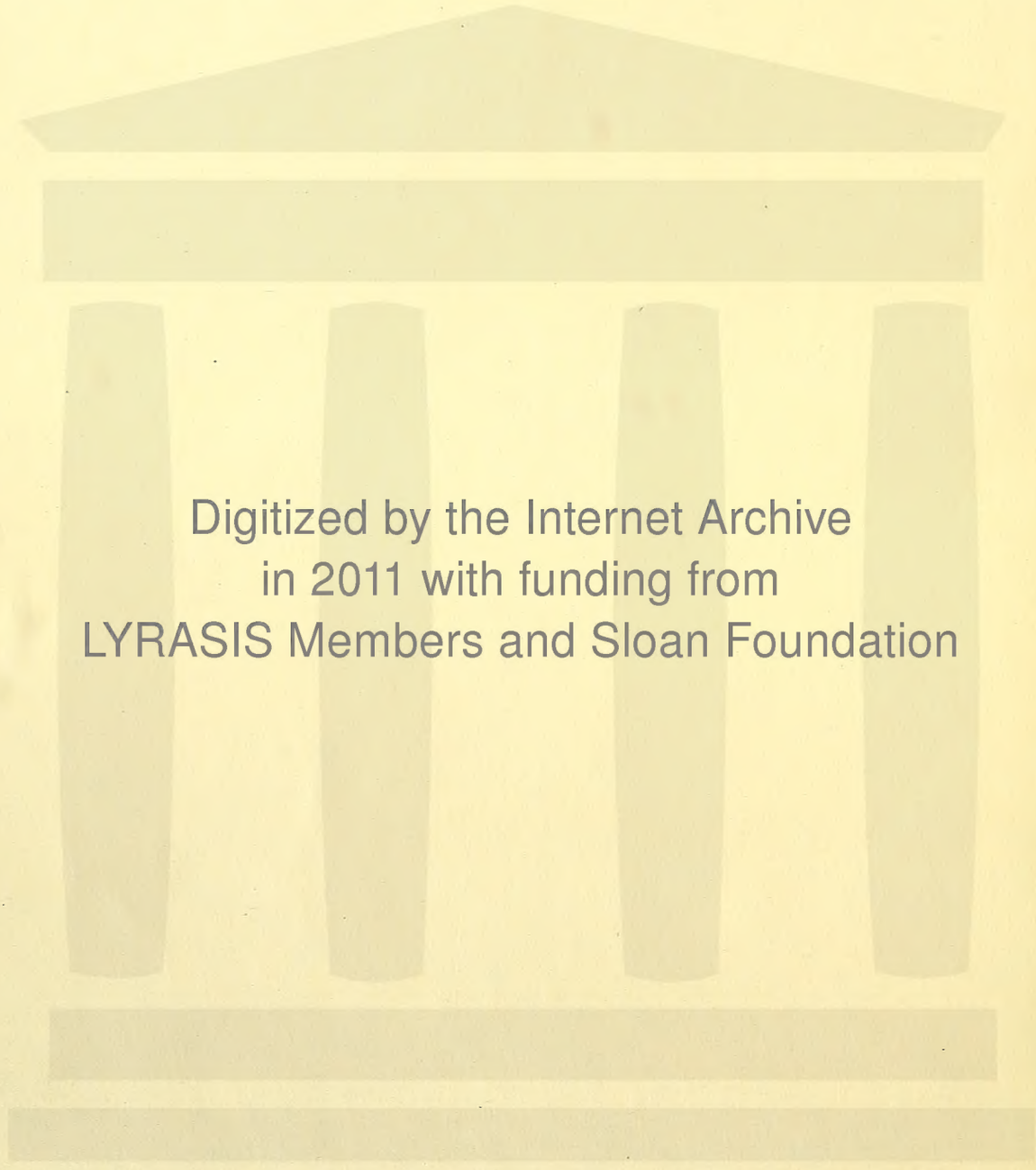


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# THE

# GARDENERS' CHRONICLE

AND

# AGRICULTURAL GAZETTE

FOR

## 1851.

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# INDEX OF CONTENTS

TO THE

# GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE,

## For 1851.


A.

Accounts, farm, 9, 27, 153, 689, 765
Acer circinatum, 791 ; villosum, 791
Acineta Humboldti, 645 ; Barkeri, 645
Acre, English and Irish, 268, 317 ; Scotch, 317, 349 ; Cheshire and Lancashire, 348 ; Worcester, Stafford, and Shropshire, 429 ; Cornish, 445
Adamia versicolor, 230
Advertisers, hints to, 358, 390
Aerides crispum, 612 ; odoratum, 612 ; affine, 612 ; maculosum, 612 ; roseum, 612 ; virens, 612
Æsculus rubicunda, 406
Agapanthus umbellatus, 694, 710
Agriculture, experiments in, 9 ; Calvert's pamphlet on certain Laws Affecting, rev., 26 ; improvement in, 43, 91, 171, 395 ; in North Devon, 73, 90 ; English, 57, 74 ; Scotch, 11, 57, 89, 171 ; Irish, condition of, 92, 187, 204, 235, 268, 300 ; Mr. Pusey on, 89, 140, 171 ; Liebig's critique on ditto, 443 ; Tullian, 138, 141, 153, 186, 236, 267, 282, 362 ; improved, 170, 238 ; use of salt in, 187 ; Prof. Way's lecture on ditto, 365 ; on the employment of gypsum in, 412 ; on lime in, 540, 589 ; Johnston's Notes on North American, rev., 265, 317 ; and steam power, 393 ; and protection, 444 ; Word in Season respecting, 445, 669, 698, 745 ; Russian, 523 ; examples of, 522, 538 ; French, 538, 572 ; in North Yorkshire, 621 ; in Australia, 635, 700 ; in Canada, 699 ; in Lancashire, 700 ; Irish, 729 ; Dr. Daubeny's lecture on what chemistry has done for, 730 ; systems of, 793
Agricultural carriages, 13 ; height of, 77 ; in the Crystal Palace, 458
Agricultural chemistry, 425, 441, 457, 474, 504, 627, 730, 763
Agricultural education, 27, 219, 265, 268, 278, 281, 297, 332 ; Mr. Lawrence on, 73
Agricultural labourers, 106, 364, 411, 428, 444, 505, 572, 604, 617, 652 ; cottage for, 75 ; plan of stove for, 454, 518 ; beer for, 475, 522, 636
Agricultural implements, grease for, 13 ; chaff cutters, 28 ; Oat bruisers, 28 ; grubbers, Scoular's improved, 53 ; Tennant's ditto, 461 ; subsoil ditto, 475 ; subsoil ploughs, 221 ; at the Crystal Palace, 281, 297, 314, 315, 330, 345, 361, 363, 364, 373, 394, 410, 426, 441, 458, 474, 490, 508, 509 ; list of prizemen for, at ditto, 429, 477, 490, 559 ; Agricultural Society's schedule of prizes for 1852, 573
Agricultural geology, 313
Agricultural Physiology, by Dr. Kemp, rev., 38
Agricultural statistics, 668 ; of Ireland, 537
Agricultural tour, 61 ; Mr. Mechi's to North Devon, 73, 90
Allamandas, 534 ; culture of, 71
Almanack, Glenny's Garden, rev., 759
Aloes, hardy, 518 ; American, 518, 597, 614
Allotments, culture of, 269, 459 ; rotation of crops for, 316
Alumina, action of, on vegetation, 283
America, horticultural meetings in, 23 ; gardening in, 88 ; Johnston's Notes on North, 265, 317 ; Wheat soils of, 413 ; phosphate of lime of, 539, 555 ; reaping machines, 538, 553, 554, 585, 606, 700, 717, 746, 747, 781 ; Baily on, rev., 551 ; Victoria regia in, 743
American blight, 56
American Poulterer's Companion, rev., 236 ; Poultry Book, rev., 284 ; Flora, Popular Nomenclature of, rev., 662
American plants, Mr. Waterer's exhibition of, 359
American churn, 411 ; ditto and English, 765
Amherstia nobilis, 39 ; at Frogmore, 167 ; at Ealing-park, 231
Ammonia, absorption of, by soils, 164, 195, 212 ; escape of, 809 ; to fix, 822
Analyses, 396 ; of common Sedges, 43 ; of Carex muricata, 40 ; of Oak husks, 109 ; of Barley ashes, 170 ; of clay soils, 283 ; of Australasian guano ; 381, 761 ; of Bolivian guano, 510 ; of gypsum, 412 ; of America phosphate of lime, 555 ; of peat, 535 ; of pinguedo, 716
Angræcum bilobum, 549 ; caudatum, 645
Anguloa Ruckeri, 517
Animals, Irish moss as food for, 10 ; and plants, difference between, 28 ; nourishing fluid of ditto, 28 ; uses of salt in the food of, 187 ; sugar in, 323 ; Prof. Symonds' lecture on the action of salt on, 379 ; periodic phenomena of, 484 ; apparatus for milking, 590 ; flesh of, as manure, 650
Animal substances, to preserve, 552
Animal and vegetable life, 515
Animal manures, 505
Annihilator, Phillips' fire, 231, 723, 773
Annuals, length of fibrous roots of, 70
Ansellia Africana, 500
Antennaria Stephensii, 563
Ants, to kill, 71, 293, 424
Aquatics, 5, 147, 197, 280, 310, 420, 469, 485, 501, 502, 517, 536, 614 ; stove, 197, 214, 215, 230 ; depth of water for ditto, 502 ; for a pond, 728
Aquilegia seed, to sow, 168
Aponogeton distachyon, 296
Apples, for a sea-side garden, 24 ; to keep, 72 ; Blenheim Orange, 228 ; Normandy Pippin, 344 ; singular bloom of, 406 ; Ribston Pippin, 614 629 ; Redstreak, 614 ; for espaliers, 648 ; table, 808 ; kitchen, 808 ; fungi on, 819
Apricots for a sea-side garden, 24 ; disease in, 664
Araucaria imbricata, 501
Arboriculture in Scotland, 692
Arctic voyage, by R. A. Goodsir, rev., 23
Arpophyllum giganteum, 517
Art v. nature, 454
Artificial manures, 10, 164, 331, 435 ; adulteration of, and the means of detection, 477
Artichokes, globe, 117
Arums, 88
Arundina densa, 517
Asparagus, 84, 391 ; to force, 134, 245, 277, 326, 341, 373 ; to salt, 168 ; cutting of, 357, 440 ; to transplant, 712
Aspasia lunata, 480
Association, British, 452, 468, 484, 516, 533, 548, 564, 595, 612
Astyages, Pear tree, 357, 373, 390
Atmosphere, 569 ; of plants, 403, 419
Atriplex hortensis, 51
Auckland Islands, vegetation and climate of, 103
Auricula, properties of, 424
Australia, guano of, 380, 686 ; analysis of ditto, 381, 761 ; flora of, 503 ; emigration to, 550 ; agriculture in, 635, 700
Aviaries, fountains for, 22
Azalea gardens, Chinese, 5, 228

B.

Baily's America, rev., 551
Baily on the Dorking fowl, rev., 284
Balsams, 376 ; from cuttings, 388 ; seed of, 390
Banana, the, 805
Banks, penny saving, 278, 310, 358
Bantams and woodlice, 277
Barkeria spectabilis, 693 ; Skinneri major, and Skinneri, 693
Barley, culture of, 169 ; analysis of ashes of, 170 ; seed, 219 ; after Wheat, 827
Barometers, to place, 408
Bats and fireflies, 789, 806
Beans, 100 ; culture of, 10, 138, 668 ; as food for cattle, 61 ; French, 68 ; drill culture of, in Belgium, 347 ; disease in, 531
Beech on an Oak, 757
Beech trees, 118 ; bleeding in, 740
Beer, 475, 522, 636 ; bitter, 733
Bees, 38, 87, 182 ; swarming of, 519 ; robber, 533 ; wild, to remove, 568 ; gas-tar walks and, 822
Beehives, 358, 504 ; in the Crystal Palace, 755 ; construction of, 755, 789
Beet, expenses and returns of an acre of, 601 ; sugar, 329, 332, 521, 539, 571, 587, 601, 620 ; field, 587
Beetle, scarlet-backed cowled, 85
Beetle traps, 680
Begonia fuchsioides, 87, 118, 134, 166 ; cinnabarina, 760
Belgium, drill culture of Beans in, 347
Bement's American Poulterer's Companion, rev., 236
Berberis aquifolium, to sow, 696 ; nepalensis 807
Berberry wine, to make, 197
Bermuda, Oranges, &c., in, 339
Binns' Notes on Lancashire Agriculture, rev., 700
Birds, British song, 392, 405, 422, 438, 502, 596, 612, 629, 645, 660, 677, 692, 708, 724, 739, 756, 772, 788, 820 ; management of, 4, 20, 36, 53, 68 ; canaries, 85, 100, 116, 149, 165, 181, 196, 212, 228, 244, 260, 308 ; nightingales, 275, 292, 325, 341, 356, 388, 404, 421, 436, 469, 486, 501, 517, 534, 759 ; Virginia ditto, 566 ; blackcaps, 452, 468, 500, 517, 532 ; garden warbler, 548 ; white-throat, 564 ; babillard, 581 ; whydak, 8, 24 ; and white fruits, 70 ; fountains for, 22 ; skylark, 203, 219, 268, 283, 300, 317, 332 ; longevity of ditto, 87 ; to keep from fruit, 134 ; migratory, 277 ; canaries in the open air, 534 ; cuckoo, 309, 454, 469, 485, 741, 770 ; to keep off Gooseberry and Currant tree buds, 438, 806 ; hedge sparrow, 502 ; swallows, 501 ; parrots, 822 ; disease in ditto, 438, 454, 469 ; swifts and hornets in Yorkshire, 566, 597 ; mocking, 610, 661, 678 ; rooks, habits of, 629, 646 ; thrush, performances of a, 742 ; Knox on Game, &c., rev. 774 ; singing hens, 790 ; robin, audacity of, 822
Birds' nests, 455
Biscuit, Borden's meat, 629, 662
Black-caps, 452, 468, 500, 517, 532
Blaine's Canine Pathology, rev., 637
Bletia patula, 693
Blight, 501 ; American, 56 ; in Wheat, 92 ; Peach tree, 486
Boilers, Cornish steam engine, 283 ; incrustations in, 327
Bones as manure, 650, 715
Bone dust as ditto, 430
Books reviewed : Townshend's Rambles and Observations in New South Wales, 6 ; Dickson on the Breeding and Management of Animals, 13 ; Goodsir's Arctic Voyage, 23 ; Kemp's Agricultural Physiology, 28 ; Calvert's Pamphlet on certain Laws affecting Agriculture, 26 ; Rivers' Orchard House, or Cultivation of Fruit Trees under Glass, 35 ; Lawrence on Agricultural Education, 73 ; Robin on the Reproductive Organs of Plants, 103 ; Fresenius' Contributions to Mycology, 119 ; Linné's Nemesis Divina, 135 ; Pusey on what ought Landlords and Farmers to do ? 140 ; Ehrenberg on the Dust carried by the Trade Winds, 151 ; on Sugar, 168 ; Hooker's Rhododendrons of Sikkim Himalaya, 163, 787 : Richardson on Domestic Fowl and Ornamental Poultry, 173 ; Payer on Cryptogams, 183 ; Deman on the Cultivation of Flax, 205 ; Considerations for extending the Cultivation of ditto, 205 ; Warnes on ditto, 205 ; Brown on ditto, 589 ; Cotton, 205 ; Bement's American Poulterer's Companion, 236 ; Johnston's Notes on North American Agriculture, 265 ; Donald on Land Draining, 269 ; Baily on the Dorking Fowl, 884 ; Cook's American Poultry-book, 284 ; Sanders on the Vine, 327 ; Dean's Land Steward, 361 ; Paul on the Culture of Roses in Pots, 391 ; Dixon's Dovecote and Aviary, 407 ; Brown's Pamphlet on Fumigation, 413 ; Irmisch on the Classification of Bulbs and Tubers, 423 ; Vasey on the Delineation of the Ox Tribe, 429 ; Morris's Naturalist, 439 ; Eyton's Herd Book of Hereford Cattle, 461 ; Boswell's Poultry Yard, 471 ; Reid on the Steam Engine, 487 ; Latham's Ethnology of British Colonies, 503 ; Traveller's Library, 503 ; Knight's Curiosities of Industry, Historical and Pictorial Half Hours, 503 ; Miss Carlow's Drops of Water, 503 ; Gilbert's Guide to London, 503 ; Hunt's and Jerrold's Hand Books to the Great Exhibition, 503, 597 ; Bingham's Photogenic Manipulation, 503 ; Murray's Modern London, 519 ; Colonial Magazine, 525 ; Wight's Indian Orchids, 534 ; Baily's America, 551 ; Cuthill's Market Gardening, 551 ; ditto, Instructions on the Potato, 606 ; Manchester Agricultural Society's Journal, 573 ; Ward's World and its Workshops, 598 ; Midland Florist, 599, 727 ; Beck's Florist, 39, 599, 727 ; Floricultural Cabinet, 599, 727 ; Gardeners' Magazine of Botany, 599, 727 ; Hogg's British Pomology, 614 ; Turner on Training Horses, 622 ; Blaine's Canine Pathology, 637 ; De la Beche's Geological Observer, 646 ; Seeman's Popular Nomenclature of the American Flora, 662 ; Paul on the Hollyhock, 663 ; Word in Season, or a pamphlet on Corn Growing, 445, 669, 698, 745 ; Lady Clutterbuck's Cookery Book, 679 ; Murray's Railway Literature, 679, 743 ; Longman's Travellers' Library, 679 ; Wheatley, on the Rod and the Line, 695 ; Bian's Notes on Lancashire Agriculture, 700 ; Prince Albert's Portrait, 710 ; Hooker's Species Filicum, 711 ; Pulman on Trout Fishing, 711 ; Crabb's Technical Dictionary, 711 ; Book of the Salmon, 726 ; Ferguson and Vance, on the Tenure and Improvement of Land in Ireland, 729 ; Ivory on the Chrysanthemum, 742 ; Fly Fishing in Salt and Fresh Water, 743 ; Layard's Nineveh, 743 ; Sir Joseph Paxton's Portrait, 775 ; Glenny's Garden Almanac, 759 ; Knox on Game Birds, &c., 774 ; Country House (the Poultry-yard), 807 ; Moore's History of Ferns, 823 ; Family Economist, 823 ; Paxton's Flower Garden, 823 ; Birmingham Magazine, 823
Borders, fruit tree, 54
Borneo, vegetation of, 695
Bostrichus capucinus, 85
Boswell's Poultry Yard, rev., 471
Botanic gardens, Edinburgh, 6, 56 ; Cambridge, Mr. Stratton's appointment to, 71 ; Swedish, 307 ; Chelsea, 391
Botanical geography of part of the Himalaya and Thibet, 612
Botanical names, 309 ; old, 502
Bouquet trade in New York, 118, 150, 182
Box-feeding of cattle, 221
Brassia Wrayæ, 500 ; caudata, 500 ; verrucosa major, 500 ; Lanceana, 500 ; macrostachya, 500 ; maculata major, 645
Bread, to obviate the bitter taste in, 526
Brewing, 43, 139, 636
Bridges, moveable, 557
Bricks, embossed, 685
Brickmakers, hint to, 54
Britain, climate of, 323, 339
British Association, 452, 468, 484, 516, 533, 548, 564, 595, 612
Broccoli, 117, 132, 694, 742 ; Snow's, 118, 214 ; fungi on, 379 ; select, 710, 726
Browæa coccinea, 70
Broughtonia sanguinea, 580
Brussels Sprouts, 117
Buckwheat, culture of, 363, 422
Buds, growth of, 259
Budding, Foulstone's new instrument for, 326
Plums and Cherries, 406
Buildings, farm, 284, 285, 300, 667 ; paint for ditto, 170, 187 ; new mode of ventilating public, 781
Bulbs, Cape, 184 ; garden, 229 ; and tubers classification of, 423 ; common hardy, 742
Bullocks, to clip, 748, 779
Bunny's (Mr.) nursery noticed, 519
Butter, Turnipy, 827

C.

Cabbages, 37, 44 ; Enfield, 69 ; Shantung, 87 Drumhead, 93, 398 ; club in, 136 ; crops of 314
Cacti, 134, 454 ; to graft, 22, 70
Calanthe veratrifolia, 532 ; flava, 532 ; bicolor, 693
Calceolarias, 262, 278, 293, 310, 328, 341, 358, 373 ; bedding, 200, 232, 661, 709
Calico, glaze for, 184
California, Pine and Cedar forests of, 103
Calla æthiopica, 822
Calves, slipping, 140 ; drop after, 334
Calvert's (Mr.) pamphlet on the Laws Affecting Agriculture, rev., 25
Camarotis purpurea, 645
Cambridge Botanic Garden, Mr. Stratton's appointment to, 71
Camellias, culture of, 21 ; method of compelling the buds of reticulata to develop, 71 ; Messrs. Chandler's, noticed, 151
Campanula vidalii, 136, 150
Canada, horticulture in, 535 ; agriculture in, 694
Canaries, management of, 85, 100, 116, 149, 165, 181, 196, 212, 228, 244, 260, 308 ; in the open air, 534
Canna, to grow in water, 551
Canvas, composition for waterproofing, 104
Cape bulbs, 184
Cape Pelargoniums, select, 536
Carbonic acid, 403, 419
Carriages, agricultural, 13 ; grease for, 14 ; height of, 77 ; in the Crystal Palace, 458
Carnations, in pots, 166 ; duration of, 440 ; show of, 502
Carrots, 53 ; Siamese, 67 ; culture of, 202, 218 ; winter, 645, 661 ; fatting early lambs on, 652
Caterpillars, to kill, 71
Cattle, Dickson on Breeding of, rev., 13 ; linseed as food for, 28 ; Beans as, 61 ; early spring, 253 ; best method of storing Turnips for, 61 ; hides of, 73 ; qualities of ditto, 106 ; on boarded floors, 154, 682, 748 ; shorthorned, 173 ; use of salt in food of, 187 ; to feed, 109, 221, 348, 444, 602, 748 ; report of the Agricultural Society's meeting of, 459, 475, 492 ; analyses of, 461 ; ditto from 1847 to 1851, 476 ; fat and imperfect, 572 ; Eyton's Herd Book of Hereford, rev., 461 ; West Highland, 523 ; Birmingham show of, 286, 701 ; report of ditto, 797, 812, 825, 827 ; Smithfield, 27 ; report of ditto, 796, 811, 825 ; summer feeding of, 590 ; marketing of, 602 ; paving for stall of, 829 ; clipping, of, 748
Cattleya Skinneri, 453 ; Mossiæ, 453 ; crispa, 453 ; superba, 453 ; labiata, 453 ; pumila, 453 ; Loddigesii, 453 ; Harrisoniæ, 453 ; violacea, 453 ; guttata, 453 ; candida, 453 ; intermedia, 453 ; granulosa, 453 ; Walkeriana, 581 ; citrina, 693

Cauliflower, 37 ; cultivating and preserving of, 247
Ceanothuses, 310
Celery, 37 ; and Onions, 582 ; to blanch, 661
Cells, plant, composition of the walls of, 199
Cement, for tanks, 166 ; for stone, 599
Cereus, night blowing, 358
Chaff-cutters, 28 ; in the Crystal Palace, 410, 426 ; Ferrabee's, 523
Chandler's (Messrs.) Camellias noticed, 151
Chapman's (Mr.) forcing ground, 87
Charcoal, peat, 12, 84, 132, 150, 231, 238, 342, 459, 518, 589, 621, 713, 733, 811 ; Rogers' patent for making, 241 ; preparation of, 268 ; to make, 397, 428, 509 ; and guano, 468 ; chemical products of, 535 ; to burn, 691
Cheese, cream to make, 781, 827
Cheiranthus Cheiri, monstrosity of, 564
Chelsea Botanic Garden noticed, 391
Cheltenham Flower Show, 421, 437
Chemistry, organic, 323 ; agricultural, 425, 441, 457, 474, 564, 627, 730, 763 ; of vegetation, 643
Cherries, for a sea-side garden, 24 ; to train, 213 ; for marketing and succession, 120 ; Morello, 259 ; to bud, 406, retarded, 678, 694, 821
Chestnut, Spanish, 182, 198, 211, 214, 230, 262
Chicory, 187, 536, 633 ; to force, 134 ; soil for, time of sowing, seed required for an acre, cultivation and harvesting, 154, 251 ; culture of, 379
Chinese Azaleas, 5, 228 ; Primulas, 215 ; Glycine, 340, 343 ; horticultural shows, 679
Chiswick, exhibitions at, 291, 371, 467 ; report of ditto, 293, 374, 469 ; list of awards at, for May, 290, 310 ; for June, 370 ; for July, 466 ; schedule of prizes for 1851, 130 ; ditto for 1852, 530 ; remarks on ditto, 583, 711 ; new regulations at, 115, 168 ; v. Rokham temperature, 118 ; garden noticed, 39, 263, 359, 598 ; fruit at, 373, 389 ; yellow Roses at, 391, 405, 422 ; Fellows' rights, 388 ; exhibitions, 517 ; Orchids at, 740 ; Pelargonium growers at, 244
Christie (Mr.), death of, 71
Chrysanthemums, 69, 262, 310, 695, 823 ; descriptive list of, 69 ; cultivation of, 151, 183, 261 ; spring, 214, 230 ; shows, 151, 183, 647, 727, 743, 775, 790, 807 ; Ivory's, 742, 757 ; Mr. Salter's, 807
Church leaseholds, 509
Churns in the Crystal Palace, 458 ; American, 411 ; ditto and English, 765
Chysis bractescens, 549
Cinerarias, 711 ; select, 136, 599, 711
Cirencester agricultural college, 265, 826 ; examination paper of, 458 ; answers to ditto, 521
Cirrhopetalum Thouarsii, 581
Citrus japonica, 40
Claremont, gardens at, noticed, 679
Claussen, Chevalier, on the cultivation of Flax and Hemp, 107, 123, 155
Clay soils, 41 ; analyses of, 283
Climate of Auckland Islands, 103 ; of Britain, 323, 339 ; remarks on, 341 ; of Torquay, 391, 406
Climbers, greenhouse, 680
Clover, failure in, 41, 185, 556, 764, 796 ; seed-time, 219
Cock's American Poultry Book, rev., 284
Cockscombs, from cuttings, 388
Cockroaches, how to get rid of, 680
Cœlogynes cristata and flaccida, 467 ; Wallichiana and præcox, 468 ; ochracea, 581 ; terrestrial, 756
Coffee plant, 213
College, Cirencester, Agricultural, 265, 826 ; examination paper of, 458 ; answers to ditto, 521
Colonisation, home, 26
Colonial Magazine, rev., 525
Compton Verney, plants at, 231
Concrete in the end of drains, 10
Conferva in waterbutts, 120 ; to remove from ditto, 166
Conifers, varieties of, 150 ; and cattle, 214 ; size of, 214, 230, 246, 262 ; at Esher-place, Surrey, 534 ; annual growth of, at Holker, 246 ; at Bayfordbury, 630 ; names of, 774
Conservatories, construction of, 19
Cookery, 387 ; Lady Clutterbuck's Book on, rev., 679
Cork, nature of, 263
Corn, remarks on growing, 105 ; prices of, 204 ; ricks in the Crystal Palace, 508 ; reaping of, by machinery, 555 ; trade, 633 ; culture of 667 ; a Word in Season, or a pamphlet on growing of, noticed, 669, 698, 745 ; at Paris, 829
Corns, cure for, 615
Coronilla glauca, 230
Coryanthes macrantha and speciosa, 645
Cotoneaster, to sow, 760
Cottages, labourers', 75, 266 ; stove for, 454, 518
Cotton v. Flax, Warnes on, rev., 205 ; African, 455, 518
Cotyledon orbiculata, 615
County census of 1851, 284
Cows, how to make them calve in the daytime, 14 ; food for, 109, 734, 750 ; produce of, 204, 300, 348 ; feeding milch, 204 ; apparatus for milking, 590 ; quantity of milk they should give in a year, 638 ; one acre to supply winter food for three, 766 ; to keep, 796
Crabb's Technical Dictionary, rev., 711
Cranberries, 184
Cratæguses, 136
Crops, rotation of gardening, 4 ; on the growth of, 169 ; how to produce five off the same piece of ground within 13 months, 203 ; to interline, 265 ; rotation of, 494, 699 ; ditto for allotments, 316 ; Cabbage, 314 ; green, 378 ; returns respecting the state of, 505, 506 ; Irish, 605 ; for a kitchen garden, 629, 678, 693, 710, 726, 741, 789, 824 ; root, to harvest, 714
Cryptogams, Payer on, rev., 183 ; reproduction of higher, 581
Cryptomeria japonica, 293, 660, 710, 740
Crystal Palace, 571, 649 ; building of, 19 ; trees in, 99, 133, 707 ; plants for, 211 ; ditto in, 295 ; Van Diemen's Land, timber at, 275, 276, 291, 307 ; descriptive report of implements in, 281, 297, 314, 315, 330, 345, 361, 363, 364, 377, 394, 410, 426, 441, 458, 474, 490, 508, 509 ; award of the prizes for ditto at, 429 ; list of prizemen for ditto at, 477, 490, 559 ; as a winter garden, 419, 438, 451, 468, 484 ; Sir Joseph Paxton's pamphlet on ditto, 420 ; his letter to Lord Campbell on, 453 ; garden contrivances in, 275, 499, 565 ; substances used as food in, 537 ; and Victoria Regia, 485, 501 ; centrifugal pumps in, 570 ; Hunt's Handbook to, rev., 697 ; farm produce in, 634 ; farm building models in, 667 ; beehives in, 755
Cuckoo, 309, 454, 469, 485, 741, 774
Cucumbers, 310 ; to save seed of, 70 ; disease in, 661, 678, 710, 756 ; soil for, 712
Cultivators or scarifiers in Crystal Palace, 330
Cunningham (Mr.), death of, 695
Curiosity, a, 278
Currant trees, 83 ; disbudded by birds, 438
Cuthill on Market Gardening, rev., 551 ; on the Potatoe, &c., 606
Cuttings, Balsams and Cockscombs from, 388 ; plunging material for, 760
Cyclamens, 118
Cycnoches Loddigesii and ventricosum, 517
Cymbidium, giganteum, and Mastersii, 501 ; eburneum, 532
Cypripedium caudatum, 517 ; barbatum, 532 ; Lowii, 532 ; venustum, 532 ; insigne, 693
Cyrtochilum maculatum, 660 ; filipes, 660 ; hastatum, 660
Cyrtopodium punctatum, 532
Cystopus candidus, 579.

D.

Dahlias, select, 24, 72, 518 ; culture of, for exhibition, 279 ; showing of, 509, 548, 631 ; shows of, 535, 583, 579, 615, 631, 647, 663
Dairy management, 60, 91, 590
Datura ceratocaulon, 120
Daubeny's (Dr.), lecture on what chemistry has done for agriculture, 730
Dean's Land Steward, rev., 361
Deman on the Cultivation of Flax, rev., 205
Dendrobium nobile, 135 ; densiflorum, moschatum, and aduncum, 483 ; aggregatum and Jenkinsii, 549 ; heterocarpum, 581 ; Cambridgeanum, 596 ; macrophyllum, 596 ; moniliforme, 596 ; Devonianum, 596 ; Gibsonianum, 596 ; sanguinolentum, 596 ; Pierardi (latifolium), 596 ; fimbriatum, 596 ; Dalhousieanum, 596 ; formosum, 596 ; nobile, 596 ; Wallichianum, 596 ; Paxtoni, 596 ; chrysanthum, 596 ; speciosum, 693
Deodar, 152, 166, 182, 198, 230, 245, 278, 309 ; seed to sow, 280
Devon, Mr. Mechi's trip to, 73, 90 ; climate of, 391, 406
Diarrhœa, use of Salep in, 661
Dicks on on Breeding of Cattle, rev., 13
Digging, double, 745 ; machine, 737
Diseases in sheep, 174 ; in parrots, 438, 454, 469 ; in Beans, 531 ; in Apricots, 664 ; in Cucumbers, 661, 678, 710, 756 ; in poultry, 667, 716
Dixson's Dovecote and Aviary, rev., 407
Dobson's (Mr.) nursery noticed, 726
Donald on Land Draining, &c., rev., 269
Drainage Companies, 411, 554, 605, 668
Drainage Act, 9, 12, 25, 27, 41, 43, 58, 123, 170, 203, 315, 332, 377, 428
Drains, roots in, 10 ; concrete in the ends of, 10 ; main, quantity of water running from, 205
Draining, 155, 235, 268, 380, 444, 554, 588, 621, 633, 653, 668, 684, 777 ; deep, 236, 509, 348, 379 ; ditto and shallow, 10 ; pipes, 91 ; and and Turnip crop, 173 ; and open furrows, 154, 187, 218, 251, 315, 316 ; Donald on, rev., 269 ; tiles for, 284 ; kiln for burning ditto, 410 ; fertility from, 332 ; by machinery, 446 ; tools in the Crystal Palace, 458 ; expenses, 492 ; land, 794 ; ditto to be planted, 518 ; and Lord Wharncliffe's Letter, 746 ; in Lancashire, 781 ; under, 810
Drills at the Crystal Palace, 345
Dry rot, 584
Ducks, food for young, 285

E.

Ealing-park, Amherstia nobilis at, 231
Earth, burned, as manure, 716
Eatable plants of Panama, 599
Edgings, garden, 38, 70, 86
Edinburgh Royal Botanic gardens, 6, 56
Education, agricultural, 27, 219, 265, 268, 281, 297, 332 ; Mr Lawrence on, 73 ; Irish industrial, 203, 698 ; village, 278
Eels, propagation of, 806, 822
Eggs, to preserve, 141
Ehrenberg on the Dust carried by the Trade Winds, rev., 151
Elms in the Crystal Palace, 99, 133, 707
Emigration, 648, 680 ; Irish, 651, 713 ; Highland, 761 ; and the Potato, 826
Engines, steam, flue boilers to, 60, 154
Epidendrums, 742 ; cinnabarinum, 483 ; Stamfordianum, 483 ; Hanburii, 483 ; crassifolium, 483 ; phœniceum, 483 ; macrochilum, 483 ; macrochilum roseum, 483 ; vitellinum, 549 ; bicornutum 549 ; aloifolium, 581 ; verrucosum, 660 ; vitellinum majus, 660 ; aurantiacum, 660
Equinoxes, the, 379
Erysiphe guttata, 227 ; penicillata, 227 ; graminis (junior), 227 ; aduncа, 227 ; bicornis, 227
Esenbeck's herbarium, 807
Espaliers, Pears for, 120, 648 ; for Apples, 648
Eucalyptus, 342, 390 ; globulus, 276 ; hardy, 358
Evergreens, to transplant, 660
Exhibition, Great. See Crystal Palace.
Exhibition in Cheshire, 483
Exhibitions, floral prizes of, 647
Experiments, agricultural, 9 ; with guano, 13 ; with manures, 57 ; ditto in the cultivation of Potatoes, 778 ; Mr. Lawes, 473, 643

F.

Fabiana imbricata, 373
Fabrics, composition for waterproofing, 104
Fairy rings, 568
Family Economist, rev., 823
Farms, small, 765, 766 ; schemes for ditto, 122, 315 ; ram breeding, 154 ; payment of rent of, 252 ; leases of, 252, 716 ; produce of a, of 465 acres, 572 ; bull breeding, 619 ; in the Crystal Palace, 634 ; Mr. Hudson's Castleacre, 188 ; Mr. Kennedy's, Myremill, 653 ; of Galson, Island of Lewis, 701
Farmers and Landlords, Mr. Pusey on what they ought to do, rev., 140 ; advice to small, 201 ; Mr. Mechi's annual meeting of, 493 ; tenant, 588
Farming, experiments in, 9 ; Scotch, 11, 57, 89, 171 ; Calvert's pamphlet on certain Laws Affecting, rev., 26 ; Mr. Mechi's, 12, 28, 825 ; in N. Devon, 73, 90 ; improvement in, 43, 91, 171, 395 ; English, 57, 74 ; Mr. Pusey on, 89, 140, 171 ; Liebig's critique on ditto, 443 ; Irish, condition of, 92, 187, 204, 235, 268, 300 ; Tullian, 138, 141, 153, 186, 236, 267, 282, 362 ; open furrows in, 154, 187, 218, 251, 315, 316 ; insufficient capital, 173 ; improved, 170, 238 ; use of salt in, 187 ; Prof. Way's lecture on ditto, 365 ; ditto on the employment of gypsum in, 412, ditto on lime, 540, 589 ; fallow system in, 317 ; and steam power, 393, 665, 686 ; cost of, 445 ; and protection, 444 ; Word in Season respecting, 445 ; examples, 522, 538 ; Johnston's Notes on North American, rev., 265, 317 ; Russian, 523 ; French, 538, 572 ; alternate culture of, 585 ; in North Yorkshire, 621 ; in Australia, 635, 700 ; Lord Leicester's, 653 ; different kinds of, 681 ; balance sheets in, 684 ; in Canada, 699 ; in Lancashire, 700 ; capital, 699 ; small system of, 717 ; Irish, 729 ; steam, 762 ; alternate culture, 779 ; and meteorology, 793
Farm buildings, 284, 285, 300, 667 ; paint for, 170, 187
Farm capital, 43
Farm accounts, 9, 27, 153, 698, 765
Farm implements, grease for, 13 ; chaff-cutters, 28 ; Oat-bruisers, 28 ; grubbers, Scoular's improved, 53 ; Tennant's ditto, 461 ; subsoil ditto, 475 ; subsoil ploughs, 221 ; at the Crystal Palace, 281, 297, 314, 330, 345, 361, 363, 364, 373, 394, 410, 426, 441, 458, 474, 490, 508, 509 ; award of prizes for, at ditto, 429 ; list of prizemen for, at ditto, 477, 490, 559 ; Agricultural Society's schedule for 1852, 573
Farm railroads, 349 ; Mr. Neilson's, 186
Farm-yard manures, 44 ; preparing and applying of, 75 ; and lime, 316
Feeding sheep, 61, 90 ; cattle, 28, 61, 221, 348, 444, 602 ; summer feeding of ditto, 590 ; best method of storing Turnips for ditto, 61 ; of cows, 109, 204
Fences, 93, 141 ; preservatives of, 3
Ferns, hardy, 168 ; seed, 552 ; Moore's History of, rev., 823
Fern and Gorse, to transplant, 200
Figs, late, 694, 709, 726
Filberts, to preserve, 616
Filter, Price and Whitehead's new, 247
Fire annihilator, Phillips', 231, 723, 773
Firs, silver, 39 ; twigs of, eaten by squirrels, 182, 198, 213 ; precocious, 518
Fish, artificial breeding of, 659, 675 ; breeding and preservation of fresh water, 693, 709 ; gold, 136, 360 ; as manure, 650 ; oil as ditto, 650 ; Salmon, Book of, rev., 726 ; eels, propagation of, 806, 822
Fishing, Pulman on Trout, rev., 711 ; Fly, rev., 743
Flax, 43, 204, 472 ; crops of 1849 and 1850, 12 ; patent steep for, 13 ; division of labour in the management of, 13 ; saving seed of, 13 ; Claussen's communication to the Agricultural Society of England in favour of an extended cultivation of, 107, 123 ; culture of, 155, 172, 233, 330 ; Deman on the Cultivation of, rev., 205 ; pamphlet on the Considerations for Extending the Cultivation of, rev., 205 ; Warnes on, v. Cotton, rev., 205 ; mountain, 381, 556 ; management of, 556 ; quantity of seed sown in Ireland in 1851 and previous years, 445 ; Brown on, rev., 589 ; winter, 668
Flax fungus, 611
Fleas, to destroy, 701, 749
Fleming's salting machine for killing weeds on walks, 275, 357, 372, 390, 452, 533
Flooring, open boarded, for cattle, 154, 682, 748 ; rabbits on ditto, 171
Flora, American, Popular Nomenclature of, rev., 662
Florist, vol. iii., noticed, 39
Flowers, to dry, 183, 360, 405 ; spring, 182, 199 ; to keep mould from in herbaria, 136, 392 ; seedling, 518, 535, 550 ; florist, awards of prizes at exhibitions of, 647
Flower-beds, mixed v. massed, 117
Fly-papers, 373, 390
Foals, clipping, 140
Forcing, 136 ; Peaches, 118, 405, 437 ; Asparagus, 134, 245, 277, 326, 341, 373 ; ditto and Seakale, Rhubarb, and Chicory, 134 ; at St. Petersburgh, 324 ; Strawberries, 358 ; Roses, 379
Food, Irish Moss as, for man and the lower animals, 10 ; Masson on preparing, 359 ; substances used as, in the Crystal Palace, 527 ; for cattle, linseed as, 28 ; Beans as, 61 ; early spring for, 253 ; use of salt in, for, 187 ; for cows, 109, 734, 750 ; for sheep, 734 ; one acre to supply winter, for three ditto, 766
Footscray nursery, noticed, 535
Forest trees, planting of, 326 ; ditto, waste land with, 86 ; preparing ground for ditto, 724 ; old reinvigorating, 87, 118, 293 ; pruning, 516, 532, 566, 596, 614, 630, 708, 758, 788, 805, 823 ; in Scotland, 692 ; and underwood, 694
Forests, Californian Pine and Cedar, 103
Fortune (Mr.), news from, 339 ; his arrival, 675
Fossil tree, gigantic, 24
Fossil remains, 748, 779
Fountains, materials for, 6 ; for birds, 22
Fowls, Richardson on, rev., 173 ; breeding and rearing, 250 ; Baily on Dorking, rev., 284 ; to mark, 444, 459 ; Cochin China, 526
Frames, cold, aspect for, 648
France, farming in, 538
Franciscea confertiflora, 262 ; eximia, 292 ; culture of, 292
Fraser's (Messrs.) nursery noticed, 487
Fresenius' (Dr.) Contributions to Mycology, rev., 119
Frogmore, Amherstia nobilis at, 167 ; growth of Conifers at, 246, 262
Frost, cure for effects of, 6 ; and Pears, 373 ; spring, 436 ; effect of, on plants, 789
Fruits, select, 24 ; white and birds, 70 ; Apples, to keep, 72 ; useful, 86 ; birds to keep from, 134 ; to dry, 183 ; to preserve, 355, 390 ; at Chiswick, 373, 389 ; Pears and frost, 373 ; to gather, 439 ; and spring frosts, 436 ; crops, 517, 549, 566 ; tarts, 551 ; wall, 579 ; rooms, 616, 627 ; Moorman's ditto, 612 ; Raspberries, ripe in January, 55 ; vitality of seeds of ditto, 515, 549, 565 ; double bearing ditto, 694 ; new, 740, 757
Fruit trees for a sea-side garden, 24 ; Pear, to train, 21 ; to protect ditto, 38, 56 ; deformed ditto, 99 ; late ditto, 104 ; ditto for espaliers, 120, 648 ; ditto and frost, 373 ; ringing of ditto, 632 ; Currant, 83 ; ditto disbudded by birds, 438 ; Peaches, to force, 118, 405, 437 ; to root prune ditto, 376 ; blight of ditto, 486 ; retarded ditto, 678, 694 ; Orange, substitute for, 131 ; Bermuda, ditto, 339 ; French ditto, 503 ; Rivers' Orchard-houses for the cultivation of, under glass, rev., 35 ; for a south-east aspect, 120 ; Cherries, to train, 213 ; ditto for marketing and succession, 120 ; Morello, ditto, 259 ; to bud ditto, 406 ; retarded, ditto, 678, 694 ; for an east wall, 200 ; Plum, 277 ; to train ditto, 213 ; Reine Claude de Bavay, ditto, 213 ; to bud ditto, 406 ; late ditto, 695 ; Coe's Golden Drop, ditto, 710, 726, 742 ; for a south-west aspect, 216 ; Apple, Blenheim Orange, 228 ; Normandy Pippin, ditto, 344 ; ditto, singular bloom of, 406 ; Ribston Pippin, ditto, 614, 629 ; Redstreak, ditto, 614 ; for espaliers, ditto, 648 ; table ditto, 808 ; kitchen ditto, 808 ; sea-weed for, 214 ; summer pruning of, 456 ; Apricot disease, 664 ; ringing, 680 ; Fig, late, 694, 709, 726 ; double digging ground intended for, 726 ; planting of, 741 ; for an east aspect wall, in a northern part, 776 ; Gooseberry, 83 ; ditto, for succession, 792 ; to keep birds from ditto, 806 ; pruning, young, 806
Fruit tree borders, 54
Fuchsias, Tiley's new, 326 ; tall, 486, 518 ; corallina, 533, monstrous, 614 ; princeps, 614, 629 ; Riccartoni, 661 ; serratifolia, 804
Fuel, peat, Rogers's patent for making, 231
Fumigation, 38, 70 ; to destroy insects on Hops by, 491
Fumigators, 310, 740 ; Brown's pamphlet on, 413
Fungi, 772 ; on Lemons, 563 ; parasitic, 579 ; on Onions, 595, 646 ; Flax, 611 ; fructification of, 803 ; on Apples, 829
Furrows, open, on drained land, 154, 187, 218, 251, 315, 316

G.

Gaines (Mr.), nursery noticed, 247
Game Birds, &c., Knox on, rev., 774
Game laws, 252, 283, 348, 412, 605, 651, 684, 700, 764, 779, 795, 827
Gardens, Chinese Azalea, 5, 228 ; winter, 19, 70 ; Crystal Palace as ditto, 419, 438, 458 ; Mr. Paxton's pamphlet on ditto, 421 ; ditto, his letter to Lord Campbell on, 453 ; Smithfield as ditto, 531, 647 ; sea side, Edinburgh botanic, 6, 56 ; edgings for, 38, 70, 86 ; exposed vegetables, &c., for, 72 ; ornaments for, 86, 102 ; sculpture for, 101 ; foreign gleanings respecting, 100, 116, 197, 229, 244, 277, 308, 324, 388, 437, 500, 565, 725, 740, 773, 804 ; bricklayer's, 135 ; bulb, 229, London, 437 ; to water, 438, 469 ; round Paris, 437 ; kitchen, to crop, 629, 678, 693, 710, 726, 741, 789, 806, 822 ; hints on making, 758, 773, 789, 805, 822 ; Hort. Society's, 39, 263, 359 ; Mr. Wainman's, Dendrobium nobile at, 135 ; Frogmore, Amherstia nobilis at, 167 ; Mr. Solomon's, Peckham-rye, 199 ; Ealing Park, Amherstia nobilis at, 232 ; at Compton Verney, 231 ; Kew, 243, 277, 807 ; Upton House, Rhododendrons at, 279 ; Swedish Botanical, 307 ; Lady Scott's, 343 ; W. O. Hunt's, Stratford-on-Avon, Chinese Glycine at, 343 ; Chelsea Botanic, 391, 695 ; at Claremont, 679 ; Oxford Botanic, 744 ; at Lisbon, 804 ; Calcutta Botanic, Victoria regia at, 805 ; of Cornwall, 821
Gardeners, wages of, 136, 216
Gardeners' newspapers, 358
Gardeners' troubles, 597
Gardening, market, round London, 70, 232 ; remarks on rotation of crops, 4 ; Early Potatoes, 20 ; Cabbages, Cauliflowers, and Celery, 37, 87 ; Carrots, early Turnips, Onions, and Horse and winter Radishes, 53 ; Leeks, White Cos Lettuce, Scarlet Runners, French Beans, and Parsley, 68 ; Asparagus and Seakale, 84 ; Rhubarb, early Peas, and Beans, 100 ; Brussels Sprouts, Beet-root, Globe Artichokes, Spinach, Broccoli, 117 ; Mushrooms, mulching, 133 ; Strawberries, 149, 182, 198 ; Watercresses, 165 ; is it profitable ? 212 ; villa and suburban, 5, 21, 37, 68, 104, 132, 180, 213 ; winter, 38 ; in America, 88 ; French notions of English, 342 ; kitchen, 437 ; in Canada, 538 ; news, 582
Garden engines, 565
Garden walks, to make, 245, 518, 533, 550 ; Fleming's machine for killing weeds on, 275, 357, 372, 390, 452, 533 ; to salt, 391, 406, 452, 484, 502, 517 ; quantity of ditto to apply to a gallon of water for killing weeds on, 520 ; asphalte, 501, 659 ; tarred, 677, 678, 694, 822 ; lead refuse, 694
Gardeners' Benevolent Institution, 151, 213, 326, 340, 647 ; anniversary of, 372, 389 ; Mr. Aiton's bequest to, 516
Gardnerian herbarium, 343
Gas, carbonic acid, 403, 419
Gas lime, 430
Geography, Botanical, of part of the Himalaya, and Thibet, 612 ; ditto, of Western Thibet, 612
Geology, agricultural, 313
Geological Observer, rev., 646
Geraniums at sea, 55 ; fancy select, 72 ; scarlet, 807
Gladioli, select, 759
Glass, uses of, 38 ; rough plate, 38, 263, 390, 406, 758, 773 ; quarry, 695 ; horticultural, 741
Glass walls, 757, 771, 790
Glass water pipes, 355
Glass houses, to erect, 180 ; to move the air in, 182 ; ventilation of, 184, 327 ; ridge and furrow, 310 ; shading for, 373 ; winter covering for, 756, 773.
Glazing, new mode of, 437
Glycine in China, 340, 343
Goodsir's Arctic Voyage, rev., 23

Gooseberries, 552; prize, 70; for succession, 792; to keep birds from, 806
Gooseberry trees, 83
Gorse, 717; and Fern, to transplant, 200
Gorteria rigens, 390
Grafting, 3, 504; history and utility of, 4; affinity of grafts and stocks, 21; analysis of kinds of, 37; inarching, observations on, 37; ditto on stems and branches, 37, 53; ditto hymeneal and sylvain, 53, 69; ditto small plants on large stocks, 69; cleft, observations on, 85; ditto with one scion and the stock cut sloping, 101; with single and double scions, and with stock of scion of equal size, 117; English cleft, 133; cleft in the side of young stems, branches, and shoots of the same size as the scion, 133; crown, observations on, 148; budding, observations on, 166; ditto with pushing eye, 180; ditto with dormant eyes, 196; with the shield removed without alburnum, 196; with the shield placed in an opening made in the form of a T reversed (⊥), 196; ditto square stamped out shield of, 212; tubular, 212; ditto with shooting eyes, 212; ditto with dormant eyes, 212; Cacti, 22, 70; Vines, 104; peg, 152; plants, 501
Grain, harvesting and preserving, 589
Grapes, shows of, 87; scissors for, 87; summer treatment of, in greenhouses, 214; rust in, 360; quick growing, 662; effect of airing well, 694; Josling's St. Alban's, 758; Reeve's Muscadine, 808
Grape mildew, 438, 469, 547, 551, 628, 643, 644, 707
Grass by inoculation, 189; to lay down for permanent pasture, 204, 205, 813; sheep on, 283; Doab, of India, 597; Pampas (Gynerium argenteum), 757
Grass seeds, 39, 141, 174, 205, 523; Italian Rye, to sow, 750
Grass land, 72; not to be broken up, 252; management of, in Fifeshire, 426
Greenhouses, how to smoke effectually, 38, 70; galvanised iron, 198; model of a, 215; summer treatment of Vines in, 214; in the Crystal Palace, 499; climbers for, 680; plants, to expose, 550, 566.
Groom's (Mr.), nursery, 103
Grubber, Scoular's improved, 53; Tennant's, 461; description of a new subsoil, 475
Guano, experiments with, 13; Norwood (loam), 246; trade, 72, 169, 243, 267, 284, 300, 451, 467, 491, 508, 547; new source of, 349; Australian, 380, 686; analysis of ditto, 381, 761; and charcoal, 468; adulteration of, 490, 589; Bolivian, analysis of, 510; normal, 508; Mr. Alcock's motion respecting, 467, 649; frauds, 825
Gutta percha, 376; piping, 6
Gynerium argenteum, 757
Gypsum, influence of, 164, 165; limestone, to convert into, 93; Prof. Way's Lecture on the employment of, in agriculture, 412; advantages of, 446

H

Hair manure, 650
Harrows in the Crystal Palace, 315, 364
Harvest in South Hants, 571
Harvesting grain, best method of, 589; root crops, 714
Harvesting machines in the Crystal Palace, 377; Hashish, 616
Haymaking, 445; time of cutting, 621; treatment in the field, 621; management of the rick, 621
Heat of plants, 375
Heating, 6, 22; cement tanks for, 166; Polmaise, 326; stove for ditto, 628; Grant on, 328; by waste steam, 403; by hot water pipes, 742
Heaths, to dry, 248
Hedera Rægneriana, 597, 661
Hedges, Yew, 358
Hemp, Chevalier Claussen's communication on, in favour of an extended cultivation of, 107, 123, 155, 410
Henderson's (Messrs.) nursery noticed, 71
Hens, singing, 790
Hepaticas, 152, 182; hybridising of, 86
Herbaceum giganteum, 70, 710; sphondylium, 428
Herbarium, to keep mould from dried plants in, 136, 392; the Gardnerian, 343; Esenbeck's, 807
Herd Book, Eyton's, of Hereford cattle, rev., 261
Hides, cattle, 73; qualities of, 106
Himalaya, botanical geography of part of the, 612; Rhododendrons, 645; Dr. Hooker's ditto of, rev., 163, 787; vegetation, 646
Hippeastrum aulicum, 38
Hogg's British Pomology, 614
Holly, variegated large, 118
Hollyhocks, select, 615, 631, 663
Home colonisation, 26
Honeycomb, antiquated, 215
Hooker's (Dr.) Rhododendrons of Sikkim Himalaya, rev., 163, 787; news from, 195; Species Filicum, rev., 711
Hop plants, 398
Hop, insects to destroy, 491
Hop mildew, 467, 582
Horn manure, 650
Hornets in Yorkshire, 566, 597
Horses, report of, at the Agricultural Society's Meeting, 493; cart, at ditto, 572; Turner on training of, 622; farm, to clip, 748, 779; keep of, 830
Horse hoes and rakes in the Crystal Palace, 361, 378
Horticulture in Canada, 535
Horticultural meetings, American, 23
Horticultural Society's Garden, noticed, 39, 263, 359; contributors to Journal of, 564
Hothouses, Roman, 311; winter covering for, 756, 773
Houlletia Brocklehurstiana, 645
Hudson's (Mr.), farm at Castleacre, noticed, 188
Humea elegans, 260
Huntleya cochleata and violacea, 660
Hunt's Handbook to the Great Exhibition, rev., 597
Husbandry, Tullian, 138, 141, 153, 186, 236, 267, 282, 362; spade, 121, 201, 202, 269, 363, 745; fork, 796
Hyacinths, 712; Tye's glasses for, 291
Hydropeltis, 406

I

Ice stacks, 743, 758, 773
Implements, grease for, 13; chaff cutting, 28; Oat bruising, 28; grubber, Scoular's improved, 53; Tennant's ditto, 461; subsoil ditto, 475; subsoil ploughs, 221; at the Crystal Palace, 281, 297, 314, 315, 330, 345, 361, 363, 364, 377, 394, 410, 426, 441, 458, 474, 490, 508, 509; award of prizes for, at ditto, 429; list of prizemen for, at ditto, 477, 490, 559
India, Tea culture in, 339; British, physical and economical effects of the destruction of tropical forests in, 548; Doab, Grass of, 597
Instruments, meteorological, to place, 408
Insects, scale to kill, 22, 136, 453; Pear tree Lyda, 36; ants to kill, 71, 293, 424; caterpillars to kill, 71; Bostrichus capucinus (scarlet-back cowled beetle), 85; what is an? 132, 181; wire-worms to kill, 134, 150, 376; ditto, to clear leaf-mould of, 24; mites, 133, 181; red spider, 133; Rose chaffer, 181; snake millepedes, 181; woodlice, 181; pear-shaped weevils, 229, 261; woodlice, to kill, 277; Pear tree astyages, 357, 373, 390; bark moth, 404; destructive, 437; Turnip moth, 473, 484, 489, 491, 499, 508, 523, 555, 650; on Hops, to destroy, 491; fox moth, 662; beetles, traps for, 680; cockroaches, how to get rid of, 680; fleas, to destroy, 701, 749; Clarke's preparation for killing, 821
Ireland, Bean culture in, 10; condition of agriculture in, 92, 187, 204, 235, 268, 300, 729; industrial education in, 203; state of, 394, 748, 778; quantity of Flax-seed sown in 1851, and previous years, 445; Potato disease in, 518, 531; Potato crop in, 570, 588; statistics of, 537; tobacco of, 588; crops in, 603; national education of, 698; Ferguson and Vance on the tenure and improvement of land in, 729; peat of, 12, 84, 132, 150, 811
Irish acre, 268
Irish emigration, 651, 713
Irish moss, as food for man and the lower animals, 10
Irish peat charcoal, 12, 84, 132, 150, 811
Iri Susiana, 310
Irmisch on the Classification of Bulbs and Tubers, rev., 423
Irrigation, 428
Iron, paint for, 405, 421, 437, 453, 485, 502, 518
Isinglass, adulteration of, 262
Islands, floating, 39
Isochilus, carnosiflorus, 517
Italian Rye-grass, to sow, 750
Ivory on the Chrysanthemum, rev., 742
Ivy on exterior walls, 712, 725; ditto on brick, 742

J

Japan Lilies, 280
Java, memoranda from, 261
Johnston's Notes on North American Agriculture, rev., 265, 317
Judas tree, to remove, 648

K

Kalmias, to propagate, 568
Kemp's Agricultural Physiology, rev., 28
Kew Gardens, 243, 277, 807
Kiln for burning drain pipes and tiles, 411; Davidson's improvement in lime and other, 413
Kitchen garden, to crop, 629, 678, 693, 710, 726, 741, 789, 806, 822
Kohl Rabi, 204
Kopros manure, 741
Kunze, (Dr.), death of, 328

L

Labour, spade, 121, 201, 202, 269
Labourers, 106, 364, 411, 428, 444, 505, 572, 604, 617, 652; cottages for, 75, 266; plan of stove for ditto, 454, 518; beer for, 475, 522; condition of, 505
Laburnum, sporting, 38, 376
Lacæna bicolor, 693
Lælia Perrinii, 467; cinnabarina and flava, 660; anceps, 677; autumnalis, 677; majalis, 677; acuminata, 677; superbiens, 677; albida, 677
Lambs, fatting early on Carrots, 652
Lancashire, farming in, 700; draining in, 781; land, waste, to plant 86; Tullian culture of, 138, 141, 153, 186, 236, 267; hints on laying down to permanent pasture, 140, 204, 205; improving old pasture, 140; open furrowed, 154, 187, 218, 251, 315, 316; Grass, 72; ditto not to be broken up, 252; ditto, Fifeshire management of, 426; poor, culture of Carrots on, 218; English and Irish acre of, 268, 317; Scotch ditto 317; Cheshire and Lancashire ditto, 349; Worcester, Stafford, and Shropshire ditto, 429; Cornish ditto, 445; allotment culture of, 269, 459; rotation of crops for ditto, 316; Donald, on draining of, 269; draining of, to be planted, 518; good and inferior, produce of Wheat on, 589; value of, 684; preparation of, for orchards, 693; rental of, 700
Landlords and farmers, Mr. Pusey on what they ought to do, rev., 140
Landed property, Rainy's lecture on the transfer of, 442
Lane's (Messrs.) nursery noticed, 279, 439
Larch, plantations of, 387; rot in, 405, 435, 438, 501, 518
Larks, 203, 219, 268, 283, 300, 317, 332, 484; longevity of, 87; Irish, 455, 518
Lasiobotrys Loniceræ, 772
Lasio-campa rubi, 662
Latch, self-shutting, 93
Lathyrus odoratus, monstrosity of, 581
Laurels, standard, 131
Law affecting agriculture, 25; relating to Oak, 168; transfer of landed property, 442; of overhanging boughs, 483; relating to game, 252, 283, 348, 412, 605, 651, 684, 700, 764, 779, 795, 827
Lawes' (Mr.), experiments, 473, 643
Lawn weeds, 788
Lawrence on agricultural education, rev., 73
Layard's Nineveh, rev., 743
Lead refuse for garden walks, 694
Lead tanks, 28
Leaves, dead, 87; grafted, 198; floating, 501; tree, 742, 757
Leafing, local, 259
Leases, farm, 252, 716
Leather, composition for water-proofing, 104
Leeks, 68
Lemon fungus, 563
Leptotes bicolor, 517
Lettuces, 68, 534
Liebig and English farming, 443; his mineral theory, 627
Lightning conductors, 360
Lilies, Japan, 280; Jacobæa, 648
Lilyworts of Siberia, eatable, 39
Lily of the Valley, 136
Lime, phosphate of, 331; superphosphate of, 180, 382; ditto, to apply, 216, 280; action of, on vegetation, 299; and farm manure, 316; carbonate of, 331; gas, 430; Prof. Way's lecture on the employment of, in agriculture, 540, 589; American phosphate of, 539, 555
Limestone, value of, 331; to convert into gypsum, 93
Link's (Prof.) microscopes, 647
Linne's Nemesis Divina, rev., 135
Linseed as food for cattle, 28
Linum flavum, 232
Liquid manure, 11, 12, 122; conveyance of, 300; tank for, 622; v. solid, 682
Lisbon, gardens at, 804
Littæa geminiflora, 695
London, Murray's rev., 519
Low's (Messrs.), nursery noticed, 279
Lusus, 360
Lycaste Skinneri, 118, 660; cruenta, 693
Lyda, Pear tree, 36

M

Machines, winnowing, 171; Fleming's for killing weeds on walks, 275, 357, 372, 390, 452, 533; in the Crystal Palace, 281; Murphy's Archimedean agricultural, 314, 363; harvesting, 377; threshing, winnowing and corn-dressing, 394; sheep-dipping, 441; reaping, 604, 621; American ditto, 538, 553, 554, 585, 700, 717, 747, 749, 781; Garrett's ditto, 555; mercantile relation, 620, 825; digging, 797
Machinery, draining by, 448
Magnesia, action of, on vegetation, 299; carbonate of, 331
Magnesian limestone, action of, on vegetation, 299
Malt-dust as manure, 505
Manchester Agricultural Society's Journal, rev., 573
Mange, red, cure for, 349
Mangold Wurzel, 11, 715; culture of, 140; rules for preparing the ground for seed, preparing seed for sowing, and storing roots of, 140; and Turnips, 316, 445; and Swedes, 539; to store, 748
Manures, 428; for Turnips, 11, 75, 365; liquid, 11, 12, 122, 409, 606; conveyance of ditto, 300; tank for ditto, 622; solid v. ditto, 682; artificial, 10, 164, 331, 435; adulteration of ditto, and the means of detection, 477; farmyard, 44; preparing and applying of ditto, 75; experiments with, 57; application of, 75, 378; prices current of, 93; heaps, 809; ditto and weeds, 116; management of, 171, 557, 796; adulteration of, 204, 251; shale, bituminous, 205; ammonia as, 164, 195, 212; when land is broken up from Grass, 252; farmyard and lime, 316; sewerage, 409, 606; bones as, 650, 715; bone-dust as, 430; peat ashes as, 491; Rape-cake, malt-dust, and animal, 505; salt as, 590; concentration or distribution of, 618; manufacture of, 637; flesh, clippings, or cony-dust, hair, horn, refuse of sugar refiners, fish, fish oil, 650; granite, as, 667; pinguedo, 716, 811; burned weeds and earth, as, 716; kopros, 741; for Potatoes, 778; hints to buyers of, 810; for Melons, 821; to fix ammonia in, 822
Marigolds, 454
Markets, vegetable, and fruit of Saint Petersburgh, 324
Market gardening round London, 70, 292; remarks on rotation of crops, 4; early Potatoes, 20; Cabbage, Cauliflowers, and Celery, 37, 87; Carrots, early Turnips, Onions, Horse and Winter Radishes, 53; Leeks, white Cos Lettuces, Scarlet Runners, French Beans, and Parsley, 68; Asparagus and Seakale, 84; Rhubarb, early Peas and Beans, 100; Brussels Sprouts, Beet-root, globe Artichokes, Spinach, Broccoli, 117; Mushrooms, mulching, 133; Strawberries, 149, 182, 198; Watercresses, 165; is it profitable? 212
Maxillaria picta (major), 517; tenuifolia, 611
Meat produce, 269
Meat biscuit, Borden's, 629, 662
Mechi's (Mr.) farming, 12, 28, 825; tour to North Devon, 73, 90; and the poor, 189; his annual gathering, 493
Melons, culture of, 421; sexes of, 499; artificial manures for, 821
Meteorology and farming, 783
Mexico, plantations of, 563
Mice, to keep from Peas, 648
Microscope, new mode of illuminating opaque objects under, 468; new arrangement for facilitating the dissection and observing of objects placed under, 468; links, 647
Mignonette, 102; bush, 213
Mildew, 227, 502; Grape, 438, 469, 547, 551, 628, 643, 644, 707; Hop, 227, 467, 582; Pea, 227, 467
Milk, quantity a cow should give in a year, 638
Miltonia spectabilis and candida, 467
Mistletoe, 264
Mitchell's (Mr.), nursery, Brighton, noticed, 567
Mocking bird, 613, 661, 677
Mormodes luxatum, 500
Morphology, 99, 723
Moss, Irish, as food for man and the lower animals, 10; Carrigene, 60; luminous, 776; Moth, bark, 404; Turnip, 473, 484, 489, 491, 499, 508, 523, 555, 650; fox, 662
Mould, leaf, to clear of wireworms, 24
Mulching, 133; soil in summer, 54; sea weed, as a material for, 214
Musa Cavendishii, 661, 677, 774
Mushrooms, 133; to grow, 407; poisoning by, 675, 772
Mycology, Dr. Fresenius, contributions to, 119

N

Names, botanical, 300
Narcissus tenuifolius, 182
Naturalist, by Dr. Morris, rev., 439
Nectarines for a sea-side garden, 24
Neill (Dr.), 567, 663
New York, bouquet trade in, 118, 150, 182
New Zealand, Potatoes in, 486
Nightingales, management of, 275, 292, 325, 341, 356, 388, 404, 421, 436; remarks on, 469, 486, 501, 517, 534, 759; Virginian, 566
Nitrate of soda, 621
Nitrogen and plants, 86; absorption of, by plants, 52, 739
Notes of a traveller, 5, 228, 340
Nursery gardens noticed, Messrs. Henderson's, Pine-apple-place, 71; Chapman's, Vauxhall, 87; Groom's, Clapham, 103; Chandler's, Vauxhall, 151; Weeks', Chelsea, 199, 327, 439; Knight and Perry's, Chelsea, 215, 407; Gaines', Battersea, 247; Lane's, Great Berkhampstead, 279, 439; Low's, Clapton, 279; Sutton's, Reading, 279; Turner's, Slough, 295, 407; Paul's, Cheshunt, 455; Fraser's, Lea-bridge-road, 487; London, 485; Bunny's, Stratford, 519; Sim's, Footscray, 535; Mitchell's, Brighton, 567; Veitch's, Exeter, 579; Rollisson's, Tooting, 662; Dobson's, Isleworth, 726; Young's, Milford, 775; Salter's, Hammersmith, 807; Lucombe and Pince's, Exeter, 807
Nymphæa cærulea, out-door treatment of, 182, 821; red, 420

O.

Oak, law relating to, 168; Turkey, 230, 246; Parliament, 519; meaning of Durmast, 677; on a Beech, 757; Lucombe, 821
Oak bark, 230
Oats, 219; description, cultivation, composition, and uses of, 605
Oat-bruisers, 28
Oat husks, analysis of, 109
Obituary, Mr. Wilmot, 23; Mr. Christie, 71; Sir Francis Lawley, 92; M. Wahlenberg, 263; Dr. Kunze, 328; Dr. Neill, 567, 663; Mr. Cunningham, 695
Odontoglossum Bictonense, 660; cordatum, 660; maculatum, 660; pulchellum, 660; Rossii, 660; Insleayii, 660; Egertonianum, 660; leucochilum, 677; Cervantesii, 677; membranaceum, 677; grande and citrosmum, 693
Oil, linseed, as a cure for scale, 453
Oncidium leucochilum, 467; sphacelatum (grandiflorum), 467; ampliatum (majus), 467; ornithorhynchum, 467; incurvum, 467; guttatum, 467; Barkeri, 467; bicallosum, 467; ciliatum and concolor, 581; Lanceanum, 645; flexuosum, 645; flexuosum majus, 645; bifolium, 645; longifolium, 645; unguiculatum, 660
Onions, 53, 293; and celery, 582; winter, 645, 661; select, 725; Potato, 805
Onion fungus, 595, 646
Orache, 51
Orange trees, substitute for, 131; Bermuda, 339; French, 503
Orchard houses, 35, 216; Rivers on, rev., 35; temperature of, 518
Orchards, preparing ground for, 693, 726
Orchard trees, effects of sea weed upon roots of, 214
Orchids, 469; sale of, 232, 263, 343, 359, 375, 391, 453, 647, 792, 808; European, 309, 693; for the million, 324, 340, 356, 389, 404, 406, 421, 437, 467, 483, 500, 517, 532, 549, 564, 580, 595, 611, 645, 660, 677, 693, 756; shows, 325, 389; Dr. Wight's, rev., 535; terrestrial, 309, 693; at Chiswick, 740; blocks of, 774; Mr. Rucker's, 776
Osiers, 62
Ostrich, the, 789, 821
Oxalis Bowei, 39
Oxford Botanic Gardens, new houses, &c., in, 744
Oxide of iron, action of, on vegetation, 299
Oxide of manganese, action of, on vegetation, 299
Ox tribe, Vasey on the delineations of, 429

P.

Pæonies, to propagate, 119; tree, 356
Paint for timber, 39; cheap and durable for farm buildings, 170, 187; for inside walls, 318; Fleming's tar for iron, 405, 421, 437, 453, 485, 502, 518; for out-door woodwork, 558
Pampas Grass (Gynerium argenteum), 757
Panama, eatable plants of, 599; candle tree of, 728; Cedron tree of, 791; ornamental trees of, 790
Pansies, seedling, 679
Paris, gardens round, 437; horticultural show at, 662; price of corn at, 829
Parrots, 822; diseases in, 438, 454, 469
Parsley, 68
Parsnips, 198; cow, 428; culture of, 650
Pastures, hints on laying down permanent, 140, 813; improving old, 140; Grass seeds for, 813
Paul's (Messrs.) nursery noticed, 455; their new Roses, 518, 535, 550
Paul (Mr.) on Roses in pots, rev., 391
Paulownia imperialis, 519, 630; flower-buds of, 822
Paxton, Sir Joseph, 755
Payer on Cryptogams, rev., 183
Peaches, to force, 118, 405, 437; retarded, 678
Peach trees, to root prune, 376; blight of, 486

Pear trees, for a sea-side garden, 24; to train, 21; to protect, 38; deformed, 99; late, 104; for espaliers, 120, 648; and frost, 373; ringing, 632
Pear shaped weevils, 229, 261
Pear tree astyages, 357, 373, 390
Peas, early, 72, 100; late, 56, 72; winter, 358; green winter, 390; shells of, 387; skinless, 455; new, 519; culture of, 603; to keep from mice, 648; select, 725
Pea mildew, 227, 467
Peat, value of, 84
Peat charcoal, 12, 84, 132, 150, 231, 238, 459, 518, 589, 621, 713, 733, 811; Rogers' patent for making ditto and fuel, 231; preparation of, 268; to make, 397, 428, 509; chemical products of, 535; charred, to winter Potatoes in, 611
Peat ashes, as manure, 491
Pelargoniums, growers of, 244; fancy select, 72; new, 375; select, 726; Cape ditto, 536; scarlet, 897
Penny savings' banks, 278, 310, 358
Peristeria elata, 500
Peruvian guano trade, 72, 169, 213, 267, 284, 300, 451, 467, 491, 508, 547
Phaius albus, 517; Wallichii and grandifolius, 532
Phalænopsis grandiflora and amabilis, 549
Phillips' fire annihilator, 231, 723, 773
Phloxes, to hybridise, 342
Phosphate of lime, American, 539, 555
Phosphate nodules, 764
Picotee seeds, 453; show of, 502
Pigs, 684; cure for scour in, 382; ditto in young, 366; to fatten, 411; Berkshire, 491; carcase and living weights of, 523
Pine-apples, bottom-heat for, 40; standard weights of, 405; Black Jamaica, 422; history of, 695
Pinguedo, as manure, 716, 811; analysis of ditto, 716
Pink showing, 485; select, 679; culture of, 679
Pineries, span-roofed, 252
Pinuses, rate of growth in, 214, 230, 240, 246, 262, 534
Pit, forcing, 134
Planchon's (Dr.), appointment, 759
Plane tree timber, 725, 757, 805
Plants, aquatic, 5, 147, 197, 280, 310, 420, 469, 485, 501, 502, 517, 536, 614; stove ditto, 197, 214, 215, 230; depth of water for ditto, 502; ditto for a pond, 728; effect of locality on, 22; and animals, difference between, 28, 515; nourishing fluid of ditto, 28; washing, 35; collecting British, 39; absorption of nitrogen by, 52, 88, 739; thawing frozen, 53; mulling among, 55; sea-side, 55; perspiration of, 67; wall, 72, 407; Robin on the Reproductive Organs of, rev., 103; effects of putrifying matter on, 116; buying, 134; vinegar, 136; spring flowering, 182, 199; spurring hard-wooded, 197; cells of, 772; ditto, composition of the walls of, 199; hardy, 214; for "Crystal Palace," 211; in ditto, 295; cellular tissue of, 227; roots of, 243; rock, 248; microscopic examinations of, 260; for shade, 280; to dry, 188, 350, 405; to keep mould from ditto, 136, 392; names of, 209, 739; old ditto, 502; to acclimatise, 341; American, Mr. Waterer's exhibition of, 359; heat of, 375; hop, 398; and the atmosphere, 403, 419; variegated, 423; in dwelling-houses, 424; growth of, in various gases, 468; periodic phenomena of, 484; grafted, 501; descent of sap in, 516; summer treatment of, 553; greenhouse, to expose, 550, 566; direction taken by, 567; eatable of Panama, 599; flower-garden, 645; inclosed in coal-pits, 694, 742; bedding, 710; naming, 739; effect of frost on, 789; old esculent, 791
Plant houses, to erect, 180; to move the air in, 182; ventilation of, 184, 327; ridge and furrow, 310; shading for, 373; winter covering for, 756, 773
Plant sales, 135, 232, 263, 324, 343, 359, 375, 391, 453, 647, 696, 792, 808
Planting, forest trees, 326; ditto on waste land, 86; preparing ground for ditto, 724; style in, 101; shrubberies, effective, 675; quick, 741; fruit trees, 741
Plantations, young, 293; Larch, 387
Plantains, Mexican, 563
Ploughs, new subsoil, 221; in the Crystal Palace, 297, 314, 330; steam, 665; and spades, 829
Plumbago Larpentæ, 694, 710
Plums, 277; for a sea-side garden, 24; Reine Claude de Bavay, 213; to train, 213; to bud, 406; late, 695; Coe's Golden Crop, 710, 726, 742
Poisons, 29
Poisoning by mushrooms, 675, 772
Poinsettia pulcherrima, 22
Pollard tree, artificial, 102
Polmaise heating, 326; stove for, 628
Polyactis fasciculatis, 707
Ponds, green, 534; aquatics for, 728
Portugal Laurels, standard, 131
Potatoes, 518, 614, 636; early, 20, 152; to protect ditto, 430; diseased, 70; varieties of, 71; Jackson's Kidney, 71; baked, quantity sold in the metropolis, 263; seed, 342; to cook, 358; in New Zealand, 486; German, 381; waxy, 550, 566; Cuthill's plan of wintering, 533, 550, 582; to store, 550, 597; culture of, 597; early planted, 661; to keep in charred peat, 661; in Kent, 668; prolific, 741; long stalk of, 749; in Perthshire, 753; manure for, 778, 811; and emigration, 826
Potato disease, 373, 390, 422, 452, 453, 469, 501, 518, 521, 531, 551, 566, 611, 629, 759; Prof. Mitscherlich's observations on, 199; in Ireland, 518, 531; in Germany, 599
Potato crop, 634; in Ireland, 570, 588
Pots, Carnations in, 166; Vines in, 293, 725; late Plums in, 695
Poultry, 43, 44, 91, 105, 123, 171, 236, 345, 445, 509, 523, 588, 604, 606; houses and walks, 27, 44; to pinion, 60, 218; Richardson on, 173; breeding and rearing, 28, 250, 586; Boswell on, 471; pilgrimages, 618; disease, 667, 716; Birmingham show of, 286, 701, 766; report of ditto, 827; Yard (Knight's), rev., 807; cramp in, 782; Baily on Dorking, 284; to mark, 444, 459; Cochin China, 526; food for young, 285
Poulterer's Companion, Bement's American, rev., 236
Preserving timber, 3, 54, 86; eggs, 141; Cauliflowers, 247; fruit, 355, 390, 616; animal and vegetable substances, 552; grain, best method of, 589; filberts, 616
Prices of goods in 1810 and those in 1851, 667
Primula, Chinese, 215
Prince Albert's portrait, 711
Promenæa stapelioides, 517
Pruning, hedgerow trees, 284; Peach trees, 376; summer, 456; forest trees, 516, 532, 566, 596, 614, 630, 708, 758, 788, 805; Wistarias, 712; fruit trees, 806
Pumps, centrifugal, in the Crystal Palace, 570
Pusey's (Mr.), speech, 89, 171; on farming, rev., 140; Liebig's critique on, 443

Q.

Quercus aquifolia, 311
Quick, to plant, 741

R.

Rabbits, management of, 60; on open-boarded floors, 171; to keep from barking trees, 342, 343
Radishes, horse and winter, 53
Railroads, farm, 349; Mr. Neilson's, 186
Railway Literature (Murray's), rev., 679, 743, 823
Rain, at Witham and Arundel, 22; at Cirencester, 28; at Bognor and Carlesgill, 55; at Goodamoor and Cobham, 71; at London, Ham, and Broadenburg, 87; at Pembroke, 102, 199; at Thurston, near Dunbar, 134; at Bowness, 199; at Itchen Abbot, 214
Rambles in New South Wales, rev., 6
Ranunculuses, 341; select, 24
Rape, 571; utility of an early crop of, and the best means of obtaining it, 445; culture of, 475; to sow, 750
Rape cake, as manure, 505
Raspberries, ripe in January, 55; vitality of seeds of, 515, 549, 565; double bearing, 694
Rats, 189, 204; to kill, 597
Reaping machine, 604, 621; American, 538, 553, 554, 585, 606, 700, 717, 747, 749, 781; Garrett's, 555
Reed on the Steam Engine, rev., 487
Rent, reduction of, 12; payment of, 252
Reviews, miscellaneous, 503
Rhododendrons, 406; Himalayan, 645; of Sikkim Himalaya, by Dr. Hooker, rev., 163, 787; Aucklandi, Thomsoni, pendulum, pumilum, lanatum, glaucum, Maddeni, and triflorum, 163; hybrid, 197; large, 231; at Upton House, 279; scarlet, 293; arboreum, 326; to hybridise, 342; sale of, 696; javanicum, 758; Edgworthii, Dalhousieanum, æruginosum, fulgens, nivale, 787
Rhubarb, 100; Mitchell's Prince Albert, 118; to force, 134; to cook, 135; to protect, 230
Ribston Pippin Apple, 614, 629
Rivers' (Mr.) Orchard Houses, rev., 35
Robin, on the Reproductive Organs of Plants, noticed, 103
Robin, audacity of, 822
Rockwork, to colour, 214; plants for, 248
Rod and the Line, by Wheatley, rev., 695
Rollisson's nursery, noticed, 662
Rocks, habits of, 629, 646
Rookery, establishing a, 150
Roses, continuous bloomers, 5, 22, 70; catalogues of, 6; Ma-au-ga, 55; autumn, 168; spurring of, 197; for forcing, 279; Cloth of Gold, 310, 358, 566, 613; Tea, 326; yellow, at the Chiswick Exhibition, 391, 405, 422; Paul's pamphlet on, 391; new, 439; Lane's noticed, 439; Paul's noticed, 455; at Regent's Park, 455; old double yellow, 550; for exhibition, 676; yellow, climbing, 728; late, 773
Rose stocks, 454, 468
Roots, in drains, 10, 381; length of fibrous annual, 70; Mangold Wurzel, to store, 140; effects of sea weed on, as a top dressing, 214; of plants, 248; value of an acre of agricultural, 364, 411; crops, 378; to harvest, 714

S.

Saccolabium guttatum and Blumei, 611
Sainfoin, 249, 362; influence of saline matters on, 59
Salamander, poisonous qualities of, 325
Salads, old, 823; Sidney Smith's, 824
Salep, use of, in diarrhœa, 661
Salisburia adiantifolia, 614, 646, 661
Salmon, book of the, rev., 726
Salt, for Asparagus, 168; use of, in agriculture, 187; Prof. Way's Lecture on, 365; Prof. Symonds on the action of, on animal economy, 379; walks to, 275, 357, 372, 390, 391, 406, 452, 484, 502, 517, 518; quantity to apply to a gallon of water for ditto, 520; as manure, 590
Salvia splendens, 246
Sanders on the Vine, rev., 327
Sandwich Islands, picnic in, 487
Saponaria calabrica, 710
Savings banks, penny, 278, 310, 358
Scale, to kill, 22, 136, 453
Scarifiers in the Crystal Palace, 330
Scarlet Runner, 68
Schomburgkia crispa, tibicinis, and undulata, 581
Science, benefits of, 829
Scotland, farming in, 11, 57, 89, 171; Mr. Pusey's speech on ditto, 89, 171; the acre of, 317; arboriculture in, 692
Sculpture, garden, 101
Scythe, Boyd's, 739
Seakale, 84, 230; to force, 134
Season, mildness of, 71, 87, 102, 122, 135, 150
Sea monsters, 549
Sea-side garden, fruit trees for, 24
Sea-side plants, 55
Sea-weed as a mulching material, 214
Seeds, Flax, saving of, 13; Grass, 30, 141, 174, 205, 523; ditto, Italian Rye, to sow, 750; ditto, for permanent pasture, 813; packets of, 54; Cucumber, to save, 70; vitality of, 70, 515, 533, 549, 565, 597; to germinate, 116; Mangold Wurzel, preparing the ground for, 140; preparing ditto for sowing, 140; Chicory, quantity required for an acre, 154; steep for, 216; Deodar, to sow, 281; to raise, 312; Balsam, 330; Picotee, 453; Fern, 552; samples of, 634, 646, 669, 677, 694, 710, 725, 726, 742; to pack to send abroad, 776; bad, 789, 805
Seeding, thin, 9, 10, 171, 734
Seed trade, 310, 437
Seeman's Popular Nomenclature of the American Flora, rev., 662
Selection the true source of improvement, 378
Services, professional, remuneration of, 791
Sewage manure, 409, 606
Shading for plant houses, 373
Sheep, 42, 75; to feed, 61; to shed feed, 90; hydatids in, 93; management of, in East Kent, 140; disease in, 174; on Wheat, 204; advantage of warmth to, 204; on Grass, 283; cross bred, 285; fleeces of, 429; analyses of the exhibition of, at the Agricultural Society's shows of, from 1847—1851, 475; list of judges and prizemen for, at ditto, from 1846—1851, 476; food for, 734
Shows, Grape, 87; country, 406; Chinese horticultural, 679
Shrubs to withstand the sea breeze, 472; new, 501
Shrubberies, effective planting of, 675
Siberia, eatable Lilyworts of, 39
Silica, 331; action of, on vegetation, 282; amount of, in common Sedges, 40
Skylark, 203, 219, 268, 283, 300, 317, 332; longevity of, 87
Smithfield market, 106; increasing the size of, 27; removal of, 395, 459; as a winter garden, 531, 547
Soap ashes, to apply, 430
Sobralia macrantha and macrantha splendens, 483
Societies: Agricultural of England, 205, 236, 264, 396; veterinary science, 92; Flax, Claussen's communication in favour of an extended cultivation of, in the United Kingdom, 107; discussion on ditto, 123, 155; culture of ditto, 155, 172; mountain ditto, 381, 556; management of ditto, 556; political neutrality, 124; report of the inspection of sites committee, on Hampton-court, &c., 124; ditto on Windsor, 251; salt in agriculture, 187; chemical report, 220; election of members, 301; half-yearly report, 332; Prof. Way's lectures on the use of common salt in agriculture, 365; on gypsum, 412; on lime, 540; Prof. Symonds on the action of salt on the animal economy, 379; draining, 380; Australasian guano, 380; analysis of ditto, 381; German Potatoes, 381; subterraneau roots and bones, 381; soil of Wheat in America, 413; list of judges and prizemen at the shows of, from 1846 to 1851, 476; Russian agriculture, 523; American phosphate of lime, 539, 555; analysis of ditto, 555; Turnip fly and insect, 555; Clover failure, 555; April Wheat, 557; moveable bridge, 557; essay prizes for 1852, 572; ditto one for 1854, 573; implement prize schedule for 1852, 573; prize essays, awards, 716; non-exhibition, fines of animals entered for shows of, 780; general meeting, council's report, 813; Windsor meeting, 92, 171, 220, 381, 429, 588, 813, nomination of judges, 92; schedule of live stock prizes at, 176, 256; cattle, report of, at, 459, 475, 492; analysis of the exhibition of ditto at, 461; ditto of sheep, from 1847 to 1851, 476; fat cattle at, 572; imperfect animals at, 572; cart stallions at, 572; agricultural improvement of Ireland, report of the half-yearly meeting, 12; scale of charges for analysis to members of, 493; annual show of, 489; report of cattle, poultry, and implements at ditto, 541; haymaking, 621; election of Mr. Harkness to the Secretaryship of, 809
Amateur Tulip, 631, 647, 691, 712
Bath Dahlia, 615
Birmingham cattle and poultry, 286, 701, 766
Birmingham Chrysanthemum, 807
Botanical of London, 6, 135, 231 439, 678
Botanical of Edinburgh, 22, 55, 167, 199, 278, 342, 438, 486, 759, 822
Caledonian Horticultural, 200, 358, 406, 518, 630, 806
Camberwell Amateur Dahlia, 599
Carrick Agricultural: Feeding of Stock, 829
Cheltenham Horticultural and Floral, 742
Cheltenham Dahlia, 615
Chesterfield Dahlia, 647
Chislehurst Vegetable, 748
Cornwall Horticultural, 343, 455, 647
Cumberland Floral and Horticultural, 647
East Cumberland Agricultural, 685, 781
Entomological, 22, 102, 167, 231, 311, 391, 439, 519, 583, 662, 726, 790
Eydon Village Industrial, 765
Flax Improvement of Ireland, 157; crops of 1849 and 1850, 12; patent steeping system, 13; division of labour in management, 13; saving of seed, 13; quantity of ditto sown in 1851 and previous years, 445
Glasgow Pansy, 679
Gloucestershire Agricultural, 685
Great Marlow Horticultural, 423
Hammersmith Pansy, 295
Hammersmith Celery, 742
Highbury Horticultural, 327
Highgate Floricultural, 551, 615, 727, 775, 807
Highland and Agricultural of Scotland, 220; best mode of preparing and applying the different manures produced on the farm, 75; Dr. Anderson's address on the discussions which have taken place during the session, 396; chemical department of, 637
Horicultural, 39, 119, 150, 183, 214 246, 327, 391, 502, 565, 646, 710, 774; anniversary, 278; garden noticed, 39, 263, 359, 598; new regulations of, 115, 168; schedule of prizes for 1851, 130; ditto for 1852, 530; remarks on ditto, 583, 711; Pelargonium growers and the, 244; exhibitions at the garden, 291, 371, 467; report of ditto, 293, 374, 469; list of awards at for May, 290, 310; for June, 370; for July, 466; fruit at, 373, 389; yellow Roses at, 391 405, 422; Fellows' rights, 388; exhibitions, 517; Orchids at, 740
Lewis' farming, 701
Linnean, 6, 55, 87, 135, 150, 215, 247, 358, 391, 742, 774
Liverpool horticultural, 455
London floricul ural, 631
Manchester and Liverpool agricultural, report of show, 669
Meath horticultural, 455
Microscopical, 710
Montreal botanical, 71, 231
National flor cultural, 167, 199, 231, 262, 295, 327, 375, 407, 438, 486, 502, 539, 566, 599, 663, 727, 775; proceedings of, 727
Newbury Dahlia, 583
Newcast e-on-Tyne Chrysanthemum, 790
North Kent horticultural, 567
Nottiug-hill Dahlia, 599
Norwich horticultural, 631
Norwich Chrysanthemum, 775
Royal Botanic, report of garden exhibitions, 311, 375, 422; fruit award, board of, 432, 454; Rose garden at, 455; remarks on schedule of, for 1851, 598,
Royal Horticultural of Ireland, 6, 167, 278, 790
Royal South London Floricultural, 263, 343, 406, 487, 567; Iliff's prize at, 486, 534; general meeting of, 807
Scottish Pansy, 647
Selby Agricultural, 172
Shacklewell Dahlia, 583
Slough Dahlia, 615, 631
Southampton Dahlia, 615
Stockholm Naturalists, 807
Stoke Newington Chrysanthemum, 151, 183, 647, 727, 743, 759; Nicholl testimonial, 262
Stoke Newington Dahlia, 631
South Devon, Botanical and Horticultural, 247, 343
Sydenham Floricultural, 663
Tardebigg Cottagers, 534
Taunton Dahlia, 615
Thornbury Dahlia, 599
Vauxhall Dahlia, 535
Wallingford Dahlia, 615
Warwickshire Horticultural, 359
Whitby Dahlia, 615
Wilts Horticultural, 553
Wycombe Horticultural 663
York Horticultural, 663
Yorkshire Agricultural, list of cattle and implement prizes at annual show of, 524; management of manures, 557
Farmers' Clubs:
Birmingham Cattle and Poultry, 285, 701; report of, 797, 812, 825, 827
Cirencester, 829
Exminster: manure, 44
Halesworth: county expenditure, 60
London: adulteration of manures, and the means of detection, 477
Newcastle: difficulties in cultivating soil, 429; "the Oat, description, cultivation, composition, and uses of," 605; ventilation of stables, 780
Probus: farm leases, 252; utility of an early crop of Rape, and the best means of obtaining it, 445
Saffron Walden: reaping machines in, 749
Sittingbourne: experiments with guano, 13
Smithfield Cattle, 27; report of, 796, 811, 825
St. German's: farm buildings, 284
St. Quivox: at Myremill, 653
Sprotbro': best method of storing Turnips for spring feeding, 61
Stockton cultivation and management of Turnips, 349
Trafalgar: farm leases, 716
Wolsingham: church leaseholds, 509
Soils, clay, 41; Wheat, 41; effects of mulching, 54; management of, 121; absorptive powers of, 137, 164, 195, 212; for Chicory, 154; absorption of ammonia by, 137, 164, 195, 212; condition of, 311; American Wheat, 413; difficulties in cultivating, 429; vegetables for different, 440; alluvial, 681; exhausted by Wheat, 750; effect of, on timber, 806
Sola or Indian cork, 344
Solomon's (Mr.) garden noticed, 199
Soot, adulteration of, 327
Sophronitis grandiflora, 580
Sowing machines in the Crystal Palace, 346
Spade husbandry, 121, 201, 202, 269, 363, 745
Spade and plough, 829
Spanish Chestnut, 182, 298, 211, 214, 230
Sparrows' nest, 453; hedge, 502
Spinach, 117
Spruce fir twigs eaten by squirrels, 182, 198, 213
Stables, ventilation of, 780, 781
Stacks, covering for, 395
Stanhopea, insignis, tigrina, grandiflora, Devoniana, ocutata, Wardii, and tigrinalutescens, 611
Statistics of Ireland, 537; agricultural, 668
Steam, heating by waste, 403; cultivator, 393, 665, 686; farming, 762
Steam engine, 204; flue boilers to, 60, 154; in crustations in boilers of, 327; management of, 249, 283; in the Crystal Palace, 490
Reid on, rev., 487
Stock, Dickson, on breeding of, rev., 13; linseed as food for, 28; Beans as, 61; early spring, 253; best method of storing Turnips for, 61; hides of, 73; qualities of ditto, 106, on boarded floors, 154, 682, 748; short-horned, 173; use of salt in food of, 187; to feed, 109; 221, 348, 444, 590, 602; report of, at the Agricultural Society's meeting, 459, 475, 492; analysis of the exhibition of, at ditto, 461; ditto, from 1847 to 1851, 476; fat and imperfect, at ditto, 572; Eyton's herd book of Hereford, rev., 461; West Highland, 523; show of, at Birmingham, 286, 701, 812, 825, 827; report of ditto, 797; Smithfield, 28; report of ditto, 796, 811, 825; marketing of, 602; clipping of, 748; feeding of, 590, 829
Stocks, 213, 712
Stone, cement for, 599
Stove, plan of a cottage, 454, 518
Stratton's (Mr.) appointment to the Cambridge Botanic Gardens, 71
Straw, for plaiting, 797
Strawberries, 149, 454; to force, 358; early and late, 440; culture of, 534; Beach's ditto, 485; classification of, 648; new, 740, 757, 789, 804
Subsoil, 777; plough, 221; in the Crystal Palace, 330; grubber, description of a new, 475
Suffolk Agricultural Relief Association, 621
Sugar, books on, 168; Beet, 329, 332, 521, 539, 571, 620; in animals, 323, 587, 601; refiners' refuse of, as manure, 650
Sulphurator, Epps's, 468
Superphosphate of lime, 180, 382; to apply, 216, 280; adulteration and detection, 621
Sutton's (Messrs.) nursery noticed, 279

Swallows, 501
Swedes and Mangold Wurzel, 539
Swedish botanical gardens, 307
Sweet-williams, monstrous, 550
Swifts in Yorkshire, 566, 597
Syringes, garden, 565

T.

Tacsonia mollissima, 6
Tanks, lead, 38; cement for, 166; material for, 376; liquid manure, 622
Tar paint, Fleming's, 405, 421, 437, 453, 485, 502, 515
Tares, winter, 633; to sow ditto, 574; and Vetches, 563
Tarts, fruit, 551
Taxation, 219
Tea culture, in India, 339
Temperance, 604, 668
Temperature, 569, 697; high winter, 38; Chiswick v. Holkham, 118; in-door v. out-door, 246; Grant, on regulating, 328; of orchard houses, 518
Thatch, incombustible, 253; v. permanent shelter, 299
Thermometers, to place, 408
Thibet, botanical geography of part of the, and western, 612
Thin seeding, 9, 10, 171, 734
Thistles, 621
Thorn, scarlet, 613
Threshing machines, 398; in the Crystal Palace, 394
Thrush, performances of a, 742
Tiles, draining, 284; kiln for, 410
Timber, preservatives of, 3, 54, 86, 580, 820; paint for, 39; to season, 102; ripening, 120; trees, 134, 150, 261; Spanish Chestnut, 182, 198, 211, 214, 230, 262; old, to renovate, 262, Van Diemen's Land, 275, 276, 291, 307; durability of, 342; Plane tree, 725, 737, 805; effect of soil on, 806
Tithe commutation, 27
Toad, poisonous qualities of, 325; in flint, 534
Tobacco, Guatemala, 248; Irish, 587
Tomato sauce, to make, 632
Torenia asiatica, 134
Torquay, climate of, 391, 406
Tours, agricultural, 61; Mr. Mechi's, to North Devon, 73, 90
Townshend's Rambles in N. S. Wales., rev., 6
Trade memoranda, 117, 133, 166, 197, 213, 245, 389, 421
Transplanting, 536; trees, 19; theory of, 179; Gorse and Fern, 200; in autumn, 246; evergreens, 630; Asparagus, 712
Traps, beetle, 689
Traveller, notes of a, 5, 228, 340
Traveller's Library (Longman's), rev., 679
Trees, gigantic, fossil, 24; to transplant, 19; Fir, 39; twigs of ditto eaten by squirrels, 182, 198, 213; precocious, 518; forest, to plant, 326, 724; ditto, waste lands with, 86; reinvigorating old ditto, 87, 293; pruning ditto, 516, 532, 566, 596, 614, 630, 708, 758, 788, 805, 822; ditto in Scotland, 692; ditto and underwood, 694; pollard, artificial, 102; in the Crystal Palace, 99, 133, 707; Beech, 118; bleeding in ditto, 740; ditto on an Oak, 757; for timber, 134, 150, 261; preservatives of ditto, 3, 54, 86, 580; seasoning of ditto, 102; ripening ditto, 120; Spanish Chestnut as ditto, 182, 198, 211, 214, 230, 262; old, to renovate, 262; durability of, 342; Blue Gum (Eucalyptus globulus), 275; hedgerow, 316, 640; pruning ditto, 284; to keep rabbits from barking, 342, 343; to withstand the sea breeze, 472; law of overhanging, 483; formation of wood in, 516, 708; Maiden Hair, 614, 646, 661; Conifer, varieties of, 150; ditto and cattle, 214; sizes of ditto, 214, 230, 246, 262, 534, 630; names of ditto, 774; Judas, to remove, 648; Oak, law relating to, 168; Turkey, ditto, 230, 246; Parliament ditto, 519; meaning of Dunmast, 677; road-side, 711; leaves of, 742, 757; Panama, 790; candle, 728; Cedron, 791; fruit, for a sea-side garden, 24; Pears, to train, 21; to protect ditto, 38, 56; deformed ditto, 99; late ditto, 104; ditto for espaliers, 120, 648; ditto and frost, 373; ringing of ditto, 632; Gooseberry and Currant, 83; ditto disbudded by birds, 438, 806, for succession, 792; Peaches, to force, 118, 405, 437; to root prune ditto, 376; blight of ditto, 486; retarded ditto, 678, 694; Orange, substitute for, 131; Bermuda ditto, 339; French ditto, 503; Rivers' orchard houses for the cultivation of, rev., 35; for a south east aspect, 120; Cherries, to train, 213; ditto, for marketing and succession, 120; Morello ditto, 259; to bud ditto, 406; retarded ditto, 678, 694, for an east wall, 200; to cover ditto, 309; Plums, 277; to train ditto, 213; Reine Claude de Bavay ditto, 213; to bud ditto, 695; Coe's Golden Drop ditto, 710, 726, 742; for a south-west aspect, 216; Apple, Belleheim Orange, 228; Normandy Pippin ditto, 314; ditto singular bloom of, 406; Ribston Pippin ditto, 614, 629; Redstreak ditto, 614; ditto for espaliers, 648; table ditto, 808; kitchen ditto, 808; sea-weed for, 214; summer pruning of, 456; Apricot disease, 664; ringing, 680; Fig, late, 694, 709, 725; double digging ground intended for, 726; planting of, 741; for an east aspect wall, a northern part, 776; pruning young, 806
Trenching, 121
Trentham, standard Portugal Laurels at, 131; machine for killing weeds on walks at, 275, 357, 372, 390, 452, 533
Trichophila tortilis, 500
Tropæolum tuberosum, 214
Tropical forests in British India, physical and economical effects of the destruction of, 548
Trout Fishing, Pulman on, rev., 711
Tuberoses, 392
Tubers and bulbs, classification of, 423
Tullian culture of land, 138, 141, 153, 186, 236, 267, 282, 348, 362
Tulips, 711; early, 70, 86; Mr. Groom's, 327; amateurs', show of, 359; to plant, 695; ditto, offsets, 583; breaking, 743
Turkeys, breeding and rearing of, 586
Turner on Training Horses, 622
Turner's (Mr.) nursery noticed, 295, 407
Turnips, manures for, 11, 75, 365; best method of storing for spring feeding of cattle, 61; early, 53; and Mangold Wurzel, 316, 445; culture of, 389, 439, 635; to sow, 364; green caterpillar, flies and slugs on, to destroy, 555
Turnip crop and drainage, 173
Turnip cutters in the Crystal Palace, 395, 426
Turnip moths, 473, 484, 489, 491, 499, 503, 523, 555, 650
Tussac Grass, 23

U.

United States, horticultural meetings, 23; gardening in, 88; Wheat soils of, 413; phosphate of lime of, 539, 555; reaping machines of, 538, 553, 554, 585, 646, 709, 717, 747, 749, 781; Daily on, rev., 551; Victoria regia in, 743

V.

Vanda teres, 549; cristata, suavis, tricolor, 612
Van Diemen's Land, blue gum tree of (Eucalyptus globulus), 276; timber of, at the Crystal-palace, 275, 276, 291, 307
Vasey, on the Delineations of the Ox Tribe, rev., 429
Vegetables, to earth up, 54; to dry, 183; for exposed gardens, 72; Masson, on preparing, 359; improvement of, 378; for different soils, 440; to preserve, 552; shows, 748
Vegetable and animal life, 515
Vegetable Marrows, 520
Vegetation of Auckland Islands, 103; researches in, 147, 148; influence of gypsum on, 164, 165; action of fine earthy matter on, 282, 299; chemistry of, 643; Himalayan, 646; of Borneo, 695; theory of, 741
Vegetarians, 604
Veitch's (Messrs.) nursery, 579
Ventilation of glass houses, 184, 327; of stables, 780; of public buildings, 781
Verbenas, select, 104, 248
Vetch, culture of, 602, 621
Vetches and Tares, 363
Victoria regia, 182, 420, 485, 501; name of, 7; houses, 19; at Messrs. Veitch's, 167; at Messrs. Knight and Perry's, 215, 407; at Messrs. Weeks', 199, 327, 439, 700; scent of, 549; at Hamburgh, 728; in United States, 743; in Calcutta Botanic Garden, 805
Vienna, shooting near, 792
Villa and suburban gardening, 5, 21, 37, 68, 104, 180, 213
Village lectures, 42; education, 278; clubs, 411; Eydon industrial ditto, 765; excursions, 587
Vinegar plant, 136
Vines, culture of, 6; cure for bleeding in, 22; out door, 38, 70; to graft, 104; summer treatment of, in greenhouses, 214; for succession, 248; in pots, 293, 725, 822; Sanders on, rev., 327; management of, 803, 805, 819
Vinery, Vacca, 744, 789
Vine mildew, 438, 469, 547, 551, 628, 643, 644, 707
Vine borders, 792; to cover, 54, 165
Vine leaves, scorching of, from dryness of the air, from condensation, 803, 819
Viola lutea, 422
Violets, 485
Viper bite, cure for, 398
Vitality of seeds, 70, 515, 533, 549, 565, 597

W.

Wages of gardeners, 136, 216; of labourers, 617
Wagnorn, Lieutenant, 54
Wahlenberg, death of, 263
Walks, edgings for, 38 70, 86; flower garden, to make, 245, 518, 534, 550; Fleming's machine for killing weeds on, 275, 357, 372, 390, 452, 533; to salt, 391, 406, 452, 484, 502, 517; quantity of ditto to apply to a gallon of water, 520; asphalte, 501, 659; tarred, 677, 678, 694, 822; lead refuse, 694
Walls, east, fruit trees for, 200; to cover, 309; to stud, 230, 246, 278; paint for inside, 318; Ivy on exterior, 712, 725; ditto on brick, 742; glass, 755, 771, 790; fruit trees for an east aspect, in a northern part of, 776; meaning of different aspects explained, 776
Wall plants, 72, 407
Wall fruit, 579
Wallflower, common, monstrosity of, 564
Ward's World and its Workshops, 598
Warnes' on Flax v. Cotton, rev., 205
Water, gutta percha piping for conveyance of, 6, 247; glass, 355; syringing with cold, a remedy against the effects of frost, 6; quantity running from main drains, 205; London, 259, 371; gardens to, 438, 469; depth of, for aquatics, 592; Canna, to grow in, 551
Water filters, Price and Whitehead's, 247
Water pipes, glass, 355; gutta percha, 6, 247
Water plants, 5, 147, 197, 199, 280, 310, 420, 469, 485, 501, 502, 517, 536, 614; depth of water for, 502; tender, 197, 214, 215, 230; for a pond, 728
Water-cresses, 165
Water-butts, Conferva in, 120; to remove ditto, 166
Waterer's (Mr.) Exhibition of American plants, 359
Waterproofing composition, 104, 184
Way's (Prof.) lectures on the use of common salt in agriculture, 365; on employment of gypsum in, 412; of lime in, 540, 589
Weald of Kent, Sussex, and Surrey, improvement of, 217
Weather, 789; at Dorchester, 14, 29, 45, 61, 77, 93, 125, 140, 173, 189, 205, 221, 237, 253, 269, 285, 301, 317, 333, 349, 366, 381, 413, 429, 461 478, 494, 502, 526, 542, 558, 574, 590, 606, 622, 638 653, 670, 686, 718, 734, 749, 766, 781, 798, 814, 830; at Pembroke, 102; mildness of the, 71, 87, 102, 122, 135, 150, 166; wet Marches, 245; the equinoxes, 379; at Warrington, 725; in the far north, 741; at Norfolk, 758
Weeds, 595, 614, 755; and manure heaps, 116, Fleming's machine for killing, 275, 357, 372, 390, 452, 533; on walks, to salt, 391, 406, 452, 484, 502, 517, 518; quantity of salt to apply to a gallon of water for killing of, on ditto, 520; burned, as manure, 716; on lawns, 788
Weevils, Pear shaped, 229, 261
Wexford, Bean culture in, 10; crops of, 603
Wheat soils, 41; ditto of America, 413; blight in, 92; sheep on, 204; in beds and alleys, 348; Tullian growth of, 348; black, 364; stacks, covering for, 395; April, 557; to dibble, 571; produce of, on good and inferior land, 589; expenses and returns of an acre of, 601; price and yield of, in South Hants, 668; prices of, in England, France, and Belgium, for the five preceding years, 715; growing, 745; Ward on ditto, 775; price of, in 1202 and 1851, 779; before Barley, 827
Whitewash, to make, 376
Widow bird, 8, 24
Wight's (Dr.) Orchids, rev., 534
Willich's tithe commutation table, 27
Wilmot (Mr.), death of, 23
Winds, Trade, Ehrenberg on the Dust deposited by, rev., 151
Wine, Berberry, to make, 197
Winter temperatures, 38; gardening, 38; gardens, 19, 70; Crystal Palace as ditto, 419, 438, 458; Mr. Paxton's pamphlet on ditto, 421; ditto, his letter to Lord Campbell on, 453; Smithfield as ditto, 531; Carrots, 645, 661; Onions, 645, 661; Flax, 668; Tares, 683; to sow ditto, 574; scorching of Vine leaves during, 803, 819
Wire-worm, to destroy, 134, 150, 376; to clear from leaf-mould, 24
Wistaria sinensis, 340, 343
Wood, preservatives of, 3, 54, 86; ripening of, 120; paint for, 39; to season, 102; Turkey, 230; bark, 230; coppice, 309; formation of, 516, 708
Wood-lice, to kill, 277
Word in Season, or pamphlet on corn growing, rev., 669, 698, 745
Wrench's samples of seed, 634, 646, 669, 677

Y.

Yeast, bitterness of, to remove, 781, 814
Yew hedges, 358
Yorkshire, swifts and hornets in, 566
Young's (Mr.), nursery noticed, 775

Z.

Zauschneria, hardiness of, 694
Zygopetalum Mackayi, crinitum cæruleum, rostratum, and maxillare, 500

# LIST OF WOODCUTS IN THE PRESENT VOLUME.


A.

Acarus telarius, 133
Acer circinatum, 791; villosum, 791
Amherstia nobilis, 39
Antennaria Stephensii, 563
Apple fungus, 819
Astyages, Pear tree, 357
Atriplex hortensis, 51

B.

Bark moth, yellow under-winged, 404
Bean fungus, 531
Beetle, scarlet back cowled, 85
Blue gum tree, 276
Boilers, diagrams of Cornish, 283
Bostrichus capucinus, 85
Buds, diagrams illustrative of growth of, 259
Budding, Foulstone's instrument for, 326

C.

Carrots, Siamese, 67
Coniditerous paraphyses of Lichen, 803
Cottage, labourer's, ground-plan of a, 75
Cottage stove, plan of a, 454
Cucumber disease, examples of, 694
Cystopus candidus, 579

D.

Draining tiles, 284; kiln for burning ditto, 411
Drill, Wheat, 202

E.

Erysiphe guttata, 227; penicillata, 227; graminis, 227; adunca, 227; bicornis, 227
Eucalyptus globulus, 276

F.

Farm buildings, ground plan of, 300
Farm railroads, Neilson's, 186
Fish, breeding place for, 676
Flax fungus, 611
Forest tree pruning, diagrams illustrative of, 516
Fruit room, Mr. Moorman's, 613
Fumigator, representation of a, 310
Fungi, on Lemons, 563; parasitic, 579; on Hops, 582; on Onions, 595; on Beans, 531; Flax, 611; Cucumber, 694; on Grapes, 707; Sphæria Desmazierii, 803; on Apples, 819

G.

Garden snail, 133
Garden mite 181
Garden walks, 245; Fleming's salting machine for, 275
Glass-houses, plan of ventilating, 327
Grafting, diagrams illustrative of, 37, 53, 69, 101, 117, 133, 148, 180, 196, 212
Grape mildew, 707
Grubber, Tennant's, 462
Gymerium argenteum, 757

H.

Harrows, Howard and Sanders', 315
Heath, monstrosity of, 600
Heating, Polmaise, 326
Hop mildew, 582
Horse hoe, Garratt's, 361
Hyacinth glass, Tye's, 291

I.

Insects, Pear tree Lyda, 36; Bostrichus capucinus, 85; red spider, 133; Rose chaffer, 181; snake millepedes, 181; garden mites, 181; Pear tree weevils, 229, 261; Pear tree astyages, 357; yellow under-winged bark moth, 404; Tenthredo Ribesii, 408; Melolontha horticola, 360; diamond-backed Turnip moth, 484

K.

Kiln, tile, 411

L.

Larch rot, 435
Lasiobotrys Loniceræ, 772
Laurels, standard, 131
Lemon fungus, 563
Lichen, coniditerous paraphyses of, 803
Lyda, Pear tree, 36

M.

Melons, sizes of, 499
Melolontha horticola, 360
Mildews, 227, 502, 582, 707
Morphology, diagrams illustrative of, 99, 723
Mycelium of Sphæria Desmazierii, 803

O.

Onion fungus, 595
Orache, 51

P.

Pampas grass, 757
Pear tree Lyda, 36; astyages, 357
Pears, deformed, 99, 723
Pear shaped weevils, 229, 261
Polmaise heating, 326
Polyactis fasciculatis, 707
Portugal laurels, standard, 131
Poultry house, ground plan of, 237

R.

Red spider, 133
Rose chaffer, 181

S.

Snake millepedes, 181
Sphæria Desmazierii, mycelium of, 803
Steam engines, diagrams of the Cornish boilers for, 283
Sweet-williams, monstrous, 550

T.

Tenthredo Ribesii, 408
Timber, Boucherie's preservatives of, 580
Trees, formation of wood in, 709
Turnip moth, diamond-backed, 484
Tye's hyacinth glass, 291

V.

Vine borders, covering for, 165

W.

Wheat, black, 364
Wheat stacks, coverings for, 395
Woodlice, 181

# THE GARDENERS' CHRONICLE
AND
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INDEX.


Agricultural experiments ..... 9 *c*
— Improvement Society of Ireland ..... 12 *b*
Beans, culture of ..... 10 *c*
Birds, British song ..... 4 *c*
— Whydah ..... 8 *c*
Botanical Society of London .. 6 *c*
Calendar, Horticultural ..... 7 *c*
— Agricultural ..... 11 *b*
Carriages, agricultural ..... 13 *a*
Carts, grease for ..... 14 *a*
Cows, how to make them calve in the daytime ..... 14 *a*
Dickson on Breeding, rev..... 13 *c*
Drains, roots in ..... 10 *c*
— concrete in the ends of .. 10 *c*
Draining, deep and shallow .... 10 *c*
Drainage Act ..... 9 *b*—12 *a*
Farm accounts ..... 9 *a*
Farming, Scotch ..... 11 *c*
— experiments in ..... 9 *c*
Fences, preservatives of ..... 3 *b*
Flax Society ..... 12 *c*
Fountains ..... 6 *a*
Frost, cure for effects of ..... 6 *b*
Gardening, market ..... 4 *a*
Grafting ..... 3 *c*—4 *b*
Guano, experiments with ..... 13 *b*
Gutta percha piping..... 6 *b*
Linnean Society..... 6 *b*
Mangold Wurzel ..... 11 *c*
Manure for Turnips ..... 11 *a*
— liquid .....11 *b*—12 *a*
— artificial ..... 10 *a*
Market gardening ..... 4 *a*
Mechi (Mr.), and his farm..... 12 *a*
Moss, Irish ..... 10 *c*
Peat charcoal ..... 12 *b*
Plants, aquatic ..... 5 *b*
Rambles in N. Wales, rev..... 6 *c*
Rent, reduction of..... 12 *a*
Roots in drains ..... 10 *c*
Roses, continuous bloomers .... 5 *a*
Rose catalogues..... 6 *a*
Royal Bot. Garden, Edinburgh.. 6 *a*
Royal Hort. Imp. Soc. of Ireland 6 *c*
Seeding, thin ..... 9 *c*—10 *b*
Sittingbourne Farmers' Club—
Guano..... 13 *b*
Taxonia mollissima..... 6 *a*
Timber, preservatives of..... 3 *b*
Traveller, notes of a..... 5 *b*
Turnips, manure for..... 11 *a*
Victoria Regia ..... 7 *b*
Villa gardening ..... 5 *b*
Vine, culture of ..... 6 *b*
Water, gutta percha pipes for .. 6 *b*
Weather, the ..... 14 *a*
Widow bird ..... 8 *c*
Wood, preservatives of..... 3 *b*



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HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

NEW EARLY PEAS, &c.

BASS AND BROWN have a very fine Stock of the undermentioned early Seeds, which they are enabled to offer at the following low prices:—

| | Per quart.—*s.* *d.* |
|---|---|
| PEAS, Taylor's new Prolific, very early, hardy, and productive, sent out by Barnes ... ... ... ... | 1 6 |
| Essex Champion, hardy and very productive ... ... | 0 8 |
| Dancroft Rival, very early ... ... ... ... | 1 3 |
| Bishop's new Long-pod, great bearer ... ... ... | 1 0 |
| Early Warwick, Early Frame ... ... ... ... | 0 6 |
| Early Emperor, very early and hardy ... ... ... | 0 10 |
| Fairbeard's Champion of England ... ... ... | 1 0 |
| BEANS, Long-pod and Windsor ... ... ... ... | 0 6 |
| RADISH, early Short top Salmon ... ... ... ... | 1 6 |
| Wood's new early Scarlet ... ... ... ... ... | 2 0 |

Their Wholesale List of Prices of the above and all other description of Seeds will be forwarded on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

KNIGHT AND PERRY, EXOTIC NURSERY, King's-road, Chelsea, London, deeply grateful for the distinguished patronage so long conferred upon them, beg to intimate that their NEW CULINARY AND FLOWER SEEDS, all of the first quality, are now ready, and they most respectfully solicit a continuance of that support which has been extended to their house for the last 50 years.

For the above—as well as for their AGRICULTURAL SEEDS, to which they pay great attention, Stove, Greenhouse, and Herbaceous Plants, Bulbous Roots, imported annually by themselves from Holland, Conifers and other Hardy Ornamental Trees and Shrubs in great variety, and including many valuable novelties, Grape Vines of all the best sorts, from eyes, Fruit Trees of choice sorts, both trained and untrained, and which are this season of very fine growth—there are lists specially appropriated, and which they respectfully solicit permission to forward.
Exotic Nursery, King's-road, Chelsea, London.

GARDENERS AND OTHERS having any quantity of CHOICE CUT FLOWERS, can meet with a purchaser by applying to Mr. SLAYMAKER, Centre Row, Covent-garden Market.

N.B.—Bouquets made of the choicest Flowers for Wedding and other Parties, and sent to all parts of the kingdom.

J. G. WAITE'S CATALOGUE OF VEGETABLE SEEDS is now Ready, with Prices to suit the times, and can be had on application.
181, High Holborn, London.

J. G. WAITE'S CATALOGUE OF FLOWER SEEDS is also Ready, and can be had on application.
181, High Holborn, London.

SION-HOUSE DWARF FRENCH BEAN, new, early, buff speckled. This is the earliest Bean known, and can be had in any quantity, price 21*s.* per bushel.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London, where every other kind of Seed in cultivation can be had, on better terms than at any other House in the Trade.

RHUBARB ROOTS TRUE TO NAME.—Myatt's Victoria, 6*s.* per doz.; Myatt's Linnæus, 9*s.* per doz.; Mitchell's Albert, 9*s.* per doz.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

STRAWBERRY PLANTS.—Kitley's Goliah, 10*s.* per 100; Myatt's Eleanor, 4*s.* per 100.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

NEW GIANT ASPARAGUS PLANTS, 5*s.* per 100.
LARGE GIANT SEAKALE PLANTS, 8*s.* per 100.
At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants:

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.

CRYPTOMERIA JAPONICA SEEDLINGS.

| | |
|---|---|
| 2 years ... ... ... ... | 18*s.* per doz., or 105*s.* per 100. |
| 3 years ... ... ... ... | 30*s.* „ 210*s.* „ |
| 1 foot 6 inches to 2 feet 6 inches high, | 60*s.* per dozen. |
| 2 feet 6 inches to 3 feet 6 inches high, | 90*s.* „ |
| 3 feet 6 inches to 4 feet 6 inches high, | 126*s.* „ |

And larger plants in proportion.
The whole of the above, with the exception of the two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10*s.* 6*d.* to 21*s.*

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS. (North of China.)
6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 21*s.* each.
These plants are from the open border—robust specimens fit for immediate planting.
15 ins. to 24 ins., 31*s.* 6*d.* each; 24 ins. to 30 ins., 42*s.* each.

CUPRESSUS GOVENIANA. (California.)
6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.
15 to 24 inches, 21*s.* each; 2 to 3 feet, 31*s.* 6*d.*

CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

| | |
|---|---|
| 1 foot 6 inches to 2 feet ... ... | 1*s.* 6*d.* to 2*s.* 0*d.* each. |
| 2 feet to 3 feet ... ... ... | „ 2*s.* 6*d.* „ |
| 3 feet to 4 feet ... ... ... | 3*s.* 6*d.* „ 5*s.* 0*d.* „ |

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.
Flowering plants ... ... ... ... 3*s.* 6*d.* „
This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.)
This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s.* each.

QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Rugæ. Dwarfs, 5*s.*; Standards, 10*s.* 6*d.* each.

TAXODIUM SEMPERVIRENS.

| | |
|---|---|
| 1 foot to 1 foot 6 inches ... ... | 2*s.* to 2*s.* 6*d.* each. |
| 1 foot 6 inches to 2 feet 6 inches ... | 3*s.* 6*d.* to 5*s.* „ |
| 3 to 4 feet ... ... ... ... | 7*s.* 6*d.* to 10*s.* 6*d.* „ |

Larger in proportion.

VIBURNUM PLICATUM. (North of China). A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21*s.* each.

WEIGELA ROSEA.

| | |
|---|---|
| 6 inches high ... ... ... ... | 1*s.* 0*d.* each. |
| 1 foot to 1 foot 6 inches ... ... | 1*s.* 6*d.* to 2*s.* 6*d.* each |
| 1 foot 6 inches to 2 feet ... ... | 3*s.* 6*d.* to 5*s.* 0*d.* „ |

These last are fine bushy flowering plants.

Selections of the finest Autumnal Flowering Roses.

| | |
|---|---|
| Standards ... ... ... ... | 15*s.* 0*d.* per dozen. |
| Half Standards ... ... ... ... | 12*s.* 0*d.* „ |

N.B.—We have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which can be sold very cheap, particulars of which can be had on application.
Bagshot Nursery, Jan. 4.

DOUBLE LILY OF THE VALLEY.—In answer to numerous inquiries for the above, and the great satisfaction given by the plants sent out by J. REID last season, he begs to state he has this year a few strong Flowering Roots to dispose of. The graceful habit, delicate appearance, and delicious perfume which the flower possesses, render it equally suitable for the Lady's Posey or the Drawing-room Bouquet. By enclosing 24 penny postage stamps, 12 strong Roots will be sent free to any part of the United Kingdom.—J. REID, Nurseryman and Seedsman, Richmond-street, Weston-Super-Mare, Somerset.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18*s.* to 24*s.* | per doz. |
| Dwarf Standard do. | do. 12*s.* to 18*s.* | „ |
| Climbing Roses | do. 9*s.* to 12*s.* | „ |

A priced descriptive Catalogue forwarded on application.
All packages delivered free of carriage to London.
Nurseries, Cheshunt, Herts, Jan. 4.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. „ Fruit Trees.
D. „ Hardy Herbaceous Plants.
E. „ Forest Trees.
F. „ Greenhouse Plants, &c.
G. „ Agricultural, Garden, and Flower Seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.
ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

COLE'S SUPERB SOLID RED CELERY.

W. COLE begs to inform his Friends and the Public generally, that he can supply them with the above article, new and genuine, in sealed half-ounce packets, free by post, for 12 postage stamps.
N.B.—The Trade supplied on liberal terms.
Dartford, Kent, Jan. 4.

WILLIAM H. MAITLAND, SEEDSMAN, 41, Great George-street, Liverpool (late Landscape-gardener to Mr. Skirving, of Walton Nursery), respectfully informs his friends and the public, that he has opened the above premises with a Stock of GARDEN and AGRICULTURAL SEEDS, carefully selected from the best markets; and hopes by sending out none but genuine Seeds of the best quality, and by a strict attention to business, to merit a share of public patronage.
N.B. Designs given for laying out grounds and for Horticultural Buildings. Experienced Gardeners, Foresters, and Farm Servants recommended.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... | 42*s.* to 60*s.* |
| Extra superior selected Standards ... ... ... | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) ... | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

MESSRS. J. AND H. BROWN'S NEW PRICED CATALOGUE OF PLANTS FOR 1851, will be sent to all Applicants, for Six Postage Stamps. It includes Orchidea, Stove and Greenhouse Plants, Roses, Geraniums, Fuchsias, Camellias, Azaleas, Conifers, &c. They also offer the following Choice Plants:—

| | *s.* | |
|---|---|---|
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... | 20 | 0 |
| 25 American Azaleas, ditto ditto ... ... | 15 | 0 |
| 6 Andromedas of sorts, including floribunda ... | 8 | 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen ... | 8 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... | 12 | 0 |
| New Hardy Yellow Rhododendrons, each, 7*s.* 6*d.* to ... | 10 | 6 |
| Hybrid Rhododendrons, with 30 to 50 bloom buds, each 2*s.* 6*d.* to ... ... ... ... ... ... | 3 | 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for ... ... | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort ... ... | 10 | 6 |
| 50 Dwarf Roses, on their own roots, by name ... | 16 | 0 |
| Standard and half-standard Roses, per dozen, 12*s.* and | 15 | 0 |
| Climbing Roses, choice sorts, per dozen ... ... | 6 | 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each ... ... ... ... ... ... | 3 | 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, ditto ditto ... ... | 30 | 0 |
| 12 Orchidea, choice species and good plants, for ... | 30 | 0 |
| New Camellia seeds, just imported, sent free, 50 for ... | 5 | 0 |

Choice Fruit Trees of all kinds at moderate prices.
Gardeners are especially invited to send us their list of seeds required, as they will be liberally treated.
Albion Nursery, Stoke Newington, London, Jan. 4.

TAME SWANS AND BLACK NORFOLK TURKEYS.—The Advertiser has for sale a pair of very fine 3 year old tame SWANS (Male and Female), in perfect plumage, and very Domesticated, price 3 guineas the pair.—Also a pair of Pure Bred BLACK NORFOLK TURKEYS, year off Birds, fit for Breeding; 25*s.* the Pair.—Orders addressed to ISAAC BRUNNING, North End, Great Yarmouth, will meet with prompt attention.

IT is our painful duty to inform the readers of the *Gardeners' Chronicle* of the Death of our deeply lamented Father, WILLIAM MAY, of the Hope Nurseries, Leeming-lane, Bedale, Yorks. We take this opportunity of stating that the business will still be continued in the same name, under the superintendence of his Sons, and we earnestly solicit a continuance of those favours so liberally bestowed upon our late Father. These Nurseries have long been celebrated for the choice collection of Ornamental Trees and Shrubs, containing also an unrivalled collection of Hardy Herbaceous Stove and Greenhouse plants, extending together over 2000 species and varieties. A choice assortment of Fruit Trees (*Scions obtained from the Horticultural Society of London*). The Vegetable and Flower Seed department is very extensive; every article is of the best quality and warranted genuine. Catalogues will be forwarded gratis on application. All Orders that we may be favoured with will be thankfully received, and meet our best attention. Purchasers may rely upon the best quality of articles being forwarded.

*Orders above 5l. will be carriage paid to London, or within 150 miles, Forest Trees excepted. Post-office Orders should be made payable to* JOHN MAY, *the Hope Nurseries, Leeming-lane, Bedale, Yorks.—January 4.*

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GEORGE BASSIL'S PHEASANTRY, HEMEL HEMPSTEAD, Herts, within 1 mile of the Boxmoor Station, on the London and North-Western Railway. G. B. respectfully invites inspection and early orders. Having a large quantity, he can supply almost any number of Tame-Bred Pheasants, or Pheasants' Eggs, in the Spring, laid by his own Birds.

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SUPERIOR BOG EARTH, OR PEAT, SAND, TURF, GRAVEL, and LOAM of the best quality supplied by HENRY BREDEN, Gardener and Seedsman, Canterbury-place, Shirley, near Croydon.

N.B. A large supply of very fine Prince Regent Potato fit for immediate planting.

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TO BE SOLD, by Private Contract, two substantially built GREENHOUSES in excellent repair, 70 feet by 12 feet, and Front Sashes, Bricks and Tiles, Flues, with stages, and was built seven years ago, at considerable expense; now to be parted with at a great sacrifice, owing to the East and West India Dock and Birmingham Junction Railroad Company requiring the ground for their works. Price low, and by inspection cannot fail to attract the attention of any who may be in want of such materials.—For particulars, apply to Mr. THOMAS STRACY, Florist on the premises, near the Station, Church-street, Hackney, near London.

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GLASS WATER PIPES.

MESSRS. COATHUPES AND CO., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ¼ an inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5¼ ins., 6½ by 5 ins., 12*s.* each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2¼*d.* to 2⅝*d.* per foot.

16*s.* per box; or 2⅝*d.* per foot if less than one box be taken:

| | | | |
|---|---|---|---|
| 11 inches | by 9 inches | 13 inches | by 9 inches |
| 12 ,, | by 8 ,, | 12 ,, | by 10 ,, |
| 12 ,, | by 9 ,, | 14 ,, | by 10 ,, |

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅛ in. thick. | ¼ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0*s.* 6*d.* | 0*s.* 11*d.* |
| Above 15 inches and not above 35 ,, | 0 8 | 1 1 |
| ,, 35 ,, ,, 50 ... | 0 9½ | 1 3 |
| ,, 50 ,, ,, 75 ... | 1 0 | 1 3 |
| ,, 75 ,, ,, 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

| | | | |
|---|---|---|---|
| 16 oz. sheet ... ... ... | 0*s.* 5*d.* | 26 oz. sheet ... ... ... | 0*s.* 9*d.* |
| 21 oz. ,, ... ... ... | 0 7 | 32 oz. ,, ... ... ... | 0 11 |

SUPERIOR ROUGH PLATE TILES.

| | | | |
|---|---|---|---|
| ⅜ inch ... ... ... ... | 0*s.* 10*d.* | ⅝ inch ... ... ... ... | 1*s.* 7*d.* |
| ¼ inch ... ... ... ... | 1 3 | ½ inch ... ... ... ... | 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

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GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

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HARTLEY'S PATENT ROUGH PLATE GLASS, FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

8 by 6 under 10 by 8.....4½*d.*; 10 by 8 under 14 by 10 .....5*d.*
14 by 10 under 1½ foot, not above 20 inches long ...5½*d.*
1½ foot — 3 feet — 30 — ...6*d.*
3 feet — 4 feet — 30 — .. 6½*d.*
4 feet — 5 feet — 35 — ...7*d.*

PACKED IN BOXES of 50 feet each.

| | |
|---|---|
| 6 by 4 and 6½ by 4½.....12*s.* 0*d.* | 8 by 6 and 8½ by 6½ .....15*s.* 0*d.* |
| 7 by 5 and 7½ by 5½ .....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 .....16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5*s.*, 6 Tubes, 7*s.* 6*d.*

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

| Sizes. Inches. | | | | | Inches. | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|---|
| | | | Under | 6 | by 4 | at | 1½*d.* is | £0 12 6 |
| From | 6 | ,, 4 | ,, | 7 | ,, 5 | ,, | 2*d.* ,, | 0 16 8 |
| | 7 | ,, 5 | ,, | 8 | ,, 6 | ,, | 2¼*d.* ,, | 0 18 9 |
| | 8 | ,, 6 | ,, | 10 | ,, 8 | ,, | 2½*d.* ,, | 1 0 10 |
| | 10 | ,, 8 | ,, | 12 | ,, 9 | ,, | 2⅝*d.* ,, | 1 2 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

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SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

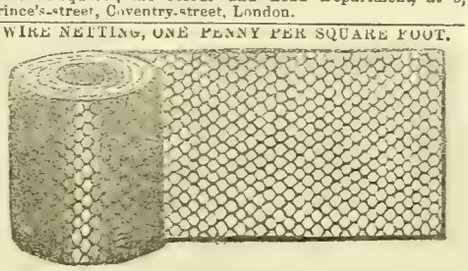
Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalized, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

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WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

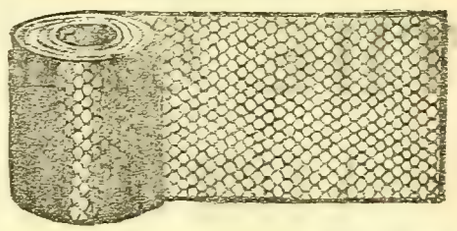
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| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 ,, ,, | 4½*d.* ,, | 36 ,, ,, | 9*d.* ,, |
| 14 ,, ,, | 6*d.* ,, | 48 ,, ,, | 1*s.* ,, |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

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GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
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| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| ¾-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

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Admission, One Shilling; on Mondays, Sixpence.

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"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."

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An Apprentice Wanted, aged 17. A small premium required. Two Shillings a week, with board and lodging.

**The Gardeners' Chronicle.**

*SATURDAY, JANUARY* 4, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | Jan. | 6—Entomological | 8 P.M. |
| TUESDAY, | — | 7—Pathological | 8 P.M. |
| | | Zoological | 9 P.M. |
| | | Literary Fund | 3 P.M. |
| | | London Institution | 7 P.M. |
| WEDNESDAY, | — | 8—Graphic | 8 P.M. |
| | | Geological | 8 P.M. |
| | | Pharmaceutical | 9 P.M. |
| | | Royal Soc of Literature | 4 P.M. |
| THURSDAY, | — | 9—Antiquarian | 8 P.M. |
| | | Royal | 8 P.M. |
| FRIDAY, | — | 10—Astronomical | 8 P.M. |
| SATURDAY, | — | 11—Medical | 8 P.M. |

A CORRESPONDENT of experience and good judgment draws our attention to THE PRESERVATION OF WOODEN FENCES, a subject of no small importance to persons engaged in rural affairs; and he thinks its discussion in the *Gardeners' Chronicle* may be the means of obtaining much useful information, and of removing some of the erroneous impressions which exist respecting the utility of the various compositions that are commonly applied as preservatives of wood-work in general. He considers this to be the more necessary at the present time, from having recently had his attention directed to a statement which appeared in a late number of the *Builder*, and which in his opinion is calculated to mislead those who may place reliance on it.

It is there mentioned, on the authority of a person who is said to have had much experience, and for years watched the effect of the atmosphere on wooden fences, that in all cases—*wood itself*—without any paint, or dressing whatever, had been found the most durable. In proof of this, an instance is adduced of a fence of thin, feather-edged boards, six from the 3-inch deal, having been found, after standing 17 years, perfectly free from any appearance of decay. The same authority also observes with respect to Oak-fencing, that, when put up new, and tarred or painted, a fungus will vegetate through the dressing and rapidly destroy the interior of the wood; but when undressed the weather will gradually dry up the sap, and so harden the wood as to render it more durable by years than when coated by any composition.

"Now, this," says our correspondent, "is so contrary to the generally received opinion on the subject, and to the usual practice, that I think it desirable to ascertain how far the experience of others may tend to confirm or refute the preceding statements. In so far as my own experience enables me to form an opinion, I am decidedly against this novel doctrine, and in favour of using some outward preparation by way of a preservative to all wood-work that may be exposed to the weather. Where good well-seasoned materials are used—whether for fencing, or anything else out of doors—and coated in a proper manner, either with paint, or any of the numerous mixtures of coal-tar, I feel satisfied that wood so treated will be found, after the lapse of several years, to be in much better condition than wood-work which has been exposed under similar circumstances, and left without any paint or outward application. The chief point, however, that ought to be attended to in this matter, and which is too often neglected, is the nature and quality of the fencing material. On large estates, where there is a great extent of fencing to look after, and keep in repair, due care is taken to have always a good supply of wood sawn up and ready for use; but this cannot be done in a general way, and hence it is not unusual, when a fence is required, for green wood to be used as soon as it comes off the saw-pit; and before it has had time to dry sufficiently, the brush is put over it, for the sake of appearance, with paint or coal-tar. I need scarcely say that a fence so treated will not be of long duration, as the very process which was intended to preserve the wood will have the opposite effect, and more speedily hasten its decay. In such a case as this I would readily admit that a fence of common deal, without any dressing, will in all probability be more durable; but what I contend for is, that a fence of dry seasoned wood, when dressed with coal-tar or any similar substance, is better calculated to withstand the weather, and will invariably prove more lasting than one that is undressed."

The best answer that can be given to this expression of opinion must be furnished by actual experiment; and, as our readers include all persons who have much practical experience in the United Kingdom, we venture to hope that they will favour us with the facts within their knowledge. In doing this it will be important to mention—1, the kind of wood referred to; 2, the state of the wood when made into a fence, whether seasoned or unseasoned; 3, the number of years that it has stood; and, 4, its present condition. By way of exemplifying how this may be done most advantageously, for the public information we will ourselves name the following cases:

No. 1. The Hospitium at York consists principally of Oak timber, which has *never been painted*. It is many centuries old, and is sound to this day.

No. 2. The Oak timber employed in old churches for pews, and found in old ruined castles where it was used for beams, as for example at Stone House in Herefordshire, and in our most ancient buildings for roofs, has *never been painted;* all these are many centuries old, and yet they are sound in most cases.

No. 3. The wooden fence, of rent Oak, fixed about 27 years since round the Garden of the Horticultural Society, was *never painted*. The pales are as sound as ever. The only decay is in the posts, where they go into the earth; and there the sap wood is rotten, as usual.

No. 4. About 28 years since a slight fence was put up near where we are writing; it was cut out of Lombardy Poplar, just felled, and was immediately fixed. After being erected it was *coated well with boiling coal-tar*, which sunk deeply into the soft wood. That fence was sound for full 20 years, and exists now, though in a decayed condition. *Question* 1. Would it have stood at all without tar? *Question* 2. Would it have stood longer had it been seasoned before being tarred?

We believe that a series of cases of this kind might be easily got together, and that they would be found extremely useful as guides in forming a settled opinion. Hereafter we shall discuss the matter with reference to general principles, irrespective of evidence either one way or the other.

IN anticipation of the arrival of the GRAFTING season, we commence in another column a careful translation of the theory and practice of the art, as expounded by one of its most eminent modern investigators. Incidentally, we have repeatedly referred to this subject; but we have long felt that the English gardener requires something beyond an explanation of principles, and the meagre statements relating to this most interesting and important art, as they are to be found in books of English gardening. We shall, therefore, now place before our readers, in a series of articles, the views of one of the most refined and skilful continental operators, illustrating his descriptions with woodcuts, drawn expressly for this purpose, and with such truth as, we trust, will render the subject as clear as the processes of any art can be.

The French have long been famous for the variety, singularity, and ingenuity of their modes of budding and grafting. In THOUIN'S "Monograph of Grafts," all that were known to that great gardener were carefully represented and described. But to his pupil, D'ALBRET, belongs the honour of separating the essential from the non-essential, and of reducing his master's long practice to greater method and precision. It is D'ALBRET whom we are about to produce in an English dress, and we feel confident that our readers of every class will agree with us in thinking, that by the publication of his views, a real service will be rendered to practical horticulture. It will then be seen that our cleft grafting, whip grafting, saddle grafting, inarching, crown grafting,

and budding, form but a small part of the methods which the great continental gardeners find it useful to employ, one for one purpose, one for another. And it cannot be denied, that superior as English cultivation is in some respects, it is very far behind that of France, in what relates to the management of fruit trees. Of course, we say this in a general sense only; for we are bound to admit that in some cases the English gardener is not behind his continental rival. These cases are, however, the exception, not the rule; but we believe it is only necessary to teach the gardeners of this country something more than the meagre routine which they learn while young, in order to place them at once on a level with their friends across the channel.

## MARKET GARDENING ROUND LONDON.

GENERAL REMARKS TOUCHING ROTATION OF CROPS, &c.—If we take a five-acre piece of ground, say in November, we shall find it full of Cabbages, which being planted out about the 25th of October, will be strong healthy plants. The moment these are off, the land is again trenched and cropped with early Celery, in well dunged trenches 6 feet apart, with two or three rows of Lettuces or Coleworts in the middle; for market gardeners do not mould up Celery until it is very large (often 18 inches high), so there is plenty of time for a crop of Cabbages, Coleworts, or Lettuces to come to maturity. When the Celery is removed, the ground is cropped with winter Greens, and again cleared off, for nothing pays so well as the London Greens or young unhearted Cabbages. In November Mr. Fitch, of Fulham, has often upwards of 20 acres of these, besides 20 acres of Cabbages; every hole and corner under trees, and all spare places being full. When the five-acred piece is cleared of Coleworts, say by the 1st of March, it is again dunged and trenched and sown with Onions, and very often Lettuces are planted in the beds as well as in the alleys. When the Onions are off, the ground is trenched and planted with Cabbages or Coleworts, &c.; next spring a crop of Cauliflowers, Gherkin Cucumbers, French Beans, or Scarlet Runners is taken off; but the grand point in the course of rotation is to be continually sowing, and whatever plants are ready when the ground is empty to plant these. The land can well sustain so much cropping on account of the heavy dungings, trenchings, and hoeings which it receives. If you ask a market gardener what is to succeed this or that crop, the answer is, "Don't know, it depends upon what is ready for planting." Continued trenching two spades deep for any crop seems expensive; but a strong Irish labourer will turn over from 12 to 14 rods a day, with comparative ease, and I may here state that if it were not for the Irish labourer the prices of vegetables would be much higher. Market gardeners know that after an active crop the top soil for several inches deep is entirely exhausted, and hence the reason for continual trenching, in order to bring up the top soil, that but a few months before had been turned down, with a large proportion of dung, to enrich it and fit it for active use along with the half decayed manure.

Market gardening is well conducted about London, and if young gardeners were to spend only one year with such men as Messrs. Fitch, of Fulham, it would teach them a lesson which would amply repay a twelvemonth's hard labour. They would there be taught how to grow digestible vegetables, and not those stunted blue Cabbages and other things that are, in too many cases, huddled up in walled-in gardens. I am almost certain that the day will arrive when the latter will be converted into forcing grounds, and when vegetables will be grown in the open fields, which are their proper places. If a farmer were to send his son to be a labourer in a market garden for a year or two, the value of such a school to such a man in after life would be great to himself, his landlord, and to the country at large. The expensive system of a market garden would not be required in a farm; it could not be maintained; but it would show him that one acre cultivated by the spade is equal to five by the plough. We know that some market gardeners use the plough; but how does it pay? Their things are always the last sold, and that for the most part to the hawker, whose name will tell the price obtained. It is, however, necessary to have a scarifier plough in all market gardens, in order to tear up the earth after the carts in wet weather. Some years ago I took the late Mr. Smith, of Deanston, over Messrs. Fitch's grounds. Till then he had no knowledge of the enormous expenses of keeping a large garden. "I have not seen," said he, "on the whole 150 acres, a weed; all the ground exhibits a fine level surface; every inch is cropped; all the paths regular; the cart-roads in good order; the hedges of the boundaries very dwarf; no ditches, and all the large plantations of Apples, Pears, and Plums, amounting to 50 acres, with every young shoot made during the summer, pruned down to a couple or three buds from last year's wood." Pruned after the manner of Currant bushes, they look well, and bear enormous crops. The ground under the trees is all cropped with Rhubarb, Currants, Gooseberries; and during the winter with Coleworts and Cabbages. I have seen eight acres of Cabbages in seed beds, after the rest are all picked out for spring Cabbages. Every spare piece of ground is filled; when the Asparagus haulm is cut down, the ground is forked over, and all planted with Coleworts, alleys and all; and when the Rhubarb leaves die down, this ground is also filled, so that altogether, besides the other crops, there must be several hundred thousand heads of Greens for winter market. All liquid manure from dunghills is collected into a large tank; this is conveyed to and distributed over the ground before digging; but the great objection to the use of sewage water after the crop is in, is that it fills up the pores of the earth, cements the mould, and prevents heat and air from acting on the roots.

Some market gardeners keep large herds of pigs, which live night and day amongst the hot dung, and subsist upon the corn that they pick out of the straw and dung, as well as on green food. Mr. Fitch keeps 12 horses, whose whole employment is to cart goods to the various markets, bring home dung, and convey it to vacant pieces of ground, which occur every week. The carts and waggons in use in market gardens have generally broad wheels. The waggons are very large, and the carts will hold as much as a Suffolk waggon. The labourers employed by Messrs. Fitch on 150 acres, amount to about 70 during winter, and in summer to about 150. The rent per acre is from 9*l.* to 10*l.*, the tithes being from 10*s.* to 12*s.* per acre. Men's wages are 2*s.* per day; women, from 1*s.* to 1*s.* 6*d.* Some idea of the amount of labour in small matters will be conceived, when I state that the whole of the frames, amounting to 1000 lights, are all painted and repaired every autumn. The whole of the hand-lights, 4000 in number, are also repaired; and every description of vegetable is washed before it is sent to market. When men are at piece-work, they receive 2½*d.* per rod, for trenching two spades deep; thus an acre highly manured, using cart-loads instead of barrowfuls, and trenching with spade, instead of shallow digging, or what is worse, using a plough, pays just in proportion to the way in which it is treated.

I have now thrown out a few general hints as to the management of a 150 acre garden. In my next and following articles, I shall proceed to particularise some of the leading crops. *James Cuthill, Camberwell.*

## GRAFTING.

No. I.—A WORD ON THE HISTORY OF GRAFTING.—Many authors have written on grafting, and some of them have treated the subject with great clearness. Much has been contributed to it by the celebrated A. Thouin, who published in 1821 an excellent monograph, in which we find the best documents on its history; after his death that work was incorporated with his "Cours de Culture," published in 1827 by his estimable nephew, Oscar Leclerc Thouin. The author of this monograph states, that the discovery of the art of grafting is of the highest antiquity, but its inventor is not known. The Phœnicians transmitted it to the Carthaginians and Greeks; the Romans received it from the latter, and spread the knowledge of it in Europe, where it has become such as we find it at the present day. He adds, that the authors who have treated of the art in some detail are Theophrastus, Aristotle, and Xenophon, among the Greeks; Mago among the Carthaginians; Varro, Pliny the naturalist, Virgil, Agricola, in Italy, and Sickler, in Germany; Bradley, Miller, and Forsyth in England; Olivier de Serres, La Quintinie, Duhamel, Rosier, Cabanis, and the Baron Tschudy among the French; and to these we now add, with veneration, the name of the late André Thouin, whose remarkable monograph contains all the principles and details essential for the guidance of writers and practical men with reference to the art of grafting; for my part I could wish for no other. During the last 13 years of his long and honourable career, he entrusted me with the execution of all the models of grafts which he had collected, to the number of 119,* in his "School of Practical Agriculture," founded in the Jardin des Plantes of Paris in 1797. This fine and judiciously-formed collection is altogether admirable; but I shall here demonstrate only such portions of it as I consider most essential to amateurs and to practical men, who daily experience the necessity of propagating plants, either for the agreeableness of their flowers or for the quality of their fruits, produced by species or varieties which frequently cannot be propagated except by grafting them on wild stocks, or on such as are, in other respects, of little value or interest; but they must naturally belong to the same family, as we shall subsequently explain.

OF THE UTILITY OF GRAFTING.—Gardeners and connoisseurs in horticulture are aware that by grafting many trees can be made to assume very picturesque forms; and it is the means of propagating numbers of woody, resinous, soft, or herbaceous plants, for use or ornament, of which very many give few or no seeds, and are difficult to strike from cuttings or layers; by grafting we make sure of preserving the originals, whether valued for the quality of their fruits, the structure and form of their flowers, their colours, the perfumes which they exhale, or as regards the nature of their wood, the aspect of the trees, the shades and variation of their foliage, &c. &c. Productions obtained by chance, or by fertilisation, either natural or artificial, or in consequence of accidental disease, and many other sports of nature, which would otherwise be lost, or could be but rarely, and after long delay obtained from seed—are readily perpetuated by the art of grafting. It may therefore be viewed as a celestial boon for increasing the amount of our enjoyment. By this mode of propagation we can accelerate the fructification of species or varieties of fruits which are annually obtained from seeds, without however increasing their size, as some have asserted, but falsely, as will be demonstrated by the following experiments. I budded annually, for 15 years, a St. Germain Pear-tree trained as a pyramid. It received the first operation in August, a bud being taken from one of the lateral branches produced by the original, which had then been two years grafted. This bud was inserted about 10 inches from the base of the central shoot. Every year, at the same period, a similar operation was performed; and when the tree had received the fifteenth, it was about 19 feet high. At the age of 18 or 20 years, all the lateral branches from the respective buddings produced an abundance of fruits, which differed nothing from each other, and their flavour was the same as that of the original sort. A similar experiment was also made at the same time on the Reinette Franche, with corresponding results.

I cannot therefore say that grafting increases the size of fruits. Their increase of size is always limited by Nature, as are likewise all the variations which they sometimes take in form. Their fertility, the greater or less perfume and succulent quality of their flesh, are generally caused by the influence of the stocks which nourish them; nevertheless the situation in which these are placed, the quality of the soil from which they draw their nourishment, &c., frequently modify the assertion I have just made, inasmuch as a sort grafted on a stock originally disposed to give large fruit of indifferent quality, and forced to live in a bad locality, cannot possibly give the result we might reasonably expect, were it placed in a more favourable position. *Translated from the French of D'Albret.*

* In a compilation published in 1825 we find a more extensive nomenclature, in consequence of the application of the same operations to different plants. This multiplicity of names seems to have been badly received by the public, the work being still in its first edition.

## BRITISH SONG BIRDS.

No. XII.—In speaking of the Proper Food necessary to be provided for an aviary, I shall take it for granted that the season of the year of which we are treating is summer; and that the united tribes of granivorous and insectivorous birds are together, under one roof. When they are separated and collected into distinct families, in the autumn, of course there will require some alteration of diet; but of this, we shall speak in its place.

Having so large a family to provide for, and so many tastes to consult, it is sufficiently obvious that there must be an ample supply of provisions that may suit the whole. Nature will teach each bird to partake of that only which is easiest of digestion, and best adapted to its constitution. You need be under no apprehension on this head. As for physic, which *some* bird-fanciers prate so much about, I say—"throw it to the dogs." Even they, however, will refuse to swallow it.

Medicine need very seldom be resorted to. There are extreme cases where a little Saffron may be serviceable; but it never cost me more than one penny for Saffron in my life; and that was, one half it, not used. Alterative food with the feathered race, as with us, is far more efficient than physic. The one acts gently, and naturally; the other deranges the system for several days, and if often repeated, injures the entire system. I have already mentioned the "hoppers," or seed boxes. These should be half filled with a mixture of Canary, Flax, and Rape seeds; all of the newest and best. Old seed is very injurious. Of these, the proportions should be—Canary, one half; the other half consisting of Flax and Rape. A small quantity of the latter will suffice, it being eaten principally and sparingly by the linnets. Flax is good for all the seed birds, keeping their stomachs in a healthy state. The "hoppers," as I have before noted, should be carefully examined, at least once a fortnight, and the seed remaining in them should be sifted, to cleanse it from dust and refuse matter, before re-filling.

For the soft-billed or insectivorous birds, the general or "universal" food must be made as follows:—German paste,* 1 lb; 6 eggs, boiled hard; half a pint of Hempseed, well bruised; 6 plain stale buns; 2 table-spoonfuls of best moist sugar. These ingredients, after being placed in an earthen pan (glazed), should be well incorporated with the naked hand, till they amalgamate. Throw in a small quantity of Maw-seed before putting the above into the birds' pans, and place the latter on the floor of the room. Above all, bear in active remembrance that the food must be fresh every day.

In addition to the above, one or two of the pans should contain grated bullocks' liver (from the part called "the nut") boiled hard, and some grated Cheshire cheese, both rubbed fine, and mixed with stale sweet buns, of which all birds are excessively fond. The buns should be purchased of a first-rate confectioner, otherwise they stand every chance of being manufactured from "kitchen-stuff." Many a school-boy's stomach, at this season ("digestive" though it naturally is), will give satisfactory evidence of the truth of my remark.

All your birds, from a canary upwards, will freely share in this soft food; and they will thrive nobly on it. By leaving it to their own option what to select, you will find they seldom, if ever, will have any ailments.

The room must be kept well supplied with ripe Chickweed and Groundsel; Lettuces (in season), Cherries, Strawberries; ripe, mellow, juicy Pears; and now and then a boiled mealy Potato, bruised. The "warblers" eat greedily of the two last; also of soft, boiled, tender Cabbage. Nightingales and blackcaps are dearly fond

* The German-paste, as "made up for sale" in London, is horrible stuff, the whole of it. It is marvellous how birds can be brought to eat it. I have first-rate "receipts" for making a genuine article, which will be given anon.

of the latter; also of Elderberries when ripe; and they greatly luxuriate in a little raw, scraped, tender beef, free from fibre. The beef, when scraped, should be moistened with water, but not made too "pappy;" and it must always be sweet. If tainted in the slightest degree, do not attempt to introduce it.

In the way of live food, throw in occasionally ants' eggs, small red worms, spiders, earwigs, mealworms, livergentles, *et hoc genus omne*. The windows being kept constantly open, hundreds of flies, gnats, and other minute ephemera, will find their way in; and no small amusement is it, to watch the gyrations of the birds as they topple over to catch their prey. The wagtails, whitethroats, and tit-larks, in particular, are most elegant in their motions, while thus occupied.

There have been many opinions on the subject of giving your birds Hemp-seed. It certainly does tend, homœopathically, to shorten the duration of their lives; but still, strange though true, they cannot live without it! It warms their stomach, and possesses an oleaginous peculiarity of flavour, which, mixing with the other food, forms a good general diet. It must be given sparingly. Many people feed goldfinches, in cages, with Hempseed; this is quite a mistake. Canary and Flax is all they should be allowed. They thrive well on it, and escape getting over-fat—the ruin of half the race. Their plumage, too, is always in beautiful order.

To prevent the necessity for "medicine," properly so called, let some crumbs of bread be scalded with boiling milk; into this put some grocers' currants, after previously soaking them some hours in cold water. All softbilled birds, nightingales, blackcaps, garden-warblers, and whitethroats in particular, eat voraciously of this dish; and as boiled milk acts medicinally on all birds, its curative properties will speedily became apparent.

If my instructions be fully carried out, and plenty of old mortar, well bruised, be kept constantly on the floor, no Sanitary Commission need ever be appointed. It is with birds as with ourselves—air, exercise, temperance, and proper diet, will "pull us through" to a good old age. *William Kidd, New Road, Hammersmith.*

## ROSES IN CONTINUOUS BLOOM.

As a wind-up to the few papers which I have written upon the classification of Roses, I now offer a list of those which, out of all the varieties of Roses recommended to me by different nurserymen, have been most constantly in flower; and permit me to say, formed the most pleasing objects for the longest time. I am far from satisfied that I have mentioned all, or even nearly all that deserve a place among those comprised in my favoured list, but I should feel greatly indebted to the more extensive cultivators if they would turn their thoughts to improving it, or giving us a better. In a general flower garden, or in a Rosery, I hold that the great feature of bloom should be never impaired, but let it not be supposed that I would discard the many noble varieties which flower for a month and depart, but they should have a place to themselves, and not assist in throwing a gloom over borders, or making blanks among the family of ever-blooming kinds. Let us suppose that we were actually confined to two colours, red and white, and that a row of these on each side of a path, or a bank of them formed of dwarfs, half-standards and whole ones were on each side, these two kinds being always in flower during several months, would look infinitely better than a general collection half or two-thirds of which were without a bloom. But we are not confined to two varieties, nor ten; I only wish to show that it is better in a place where Roses form a principal feature, as they ought in all gardens, to have 20 of a sort in flower, than 20 sorts without five or six in good bloom.

As a class which has disappointed me most I would mention the so-called Hybrid Perpetuals. They are anything but perpetuals, and if I must follow the sections or families as now classified, I like best the Noisettes, the Bourbons, and the Chinas; but there are exceptions, and marked ones, and I cannot help repeating my wish that the Rose nurserymen would reclassify, if I may so express myself, the whole family of Roses. At all events, let those who want a hundred, or five hundred, or a dozen, confine themselves to particular kinds for all that have to figure in the general scenery of a well kept garden, and not be afraid of half a dozen or half a hundred of a sort, and let them grow the summer varieties, no matter what family they belong to according to the catalogue; but I mean all those which only bloom a month, in a portion of the garden out of the general scenery. I strongly recommend every body who has a hundred or two varieties planted for ornament, to remove all the summer kinds at once to some place adapted for a general collection, and order continuous flowering varieties, 20 of a sort, if necessary, to fill their places.

I hope I have said enough to induce Messrs. Rivers, Wood, Paul, Curtis, Hooker, Francis, and other Rose-growers, to turn their attention to the subject of publishing catalogues with some note showing which are continuous bloomers; for all the world ought to know that perpetual means, at the best, only temporary; hybrid perpetual no better, while many other families embrace Roses as contrary in habit as any two different sections. I likewise hope they will reiterate such of my notions as they approve, and add their powerful influence to mine to induce amateur Rose-growers to follow so much of my advice as they may deem wholesome. The following are the varieties which bloomed the most continuously; they were planted in good loam and dung, and I did not make my final notes till they had flowered the second season.

Fellenburg, Noisette.
Jaune Desprez, do.
L'Amie Vibert, do.*
Lucida Duplex, Macartney.*
Maria Leonida, do.
Pourpre de Tyre (Fafait of some), Bourbon.*
Madame Desprez, do.*
Bourbon Queen, do.*
Paul Joseph, do.*
Madame Nerard, do.*
Souvenir de la Malmaison, do.*
Bouquet de Flore, do.*
Proserpine, do.*
Acidalie, do.*
Madame le Charone, do.
The Crimson China.*
Princess Wurtemburg, China.*
Mrs. Bosanquet, do.*
Géant des Batailles, Hybrid Perpetual.
Duchess of Sutherland, do.
La Reine, do.
Madame Laffay, do.
Marquess Boccella, do.
Doctor Marx, do.
Baronne Prevost, do.
Robin Hood, do.
William Jesse, do.
Rose du Roi, Perpetual

Those which are marked with a * are the most constant; but all those not marked were, in respect to continuous flowering, the best of their family. *Crito.*

## VILLA AND SUBURBAN GARDENING.

In pursuing the subject of Pear training, I shall begin by explaining the mode extensively adopted by the great market-gardeners in the vicinity of London, whose contributions constitute the chief supply of Covent-garden Market. The plan which they adopt may not be the most beautiful that could be devised, or one that we would wish to see in gardens of high pretensions, still it appears to answer their purpose; and there may be many amateurs who pursue gardening upon economical means, looking forward to a remunerative result rather than to nice appearances. The market gardeners usually plant the large and finer kinds of Pears by the sides of roads and pathways in their orchards, and they are trained horizontally, without much regard to regularity. Horizontal training, when carried out perfectly, requires the leader to be kept down until the number of shoots requisite to form a perfect symmetrical tree is induced. The market gardener pays no regard to this. His object is the rapid production of a tree, from which he expects to reap his reward; and he finds that these rude espaliers are quite as productive as the wire-drawn looking examples of high artificial gardening on a gentleman's garden wall.

The materials which they use for the purpose of training upon are of the rudest possible kind, being frequently mere stakes cut from their hedges. Little regard is paid to their uniform thickness or straightness, the only point being to keep the trees in a direct line; as the extremities of the branches meet, they fasten them together, and within a short distance of where I now write there are actually walls of these espaliers supporting themselves without either stakes or anything else. One of the most important advantages of this mode of training is, that when the trees are in full blossom, and when frost is apprehended, a temporary covering may be thrown over these espaliers without much trouble or difficulty, and the crop, in spite of all atmospheric influences, is positively secured. This is a matter which deserves the attention of all Pear cultivators. Much care is bestowed on the Peach; but the Pear is a more valuable fruit, for at this season, when we have few other fruits for the table, some Pears are in high perfection, and their value is just enhanced, in proportion to their excellence, in conjunction with the absence of other native fruits. *Pharo.*

## NOTES OF A TRAVELLER.—No. XV.

Chinese Azaleas and Azalea Gardens.—These gardens, in the neighbourhood of Shanghae, are not less interesting than those in which the Tree Pæonia or Moutan is cultivated, and which were described in my last letter. About five miles north from the city there are two nurseries, each of which contains an extensive and valuable collection. They are generally known as the Pou-shan gardens, and are often visited by the foreign residents at Shanghae. A few days after my visit to the Moutan district, I set out to see the Azaleas, which I knew were then in full bloom. My road led through a country, which is perfectly level, and in a high state of cultivation. It was spring time, and everything teemed with vegetable life. Deciduous trees were now covered with fresh green leaves, as yet uninjured by the attacks of the insect tribe; Wheat and Barley were in ear, and in some places tinged already with a yellow ripening hue, and the air was scented with the field Bean, which was in full bloom. Clumps of trees were dotted over the country, generally divided pretty distinctly into two kinds—deciduous and evergreen. The deciduous clumps marked the spots where the villages and farm houses were situated; the evergreens, consisting chiefly of Cypress and Juniper trees, were growing about the tombs of the dead.

Little more than an hour's walk brought me to the garden I had come to visit. There were no external marks, such as name or signboard, to direct the stranger to the garden; indeed, a person unacquainted with the customs of the Chinese would never have dreamed of finding such a beautiful place as this is, in a poor country village. Going up a narrow passage between two houses, I reached the residence of the nurseryman. He received me with great politeness, asked me to sit down in his house, and called to one of his sons to bring me a cup of tea. Having sipped the favourite beverage, I then walked out with him to inspect his garden.

In the front of the house where we had been sitting, three or four flat stages were covered with Japanese plants, of which the old man had a good collection. A small species of Pinus was much prized, and when dwarfed in the manner of the Chinese, fetched a very high price; it is generally grafted on a variety of the Stone Pine. The Azalea obtusa, and some varieties of it with semi-double flowers, were in full flower, and highly prized by the Chinese. The colour of this species is much more brilliant and dazzling in China than I have ever seen it in England. A beautiful variety, quite new, had small semi-double pink flowers, which it produced in great profusion. This will be a great favourite in England when introduced to our gardens. Its novel colour, small leaves, and neat habit will render it most desirable for bouquets and other decorative purposes. I have named it Azalea amœna. On the stage with this plant I observed a new species of Holly, which is likely to be of some value to English gardens. I have named this species Ilex Reevesiana,* and thus describe it:—A dwarf shrub; leaves entire, elliptical, acute, slightly wavy; dull green, and covered over with small dots, somewhat like Elæagnus; flowers on short spikes, terminal; fruit large, of a deep red colour. A very ornamental bush, which flowers in the winter months, and ripens its fruit during the following autumn like our common English Holly. It is the Wang-sang-qui-wha of the Chinese, and said to have been brought from Wang-San, a celebrated mountain in Hwuy-chow.

After looking over the plants upon the stage, I passed on to the main portion of the nursery, which is situated behind the house. Here a charming view was presented to the eye. Two large masses of Azaleas arranged on each side of a small walk were covered with flowers of the most dazzling brightness and beauty. Nor were they common kinds. Generally they belonged to the same section as A. indica (the varieties of A. variegata do not flower so early), but the species so common in Canton and the south were comparatively rare here. A most beautiful kind having the habit of A. indica and half deciduous, had its flowers striped with pale blue or lilac lines, and sometimes blotches of the same colour upon a white ground. Another species allied to this had red stripes, and a third was mottled and striped in its flowers, the colours being still the same. These are all quite new, and they flower early in the season, fully three weeks or a month before that section to which A. variegata belongs. A red variety, which flowers later, is particularly worthy of notice. Its habit is different from any known species, its leaves are dark green, shining, and evergreen; and its flowers are of a deep clear red, and very large. Each flower measures from 3 to 4 inches in diameter. It is said to be a Japanese species.

I now passed over a little wooden bridge to the third compartment of the nursery, which contained a collection of the common shrubs of the country. Along the banks of a ditch, through which the tide ebbs and flows, there is a row of the far-famed Qui-wha, or Olea fragrans. In England we know nothing of the beauty of this charming plant. Here it is a fine evergreen bush, always handsome, and in the months of September and October literally covered with its fragrant blossoms. One tree is enough to scent a whol garden. I have often sat down under the shade of these very bushes, in the midst of this perfumed atmosphere, and almost fancied myself in the garden of Eden. *R. F.*

* Named in compliment to Mr. Reeves, whose kind introductions have been of great assistance to me in China.

## Home Correspondence.

*Aquatic Floriculture.*—I would gladly learn what has been ascertained, and see fresh experiments made, concerning aquatic plants. It is worthy of enquiry what character distinguishes palustrian from aquatic plants. Certainly not alone the natural habitat, for we know that plants will flourish where they are not found wild. A plant whose roots grow under the water level is, *quoad*, its roots, aquatic; only its stem, or the lower part thereof, is embraced by air and not by water. The tendency of a plant to have its stem or leaves corrupted and macerated by immersion, while its roots are proof against it, would seem to me to be the distinctive palustrian character. But is it not an interesting field of experiment to try in how many instances such a distinction really exists, prejudicially to the beauty of our ponds and tanks? This is remarkable in some aquatics, that they are not so, and that in the extreme degree. Crinum capense grows, flourishes, and blows in my pond, rejoicing in water and ice, with boys and girls skating over its bulbs; and it does all the same in the south border against my house through the long droughts of spring and summer. Calla æthiopica flourishes in deep water, and lives well enough on a neglected shelf of a greenhouse, in a brick of dry earth. Iris Pseud-acorus will live for years in raised borders and unwatered. Epipactis palustris grows in a raised border against my house, watered by me when I remember it, and by nobody when I do not, or when I am absent for weeks. Since absolute subaqueous aquatics are patient of drought in its utmost degrees short of growing like a Snapdragon on a wall, there is surely reason to doubt whether the nature of many plants will not bear stretching in the other direction. For only consider how vast is the distinction between plants growing in a pond, and plants baked in a pot, or roasted under a dry south wall; and how trivial seems the distinction which separates plants rooting under the water-level from those which grow under a water surface. The wild yellow Iris (Pseud-acorus) is common in muddy ditches, and I read that it is also found in shallow ponds. It may be the only Iris

of the section called by nurserymen the English Iris, abounding in such various and beautiful colours, that will bear water. But the probabilities, *à priori*, must be rather the other way. I have planted in ground which, when the springs rise, will be the shallow edge of a pond, a very strong tall-growing yellow and white Iris, name unknown to me. Also the Epipactis, and plants of the common Agapanthus, deep. I shall try Orchis latifolia next year, for I cannot find it at this season. But my curiosity extends farther, to know how many plants, not even reputed palustrian, such as Canna, Dodecatheon, Funckia, Hemerocallis, &c. (you can suggest better than me), may not peradventure be found as hard drinkers as Crinum capense, though now considered as sober as that was when people called it Amaryllis longifolia. Patience of water I consider very distinct from patience of air between wind and water; and I wish to learn the average and the maximum ice depth in still water. No doubt there are works in which the whole matter is discussed in a knowledgeable manner. But there must be many persons who share my ignorance of those branches of literature, and to whom any mental illumination you are willing to pour into them will be highly acceptable. *A. H.* [This letter suggests so many important inquiries that we gladly submit it to the consideration of our readers. Hereafter we shall recur to it.]

*Rose Catalogues.*—It appears to me that, if our large Rose-growers had their lists printed in alphabetical order, placing the class to which each Rose belongs in a column to the left or right (instead of having each class by itself), it would do away with the great difficulty which is now experienced in finding any particular variety, when ignorant of its family; and also prevent errors, as a sort in one class frequently bears the same name in another class. *C. C., Dec.* 19.

*Material for Fountains.*—Your correspondent on aviaries recommends zinc; now, any chemist will tell him that it is very dangerous, depending much on the nature of the water, whether it be not absolutely poisonous. I am surprised that I do not see among your advertisements, any for fountains made of stoneware; although this substance would not do for statues, or even vases, from its refracting too much light, that would not be so objectionable in a fountain which, from being always wet, is in the same predicament; it is very cheap, does not get mossy, or decompose, as do all cement fountains, and can, by "toning" the glaze, be made, at first setting up, to look reverend. Another material is "Peake's terro-metallic clay," or whatever it may be; this need not be so dark as it is usually made; it can be burnt rather ruddy, and nothing endures longer. *Jay, Somerset.*

*Tacsonia mollissima.*—At page 805 of your last year's volume a correspondent complains that this plant does not flower well with him, and states that he has discarded it from his conservatory. I consider that he has acted hastily in throwing away such a valuable plant. With me this Tacsonia commenced blooming about the middle of May, and from that time till the middle of October it has had daily from 50 to 100 fully expanded flowers on it. A few blossoms continue to open up to the present time; and we are of opinion that they are better formed and of a richer colour each successive year. The specimen here, which has been the admiration of every one who has seen it, was planted in the summer of 1847; though small it soon reached the top of the house, and now it spreads in four different directions on the roof, each branch being about 70 feet from the root of the plant. I pruned it very closely some time in February, and during the summer its shoots (which are often elegantly festooned) nearly reach the border of the conservatory; they commence flowering when about a foot long, and blossom at every joint during the whole period of growth. *J. Pringle, jun., Stoke Rockford Gardens.*

*Royal Botanic Garden, Edinburgh.*—I have seen lately in the *Chronicle* some notice respecting this Botanic Garden (more especially by "Dodman" and "G., Hammersmith") which would seem to imply that matters are conducted by us here in a very illiberal and exclusive spirit. Now I am anxious that the public and your correspondents should be set right in the matter, by a plain statement of facts. The garden is open to the public every lawful day. Anyone may walk in the garden who chooses. The hours of admission in summer are from 6 A.M. to 6 P.M.; and in winter from daylight to dusk. The houses are open to the public on Saturdays from 12 to 4 in summer and from 12 to 3 in winter. I wish I could have them open every day, but I have not the means of employing a sufficient number of hands, so as to enable me to do so without injury to the other work in the garden. I hope to be able to make arrangements so as to open the houses two days a week to the inhabitants of Edinburgh. Any stranger coming to Edinburgh is admitted to see the houses on any of the other days of the week, on mentioning his wish to the porter at the gate. Your correspondent "G." has made a mistake as to the hour when the houses are open on Saturday, and his statement would almost lead to the belief that the garden itself was closed against him. The day of his visit was Saturday, and as that is the day when the public are admitted, it is not convenient to allow any one to visit the houses in the forenoon when the watering and syringing of the plants and the washing of the floors are going on. This will account for Mr. M'Nab requesting "G." to delay till 12, and asking him in the meantime to visit the winter house in the experimental garden. There was no wish to do anything illiberal on Mr. M'Nab's part. He acts, I believe, precisely in the way in which his worthy father did as regards the admission of strangers. I have always advocated the importance of having gardens and museums open to the public. I am particularly desirous to see the working classes take an interest in them, and with that view I throw open the houses on all general holidays. I trust that this statement will show that I do all within my power to accommodate the public. *J. H. Balfour.*

*Vine Culture.*—I beg to offer the following replies to "W. C. E.'s" queries, at page 806 of your last year's volume. First, the age of the Vine has nothing whatever to do with the colour of the Grapes. The latter, I imagine, depends principally on the kind of atmosphere maintained in the house. As regards stopping, they ought not to be allowed to make more than one leaf beyond the bunch of fruit; if they are permitted to ramble beyond this, the Vine exhausts itself in making useless wood and leaves. As to liquid manure, it should be applied while the fruit is swelling; all fluids should be entirely withheld at the ripening season. Respecting temperature, I should not attach much importance to it at ripening time, but in dull damp weather I should light fires and give plenty of air at the same time, for the purpose of keeping the atmosphere in motion. Grapes are both better coloured and flavoured when the growth of the Vine is suspended than when it is permitted to be continued. As regards the late bunch being better coloured than the early ones, possibly more air was given at the time of its ripening, and probably the Vine was altogether in a more mature condition. The fact of the Vine making a late bunch is a proof that it had been kept growing at the time of ripening the first fruit, which, in my opinion, sufficiently accounts for the crop not ripening well. If by any accident the growth of the plant is suspended, fruit of any kind, even if not half swelled, will always partially assume the colour and flavour of ripeness. This is easily acted upon in a Vinery, where the conditions are so completely under the control of the gardener. *Anon.*—My experience supplies me with the following answers to "W. C. E.'s" questions. 1. Young Vines require rather more judgment than old ones in their management, to cause them to produce the finest Grapes. 2. Old Vines, like old Melon seed, are sure to produce fruit with less management than young ones, the vigorous sap being checked in having to find its way through so many wounds (?)—inducing the production of short-jointed firm wood; but neither old Melon seed, nor old Vines, will produce so fine fruit as when they are fresh and vigorous. 3. The shoots ought to be stopped at the first joint above the fruit; then as they break stop a joint further, and a joint further, by which time the extremity of the shoot will be nearly exhausted. Laterals under the fruit should be taken clean away; and if there are any above the fruit, stop them at the leading shoots. 4. It is a barbarous practice to let Vines ramble, and then cut off great quantities of shoots; some say it strengthens the shoulder of the bunch, but that is wrong. 5. Give abundance of liquid manure, with heat at the time of swelling; as they approach ripening lessen both gradually. 6. As they approach ripeness, as I have just stated, the temperature should be gradually lessened, and more air given, and when ripe the house ought to be as dry as a sitting room. 7. The production of the black bunch after the main crop was cut is, I have no doubt, owing to the house having been kept cooler, and to the bunch being brought forward in a more natural way, though perhaps the berries were smaller than those of the first crop. *D. Kidd.*

*Syringing with cold Water, a remedy against the effects of Frost.*—Your leading article last week, on the manner in which cold acts on plants, reminds me of the following circumstance:—In the spring of 1826, or 1827, when I resided at "the Cedars" at Putney, the only border which my next door neighbour and myself had for growing early Peas, had an east aspect. A very severe frost (10°) came over that district about the 15th of May. The Peas were in full bloom on my neighbour's border, as well as mine. I syringed all mine with cold water. My neighbour, on witnessing the operation, said that he would not kill his in that way. I saved all mine, he lost all his. This taught me a lesson which I never forgot; and by the same means I have often saved the Peach, Pear, and other fruits, as well as Gooseberries, after they were a good size. I have, however, failed in the case of a continuance of frost, such as has occurred during the last two or three springs. *James Cuthill, Camberwell.*

*Gutta Percha Piping.*—A gentleman has just called our attention to an article on this subject in your Paper of the 28th December; we therefore beg to inclose you copies of some of the letters which we have received from persons who have used our tubing for the conveyance of water, which is the best answer we can give to the inquiry of your correspondent. With regard to the question of "rats," the reply we may give is, that we have yet to hear of the first case of their attacking gutta percha. The Canal adjoining our works abounds with rats, and we have never found them to touch any of our material. *The Gutta Percha Company; W. T. B. Smithies.*

## Societies.

LINNEAN, *Dec.* 17.—R. BROWN, Esq., in the chair.—Mr. Westwood made a communication on the subject of a wingless bird, discovered by Captain Poole, of the East India army, in Lord Howe's Island. This island, which was situated about half-way between New Holland and Norfolk Island, was formerly uninhabited. It had, however, been visited by Captain Poole, who thinking it capable of becoming useful as a port for provisions for whalers, was induced to attempt to colonise it, and had succeeded in inducing half-a-dozen Irish families to settle on it. The British Government had not claimed it, and it was now Captain Poole's property. On this island they had discovered a wingless bird, about the size of a rail, and which had turned out very good eating. Such a bird was not hitherto known among naturalists, and it was interesting in connection with the discovery of the great group of extinct wingless birds in New Zealand, and the recent specimen of the Notornis. No specimen of this bird had yet been sent to this country, but some were on their way.—The conclusion of Mr. Benjamin Clarke's Paper on the position of the carpels, as a means of classification of plants, was read. Mr. Jones, of Dalston, called the attention of the Fellows of the Society, after the meeting, to the presence of an Acarus in almost every specimen of moist sugar that could be obtained. Seven specimens were sent for and exhibited, and in each the presence of the Acarus was detected. In each case the animal was dead. It was stated that in the sugar, as imported from the West Indies, this creature had been found.

BOTANICAL OF LONDON, *Nov.* 29 (14th Anniversary).—The President in the chair. Various donations were announced as having been received since the last meeting. The Secretary read the report of the Council, from which it appeared that 13 new members had been elected since the last anniversary, making the Society now include 255 members. The distribution of British and foreign plants had been carried on regularly and numerously, and many valuable parcels had been received recently, the results of exertions made by members during the past summer. The Council had requested Mr. Hewett C. Watson and the Secretary to prepare a 3d edition of the "London Catalogue of British Plants," a copy of which, in proof, was laid on the table. The report was unanimously adopted, after which a ballot took place for the election of officers for the ensuing year. Mr. A. Henfrey, Vice-President, then read a brief report on the progress of botany and botanical literature during the year 1850, to the following effect: "The present year has not been signalised by any remarkable discovery or publication in the department of physiological botany. Many interesting papers have appeared on various subjects in the journals, contributing to increase our knowledge of development, and of the character of the elementary structures; but the phenomena of cell formation still present a wide field for investigation. The third German edition of 'Schleiden's Principles of Scientific Botany' has been completed, and offers one point worthy of note, namely, the author's continued assertion of the truth of his original view of fertilisation on the Phanerogamia, in opposition to almost all recent observers. A new edition of Dr. Asa Gray's useful 'Manual' has also been published. In the department of systematic botany much more activity has been displayed, so far as publication is a criterion. In addition to the numerous fragmentary notices in the botanical journals, many important separate works have appeared. A fifth volume of Kunth's 'Enumeratio Plantarum' has made its appearance since his death. Professor Unger has published a synopsis of all known fossil plants. Mr. Woods has brought out the 'European Flora,' in which he has been so long engaged. Several local European floras have been presented to the world; many of which may be noticed: 'Mayer's Flora of Hanover;' the completion of 'Fries' Summa Vegetabilium;' and the commencement of a new illustrated work, called 'Plantæ Scandinaviæ,' by Mr. Andersen. Of new editions, we have one almost constituting a new work, in the sixth edition of 'Hooker's British Flora,' by Dr. Arnott, a most valuable contribution to British botany; and a second illustrated edition of Professor Harvey's excellent 'Manual of British Algæ;' numerous other works of less general importance have contributed to swell the list. Botanists have to lament the death of many active followers of the science during the last twelve months. Professor Kunth, of Berlin, Dr. Corda, Prof. Raffeneau Delile, of Montpellier, Dr. Dietrich, well known by his horticultural works, together with Professors Moritzi, George Hecker, and Drs. Berger, Hagenbach, and Martius, the father of Professor Martius. We have more particularly to deplore the loss of a young and zealous aspirant for botanical honours, Mr. J. H. Wilson, whose awfully sudden death came like a thunder clap on those who saw him full of life, and apparent health, at our last monthly meeting."

ROYAL HORTICULTURAL IMPROVEMENT OF IRELAND.—A meeting of members was lately held at the Rotunda, for the purpose "of considering the propriety of establishing a Benevolent Fund in connection with this Society, for the relief of aged gardeners and their widows, and also, in extraordinary cases of unforeseen necessity, young men." Several resolutions in favour of the project were proposed and adopted, and at the close of the meeting a sub-committee was appointed to carry out the objects which it had in view.

## Notices of Books.

*Rambles and Observations in New South Wales.* By J. P. Townshend. 8vo, pp. 312. Chapman and Hall.

THE object of the author of this amusing book is to add something to the information accessible to persons in-

tending to emigrate to New South Wales. He gives an account of what he saw while in the colony, expresses his opinion pretty freely upon an emigrant's chances, and takes a dispassionate but, upon the whole, a favourable view of the advantages to be found in a settler's life, under particular circumstances. It is, however, to be feared that even here we have not a perfectly fair view of the New South Wales question, even although Mr. Townshend may, as he says, have finally quitted the colony, have no land to sell, and no interest in puffing any particular locality; for we find him admitting that he has "contracted a perfect horror of colonial government," and we do not see how, with such feelings, he can take any other than a one-sided view of colonial affairs.

Passing this by, we are glad to be able to say that there is much good sense in Mr. Townshend's work, and that to intending emigrants it cannot be otherwise than useful. That they will be surprised at some of his statements we entertain no doubt; for few think of paying 10*l.* an acre for land, or believe that 20,000*l.* is the necessary capital for a squatter, which our author assures us is the case. We must, however, leave the reader to examine for himself in the book the grounds upon which such opinions are founded, and confine ourselves to a string of extracts.

In speaking of the much-debated assignment system, he remarks:

"For my own part, I have arrived at the conclusion that the assignment system had not a fair trial until transportation to the colony was abolished. When convicts were annually landed in Sydney, in large numbers, as many as possible were thrust upon the public—but a small community—to relieve the Government of the burthen of maintaining them; but thousands were, nevertheless, employed in gangs, in public works—a certain method of effectually depraving them; and bush-rangers and highway robbers were generally those who had escaped from such gangs. Hence, also, on some large farms, two or three hundred convicts were assembled together, instead of being dispersed as they ought to have been; and we can hardly hope that, when they were a drug in the market, they were as well treated as when it was announced that no more would arrive in the colony; indeed, we may be sure they were not, and dreadful stories are current of cruelties suffered by the convicts, principally by means of excess of corporal punishment. Some, on the other hand, received no punishment at all, being assigned to their wives, who would precede them, and, in some cases, actually with the fruits of the crime for which the husband was transported; whilst others were made clerks in the offices of the Government, or attained some other easy berths; but it would be tedious to detail all these abuses. If the men, however, were not properly dealt with, what was once the fate of the women?"

The following bits of advice to emigrants are, we doubt not, much needed:

"The emigrant, however, should not lay out his money in the extravagant outfits that are often procured. He requires little else than bedding, three dozen shirts, a shooting-jacket or two, and a great coat. If he procure many other articles, he will find them only an incumbrance. Bush clothes he can procure at a reasonable price in the colony; and the best tailor in Sydney is Mr. Alderman Broughton.

"The emigrant should always take a handful of sovereigns with him, lest the ship may call at some port; but, beyond this, he should carry all his cash to the office of the Union Bank of Australia, in Old Broad-street, and exchange it for a letter of credit on Port Phillip or Sydney."

"On going on board some of the ships bound for New South Wales, it would be easy to imagine that one had boarded a pirate, all the passengers seeming to think it necessary to be armed to the teeth. Double guns, duck guns, rifles, pistols, swords, &c., adorn the different berths, and the passengers themselves are often in full piratical costume. But the expense of buying these arms is useless; and, if the owners of them could be followed to their destination, such weapons would probably be soon found rusting neglected in a corner. A good gun, a few bags of large shot, and a few pounds of powder will, however, be found useful in the bush; and in Sydney a good gun can sometimes be bought for a few shillings, the piratical gentlemen aforesaid being often anxious, in the course of time, to sell their weapons. Powder and shot are comparatively dear in Sydney.

"Some emigrants expend their money in buying the most absurd luxuries, such as champagne, pots of preserves (the latter lest they should be sea-sick), polished boots, and musical boxes; but these follies must be avoided. Others take out bulls and stallions. I do not think that it is worth while to take out horned cattle; but any one taking out a good stallion, as much as possible the style of the English hunter, could, by letting him, or by taking in mares, make a good thing of it. Many, again, take with them the most frightful and savage-looking dogs they can pick up, thinking therewith to frighten the blacks; but this also is unnecessary. A stallion should, of course, be insured against sea-risk."

"It is useless to say much on the subject of the books an emigrant should take with him, but I think no one would repent taking out a few standard works, and a set of the 'Edinburgh,' the 'Quarterly,' or 'Blackwood.' The most acceptable present that could be made to any friend already in the bush would be a cask of English beer; the next, a copy of 'Pickwick.'"

"Nothing ought to be more firmly impressed on a new hand in the colony, than that he must first understand the colony before he can hope to commence operations in it with success; and I know no means whereby he can obtain information so well as by travelling; and the expense of this is trifling."

"A settler must never get into debt. Money is not to be procured in New South Wales as readily as in England, and a small debt may ruin a family, as many unfortunate people who have been in arrear for their quit-rents have found to their cost. Hence, the settler must avoid debt as he would the pestilence, and never expend his whole capital, but keep a reserve fund as a sheet anchor."

"In buying land the emigrant must ascertain that it does not form part of a grant on which arrears of quit-rent are due, or the Government will quietly allow him to take possession, and then levy on him for the amount due on his purchase, and on all the remainder of the original grant also. He must also be careful that his title is not derived through a convict under sentence."

We have only to add, that of matter of this quality Mr. Townshend's book is full.

## Miscellaneous.

*Victoria regia.*—For many years this plant has been allowed to bear the name which was first given to it by an authority which we at least shall not presume to question. But some attempts have been lately made at effecting an alteration, which he, to whom the high honour was assigned of rendering the plant known, under the name of Victoria regia, is bound to resist. In "The Annals of Natural History" for August, 1850, Mr. John Edward Gray asserts that its proper name is that imposed by himself, namely Victoria Regina; because, in a Report of the Proceedings of the Botanical Society, in the *Athenæum* of the 9th of September, 1837, a description is printed of a "new genus of Water Lily named Victoria Regina, by permission of Her Majesty;" because at a meeting of the British Association, on the 11th of September, 1837, he "remarked, that it would form a new genus intermediate between Nymphæa and Euryale, and proposed to name it Victoria Regina," &c. &c. &c. He then goes on to say that in the index to the *Athenæum* for 1837, under the head of Botanical Society, there occurs, "Schomburgk on the Victoria regia, p. 661," which is evidently an error of the press, as the name in the page referred to is V. Regina. He further states that, "Shortly after the appearance of the description and figure in the 'Annals of Zoology,' the Secretary of the Geographical Society borrowed from the Botanical Society the original description and drawing of the plant; that the papers found their way into the hands of Dr. Lindley, who printed, for private distribution, 25 copies of an essay on this plant; that he adopted the view which had been stated before the Botanical Society and British Association, that it formed a genus intermediate between Euryale and Nymphæa; but that he called the plant Victoria regia, thus continuing the error of the printer of the *Athenæum*."

This is answered in the last number of "Paxton's Flower Garden," by the production of the following *précis* of the letters, &c., relative to this transaction, as they appear in the records of the letter-book of the Geographical Society:—1837, July 18th.—Letter from Schomburgk, announcing the discovery of a Water Lily, stating that he has sent two sets of drawings home, with a request that, if a new genus, he might be permitted to append to it the name of Victoria July 21st.—A packet, containing these, arrives. The president of the R.G.S. communicates with Sir Henry Wheatley. July 26th.—Sir H. W. signifies the Queen's commands that the drawings be sent to the palace. July 27th.—The president, to Sir H. W., sending drawings, and adding request that the flower may bear the name Victoria. July 29th.—Sir H. W. to president, signifying Her Majesty's pleasure, that the name of *Victoria Regia* should be affixed to the flower. Drawing returned for the purpose of enabling this to be done. July 30th.—The Sec. of the R. G. S. to the Botanical Soc. forwarding one copy of the drawings, &c., and adding, that as Mr. S. was travelling entirely under the control, and at the cost, of the G. S, the Council were of opinion that whatever drawing he may wish to present to Her Majesty should pass directly to the Queen through the hands of the R. G. S., and they therefore relieve the Botanical Society from any further trouble on that account. Aug. 1st.—Sec. of R. G. S. to Mr. S., stating that his drawing had been presented to the Queen, that Her Majesty had accepted the dedication under the name of *Victoria Regia*. Aug. 3d.—Sec. of R. G. S. to Dr. Lindley, transmitting the Queen's copy of the drawings, and requesting him to superintend the publication of the flower, and a correct description of it. Also stating, that the Queen had been pleased to accept the dedication of it, and to signify Her pleasure that it should bear the name of *Victoria Regia*, if, as believed, the flower should prove to be an undescribed genus.

Thus it is manifest that Mr. Gray's statement is a tissue of mistakes; as he has, indeed, been subsequently obliged to admit in the "Annals of Natural History" for December last. 1. The plant received the name it bears, by Her Majesty's permission, before Mr. Schomburgk's drawings were even in the hands of the Botanical Society. We may add, that it was generally known to the Council of the Royal Geographical Society, and to the numerous visitors that called to see the drawings within the first fortnight, by the name of Victoria Regia, and by no other; and that, consequently, Mr. Gray might have informed himself of that circumstance had he made any inquiry, as we think he was called upon to do, before he ventured to make public a document which the Botanical Society had been officially informed was forwarded by a traveller "entirely under the control and at the cost of the Geographical Society,"—a tolerably intelligible, although courteous hint, which most men would have known how to receive. 2. That the Editor of the *Athenæum*, in changing the words Victoria Regina to Victoria Regia, in the Index of the year 1837, did not commit "an error of the press," but silently corrected one, by employing the name which he, as a well-informed man, knew was that by which the plant would be in future called. Possibly, too, as a scholar, he saw the absurdity of the name Victoria Regina. 3. That Mr. Schomburgk's papers did not "find their way into the hands of Dr. Lindley," as Mr. Gray pretends, but were officially communicated to him for the express purpose of publication, and by the only Society which had any property in them. 4. That the Geographical Society could scarcely have afterwards borrowed drawings which they already possessed, and most certainly did not do so, if they borrowed them at all, for any such purpose as Mr. Gray asserts.

But Mr. Gray's inaccuracy does not terminate here. He says, that Dr. Lindley adopted his view, that the plant forms a genus intermediate between Euryale and Nymphæa; and in support of this assertion he quotes the "Botanical Register" for 1838, p. 11. But if the reader will consult that work, he will find nothing of the sort. Dr. Lindley's statement, before examining the plant personally, and judging merely from Mr. Schomburgk's drawings, was this:—"This noble plant corresponds with the genus Euryale in the spiny character of the leaves and stalks, and to a certain extent in the great development of the former organs; but it is, in fact, most nearly related to Nymphæa itself." At p. 12, where the result is given of an examination of some decayed flowers, it is stated that "Victoria is quite distinct from Euryale;" and the whole of the succeeding observations are made for the purpose of showing that Victoria is very different from Euryale; the last words of the little dissertation referred to being these—"notwithstanding a *primâ facie* resemblance to Euryale, Victoria is, in fact, more nearly allied to Nymphæa."

So much for Mr. John Edward Gray. Another proposal, made by Mr. Sowerby, to change the name of Victoria regia to that of V. amazonica, because it now appears that the plant was originally called Euryale amazonica, we do not think worth serious consideration. *Paxton's Flower-Garden for January.* [In order to save room, we have condensed Mr. Gray's charges, omitting what is irrelevant, and in like manner have shortened the *précis* of the correspondence.]

*Exotic Nursery, King's-road, Chelsea.*—We understand that Messrs. Knight and Perry gave the annual festival to all who are employed in their establishment, on Tuesday last, when, after regaling themselves from a bountiful supply provided for the occasion the evening was spent in great sociality.

## Calendar of Operations.

*(For the ensuing week)*

GENERAL REMARKS.

From now until the end of February is the most trying period to tender plants, placed throughout the winter and spring in pits and frames, to be preserved for the summer decoration of the flower garden, the beauty of which so much depends upon their being brought carefully through the trials that now await them, that too much attention can scarcely be paid in guarding them from excess of cold and damp. This is not the time to discuss the best way of wintering tender plants, as every one who has any to preserve, will have put his favourite or most convenient plan into use long before this. The great point to aim at now, is, to take care that no injury comes to the stock; and that whatever plan has been adopted, it be made to answer by strict attention and diligence in preventing the plants from suffering by frost, or damping off for want of air. Every opportunity should be seized to admit light and air to the inmates of all pits and frames, and to pick off every leaf that shows symptoms of decay, before the evil is communicated to others. Should severe frost continue for several days, so that no light or air can be admitted to cold pits containing such plants as Geraniums, Calceolarias, Petunias, &c., be cautious in uncovering after the frost goes, lest the too sudden exposure to the action of light should prove injurious to them. Remove the greater part of the covering first, leaving a little to shade the plants for a few hours, while air is admitted by tilting the sashes an inch or two at the back, which will enable them better to endure the sudden change from total darkness to a bright light. In giving water, much caution should be used not to cause more damp than is unavoidable inside the frame or pit, as the drier both it and the covering material is kept, the less will frost be attracted, and the healthier will the plants continue. The kitchen garden frames which are occupied with Salads, Cauliflowers, early Radishes, &c., should also share our attention; and every means we can devise should be put in practice to ensure the safety of these useful plants from slugs, and from the mould and damp, so apt to result from long confinement. The ashes of garden refuse, prunings of shrubs and hedges, or any consumable matter, sifted fine and sprinkled among young Lettuces or Cauliflowers, will

can only dry up damp, but snails and slugs will be made uncomfortable by its adhering to them, and these ashes are very fertilising. Many operations can be carried on during frosty weather with much greater facility than when the ground is soft and wet. Manures, fresh soils for reinvigorating exhausted compartments and fruit borders, and draining materials where required, can all be conveyed to their places in a much more handy and cleanly manner while the surface is hard. By forethought and activity much may now be done to forward the work of a garden, and all the hands can be fully employed even in the severest weather. Pruning the hardier kinds of fruit-bearing plants, as Gooseberries and Currants, and dressing and tying Raspberries, may be safely carried on during frost; and if snow falls so as to prevent out-door work, there will be a host of things to be done in-doors, such as making brooms, preparing flower stakes, tallies, &c. In the plant department, Orchid baskets may be made, trellises painted, crocks broken and sorted, and soils got in while in a frozen state, by which insects and their injurious larvæ are destroyed; besides a great variety of other things which may be put in readiness for the busy time of potting in the spring.

### PLANT DEPARTMENT.

The principal thing to be attended to in this department during the present month is to keep the plants perfectly free from decaying leaves and insects, and to avoid excess of heat and moisture during dull weather; but whenever there is a clear day, take advantage of it to increase the temperature a few degrees, accompanied with more air, by which the plants will be much invigorated. Avoid watering until you can moisten thoroughly the whole of the soil in the pot; and endeavour to keep a moderately dry atmosphere about all plants at this season. Although it is not a common practice to pot plants at this dull period of the year, yet, in many cases, it may be done with advantage. We find that Heaths, and many other plants which grow throughout the winter, do well when potted at this season; and we make a practice of potting all plants that require it, when they have done flowering and have begun a new growth, be the season what it may. Now is a good time to turn the heaps of soil collected during the autumn, as many insects will be exposed and destroyed by the frost; and, if after being turned, the frost continues until a crust is formed, some of the soil may be taken in this state into the shed, as it will then be quite free from insects. Sphagnum for Orchids should be collected and laid out thinly upon a clean spot, that the birds may pick the larvæ of insects out of it. The action of frost will also be of service in destroying them; and its sweetening influence will render the sphagnum more genial to the roots of the Orchids. Orchid baskets of various sorts, and blocks of any kind of durable wood, should be prepared; that when the work of shifting the plants and cleaning the blocks commences, all may be in readiness. Stoves should range from 50° to 55° at night; intermediate houses, 41° to 50°; Geraniums and soft-wooded greenhouse plants, 38° to 43°; New Holland house, the same; Heath-house, 32° to 38°. The day temperature should range from 5° to 15° higher, according to the amount of light. The practised eye will readily detect any little alterations that are required, such as removing to the warmer end of each house those plants which are a little more delicate in constitution than their neighbours, or which, from various causes, require a more favourable situation.

CONSERVATORY.—As soon as any of the flowering plants becomes shabby in appearance, they should be removed out of the way, to make room for others which are coming into flower. In arranging these, let the situation of each be suited as much as possible to the nature of the plant; some kinds preferring a shady situation, and *vice versa*. With regard to temperature, also, some require to be placed in the warmest parts of the conservatory, while others will be satisfied with a simple protection from frost.

### FORCING DEPARTMENT.

PINERY.—The fruiting pits should be kept from 55° to 60° by night, and 65° to 75° (or 85° by sun-heat) during the day; bottom-heat 80°. Admit as much fresh air as possible, moderating the quantity when the wind is very keen. The day temperature and the moisture should be regulated by the clearness of the weather, and the amount of air which can be admitted. Crownless and deformed fruit are the result of moisture being allowed to accumulate in the hearts of the plants, at the time the fruit is coming up; be careful, therefore, to avoid drip or syringing. Where the pot system is practised, the plants, in all stages, should be examined once in two or three weeks, and a portion of those whose roots have made the greatest progress should be repotted. VINERIES.—After washing the Vines and glass, the woodwork and everything else about the house should be painted, if necessary. If the outside border is not already covered, this should be done before the Vines are started. Apply about 18 inches of fermenting material, such as stable litter, and leaves, to produce a gentle warmth in the soil, before the inner temperature is raised higher than 50°; previously to which, all loose or exhausted soil should be scraped off the border, as far as the roots, and replaced by a top-dressing of charred turf, crushed bones, charcoal, and fresh horse-droppings. The inside border should also have the exhausted soil removed, and be top-dressed with a similar mixture. Commence with a gentle heat, of from 45° to 50° night temperature, and from 50° to 60° by day. The amount of moisture should be moderate at first, and increase gradually, as the buds advance in growth. Syringe freely in fine weather, and admit air daily after the swelling of the buds is observed, or weakly shoots will be the consequence.

### FLOWER GARDEN AND SHRUBBERIES.

In many damp low situations it will be found better to have the pits in which half-hardy plants are kept heated with 2-inch hot-water pipes; and as these enable us to dispense with mats or covering of any kind over the glass, they will be found on the whole to be not only the best but the cheapest. Where these are in use, care should be taken not to render the plants too tender by excess of fire heat. If the frost is excluded, it is sufficient; and air should be admitted on all favourable occasions; while, if the weather is mild and dry, the lights may be entirely drawn off for an hour or two in the middle of the day.

### FLORISTS' FLOWERS.

January is quite soon enough to put Dahlia roots in heat, in order to obtain a great stock of plants, yet some begin thus early. Nothing is so well adapted for this purpose as a small house, with a hot water tank. We would advise those whose roots have been stored in cellars, and similar places, to examine them, and it will be highly beneficial to bring them out, and expose them to the wind on fine drying days. The trouble is not much, and it may save great disappointment. After frosts, look well to all florists' flowers planted in beds, such as Pinks, Pansies, &c. &c.; they are often raised. Those in frames will require picking over, the dead leaves removing; Pinks and Carnations are peculiarly liable to be affected with a black mildew; this, if not removed, will spread to others. It will be best that all affected plants should be kept in a frame by themselves. We have tried dustings with sulphur, and with beneficial effect. We doubt not that the contrivance now in use for discharging powdered brimstone over mildewed plants would be extremely useful to the florist.

### KITCHEN GARDEN.

The most economical method of forcing French Beans is to grow them in a bed of soil, in a pit which has the advantage of being heated at pleasure, both top and bottom, by means of hot-water pipes. The best way of proceeding is to fill the frame to within 12 inches of the glass with fermenting materials, and upon this to lay 9 inches of rich loamy soil. The seeds should be sown in drills longitudinally, for as the surface of the soil will be upon the same incline as the glass, the plants will not shade one another so much as if in rows transversely. As the plants increase in size the fermenting material will gradually sink, and when the heat thereof begins to decline, it can be sustained by means of the hot-water pipes. A sowing of Lettuces and Radishes should be made on a warm open border facing the south, and covered with a little dry Fern, which should be drawn off with a wooden-headed rake during the day in fine weather. The early crop of Radishes in frames will now be progressing, and the sashes should be removed for a few hours every day when the temperature is above 40°. Let them be thinned out sufficiently to prevent their injuring each other. A sowing of Radishes, Lettuces, Cauliflowers, Celery, and a little early dwarf York Cabbage will come in early, if made under a south wall, where a covering is used for the protection of Apricots or Peaches. Some Peas of an early kind, and a few Mazagan Beans, may now be sown on an early border, taking care to prevent mice from destroying the seeds. Sowing a little chopped Furze or malt screenings in the drills will be found useful for this purpose.

### HARDY FRUIT GARDEN.

If Apricots are not already covered, it should be done as soon as possible, for their flower-buds are injured by frozen sleet much sooner than is generally believed. A recurrence of such a season as the last, when many fine trees were killed by the severity of the spring, would be unfortunate; and as it is quite possible, every available means should be adopted to ward off the effects of cold and wet. As Apricots are more tender than Peaches or Nectarines, it is my practice to cover them early in winter, by placing very thinly amongst the shoots, as soon as they are trained, some Spruce or Yew branches; and over these a canvas screen, which is readily rolled up or let down by means of lines passing over pulleys, fixed in the face of a 6-inch projecting wooden coping. The object of using the Spruce and Yew branches is to prevent the injurious effects of cold currents of wind, which often sweep along between the wall and the canvas; one of the greatest advantages arising from the use of the latter is in keeping the trees dry.

**State of the Weather near London, for the week ending Jan. 2, 1851, as observed at the Horticultural Garden, Chiswick.**

| Dec. and Jan. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 27 | 23 | 30.197 | 30.125 | 48 | 28 | 38.0 | 39 | 39½ | S.W. | .00 |
| Satur.. 28 | 24 | 30.265 | 30.235 | 46 | 28 | 37.0 | 39 | 40 | W. | .00 |
| Sunday . 29 | 25 | 30.257 | 30.030 | 49 | 35 | 42.0 | 39 | 41 | S.W. | .00 |
| Monday 30 | 26 | 29.995 | 29.841 | 51 | 45 | 48.0 | 40 | 41 | S.W. | .02 |
| Tues. .. 31 | 27 | 29.810 | 29.704 | 52 | 50 | 51.0 | 42 | 42 | S.W. | .05 |
| Wed. .. 1 | 28 | 29.707 | 29.646 | 54 | 51 | 52.5 | 44 | 42 | S.W | .02 |
| Thurs .. 2 | ● | 29.801 | 29.707 | 53 | 43 | 48.0 | 45 | 44 | S.W. | .00 |
| Average.... | | 30.000 | 29.898 | 50.4 | 40 0 | 45.2 | 41 1 | 41.3 | | 0.09 |

Dec. 27—Overcast; exceedingly fine; overcast.
— 28—Clear; very fine; clear; slight frost.
— 29—Fine; exceedingly fine; with sun; overcast.
— 30—Fine; cloudy; foggy; slight rain
— 31—Overcast; rain; drizzling rain with strong wind.
Jan. 1—Densely clouded and boisterous; rain; cloudy and boisterous.
— 2—Overcast; cloudy and mild; densely overcast.

Mean temperature of the week 3¼ deg. above the average.

**State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Jan. 11, 1851.**

| Jan. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 5 | 41.0 | 30.7 | 35.9 | 10 | 0.40 in. | 6 | 2 | 5 | 1 | 1 | 8 | 1 | 1 |
| Mon. 6 | 40.7 | 29.8 | 35.3 | 9 | 0.33 | 2 | 2 | 6 | 3 | 2 | 7 | 3 | 1 |
| Tues 7 | 40.3 | 29.1 | 34.7 | 7 | 0.31 | 2 | 2 | 6 | 3 | 2 | 7 | 3 | 1 |
| Wed. 8 | 38.1 | 30.5 | 34.3 | 6 | 0.26 | 1 | 2 | 4 | 2 | 1 | 4 | 1 | 3 |
| Thurs. 9 | 39.0 | 31.6 | 35.3 | 7 | 0.29 | 1 | 6 | 3 | 3 | 3 | 5 | 1 | 1 |
| Friday 10 | 40.4 | 29.7 | 35.1 | 10 | 0.40 | 1 | 6 | 3 | 4 | 4 | 3 | 2 | 2 |
| Satur. 11 | 40.1 | 30.2 | 35.2 | 13 | 0.83 | 3 | 4 | 3 | 1 | 5 | 6 | 1 | 2 |

The highest temperature during the above period occurred on the 6th and 7th, 1845—therm. 54 deg.; and the lowest on the 7th and 8th, 1841—therm. 6 deg.

MONTHLY DEPTH OF RAIN, in inches and hundred parts of an inch which fell at Chiswick in the years 1841 till 1850 inclusive.

| | 1841. | 1842. | 1843. | 1844. | 1845. | 1846. | 1847. | 1848. | 1849. | 1850. |
|---|---|---|---|---|---|---|---|---|---|---|
| | In. | In. | In. | In. | In. | In. | In. | In. | In. | In. |
| Jan. ... | 2.60 | 1.06 | 1.33 | 2.25 | 2.97 | 2.85 | 1.31 | 1.16 | 1.73 | 1.43 |
| Feb. ... | 0.76 | 1.32 | 2.35 | 2.27 | 0.93 | 1.47 | 0.94 | 3.12 | 2.52 | 0.95 |
| March . | 1.32 | 1.81 | 0.47 | 2.44 | 1.25 | 1.02 | 0.41 | 3.05 | 0.85 | 0.13 |
| April ... | 1.58 | 0.15 | 1.62 | 0.33 | 0.95 | 3.93 | 0.92 | 3.06 | 2.21 | 1.79 |
| May ... | 2.16 | 1.73 | 5.26 | 0.25 | 2.89 | 1.35 | 1.59 | 0.28 | 3.53 | 1.84 |
| June ... | 2.45 | 1.52 | 1.62 | 0.97 | 1.36 | 0.80 | 1.31 | 3.20 | 0.31 | 1.40 |
| July ... | 3.66 | 1.52 | 1.67 | 2.10 | 2.31 | 1.78 | 0.79 | 2.21 | 2 82 | 2.68 |
| August | 2.69 | 2.81 | 3.28 | 1.84 | 2.79 | 4.59 | 1.50 | 4.70 | 1.60 | 0.97 |
| Sept. ... | 3.71 | 8.39 | 0.98 | 1.31 | 1.77 | 1.76 | 1.66 | 2.20 | 2.49 | 2.36 |
| Oct. ... | 4.61 | 1.71 | 4.19 | 4.13 | 1.39 | 5.54 | 1.75 | 2.93 | 2.18 | 1.55 |
| Nov. ... | 3.41 | 4.47 | 2.13 | 3.06 | 2.11 | 1.43 | 2.26 | 0.90 | 1.32 | 2.03 |
| Dec. ... | 2.12 | 0.76 | 0.68 | 0.59 | 2.61 | 1.21 | 1.81 | 2.03 | 1.28 | 1.15 |
| Annual amount | 30.97 | 23.31 | 25.48 | 21.34 | 23.33 | 27.71 | 16.25 | 28.84 | 22.84 | 18.28 |

The annual amount of rain at Chiswick, on an average of 25 years, is 24 inches; consequently the amount in 1850 is nearly 5½ inches below the average; 1847 was the driest year in the present century.

## Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volumes for 1847, 1848, 1849, and 1850 are now ready, price 30s. The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—1, 2, 4, 6, 8, 11, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53.

1843—3, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

1844—All, except 46.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 25, 26, 27, 28, 31, 32, 37, 39, 40, 41, 42, 44, 45, 50, 51, 52.

1846—4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 23, 24, 26, 37, 42, 43, 46, 49.

1847—1, 2, 3, 4, 5, 6, 8, 13, 14, 16, 19, 20, 21, 22, 27, 28, 29, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

1848—2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 48, 51, 52, 53. 1849—All. 1850—All, except 41.

BIRDS: *L J W*. A lady who has had one of the birds you mention, for some years, has favoured us with the following answer: "The widow-bird is the Whydak bird, or bunting of Paradise. If resembling the specimen in my possession, it is by no means delicate; the warmth of an ordinary sitting-room is sufficient, with a shawl or something thrown over the cage at night. It lives on millet and canary-seed, but chiefly millet. In the winter it loses its long black tail, and the whole plumage changes to a dull speckled brown; in May it begins to resume its jetty and golden hues. Sometimes it appears to suffer much pain and inflammation in its legs and claws; the scales come off, but are resumed with the summer plumage. It is particularly fond of bathing, and likes plenty of fresh water; the bath should be changed two or three times a day; its song is very wild and peculiar, but pleasing; it is very fond of fresh Grass, the only green food it will eat."

CARROTS: *G L H*. It is a very curious case, and we should wish to draw attention to it. Are the roots *really* grafted together? Is there no possible deception? If the monster is indeed what you suppose, then it would be well worth sowing the seeds. We know of no similar case.

CHALK DOWNS OF HANTS: *C D*. You shall have a list of fruits next week. We have no experience of the suitability of Mexican Pines for such places, but they deserve a trial. Evergreen Oaks, certainly; Tree Box, Phillyreas, Alaternus, Turkey Oaks, Hornbeams, &c. We do not know whether Taxodium is poisonous; probably not; at least it is not sufficiently allied to the Yew to merit an unfavourable opinion. Stone Pines, Silvers, Balm of Gileads, Pinus austriaca, and uncinata are worth trying; as also are the Laricio and Pinaster, with P. halepensis, and Brutia. You would do us quite a favour if, in putting questions, you would have the goodness to write them on one side the paper, only.

CONIFERS: *Gallicus* will find that his inquiry was answered the week it was received.

HEATING: *J C*. A lecture-hall of glass and iron might be constructed cheaply on the Paxton plan; but it should not be circular: it should be either a square, or two squares side by side, or any other number of squares. It might be heated by hot-water pipes like any other place. The glass should be white.

NAMES OF FRUITS: *W Ross*. 1, Blenheim Pippin; 2, Round Winter Nonsuch; 3, Hughes's Golden Pippin. The Pear is Passe Colmar.‖

NAMES OF PLANTS: *C T—s*. Veronica salicifolia. There is nothing worth notice in the Fuchsia.—*H F Thompson*. It would save us some trouble if you would have the goodness to say whether the plant requires a hothouse, greenhouse, or what; and whence it was obtained, if you happen to know.—*R E*. A bad variety of Vanda suavis.

SMOKY FLUES: *A Z*. Smoke oozing from their sides in a pit where Fuchsias and Pelargoniums, &c., are kept, will be likely to injure the plants, even although there is very little. Cannot you stop it by parging? rebuilding the flue would be expensive.‡

VINES: *Anxious*. If their wood is *perfectly* ripened, they will not be likely to receive much injury from being turned out of doors; but if it were convenient, we should certainly prefer permitting them to remain in the house.‡

WOOD SEASONING: *J Fleet* We are making inquiries.

THE LONDON MANURE COMPANY beg to offer as under:
LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.
The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 33, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.
E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.


# The Agricultural Gazette.

*SATURDAY, JANUARY* 4, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, Jan. | 8 | Agricultural Society of England. |
| THURSDAY, — | 9 | Agricultural Imp. Society of Ireland. |
| WEDNESDAY, — | 15 | Agricultural Society of England. |
| THURSDAY, — | 16 | Agricultural Imp. Society of Ireland. |

BEFORE entering upon the drier and minuter details of the subject of FARM ACCOUNTS, we think it may be right to make a few observations on several matters connected with it. We believe, that without accounts, the proceedings of any one, whatever may be his engagements, whatever his business, must be a matter of chance speculation, and even then that the chances are entirely against him, because he is progressing in the *dark*.

We never yet knew a man who became, as it is termed, "unfortunate in business," but upon the investigation of his affairs, his books were found badly kept—or suffered to get "behind-hand," or perhaps no books were kept at all: had they been duly attended to, what was there to prevent his circumstances being thoroughly known, and a stop being put to many of his ruinous speculations, and also a due estimate made of those that were profitable. What must we say to the merchant who conducts his tradings in the manner described? the mildest term must be *foolishness*, and yet how many do so—and perhaps amongst the agriculturists the instances are more numerous; indeed, we must express our belief that often a farm is conducted without accounts at all: that is, any such accounts as can truly bear the name, many thinking "that what slips out of the kneeband falls into the boot." That is not enough—every farmer, like the merchant, should know positively the profit or the loss on every mode of cultivation, on each sort of grain, stock, &c., otherwise (in many instances it has been proved) he is pursuing his ruin; so careful indeed would we be — perhaps by some we may be laughed at for "splitting straws"—that we should recommend, in addition to the exactness required on the land, as careful an account to be kept of housekeeping, because, generally speaking, the farmer consumes, if with a large family and establishment, a considerable portion of his produce, and, when placed to the proper sources from which the consumption was derived, it would therefore form a no less item of *profit*.

It will not be out of place if we mention another source of profit or loss, as the case may be, in the cultivation of a farm—we refer to the amount of capital employed. If the moneys employed are too little to meet all the requirements without a pressure, that pressure will oblige the farmer to neglect his culture, or to force sales at a great disadvantage, or perhaps do that which is more ruinous still, viz., borrow money at a rate of interest, perhaps greater, with the expenses attending it, than the average profits of the farm; when, on the other hand, if he employs a larger capital than is necessary, that very capital becomes a clog, as the land must be charged for the interest of the capital employed, and if nothing worse is the result, it changes the farmer into a speculator, and the meaning of that word, surely, points out to everyone that the chances of success cannot be so certain.

In pursuing our subject, we propose to ourselves the task of framing a system, and conducting the accounts through the period of one year; viz., from Michaelmas to Michaelmas—the extent of the farm to be 100 acres of arable, pasture, and woodland, in order that as much as possible every circumstance may be embraced in which a farmer can be placed. At the same time we must observe, that although we have fixed on 100 acres as the extent of our farm, we are perfectly aware that, under ordinary circumstances, such an acreage would be cultivated at proportionally a much greater expense, as the number of horses, implements of husbandry, &c., must be sufficient to meet every requirement; whereas, if the farm were 500 acres, those items would not have to be, perhaps, more than four times the number. But this circumstance is not for us minutely to consider. Our system will be the same, yet we deem it right to bring this matter before public notice, in order that we may not be misunderstood. We shall not presume to teach the farmer how to make the most from his land, but simply how he is to keep his accounts, and by them to discover that system which will best remunerate him for his skill and labour.

From the circumstances of a residence in Essex—having witnessed the modes of cultivation there pursued, more than in any other county—we shall consider the farm situate in that county. Of course the nature of occupation, whether under a lease or not, whether under a corn rent, or otherwise, in the *present* case, is of no importance to the discussion of the subject before us. No doubt it does, to a great extent, influence the farmer; for, in the one case, he is induced to farm with a "free and open hand," and the system pursued is both better and more profitable; whereas, in the other hand, he fears to calculate beyond the one year.

It may be right, ere we close this somewhat lengthened introduction, to enter upon one subject more, with reference to this 100 acres: on the amount of capital required for its proper cultivation, there may be some difference of opinion, as some farmers (according to their views of farming) consider 8*l.* per acre sufficient, some 9*l.*, some 10*l.* Each may be right in his estimate, as the nature of the soil will necessarily greatly influence these opinions; but perhaps 10*l.* per acre will be the safest amount both for landlord and tenant; and throughout our calculations we shall consider it so, and name the capital employed, 1000*l.*

Having thus prefaced our subject, we shall, in our next communication, in another section of this Journal, inform our readers that we have hired our farm; — that a valuation for incoming has been effected; that we have taken possession, and have commenced operations, the nature of which we shall endeavour to render as clear as possible. *F.*

## THE DRAINAGE ACTS.

AN anonymous correspondent, describing himself as "An Assistant Commissioner under the Acts," has, in page 811—No. 51, 1850—made an attack upon his official superiors, for their administration of the provisions of the Drainage Acts. I believe that attack to be altogether unwarranted, for I happen to know that it is a rule at the Inclosure Office, that no assistant commissioner shall be allowed to act as inspector upon any lands in which he may be interested, either as proprietor or agent, or as a contractor for the works to be performed; and in my experience of the carrying out of the provisions of the acts, which, I daresay is not less than that of your correspondent, I know of no instance in which this rule has been broken through; I therefore make bold to assert that, upon further inquiry, your correspondent will find that he has been misinformed; and trust, that for the credit of your excellent Paper, he will at once either withdraw or substantiate his charge, by naming the party, who, holding the appointment of steward, has been allowed (the commissioners being cognisant of such connection between the parties), to act as assistant commissioner for the works executed under the provisions of the Drainage Acts, on the lands of his employer. Again, as to "office expenses turning a very pretty penny for somebody or other," as your correspondent phrases it; if he really be what he styles himself, he ought to know that there are no office expenses which can by any possibility benefit any person there; that, in fact, the only expenses required by the office, are repayments of sums paid out for advertising, as required by the act, &c. It is an unavoidable evil that some of the expenses are as great in the case of an application for a few hundreds as a few thousands of pounds; and also that the expense of inspection is not materially less, especially if the money be required in small portions; but your correspondent has shown that inspection cannot be dispensed with; and it must be borne in mind, that the advice of the inspector is worth something to the individuals draining under the acts; indeed, in some cases a great deal, as for instance, in one case within my own knowledge, where it seems probable it will be the means of saving 500*l.* on one single application. I cannot at all see what the tax-paying portion of the community have got to do with the Drainage Acts in their capacity of tax-payers, as they certainly cost them nothing, and your correspondent is not likely to find many adherents among the landed interests; for they one and all seem highly pleased with the measures and their administration; and in truth they have no cause to feel otherwise, for the measures themselves are affording the means of greatly improving their estates, at a very small cost, without any trouble with titles or law, and it is well known that no public board has more anxiously endeavoured to carry out cheaply and well the measures entrusted to it than the inclosure commission has in the instance in question. I would not have noticed your correspondent's remarks at this length but for the fictitious importance they acquire by obtaining a place in your widely circulated Paper. *John Girdwood, Chirk, North Wales.*

## EXPERIMENTS ON CULTIVATION.

IT is the more necessary to communicate to you the results of my agricultural experiments this year, because they in some degree contradict my former experience, and disappoint the expectations which theory seems to authorise. On the disputed question about the best quantity of seed to be sown for a crop of Wheat, I have hitherto found it about the mean between four pecks and ten; this year the evidence is in favour of the smallest quantity. In order that the effects, whatever they might be, should not be attributed to the mode of cultivation, each experiment was conducted in three different ways; part was broadcast, part dibbled, and another part was dropped by hand after the presser had formed its well consolidated lines; in a wet season this is a good method of avoiding the inconveniences of the dibble, which in a retentive soil forms cups, that hold the water and exclude the air, till the seed is rotted; it is moreover more expeditious, and forms an equally firm seed bed. The last season, however, did not require such precaution, and perhaps from the absence of wet, the pressure of the dibble was more effective; certain it is, that the produce was inferior to the other.

| | Corn. | | Straw. | | Average of Corn. |
|---|---|---|---|---|---|
| | bsh. | gal. | Trusses. | lbs. | bsh. gal. |
| 4 pecks per acre sown broadcast | 32 | 4 | 108 | 32 | |
| 4 do., dibbled ... ... ... | 32 | 4 | 116 | 24 | 31 5 |
| 4 do., dropped ... ... ... | 30 | 0 | 103 | 12 | |
| 6 do., broadcast ... ... | 25 | 0 | 62 | 8 | |
| 6 do., dibbled ... ... ... | 31 | 2 | 108 | 32 | 27 7 |
| 6 do., dropped ... ... ... | 27 | 4 | 62 | 8 | |
| 8 do., broadcast ... ... ... | 22 | 4 | 69 | 24 | |
| 8 do., dibbled ... ... ... | 30 | 0 | 97 | 28 | 26 5 |
| 8 do., dropped ... ... ... | 27 | 4 | 80 | 0 | |

It may be observed that in the two last trials the broadcast produced less than either of the others, and in the first, though it was on a par with the dibbled in point of grain, it was inferior to it, where it might be supposed to have the advantage—in the quantity of straw; but it is more to my present purpose to observe, how much the average quantity of corn is diminished in proportion as the quantity of seed is increased; and this can scarcely be the effect of accident; for it is confirmed by another series of similar experiments, the results of which so nearly coincide with these that it is needless to occupy your columns with the particulars, but a greater quantity of seed was tried, and it may be a warning not to be too precipitate in drawing conclusions from a limited set of experiments, when it appears that if only 6, 8, and 10 pecks had been tried against one another, the evidence would have seemed in favour of thick sowing; for in the last case the average was 28 bushels; higher, that is, than either of the others, but when compared with the produce of the thinnest sowing it falls below it by nearly 3½ bushels, which added to the difference in seed makes up a loss of almost 5 bushels per acre; another series of experiments was intended to show whether a variety or increase of food to the plants would materially affect these proportions. The fertilisers used were guano, phosphate of potash, sulphate and muriate of ammonia in different proportions; but they all tell the same tale—all increased the produce, but the amount of that increase observed much the same proportions.

The average from 4 pecks was 34½ bushels.
" 6 " 32¾ "
" 8 " 30 "
" 10 " 31¼ "

Nevertheless, when the experience of one year contradicts that of several, and not only in one locality bu

generally, it is obvious that some peculiarity of the seasons must have been the cause; and in point of fact, the preceding autumn was very favourable; there was not too much wet for the seed, or for the young plant, and it suffered less than usual from the winter. If it were sure that it would always escape the disasters which commonly befall it, and the same number of plants always survived the winter, four pecks of seed, or even less, might possibly suffice, but it would be folly to act upon that calculation, till it can be shown that such seasons may be taken as the rule and not as a rare exception; and that besides the weather, all the living foes arrayed against the crop—insects and slugs and worms and birds, will not claim for themselves more than half of that which the cultivator hopes to reap. If it be asked, how it happens that under such favourable circumstances the actual yield of corn per acre is so much less this year than it was the last—less by several bushels—the answer is one among many proofs, how much the presumption of imagining that the course of nature can be controlled by any amount of skill or expence, is rebuked by Him who directs its arrangements. Never was there a greater promise of abundance; but just at the critical period, when the Wheat was in blossom, it was beaten down by thunderstorms, and the thickest and heaviest crops had the least power of recovering themselves, and the ears were blighted or only half filled.

Of all the ingredients detected by chemical analyses in the structure of Wheat, two of the most important aids to increased fertility are nitrogen and phosphoric acid; in order to obtain enough of the former for one extra bushel of Wheat above the ordinary produce, it has been proved that 5 lbs. of ammonia must be added to the soil; and so many pounds of the latter are taken away from it every year, in the shape of grain or mutton, and not returned in farm-yard manure, that it seems reasonable to fear that in land long under cultivation, the natural supply of it must be quite exhausted. Hence it would appear that Mr. Solly was quite justified in asserting that phosphate of ammonia is a most valuable manure, since it contributes the two ingredients most needed for the increased development of the plant. I will not say that the experience of this year has proved the contrary, because, not having examined the article sold under that name before it was used, I cannot be sure that it was the genuine salt; certain, however, it is, that it has appeared to be almost entirely inert. It increased the quantity of straw a little, but the quantity of corn not at all; moreover the salts of ammonia are usually beneficial to Grass land; but there too the phosphate has failed, and it is not only in this combination that phosphoric acid has disappointed me. Combined with another base, most essential to vegetation—potash, it was equally inactive; and when mixed with some other manure, the effect was no more than might be expected from that other, if it alone had been employed. Nevertheless it must be remembered, how much uncertainty attends all these experiments; the same facts must be repeatedly verified, to clear them from the suspicion of arising from accidental causes, and it is only a long experience that can be taken as the test of truth; for it will be seen from the following statement that if too much reliance were placed upon a few partial experiments sentence of condemnation must be passed upon some of the most approved fertilisers.

| | Corn. | Straw. | Cost. | Loss, per acre. |
|---|---|---|---|---|
| | bsh. gal. | Trs. lbs. | £ s. d. | £ s. d. |
| 240 lbs. of Peruvian guano | 32 4 | 122 8 | 1 1 5 | 1 1 5 |
| Without it ... ... ... | 32 4 | 108 32 | | |
| 1 cwt. muriate of ammonia | 31 2 | 111 4 | 1 2 0 | 1 2 0 |
| Without it ... ... ... | 31 2 | 105 21 | | |
| 1 cwt. guano+1 of muriate of ammonia ... .. | 25 0 | 105 20 | 1 12 0 | 1 12 0 |
| Without it ... ... ... | 25 0 | 62 8 | | |
| 160 lbs. guano+80 of muriate of ammonia ... .. | 32 4 | 80 0 | 1 10 0 | 1 10 0 |
| Without it ... ... ... | 32 4 | 69 24 | | |

Some deduction must be made from this statement of loss, on account of the increase of straw, which in some cases was very considerable, and in one where the phosphate of potash was combined with muriate of ammonia, amounted almost to double, but still it has an aspect of great discouragement towards experiments; and yet it would be a great mistake to be discouraged from making them; for after deducting all the expenses and losses of 27 experiments, there remains a balance of profit in their favour to the amount of five guineas. I will only further add upon this subject, that if the inactivity of manures consisting of ingredients most necessary and most apt to be deficient is to be accounted for on the principle that the earth already contains them in sufficient abundance, and if there is no reason to suspect that any others can be deficient, we are driven to acknowledge that there are conditions of soil which prevent it from producing more than a certain maximum peculiar to itself, and which cannot be corrected by any applications of art, for in these chalk soils no drainage is required. There is, indeed, a mode of improving its texture, which I still persist in recommending, where it is not all too stiff, and which may be practised with great advantage wherever there is plenty of wood or other fuel. By burning the whole surface of one-half of a field, it bore last year an excellent crop of Turnips, without the aid of farm-yard dung; and this year it has produced 10 bushels of Barley and 13 trusses of straw more than the other part which received 18 loads of farm yard manure. But if some of the opinions which I had previously entertained have been much shaken by these experiments, there is one at least which has been confirmed by them, and one which is very intimately connected with the preceding discussion. It is not the first time that I have endeavoured to show how much we are apt to overdose our land with some favourite manure, and to forget the old adage, that "too much of anything is good for nothing." The following instances illustrate this:

| | Hay. | |
|---|---|---|
| | Tons. cwt. lbs. | ——— s. d. |
| 276 lbs. of guano on grass produced ... ... ... ... | 1 12 76 | loss 11 2 |
| The adjoining land unmanured | 1 9 12 | |
| 224 lbs of guano ... ... ... | 1 10 60 | ,, 3 3½ |
| Adjoining land ... ... ... | 1 6 8 | |
| 140 lbs. of guano ... ... ... | 1 10 0 | profit 15 7½ |
| Adjoining land ... ... ... | 1 2 56 | |
| 112 lbs. of guano ... ... ... | 2 9 12 | ,, £1 12 10½ |
| Adjoining land .. ... ... | 1 18 24 | |
| 112 lbs. of muriate of ammonia | 1 11 8 | loss 6 3 |
| Adjoining land ... ... ... | 1 6 8 | |
| 86 lbs. of muriate of ammonia | 1 10 110 | ,, 0 4½ |
| Adjoining land ... ... ... | 1 6 8 | |
| 56 lbs. of muriate of ammonia | 1 12 46 | profit 7 3 |
| Adjoining land ... ... ... | 1 7 16 | |

The benefit derived from these manures was obviously in the inverse ratio of the quantities employed; and while all increased the growth of the Grass, they could not stimulate it beyond a certain point, and therefore the larger proportions did not repay their cost; but here again I must repeat what I remarked before, that notwithstanding several failures, that system of manuring answered well, for in summing up the results of 16 experiments on Grass, the gain exceeded the loss by 3*l.* 15*s.* 6*d.*; and it is a comfort to know, that the phosphates and ammonia which appear at present to be useless, will not be carried away by the winter rains into the bowels of the earth, wherever there is a foot or two of strong soil above the chalk, but are retained by it, and stored for future use, and may improve the pasture for the sheep. My garden experiments this year contribute something to the same conclusion, that production cannot be indefinitely forced, for having ascertained by the experience of many successive years, that in this soil at least (I presume not to lay down rules for others), the hoeing of Wheat is a useful practice, provided that it be not done too late in the spring, and that the soil be well consolidated by rolling or other pressure afterwards, that was no longer to me a subject of inquiry, but the proportions of food that may most advantageously be administered to growing plants is still an unsettled question, and this I proposed to investigate, retaining the six salts which I have always employed—sulphate of soda, phosphate of soda, muriate of ammonia, nitrate of potash, phosphate of potash, and sulphate of ammonia. The four first were tried separately in this way; half of 16 spaces, each of which contained five rows, was watered with the respective solutions in the proportion of 2, 4, 6 and 8 ounces; the other half was sown with seed which had been previously saturated with the solution. The answers to these questions are not quite satisfactory, because it was necessary to burn the annual weeds and the creeping roots on the spots which produced them, since it would have impoverished the ground too much to remove them from it, and they would have propagated themselves too much if they had been dug in; thus some inequalities were necessarily produced on the spots where they were burned. It is remarkable, however, that the seed which had only been steeped in the two salts of soda, produced not only more corn, which might happen if the crop were very rank, but more straw also, than all those which were watered with the solutions. From the nitrate of potash the straw was exactly equal, the corn a little in favour of the solutions. The muriate of ammonia was successful in the two larger doses, but in the two smaller the produce both of corn and straw was less than from the steeped seed.

This communication having extended already to too great a length, I will conclude it with two or three curious facts. Where the sulphate of ammonia and phosphate of potash were applied separately and in combination to equal plots of ground, half of which was sown with good seed and half with bad, the bad seed having its vacancies filled up in the spring by dividing the roots of those which grew, and watering them with sulphate of ammonia, produced 6 lbs. of straw more than the good, and the total was 50 lbs. more than grew on the same ground seven years ago, though it has borne a crop of Wheat ever since, and bore as much corn as it did six years ago, notwithstanding the unfavourable season. That part which has been always hoed, but never manured, except with its own ashes, produces exactly the same as at first. *L. Vernon Harcourt.*

## AGRICULTURAL MEDLEY.

*Thick and Thin Sowing.*—I have for more than 30 years been connected with Wheat growing in Ireland, and it has fallen to the lot of few to try so many experiments on such a variety of soils, in so many various parts of the island, and under such varied circumstances; and the result of my investigations lead me to agree with Messrs. Hewitt Davis, Mechi, and others, who advocate thin sowing as a source of individual as well as of national profit. I will, out of many other cases, give you two that have occurred with myself. One was on a good Wheat soil in the county of Dublin, where from 70lbs. of Wheat "ribbed in," in beds averaging 14 feet wide, furrows 12 inches wide, and 12 to 15 inches deep, "double snovelled," I reaped 20 barrels, of 20 stones each, to each Irish acre; that is, 80 stones produce to each stone sown. The next I will give, was from an Irish acre of Wheat land of good quality in Kerry, where I had 15 barrels, of 20 stones each, from a seeding, broadcast, merely "harrowed in," of 35 lbs of seed, or 120 to one.* The crop in Dublin was of course more profitable, not so much, or, perhaps, at all, because I used double the seed, but because the land was better, and tilled by the shovelling of the furrows in a better manner. I have, since I last wrote to you, sown Wheat in this island with 60lbs of seed to the statute acre, being 4 lbs under a bushel; and from the present appearance of the crop, though on land rather worn out from a previous cropping (bad farming, you'll say, before I tell you that circumstances admitted of no other), I rather think I would have plants enough, though broadcast, for half as much more land. With the result of this crop, and others under other circumstances, you shall be duly apprised, if I am spared †

*Deep and Shallow Draining.*—Like the Wheat growing, I have had much experience in this department, and like many others, had very strong prejudices for some time against the application of deep drains to all soils, and under all circumstances. My prejudices are not yet totally removed, yet they are sufficiently so to make me believe that the deep draining is far preferable, generally speaking, on the great majority of our Irish lands requiring drainage, and, though I am draining lands, here now, which six weeks ago appeared to require none, and where many now would wonder where the water could come from, as little, if any, appears at the depth of 2½ feet; nor is the wonder less on seeing a large supply given out at the depth of 4½ feet. I will, hereafter, when the work is done, give you a more lengthened detail of this operation. I am not surprised at the fact mentioned by Mr. Davis, of the garden pond's drying under the circumstances described, yet he may be a little surprised on my relating a fact that came under my own observation near the railway station at Kildare village, on the Great Southern and Western line. There is, or was, when I last saw it, a little watering pond near the road that crosses the railway to the south-west of the station, within 12 to 18 feet of the railway cutting, in depth, I think not less than the same number of feet. Yet the water remained *in statu quo* in the pond, as neither crack nor fissue appeared to give it vent into the deep cutting.

*Roots in Drain-pipes.*—I once found in a drain 4½ feet deep, a mass of roots which had completely choked the inch and half pipe, though laid but 18 months. These roots were from a Mangold Wurzel crop just removed off the land where they had grown.

*Concrete in the ends of Drains.*—I have repeatedly found wedge-shaped masses of concrete as hard as the mortar found in "the round towers of Ireland," completely shutting in the water. This concrete I suppose must have been formed of the lime held in solution till brought by the water to the end of the drains, and then acted upon by the atmosphere. The remedy against this evil, I find to consist in not allowing any water to settle in the drain, when I could prevent its doing so at the extremity. I, as yet, know no remedy against the entrance of roots into the pipes, except such as would make "the cure worse than the disease." Has any of your readers yet made such a discovery?

*"Irish Moss," as Food for Man and the lower Animals.*—The plant noticed in your last, is, I suspect, not a Moss at all, though in Ireland called by the natives, "Carrigeen Moss," which in English means the Moss of "the little rock," collected on the rocky shores in many places, but more especially on rocks which stretch out into the Atlantic Ocean, on the western and southern coast. I have never known it to be used in this country as a food for cattle. I have never seen it, but in a dried state, sold at a high price in the apothecaries' shops, and have been treated to it in the house of a clergyman in Mayo, 20 years ago, as a most delicate luxury, which it really is, when properly cooked. Having never seen it growing, I can neither describe nor find such a description of it, in either the "Flora Hibernica," or "Irish Flora," as to justify my saying more about it, than to recommend the notice of it to your botanical friends, at this and the other side of the channel. There is another marine plant, found on the coasts of Ireland, called "Dhulse," or "Dhilisk," set down by Doctor Mackay, in "Algæ Rhodospermæ Flora Hibernica," Part 3, No. 6, page 195; and called *Rhodomenia palmata*, which is collected by the poor people, and sold to parties who give it as a treat at fairs and markets. This, with many others of the Algæ, I have known to be eaten by cattle, pigs, and even horses, on the coast, or when collected amongst other marine plants as a manure. Indeed, many of these plants have been, and, I fear, still continue to be eaten by the starving Irish, especially in the southern and western coasts; cheap as are provisions, and heavy as are the poor-rates. Would that our poor people could enter into a commercial exchange with our sea plants, for the Bean meal to whose value you compare the Moss in question. You will now naturally ask, why not grow the Beans ourselves? aye, "that's the rub," which brings me to another subject, namely:

*Bean Culture in Wexford.*—A part of which is, and long has been the best, if not, the only district worthy of the name of Bean growing in Ireland. In the few

* The seasons were peculiarly favourable for Wheat growing.

† I cannot agree in the opinion expressed by a former writer of the great value of the Mummy Wheat. I am trying it again.

remarks on this head, I will confine myself to the immediate locality in which I am situated. The land designed for Bean culture is that in which there had been previously a corn crop ; and sometimes the land selected is meadow or pasture land, "ploughed out of the lea," in September, October, or November, into beds from 4 to 5 feet wide, on which is laid from 10 to 40 tons of farm-yard dung, or compost of sea weeds, road scrapings, &c., to the Irish acre. When this compost is spread on the ploughed land (it is sometimes spread on the land before being ploughed), it is then either lightly covered—or not covered at all—with a couple of inches of earth, either from the furrow or other beds, according to convenience ; the seed then, in November or December, sowed broadcast, at about 20 stones per Irish acre, and covered from the furrows, like to the planting of Potatoes in "lazy-beds," so called, and generally left so, till the crop is fit to cut, the August or September following, when the produce will vary at from 5 to 20 barrels per acre, according to the goodness of the soil, or favourableness of the season. The kind thus grown is called the Wexford Bean, in character something like the winter or Russian Bean, of late introduced into Ireland. I am trying several varieties of Beans this season, under a great variety of circumstances, and will give you the result, if I think it of any importance to any class of your readers at either side of the channel. *Edward Carroll, Beg Erin, Wexford, Dec. 11th*, 1850.

## EXPERIMENTS WITH MANURES IN THE GROWTH OF TURNIPS.

A NUMBER of experiments, for the purpose of testing the comparative values of various manures in the growth of Turnips, were conducted last summer on the home farm at Craigie House, for the information of the St. Quivox Farmers' Club. At the request of Mr. Campbell, I examined the different lots, along with Mr. Smith, Nursery Hall, on the 3d of December ; and the Turnips were then taken up, cleaned, divested of tops and roots, and carefully weighed under our surpervision. And I now have the honour of stating to the club the nature of these experiments, and the results which have been ascertained.

The side of the field on which the experiments were made is well adapted for a comparative trial of manures, as the soil is of a very uniform character. It is naturally poor—the soil consisting principally of a hungry grey sand ; but, under the liberal management of Mr. Campbell, it has been much enriched. Of this there is evidence in the fact that the lot in the experiments which got nothing produced a considerable crop. The usual experience of farmers is that, when there is nothing applied to Turnips in the shape of manure, the return is also nothing. The field, therefore, was in good condition previous to the application of manure for the Turnip crop. There were fifteen lots, each of which consisted of three drills ; and the centre drills of the lots were alone weighed, that the result might not be affected by the influence of particular manures upon any Turnips in neighbouring drills, which might send out their roots unusually far in a lateral direction. Nos. 1 and 2 extend from top to bottom of the field. The other experiments were in small lots of four rods in length ; but they were made with the utmost precision. The drills were drawn 27 inches wide, and the Turnips singled out 12 inches apart. A few plants had been destroyed, and others injured by wire-worm ; but, so far as could be judged from observation, the comparative results were not materially affected by this means, as the different lots appeared to have suffered very much alike.

The first and second lots are the most important experiments. They were manured respectively with dung, preserved under cover according to the dicta of chemists, and various eminent agricultural authorities ; and with dung preserved on an uncovered dung-stead, as is commonly practised. These lots were each manured at the rate of 40 farm cart-loads per acre. The lower part of the field is a heavy clay. We therefore weighed 4 rows near to the foot of the drills, in order to have a duplicate of this interesting experiment. These I shall describe as lots 3 and 4. No. 5 was manured with Peruvian guano, at the rate of 7 cwt. per acre ; 6, with 7 cwt. dissolved bones ; 7, with 25 cart-loads of dung and earth compost, and 3½ cwt. of guano ; 8, with 25 loads of compost, and 3 cwt. of dissolved bones ; 9, with 7 cwt. of M'Call and Co.'s manure ; 10, with 7 cwt. of guano and dissolved bones, mixed in equal proportion ; 11, with 25 loads of compost, and 3 cwt. of M'Call and Co.'s manure ; 12, with 25 loads of compost and 3 cwt. of dissolved bones ; and to No. 13 no manure of any kind was applied. The Turnips on these lots were the green top Swedish variety. Lots 14 and 15 were golden yellow Turnips. The former of these was manured with water docks, and 3 cwt. of dissolved bones ; and the latter with Nettles, and 3 cwt. of the same potent auxiliary. I append the result in a tabular form, stating the weight on 4 rods, or 66 feet, of a drill in each lot ; and likewise the rate of produce per imperial acre. The produce per Scotch acre may easily be ascertained to a nearness, by adding one-fourth to the amounts stated.

| | lbs. | tons | cwt. | qrs. |
|---|---|---|---|---|
| 1 ..... | 159 ..... | 20 | 16 | 2 |
| 2 ..... | 156 ..... | 20 | 8 | 2 |
| 3 ..... | 180½ ..... | 23 | 12 | 3 |
| 4 ..... | 179½ ..... | 23 | 10 | 0 |
| 5 ..... | 194 ..... | 25 | 8 | 0 |
| 6 ..... | 159½ ..... | 20 | 17 | 0 |
| 7 ..... | 171 ..... | 22 | 7 | 2 |
| 8 ..... | 177 ..... | 23 | 3 | 2 |
| 9 ..... | 134 ..... | 17 | 11 | 0 |
| 10 ..... | 176 ..... | 23 | 1 | 0 |
| 11 ..... | 181 ..... | 23 | 14 | 0 |
| 12 ..... | 168 ..... | 22 | 0 | 0 |
| 13 ..... | 47¾ ..... | 5 | 15 | 3 |
| 14 ..... | 190½ ..... | 24 | 19 | 0 |
| 15 ..... | 172 ..... | 22 | 10 | 2 |

It will be observed that the difference between lots 1 and 3, which were manured with dung kept under cover, and 2 and 4, manured with dung kept uncovered, is so trifling as to be practically of no moment. The lot grown on 7 cwt. of guano is much superior to that on an equal weight of dissolved bones, and is the finest in the field—the produce being at the rate of nearly 32 tons per Scotch acre. But again, 3 cwt. of dissolved bones are found to be as good an auxiliary to the dung compost as 3½ cwt. guano. M'Call's manure applied alone is a signal failure ; but it seems to be superior to guano or dissolved bones as an auxiliary. I am not acquainted with the composition of this manure ; but the experiments lead us to suppose that, while some of its constituents are favourable in a high degree to the growth of the Turnip plant, it fails when applied alone to a light soil to sustain the growth during the autumn months, and to produce a bulky crop. The crops of yellow Turnips grown upon water docks, and nettles, with the aid of dissolved bones, are excellent, and point out the propriety of putting to use every description of vegetable matter about the farm.

But the chief feature of interest involved in these experiments is the comparison between the crops grown on farm manure kept under a roof, and those on dung kept in the usual manner. It is an important contribution towards a solution of the question—Whether is it profitable to roof over manure heaps at farm steadings ? It is needless to expect that this point will be settled in the laboratory of the chemist. As in many other things, the farmer must, in all likelihood, find out the way for himself, and the chemist will afterwards tell him why his practice is correct. At a recent agricultural meeting, Professor Way, when asked whether the advantages gained by covering a manure heap were worth the expense, replied that "the question was an unfair one, as he could not be supposed to know what the expense would be ; but as a principle he would say, by all means cover it over, and if they must dilute their heap, dilute it when they wished, and not let the heavens do it for them. Even if mixed with soil, he wished to say that it would be better to cover it." It may as well be said, however, that if the heap must be diluted, in order to keep it in a cool condition, it can in no other way be so cheaply done as by the rains ; and if these should wash out a portion of the soluble fertilising matter, a good tank can be constructed to receive it at far less expense than a large roof ; and besides, we have here a fact, and one fact is said to be worth a number of theories, that the manure kept in the open air at Craigie Home Farm last winter was as valuable for the growth of Turnips as that kept under a roof. The quality may be a little lessened by exposure ; but what remains appears to be, weight for weight, of equal quality. Nor is it likely to lose much if mixed with soil containing a considerable portion of alumina. Professor Way has himself shown, by his admirable discoveries, that such soils possess the power of absorbing and retaining the fertilising properties of manure in so effectual a manner, that no amount of rain will wash them out. With this knowledge it is difficult to discover what great good can result from roofing over a heap of dung mixed with earth. In these times it will not do for farmers to undertake expensive works which may be of doubtful utility ; and it is therefore satisfactory to find that some progress has been made in the accumulation of data, from which a correct judgment may be formed. A few more of carefully conducted experiments to confirm or disprove those of our respected President, will be the simplest way of setting the matter at rest ; for, with all deference to those who guide us to principles, it is facts from the field which will most readily influence practical men, at least so long as the knowledge of these guides is so incomplete that their deductions are frequently found not to be trustworthy. It will probably be found that dung which is exposed to the summer sun loses more rapidly than that which is winter made ; but in the generality of cases at present, the majority of farmers will concur that about almost every farm-steading there are many extensions and improvements remaining to be effected, which are of much more urgent necessity than roofs over manure-heaps. *Reported to the St. Quivox Farmers' Club by James Drennan, Secretary.*

## Home Correspondence.

*Liquid Manure.*—"C. L.," of Cirencester, ought to have had a more correct statement of things before he put the same on paper. The huge brick tower that he mentions is not for liquid manure at all, but a reservoir for water for the mansion and fountains. The quantity and complexity of the machinery cannot be so very great. When a common blacksmith, at 1*l.* and a house a week, has to shoe above 30 horses, and farm work ; can manage the same machinery, with the assistance of two boys at 10*s.* 6*d.*, who were accustomed to attend the pigs and dogs, and have never been five miles from where they were born. "C. L." ought to have enquired what was the nature and requisites wanted. He would have then found that the open sheds were for summering hunters, and that air was required. They are also all boxes and not stalls. The enclosing of these in the winter for beasts, the applying liquid to the already formed heaps of manure, are mere child's play. There is a reservoir of liquid manure, and now comes some of the results from the application of liquid manure—6 quarters of white Wheat to the acre. There is at this present time, on the same field, as good a crop of Mangold and Cabbage as any farmer might wish. Large crops of Italian Grass, and last, though not least, if carried out largely, as Mr. Kennedy, of Myremills, in dry weather, at a cost of 1s. per acre ; the being able to plough and get in the seed directly, thus saving many ploughings at a time, when it is a great object to get in Swedes, and the ensuring of a crop. It is easy to find fault, but truth tells its own tale. I cannot perceive why "C. L." has made such statements, unless he has some underhand object. It is unfair for any person to go round the country to look at farms or machinery, and then, without giving notice to the owner, to insert that which is not true. *J. J. W., Reading.*

*Mangold Wurzel.*—Your correspondent "B. T." seems astonished at his plants not coming up true, and some of them being "runaways." His dressing of 4 cwts. of Peruvian guano per acre was sufficient to make the whole crop run away. We know an instance this season of such an occurrence. Dry weather will "set the plants up," and especially where there is a lack of diligence in having them hoed ; the more attention this crop receives in the early stages of its growth, the more abundant and certain will be the yield. Plants once set up, and especially in strong land, there is little hope of a good crop—sandy loams suit them the best. We generally allow 1 cwt. of guano to an acre, and this mixed with other manure. The same we apply to Swedes, mixed with bone-dust, ashes, and urine. There is no doubt "B. T." might have had true seed in the first instance, but his plants were unquestionably inoculated ; and distance, and the absence of any other variety near him, would be no hindrance to such an occurrence. The above root is becoming more and more cultivated ; it affords an excellent food for pigs during the months of May, June, and July, when other food is scarce. We, ourselves, did not this year get our crops in till the 18th of May, somewhat late no doubt, but it proved the heaviest crop we have ever grown. Two, or three at most, of these ran to seed. Of all varieties of this root, all agree in one thing, that the Yellow Globe surpasses in weight and bulk of crop all other varieties. *X. Y. Z., Hants.*

*Scotch Farming.*—Mr. Pusey's remarkable speech at the annual meeting of the London Farmers' Club, ought to appear in your columns. *M. S.*—We subjoin a portion of it:—They had heard for a great many years, and many gentlemen believed in, the great superiority of Scotch farming to English farming. He believed in it once ; but he knew a little more about the matter now (laughter). Having heard so much about it, he wished to bring it to a test. Some time ago, therefore, he begged the committee of that club to offer on his part a bet of 150*l.*, to back three farms in the eastern counties of England, against three farms in Scotland. There were to be three events ; and he left it to the club to settle the conditions. This was communicated by the Farmers' Club to the Haddington Farmers' Club ; but he was not aware that the challenge had been accepted up to that day (cheers and laughter). There had, in fact, been no answer. Now he should not say one word against Scotch farmers if they only praised each other ; they would be perfectly welcome to do that ; but when they depreciated English farming his blood was up (laughter). He felt that, as being connected with an English journal, the character of English farmers was in some degree in his hands ; and as long as he continued connected with it, he would not listen to that depreciation in silence. Well, the challenge had, as he had stated, been given, and was not accepted. Yet he read in a newspaper, which should be nameless, that a gentleman from the East Lothians who had been travelling in Norfolk, had remarked upon the superiority of Scotch farming to Norfolk farming. Why ? Because, while in the East Lothians land sold for 40 years' purchase, in Norfolk it would sell only for 30. He (Mr. Pusey) would draw the opposite inference. His conclusion would be that the land of Norfolk had been improved so much already, that it could not be improved much more ; whereas the land in the East Lothians having been in a very bad state 100 years ago, had been so much improved, that its value had of late greatly increased. He had travelled in Scotland himself, with a determination to look into the matter, and drove his own horses through 20 or 30 miles a day. He saw along the sea-coast some wonderfully fine deep red land, very well farmed ; but, having horses with him, he left the sea-side and rode up to the hills. There he first found very indifferent farming, then bad farming, and on the tops of the hills no farming at all (laughter). On this subject, as he did not wish them to rely upon his opinion, he would read to them that of an old farmer who afterwards turned politician—the opinion of Oliver Cromwell, who began life as a farmer and grazier at Huntingdon. On the 25th of September, 1650, he wrote thus to the Lord President of the Council: "I thought I should have found in Scotland a conscientious people and a barren country. About Edinburgh it is as fertile for corn as any part of England :" and such was his (Mr. Pusey's) opinion of the land. About 100 years afterwards, Dr. Johnson, who wrote a great Dictionary, and was half blind, and living in Bolt-court, Fleet-street, of course did not know anything about land, wrote from Edinburgh that he never saw finer land in his life. It must have been very good to have struck him. His lamented friend, the late Lord Leicester, said the Scotch must be very much afraid of their

Wheat, as they allowed so many Docks to grow up to support it (laughter). When in Scotland, he (Mr. Pusey) saw a great deal of land that was entirely out of cultivation. He would not pursue the subject. If the Scotch would let them alone, they would let the Scotch alone; but so long as the Scotch went on boasting of the superiority of Scotch farming, he would declare his belief that such superiority was as gross a humbug as was ever palmed by the vanity of one nation on the credulity of another (cheers). The challenge which he had mentioned was still open, and he would be most happy to make the wager, in defence of British farmers.

*Liquid and Solid Manure.*—I have read in your paper of the 14th inst., a letter from "C. L.," of Cirencester, condemning a notion which some people entertain of making their manure in a liquid, instead of the usual solid form; and he ridicules the idea because, in one of his travels, he finds some one has put up expensive buildings and machinery for the purpose of applying it, without stating whether the manure had failed, or even if it had been tried. I have no experience on the subject, but possibly some of your many readers may be able to give theirs. Without the knowledge which trial will give, it would seem that if all the excrements of cattle, both liquid and solid, are collected together in a tank, they will be as valuable in that state, as if they were absorbed and mixed with straw, according to the common custom. It seems a separate question to determine which of the two manures can be most economically conveyed to the soil, though it should of course be settled in any one's mind, before going to the expense of tanks, &c. But does the manure made with straw possess a greater value than it would have if collected in tanks? *A. E. C., Warwickshire.*

*The Drainage Act.*—To the question of, "An Assistant Commissioner under the above Act," "What so preposterous a sum as 34*l.* 5*s.* 10*d.* deducted by the Board for expenses, was for?" I can give no answer. The sum total was merely sent me, and a draft for 365*l.* 14*s.* 2*d.*, the balance. Two inspections only were made, by a person from Devonshire, whose name I forget. My first application, was made thus, "The West of England and South Wales Draining Company," (who did work for me, under the inspection of their own engineer), in October, 1846. The work was commenced, January, 1847, completed, June, 1847, and the sum of 365*l.* 14*s.* 2*d.*, was received by me, October 21, 1848, upwards of 15 months after the work had been paid for. I think, therefore, I have good reason for differing from Mr. H. Davis's eulogistic strain, though, I truly wish, I could instead, join him in it, for the design is most excellent, but, the carrying it out is so troublesome, so much letter writing attendant on it, the charges so exorbitant, and the delay in the receipt of the money so great, (I speak only from my own experience), as to render it totally impracticable for that class of persons, who, among others, most require the assistance, viz., the smaller class of freeholders of this country. *J. T., Swansea, Dec.* 23, 1850. [We hope that any who have had a more favourable experience of of the Act, will be good enough to speak out.]

*Reduction of Rent.*—The Earl of Stair has granted to his extensive tenantry, in Wigtownshire and Midlothian, an abatement of 25 per cent. upon the year's rent, which fell due at Martinmas last (rents are payable in this country at the terms of Whitsunday, 24th May, and Martinmas, 22d November), besides allowing two months after term time to make up the sum. For making this abatement, his lordship has not been led away by mere pity or by fear; the manner in which the boon is to be expended, showing as much wisdom as the amount exhibits of benevolence. In making the deduction it is stipulated that the amount must be expended, before May next, upon agricultural improvements. While this must prove the most profitable manner in which the farmers could invest the sum, it will, at the same time, gladden the firesides of many agricultural labourers, who have of late been but indifferently employed, and the public will be generally benefited. The period in which the boon has been granted, under the foregoing stipulation, is likewise highly seasonable. The present Earl of Stair succeeded to the extensive Wigtownshire estates about 10 years ago, when by the splendid improvements upon his own domain, and encouragement given to the numerous tenantry, a spirit of emulation was excited, which soon had the effect of completely changing the appearance of the face of the district. Such a state of matters continued for some time; but now, owing to the continued depression of prices of all kinds of agricultural produce, although Mr. M'Culloch (of "High Farming" notoriety) and a few others, continue to go on as usual, yet the progress of common spirits had begun to flag. The proposed improvements, however, will set the wheels of industry in motion, and then it is to be hoped will continue until brighter days dawn upon the agriculturists of Wigtownshire. *James Kennedy, South Cairn, by Stranraer, N.B., Dec.* 27*th.*

*Mr. Mechi and his Farms.*—The public, who are thoroughly English in their feelings, like fair play. Mr. Mechi has not had fair play from one of the noblemen at a late agricultural meeting, nor is it the first time his farming has been sneered at, nor his calling as a tradesmen. This last is "the rub." What has a man's origin or his calling got to do with the benefit or good he may confer upon his species? Is the Archbishop of York the worse divine because he is the son of a tailor? Will the duke refuse to go and hear him preach, because he is not the son of a noble? I remember, in Scotland, an old lady would not go one Sunday to Kirk, because the preacher was the son of a hatter in the same town? She was not a lady by birth, and her conduct proclaimed her origin. *Virtus sola nobilitas.* Will his Grace translate this piece of Latin for us landlords? We need not give other examples, as this country can boast of many, *e. g.*, generals from the ranks, admirals from cabin-boys, lawyers from pot-boys, divines from tailors. Mr. Mechi is not assuming in manner; but though he and Mr. Huxtable have wasted not a little money, they have taught themselves something, and, it is to be hoped, many landlords also. *X. Y. Z., Hants.*

*Peat Charcoal.*—A friend of mine has a quantity of it. How shall he treat it so as to get it saturated with ammonia? At present he has some flour barrels, with a few gimlet holes in the bottom, three parts filled with charcoal, into which are poured the urine of the feeding cattle. The liquid after standing for some time in the cask, is drained off, and a fresh quantity poured on. After how long a time or how many saturation of urine will be sufficient to prepare the charcoal? Is this the best or proper method? Can the charcoal be used for top-dressing for Grass or Wheat, or is it best for Turnips? I suppose it must be kept from wet. The charcoal has been prepared, and most satisfactorily and cheaply, in a kiln or furnace rather, used for making small coal into coke; it was burnt for 48 hours, and the peat lost two-thirds of its weight, but not very much of its bulk. Should this same charcoal turn out half so valuable as Mr. Jasper Rogers would have people suppose, the farmers in some parts of this district will be able to supply themselves with any quantity at less than 1*s.* 6*d.* per cwt. *J. L.* [The charcoal may be used so long as the liquid coming through it seems purified by the filtration: and that can be ascertained by sight and smell; or by adding acid, which will make old liquor effervesce if it be not well filtered. Charcoal thus treated will be a capital top-dressing for grain crops.]

## Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND, *Dec.* 6.—The half-yearly general meeting of the above Society was held this day in their rooms, Sackville-street, his Grace the Duke of Leinster, President, in the chair. The Secretary, Mr. Bullen, read the report and statement of receipts and expenditure for 1850, which was adopted. The following is a statement of the receipts and expenses at the Cattle Show at Cork, July 24, 1850:—

| RECEIPTS. | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Amount received from local committee, towards payment of prizes at Cork ... | | | | 500 | 0 | 0 |
| Entrance fees from non-subscribers ... | 25 | 5 | 0 | | | |
| By sale of catalogues ... ... ... ... | 24 | 17 | 0 | | | |
| | | | | 50 | 2 | 0 |
| Balance of expenses of show paid by the Society ... ... ... ... ... | | | | 296 | 17 | 7 |
| | | | | £816 | 19 | 7 |
| EXPENDITURE. | | | | | | |
| Amount of money prizes awarded at the Cattle Show at Cork ... ... ... | 598 | 10 | 0 | | | |
| Gold and silver medals ditto ... ... | 30 | 0 | 0 | | | |
| | | | | 628 | 10 | 0 |
| Travelling expenses of judges ... ... | | | | 77 | 5 | 0 |
| Advertisements ... ... ... ... | | | | 71 | 11 | 6 |
| Expenses of deputation to Cork, previous to Show ... ... ... ... ... | 10 | 17 | 9 | | | |
| Ditto of secretary and staff at Show ... | 24 | 18 | 10 | | | |
| Printing and selling 1000 catalogues ... | 18 | 5 | 0 | | | |
| Printing and stationery generally for Show | 15 | 11 | 6 | | | |
| | | | | 69 | 13 | 1 |
| | | | | £846 | 19 | 7 |

The time having come round, by rotation, for holding the next annual Cattle Show of the Society in the Province of Ulster, for the year 1851, steps were taken, by public advertisement and otherwise, for giving due publicity to such an arrangement; but the Council regret, that, up to the present time, no decisive move has been made to effect such a desirable object. The list of prizes for the ensuing year has, however, been agreed on, and are now submitted to the Society for approval, and the Council hope that nothing will intervene to prevent the Province of Ulster from aiding the efforts of the Society, to improve the breeds of stock, and encourage the introduction of new and improved agricultural implements into the north of Ireland.

*Local Farming Societies.*—In order to encourage the formation and revival of these useful bodies, the Council increased the amount of premiums to local farming societies considerably this year, and rescinded many conditions and restrictions which, it was conceived, interfered with their general working and utility. They regret, however, to state, that the numbers which have availed themselves of the Society's premiums, as yet, fall far short of their expectations, and prove the general decline that has taken place in these useful institutions, when compared with former years. Upwards of 27 claimed the Society's premiums last year, and it is expected that a similar number will qualify for 1850.

*Chemico-Agricultural Department.*—An offer having been made at the General Meeting in 1848, to render the Laboratory and Chemical Department of the Museum of Irish Industry, in Stephen's-green, available upon certain conditions, for promoting chemical analysis and inquiry on agricultural subjects, among the members of the Society, and the same having been accepted, Mr. William K. Sullivan, Chemical Assistant to that establishment, was appointed Chemist to this Society, and a set of rules and scales of prices published for the guidance and direction of the members. The Council regret, however, that little substantial benefit has hitherto been derived to the Society from the existing arrangement, and that they are obliged to recommend that it should terminate at the end of the present year; and that it should be referred to the Managing Committee to inquire and report on the best mode of procuring chemical advice and analyses on agricultural subjects in future, and of promoting the views of the members in this most important branch of agricultural knowledge.

*The Practical Instructors.*—The Council have reported to the Society, at the last General Meeting, that 33 instructors had been appointed to as many districts, including 12 from which the requisite contributions had been received, and 21 gratuitously, the Committee took the necessary steps for carrying out the views of his Excellency the Lord Lieutenant, and the Council, to secure the proper superintendence of the instructors in their respective districts, so as to render their services as practically useful as possible. The Local Committees previously formed were re-organised, and new bodies, where required, were established, to which the instructors were duly accredited, and a system of local superintendence and control was thereby formed, from which the best results have been experienced.

Summary of the Receipts and Expenses connected with the Practical Instructors for 1850:—

| RECEIPTS. | £ | s. | d. |
|---|---|---|---|
| To balance to credit of fund since 1849 ... ... | 301 | 18 | 10 |
| To third contribution from the Irish Reproductive Loan Fund, per the Earl of Clarendon ... ... | 1000 | 0 | 0 |
| Conditional Subscription from Local Societies towards procuring Practical Instructors for 1850 ... | 351 | 0 | 0 |
| Unconditional subscriptions ... ... ... | 674 | 0 | 0 |
| Amount refunded by the sale of green crop seeds at half-price, in 23 localities ... ... ... | 399 | 18 | 11 |
| | 2726 | 17 | 9 |
| DISBURSEMENTS. | | | |
| Paid salaries to 33 Practical Instructors ... ... | 1644 | 0 | 7 |
| For green-crop seeds to be sold at half price ... | 820 | 12 | 3 |
| Carriage, and other expenses connected therewith | 67 | 5 | 3 |
| Office expenses, printing, stationary, advertisements | 56 | 14 | 2 |
| Balance in bank to credit of fund ... ... ... | 138 | 6 | 1 |
| | £2726 | 17 | 9 |

The committee having closed the accounts and called in the instructors for the present year, were anxious to ascertain the wishes of his Excellency relative to the continuance of the system, during the approaching season. Accordingly, a letter was addressed to his Excellency, dated the 12th Sept. last, stating the results of the inquiries as to the general effects of the system, but that the Committee were of opinion, from the continued depression of the times, that it was vain to expect any timely or substantial contributions from those remote localities, where instruction and encouragement were most required, and, at the same time, it was most important that if assistance was given it should be available at as early a period as possible, and that a larger sum would be required than has been hitherto placed at the disposal of the Society for the purpose. To this communication a letter was received from Sir Thomas Redington in reply, dated the 11th October, stating that his Excellency was prepared to recommend to the Lords of the Treasury, the issue of another 1000*l.*, from the proceeds of the Irish Reproductive Loan Fund, upon the same terms and conditions as upon the three former occasions. Circulars were accordingly directed to be sent to the different districts mentioned in the counties specified in Sir Thomas Redington's letter of the 11th October, requesting to know what contributions might be expected from these localities in aid of the Instructor Fund for the ensuing year. To these circulars replies have been received, stating the total incompetency of the different localities to subscribe to the fund; and at a meeting of the Instructor Committee, held on the 21st November last, it was resolved to send instructors to 10 districts, gratuitously, leaving the balance of the fund to be applied to such applications as may be made from localities willing to contribute the necessary sum.

FLAX IMPROVEMENT SOCIETY OF IRELAND.—The tenth annual meeting of this Society was held on the 29th ult., in the Society's rooms, Commercial-buildings. The following extracts are from the report.

*The Flax Crops of* 1849 *and* 1850.—According to Captain Larcom's report, it appears that the Irish Flax crop of 1848 was 53,863 acres, and in 1849, 60,014, being an increase in the latter year of 6451 acres. The county of Donegal produced the largest quantity, 12,662 acres, being 1 to every 18 of arable land, while Kerry, with about the same superficial area, produced but 136 acres. The province of Ulster produced 57,651 acres of Flax, while Munster, with about the same superficial area, produced but 937. Monaghan gave 6775, while Limerick, with two and a half times its area, yielded only 94 acres. At the head of the southern and western counties appear those where the Society has already made some footing—Mayo giving 524 acres, which is more than all the rest of Connaught, and Cork 458, being about the half of what Munster produced. Sligo, again, with 218 acres, Clare 179, and Wexford 115, contrast favourably with such counties as Wicklow with 7, Waterford 11, and Kilkenny 16 acres; the three former having already made a commencement under this Society's superintendence, while the three last named have only now begun to bestir themselves. These details are all from the agricultural returns for 1849. Those for the present year not having been as yet compiled, it can be only stated, that there is reason to believe the breadth of land under Flax, in 1850, to have been greater than in 1849, more especially in the southern and western provinces, where many of the counties would make a more respectable figure than in the table just quoted. The sowing would have been still more extended, had it not been for the scarcity and

high prices of seed. The quality of Irish Flax, this year, is not so good as usual, the fibre being found to want mellowness, and being difficult to work. The yield has also not proved so large, in some localities, as was expected from the very luxuriant appearance of the growing crop. Notwithstanding this, however, the brisk demand and high prices for the fibre have so well remunerated the farmer, especially when contrasted with the low rates for other kinds of agricultural produce, as to insure a greatly increased breadth being sown next year; while, from the large supply of seed expected from abroad, and the quantity saved at home, farmers may be certain of obtaining what they require.

*The Patent Steeping System.*—The system of steeping Flax in hot water, brought under the notice of this Society by the late Mr. Schenck, in 1847, has, from the first, had the earnest attention of your committee. While approving the general principle, they have been cautious in pronouncing a decided opinion upon its details, in consequence of some objections having been made by parties in the north of Ireland. In order fully to investigate the grounds for these objections, they gave the matter in charge to a sub-committee, whose report, in which your committee very fully concur, will be laid before the Society at the present meeting; and they feel confident that it will sufficiently justify you in giving every encouragement, in all parts of Ireland, to the carrying out of the patent system. In the course of these investigations, your committee, being made acquainted from time to time with the results of the various experiments which had been conducted with a view to testing the merits of the plan, considered it advisable to give publicity to them; and, in consequence of their favourable nature, many parties have been induced to establish steeping concerns in different localities. The adoption of the system has been much facilitated by your committee having induced the late patentee to lower his terms for the right of working. Your committee have given their best attention to all new projects brought forward for preparing Flax fibre for sale, as the Society must be naturally solicitous to render every improvement auxiliary to the advantage of the grower, and to the perfecting of the products of his crop. They have, therefore, carefully investigated each new plan that has been submitted, and, for so far, they believe that nothing appears to combine so many advantages as Schenck's system. Within the last few months a plan of separating the Flax fibre without steeping has been brought forward in London, by Mr. Donlan, which has attracted great public attention. Your committee are of opinion, however, that the greatest caution should be exercised in the consideration of these statements, from the absence of data supported by the opinion of practical persons, competent to form a judgment on the merits of the proposed process, and from the fact that the dry preparation of Flax fibre has been frequently brought forward at former periods and in different countries, but has, in all cases, been given up, owing to its inutility. Although it would be unjust to the inventor for the Society to pronounce decidedly against his plan, without full information on all its details, yet your committee think, from the partial evidence which they have been able to collect, that there is no ground for supposing this process to be so advantageous, either to the producer or to the consumer, as Schenck's system; and they hope, therefore, that parties who have intended to adopt the latter may not be deterred by the plausible but unsubstantiated statements relative to the former which have appeared in the public journals.

*Division of Labour in Flax Management.*—It was early recognised by your committee that great advantage would be derived from the culture of the Flax plant, and the preparation of the fibre for sale, being separated into two distinct departments, requiring the farmer simply to prepare the soil, sow the seed, and pull and dry the mature Flax stems; and leaving to other parties the steeping, drying, and scutching operations. Being aware that in Belgium a large proportion of the Flax crop is purchased by factors from the growers, who steep it in the river Lys, and bring the fibre to market, your committee, in 1843, encouraged some enterprising and experienced individuals to undertake a similar system in Ireland, and the Society awarded them gold medals in testimony of its approval. But, although the advantage was apparent, of superior quality and handling in the Flax thus treated, from a variety of causes it was not found to be profitable to the undertakers; and there is reason to believe that the system cannot be made practically available in Ireland. Schenck's hot water method appears, however, to combine equal advantages in the quality of the product, with a fair profit to those who may embark in it as a business undertaking. While it is probable that those farmers who are particularly skilful in the management of their crop may produce as good an article by the ordinary mode, the proportion of such is so small to the great mass of Flax growers, that there can be no reasonable doubt the average quality of Flax brought to market from any district would be greatly improved by the adoption of the new system. In the value of the seed, which would be all saved by the new process, a yearly addition of fully a quarter of a million sterling would be made to the produce of the Irish Flax crop—a fact of itself sufficient to warrant its general adoption. But the most important advantage of this method, as relating to the general extension of Flax culture in Ireland, is the immediate market thus afforded to the grower, who is frequently deterred from an extension of his Flax crop by the risk and uncertainty attending the ordinary process of steeping in the open air, as well as by the difficulty of managing a large quantity, all of which has to be steeped at the same time; while, in many districts, the absence of facilities for watering precludes farmers from attempting its culture. In the introduction of the crop where it has not hitherto been grown, the establishment of a steeping concern and scutch-mill at once removes all the difficulties arising from the critical nature of the ordinary processes, and the want of a market on the spot for the fibre. With proper instructions in the choice of soils, their preparation, the selection of seed, and the sowing, pulling, and saving of the plant, the farmer will be enabled to produce a good article of Flax straw, while the capital, skill, and undivided attention of the steeper will insure that the fibre is produced in the market in a satisfactory state. Your committee therefore consider that a much more rapid development of Flax cultivation will take place all over the country, by the carrying out of Schenck's system, than if the growers were obliged to depend on the old method of manipulation.

*Saving of Flax-seed.*—The value of the seed of the Irish Flax crop, during the 10 years of the Society's labours, cannot be estimated at less than 2,000,000*l.* Of this large amount probably not more than one-tenth has been rendered available, the rest having all been steeped with the Flax, and thus utterly lost. Your committee have been untiring in their exertions to impress upon the farmers the lamentable waste arising from this practice; but even yet with only partial success. The reasons which have been instrumental in causing farmers to neglect this advice are various. Many could not be made to believe that the quality of the fibre is not injured by taking off the seed, and this opinion has been strengthened by the operation of rippling being often carelessly performed, with inefficient tools, so as to tear and break the ends of the Flax. It was also found difficult, in many cases, to carry on the rippling and steeping of a quantity at the same time. But the chief obstacle arose from the unfavourable weather, which frequentlly sets in in our climate at the pulling season, rendering it very difficult to dry the seed properly in the open air, and obliging the growers to kiln-dry it, which, when hurriedly done, causes the seed to shrivel, and leaves it of little comparative value. It has only, therefore, been in certain districts that the saving of Flax seed has become at all general, while in others it has not been practised at all. It is with no little satisfaction, therefore, that your committee have to call your attention to the fact that the drying of the Flax stems for Schenck's patent process necessitates the preserving of the seed, and insures its being saved of the best possible quality. Flax seed thus saved can be employed in two ways, either for sowing again or for cattle feeding. There is an annual import from foreign countries into the United Kingdom of about 650,000 quarters of seed, and 70,000 tons of oil-cake made from it—value together about 1,950,000*l.*, all of which could readily be supplanted by the home-grown article, while the valuable manure which it produces would return to the soil the greater part of the substances taken from it by the plant. To meet the annual demand for sowing, about 28,000 quarters of seed would be required, at an average value of 112,000*l.* Nor would the money value be the only advantage of producing this at home. It often happens, as in the case of the present year, that enough of foreign seed cannot be procured to meet the demand; and while its price is so much enhanced as to place its purchase beyond the means of the poorer class of farmers, much land that had been intended for Flax is put in other crops, after the import of seed has been exhausted. It is very gratifying to find that more than 6000 bushels of seed from the steeping concerns were sold last spring to farmers, and that the produce, as in all instances, where good home-saved seed is used, was abundant, and generally excelled the crops from foreign seed. Your committee calculate that nearly 40,000 bushels of Irish seed will be available for next sowing season, from this and other sources. They look confidently forward to a period not far distant, when the import of foreign seed will be restricted to the quantity necessary to maintain the vigour of the plant, as it has been found that if the same strain of seed be used for successive years, it degenerates in quality, but this might be obviated by changing the seed to different soils, as is done in the case of other plants.

## Farmers' Clubs.

SITTINGBOURNE.—*Guano.*—At a late meeting of this association, Sir J. M. Tylden gave the following results of experiments with guano. Last autumn, I set apart three pieces, of a quarter of an acre each, of Spalding Wheat. The previous crop was Cole after Rye, after Wheat, the Cole and Rye being fed off. On No. 1 I put no manure, on No. 2 guano at the rate of 4 cwt. per acre, and on No. 3 guano at the rate of 2 cwt. per acre; the cost of No. 2 being 2*l.*, and of No. 3 1*l.* per acre. The yield of No. 1 was 3 quarters 4 bushels, and the weight of straw and horse-meat was 1664 lbs. per acre; the weight of a bushel of this Wheat, 61½ lbs. the money value at 5*s.* per bushel for the corn, and 6*d.* for every 36 lbs. of straw and horse-meat, gives 8*l.* 16*s.* No. 2 had 4 cwt. of Peruvian guano harrowed in at sowing time. The yield per acre was 4 quarters 4 bushels and 6½ gallons, and the weight of straw, &c., 3936 lbs. The weight of a bushel was 61 lbs. Money value as before, 11*l.* 16*s.* 4*d.*, from which deduct 2*l.* for manure, there remains a clear gain over no manure of 1*l.* 0*s.* 4*d.*, or over 50 per cent. on the outlay. No. 3 had 2 cwt. of the same guano, sown at the same time as No. 2. The yield per acre was 4 quarters 1 bushel 6 gallons. Weight 61 lbs., and of straw, &c., 3312 lbs. Money value, deducting 1*l.* for the guano, 9*l.* 14*s.* 4*d.*, giving a clear gain over no manure of 13*s.* 4*d.*, or more than 35 per cent. In both these experiments the increase of corn has more than paid for the manure, for in No. 2 the increase was 8 bushels 6½ gallons, and in No. 3, 5 bushels 6 gallons. I also marked off 4 pieces of white Wheat, of a quarter of an acre each. Two after Clover, two after Tares, followed by Cole, both fed off after Wheat. One of each had no manure, and one of each at the rate of 2 cwt. of Peruvian guano, top dressed in February last. No. 1, Clover lea, no manure, yielded 4 quarters 1 bushel 5 gallons per acre. Weight per bushel, 60¾ lbs., with 3020 lbs. of straw, &c.; the money value per acre being 10*l.* 9*s.* 3*d.* No. 2, Clover lea, with guano at the rate of 2 cwt. per acre, yielded 4 quarters 4 bushels 5½ gallons per acre. Weight per bushel, 60¼ lbs. Weight of straw, 3768 lbs. The money value per acre, after deducting 1*l.* for manure, was 10*l.* 15*s.*, leaving only the small profit of 5*s.* 4*d.*, or rather more than 25 per cent. No. 3, Tares, and no manure, yielded 4 quarters 1 bushel, weighing 60 lbs., and straw, &c., 2708 lbs.; the money value of which was 10*l.* 3*s.* No. 4, Tares, &c., manured with guano at the rate of 2 cwt. per acre, yielded 4 quarters 7 bushels over half a gallon per acre, weighing 50½ lbs., weight of straw, &c., 3324 lbs.; the money value of which, deducting the price of manure 1*l.*, was 11*l.* 1*s.* 3*d.*, giving a profit over no manure of 18*s.* 3*d.*, or over 85 per cent., the corn more than paying for the guano; whilst on the Clover lea the corn alone did not pay for the guano, the difference between that and no manure being only 3 bushels and half a gallon. The inference I draw from this is, that it would be better to use the guano on the Clover, thereby ensuring a larger crop of Clover, and to a certainty as good a crop of Wheat.

## Reviews.

*The Breeding and Economy of Live Stock; being the results of Forty Years' Practical Experience in the Management and Disposal of Cattle, Horses, Sheep, and Pigs.* By James Dickson, Cattle Dealer. Adam and Charles Black, Edinburgh.

A SMALL octavo volume of 220 pages cannot be expected to enter into great detail upon so large a subject; and yet Mr. Dickson manages to describe within these limits the breeds of cattle, sheep, and horses in this country; to specify peculiarities of management, and to discuss modes of feeding and of breeding. The book is an easily written and agreeable lecture, by an intelligent practical man. The history of different breeds of sheep and cattle, illustrated by details of instances; the management of each, with numerous examples illustrative of outlay and returns, fill the book so nearly as to leave but little room for the description given of pigs and horses. It is with the former, apparently, that Mr. Dickson has been most familiar; and by confining his remarks to them, he has given us a good practical work, within the limits of a cheap size.

Among the most interesting parts of the book are his calculations of the cost and probable returns of farms, exclusively for breeding purposes—as for breeding short-horned bulls and Leicester sheep. These we shall hereafter transfer to our columns. Meanwhile we must be contented with a general recommendation of the work, which agricultural students will find useful, as one of the best, while it is the cheapest of the many existing works on its subject.

## Miscellaneous.

*Agricultural Carriages.*—On a farm of 1000 acres of good land, cultivated on the four-course, or Norfolk system of cropping, there will be probably 200 tons of hay made per annum, which, we may suppose, will be carried on an average, three-fourths of a mile to the rick: supposing one-half of the roots to be harvested and carried to the yards for consumption, there will probably be 2000 tons of roots carried three-fourths of a mile: there will be 1000 tons of grain in the straw carried three-fourths of a mile to the stack-yard: there will be probably nearly 400 tons of grain carried 10 miles to market: there will be some 40 or 50 tons of food or manure carried home that distance from market: and there will be nearly 4000 tons of manure every year carried three-fourths of a mile, from the yards to the fields. The subject of agricultural carriages may thus well be considered of considerable importance to the business of such a farm. Adding up the above items, we have a total equal to nearly 10,000 tons, carried a distance of one mile; and if to the weight of the load there be added, in each case, that of the vehicle as well, which in the case of a field carriage will be found equal to fully 60 per cent. on the load, we obtain the amount of 16,000 tons carried one mile, as the labour of this kind executed, per annum, on a farm of 1000 acres. But this amount must be still further increased, for an empty carriage* returns for every full one that goes; and supposing our estimate at 60 per cent. on the load fairly to represent the weight of the conveyance, we must add to our former amount 6000 tons carried one mile, on this account. Now the labour of carriage on fields and farm roads may be assumed equal to a lift of one-eighth of the load. To pull 22,000 tons one mile along the surface of the field or road, will be nearly the

* The forty or fifty tons of return carriage from market are not referred to here; but this small inaccuracy will not materially influence the result.

same as lifting 2750 tons one mile high. Now the working year may be supposed equal to 250 days, of 10 hours each; but a horse in a cart is not continually moving; it is at rest during the operation of filling and emptying, and therefore the time, per annum, in which it could be engaged in actually shifting the material it has to convey, cannot be put at more than three-fourths of the above, or 250 days of 7 hours and a half each; and a little calculation will show, that to lift 2750 tons one mile high, in 250 days of 7 hours and a half, requires a continual lifting of 290,000 lbs. per minute. This, according to Watt's estimate of a horse power, represents the constant labour of nearly 10 horses. And if we take the period during which there is most hauling, and ascertain the quantity of labour of this kind which must be done within a given time, in order that the ordinary routine processes of cultivation may be carried on, we shall find that the labour of carriage alone necessitates the employment of quite if not more than one-half of all the horse labour the farm employs. *J. C. M., in Morton's Cyclopedia of Agriculture.*

*Grease for Carts, &c.*—The following composition is recommended by a writer in the *Indépendance Belge* for greasing carts and other agricultural implements:—Take 4 lbs. of caoutchouc dissolved in a proper liquid, 1 lb. of gelatine, 10 lbs. of carbonate of soda, 45 quarts of animal or vegetable oil, and as much water; boil the water with the carbonate of soda and gelatine, then add the caoutchouc and the oil, stir the mixture well until it forms a homogeneous liquid. The above proportions may be varied, and if the caoutchouc and oil are previously purified, the carbonate of soda is unnecessary. The above mixture will be found very useful not only for greasing carts, &c., but also for keeping the farm harness in order. *Flore des Serres.*

*How to make Cows Calve in the Day-time.*—Every one has felt the inconvenience of having his cows calve during the night. In all seasons, but especially in winter, this is exceedingly annoying, and not only demands continual useless watching on the part of the cow-keeper, but also often, indirectly, causes the death of the calf and its mother. Now it has been ascertained by a person living in the neighbourhood of Utrecht, that a cow with calf milked for the last time at night instead of in the morning, calves in the day and not at night. Out of 30 cows on which the experiment was tried, only 3 or 4 are mentioned by M. Numon, professor of Agriculture at Utrecht, as being exceptions to the above rule. As confirming the above statement, we may mention the fact, that a large farmer in the Campine has also tried the same plan with success. *Flore des Serres.*

METEOROLOGICAL REPORT.—NOV.—DEC.

THE weather during the latter part of November was boisterous in the extreme, from a succession of storms passing from S.W. to N.E., causing rapid and excessive fluctuations of the barometer.

| Date. | Time. | Max. | Min. | REMARKS. |
|---|---|---|---|---|
| Sunday 17 | 8 a.m. | 29.95 | ... | |
| | 10 p.m. | ... | 29.90 | |
| 18 | 9 a.m. | 29.70 | ... | |
| | 10 p.m. | ... | 29.30 | Heavy S.W. gale cleared |
| 19 | 8 a.m. | 29.05 | ... | away, and went off to |
| | 10 p.m. | ... | 28 85 | N.W. and North. |
| 20 | 8 a.m. | ... | 28.78 | |
| | 10 p m. | 28.90 | ... | |
| 21 | 8 a.m. | ... | 29.25 | |
| | 10 p.m. | 29 .48 | ... | |
| 22 | 8 a.m. | 29.48 | ... | |
| | 10 p.m. | ... | 29 30 | Ditto, gale to N. and N.E. |
| 23 | 8 a.m. | ... | 29.30 | |
| | 10 p.m. | 29.45 | ... | |
| Sunday 24 | 8 a m. | 29.20 | ... | Heavy gale A.M. S.W. |
| | 10 p.m. | ... | 28 98 | Ditto towards the night. |
| 25 | 8 a.m. | ... | 29.05 | Fine morn., wind N.W. |
| | 10 p m. | 29.12 | ... | P.M. rainy. |
| 26 | 8 a.m. | ... | 29.18 | |
| | 10 p.m. | 29.40 | ... | |
| 27 | 8 a.m. | ... | 29.60 | Fine, but frosty towards |
| | 10 p.m | 29.70 | ... | evening. |
| 28 | 8 a.m. | ... | 30.00 | Hard white frost, fine |
| | 10 p.m. | 30.10 | ... | day. |
| *29 | 8 a.m. | 30.10 | 30.10 | Ditto ditto. |
| | 10 p.m. | | | |
| 30 | 8 a.m. | 30.05 | ... | Fine day, and cold. |
| | 10 p.m. | ... | 29.90 | |
| Dec. 1 | 8 a.m. | ... | 29 81 | Gloomy and very cold. |
| | 1 p.m. | ... | 29 81 | |
| | 10 p m. | 30.00 | ... | |
| †2 | 8 a.m. | ... | 30.05 | Rainy, increasing to- |
| | 10 p.m | 30.10 | ... | wards noon. |
| 3 | 8 a.m. | 30.05 | ... | SS.E. Very little wind; |
| | 10 p m. | ... | 29 90 | overcast, but not cold. |
| 4 | 8 a.m. | ... | 29.88 | S. Rainy morning. Noon |
| | | | | fine. |
| | 10 p.m. | 29.99 | ... | Wet evening. |
| 5 | 8 a.m. | ... | 30.08 | Misty dull day. |
| | 10 p.m. | 30 20 | ... | |
| 6 | ... | 30 20 | 30.20 | Calm, cloudless sky. |
| 7 | 9 a.m. | 30.20 | ... | Dense fog this after- |
| | 3 p.m. | ... | 30.10 | noon and next day ‡ |
| | 10 p.m. | ... | 30.10 | |
| Sunday 8 | ... | 30.10 | 30.10 | Ditto. |
| 9 | ... | 30.10 | 30.10 | Ditto. |

* As the opposite side of this storm must have reached as far as to 76° of North latitude, the severe coldness which prevailed on the 26th and 28th is easily accounted for.

† This storm travelled from W. to E. over the north of Spain.

‡ I attribute these fogs to the storm having gone up the English Channel and the North Sea, which would send back the London smoke on the 8th, and the Dutch fogs on the 9th, on which day was the most cold raw fog we have had this season.

Dorchester, Dec. 17th. *F. P. B. M*

## Calendar of Operations.

DECEMBER.

ESSEX FARM, *Dec.* — Since my last we have been finishing Wheat sowing (now completed), and a better seed time I do not remember; the horses are now employed giving the last ploughing to the tilt land (not sit), which is summer fallowed, and intended for Barley; it is not often that this land can be ploughed so late in this part, as it is very heavy land, but at the same time it is considered as good as a quarter per acre more for it. The day-men are employed in scouring out the open ditches and trimming the hedges, covering the Mangold Wurzels and Swedes with about 6 inches of earth; they were only covered with straw at the time they were taken up. We lay them in ridges about 9 feet wide at the base, and finishing with as sharp an angle as possible. They keep well this way if not covered with earth till they have heated the first time, and a draining pipe is inserted here and there in the earth, sloping, so that the wet cannot enter. We had some Mangold Wurzel kept till August this year, and in most excellent condition. There seems to be some misunderstanding regarding the remarks in my last. I never intended to say that Swedes caused abortion; quite the reverse. I believe them to be a most valuable root at all times, but I believe that Mangold Wurzel does so, certainly, with sows, as I believe any one will find to their cost who may feed them exclusively on them, more particularly if fed out before April or May, when they become somewhat shrivelled and dry. They are a most excellent thing for ewes after they have dropped their lambs, and also for cows; but at the same time I must adhere to my former opinion, and I may add that it is not a small way in which Mangold Wurzel has been found to act injuriously. It has been the endeavour on this farm to raise pigs enough to pay the labour every week from harvest till the latter end of April, and this, on nearly 800 acres, requires no small number, particularly now, with pork at from 2*s.* 10*d.* to 3*s.* 2*d.* per stone; it, in fact, requires from 35 to 40 to bring home the money that 25 or 30 brought three or four years ago. The sows are got as forward in pigging in the spring as possible, and well fed with steamed roots mixed with Barley or Bean meal and milk. The young pigs soon begin to eat this mixture, and grow fast on it; as soon as they seem to feed well, they are removed from the mother and well kept till there is some Clover ready for them, when they are turned out and have their mixture morning and evening. The best are picked out about a fortnight or three weeks before it is intended to kill them; they then have more meal and less roots, and a few Beans and Peas once every day. They are shut in a shed, and as one lot is sent to Newgate Market, the next best takes their place. *E. X., near Braintree.*

## Notices to Correspondents.

ANBURY, OR FINGERS AND TOES: *Amateur.* We have had many complaints. Some have found lime, others bone-dust, others drainage, remove the scourge; and all have found that that in which they were deficient from the standard of good cultivation and fertile soil was the cause of the mischief.

FLAX: *Isle of Man.* The dry way of handling Flax has been often tried and always failed hitherto. And M'Clausson's mode is not likely to be more successful than its predecessors.

RAPE PLANTS: *W D E.* We hardly know how you are managing them. Do you steep them? If so, you cannot expect another crop of Beans till late in spring.

RYE-GRASS: *F B.* Sow early in April.

TURNIPS: *B.* Pile them between two rows of hurdles 6 or 8 feet apart; pile them up and thatch them over. Mind that there is straw enough at the sides too. That is the plan we have adopted, and they keep till May, if the cattle will let them.

"YOUATT ON THE HORSE:" *Yorkshire.* Inquiry has been made of the publishers.

# Markets.

COVENT GARDEN, JAN. 4.

Hothouse Grapes and Pine-apples remain nearly the same as quoted last week, and the same thing may be said of Apples and Pears. Oranges and Lemons are plentiful, an improving in quality. Nuts have not altered since our last account. Amongst Vegetables, there have been some excellent Seakale, Asparagus, and Rhubarb. French Beans, Carrots, and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Gardenias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4*s* to 6*s*
Grapes, hothouse, p. lb., 4*s* to 6*s*
— Portugal, p. lb., 8*d* to 1*s*
Pears, per doz., 1*s* to 3*s*
— per half sieve, 6*s* to 15*s*
Apples, dessert, p. bsh, 3*s* 6*d* to 8*s*
— kitchen, do., 3*s* 6*d* to 6*s*
Oranges, per doz., 9*d* to 2*s*
— per 100, 6*s* to 10*s*
Lemons, per doz., 1*s* to 2*s*
Pommegranates, each, 3*d* to 6*d*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Chestnuts, per peck, 2*s* to 5*s*
— per 100, 9*d* to 1*s* 6*d*
Nuts, Barcelona, p. bush., 20*s* to 22*s*
— Brazil, p. bsh., 12*s* to 14*s*
Filberts, per 100 lbs., 60*s* to 65*s*

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1*s* 6*d* to 2*s*
Cabbages, per doz., 6*d* to 1*s*
Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, p. doz., 4*s* to 6*s*
Broccoli, p. doz. bndl., 10*s* to 12*s*
French Beans, per 100, 2*s* to 3*s*
Seakale, per punnet, 2*s* 6*d* to 3*s*
Asparagus, per 100, 3*s* to 8*s*
Rhubarb, p. bundle, 1*s* 6*d* to 2*s*
Potatoes, per ton, 60*s* to 100*s*
— per cwt., 3*s* to 5*s*
— per bush., 1*s* 6*d* to 2*s* 6*d*
Turnips, p. 12 bundles, 1*s* to 2*s*
Cucumbers, each, 1*s* 6*d* to 4*s*
Radishes, per doz., 1*s* to 1*s* 6*d*
Celery, p. bundle, 9*d* to 1*s* 6*d*
Carrots, per doz., 2*s* to 5*s*
Spinach, p. half sieve, 6*d* to 1*s*
Onions, p. bunch, 4*d* to 6*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*
Leeks, per bunch, 1*d* to 2*d*
Shallots, per lb., 4*d* to 8*d*
Garlic, per lb., 4*d* to 8*d*
Artichokes, Jerusalem, p. half sieve, 1*s* 6*d* to 2*s*
Lettuce, Cabbage, p. score, 1*s*
— Cos, p. score, 1*s* to 1*s* 6*d*
Endive, per score, 1*s* to 1*s* 6*d*
Small Salads, p. punn, 2*d* to 3*d*
Horse Radish, p. bdl., 1*s* to 4*s*
Red Beet, per doz., 6*d* to 1*s*
Mushrooms, p. pot., 1*s* 0*d* to 1*s* 3*d*
Sorrel, p. hf. sieve, 6*d* to 9*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, p. doz. bun., 1*s* to 3*s*
— Roots, p. bdle., 9*d* to 1*s*
Marjoram, per bunch, 2*d* to 4*d*
Mint, per bunch, 2*d*
Watercress, p. 12 bunch., 4*d* to 9*d*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 2.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | | Clover ... ... ... | 70*s* to 80*s* | |
| Inferior ditto... ... | 60 | 68 | Second cut ... ... | 60 | 70 |
| Rowen ... ... ... | 55 | 65 | Straw ... ... ... | 21 | 24 |
| New Hay ... ... | — | — | | J. COOPER. | |

Meadow Hay a short supply; trade a little better.

CUMBERLAND MARKET, Jan. 2.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | | Inferior ... ... ... | 60*s* to 70*s* | |
| Inferior ditto... ... | 50 | 68 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 24 | 28 |
| Old Clover ... ... | 75 | 80 | | JOSHUA BAKER. | |

WHITECHAPEL, Jan. 2.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 68*s* to 72*s* | | New Clover ... ... | —*s* to —*s* | |
| Inferior ditto ... | 55 | 60 | Inferior ditto... ... | 65 | 70 |
| New Hay ... ... | — | — | Straw ... ... ... | 20 | 24 |
| Old Clover ... ... | 75 | 80 | | | |

POTATOES.—SOUTHWARK, Dec. 30.

The Committee report that the trade during the last week has been very heavy, and, though considerable reduction in price has been submitted to, there have not been so many Potatoes sold as we have had arrive since our last report, which have been very extensive, both by rail and coastwise. The following are this day's quotations:—York Regents, per ton, 90*s.* to 100*s.*; Scotch do., 55*s.* to 75*s.*; ditto Cups, 60*s.* to 65*s.*; Wisbeach Regents, 60*s.* to 80*s.*; French whites, 60*s.* to 70*s.*

COAL MARKET.—FRIDAY, Jan. 3.

Hollywell, 15*s.* 6*d.*; Carr's Hartley, 14*s.*; West Hartley, 14*s.*; Wallsend Haswell, 17*s.*; Wallsend Hetton, 17*s.*; Wallsend Lambton, 16*s.* 6*d.*; Wallsend Stewart's, 17*s.*; Wallsend Adelaide Tees, 16*s.*—Shipsat market, 320.

SMITHFIELD, MONDAY, Dec. 30.

We have a good supply of Beasts, considering it is so soon after Christmas. Trade is generally dull, but some of the choicest kinds still make 4*s.*; this must, however, be reckoned an extreme quotation. The number of Sheep is small, but the butchers not having cleared out well, they buy very sparingly. Only some of the small and good qualities are readily disposed of. Big Sheep are a heavy trade. Choice Calves are scarce and dearer. From Holland and Germany there are 43 Beasts, 150 Sheep, and 76 Calves; from Norfolk and Suffolk, 700 Beasts; from Scotland, 250; and 1800 from the northern and midland counties.

| Per st. of 8 lbs. | s d | s d | Per st. of 8 lbs. | s d | s d |
|---|---|---|---|---|---|
| Best Scots, Here- | | | Best Long-wools | 3 6 | to 3 10 |
| fords, &c. ... | 3 10 | to 4 0 | Ditto Shorn ... ... | — | ... |
| Best Short-horns | 3 6 | — 3 8 | Ewes & 2d quality | 3 2 | — 3 6 |
| 2d quality Beasts | 2 8 | — 3 4 | Ditto Shorn ... ... | — | ... |
| Best Downs and | | | Lambs ... ... ... | — | ... |
| Half-breds ... | 3 10 | — 4 2 | Calves ... ... ... | 3 0 | — 4 6 |
| Ditto Shorn ... ... | — | ... | Pigs ... ... ... | 3 0 | — 4 0 |

Beasts, 3169; Sheep and Lambs, 1550; Calves, 127; Pigs, 360.

FRIDAY, Jan. 3.

Although the number of Beasts is small, it considerably exceeds the demand. Notwithstanding, there is a reduction in prices of fully 2d. per 8 lbs. Several remain unsold. There are purchasers for the few Sheep we have on offer, at about last Monday's quotations. Calves are about 4d. per 8 lbs. lower than on Monday last, the demand being exceedingly limited. Our foreign supply consists of 73 Beasts, 400 Sheep, and 48 Calves; there are 80 milch cows from the home counties.

| Best Scots, Here- | | | Best Long-wools | 3 6 | to 3 10 |
|---|---|---|---|---|---|
| fords, &c. ... | 3 8 | to 3 10 | Ditto Shorn ... ... | — | ... |
| Best Short-horns | 3 4 | — 3 8 | Ewes & 2d quality | 3 2 | — 3 6 |
| 2d quality Beasts | 2 6 | — 3 2 | Ditto Shorn ... ... | — | ... |
| Best Downs and | | | Lambs ... ... ... | — | ... |
| Half-breds ... | 3 10 | — 4 2 | Calves ... ... ... | 2 8 | — 4 2 |
| Ditto Shorn ... ... | — | ... | Pigs ... ... ... | 2 8 | — 3 8 |

MARK LANE.

MONDAY, Dec. 30.—The supply of Wheat by land carriage samples this morning from Essex and Kent was very small, and the condition generally damp; fine dry parcels command our quotations, but all others must be written 1*s.* per qr. lower; in foreign, business was exceedingly limited at late rates.—Barley, Beans, and Peas of all descriptions are 1*s.* per qr. cheaper.—The Oat trade is heavy, and sales are difficult at a decline of 6*d.* to 1*s.* per qr.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk ... White | 43—47 | Red ..... | 38—44 |
| — — fine selected runs ... ditto | 43—48 | Red ..... | —42 |
| — — Talavera ..... | 46—52 | | |
| — Norfolk, Lincoln, & York... White | — | Red ..... | — |
| — Foreign ..... | 36—50 | | |
| Barley, grind. & distil., 20*s* to 23*s*... Chev. | 27—31 | Malting | 23—27 |
| — Foreign... Grinding and distilling | 18—23 | Malting | 20—25 |
| Oats, Essex and Suffolk ..... | — | | |
| — Scotch and Lincolnshire ... Potato | 20—24 | Feed ... | 17—21 |
| — Irish ..... Potato | 18—22 | Feed ... | 17—19 |
| — Foreign..... Poland and Brew | 18—23 | Feed ... | 16—20 |
| Rye ..... | 25—27 | Foreign | — |
| Rye-meal, foreign..... per ton | — | | |
| Beans, Mazagan ..... 23*s* to 27*s*..... Tick | 25—28 | Harrow | 25—28 |
| — Pigeon ..... 26*s* — 32*s*... Winds | 38—44 | Longpod | 28—34 |
| — Foreign ..... Small | 24—3 | Egyptian | 21—22 |
| Peas, white, Essex and Kent..... Boilers | 24—27 | Suffolk... | 27—22 |
| — Maple..... 27*s* to 30*s* ..... Grey | 25—27 | Foreign | 25—33 |
| Maize ..... White | — | Yellow... | — |
| Flour, best marks, delivered... per sack | 38—40 | | |
| — Suffolk ..... ditto | 30—36 | Norfolk | 30—36 |
| — Foreign ..... per barrel | 18—24 | Per sack | 29—34 |

FRIDAY, Jan. 3.—The arrivals of grain since Monday have been moderate, with the exception of 19,850 qrs. of Wheat from abroad; this morning there appeared to be a general disinclination to purchase any description of corn and Flour, and the quotations of Monday must be considered nominal for all sorts. Transactions in floating cargoes are rare; good Polish Odessa must be quoted 34*s.* to 35*s.*, cost, freight, and insurance. Galatz Maize 30*s.*, with a downward tendency.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2060 | 4330 | 4730 | 1450 sacks |
| Irish ..... | — | — | 9930 | |
| Foreign ... | 19850 | 5770 | 5140 | — brls. |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Nov. 23..... | 39*s* 11*d* | 24*s* 1*d* | 17*s* 3*d* | 29*s* 6*d* | 28*s* 9*d* | 29*s* 4*d* |
| — 30 ..... | 40 3 | 24 6 | 17 1 | 23 6 | 28 5 | 29 2 |
| Dec. 7..... | 40 2 | 24 7 | 17 7 | 24 3 | 28 9 | 29 0 |
| — 14..... | 39 9 | 24 3 | 17 1 | 25 11 | 27 11 | 29 5 |
| — 21..... | 39 5 | 23 10 | 17 1 | 23 1 | 27 8 | 28 2 |
| — 28..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Aggreg. Aver. | 39 9 | 24 1 | 17 1 | 24 10 | 28 2 | 28 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Corn Averages.

| PRICES. | Nov. 23. | Nov. 30. | Dec. 7. | Dec. 14. | Dec. 21. | Dec. 28. |
|---|---|---|---|---|---|---|
| 40*s* 3*d* | ... | ... | ... | ... | ... | ... |
| 40 2 | ... | ... | ... | ... | ... | ... |
| 39 11 | — | ... | ... | ... | ... | ... |
| 39 9 | | ... | ... | ... | ... | ... |
| 39 5 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, FRIDAY, Dec. 27.—In consequence of the observance of holidays this week, the trade here since our last report has been completely at a stand. The trade at our market this morning varied little from its previous character. The sales of Wheat were limited to a few remnants, forced off in order to clear up accounts; importers, however, were generally firm. Prime Malting Barley was saleable at former prices, whilst in grinding samples little or no business was apparent. Malt, Beans, and Peas, being scarcely noticed, were the turn cheaper. Oats and Oatmeal were also much neglected, each barely sustaining recent values. Indian Corn was in slow request, losing the small advance of Tuesday.—TUESDAY, Dec. 31.—This morning being the last market for the year, trade was inanimate, and of Wheat very few sales were effected; holders, nevertheless, remained firm, and late quotations continue unaltered. Of Flour, also, few sales were effected, secondary qualities receding 1*s.* per sack. Barley, Beans, and Peas appeared to meet little notice, the value of each remaining nominally unaltered. Oats, being extremely difficult of sale, declined 1*d.* per 45 lbs.; and Oatmeal was partially depressed in value. Irish buyers, being rather forbearing to-day, Indian Corn was in less active request, and although 6*d.* per qr. cheaper, good yellow could not be purchased under 31*s.* per qr. The following are the prices: Wheat, English red, per 70 lbs., 5*s.* 6*d.* to 6*s.* 1*d.*; white, 5*s.* 6*d.* to 6*s.* 3*d.* Barley, Scotch and Irish, per 60 lbs., 3*s.* 2*d.* to 3*s.* 5*d.* Malt, English, per qr. pale, 50*s.* to 55*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 8*d.* to 2*s.* 11*d.* Beans, English, per qr., 27*s.* to 31*s.* Peas, do. do., 29*s.* to 31*s.*

*Just published, considerably enlarged, price 5s. 6d., the Third Edition of*

# RURAL CHEMISTRY:

## AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

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### CONTENTS OF THE VOLUME.

Absorption of manure
Acetates
Acetic acid
Acetic fermentation
Acids
Acids, organic
Acids, test for
Action of plants on the air
Active principles
Adulterated guano
Affinity, chemical
After-damp in
Air [mines
Air contains ammonia
Air contains carbonic acid
Air contains water
Air, inflammable
Air necessary to life
Air, composition of
Air resists compres-
Air, weight of [sion
Alabaster
Albumen
Albumen, vegetable
Alcohol
Ale
Alkali, test for
Alkali, volatile
Alkalies
Alkalies, vegetable
Alloys
Almonds
Alum
Alumina
Alumina, absorbs ammonia
Alumina in soil, use of [of
Alumina, phosphate
Alumina, silicate of
Alumina, sulphate
Aluminum [of
Aluminum, oxide of
Ammonia
Ammonia absorbed by alumina
Ammonia absorbed by charcoal, &c.
Ammonia, carbonate of
Ammonia, fixing of
Ammonia in air
Ammonia in rain-water
Ammonia, loss of
Ammonia, muriate
Ammonia, phosphate
Ammonia, salts of
Ammonia, sulphate
Ammonia, urate of
Ammoniacal liquor
Analysis
Animal heat
Animal manures
Animal principles, proximate
Animal substances
Animals, breathing of [of
Animals, fattening
Annotta
Apple jelly
Aquafortis
Argol
Arrack
Arrowroot
Arteries
Artichoke, Jerusa-
Ashes [lem
Atom
Attraction
Azote
Balloons
Bamboo
Barilla
Barley
Barley straw
Barley sugar
Barm
Barometer
Base
Basting meat
Batatas
Bay salt
Bean, field
Bean straw
Beans, kidney
Beech ashes
Beech nuts
Beer
Beer, Bavarian
Beet
Beet-root sugar
Bell metal
Bile
Binary compounds
Biphosphate of lime
Bitartrate of potash
Bittern
Bleaching by chlorine
Bleaching by sul-
Blende [phur
Black Currant jelly
Blood
Blubber
Bones
Bran
Brandy
Brass
Bread
Bricks
Brimstone
British gum
Bromide of magne-
Bromides [sium
Bromine
Brown stout
Buckwheat
Buds
Burning
Burning lime
Burning of plants
Burnt clay
Burnt sugar
Butter
Butter, clarified
Butter, how coloured
Butter, melted
Butter, salt
Butyric acid
Cabbage
Cabbage, red
Calamine
Calcium
Calcium, chloride of
Calomel
Camphor
Candles
Candle, burning of
Cane
Cane sugar
Caoutchouc
Caramel
Carbon
Carbon in plants
Carbonate of ammonia
Carbonate of iron
Carbonate of lead
Carbonate of lime
Carbonate of magnesia
Carbonate of potash
Carbonate of soda
Carbonates decomposed by acids
Carbonic acid gas
Carbonic acid gas necessary to plants
Carbonic acid gas, decomposition of
Carbonic oxide
Carburetted hydro-
Carcases [gen
Carrot
Caseine
Caseine, vegetable
Castor oil
Caustic potash
Cellars, foul air in
Cellulose
Chalk
Chamomile
Changes, chemical
Charcoal
Charcoal absorbs ammonia [of
Charcoal, burning
Charcoal, disinfecting powers of
Charring
Cheddar cheese
Cheese
Cheltenham salts
Cherry-tree gum
Cheshire cheese
Chestnuts
Chlorides
Chlorine
Churning
Chyle
Chyme
Circulation of the
Cider [blood
Cinnabar
Citric acid
Clay
Clay, burnt
Clay iron ore
Climate, differences
Clover [of
Coagulation of al-
Coal ashes [bumen
Coal-gas
Coal-tar, naphtha
Cocoa-nut oil
Cognac brandy
Cohesion
Coke
Colophony
Colour of soils [of
Colours, changing
Colours, vegetable
Colza
Combination
Combination, [by changes produced
Combining weights
Combustion
Combining numbers
Combustion, results
Common salt [of
Composition of animal matter
Composition of organic matter
Composition of plants
Composition of soils
Composition of stones
Compounds
Contagion
Contagious matter
Cookery
Copper
Copper in plants
Copper, oxide
Copper, pyrites
Copper, salts of
Copper, sulphate of
Copperas
Coprolites
Corn
Corrosive sublimate
Cotton
Couching
Cream
Cream cheese
Cream of tartar
Crops, rotation of
Cubic nitre
Cultivated land
Curd of milk
Currants
Daguerreotype
Dahlia
Death of plants
Decay [lime
Decay, influence of
Decay, like burning
Decay of humus
Decay of plants
Decay, results of
Decay, under water
Decomposition
Decomposition, induced [rocks
Decomposition of
Decomposition, spontaneous
Deliquescence
Dew
Dextrine
Diamond
Diastase
Digestion [ment of
Digestion, derange-
Diseases of plants
Distillation
Ditch scrapings
Double salts
Dough
Drainage water
Draining
Dunder
Dung
Dutch rushes
Dyeing
Earth
Earth nut
Earths
Earths, alkaline
Earthy matter in the air
Earthy silicates
Earthy substances in plants
Effervescence
Egg, white of
Elaine
Electricity, influence on plants
Elements
Embryo
Epsom salts
Equivalent
Excrement [fowl
Excrements of sea
Exhaustion of soils
Expansion [damp
Explosion of fire-
Faints, distiller's
Fallowing
Farm-yard dung
Fat
Fat of animals
Feathers
Feeding off with
Ferment [sheep
Fermentation
Fertility
Fibre, woody
Fibrin, animal
Fibrin, vegetable
Finings
Fir-ashes
Fire
Fire-damp
Fish, refuse
Fixed oil
Fixing ammonia
Flame
Flax
Flesh
Flint
Flooring malt
Flour
Flour, damaged
Flowers
Flowers, their effect on the air
Fluorides
Fluorine
Food of animals
Food, chemical use
Food of plants [of
Formation of seed
Formation of soils
Foul smells
Freezing, effects of
Freezing of water
Fruit
Fruit, ripening of
Fuel [chlorine
Fumigating by
Fumigation by sul-
Fungi [phur
Fur from water
Galvanised iron
Game, preserving
Gas
Gas coal
Gas, inflammable
Gas, manufacture of
Gas liquor
Gas liquor, strength
Gas tar [of
Gastric juice
Gelatine
Geneva
Germination
Germination accelerated
Glass
Glauber salts
Gliadine
Gloucester cheese
Glue
Glue, refuse
Gluten
Glycerine
Gold
Gold, chloride
Gold of Pleasure
Gold mosaic
Gooseberries
Grain of Wheat
Grains, spent
Grape sugar
Grapes
Grass
Gravity
Gravity, specific
Greaves
Green manures
Green vitriol
Growth of plants
Guano
Gum
Gum arabic
Gum, British
Gum, cherry-tree
Gum, formation of
Gum, resin
Gun cotton
Gunpowder
Gutta percha
Gyletun
Gypsum
Hair
Hard water
Hartshorn
Hay
Heat
Hedges, foul
Hemp-seed
Hollands
Honey
Hoofs
Hops
Hordein
Horn
Humates
Humic acid
Humus
Hydrogen
Hydrogen, carburetted [of
Hydrogen, lightness
Hydrogen, sulphu-
Ice [retted
Iceland moss
Indian corn
Indian rubber
Indigo
Inflammable air
Inorganic matter in plants
Inorganic manures
Inulin
Iodides
Iodine
Iodine in sea water
Iron
Irrigation
Isinglass
Ivory
Juniper
Kelp
Kidneys
Kiln-drying
Kirschwasser
Lactic acid
Latent heat
Lead
Leather
Leaven
Leaves
Leaves, fall of the
Leaves, office of
Lees of wine
Legumine
Lemons
Lentils
Lettuce
Light, effects of
Light, influence on plants
Lighting a fire
Lignin
Lime
Lime, action on soil
Lime and salt
Lime, biphosphate
Lime, burning [of
Lime, carbonate
Lime, caustic
Lime, citrate
Lime, hydrate of
Lime in plants
Lime, muriate of
Lime, nitrate of
Lime, oxalate of
Lime, phosphate of
Lime, silicate of
Lime, slaking
Limestone [sian
Limestone, magne-
Lime, sulphate of
Lime, superphosphate of
Lime, when useful
Lime, when not to be used
Limes, juice of
Linen
Linseed
Liqueurs
Liquid manure
Liquid manure
Litharge [tanks
Liver
Loss of manure
Lucerne
Lungs of animals
Macaroni
Magnesia
Magnesia, carbonate of
Magnesia in plants
Magnesia, muriate of
Magnesia, phosphate of
Magnesia, silicate of
Magnesia, sulphate of
Magnesian limestone
Magnesium
Magnesium, chloride of
Magnesium, oxide of
Maize
Malt
Malting
Malic acid
Manganese
Manganese in plants
Manganese in soils
Manganese, oxide of
Mangold Wurzel
Manures
Maple sugar
Maraschino
Marble
Mark of Grapes
Margarine
Marl
Mashing
Mead
Meat boiling
Meat roasting
Medicines, action of
Mercury
Mercury, chlorides
Mercury, oxides of
Mercury, sulphuret
Metallic alloys [of
Metallic oxides
Metallic salts
Metals
Milk
Millet
Minium
Mixture
Mixture of soils
Molasses
Mordaunts
Mortar
Mosaic gold
Mould
Mouldering
Mouldiness
Mucilage
Muriate of ammonia
Muriate of lime
Muriate of magne-
Muriate of soda [sia
Muriates
Muriatic acid
Muscle
Muscovado sugar
Musk
Must
Mustard
Naphtha
Nascent state
Natural vegetation
Nightsoil [fected
Nightsoil, disin-
Nitrate of lime
Nitrate of potash
Nitrate of soda
Nitrate of silver
Nitrates
Nitrates, in plants
Nitre
Nitre beds
Nitre, cubic
Nitric acid
Nitric acid in ma-
Nitrogen [nure
Noyeau
Nutrition of plants
Nutrition of ani-
Oak ashes [mals
Oats
Odours of plants
Oil
Oilcake
Oil, castor
Oil of cloves
Oil, cocoa-nut
Oil, dregs
Oil, drying
Oil, fat
Oil, fixed
Oil, linseed
Oil, mustard
Oil of lavender
Oil of lemons
Oil of turpentine
Oil of vitriol
Oil, olive
Oil, poppy
Oil, rape
Oil, rock
Oil seeds
Oil, volatile
Oleine
Opodeldoc
Ores, roasting of
Organic acids
Organic manures
Organic matter
Organic substances in soils
Organic transformations
Organised matter
Oxalate in lime in
Oxalic acid [plants
Oxalis
Oxide, carbonic
Oxide of copper
Oxide of iron
Oxide of lead
Oxide of manganese
Oxide of mercury
Oxide of silver
Oxide of tin
Oxides, metallic
Oxygen
Paint, white
Palm juice
Paper bleached by
Paring [chlorine
Parmesan cheese
Parsnip
Paste
Pearlash
Peas
Peat ashes
Pectine
Per-oxides
Perry
Persalts
Petre
Petre, salt
Pewter
Phosphates
Phosphoric acid
Phosphoric acid in plants
Phosphoric acid in bone [water
Phosphoric acid in
Phosphorus
Pickling cabbage
Pine-apples
Pipes, bursting of
Pitch
Plants, composition
Plants, death of [of
Plants, decay of
Plants decompose carbonic acid [air
Plants, effect of, on the
Plants, elements of
Plants, food of
Plants, growth of
Plaster of Paris
Plaster stone
Plough, subsoil
Plums
Polenta
Pond mud
Poppy seed
Porter
Potash [of
Potash, binoxalate
Potash, bitartrate of
Potash, carbonate of
Potash, caustic
Potash in plants
Potash in the soil
Potash, muriate of
Potash, nitrate of
Potash, salts of
Potash, silicate of
Potash, sulphate of
Potashes
Potassium
Potassium, chloride
Potato [of
Potato haulm
Potato spirit
Potato starch
Potato, sweet
Pottery
Principles, active
Proportions
Protein
Proto-salts
Protoxides
Proximate animal
Pruning [principles
Putrefaction
Putrefaction, influence of lime in
Putrefying animal matter
Putrid fermentation
Putrid urine
Putty powder
Pyrites
Pyrites, copper
Pyroligneous acid
Pyrolignites
Pyroxylic spirit
Quartz
Quaternary com-
Quicklime [pounds
Quicksilver
Rain water
Raisins
Rape seed
Rape vine
Red cabbage
Red lead
Refuse of gas works
Rennet
Resins
Respiration [tion
Results of combus-
Results of putrefac-
Rhubarb [tion
Rice
Ripening of fruit
River mud
River water
Road drift
Rock salt
Rocket [tion of
Rocks, disintegra-
Roman vitriol
Roots
Rotation of crops
Ruby
Rum
Rushes, Dutch
Rust of iron
Rye
Rye straw
Saccharine matter
Safety-lamp
Sago
Sainfoin
Sal-ammoniac
Saline compounds
Saline draughts
Saline manures
Salt
Salt and lime
Salt bay
Salt, common
Salt in sea water
Salt, rock
Salt, spirit of
Salt, sea
Salt, solution of, in
Saltpetre [water
Salts
Sand
Sapphire
Sawdust
Schiedam
Sea fowl, excre-
Sea-water [ments of
Sea-weed
Seeds
Seed, formation of
Seeds, germination
Seeds, steeping [of
Seidlitz powders
Selection by roots
Semolina [of plants
Shell sand
Shells
Silex
Silica
Silica in plants
Silica in soil, use of
Silicate of alumina
Silicate of lime
Silicate of magnesia
Silicate of potash
Silicate of soda
Silicates
Silicic acid
Silicon
Silk dyeing
Silver
Silver, chloride of
Silver, nitrate of
Silver, oxide of
Silver, salts of
Silver, sulphuret of
Size
Size, resin
Skimmed milk
Skin
Slaking of lime
Slag
Smells, foul
Smoke
Straw ashes
Straw of barley
Straw of buckwheat
Straw of lentils
Straw of maize
Straw of oats
Straw of rye
Straw of vetch
Straw of wheat
Strong manures
Sub-salts
Subsoil
Subsoil ploughing
Substratum
Suffocation from
Sugar [charcoal
Sugar, barley
Sugar, candy
Sugar, formation of
Sugar of lead
Sugar of milk
Sugar, refining
Sugar refiners' waste
Sulphates
Sulphur
Sulphur in plants
Sulphuret of iron
Sulphuret of lead
Sulphuret of silver
Sulphurets
Smelting
Soap
Soap-boiling
Soap, decomposi-
Soap, soft [tion of
Soap, transparent
Soap, yellow
Soapmaker's ash
Soda
Soda, carbonate of
Soda in rocks
Soda in plants
Soda in soils
Soda, muriate of
Soda, nitrate of
Soda, silicate of
Soda, sulphate of
Sodium
Sodium, chloride of
Soft water
Soil
Soils, analysis of
Soil, colour of
Soils, composition of
Soils, exhaustion of
Soils, formation of
Soils, mixture of
Soils, nature of
Solder
Soot
Sorrel
Soup
Specific gravity
Spices
Spirit proof
Spirit, pyroxylic
Spirit of salt
Spirit of wine
Sponge
Spring water
Springs
Stall feeding
Starch
Steam
Stearic acid
Stearine
Still
Stilton cheese
Sulphuret of tin
Sulphuretted hydrogen
Sulphuric acid
Sulphurous acid
Sulphurous acid checks fermenta-
Sunflower [tion
Sunflower seed
Super-salts [lime
Super-phosphate of
Super-tartrate of
Swedes [potash
Tabasheer
Tannin
Tanning
Tapioca
Tar
Tarnish on silver
Tartar
Tartaric acid
Tartrates
Teeth
Ternary compounds
Tests, vegetable
Thermometer
Thunderbolt
Tiles
Tin
Tin, oxide of
Tin plate
Tin, sulphuret of
Toast
Toasted cheese
Tobacco
Toddy
Treacle
Tropical countries
Tubers
Turf-ashes
Turmeric
Turnips
Turpentine
Turpentine, oil of
Urate of ammonia
Urea
Uric acid
Urine
Use of leaves
Use of plants
Usquebaugh
Vapour condensed by cold
Vapour in the air
Vegetable alkalies
Vegetable manure
Vegetables, boiling
Veins [of
Vermilion
Vetch
Vinegar
Vinegar distilled
Vinous fermenta-
Vitriol, blue [tion
Vitriol, green
Vitriol, oil of
Vitriol, white
Volatile alkali
Volatile oil
Walnuts
Wash, distillers'
Water
Water, action on
Water, air in [lead
Water, composition of
Water, freezing of
Water, hard
Water, impurities in
Water, mineral
Water necessary to plants
Water, New River
Water, phosphoric acid in
Water, pure
Water, rain
Water, sea
Water, soft
Water, spring
Water, Thames
Water, well
Wax
Weed-ash
Weeds,
Weeds, burning of
Weeds, putrefaction
Weeds, spread of [of
Wheat grain
Wheat straw
Wheat starch
Whey
Whiskey
White lead
White of egg
Wine
Wine, brandy
Wine, domestic
Wine, fermentation
Wine, fining of [of
Wine, pricked
Wine, ripening of
Wine, vinegar
Wood ashes
Wood spirit
Woody fibre
Wool
Wool dyeing
Wool, mill refuse
Wool rags
Wool soap
Wort
Wort, foxiness of
Xyloidine
Yeast
Yeast as manure
Yeast, artificial
Yeast, bad
Yeast, dry
Zinc
Zinc, chloride of
Zinc, oxide of
Zinc, sulphate of

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"Bicton Gardens, Sidmouth, Nov. 30, 1850.

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"To Messrs. W. E. Rendle & Co. "JAMES BARNES."

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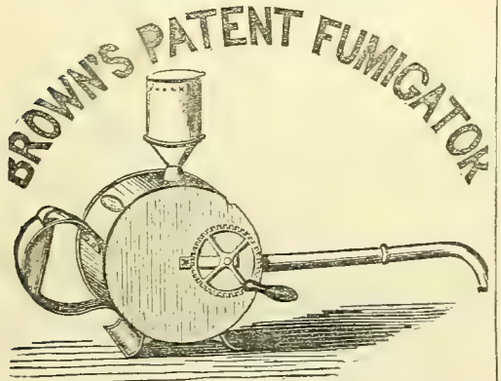
"I remain, Gentlemen, your most obedient servant,
"ROBERT ERRINGTON."

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| Glenny's Journal. | Devonport Telegraph. |
| The Gardeners' Magazine of Botany. | Plymouth Chronicle. |
| The Cottage Gardener. | Teignmouth Gazette. |
| The Midland Florist. | Besley's Devonshire Chronicle. |
| West of England Conservative. | Portsmouth Times and Naval Gazette. |
| The West Briton. | The Plymouth Times. |
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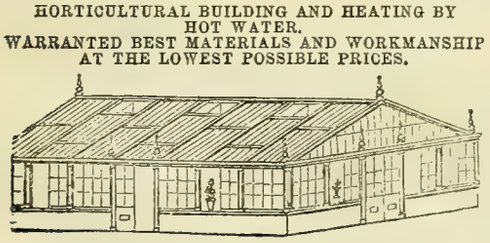
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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 2—1851.] SATURDAY, JANUARY 11. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural education | 27 *c* | Horticultural meetings, American | 23 *c* |
| — Physiology, by Dr. Kemp, rev. | 28 *c* | Hyde-park, building in | 19 *a* |
| Apples, select | 24 *c* | Laws affecting agriculture | 25 *c* |
| Arctic voyage, noticed | 23 *b* | Market gardening | 20 *b* |
| Birds, British song | 20 *c* | Oat bruisers | 28 *a* |
| Botanical Society of Edinburgh | 22 *c* | Pears, select | 24 *c* |
| Cacti, to graft | 22 *a* | — to train | 21 *b* |
| Calendar, Horticultural | 24 *a* | Plants, effect of locality on | 23 *c* |
| — Agricultural | 29 *b* | Poinsettia pulcherrima | 22 *b* |
| Calvert's (Mr.) pamphlet | 25 *c* | Potatoes, early | 20 *b* |
| Camellia, culture of | 21 *c* | Poultry houses | 27 *c* |
| Cattle, food for | 28 *b* | — rearing | 28 *b* |
| Chaff-cutters | 28 *a* | Rain at Arundel | 22 *b* |
| Conservatories, construction of | 19 *a* | — at Witham | 22 *b* |
| Dahlias, select | 24 *c* | — at Cirencester | 28 *b* |
| Drainage Act | 25 *a*—27 *b* | Ranunculuses | 24 *c* |
| Education, agricultural | 27 *c* | Roses, continuous bloomers | 22 *a* |
| Entomological Society | 22 *c* | Scale, to kill | 22 *b* |
| Exhibition, great building of | 19 *a* | Smithfield show | 27 *b* |
| Farming, Mr. Mechi's | 28 *b* | — market | 27 *c* |
| Farm accounts | 27 *c* | Tithe commutation | 27 *b* |
| Food, cattle | 28 *b* | Trees, to transplant | 19 *c* |
| Fossil tree, gigantic | 24 *a* | — gigantic fossil | 24 *a* |
| Fountains, bird | 22 *a* | Tussac Grass | 23 *a* |
| Gardens, winter | 19 *a* | Victoria houses | 19 *a* |
| — market | 20 *b* | Villa gardening | 21 *b* |
| Grafting | 21 *a*—22 *a* | Vines, cure for bleeding in | 22 *a* |
| Heating | 22 *a* | Weather, the | 29 *b* |
| Home colonisation | 26 *c* | Wilmot (Mr.), death of | 23 *c* |
| | | Winter gardens | 19 *a* |



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,, ,, No. 2, good kinds, ,, 1*l.* 5*s.*

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. KEMP for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or per 100, 10*s.*, fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*—per 100, 15*s.*

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4*l.*, in 100 varieties, or per 100, 10*s.*, in 50 varieties; the stock extends over 30,000, and is very fine and healthy.

CURRANTS—White, Red, and Black, including Black Naples, per 100, 10*s.*, fine.

Fruit and Forest Trees, fine, and equally low, and of the most approved kinds, warranted true.

Kitchen and Flower-garden Seeds, of the best quality, very cheap.

Greenhouse and Stove Plants, a splendid stock, at low prices. Catalogues on application gratis.

Orders (except for Forest Trees), above 5*l.*, will be delivered carriage free, or allowed to London or within 150 miles of the Nurseries.—Address, WILLIAM MAY, Hope Nurseries, Leeming-lane, Bedale, Yorkshire. Post-office orders should be made payable on Bedale, to JOHN MAY.

NEW FANCY DAHLIA—"MRS. WILLES."

EDWARD LIDDIARD, Hungerford, Berks (the raiser of "Miss Compton," which gave such universal satisfaction last season) is sending out roots of the above fine Fancy Dahlia to the trade, at 3*l.* 3*s.* each. Colour, blush, shaded off to the margin with maroon, full and constant in its marking. Height, 3 feet 6 inches. Plants in May, 7*s.* 6*d.*—Address as above, or to Mr. E. SPARY, Florist, Brighton.

NEW RANUNCULUS ROOTS, a choice selection, containing edged, spotted, striped, and superb self colours, which have gained upwards of 40 first prizes, are offered in one mixture at 21*s.* per 100; the best old named varieties, at 6*s.* per 100. May be had at 6, Leadenhall-street, London; or of SAMUEL WALTERS, Nurseryman, &c., Hilperton, Trowbridge, Wilts.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18*s.* to 24*s.* | per doz. |
| Dwarf Standard do. do. | 12*s.* to 18*s.* | ,, |
| Climbing Roses do. | 9*s.* to 12*s.* | ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.
All packages delivered free of carriage to London.
Nurseries, Cheshunt, Herts, Jan. 11.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower Seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.
ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

TO SEEDSMEN AND MARKET GARDENERS.
GENUINE NEW SEEDS.

| | |
|---|---|
| Early Horn Carrot, selected | Ringwood Marrow Peas [fine |
| Long Surrey Carrot | Queen of England Peas, very |
| White Belgian Carrot | Brussels Sprouts, grown from fresh imported seed |
| Selected Altringham do. | Fine stock green curled Savoy |
| Improved Jersey Marrow Parsnip | Cole's superb dwarf red Celery |
| Drumhead Cabbage | Mignonette |
| Yellow Globe Mangold Wurzel | Mixed Sweet Peas |
| Lucerne (imported) | True Italian Rye-grass. |
| Skirving's Swede | True Ash-leaf Kidney Potatoes |

JOHN SUTTON AND SONS, Reading, having grown rather more than they will require of the above-named articles, beg to offer them to the trade, as being fine stocks, which they can confidently recommend. *Low Prices will be given in reply to applications stating quantities required.*

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

THE NEW EARLY SWEET-KERNELLED KAISHA APRICOT.

MESSRS. VEITCH AND SON feel much confidence in bringing into public notice the above valuable new Syrian Apricot, sent to this country by the late JOHN BARKER, Esq., of Suedia, the gentleman by whom the valuable Stanwick Nectarine was introduced. Having obtained the entire Stock, they are now prepared to send out a limited number of healthy Young Trees at the following prices, and solicit the favour of early orders, which will ensure good trees and meet with immediate attention:

| | | |
|---|---|---|
| Healthy one year old Trees | ... 21*s.* 0*d.* | |
| ,, one year trained | ... 31 6 | } package included. |
| ,, two year trained | ... 42 0 | |

A few, chiefly half standards and standards.

In offering the above valuable new early Apricot for sale, Messrs. VEITCH and SON beg to refer to the description given by Dr. LINDLEY, in the "Journal of the London Horticultural Society" for July, 1849, from which the following extract is given:

"The fruit semi-transparent, roundish 5½ inches, in circumference, skin slightly downy, pale citron-coloured where shaded, tinged and marked with red next the sun. Flesh tender, juicy, of a clear citron colour, parting freely from the stone, *sugary and delicious*, like well refined lump sugar combined with Apricot flavour; stone *small*, roundish; kernel sweet like a nut. A valuable early variety for the dessert, and probably excellent for preserving; if it be employed for this purpose, the transparency of its flesh will exhibit a new feature amongst Apricot preserves. Some of the fruits have ripened as early as the 12th of July, and on the *same wall* at the time were Moorpark and Turkey Apricots perfectly green and hard."

Exeter, Jan. 1851.

NEW EARLY PEAS, &c.

BASS AND BROWN have a very fine Stock of the undermentioned early Seeds, which they are enabled to offer at the following low prices:—

| | Per quart.—*s.* | *d.* |
|---|---|---|
| PEAS, Taylor's new Prolific, very early, hardy, and productive, sent out by Barnes ... ... ... | ... 1 | 6 |
| Essex Champion, hardy and very productive ... | ... 0 | 8 |
| Danecroft Rival, very early ... ... ... | ... 1 | 3 |
| Bishop's new Long-pod, great bearer ... ... | ... 1 | 0 |
| Early Warwick, Early Frame ... ... ... | ... 0 | 6 |
| Early Emperor, very early and hardy ... ... | ... 0 | 10 |
| Fairbeard's Champion of England ... ... | ... 1 | 0 |
| BEANS, Long-pod and Windsor ... ... ... | ... 0 | 6 |
| RADISH, early Short top Salmon ... ... ... | ... 1 | 6 |
| Wood's new early Scarlet ... ... ... ... | ... 2 | 0 |

Their Wholesale List of Prices of the above and all other description of Seeds will be forwarded on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

RENÉ LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, begs to draw the attention of the Public to his still unrivalled collection of PEAR TREES, not yet surpassed in Europe, in which will be found all the very best varieties, insured for the season required. Trees may be had already formed, either pyramidal or for espalier, in unusually fine and healthy condition, such as will give the most ample satisfaction to both purchaser and R. L. The price has been much reduced, and the quantity of trees R. L. possesses enables him to supply the trade with guaranteed sorts equal to any house on the Continent, having given the greatest satisfaction for several years. Foreign correspondents will find a very great advantage if the selection is left to R. L., as they will be cheaper, and none but the best sorts will be supplied.

R. L.'s Descriptive Catalogue, which has been found the best and most correct yet published, is only to be had at his Nursery, Jersey, price 1*s.* 6*d.*, and 6*d.* extra for postage.

A very great reduction has been made in the transit by steamers to all parts of England, so that R. L. can supply trees cheaper than any other grower.

A fine collection of Roses, Camellias, and yellow Picotees.

WE beg respectfully to acquaint our numerous PATRONS that we have now a good and healthy stock, our own growth, of most of the new and rare TREES AND SHRUBS, especially the former, which we have, by diligent research, collected from the Continent, and other parts. To give an idea of their price, we may observe that they average about 30*s.* per dozen.

CHOICE SELECTIONS OF THESE NEW TREES AND SHRUBS WILL BE FURNISHED IN 5*l.* OR 10*l.* ASSORTMENTS.

KNIGHT and PERRY.

EXOTIC NURSERY, KING'S-ROAD, CHELSEA.

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THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42*s.* to 60*s.* |
| Extra superior selected Standards ... ... ... | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) ... | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

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AN UNLIMITED STOCK OF REMARKABLY FINE SEEDLING AND TRANSPLANTED LARCHES AT REDUCED PRICES.

WM. WOOD AND SON, being very extensive holders of the above, and all other kinds of seedling and transplanted Forest trees, will be happy to furnish prices on application.

N.B. Catalogues of Vegetable, Flower, and Agricultural Seeds, also of Nursery Stock, will be forwarded free.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

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SEEDS OF THE BEST QUALITY, CARRIAGE FREE.

J. C. WHEELER AND SON have had the honour of being appointed Seedsmen to the Gloucestershire Agricultural Association. Their Priced List of Seeds for this season is just ready, and will be forwarded free by post to any address on receipt of two postage stamps. This Catalogue is not a long list of useless names; it is really what it professes to be, a List of the best Seeds in cultivation, and will be found a safe guide to all purchasers.

Dr. LINDLEY, in the *Gardeners' Chronicle*, of the 2d March last, strongly recommends it in the following terms:

"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."

J. C. WHEELER and SON, deliver their Seeds CARRIAGE FREE.

Kingsholm Nursery; and 99, Northgate-street, Gloucester.

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CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENÉ LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The stock is such as has never before been offered to the public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

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SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

We prove the growth of each kind before we send them out.

| | | | | |
|---|---|---|---|---|
| No. 1. | A full collection, suitable for a large establishment, for ... ... ... ... ... | 45*s.* | 0*d* |
| No. 2. | Do., in smaller quantities ... ... | 30 | 0 |
| No. 3. | Do., " " | 20 | 0 |
| No. 4. | Do., " " | 12 | 6 |
| No. 5. | Do., " " | 8 | 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | | | |
|---|---|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each ... ... ... | | | | 25*s.* | 0*d.* |
| 50 | Ditto. | Ditto. | Ditto. ... ... | 14 | 0 |
| 25 | Ditto. | Ditto. | Ditto. ... ... | 8 | 0 |
| Hardy kinds separate, per dozen packets ... ... | | | | 2 | 0 |
| Half hardy | Ditto. | Ditto. | ... ... | 3 | 0 |
| Greenhouse | Ditto. | Ditto. | ... ... | 4 | 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

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SEEDS, FLOWER-ROOTS, PLANTS.

THEODORE LOCKHART, SEEDSMAN AND FLORIST, 84, Fleet-street (next door to the *Punch* Office), London, has just received his annual supply of German Seeds. The following he warrants of first-rate quality:

| | | | | |
|---|---|---|---|---|
| 12 distinct vars. German Stocks ... ... | 3*s.* and | 6*s.* | 0*d.* |
| 12 ditto. ditto. Asters ... ... | 3 and | 6 | 0 |
| Lockhart's rosette Collard or Colewort, per oz. ... | | 4 | 0 |
| Imported Brussels Sprouts, per oz. ... ... ... | | 1 | 0 |
| Fulham early scarlet frame Radish, per quart. ... | | 2 | 0 |
| Glenny's 6 vars. Camellia Balsam ... ... ... | | 2 | 6 |
| 14 vars. prize Cucumbers, each per packet ... ... | | 1 | 0 |
| Beechwood, Trotter's scarlet flesh and green Persian Melons, each, per packet ... ... ... ... | | 1 | 0 |

All the above sealed in packets and signed by T. L.

| | |
|---|---|
| Ranunculus, in 50 sorts, named ... ... | 25*s.* |
| Lawn Grass Seed, per lb. ... ... ... | 1*s.* |

All kinds of Peas, early Potatoes, and Fruit Trees. Lists gratis on application.

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THE TRUE OLD ASH-LEAF KIDNEY, the NEW RED ASH-LEAF KIDNEY, and JACKSON'S NEW EARLY KIDNEY POTATOES.—Market Gardeners and others growing Early Potatoes, are recommended to plant the above-named excellent sorts, which can be warranted true and sound. Prices low, according to quantities required. Several other choice sorts may also be had, at moderate prices.

Address, JOHN SUTTON and Sons, Seed Growers, Reading, Berks.

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DOUBLE LILY OF THE VALLEY.—In answer to numerous inquiries for the above, and the great satisfaction given by the plants sent out by J. REID last season, he begs to state he has this year a few strong Flowering Roots to dispose of. The graceful habit, delicate appearance, and delicious perfume which the flower possesses, render it equally suitable for the Lady's Posey or the Drawing-room Bouquet. By enclosing 24 penny postage stamps, 12 strong Roots will be sent free to any part of the United Kingdom.—J. REID, Nurseryman and Seedsman, Richmond-street, Weston-Super-Mare, Somerset.

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CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber-growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Mills's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5*s.*; or three seeds, 2*s.* 6*d.*

E. T. has also seed of his three other superb Cucumbers at the following prices:

| | | | |
|---|---|---|---|
| Victory of Bath, per packet ... ... ... | 2*s.* | 0*d.* |
| Gordon's White Spine, ditto ... ... ... | 1 | 6 |
| Lord Keynon's Favourite, ditto ... ... | 2 | 6 |

This last is the best for winter cultivation.

MELONS.

BROMHAM HALL GREEN-FLESH MELON.—This has again this season surpassed all others for its superior flavour; it was placed first and second for flavour at the Chiswick Exhibition last season, and obtained a great number of first prizes throughout the country where exhibited. Sold in packets at 1*s.* 6*d.* each.

E. T. has also seeds of the following superb Melons, which he can with confidence recommend:

| | | | |
|---|---|---|---|
| Cameron Court Green-flesh ... ... | 1*s.* | 0*d.* | per packet |
| Queen Melon ... ... ... ... ... | 1 | 0 | " |
| Blackall's Green-flesh ... ... ... | 1 | 0 | " |
| Bailey's Green-flesh... ... ... ... | 1 | 0 | " |
| Bowood Green-flesh... ... ... ... | 1 | 0 | " |
| Beechwood Green-flesh ... ... ... | 1 | 0 | " |
| Windsor Prize ditto... ... ... ... | 1 | 0 | " |
| Emperor ... ... ... ... ... | 1 | 0 | " |
| Fleming's Trentham Hybrid ... ... | 1 | 0 | " |
| Duncan's Green-flesh do. Improved ... | 1 | 0 | " |
| Hampton Court Green-flesh ... ... | 1 | 0 | " |
| Egyptian do. do. Improved ... ... | 1 | 0 | " |

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14. Abbey Church-yard, Bath.

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TO MARKET GARDENERS AND NURSERYMEN.

TO BE SOLD OR LET, on very low terms, "THE GARDENS" at Newmarket, formerly belonging to the late "CROCKFORD, ESQUIRE," and stocked with the choicest varieties of Fruit Trees, regardless of expense. They contain 4 acres of the richest garden soil, sloping to a southern aspect, walled in on all sides, and include a Gardener's House and Yard, an extensive Vinery 100 feet in length, containing 3000 feet of glass, and replete with the best varieties of Frontignan, Muscat, Hamburgh, Muscadine, and other equally excellent kinds of Grapes in first-rate bearing condition. A second Vinery, 45 feet in length, equally well stocked with choice Grapes, and contains 1000 feet of glass. A third Vinery, 45 feet in length, stocked with Vines, as others, together with a large quantity of hard and soft-wooded plants, and containing 1300 feet of glass. The whole are provided with Potting and Store Houses, and are heated on an approved plan. There is also a range of 15 light Melon and Cucumber frames, and another of 12 light do. Any quantity of Land will be let with the Gardens for Nursery purposes.

The Gardens are situated close to the Newmarket and London Railway, equidistant 13 miles from the populous towns of Cambridge, Bury, and Ely, and afford an excellent opening to any one desirous of meeting with a first-rate Market Garden and Nursery Grounds.—For terms, apply to Mr. J. F. CLARK, Architect, Newmarket.

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TO BE SOLD, in consequence of the death of the late Proprietor, a well Stocked and Established NURSERY with Dwelling-house, Hothouses, Stables and Outbuildings, in the immediate vicinity of Bristol; with a Shop centrally and eligibly situate in Bristol—well calculated to conduct a good Seed Business, &c. For particulars apply to Mr. THOMAS DIX, Solicitor, Small-street, Bristol.

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THE APPROACHING COLD WEATHER.

THERMOMETERS FOR REGISTERING THE EXTREMES OF HEAT AND COLD, of the best construction, 1*l.* 1*s.* and 18*s.*; of the common construction, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.* Night Thermometers for Registering Cold only, 10*s.*, 7*s.* 6*d.*, 5*s.*, to 2*s.* 6*d.* Thermometers for Baths or Brewing, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, to 2*s.* 6*d.* Hotbed Thermometers to 4 feet long, 25*s.*, 20*s.*, 17*s.* 6*d.* Steam pressure Gauges, 2*l.* 5*s.* and 2*l.* 2*s.* Rain Gauges, from 10*s.* Lactometers for showing the Quality of Milk, with instructions for use, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, 5*s.* Hydrometers, for trying Sulphuric Acid, 10*s.*, 7*s.* 6*d.*, 5*s.* Barometers, Microscopes, Telescopes, Drawing Instruments, &c.

HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

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SIR JOHN SEBRIGHT'S BANTAMS. — A few couples of very perfect birds of the above breed, both of the Gold and Silver Spangled varieties, hatched in 1850, TO BE SOLD, and may be seen on application to the Gardener, Mr. D. BAILIE, Longcroft's Hall, Lichfield. Letters to be post paid.

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BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

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DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall; they are warranted double, and large and choice roots of which are selected at 4*s.* per dozen. N.B.—Orders by post punctually attended to.

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FREEHOLD LAND TO BE SOLD, nearly adjoining the Uxbridge-road, a short distance beyond Kensington-gardens, and extending northward to the Harrow-road. The Great Western Railway passes through part of the property, the terminus being distant one mile from it. The property comprises 166 Acres, now held by a tenant from year to year, and is under cultivation as a Grass Farm, having a good House and suitable Outbuildings, but is admirably adapted for Building Ground, Nursery Grounds, or Market Gardens, the land to the south of part of the property lying between it and the Uxbridge-road being already built on, and a good road made through it. There is good Brick Earth on the estate. To be sold in one lot, or in separate lots of not less than 10 acres, at 100*l.* an acre. If small lots are taken for building purposes, they must be laid out on a plan to be agreed on as to roads, &c., across the entire property, so as not to interfere with the sale of other parts.

For further particulars, apply to Messrs. LOWE, Solicitors, No. 2, Tenfield-court, Inner Temple, London.

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THE WEATHER.

BROWN'S UNIVERSAL BAROMETER, registered under the Act for Protection of Articles of Utility. Price 10*s.* 6*d.* An elegant and portable instrument for foretelling atmospheric changes, and ascertaining elevations. Constructed on the Torricellian, or most correct principle. Greatly simplified and improved, whilst the price is not a quarter that of an ordinary Barometer. Manufactured and sold by L. P. CASELLA and Co., 23, Hatton-garden, London, by whom also the trade is supplied, and may be ordered of all Opticians and Mathematical Instrument Makers.

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HALL'S GARDEN NETS, of superior Lightness and Strength. These Nets are found to be a good protection against Frost, Hail, and Wind; also from Wasps and Insects. They are of great width, and very durable. Also valuable as outside shades to greenhouses, &c.

| | | | | |
|---|---|---|---|---|
| No. 1, 2, } | 56 inches wide... ... ... | 0*s.* | 6*d.* | per yard. |
| " 3. | " " close shelter ... | 0 | 8 | " |
| " 4. | " " thread leno ... | 0 | 8 | " |

GLASS SUBSTITUTE.

A very durable, strong, translucent, varnished Cloth, which, by being a slower conductor of heat than glass, maintains a much more equal temperature through the 24 hours, and protects the plants from chills and from scorching heats, with very beneficial results, at much less expense than glass. The width is 36 inches, hich fits most frames, and to which it is very easily attached. The price is 13½*d.* per yard.

P.S. It will be observed that No. 1 Net, of which there is the largest consumption, is only 4*d.* the *square* yard, or rather less. All the nets are 56 inches wide, and so made that two breadths can easily be joined.

AGENTS FOR SALE.—London: Mr. Benjamin Edgington, 2, Duke-street, Southwark; Messrs. Charlwood and Cummins, 14, Tavistock-row, Covent-garden; Messrs. Minier, Nash, and Nash, 60, Strand; Mr. J. Carter, 238, Holborn; Mr. W. Clark, 25, Bishopsgate-street Within; Messrs. Hurst and McMullen, Leadenhall-street: Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street.—Peter Lawson and Son, Edinburgh; T. D. Watkinson, Market-place, Manchester; H. Bigland and Co., ditto, ditto; F. and J. Dickson and Co., 106, Deansgate, Manchester; John Shaw, 19, Oxford-street, Manchester; F. and J. Dickson, Chester; H. J. Oldroyd, High-street, Shrewsbury; Fisher, Holmes, and Co., Sheffield.

Manchester, Jan. 11.

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SUBSTITUTE for GARDEN MATS, TARPAULIN, &c.—THICK SHEETING, dressed with a composition, admitting light to plants, and excluding frost, 6*d.* per square yard, or 1*s.* per yard, two yards wide. This is recommended for covering greenhouses, pits, frames, for fumigating cloth, preserving blossom of fruit, and also for shading in summer. It will outlast two mats, keep out more cold, give light, which is so desirable, and is nearly the same price as mat. Also tarpaulin, two yards wide, 1*s.* per yard, or half the width, 7*d.* per yard.—ROBERT RICHARDSON, Net, Tent, and Tarpaulin Maker, 21, Tonbridge-place, New-road, London.

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WATERPROOF CAPES.—Second-hand Police Capes, fresh dressed, 1*s.* 6*d.* to 2*s.* each; New Capes, 2*s.* 6*d.*; old do., large enough to effectually preserve a man from wet while stooping down, 3*s.* each; Coats, 4*s.* 6*d.* to 6*s.* 6*d.*; India Rubber Surface Coats, 20*s.* each; Horses' Loin Cloths, waterproof, 7*s.* each, for Shaft-horses; do. for Fore-horses, 9*s.* 6*d.*, lined and strapped. Dog-cart driving Aprons, lined and strapped, 6 feet by 3 feet 6 inches, 12*s.* each, very soft and pliable. Waggon and Cart Covers, 2*s.* per square yard, made to any size.—R. RICHARDSON, 21, Tonbridge-place, New-Road, near Euston-square, London.

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RABBIT NETS, SHEEP NETS, FISHING NETS. Long Hare and Rabbit Nets, on Cords, 50 to 100 yards long, for catching Rabbits, Shooting, &c., dipped in Kyan's Preparation to prevent Decay. Strong New Zealand Cord, or Cocoa-Nut Fibre, Sheep Nets, 4½*d.* per yard, 4 feet wide. All kinds of Fishing Nets, for Home Use, or Exportation, made by Machinery.—A. RICHARDSON, 21, Tonbridge-place, New-road, London.

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WIRE FENCING, painted, an effectual fence against hares, rabbits, sheep, cats, dogs, deer, &c.; also for enclosing pheasants, fowls, &c.; for heightening existing walls, fences, &c.; and as a protection against petty thieves:—15 inches high, 3*d.* per yard; 18 inches, 3½*d.*; 2 feet, 4½*d.*; 3 feet, 6½*d.*; 4 feet, 9*d.*; and 6 feet, 1*s.* per yard; less than 2-inch mesh. Being worked in oil it will not rust when painted, and will last twice as long before it requires repainting as any other kind of wire-work that is made. Also, sparrow-proof wire-work, 2*d.* per square foot; wire-work, 4 inch mesh, ½*d.* per square foot. Wire-work to order. Numerous testimonials of approval.—R. RICHARDSON, 21, Tonbridge-place, New-road, London. N.B. As this wire kept painted would last 20 years, farmers and others may, at a small expense, preserve their crops from hares and rabbits.

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WORSTED GARDEN NETS, 2½*d.* per yard, made of four-strand worsted, and strongly recommended to protect the blossom of fruit trees from frost, blight, mildew, birds, &c.; also new twine herring nets, 1½*d.* per yard, tanned or dipped in Kyan's Preparation to prevent the decay; old mended up herring fishing nets, tanned, ½*d.* per yard. The new garden nets may be had in pieces any width from 1 yard to 17 yards wide: also on sale, Bunting, and a strong net, which has given great satisfaction, being fine enough to protect ripe fruit from wasps and flies, in addition to a very effectual protection to the blossom of fruit trees in exposed situations, 6*d.* per square yard; green tie for flowers, &c.; nets for covering pheasantries, fishing, and sheep folding, constantly on sale.—R. RICHARDSON, Net and Tent-maker, 21, Tonbridge-place, New-road, London.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT,

**For Supplying Genuine Home-Grown Seeds Carriage Free.**

JOHN SUTTON AND SONS, SEED-GROWERS, Reading, Berks, being extensive Growers of Seeds, and having many Customers in the Southern, Midland, and Western Counties of England, and in South Wales, have made arrangements with the Directors of the above named Railways (all of which converge at Reading), whereby they are enabled to deliver their Goods *Carriage Free* to any Station on either of these Lines; or to any Railway Terminus in London; or Packet Office in London or Bristol.

SUTTON'S NEW PRICED CATALOGUE OF HOME-GROWN SEEDS, being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL and FLOWER SEEDS, *with prices affixed to each article*, will, it is presumed, be found the *most useful* and convenient of any yet presented to the public, the prices being remarkably low, while the sorts are the best in cultivation. *It will be sent post paid on application, enclosing one penny stamp.*

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden,* Messrs. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

The Collections are increased in quantity this year, and are far superior to any others yet offered to the public, both in quantity and quality.

| | £ | s. | d. |
|---|---|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply | 2 | 10 | 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... ... ... | 1 | 10 | 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... ... ... ... ... | 1 | 1 | 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... ... ... ... | 0 | 12 | 6 |

Persons who are already in possession of several kinds of Seeds are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.

*Choice Collections of Flower Seeds* may also be had, either all hardy or half hardy sorts, and will be sent carriage free with the above, or free by post if Flower Seeds only are required, viz.:—*The best 50 Sorts, 10s. 6d.; the best 36 Sorts, 7s. 6d; the best 24 Sorts, 5s.*

N.B.—*It is not necessary that remittances should accompany orders from Clergymen, Resident Gentlemen, or their Gardeners.*

Address, JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

PEAR AND QUINCE STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, St. Helier, Jersey, begs to inform the Public and the Trade that he has the following, of very superior growth, to dispose of:—A few thousands QUINCE, very free and healthy, fit to receive the buds next July, at 40*s.* per 1000; also PEAR Stocks, of superior growth, two years transplanted, and very vigorous, at 40*s.* per 1000; smaller ditto, transplanted, and very vigorous, at 35*s.* per 1000.

This is an opportunity R. L. has never before offered to the Public, for his stock is totally different from the French stock, which has always given R. L. superior growth of trees.—Orders will be punctually attended to. Reference or remittance from unknown correspondents.

The Gardeners' Chronicle.

*SATURDAY, JANUARY* 11, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | Jan. | 13 | British Architects | 8 P.M. |
| | | | Geographical | 8½ P.M. |
| | | | Horticultural | 2 P.M. |
| TUESDAY, | — | 14 | Syro Egyptian | 7½ P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Microscopical | 8 P.M. |
| WEDNESDAY, | — | 15 | Society of Arts | 8 P.M. |
| | | | Ethnological | 8 P.M. |
| THURSDAY, | — | 16 | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| | | | Asiatic | 2 P.M. |
| SATURDAY, | — | 18 | Royal Botanic | 3½ P.M. |
| | | | Medical | 8 P.M. |

IF the marvellous building now rearing its head in Hyde Park had no other merit than that of exhibiting what can be done in England under the influence of a fixed resolution, it would scarcely claim a notice in this part of our Journal; however worthy of admiration it might be, its structure would necessarily be left for discussion elsewhere. But it will be found, beyond all doubt, to have a most important bearing upon Horticulture, as, indeed, its garden origin suggests. When Mr. PAXTON constructed at Chatsworth the VICTORIA HOUSE, fully described in our last volume, page 548, he laid the foundation of a series of changes in the plans of conservatories, the end of which will doubtless be the gradual removal of all those lean-to, span-roofed, or upright fronted plant-houses with which gardens are now decorated. It will probably be found, too, that he will have introduced into very general use those winter gardens which so many have sought for and so few have found.

The difficulty that has hitherto been experienced in making a winter garden, has been its expense. The very term winter garden implies the enclosure of a considerable area beneath a glass roof; but the moment a large area is spoken of, the architect casts his eyes upwards, and insists upon the height bearing a certain proportion to the base. Tied down by the rules of his profession, he is unable to acquiesce in anything at variance with what he calls principles; he finds it indispensable that a greenhouse of any magnitude should be constructed upon the same rules as a Gothic cathedral, or a Greek temple; and the result is a large outlay, not for the benefit of the plants to be cultivated, quite the contrary, but for the support of a professional reputation, the true nature of which is mistaken. The supposed necessity of securing loftiness in a large conservatory, renders great strength indispensable in the roof, and in the walls that support the roof; this involves much cost, which being once incurred, of course leads to stone pavements, and carved fittings, and such other expensive adjuncts as are required to reconcile the interior with the magnificent exterior of the building. But that is no means all. A large outlay having been permitted in a cathedral or temple of glass, the proprietor is naturally unwilling to fill it with any other plants than such as represent a climate entirely different from his own; hence the tropics are ransacked for all that is singular, or unusual, or picturesque in their vegetation; but such plants insist upon a high temperature and a very peculiar atmosphere, in the absence of which they refuse to exist. And this compels the further introduction of costly heating apparatus; so that between massive brickwork, ponderous iron work, and a labyrinth of hot-water-pipes, it is fortunate if the building is prepared for receiving plants at a cost of less than a pound sterling per superficial foot of the area. We entertain no doubt that, in general, the expense is far greater. At this rate, a plant-house, 100 feet long and 30 feet wide, would cost 3000*l.* at the least; and it would require nearly 44,000*l.* to cover an acre in like manner.

But when we look at the Victoria House in Hyde-park, we find that about 18 acres are covered for less per acre than a quarter the sum above mentioned; and of this sum we apprehend that more than half has been on account of the galleries and aisles, required to produce the magnificent effect which we all so much admire. It is not heated, it is true, and for that an allowance must be made; but, giving any reasonable margin for heating, still the difference of cost is excessive. And it is to this that the attention of the country should be directed.

The true principle to observe in the construction of plant-houses should be, as we think, to depend for a fine effect upon the vegetation they enclose, and not upon the roof that covers it. If a grand architectural display is required, there is the mansion in which it may be properly sought; to attempt it in a plant-house, is a misapplication of skill, which usually ends in a costly abortion, too solid for plants and too flimsy for anything else. That being so, high roofs, with a wide span, should be discarded; the immediate effect of which is to obviate the necessity of massive walls and foundations. If in their place is substituted the cheap horizontal ridge and furrow roof, proposed by Mr. PAXTON, with the light columns that carry it, the main elements of expense disappear, heating becomes needless, perhaps, or, if needed, unexpensive contrivances may be substituted for the numerous water-pipes now in vogue, and an acre or two of winter garden beneath a Victoria house, falls within the means of every wealthy person, and of every large city, in the United Kingdom. Nor is the reduction of cost the only gain to be expected from these Victoria houses. The cost, such as it is, is reduced to a sum which is liable to no error. The price of one "square" being known, the exact cost of any number of similar "squares" is ascertainable; and thus we are left in no uncertainty as to whether the expense of our undertaking will be half as much more than the estimate, or twice as much.

To tenants the Victoria House will be peculiarly valuable; because it can be removed in pieces, and put together again with the same ease with which it was fixed. Whereas, from the manner in which plant-houses are now built, they are practically irremovable, and become the property of the landlord, in the absence of some special agreement to the contrary.

It may be true that Victoria Houses are not applicable to all the objects of cultivation. Perhaps not. But there can be no doubt that they will answer perfectly for four-fifths of the purposes sought in gardens. They will not do for propagating houses, nor for growing the difficult kinds of Orchids, nor for some of the more delicate operations of the gardener; but they will make admirable forcing-houses, greenhouses, conservatories, Vineries, and hibernatories—to which let us add orchard-houses—a new name proposed by Mr. RIVERS for buildings where fruit-trees may be cultivated in pots under glass.* In comfort and convenience they will prove infinitely preferable to the narrow spaces now occupied by greenhouses, because of the facility with which they can be made to extend over a considerable area. As to their internal management, it need differ in nothing from what is found necessary in the open air; gravel walks, lawns, shrubberies, will be as suitable as in the common flower-garden? In fact the difference between the Victoria garden, or winter garden, and an ordinary pleasure ground, will consist in the substitution of Camellias, Chinese Azaleas, Indian Rhododendrons, Cape Heaths, Pelargoniums, and New Holland plants of all sorts, for Laurels, Lilacs, and Phillyreas; in having crops of fruit secured against risk, and in the enjoyment of flowers and green leaves all the winter long, in exchange for mud, snow, hail, frost, and floral desolation.

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IT is a principle with vegetable physiologists that a TREE of any age, or dimensions, may be safely TRANSPLANTED, provided its roots can be preserved, and mechanical means be found for lifting a mass so ponderous as a forest tree with the earth in which its roots are embedded. But the difficulties attendant upon carrying out the principle are such as to deter most persons from trying the experiment. Sovereigns, indeed, like LOUIS XIV., were at one time supposed to be the only persons able to undertake such costly operations; and hence, notwithstanding the occasional adoption of the process, the transplantation of large trees may still be called a rare occurrence, even in this climate, which is so especially favourable to its success.

That there really is no difficulty in the matter, except such as skill and adequate means can wholly overcome, is sufficiently proved by the extent to which the transplantation of large trees has been carried at Elvaston Castle, of which some account has been given in our columns. But people evidently think that Lord HARRINGTON'S success is an exceptional case; they do not put entire confidence in Sir HENRY STEWART'S results, and they feel alarmed at what that writer says of the issue of a great experiment tried at Edinburgh some years since, when the site of the Botanic Garden was changed. In the first place, as to the expense of the experiment, this writer says it would be needless, as well as invidious, to investigate that, as it could be no object in a royal institution; and, secondly, he speaks rather coldly of the result, when he merely says that "the removals were executed with a safety which could scarcely have been anticipated." The meaning which this was intended to convey is now explained in the notes to the third edition of the "Planter's Guide," page 386, where we are distinctly informed that although some things had succeeded well, yet that "the ordinary forest-trees on the other hand, such as the Lime, the Birch, and the Walnut, appeared by no means so successful, although powerfully supported with cordage." Faint praise like this, from the pen of Sir HENRY STEWART, it must be acknowledged, was not calculated to hold out great expectations of success in transplanting large trees, considering that the late Mr. M'NAB was the operator; and it must have greatly contributed to damp the ardour of those who would have been otherwise encouraged by the success said by Sir HENRY to have attended his own proceedings.

How general the feeling is, that no certainty attends the removal of old trees, was shown by the manner in which the public received Mr. PAXTON'S proposal to remove the old Elms in Hyde Park, which are now enclosed in the building there. It evidently was thought by some that the proposal was a boast, hazarded for the sake of removing an impediment in the way of the structure. But the thing might have been done last September just as easily as raising the first column of the building; that is to say, provided the rotten old trunks would have borne the strain that there must have been upon them in the act of removal.

The practicability of this has been finally set at rest, in a manner open to no question, by a large experiment in transplanting trees from 10 to 49 feet in height, at Amport House, near Andover, the seat of the Marquess of WINCHESTER. Mr. JOSEPH HOLMES, the gardener there, has published an account of the operation in a highly instructive paper in the new number of the Journal of the Horticultural Society. In this communication he describes with minuteness the method he pursued, the difficulties that occurred, and the final result of transplanting about a couple of hundred trees of

* We have not space on the present occasion to go into any description of these orchard-houses, but we shall certainly do so next week.

very large size from a sheltered valley to much higher ground. The trees consisted of

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Yews | ... | 7 | ... | from 10 to 24 | feet | in | height. |
| Oaks | ... | 18 | ... | „ 16 „ 27 | „ | „ | |
| Beech | ... | 60 | ... | „ 16 „ 49 | „ | „ | |
| Birch | ... | 3 | ... | „ 19 „ 42 | „ | „ | |
| Elms | ... | 22 | ... | „ 16 „ 36 | „ | „ | |
| Limes | ... | 5 | ... | „ 13 „ 36 | „ | „ | |
| Hornbeam | ... | 36 | ... | „ 30 (on an average.) | | | |
| Horse-chesnuts | | 25 | ... | „ 14 „ 33 | „ | „ | |
| Sycamores | ... | 28 | ... | „ 15 „ 37 | „ | „ | |

In all 204 such trees were planted, of which 199 remain. The only one which really failed is thus spoken of by Mr. Holmes. After pointing out the importance, as he conceives, of obtaining a good ball of earth along with the tree, to attention to which he attributes his success more than to anything else, and explaining the nature of the machinery used by him, which he is of opinion is attended with no risk, he adds: "It is in this and other respects that I consider the machinery employed infinitely superior to the principle of Sir Henry Stewart, for example. In transplanting upwards of 200 trees, not one of the number failed, and it was found necessary to sacrifice only one tree. The instance I allude to was that of a fine Beech, 42 feet high, removed on Sir H. Stewart's principle. The tree was rooted equally well with any of its contemporaries, but it had no ball; hence it was difficult to rear upright, and notwithstanding every care in propping, the first high wind laid it prostrate, when it was not considered worthy of further trouble."

His mode of proceeding, after the trees were deposited in the places intended for them, is described thus:—"In placing the tree on its new site, nothing more is necessary than to have a good hole made a foot or more wider every way than the roots extend. A roadway for the truck is cut from the natural surface to the bottom of the hole, and on the opposite side means are afforded for the horses to get out of the hole. The truck being in the middle of the latter, loosen the chain, take out the pole, bring down the head of the tree, so as to allow the edge of the ball to touch the bottom of the hole, then draw out the truck; and should the tree not have got quite an upright position, pull the ropes to render it so, at the same time packing the ball with fine soil, until it stands upright of itself. Every root that has been injured in taking up, should now be cut smooth, and every one laid out as straight and natural as possible, resembling the rays of a circle, great care being taken to pack fine soil firmly round the ball, and to surround every fibre with the best and finest soil, until every root is covered."

"Immediately after transplanting, every tree was *mulched* with old thatch, as far as the roots extended; and they also had a covering of about half an inch of straw around their stems, from 8 to 12 feet from the ground. This was done principally with the view of lessening the demand made upon the tree by evaporation. The straw was found to keep damp a considerable time after every rain. A ridge of soil was also placed around each tree, at the extremity of the roots, forming a sort of cup; and I have frequently seen water standing in these cups half an hour after heavy rain, during the second summer after planting, as by this time, from various causes, the mulch had disappeared, and the surface was firm, owing to the constant treading of sheep, which were allowed to feed among the trees during the second summer after planting, and which was, no doubt, favourable to them.

"No further care was bestowed or considered necessary; and no tree was ever watered, except during the first three weeks after transplanting, when the water-cart was used to most of the two groups of Hornbeam at the time they were in green leaf; and it was thought that thereby an early root action would be induced."

The precise fate of each tree is described by Mr. Holmes, in a set of tables, from which we gather two or tree striking facts. A Beech tree, 42 feet high, made wood 12 inches long the first year, and 7 inches in the two succeeding years; another, 48 feet high, made 8 inches in the first year, and 8 and 6 inches afterwards; another, 49 feet high, which did not make more than 4 inches of shoot the first year, made 6 the second, and 8 the third year (1850). The annual extensions in the three years since removal, have been thus in the following instances:—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Elm | ... | 21 | feet high | 4 —12—13 | in. | | |
| „ | ... | 36 | „ | 3 — 2— 6 | „ | | |
| „ | ... | 29 | „ | 3 — 5— 6 | „ | | |
| Birch | ... | 42 | „ | 4 — 4— 6 | „ | | |
| Oak | ... | 25 | „ | 5 — 3— 5 | „ | | |
| „ | ... | 25 | „ | 4 — 4— 4 | „ | | |
| „ | ... | 26 | „ | 5 — 2— 3 | „ | | |
| Hornbeam | | 30 | „ | 3½— 6— 7 | „ | on chalk. | |
| Hornbeam | | 30 | feet high | 3½— 4— 4 | „ | in loam. | |
| Sycamore | | 36 | „ | 7 — 6— 6 | „ | | |
| „ | | 34 | „ | 3 — 2— 2 | „ | | |
| „ | | 37 | „ | 2 — 2— 3 | „ | | |

What is very important, with reference to the final issue of this experiment, is the present state of the roots, after three years' removal, and the late excessively dry autumn. We can state that their condition is in every respect most satisfactory. We have now before us fine fibrous roots, 3 feet long, taken from the Sycamore No. 16, 37 feet high, when transplanted, whose shoots lengthened 2 inches the first year, 2 inches the second, and 3 inches the third. This tree was transplanted Dec. 29th, 1847; it was taken from a very low, damp, dense shrubbery, surrounded by tall trees, and was transplanted to the most high and exposed part of the new park; apparently for 14 years the tree had had two leaders; one of these rival leaders were cut off in March, 1849. This tree was also affected by the wind more than any other, by reason of its heavy head, as compared with the stem. It was, therefore, a very good one to be subjected to a root examination, as no tree had to contend with such a number of unfavourable circumstances, or appeared to be doing worse. The roots, however, were found, on examination, to be an entire mass, similar to what we have described, in a hole of 11 feet diameter.

Let us add, that the operations now described were accompanied by only two peculiar advantages. There was the usual difficulty with country labourers, the usual failure of first attempts in using new machinery, and the disadvantage of removing trees from a valley to a hill, and from deep loam to thin chalk. The advantages alluded to were the ample means supplied by the noble lord, in whose park the work was done, and the incessant personal supervision of the gardener. Determined to deserve the confidence his noble employer placed in him, he made up his mind at the beginning, that whatever was done should be well done; therefore not a tree was planted but by himself, and not a root was cut and placed except by his own hand, or under his own eye. And that, we submit, accounts in no small degree for the success that has attended such operations wherever they have succeeded.

## MARKET GARDENING ROUND LONDON.

No. II.—Early Potatoes.—These being in great demand in spring, the following plan of producing them has been long practised by the London market-gardeners. The kind which Mr. Fitch cultivates is the true Early Shaw, a large and beautiful white-skinned Potato, whose only fault is its hollow eye. It is very prolific, either under hoops or in the open ground. The Ash-leaved Kidney was not grown to any great extent for market until my plan of managing it was made known, by which I caused it to produce as good a crop as any of the round ones, and it always fetches a better price. When Potatoes are wanted early, a long bed, 5 feet wide, is dug out to the depth of 2 feet. This trench is filled with hot dung, on which 6 inches deep of the surrounding mould is put. Middle-sized whole Potatoes are used for planting; they are placed in close succession along the bed, covered with two inches of mould, hooped and covered over with mats and straw. In about a month they will have sprouted; frames are then got ready, placing 2 feet of hot manure along the whole line of framing, which is sometimes a hundred yards in length; the mould is put on to the depth of 8 inches; the Potatoes are carefully taken up from the striking bed, all shoots are removed except the main one, and they are planted 4 inches deep. Radishes are then sown thinly over them, covering lightly with mould. When the haulm of the Potato has grown to about 6 inches in height, the points are nipped off; this is done, in order to give the Radishes fair play, and, although it may stop growth for a few days, still the crop is always excellent. The plants are never moulded up, a plan which weakens the Potato more than anything else. After planting, nothing more is required but to admit plenty of air, and give water; the crop is not dug up until it has come to maturity.

The above is the treatment frame Potatoes receive, but they are largely grown in hooped beds in the open ground. In the latter case the tubers are sprouted, as I have before mentioned. The beds or ridges are dug out 2 feet deep in January, filled with hot dung and covered with the surrounding mould to the depth of 10 inches. The Potatoes are taken up and planted 5 inches deep, and above all Radishes are sown. The ridges are then hooped over, allowing about 2 feet of space in the middle between the mould and the hoop. They are covered with mats and straw, but as soon as the Radishes come up they are uncovered daily, and covered again every night. This is continued till the Potatoes are ready for digging in May; for sometimes large losses are occasioned by a sudden change of weather on cold April nights. Nothing more is done to the hooped beds, beyond attending to them with water. Market gardeners were wont to cut all very large Potatoes for seed, but they are now getting more into the system of keeping the small ones for planting, and sending the large ones to market.

What are called winter or new Potatoes are the produce of old tubers kept back until July, and then planted. They grow very fast, but the crop never ripens before frost sets in; as soon as the haulm is cut down, large quantities of straw are put on the ground, and towards Christmas the tubers are dug up, put into 1 lb. and 2 lb. baskets, and sold for new Potatoes, at from 6*d.* to 8*d.* per lb.; they are as full of water as a Turnip, on account of the leaves being destroyed before the cells had time to become filled with starch. Cornwall Kidneys are the only ones used for this purpose. On examining one you will find the skin firmly attached, which is not the case with a new Potato, either grown in frames or in the natural ground. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

No. XIII.—Having now got safely over the *pons asinorum* of our subject-matter, including the building of an aviary, the purchase of "stock," the proper mode of preparing the birds' food, &c. &c.—we have henceforward to look on the pleasant side of the picture *only*. With care and attention, you will have very few deaths, very few casualties, and still fewer cases of sickness. In short, you will possess a "model aviary;" and find it a perpetual and inexhaustible fund of amusement.

I have already taken occasion (see my remarks in the Eleventh Article), briefly to direct attention to the fact of the human eye, and general expression of countenance, having considerable influence in the taming of birds and other animals; rendering them, moreover, affectionately-playful.

I have invariably found this to be the case; and, therefore, always make a point of attending to the aviary myself, *in propria persona*. It was no uncommon circumstance for a bird to perch on my head, my shoulder, my knee (whilst stooping), or on my hand, whilst engaged in cleansing the perches, &c. On such occasions, I made it an undeviating rule to notice these marks of affectionate regard, by giving him a fond look, and whistling him a lively tune; also, by offering him some "tid-bit" in the form of a mealworm, an earwig, a piece of ripe, soft Pear, or the leaf of a juicy Lettuce.

Emboldened by the familiarity of their fellows, and remarking that I never abused the confidence reposed in me, nearly the whole family would, after a while, eat from my hand. I have gone so far with many of them, as to take them up singly, while trotting about the floor; kiss them; play with them; and let them run away quietly from my half-open hand. They would as quickly return, and repeat the same ceremony; evidently much gratified with their "tiny" performances.

You will have unlimited opportunities for the indulgence of these reciprocal, pleasing familiarities; for you must enter the aviary every morning, regular as clock-work, to perform the requirements of the day. The perches must all be rubbed hard with a soapy flannel, and afterwards dried; the windows and looking-glasses must be wiped with a dry cloth, the floor must be cleansed from its impurities, the universal mixture must be fresh made; and the residue (if any) thrown into the poultry yard, the fountain cleansed, fresh water turned on, and, in short, a variety of other minor matters must be attended to, which will necessarily suggest themselves at the time.

I would here remark that all persons who *will* have fine birds, must be scrupulously exact in keeping their apartment clean; also in seeing to their toe-nails being kept properly cut, and their feet not clogged up nor fouled by dirt. Look to their "hoppers" and food-troughs, daily, and blow away the refuse of any seed that may remain on the lower ledge.

Be careful to keep a nice selection of Geraniums, Stocks, Calceolarias, &c., in the miniature balconies round the windows, and train your Ivy and other climbers over the upper parts of your windows. The birds will rejoice in an arrangement of this nature, and their song will be loud and continuous. You must also have, nailed on the outside of all your windows (at all events the lower panes), a strong galvanised wire-work frame—the bars sufficiently close to prevent the ingress of the cats, which would, otherwise, dash through the windows, and make sad havoc within. There is but one way of annihilating *these* vermin; to this I have already directed attention. (See Article No. 10.)

In selecting your birds generally, it is always advisable to prefer those of a quiet temper. This remark has reference, in the most pointed manner, to woodlarks in particular. These melodious little songsters are, for the most part, very wild, and very timid, knocking themselves about sadly, even at the reflection of their own shadow. They also have a bad habit of jumping up violently from the floor, when you go near them; especially when they are moulting. Their legs, I should observe, are fragile as the finest glass; consequently, they are liable to be easily broken. Woodlarks, of quiet habits, are a great acquisition in an aviary, where "harmony" is considered desirable. As they race along the floor, in the joyousness of their nature, they pour forth the most deliciously-plaintive notes. Many persons rank them as equal, some as superior to the Nightingale.

Skylarks will neither thrive nor sing in an aviary. Naturally accustomed to soar aloft, they are sure to dash their heads violently against the ceiling, and they cannot be taught to keep upon the floor. It is, therefore, quite useless to admit any of this tribe.

Should you, perchance, observe any wing-feathers lying about, watch narrowly who the offender is that has been thus spiteful; and if you find any recurrence of the outrage, remove him at once. There must be no insubordination allowed. When bringing in the daily

supplies of fresh food, &c., you will be much amused by closely watching the movements of the expectant guests. They will cling to the wires and feed freely from your hand.

If ever you purchase any *good* song-birds, whose plumage may be defective, simply press hard upon the stumps of their tails, and draw out the whole of the tail feathers, one by one. In less than a fortnight after they have luxuriated in the aviary, a new tail will be discernible in prospective, and in a short month their entire plumage will be beautiful. This affords abundant proof of the benefits derivable from air, exercise, and amusement. *William Kidd, New-road, Hammersmith.*

## GRAFTING.

No. II.—On the Affinity of Grafts and Stocks.—I shall only say a few words on the affinity of grafts with the stocks on which they should be worked, in order to assist in destroying the errors of some ancient authors, and which are still credited by some persons, who are led away with the false idea that they may successfully graft trees or other plants on each other, although these should have no family relationship. In consequence of this ignorance, it has been said, that in order to obtain black Roses, you must graft on the black Currant, and to have green, on the Box. They would also wish to persuade us that all trees will take on the Olive, and this on the Fig; the Vine on the Walnut and Cherry; the Peach on the Willow, and the Apple on the great Cow-Cabbage, &c. &c. Happily, our modern authors, and the enlightened men of our age, have entirely rejected these false assertions. It is now well known that, in order to graft with success any woody or herbaceous plant, it is necessary that the plant furnishing the grafts be of the same family as the stock; or, frequently, that both should belong to the same genus, or to varieties of the same species. There should also be some analogy between the saps of the two individuals, not only on account of their affinities, but also with reference to their proper juices. Thus we may graft, with success, the Plum on the Cherry, and *vice versa*, the Apple takes on the Pear, and *vice versa;* but although these genera are of the same family, nearly related, confounded, or united by some learned botanists, yet they rarely exist united two or three years. With regard to the vigour of the stocks, we prefer those that are strong and hardy for large trees, and the weaker for those of smaller dimensions. As to the persistence of the leaves, and the movement of the sap in the subjects to be united by grafting, it is in general necessary that they should nearly correspond. We have, however, some examples to the contrary. The Prunus Laurocerasus and P. lusitanica, both evergreens, live for some time grafted on the Bird Cherry, Prunus Padus, and are less sensible to the cold than those growing on their own roots. The Eriobotrya japonica and E. glabra, also evergreens, live a very long time grafted on the Mespilus Oxyacantha. The Cedar of Lebanon, Larix Cedrus, grafted on the common Larch, Larix europæa, lives upwards of 10 years, but it remains stunted and dwarf. There are other well known facts of this kind, which I need not mention here, as they only prove exceptions to the general rule.

Of the qualities which branches and shoots ought to possess when cut from the trees, and the means to be adopted for preserving their vitality.—Many authors recommend taking the shoots produced at the extremities of healthy vigorous trees. The theory which they develope seems to be conclusive. It must, however, give way to the subjoined observations. Some years before the first transfer of the *Ecole des Arbres Fruitiers du Jardin des Plantes*, effected in 1824, I was obliged to take grafts from more than 400 of these trees, of the different sorts, which were found to be in a state of complete decrepitude, often covered with canker, burns, &c. Such grafts put on healthy young stocks have all grown with remarkable vigour. These trees, from 20 to 26 years old, and of which many had attained the height of more than 36 feet, all bore fruit in prodigious quantity, and were free from original disease, when they fell under the axe in 1841.

The proper sorts of shoots for grafting and budding are not easily known by those not well experienced in the art. In taking shoots for buds, more especially, they make sometimes enormous blunders by cutting either too early or too late. In general the shoots ought to be of medium thickness, excepting those having slender wood, and in that case the thickest ought to be preferred; all ought to have made the greater part of their growth, in order that a considerable number of the buds on the lower part of the shoots may be completely formed, for such only should be reserved for budding, seeing that the bark adjoining these will be also in a firm state, for if the parts are too tender and too herbaceous when placed in the incision made in the stock, they are apt to be decomposed by the abundance of sap in the latter, which ought always to be in greater flow than that of the shoots which furnish the buds.*

The shoots of this description being separated from the trees, the herbaceous extremities are immediately cut off, as are likewise the leaves attached to the eyes reserved, taking always care to preserve at least one-fourth of their petiole.

The shoots should not be exposed to the free air, and they should be kept in a cool moist place till such time as they can be budded; but whatever means may be employed for preserving their vitality, we should avoid too close packing, in order to prevent the fermentation of the substances employed for that purpose.

We know that the moss of our woods (Hypnum) is very proper for this purpose. We, gardeners, often furnish ourselves with a large hollowed-out Cucumber, in which we place the shoots. In this situation they may be preserved in a good state for 10 days. If for a longer period, they must be put in a bottle, which must be filled up with honey, and then corked and sealed hermetically. In this state they will be preserved as fresh as possible during the journey.

Scions, for grafting in spring, are of course much more easily preserved than buds. For these they prefer the extremities of strong shoots, or any other part of which the thickness is about equal to that of a quill, and of the length of from 16 to 20 inches, with prominent eyes, not excepting the terminal, which ought always to be preferred, if it has not burst its envelopes.

It has been long remarked in many countries, that, in order to preserve grafts, especially for transportation, they ought to be separated from the parent tree before they have commenced to vegetate. In the climate of Paris, the month of February appears to us to be the best time for taking them off; they ought then to be placed in a northern exposure, in a horizontal position on the soil, and covered over with some of that adjoining, to the depth of about 2½ inches. They should remain in that position till their buds are well swelled, by which time the stock intended for their reception will be much more advanced, a necessary condition, as I have already explained. If the cuttings for grafts have to be sent to a distance, it is best to send them off as soon as they are taken from the tree. If the journey require only three weeks or a month, it will be sufficient to tie them up in packets, putting some dry moss between them, in order to prevent them from being bruised, and then insert their bases in a ball of moist clay, covered with fresh moss, the whole tightly enveloped in a thin coating of straw. But if the cuttings have to be sent to a great distance, so as to require several months on the way, they should be enclosed in a box, in small parcels, all laid with their tops in the same direction, their thick ends being covered with clay and fresh moss, the whole compactly fastened with laths likewise coated with moss. If for a long sea-voyage, care should be taken to close the box hermetically; but if not, some holes may be made in the top to prevent the shoots ftom becoming mouldy. I have sent grafts packed in this way to St. Petersbnrg, New York, &c., and they have always arrived in good condition. *Translated from the French of D'Albret.*

## VILLA AND SUBURBAN GARDENING.

To those to whom expense is of little importance, compared with ornamental effect, various modes of training Pears may be suggested; but whatever plan is adopted it will be necessary to procure in the first instance plants which can be adapted to the particular system which may be projected. For example, if it is intended to train in the form of a weeping fountain or umbrella, then the young tree must have a straight clean stem at least 5 feet high, which should occupy the centre of the circle, and this circle should have an iron frame fastened substantially upon stone or on brick and cement supports near the surface of the ground. When complete, this frame will exhibit an appearance similar to that of an ordinary striking glass. The system of training pursued in this device is to direct the course of the shoots downwards, placing them from 9 to 12 inches apart. This mode of training has been adopted in many of our best gardens, for it produces an effect in harmony with the geometrical lines which necessarily prevail in kitchen gardens. Another plan consists in inverting this form, selecting dwarf plants for the purpose, and in training the shoots upwards. Both plans have been found to answer, and the expense in either case is about the same. There are those, however, who prefer to have their iron frames made in the form of a cylinder, planting dwarf trees, and training the branches in a spiral manner. This gives a longer extension of branch, and fewer shoots are employed in training. I can bear testimony to this mode answering perfectly, and in a garden having high pretensions to artificial arrangement and skilful management; the effect is both novel and pleasing, and may be maintained at no sacrifice of the crop.

But the most important as well as the most economical arrangement has yet to be mentioned. It is well known that in hot weather, and especially when bright sunshine prevails, few individuals are tempted to visit a kitchen garden, owing to the absence of all shade, and the universal exposure to which they are subjected in it. Now, suppose that a centre or main walk runs north and south, with borders on either side. From these borders I would recommend an arch to be thrown over the walk, and the trees to be trained over the exterior of the trellis, which should form the arch, until the whole was completely enshrouded. This mode of training would be of great importance; for, instead of occupying the borders with the trees, the walk alone would be shaded. The advantages of the plan are—economy, the perfect security of the fruit, and the facility which it affords of protecting the blossoms from frost in spring. The flavour of the fruit, too, under these conditions, is very superior, at least in the majority of kinds; for they are exposed more freely to air and light on a trellis than against walls, and are less liable to become gritty. Experience and constant comparison for many years have fully confirmed this important fact, at least in the climate of London. *Pharo.*

## CULTURE OF THE CAMELLIA.

The beautiful glossy foliage of the Camellia, when in health, as well as its glorious flowers, deservedly gain for it a conspicuous place in every greenhouse; yet, notwithstanding this, I am afraid that, even in these enlightened times, amateurs are not so well acquainted with its management as they should be, and as, from the inquiries often put to you by them, I am sure they wish to be. To have Camellias flourish, something more is necessary than to put them into pots in finely sifted soil, to place them on our greenhouse stage, to water them when they are dry, and to allow them to remain in this condition otherwise undisturbed for years. True, if we give them air, the atmosphere—one of the sources from which plants derive nourishment—will perform its part; but does the soil, under the conditions mentioned, rightly effect its portion of the work? I fear not; and out of this arises all, or nearly all, the mischief of which amateurs complain.

The compost I have found best adapted to the growth of the Camellia is, a mixture of peat and loam in nearly equal proportions, together with a sprinkling of sharp sand. When the loam is light and sandy, less peat is necessary. These should be broken up, not sifted, intimately mixed, and the roughest pieces laid at the bottom of the pot over the drainage, which must be complete, or little success will attend your labours, even though all other conditions should be favourable. By complete drainage, I do not mean that this should be effected so much by crocks, as by the way in which the soil is arranged in the pots; for experience has taught me that the roots of the Camellia are apt to die among crocks alone when many are used; at least, I have found such to be the case. I put one large concave crock or oyster-shell over the opening in the bottom of the pot, with three or four smaller pieces round it, and over these the most turfy portions of the compost, in which the roots of the Camellia appear to delight.

Camellias will grow, and even flourish, in either peat or loam separately; they generally grow most luxuriantly in peat, and the foliage of plants in this kind of soil is of the deepest green; but I have not found them to flower so well. In loam alone the leaves are paler, and the plants are more liable to get into ill health. The utility of mixing the two soils, therefore, will be at once apparent.

The question, "How am I to restore my sickly plants to health?" is one often asked. When Camellias get into ill health, from whatever cause, the best plan is, to turn the plants out of their pots in spring, to examine their roots; and if these are found to be dead or dying, to shake the soil entirely away from them, removing at the same time all pieces that are dead. The top must also be well shortened-in, in order to preserve a sort of balance between that and the root. These things being done, place the plant in a pot just large enough comfortably to admit the roots, in a compost consisting of two parts peat to one of loam, using a little more sand than for plants in health. When potted, water, to settle the soil; place them in a gentle bottom heat, and keep them close; watering at the root but sparingly till the plants begin to grow, but frequently syringing their tops with tepid water. If they have made good roots by autumn, they may be either shifted into larger pots then, or in the following spring, when they may receive the same treatment as the general collection.

In regard to the best season for shifting Camellias, some diversity of opinion exists; some recommending that it should be done in spring, others that it should be performed in autumn. I have tried both seasons, and with nearly equal success; but, as a general rule, I prefer spring-shifting.

It has been correctly stated that the Camellia is not a greenhouse plant; nevertheless, although this is strictly true, it succeeds best when treated as a hardy greenhouse shrub. If it be kept in a temperature above freezing, it will thrive better than if grown in a warmer atmosphere. Camellias, however, like an increase of warmth and plenty of moisture when they are making their new wood; and to ensure a good display of bloom, this latter must be thoroughly ripened. After they have ripened their wood and set their flower-buds, they may be placed in the open air, or retained in the greenhouse, according to circumstances. If kept in the greenhouse, as much air as possible should be admitted, and the foliage may be occasionally sprinkled with water, which will keep it clean and healthy. On this latter point much depends; for it is in the leaves that the sap, under the influence of light, undergoes those changes in its composition by which it becomes capable of forming the various compounds required in the plant's economy. The roots, too, must be kept in a proper state as to moisture.

In cases in which it is not convenient to use large pots, Camellias may be kept in health by watering them occasionally, during their growing season, with weak liquid manure, which will in some measure restore to the soil the fertilising qualities of which it has become deficient.

It now remains for me to speak of propagation, which is, however, more the province of the nurseryman than of the amateur; and yet so much interest attaches to the offspring of one's own handiwork, that, for the benefit of those who like to amuse themselves in this kind of employment, which is as instructive as it is pleasant, I will add, that Camellias are increased by

* I am anxious to impress upon my readers the necessity of paying particular attention to this observation; it is general for all the operations, and I shall pass it over when I come to treat of them.

inarching, grafting, and budding on the single red and Middlemas red, cuttings of both of which strike readily. These latter should be taken off in August or September, as soon as the young shoots are ripe. They are prepared by being cut through horizontally at a joint, or better taken off with a "heel," divesting them of a few leaves at the base, and potting them in sand. They should then be well watered, and the pots placed in a cold frame for a month or six weeks. They may then be introduced into a gentle bottom heat, and potted off into small pots next spring; still keeping them in heat until they have made their growths, then gradually hardening them off. In the succeeding season they will be ready to be inarched, budded, or grafted. The best time for inarching is in the spring, just before the plant begins to grow; and for grafting, in August or September. *J. M. H.*

## Home Correspondence.

*Roses.*—I consider that the following deserve a place in "Crito's" list of "continuous bloomers," viz.: 1. Hybrid Perpetual, Comte d'Eu, than which no Rose with me is more brilliantly vivid in colour, or more lasting in bloom. I had good flowers here (Nottinghamshire) on one of my trees the second week in November. 2. Hybrid Perpetual, Ernestine de Barante justly called by Rivers "a perfect gem," as beautiful as bountiful of its sweet fairy flowers. Well grown on a half-standard tree, where shall we find a more symmetrical or constant bouquet? 3. The Grenadier (Bourbon) so conspicuous in a Rose-garden, on account of its splendid colour in the bud, and so brave, like its namesake, to resist the advance of its enemies (winter and Jack Frost)! 4 and 5 of the same family—Dupetit Thouars and Comice de Seine et Marne—two of the best and most continuous. I had blooms of the latter in my button-hole (side by side with *la belle* Mrs. Bosanquet) the greater part of November last. 6 and 7, to these I would add Devoniensis and Comte de Paris (Teas). They are both hardy (for out-door culture I prefer them worked on the common briar), and what can be more beautiful? The former makes one feel that though the English growers have not originated many new Roses, they may speak of this, as the lioness of her single offspring, "it is a lion;" and I quite commend Messrs. Curtis for placing it A 1, in their elegant publication. Thanks to "Crito" for reviving the "wars of the Roses," so far as the catalogue-nuisance is concerned; and thanks to Mr. Rivers for his most judicious pruning. I must say that I cannot find in his catalogue one Rose which has not some distinctive claim to commendation. *S. R. H.*

*Remedy for Bleeding in Vines.*—In the case of a large limb being removed, nothing more is needed to stop bleeding than to rub the fresh cut over with a little tallow. I was led to adopt this plan from seeing a plumber use a tallow candle to stop a leak in a water-pipe, which it did effectually. *A. Melross, Ardgowan.*

*Fountains for Aviaries.*—In reply to your correspondent, "Jay, Somerset," who deprecates the use of zinc fountains in aviaries, I would remark, that I had two of them in daily use for 12 years, and never experienced any ill effects from their introduction. Quite the contrary. I have also been in the habit of drinking water myself, supplied from a cistern of zinc, which is considered, generally, as far superior to lead. Not being a practical chemist, I cannot go minutely into the "why and because" of the subject. I simply state "facts," which are said to be "stubborn things." It is somewhat singular—is it not?—that dogs, hounds, &c., are, for the most part, supplied with water conveyed to them in troughs of zinc? *W. Kidd, New Road, Hammersmith.*

*Heating.*—I had lately occasion to pass through Guildford, where I saw, in Mr. Penn's shop, in High-street, a model of an excellent heating apparatus for horticultural purposes. It consists of an open tank for bottom heat (or close if required), which sends up a congenial heat, and at the same time warms a range of pipes round the top of the bed. It was heated by means of a jet of gas, and its action was perfect. The amount of fuel required must be trifling, for the boiler was not more than 5 inches in diameter, and it was set so as to be nearly enveloped by the fire. I understood Mr. Penn to say that he had erected many in the neighbourhood. One gentleman, I know he told me, had three. I had no time, or I should have examined one of them; but I am so satisfied with the contrivance that I intend to give it a trial; as I imagine that Grapes, Pines, Cucumbers, &c., can be grown easier and cheaper by it than by any other plan I have seen. *Charles Phillips, Ealing, Hants, Jan. 6.*

*Grafting Cacti.*—I have observed, in the *Sydney Morning Herald*, an account of a very fine specimen of Cereus flagelliformis, measuring, if I recollect right, 360 feet, and the growth of only three years. I have seen this specimen and many others grown by the same person, and I may say that he is the most successful grower of the commoner varieties of long Cacti that I have ever met with. Brown, the man I speak of, grafts, as does everybody else here, on Cereus triangularis, and I doubt not but that if tried in England it will be found a far superior stock to C. hexagonus or any other of the slow growing kinds. Cereus triangularis is a very common species out of England, in consequence, I suppose, of its extremely hardy constitution and rapid growth; and I would recommend growers of trailing Cacti in England to try it as a stock as soon as possible—it will bear great heat, considerable coolness, any amount of wet (above ground), and in rich soil will make a shoot of 6 feet, from a cutting of 6 inches, in one season. The gardener, Brown, who possesses the above-mentioned specimen, has a method of inserting the graft, which appeared to me quite novel, and at the same time successful—it amused me very much when I first heard of it; he bores a hole with a gimlet (!) in the stock and therein inserts the graft. On trying Brown's plan I found it extremely difficult to retain the graft in the hole, in consequence of the confined air forcing it out, and therefore invented a plan which effectually removed the difficulty; it consists in inserting with the graft a fine tube—the hollow culm of a Grass will do, and therewith sucking out the inclosed air and liquid; when the tube is withdrawn the graft is retained, as the dentists say, "on the atmospheric principle," and requires no bandages to keep it in its place. My advice to gardeners in England who wish to procure gigantic specimens of slow growing Cacti in a short space of time, is therefore to procure plants of Cereus triangularis, plant them in any rich soil, give them plenty of heat and water; when high enough stop the shoots in order to make the angles thicker, at last graft as above, at a time when the stock is attempting vigorously to sprout at every eye. As I cannot find the paragraph above alluded to, and as I may be mistaken as to the length of the stock, I send you the dimensions of a plant of my own, grafted about six months since. The stock was about six inches long, and had been separated about six months previously, but had been starved until shortly before it was grafted; it was then planted in the hollow stump of a Eucalyptus, filled with about equal parts of loam, white ants' nest (a cellular matter of vegetable origin), and sheep-dung, with about one-tenth part of burned sheep-bones intermixed; the whole well rammed in, in order to facilitate the decomposition of the dung and to prevent shrinkage. The graft was of the hybrid called C. Mallesonii, and was about 3 inches long. There are now 17 shoots, all pushing at the tips; eight of the largest are from 12 inches to 15 inches long, and none of the rest less than 8 inches. The original plant with 3 shoots of about 6 inches each, was planted in the stump at the same time as the stock, and has barely replaced the shoot I took off it to graft. By-the-bye, in this climate mid-winter appears to be the time when C. speciosissimus and C. flagelliformis make all their growth; C. Mallesonii also, of course; so also Epiphyllum Ackermanni. This place is in S. lat. 25·30, and there is occasionally real frost in the flats, but not enough on the hills to touch the Sweet Potato vines. *J. C. Bidwill, Tinana, Maryborough, N. S. Wales.*

*Rain.*—The monthly depth for the past year, according to my rain gauge, is as follows:

| | Inches. | | Inches. |
|---|---|---|---|
| January ... ... ... | 1.28 | August ... ... ... | 1 91 |
| February ... ... ... | 0 99 | September ... ... | 1.08 |
| March ... ... ... | 0.60 | October ... ... | 1.77 |
| April ... ... ... | 1.43 | November ... ... | 1.98 |
| May ... ... ... | 2.25 | December ... ... | 1.46 |
| June ... ... ... | 0.61 | | |
| July ... ... ... | 1.89 | | 17.25 |

The fall of rain last year is the smallest I have ever noted. In the remarkably dry season of 1847, the quantity here was 17.60 inches. *Henry Dixon, Dorwards Hall, Witham, Jan.* 1851.——The popular belief here is, that this locality is dry; but by comparing the following table with that furnished from Chiswick, it will be seen that instead of this part of Sussex receiving less rain than the average quantity which falls at other places, the contrary is the fact; for we have annually more rain than the neighbourhood of London by from 8 to 15 inches.

| | 1846. | 1847. | 1848. | 1849. | 1850. | Mean. |
|---|---|---|---|---|---|---|
| | In. | In. | In. | In. | In. | In. |
| January ... ... | 5.50 | 2.37 | 2.10 | 2.77 | 1.00 | 2 748 |
| February ... ... | 2 30 | 1 62 | 5 07 | 2.32 | 2.96 | 2 974 |
| March ... ... | 2.16 | 1.22 | 3 94 | 0.52 | 0.50 | 1.608 |
| April ... ... ... | 2.18 | 1.14 | 3 35 | 4.00 | 3.65 | 2 854 |
| May ... ... ... | 2.07 | 2.29 | 0.41 | 3.46 | 3.59 | 2.364 |
| June ... ... ... | 1.12 | 1 95 | 4.65 | 1.31 | 2 24 | 2.240 |
| July ... ... ... | 2.34 | 0 71 | 4.66 | 2.21 | 2 09 | 2.522 |
| August ... ... | 4 39 | 2.02 | 4 88 | 0.74 | 3.32 | 3.070 |
| September ... ... | 3.16 | 1.70 | 3 83 | 3.52 | 2.69 | 2 980 |
| October ... ... | 6.61 | 2.73 | 4.95 | 4.76 | 2.48 | 4.306 |
| November ... ... | 2 67 | 2.42 | 2.23 | 2 10 | 4.15 | 2.714 |
| December ... ... | 2.16 | 4.58 | 4.01 | 3.77 | 2.94 | 3.492 |
| Annual amounts ... | 34.61 | 24.75 | 44.08 | 32.11 | 32.21 | 33.952 |

—*A. D., Dale Park, Arundel.*

*Destroying Scale.*—I have found two parts boiled, and one part raw Linseed oil effectual in eradicating the mussel scale. I use it in a cold state. In cleansing Pear and Apple trees, I loosen them from the wall, and carefully anoint every part with the oil, which must be dry before the trees are again nailed to the wall. Apply it with a painter's brush. *J. Johnston, Gledston Gardens, Skipton in Craven.*

*Poinsettia pulcherrima.*—All who have a stove should cultivate this plant, whose beautiful floral leaves or bracts create a gay appearance for about three months during the dullest time of the year, and even a small piece introduced into a bouquet is sure to be admired. When I cut down an old plant, in January or February, I select for cuttings those portions on which the eyes are placed rather closely together, and make them into lengths of about a foot, each having six eyes. I insert the cutting over the two lowermost eyes into a tan bed, in which Pine-apples are grown. The eyes above the tan will generally all have pushed by about April, and by that time roots will have been sent out from the lower eyes. I then take the plants up carefully, and pot them, shading them from the sun for a week or so; when they have become well established in the pots, or about Midsummer, I pinch the tops off the young shoots, which induces them to double their number, each shoot breaking at the two uppermost eyes. I now encourage them to grow vigorously by giving them plenty of heat, air, water, and root-room. I pot them in a mixture of loam, peat, and manure, in equal parts, and keep them growing on until November, when they begin to show their bright crimson bracts, and they remain objects of great attraction during the winter. I have a plant at the present time with eight heads, or bunches, of red leaves on it, each head measuring from 12 to 20 inches across. The temperature I grow it in varies from 55° to 70° in winter, and from 65° to 90° in summer. *I. Rust, Pashley, Ticehurst.*

*Grafting.*—Your commencement of a series of articles on this subject leads me to suggest that nurserymen would serve their own interests by selling scions or cuttings of the different varieties of fruits, as well as worked plants. Many a man has healthy established trees of second-rate kinds, which he would grudge to root out, but which he would gladly cut back and graft with better sorts, if he only knew where scions were to be procured. His only resource at present is to go a-begging from his neighbours, from whom he perhaps does not obtain the varieties he would like, and would willingly pay for, but something that at least promises to be better than his own. If scions were to be had at the nurseries, they would not only be in demand for such purposes, but there would be an opportunity of testing the fitness for different soils and climates of many of the new varieties of fruits lately introduced, by inserting grafts on the branches of established trees, before taking the hazardous and expensive plan of throwing away old trees to be replaced by new and untried kinds. If Mr. Rivers, or some other of our leading nurserymen, availing themselves of the facilities afforded by the Post-office, would advertise scions at—say 3*d.* or 6*d.* each—free by post, newer sorts being higher in proportion, I have no doubt that a good deal of money might be made of what at present goes to the rubbish-heap. *A Scotchman, Ford.*

*Effect of different Localities on the Flowering of Plants.*—I am on the red marl of the coal measures, but well drained; the garden soil of course has not too much clay; now, I never get a flower on any of my English Irises, or any broad-leaved flags. Can any of your readers give me a probable cause of their failure? Their situations are various, and none over damp, dry, or sunny, &c. Near Wells they cannot flower the Tropæolum tuberosum well, whereas, with us, it has literally as many flowers as leaves, and yet it is a very rare plant; one root will cover as much wall or trellis as a Cobæa and Maurandya together. If any of your readers fail in their attempts to flower this very beautiful creeper, let them mix some marl with the soil, and plant late in April. *Jay, Somerset.*

## Societies.

ENTOMOLOGICAL, *Jan.* 6.—The President in the chair. Various donations to the library were announced from the Royal Agricultural Society, the Linnean Society and the Society of Arts and Sciences of Lyons; and also the new Catalogue of British Macro-Lepidoptera, printed for the British Museum by Mr. J. F. Stephens. Additions to the museum were presented by the Rev. Mr. Kuper and Mr. F. Smith. Mr. S. Stevens exhibited fine specimens of both sexes of the rare Dynastes Jupiter from Columbia, and also an exotic moth within which a parasitic Tinea had been reared, the cocoon of which was attached to the head. Mr. Thomas Allis exhibited a specimen of the very rare Drepanepteryx Phalænoides, from Bowness. Mr. Douglas stated that since the last meeting he had observed several instances of the occurrence of the curious small Lepidopterous larva, which forms a movable case of the dried flower-buds of Origanum, so exactly resembling the buds as to escape ordinary notice. Dr. Wallich, F.R.S., read a translation from the Transactions of the Royal Danish Academy of the remarkable memoir of Dr. Schiodte on the subterraneous Fauna of the Adelsburg caverns in Illyria, the mammoth cave in Kentucky, &c., the great peculiarity of which consists in the want of eyes of almost all the species of animals of which it is composed. In addition to the singular Proteus anguinus, several Crustacea and beetles had been previously observed in Europe, whilst in America several blind species of fish had also been observed, and a considerable number of Crustacea, spiders, and insects. Dr. Schiodte had himself investigated the Alpine caverns, and had succeeded in detecting several most remarkable Crustacea, Arachnida, and insects, the minute description of which, with observations on their physiology and relations, formed the chief subject of the paper translated by Dr. Wallich. One of the species of Coleoptera is especially interesting, as it forms the type of a new and distinct family allied to the Silphidæ. —Papers were also read by F. Walker, Esq., on six new British Dipterous insects; by Mr. Dallas on the genus Acanthosoma (one of the Pentatomideous Hemiptera), with descriptions of four British species; by Mr. Douglas on the genus Gelechia (belonging to the Tineidæ, including Tinea cerealella, a species destructive to Cereals); and by Mr. Stainton on some new species of Gracillaria, a genus of Tineidæ.

BOTANICAL OF EDINBURGH, *Dec.* 12.—The President in the chair. Office-bearers for the ensuing year were elected. Several donations to the library and museum were announced. A specimen of Anastatica

hierochuntina, or Rose of Jericho, was exhibited, and a stem of Agave from the Mauritius. Dr. Balfour gave an account of a botanical excursion which he had made in company with the Rev. Mr. Drummond to Ben Chonzie and other mountains near Crieff, in October, last year. The following communication from Mr. C. Lawson, jun., relative to the growth of the Tussac Grass (Dactylis cæspitosa), in Orkney was read. Mr. Traill, of Woodwick, in Orkney, has been the most successful cultivator, and from a letter written by him, I proceed to give the under-mentioned particulars regarding his method of culture:—In leisure time, previous to June, some pasture ground is selected and trenched. During the first week of that month Turnip seed is sown in drills 4 feet apart. So soon after as wet weather sets in, Tussac Grass plants are dibbled in between the rows of Turnips, at a distance of 3 feet apart. After the Turnips are removed for use, manure is wheeled in and Potatoes set on the same ground. By adopting this method of culture, the Tussac is cultivated with no expense beyond the outlay for the plants and the labour of dibbling. The work requisite for the two intervening crops is found to be quite sufficient to keep the Tussac plants clear, after which they need no further care, and speedily close up the rows. Where practicable, however, it would be much better to commence with a field previously manured for Turnips, by which a saving of the ground in wheeling manure during winter would be effected. Mr. Traill thus sums up the advantages of the Tussac: 1. The enormous produce of a highly nutritive food for cattle. 2. Having this food every day in the year equally plentiful. 3. The conversion of a poor unproductive field into the most productive of the whole farm in two years, without outlay beyond the plants themselves. 4. The ease with which it can be cut and carried off in snowy weather, and the certainty with which a farmer can count his supply of fodder. 5. When cut down for use, it recovers its bulk in two months in winter, and in about five weeks in the summer. During the four years, over which Mr. Traill's experiments extend, the plants have been steadily increasing in height, and at the present time, the oldest ones have attained 7 feet. When not cut, Mr. T. notices that the leaves continually augment in number, length, and breadth, whilst about a fourth of the older leaves gradually turn yellow and dry up, become brittle and fall to the ground. It is somewhat remarkable, that this decay does not take place at particular seasons, but is progressively developed throughout the year. January is the time of flowering, but the flower-spikes are fully formed in December, generally during the first week. While the necessity of procuring strong and healthy plants will naturally suggest itself to all, the cultivator must bear in mind, that it is necessary to the vitality of the plant, that it be kept free of weeds for at least two years. This, Mr. Traill very satisfactorily proved last year, by selecting 12 fine healthy plants, and sowing Rye-grass around them. As the Rye-grass got up, one-half of the Tussac was completely killed, and of the remainder, scarcely a single plant can be discerned. As to soil in which the plant is grown, Mr. Traill gives the following, progressing from the best to the worst:

1. Dry sandy peat.
2. Wet do.
3. Any dry sandy soil.
4. ,, wet do.
5. ,, dry peat do.
6. ,, wet do.
7. ,, dry peat and earth.
8. Any wet peat and earth.
9. Dry peat and clay.
10. Wet do.
11. Dry friable clay.
12. Wet do.
13. Dry stiff retentive clay.
14. Wet do.

Mr. Traill's soil, generally speaking, is of the very worst kind; but he overcomes this disadvantage by mixing sand, peat, and retentive clay. The specimens sent to the Botanical Society were grown in the worst kind of soil. The principal objection to this soil is, that the plants, perhaps a tenth, die out the first year, and sometimes a few in the second. If they survive this period they thrive quite as well as those grown in the better soils. Mr. Horsburgh, of Tongue, one of the factors of the Duke of Sutherland, has, at the request of his Grace, also instituted a series of experiments with the Tussac, which, however, in their results, are somewhat different from those of Mr. Traill. Mr. Horsburgh obtained from us in 1846 two plants of the Grass, which "tillered out," to use his own words, "beautifully." In the following year, by a division of the roots 60 plants were obtained, which were planted in his garden at Tongue. In 1848 the plants were again divided, and a portion of them dibbled into mossy ground, exposed to the influence of the sea spray. In the year following (1849), all the plants, with few exceptions, flowered and produced abundance of apparently good seed, which was sown in August of the same year, but did not vegetate. In December, the plants in the garden were cut, and the Grass given to cattle, who devoured it greedily. In the spring of 1850 a number of the plants which had been cut, withered away and completely "died out." A few of the healthy plants were again divided, and set in a patch of sandy ground near the Ferry at Tongue (west coast of Sutherland), and at the present date are reported to be healthy and thriving. Very few of the plants in Mr. Horsburgh's garden bore seed this year. A portion of last year's seed, which was saved for further experiment, was sown in June of the present year and vegetated freely; but in consequence of being hoed up by an ignorant lad, the result of this experiment cannot be known. Mr. Horsburgh states as the result of his observation that the Tussac thrives best in rich garden soil, where its growth is very luxuriant, while on poor mossy land the plants thrive very indifferently. The greatest length of blade of Mr. Horsburgh's specimens was 6 feet; but the average was only between 4 and 5. All the plants stand the winter very well. Mr. H.'s gardener is inclined to attribute the decay of the cut plants to the nibbling of mice, which little animals not only lived upon them, but constructed their nests at the base of the thick bushy tufts. —Dr. Balfour read a communication from James Backhouse, jun., York, relative to rare alpine plants picked by him in the Clova, Glen Isla, and Braemar districts. Mr. Anderson gave a short account of the Flora of the district around Clonmel. There was exhibited from Mr. Murray, of Henderland, a specimen of Rhodoleia Championi, brought from Hong Kong, by Captain Champion. The plant is very showy, and belongs to the natural order Hamamelidaceæ. Mr. Storey presented a specimen of Quercus intermedia, Don. He also sent for exhibition a specimen of Naias flexilis, picked by Mr. D. Oliver, jun., in Ireland. Several new members were elected.

## Reviews.

*An Arctic Voyage to Baffin's Bay and Lancaster Sound, in Search of Friends with Sir John Franklin.* By R. A. Goodsir. 8vo. Van Voorst, pp. 152.

Mr. Goodsir sailed for the Arctic regions in March 1849, in search of the unfortunate expedition, in which he had a brother. Although his attempt was, like so many others, unsuccessful, it enabled him to collect some curious facts respecting the natural history of the icy seas; and this he illustrates in the simple, unaffected, and interesting narrative before us. Criticism on such a book is misplaced. Extracts are all that we feel entitled to indulge in.

To the oft-repeated tales of whale fishers, the following may well be added:—

"We captured one middling-sized whale off this bay, and then slowly worked our way southwards. For some time we saw nothing worthy of notice or comment. A little to the southward of this, however, a few days afterwards, we fell in with a 'run' of fish. It was about mid-day, the water was very free of ice, and a good deal of sea was running, there being a sharp breeze. Three of the boats were lowered, and they had a pretty good tossing about for some hours, but were completely unsuccessful. It moderated, however, as the afternoon wore on, and we were again rejoiced to see the horizon broken by the spouting jets of numerous whales. A large 'sconce,' or rather small floe, lay some distance a-head —round this they were playing in dozens. All sail was crowded on at once, though there was a strong breeze blowing; but there being three or four other vessels in company, it was, of course, necessary to be a-head of them. This we accomplished in gallant style; the good old 'Advice,' when well handled, clumsy as she looked, could still sail well; and, indeed, throughout the whole voyage, when we were in company with the others, I think we showed as good a pair of heels as any of them.

"Well, we got into the midst of the black floundering masses; one, two, three boats were in an instant lowered, and in five minutes one of the largest of the oily giants was writhing and struggling under the tortures of a deeply-planted harpoon,—'she' made rather a long and hard fight, but was ultimately subdued.

"In the mean time, all the other vessels had 'got fast,' each had secured his whale, but the rest of the fish had beat a quick retreat. Interested as I was in the success of our own boats, I could not help enjoying the interesting scene that was going on amongst those of the 'Truelove;'—they had got fast to a large whale, but she showed better fight than any I had as yet seen. For some considerable time she lay on the surface, never diving, raising her huge tail and rump high out of the water, and lashing it into a foam, that even at the distance I was, seemed like that at the foot of Niagara. The boats during this time lay at a respectful distance; but soon the immense animal getting exhausted, one after the other cautiously advancing, drove their weapons into her, and she was soon thoroughly vanquished, when the happy conquerors found themselves possessed of more 'blubber' than their ship could well stow, as they had previously been very fortunate."

Even in the whale ships it appears that horticulture begins to be practised; and we should not be surprised to hear that in some future expedition, a regular Cabbage-garden had been established. Mr. Goodsir speaks with exultation, as well he might, of the early Potatoes which Captain Penny's ship rejoiced in.

"It may appear rather strange that we should have early Potatoes on board ship within the Arctic circle, but for upwards of three months, from June to September, we had every day more than a quart of them at dinner. A large supply of excellent Potatoes had been put on board at Dundee, a good deal of mould being amongst them, and the place where they were stored being not far from the stove, and under the water, they had sprouted, and formed young tubers. The steward having informed us of this, orders were given that he should be careful in removing the daily supply, and rather to encourage than interfere with the growth of this unlooked-for delicacy. They were about as large as a pigeon's egg, and exceedingly good—better, indeed, than forced early Potatoes at home. As I am upon the subject of eatables, I may mention that the captain and I not unfrequently indulged in a broiled whale steak, and broiled whale skin, both of which are very fair eating, indeed, and which, if it came to be a matter of necessity, I should think excellent."

The death of a whale, 65 feet long, is thus narrated:—

"The stern-boat was the only one now left on board. The master ordering it to be lowered, and getting into it himself, I jumped in with him. We pulled up to the "fast boat," to see how things were getting on, and found they were only fast with the gun-harpoon, and not very well with that. Whilst talking to the harpooner of this boat, we heard a commotion amongst the others, and almost before we had time to turn, bang! went one of their guns, and the fish was made almost secure. She seemed to dive under the floe, and reappeared almost at the same place, for she next came up within a very short distance of where she was first struck, when a third boat got fast to her, and before she dived again, she was mortally lanced. When she next appeared at the surface, it was close to our boat; we were at her in a minute, when the ready lance of the master was twice buried deep behind her fin. She made a rush forwards, which pulled the lance out of his hand, but he soon had a second—we 'hardened up' to the fish, when he plunged it into her side. She had been quiet enough hitherto, but it was now full time for him to cry, 'Back, men, for your lives!' I heard a sudden whizzing, whistling sound in the air—I thought a black cloud had passed between us and the sun—a drenching shower of spray passed over us, and there was a loud *thud* upon the water on the other side of the boat, as her huge tail descended into the sea, which it continued to lash into seething foam for more than five minutes. It may be believed that whilst this was going on we all kept at a safe distance. It was, however, only the last struggle—'the dying flurry,' and the huge mass was soon lying powerless and motionless before us. This was a female whale, and one of the largest we had yet seen."

## Miscellaneous.

*Death of Mr. Wilmot, of Isleworth.*—We regret to announce the death of Mr. Wilmot, which happened on the 2d inst., and in the 74th year of his age. As a market gardener, no man in his time held so prominent a position. From early youth, to the day of his decease, he evinced an ardent enthusiasm in everything relating to gardening; for although it is well known that he pursued his profession most successfully and profitably, yet no cultivator for the market ever expended so much as he has done in mere experiments. He tested the efficiency or inefficiency of every plan connected with the construction of glass houses, and in heating them has proved every system devised during these last 26 years. In the cultivation of the Pine-apple, during his long career, Mr. Wilmot has been, upon the whole, eminently successful; and every mode propounded, from Speechly's to the Meudon plan, has been tried by him; the same may be said as regards the cultivation of the Grape. Every variety of soil, and all the various modes of constructing borders, have been amply proved under his supervision at Isleworth. It is scarcely possible for any one to have exhibited a greater degree of interest than Mr. Wilmot did in the introduction of new and improved varieties of fruits. During the period of which we speak, he made numerous excursions to the continent, in order to inspect the gardens of Belgium, Holland, France, and Germany; and on these occasions he made extensive purchases of varieties which appeared to him worthy of cultivation in this country. He was, however, often deceived, still this never damped his ardour. When Cayenne Pine-apples first became known to English gardeners, Mr. Wilmot was early in the field, and made large purchases, in order to test their value. His experienced eye, however, soon detected that instead of the smooth-leaved variety, the French were importing a large intermixture of the smooth-leaved Havannah, a comparatively worthless kind. Whatever he considered likely to suit the taste, and that would benefit the English public, that he procured, be the expense what it might; and so late even as last autumn, he planted a large breadth of the Jefferson Plum. Upon tasting that variety, he at once saw that it was an acquisition. In his relations with men interested in his professional pursuits, he at all times evinced the utmost frankness of manner, and explained everything without the least reserve. His mind soared above what are called garden secrets; consequently he imparted, especially to young gardeners, much valuable advice and information. Generous and kind-hearted, he was ever ready and willing to help the distressed; and everything he did was in a liberal and princely spirit. Naturally endowed with a vigorous mind, and great honesty of purpose, he was largely entrusted with the valuation of garden property. In short, he has left a blank in the community of horticulturists. *G.*

*Horticultural Meetings in the United States.*—The recent fairs, horticultural, agricultural and mechanical, have made a glorious era in the history of our State and City. The effects of such an in-gathering of the people, to witness the collected results of their own and neighbours' industry and genius, and the enlarged views produced upon the minds of all, may be imagined; but few will be able, even in their imaginations, to realise the effects of the exciting causes which have been brought to bear in this way upon the great mass. Time alone will show the result. It is like a great school to most men—being an occasion upon which new ideas or more liberal views are received—and the mind thereby improved, the heart expanded. A minute description of this fair would not be appropriate for a horticultural paper, but a few words in our own department may not be amiss, especially, since the merits of horticulture begin to be so highly appreciated by the agriculturists of our State, that horticultural societies are likely hereafter to have a representation in the body

of delegates who select the members of the State Board of Agriculture. The Floral Hall was a large tent, ornamented with evergreens, and decorated with greenhouse plants, floral designs, and displays of flowers—some of which were from the most distant parts of the State.—Mr. M'Intosh, one of the largest contributors of Roses, Phloxes, and Dahlias, &c., was from Cleveland—and he carried off some of the premiums too. The display of fruits was large, and occupied the tables around the entire circuit of the immense tent. The Apples, especially, were in great profusion, and from many distant points. Among them all, however, none were more admired than those of F. G. Carey, of this county, well known as the Principal of Farmer's College, and equally well known as the contributor of fine fruits at our Horticultural Hall. Grapes were very abundant, both those from open culture in the vineyards, and also from glass Vineries. John E Mottier was a liberal contributor of the former, having piles of Grapes on his tables; many visitors from this part of the State were astonished to see such fine well-ripened specimens, as those brought by Mr. Carpenter from Kelly's Island, in the extreme north, where it had been supposed the climate was too inhospitable for Vine culture. If Mr. Carpenter's experiments continue to succeed as well as they promise, this island will become an important region for fruit. A few years ago, when taking refuge under the lee of its forests, during a storm on Lake Erie, the passengers went ashore, and we were satisfied with a few black Raspberries—the only fruit product then to be found on the island. *Cincinnati Horticultural Review.*

*Gigantic Fossil Tree.*—Prof. Göppert has described a trunk, or rather the lower end of a trunk, of Pinites protolarix, discovered in 1849 in the brown coal of Laasan in Silesia. It was found in a nearly perpendicular position, and measured more than 32 feet in circumference. Sixteen vast roots ran out almost at right angles from the base of the trunk, of which about 4 feet stood up perfect in form, but stripped of bark. Unfortunately the interior of the stem was almost entirely filled with structureless brown coal, so that only two cross sections could be obtained from the outer parts, one 16 inches, the other 3 feet 6 inches broad. In the first section Prof. Göppert counted 700, in the second 1300 rings of wood, so that for the half-diameter of 5½ feet, at least 2200, but probably 2500 rings must have existed. Since there is no reason to believe that the rings were more frequently formed in earlier ages than the annual rings are now, this tree would appear to have been from 2200 to 2500 years old; a conclusion which acquires especial interest from the fact that this observation gives the first certain foundation for a chronology of the ancient world. *Botanical Gazette.* [We should be very sorry to build any theory upon such evidence as this, for reasons which English physiologists will understand.]

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

GENERAL PLANT HOUSE.—Eranthemums, Euphorbias Poinsettias, and many other woody plants which look unsightly after they have done flowering, may be cut down, and placed in any situation not too cold or damp, where they can be kept nearly dormant until spring. Gesneras, and similar habited plants, must be kept near the light, even after their flowers are over, otherwise they will be much weakened; and while their foliage continues green and healthy, give sufficient water to moisten the contents of the pot. Bring forward successions of the above winter flowering plants for supplying the drawing-room. The Phaius, Epiphyllum truncatum, and varieties, Francisceas, &c., will now be advancing towards a flowering state, and should be assisted by being placed as fully in the light as possible. The autumn-struck Gloxinias and some of the older bulbs which were dried off early last summer, will now be coming forward. A few Hyacinths should be put into a frame, heated slightly, at first. They delight in dung heat, and the finest blooms are always obtained in pits or frames heated with dung linings, and the plants plunged in leaves or tan. Cuttings of any useful winter flowering stove plants put in now, will be in a fine state for flowering next winter. Where space is limited, it is in many cases found necessary to do away with the old plants as they cease flowering; first taking a sufficient number of cuttings to secure a succession.

### FORCING DEPARTMENT.

Where extensive forcing is carried on, it is indispensable that a good stock of soil and leaves be provided, and laid up carefully in as dry a place as possible. Leaves, if collected when dry, and thatched over, will not ferment until required for use, and their heating property is thus economised. It is but seldom that shedding can be had for a large stock of these; but there are always some means at hand of keeping them dry, if only by covering them with Fern. A sufficient quantity of tan should also be laid into a shed; and thus, by having all things ready at hand, there will be the greater chance of success in the various operations carried on in the houses and pits, at this critical and busy season. PEACH-HOUSE.—In the early house, where the buds are now swelling, a temperature of about 50° by night, with a rise of from 5° to 10° by day, will be required, according to the clearness of the weather. Give air daily, and sprinkle the trees frequently during clear weather. STRAWBERRIES should now be taken into the forcing-pits once a fortnight. The pots should be plunged in leaves, and the plants kept about 1 foot from the glass, with a temperature of 45° to 50°, which will be sufficient top-heat for some time, after they are first brought into the pit. Give air at all times, except during very cold weather, and sprinkle slightly with the syringe, when bright days occur. MELONS.—Some seed of an early kind should now be sown.

### FLOWER GARDEN AND SHRUBBERIES.

Active preparations should now be made for propagating, by getting pits, frames, soil, and pots ready. In taking cuttings of bedding plants, it is worth while to bestow extra attention on the naming and distinguishing of the different kinds. It is very tantalising to find the harmonious arrangement of your colours destroyed for want of a little more care on the part of your propagator. When the weather permits, let any alterations in the ground which have been decided upon, be persevered in with all possible despatch, keeping always in mind that success depends upon the careful manner in which every operation is performed. These remarks more particularly apply to the formation of the ground, the preparation of the soil, and the taking up and replanting of choice shrubs. If not done already, cuttings should be put in immediately of many hardy shrubs, as the Jasmine, flowering Currant, Honeysuckle, &c. Look sharp after the beds of Crocus and other spring-flowering bulbs, as mice are very apt to attack them. We use the common figure 4 trap, baited with anything that mice are fond of, and find it answer the desired end.

### FLORISTS' FLOWERS.

The mildness of the season is telling on stocks of Polyanthuses and Auriculas; for during a tour we have made during the past week, we find that many have bloomed prematurely; amongst named varieties, this is to be regretted; with seedlings, amateurs are so anxious to ascertain the properties of their *elèves*, that it is rather desired, than otherwise; but no decisive step should be taken with them at this season, unless they are radically bad—in that case, they may be pulled up. In connection with these flowers, the necessary compost should be now attended to, the more simple the better; we are no advocates for sugar baker's scum, night-soil, &c., &c., which entered into the nostrum, of Emmerton, and others of his day. Well sweetened vegetable mould, with clean river sand, should enter largely into the compost; this, with loam taken from an old pasture field, well turned in frosty weather, to mellow, and free from insects and their larvæ, is the best to get together in quantity for these flowers of anything we know. If stimulants must be given, let it be done in the way of top dressings or liquid manure; but by all means, if the amateur wishes to escape cankered roots, with certain loss, let him grow his plants in the compost above alluded to.

### KITCHEN GARDEN.

CUCUMBERS.—If you have no other convenience for growing Cucumbers, materials should now be prepared for making up a bed for them. Let the litter be mixed with leaves, and the mass turned frequently, to allow the rank steam to pass off before the bed is finally made up. Those already advancing must be carefully attended to at this dull season. By a proper arrangement of the ventilators, a constant circulation of air should be secured, and where pipes or flues are used the portion of fresh air which is admitted from the outside, should, if possible, be made to pass over their warm surface before it comes in contact with the plants. Upon a proper attention to this point, the health of the foliage, and the setting of the fruit, very much depend. A high night temperature and a scalding evaporation is very injurious. ROOT-HOUSE.—Take advantage of wet weather to examine and remove any decayed or decaying roots, and adopt efficient measures for keeping out the frost.

### HARDY FRUIT GARDEN.

Short fruitful shoots of choice fruit trees for grafting should be secured, and laid in under a north wall. Long scions are not so good as those about 4 inches in length, which may be often found on a spur. In selecting these make choice only of those varieties which have been proved by experience to be well adapted to the locality. There are many varieties which do admirably in one county, but are worthless in another. In purchasing new kinds, the above reason makes it advisable not to procure too many plants of any one variety till its applicability to the soil and situation has been tested. By procuring root-pruned plants on Quince stocks, this may be easily managed in a couple of seasons. Planting of fruit trees should be proceeded with. It is well to be at some little pains in preparing the ground for the reception of Pears and other choice fruits. If the soil be deep and retentive, a stratum of ashes or some similar substance should be laid within 9 inches of the surface, to check the downward tendency of the roots. Loam from an old pasture, without manure, forms the best soil for the healthy and fruitful development of the Pear tree.

State of the Weather near London, for the week ending Jan. 9, 1851, as observed at the Horticultural Garden, Chiswick.

| Jan. | Moon's Age | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 3 | 1 | 29.949 | 29.831 | 46 | 35 | 40.5 | 45 | 44 | N.E. | .56 |
| Satur... 4 | 2 | 29.846 | 29.648 | 47 | 39 | 43.0 | 44½ | 44½ | S. | .02 |
| Sunday . 5 | 3 | 29.554 | 29.512 | 47 | 24 | 38.5 | 44 | 44½ | W. | .00 |
| Monday 6 | 4 | 29.581 | 29.520 | 45 | 31 | 38.0 | 42 | 44 | S.E. | .00 |
| Tues. .. 7 | 5 | 29.560 | 29.447 | 47 | 27 | 37.0 | 42 | 43 | S.E. | .02 |
| Wed. .. 8 | 6 | 29.416 | 29.491 | 49 | 27 | 38.0 | 42 | 43 | S.W | .08 |
| Thurs .. 9 | 7 | 30.028 | 29.781 | 45 | 23 | 34.0 | 41 | 43 | S.W. | .07 |
| Average.... | | 29.720 | 29.604 | 46.5 | 29 4 | 38.0 | 42 9 | 43.7 | | .75 |

Jan. 3—Hazy; rain; overcast.
— 4—Hazy; overcast; fine; clear.
— 5—Fine; exceedingly fine; clear.
— 6—Dense fog; hazy; fine; cloudy.
— 7—Foggy; cloudy and very fine; overcast.
— 8—Fine; exceedingly fine; heavy rain in the evening; clear at night.
— 9—Fine; very fine; clear; frosty; rain.

Mean temperature of the week 2½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Jan. 18, 1851.

| Jan. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 12 | 40.5 | 29.3 | 35.2 | 11 | 0.76 in. | 2 | 5 | 2 | 2 | 5 | 6 | 2 | 1 |
| Mon. 13 | 42.0 | 32.8 | 37.4 | 14 | 0.29 | 4 | 3 | 3 | 2 | 5 | 4 | 2 | 1 |
| Tues 14 | 41.6 | 30.4 | 36.0 | 13 | 0.80 | 4 | 4 | 4 | 2 | 3 | 4 | 1 | 3 |
| Wed. 15 | 40.4 | 28.9 | 34.6 | 8 | 0.54 | 3 | 4 | 3 | 2 | 2 | 4 | 4 | 3 |
| Thurs. 16 | 40.6 | 30.8 | 35.7 | 12 | 0.34 | — | 7 | 5 | — | 3 | 5 | 3 | 2 |
| Friday 17 | 41.8 | 30.7 | 36.2 | 8 | 0.23 | 3 | 5 | 2 | 3 | 2 | 6 | 3 | 2 |
| Satur. 18 | 41.7 | 31.8 | 36.7 | 11 | 0.55 | — | 3 | 1 | 3 | 4 | 7 | 4 | 3 |

The highest temperature during the above period occurred on the 18th, 1828 15th, 1834, and 14th, 1849—therm. 56 deg.; and the lowest on the 14th, 1838—therm. 4 deg.

## Notices to Correspondents.

BIRDS: *L J W.* We regret to see that by an error of the printer the "widow bird" is called the Whydah, not the Whydah.

BOOKS: *R A.* Obtain the Catalogue of British Plants published by the Botanical Society. — *H.* Kaulfuss' "Enumeratio Filicum;" Hooker's "Genera and Species of Ferns" (very incomplete), published by Pamplin; Fresl, Tentamen Pteridographiæ, and the supplement. Fée Mémoires sur la Famille des Fougères.—*Juvenile Entomologist.* You will find the two little volumes of British Moths and Butterflies in Jardine's "Naturalist's Library," with coloured plates, sufficient at present. By-and-bye you will want Westwood and Humphrey's "British Butterflies and their Transformations," and "British Moths and their Transformations." *W.*

CARROTS: *G L H.* Then we should be greatly obliged if you would ask your friend to send it to Mr. Moore, of Glasnevin, with a request that he would have the kindness to report to us respecting it.

DAHLIAS: *Alpha.* The following will possibly suit you:—Princess Radziwill, Beeswing, Shylock, Berryer, Captain Warner, Toison d'Or, Marchioness of Cornwallis, Miss Vyse, Beauty of Hastings, Standard of Perfection, Yellow Standard, and Nonpareil.*

DISEASES: *W D H.* Unless your Odontoglot is suffering from damp and cold *combined*, we have no idea what ails it. You cannot have two better aquatics than Nymphæa cærulea and rubra. We should plant them in the mud of the tank.

FRUIT TREES.—Your situation being exposed to the south-west sea breezes, your better plan will be to make a thick plantation, so as to shelter as much as possible the fruit trees which you intend to plant, from the influence of those winds. The following kinds may be planted, with the recommendation to watch any that do not appear to grow kindly, and graft them with such as are seen to be the most thriving. Pears, in many instances, are known to succeed well near the sea, and of these you may plant the following varieties:—Marie Louise, Passe Colmar, Beurré Diel, Glout Morceau, Winter Nelis, Knight's Monarch, Althorp Crassane, Broom Park, Eyewood, Forelle, Thompson's, Ne plus Meuris, Easter Beurré, Beurré Rance. *Apples:*—Golden Reinette, Court of Wick, Wormsley Pippin, Kerry Pippin, Pearson's Plate, Cockle Pippin, King of the Pippins, Blenheim Pippin, Reinette du Canada, Scarlet Nonpareil, Boston Russet, Court-pendu Plat; and for kitchen use, Dumelow's Seedling, Alfriston, Bedfordshire Foundling, Mère de Ménage. *Plums:*—Green-gage, Purple-gage, Denyer's Victoria, Washington, Jefferson, Early Orleans, Coe's Golden Drop. *Cherries:*—May Duke, Elton, Downton, Knight's Early Black, Kentish, Bigarreau, Morello. For a wall with a south-eastern aspect, the following Apricots and Nectarines, as you prefer them to Peaches, will be suitable. *Apricots:*—Moorpark, Royal, Large Early, Turkey. *Nectarines:*—Elruge, Violette Hâtive, Balgowan, Stanwick. Your soil is of too dry a nature for the Quince Stock. ‖

INSECTS: *W S.* The insects in your hothouse are one of the small species of spring-tailed insects (Poduridæ). We do not consider them injurious to healthy plants. *W.*

LEAD: *Rev W M R.* Next week.

LEAF MOULD: *Sub.* The most effectual way of clearing it of wireworms is to soak it with boiling water.‡

NAMES OF FRUITS: *C B.* As far as we can judge from the figure, and the particulars which you state, your Pear is the Passe Colmar ‖

NAMES OF PLANTS: *M J.* Both Polystichum aculeatum. *S.*—*Erzeroum.* 95, Scrophularia vernalis; 34, S. laciniata?; 147, S. Scorodonia?; 125, S. lucida; 547, S. nodosa; 441, Solanum persicum.—*H T Thompson.* We see now that it is Magnolia pumila.—*J F.* 1, Blechnum Corcovadense, *Radd.*; 2, Pteris crenata, *Sw.*; 7, Adiantum pubescens, *Schk.*; 4, Cyrtomium falcatum, *Presl.*; 5, Notholæna lendigera, *J. Sm.*; 6, Adiantum cuneatum, *L. et F.*; 7, Platyloma rotundifolia, *J. Sm.*; 8, 9, Adiantum Capillus-veneris, *L.* (the tropical forms); 10, Asplenium flabellifolium, *Br.*; 11, A. compressum, *Sw.*; 12, Polystichum capense? *J. Sm.*; 13, Phymatodes scandens, *J. Sm.*; 14, Adiantum æsimile, *Sw.*; 15, Polypodium pectinatum; 16, 17, Sitolobum punctilobum, *J. Sm.*; 18, Blechnum australe, *L.*; 19, B. hastatum, *Kaulf.*; 20, Diplazium Shepherdi, *Presl. S.—E P.* We never name Mosses.

TIMBER: *C M S.* Saw-cut timber placed under a roof will become more quickly seasoned than if exposed to the weather without shelter. Your Pomegranate has not summer heat enough; a glass roof would give it more, and therefore should promote its flowering.

RANUNCULUSES: *Z.* The following are first-class sorts: Captivator, Talisman, Pleaser, Alexis, Paragon, Glenelg, Gem, Flaminius, Herald, Sir John de Græme, Creon, Aspirant, Dr. Channing, Queen, Mrs. Cowan, Exhibitor, Festus, and Coronation.*

ROSES: *S R H.* Fortune's yellow belongs to none of the classes you mention.‡

VENTILATION: *A Country Subscriber.* We have no experience with Louvre boarding; it may be a good plan. It is, however, of no use to provide for ingress of cold air below unless you provide for its *ample* egress above. The problem of ventilating hothouses well has never yet been solved. One great point is to take care that the air is warmed *upon entering* the house, and that there is plenty of it.

VINES: The Royal Muscadine will succeed against the back wall of a Vinery.‖

WOODWORK: *J W.* There is nothing better than Stockholm tar applied hot; if it does not dry fast enough you may melt with it a little pitch. Coal tar is also a good material, but its smell is against it. The dealers in these articles will supply you with tar brushes.

MISC: *M J.* Dielytra spectabilis is a hardy herbaceous plant. For the treatment of Fuchsia spectabilis, see p. 758 of our last vol.‡—*Torquay.* If your Apricots are standards, as we presume they are, they should receive no pruning beyond removing the dead wood. The best time for cutting back your Daphne, is just after it has done flowering. ‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, E-q., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

⁂ A second-hand span-roofed House for Sale very cheap.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

DO YOU BRUISE YOUR OATS?
No; then you lose 50 per cent.
A NICE STABLE MESS, effecting immense saving, and vastly improving the condition of the animal—bruised Oats, straw cut into chaff of a certain length, and a little hay; the whole steamed, and served up at discretion. No rack—down with the racks;—MARY WEDLAKE'S MACHINES, 118, Fenchurch-street, and 11, Tavistock-street, Covent-garden, where a machine may be seen at work. A pamphlet on the above, by sending 12 postage stamps.

**The Agricultural Gazette.**
*SATURDAY, JANUARY* 11, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, | Jan. | 15—Agricultural Society of England. |
| THURSDAY, | — | 16—Agricultural Imp. Society of Ireland. |
| WEDNESDAY, | — | 22—Agricultural Society of England. |
| THURSDAY, | — | 23—Agricultural Imp. Society of Ireland. |

THOROUGH DRAINAGE is to wet land what a good foundation is to a house. We can no more hope to exercise a profitable system of agriculture without the one, than to erect a firm and substantial building without the other. The parallel holds good even further; for as in the case of a badly-founded edifice, the more important and extensive the structure, the more imminent the danger, and the greater the destruction and loss likely to accrue. So, the more manure and labour we bestow on wet land, the greater will be the balance on the wrong side of the ledger at the year's end.

Drainage, then, being so valuable in its results, everything which tends to throw light on its theory or practice, or to promote its application, merits every encouragement which such a journal as this can give. In our present circumstances, called upon as we are to contend with the world in the production of food, we look to drainage as our sheet anchor. No country can vie with us in its application, and in none does it produce more beneficial results.

Much has been done during late years to illustrate the theory and guide the practice of this art. During the year which has just passed, its philosophy has been popularised and made attractive by the well-stored mind and pleasant periods of an able writer in the "Quarterly Review;" while its aims and ends, and its most improved practice, have been discussed in a more practical manner in the "Cyclopedia of Agriculture," by one of our own contributors, who has shown that we must have one system of drainage for the east side of the country, and another for the west; that the inch pipes, which serve to draw off 20 inches of rain annually, at Wakefield, will be quite overpowered with the 50 inches of the west coast, and that the fissures in the soil, which are formed even without draining during the summer months in a dry climate, will require the aid of drains *at narrow intervals* for their establishment under a humid sky.

While we have thus been extending our knowledge of the art, we have, at the same time, been giving it a widely-extended application. England, Scotland, Ireland, have each and all been measuring their drainage expenditure by millions, to the no small lessening of the cost of labouring the land, and increasing the quantity of its produce, whilst its quality has been greatly improved by its earlier maturity. Foremost among the promoting causes of these extensive operations stand the Drainage Acts, the two Public Loan Acts, and the Private Money Drainage Act. In consequence of the provisions of these acts, it has been put in the power of proprietors to drain their estates, no matter how embarrassed they may be, or how encumbered their properties; provided only the improvement to be effected can be shown to add to the rental value of the land such a sum as will cover the annual instalments at 6½ per cent., required to repay principal and interest in 22 years.

From what we already see of the effects of the extensive drainage works now being carried on, on various estates in different parts of the country, we augur the best possible effects from them, where they are judiciously executed, and that not only from their direct action upon the land, but from the powerful influence they must exercise upon agricultural practice around them. Where they are carried out in an enlightened spirit, and in a complete manner, they are causing the extirpation of numerous old and crooked hedgerows which interfere with the proper laying out of the drains. They are compelling the removal of numerous trees, which in some parts of the island quite overshadow and destroy the crops; for no competent inspector will sanction the placing of drains near Ash, Alder, or other water-loving trees, where they would in a year or two at most be rendered worse than useless by the roots. The old crooked watercourses, with their wide margins of weeds, are in course of being straightened and reduced to proper limits, or are fitted with large pipes and covered over, the effect of all which is, that in some cases the available surface actually receives an accession of one-fifth, while the expense of cultivation, rent, rates, taxes, and tithes, now commuted, remain the same. In some districts we observe large extents of waste land in course of reclamation by trenching and inclosing as well as draining, and in others, lands covered with brushwood and stumps of old trees made highly productive by trenching and draining.

We must here notice, in order to give our hearty commendation to it, an arrangement which has been come to on several large properties, by which the landlord undertakes the whole of the drainage, and himself pays either the whole or the greater part of the annual instalment on the outlay, deeming this the best way to enable his tenantry to meet the times. We shall be greatly surprised if, in the course of a few years, both landlord and tenant do not find themselves in a better position under such an arrangement, than where the latter are left to do the best they can with wet land and a reduction of a few shillings an acre of rent.

The carrying out of the provisions of the Drainage Acts in Great Britain has been entrusted to the Inclosure Commissioners of England and Wales. The mode of obtaining advances under them is of the most simple and comparatively inexpensive description consistent with a check upon the proper expenditure of the money.

We are induced to draw special attention to this part of our subject in consequence of a letter from "An Assistant Commissioner under the Acts," which appeared lately in our columns, and which has evidently been written under most erroneous impressions, and contains insinuations against the Inclosure Commissioners which are, as we feel confident, entirely unfounded, and which were contradicted in our last number by a communication authenticated by the signature of Mr. GIRDWOOD. We the more regret the appearance of this letter, as the signature would necessarily give weight to the observations; for the conclusion would be natural that an "Assistant Commissioner" must know the technicalities of proceedings under the acts, and have assured himself of the correctness of his position before he attacked his official superiors.

We have taken steps to ascertain the facts of the case alluded to, and we find it to be nearly, if not altogether, a singular one. It appears to have occurred at an early period after the passing of the first Drainage Act (1846), before inspectors had been appointed in each district of country, and when the charges of surveyors and engineers had been raised to an extravagant height by the railway mania. The high rate of expense seems to have been wholly occasioned by the exorbitant bill of the gentleman who made the preliminary inspection. We understand that the commissioners took steps to prevent a like occurrence in future; and the effect of these steps is sufficiently illustrated by the fact, that the inspection on completion, although necessarily the most troublesome piece of work of the two, did not cost above one-third of the sum paid for the preliminary inspection. We find that there were no office expenses *whatever* in the account, and the only charge, besides those for inspection, was a small sum for advertising in the *London Gazette*, and local paper. It also appears, that if the same gentleman who made the second inspection had made the first, the whole charge would not have exceeded 18*l.*

We have gone into this subject at some length, as we are anxious to correct the erroneous impression which we may have been, in some degree, the unwitting means of propagating; and we are also anxious to point out to those of our readers who may have occasion to drain their lands, the great advantages which the provisions of these acts afford. The expenses where the sum applied for approaches 1000*l.* will seldom exceed two or two and-a-half per cent.; while every one knows that the law charges on a mortgage of similar amount, where such can be made at all, are seldom under 5 per cent.; besides the trouble and discomfort of producing title-deeds, not to speak of the impossibility of making fresh charges on settled estates—a difficulty which the Drainage Acts were expressly framed to meet. The expenses too, such as they are, must not be looked at as merely incurred in guaranteeing the Commissioners as to the expenditure of the money; for they secure the advice of some of the most skilful draining engineers in the kingdom. Where large sums have been applied for, as 10,000*l.* or 12,000*l.*, the charges, in many cases, have not exceeded 1½ per cent.

In conclusion, we heartily bear testimony to the assiduity and care with which the Inclosure Office has watched over the preparation and administration of these acts, which have been a great boon to the agricultural community; and we have abundant means of knowing that no effort has been spared to reduce the expenses to the lowest possible limit. "J. T." seems, unfortunately for himself, to have suffered from the want of completeness of arrangements, which is always apt to be the case in the first working of new and untried measures, more especially during such periods of alarm and suffering as those which characterised the period of the passing of the first Drainage Act. We know that it is now the practice of the Commissioners, and a practice occasioned by the very case which has been brought forward, to scrutinise all bills most rigourously, and to cut them down where necessary. In point of fact the Commissioners have struck large sums off several bills, and have ceased to allow the gentlemen to act who made them. Those, therefore, who now take advantage of the acts will receive all those benefits, which "J. T." admits that they offer, without those drawbacks from which he unfortunately suffered.

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THE new year opens gloomily upon the agriculturist. In spite of open predictions of amendment, amongst the hopeful, and in spite of the not less sanguine though secret hopes against their own auguries, amongst the timid, prices continue low, and the corn-grower sits apart, the sole unpartaker in the feast that he has helped to make for others. Meantime the nation is busy and prosperous; trade is active, capital increasing, money abundant, wages good—so at least the usual organs of the world that lies beyond the farm inform us; but the news comes sadly and unmeaning to the ears of that one interest whose share seems but a scant one in the merry Christmas, and which looks ahead with but a hazy prospect of the "happy new year" that is passed, much as usual, from mouth to mouth around. Even to the most habituated preacher of despondency the prospect seems to offer the puzzle of a reality that he never meant exactly to come true; for people differ more in their avowed prognostications than in their actual beliefs, and commonly blame the hopeful seer more for his manners than his appetite in which they entertain a common sympathy. Even the wisest confess themselves puzzled: and not in this country alone, but in more than half the countries of Europe the same complaint, strange-sounding to the ears of the "consuming" world, prevails, and for the last two or three years has prevailed, of a low price and plethora of food.

Were agriculture, like most other business pursuits in this country, a struggle of capital against capital, instead of a continual struggle against the want of it in the immense majority of instances, the whole matter would bear a different aspect. A few years—a cycle as it is—of abundance and consequent cheapness, would come upon the producing interest it affected, bringing neither surprise, despondency, nor resourcelessness; profits might be lowered, seemingly annihilated, for the time, as they have been in the cotton, the silk, the woollen, the iron, and most other of our principal trades, within our not unfrequent remembrance. Hard-pressed industry, and hard-earned capital sunk apparently for the moment, like a labouring vessel in the trough-of-the-sea during a ground-swell, would yet gradually rise again, steady and still buoyant, chastened to a knowledge of the ways, but not unmindful of the mercies of Providence. But in the agricultural world the cumbersome inventions of human ingenuity and one-eyed selfishness having for half a century shut out all real trade experience, all extended and commercial knowledge, all the external and powerful influences that, operating with healthy and unrestricted freedom upon the other arts and industries of our advancing community, have built up out of the progressive intelligence of each pursuit its own best insurance against occasional periods of depression—have left

this one, the greatest of all, unprepared uncovered to the storm, the tender plant of a fostering legislation—and as is ever usual in such cases, the deserted victim in the end of the guardian genius it so long invoked succcessfully, and unwisely.

It may indeed be easy to many who never saw this before to see this now, from the vantage-ground of after knowledge; but it is not so easy to trace and point out in all their ramifications, the inward weakness, the ignorance, the errors, the improvidences, the neglects, the unprepared positions, and the false calculations that have rooted themselves with ease, and spread their consequence throughout the whole business of agriculture, and of that raw material that agriculture is concerned upon—the land. The whole subject, long protected by false expedients, from an honest scrutiny, is found in a state of dislocation, and wants overhauling: high prices, high rents, cloaking ignored duties, neglected improvements, *unstimulated invention*, and stupid laws, have worked together in mischievous alliance, in nothing so mischievous as in mutually keeping possible each others' existence. Error is fruitful of collateral incidents: like the first lie, it begets a legion to support it. Where there is one radical fault, it spreads like a leaven through the whole mass; it is vain to go on cobbling at details; you must go back to the origin of the evil, if you wish to cure or even to understand it.

He would be like to earn for himself the title of a powerful assertor of undisputed propositions who should bravely venture to declare that at the bottom of all agricultural processes lies that rawest of raw materials—the Soil. And yet strange enough it is that what sounds so broad and obvious a physical truth in the ears of the farmer, seems to struggle in vain for a recognition in that of the landowners. In vain do the Crown-lawyers in Parliament, who are best able to know the truth, and can afford to speak it, again and again, session after session, invite the landed legislators around them to turn their individual attention and collective weight to the amendment of the laws relating to, and the practices,—worse than any laws, that tyrannise over the land. Ask any tenant occupier in any county of England, with a lease or without one, what is the one thing needful to help him to rub through a period of agricultural depression—what it is that will keep out the fiend of despondency, cheer his hopes, stimulate his enterprise, and turn adversity itself to its best lesson and purpose; he will tell you, the help and countenance of an intelligent and spirited landlord. Put the converse question—ask him what is the most deadening and destructive thing to a farm or a property—that makes improvement an impossibility, kills energy, turns backward that which should be progress, and makes, even "standing as you were," impossible; the answer will be sadly, and per-contra-wise to the same effect. It is a trite and easy matter to calculate the number of pounds sterling to the acre that the tenant in agriculture should be master of to hold a farm; but what would be the blank looks if the same principle of calculation were propounded to the *tenants in tail* to hold an estate. Of all the greedy swallowers and potent "assimilators" of capital where is there one like land, to be the owner of? Of all the low-interest-paying investments of capital where is there one like land, *to buy?* Of all the borrowers on first-rate security who borrows at so great expense, to pay so high an interest, as the borrower on land? Of all the helpless creatures in creation, tied to a possession that he cannot part with or improve, or enable others to do it for him, who so helpless as the tenant for life in tail? The State at length recognizes the public impolicy and private cruelty of his predicament, and lends him money to drain his land; in other words it supplies to him the means of making the first plunge into an indefinite investment. It opens out to him a new and bolder relation with the soil he is the owner of. He becomes a pseudo-capitalist for the nonce. The money is borrowed and expended, the land is drained, and a Turnip-crop springs up upon the four-course odd mark of his farms, where the summer fallow used to be. Turnips imply stock to consume them; and stock imply buildings to cover them. The difficulty is at his door again, with a louder knock than before. Tiles and collars and four foot drains are expensive, but what are they to Bricks and Mortar! So the State takes off the duty on Bricks, and talks of playing the money-lender again, in new loans for agricultural buildings.

And why all this? To support a false position: virtually and in effect to keep land out of commerce: to make free-trade in corn amalgamate with feudalism in the soil: to keep ostensible owners in the ostensible proprietorship of ostensible acres, which there is plenty of private capital in the country to buy and improve, and *realise*, without recourse to loans from the public, and leaving the present owners so much the better able, by being rid of a part to perform their duty and their wishes by the rest.

If it be an evil for the occupier to hold more land than he has capital to manage, how is it a good for the owner? If it be a benefit to the country that money should circulate, how is it a benefit that land should stagnate? To reduce the proposition to its plainest terms, how can free-trade in corn ever permanently exist without free-trade in the land that grows it? For what is land to corn but the raw material to the manufactured article?

The land is, in two distinct and separate ways, tied up out of commerce. First by entails and family settlements, secondly by the shameful and absurd expense of transfer, an expense proportionately greater, not directly, but inversely with the extent of the purchase; thus confining the sale, in effect, to large purchasers, thereby reducing the market to its narrowest capacity, and consequently reducing the price; for where purchasers are few, it needs no LOCKE or ADAM SMITH to tell us, the exchangeable value is reduced proportionately.

But what shall we say of those not uncommon cases where the occupier himself would readily and gladly be the purchaser, and could well afford to be so, and the proprietor would readily and gladly be the seller, and would be the richer, and his successors after him, by being so, of land upon which the one cannot afford, nor the other prudently expend even the capital requisite for its improvement? Upon what principle of public policy, or of private benefit, can the system be defended of withdrawing land from the reach of capital, and the twice-blest employment of labour, blest in the operation and in the result, in order to gratify a vanity of extensive but empty ownership, the likeness of which, amongst occupiers, men are now loud in condemning, as a source of the most self-deceptive injury and public loss.

We took occasion to notice, some time since, a pamphlet, addressed to the CHANCELLOR of the EXCHEQUER by Mr. CALVERT, Q.C., upon certain laws affecting agriculture, in which the effect upon the condition of landed property arising from the position of Tenants for life was most ably scrutinised, and the proper remedies suggested. We have now to express our cordial welcome of a second letter from the same pen in continuation of the subject.* If a very small share of the intelligence with which Mr. CALVERT has popularised the really momentous features of this question, were generally diffused amongst both the owners and occupiers of land, we may safely say that a more valuable new year's offering could hardly be made to them. To quote from it is almost impossible: the subject itself is so succinct, from its very nature, as well as from its terse and simple treatment in his hands, so appropriate and opportune in its suggestions, that we shrink from the mutilation of his views and arguments by detached extract; and would rather entreat for the ten minutes its entire perusal would cost, with all who feel an interest in the question,—never perhaps so vital as at this moment,—What can be done for British Agriculture?

To state the objects of this important letter, without the writer's arguments, is merely to open a naked case to the possible damage of misunderstanding and pre-conceived error of every kind. It goes to what Mr. COBDEN would call 'the backbone' of the subject. Since the publication of the first letter, time has given proof of the necessity of the measures then proposed, and the partial acts of the Legislature in the direction pointed out, have confirmed it. Probably the most important by far of the suggestions in his first letter was the one to the effect "that Tenants for life should be empowered, *under proper safeguards*, to sell so much of the Settled Estates, as would be sufficient for the discharge of the Settlement-incumbrances;" in other words, to discharge the inheritance from a settled debt, to

> "Throw away the falser part of it,
> And live the truer with the other half."

"Why," asks Mr. CALVERT, referring to the recent Act, 13 and 14 Vic., c. 31, "is not the English landowner, who desires to make improvements, to be released to the same extent as the Irish landowner, from the trammels of the settlement? Are not landowners in both countries suffering from imprudent settlements, made, not by themselves, but by their ancestors or predecessors *in the days of high prices?* Are they not in both countries equally compelled to encounter the competition of other soils and climates?"

In these two last propositions lies the gist of the whole subject. 'Lower your rents, or enable your tenants to pay the same rents out of lower prices,' cry the tenant-farmers and the public—'drain your fields, improve your roads and fences, put up ample accommodation for an increased head of Stock, and for the housing and economical conversion of an increased produce.' Now let us look at the position inherited by a very large proportion of those to whom this natural and reasonable demand is addressed. Mr. CALVERT has well described it, as it commonly arises.

"No sooner does the tenant in tail come of age, than he is urged by those *whose influence is irresistible*, to cut off the entail, to resettle the estate, and to fasten upon it the debts of his ancestors. In fact, he is invited to pay for the extravagance of a father or grandfather, who has often done worse than nothing for the condition of the family property. Thus the burthens of the generation which is passing, or passed away, are heaped upon that which is advancing. It may be fairly made a question whether the law ought not to be modified in this respect; whether so young a person should be by law capable of binding himself in so important a transaction. It is open to two serious objections; one, that a young man executes a solemn act deeply compromising his fortune, when as yet he cannot understand its consequences; the other, that the weight of hereditary debts which he thus fixes upon himself, crushes all his efforts and disappoints all his intentions to improve the cultivation of his estate. This system sacrifices the interest of the entire present generation, not merely of the tenants for life, but also of *their tenants and labourers;* while the principle upon which it cherishes the prospects of generations unborn, are, to say the least, extremely doubtful. I am convinced that the interests of the remainder-man or descendant will be much promoted by the removal of this peculiar restriction which is now part and parcel of the law of settlements. The agricultural improvement of a district effected in one generation is eminently useful in the next. Indeed a further question arises whether the entire system of settlement will not be summarily destroyed, if it continues to interfere with the due cultivation of the soil, and with the provision of employment to the labouring classes."

Mr. CALVERT has taken up a subject which he thoroughly understands; considering it, as it must be considered, both from the legal and the agricultural point of view. Every word he writes proves it. The landlord, the tenant, and the labourer are equally concerned in this question: this he clearly sees; and we confidently trust that in the House of Commons he will prosecute it, and make it understood as it deserves to be. It is almost monstrous to suppose that with so large a portion of the proprietary interest in the land tied up as it were from free action in the employment of capital, or in the power to enable others to employ it, a fair scope can be offered to those who have to meet a free competition against the world. The existing system of settlements was based upon high prices. These have passed away; and the country is satisfied, and commercially prosperous under the change; but before the benefits which other classes enjoy can reach the agricultural interest, though we are scarcely doubtful of the result, yet much remains to be done. The system of Government, or to speak more plainly, of public loans, has worked well, but the very success of a temporising and not very constitutional expedient, may after all be only an index pointing in the direction of a truer remedy. There is good reason to believe that, in both Houses of Parliament, the approaching Session will shew that the subject is becoming better understood and its importance appreciated. It is only strange that the simplification of the dealings with land should be a point remaining for discussion, after free trade in the produce of it has been for two years predominant. We shall watch the subject with anxious interest, and the more so as we believe it to be one the bearing and influence of which is not half recognised as it ought to be, towards the agricultural prosperity of the kingdom.

* Second letter to the Right Hon Sir C. WOOD, Bart., M.P., upon certain laws affecting Agriculture. By FREDERIC CALVERT, Esq., Q.C.

## HOME COLONISATION.

WHATEVER may be the cause of the present low prices of agricultural produce, we have little doubt that the pressure which it produces on landlords and tenants will prove, like the Potato failure to those of Ireland, eventually beneficial to them as a class, though the benefit will be attained through much individual suffering. Among the most hopeful signs must be enumerated the attention bestowed on agricultural questions by the writers of the daily London newspapers, and their sound and practical mode of treating them, compared with that which prevailed during former periods of agricultural distress. Time was, in 1822 and 1835, when all the evils which afflicted farmers, and all the necessity for the increased protection which they so frequently demanded, were attributed to their propensity for cultivating inferior soils; and the remedy proposed was to suffer some millions of acres of such soils to revert to the state of

heath and sheep-walk from which, it was said, they ought never to have emerged.

Now, the metropolitan journals labour sedulously and effectively in diffusing a knowledge of the best systems of cultivation pursued on such soils, and in proclaiming the grand fact, proved by innumerable examples, that the improvement of poor land affords a more profitable investment for capital than the purchase of the best. Time was when those who complained of the low price of Wheat were advised to grow Pine-apples; and when it was proved by all the rules of political economy to be both the interest and the duty of the owners and occupiers of the soil to make fish, poultry, and game as abundant and cheap as beef and mutton. Now, three hares are proved to consume as much as one sheep, and the batteries of the daily press are very laudably turned against the preserves and battues to which we are indebted for the present cheapness of game. By means of these, they who possess good local information as to when and where certain lords and squires have been shooting, and who keep a vigilant eye on Leadenhall-market, are frequently enabled to sit down to hare or pheasant at a cheaper rate than if the noble and gentle sportsmen had made them a present of it, but had not paid the carriage.

What, if an occasional "leader" betrays a hankering after some little table luxuries, and gives vent to dissatisfaction at their cost, in exhortation to farmers to grow less corn and butcher's meat, and to direct their attention to fruit and vegetables, unmindful of the fact that market gardeners complain as loudly as farmers of foreign competition and low prices, and assert that they supply the cockney dinner tables with Peas and Asparagus, Apples, Cherries, and Peaches, not only without profit but out of their capital. These little editorial outbursts are very excusable. Parliament is not sitting, topics are scarce—space has to be filled—and the great "We" may have been annoyed by a heavy bill from the green-grocer, after having, on the faith of low prices, given a spread of more than usual hospitality.

On the whole we cannot be too grateful to the daily press of London for their exertions in the cause of agricultural improvement. About this time last year the great topic was the investigations of the *Morning Chronicle* respecting labour and the poor. In them we saw the tact and acumen of the practised reporter, making old blue books readable, and sifting their Wheat from the chaff. Penetrating personally into the abodes of poverty and vice, he made them tell their own tale in that form of monologue or dialogue which gives so much zest to novels of the "Oliver Twist" and "Dick Turpin" school. Nor let it be objected that, like those novels, these investigations only produced a few sentimental tears, an undefined dread of our dangerous classes—a virtuous indignation against the "sweating system," or a transient burst of feeling, which quickly blazed itself out, in subscriptions for the hero or heroine of some tale of woe. The Association for Promoting Female Emigration, the first fruit of those labours, is a promising plant, which bids fair to develope itself into that which so many desire, and of which few have any definite perception—a "well digested system of national colonisation." As far as experience has yet gone, the experiment has been successful; and, being an experiment, it is a merit rather than a defect that it has been undertaken with caution, and, at present, only on a small scale.

Amidst much that is valuable in the reports of the agricultural commissioners of the *Times*, we select for notice some facts which strongly illustrate a point to which we have ourselves endeavoured to draw attention—the unequal rate of agricultural wages in different districts of England. That journal lately announced that great dissatisfaction prevailed among the agricultural labourers of Buckinghamshire, in consequence of the attempts of the farmers to reduce wages to 7*s.* a week. Since then the *Times* commissioner has stated that in South Lancashire the farmers are giving from 12*s.* to 15*s.* a week to English labourers, and 9*s.* to Irish; cottage rents being from 3*l.* to 5*l.* a year, and fuel cheap. Women, it appears, are rarely employed in field labour, because they can earn better pay in-doors in the factories. Under these circumstances we are told that the manual labour of the Turnip crop is nearly double its cost in the south, and the farmers declare that they could not get on at all without the Irish. Such being the case, we should suppose that a supply of the Buckinghamshire labourers would be a great acquisition to the farmers; and that to these seven-shillings-a-week men, South Lancashire would be a paradise. In looking to emigration as one of the means for improving the condition of the labouring classes, let us not wholly overlook home colonisation. Emigration need not be *per saltum*. The steps might be from 7*s.* in Buckinghamshire to 15*s.* in South Lancashire, without board, and from that to the same money wages, with board, in Canada or Australia; together with the certainty, with good conduct, of becoming a landowner and an employer of labour. It would be an object well worthy the attention of the benevolent to organise a system for the transfer of the redundant labour of the purely agricultural districts, to those where the presence of manufactures has improved the condition of the labourer in husbandry by extending the demand for his services while it has diminished the supply. We hope to see the influence of the fourth estate directed to the furtherance of so practical and desirable an object. *E. W.*

## TITHE COMMUTATION.

As your agricultural as well as clerical readers may feel anxious to know the result of the Corn Averages for the seven years to Christmas last, published in the *London Gazette* of last evening, viz.:

| | | |
|---|---|---|
| Wheat | ... ... | 6*s.* 5½*d.* per imperial bushel. |
| Barley | ... ... | 4 0 do. |
| Oats | ... ... | 2 8 do. |

I beg to state for their information that each 100*l.* of rent charge will for the year 1851 amount to 96*l.* 11*s.* 4¾*d.*, or about 2¼ per cent. lower than last year. The following statement from my "Annual Tithe Commutation Tables" will show the worth of 100*l.* of rent charge for each of the following years:

| | £ | *s.* | *d.* |
|---|---|---|---|
| 1845 ... ... | 103 | 17 | 11¼ |
| 1846 ... ... | 102 | 17 | 8¾ |
| 1847 ... ... | 99 | 18 | 10½ |
| 1848 ... ... | 102 | 1 | 0 |
| 1849 ... ... | 100 | 3 | 7¾ |
| 1850 ... ... | 98 | 16 | 10 |
| 1851 ... ... | 96 | 11 | 4¾ |

If we include the whole period of 15 years elapsed since the passing of the Tithe Commutation Act, it will be found that the general average value of 100*l.* of tithe, rent charge amounts to 100*l.* 16*s.* 7*d.* *Charles M. Willich* 25, *Suffolk-street, Pall-mall, Jan.* 4, 1851.

## Home Correspondence.

*The Drainage Act.*—"J. T's, Swansea," complaint of the charges of the Drainage Commissioners appears to me to be unreasonable, and to require only the following explanation to be seen in a very different light from that in which he would place it. It will be easy to show, although he has paid 34*l.* 5*s.* 10*d.* for the loan of 400*l.*, that he could have raised the money in no other way so cheaply; and he has gained, in addition, the assistance of an inspection, which, if he had had the experience of others of the waste of money, from the want of such an inspection, he would not think it too highly charged for, at the rate of 5*s.* or 6*s.* an acre. Let me advise "J. T.," and all your agricultural readers who have land to drain, and are willing to leave the plan, &c., to farm-tenants and bailiffs, first to read "Agricultural Drainage," published by John Murray, Albemarle-street, price 4*d.* The Government advance is made at a rate of interest of one per cent. per annum below the common rate of advances on mortgage; and the borrower gets the further advantage of paying back the principal in annual instalments; now, if "J. T." will refer to "Inwood's Tables," fourth table, he will find that the difference of borrowing 400*l.* for 22 years, at the rate of 3 per cent. and 4 per cent. per annum, amounts to 38*l.* 12*s.* 9*d.*; and had he borrowed the money in any other way, he would have had, in addition, to submit to investigations of title, &c., and been fortunate, had the lawyer's charges, which he would have had to pay in addition, been so little as 34*l.* 5*s.* 10*d.* In all advances under the commissioners, not only do the borrowers get their advances on lower rates of interest, and save the ordinary cost of investigations of title, &c., but they also have the advantage of an inspection of the proposed works by experienced surveyors, which secures the landowner from improvident outlay, both as to scale of charges and planning of the work. There are some of your readers who, of my knowledge, will not so lightly estimate the value of this inspection. I could name many individuals who, upon the advice of the Government inspectors, have seen reason to abandon the plans on which they had proposed to expend many thousands, and to adopt those of the inspector; but I will not enlarge on this, as I trust the work I recommend will be read by every one who has draining to do, and who may be in doubt of the value of some such an inspection as is given by the Drainage Act. I have only to add, and I would do so as a postscript, and rather with reference to the present working of this Act, than as any apology for the charge of which "J. T." complains—that in 1846 when his application was made, the commissioners were ill prepared with inspectors; they had to send great distances; and further, that the costs are necessarily large on small advances, and in this instance, would probably have been no more had the sum been 1000*l.*, in lieu of 400*l.* *Hewitt Davis.*

*Report of Smithfield Show.*—My late friend, the Rev. Henry Berry, during our long connection, never having bred Hereford cattle, I beg to correct your statement of him in your report of the Smithfield Show, page 795, describing Class I. "2d prize was a Hereford ox of much merit; the length of the body exceeded the proportion of the girth, and the shoulder was not well covered. The fore ribs were uncommonly fleshy and the thighs deep. The back and the set of the tail formed a continuous level, and the whole animal was one of the best that were shown. It showed the value of the stock of the Rev. Henry Berry." The latter part of the above, I take it, was your criticism on the second prize in Class N., Mr. Boult's 3 years old steer. "The length of the body exceeded the proportion of the girth"—I cannot understand, comparing, in your first table, oxen 4 to 5 years old; 2d prize Hereford, 5 ft. 6 in. length, 8 ft. 6 in. girth; Smithfield oxen, 2 to 3 years old, 2d prize, 5 ft. 9 in. length, 8 ft. 9 in. girth; oxen, any age, under 90 stone (short-horns Smithfield), 2d, 5 ft. length, 8 ft. 4 in. girth." I take No. 1, in the quotation, to be Mr. Philips' ox, weighing 97 stone, and No. 2 to be Mr. Boult's, weighing 105 stone; or No. 4, weighing 83 stone. I do not anywhere see stated the length of the body exceeding the proportion of the girth. *Henry Cottrell, Rhodyate Lodge, Congresbury.* [The remark about the length and girth meant that that particular ox was very long in proportion to its girth.]

*The Proposal to Increase the Size of Smithfield Market*, instead of removing it altogether, is rather amusing. At the present day can a company be permitted to retain a public nuisance, in the midst of a population consisting of two millions of human beings, almost all of whom are anxious to get rid of the abomination? Those persons who own property in the vicinity of Smithfield market may fancy themselves aggrieved by the metropolis being freed from scenes of cruelty and vice unparalleled in any other Christian country, or even in the regions where the heathen dwells, who although not blessed with a knowledge of the true faith, yet is more merciful to the brute creation than those who are taught better, and who have not the excuse of ignorance to palliate wickedness. The sufferings of sheep, oxen, and pigs, goaded to Smithfield market, are terrible; and their miseries are not altogether unrevenged, as their overheated and inflammatory bodies, sold in the shambles, produce a variety of diseases, amongst which bowel complaints are the most prevalent, followed by typhus fever, &c. It is in vain we shut our eyes to these startling facts; and we must not attribute illness at particular seasons so much to atmospheric changes as to the body being, from the indulgences in impure food, more susceptible of injury than it would be if partaking of a wholesome diet. Individual interests cannot be considered when the welfare of thousands is concerned. If such is to be the case in the instance of Smithfield market, great injustice has been done to many thousands whose pockets have suffered to benefit "the million." A locality now exists in London condemned by the great mass of the inhabitants, as injurious to health and morality; and surely a sink of everything that is bad should be cleansed in the 19th century before we expose ourselves to the eyes of the whole world during the influx of people of all nations during 1851. It is strange that health reports do not lay more stress upon impure food consumed by man as causing disease! *Falcon.*

*Farm Accounts.*—As your correspondent, "E. F.," wishes to know what alterations I propose to make, I have inclosed an arrangement of columns, which shows at one view the present arrangement adopted in the Royal Ag. Soc.'s Labour Account-book; and the alterations which I propose to make, should there be anything in my plan which is not understood, I shall of course be happy to forward an explanation. With regard to the general arrangement of the book, I think the stock, corn, and cash accounts might be removed from its present position to a page now devoted to "hiring and wages of servants;" this is an account which I think will be seldom or ever used, as in most places labourers are paid weekly, and turned off at a few days' notice. By removing this account, it will be seen that something like 4½ inches of length might be safely done away with, and the whole remaining portion of the page devoted to weekly labour accounts. The present length of the Royal Ag. Soc.'s Labour Account-book is decidedly inconvenient. *J. R. Markby.* [The arrangement of columns for Labour Accounts in the Royal Ag. Soc. of England's Account-book is altered:—1st, by reducing width of column for names; 2d, by taking out column for "signature of labourer," which is useless, and putting in its place a column for "description of task-work;" 3, by putting the columns for "days—at per day—and weekly wages" after all the others; and 4, by putting a double line to each name in the name column. The whole effect is to reduce the width of the page 2½ inches. This description of the alteration may suffice, as the specimen page would be too bulky.]

*Poultry Houses and Poultry Walks.*—In reply to your correspondent "W. H." (see *Agricultural Gazette*, Dec. 21), who wishes to know the dimensions of my poultry houses, and the extent of my poultry walks, I here subjoin the required particulars. The largest of my poultry houses is 9 feet square. It is built of brick (with a tiled roof), excepting the front, which is of wood, and protected by Stockholm tar, with which it is thickly covered. On one side of it is a recess 10 feet deep and 3 feet wide, with a slated roof for the fowls to take shelter in during heavy rains and unseasonable weather. The extent of walk is 20 feet by 15 feet; the top is considerably elevated, in order to afford the fowls an opportunity of perching high. The perches are fixed in a variety of directions, and so placed as to command an extensive view of the neighbouring gardens, Ravenscourt Park, &c.; and, of course, a glimpse of the sun's rays. By the fowls being constantly seen seated on these perches, it is quite evident that they are "happy" in their confinement; and being always in robust health, and the nests for the most part abundantly supplied with eggs at all seasons of the year, I am led to believe that my treatment of them is in every respect correct. No poultry-house ought to be of less dimensions than from 6 to 7 feet square (I have several this size); and if built of brick, so much the better. It is warmer than those built of any other material. The larger the poultry walk the better; 12 feet by 9 feet should be the minimum size. By turning the top soil frequently over, the walks will be kept sweet and wholesome, and the health of the poultry thereby ensured. Since my last communication appeared, an increased number of my hens have come into lay. In a few days, I expect they will all be "profitable servants." *William Kidd, New-road, Hammersmith, Dec* 24.

*Agricultural Education.*—As it is evident that some exertion must be made by all classes in acquiring a better knowledge of the sciences that are more immediately connected with the various occupations with

which we may be connected, I would venture to suggest botany as one department which might be made not only useful, but also interesting, to those engaged in rural pursuits. Hitherto it has been confined almost exclusively to professional gardeners. But why should it not be rendered useful and also pleasant to those engaged in farming? I think it may be more attractive to them; for they are brought more in contact with the spontaneous productions of Nature than any other class. And when we consider how the different orders of plants prove the nature, climate, and capabilities of soil, is it not very evident that botany would be useful to the farmer? I am quite aware that there are few practical farmers that will think the finer theories of that science of any use to them, and perhaps they are right; but I much question if, once they had obtained a slight knowledge of its outlines, they would rest contented to let that little remain inactive. But it is more particularly to the rising generation that this delightful science might be made available. Suppose that, in taking a walk across the fields, we were to take a little notice of the wild plants, we would find that one sort prevails in one place, which was not to be found at another. Then we might be led to ask why that was? We find in one field a certain weed prevailing, which we do not find in another; and these will indicate the strength, coldness, or deepness of soils; and also the nature of the subsoil to a great extent. And this might be a guide to many respecting land that they are otherwise unacquainted with. At times a farmer may have his children with him when in the fields, and it would be of little interest to them to try to instruct them in the dry details of field operations; but he might instil into the tender mind a pleasure in the wild wayside plants, and thus turning the mind to a love of the beautiful works of Nature more immediately connected with that calling which he is destined to follow, instead of leaving the young mind vacant, to be filled up with the many evil weeds which may and will take root, unless care is taken to sow the good seed of useful and pleasing instruction. The spare time of old and young might thus be very pleasantly employed during the summer. And such an occupation would never lose its attractions. And in our journey through life, which is said to be beset with thorns and briars, we should find a good many flowers mingled, to cheer our path. But then there is a season of the year when what may be called practical botany cannot be studied, and when the youthful mind may be led to imbibe evil and careless principles. And how is it to be got over? Those long dreary winter nights that many spend drinking a pint or smoking a pipe, to pass the time away, until at last they fall asleep in a state of stupor; while the young are apt to run into company who, like themselves, have nothing to do, and, of course, will soon acquire habits of doing worse than nothing. But to prevent this state of languor and dulness there is a science equally interesting and useful with the former, and now generally admitted to be indispensable to the farmer, that may be turned to; that is chemistry. And were this science not so directly useful to the farmer as it is, would it not be extremely pleasant on its own account, as explaining the laws which govern the many peculiarities of nature that we see around us. How many small but interesting experiments may be performed by one who is not very well acquainted with the higher departments of that science! And if the smallest beginning were made it would give a stimulus to further exertion. And with the numerous aids that may be cheaply obtained by books, a greater degree of knowledge may be obtained than the uninitiated could ever dream of. And then how different would be our feelings in our daily walk, in viewing the various objects around us! Everything would then possess a beauty, order, and simplicity which would elevate our ideas, and excite our pleasures in every step we take. And the admiration of nature's order and beauty would lead our minds to love and fear Him by whom all things are so fearfully and wonderfully made. *G. S.*

*Oat Bruising and Chaff-cutters.*—I quite agree with "Baddow (Basildon?) Park," as to the advantages derived from the plan. I have been in the habit of using one for 14 years, having bought it when I only kept one nag, a delicate feeder; it is astonishing the difference it makes in their condition, several instances of which I might give you, but one will suffice. I have a hunter belonging to a friend of mine, which has been going his two days a week with hounds, sometimes three; yet positively fattens on his work: whereas, the last two seasons, he has looked tucked up, though with less work, and quite as good (unbruised) corn. A horse will do better on two bushels of bruised, than the same quantity of whole corn; consequently there is a saving of at least a bushel a week each horse, minus the expense of crushing, which is trifling. They should be smooth steel rollers, and no flutes in them, as for Beans, which I also have cracked by another machine; chaff, too (chopped hay with a little straw), I always give with both the above. Greedy feeders are in the habit of swallowing many Oats whole, which do more harm than good; were they bruised, no nourishment would be lost. Look at the Oats, spilt from the nose-bags, about London, you will find them almost all bruised. The only disadvantage I am aware of is, the horses miss them when fed away from their own stable. *Cottager, Jan. 2.*——Economy in these matters is of great importance. May I ask your correspondent, of "Baddow Park," if he advises that all the hay be cut into chaff before being given to the animals; I allude more especially to milch cows and horses. It has seemed to me that when chaff in considerable quantities has been given, they have not liked it so well as uncut hay, and considerable waste has arisen from their knocking it out of their manger. Again, in the case of cows, as they reproduce all their food to chew again, would not the advantage insisted on by your correspondent be lost? *D. W.*

*Rain in 1850.*—More than once during the past year, I noticed some statements in your Paper, relative to the quantity of rain that had fallen, up to that particular time. On referring to my own observations, I found a great difference to exist between what had fallen here and at Chiswick (I presume), and as many of your readers now take an interest in facts relating to our climate, I have ventured to send you a digest of our observations, taken at an elevation of about 400 feet above high water mark. Quantity of rain in each month in 1850—in inches.

| | | | | | |
|---|---|---|---|---|---|
| Jan. | ... | 1·49 | Aug. | ... | 1·86 |
| Feb. | ... | 0·28 | Sept. | ... | 1·59 |
| March | ... | 1·77 | Oct. | ... | 1·79 |
| April | ... | 4·41 | Nov. | ... | 3·03 |
| May | ... | 3 33 | Dec. | ... | 2 82 |
| June | ... | 0 8 | | | |
| July | ... | 5·13 | | | 28·30 |

The usual average is between 25 and 26 inches.

| | |
|---|---|
| The highest barometer, Dec. 23 ... ... ... | 30·216 |
| The lowest, April 4 ... ... ... ... ... | 28 56 |
| Shows a variation between extremes ... | 1·656 |
| The highest thermometer, June 25 ... ... | 87° |
| The lowest, Jan. 15 ... ... ... ... ... | 15° |
| Difference between extremes ... ... | 72° |

The thermometer: an external, placed on a lawn, 4 feet from ground, with a canvas roof over, and quite free from radiation, or direct action of sun's rays. *John Wilson, Royal Agricultural College, Cirencester.*

*Linseed as Food for Cattle.*—In answer to your correspondent, "B. S.," I beg to inform him that I discontinued the use of fire in the preparation of cattle food about two years since. Prior to my doing so, I discovered that a gelatine, formed by soaking Linseed-meal 24 or more hours in cold water, was more economical and efficacious than that obtained by boiling. I cannot now enter into particulars, but they are fully described in my pamphlet entitled "Flax *versus* Cotton," a copy of which I had the pleasure of sending to your office in London. It is still to be had of Ridgway, and I beg to add that the system which I so successfully practised at Trimingham, upon less than 100 acres, is being introduced here upon more than 1000. *John Warnes, Bolwi k-hall, Marsham, Norwich.*

*Mechi's Farming.*—Every one interested in agriculture must have read with pleasure Mr. Mechi's statement, giving an account of the expenses incurred on Tiptree farm, and the anticipated profits in the year 1851. It is more than probable that a fair return will be received on the capital laid out on the land, taking the average of a certain number of years. The only fear is that the buildings attached to the farm will swallow up everything in the shape of cash figuring on the credit side; at the same time it is to be hoped they will not be so; and even should such be the case, it is some consolation to think the circumstance will neither affect Mr. Mechi's comfort, nor disprove his statement, that draining, and the employment of more labour on the land, are essential to enable the English farmer to compete with free trade. However, the contrary system appears to be followed in too many instances; men, as produce cheapens in the market, relaxing their efforts in the cultivation of the soil; a mistake which many will, in the long run, bitterly rue. Although agriculture cannot at once rival horticulture, yet there is no reason why it should not make some approach to it; in fact, it only requires capital to give the farmer a fair chance in the race with the gardener. It is really surprising to see anything grow on stiff undrained land, ploughed 4 inches deep, scarcely enough to cover the weeds, much less kill them. It must be admitted that land in the United Kingdom is not cultivated to its full extent; even much of what has been under the farmer's care for years, does not produce its fair quota of food for man and beast. It is worse than folly to ridicule high farming, or rather confound it with extravagance. However annoyed tenants may be at the lowness of prices, they may rest assured it is only by increased exertion on their parts, and employing more labour on the land, they can hope to obtain remuneration. Farming is, like most trades, not so lucrative as it was some years ago, but still worth something to an industrious sensible man, who has not accustomed himself to a luxurious mode of living, spending the whole of his income, when he ought to have preserved a trifle for a "rainy day." *Falcon.*

*A few words on Rearing Poultry.*—This is a point of farming treated with much contempt by most farmers, particularly large ones; but I hope to put it in a better light, after relating a story, well known to me for a fact:—A man, who held something over 300 acres, was, on the approach of rent day, much behind, and, like most men under those circumstances, felt particularly miserable for some days. His wife restored his good humour by putting into his hand 200*l.* in notes, saying, at the same time, "you have always found fault with my poultry, saying, that they eat so much corn, and you never could see any benefit, beyond having a fowl for dinner now and then, and a goose at Michaelmass, a turkey at Christmas, &c. (those are no trifles to those who have to purchase everything). Now you see that the despised poultry are your best friends." I may add that this saving was in addition to finding clothes for herself and four daughters; no small sum, though not so much as lady farmers require now-a-days. I would recommend turkeys first, having had the most profit from them myself, and they make a large quantity of better guano than you can buy of most dealers in that article, if, instead of putting a quantity of straw into the place they roost in, you use burnt earth, or coal ashes, sprinkling a small quantity over the floor every day; you will accumulate such a quantity as will astonish any one, who has not tried this plan, and it answers equally well for pigs and sheep, and they do better than on nasty rotten straw; they require a little dry straw in the inner place where they sleep. Turkeys are more tender when quite young than other poultry, and require much attention for the first six weeks or two months; afterwards they do very well any way, and, I believe that turkey at 9*d.* per pound (about the average price in London), will pay better than either mutton or beef at 4½*d.*; and after they are two or three months old, they will eat everything that a bullock or sheep will, with the exception of hay and chaff, but they eat much Grass, and will do well on Turnips, Carrots, or Mangold steamed and mashed up with Barley-meal or Rice. It is not necessary to give the detail of the management (as there are many excellent books on the subject), but I will state what has been my general experience as to their weight. I have always endeavoured to have them hatched about the middle of April, as they do not get to the weight if later, and sell most of the hens the beginning of November. They generally average 8 or 9 lbs., and fetch six or seven shillings. The cocks are kept till Christmas, and weigh from 16 to 20 lbs. and are worth from 12 to 16 shillings. *E. X., near Braintree, Essex.*

## Reviews.

*Agricultural Physiology, Animal and Vegetable. Designed for the use of Practical Agriculturists.* By T. Lindley Kemp, M.D. Blackwood and Sons, Edinburgh and London.

It has latterly become too much the fashion to consider only those books *useful* to the farmer which shall impart economical methods, or directly profitable truths relating to his business. Dr. Kemp's work may not be able to do either the one or the other; but that it will be useful to those for whom it is designed, we have not the smallest doubt. We have read the book with a great deal of interest, and so we doubt not will it be read by many. It teaches general truths, which, if not of immediate *£ s. d.* applicability, will surely influence our practice ultimately; and already, as the Appendix to the work proves, have many of them been brought to bear in agricultural practice. In a work which describes in the course of 220 small octavo pages, the chemical and vital laws of nature; the classification of plants and animals; the conditions necessary to the continuance of life; the circulation of fluids through living objects; the process of nutrition; the food of plants and of animals; the respiration of plants and animals; the nature and operation of the nervous system; the reproduction of plants and animals; the species and varieties of cultivated plants and domesticated animals; and that arrest of all activity, which we call death—in a work which has such a table of contents for so small an amount of contents, and where every subject must therefore be very tersely and shortly given, it is difficult to select any passage which is able to give the reader a general view of the performance. Perhaps the following may suffice:—

*On a Difference between Plants and Animals.*—"Vegetables perform two very important functions. As we shall afterwards see, a quantity of carbonic acid gas is constantly issuing from man and all animals into the atmosphere. Now, this gas is very poisonous; and if it were not removed from the air, all the higher animals would very speedily perish. Vegetables have the power of taking this carbonic acid gas from the atmosphere, and of converting the carbon of it into part of their own structure. Then, while animals and plants are composed of the same elements, we shall afterwards find a great difference to exist between them as to the source of their elements or their food. Vegetables can take the elements of which they stand in need, when these elements are subject to chemical laws, that is, from the inorganic world. Thus guano (or farm-yard manure) contains nitrogen, phosphorus, soda, lime, &c.; and properly prepared soil contains all the elements whose combinations form the different structures of plants. Now, when these substances are brought to the roots of plants (which are analogous to the mouths of animals), these roots can take them in, and can then combine them so as to form the stem, leaves, flowers, &c. But it is quite different with animals: they cannot digest inorganic matter—*i. e.*, they cannot convert inorganic matter into their own structures. If the chemical elements of which an animal is composed be put into its mouth in an inorganic state, they may be swallowed, but they are never turned into its texture, but either poison it or are excreted. The food of animals must consist of the elements of which they are composed in an organic state; *i. e.*, in a state of subjection to the laws of life, and not of chemistry—or, in other words, of flesh and vegetables—before they have putrified. The important function which vegetables serve in converting the inorganic matter placed upon the surface of the earth into a state which can serve for the food of animals, will now be evident."

*On the Nourishing Fluid of Plants and Animals respec-*

*tively.*—"The first remark to be made upon the nourishing fluid of plants is, that it always contains a substance of the nature of gum or sugar. The properties of gum will be considered in the next chapter, as well as that of the other substances immediately to be alluded to. We shall here only mention that it consists of carbon, hydrogen, and oxygen. That the basis of the nourishing fluid of plants should be gum is very intelligible, when we consider that the greater part of the structure of plants (which structure is of course formed out of the nourishing fluid) consists of the same elements as gum does. We may specify wood or woody fibre, the waxes of plants, their oils, resins, &c. But the nourishing fluid of plants must contain also the other elements which, although in much smaller quantities, make up the structure of vegetable beings. Many parts, for instance, of plants contain nitrogen, and all plants contain some of the following elementary bodies,—potassium, calcium, magnesium, sodium, silicon, aluminum, iron, manganese, sulphur, phosphorus, and chlorine. The nourishing fluid of any plant must and does contain all the elements of which the structure of that individual plant is composed. Besides providing for their own structure, plants lay up a store of nutriment for the young embryo that springs from them. This must likewise be formed from the nourishing fluid. This substance, we may add, is always insoluble in cold water, and is known by the name of starch. It is obtained in abundance from Potatoes and other roots, from flour, and from many other vegetable products. When we come to examine the blood of animals, or of man, we find that it bears an exact analogy to the nourishing fluid of vegetables. As it not only forms but keeps up (for we shall soon have occasion to see that animals differ from plants, inasmuch as their structure is always wasting) every part of the body, it must contain all the elements which the body is made up of; and as it is continually parting with these, it must receive a continual supply of them. This supply is obtained at the stomach in the shape of food, and at the lungs in the shape of air. But as few animal substances do not contain nitrogen, the compound which is, as it were, the base of blood is not a substance composed of carbon, oxygen, hydrogen, like gum, but is a compound of carbon, oxygen, hydrogen, and nitrogen. It is called albumen, and its properties will be considered in the next chapter. Although, however, albumen is the basis of blood, it does not appear that it can be directly converted into animal tissue. A slight alteration is made in the proportion in which its elements are united, and another substance called fibrin is produced. To use a very ingenious comparison of Dr. Carpenter's, albumen, fibrin, and organised tissue, bear the same relation to one another, that raw cotton, cotton yarn, and woven cloth do. Fibrin may be easily obtained from blood by stirring this fluid with a stick, to which the fibrin will adhere. Fibrin can, by vital forces, be converted back again into albumen; and this we shall afterwards see is effected in those animals whose food is flesh. The blood, then, of man and the higher animals consists of albumen, because this substance can be converted, by the vital forces, into fibrin; a substance fitted, by its constitution and properties, for the repairing and renewing the greater part of the constantly wasting organs of the body. But as the body contains, although in much smaller proportion, other elementary bodies besides the carbon, oxygen, hydrogen, and nitrogen, which constitute fibrin, the blood must also contain these. And we find that it does. In the blood we can detect potassium, sodium, calcium, magnesium, silicon, aluminum, iron, sulphur, phosphorus, and chlorine. Carbon also exists in blood, in the form of carbonic acid. The blood also contains ready-prepared oil or fat. We saw that plants laid by a store of future nutriment, in the shape of starch. The office of fat seems analogous to that of starch; and, what is very curious, we shall afterwards have occasion to see that animals have the power of converting starch, taken as food, into fat."

*On Poison.*—"Poisons act as powerfully upon plants as upon animals. Moreover, plants constantly exposed to the influence of slowly-acting poisons, become diseased and out of health. When speaking of the unfertile soil (p. 118), we mentioned that the cause of its unfertility was probably the excess of iron in it. Indeed it would appear that an excess of any of the alimentary principles necessary for the food of plants, acts as a poison. This is very well exemplified in the following table, extracted from Mr. Johnston, and containing the result of an experiment made with guano. The quantity of land experimented upon was a Scotch acre.

| Quantity of guano. | Effect upon Turnip Crop. | Effect upon after Wheat Crop. |
|---|---|---|
| 4 cwt. | Good Turnips, 18 tons. | Good Wheat. |
| 8 ... | Very indifferent, 14 tons. | Inferior. |
| 16 ... | Grew up wonderfully, looked beautiful, but there was little bulk. Produce 10 tons. | Stubble black, grain dark and not larger than small Rice. |

"Nothing is more prejudicial to most plants than the continual presence of water at their roots. Part of the evil effect so produced may be attributable to the low temperature at which soil, in which water is also present, is kept; but another part of its bad action must be attributed to the very diluted state of the food of the plant. This causes the plant to be unable to absorb a sufficient amount of nutriment. It also prevents the carbon of the humus from combining with the oxygen of the air. The remedy is of course thorough draining. It sometimes happens that a crop at first grows very healthily; but at a certain period, when its roots penetrate deeper, it sickens, withers, and dies. This is probably owing to the subsoil containing matters which are poisonous to the plant. Indeed, a minute inquiry into the action of poisons upon plants would be a very valuable contribution to scientific agriculture."

We may add that the work is nicely illustrated with instructive woodcuts.

## METEOROLOGICAL REPORT.—Dec.

(*Continued from page* 14.)

[Our readers are requested, in our last week's report, to draw a line across the type below 10 p.m, Dec. 2d, which was accidentally omitted.—Ed.]

| Date. | Time. | Max. | Min. | Wind. | Remarks. |
|---|---|---|---|---|---|
| Dec. 10 | 8 a.m | 30.06 | ... | E | Very little wind during these days, but foggy, with occasional rain. |
| | 10 p.m. | ... | 29.95 | E | |
| 11 | 7.30 a.m. | 29.85 | ... | S | This storm travelled Northward, and must have lain a long way off to the Westward. |
| | 10.30 p.m. | ... | 29.78 | S | |
| 12 | 7.30 a.m. | ... | 29.80 | SW | |
| | 10.45 a.m. | 29.82 | ... | WSW | |
| | 10.30 p.m. | 29.82 | ... | SW | Much rain with this storm, which came from the Southward and Westward, with heavy thunder and lightning about 5 to 6 p.m., on the 14th. This storm passed off to the Northward |
| 13 | 8 a.m. | 29.71 | ... | SW | |
| | 10.30 p.m. | ... | 29.00 | SSW | |
| 14 | 11.25 a.m | 29.58 | ... | S | |
| | 5.30 p.m | ... | 29.35 | S | |
| | 10 p.m. | ... | 29.35 | S | |
| | 10.40 p.m. | 29.41 | ... | S | |
| 15 | 8.25 a.m. | 29.35 | ... | S | Heavy wind early a.m. on the 15th, and again towards night. It was difficult at that time to say which quarter it did not come from. This storm probably crossed Ireland and the South of Scotland. |
| | 10.35 p.m. | ... | 28.94 | S | |
| 16 | 6 a.m | ... | 29.14 | SSW | |
| | 9 a.m | 29.21 | ... | SSW | |
| | 11 a.m. | 29.19 | ... | SW | Heavy rains with this storm, blowing heavily in the evening. This storm probably crossed the North of Scotland, having come from the Westward. |
| | 4.30 p.m. | ... | 28.98 | SW | |
| | 6 p.m. | ... | 28.98 | | |
| | 10.30 p.m. | 29.15 | ... | WN | |
| 17 | 8.30 a.m. | 29.17 | ... | S | This storm probably went over Holland. At 1.26 p.m. noticed very remarkable appearance of strata of dark clouds, from NW to N by E, with cumuli of white masses rising behind them to N by E. |
| | 3 p.m | ... | 28.98 | SW | |
| | 5.30 p.m. | ... | 29.01 | SW | |
| | 11.15 p.m. | 29.18 | ... | SW | |
| 18 | 7.30 a.m | ... | 29.26 | NW | |
| | 0.30 p.m | 29.30 | ... | | |
| | 2.40 p.m | 29.22 | ... | SE | Raining towards sunset. This storm came from the Bay of Biscay, with little wind and not much rain. It went off to the North, producing hard frosts on the 19th, 20th, and 21st, being the effects of the back current of a storm rotating in a colder latitude. |
| | 6 15 p.m | ... | 29.05 | S | |
| | 10.50 p.m. | ... | 29.05 | WSW | |
| 19 | 7.45 a.m. | ... | 29.10 | N | |
| | 10.30 p.m. | 29.75 | ... | | |
| 20 | 8 a.m. | ... | 29.98 | N to | |
| | 7 p.m. | 30.10 | ... | NW | |
| 21 | 8 a.m. | 30.11 | ... | Calm | |
| | 11 a.m. | 30.11 | ... | | A storm passing at a great distance to the Westward, so great as not to alter the current produced by the previous storm. The wind during its passage was light and northerly. |
| | 1.30 p.m | 30.09 | ... | | |
| | 6 p.m. | ... | 30.06 | | |
| | 10.30 p.m. | 30.10 | ... | | |
| 22 | 8 40 a.m | ... | 30.27 | | |
| | 11.40 p.m. | 30.40 | ... | | |
| 23 | 7.30 a.m. | 30.40 | ... | | |

Dorchester, Dec. 24th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### DECEMBER AND JANUARY.

Dorset Farm, *Dec.* 31.—At this season of the year there is little that can be said about the work of the farm. Everything is dull, and the out-door work as little exciting as at any time of the year. The chief attention is directed to feeding our cattle and sheep. Our fatting beasts are now getting Swedes and Mangold Wurzel cut together, as many as they can eat; with hay twice a day, and 4 lbs. Linseed-cake each per day. The Turnips are cut in slices, with the Mangold Wurzel. Our fatting sheep are tied up, and stand on bearded floors, having their Turnips cut small, and 1 lb. of cake each per day. In this way they do very well, but great care must be taken to keep the house clean, for if much dung is allowed to accumulate below them, they will soon show the bad effects produced by its fermentation. It ought never to lie until fermentation commences. We give our store pigs, such as sows and growing ones, nothing but raw Mangold Wurzel, and they thrive very well on it and eat it heartily. The younger ones have also as many of these roots as they will eat, amd besides have a little milk, with some Barley and boiled Turnips. And the fatting ones have, in the first stage of fatting, boiled Turnips, mixed with Barley meal, the proportion of meal being increased as they get riper. We have, throughout the autumn, and up to the present time, had very mild weather, and, consequently, have had no slip lambs. Wheat is everywhere looking well, and work is now far advanced; the only ordinary work now is carrying the dung to the fields, and when dry, ploughing some of the land for next Turnip crop, leaving it as rough as possible, to get exposed to any frost that we may have. *G. S.*

Lammermuir Sheep Farm, *Jan.* 3.—The weather during the past month has been very fine—for December; only a moderate fall of rain, little frost, and no snow. The past autumn, as might have been expected, has been highly favourable for hill sheep. With such mild weather they are in excellent condition, while the dryness of the season has effectually swept away the rot, even on the "softest" grounds. No doubt our severest storms are after the new year, but their danger is greatly lessened when the sheep meet them in good spirits, for though their previous good condition will not, like the far-famed fat of bears, sustain them comfortably during months of frosts and snows, when nothing else is to be got, yet it goes a great way, and enables them to bear up against and come through many a privation, which would soon crush them did it overtake them when already in a poverty-stricken state. The rams having been among the ewes for six weeks, will be removed in the course of a few days, and receive a small allowance of Turnips in one of the inclosures. It is the practice of some stock-masters to allow them to remain constantly among the ewes, only removing them for a few weeks in autumn, when the ewes begin to come in season. Though a saving in expense in artificial food is thus secured, we think that this is more than counterbalanced in several ways. They are never in that condition which is desirable in this description of stock, and, if you are a ram breeder, can never be shown to advantage. There is also the annoyance of lambs dropping for weeks and even months after the regular season. These may, indeed, for awhile supply the farmer's family with a kind of "house lamb," but are of very little market value; and we quite agree with the common remark, that "an eild (barren) ewe is better than a late lamb." Then, again, where it is the practice to graze the ewes and ewe hogs together, a piece of cloth is sewed over their tails to prevent them having lambs. This appendage is uncomfortable at any time, but particularly so during frost, and is taken off whenever the rams are removed from the ewes. When all the kinds remain together during winter, the hogs must either be subjected to this annoyance, or many of them will be seriously injured, if not destroyed, by having lambs at an age when the nature of their pasture renders them utterly unfit, not to nurse them merely, but even to bring them forth. The work on the arable part of the farm has consisted of the ploughing of Oat stubble for the Turnip crop; the storing of them during dry weather, and the carting out of manure for the next year's crop during frosts. The stubble ploughing is now completed; a considerably larger breadth than usual having prevented its being all turned over until a later period than we would have liked. The ploughing of lea for Oats is begun, and, with favourable weather, will be finished during the present month. Those Turnips which we purpose consuming on the ground with the ewes, have been all earthed up to preserve them from frost. This operation we perform with the common plough, giving each drill a single furrow. Taking in any convenient number of drills, the plough (with two horses) starts in the middle, and taking a furrow from the edge of the drill, going as near to the Turnips as possible without touching them, throws it on the top of the one next; it returns down the second drill to the right, and removes a furrow from it also, and proceeds round and round in this manner until the whole piece is completed. As the drill at the closing has been pared from both sides, a furrow is thrown back upon it from the drill next it. We have tried the double mould-board plough for this purpose, but found, especially on steep ground, at a season when the soil is damp and does not readily leave the moulds, that the draught was too severe for two horses, while the work was neither faster nor better done. Besides being an excellent preservation to the Turnip roots, this operation acts in a very beneficial way upon the soil, by exposing a much larger surface to atmospheric influences. The whole of our crop of Swedes has been lifted and stored in long heaps, which are first covered with a few inches of straw, and then with Heather turf from the moor, cut in pieces about 18 inches square and 1 thick. These are laid above the straw, lapping slightly over one another like slates on a roof, and prevent the entrance both of frost and rain. In spring, when their present office is over, we purpose charring and mixing them with manure for the Turnip crop. In taking leave of 1850, we must say that, upon the whole, it has been a good year for the stock farmer, at least he has been much better off than his brethren on arable farms. The past season has been remarkable for fine, dry, warm weather, consequently our stock have been healthy and in excellent condition; markets for lambs and other lean sheep have been relatively higher than those for fat, while the price for wool has risen considerably from the previous year—Cheviot wool being at what we never can take it above, and grumble when it falls below, 1s. per lb. Not but that we have been feeling the pressure of the times also, for we believe that were our stock sold off now, it would not bring within 30 per cent. of its value a few years ago. Most sheep farms in this district have 100 or 200 acres under the plough, but this, except in as far as it produces hay and Turnips to assist the sheep through the winter and spring months, is, in very few cases, a source of direct profit, but rather the reverse. We can answer for ourselves, that if we can grow as much corn as suffices to pay the shepherd's meal—sow the next crop—and keep the horses eating, we consider we have done well, having oftener fallen short of than exceeded this mark. An elevation of from 700 to 900 feet, is too great to be profitably farmed in any other way than as a sheep walk. *A Lammermuir Farmer.*

Central Yorkshire, *Dec.* 31.—Throughout the whole of this month the weather has been extremely variable, occasional frosts have intervened with storms, and a thick foggy atmosphere; on the whole there has been an unusually small quantity of rain for the season; and altogether the month has been favourable for farming operations. The young Wheats are showing a full and healthy plant; the Turnips have continued to grow throughout the month, and winter feed for sheep was never more abundant. We have finished storing our Swedes for spring consumption, and our sheep are still on white Turnips, their quality continuing very good. The weather having been so mild throughout the month, the cattle in the yards have consumed straw very slowly. Our lean cattle—in fact nearly all throughout the country have been suffering from the disease in the mouth and feet; but we have been free from pleuro-pneumonia for some time. A portion of our fat cattle have gone to market; we have realised about 5*s.* 9*d.* per stone for prime heifers and bullocks. Our draft ewes of last year are now going to market from Turnips. At last sale we made 42*s.* per head, for 28 lbs. per quarter sheep, a miserable price indeed. Pork feeding, although grain is so cheap, has been a losing concern, the article making only from 3½*d.* to 4*d.* per lb. Our principal farm work during the month has been ploughing stubbles for white Turnips, deep ploughing land for Swedes and Potatoes (this land having been previously scarified and weeded), ploughing Turnip land for Barley, threshing Barley, and, during frost, carting manure from yards to couch, and to distant fields. We have also been engaged in stubbing up some crooked and imperfect fences, and in replanting the same. *J. S., Kirk Deighton.*

## Notices to Correspondents.

Carts: *Tuesday.* We do not know Busby's prize cart. He lives near Bedale, Yorkshire; neither do we know where Mr. Rogers's peat-charcoal is sold in London. Perhaps this notice may elicit information on both points.

Charcoal: *Charcoal and others.* In a future number full details shall be given.

Chicory: *Rev E P.* The roots should be chopped up, after being cleaned, in sizes about an inch cube, and spread in a hop kiln to dry, as soon as possible after being removed from the ground. The most economical method for the farmer is to sell them raw. There is ample demand for them. We could sell hundreds of tons if we had them, without difficulty, at 50*s.* a ton.

Draining Tiles: *W.* They are burned by themselves. We hope to give the whole subject very soon. The wash of a house, exclusive of closet, is worthy of being conveyed by drain to the farm tank.

Dimmery's Hoe. The hoe is 10 inches long in the blade, elliptical, nearly 5 inches broad, rounded at the handle end, and pointed at the working end. It is not sold by ironmongers. Your blacksmith can make it from this description.

Field near London: *J W.* It is quite impossible to name the rent of a field from a description of it. Any soluble poison in the soil may be got rid of by draining and *patience.* If you can grow Mangold Wurzel on it, that will probably be as

good as any other means of making money off the land near London.

FLAX: *Anon.* It is doubtful if the process of dry-retting will ever answer. It is no new attempt, and we think it has always failed.

GRASS SEEDS. *S.* Sow your mixture late in March, when the ground is moist. We would not sow earlier. Your three years feed would be better thus: 18 lbs. of Rye-grass, 1 lb. of Timothy Grass, 3 lbs. of red Clover, 3 lbs. of perennial red Clover, 4 lbs. of white Clover, 2 lbs. of Hop Trefoil. And the one year's feed should be from 18 lbs. of Rye-grass, 1 lb. of Timothy Grass, 8 lbs. of red Clover, and 2 lbs. of white.

HOSE: *A Z.* The gutta purcha tubing answers perfectly for liquid manure, and is probably as good as any. But we should be glad to have the experience of correspondents on this subject.

IRISH MOSS: *M B.* It is Carrageen Moss. Probably the same as the specimen formerly received. We do not know any other address than that given Dec. 7.

MANGOLD WURZEL: *G B P.* We have used the sweet liquor from the steaming Mangold Wurzel to throw over straw chaff and meal for cattle. Oats at 1*s.* 10*d.* per bushel are cheaper than oilcake at 8*l.* per ton. The only objection to coarse bone-dust for dissolving in acid is the longer period of time needed for their solution.

ON FEEDING WHEAT IN SPRING: *G Ensor* asks our farming readers their opinion of feeding Wheat off with sheep in spring. We should prefer mowing it—as we have often, in the case of luxuriant grassy Wheat, been forced to do. He asks:—"Does it tend to thicken or thin the crop? Does it retard the period of ripening? Does it cause a shorter straw? Till what period, on early sown Wheat, might sheep (if at all) be permitted to remain?"

RAILWAY: *X Y Z.* Mr. Neilson has been kind enough to promise a statement on the subject. We must not complain of the delay.

SHEEP: *A R.* We have often folded young sheep on Turnips all their first winter, and made good mutton of them in the following May and June, selling them naked.—*S.* Oat-sheaf cut into chaff is capital food; 16 to 20 lbs. of Mangold Wurzel, and Oat-sheaf as much as they will, is food for one day.

STRAW: *Anon.* The consumption of all the straw as food is not likely to affect the growth of straw in the land. It is much the same thing whether it reaches the land after digestion in the animal or after rotting in the dung-heap. Mildewy, fusty straw, had better be used as litter than as food.

TURNIPS: *Vice-regal Lodge.* We always clean ours with a knife, which costs 2½*d.* per ton, done by task work. 1000 tons have been contracted for, for 10*l.*, this winter. We have never had them washed; and an experiment in the "English Agricultural Journal," vol. vi., p. 370, seems to indicate that the unwashed roots do best, but a single experiment cannot determine the point; and if we could get our roots washed for as little as we can get them cleaned by knife, we should prefer the plan which cleaned them best.

# Markets.

## COVENT GARDEN, JAN. 11.

Hothouse Grapes, although becoming scarce, have not altered in price since our last account. Pine-apples are a trifle dearer, as are also Apples and Pears. Oranges and Lemons are plentiful, and improving in quality. Nuts remain nearly the same as last week. Amongst Vegetables there have been some excellent Seakale, Asparagus, and Rhubarb. French Beans, Carrots, and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 3*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Gardenias, Bignonia venusta, Chrysanthemums, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 5*s* to 8*s* | Pomegranates, each, 3*d* to 6*d* |
| Grapes, hothouse, p. lb., 4*s* to 6*s* | Almonds, per peck, 6*s* |
| — Portugal, p. lb., 8*d* to 1*s* | — sweet, per lb., 2*s* to 3*s* |
| Pears, per doz., 1*s* to 3*s* | Chestnuts, per peck, 2*s* to 5*s* |
| — per half sieve, 6*s* to 15*s* | — per 100, 9*d* to 1*s* 6*d* |
| Apples, dessert, p. bsh., 6*s* to 10*s* | Nuts, Barcelona, per bush, 20 to 22*s* |
| — kitchen do., 5*s* to 8*s* | — Brizil, p. bsh., 12*s* to 14*s* |
| Oranges, per doz., 9*d* to 2*s* | Filberts, p. 100 lbs., 60*s* to 65*s* |
| — per 100, 6*s* to 10*s* | |
| Lemons, per doz., 1*s* to 2*s* | |

### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* 6*d* to 2*s* | Leeks, per bunch, 1*d* to 2*d* |
| Cabbages, per doz., 6*d* to 1*s* | Shallots, per lb., 6*d* to 8*d* |
| Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Cauliflowers, per doz., 4*s* to 6*s* | Artichokes, Jerusalem, p. half sieve, 1*s.* 6*d.* to 2*s* |
| Broccoli, p. doz. bundl., 10*s* to 12*s* | Lettuce, Cabbage, p. score, 1*s* |
| French Beans, per 100, 2*s* to 3*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 2*s* to 3*s* | Endive, per score, 1*s* to 1*s* 6*d* |
| Asparagus, per 100, 3*s* to 8*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Rhubarb, p. bundl., 1*s* to 2*s* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Potatoes, per ton, 60*s* to 100 | Red Beet, per doz., 6*d* to 1*s* |
| — per cwt., 3*s* to 5*s* | Mushrooms, p. pot., 1*s* to 1*s* 3*d* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Fennel, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* 6*d* to 4*s* | Savory, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 9*d* to 1*s* 6*d* | Parsley, per doz. bun., 1*s* to 3*s* |
| Carrots, per doz., 2*s* to 5*s* | — Roots, p. bundl. 9*d* to 1*s* |
| Spinach, p. half sieve, 6*d* to 1*s* | Marjoram, per bunch, 2*d* to 4*d* |
| Onions, p. bunch, 4*d* to 6*d* | Mint, per bunch, 2*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Watercress, p. 12 bunch., 6*d* to 9*d* |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, JAN. 9.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | Clover ... ... ... | 70*s* to 80*s* |
| Inferior ditto .. ... | 65 70 | Second cut ... ... | 65 70 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 22 25 |
| New Hay ... ... ... | — — | | J. COOPER. |

The supply short, but quite equal to the demand.

CUMBERLAND MARKET, JAN. 9.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72*s* to 77*s* | Inferior ... ... ... | 65*s* to 70*s* |
| Inferior ditto... ... | 55 65 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover... ... | 75 80 | | JOSHUA BAKER. |

WHITECHAPEL, JAN. 9.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 68*s* to 72*s* | New Clover ... ... | —*s* to —*s* |
| Inferior ditto ... | 55 60 | Inferior ditto... ... | 63 70 |
| New Hay ... ... ... | — — | Straw ... ... ... | 21 24 |
| Old Clover ... ... | 75 84 | | |

### HOPS.—FRIDAY, JAN. 10.

Messrs. Pattenden and Smith report that the market continues the same.

### POTATOES.—SOUTHWARK, JAN. 6.

The Committee report that the market is well supplied with Potatoes, coastwise, Continental, and by rail, all of which, owing partly to the mild weather, are meeting a very dull sale, and though a considerable reduction in price has been submitted to, salesmen have been obliged to store many cargoes to clear the ships. The following are this day's quotations:—York Regents, per ton, 80*s.* to 100*s.*; Scotch do., 55*s.* to 70*s.*; ditto Cups, 55*s.* to 65*s.*; Cambridgeshire and Lincolnshire Regents, 50*s.* to 70*s.*; French whites, 50*s.* to 60*s.*

### COAL MARKET.—FRIDAY, JAN. 10.

Hollywell, 15*s.*; Eden Main, 15*s.* 3*d.*; West Hartley, 14*s.*; Wallsend Riddell, 15*s.*; Wallsend Haswell, 16*s.* 9*d.*; Wallsend Stewart's, 16*s.* 9*d.*; Wallsend Tees, 16*s.* 9*d.*—Ships at market, 226.

### SMITHFIELD, MONDAY, JAN. 6.

The supply of Beasts is large, and the average quality good. Trade is dull, at a reduction of about 2*d.* per 8 lbs. The number of Sheep for the time of year is sufficiently large. Prices of last Monday are barely supported. Trade is cheerful for Calves at rather higher rates. From Holland and Germany there are 286 Beasts, 1560 Sheep, and 116 Calves; from Norfolk and Suffolk, 1000 Beasts; from Scotland, 300; and 1400 from the northern and midland counties.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 | Best Long-wools | 3 | 6 | to 3 | 10 |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Shorn ... ... | | | | |
| 2d quality Beasts | 2 | 0 | — 3 | 0 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds | 4 | 0 | — 4 | 4 | Ditto Shorn ... ... | | | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... ... | | | | |
| | | | | | Calves ... | 3 | 0 | — 4 | 4 |
| | | | | | Pigs ... | 2 | 4 | — 3 | 4 |

Beasts, 4082; Sheep and Lambs, 22,431; Calves, 160; Pigs, 310.

### FRIDAY, JAN. 10.

The supply of Beasts to-day is small, but more than equal to the demand. A clearance cannot be effected, although there is a disposition to take lower prices. The number of Sheep is about an average for the time of year; trade is cheerful at about Monday's quotations. There is more inquiry for choice Calves, and in some instances rather more money is obtained. From Germany and Holland there are 70 Beasts, 80 Sheep, and 155 Calves; from Norfolk and Suffolk, 300 Beasts; and 85 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 | Best Long-wools | 3 | 6 | to 3 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... ... | | | | |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds | 4 | 0 | — 4 | 4 | Ditto Shorn ... ... | | | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... ... | | | | |
| | | | | | Calves ... | 3 | 0 | — 4 | 4 |
| | | | | | Pigs ... | 2 | 4 | — 3 | 4 |

Beasts, 539; Sheep and Lambs, 3310; Calves, 234; Pigs, 320.

### MARK LANE.

MONDAY, JAN. 6.—The supply of English Wheat to this morning's market was small, and much out of condition; the sale was difficult on the terms of this day sennight. Foreign was quite as much inquired after, but could only be disposed of at some reduction, which holders generally were not inclined to accept.—Barley moves off slowly.—Beans and Hog Peas must be written 1*s.* per qr. cheaper.—Oats were in limited demand, and our quotations barely supported.—Flour is a heavy sale, and late prices were with difficulty maintained.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 43—47 | Red ..... | 38—44 |
| — — fine selected runs...ditto | 43—48 | Red ..... | —42 |
| — — Talavera ..... | 46—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 36—50 | | |
| Barley, grind. & distil, 20*s* to 23*s*...Chev. | 27—31 | Malting . | 23—27 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 26—25 |
| Oats, Essex and Suffolk ..... ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 20—24 | Feed..... | 17—21 |
| — Irish .....Potato | 18—2[illegible] | Feed..... | 17—19 |
| — Foreign .....Poland and Brew | 18—22 | Feed..... | 16—20 |
| Rye ..... | 25—27 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..23*s* to 27*s*.....Tick | 24—28 | Harrow . | 24—28 |
| — Pigeon.....26 — 32... Winds | 38—44 | Longpod | 28—34 |
| — Foreign .....Small | 24—30 | Egyptian | 21—22 |
| Peas, white, Essex and Kent.....Boiler- | 24—27 | Suffolk.. | 27—29 |
| — Maple.....27*s* to 30*s* .....Grey | 24—27 | Foreign . | 25—33 |
| Maize .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 36—40 | | |
| — Suffolk .....ditto | 30—36 | Norfolk . | 30—36 |
| — Foreign .....per barrel | 18—24 | Per sack | 29—34 |

FRIDAY, JAN. 10.—The arrivals of grain since Monday have been moderate; the attendance at market this morning was small. Wheat, Flour, and spring corn met a limited retail inquiry at our quotations. Floating cargoes of Polish Odessa Wheat are held at 34*s.*, which buyers are not willing to comply with. Maize has been sold at 30*s.* to 30*s.* 6*d.* per qr. afloat.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2690 | 4370 | 2160 | 2520 sacks |
| Irish ..... | — | — | 1420 | |
| Foreign ... | 6910 | 2530 | 3840 | — brls. |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Nov. 30..... | 40*s* 3*d* | 24*s* 6*d* | 17*s* 1*d* | 23*s* 6*d* | 28*s* 5*d* | 29*s* 2*d* |
| Dec. 7..... | 40 2 | 24 7 | 17 7 | 24 3 | 28 9 | 29 0 |
| — 14..... | 39 9 | 24 3 | 17 1 | 25 11 | 27 11 | 29 5 |
| — 21..... | 39 5 | 23 10 | 17 1 | 23 1 | 27 8 | 28 2 |
| — 28..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Jan. 4..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Aggreg. Aver. | 39 9 | 24 1 | 17 1 | 24 0 | 28 2 | 28 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | Nov. 30. | Dec. 7. | Dec. 14. | Dec. 21. | Dec. 28. | Jan. 4. |
|---|---|---|---|---|---|---|
| 40*s* 3*d* | — | ... | ... | ... | ... | ... |
| 40 2 | ... | — | ... | ... | ... | ... |
| 39 9 | ... | ... | — | ... | ... | ... |
| 39 5 | ... | ... | ... | — | ... | ... |
| 38 10 | ... | ... | ... | ... | — | ... |
| 38 10 | ... | ... | ... | ... | ... | — |

### SEEDS.—JAN. 6.

| | | | |
|---|---|---|---|
| Canary, per qr..... | 44*s* to 48*s* | Coriander, per cwt. ... | 14*s*— 21*s* |
| Caraway, per cwt. ... | 29 — 33 | Mustard, white, p. bush. | 4 — 6 |
| Hempseed, per qr. ... | 34 — 35 | — brown do. ..... | 7 — 10 |
| Linseed, foreign, do. | 37 — 44 | Rape, per last ..... | 24*l.*—26*l.* |
| Clover, red, p. cwt.... | — — | Cakes, Linseed, p. 1000 | 8*l.* 15*s* |
| — — foreign, do. — | — — | — — foreign, p. ton, | 6*l.* 15*s* |
| — white, do. ..... | — — | — Rape, foreign, do., | 3*l.* 17*s* |
| — — foreign, do. — | — — | Tares, per bush... | 3*s* 0*d*—5*s* 6*d* |

LIVERPOOL, FRIDAY, JAN. 3.—The supplies coastwise and from Ireland during the last three days have been unusually small, and from the United States we have not a single fresh arrival to notice. At our market to-day millers and dealers seemed disposed to remain inactive, and transactions in Wheat were limited in amount; still holders appeared firm, and all descriptions of this grain maintained our last currency. Malting Barley and Malt, upon a moderate demand, obtained late rates; grinding Barley in slow request, but not cheaper. Beans and Peas, moving sparingly, were the turn lower in value. Oats, meeting little inquiry, hardly supported the reduced rates of Tuesday. Indian Corn merely sustained former prices.—JAN. 7.—We have again to report very scanty arrivals of grain and Flour, coastwise and from Ireland. Having a tolerable number of millers at our Corn Exchange to-day, Wheat of all descriptions was held with rather more firmness than of late; buyers, however, continued to proceed cautiously, and the amount of business was only moderate, with little or no variation from the currency of this day se'nnight. In malting or grinding Barley, or in Malt, the transactions were limited and prices unaltered. English and European Beans hardly maintained our last quotations, and Egyptians gave way 6*d.* per qr. Peas nominally unvaried. Oats and Oatmeal barely supported previous quotations. The following are the prices: Wheat, English red, per 70 lbs., 5*s.* 6*d.* to 6*s.* 1*d.*; white, 5*s.* 9*d.* to 6*s.* 3*d.* Barley, Scotch and Irish, per 60 lbs., 3*s.* 2*d.* to 3*s.* 5*d.* Malt, English, per qr. pale, 50*s.* to 55*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 8*d.* to 2*s.* 11*d.* Beans, English, per qr., 27*s.* to 31*s.* Peas, do. do., 29*s.* to 31*s.*


## GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

| | | | |
|---|---|---|---|
| 16 oz. from 2*d.* to 3½*d.* per foot. | | | |
| 21 oz. ,, 3½*d.* 5*d.* ,, | | | |
| 26 oz. ,, 3½*d.* 7½*d.* ,, | | | |
| 32 oz. ,, 4*d.* 9½*d.* ,, | | | |

SHEET SQUARES.

| | | | |
|---|---|---|---|
| In boxes of 100 feet. | £. | s. | d. |
| Under 6 by 4 ... ... | 0 | 12 | 6 |
| 6 by 4 and 6½ by 4½ ... | 0 | 13 | 0 |
| 7 by 5 and 7½ by 5½ ... | 0 | 15 | 0 |
| 8 by 6 and 8½ by 6½ ... | 0 | 17 | 6 |
| 9 by 7 and 10 by 8 ... | 1 | 0 | 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2¾*d.* per foot.

## HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.* |
| 7 by 5 ,, 7½ by 5½ ... 13 6 | 9 by 7 ,, 10 by 8 ... 16 6 |

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 5*s.*; 6 tubes, 7*s.* 6*d.* GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

## SMITHFIELD CATTLE SHOW.—MILK PANS,

in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalised, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

## GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes,

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12*s.* each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2½*d.* to 2¾*d.* per foot.

16*s.* per box; or 2¾*d.* per foot if less than one box be taken:

| | |
|---|---|
| 11 inches by 8 inches | 13 inches by 9 inches |
| 12 ,, by 8 ,, | 12 ,, by 10 ,, |
| 12 ,, by 9 ,, | 14 ,, by 10 ,, |

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

### ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅛ in. thick. | ¼ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0*s.* 6*d.* | 0*s.* 11*d.* |
| Above 15 inches and not above 35 ... | 0 8 | 1 1 |
| ,, 35 ,, ,, 50 ... | 0 9½ | 1 3 |
| ,, 50 ,, ,, 75 ... | 1 0 | 1 3 |
| ,, 75 ,, ,, 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

### SHEET GLASS TILES.

| | | | |
|---|---|---|---|
| 16 oz. sheet ... ... ... | 0*s.* 5*d.* | 26 oz. sheet ... ... ... | 0*s.* 9*d.* |
| 21 oz. ,, ... ... ... | 0 7 | 32 oz. ,, ... ... ... | 0 11 |

### SUPERIOR ROUGH PLATE TILES.

| | | | |
|---|---|---|---|
| ⅛ inch ... ... ... ... | 0*s.* 10*d.* | ⅜ inch ... ... ... ... | 1*s.* 7*d.* |
| ¼ inch ... ... ... ... | 1 3 | ½ inch ... ... ... ... | 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

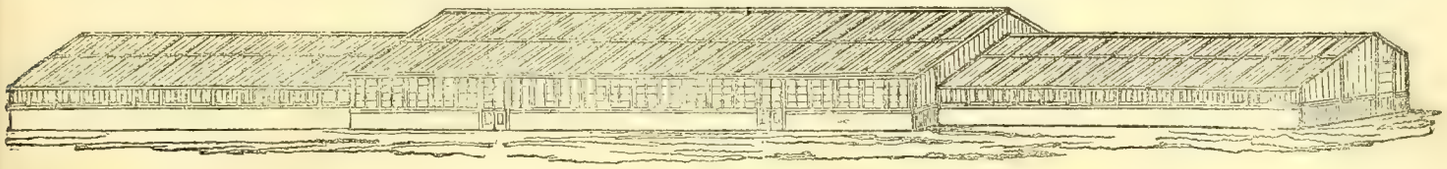
N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



| Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft. |
|---|---|---|---|---|---|

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed,) "James Fraser, Gardener, Luton Hoo Park."

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*Patron.*—H.R.H. Prince Albert.

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Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

MANURES.—The following Manures are manufactured at Mr. Lawes's Factory, Deptford Creek:

| | |
|---|---|
| Clover Manure, per ton ... ... ... ... | £11 0 0 |
| Turnip Manure, do. ... ... ... ... | 7 0 0 |
| Superphosphate of Lime ... ... ... | 7 0 0 |
| Sulphuric Acid and Coprolites ... ... | 5 0 0 |

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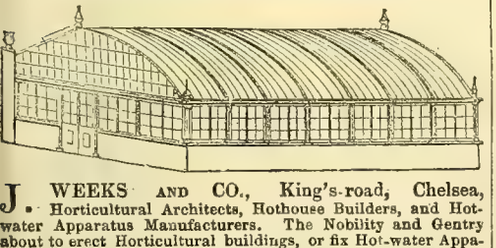
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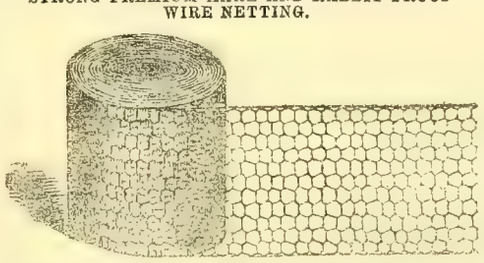
STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



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MANUFACTURERS OF IRON AND WIRE WORK, &c.,

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1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | |
|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. .. | £3 15 0 |
| Do. of 100 yards, 24 ins. wide | .. .. | 5 0 0 |
| Do. of 100 yards, 30 ins. wide | .. .. | 6 5 0 |
| Do. of 100 yards, 36 ins. wide | .. .. | 7 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

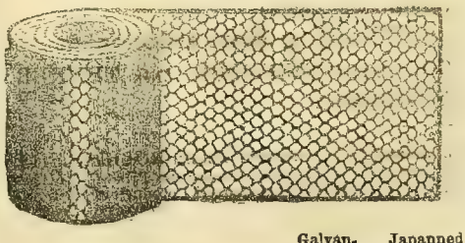
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

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Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
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| 2-inch mesh, light, 24-inch wide ... | | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | | 12 ,, | 9 ,, |
| 1¾-inch ,, light ,, ... | | 8 ,, | 6 ,, |
| 1¾-inch ,, strong ,, ... | | 10 ,, | 8 ,, |
| 1¾-inch ,, extra strong ,, ... | | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

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PRIZE STOVE OF 1850,

Now Exhibiting in the Model Room of

THE SOCIETY OF ARTS,

*John-street, Adelphi, London;*

AND IS UNQUESTIONABLY THE

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IT HAS ALREADY BEEN EXTENSIVELY ADOPTED, AND IS KNOWN AS

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3. That it preserves the BALANCE between the CONSUMPTION of the impure and the ADMISSION of pure air so accurately that it effectually prevents BLASTS of cold air through crevices in doors and windows.

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5. That it imparts so large a proportion of its heat to the air in its passage into the room through it, that the SMOKE FLUE can never get so heated as to endanger the building, or to add to the risk in insuring.

6. That as nearly all the heat produced by the fire passes with the air into the room, and very little up the flue, it obviously economises the fuel.

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MATTHEW O'BRIEN.

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Dear Sir,—We have never had occasion to regret the substitution of your excellent Stoves for the hot-water apparatus with which our establishment was previously heated; all our customers seem delighted with the change.

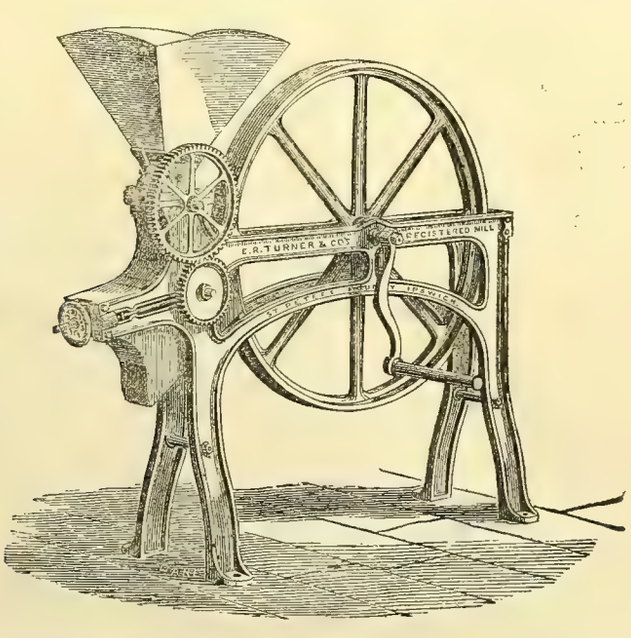
The improved ventilation produced by them—the entire freedom from that smell of iron so common to most other stoves, and the agreeable sight of the fire—render them most desirable for such establishments as ours.

We are, dear Sir, yours truly,

GEORGE HITCHCOCK AND CO.

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TO AGRICULTURISTS, HORSEKEEPERS, AND OTHERS.




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INDEX.


Agriculture, improvement in .. 43 *c*
Analyses ..... 40 *c*
Bees ..... 38 *a*
Birds, British song ..... 36 *c*
Brewing..... 42 *c*
Calendar, Horticultural..... 40 *a*
— Agricultural ..... 45 *b*
Citrus japonica ..... 40 *c*
Clover, failure in ..... 41 *c*
Drainage Act .....41 *b*—43 *b*
Edgings, garden..... 38 *b*
Exminster Farmers' Club—Manure..... 44 *b*
Farm capital ..... 42 *b*
Firs, Silver ..... 39 *a*
Flax ..... 43 *c*
Florist, Vol. III., noticed ..... 39 *b*
Fumigation ..... 38 *c*
Gardening, market ..... 37 *b*
— winter..... 38 *b*
Glass, uses of ..... 38 *c*
— rough plate ..... 38 *a*
Grafting..... 37 *a*
Hippeastrum aulicum..... 38 *c*
Horticultural Society ..... 39 *a*
— garden ..... 39 *c*
Islands, floating..... 39 *a*
Laburnum, sporting..... 38 *b*
Lead tanks ..... 38 *c*
Lilyworts of Siberia..... 39 *c*
Lyda Pear tree ..... 36 *b*
Manure, farm-yard ..... 42 *b*
Market gardening ..... 37 *b*
Orchard houses ..... 35 *c*
Oxalis Bowei ..... 39 *a*
Paint for timber..... 39 *a*
Pear trees, to protect ..... 38 *b*
Pine-apples, bottom-heat for .. 40 *c*
Plants, washing ..... 35 *b*
— collecting British ..... 39 *a*
Poultry ..... 43 *c*—44 *a*
Rivers' (Mr.), orchard houses .. 35 *c*
Sheep, the ..... 42 *a*
Siberia, Lilyworts of ..... 39 *c*
Soils, clay ..... 41 *a*
Tanks, lead ..... 38 *c*
Temperatures, winter ..... 38 *b*
Timber, paint for ..... 39 *a*
Villa gardening ..... 37 *c*
Vine, out-door..... 38 *c*
Weather, the ..... 45 *b*
Wheat, soils..... 41 *a*
Winter gardening ..... 38 *b*
— temperatures ..... 38 *b*



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☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

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Dr. LINDLEY, in the *Gardeners' Chronicle*, of the 2d March last, strongly recommends it in the following terms:

"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."

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We prove the growth of each kind before we send them out.

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| No. 1. | A full collection, suitable for a large establishment, for ... ... ... ... ... | ... | 45*s.* 0*d* |
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|---|---|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each ... ... ... | | | | ... | 25*s.* 0*d.* |
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HOSEA WATERER HAS TO OFFER THE FOLLOWING VERY DESIRABLE PLANTS.

CONIFERS.

| | *s.* | *d.* | | | |
|---|---|---|---|---|---|
| ABIES—(The Spruce Fir.) | | | | | |
| " Clanbrasiliana, each ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " elegans, strong plants, each ... ... ... ... | 10 | 6 | | | |
| " pumila, each ... ... ... ... ... | 5 | 0 | | | |
| " pygmæa, each ... ... ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " compacta, each ... ... ... ... ... ... | 3 | 6 | | | |
| The above are all dwarf varieties of the common Spruce Fir, and very pretty. | | | | | |
| " Smithiana, 2 to 4 feet, each ... ... | 2*s.* 6*d.* to 5 | 0 | | | |
| " Morinda, 2 to 4 feet, each ... ... | 2*s.* 6*d.* to 5 | 0 | | | |
| " orientalis (true), each ... ... ... ... | 10 | 6 | | | |
| " Douglasii (stout, handsome plants from seed), 1 ft., 3*s* 6*d.* each, or per doz. ... ... ... | 36 | 0 | | | |
| " " 1½ to 2 feet, 5*s.* each, or per doz. ... ... | 48 | 0 | | | |
| " " 3 to 4 feet, each ... ... | 15*s.* to 21 | 0 | | | |
| " " 5 to 7 feet, each ... ... | 31*s.* 6*d.* to 63 | 0 | | | |
| Larger and magnificent plants, up to 12 feet, 5 to 7 guineas. | | | | | |
| " Menziesii, 1½ to 2 feet, per doz. ... ... ... | 18 | 0 | | | |
| " " 3 feet, each ... ... ... ... ... | 2 | 6 | | | |
| " " 4 to 5 feet, each ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " " larger, 6 to 8 feet, each ... | 21*s.* to 31 | 6 | | | |
| " Cephalonica, nice plants, each ... ... ... | 3 | 6 | | | |
| " " larger, 3 to 4 feet, each ... ... | 21 | 0 | | | |
| " pinsapo, nice plants, each ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " " larger and very handsome, 4 ft., ea., 42*s.* to 63 | | 0 | | | |
| " canadensis (the Hemlock Spruce), 5 to 6 ft., 1*s.* 6*d.* to 3 | | 6 | | | |
| " Brunoniana, 1 foot, seedlings very stout, each ... | 5 | 0 | | | |
| " " 1½ foot, do. each ... | 7 | 6 | | | |
| PICEA Pichta or Siberica, 1 foot, each ... ... ... | 3 | 6 | | | |
| " Frazeri, 4 to 5 feet, each ... ... ... | 3 | 6 | | | |
| " Webbiana, 2 feet, each ... ... ... ... ... | 10 | 6 | | | |
| " Pindrow, 1 foot, each ... ... ... ... ... | 5 | 0 | | | |
| " Nordmanniana (true), from seeds 3 years old, each | 7 | 6 | | | |
| " " larger and stout plants, about 1½ ft. | 21 | 0 | | | |
| " Hudsoni, stout plants, each ... ... ... ... | 21 | 0 | | | |
| " nobilis, stout young plants, about 1 foot, ea., 21*s.* to 31 | | 6 | | | |
| " " a few plants from seed, 2 to 2½ feet, very rare, 10 guineas each. | | | | | |
| " grandis, each ... ... ... ... ... ... | 21 | 0 | | | |
| PINUS sylvestris pumila (the dwarf Scotch Fir, and very pretty), each ... ... ... | 10 | 6 | | | |
| " " " foliis variegatis (a very good stripe), each ... ... ... | 10 | 6 | | | |
| " pumilio, 2 feet, each ... ... ... ... ... | 1 | 6 | | | |
| " Mughus, 2 feet, each ... ... ... ... ... | 1 | 6 | | | |
| " Laricio, fine plants, 5 to 6 feet, each ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " austriaca, do. ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " Pinea (the Stone Pine, in pots), 2 feet, each ... | 1 | 6 | | | |
| " excelsa, 3 to 6 feet, each ... ... ... | 3*s.* 6*d.* to 10 | 6 | | | |
| " Lambertiana, 1½ foot, each ... ... ... | 7 | 6 | | | |
| " " 2 to 3 feet, each ... ... | 10*s.* 6*d.* to 21 | 0 | | | |
| " " A few large plants from seed, 5 to 6 ft., each ... ... ... | 63*s.* to 5*l.* | 5 | 0 | | |
| " monticola, 2 to 3 feet, each ... ... | 10*s.* 6*d.* to 21 | 0 | | | |
| " Ayacuhuite, 2 feet, each ... ... ... ... | 21 | 0 | | | |
| " Cembra, 2 to 3 feet, each ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " " large and very handsome plants, 7 to 12 ft., each ... ... ... ... | 21*s.* to 63 | 0 | | | |
| " " helvetica, 2 to 3 feet, each ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " nivea, each ... ... ... ... ... ... | 10 | 6 | | | |
| " Sabiniana, 2 feet, each ... ... ... ... ... | 21 | 0 | | | |
| " macrocarpa, 1 foot, each ... ... ... ... | 21 | 0 | | | |
| " " very fine specimens, in tubs, 6 to 8 feet, each ... ... ... | 5*l.* 5*s.* to 7*l.* | 7 | 0 | | |
| " ponderosa, 9 to 12 inches, each, seedlings ... ... | 10 | 6 | | | |
| " Strobus (the Weymouth Pine), 3 feet, each ... ... | 1 | 0 | | | |
| " " pumila, rare, each ... ... ... ... | 21 | 0 | | | |
| " " compressa, 2 to 3 feet, each ... ... | 7 | 6 | | | |
| " Montezumæ, 1 foot, each ... ... ... ... | 7 | 6 | | | |
| " " 1½ foot, each ... ... ... ... | 10 | 6 | | | |
| " " 2 feet, each ... ... ... ... ... | 21 | 0 | | | |
| " Gerardiana, each ... ... ... ... 3*s.* 6*d.*, 5*s.*, to | 7 | 6 | | | |
| " insignis, 1½ foot, from seed, each ... ... ... | 5 | 0 | | | |
| " " 1½ to 2 feet, each ... ... ... ... | 7 | 6 | | | |
| " " large and splendid plants, up to 12 feet, 3 to 7 guineas each. | | | | | |
| " palustris ... ... ... ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| ARAUCARIA imbricata, stout seedling plants, 9 in., p. 100 | 5*l.* 0 | 0 | | | |
| " " 1 foot, 21*s.* doz., or, per 100 ... | 7*l.* 0 | 0 | | | |
| " " 1½ foot, per doz. ... | 30*s.* to 42 | 0 | | | |
| " " 2 feet, each ... ... | 5*s.* to 7 | 6 | | | |
| " " 2½ to 3 feet, each ... | 10*s.* 6*d.* to 21 | 0 | | | |
| " " 3½ feet, each ... ... ... | 31 | 0 | | | |
| " " 4 feet, each ... ... ... | 42*s.* to 63 | 0 | | | |
| CRYPTOMERIA japonica, 2 years seedling, per 100 ... | 7 | 10 | 0 | | |
| " " 1½ to 2 feet, per doz. ... | 30*s.* to 42 | 0 | | | |
| " " 2½ to 3 feet, each ... | 5*s.* to 7 | 6 | | | |
| " " larger plants, 7 to 8 feet, each | 5*l.* | 5 | 0 | | |
| " " var. nana, each ... ... | 21 | 0 | | | |
| CEDRUS Deodara, nice plants from seed, 1 foot, per 100 | 7*l.* | 10 | 0 | | |
| " " 1½ to 2 feet, per 100 ... ... | 10*l.* | 0 | 0 | | |
| " " 2 to 3 feet, each, 3*s.* 6*d.*, or, per doz. | | 36 | 0 | | |
| " " 3 to 4 feet, each ... ... | 5*s.* to 7 | 6 | | | |
| " " 4 to 5 feet, each ... ... | 10*s.* 6*d.* to 15 | 0 | | | |
| " " 5 to 7 feet, each ... ... | 21*s.* to 31 | 6 | | | |
| " " larger and most beautiful plants, 8 to 12 feet, each ... ... | 63*s.* to 147 | 0 | | | |
| " Libani (the Cedar of Lebanon), good free grown plants, 2 to 3 feet, each, 2*s.* 6*d.*, or, per doz. ... | 24 | 0 | | | |
| " " 4 feet, each ... ... 5*s.*, or, per doz. | 48 | 0 | | | |
| larger, 7 to 10 feet, each ... | 21*s.* to 63 | 0 | | | |
| " Africanus, 1 foot, each ... ... ... ... | 10 | 6 | | | |
| CUPRESSUS thyoides (the white Cedar) 3 to 4 feet, each ... | 2 | 6 | | | |
| " " foliis variegatis, 2 to 3 feet, each ... | 5 | 0 | | | |
| This is a very handsome striped plant. | | | | | |
| " thurifera, 1½ foot ... ... ... ... ... | 2 | 6 | | | |
| " Funebris (Funeral Cypress), strong seedling plants, each ... ... ... | 7*s.* 6*d.* to 21 | 0 | | | |
| " Macrocarpa or Lambertiana, 2 to 3 feet, each, | 3*s.* 6*d.* to 5 | 0 | | | |
| CUPRESSUS larger ... ... ... ... | 10*s.* 6*d.* to 21 | 0 | | | |
| " Goveniana ... ... ... ... ... | 21 | 0 | | | |
| " torrulosa ... ... ... ... ... ... | 1 | 6 | | | |
| JUNIPERUS (Juniper). | | | | | |
| " Communis (the English Juniper), 1½ to 2 feet, per 100 ... ... ... ... ... ... | 15 | 0 | | | |
| " " 2 to 3 feet, per 100 ... ... ... | 21 | 0 | | | |
| " Upright Irish, 3 to 4 feet, each ... | 2*s.* 6*d.* to 3 | 6 | | | |
| " " 5 to 6 feet, each ... | 7*s.* 6*d.* to 10 | 6 | | | |
| " " larger, 7 to 8 feet, each, | 15*s.* to 21 | 0 | | | |
| This is a fine plant, totally distinct from any other Juniper, being as erect in its habit as an Irish Yew. It is extensively planted at Elvaston Castle, where it is a principal feature. Except Elvaston, I believe the plants here offered are the largest in the country. | | | | | |
| " excelsa, 1½ to 2 feet, each ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " " 3 to 4 feet, each ... ... | 10*s.* 6*d.* to 21 | 0 | | | |
| " pendula vera, each ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " echiniformis, each ... ... ... ... | 5 | 0 | | | |
| " Bedfordiana, fine plants, 3 to 4 ft., ea. | 3*s.* 6*d.* to 5 | 0 | | | |
| This is a very beautiful Juniper. | | | | | |
| " chinensis, 3 to 4 feet, each ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " " larger, 5 to 7 feet, each ... | 7*s.* 6*d.* to 10 | 6 | | | |
| This is another fine Juniper, and ought to be universally planted. | | | | | |
| " recurva, 3 feet, per doz. ... ... ... ... | 30 | 0 | | | |
| " " larger, 4 to 6 feet, each | 3*s.* 6*d.* to 7 | 6 | | | |
| " Sabina (the Savin), each ... ... ... | 1*s.* to 1 | 6 | | | |
| " " foliis variegatis, each ... ... ... | 1 | 6 | | | |
| " " alpina, each ... ... ... ... | 1 | 6 | | | |
| " " tamariscifolia, each ... | 1*s.* 6*d.* to 3 | 6 | | | |
| " prostrata, each ... ... ... ... ... | 1 | 6 | | | |
| " nana, each ... ... ... ... ... ... | 1 | 6 | | | |
| " tetragona, each ... ... ... ... ... | 3 | 6 | | | |
| " flaccida, 1½ to 2 feet, each ... ... ... | 3 | 6 | | | |
| " squamata, each ... ... ... ... | 2 | 6 | | | |
| " hispanica, 1½ to 2 feet, each ... ... ... | 5 | 0 | | | |
| " phœnicea, each ... ... ... ... ... | 3 | 6 | | | |
| " virginiana (the Red Virginian Cedar), 4, 5, and 6 feet, each ... ... ... ... | 1*s.* 6*d.* to 3 | 6 | | | |
| " " foliis variegatis, each ... ... | 7 | 6 | | | |
| TAXODIUM sempervirens, 1½ to 2 feet, stout, per doz. ... | 30 | 0 | | | |
| " " 2 to 3 feet, per doz. ... ... | 42 | 0 | | | |
| " " larger, 3 to 4 feet, each ... | 5*s.* to 7 | 6 | | | |
| TAXUS—(Yew) | | | | | |
| " baccata (the common Yew), 3 to 4 feet, per doz. ... | 18 | 0 | | | |
| " " 5 to 6 feet, each ... ... | 2*s.* 6*d.* to 3 | 6 | | | |
| " " larger, 7 to 8 feet, each ... | 5*s.* to 7 | 6 | | | |
| " Irish Yews, 2½ to 3 feet, per doz. ... ... ... | 18 | 0 | | | |
| " " 3 to 4 feet, per doz. ... ... ... | 30 | 0 | | | |
| " " 4 to 5 feet, per doz. ... ... ... | 42 | 0 | | | |
| " " 5, 6, 7 & 8 feet, each ... | 7*s.* 6*d.* to 15 | 0 | | | |
| " gold striped Yews, 1½ to 2 feet, per doz. | 30*s.* to 42 | 0 | | | |
| " do., 4 feet, worked on the common, and very handsome, each ... ... ... ... ... | 21 | 0 | | | |
| do., tall standards, with fine heads, ea., | 31*s.* 6*d.* to 42 | 0 | | | |
| " elegantissima (new gold striped), each, | 2*s.* 6*d.* to 5 | 0 | | | |
| " silver striped Irish, each ... ... ... ... | 10 | 6 | | | |
| " adpressa, each ... ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " Dovaston or Weeping Yew, each ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " Yellow-berried, each ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| The Golden Yew is another of the plants used so extensively at Elvaston Castle, where alone its merits appear to have been properly understood. It is really a capital plant, and may be considered one of the gayest ornaments to our gardens in winter and spring. | | | | | |
| THUJA—(Arbor-vitæ.) | | | | | |
| " occidentalis (the American), 3 to 4 feet, per doz., 6*s.* to 9*s.*; per 100 ... ... ... ... | 30 | 6 | | | |
| " " 5 to 6 feet, per doz. ... ... ... | 18 | 0 | | | |
| " " fol. varieg., each ... ... ... | 5 | 0 | | | |
| " orientalis (the Chinese), 2 to 3 and 4 ft., p. doz., 9*s.* to 30 | | 0 | | | |
| " Sibirica Weariana (the best variety of Siberian Arbor-vitæ) 2 to 2½ feet, per doz. ... ... | 12 | 0 | | | |
| " " 3 to 4 feet, per doz. ... ... from 18*s.* to 30 | | 0 | | | |
| " " plicata, 3 feet, each ... ... ... | 2 | 6 | | | |
| " " 4 to 5 feet, each ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " tartarica, 4 feet, each ... ... ... ... | 3 | 6 | | | |
| " nepalensis, 2 feet, each ... ... ... ... | 3 | 6 | | | |
| " pendula, each ... ... ... ... | 3*s.* 6*d.* to 5 | 0 | | | |
| " aurea, each ... ... ... ... ... | 5*s.* to 7 | 6 | | | |

LIBOCEDRUS CHILIENSIS.

Seedling plants ... ... ... 10*s.* 6*d.* each, 3 for 20 0

This is an Arbor-vitæ of recent introduction from Chili. Sir W. Hooker, speaking of it in the "Journal of Botany," says, "It is a tree 30 to 40 feet high, of great beauty, and well worthy of being introduced to our gardens."

All the above may be seen growing in the Nursery at Knaphill, which is within an hour's ride of London, being near the Woking Station, South-Western Railway, and from whence conveyances may at all times be had, and where every train stops.

The whole of the large plants mentioned were moved in the spring of the past year (1850), and H. WATERER will engage them to transplant again, and can be sent any distance with perfect safety.

Goods delivered free to any Railway Station in London.

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From the repeated exhibitions at the King's Road, Chelsea, and more recently at the Botanic Gardens, Regent's Park, this Nursery is well known as containing the most complete collection of American Plants in existence. Descriptive Catalogues of these, as well as of a most extensive general Nursery Stock, may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill, Woking, Surrey.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12s. per dozen. Also Myatt's Linnæus, 12s. per dozen; and Victoria, 9s. per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

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Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Jan. 18.

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WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42s. to 60s. |
| Extra superior selected Standards ... ... ... | 18s. to 24s. |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10s. to 16s. |
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| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50s. |
| Good do. do. without names, per 100 | 30s. |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BEAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BEAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

## GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT,

**For Supplying Genuine Home-Grown Seeds Carriage Free.**

JOHN SUTTON AND SONS, SEED-GROWERS, Reading, Berks, being extensive Growers of Seeds, and having many Customers in the Southern, Midland, and Western Counties of England, and in South Wales, have made arrangements with the Directors of the above named Railways (all of which converge at Reading), whereby they are enabled to deliver their Goods *Carriage Free* to any Station on either of these Lines; or to any Railway Terminus in London; or Packet Office in London or Bristol.

SUTTON'S NEW PRICED CATALOGUE OF HOME-GROWN SEEDS, being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL and FLOWER SEEDS, *with prices affixed to each article*, will, it is presumed, be found the *most useful* and convenient of any yet presented to the public, the prices being remarkably low, while the sorts are the best in cultivation. *It will be sent post paid on application, enclosing one penny stamp.*

### SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well-acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden*, Messrs. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

The Collections are increased in quantity this year, and are far superior to any others yet offered to the public, both in quantity and quality.

| | £ | s. | d. |
|---|---|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply | 2 | 10 | 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... ... ... | 1 | 10 | 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... ... ... ... ... | 1 | 1 | 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... ... ... ... | 0 | 12 | 6 |

Persons who are already in possession of several kinds of Seeds are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.

*Choice Collections of Flower Seeds* may also be had, either all hardy or half hardy sorts, and will be sent carriage free with the above, or free by post if Flower Seeds only are required, viz.:—*The best 50 Sorts*, 10s. 6d.; *the best 36 Sorts*, 7s. 6d; *the best 24 Sorts*. 5s

N.B.—*It is not necessary that remittances should accompany orders from Clergymen, Resident Gentlemen, or their Gardeners.*

Address, JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18s. to 24s. | per doz. |
| Dwarf Standard do. do. | 12s. to 18s. | ,, |
| Climbing Roses do. | 9s. to 12s. | ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.
All packages delivered free of carriage to London.
Nurseries, Cheshunt, Herts, Jan. 18.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower Seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.
ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

NEW EARLY PEA.—"TAYLOR'S EARLY PROLIFIC."

THOMAS BARNES begs to offer to the public the above new and valuable Pea, which will be found perfectly distinct from any other yet out. It is an abundant bearer, perfectly hardy, and one of the very earliest grown.
Price, per quart, 1s. 6d.; per peck, 9s. 6d.
Wholesale prices on application.
☞ London Agents: Messrs. HURST and M'MULLEN, 6, Leadenhall-street.—Danecroft Nurseries, Stowmarket.

DALSTON NURSERY, MIDDLESEX.—All Persons having Claims against the Estate of Mr. JOHN SMITH, late of Dalston Nursery, deceased, are requested to forward the particulars thereof, addressed to Mr. THOMAS SMITH, at the Nursery, without delay; and all Persons Indebted to the Estate are requested to pay the same either to Messrs. GRAHAM and LOYDE, Solicitors, 3, Mitre-court Chambers, Temple, London; or to Mr. WILLIAM HARRINGTON, at the Nursery.

TO THE READERS OF THE "MIDLAND FLORIST."

TESTIMONIAL TO MR. WOOD.—At a recent private meeting of friends, at Mr. Dodwell's, the subject of the *Midland Florist*, and the long and honourable service of its Editor, was introduced; and it was suggested, that the great meeting, to be held in May next, offered a most appropriate opportunity to present to Mr. WOOD a Testimonial, expressive of the esteem and cordial regard his conduct as a man, and his long and eminent service in the cause of Floriculture, had engendered; and it was unanimously determined that measures should instantly be taken in furtherance of this object. In the first instance this notice was not contemplated, but it was quickly felt that to keep the subject private must lead to the exclusion of the large body of Florists. Mr. WOOD was therefore informed of the purpose, and excepting that he distinctly refuses to receive a money gift, he appreciates the feeling displayed.

Florists of England! of the whole world! it is no part of the purpose of the writer of this to eulogise the services of Mr. WOOD; those services must have been, and be now felt, or this notice will fall a dead letter on your hearts. Those services have been many and various, freely and with honour rendered, wherever needed; and it is not of the least, when, despite the sacrifice as a professional Florist, he has cheerfully rendered you his aid at your great meetings. Come forward, then, and render honour to him who has honoured you; who has given you a place and a name of honour amongst the nations. Let all classes take the work to their hearts, the humblest as well as the most elevated; and that all may join in an act of graceful homage to high worth, Subscriptions, however small, will be received by any of the following gentlemen:—Edward Beck, Esq., Worton Cottage, Isleworth; John Edwards, Esq., Wace Cottage, Holloway; Mr. Charles Turner, Royal Nursery, Slough; Mr. R. Marris and Mr. F. W. Hollyoake, Leicester; Samuel Buswell, Esq. and Mr. I. C. Wasnidge, Nottingham; Thomas Adams, Esq., Derby; John Haines, Esq., Tiptou; Mr. Henry Pope, Birmingham; Mr. R. Dixon, Manchester; G. W. Hardy, Esq., Warrington; Mr. Rhodes, Mr. Dobbins, Mr. Bramma, and Mr. Schofield, Leeds; M. Woodhouse, Esq., Whitby; Mr. Hepton and Mr. Merryweather, York; Mr. G. Lightbody, Falkirk; and Mr. E. S. Dodwell, Derby.

All communications are requested to be addressed to Mr. E. S. DODWELL.

The following Donations are announced:

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Edward Beck, Esq. ..... | 10 | 6 | Mr. Charles Turner ..... | 20 | 0 |
| John Edwards, Esq. ... | 10 | 6 | Mr. E. S. Dodwell..... | 20 | 0 |
| M. Woodhouse, Esq. ... | 10 | 0 | Mr. Wasnidge..... | 10 | 0 |
| Thomas Adams, Esq .... | 20 | 0 | Mr. Bayley ..... | 5 | 0 |
| John Haines, Esq. ..... | 20 | 0 | 20 Friends in Derby..... | 20 | 0 |
| Mr. R. Dixon..... | 20 | 0 | Samuel Buswell, Esq.... | 10 | 0 |
| Mr. W. Hepton ..... | 20 | 0 | G. W. Hardy, Esq. ..... | 10 | 6 |

TO GENTLEMEN, GARDENERS, AND OTHERS.

ORANGE AND LEMON TREES.—Any private grower having four Orange and two Lemon Trees to dispose of, 8 or 10 feet in height, with clean stems, good heads, and in a healthy condition (by stating price), may hear of a purchaser by applying to Mr. ROBERTS, Gardener, Raby Castle.
Raby Castle, Darlington, Jan. 18.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5l., 7l. 10s., and 10l. per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

WM. HAMILTON, SEEDSMAN, &c., 156, CHEAPSIDE, LONDON, begs to intimate that his Catalogue of Seeds, &c., will be sent by post on application. It contains, as usual, in the most comprehensive style, the ENGLISH AND SCIENTIFIC NAME, HABIT, AND DURATION, TIME OF SOWING AND FLOWERING, THE COLOUR, &c., of upwards of 500 of the most popular Flowers, with prices of Vegetables, Plants, Implements, &c. Everything connected with Gardening at the lowest prices consistent with a good article.—Address, 156, Cheapside, London.

HERACLEUM GIGANTEUM.

HERACLEUM GIGANTEUM AND HERACLEUM SPHONDYLIUM; sow this and next month. The former is one of the finest ornamental biennials in the world; grows 12 to 14 feet high; leaves, 5 feet wide; pure white umbellated flowers, 2 to 3 feet in diameter; a native of Siberia. The latter is a British plant, much improved by cultivation, producing abundance of green food for cattle, pigs, and rabbits, which fatten upon it. Seeds of either variety 6d. per packet, post free, with directions for sowing, &c. A liberal allowance to Seedsmen.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE OF SEEDS is now ready, being a part of their ANNUAL SEED AND PLANT LIST, which will shortly be complete, and forwarded as a newspaper, free by post. The Parts now ready may be had together for a penny stamp, viz.:

PART I. FLOWER SEEDS, containing a scale of priced selections of 422 of the new and most approved sorts, with colour, height, hardiness, duration, price of each packet, and other useful information.

PART II. VEGETABLE SEEDS, with priced scale of collections, time of sowing each description of Vegetable, and price of each variety, with heights of Peas, and other descriptive information.

PART III. AGRICULTURAL SEEDS, containing also much useful and descriptive information.

PART IV. ROOTS, FRUITS, AND BULBS for early planting.

PART V., as far as complete, contains a scale of prices of our choice selections of plants, and the principal part of our descriptive list of Geraniums.
Seed and Horticultural Establishment, Sudbury, Suffolk.

THE REGISTERED ROSE GIRDLE-LABEL.—A Rose Grower (having found, by long experience, the present method of securing Standard Plants by wires of any kind, and cord or rope of whatever description, to be highly injurious to the bark, and otherwise detrimental to the growth of the plant, besides being clumsy, troublesome, and ineffectual), has the pleasure of submitting to Amateurs and the Public a new Invention which he has recently introduced, for the more efficient and neat fastening of Roses and other Standard Plants to their Stakes.

The REGISTERED ROSE GIRDLE now offered to the Public, besides the advantage of being well adapted for a neat and permanent Label to the plant which it secures, will greatly diminish the time and trouble attending the mode hitherto pursued in the tying of Standard Plants to their stakes. The utility of this invention, while combining two important objects (till now very imperfectly attained), cannot but entitle it, from those who wish a neat and permanent Label as well as an efficient fastener for their Standard Plants, to an additional claim. It is neat as it is efficacious, and as cheap as it is useful.

EXTRACT FROM "FLORIST'S DIRECTORY."—"We consider it one of the most useful articles that have been invented—it forms a permanent Label as well as an unerring fastening, and we shall be disappointed if it is not generally used for Roses and Standard Cytisuses. We shall adopt it for everything we can apply it to in the garden."

Sold, wholesale and retail, by WILLIAM HAMILTON, Seedsman and Florist, 156, Cheapside, London; and to be had of all Nursery and Seedsmen. Price 1s. 6d. per dozen.

THE NEW EARLY SWEET-KERNELLED KAISHA APRICOT.

MESSRS. VEITCH AND SON feel much confidence in bringing into public notice the above valuable new Syrian Apricot, sent to this country by the late JOHN BARKER, Esq., of Suedia, the gentleman by whom the valuable Stanwick Nectarine was introduced. Having obtained the entire Stock, they are now prepared to send out a limited number of healthy Young Trees at the following prices, and solicit the favour of early orders, which will ensure good trees and meet with immediate attention:

Healthy one year old Trees ... 21s. 0d.
„ one year trained ... 31 6 } package included.
„ two year trained ... 42 0 }
A few two year old trained, chiefly half standards and standards ... ... ... ... 42s. each.

One plant over to the Trade when three are taken.

In offering the above valuable new early Apricot for sale, Messrs. VEITCH and SON beg to refer to the description given by Dr. LINDLEY, in the "Journal of the London Horticultural Society" for July, 1849, from which the following extract is given:

"The fruit semi-transparent, roundish 5½ inches, in circumference, skin slightly downy, pale citron-coloured where shaded, tinged and marked with red next the sun. Flesh tender, juicy, of a clear citron colour, parting freely from the stone, *sugary and delicious*, like well refined lump sugar combined with Apricot flavour; stone *small*, roundish; kernel sweet like a nut. A valuable early variety for the dessert, and probably excellent for preserving; if it be employed for this purpose, the transparency of its flesh will exhibit a new feature amongst Apricot preserves. Some of the fruits have ripened as early as the 12th of July, and on the *same wall* at the time were Moorpark and Turkey Apricots perfectly green and hard."

Exeter, Jan. 1851.

CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber-growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Mills's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5s.; or three seeds, 2s. 6d.

E. T. has also seed of his three other superb Cucumbers at the following prices:

Victory of Bath, per packet ... ... ... 2s 0d.
Gordon's White Spine, ditto ... ... ... 1 6
Lord Keynon's Favourite, ditto ... ... 2 6

This last is the best for winter cultivation.

MELONS.

BROMHAM HALL GREEN-FLESH MELON.—This has again this season surpassed all others for its superior flavour; it was placed first and second for flavour at the Chiswick Exhibition last season, and obtained a great number of first prizes throughout the country where exhibited. Sold in packets at 1s. 6d. each.

E. T. has also seeds of the following superb Melons, which he can with confidence recommend:

| | 1s. 0d. per packet |
|---|---|
| Camerton Court Green-flesh ... ... | |
| Queen Melon ... ... ... ... ... | 1 0 „ |
| Blackall's Green-flesh ... ... ... | 1 0 „ |
| Bailey's Green-flesh... ... ... ... | 1 0 „ |
| Bowood Green-flesh... ... ... ... | 1 0 „ |
| Beechwood Green-flesh ... ... ... | 1 0 „ |
| Windsor Prize ditto... ... ... ... | 1 0 „ |
| Emperor ... ... ... ... ... | 1 0 „ |
| Fleming's Trentham Hybrid ... ... | 1 0 „ |
| Duncan's Green-flesh do. Improved ... | 1 0 „ |
| Hampton Court Green-flesh ... ... | 1 0 „ |
| Egyptian do. do. Improved ... ... | 1 0 „ |

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

FOR CHEAPNESS, QUALITY, DISPLAY, and UTILITY, *the following are strongly recommended.*

HOLLYHOCKS, No. 1, fine double named kinds, all shades of colour, per doz., 9s., or per 100, 2l. 10s. HOLLYHOCKS, No. 2, for border display, very good, per doz., 6s., or per 100, 1l. 10s. These are selected from some hundreds of seedlings, and may be confidently relied on.

HERBACEOUS PLANTS.—Purchaser's Selection, from List, per 100, 3l. 3s.

W. MAY's selection, extra fine, No. 1, 2l. 2s. per 100;
„ „ really good, No. 2, 1l 10s. „

Having an immense stock they can be furnished at these low prices. The collection extends over 700 species and varieties selected from the choicest stocks in the country (regardless of expense) for display, and warranted second to none. To meet our customers in every way, we hope to be favoured with lists of such plants as are already in their collections, that duplicates of any article may not be sent where the selections are left to ourselves.

FLOWERING SHRUBS AND ORNAMENTAL TREES.—The finest vars., purchaser's selection, from the list, per 100, 3l 3s.

W. MAY's selection, No. 1, extra fine, per 100, 2l. 2s.
„ „ No. 2, good kinds, „ 1l. 5s.

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. KEMP for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4l.; or per 100, 10s., fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5l.—per 100, 15s.

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4l., in 100 varieties, or per 100, 10s., in 50 varieties; the stock extends over 30,000, and is very fine and healthy.

CURRANTS—White, Red, and Black, including Black Naples, per 100, 10s., fine.

Fruit and Forest Trees, fine, and equally low, and of the most approved kinds, warranted true.

Kitchen and Flower-garden Seeds, of the best quality, very cheap.

Greenhouse and Stove Plants, a splendid stock, at low prices. Catalogues on application gratis.

Orders (except for Forest Trees), above 5l., will be delivered carriage free, or allowed to London or within 150 miles of the Nurseries.—Address, WILLIAM MAY, Hope Nurseries, Leeming-lane, Bedale, Yorkshire. Post-office orders should be made payable on Bedale, to JOHN MAY.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2½ feet, is three weeks earlier than the old dwarf Green Knight's, and the Peas and pods are twice the size. 5s. per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetars, and 20 to 24 per stem. 1s. per quart.

BURBIDGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1s. per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c., Wholesale and Retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be furnished on application.

CHOICE FRUITS, &c.—Planters are respectfully informed that YOUELL and Co. possess an extensive stock of strong and healthy plants of the under-mentioned:

FASTOLFF RASPBERRY (true), as originally sent out by Youell and Co., 15s. per 100.
Large White do., 24s per 100.
Cornwall's Victoria, 8s. per 100.
CURRANTS.—Improved large White Dutch, 5s. per dozen.
Large Black Naples, 6s. per dozen.
Raby Castle, or Victoria (red), 6s. per dozen.
Knight's Sweet Red, 6s per dozen.
Knight's Large Red 6s. per dozen.
Red Grape, 4s. per dozen.
GOOSEBERRIES of the finest sorts, by name, selected for size, combined with flavour, 5s. per dozen.
RHUBARB.—Myatt's Linnæus, Mitchell's Royal Albert, and Myatt's Victoria, 12s. per dozen.
Youell's Tobolsk, fine, for forcing, 6s. to 9s. per dozen.
ASPARAGUS.—Giant, strong, 4 years old, for forcing, 5s. per 100.
Do. do. 2 and 3 years old, 2s. 6d. and 3s. 6d. per 100.
SEAKALE, strong, 1s. 6d. per dozen.

Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots, of the newest and most approved kinds, selected from the Garden of the London Horticultural Society, and warranted true to name, can be supplied in maiden and trained trees of the finest quality, and forward for bearing.

TO PLANTERS AND CONTRACTORS.—WHITETHORN, twice transplanted (very strong), 7s. 6d. per 1000.
Do. 1 and 2 years transplanted, 4s. 6d. and 5s 6d. per 1000.
Do. 4 years, strong and fine, with an abundance of fibrous roots, as good as transplanted, 3s. per 1000, or 12l. 10s. per 100,000.

YOUELL and Co. can also supply
CAMELLIAS, of the newest and best kinds, with flower-buds, 30s. per dozen.
ROSES, standard, half-standard, and dwarfs, of the very best kinds in cultivation, 12s to 15s. per dozen.
ESCALLONIA MACRANTHA, 5s each.
Royal Nursery, Great Yarmouth.

# The Gardeners' Chronicle.

*SATURDAY, JANUARY* 18, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | Jan, | 20 | Chemical | 8 P.M. |
| | | | Statistical | 8 P.M. |
| | | | Linnean | 8 P.M. |
| TUESDAY, | — | 21 | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 22 | Society of Arts | 8 P.M. |
| | | | Geological | 8 P.M. |
| THURSDAY, | — | 23 | Royal Soc of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8 P.M. |
| | | | Philological | 8 P.M. |
| FRIDAY, | — | 24 | Royal Institution | 8 P.M. |
| SATURDAY, | — | 25 | Medical | 8 P.M. |

CLEANLINESS, says some old writer, is the charm of animated beings; but we suspect that plants were not included in the maxim. People, indeed, seem to have no notion that because they must clean their own skin, if they would preserve their good looks, therefore they must clean the skin of the creatures that surround them. It must be confessed, indeed, that cleanliness would seem, from the practice of many persons, to be looked upon as the peculiar attribute of man. The state of their cows and their pigs and their oxen plainly enough declares a conviction that dirt is the heritage of all living things, man excepted. To introduce the sponge and the curry-comb into the pigstye and cowshed is a degree of rural dandyism of which, they think, no rational being would be guilty. How much stronger then must be the belief that to plants, the peculiar children of the soil, dirt must be natural, if not necessary.

And yet we find, in the condition of the plants in some good gardens, a degree of neatness observable which our forefathers thought, with many of their descendants, to be wholly uncalled-for. But we fear that, even here it is not uncommonly supposed that the chief ground for keeping plants clean is that their colours are brighter, and that they harmonise better with the woodwork and floors, in which neatness is required by common consent. It may be too that in greenhouses the fair hands that gather flowers are not to be soiled with impunity because of a gardener's neglect.

If these reasons were the only ones for keeping plants scrupulously clean, they would be weighty enough to demand attention; but they are among the weakest. It is notorious to those, who understand the nature of vegetable life, that a freedom from impurities upon the skin is of even greater vital importance to a plant than to a man. It is nearly ten years since we showed, in these columns, that the main reason why green leaves and gay flowers are banished from the squares and balconies of London, is the filthy atmosphere that is incessantly defiling them; and we then asserted, what few believed to be true, that if as much washing were bestowed in London upon a pet plant, as upon a lapdog, the one would remain in as good condition as the other. The reasons are obvious. Plants breathe by their leaves: and if their surface is clogged by dirt of whatever kind, their breathing is impeded or prevented. Plants perspire by their leaves; and dirt prevents their perspiration. Plants feed by their leaves, and dirt prevents their feeding. So that breathing, perspiration, and food, are fatally interrupted by the accumulation of foreign matters upon leaves. Let any one, after reading this, cast an eye upon the state of plants in sitting-rooms, or ill-kept greenhouses; let them draw a white handkerchief over the surface of such plants, or a piece of smooth white leather, if they desire to know how far they are from being as clean as their nature requires.

There is so little novelty in all this, although but seldom thought of, that we should have scarcely introduced the subject, if it were not for some new and curious experiments just published by M. GARREAU. This experimentalist has for some time devoted himself to inquiring into the functions of the skin of plants, and his observations entirely confirm all that had been stated upon the subject by others. Among other things he found that soap and water had great merit; plants well washed acquiring a power of absorption much beyond what they possessed in their unwashed condition. Thus the rate of absorption in the Tangiers Ferula was as 4 to 0 after ablution; and in the yellow Gentian as 30 to 20. In like manner, the petals of the Pæony took up five and six times as much after as before being cleaned; and the leaves of the Lilac, Lily of the Valley, Ivy, and Clematis when washed took up about twice as much as before.

It is not a little curious, however, that soap and water had a far greater cleaning effect than mere water; thus, a Fig-leaf, which had been lathered, absorbed 90 parts, while after a mere water-bath it took up only half the quantity; and a bramble, which soap and water provided with 130 parts of water absorbed, could only consume 10 parts when cleaned with water alone. Can there be a more conclusive argument in favour of the repeal of the soap duty? We respectfully submit this to the consideration of the Chancellor of the Exchequer.

On a future occasion we shall lay before our readers, in a more formal manner, the results to which M. GARREAU's experiments have led him. In the meanwhile enough has been said to show that a dirty gardener is necessarily a very bad one, as well as a particularly disagreeable person.

THE ORCHARD HOUSES, to which we alluded last week, have been proposed by Mr. RIVERS as a certain and unexpensive means of securing a crop of common fruit. Considering the fickleness of our springs, the universal loss of a considerable portion of all orchard crops by late frosts, especially in low warm situations, and the slight amount of protection by which such consequences are to be averted, it must be owned that an intelligent enterprising nation like this has been untrue to itself in not having sooner thought upon some simple means of security. No doubt the evils have been borne under the idea that they can only be averted by an expenditure which the value of the article to be preserved would not justify.

It must be admitted that there was much truth in this so long as timber and glass and iron-castings were dear, and more especially so long as no other mode of obtaining protection was known than that of building costly hot-houses and greenhouses. But all this has ceased. Glass is among the cheapest of materials. Timber is sunk to its lowest in price; saw-mills have reduced the labour of its conversion to a comparatively inconsiderable sum; and iron-castings may be had at five or six pounds a ton. With these materials skilfully applied the expense of covering large areas becomes in many cases a prudent outlay; for markets must be bad indeed if they will not yield a profit to the producer of crops under such glass roofs as we are alluding to, after allowing an ample margin for interest upon the expense of constructing them.

Mr. RIVERS points out in what manner he would set about this in a very useful pamphlet,* which we advise everybody to purchase. Having been published for the purpose of aiding in the repairs of his dilapidated parish church, his little treatise has a claim upon the public, independent of its intrinsic horticultural worth, which is great. After pointing out the important fact, that the mere covering a space of ground with a glass roof is sufficient, without fire heat, to produce in England the climate of central France, Mr. RIVERS explains in what way he constructs—for he teaches what he

* The Orchard House; or, the Cultivation of Fruit Trees in Pots under Glass. By THOMAS RIVERS, of the Nurseries, Sawbridgeworth, Herts. LONGMAN & Co.

has done, not what he thinks might be done—at a very small expense, the building to which he gives the name of an Orchard House.

"I have," he says, "a house 30 feet long, built as I have described, with a brick Arnott's stove in the centre of the back border, which is excavated for it to a level with the sunken path: everything thrives admirably. The borders are 12 inches deep, with lime rubbish mixed with a little manure: my forced Strawberries, placed on the front border near the glass, rooted into it, and gave me abundance of excellent fruit. In like manner, Peaches, Grapes, Figs, and Apricots, may be forced with but little trouble,—in fact with much pleasure and gratification. But in building these *forcing* orchard houses the *constant* ventilation through the cracks in the boards must be avoided; they must be cased with asphalte felt, or, as bricks are cheap, the walls may be of brick, with the ventilating shutters in back and front. The forcing orchard house I have alluded to above, is built with studs of Larch cut once down, and covered with half-inch boards; these being nailed on, were well tarred with Stockholm tar, and the felt (M'Neil's) then nailed on, and done over twice or thrice with boiling coal tar, in which lime that had been slaked a fortnight was mixed to the consistency of thick paint: this forms a shining, imperishable, mineral coat,—I know of nothing equal to it for felt, clay, or lime walls or fences; my clay walls on some old buildings have, by repeatedly using it, become coated with stone. I have mentioned that bricks may be used; but although I have many plant houses built with bricks, I have not employed them for building orchard houses, or even houses for forcing Roses, &c. My preference for boards and felt for forcing houses may be owing to imagination; but I may as well state *why* I have and do prefer them;—it is because I have found them fiercely hot during the day, even in moderate sunshine, the evil effects of which are easily modified by abundant ventilation, and agreeably cool during the night, without that stifling atmosphere peculiar to houses with brick walls, only because bricks give out heat for many hours after sunset. Now in thus rapidly cooling down, I have found that they approximated to the descriptions given of the climate of the East, the birthplace of all our choice fruits; accordingly, my Peaches, Nectarines, Grapes, and Figs, have grown and do grow with as little trouble as I can wish them, in houses with their walls of half-inch boards and felt. But I ought not to omit mentioning here an additional reason for my opinion that fierce sunlight through large pieces of glass and abundant ventilation, will give us the climate of continental Europe. I have an orchard house, 90 feet long, 12 feet wide, rafters 4 inches by 2 and 14 feet long, the back wall of which is a fine Beech hedge, 20 years old, 8 feet high, 1½ thick, the front half-inch boards; the board next the glass 15 inches wide, is on hinges, and is always open in warm weather: this house is glazed with 16-oz. sheet glass, 20 inches by 12, placed crosswise, so that the rafters are 20 inches apart; the glass is foreign, of the cheapest description, and cost 2¼*d.* per foot. Under ordinary circumstances I should have much trouble from scorching, as it is very irregular, and many foci are formed; but the gentle percolation of the air through the hedge is so constant and so regular, that not a scorched leaf is to be found in this orchard house, in which are about 700 Peaches, Nectarines, Apricots, and Figs in pots, a few Pears full of fruit, a few Plums, the same—everything is in perfect health, the shoots of the Peaches and Nectarines in particular are beautifully ripened. Now what can tell more forcibly that scorching is the result of imperfect ventilation?"

The cost of such houses may be judged of from the whole expense of one 21 feet long, 12 feet 6 inches wide, 2 feet 9 inches high in front, and 7 feet 6 inches at the back, being 17*l.* 8*s.* 9*d.*, or less than 1*s.* 6*d.* per foot superficial of the area covered. The pamphlet contains a plan of such a house, and a detailed statement of the manner in which the cost is made out.

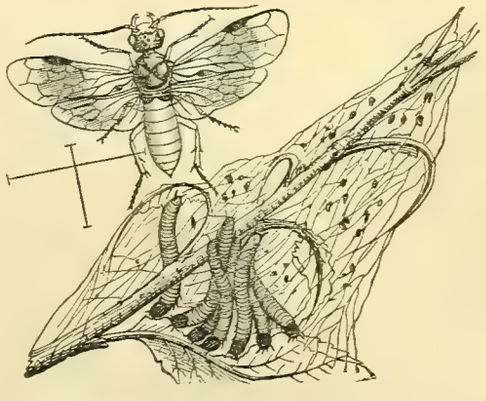
Within houses of this kind Mr. Rivers grows, with great success, Apricots, Peaches and Nectarines, Plums, Cherries, Figs, Pears, Grapes, Apples, Strawberries, &c., all in pots, by a system of management fully and carefully described in his pages. We say in pots, because it is important to bear in mind that in places of such small dimensions fruit trees must necessarily outgrow the space allottable to them, unless their roots are confined in pots. His experience has told him that if planted in the ground "they cannot be kept under control, even with annual root-pruning. I have some Peach-trees which have been planted in the raised borders of one of my orchard houses four years; they bear admirably; but, in spite of root-pruning, they will grow too rapidly. Now, in pots, the size and growth of the tree may be regulated with the greatest nicety; the annual root-pruning can be done with much facility, and there is no occasion to dig and disturb the borders, which must be done to a great extent to root-prune properly, trees planted in them. In fine, as far as my experience has gone, I can imagine nothing so eligible as pots, or vases, for fruit-trees in orchard houses, or fruit conservatories."

But although this is true in small places, it would by no means apply to "Victoria Houses," under which, ventilation being provided, cultivation would go on exactly as it does in the open ground; and all the trouble and expense of pots be saved. We see no reason whatever why many of the walled-in squares of the kitchen gardens attached to country residences should not be covered with glass; the walls remaining as they are. In that way the great expense of side enclosures would be saved; and it would become possible to rely upon the certainty of many crops which are now almost the result of chance. Winter Lettuces ought to grow there, as they now grow in summer; early Peas and Beans would beat those now poured into our markets from the south; Manchester would have the climate of Penzance, and Isleworth of Jersey; and for anything we see to the contrary, the differences of climate between Provence and Middlesex would cease to exist. The whole difficulty consists in ventilation; that is to say, in maintaining beneath the glass roofs such a motion of the air as would resemble that to which plants are naturally exposed. Such a movement of the atmosphere is indispensable; and we shall be greatly surprised if the engineers of this country do not provide it in a manner to leave nothing to be desired.

## ENTOMOLOGY.

### The Pear-tree Lyda.

The genus Lyda is one of the most interesting of all the groups of saw-flies (Tenthredinidæ), a family of Hymenopterous insects, so named from the saw-like apparatus at the extremity of the body of the females, which is employed in forming small channels in the stems or leaves of plants, within which the insect subsequently deposits her eggs. Not only do the perfect insects of this genus (Lyda) differ from all the other species of the family in their very large wings and their long multiarticulate antennæ, gradually attenuated to the tip, but the larvæ are quite unlike those of all the other genera, since, instead of having numerous pairs of fleshy legs attached to the middle and posterior segments of the body, as is the case with the larvæ of the ordinary Tenthredinidæ (which thus bear the closest possible resemblance to the caterpillars of butterflies and moths), the larvæ of the Lydæ are only furnished with the three pairs of short, ordinary, jointed feet attached to the first three segments succeeding the head, and the body is terminated by two short points, beneath which are two longer articulated appendages, resembling the thoracic legs, but directed backwards, whence the motions of these larvæ are curious, and quite unlike those of the other species, which are furnished with abdominal prolegs, having more of a sliding motion, and employing their powers of spinning silk, far assisting their progress. When they descend from a leaf, they let themselves down by a silken thread, after the manner of caterpillars.



There is considerable diversity of habit in the different species of the genus; and some of the species are very destructive to different kinds of Fir-trees. Hartig and Ratzeburg have figured the history of various of these Fir-feeding species in their excellent works. Most of the species live in society, but others are solitary in their habits, as is the case with the larvæ of the Lyda inanita, whose history I have given in our volume for 1847, p. 684, which feed upon the leaves of standard Roses, which they separately roll up into spiral tubes, in which they reside.

Amongst the social species are several which feed upon the Pear *, one of which I have had the good fortune to trace to its final state, and thereby to discover that one of the rarest British species of the genus may be obtained in our suburban gardens, if entomologists will only take the trouble of endeavouring to rear the caterpillar, or of carefully examining the trees, at the period when the perfect insects appear.

At the beginning of the month of July, 1848, and again in the two following years, I observed that several young espalier Pear trees in my garden at Hammersmith were attacked by a number of orange-coloured larvæ residing in society beneath a silken web, which they spin around the young branches and leaves of the trees, which they quickly defoliate, leaving only the midrib of the leaves, and then making their way to an adjacent twig. The largest individuals were about an inch long, nearly cylindrical, bright orange-coloured, with a black head. There were also others of a smaller size, but they were similarly formed and coloured, and were doubtless younger specimens of the same species. (This is mentioned, because in some of the species there is considerable diversity in the colours of the larvæ of different ages.) When alarmed, these larvæ withdraw about a quarter of an inch within the web, remaining quite stationary, each ejecting a drop of dark-brown fluid out of the mouth as a means of defence. This was the more necessary, as I observed some of the parasitic Muscidæ hovering over them, evidently with the view of depositing their eggs in their bodies.

As represented in our little annexed figure, it will be seen that having commenced at the top of a twig they descend, conjointly attacking a fresh leaf. The little dark particles observed lodged in the web, are the excrement of the larvæ. When disturbed the larger sized individuals let themselves down to the earth, within which they immediately buried themselves, which at once let me into the secret of the place in which they undergo their transformations, and enabled me to foresee that if I knew the precise period in the following year when they arrive at the perfect state, I had only to watch the trees, and I should then find the perfect insects. I also endeavoured to obtain the same result by placing some of the larvæ in a large garden pot filled with earth, but I had scarcely better success than Reaumur, who seems also to have been acquainted with the larvæ of this species (Mémoires, vol. iv., Mem. 4. pl. 15, figs. 7, 9, 10), and who says that by keeping the earth dry, the larvæ dried up, and by keeping it damp, they became mouldy. One of my specimens, however, did not die until it had nearly arrived at the perfect state, the form and colour of the perfect insect being attained, although the limbs were still encased in the thin membranous covering of the pupa, and the wings, consequently, not being extended, but lying in a small crumpled mass at each side of the body. I had thus, however, obtained sufficient knowledge of the perfect state to be able to assert that the perfect insects which I detected upon my Pear trees in the last week of May, 1850 (one of which I also saw crawling out of the earth), were the descendants of the insects I had first observed in the larva state in July, 1848, and which had themselves arrived at the perfect state in May, 1849, without my having noticed them, although I paid many visits to the trees at that period, knowing that it was the precise time that the Lyda inanita arrives at the perfect state. I have not, it is true, found the pupa of these insects, but this, under the circumstances, is an unimportant link in the history of the species, as it would resemble the perfect insect in size and shape, only differing in fact by having the legs and antennæ lying encased in delicate membranes along the breast and belly, and the wings enveloped in the membranous wing-cases resting at the sides of the body.

The perfect insect proves to be the very rare Lyda fasciata (Curtis Brit. Entomology, pl. 331), a species which appears unknown on the Continent, and of which the female alone has hitherto been known. This sex, which is figured by Mr. Curtis (who did not possess the species), measures about half an inch in length, and an inch in the expansion of the wings. It is of a black colour, with a yellow patch between the antennæ; the base of the latter, the mandibles, the scales in front of the wings, and the legs yellow, and the terminal half of the abdomen orange-red; the fore wings have a broad dusky band crossing them rather beyond the middle, and the apical half of the hind wings is also dusky. The male, hitherto undescribed, and which is here for the first time figured, is coloured in the same manner as the female, differing, however, in having the entire front of the head pale yellow, and in having the whole of the abdomen of an orange yellow. It is also somewhat smaller than the female. The males seem rarer than the females, and those which I captured were not observed until several days after the females had begun to appear. *J. O. W.*

* In my Introduction to the Modern Classification of Insects, vol. ii. p. 107, the larva of L hypotheupica of Hartig is by a misprint stated to feed upon the Pear instead of the Pine.

## BRITISH SONG BIRDS.

No. XIV.—As no workman, how clever soever he may be, can move one step in the right direction without being provided with proper tools,—so, no aviary can be reckoned "complete," in its several appointments, without *all* the necessary paraphernalia are in readiness to be used as occasion may require them. I shall therefore proceed, at once, to particularise what these essentials are.

In the first place,—as you will daily have to grate your bullocks' liver, buns, &c.; and as it requires a "fine" apparatus for this purpose; you must get a carpenter to furnish you with two well-seasoned deal boxes, made as follows:—The length of each box must be 8 inches; width, 6 inches; depth, 3½ inches. All round the tops of each, should be ledges; shelving upwards and outwards, so as to prevent waste. In the upper part of each box, let a square sheet of tin be inserted (any

brazier will undertake this), perforated with minutely-fine holes, and strongly "roughed" on the outside, like an ordinary domestic grater.

In the under part of each box, let a drawer be fitted, to pull out; having a ring in the centre. By the aid of this, you will obtain easy access to whatever you may have been passing through the holes above. One of these boxes should be kept exclusively for the bullocks' liver, and cleansed immediately after use; the other, for the buns, bread, &c. This provision has reference to the "warblers" principally. The larger and more hardy birds will select tangible pieces of bread, bun, &c.; which they love to place under their claw, and flirt with at their leisure.

You must next provide a piece of deal, 12 inches square, and made on the principle of what housekeepers call a chopping-board; that is, having a back to it, and a narrow "wall" on each side. On this you must place your Hemp-seed, crushing it thoroughly with a *lignum vitæ* rolling-pin. After every operation of this kind, scrape the board clean with a long knife; and daily scald it with boiling water, to remove or lessen the grease which has exuded from the Hemp-seed.

A pestle and mortar, of marble, is the next requisite. This is serviceable for rubbing down the hard-boiled eggs, and a variety of other substances connected with an aviary. It is an article of indispensable utility. To scrape your raw beef on, and keep it free from taint, you will find nothing so serviceable, nothing so appropriate, as a circular slab of marble, 12 inches in diameter. This will be in perpetual use as a general "table for operations." In connection with it, you will find a "spatchelor," or apothecaries' knife, very handy. Being flexible, it yields easily to the pressure of the hand. Both these articles must, of course, be kept sweet and clean.

To cleanse the floor of the aviary, by removing the sand, &c., the most ready instrument will be a kind of "hoe," fitted in a wooden handle, 12 inches long. The width of the hoe should be 5 inches, and it should be slightly "inclined" inwards. A trowel, also, on a somewhat similar principle, will be found useful, for scraping the *corners* of the floor. The sand should be, to use an Hibernicism, rather gravel than sand. That is, it should be gravel, finely sifted, so as to retain a number of small pebbles. These pebbles are freely eaten by, and greatly assist the digestive powers of, all the feathered tribe. It is not necessary to throw away all the sand every time it is removed; it will come into use again, much of it, when cleansed by sifting.

For this purpose, always be provided with two large strong sieves, made of wire, one finer than the other. Through these, severally, pass what is removed from the floor of the aviary, day by day. The *dry* sand will freely pass through the fine sieve—the residue must be rejected as being quite unfit for use. It will, however, do for the poultry-yard.

For the purpose of cleaning the circular and square perches, there are always kept ready for use (obtainable at any of the bird-dealers in the neighbourhood of "the Seven Dials") long and short iron rods, fitted with two distinct contrivances—one at either end. These are of light weight, and are made, at one end, so as to admit the perches into their centre. Thus, all dirt is readily removed, and with comparatively little trouble. These irons are also indispensable for the perches of *caged* birds, as well as those in an aviary.

The last equipment that I need notice is—the jars to contain your bird-seed, &c. These I should recommend to be of transparent glass, with glass covers also. The tall glasses, such as are used by chemists and confectioners, will be found most serviceable. Whether for your German paste, your buns, your seed—or what not—these glasses are to be highly commended. They are by no means costly, and they preserve all that is contained in them sweet and wholesome.

Of course, you will keep yourself well supplied with sponges, flannels, nail-brushes, and other similar articles of daily use. You should also be furnished with a stock of bird glasses, tin pans, &c., so as never to be at a loss, in case of sudden need. *William Kidd, New Road, Hammersmith.*

## GRAFTING.

No. III.—Analysis of the kinds of Grafting and Budding described in this Work.—As the modes which I propose to describe are chiefly intended for the propagation of plants, I shall only briefly notice those of grafting by approach, or inarching, by which sometimes useful and agreeable picturesque configurations are produced; but, in demonstrating those employed for propagation, I shall point out the operations applicable to the principal forms which amateurs may wish to produce.

I have included in one group all the kinds above mentioned, without confining myself to the various sections in which they have been classed by our great masters. Those by scions comprise the principal modes of cleft grafting, whether on branches or roots; and they are divided into two sections. The first treats of all thos; in which the stock is considerably larger than the scione the second, those in which the stock and scion are equal in size at the time of performing the operation. Crown grafting and side grafting belong to the same group.

Then we come to those which our great master has united under the denomination of budding (*greffe par gemma*). I shall only include such of them as are the most useful and most easily executed; as, firstly, some of the principal varieties of shield budding; and, secondly, those of flute budding. The numerous details which I am about to give on each of these modes will, I hope, be sufficient to enable my readers to propagate all the sorts of plants to which these modes are applicable.

Section I. General Observations on Inarching.—Inarching (*Greffe par Approche*) is distinguished from other kinds of grafting by the circumstance that both the individuals intended to be united live on their own roots, and mutually co-operate in forming a union. Such unions have different uses; they may be effected for permitting both individuals to live together during their united existence; or they may have for their object the transferring of valuable species to stocks of a hardier and more vigorous nature proper to maintain them independent of the parent plant, from which they are separated after they have taken on the stocks.

It is thus that we propagate many fine trees and shrubs which cannot be propagated by other modes, or at least not by any that are so well adapted for bringing plants rapidly to fruition. By means of some of the modes of inarching we can make our large trees assume, in our parks and forests, very agreeable and picturesque forms; and they may be made of more extensive utility for producing curved and angular timber, exceedingly useful for the navy, and in the arts.

The modes of inarching are very numerous. M. Thouin has described 39 of them. To demonstrate all these would carry me far beyond my present object. It appears to me sufficient to make known all those which may be most usefully turned to account, and practice will supply all the varieties which may be derived from them, and which have only received different names in consequence of their application to various positions and different stocks.

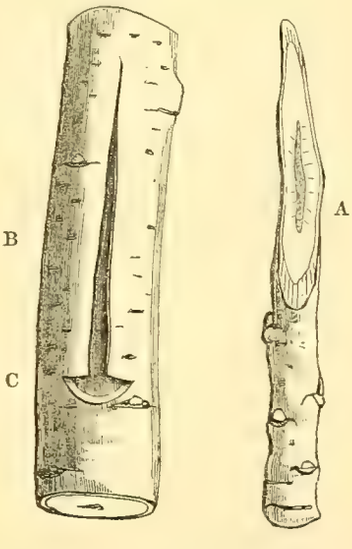



Fig. 1.

Inarching is best performed when the sap is in full flow in spring. All the modes of it require ligatures, and some little apparatus necessary for bringing the respective portions into the desired form; all these ought to be carefully looked after, in order to prevent strangulation and overstraining.

In stocks of high dimensions, destined to form curved timbers, &c., we should take care to allow some weak shoots and branches to grow along the stems, in order to increase their thickness; without, however, robbing the parts operated upon.

Inarching of Stems, for the purpose of supporting and invigorating them, see *fig.* 1. (This is a modification of that described by M. Thouin, under the denomination of Greffe Michaux.) *Operation.*—Select a strong tree, near which there is a slender one of the same kind, or if not, plant one, and when it is well established, bend it against the stem of the stock, in order to determine the most convenient place for the union; there cut off the top of the weaker, and thin the end like that of a flute, but more slanting, A; make in the bark of the stock, B, two incisions, which, together, form a T reversed, ⊥, at the bottom of which remove a small portion of bark, forming a semicircle, such as may be seen at C; then that above will be easily raised for introducing the extremity of the prepared portion, A, the cut surface of which will rest on the alburnum, and on which it should be immediately fixed, by means of stays and ligatures; and if the inarched tree, B, is large, and exposed to the action of the wind, the operation is secured by means of one or two nails, driven through the part joined, so as to afford the greatest resistance.* This inarching may be repeated on the same individual, when there are subjects adjoining that can be adapted. We may also apply it by bending the flexible branches of trees to their stems, and inserting their extremities in the manner above indicated. This application, and also the preceding, are very proper for forming bent timber for the purposes already mentioned. *Translated from the French of D' Albret.*

## MARKET GARDENING ROUND LONDON.

No. III. Cabbages.—These being general favourites with the public, their cultivation is extensively carried out by market-gardeners. Seed for the general crop of spring Cabbages is sown between the 25th of August and the 1st of September, in beds 5 feet wide, which collectively occupy several acres. Mr. Fitch, of Fulham, generally sows about 8 acres. When the plants are up, hoers are sent over the beds with 3-inch hoes; the plants are thinned out, and at the same time all deformed ones are removed. No particular time is set apart for transplanting; this entirely depends upon the season, and how other crops are got off the grounds. Last year Cabbage planting commenced about the 25th of October; the plants were then very large, and as the ground is dunged and trenched the planters follow the trenchers. I have frequently seen as many as 30 workmen upon one piece of ground, with their foreman walking along the line, in order to see that "every man did his duty," and it is his place to move the measuring sticks; for every man had his 12 feet measured out for him down the whole piece. The spades in use in market gardens are 12 inches long by 9 inches broad, and the work is performed by them in a masterly style. Land for Cabbages is heavily manured; a two-horse load is emptied down (as if it were a barrowful) for every 30 square feet. As soon as a four or five acre piece of ground is ready for planting, men with lines are put to work on it. The first line is trod out, and after it the rest 2 feet apart; the lines are then shifted crossways 2 feet distant, but this time the men only tread in the angle of the previously made line, so that the main crop stands 2 feet plant from plant; but, in case of a runaway, as well as to help to pay, a middle row is generally introduced; this row is, however, cleared off for Coleworts during this winter. I may mention that the existence of slugs is almost unknown in well managed market gardens; their disappearance is owing to the double trenching which is continually kept up in such gardens. Immediately after planting, hoes are sent through, to loosen the ground, and at all other favourable opportunities during winter and spring the earth is stirred and aerated; but the plants are never moulded up—a bad practice for almost any crop. Under the above system of treatment most delicious Cabbages are produced.

Cauliflowers.—The seed of spring Cauliflowers is generally sown about the 20th of September in open beds. Towards November, when the weather is beginning to get cold, frames and hooped beds are got ready in light rich land. The plants are pricked out, not more than 4 inches apart each way; during the winter they are kept dry; no rain is allowed to fall upon them; but whenever practicable plenty of air is given them, frost has but little effect on them under hoops; but when excluded long from air, and kept in darkness, they sometimes suffer from damp to a considerable extent. They are planted out in the richest and earliest ground in February, or the beginning of March. I have known one grower to save nearly all his Cauliflowers for seed, instead of sending them to market. In this way he has secured nearly a ton of seed from large plantations of many thousands. When the Cauliflower is permitted to seed the whole of the centre portion or flower is cut out except a rim to run up for seed. If this is not done the mass of flower is so great, that unless a very fine season occurs the seed will not ripen.

Celery.—For the first crop this is sown early in February; and in March and April for late crops. The first is sown either in a frame or under a hooped roof, with hot dung under it. Celery generally succeeds Cauliflowers, Cabbages, or Lettuces. The system is to dig out a trench two spades deep, banking the mould up on either side, then to fill in a foot of the strongest manure, such as cow-dung, and to cover this with 3 or 4 inches of mould for planting in; if the ground is very rich half the quantity of manure is applied, and it is dug in. The rows are generally from 4 to 6 feet apart, the plants are then taken from the seed-bed, and planted root and head entire—not trimmed in, a plan which ought to be discontinued in everything. The plants are placed about 8 inches apart, the intermediate ground being planted with Coleworts, Lettuce, or any other light crops which are likely to be off before the Celery wants moulding up; but market-gardeners do not commence blanching until the plants are about 18 inches high, as it prevents rain and air from acting on the roots. The sort of Celery now grown for market is entirely changed; solid Celery is not used, but a much more spongy tall kind, which is ready for market in half the time the red solid (such as they grew 20 years ago, or what gentlemen's gardeners now grow) occupied, but the latter is by far the best. Market-gardeners cultivate a pink kind (no white is grown) which, on account of the richness of the land, is brittle and tender, and grows rapidly; but it would be much better flavoured if it had more time to blanch. The operation of earthing up is all performed by the spade, no hand earthing is employed. Parallel lines are stretched on either side of the row, 18 inches from the plants, and the mould is cut out of the alleys to form the blanching ridge. Late earthing up is effected in about three different times. *James Cuthill, Camberwell.*

## VILLA AND SUBURBAN GARDENING.

The ordinary mode of planting the various kinds of shrubs which ornament our villas, is apparently so simple and so easy, that it scarcely calls forth a remark. To dig holes and thrust plants into them is considered to require no great amount of knowledge or skill. Trenching is deemed useless and unnecessary, because it is believed by the inexperienced that plants will thrive alike under all conditions, *i. e.*, if the soil be

* There is no danger in using nails in this and some other kinds of inarching; they are overgrown by the new layers of wood, without any bad effects from their oxidation. I have had ocular demonstration of many of these inarchings, after the operation had been performed 17 years, and can therefore vouchfor the correctness of these assertions.

good; and if it happens to be indifferent, why, of course, there then exists a substantial reason for their looking stunted, scrubby, and sickly. Any amelioration of its natural unkindliness is never thought of; but, if it were, it would be looked upon as a wild theory propounded by some speculative mind. A case in point occurred the other day, when I was called in by the owner of a small villa residence to inspect the place and to give my opinion as to the reason why the shrubbery looked unlike that of his neighbour, both having been planted at the same period. The shrubs in the one I examined had made comparatively little progress. They were yellow and stunted, with the exception of two weeping Willows. On trying the soil, I found that at 6 inches below the surface there was a retentive clay, which had not been touched in planting, beyond a little scooping out where the plants had been inserted. They were thus placed in a clay basin, filled three parts of the year with wet puddle; the roots which were made in summer perished of course in winter. Now it will scarcely be believed that the ground-work of 70 per cent. of all the villa residences of our great towns is similarly "laid out." Contracts are entered into, and a polish is given to the surface. Shrubs and trees from the nursery, full of health, adorn the borders when the work is done, never more to assume a similar aspect; for, as my friend remarked, nothing could look healthier than the plants did when they were first planted. His gardener, a bright sample of the class employed at such residences, insisted that the soil of the place was the very worst in the locality—that nothing would ever make shrubs grow in it—that making any attempt at this would only be wasting labour; so that he found that there was no help for him but to live in the midst of plants struggling between life and death—diseased, yet still tenacious of life. In this dilemma, my recommendations were favourably received by the proprietor; but stoutly resisted, as being absurd, by the gardener. The first step was to entirely clear the whole ground, then to form secure drains, 18 feet apart, and 3 feet deep; and as road scrapings were abundant in the neighbourhood, to cover the whole 3 or 4 inches thick with them. Then to trench the ground 2 feet deep, well incorporating the road scraping with surface soil and clay, and then to replant the shrubs, taking care however that the roots were not crammed into the smallest possible compass, but regularly spread out to their extreme lengths, and the soil properly distributed amongst the fibres—in fact planted, but not according to the vulgar notion of doing this. Before commencing operations, however, I advised him to employ a competent person who understood what planting meant, and who would carry out the work in a proper spirit. I further assured him, that by following these simple recommendations, his shrubs would grow as well and kindly as any in his neighbourhood, but that everything depended upon how the instructions were executed. *Pharo.*

## Home Correspondence.

*Patent Rough Plate Glass.*—I was induced, a year ago, by your recommendation, to re-glaze my Grapery with Hartley's patent rough plate glass, 26 oz. to the foot, in panes 20 inches long, which I purchased of Messrs. Phillips and Co., Bishopsgate-street Without. Feeling, however, somewhat sceptical as to the result, from the novel character of the glass, I determined to glaze only half of the roof of my house at that time, until I was satisfied from experience, of its fitness for the purpose. I am happy to say the experiment has amply realised my wishes. The Grapes under the new glass were much finer than those under the old crown glass, the bunches being from one-third to one-half the size larger. I am so well satisfied that I have just finished the other part of the roof with the same sort of glass, and feel assured that any one who had seen my Grapes last summer, would have been completely satisfied as to the perfect adaptation of the glass in question to the roof of a Vinery. The wood has thoroughly ripened, and everything gives promise of a crop of fruit next season. *Thomas Canning, Elsenham Vicarage, Bishop's Stortford.*

*Bees.*—As you have often treated of bees, perhaps the following fact may be interesting to your readers. A friend of mine, who has kept bees for many years, removed, in July last, four miles from his former residence, and carried his two glass hives with him. All went on well till about 10 days after his arrival, when he observed some of his bees dead outside. As he could not guess the cause, he shut the doors at night, and when he went in the morning, he found the hives surrounded by strange bees, evidently waiting the opening of the doors to make a rush in; and no contrivance could prevent the fatal invasion, in which they not only succeeded in killing the inmates, but they either eat or took with them all the honey which had been made. Could it be that the "natives" were afraid of a famine in the land, by the new settlers arriving at that period of the year? and may my friend hope to be more successful with a new colony earlier in the season? *H M, near Worcester.* [If bees are moved at any season of the year when they are actively employed out of doors, it follows that they are much weakened; in the first place by the loss of those which are out at the time of removal, and cannot find their way to their new abode. In the second place, all those bees which start from the hive before they have observed its altered position return to the old locality and are lost. Thus weakened they are of course liable to be attacked and overpowered by any neighbouring hive; not, however, we should suppose from any jealousy of the new comers, but rather with a desire to rob them of their honey. In the case referred to, the effect of stopping up the entrance of the hive would be to enrage the bees and cause them as soon as released to side with the robbers, and help to destroy their own combs and honey. *Y.*]

*Garden Edgings.*—Perhaps some of your correspondents can inform me what would be a cheap and durable edging for the paths of cottage gardens, where the proprietor likes to see a degree of order and neatness kept up, but where the labourer has but little time to spare upon the ornamental part of his work. *A. B., East Norfolk.*

*Winter Gardening.*—There are several kinds of deciduous trees and shrubs which, on account of their purple, red, and variously-coloured shoots, are very attractive, and which, if judiciously associated with evergreens, would greatly enhance the appearance of our winter gardens. Deciduous plants of this character, either in clumps, or planted singly, would not only create variety, but considerably relieve the evergreens of their monotonous appearance. The subjects I would recommend for this purpose are Cornus sanguinea or red Dog-wood; Leycesteria formosa, whose stems resemble those of a gigantic Rush; and the Negundo, the beautifully polished green shoots of which are very handsome. These, again, would contrast well with the dark brown wood of Spiræa Lindleyana. Acer dasycarpum and A. striatum would likewise be eligible, as also the gold-barked Ash (Fraxinus aurea). To the above might be added Cornus mascula, which will bloom, even in a small state, from January until March. The above are the names of a few, and only a few, of such plants as occur to my memory at the moment; but however limited their number, they will serve to illustrate the kind of gardening which I should like to see carried out, and which, if adopted, I am certain would greatly beautify our winter scenery. *C. May, Hope Nursery, Bedale.*

*Sporting Laburnum.*—On a Laburnum tree, of about 12 or 14 years' growth, of the common kind, there are several tufts composed of thickly-set but slender branches, with blossoms, I am told, like the Broom, as the foliage is, but they are of a purple colour. Part of the tree has Laburnum blossoms of a purple colour also; but where this occurs, no seed-pods are formed; the principal part of the tree, which is of the yellow variety, bears seed plentifully. The garden is a strong deep soil, and there are other Laburnum trees, nearly similar in size, without this peculiarity; but on one younger tree, germs of a similar kind to what I have described are beginning to be thrown out, and which appear of a parasitical character. *E. W., Gloucester.* [We must refer our correspondent to the discussion upon this subject, which took place at p. 325, 1841, and at p. 397, in the volume for 1842. It is Cytisus Adami, a hybrid obtained between C. purpureus and C. Laburnum, and sometimes it breaks out the one and sometimes the other.]

*High Winter Temperatures.*—The very high temperature we have lately experienced is extremely rare at this particular season; it has not been so high since the year 1824, when the maximum on the last day of the year reached 53°, and again on the next day, Jan. 1, 1825, the daily mean temperature for that day also averaged above 50°. All these high hybernal temperatures are introduced by strong westerly winds, and accompanied by a high barometer. The wind blew from the west on the 31st of last month and on the 1st of January, with a mean of 50°, both by day and by night—the atmospheric pressure rather high. From Dec. 21st, to Jan. 15th, is absolutely the coldest period of the year, and any great departure from the mean, upwards, is very unusual, the short period of our winter being generally frosty. It will be remembered that last October was unusually cold. Now in the year 1817, that month was the coldest perhaps on record, and a mild January succeeded. It would appear then, that when the mean temperature is low in autumn, constituting as it were a kind of premature winter, the following winter will be mild, and in all probability be succeeded by a cold spring. The winter of 1846 was wonderfully warm, the mean temperature of January being 7°, and that of February 5½° above the mean of these respective months, and there were only 11 frosty nights during this period of two months, registered at Hyde Vale. On referring to the journal for the ensuing month of March, we find that all the fruit trees (the Apple tree excepted) were in blossom by the 31st, and the Horse Chesnut tree (Æsculus Hippocastanum) in the park just in leaf, and green. I shall conclude this short remark with an extract from my journal, dated Feb. 28th, 1846:—"On this day at 2 P.M., the thermometer rose to 60° in the shade; abundance of flowers in blossom everywhere; the meadows sprinkled with Daisies; in the market gardens between Bermondsey and Deptford, about 3 miles S. E. of the city, Plum-trees in bloom; Lilac-trees and hedge-rows (Quick Thorn) green; great quantities of flowers are gathered and sold in the London market, and even in the streets, and all kinds of vegetables are in plenty." *J. Henry Belville, Hyde Vale, Greenwich.*

*Pear Trees and Spring Protection.*—Some months ago, an article appeared in the *Chronicle*, from Mr. Errington, on the management of Pear trees. Anything on that subject being to me very acceptable, I read it with great interest. There was one part of it, however, which seemed rather doubtful. He says, if trees are previously properly attended to, by root-pruning, stopping, &c., it will, in a great measure, counteract the bad effects of late spring frost, because the wood will be sooner and more perfectly ripened. The trees I have to deal with were managed nearly in the manner Mr. E. recommends, and most of them showed bloom in abundance. Some of them I protected with Spruce branches; still the 14° or 16° of frost that Mr. E.'s trees resisted, left me the rudiment of a very thin crop. It is necessary to say that the situation of my trees is low and damp. Consequently the frost would take more effect on the blossom. It occurred to me on reading Mr. E.'s letter, that the vicinity of Oulton to the forest might possibly be one cause of his escape or success, as, having sufficient shelter immediately around the trees, the air without would be pure and dry. I do not, however, dispute the authority of Mr. Errington; but, how to protect trees from the effects of spring frosts, without incurring the expense of costly materials, does not appear to be very plainly pointed out in the letter alluded to. *S.*

*Uses to which Glass may be put.*—Now that glass is so cheap, it might be applied with advantage for many purposes for which it was once thought unfit. For instance, it would make good copings for Peach walls, &c. Whole orchards might be covered with it in the ridge and furrow system, leaving the sides open; and our walled gardens might also be closed in with it. The more late and hardy vegetables could be cultivated elsewhere. But why not use it more extensively still, as in the shape of canopies for walks, in order that a lady or an aged gentleman might take out-door exercise at pleasure in all weathers; and I see no reason why the drive round Hyde Park should not be covered over, the main walks of Kensington Gardens, and our new parks, besides all pathways and streets. This would do away, in a great measure, with umbrellas, and secure for us dry pavements. *James Cuthill, Camberwell.*

*Out-door Vine, at Nettlecombe.*—A few errors have crept into the article, which appeared at p. 822, of last volume, respecting the Vine that is trained against the gardener's house, at Nettlecombe Court, Somersetshire. In the first place, it is not a Black Hamburgh, but the Esperione. In the next place, no mortar or stone was used in planting it. It is also asserted that it is impossible to give it any assistance in the shape of nourishment, and that the rock out of which it grows, consists of a red grit stone, belonging to the slate formation. Now, the rock is wholly of the slate formation, and, owing to its loose texture, and the numberless fissures which it contains, the plant receives a great deal of nourishment from rain water, mixed with soil that flows over its roots from the land above. Your correspondent is right in stating that it is very prolific, and in a favourable season the fruit is very fine. It is trained on the horizontal system, and at the winter pruning the lateral shoots are cut back to one eye. In this way a crop is obtained regularly all over the Vine, from the main stem to the extremities. It was planted 18 years ago, and now it covers above 400 square feet of wall. The late Mr. Loudon once saw it, when it had a full crop of fruit on it, and he was much pleased with it. *Charles Elworthy, Nettlecombe Gardens.*

*Lead Tanks.*—What has perforated the sheet lead, as per inclosed specimen? It is taken from the lining of a salting tank, in use about 10 years, for salting bacon, &c. My plumber tells me it is the saltpetre, but that he never witnessed a similar case before. I cannot take his opinion. Would not the effect of any corrosive be in irregular holes and blotches? whereas these are round, as if drilled. My own impression is that a grub or insect is the cause. Pray observe that the holes appear to have been commenced from the under side of the lead, next the wood—some not entirely through; the holes are commenced sideways, and not perpendicular to the plane of the surface. I fancy in some of the holes I find the remains of an insect, with hard-cased wings like a beetle or flea. The whole sheet, 5 feet by 3 feet, is similarly perforated. I cannot say how long it has been in this state, as it has been out of use four or five years; but it was serviceable seven years ago, certainly. Pray give me your opinion on the matter. *Bishop's Castle.* [The perforations in the sheet-lead lining of the salting tank, which have rendered it useless, are, as you very rightly conjecture, not caused by the action of salt or nitre; they are probably the ravages of some small Coleopterous insect, the eggs of which were deposited in the wooden case below the lead. If you can send some of the wood, or can find any of the beetles living in it, they shall be examined; similar cases are not uncommon, and the evil is a considerable one, for new pests of this sort are occasionally introduced with foreign woods. The only certain mode of preventing their ravages appears to be that of burning the wood which they are found to have attacked. Would you send us some of the wood and another piece of lead, in order that they may undergo an entomological examination.]

*How to Smoke a Greenhouse Effectually.*—Take a sheet of touch-paper, spread it out, and roll half an ounce or 1 oz. of tobacco up in it, light it at both ends, put it into the house, leave it there, remain outside with your hands in your pockets, and the job is done. In the morning all the green flies will be dead. *Edward Huggins, Boston, Lincolnshire.*

*Hippeastrum aulicum.*—As this showy Amaryllid blooms beautifully in December, it is well worth a little extra care. A young plant has flowered with me three successive seasons in that month, and it is hailed with delight by every one who sees it at that dull season. I received it from the nursery about the month of April, when it had a good shift, and was put into an interme-

diate house. It grew away nicely, made a firm bulb by the autumn, and produced one flower spike bearing two flowers. The second year it produced two spikes and four blooms. The third year three spikes and seven blossoms, each eight inches across, which remained in beauty three weeks; and next December I expect six spikes of flowers, as it has now two large bulbs and two small ones. Many people only allow their Amaryllids to have one bulb, breaking off all additional ones as they appear. This I consider bad practice, as they are much more effective when grown in a mass like an Orchid. The compost I use for them is loam, leaf-mould, peat, and sand. Temperature in winter 45° to 60°; summer 60° to 80°. *I. Rust, Pashley, Ticehurst.*

*Protecting Timber.*—Three carpenters, who have been brought up in the country, all affirm that Oak ought not to be painted or tarred, but that Deal fences last longer if covered with Stockholm tar; gas tar, on the contrary, they say, burns the wood. *J. Cuthill, Camberwell.*

*Oxalis Bowei.*—It has been stated that this Oxalis should be protected from frost. I have grown it, at Nettlecombe, for these last 16 years, without any protection whatever. The bed was prepared in the following manner:—The earth was removed to the depth of 2 feet. I then introduced 8 inches of drainage, laying on the top of it a layer of fresh turf, with the view of preventing the soil filling up the insterstices. I then filled up the bed with equal parts of well-rotted, turfy loam and leaf-mould, intimately mixed together. In May, I turned out the plants, and placed them, so that the bulbs might be 3 inches below the surface. Thus circumstanced, I have never found them to receive any injury, with the exception of the foliage being destroyed by frost. They flower beautifully every autumn. *Charles Elworthy, Nettlecombe Gardens, Somersetshire.*

*Floating Islands.*—I am about to construct a floating island on an exposed and rather extensive piece of water. Now will some of your correspondents be so good as to tell me, first, what is the best sort of timber for this purpose? Second, Should it be green or dry? Third, What shape would look best? Fourth, How long will it be before it may be expected to sink or require removing. And sixth, the water being at least 8 feet deep, if made of any size, what would be the best method of mooring it. *A Subscriber.*

*Collecting British Plants.*—I learn from your Paper that the Caledonian Horticultural Society awards prizes for collections of dried British plants. Now, the object for which these prizes are given is a good one, and would be of advantage to science if the thing were rightly carried out; but as yet the prizes have almost always been won by men employed in the botanic or experimental gardens, and the range of ground gone over by them in quest of the plants, could not be more than from six to eight miles around Edinburgh. Now, that ground has already been so often examined that I think it is high time for the Society to extend its influence to every corner of Scotland. It might all be worked upon the six or eight mile system, as around Edinburgh; for beyond that distance I believe that there are many places seldom or never visited by botanists; so that if encouragement was given to gardeners at a distance to collect for the prize, many rare plants might be contributed; and if the collectors were bound (if required) to send in plants for the Botanic Garden at the same time, the collection there would soon become much improved. I am anxious that some such plan as the one I propose should be adopted. *Pseudo-Falcon.* [Our correspondent will see the inconvenience of taking the signature of a well known contributor to our columns.]

*Silver Firs.*—In the deer-park at Lord Farnham's, in the county of Cavan, is a fine healthy tree, of some 60 or 80 years' growth, which has thrown out near the bottom, a side branch which has turned upwards, and has become a second perfect Silver Fir, of some 16 years' growth. It has a singular appearance, as if two trees were grafted together. *Cavanensis.*

## Societies.

Horticultural, *Jan.* 14.—E. Brande, Esq., in the chair. A. Lawson and J. H. Good, Esqs., were elected Fellows. Mrs. Lawrence showed a quantity of cut flower spikes of Amherstia nobilis, some account of which is given at p. 824 of our last volume. It was stated that it has been flowering at Ealing Park in great profusion for some weeks, and, though now rather past its best, it is still in great beauty. This makes the second year in which Mrs. Lawrence has flowered this fine stove tree, which nobody else has yet been able even to grow successfully. Much difficulty has been experienced in keeping the foliage, which is exceedingly graceful, from first decaying at the points, and then dying back; but naturally nothing of the kind happens, and it has only occurred with Mrs. Lawrence in a very trifling degree. The brilliant salmon-coloured and yellow inflorescens is very handsome, and when it is mentioned that 16 and 20 blossoms such as that now represented are often arranged in a single raceme, some idea of the beauty of the plant may be conceived. At Ealing-park it is beginning to form seed-pods. A large Silver Medal was awarded it.—Mr. Loddiges sent examples of Ansellia africana, an Orchid named after Mr. Ansell, who when attached to the Niger expedition discovered it in the Island of Fernando Po. In addition to its stately aspect and good quality of continuing long in bloom, it is remarkable as being one of the very few of those Epiphytes which have been found on the stems of Palm trees. A Banksian medal was awarded it.—Mr. Dobson, gardener to Mr. Beck, of Isleworth, sent three yellow-flowered Oncids (O. Cavendishii, ampliatum, and another kind), and a group of seedling Cinerarias, which were exhibited to show that by sowing a little seed in May some very gaily blooming plants may be obtained about Christmas, when every stray flower is valuable. It was stated that at Worton Cottage a constant succession of such plants had been kept up since November.—Mr. Davis, of Oak-hill, East Barnet, received a Certificate of Merit for samples of West's St. Peter's Grape, black as Sloes, plump, and covered with bloom.—A brace of Cucumbers was furnished by Mr. Parr, gr. to J. Jarrett, Esq., of Camerton Court, near Bath.—Examples of a new kind of garden label, called "Rose girdle label," were produced by Captain Armstrong, of Claremont Lodge, Cobham, Surrey. They consisted of a strip or band of zinc, painted where the name was written. They are intended to be bent round the stem of the tree or whatever else they are to be attached to, the ends brought together and fastened by means of a screw and nut. Whether they will be found altogether unobjectionable, remains to be proved; but they are very cheap, and looked as if they would answer well.—From the garden of the Society came six nice plants of the better varieties of Epacris, the round-leaved Acacia, a suitable species for




pot culture, the pretty winter blooming Selago distans, Erica hiemalis, and six Orchids, among which were Barker's variety of Lælia anceps, a beautiful kind, and a highly coloured and compact Bird's-head Oncid (Oncidium ornithorhynchum). The same establishment also furnished cut blooms of Chimonanthus fragrans and its large-flowered variety; specimens of Easter Beurré and Beurré Rance, Pears, which have ripened earlier this season than usual, owing to the dry summer; Hubbard's Pearmain Apple, a very hardy excellent kind, not so much cultivated as it deserves to be; and examples of Bassano Beet, a Turnip-shaped sort, not sufficiently good, it is to be feared, to suit our English taste, but which, according to the "Bon Jardinier," 1842, was found by M. Audot in all the markets from Venice to Genoa, in June. It was young, tender, very delicate, and preserved its rose-coloured zones after cooking. It is said to be much esteemed in the north of Italy. In this country, with good cultivation, its produce may be estimated at 40 to 50 tons per acre; and it may be grown on thinner land than is required for the other kinds of Beet, as it grows mostly above ground, like a Turnip.

## Notices of Books.

*The Florist and Garden Miscellany.* Vol. III. 8vo. Chapman and Hall.

We have had occasion formerly to recommend this beautiful book to the lovers of floriculture, not merely because of the truth of its representations of florists' flowers and the honesty of the opinions it expresses, but because, in addition to mere disquisitions about the points of a flower, it contains capital practical matter, by men thoroughly acquainted with the subject on which they write. What we said before we say again; with the addition that the Editor now proposes to introduce the fruit garden to his pages, a great, and we doubt not, very acceptable extension of the range of his subjects.

## Garden Memoranda.

Horticultural Society's Garden, Turnham-green.—Since we last visited this establishment, various alterations have been effected, and others are still in progress. A number of the less important trees have been removed from the Arboretum, which had become too much encumbered with timber, and the result is an evident improvement in its general aspect, as well as more uninterrupted room for visitors at the great exhibitions to promenade in, while there are yet ample trees left for the purposes of ornament, and to afford an agreeable shade from the scorching rays of a summer's sun. In addition to the extensive alterations which took place last spring on the eastern side of the Arboretum, the corner nearest the grand entrance to the grounds at Chiswick House has been much altered and improved, and a new American garden is at present in course of formation on the west side of the kitchen garden. In order to accomplish this, the thicket of miscellaneous trees and shrubs, which previously occupied its site, has been removed, except such as were considered of sufficient value to be retained; various excavations have been made, and mounds thrown up, whose sides are planted with Evergreens, Yuccas, and other ornamental plants; and, to give variety as well as afford at suitable places views of the general arrangement, the embankments are traversed by paths which are conveniently approached by flights of rustic steps. As it was desirable that the van-road to the exhibition ground should be continued from the carter's yard through the kitchen garden, a bridge, whose supports are flanked by rockwork decorated with Ferns, the lively green hue of whose fronds cannot fail to yield interest at all seasons of the year, has been thrown over the upper portion of the new ground, which is to be entered at this end through masses of Rhododendrons. It being intended that this garden shall be gay the whole year round, or at least nine months out of the 12, it will be furnished with plants calculated to effect that end, and if well carried out, as there is little doubt it will be, it will not only form a pleasant retreat at all times of the year, but will also be, for obvious reasons, very instructive. We had nearly forgotten to mention, however, that some of the more prominent and steep portions of the mounds have been faced with burrs, which also appear as edgings, and on the banks wherever it was thought their introduction would heighten the general effect. But it is not in ground work alone that the Society has been making alterations. In order that it might be more useful in distributing plants among the Fellows, a new span-roofed propagating house, 63 feet long, has been erected. This is in two compartments, with a pathway up the middle and beds on either side; it is heated by means of hot water in iron pipes, and it is also conveniently furnished with a potting-shed and boiler-house, all under one roof. It may be mentioned, in regard to the striking glasses employed here, that those having a true bell shape are the best; it has been found that flat-headed ones, with nearly perpendicular sides, permit condensed moisture to fall on the cuttings, while in the other form, it runs down the glass into the sand at the side of the pot, and does little or no harm. The lean-to house, beside the open cistern in the experimental ground, has been converted into a very useful span-roofed house, as has also a long pit near the end of the carpenter's shop; and considerable additions have been made to the other brick pits in this quarter. When it is recollected, therefore, in connection with the alterations that have just been glanced at, that the orchard has been but recently almost entirely remodelled, it will be apparent that the condition and appearance of the garden is steadily improving.

## Miscellaneous.

*On the Eatable Lilyworts of Siberia.*—The terrible ravages committed by the Potato disease have made it very important that some vegetable, easy of cultivation, prolific, nutritious, agreeable to the taste, and easy of digestion, should be found which may replace the article of food of which that disease has almost entirely deprived us. Many plants have been proposed for this purpose, but hitherto without success; the Yam, Sweet Potato, and Cassava require the heat of the tropics, and cannot be cultivated in northern climates. The tuberous Tropæolums are too strong-tasting; the Jerusalem Artichoke and Oxalis are too watery; the Apios, or Saga-ban, takes too much space for its cultivation, and becomes hard and unpalatable; the Psoralea esculenta, from which so much was expected, has proved, to a great extent, a failure; the Camassia esculenta is more likely to answer the purpose than the two last-named plants, provided always it can be quickly and easily propagated. The Camassia is, of all the above-named vegetables, the only one which can be compared with the Siberian Lilyworts, which have been long used as an article of food, and deserve to be better known than they are. Erythronium Dens canis, the large flowered variety of which is very common in the south of western Siberia, is there gathered, and much esteemed as an article of food, and used in former days to be sent to the court at St. Petersburgh. It may be raised from seed with certainty, and in large quantity; if the seeds are sown as soon as they are ripe, they all come up, but three years are required to enable the bulb to attain its proper size; its country name is

kandyk. Lilies are called sarana in Siberia; the most esteemed are Lilium tenuifolium, F., and Sarana kamschatica, F. (Lilium kamchaticum, and Fritillaria kamchatica of the books). Lilium spectabile, F., is also eaten. These three plants multiply with great rapidity, and tenuifolium almost exclusively by seed, the other two by scales also; and it seems that each scale of the bulb, which scale is long and pointed in L. spectabile—thick, short, and tubercular in the Sarana of Kamchatka, forms a new plant; this mode of propagation is indeed essential to the Sarana, inasmuch as it produces but few seeds, sterility being very common. There is also in Kamchatka a Lily, somewhat like L. canadense, which I call L. avenaceum, from the name it bears in the country, and from the resemblance of the scales of its bulbs to large seeds of the Oat. This species is not yet found in gardens; in its native country it is eaten like the common Sarana, which is, however, preferred to it. These useful plants are not cultivated in Siberia; the bulbs of the wild plants are collected in abundance. Lilium tenuifolium and spectabile are met with in the eastern part of the Government of Tomsk, and are spread round the Baikal and all over Daouria to the eastern ocean. The Sarana of Kamchatka is found all along the coast of the Eastern Ocean, in Kamchatka itself, and in the islands on the western coast of America. It is not impossible that satisfactory results might be obtained from its careful cultivation. The southern steppes of Russia are covered in the spring with beautiful Tulips, and among them there is a species, partly common on the Don, not differing much from Tulipa suaveolens, and which is eagerly sought for and eaten by the inhabitants, who can distinguish it with ease from the other species, which they do not touch. *Flore des Serres.*

## Calendar of Operations.

*(For the ensuing week.)*

GENERAL REMARKS.

As soils long under cultivation, and frequently manured with ordinary stable and cow-house manure become effete, and cease to grow some kinds of vegetables well, it is important at this season to adopt some means for remedying this by applying a good dressing of one or a mixture of all of the following ingredients. Fresh meadow soil, with the turf well chopped up and laid between the top and bottom spits as the trenching goes on, will give renewed vigour to our garden crops for several years. Burnt clay is an excellent reviver of old soil. Charred refuse, and, for stiff clayey land, lime rubbish and coal ashes are valuable for their mechanical action upon the texture of the soil, thereby rendering it more easily worked, and more productive. A mixture of all these will be beneficial to soil of any kind by supplying new substances to the plants; and in many cases is preferable to ordinary manure. For applying all such material to the kitchen-garden compartments, take advantage of frosty weather, as the cart may then do in half the space of time what at other times must be done by the barrow. We may add that for improving the productiveness of light sandy soils, marl is often used with advantage, from the great capacity which it has for absorbing fertilising gases, and retaining them to nourish the plants during drought. In many gardens the Strawberry does not thrive until a good dressing of marl has been applied; and now is the best time for supplying it.

PLANT DEPARTMENT.

ORCHIDS.—These should be carefully watched at this season, as many of them will be starting into growth. As soon as this is perceived in any plant, it should be repotted or supplied with a larger block or basket, if necessary. In shifting Stanhopeas, or other Orchids, which send their flower stems through the soil, very shallow wire baskets should be used, without potsherds, charcoal, or any other impenetrable material. They succeed admirably in lumps of fibry peat, from which the soil has been shaken out, mixed with rough flaky leaf-mould, and plenty of clean sand, which is necessary to prevent the leaf-mould and peat from becoming too spongy. The surface of the soil, and the inside of the basket, should be lined with sphagnum, which protects the roots from sudden gleams of sunshine, prevents the soil from falling out, and, by its powers of absorption, keeps itself and the soil sufficiently moist. Maxillarias, Lycastes, Gongoras, &c., succeed better when treated in this manner than they do in pots; but in soil for these, a good proportion of charcoal and potsherds, or pieces of sandstone, may be safely added, as their flower stems are altogether above the soil. Those plants which do not require shifting should be surfaced with a little of the same material as would be used in removing them to larger pots or baskets. As soon as any plant is potted or top-dressed, it should be dipped into the warm-water cistern, that the whole of the peat, &c., new and old, may be thoroughly and equally moistened. If a little trouble is taken in this operation, any woodlice or other insects which are harbouring in the soil will retreat before the rising water, till they come out on the surface, whence they may be easily removed. A gentle syringing will be useful on fine mornings, particularly to the plants which are attached to blocks, as it is yet too early to keep up a sufficiency of moisture in the atmosphere. Water must be very carefully used, and should always be of the same temperature as that of the house. The rain which falls on the roof should be conducted into a tank within the house; it is preferable to river or pump water, which generally contains eggs of insects injurious to Orchids. For the further protection of the plants from their ravages, the peat and leaf-mould should be thoroughly baked, and the sphagnum immersed in boiling water, in order that all animal life may be destroyed before they are used. As the plants commence their growth, remove them to the warm end of your house, if you have only one; but it is impossible to grow them to perfection unless you are able to keep the dormant plants cool and dry, and those in a growing state comparatively warm and moist.

FORCING DEPARTMENT.

PEACH-HOUSE.—From the time when the Peach and Nectarine blossoms begin to expand, maintain a steady night heat of 45° to 50°, and not rising higher than 60° during the day, unless by sun-heat. If the external temperature is not too low, a sufficient quantity of fresh air should be admitted every day, but avoiding syringing until the bloom is set. In very cloudy weather have recourse to artificial impregnation, as the pollen does not move so freely as in bright sunny weather. If the early Melon bed is not yet made, it should be immediately attended to, and should be constructed in such a manner as to secure a continuous and steady bottom heat. If you have not hot water at command, this can be effected by Oak-leaves made up into a bed 4½ feet high, and well trodden; these maintain a steadier heat than horse-litter, and when the heat begins to decline, add linings of fresh material. Where Cherries are required early, the house should now be in proper order as regards cleaning and painting. The temperature should be kept at 45° by night and 55° by day with air, until the buds begin to expand, when a rise of 5° should gradually take place. The fruit will set with the low temperature of 50° by night, and 60° to 65° by day. No kind of fruit requires greater care in forcing than this, as any excess of heat during the time of setting will prove ruinous. Air is indispensable during the day, while the trees are in flower, and even at night, when the external air is not too cold.

FLOWER GARDEN AND SHRUBBERIES.

If the advice, given in August and September of last year, has been attended to, by deciding upon the arrangement for the different portions of the flower garden, and also by noting the number required of the different kinds of plants, an inspection of the stock at the present season will show of what kinds there is a deficiency, and thus determine what quantity of young plants have to be propagated between this time and the end of April. But if memoranda were not made at the time recommended, the arrangements should be decided upon before the season is farther advanced. Bouvardias, Salvias, Lobelias of the section to which propinqua belongs, and other half-hardy, deciduous plants, should now be looked over, and if the stock of any is deficient, it should be increased by the usual means. Preparations should now be made, by getting soil, pots, and crocks ready for potting off plants in store pots, of such things as fancy Geraniums, Petunias, Calceolarias, &c. &c. In the meantime, let all half-hardy bedding plants be duly attended to, as regards watering and the removing of decayed leaves, and occasionally stopping long weak growths.

FLORISTS' FLOWERS.

There has seldom been so mild a winter as we have hitherto experienced, consequently redoubled precaution is necessary to guard against sudden or continuous frosts. True, if our instructions have been followed out, not only Auriculas, Carnations, Pinks, and Pansies ought to look well, but they ought to be sufficiently hardy to bear a tolerable degree of frost. Auriculas, particularly, will now begin to move, consequently they will require more water, and with more moisture they will want more air; this latter is absolutely required when the former is applied. The open weather will cause Tulips to peep perhaps rather prematurely; we would advise a handful of sandy loam being placed over each; this slight protection will be found highly beneficial. Fasten the soil round Pinks and Pansies; for worms, during this open season, often loosen those which have not good hold of the soil. Examine Dahlia roots, and give air especially to Verbenas. Hollyhocks should not be forgotten; snails are very fond of them; a handful of soot will not be misapplied round about them.

KITCHEN GARDEN.

Success in our gardening operations, as in the numerous other affairs of life, depends very much on careful attention to small matters, many of which, if examined individually, appear trifling, but if omitted or neglected, prove detrimental to the attainment of our hopes. Amongst the little things to be looked closely after, at this season of the year, the garden snail, the common grey slug, and their congeners, may rank among the very first. These hide themselves in the earth, Box edgings, and other snug corners, till warm weather occurs, when they come forth and attack every vegetable in their way. On a mild day hundreds may be seen crawling over the walks, of which a great number may be picked up by a quick boy, as they frequently continue visible during the whole of the day at this season. By beginning to destroy them thus early, the ground is comparatively freed from these ravagers by the time our young plants appear in spring. Seakale is most profitably forced by means of a slight hot-bed of leaves and litter, with a frame upon it; the bleaching being ensured by covering with wooden shutters; 53° to 55° is sufficient for top heat. Look closely after Endive in damp weather, and remove all decaying leaves. Examine Cauliflowers and Lettuces in frames, and dust a little quicklime amongst them if necessary. Give plenty of air on all favourable occasions. Make a sowing of Radishes under a south wall, and when they come up protect them with a few evergreen boughs, or spread a little short litter over them on frosty evenings, and remove it with a light wooden rake into the alleys in the morning.

State of the Weather near London, for the week ending Jan. 16, 1851, as observed at the Horticultural Garden, Chiswick.

| Jan. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 10 | ) | 30.054 | 29.944 | 50 | 39 | 44.5 | 40 | 42½ | S.W. | .21 |
| Satur. .. 11 | 9 | 30.108 | 3 .034 | 49 | 45 | 47.0 | 42 | 42½ | S.W. | .62 |
| Sunday.. 12 | 10 | 29.959 | 29.887 | 51 | 47 | 49.0 | 43 | 43 | S.W. | .01 |
| Monday 13 | 11 | 29.826 | 29.717 | 49 | 44 | 46.5 | 44 | 44 | S.W. | .00 |
| Tues. .. 14 | 12 | 29.552 | 29.293 | 48 | 40 | 44 0 | 44 | 44 | S.E. | .00 |
| Wed. .. 15 | 13 | 29.449 | 29.111 | 51 | 28 | 39.5 | 43 | 44 | S. | .00 |
| Thurs.. 16 | 14 | 29.744 | 29.474 | 50 | 40 | 45.0 | 43 | 44 | S. | .20 |
| Average ... | | 29.813 | 29.640 | 49.7 | 40 4 | 45.0 | 42 7 | 43.5 | | .44 |

Jan. 10—Rain; cloudy and mild at night.
— 11—Fine; slight rain; drizzly.
— 12—Densely overcast; slight rain; mild.
— 13—Densely clouded throughout.
— 14—Fine; cloudy, with sun occasionally.
— 15—Fine; cloudy; fine at night.
— 16—Very fine; cloudy; rain at night; very boisterous.
Mean temperature of the week 10½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Jan 25, 1851.

| Jan. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 19 | 41.7 | 30.1 | 35.9 | 11 | 0.88 in. | 4 | 2 | 4 | 1 | 3 | 6 | 5 | 1 |
| Mon 20 | 40.4 | 30.3 | 35 3 | 4 | 0.65 | 4 | 6 | 4 | 1 | 3 | 4 | 2 | 1 |
| Tues. 21 | 42.5 | 33.1 | 37 8 | 13 | 0.48 | 1 | 4 | 4 | 1 | 6 | 4 | 4 | 2 |
| Wed. 22 | 43.5 | 32.6 | 38.0 | 18 | 0.57 | 2 | 4 | 1 | 5 | 3 | 7 | 2 | 1 |
| Thurs. 23 | 44.2 | 32.1 | 38.1 | 12 | 0.27 | — | 3 | 2 | 3 | 4 | 8 | 1 | 4 |
| Friday 24 | 43.4 | 33.0 | 38 2 | 18 | 0.51 | 2 | 3 | 2 | 1 | 3 | 8 | 5 | 1 |
| Satur. 25 | 44.1 | 34.0 | 39.0 | 10 | 0.90 | 1 | 3 | 2 | 1 | 3 | 8 | 4 | 3 |

The highest temperature during the above period occurred on the 19th, 1828—therm. 60 deg.; and the lowest on the 19th, 1838—therm. 4½ deg. below zero.

## Notices to Correspondents.

APRICOTS: *A H.* We do not know whether or not the Kaisha Apricot flowers earlier than other sorts. Messrs. Veitch can best answer this question.‖

ANALYSES: *Alaunensis.* Common Sedges contain on an average nearly 2 per cent. of silica. Sprengel has published an analysis of Carex muricata; 100 parts of the green plant gathered in flower contained 60 parts of water, and when burnt left an ash containing 2½ parts of silica. There are no good chemical analyses published of the comparative composition of arteries and blood-vessels. We doubt the existence of silica in either, except as an accidental occurrence, or in exceedingly minute quantity.

BOMBAY PLANTS: *C F J.* The plants have no market value. They are well known. You will scarcely keep them alive in the manner you describe. A stove, with bottom-heat, and plenty of light, is necessary for all except the Bougainvillea, which will grow out of doors in summer and bear a greenhouse in winter. You had better get them placed in the Botanic Garden.

BOOKS: *J P.* There is no new edition of Liebig—and if there was we should not recommend you to buy it. The work you have is the best in English, so far as Physiology is concerned; for Chemistry consult "Johnson's Lectures on Agricultural Chemistry," and procure a copy of "Knight's Physiological Papers."—*W P.* "Macintosh's Practical Gardener."‡

CELERY: *H T.* It has possibly been allowed to get frosted before it was earthed up.‡

CITRUS JAPONICA: *A Florist.* It should have strong fibry loam, *not clay*, and be well manured. But to get it into health now that it is half dead, you must give it a smart bottom heat in February, and shut it up close till it has begun to grow freely. In doing this shorten all the shoots, cutting out the spindling branches.

COST OF FRAMES: *Sub.* You will easily ascertain by inquiring of two or three carpenters, and taking the lowest offer.

COUNTRY SHOWS: *G S.* We intend to notice in future all that send us their reports.

EMIGRATION: *N P H.* We have no disinterested information about Natal, and we cannot trust interested parties in so grave a matter. The best work to consult is Christopher's "Account of Natal," one vol., 8vo, published by Effingham Wilson; in which you will find a good map of the country.

EUPHORBIA SPLENDENS: *Sub.* It often sheds its leaves before the plant blossoms.‡

FILBERTS: *J K F.* The manner in which they should be pruned has been fully described at p. 101 of last volume.‡

FLORISTS' MEETINGS: *S. w. l.* We have made arrangements to report in future all that are of importance.

INSECTS: *D.* Your beetle is the common green Rose-chaffer, Cetonia aurata *W.*

NAMES OF PLANTS: *Erzeroum.* 557. Veronica Beccabunga; 60. V. caucasica; 226. V. pedunculoris; 447. V. persica.—*A Subscriber.* It is not an Orchid, but a Tillandsia. Hang it up in the stove till it begins to grow; then pot it in tolerably dry soil and treat it afterwards like a stove plant; only never water the roots; but pour lukewarm water over the leaves.—*H and Son.* We cannot consume time in determining the names of plants from miserable bits without flowers.‡—*M K D.* They are some kind of Juniper, and perhaps J. excelsa; the specimens are insufficient for exact determination.

PAINT FOR IRON: *H B.* See pp. 120 and 188 of our last volume.‡

PINE APPLES: *A Subscriber.* For Pines either in pots or planted out, the bottom-heat should be 80°; the bulb of the thermometer being plunged about a foot below the surface of the bed in both cases.

PLANTING: *Newstidi.* Do not plant your cheesy land now. It *must* be dry first. Either wait till February, or defer the work till next October, in the meanwhile taking off it a crop of Potatoes. If you have lime or chalk at hand, give it a heavy dressing. You may grow Ash, Oak, Scotch Firs, Elms, Sycamores, and form a covert with Berberis aquifolium, or *Yew*, which thrives in such places. Larch will grow in such a place, but it will take the rot by the time it is 20 years old.

SPINACH: *W Tuck.* It is Orach, not Spinach. We will tell you all about it next week.

TIMBER: *J F., jun.*, is referred to the "Mechanic's Magazine," Nos. 1282, 1321, 1349, 1415, and 1416, for information respecting the seasoning and preservation of timber. The importance of the subject having seemed to require that attention should be repeatedly called to it, some repetitions unavoidably entered into the papers furnished to the Magazine, though they each of them contain much matter peculiar to itself. Should "J. F." wish for further information than those Magazines afford, especially as to seasoning wood on a small scale of operations, on stating his queries to the Editor of this paper, replies to them will be early furnished. *M.*

VINES: *L H.* It is better that the roots should be on the outside the house, if the border can be properly formed; if not, the roots are best inside; but in that case means must be provided of watering abundantly with luke-warm water when necessary. Twelve feet is wide enough for a Vinery. We cannot answer inquiries privately through the post. We would advise you to read what has lately been said about concreting Vine borders in bad climates or situations, especially at pp. 772 and 820 of our last volume.—*C.* The Esperione will suit the situation you describe.‡

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BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.
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# The Agricultural Gazette.

*SATURDAY, JANUARY* 18, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, Jan. | 22 | Agricultural Society of England. |
| THURSDAY, — | 23 | Agricultural Imp. Society of Ireland. |
| WEDNESDAY, — | 29 | Agricultural Society of England. |
| THURSDAY, — | 30 | Agricultural Imp. Society of Ireland. |

THE difficult question, "What is to become of our heavy Wheat soils?" has of late become an interesting one, as it always does when the price of Wheat falls below a certain level: for then, if we can believe it, "they must of necessity be thrown out of cultivation."

That there is a great deal of groundless prejudice existing on this subject cannot be denied; for before lands of this description are fit for being laid down to Grass, or subjected to any other culture than that which they are now under, they must undergo a process of drainage and other improvement, which would render them fit for growing Mangold Wurzel and Cabbages, or even Swedish Turnips—yes, and an additional quantity of Wheat itself—which would, in the vast majority of cases, very far counterbalance any depreciation which has taken place in prices. And, moreover, the fact is notorious that at present large fields of this class of soils are obliged to be broken up from a worthless state of pasture, and to be subjected to Wheat culture, in order to render them tenantable—so different is sound practice, and the urgent demand for bread by an increasing population, from the theories and prophecies of the fearful. Indeed, a correspondent informs us that a certain landlord who labours under the belief that such soils cannot be cultivated under present prices, is nevertheless breaking them up as fast as he can get them into his own hands, from a state of worthless pasture to Wheat culture. And what renders circumstances connected with this example still more amusing, is the fact that on going over the Park and Park farm, he found the landowner and his old manager labouring under an equally gross delusion; for although about two-thirds of the lands were composed of drifted materials, in which chalk largely predominated, in not a few instances forming on the whole a superior Turnip soil, yet the second question put to him was, "What do you think of our cold clays?" "We were then," says he, "standing on the finest Turnip soil in the kingdom, and hence were a little taken by surprise; but, although the worthy and improving landlord, who had just succeeded to the property, had, up to this date, been belaboured into the belief that these lands were of this character, yet we had no great difficulty to convince him that there was a considerable difference between chalk and Oxford clay." In this case an excess of moisture, coupled with an antiquated practice, conferred upon the soil many of the characteristics and disadvantages peculiar to the clay on which it was incumbent. The want of drainage, therefore, and a proper system of management, generally, converted the elements of a Turnip soil into that of a Wheat soil requiring fallowing; so that in this example we have the conversion of one kind of soil into another, not by the mechanical and chemical agents of agricultural science, but by mere neglect and carelessness.

The practical point at the bottom of this discussion is, *the expensive system of fallowing*—one purely agricultural, although parties have always had recourse to it as a subterfuge in politics, for the want, we presume, of better argument; for out of the 22,000,000 arable acres in the three kingdoms subject to the plough, there are probably about 16,000,000 partially subject to Wheat culture, while there are not more than 2,000,000 acres of this sum under fallow annually, and about 5,000,000 under Wheat.

According to the hypothesis of 2,000,000 acres annually under fallow, and a four course shift, we would have consequently 8,000,000 acres of Wheat soils, from which therefore we only obtain *three crops every four years*. Now, if we could, by any improved system of management, obtain alternately with Beans, as now grown, from 20 to 30 tons of Mangold Wurzel or Swedish Turnip per acre, on the 2,000,000 under fallow (say, for the sake of argument, on an average, 25 tons, at 5*s.* per ton), then such a result as this would amount to an increase of 12,500,000*l.* annually on the value of our agricultural produce; and, with a result of this kind, we may safely conclude that an increase of some eight bushels of Wheat and Beans per acre would also be obtained respectively from the other parts of the land under that course of cropping. If we, therefore, take 2*l.* per acre as the value of the increase of corn and straw on the remaining 6,000,000 acres, it will give us a grand total increase of from 20,000,000*l.* to 30,000,000*l.* annually. Again, if we suppose that the farmer is able to turn the one-half of this sum into profit, for we cannot suppose it possible to turn the whole, because such an increase of produce must of necessity incur an increase of manure, outlay of capital, and expenses generally, although the increase of working capital and annual expenses incurred would by no means be proportioned to the increase of produce—if we suppose that the farmer is able to turn the one-half of such a sum into hard cash, it would obviously meet on his balance-sheet many of those short-comings at present experienced.

The practice of fallowing is an old-established one, and more than a favourite with many; and certainly to propose dispensing with it until a more valuable equivalent was found, would be to rush into inevitable ruin; but although this may be true, yet, like all other old favourites, the value of the practice is liable to be over-estimated, for the very theory of fallowing itself pre-supposes something imperfect in its practice—the subduing of a certain evil, rather resulting from improper management than inherent in the soil naturally, which the farmer is never able finally to conquer, or a repetition of the warfare would not be required. For, though we suppose a field fallowed in the highest possible degree, the whole of the benefits gained resolve themselves into certain chemical and mechanical changes to be over and over again effected, as often indeed as the field is fallowed—the restoration of a certain chemical and mechanical condition. And this can be done in the vast majority of cases, without resort to naked fallows, by *efficient drainage, manuring, and tillage*.

The matter after all, therefore, resolves itself into the somewhat questionable form of the efficient drainage of our 8,000,000 acres of heavy Wheat soil—entailing, in the first place, a heavy outlay of capital on the part of the landlord, and, in the second, a considerable outlay of capital, in the shape of stock and labour, on the part of the tenant, while to both the efficient drainage of this class of soils is yet but little understood, and much disputed. Doubtful as the ultimate performance of such a great work may appear, we venture to say that, were labourers more freely employed—were the money which the landlord and tenant now spend in poor rates, spent in draining, it would soon effect the work, without either party experiencing any inconvenience of a drain upon their working capitals, while the increase of produce which is to repay them would be realised. *B.*

## THE DRAINAGE ACTS.

THAT Mr. Girdwood's experience as an Inspector under the Drainage Acts exceeds my own is very probable, and is a deserved testimony to his ability; nevertheless I yield to none in knowledge of or interest in the subject of drainage, inasmuch as it was my lot to be an early and recognised labourer, with those whose recent removal we have to lament, in the pioneering of that path which led the Legislature to adopt the principles we propounded, both in the public acts, and in the incorporation of the drainage companies. It was not without labour, anxiety, and money (and few know how much of each such an attempt entails), that existing facilities have been secured; and so far as it may yet lie in my power, further efforts shall not be spared to render effectual the good that has been so attained.

The instance alluded to of the steward of an applicant being made an Assistant Commissioner, is that of Mr. Faint, of Wood End, near Thirsk, in this county. The late Sir Samuel Crompton, of Wood End, was one of the earliest applicants for an advance under the first act; and the preliminary inspection was entrusted to myself. Along with the other requisite particulars my report contained a well-merited expression of approval of the drainage that had already been done, and consequently of my confidence in the ability of Mr. Faint to conduct the work contemplated under the Act. I afterwards inspected the first portion of the drainage that was completed, and certified to its effective execution. Mr. Faint was subsequently appointed, and is now acting as an Assistant Commissioner, and my services have never since been required there. The following extract from a late communication from the Board indicates the practice that prevails, and which is not only irreconcileable with the rules Mr. Girdwood describes, but is wholly at variance with the spirit, if not the letter, of the Act of Parliament. "The Commissioners are desirous, as far as practicable, to consult the wishes of landowners in the selection of inspectors, and do not consider themselves in any way bound to continue the inspection of any particular property under the gentleman who may have been called upon to make the preliminary inspection and report; and they are not in the habit of calling upon landowners to give any reasons for wishing a particular inspector to report upon their works." It would be a reflection on the reader's perception to occupy his time by pointing out the abuses to which this may conduce; suffice it to remark that since the inspectors have entrusted to them, and are responsible for not only the permanent and effectual execution of the work, but also the correctness of the amount of its cost, they ought to be independent of any influencing patronage, and should moreover be supported and protected by the administrative power in the discharge of their important duties, rather than be exposed, as they now are, to such capricious or uncalled-for changes as applicants may desire. It is quite true the Commissioners "may from time to time remove any such Assistant-Commissioners," and "may make such other inquiries in relation to any such application as they may think fit," but the Act nowhere authorises any interference from applicants in this particular; and, although, as is usual, the reasons for removal are left entirely to the discretion of the Commissioners, it is manifestly implied that such a step should not be resorted to without reasonable and proper grounds. Were it otherwise, an inspector's professional reputation would be subject to the most serious injury which one man can inflict upon another, without a prospect of either justice or redress.

I most fully concur with Mr. Girdwood, in regarding the advice of the inspector as of the highest value, not only as respects the execution of the drainage itself, but, if his attainments in the most approved agricultural practices of the day be such as his position demands, in suggesting also that course of subsequent operations which, according to circumstances, is best calculated to realise the full measure of advantage from the drainage work. It is for this reason that I conceive it is very poor economy to set a scanty limit on the inspections which an Assistant Commissioner may deem it right to make; and, I for one, rather than be so restricted, would willingly accept 1*l.* per day, in lieu of 3*l.* 3*s.*, for such visits, whenever I thought it desirable to see what was doing. In the instance given by "J. T.," for example, how could any one, with only two inspections, certify of his own knowledge, and in the unqualified terms required, that drainage to the amount of 400*l.* had in all respects been properly executed? One visit would, of course, be needed for the preliminary inspection and report; and another must necessarily be made on the completion of the work, or he could not know it was done at all; but I hold that at least one intervening inspection of the work during its progress is indispensable to a satisfactory assurance of its being effectually done. No doubt, in some degree, the proportionate amount of charges on the smaller applications, may exceed that on the larger estates; but in the case before us, it is the great discrepancy between the inspection and what may be distinguished as office charges that more particularly excites attention. I observe, however, that in "J. T.'s" further communication on the subject, in your impression of the 4th instant, he says, "My first application was made through the West of England and South Wales Draining Company (who did the work for me under the inspection of their own engineer), in October, 1846." Possibly, therefore, the West of England Company may have something to do with the matter, and so relieve the Commission from the excess.
*J. H. Charnock, an Assistant Commissioner under the Acts. Wakefield, Jan.* 10, 1851.

## FAILURE OF CLOVER.

IN the autumn of the year 1849, it was mentioned to me by John Bell Crompton, Esq., an eminent agriculturist in the neighbourhood of Derby, that he had a fine first growth of Clover on land where it was in the habit

of failing. He asked my advice. I informed him that there existed no sovereign remedy for the cure of a disease which might originate in so many causes. After a description of the soil and information of the mode of treatment, I recommended rolling, and a top-dressing of salt and superphosphate of lime. For months more I heard nothing more about this particular case; but in the spring of 1850, Mr. Crompton sent me a sample of a soil, upon which healthy-looking Clover had suddenly and mysteriously died away. I was to examine it chemically, as far as I considered it to be necessary. I found the soil to contain as much as one-half of its bulk of finely-divided matter, consisting of finely-divided sand, clay and chalk, together with a proportionate small quantity of organic matters. Subjected to further tests, I found the amounts of several fertilising matters present in such small quantities as to be scarcely recognisable. And this was the case more especially with the sulphuric acid. I then thought it advisable to estimate quantitatively several of the constituents. An imperial pound of the dried soil contained:

| | | | |
|---|---|---|---|
| Organic matter | ... | ... | 80 grains |
| Gypsum | ... | ... | $\frac{1}{1000}$ of a grain |
| Common salt | ... | ... | $\frac{47}{1000}$ of a grain |
| Chalk | ... | ... | $177\frac{6}{10}$ grains |
| Bone-earth | ... | ... | $5\frac{576}{1000}$ grains. |

Inasmuch as qualitative analysis did not indicate any other reason for the failure of the Clover crop, I thought myself justified in attributing it, in this instance, to the want of sulphuric acid, and perhaps of chlorine. When we consider the amount of sulphur removed by a large crop, it must be obvious that this soil could not furnish it. I had every reason to believe that the practice of the former tenant, of using lime as the sole manure, had been the cause: first, of changing the physical nature of the soil; second, of removing its soluble constituents; and thirdly, of supplying a large amount of phosphoric acid. I was much gratified to find that my advice in the first instance was productive of success. The Clover on 6 or 8 acres (I do not remember which) did not only not fail, but an average of 2 tons per acre was obtained in the summer. And although the soils in the two instances mentioned here were some distance asunder, I know that the sulphuric acid of the superphosphate and the chlorine of the salt, were, chemically speaking, the cause of success. *Albert J. Bernays, F.C.S., Chemical Laboratory, Derby.*

## THE SHEEP.

A Village Lecture.

In its natural state the sheep is wild, shunning the haunts of men, having greater pleasure in bounding amongst the mountain crags, and cropping the scant herbage springing from the crevices of the rocks, than in frequenting the plains to fatten indolently on their luxuriant pastures.

It is supposed that there are three varieties of sheep, from which all others have sprung. They resemble each other in character, though not in appearance. The mouflon is found amongst the mountains of the wildest islands of the Mediterranean Sea; and the North American argali frequents the mountains of the country from which it derives it name. I shall point you to the third called the Asiatic argali. Well, this argali to us is a curious looking sheep. If that picture is a good likeness, I think we shall be inclined to say, "What a fine goat," for certainly it is more like a goat than anything else. We should be sorry to see such a fierce wild fellow as that amongst our flocks. Those long legs would carry him over our highest fences. His bones are large, his frame is indicative of great strength, and altogether, with his small erect ears, and long upright spiral horns, he is a very handsome, but certainly not a very quiet well-disposed sheep. His covering is a mixture of hair and wool, varying in quantity according to the clemency or inclemency of the season. The hair dashes aside the rain and snow, and the wool protects him from cold. During the summer months, therefore, you may see these animals dressed in long hair; but as soon as the cold winds prevail, and the snow falls, and frosts ice the waters, the wool spreads amongst the roots of their hair, and a warm covering is thrown around them. The argali usually run together in flocks of 10, and the females lamb twice a year.

We are quite unable to ascertain how long ago, or by what means the sheep was introduced into our country. Some Latin books, however, mention the British sheep when we were invaded by the Romans. That event, of which I told you upon a former occasion, took place about 1900 years since, so that there need be no wonder at our inabilities to date the introduction of this animal into England. It appears that the west of England was, at this period, more celebrated for its sheep than any other parts. The Romans established woollen manufactories, and seated them at Winchester, in the centre of the great western downs, on the borders of which, to this day, may be seen the remains of Roman buildings and sheep cots, and the long straight lines of Roman road that weary the eye of the traveller. These down sheep furnished a very fine wool, much in request for the manufacture of the finest cloths. It was for its wool at this period that the sheep was bred. Some time after this the improvement of the carcass was aimed at, but the quality of the wool suffered in consequence, and the manufacturers were obliged to seek for wool from other countries, where the pasturage is less rich. The wools clipped in this country, at the present time, for the same reason, cannot be worked up into the finer stuffs; but for all such fabrics foreign wool from Germany and Australia, &c., as you will learn when I come to speak of wool, has to be used.

To these downs, as far north as the Cotswold Hills, to which I now point you, this valuable breed of sheep seems to have been confined for a length of time, and the manufacture of cloth was consequently limited to the west of England. By reason of the abundance of fuel further north it has been removed to a position where it can be conducted with less expense.

The wooded and marshy nature of our country formerly rendered it unfit for the pasturage of the sheep, which could exist only upon the downs, and hills that were naturally drained and free from timber. But as the mighty forests fell beneath the axe of the woodman, and the land was relieved of its superabundant water, by a good system of drainage, the sheep sauntered down into the plains to taste of the fruits of cultivation. Some preferring the active life of the hills to the indolent existence of the plains, returned to their mountain retreats and scant pastures, whilst others willingly consented to remain and fatten upon food that should be prepared for them. With this change of habits and food comes a change of form, character, and constitution. The peculiarities of soil, situation, and climate produced corresponding peculiarities of form and habit; and it is with the varieties of this animal thus produced that we have now to do, under the two heads of upland and lowland sheep.

Of the upland varieties I shall first notice the southdowns. They receive that name because they frequent the great chalk downs to the south of England. From that representation of a southdown ram you will see that their shape is compact and round, their body full, their head fine and without horns. Their faces are remarkable for a mild expression, and they are famed for tractableness and gentleness. The fleece is close, extending under the belly to the hocks. Both their wool and mutton is much esteemed, and find a ready sale. They are prolific breeders, fatten quickly, and are only suited to the lighter soils. As mountain sheep they have naturally light fore-quarters; but this defect has been corrected by careful selection, and they now appear, by the same means, to have arrived at the highest perfection of form. The chain of hills and moors, extending from Derbyshire, northwards, is famous for the black-faced sheep. You will easily recognise the picture of the animal from amongst the rest before you. It belongs to the smaller class of sheep, is of compact form, with black face and legs, long spiral horns, an eye bespeaking wildness, and a coarse fleece. On account of its great hardihood, it is carried amongst the bleak uplands of Scotland, and is the only sheep that can endure the excessive cold of those mountains. The heavy snow storms are the chief sources of danger to the sheep, and of anxiety to the shepherd. I am told that when a storm comes on, these animals will all repair to the windward side of the mountain, and remain with their heads pointed to the quarter from whence it comes, during its continuance. As their pastures are bare, and no provision is made for them of artificial food, they are three or four years old before they are ready for the butcher. When marketable, however, they command a high price, owing to the venison flavour of their flesh. They are kept in large flocks, and need a great range of pasture, so that one or more shepherds with their dogs are required to be constantly abroad. The duties of a shepherd in those parts are very different therefore from those you have to perform. During the day he occupies the high ground; that affords him a view of the whole sheep walk. His dog is his chief and most useful companion A word or a look from his master sends him searching to the furthest range of the sheep walk. These dogs, when well trained, perform, with the most perfect ease, more work than could be done by 5 or 6 men. When the flock has to be "gathered," and driven to another quarter of the sheep walk, the dog, at a sign from his master, barking, circles the sheep, and they, recognising his signal to fall in, all scamper towards the centre of their range, and are driven towards the shepherd, who leads them to a fresh bite. The chief objection to the breed is founded upon the coarseness of its wool, and the Cheviot, of which we shall speak directly, is often chosen in preference to it, on account of its fine fleece. But for an elevated and rugged country, a healthy pasture, and a serene climate, the black-faced sheep is better suited than any other. When removed to a low, marshy district, this sheep parts with many of its peculiarities. It loses its hardiness, the colour of its face and legs becomes less dark, its wool less coarse, and sometimes its horns disappear altogether.

*The Cheviot sheep* derive their name from the Cheviot Hills, of which they are natives. That range of hills extends through the north-east of England, and the south-east of Scotland. The Cheviots are heavier than the black-faced sheep; they are without horns, the head and legs are white, and the eye mild. The body is finely shaped, though long; the back is straight, the ribs arched, the shoulder plate well thrown out, and the legs small-boned and clean. Their native hills are clothed with a pasturage inferior to that of the southern chalk downs; but it is considered good. Their wool is fine and short, and as a protection against the bitter winds that sweep through the dales, and the snow storms that whiten the mountains of the northern counties, it is thickly set. A heavy winter snow storm is no slight matter in the eyes of the flock-masters and shepherds of the Cheviot Hills. Nothing can be done during the continuance of the storm except to seek for self-preservation; but when its fury has abated there is work in plenty. The Cheviot is perhaps less hardy than the black-faced sheep; but its good qualities, its fine wool, delicately flavoured flesh, weight, and gentle character, give it a higher place than that animal in the consideration of sheep breeders.

Having glanced hastily at the most important of the mountain breeds, let us descend and make ourselves acquainted with the peculiarities of the chief varieties of sheep that enliven our plains.

You all know the *Leicester sheep.* Many of you know more about its management than I do; but perhaps I can tell you more about its history than you know. On your right are two pictures. They are both representations of the Leicester ram. "What a difference!" you say. It is true; and the difference may just show you the improvement which this breed has undergone within the last 70 or 80 years. Formerly, the Leicester was little esteemed, either for wool or mutton; indeed, it had few good qualities. What is called the new Leicester is now the most general and valuable variety of all the long-woolled sheep. This improvement arose from the attention given by the master of a single flock to the principle of selection. By this I mean that the most perfectly formed animals were every year selected for the purposes of breeding, until all, or nearly all the prominent defects of the parent stock were lost, and all its good points were strengthened and confirmed. The result of the experiment is, as you see, that from a very coarse animal wanting in all good properties, a very fine one, possessing very few bad properties, is produced; and this is, indeed, the surest method of improvement, where the defects of a breed are to be corrected without endangering those properties which especially adapt it to its situation. These, of course, must be retained, and therefore we see that attempts to improve a breed of sheep or any other animal, by crossing it with another, frequently prove failures. The new Leicester sheep is inferior to the old in size and weight. Mr. Bakewell, the improver of the breed, cared not, however, so much for size, weight, or wool, as he did for something else. He made himself acquainted with the external characters which indicate a disposition to fatten, and when he met with a sheep in his flock possessing such qualities, he put it aside. His aim was to obtain a sheep that would come in an early state of perfection to the knife, and great success has attended his efforts, since no class of sheep comes sooner to a state of maturity than the Leicester. The butchers dislike this sheep. The fineness of its bone causes it to weigh too well for the customer; and its fat is distributed all over the body, instead of being accumulated about the kidneys (as it is in the mountain sheep), which is a great disadvantage to them, since the "tallow cake," as you call it, fetches a higher price in the tallow market.

Yonder picture represents the sheep—I mean the *Old Norfolk*—and emboldened by the absence of a Norfolkman, I will show it off to the best of my ability. It was excellently well fitted for walking, racing, and jumping. Very few of the pure breed are to be seen now. Nothing could be done to improve it except the introduction of foreign blood into its system, for of its own it had no good qualities to be confirmed and rendered permanent by the method of selection. It was crossed with the Leicester and the Southdown, &c., and usually made way altogether for other breeds. Suited exactly for the formerly uncultivated waste of Norfolk, where long legs and agile limbs were essential to keep their possessor clear of bogs, and well supplied with pasturage without over fatigue, it is quite unsuited to Norfolk in its present highly cultivated and drained state; for, owing to its restless habit, it destroys more food than it consumes, and fattens very slowly, in comparison to the Leicester and Down sheep.

*The Sheep of Romney Marsh* are peculiar. The nature of their situation requires them to be very strong and hardy. Looking at the map you would perhaps think the county of Kent warm and mild, from its southerly position; and Romney Marsh, which is at the south of the county, a little raised above the level of the sea, you would expect to find one of the warmest spots in England. Kent, however, in winter is a cold county, and Romney Marsh is one of the coldest districts of Kent. These sheep have many privations to suffer, and much inclement weather to endure. The fields there are divided by dykes instead of hedges or stone walls; and when the autumnal rains set in, these dykes are filled to overflowing, and the land is soaked. The evaporation of all this water must take place, and the air is consequently charged with an unwholesome degree of moisture, and rendered very chilly; and we shall learn, when we come to talk about the diseases of sheep, that the rot which is caused by the wetness of land is the most fatal malady that they are liable to. Now, if rot should be found anywhere, one would surely expect to find it amongst the Romney flocks; but it appears that in consequence of these sheep being thoroughly inured, or, as I should say, naturalised, to the disadvantages and hardships of their situation, comparatively few suffer from this cause. The Romney sheep is destitute of almost all those qualities that the best judges consider essential to a good sheep. Some efforts were made to impart to it the better properties of other breeds; but with a bad result, since an animal was produced that could not endure the severities of the climate, and the principle of selection was resorted to as the only means of furthering the designs of the flock-masters.

*The Cotswold* is in its pure state a heavy, ill-made, narrow-breasted sheep. It derives its name from the

Cotswold Hills, running through Gloucestershire, on the table land of which it feeds. These hills are called Cotswold from the sheep cots built upon them by the Romans. Wold means wild, or height, so that the whole word means the wild or height of the sheep cots. Above the representation of this sheep is a plan of one of these cots, from which you will see that they were long houses, with several floors, reached by as many very gradually inclined approaches or walks from the outside. This sheep, though a ranger of the hills, belongs to the lowland class; and, furthermore, it is the first of the long-woolled breed we have noticed. The Cotswold is rather an important animal in history, I assure you, although such a mean inelegant-looking sheep. His fleece was exported, to be wrought up with gold by the people of Italy, and France, and Spain to sparkle upon the persons of their kings. For a length of time after the Romans left us, it was valued and bred solely for its wool; not on account of its fineness, but for its long staple, a property that rendered it better suited for the manufacture of light fabrics than the short wool. Mutton becoming an object to the sheep farmer, he looked about for means to improve this breed by increasing its fattening properties. About 50 years ago it was first crossed with the Leicester with very good effect. The bulk of the sheep was reduced, and its wool became of shorter staple; but all loss that has occured to the farmer in these ways, has been amply made up to him by the early age at which these animals come to perfection, and the quick return of his money.

*The Devonshire Long-woolled Sheep* resemble those of Romney Marsh, except in the colour of their head and legs, which are brown. The pure breed is remarkable for nothing save an ungainly, rambling body, and a long coarse fleece. The Leicester cross has, however, been very serviceable to them.

*The Sheep of the Devon Moors*, like the Devon Moors themselves, are wild, ranging, dark, and stunted as the stunted herbage upon which they endeavour to subsist. The wethers are left to weather the winter as they best may upon those bleak barren moors, but the ewes are protected during that season by stone enclosures. So great is the wear and tear of body these sheep are obliged to sustain in obtaining a scanty living, that they are frequently shorn nine times before they are brought to market. The Leicester has likewise improved this breed.

*The Old Lincoln Long Woolled* are not the handsomest sheep in the world. The mountain life would make them like so many bags of bones. They could never support the fatigue occasioned by the long walks and fearful jumps that the mountain sheep are compelled to make, in search of food, and for which God has fitted them, by the gift of agile limbs and light frames. But for his native marshes, where the pastures are rich, and he has not many steps to move before his appetite is satisfied, the Lincoln is very well suited. The mountain breed, by reason of the great quantities of food they would damage by their restlessness, would be as much out of place in the marshes of Lincolnshire, as would the Lincoln amongst the uplands of Scotland. The Leicester and Cotswold have both been crossed with this sheep, much to its advantage. Their fleeces are heavier than the Cotswold, and the staple is longer.

*The Dorset* is a small and rather pretty sheep. Its head is horned. It is hardier, although rather coarser than the Southdown. Being quiet it is found very useful as a folding sheep—thus manuring the high lands when it would be impossible to cart yard dung. The ewes are remarkable for their forwardness in lambing. Their lambs are usually ready for the Christmas market, when lamb appears only upon the tables of the rich, who are made to pay a high price for their good taste. To lengthen the wool of the Dorset, and increase its size, crosses were tried with the Leicester, but to no purpose, since more good qualities were displaced than imparted. The fleece only weighs from 3 to 4 lbs.

*The Welsh Sheep*, or those now feeding in that country, have been principally introduced from England. The natives of those mountains resemble the goats as nearly as we said the Asiatic argali did, and are excessively wild. They vary in colour from black to white. Their wool differs in quality, and is fine and coarse according to their pasture—they fatten very slowly, but their mutton is much esteemed. We have, I think, looked at all the principal varieties of British Sheep, and noticed the points wherein they differ from one another. We see how they all take their character from the soil, the climate, and the situation, and how dependent they are for their form and constitution, and properties, upon circumstances over which they can have no control, even as we are ourselves. The intelligent traveller may obtain much real knowledge of the agricultural condition of a country, by a quiet observation of the sheep, as he passes by upon the high road. You could know as well the character of the soil of a particular district, by looking at the sheep that were reared upon it, as though you were to turn it up with a spade for yourself. We shall have you walking about with quick eyes now, and when you detect a sheep like the Old Norfolk, you will say to yourself, "This land sadly runs to waste, why is it not drained and properly done by; the folks are much to blame? It is wonderful how much labour our eyes will save us when properly used. Take a bit of earth to some men, and they will tell you what kinds of earth and stone lie underneath it for hundreds of feet. Pluck a weed and send it with its roots to others, miles away, and they will tell you all about the place from whence you took it. And why may not you learn to know of things beneath, by those you see above? Then what would you think of a blind man going to *look* over a farm? Yet by judicious questions, and by learning the names of the very weeds upon the land, he might know as much about the nature and condition of the soil as you will.

## Home Correspondence.

*The Drainage Act.*—In complance with your call to "speak out" to "any one who has had a more favourable experience of the administration of the Government loan for drainage," than one of your correspondents would seem to have had, I have very great pleasure in stating that my experience of it has been most satisfactory in every respect. I have lately had 250 acres of my glebe drained under the Act. The total charge of the Inclosure Commissioners for their expenses, amounted to the sum of 21*l.* 11*s.*; and this very moderate sum was allowed to form a part of the amount to be charged on the estate. The Inclosure Commissioners, who were very far from raising any obstacles, or need less delays, sent one of their inspectors for a final inspection, as soon as it was announced to them that the work was finished; and very soon after, I cannot easily refer to dates, but so soon, I think, as it was possible, allowing a reasonable time for necessary explanations, and a due consideration of his report, the money was advanced, and the charge completed. As your correspondent has alluded to the "West of England Land Drainage Company," I will add that I also entrusted the whole contract of the business to them, and that I have had no reason to regret it. Their charges are moderate. The attention of their directors and engineers was unremitting from first to last. The work was executed most rapidly—a very important consideration—and in so perfect a manner, as to command the admiration of all who saw it. *T. A. Strickland, Bredon Rectory, Tewkesbury.*——Your correspondent "J. T." of Swansea must have omitted some circumstances which would fairly account for the delay in payment of his 400*l.* from the Drainage Commissioners, and also for the amount of charge made by them for inspection, &c. Perhaps the absence of railways, or difficulty of access to the ground, may have raised the expenses of the inspector, and, no doubt, the per-centage upon a small sum will be greater than upon a large amount. From the middle of 1847 to the present time, I have been engaged in draining under the loan of 1846-7, and have never found any difficulty in obtaining any periodical advances within a month of the time I wished for them, while even that trifling delay has been occasioned by the unavoidable engagements of the inspector. Within a fortnight of the time, when he sends in his report, the treasury cheque invariably arrives. The total of my deductions are now under 3 per cent. upon the sum advanced, and at the last advance they will barely exceed 2 per cent. upon the whole. The amount of letter writing complained of, is entirely in the hands of "J. T.;" one letter to the commissioners asking for a form of application, and the return of that form properly filled up, is quite sufficient, but the neglect of the instructions in that form will, of course, entail additional correspondence. *L.*

*Farm Capital.*—In an article on "Farm Accounts," in the *Agricultural Gazette* of the 4th inst., I observed the following paragraph with regard to the amount of capital required for the cultivation of a farm of 100 acres in extent:—"It may be right ere we close this somewhat lengthened introduction, to enter upon, &c." Now, may I first ask the question, why does "F." fix on 10*l* per acre, as the amount of capital with which he is to meet the first year's expenses? The opinion of one farmer or another would be nothing with me in a case of this kind, unless the one or the other had seen the farm and valued the first year's expenses with the utmost scrutiny. If "F." takes the trouble to value every expense which it is necessary to incur during the first year, and which must be paid by drawing on his capital, he need not fear the criticism of anyone, as he may at all times reply, "Value my first year's expenses, and if they can be got through for less, I shall be glad to spare the money." Very few would, I think, undertake to make a calculation, and many of them would probably find themselves very much out if they did—provided "F." has exercised that strict economy which is necessary. It is no uncommon custom amongst some of our best farmers to *guess* at the amount of capital required for entering a farm, and even though they have never seen the farm or been within 30 or 40 miles of it, they do not scruple to practise such a blind policy. Of course nothing can be so vain as to suppose they can tell within a great deal the actual amount required, more especially as the expenses of the first year are so very various and numerous. The number of small items which run away with small sums, like eighteenpences, half-crowns, crowns, and half-sovereigns, are almost incalculable, whilst many of these small items are as important as some of the larger ones. If "F.," in some of his next articles, would lay down a concise method of valuing one's first year's expenses, and give a few arguments in favour of such a practice, he would confer a great favour on your readers. I subjoin a list of expenses which appear to me to require consideration upon entering a farm, viz.:—rent, rates, tithe, taxes, interest of money, valuation of covenants, one year's labour, whole amount of dead stock, whole amount of live stock, furniture of house, all expenses connected with housekeeping, and for a few household repairs to be done on entrance (that are to be done inside); some allowance should also be made for a few repairs or alterations made in concert with the landlord. *J. R. M.*—[We think your criticism is premature: wait till we see how "F.'s" plan developes itself.]

*Brewing.*—In March last, in your journal, "Barleycorn" furnished a capital process of brewing. If he be still in a kind vein, I trust he will satisfy my enquiry. I have sometimes difficulty in procuring sound yeast. Has "Barleycorn" ever tried German yeast? an article which finds its way to London twice a week from Hamburgh, and a most capital one it is for baking bread, but I desire to know if it be equally applicable to the production of Barley-wine. Is rain water objectionable, which has stood for some time in cask, and become rather sewery or Londonised in its character? "Barleycorn" advises in brewing that the temperature in mashing be not allowed to rise above 170°; for above 170°, you get gum, and not sugar, and if the mash fall below 140°, you run risk of acidity. Will he be pleased to give me the rationale of this? *A. B.*

*Poultry.*—Your correspondent (Mr. Kidd, Hammersmith), must be wrong in giving Sir John Sebright as the author of the tale about the wild ducks; the late worthy baronet well knew how to perform the operation of pinioning, so that the feathers could not reappear; out of respect to whose memory I take this opportunity of correcting Mr. Kidd, and to tell him that in pinioning a bird, that part of the wing called the pinion, and containing the 10 flight feathers, is cut off. *H. Hottimon.*

*Flax.*—There appeared in a recent Number of your Paper a notice of an invention by M. Clausson by which the tedious process of steeping was avoided in the preparation of Flax for the market. Have any particulars of this valuable discovery transpired? and is it of so cheap a nature as to be of any advantage to limited growers? Many publications and some names of high agricultural authority, have of late rung the praises of this plant. A statement of Mr. Warnes's, which appeared in the *Morning Chronicle* some time since, was particularly cheering to farmers whose lands are favourable for its cultivation. According to him (Mr. Warnes) a profit of 17*l.* an acre is realised; a profit it is needless to say no one, under the most favourable circumstances, could expect from Wheat. But as Mr. Warnes may be so happily situated with respect to the growth, manufacture, and sale of Flax that a large per centage will have to be deducted to suit less favoured districts, still I think it is a crop from which the farmer may reasonably expect a fair remuneration, because he shall not have to depend on the fibre alone to pay him, he will also have the seed, so valuable as a fattener and enricher of manure. *Anon.*

*Agricultural Improvement.*—To point out all the numerous errors in agriculture would indeed be an onerous and almost an endless task; and having alluded to a few of the most flagrant, I will now attempt the more agreeable duty of endeavouring to suggest some means of improvement. In my last paper I alluded to the importance of agricultural education, as a means of promoting improvement. The want of such education has been one of the greatest impediments to agricultural progress; for if we examine the various improvements which have been made within the last century, we shall find that hardly any of them have originated with uneducated men. On the contrary, nearly all of them have been the suggestion of educated persons, though many of them had not been brought up as farmers. And here I beg to correct a misprinted word in my last letter. At page 779, for "crime" read "curse." It should be, "but in all education, moral and religious principles should be inculcated; without these it will prove a curse instead of a blessing." We must not consider it criminal to promote education, though the want of right principle may cause it to be perverted to criminal purposes, and thus it may prove a curse instead of a blessing. Now since it is evident we cannot go on in the old way, let us consider what improvements may probably be made. First then, with regard to the size of farms and their arrangement; I would suggest that when the nature of the land is suitable for alternate tillage, and the house-feeding of live stock, the farm should not exceed one or two hundred acres, with the farm-stead nearly in the centre. If larger the distance from the homestead is too great for the carting of green crops, and solid and liquid manure. Indeed it is astonishing how much stock and crop may be raised on even a much smaller farm, when the land and manure, liquid as well as solid, are made the most of. Instead of only half managing 200 or 300 acres let the farmer try if he cannot, by deep and perfect cultivation, raise as much or more produce on half that quantity. To do this is frequently quite practicable, as it has been proved to be in numerous instances. But then there must be no neglect, no loss of time, or waste of anything, as we so commonly see there is, even on farms above the average state of cultivation. But there is other land which is unsuitable for cultivation that ought to be kept in pasture or meadow, and if the farmer has capital enough, he may very properly occupy a portion of such lying at the outside of his little ring-fence farm. Such land would be very desirable for breeding stock, which should be kept out of doors as much as may be, as the animals would become tender by being much housed. There is a great deal of pasture and meadow land that is capable of being profitably improved without ploughing. For instance, there is a stream of water which a large proprietor, or a number of smaller ones, or even well secured tenants might turn into higher ground, so as to irrigate some hundreds or thousands of acres. And even if the water

be not of good quality for irrigation, means may be used to improve and qualify it. How very beneficially a very small quantity of water might be applied immediately after a slight sprinkling of guano, nitrate of soda, or other hand manure, on such Grass land. A light dressing of quicklime has sometimes done wonders in improving the herbage on moor land, and yet these and similar easy means of improvement are sadly overlooked. Then that stream of water might be advantageously employed in various other ways, particularly in its application to machinery. It would frequently be profitable to erect either a water-mill or a steam-engine of small power at the homestead. Then again, the English farmer may take a lesson from the gardener, and another from the Belgian farmer, and even from the manufacturer. From them he may learn that it is oftentimes profitable to cultivate two soils, an upper and a lower one, in each field, instead of only half cultivating a shallow surface soil. He may, by first cultivating the subsoil, and partially mixing it with the upper soil, afterwards raise this mixed subsoil to the surface, placing the original top-soil below it, and thus have a fresh soil and one or two good crops every year, instead of two bad ones in three years, as is still the case on some farms. Or the soil may be dispersed and mixed with the subsoil by digging a trench in each furrow, and casting the earth over the land. In some cases this might be a substitute for under-draining, but that should on no account be neglected where needful and practicable; and where the drains are deep, this kind of semi-spade culture may occasionally be profitably adopted. Labour is the source of wealth, and land is grateful for it when applied judiciously. These are truisms sadly overlooked by most farmers. They practically contradict what they verbally allow, that if land will not pay for working well, it cannot pay for working at all. Some gentlemen, it is true, have been injured by an extravagant and injudicious expenditure; but experience convinces me that a very large, yet judicious application of labour on a small quantity of land is far more profitable than the same amount of labour on double the number of acres. Let the landlord and farmer then work together and take the benefit of labour, while it may be procured at a reasonable rate; for a time may come, and that soon, probably, when the labourer's work will be more appreciated and his services better paid. The progress of improvement in the arts and agriculture will, as I confidently believe, very soon promote such a change. This is an age of progress, and the condition of the labourer must improve, or the country's weal will be overturned by his depression, or oppression more properly speaking. It is good policy, as well as humanity and justice, to promote the morality, independence, and comfort of the industrious poor. Let honest industry be freely encouraged and liberally remunerated; it is a compound virtue, more precious than the costliest pearl, or the most brilliant diamond. When prices were high, cultivation might be low, and still profitable; but now that prices are low, cultivation must either be high, or it must cease altogether. Poor crops and low prices are ruinous; if the price be low, the crop must be good both in quality and quantity, and that cannot be expected without skilful cultivation. Such cultivation may probably in a considerable degree provide remedies for those casualties which are frequently so injurious to farmers who manure highly, but do not in some respects act judiciously. A little practical study of chemistry and botany may probably tend greatly to strengthen the straw and promote other safeguards. There is much land which, with low prices, will not pay for constant cultivation, but which might be profitably improved as pasture ground, and by occasional cultivation at more distant periods, and of a superior character. My aim is to impress both landlords and tenants with a sense of the imperative necessity which now exists for mutual co-operation, so as in every way to make the most of the land. Very considerable improvements must now be made, or cultivation must be completely abandoned; and these improvements cannot be effected without the co-operation of both parties. Even if the delusive hope of a restoration of protective duties, on which some seem still to be relying, could be realised, even then, agriculture could not be permitted to stand still, it must advance with the age; it cannot be that the oldest and most useful of the arts shall remain comparatively stationary, while everything else is making rapid progress We have now great difficulties to encounter, and without superior efforts and improvements they cannot be surmounted, but by them we hope they may. *O. F.*

* *My Poultry House* is a brick building; the walls are about 6 feet high; the slate span roof is thatched inside; the internal walls are 4½ inch brickwork, which divide the house into compartments, 12 feet long by 6 feet wide, to each of which is attached a yard or walk of the same dimensions. Each room is rendered rat proof by a slate floor, worked wire over the window, and sheet iron on the door. The floors are covered with a thick carpet of sawdust. Each room of these dimensions affords ample accommodation for a cock and six hens, with laying boxes and self-supplying feeding-trough, and allows space for a small pen or two where hens may incubate, without being disturbed by others, or it is large enough for 12 full grown chickens which do not require the boxes and pens. Perhaps "W. H." will think the space allowed is small, but he will find that if the floors of the house are raked over in the morning, and the walks in the evening daily, and fresh sawdust in the house, and sand and gravel in the yards are laid down frequently, the fowls may be kept in health and high condition. The quantity of manure I collect from the droppings of about 36 fowls is surprising. I conclude that every amateur gardener is aware of its value. *Penzance.*

## Farmers' Clubs.

EXMINSTER, *Dec.* 30.—The principal object of the meeting was to hear a lecture from Dr. Bucknill on the most economical method of using manure (not artificial) on farms. Dr. Bucknill commenced by observing that he had been reading a book of travels in Canada, in which, curiously enough, it was shown how the agriculturist might best "dispose" of his manure, as if manure was a thing to be disposed of and not carefully used. But this book of travels related that the Canadian farmers, when they could, constructed a platform on a river or stream, overhanging its banks; on this platform the manure accumulated, and during floods it was shovelled into the river—that was one way certainly of disposing of manure. Since that he had read a book of field sports in South Africa written by Mr. Gordon Cumming, who states that the English agricultural colonists who have immense flocks of sheep, and herds of cattle, are in the habit of confining them in a kind of yard called a kraal; there large heaps of manure accumulated, and this being dried in the sun is used as fuel—the farmers there burn their manure, which was another way of disposing of it. If they came nearer home they would sometimes find cases in which the manure was disposed of not altogether in the bulk, and at once, as by the farmers of Canada and South Africa, but where its valuable properties were nearly as effectually wasted. In England they sometimes found large farm yards partly surrounded by waggon sheds, stables for a few horses, stalls for a few oxen, and standing for cows—none of the roofs provided with gutters, and in the centre a depression on which the manure made is deposited from time to time. This depression communicates in a number of instances with the road in a very convenient manner to carry off all superfluous matter, and after a heavy rain all the water which has fallen in the yard and from the roofs, first saturates the manure heap, and then in the shape of a thick black portery-looking liquid makes its way down the adjoining roadway, into the nearest brook or river. Thus all the soluble salts, which the manure contained, were washed out. The manure itself was much of it scattered across the yard exposed day after day to the winds of heaven, until all its volatile particles, those fugitive essences, which were the farmer's best friend, his good genii when kept, but which have always a tendency to fly away, were dissipated. They passed into the atmosphere, fertilised the rain which fell on the land, but a most infinitesmal dose was returned to the farms from which they had escaped. He thought they would agree with him that on such farms as that they were nearly as successful in disposing of their manure, as in Canada or South Africa. But the question was not how to dispose of the manure, but how to save it—he would therefore examine the principal evils of the different systems. The evils resulted themselves into the want of management—feeding carelessly or badly—neglect of the soluble and liquid portions of the manure, and want of due precaution in fixing and bottling up so as to catch and reclaim that volatile essence which they all knew by the name of ammonia. First, as to the general principles of feeding. The old system of feeding had of late days had most vigorous and presumptuous rivals. There was the system of feeding on boards, advocated by Mr. Huxtable and Mr. Mechi—he did not pretend to know what advantage that system possessed in making manure, except that it saved litter, and this litter was consumed for fodder, which certainly was worth their consideration. Another system, and one which deserved their attention, was that of feeding in boxes; he must own, both from personal observation and from what he had heard and read, that he believed this system of box feeding, where there was plenty of litter, was by far the most economical and most judicious mode of feeding beasts. The principle is that of confining the animals, each in a sort of box, supplying them, from day to day, with plenty of fresh litter, which they trample under their feet, and never removing it until it accumulates to a certain height, and becomes a solid, compact mass. The continued trampling of the animal makes it so solid that air cannot penetrate, and fermentation does not therefore take place. The urea in the dung is not converted into an ammoniacal salt, and the mass of dung, urine, and litter, is all mixed up in a solid cake, and remains, at the end of many months, in an unfermented condition. Now, when they remembered that fermentation was the conversion of the urea, in the dung and urine, into a volatile salt, and that this volatile salt had always a strong tendency to escape, do what they would with roofs, sheds, or covering it with gypsum, they would see the importance of a method which prevented fermentation, as did the box system of feeding, known as Warnes' system. Although there had been many objections made to the system, he believed that the success it had met with in Norfolk and other counties, where farming was carried on in a very skilful manner, was the best practical answer to objectors. But the box system was not general—a great majority of farmers had no boxes. There was another system very prevalent—that of feeding in loose stalls, tying the animals by the head, and removing the dung when it had accumulated. That system being a general one, and not entirely wrong or contrary to any obvious philosophical principles, required some consideration. It required much greater care than the system of box-feeding, to prevent fermentation. Directly the dung of an animal was dropped, it began to ferment, if exposed to the air. There was no ammonia in the dung or urine of a healthy animal when first passed; it was then in the condition of nitrogen—in what chemists called a state of urea or urates, but as soon as it was exposed to the air it began to undergo a chemical change to a salt of ammonia, principally the carbonate. The dung of a horse would ferment in 24 hours, and if put in a heap, in a fortnight or three weeks would lose seven-tenths of its weight—a most astonishing loss. Having these manures, how then, was the question, could they best prevent the loss of the ammonia by fermentation consequent on exposure to the air. There were many plans to prevent—of course it was highly necessary to make it into a solid compact well shaped heap, and if they had more liquid manure than the heap would absorb, it should be conveyed to a tank or depression in the ground, from whence it could be thrown over the heap as required. There were also many sorts of absorbents which could be mixed up with the dung, and which would to a great extent prevent its rapid fermentation. Of these, the one which appeared to be of the greatest importance, was peat charcoal, a patent for the preparation of which had been taken out by Mr. Jasper Rogers. Peat charcoal, of all substances, perhaps had the greatest affinity for ammonia. He firmly believed that if it could be sold at a reasonable price, it would become an article of great importance to farmers. Another absorbent was gypsum, which he (Dr. Bucknill) used to a considerable extent. Gypsum when in contact with carbonate of ammonia in a liquid state, underwent decomposition, the carbonic acid in the carbonate of ammonia in a liquid state, underwent decomposition, the carbonic acid in the carbonate of ammonia united with the lime in the gypsum, setting free the sulphate, which combined with the ammonia, and formed a sulphate of ammonia. Sulphate of ammonia was a fixed salt, and when the farmer had got the ammonia united with a sulphuric, instead of a carbonic acid, he had but very little difficulty; it was soluble, and might therefore be washed away by the rain, but was no longer volatile. Next to peat charcoal, gypsum was therefore the most valuable ingredient to retard fermentation, and to hold fast the ammonia. Then Professor Way had made some important experiments and discoveries. He found that if he filled a tube with any loamy earth containing clay, and filtered liquid manure through it, it parted with all its manure qualities, and came out plain water. He thus found that clay will abstract from manure all its ammoniacal salts. Now, they knew the why and the wherefore of this peculiar property of clay, they would be enabled to take advantage of it with much greater effect than before. They also now saw how it was, that great benefit was derived from covering over heaps of manure with clay, or with earth containing clay. If they took three portions of liquid manure from the same tank, and mixed one with clay, another with sand, and left the third alone, they would find that portion mixed with sand stink first, that left alone the next, whilst that mixed with clay would remain for many months without change. He would next touch on liquid manures—the best mode of applying them, and the reason why liquid manures so frequently failed, and point out the way to apply them, so as to obtain the most beneficial result. When they remembered that a cow passed more than 300 gallons of urine in the course of four months, that the weight of the urine from animals usually kept by farmers is double that of the dung passed by them; and when they also remembered that taking weight for weight—taking a pound of the urine of the cow against a pound of the dung of the cow, the urine contained a greater portion of ammonia; so that it was more valuable, and that the same was the case with the horse, they must see the importance of attending to liquid manures. Dr. Thomson had stated that 9 lbs. of urine were equal to 20 lbs. of dung. Boussingault had found, by experiment, that 100 lbs. of good farm-yard dung produced the same result as 125 lbs. of cow-dung, or 91 lbs. of the urine of the cow, or 71 lbs. of the urine of the horse. In experimenting on the quantity of nitrogen, he found in 1000 lbs. of the dung of a cow, 3¼ lbs.; in 1000 lbs. of the urine, 4½ lbs.; 1000 lbs. of the dung of a horse, 5½ lbs.; and in 1000 lbs. of the urine of the horse, 26 lbs. Nitrogen, as he had said, was the basis of ammonia, and by fermentation it became a salt of ammonia; they therefore saw that the urine of the cow contained one-third more nitrogen than the dung, and the urine of the horse contained 26 lbs., whilst the dung contained but 5½ lbs. So that, in the first place, urine was more valuable, on account of its greater bulk; and secondly, it was more valuable because, bulk for bulk, it was capable of producing more ammonia than dung; they might then come, without difficulty, to the conclusion that it was most wasteful to neglect saving the urine of animals. Another question was, whether they should keep the liquid manure separate from the solid? He believed that it was most desirable to keep it separate, or to have a separate provision whenever the quantity of animals was so great that the litter was not sufficient to absorb it. If there was sufficient, no doubt the absorption of the urine by the litter was the easiest plan, though, in a majority of cases, he believed the litter would not be sufficient. A single cow passed 1000 gallons of urine in a year at least, and it would take an immense quantity of litter to absorb the urine where a number of beasts were kept In such a case, he considered the best plan was to conduct the liquid manure to a tank—and this brought him to the tank system. Many persons advo-

cated that system, and stated that they had found it to answer; many other persons, on the contrary, who had had tanks built, had found them fail. What was the cause of this failure? He thought that it could be principally ascribed to two reasons. First, that the liquid manure which was allowed to pass into the tank was not pure, nine-tenths of it was rain water which had fallen in the farm-yard, and from all the buildings which had surrounded it. If they allowed 40 inches of rain to fall in the course of the year—he was not speaking from actual knowledge, but he believed he was under the mark, as 19 inches had fallen at Chiswick in four months; but taking that amount, there would be more than 4000 tons on an acre of ground—and as many farm-yards were more than a quarter of an acre, they would receive 1000 tons of rain water, which would be mixed with the manure and urine. If that liquid which was called liquid manure, thus got into the tank, was carted over the farm, and expected to produce a great result, he need hardly tell them that their expectations would fail. But where there was a well-constructed tank, in which liquid manure only was received, which was used on a grateful soil, which had been first well drained, and was capable of giving back a grateful return for benefits received, he believed there would be no failure. This led him to the second cause of failure—namely, that it was frequently applied to land which was undrained, the pores of which were already overflowing with moisture, and could not receive the liquid, which the first shower of rain swept off. But if the urine was properly saved and conducted over the land, whether by cartage, by pipes, by hose, or any way, he had no doubt that it would well answer. He had no reason to doubt the accounts which had been published of its effects in the neighbourhood of London and at Hounslow, where a great stable keeper had produced wonderful results. He had himself seen its extraordinary benefit in clay soils, where it should be applied to the ground, and not to the crop, and in the winter, or early spring, because clay soils had the facility of retaining and holding fast the ammonia. When liquid manure was applied to clay soil, it should be allowed to ferment, and that they might throw into it dead dogs, cats, or any other animal matter, and let it undergo the putrefactive process. But if it was applied to sandy soils it would be far better to use it in the spring months, when vegetation was first making its vigorous efforts; and when applied to pasture land, or to Italian Rye-grass, it should be as fresh as they chose, and he could assure them that it would answer every expectation. Another point sometimes mooted was whether it was desirable to have their manure heaps under covered sheds or not. He believed that if they wished to carry out the manufacture of manure in the most skilful and the most careful manner, they must have a roof, as they had in the northern counties; but a roof in the hands of a slovenly or unskilful agriculturist, not fully competent to manage the fermentation, might be productive of evil. Unless they were careful the heap when roofed might undergo a violent fermentation, and the heat would drive off the ammonia—the liquid manure should therefore be received in a tank, with a pump and hose attached, that it might be pumped over the heap to keep it cool and retard fermentation. The heap should also be covered over with clay, soil, hedge scrapings, hedge parings, and any other absorbents, which should also be mixed up with it if necessary. Supposing the farmer had neither tank nor manure shed, what was to be done? Supposing he even had to work with one of the worst yards, without gutters to the buildings or any conveniences, could he save his manure? He thought he could better than was often done—of course the good workman worked the best with good tools, but he worked better with bad tools than the ignorant or the slovenly. He would have a dry level spot for his heap, and make the bottom water tight by puddling it with clay; he would also protect it from the droppings of the roofs. Here he would cart his manure in a compact form, consolidate it by carting it down, mixing with it all the absorbent materials he could get. He would thus bring it to as solid a mass as possible, somewhat like its condition in Mr. Warnes' boxes. Then the distillation of liquid manure from the sides and bottom of the heap, he would catch in an open drain, and conduct to some convenient depression in the earth, made water tight, and from hence have it scooped back and thrown over the surface of the heap. He believed that this management was very common, and that it was the general way in which, under great difficulties, skilful farmers managed their manure, and he could only regret that skilful farmers should have to work under such difficulties. There were many other questions which time would not allow him to go into; there was one very important question—how the richness of the manure was affected by circumstances other than those he had mentioned—for instance, how by the food the animal consumed. Now they knew that manure was the balance left of the consumption of food, the residue from that which was required for supplying the animal economy, including what was burnt off in the lungs. If the food was rich in nitrogen, the manure would, of course, be rich. Vetches, Peas, Beans, and all leguminous plants were rich in nitrogen, and consequently the manure from animals fed on these substances was warm and rich, and apt to ferment. Another important point was the presence of the phosphates, one of those portions of the soil which it was difficult to prevent passing off, and which must be returned to keep up its fertility. It had been shown, that by giving animals bran, they would return much of the phosphate in their manure, as the phosphatic salts resided, not in the grain of the Wheat but under the husk. Then again, whether the animals were young or full grown was important—if they were young, they were adding the phosphate to their bone, and the nitrogen to their muscles and cellular tissues—young animals, therefore, made poorer dung than old ones. Animals fattening also made richer dung than animals getting into high condition. Animals in a stall, in poor condition, added to their muscles, and that robbed the manure of its nitrogen, but, in adding fat to their frames, they did not require the nitrogen. Again, if animals have any other excretion which is rich in nitrogen, their manure is poor—for instance; a milch cow requires a great quantity of nitrogen, the dung of a milch cow, therefore, is much less valuable than that from a fattening bullock. Another curious fact was, that in worked animals, the urine became richer and the dung poorer; the droppings from a working bullock were always poor. There was another branch of the subject which could hardly be gone into that night, as to the method of using manure; it was a very extensive subject, but one point could hardly be omitted—whether it was most desirable to use manures in a fermented or unfermented state—whether it was desirable to allow them to ferment, to get all the urea converted into carbonate of ammonia, or employ the manure unfermented, and allow the fermentation to go on within the soil. It seemed that this point had been a good deal discussed of late, and that a great many persons, including Professor Way, thought it far more desirable to use the urine fresh—that the loss experienced by the fermentation out of the soil was far greater than that experienced by its fermentation in the soil, especially if the soil be loamy or contain clay. He concluded by observing that on this and the other points he had touched on, he should be glad to hear the opinions of the practical farmers in the club.

METEOROLOGICAL REPORT.—Dec.—Jan.

(*Continued from page* 29.)

| Date. | Time. | Max. | Min. | Wind, and Remarks. |
|---|---|---|---|---|
| Dec. 23 | 7.30 a.m. | ... | 30.40 | N. Fine day and frosty. |
| | 10.20 a.m | 30.43 | ... | N. gentle breezes. See Dec. 20—22. |
| | 7.10 p.m | 30.41 | ... | Calm almost; clear and frosty. |
| | 10.50 p.m | ... | 30.39 | Do.; beginning to thaw. |
| 24 | 8 a.m | 30.34 | ... | Calm; mild cloudy day, wind. |
| | 10.20 p.m. | ... | 30.02 | W. Moderate, but increasing |
| 25 | 5 a.m. | ... | ... | W. Hard squall for about 20 minutes. |
| | 7.40 a.m. | ... | 29.92 | W. Heavy bank of clouds sinking to E. |
| | 11.30 p.m. | 29.99 | ... | W. Light winds throughout this day. |
| 26 | 8 a.m | ... | 30.05 | WNW. to NW. Light winds |
| | 10.40 p.m. | 30.10 | ... | and thin clouds with blue sky, and a mild day. |
| 27 | ... | 30.10 | 30.10 | NW. Calm, dull heavy day, but very mild. |
| *28 | 9 a.m | ... | 30.21 | NW. Calm morning, and bright blue sky. |
| | 11.10 a.m. | 30.22 | ... | NW. Warm sunny day. Barometer rising. |
| | 2.30 p.m. | 30.22 | ... | The barometer flat, having ceased to rise, and dark clouds passing slowly. |
| | 9.20 p.m. | ... | 30.22 | N.W. Bright starlight, thin clouds. |
| 29 | 8 a.m. | 30.18 | ... | W. Moderate breeze, cold drizzle a.m., and |
| | 10.10 p.m. | ... | 30.03 | W. overcast the whole day. |
| 30 | 7.15 a.m | 29.98 | ... | SW. Moderate breezes, in- |
| | 9.20 p.m. | ... | 29.85 | creasing towards night: overcast, clearing off p.m. |
| 31 | 11.30 a.m. | 29.73 | ... | SW. Blowing a gale all day and night, and barometer falling steadily. |
| Jan. 1 | 3 a.m | ... | 29.54 | SW. Blowing a gale all day, |
| | 1.50 p.m. | 29.64 | ... | with squalls and rain, and |
| | 6.45 p.m. | ... | 29.60 | a very rough night, but wind less violent. |
| 2 | 9 a.m. | ... | 29 62 | SW. Wind moderating a little, |
| | 9.40 p.m. | 29.72 | ... | but squally and rainy all day. |
| †3 | 4.20 a.m. | ... | 29.81 | Calm and hazy. |
| | 9.30 a.m. | 29.85 | ... | NNE. Gentle breeze and heavy rain. |

* This storm must have come from the Bermudas across the South of Ireland, and Central Germany. It was of large area, and travelled slowly.

† This storm came from the Azores (judging from the incessant rain), travelling slowly: it crossed the South of England, and the German Ocean.

Dorchester, Jan. 13th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### JANUARY.

Somersetshire Farm, *Jan.* 12.—Having been two years on a farm in the neighbourhood of Glastonbury, in this county, and afterwards a year in the Wold districts of Lincolnshire, I wish to give my experience of the two systems pursued, by way of comparison, and afterwards a short account of the farming in this neighbourhood (about 12 miles from Bristol, on the west coast of the county). The first thing which struck me on my first visit to Lincolnshire was the great neatness of the hedges, the cleanliness of the land, and the quickness and precision of all the out-door work performed; no stopping being ever allowed till the dinner hour of the men, so that I think the higher rate of wages allowed, as compared with Somersetshire, well bestowed. With respect to drilling corn, in the former country, from 10 to 12 acres are performed per diem, in the latter seldom more than 7; in ploughing, an acre per day in the former, in the latter ¾; but this is perhaps hardly a fair comparison, as the difference of land must be taken into account, also the custom of permitting the men (in this county) to stop for much at 11 forenoon, at which half an hour is often spent; still we think the Lincolnshire ploughman would have the advantage, always working with a pair of horses of a quick, blood description. In harvest time all corn is mown in the former county; in the latter, although the use of the scythe is gaining ground, reaping is more prevalent: much is to be said on either side. Mowing is undoubtedly the quickest way, but it leaves longer straw for leading away and threshing, as well as in standing out in the fields, being more cumbrous: they always tie their Barley; and Oats, which is decidedly better than raking it up loose like hay, which is often done. Now, with reference to keeping beasts in loose yards on long straw, a common practice on the Lincolnshire Wolds, we may contrast the Somersetshire farmers favourably, for the straw is always cut; often, as on the farm where I first resided, with a horse-power chaff-cutter; or if straw is not given, good hay is substituted. Again, with regard to sheep feeding. In my opinion the Lincolnshire farmers allow too large an extent for the run of the sheep; the nets, which are always used, being spread right across the Turnip field, and the sheep allowed to remain 10 days or more on the same piece of land; in which system I have seen much waste of Turnips. In Somersetshire and Wiltshire, although perhaps occasionally the other extreme is fallen into, the plan is the best in the end; for the land, by closer folding, gets the benefit of the sheep's manure more regularly and thickly diffused, and the Turnips eaten up as they go on, without waste, by taking a fresh fold every day, or every other day. I should add that the Turnips are cut in Lincolnshire, as well as generally speaking in the best farms of the other two counties above named; but that oilcake is more generally given to sheep in Lincolnshire than in those two counties, as likewise to beasts, for which last, however, the Turnips and straw are, as I said before, often not cut. We next come to the "stacking" of Lincolnshire, for in that county stacks is the term used, whilst here they are called ricks or mows. The former is the more appropriate name for Lincolnshire, as their corn is shaped up more in the form of our hay-stacks, not being raised from the ground on a staddle, as we term it in Somersetshire; the latter I think the best and neatest way, as being more security against vermin. For the descriptions of soils of the districts of the two counties which I visited, I must give reference to my reports for the past two years from West Somerset and East Lincolnshire farms, the former having more variety of soil to offer to a geologist than the latter, which on the Wolds abounds much in chalk. I must now conclude with a few remarks on the farming of this district. 1st, As I am on the subject of soils, I will endeavour to describe this: A line of limestone hills runs through the country, opposite to what are called the Mendip hills, between which is a wide valley or rather flat land, of rich black description, something similar to the Cambridgeshire Fens, but this varies to red sandstone near the limestone hills, and around the peaty land is a clay, which becomes in places of a bluish character, adapted for Wheat and Beans. On the limestone hills nothing can exceed the luxuriant green of the pastures, which are remarkably early for sheep keep in spring. This is chiefly a dairy and grazing district, the best Grass land letting from 3*l.*, and in some cases 4*l.* an acre. There is comparatively little land under the plough, and until lately what there was had not been well managed, few roots being grown, and beasts grazed on hay alone, which, however, was of good quality. Now, however, a great improvement is manifest, chiefly from the example of gentlemen farmers in the neighbourhood, and Turnips and Mangold are now to be seen in perfection, grown on this rich soil with little assistance from manure. When near the rock it is found necessary to manure the Turnips, as has been proved by comparative experiments, those grown without manure being nothing in point of size; in fact, superphosphate of lime will grow Turnips anywhere, and may be almost, we may say, "grown on a deal board." Witness Mr. Huxtable's experiment. Another improvement is the introduction of iron ploughs and a pair of horses working, instead of the line of three or four, with a boy leading. With reference to this subject, where the soil is a heavy clay, like the old red clays of Devon, I think oxen may be kept up in some cases (worked always in collars), which may pay, after being worked two years, to be then grazed; but I should never allow more than two horses in a plough, so that on a farm of mixed soils we might have pair horse ploughs and four for oxen. The great want now of this country is farm buildings of a new and better description, with a view to economise manure; but this we shall have in time, and I have no doubt the new generation will see a better description of farmer, so that Somersetshire will, in these times of improvement, be able to keep pace with other parts of England.—The beasts in this district are the Hereford, Devons, and Shorthorns, the latter used chiefly in the dairy; the sheep of the Devons, Dorsets, and Southdowns occasionally crossed—there are also Irish sheep. *H. E.*

## Notices to Correspondents.

Cabbage: *W D C.* Early Yorks, sown in July and August, will be ripe in May. Pull every fourth Cabbage, and transplant Drumheads sown in February. They will be ready in November, and will keep till January, and if you sow in April again you may have a crop which will be good food in January and February. Of these we can speak from experience. But we print your question for other answers, if correspondents will kindly give them. "I wish to have the longest possible succession of cattle Cabbage, will you kindly tell me how I must manage, and give me the chief periods for sowing?"

Carrots: *Louisa P.* They may be given to sheep with safety and success. Chicory and Flax are both described in Blackie's "Cyclopedia of Agriculture." Flax culture is also well described in a little book by T. K. Short on Flax, for which you should apply to your bookseller. It can be sold in the straw to any large dealer, such as are to be found at Leeds.

Cochin China Fowls: *J L.* Feathers on the legs of fowls, said to be Cochin China, do not indicate impurity of breed, but the contrary.—*M N O.* Specimens with lark-crests would not be allowed to pass as pure at any poultry show. Defective wings and tail are esteemed merits in model Cochin China fowls.

Cow Food: *W M.* Hay being your only food, you may make a less quantity answer by cutting it into chaff—and buying Oat straw, and mixing one of the latter with two of the former—and pouring over the mixed chaff a hot and salt Linseed soup.

Dairy: *P A C.* Several plans and elevations are given in the article, "Farm Buildings," Blackie's "Cyclopedia of Agriculture;" and for ordinary dairy management, see a little book by C. W. Johnson, Esq., entitled the "Modern Cow-keeper."

Drainage Act: *X X.* There is no public Act giving power to charge settled estates in England with the expenses of buildings. There was a clause in the Drainage Act of last session giving such power, when the measure was brought forward; but the Chancellor of the Exchequer spoke against it, and it was struck out. The Acts of the different Drainage and Inclosure Companies give such a power, but we know nothing of its working. *J. G.*

Farm Buildings: *R Greaves.* A number of plans are given in Blackie's "Cyclopedia of Agriculture."—We recommend a plan in which box-feeding is adopted. Potatoes on a burned clay soil will very probably succeed. The quantity of bushels per acre depends altogether upon the size of the sets; when of the common small size for "seed," from 30 to 40 bushels will be needed per acre.

Farm Capital: *E T and J T Plymouth.* We hope to insert a full reply next week.

Grinding Machine: *H W.* We have no personal experience, and must refer you to the makers—as Mr. Z. Parkes, Birmingham; Messrs. Ransome and May, Ipswich, &c.

Liquid Manure Wheelbarrow: *A Hain.* Mr. Coode, 473, Oxford-street, Bloomsbury, is probably the person you allude to.

PIGEONS: *M A* wants to know the names of some pigeon-fanciers in London who breed the Almond Tumbler exclusively.

"RAT! RAT!! RAT!!!" *T L.* Your bookseller must inquire for you; we do not know the publisher.—In cow-houses use powdered gypsum to sprinkle over the floor every morning. Peat charcoal in a future number.

RATS: *S E S* asks where Harrison's pills are to be had.—About Grasses, you should tell us whether your land is light, medium, or stiff; or, perhaps, your better way would be to purchase Lawson's pamphlet on the Grasses, and abide by its directions.

REFUSE FISH: *A Warner.* The best plan would be to cover the heap with vegetable mould and peat, or peat charcoal, or refuse charc al of any sort, so as to detain the effluvia, and let it rot under that cover. This will be better than adding hot lime.

ROOTS, &c.: *W E.* It is not *hurtful* to give unwashed Turnips to cattle, but it is *beneficial* to give them clean ones. Woodpigeons must, we suppose, be warned off, like crows; try a bullet or two among them, you can get near enough for that.

SALT: *A Rutland Subscriber.* We would not hesitate to apply 500 or 600 cwt. per acre, on any free soil, and *try* it (without much hope, however, of success) as a cure for wireworm. But in an inland situation 100 or 200 cwt. of the salt may be applied with reasonable expectation of its improving the crop, besides any such remedial action as that. Apply the salt for a week or two before sowing the seed.

SAWDUST AS LITTER: *G W D* need not fear that the resinous matter in sawdust will injure the feet of his cattle.

ST. QUIVOX: *W J Garnett.* It is in Ayrshire: a wet county.

SMALL PIGS: *H T.* Mr. Fisher Hobbs's black breed; or the Cumberland white breed.

TURNIPS: *Blenbury* wants to know if raw Turnips are good food for breeding sows. We have given Mangold Wurzel uncooked safely, and should imagine Turnips uncooked to be equally harmless.

UDDER OF COW: *B W G.* The teats may be *carefully* divided with a knife, and means taken to prevent the parts reuniting. *W. C. S.*

WARTS: *L M.* The best plan is to dissect the warts out with a knife, and sear the divided vessels lightly with a hot iron. *W. C. S.*

# Markets.

## COVENT GARDEN, JAN. 18.

Hothouse Grapes and Pine-apples are both scarce, and consequently dearer. The supply of good dessert Pears is also limited. Apples are sufficient for the demand. Oranges and Lemons are plentiful, and improving in quality. Nuts remain nearly the same as last week. Forced Vegetables of all kinds are abundant and good. Seakale, Asparagus, and Rhubarb are excellent. French Beans are making their appearance. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Chrysanthemums, Roses, and the different kinds of spring bulbs.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Pomegranates, each, 3d to 6d |
| Grapes, hothouse, p lb., 5s to 8s | Almonds, per peck, 6s |
| — Portugal, p. lb., 8d to 1s | — sweet, per lb., 2s to 3s |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| — per half sieve, 6s to 15s | — per 100, 9d to 1s 6d |
| Apples, dessert, p. bsh. 6s to 10s | Nuts, Barcelona, per bush, 20 to 22s |
| — kitchen do., 5s to 8s | — Brizil, p. bsh., 12s to 14s |
| Oranges, per doz., 9d to 2s | Filberts, p. 100 lbs., 60s to 65s |
| — per 100, 6s to 10s | |
| Lemons, per doz., 1s to 2s | |

### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Leeks, per doz., 9d to 1s |
| Cabbages, per doz., 6d to 1s | Shallots per lb., 6d to 8d |
| Greens, p. doz. bun., 1s 6d to 2s 6d | Garlic, per lb., 4d to 8d |
| Cauliflowers, p. doz., 1s 6d to 4s | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Broccoli, p. doz. bundl., 7s to 12s | Lettuce, Cab., p. score, 6d to 9d |
| French Beans, per 100, 2s to 3s | — Cos, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Endive, per score, 1s to 1s 6d |
| Asparagus, per 100, 2s to 8s | Small Salads, p. punn, 2d to 3d |
| Rhubarb, p. bundl., 6d to 1s 6d | Horse Radish, p. bundl., 1s to 4s |
| Potatoes, per ton, 60s to 100 | Red Beet, per doz., 6d to 1s |
| — per cwt., 3s to 5s | Mushrooms, p. pot., 1s to 1s 3d |
| — per bush., 1s 6d to 2s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. doz. bundl., 1s to 2s | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 4s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Carrots, per doz, 2s to 5s | — Roots, p. bundl. 9d to 1s |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, per bunch, 2d to 4d |
| Onions, p. bunch, 3d to 4d | Mint, green, per bunch, 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Watercress, p. 12 bunch., 6d to 9d |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 16.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Clover ... ... ... | 70s to 80s |
| Inferior ditto .. ... | 65 70 | Second cut ... ... | 65 70 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 22 26 |
| New Hay ... ... | — — | | J. COOPER. |

The supply short.

CUMBERLAND MARKET, Jan. 16.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 74s to 78s | Inferior ... ... ... | 60s to 70s |
| Inferior ditto... ... | 55 65 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 75 80 | | JOSHUA BAKER. |

WHITECHAPEL, Jan 16.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 68s to 72s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 55 60 | Inferior ditto... ... | 63 68 |
| New Hay ... ... | — — | Straw ... ... ... | 22 24 |
| Old Clover ... ... | 78 84 | | |

### HOPS.—FRIDAY, Jan. 17.

Messrs. Pattenden and Smith report that there is a better demand for Hops of all descriptions, at quite as much money. Fine Sussex are very scarce.

### POTATOES.—SOUTHWARK, Jan. 13.

The Committee report that, from the unprecedented mild weather, trade was heavy, which, with a considerable supply, has caused lower prices to be submitted to, particularly Scotch cups, which were nearly unsaleable. The following are this day's quotations:—York Regents, per ton. 80s. to 100s; Scotch do., 55s. to 70s; ditto Cups, 55s. to 60s.; Cambridgeshire and Lincoln Regents, 50s. to 70s.; French whites, 50s. to 60s.

### COAL MARKET.—FRIDAY, Jan 17.

Eden Main, 14s. 3d.; Tanfield Moor, 14s.; Wallsend Hetton, 14s. 3d.; Wallsend Haswell, 15s. 9d.; Wallsend Tees, 15s. 6d.—Ships at market, 124

### SMITHFIELD, MONDAY, Jan. 13.

We have a good supply of Beasts. The trade is very dull, and prices are no better. The number of Sheep is small; however, the mild weather operates against the trade, especially for big Sheep, and it is difficult to obtain higher rates. Some Dutch vessels not having arrived, the supply of Calves is small; trade is, on the average, better in consequence. From Holland and Germany there are 358 Beasts 890 Sheep, and 61 Calves; from Norfolk and Suffolk, 1500 Beasts; from Scotland, 400; and 900 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 |
| Best Short-horns | 3 | 2 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 |
| Best Downs and Half-breds | ... 4 | 0 | — 4 | 4 |
| Ditto Sworn ... ... | | | | |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools | 3 | 6 | to 3 | 8 |
| Ditto Shorn ... ... | | | | |
| Ewes & 2d quality | 2 | 10 | — 3 | 2 |
| Ditto Shorn ... ... | | | | |
| Lambs ... ... ... | | | | |
| Calves ... ... | 3 | 2 | — 4 | 6 |
| Pigs ... ... | 2 | 4 | — 3 | 4 |

Beasts, 3949; Sheep and Lambs, 19,070; Calves, 100; Pigs, 295.

### FRIDAY, Jan. 17.

The supply of Beasts is small, so also is the demand. Trade is dull, and it is difficult to maintain Monday's quotations. There is a full average number of Sheep for the time of year; trade is generally rather worse; a few choice things are sold as well as on Monday. Good Calves are scarce and rather dearer. From Germany and Holland there are 44 Beasts, 290 Sheep, and 14 Calves; from Norfolk and Suffolk, 300 Beasts; from Scotland, 40; 100 from the northern and midland; and 86 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 |
|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 |
| Best Downs and Half-breds | ... 4 | 0 | — 4 | 4 |
| Ditto Shorn ... ... | | | | |

| Best Long-wools | 3 | 4 | to 3 | 8 |
|---|---|---|---|---|
| Ditto Shorn ... ... | | | | |
| Ewes & 2d quality | 2 | 8 | — 3 | 2 |
| Ditto Shorn ... ... | | | | |
| Lambs ... ... ... | | | | |
| Calves ... ... | 3 | 3 | — 4 | 6 |
| Pigs ... ... | 2 | 4 | — 3 | 4 |

Beasts, 718; Sheep and Lambs, 3330; Calves, 181; Pigs, 310.

### MARK LANE.

MONDAY, JAN. 13.—The supply of English Wheat to this morning's market by land carriage samples was small; the best descriptions were disposed of at about the prices of this day se'nnight, but the cold and red remained unsold. The business in foreign is almost at a stand-still.—Barley and Peas are a slow sale at late rates.—Beans must be quoted 1s. per qr. cheaper.—The Oat trade is heavy, but we do not reduce our quotations.—French and country Flour can only be disposed of at a reduction of 6d. per sack.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 43—47 | Red ..... | 38—44 |
| — — fine selected runs...ditto | 43—48 | Red ..... | —42 |
| — — Talavera ..... | 46—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 36—50 | | |
| Barley, grind. & distil, 20s to 23s...Chev. | 27—31 | Malting . | 23—27 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 26—25 |
| Oats, Essex and Suffolk ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 2 —24 | Feed ..... | 17—21 |
| — Irish ..... Potato | 18—2 | Feed ..... | 17—19 |
| — Foreign .....Poland and Brew | 18—23 | Feed ..... | 16—20 |
| Rye ..... | 25—27 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ...22s to 26s .....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Wind- | 37—43 | Longpod | 27—33 |
| — Foreign .....Small | 23—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler | 24—27 | Suffolk .. | 27—29 |
| — Maple.....27s to 30s .....Grey | 24—26 | Foreign . | 25—33 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 36—40 | | |
| — Suffolk .....ditto | 30—36 | Norfolk . | 30—36 |
| — Foreign .....per barrel | 18—24 | Per sack | 29—34 |

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Malt. Qrs. | Oats. Qrs. | Beans. Qrs. | Peas. Qrs. |
|---|---|---|---|---|---|---|
| Flour, 17654 sks — 3694 brls | | | | | | |
| English ..... | 3358 | 5104 | 4665 | 938 | 1223 | 500 |
| Irish ..... | — | — | 40 | 1620 | — | — |
| Foreign ..... | 8111 | 3345 | — | 5296 | 1640 | 724 |

FRIDAY, Jan. 17.—The arrivals of grain this week have been moderate, but the market to-day is almost a nominal one; so little is doing that we are unable to alter our quotations for any article. The Flour trade sympathises with the Wheat market, and is exceedingly heavy. A few Polish Odessa cargoes of Wheat on the coast for orders have been sold at 32s. 6d. to 33s. 6d. c. f. and I., and those remaining are now held at 34s. to 35s. Maize is dull, but a cargo of fine Galatz has been sold at 30s. per qr. afloat. Dulness continues the prominent feature of the corn trade, and throughout the kingdom the tendency of Wheat prices has been towards a decline; the trade in spring corn of all descriptions has also been inactive, and late terms with difficulty obtained.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 1690 | 2840 | 3810 | 2110 sacks |
| Irish ..... | — | — | 11570 | |
| Foreign ... | 8020 | 1480 | 3750 | 3240 sacks |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Dec. 7..... | 40s 2d | 24s 7d | 17s 7d | 24s 3d | 28s 9d | 29s 0d |
| — 14..... | 39 9 | 24 3 | 17 1 | 25 11 | 27 1 | 29 5 |
| — 21..... | 39 5 | 23 10 | 17 1 | 23 1 | 27 18 | 28 2 |
| — 28..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Jan. 4..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| — 11..... | 38 1 | 22 9 | 17 2 | 22 1 | 26 9 | 27 0 |
| Aggreg. Aver. | 39 1 | 23 8 | 17 1 | 24 3 | 27 7 | 28 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | DEC. 7. | DEC. 14. | DEC. 21. | DEC 28. | JAN. 4. | JAN. 11. |
|---|---|---|---|---|---|---|
| 40s 2d | — | ... | ... | ... | ... | ... |
| 39 9 | ... | ... | ... | ... | ... | ... |
| 39 5 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |
| 38 1 | ... | ... | ... | ... | ... | ... |

### SEEDS.—JAN. 13.

| | | | |
|---|---|---|---|
| Canary, per qr. .....44s to 48s | | Coriander, p. cwt. ...14s to 21s | |
| Caraway, per cwt. | 29 — 33 | Mustard, white p. bush. | 4 — 6 |
| Hempseed, per qr. | 34 — 35 | — brown, do..... | 7 — 10 |
| Linseed, foreign, do. | 37 — 44 | Rape, per last ..... | 24l.—26l. |
| Clover, red, p. cwt. ... — | — | Cakes, Linseed, p. 1000 | 3l. 15s. |
| — — foreign, do. — | — | — — foreign, do. | 3l. 17s. |
| — white, do. ..... — | — | — Rape, foreign, do. | 3l. 17s. |
| — — foreign, do. — | — | Tares, per bush, ... | 3s 0d—5s 6d |

LIVERPOOL, FRIDAY, JAN. 10.—The grain trade since Tuesday has been without animation, and at this morning's market the transactions were quite in retail. There was no observable change in the quotations of Tuesday, excepting for Indian Corn, which, being in limited request, was considered 6d. per qr. cheaper.—TUESDAY, JAN. 14.—Excepting fair quantities of Oats and Oatmeal from Ireland this week, the other arrivals thence and coastwise are quite trifling. The foreign supplies are also upon a reduced scale, as compared with former weeks. The week's exports to Ireland and coastwise are larger than usual. The grain trade throughout the past week has continued in the same languid state as for some time past, without, however, much variation in the price of any article. The open and damp weather we have experienced may partly account for the depression, by keeping farmers from field labour, and to their serving the interior markets liberally with their produce. At to-day's market the middling descriptions of Wheat were in modera e request from the town and neighbouring millers, and a few Irish buyers, at from 5s. 8d. per 70 lbs. for French red, up to 6s. for Canadian mixed, which are much the same rates as on this day se'nnight. Fine Wheats are held with firmness. The best samples of Oats and Oatmeal supported late prices, but inferior were hard to sell, and ½d. to 1d. per bushel, and 6d. per load lower. Egyptian Beans declined 6d. per qr. Barley and Peas were unaltered in value, and in slow demand.


HARTLEY'S PATENT ROUGH PLATE GLASS, FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

8 by 6 under 10 by 8.....4½*d.*; 10 by 8 under 14 by 10.....5*d.*
14 by 10 under 1½ foot, not above 20 inches long ...5½*d.*
1½ foot — 3 feet — 30 — ...6*d.*
3 feet — 4 feet — 30 — ...6½*d.*
4 feet — 5 feet — 35 — ...7*d.*

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½.....12*s.* 0*d.* | 8 by 6 and 8½ by 6½ .....15*s.* 0*d.*
7 by 5 and 7½ by 5½.....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 .....16 6

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5*s.*, 6 Tubes, 7*s.* 6*d.*

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PITFRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12*s.* each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2¼*d.* to 2¾*d.* per foot.

16*s.* per box; or 2¾*d.* per foot if less than one box be taken:

| | |
|---|---|
| 11 inches by 8 inches | 13 inches by 9 inches |
| 12 " by 8 " | 12 " by 10 " |
| 12 " by 9 " | 14 " by 10 " |

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to how, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅛ in. thick. | ¼ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0*s.* 6*d.* | 0*s.* 11*d.* |
| Above 15 inches and not above 35 .. | 0 8 | 1 1 |
| " 35 " " 50 ... | 0 9½ | 1 3 |
| " 50 " " 75 ... | 1 0 | 1 3 |
| " 75 " " 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

| | | | |
|---|---|---|---|
| 16 oz. sheet ... ... ... | 0*s.* 5*d.* | 26 oz. sheet ... ... ... | 0*s.* 9*d.* |
| 21 oz. " ... ... ... | 0 7 | 32 oz. " ... ... ... | 0 11 |

SUPERIOR ROUGH PLATE TILES.

| | | | |
|---|---|---|---|
| ⅛ inch ... ... ... ... | 0*s.* 10*d.* | ⅝ inch ... ... ... ... | 1*s.* 7*d.* |
| ¼ inch ... ... ... ... | 1 3 | ½ inch ... ... ... ... | 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalised, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

FINAL SALES.

MR. D. A. RAMSAY has received instructions from Messrs. Dennis and Co. to submit to public Auction, during the ensuing season, on the premises, King's-road, Chelsea, opposite Cremorne Gardens, the whole of the remaining NURSERY AND OTHER STOCK, GREENHOUSES, IMPLEMENTS IN TRADE, &c., in consequence of the lease having expired. The first sale will take place about the third week in February, and consist of a large portion of the Nursery Stock, comprising fine Aucuba, Box, Laurels, Hollies, and other Evergreens, a quantity of fruit bearing and other Mulberries, fine prize Gooseberries, extra large Ivies, Jessamines, and other Climbing Plants, Roses and other Miscellaneous Stock. The Second Sale will include the celebrated collection of Greenhouse Plants. Erections of Greenhouses, Garden Frames, Lights, &c., of which due notice will be given.
Brompton Nursery, Jan 18.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, January 27, 1851, at 2 o'clock precisely, by order of Messrs. ANTONY GIBBS and SONS, the Importers, about 1200 tons (damaged) PERUVIAN GUANO. Catalogues and further particulars, in due time, from J. A. ROCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TO BUILDERS AND OTHERS.

TO BE SOLD.—A large quantity of VASES, FIGURES, and ELIZABETHAN CHIMNEY TOPS, will be sold by Auction, on the 27th of January, without reserve, for the purpose of clearing the ground for building, on the premises lately occupied as an Artificial Stone Manufactory, Diana-place, near Fitzroy-square.—May be viewed two days previous to the sale, and Catalogues had of Mr. J. FOLLER, Albany-street, Regent's-park, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON.—HIS ROYAL HIGHNESS PRINCE ALBERT.
PRESIDENT.—THE RIGHT HON. EARL BATHURST.
VICE-PRESIDENT.—THE RIGHT HON. EARL DUCIE.

The College will re-open February 12th, for Agricultural and General Education.—Lectures, by Professors of ability and experience, in Chemistry, Geology, Botany, Zoology, Veterinary Medicine and Surgery, Surveying and Civil Engineering, &c., will be combined with Practical Instruction in Agriculture, and the several branches of a good Education.

TERMS PER ANNUM.
*Payable Half-yearly in advance.*

| | | |
|---|---|---|
| Pupils in the College, under 14 years of age | ... | 45 Guineas. |
| Ditto from 14 to 16 | ... | 55 ,, |
| For a separate sleeping apartment (if required) | ... | 10 ,, |
| For a share in a private study (if required) | ... | 5 ,, |
| Pupils in the Boarding-house | ... | 80 ,, |
| Out-students | ... | £40 |

For Prospectuses and information respecting the Course of Studies for the elder and younger Students, &c, apply to the Principal, the Rev. J. S. HAYGARTH, M.A.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

IRISH PEAT CHARCOAL.
TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, exclusive of sacks, 35s. per ton; in London, Liverpool, Bristol, and other seaports in England 60s. per ton, sacks included.

Agents will be forthwith appointed in all the principal towns in England.

Head Office, 9, Waterloo-place, London.
Jan. 18, 1851. G. L. PARROTT, Secretary.

MANURE DEPOT.
TO FARMERS, AGRICULTURISTS, &c., &c.

G. H. FOLEY, Essex Wharf, Lea-bridge, Middlesex, Agent, by appointment, to the Irish Amelioration Society, for the sale of IRISH PEAT CHARCOAL, an excellent Fertiliser, and when mixed with night-soil or sewage matter renders both inoffensive, and retains all their fertilising properties, and producing, combined, a very valuable Manure, at a remarkably low cost; capable of being conveyed in sacks or otherwise. Price of the Charcoal, in its pure state, 60s. per ton; mixed with night-soil, 45s. per ton, sacks included.

All needful particulars will be given upon application at the above address.

PAGE AND CO., SEED MERCHANTS, &c., to the Horticultural and Agricultural Society of Western India, 38, Oxford-street, and 58, Above Bar, Southampton, have to offer a few packets, at 1s. 6d. each, of the BEANS spoken so highly of in the *Gardeners' Chronicle* of February 9, 1850, and we subjoin that testimonial. (Copy).—"Dwarf Crimson-seeded Bean, alias Fève très naine rouge, naine rouge. The earliest and most dwarf of all the sorts of Beans; stems scarcely attaining a foot in height, branching close to the ground, and bearing profusely; pods about 3 inches in length, generally well filled; the Beans are crimson, nearly the size of those of the long-pod. It might be grown in rows from 12 to 15 inches apart."

New Golden Pea (the best late variety known), 2s. 6d. per quart.
Pages Goliah Do., 2s. 6d. per quart.
Calceolaria, Cineraria, and Geranium, saved from the finest named sorts, 1s. per packet.
12 packets Hardy Annuals, 1s.
Our detailed priced list of Seeds may be had gratis on application.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

TO BE LET, furnished or unfurnished, a comfortable Yeoman's House, with or without about 25 acres of excellent land, divided in 8 Lots. Also, may be had, a Farm adjoining, of about 200 acres, now held by the Proprietor, only half a mile from coal and lime, on the Chester Railway.—Address A. Z., Office of this Paper.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

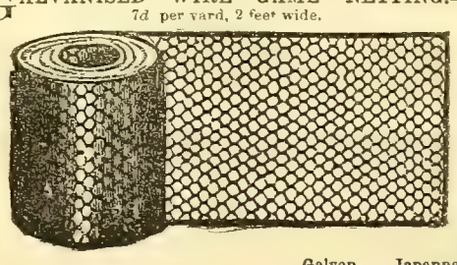
NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

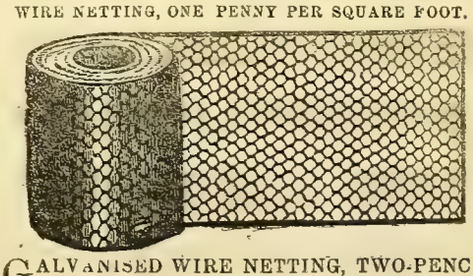


| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| ¾-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1¾-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1¾-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | | | |
|---|---|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | | 30 inches wide | 7½*d.* per yard. | |
| 18 ,, ,, | 4½*d.* ,, | | 36 ,, ,, | 9*d.* ,, | |
| 14 ,, ,, | 6*d.* ,, | | 43 ,, ,, | 1*s.* ,, | |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

SEED LABELS.

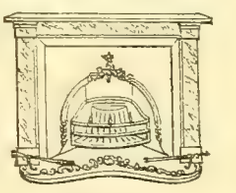
AYRES AND MOORE'S DESCRIPTIVE AND CULTURAL SEED LABELS, are printed on paper of the requisite size for packing the ordinary flower-seeds. Each label, besides containing the scientific and popular name of the plant, and its botanical description, gives simple directions for its culture. The LABELLED SEED PAPERS are used by all the principal Seedsmen of the kingdom, and have received the highest approbation of the horticultural press. As these labels have been now printed on a much better quality of paper than was used last season, the price is 3*s.* 3*d.* per thousand, in quantities of not less than 50 of each sort.—Orders must be sent without delay to DAVID ARD, 170, Fleet-street, London.

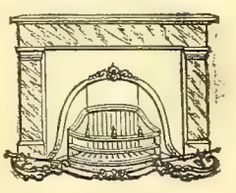
STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

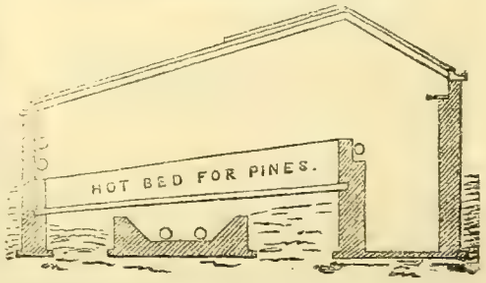
MARBLE CHIMNEY-PIECES, GRATES, AND FENDERS.





J. L. DOWSON, 123, OXFORD-STREET (Five Doors West of Regent Circus), LONDON, has on view, in his extensive Show Rooms, a great variety of Marble Chimney-Pieces, Register Grates, and Fenders, of the most elegant and perfect description. Improved Kitchen Ranges, and other Cooking Apparatus. Every article manufactured upon the most correct principles, and at ready money prices.
SOLE MANUFACTURER OF CUNDY'S PATENT STOVES.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.




J. WEEKS AND CO., King's-road, Chelsea Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

BEAUTIFYING AND PRESERVING THE HAIR—To preserve the human hair has been for a long time the unsuccessful pursuit of innumerable chemists and naturalists, and although there have been various compounds professing to accomplish this desirable end, still nothing really capable of restoring and preserving one of the most beautiful of Nature's gifts was discovered until 1821, when the result of a series of experiments, tried for a long previous period upon persons of all constitutions, fully established the infallible virtues of

C. AND A. OLDRIDGE'S BALM OF COLUMBIA.

The wonderful efficacy of this inestimable compound in restoring the hair to its pristine beauty, and the certainty with which its conservative agency operates in preserving it, has received, as might be expected, the most flattering testimonials from the grateful thousands who have experienced its effects.—3*s.* 6*d.*, 6*s.*, and 11*s.* per bottle; no other prices.—When you ask for OLDRIDGE'S BALM, never let the shopkeepers persuade you to use any other article as a substitute.—13, Wellington-street North, Strand, a few doors above the Lyceum Theatre, on the opposite side.

HOLLOWAY'S OINTMENT AND PILLS THE BEST REMEDY TO CURE BAD LEGS.—Eliza Dew, the wife of a farm-servant, leaving at Dinton, near Salisbury, suffered for several months with a sore Leg, the ulceration of which was so dreadfully obstinate that it defied the skill of eminent Medical Men to abate its malignancy. When in its worst state, she commenced using HOLLOWAY'S OINTMENT and PILLS, which soon produced favourable appearances; and, by persevering in their use for a short period, she can now boast of a sound cure. There is no case, however obstinate, bad, or long standing, but may be cured by these admirable Medicines.—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

HARRY HIEOVER'S WORKS.
In Two Volumes, 8vo, with Portrait, price 24s. cloth,
STABLE TALK AND TABLE TALK; or, Spectacles for Young Sportsmen. By HARRY HIEOVER.
"An amusing and instructive book, which will be read with pleasure by the old sportsman, and may be perused with profit by the young one."—*Times.*
By the same Author, fcp. 8vo, price 5s. each.
THE POCKET AND THE STUD. Fcp. 8vo, 5s
THE STUD FOR PRACTICAL MEN. Fcp. 8vo, 5s.
PRACTICAL HORSEMANSHIP. Fcp. 8vo, 5s.
THE HUNTING-FIELD. Fcp. 8vo, 5s.
London: LONGMAN, BROWN, GREEN, AND LONGMANS.

New Edition, carefully corrected and greatly improved,
NEW UNIVERSAL FRENCH GRAMMAR; being an accurate System of French Accidence and Syntax, on a Methodical Plan. By N. HAMEL, Graduate in the University of Caen, and Rector of the Town of L'Aigle, in Normandy. 12mo, price 4s. bound.
EXERCISES on Hamel's Grammar, 4s.—KEY, 3s.
Lately published, 12mo, 5s. 6d bound,
HAMEL'S FRENCH GRAMMAR and EXERCISES. A New Edition, in One Volume. By N. LAMBERT.—KEY, 4s.
London: LONGMAN and Co.; and WHITTAKER and Co.

On Friday next will be published, in post 8vo, price 6s. cloth, and 16mo, price 2s. 6d. sewed, the First Part of the Third and Concluding Volume of
HUMBOLDT'S COSMOS. — Translated with the Author's sanction and co-operation, and at his express desire, by COLONEL and MRS. SABINE.
*** The Third Volume of the German Original is divided into Two Parts, of which only the First has yet appeared, and of the whole of which the above is a Translation.
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INDEX.


| | | | |
|---|---|---|---|
| Atriplex hortensis | 51 *e* | Mulching | 54 *b* |
| Beans for cattle | 61 *b* | Orache | 51 *c* |
| Birds, British song | 53 *a* | Osiers | 62 *a* |
| Blight American | 86 *c* | Plants, absorption of nitrogen by | 52 *a* |
| Borders, fruit-tree | 54 *b* | — thawing frozen | 53 *c* |
| Botanical Society of Edinburgh | 55 *b* | — muling among | 55 *a* |
| Brickmakers, hint to | 54 *a* | — seaside | 54 *c* |
| Calendar, Horticultural | 56 *a* | Poultry, to pinion | 60 *b* |
| — Agricultural | 61 *c* | Rabbit keeping | 60 *a* |
| Cattle, breeding fat | 60 *b* | Rain at Bognor | 55 *a* |
| — Beans for | 61 *b* | — in Dumfriesshire | 55 *a* |
| Dairy management | 60 *a* | Raspberries, ripe | 55 *c* |
| Drainage Act | 58 *a* | Rose, Ma-an-ga | 55 *c* |
| Farming, Scotch and English | 57 *c* | Royal Bot. Garden Edinburgh | 56 *c* |
| Food, Beans as | 61 *b* | Saintfoin, influence of saline matters on | 59 *a* |
| Fruit-tree borders | 54 *b* | Seeds, packets of | 54 *b* |
| Gardening, market | 53 *c* | Sheep, to feed | 61 *b* |
| Geranium at sea | 53 *b* | Soil, effects of mulching | 54 *b* |
| Grafting | 52 *b* | Sprotbro' Farmers' Club | 61 *a* |
| Grubber, Scarlar's improved | 53 *b* | Steam engine boilers | 60 *b* |
| Halesworth Farmers' Club | 60 *c* | Timber, to preserve | 54 *c* |
| Linnean Society | 55 *a* | Tours, agricultural | 61 *b* |
| Manure, experiments with | 57 *a* | Vegetables, to earth up | 54 *a* |
| Market gardening | 53 *c* | Waghorn, Lieutenant | 54 *c* |
| Moss, Carrigeen | 69 *b* | Weather, the | 61 *c* |



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STRAWBERRY PLANTS.—Kitley's Goliah, 10*s.* per 100; Myatt's Eleanor, 4*s.* per 100.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

NEW GIANT ASPARAGUS PLANTS, 5*s.* per 100. LARGE GIANT SEAKALE PLANTS, 8*s.* per 100.
At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

AN UNLIMITED STOCK OF REMARKABLY FINE SEEDLING AND TRANSPLANTED LARCHES AT REDUCED PRICES.

WM. WOOD AND SON, being very extensive holders of the above, and all other kinds of seedling and transplanted Forest trees, will be happy to furnish prices on application.

N.B. Catalogues of Vegetable, Flower, and Agricultural Seeds, also of Nursery Stock, will be forwarded free.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18*s.* to 24*s.* | per doz. |
| Dwarf Standard do. | do. 12*s.* to 18*s.* | ,, |
| Climbing Roses | do. 9*s.* to 12*s.* | ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.

All packages delivered free of carriage to London.
Nurseries, Cheshunt, Herts, Jan. 25.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower Seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.
ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE OF SEEDS is now ready, being a part of their ANNUAL SEED AND PLANT LIST, which will shortly be complete, and forwarded as a newspaper, free by post. The Parts now ready may be had together for a penny stamp, viz.:

PART I. FLOWER SEEDS, containing a scale of priced selections of 422 of the new and most approved sorts, with colour, height, hardiness, duration, price of each packet, and other useful information.

PART II. VEGETABLE SEEDS, with priced scale of collections, time of sowing each description of Vegetable, and price of each variety, with heights of Peas, and other descriptive information.

PART III. AGRICULTURAL SEEDS, containing also much useful and descriptive information.

PART IV. ROOTS, FRUITS, AND BULBS for early planting.

PART V., as far as complete, contains a scale of prices of our choice selections of plants, and the principal part of our descriptive list of Geraniums.

Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW DWARF CRIMSON SEEDED BEAN,
*Alias* FEVE TRES NAINE ROUGE, NAINE ROUGE.

PAGE AND CO., SEED MERCHANTS, &c., to the Horticultural and Agricultural Society of Western India, 38, Oxford-street, and 58, Above Bar, Southampton, have to offer a few packets of the above excellent Bean, at 1*s.* 6*d.* each, so highly recommended in the *Gardeners' Chronicle* of Feb. 9, 1850. The earliest and most dwarf of all the sorts of Beans, stems scarcely attaining a foot in height, bearing profusely, pods about 3 inches in length, generally well filled. The seed, when dry, is crimson, nearly the size of the Long-pod. It might be grown in rows, from 12 to 15 inches apart.

New Golden Pea (the best late variety known), 2*s.* 6*d.* per quart; PAGE'S Goliah, ditto, 2*s.* 6*d.* per quart.

Calceolaria, Cineraria, and Geranium, saved from the finest named sorts, 1*s.* per packet; 12 packets of Hardy Annuals, 1*s.*

Our detailed Priced List of Seeds may be had gratis, upon application.

N.B. Gardeners' and Land Stewards' Registry Office. No charge except Postage.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42*s.* to 60*s.* |
| Extra superior selected Standards ... ... ... | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) ... | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

SEEDS OF THE BEST QUALITY, CARRIAGE FREE.

J. C. WHEELER AND SON have had the honour of being appointed Seedsmen to the Gloucestershire Agricultural Association. Their Priced List of Seeds for this season is just ready, and will be forwarded free by post to any address on receipt of two postage stamps. This Catalogue is not a long list of useless names; it is really what it professes to be, a List of the best Seeds in cultivation, and will be found a safe guide to all purchasers.

Dr. LINDLEY, in the *Gardeners' Chronicle*, of the 2d March last, strongly recommends it in the following terms:

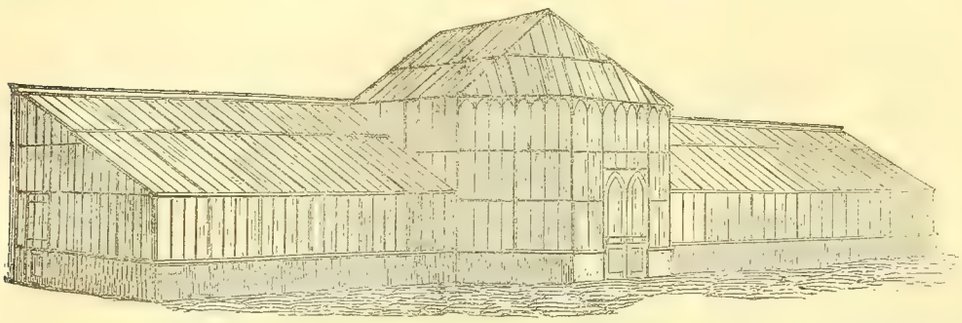
"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."

J. C. WHEELER and SON deliver their Seeds CARRIAGE FREE.
Kingsholm Nursery; and 99, Northgate-street, Gloucester.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

# PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

## E. DENCH, PATENTEE.



Vinery, 24 feet 6 inches. Conservatory, 20 feet. Peach-house, 24 feet 6 inches.

THIS RANGE WAS ERECTED FOR A GENTLEMAN AT NEWARK, NOTTINGHAM.
A similar Range was Erected, and Heated with Hot-water, for C. VICKERS, Esq., Crawley, Sussex.
Mr. GOLDSMITH, the Head-gardener, will give every information.

THE PATENT consists of two distinct principles for all Horticultural Erections—on one plan the Roof is formed wholly of Iron and Glass, no wood or putty, &c., and not more than three-quarters of an inch of light being taken up anywhere, and is very light, strong, and elegant, free from drip, and perfectly impossible for the rain to penetrate; the other principle consists of the Roof being formed in Sashes, and the surface of the Roof being Iron, Glass, and Putty, and, the work being hollow, is perfectly free from contraction or expansion. These Houses have been proved in all parts, and are found to excel all others. Heating by Hot-water on most scientific principles.

ONE GOOD SECOND-HAND HOUSE FOR SALE.

FLANAGAN AND SON beg to inform their customers and the public generally, that their Catalogue of VEGETABLE and FLOWER SEEDS is now ready, and a copy may be obtained on application by post or otherwise. FLANAGAN and Son take this occasion of assuring their friends that their Seeds are of the best quality, and trust to receive those orders with which they have for so very many years been favoured.
9, Mansion-house-street, London.

BRITISH QUEEN POTATO.—A new and superior variety—as early as the Shaw, and quality of the Regent, coming in a month before that kind. The grower says, "I planted them last year, close by a good stock of Shaws. They were quite as early, and when each were full grown, the BRITISH QUEEN were worth considerable more money, being much like a Regent, and ready nearly a month before it. My salesman considers them preferable to any Potato he ever saw; they grow short haulm, and in a cluster; will admit of being planted closer together than most sorts."
To be had only of NUTTING and SONS, Seedsmen, 46, Cheapside, London, at 9*s.* per bushel; where may be had every approved kind of Agricultural, Horticultural, and Floricultural Seeds.

THORN QUICK, 70 per cent. below the usual price.—On sale a large quantity of 4-year-old Quick, at 5*s.* per 1000. Parties wanting a first-rate quality for the markets will find the above well worth their attention; the bark and root being all that can be desired. Height, about 3 feet, the greater part being strong enough to fill up old fences. Samples of 150 sent to any part of the country, which, on inspection, will be found worth 10*s.* per 1000.

STAMFORD HILL HORTICULTURAL SOCIETY.—The Exhibitions of this Society for the year 1851, will be held on the undermentioned days, viz.:
THURSDAY, May 15th.
TUESDAY, June 17th.
WEDNESDAY, July 23d.
And the Evening Fête on WEDNESDAY, June 18th.
This Society is confined to the resident gentry and amateurs, but for the general encouragement of Horticulture, prizes are awarded to Nurserymen, who are invited to compete among themselves at each Exhibition.
CHARLES ANDERSON, Honorary Secretary.

POLYANTHUS SEED.
JAMES WOODS has a quantity of Polyanthus Seed, which he can recommend with confidence, saved from none but named and good laced Flowers, price 1*s.* per packet; or sent free on receipt of 13 stamps. Also, a few hundreds of Ranunculus roots of the best old named varieties, in one mixture, at 5*s.* per 100.—Address to JAMES WOODS, Florist, Harwich, Essex.

ROSES FOR THE MILLION.—The following fine Assortment, comprising most of the best ever blooming ROSES in existence, are offered in strong one-year-old plants from pint pots, on their own roots, at the following advantageous terms, package included, on receipt of a Post-office order from unknown correspondents for the amount.
HYBRID PERPETUAL.—Amandine, Géant des Batailles, Comte de Egmont, Aubernon, Baronne Prevost, Comte de Montalivet, Comte d'Eu, Comte de Paris, Dr. Arnal, General Moranquiez, General Jacquimint, La Reine, Lady Alice Peel, Pius IX., Madame Laffay, Madame Trudeaux, Rivers' Robin Hood, Sidonie, William Jesse, Henry IV., Clementine Seringe, and Duke de Alencon.
BOURBON.—Queen, Bouquet de Flore, Desgaches, Enfant d'Ajacio, Beauty of Versailles, Madame Angelina, Glory of Paris, Henry Lecoq, La Grenadier, Menoux Marianne, Pierre St. Cyr, Reine des Vierges, Gloire de Rosamène, Souvenir de la Malmaison, and Plantier.
CHINA.—Clara Sylvain, Mrs. Bosanquet, Tancredi, Cramoisie Superieure, and Fabvier.
TEA-SCENTED.—Adam, Bougere, Comte Paris, Devoniensis, Caroline, Mansais, Reine de Bassora, Viscountess de Leages, and Noisette Eclair de Jupiter.

| | | | | |
|---|---|---|---|---|
| Purchaser's selection of 12 for | ... | ... | ... | 14*s.* 0*d.* |
| Ditto | ditto | 18 | ... | 16 0 |
| Ditto | ditto | 24 | ... | 20 0 |
| Dtito | ditto | 36 | ... | 27 0 |
| Ditto | ditto | 48 | ... | 38 0 |

These prices will not apply where more than one or two of a sort are selected.

| | | | | |
|---|---|---|---|---|
| 12 Climbing Roses for | ... | ... | ... | 6*s.* 0*d.* |
| 12 Standard Roses... | ... | ... | ... | 15 0 |

N.B. Descriptive Catalogues on application.
ARCHIBALD GODWIN, Rose Grower, Ashbourne, Derbyshire.

BAROMETERS FOR THE MILLION.
BROWN'S REGISTERED BAROMETER is sold by HENRY BAKER, INSTRUMENT MAKER TO THE BOARD OF ADMIRALTY, 90, Hatton-garden, London, price 10*s.* 6*d.* This unique little instrument has given great satisfaction, the price placing it within the reach of persons who would not be able to purchase a more expensive article. Persons purchasing a dozen supplied at the wholesale price, for cash only. Night Thermometers for registering the extreme of cold, 5*s.*

SILVER SAND, PEAT, &c.—REDUCTION OF PRICE.
EDWARD KEMP begs to return his grateful acknowledgments to his Friends and Patrons for favours hitherto received, and informs them that he has made considerable reduction in the price of Silver Sand, which he trusts will ensure a continuance of their support. Particulars will be forwarded on application addressed EDWARD KEMP, 16, Ann's-place, East-street, Old Kent-road, London.
N.B. No connection with any other party.

DR. S. NEWINGTON'S PATENT DIBBLES, HAND-HOE CULTIVATORS, DRILLS, and other Agricultural Implements for effecting a more scientific system of cultivation, and insuring more abundant crops. Early orders must be given to ensure early execution. An illustrated Catalogue, &c., may be obtained on application to Messrs. DUFAUR and Co., sole manufacturers, 21, Red-lion-square, London.

CUCUMBER and MELON BOXES and LIGHTS.
One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

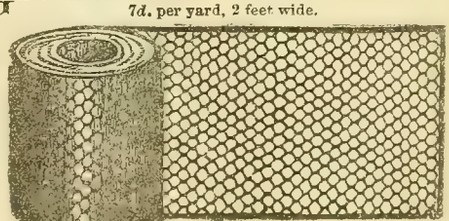
PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

TO GENTLEMEN, THE NURSERY TRADE, AND OTHERS.
TO BE SOLD CHEAP, about 40 Fine Large Standard-trained Nectarine, Apricot, and Plum Trees.—The trees have been on the wall six years—6 feet stems, fine heads, and of the best kinds. The reason why the above are to be disposed of is, that the wall on which the trees are is the property of a public company, and is to be taken down. Such trees are seldom to be had in the Nurseries, and are well worth the attention of any one requiring trained trees in a bearing state.—Direct to T. F., 18, Grove-road, Mile-end, London.

TO BE LET, in consequence of the Death of the late Proprietor, a compact NURSERY, in the immediate vicinity of Bristol. Connected with the Nursery is a Dwelling-house, with Stable and other Outbuildings. The person taking to the Nursery may have the option to rent a Shop centrally and eligibly situate in Bristol, calculated for the carrying on of a good Seed Business. The Nursery, Stock, Outhouses, &c., to be taken at a valuation.—For particulars apply to Mr. THOMAS DIX, Solicitor, Small-street, Bristol.

TO BUILDERS AND OTHERS.
TO BE SOLD.—A large quantity of VASES, FIGURES, and ELIZABETHAN CHIMNEY TOPS, will be sold by Auction, on the 27th of January, without reserve, for the purpose of clearing the ground for building, on the premises lately occupied as an Artificial Stone Manufactory, Diana-place, near Fitzroy-square.—May be viewed two days previous to the sale, and Catalogues had of Mr. J. FULLER, Albany-street, Regent's-park, London.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



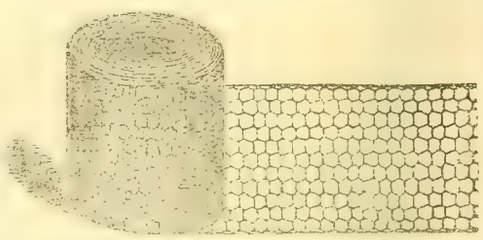
| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " | ... | 9 " | 6½ " |
| 2-inch " extra strong " | ... | 12 " | 9 " |
| ¾-inch " light " | ... | 8 " | 6 " |
| 1½-inch " strong " | ... | 10 " | 8 " |
| 1½-inch " extra strong " | ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP DAHLIAS, FUCHSIAS, AND VERBENAS, for 1851.
J. COURCHA can supply all the new DAHLIAS of last year, at 7*s.* per dozen; older varieties at 3*s.* per dozen; Fuchsias and Verbenas, at 3*s.* per dozen.—Catalogues may be had on application to JOSEPH COURCHA, Florist, 8½, Wellington-row, Hart's-lane, Bethnal-green-road, London.

SEED LABELS.
AYRES AND MOORE'S DESCRIPTIVE AND CULTURAL SEED LABELS, are printed on paper of the requisite size for packing the ordinary flower-seeds. Each label, besides containing the scientific and popular name of the plant, and its botanical description, gives simple directions for its culture. The LABELLED SEED PAPERS are used by all the principal Seedsmen of the kingdom, and have received the highest approbation of the horticultural press. As these labels have been now printed on a much better quality of paper than was used last season, the price is 3*s.* 3*d.* per thousand, in quantities of not less than 50 of each sort.—Orders must be sent without delay to DAVID AYRES, 170, Fleet-street, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.
This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.
The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.
PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | |
|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | £3 15 | 0 |
| Do. of 100 yards, 24 ins. wide | .. | 5 0 | 0 |
| Do. of 100 yards, 30 ins. wide | .. | 6 5 | 0 |
| Do. of 100 yards, 36 ins. wide | .. | 7 10 | 0 |

If more or less than a web is required, it would be charged at the same rate per yard.
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.
C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.
C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.
Workmen sent to all parts of Scotland, England, and Ireland.

REGISTERED ROLLER MILL for Crushing Linseed, Oats, Malt, Barley, &c., and Breaking Beans and Peas. Manufactured by E. R. TURNER AND CO., late HURWOOD and TURNER, St. Peter's Foundry, Ipswich.
E. R. TURNER and Co. claim for their registered Roller Mill the particular attention of Agriculturists, Housekeepers, and others. Besides accomplishing all the purposes of the well-known Roller Mill for crushing Corn and Seeds, by an entirely novel arrangement it is made to break Beans and Peas most effectually, and without involving any delay in adapting the Mill from one process to the other. They are very simple in construction, and therefore not liable to get out of repair; may be worked with ease by one man, and for efficiency and cheapness are superior to any Implement of the kind yet manufactured. Price complete, 9*l.* 9*s.*
E. R. T. and Co. also manufacture a Roller Mill for Crushing only, of the same size as the Registered Roller Mill, and a larger Mill, for which HARWOOD and TURNER were awarded the Royal Agricultural Society's Prize at Norwich in 1849.

| | | |
|---|---|---|
| Price of Small Roller Mill | ... ... ... | £7 10*s.* |
| " Norwich Prize Mill for Horse, Steam, or Hand Power | ... ... ... | 10 10 |

Delivered Free to London, Norwich, Bury St. Edmunds, and all intervening Stations. To Hull by water, and all places within 30 miles of Ipswich.
A Discount of Five per cent. allowed for Cash payments.

METCALFE AND Co's NEW PATENT TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.
METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.
CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

We prove the growth of each kind before we send them out.

| | | | |
|---|---|---|---|
| No. 1. | A full collection, suitable for a large establishment, for ... ... ... ... ... | 45s. | 0d |
| No. 2. | Do., in smaller quantities ... ... | 30 | 0 |
| No. 3. | Do., " " | 20 | 0 |
| No. 4. | Do., " " | 12 | 6 |
| No. 5. | Do., " " | 8 | 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | | | |
|---|---|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each ... ... ... | | | | 25s. | 0d. |
| 50 | Ditto. | Ditto. | Ditto. ... ... | 14 | 0 |
| 25 | Ditto. | Ditto. | Ditto. ... ... | 8 | 0 |
| Hardy kinds separate, per dozen packets ... ... | | | | 2 | 0 |
| Half hardy | Ditto. | Ditto. | ... ... | 3 | 0 |
| Greenhouse | Ditto. | Ditto. | ... ... | 4 | 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber-growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Mills's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5s.; or three seeds, 2s. 6d.

E. T. has also seed of his three other superb Cucumbers at the following prices:

| | |
|---|---|
| Victory of Bath, per packet ... ... ... | 2s 0d. |
| Gordon's White Spine, ditto ... ... ... | 1 6 |
| Lord Keynon's Favourite, ditto ... ... | 2 6 |

This last is the best for winter cultivation.

MELONS.

BROMHAM HALL GREEN-FLESH MELON.—This has again this season surpassed all others for its superior flavour; it was placed first and second for flavour at the Chiswick Exhibition last season, and obtained a great number of first prizes throughout the country where exhibited. Sold in packets at 1s. 6d. each.

E. T. has also seeds of the following superb Melons, which he can with confidence recommend:

| | | |
|---|---|---|
| Camerton Court Green-flesh ... ... | 1s. 0d. | per packet |
| Queen Melon ... ... ... ... ... | 1 0 | " |
| Blackall's Green-flesh ... ... ... | 1 0 | " |
| Bailey's Green-flesh... ... ... ... | 1 0 | " |
| Bowood Green-flesh... ... ... ... | 1 0 | " |
| Beechwood Green-flesh ... ... ... | 1 0 | " |
| Windsor Prize ditto... ... ... ... | 1 0 | " |
| Emperor ... ... ... ... ... | 1 0 | " |
| Fleming's Trentham Hybrid ... ... | 1 0 | " |
| Duncan's Green-flesh do. Improved ... | 1 0 | " |
| Hampton Court Green-flesh ... ... | 1 0 | " |
| Egyptian do. do. Improved ... ... | 1 0 | " |

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that, although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

FOR CHEAPNESS, QUALITY, DISPLAY, and UTILITY, *the following are strongly recommended.*

HOLLYHOCKS, No. 1, fine double named kinds, all shades of colour, per doz., 9s., or per 100, 2l. 10s. HOLLYHOCKS, No. 2, for border display, very good, per doz., 6s., or per 100, 1l. 10s. These are selected from some hundreds of seedlings, and may be confidently relied on.

HERBACEOUS PLANTS.—Purchaser's Selection, from List, per 100, 3l. 3s.

W. MAY's selection, extra fine, No. 1, 2l. 2s. per 100;
" " really good, No. 2, 1l 10s. "

Having an immense stock they can be furnished at these low prices. The collection extends over 700 species and varieties selected from the choicest stocks in the country (regardless of expense) for display, and warranted second to none. To meet our customers in every way, we hope to be favoured with lists of such plants as are already in their collections, that duplicates of any article may not be sent where the selections are left to ourselves.

FLOWERING SHRUBS AND ORNAMENTAL TREES.—The finest vars., purchaser's selection, from the list, per 100, 3l. 3s.

W. MAY's selection, No. 1, extra fine, per 100, 2l. 2s.
" " No. 2, good kinds, " 1l. 5s.

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. KEMP for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4l.; or per 100, 10s., fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5l.—per 100, 15s.

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4l., in 100 varieties, or per 100, 10s., in 50 varieties; the stock extends over 30,000, and is very fine and healthy.

CURRANTS—White, Red, and Black, including Black Naples, per 100, 10s., fine.

Fruit and Forest Trees, fine, and equally low, and of the most approved kinds, warranted true.

Kitchen and Flower-garden Seeds, of the best quality, very cheap.

Greenhouse and Stove Plants, a splendid stock, at low prices. Catalogues on application gratis.

Orders (except for Forest Trees), above 5l., will be delivered carriage free, or allowed to London or within 150 miles of the Nurseries.—Address, WILLIAM MAY, Hope Nurseries, Leeming-lane, Bedale, Yorkshire. Post-office orders should be made payable on Bedale to JOHN MAY.

RAILWAY NURSERY, WATFORD; AND NURSERIES, RICKMANSWORTH.

E. R. GREENUS, from his proximity to the Watford station, on the London and North-Western Railway, begs to say that he has an opportunity of executing all orders conferred on him with the utmost dispatch.

E. R. G. has from 2000 to 3000 fine Standard and Dwarf ROSES, of the best and most approved sorts, to dispose of at the most reasonable prices; as also Standard and Dwarf Trained Fruit Trees, strong Standard do. for Orchards, with a collection of fine Evergreens, Flowering Shrubs, Piouses, &c., all of which will remove with excellent fibrous roots, and without the least danger; and the Evergreens with balls of earth attached to them, as, from the nature of his Nursery Grounds, *no large roots* are made, and, consequently, no cutting and amputating them in removal. All sorts of Agricultural and Garden Seeds, of best quality.

N.B. Carriage paid to London, or within 20 miles, on all orders above 2l. Reference required from unknown correspondents.

All letters to be directed to Rickmansworth.

CUT FLOWERS.—Gardeners or others having Cut Flowers to dispose of are requested to communicate with W. H. MAITLAND, Seedsman, 41, Great George-st., Liverpool.

CINERARIA "SEA-NYMPH."

JAMES MACINTYRE, in offering this new CINERARIA to the Nobility, Gentry, and the Trade, begs to state that, in point of novelty, beauty, and symmetry of growth, it is unsurpassed by any of this class of plants sent out for many years, and may be briefly described thus:—Colour pure white, tipped with ultra-marine blue, and flushed with rose; habit, dwarf and robust; a very free bloomer. Its striking peculiarity and beauty consists in the two very distinct colours, forming two distinct rings, the inner one a pure white, and the outer one a rich lively blue, flushed with rose. The white stands boldly out, whilst the rose shading on the outer margin of the blue circle, gives to the whole an ease and elegance not frequently met with.

Plants of the above will be ready for delivery early in March, at 5s. each; and as the stock is limited, early orders are particularly requested, and will be executed in strict rotation. The usual discount to the Trade.

Catalogues of stock cultivated for sale, at the Taunton Nurseries, may be had on application.

Taunton Nurseries, January.

The Gardeners' Chronicle.

*SATURDAY, JANUARY* 25, 1851.

MEETINGS FOR THE ENSUING WEEK.

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|---|---|---|---|---|
| MONDAY, | Jan, | 27 | Entomological (Anniversary) | 8 P.M. |
| | | | British Architects | 8 P.M. |
| | | | Geographical | 8½ P.M. |
| TUESDAY, | — | 28 | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| WEDNESDAY, | — | 29 | Society of Arts | 8 P.M. |
| THURSDAY, | — | 30 | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| FRIDAY, | — | 31 | Royal Institution | 8½ P.M. |
| SATURDAY, | Feb. | 1 | Asiatic | 2 P.M. |
| | | | Medical | 8 P.M. |

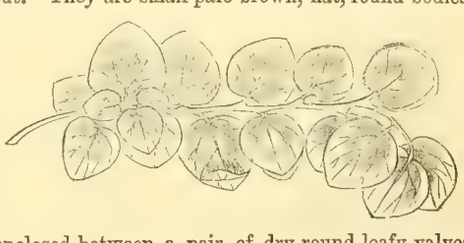
FASHION is a despot that exercises influence everywhere, tyrannising over our gardens as much as our clothes and manners. Right in some things, reasonless in many, fickle in all, she compels her unreluctant votaries to shift and change incessantly their affections, their sympathies, their habits. Food is no more beyond her control than dress; and if there is little resemblance between a modern kitchen and one of the last century, so is the old kitchen-garden equally changed. It must be owned that this is often for the better: but it is by no means clear that it is always so; for change is not the same as improvement, however firmly restless people may believe it to be.

It is now a year since we ventured to take by the hand and reintroduce to the polite world an old discarded favourite whose place had been usurped by things no better than they should be; and we have the satisfaction to know that *Mache* is already in high favour with all persons of good taste, or lovers of easy digestion. To-day we beg permission to present another candidate for readmission into good society.

In the wilds of Siberia and Tartary there grows a plant of noble stature, clothed in purple or green vestments, the glory of those regions, though but of only annual existence, which our forefathers obtained at a period so remote that its introduction is lost in antiquity. Of their gardens it was one of the proudest ornaments and the most useful; by degrees its descendants spread over the allotments of cottagers, till at last, become vulgar in the eyes of fashion, it disappeared so entirely from cultivation that even experienced gardeners have forgotten its very existence; so that when some lingering descendant of the race chances to reappear, a limb is sent to London for a name and history. Some, indeed, profess to know it, and call it Spinach; but this false name only shows yet more plainly how utterly its memory has passed away. It is thus spoken of by a correspondent near Yarmouth:

"I grew it last year for the first time; it is a large sort that will stand two or three months in the summer time before it seeds; it grows from 4 to 6 feet high, with large leaves, more like Cabbage leaves than the old round Spinach. I had the seed from the captain of a trading vessel; only six plants came up, and they supplied the family with Spinach two or three times a week, all May, June, July. It is better flavoured than the common round sort, and does not waste so much in boiling. I sowed it the second week in March. I never saw any till last year, and no one in this part knows anything about it. I think no one ought to be without it who likes Spinach."

The seeds he sent are represented in the annexed cut. They are small pale-brown, flat, round bodies,



enclosed between a pair of dry round leafy valves, growing in ample bunches from all the upper part of the stem. Botanists call the plant *Atriplex hortensis;* the French *Arroche;* our old herbalists *Aurache* and *Orache;* under which latter name it may still be bought of the English seedsmen. In France, indeed, it is in as much request as ever, being there employed both as Spinach and as a means of softening the acidity of Sorrel. The second names given it by the French, *Bonne-Dame* and *Belle-Dame*, evidently point to the usefulness and beauty of the plant.

Its use as Spinach is undoubtedly of great antiquity; it seems in fact to have been the plant thus employed before the present garden Spinach came from the Holy Land. But it was valued not merely as a capital summer pot-herb; it had considerable medical reputation, in common with many other plants that possessed the important quality of doing no harm, if they conferred no benefit.

"Green Orach, bruised," says REMBRANDT DODOENS, through his translator HENRY LYTE, "is very good to be laid upon inflamations and hot swellings. That of the Garden, at the beginning of the swelling or inflamation; and the Wild, at end or going away of the same. With saltpeter, honey, and vinegar, it is laid to cholerike inflamations, called wild fire (because it doth waft and consume the member it is in), and also to the gout. The often use of Orach ingendreth many infirmities, overturneth the stomache, and causeth diverse spots, freckles, or pimples to arise in the face, and all the rest of the body. Also it is hard of digestion, as saith DIOCLES and DIONYSIUS."

In like manner old GERARDE tells us what was thought of it in his days. "ORACH, saith GALEN, is of temperature moist in the second degree, and cold in the first. DIOSCORIDES writeth, that the garden Orach is both moist and cold, and that it is eaten boiled as other Salad herbs are, and that it softeneth and looseth the belly. It consumeth away the swellings of the throat, whether it be laid on raw or sodden. The seed being drunken with mead or honied water, is a remedy against the yellow jaundice. GALEN thinketh that for that cause it hath a clensing quality, and may open the stoppings of the liver."

Without vouching for the truth of what may have been said by GALEN, or DIOSCORIDES, or DIOCLES, or DIONYSIUS, we can answer for the excellence of Orache as a vegetable, whether employed in the

French way or fairly treated by any cook who can boil a Potato. And with this character, and the following extract from LOUDON, we dismiss it.

"The leaves are used as Spinach, and sometimes also the tender stalks. The stalks are good only while the plant is young; but the larger leaves may be picked off in succession throughout the season, leaving the stalks and smaller leaves untouched, by which the latter will increase in size. The Spinach thus procured is very tender, and much esteemed in France. The Orache is raised from seeds, which may be sown early in spring, in drills 2 feet apart, the plants being afterwards thinned out till they are 2 feet distant in the rows. A second sowing, made about the middle of June, will ensure a succession of leaves; but the size and succulency of these will of course depend a good deal on the richness and moisture of the soil. (*Gard. Mag.*, vol. ii., p. 178.) *To save Seed.*—Leave a few plants of the most tender and succulent constitutions to blossom, and they will produce abundance of seeds in August."

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WE published, at the close of last year, a brief account of some experiments now in progress, ON THE ABSORPTION OF NITROGEN by plants from the air; and on the influence of ammonia on vegetation, by M. Ville, which are described in the *Comptes Rendus*. As this is not merely a subject of scientific interest, but also one of great practical importance, we shall again draw attention to M. Ville's experiments, and briefly state some of the points which bear upon the effect in question.

Thirty years ago, the importance of nitrogen as an element of plants, was scarcely known or acknowledged by any one. DAVY, and the chemists who preceded him, spoke of it almost in the light of an accidental impurity; and it is only within the last 20 years that we have heard much about the importance of this substance to plants. Investigations into the nourishment of animals very naturally led to the recognition of nitrogen as an important element of plants, because, as that peculiar gas was found to be a component of most animal substances, and to exist, in considerable quantity, in the flesh and blood of all animals, physiologists soon began to look at plants, as the probable source of this substance, and arrived at the conclusion that vegetable food must be chiefly valuable, in proportion to the quantity of nitrogen which it contained. In fact, there were only two sources whence herbivorous animals could well be supposed to derive nitrogen, and these were, the atmosphere and their vegetable food. Experiment soon showed that such animals could not, by any arrangement, be made to thrive on food containing no nitrogen, even though they were supplied with plenty of fresh air; that, in fact, they could not thrive unless they were fed with vegetable matter containing nitrogen. A few years since, this conclusion was still further confirmed, when it was ascertained by direct chemical analysis, that the substances which exist in the blood of animals, and which are necessary to their growth and to the development of muscle, really and truly exist ready formed in those plants which constitute the food of animals.

The true source of the nitrogen which exists in animals, was, however, only half made out; it was satisfactorily established that though they might, and very possibly did, derive some small portion of it directly from the air, yet that the greater part must be obtained from plants. The next question of course was, whence then do plants derive it? This enquiry is still undecided, though certainly there is a great mass of evidence, all tending to show that like animals they do not absorb nitrogen in the free state, but only in a state of combination, and as a compound already formed by some other agency. Between plants and animals, however, there would seem to be this important distinction, that whilst the latter absorb nitrogen in the form of an organic combination, that is to say as vegetable matter, plants absorb it in the form of an inorganic compound; it being their especial office to combine it with other substances, and so form or elaborate organic matter fit for the nourishment of animals.

The great majority of facts tend to show that plants, though they grow in the free and open air, surrounded therefore with plenty of uncombined nitrogen, absorb little or none of it; but that they require to have it previously combined by some chemical process with another element, either oxygen or hydrogen. The experience of practical men as to the growth of plants, and the influence of soil and climate on their development, and more especially the action of manures, all lead to the conclusion that ammonia and nitric acid, even in minute quantities, exert a very remarkable influence on vegetation, which is healthy and luxurious when they are present, and comparatively sickly and weak if they are altogether excluded. No known practical fact, and no accurate physiological or chemical experiment, has been adduced to bear out the supposition that plants ever directly absorb nitrogen from the air. On the other hand, there are thousands of facts which prove that both ammonia and nitric acid are eagerly absorbed by plants; they grow with remarkable vigour, and, on subsequent analysis such plants are found richer in nitrogen than other plants not so fed. The simple and evident conclusion to which this seems to lead, is, that though it is not proved that plants are wholly unable to absorb any of the free nitrogen of the air, yet, that under all ordinary circumstances, they must derive their nitrogen from some other source; that source being most probably ammonia and nitric acid.

Lengthened and ingenious calculations have been made to ascertain, whether it is possible that plants could obtain from the air and soil a sufficient quantity of ammonia and nitric acid, to supply them with all the nitrogen which they require; but these calculations are all more or less founded upon mere assumption. The fact is, that though it has been known for a considerable time, that the air frequently contains a small quantity of ammonia, yet in consequence of its great volatility, and the facility with which it is absorbed by water, and still more in consequence of the very minute quantity of it which can at any time exist in a given bulk of air, its detection and estimation by chemical means is exceedingly difficult, not to say almost impossible. In many inquiries of this sort, facts may be satisfactorily established by induction, and we may feel tolerably well convinced of their truth, without being able to settle the question beyond all dispute by direct and unexceptionable evidence. There is no doubt whatever that there frequently exists in the atmosphere a very considerable quantity of various foreign matters, which though they are too subtle to be detected by the use of chemical tests, may nevertheless be sometimes shown to be present, and which produce various important effects on the health of animals, and also in other ways. It would be well if the attention of chemists were drawn to this very curious and interesting subject, for there can be no doubt that improved modes of detecting the presence of foreign matters in our air would lead to the most important practical results in a sanitory point of view. The power which steam and vapour generally possesses, of assisting in the evaporation of less volatile substances has been long known, but very little is known of the extent to which this influence extends in nature, or the effects to which it may give rise. Recent experiments have shown that steam is able to carry away, in a state approaching nearly to the form of vapour, the most fixed substances, such as soda, oxide of iron, &c.; and there are others which render it probable that steam is also sometimes able to cause the volatilization of some forms of organic matter. If this should prove to be really the case, it will lead to very interesting inquiries respecting the spread of disease in the air, and the nature of contagion.

Although, however, we have difficulty in obtaining direct evidence of the existence of either ammonia or nitric acid in the atmosphere, yet we are sure it must frequently exist in the air, because we know that all organic matter, when in a state of putrefaction, evolves ammoniacal gas. It is also evolved constantly by the bodies of all living animals, constituting an ingredient of their perspiration; and it is also continually being formed and poured into the atmosphere by the combustion of coal. Again, in the formation of nitre in soils, we have further evidence of the presence of ammonia. When a soil contains potash or some similar base in contact with putrefying animal matters, nitric acid is formed, but in such cases the nitrogen appears to pass through the intermediate state of ammonia; that is to say, that the putrid matters do not at once generate nitric acid, but that they form ammonia, which, in the presence of potash, &c., is in turn converted into nitric acid. In soils which have been manured it is easy to trace the origin of nitric acid, but in those soils which have never been artificially manured in any way, but which continue from time to time to yield fresh crops of nitre by mere exposure to the air, there appears little doubt that the nitric acid thus formed is produced by the action of potash naturally existing in the soil, on ammoniacal vapours which are brought from a distance in the air.

The quantity of nitric acid formed in the soil in many places, particularly in the vicinity of towns, is probably even much larger than is generally supposed. The earth below the pavement of towns, and that surrounding drains even to a very considerable distance, frequently contains traces of nitric acid in combination with lime and potash; and even the water of the surface springs, such as those which generally supply street pumps, are in many cases found to contain small quantities of these salts. There appears, in truth, to be no doubt whatever that a very large quantity of ammonia is constantly being formed and given off into the atmosphere, the greater part of which, however, is brought down again, and spread regularly over the surface of the earth by dew and rains. It has been questioned whether that portion of rain-water which a given number of plants receive and absorb by means of their roots, could contain ammonia enough to supply them with the requisite quantity of nitrogen, and it has been supposed that a heavy rain must of necessity soak far into the soil, and consequently wash away, and remove altogether beyond the reach of the extreme roots a very large proportion of the ammonia thus brought down from the air; that this latter, however, is not the case, has been satisfactorily proved by recent experiments, to which we shall shortly draw attention. Such a calculation is necessarily vague and incomplete; but as far as can be judged, it appears most probable that plants are able to absorb enough nitrogen from the air and soil to supply all their wants, in the forms of nitric acid and ammonia.

It is obvious that this inquiry has a very important direct bearing upon the use and action of manures. It is pretty well ascertained that the two most valuable ingredients of dung, and similar rich manures, are the phosphoric acid and nitrogen which they contain; and it is plain that the quantity of the former which plants are able to take up must depend upon the proportion of it naturally existing in the soil, or artificially added to it. In the case of ammonia, however, it must be different, if the quantity which plants contain is independent of the soil altogether, and depends on the proportion which they are able to collect from that unlimited source, the atmosphere. It is evident that if plants are able to appropriate the nitrogen of the air, our views, respecting the application of manure, must be considerably modified; because the question will no longer be, how to fix ammonia, and how to supply plants with a certain quantity of nitrogen in a state of combination, but rather how to bring plants into that state in which they are best able to appropriate the nitrogen of the air.

Always, therefore, bearing in mind, that it is by no means impossible that plants may absorb a portion of free nitrogen, we must say that probability is much against it. At the same time the inquiry is one of great interest, and well worthy of most careful investigation, but the experiments must be devised with judgment, and carried on with the most scrupulous care, and unwearied attention; for the difficulties which surround such investigations are very numerous, and without constant study some of them would be sure to escape the observer's notice. In all experiments on the growth of plants under glass cases, and in confined portions of air, there are more or less unnatural conditions introduced, which render it very difficult fairly to compare the results obtained, with those which are observed when plants grow under natural circumstances, or in the free and open air. In most plants we observe a superabundance of means; organs are provided more powerful or more abundant than are absolutely necessary to carry on the healthy functions of the plant; instead of merely forming a few seeds, a plant produces hundreds or thousands; and in a great many cases much more organic matter is laid up for the use of each seed, than under any ordinary circumstances the embryo can possibly require. Some seeds contain so abundant a store of food, that even if half of it is destroyed accidentally, or purposely removed, the remainder is sufficient to nourish the embryo, and ensure the growth of a perfect plant. Others again, such as the seeds of fruit trees, are not merely thus amply provided with organic food, but in addition they are furnished with a certain quantity of manure; for the fleshy covering which constitutes the edible part of the fruit, as it decays in the soil, or on the ground when the fruit falls and rots, forms a quantity of rich mould for the roots of the young plant, when the seed subsequently germinates. The beneficial consequences which result from these curious and beautiful provisions are evident throughout the whole vegetable kingdom. Amongst other effects thus produced is the power which plants have of withstanding the influence of various external agencies, and other accidental effects, which would inevitably destroy them if it were not for their great vitality, and the remarkable power which they have of adapting themselves to surrounding circumstances.

This great vitality of plants, which infinitely exceeds that of animals, and the extraordinary way in which plants live and continue to grow, sometimes under the most disadvantageous circumstances, and in the most unnatural situations, is, however, rather unfavourable, in some respects, to experiments on the nutrition of plants. When an animal is starved to a certain point, it will then greedily devour food

which, under ordinary circumstances, it would not touch—a fact which is often illustrated by the introducers of some marvellous new kind of fodder for cattle; but in such cases it is frequently found that though they will eat it when they can get nothing better, yet they derive comparatively little benefit from it; and the fact that they are able to live upon it is no proof that it agrees with them, or can be fairly called a good and wholesome food. In the case of plants all this appears to hold good, but to a far greater extent; for when we take away from them, or diminish their supply of what constitutes their food, or is in any way necessary to their healthy growth, we generally find that they make extraordinary efforts to continue growing, and to struggle on as long as they have a chance. Some of Saussure's experiments well illustrate this, for he found that when certain plants were confined under glass bell jars, shut out from all connection with the atmosphere, and not in any way supplied with gaseous food, they still continued to grow, but they fed upon themselves; the weakest leaves withered and faded, and by their decay furnished carbonic acid, &c., which enabled the stronger young shoots to continue their growth and development. From these, and many other similar facts, we may be led to conclude that, even if it should be proved that under unnatural circumstances plants are able to absorb and appropriate the free nitrogen of the atmosphere, it will not at all follow as a necessary result, that under natural circumstances, they ever do so absorb it. We shall again advert to this subject on a future occasion.

## BRITISH SONG BIRDS.

No. XV.—We may now consider all our preparations for enjoyment "complete;" for I believe very few matters of essential import, connected with an aviary, have escaped notice.

The first thing now to be done, is to make yourself thoroughly acquainted with the natural history of every bird in your possession. You could not do this satisfactorily, unless you had several of the same species; for to judge of all by one, would be manifestly incorrect. Three of each, I think I may conscientiously say, will suffice for your purpose; if you chance to have more, so much the better.

You will find there are many books extant, which profess to treat logically of "British Song Birds;" and I recommend, if you feel so disposed, a perusal of the whole. You will then satisfactorily convince yourself, how totally insufficient they are to teach you any large amount of practical knowledge. They appear to me to be mere servile copies, one from the other.

For several years, I kept a regular "diary" of observations; and I most earnestly advise every possessor of an aviary to do the same thing. They will feel, as I have ever done, fresh sensations of delight every time they refer to their note-book. Truly different indeed will be their own remarks, by comparison with those they have been in the habit of reading in printed books!

You will first note the peculiarity in disposition of each separate inmate; observing, for instance, in whose company the canary and goldfinch are principally found; also the linnet, chaffinch, bullfinch, &c. Certain birds you will find to be of solitary, retired habits—others, gregarious; and many, partial to mixed society. Every day will unfold some new and interesting discovery, and bring to light some Pylades and Orestes vowing eternal friendship for each other, &c.

It is beyond all question, that social intimacies *are* formed in an aviary, and that they are of long continuance. This remark applies as well to male birds, as to those which live together in pairs. The most singular instance of attachment, in illustration of the latter, that I can call to mind, is that of a pied mule canary (a hen), associated with a cock robin. The mutual affection of this out-of-the-way pair was as strong as it was remarkable. The two were never to be found apart. The mule, which I had originally imagined to be a male bird, and purchased as such, in due course laid three eggs. They were artfully concealed behind a part of the lining of the wall, in some dried chickweed. I removed these eggs as quickly as possible, and placed them under a hen canary, which was just beginning to sit, in a breeding cage.

There being a wise and universal law in nature, that no mules, males or females, can reproduce their own species, I felt quite confident in my own mind of what must be the necessary result with regard to the hatching of the eggs. There was, of course, no embryon—consequently, no offspring. I merely experimented in this one extraordinary instance, to satisfy some amateurs, who were morbidly sanguine of a contrary issue.

It is worthy of notice, that immediately on the removal of the eggs from their hiding-place, both the robin and the mule grew melancholy. Their affection was, if possible, redoubled; but, sick at heart at the frustration of their fondest hopes, they pined gradually away, and found a resting-place in the silent grave. "In their deaths they were not divided:" I placed them in a small deal box, and buried them beneath the same tomb.

When you have carefully studied the dispositions and habits of the hard-billed birds, you will find that in the soft-billed, you have yet more to admire. These little creatures, more particularly those known as the "Warblers," have all of them a soft, silky, plumage; and are, in point of substance, "light as air." Hence their sleekness, trimness, and fair symmetrical proportions. The time to view them in their glory is in the morning, while feeding; or when the sun streams into the aviary, through the windows. They may then be seen basking in the sun's rays, ranged on one of the long perches in the front window; or lying stretched out at full length on the margin of the rippling fountain.

The "Warblers" are also remarkably fond of sitting opposite the looking-glasses; before which they habitually make their toilet, and perform some excruciatingly-droll antics. If ever birds may be said to "think," it is at such seasons as these. It is long before they can bring themselves to believe that the reflection of their own person is not in reality another bird. Many are the assaults committed on the face of the glass in consequence!

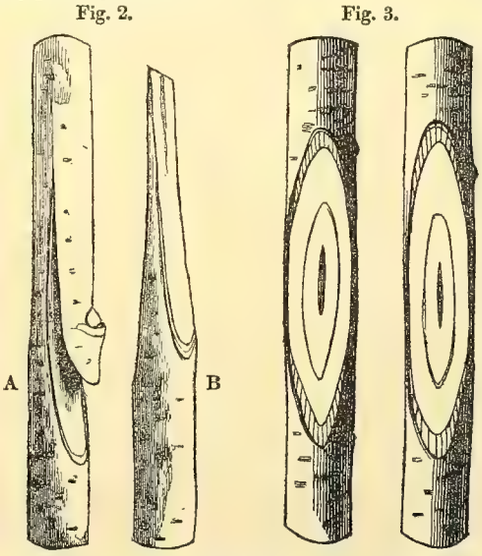
To get these little rogues, one and all, to be your associates, you need only provide yourself with any of the luxuries in which they delight—such as a few woodlice, ants, spiders, mealworms, or earwigs. Your advent will then be heralded with a rapturous song. One or two of these savory *morceaux*, kindly presented with the hand, will get rid of all *mauvaise honte* on their part, and cause you to be "A 1" in the estimation of the colony. *William Kidd, New-road, Hammersmith.*

## GRAFTING.

No. IV.—Inarching on Stems or on Branches; *fig.* 2 (*Greffe Monceau of Thouin*).—This mode of inarching may be employed for the same purposes as that of the former, or Michaux inarching; and it answers better for the propagation of evergreen plants and others; but in all cases in which it is adopted, it is better to operate with wood of one or two years old, and that the portions joined should be of the same age and thickness.

*Operation* (*see fig.* 2.)—Prepare beforehand a stock, of which the dimensions shall be regulated by the place where we would wish to join it to an allied tree, of the same thickness; make in the latter a cleft through the substance of the young wood; it should be made from below upwards, and prolonged even to the medullary sheath, dividing it into two nearly equal parts (see letter A); then the other (letter B), is cut long wedge-shaped, for being inserted into the cleft, so as the whole may perfectly coincide.

Fig. 2. Fig. 3.




When we wish to employ this mode of inarching for propagating rare plants, difficult to unite by other means, we rear the stock in a pot to the height which the plant to be inarched may require. When well taken, the inarched portion is detached from the parent plant, to form a distinct individual, depending entirely on the stock, which has no other merit than that of being vigorous, and of belonging to the same family as the species we wish to increase.*

Hymeneal Inarching (*Greffe Hymen*); *fig.* 3.—This may be employed for the same purposes as the preceding; if it be intended to form *kiosks*, pavilions, or arbours in gardens, or elsewhere, we may unite three or four trees. I have inarched some in this way, under which a coach could pass in every direction. It may be practised more simply with two subjects, such as are represented in the engraving, and in this way they may be used instead of posts for rural gates or doors

*Operation.*—Prepare two plants or trees of the same height and thickness; bring their tops together at points where they readily touch, in consequence of a slight bending; cut from each of them at this place a longitudinal slice, of equal dimensions, deepest in the middle, where it should raise a small portion of the medullary sheath; thus prepared, the two cut surfaces are united, so as to mutually cover each other, and they are then firmly secured by means of ligatures, &c. If the parts are of the thickness of the little finger, and this should be the maximum, their consolidation would be aided by a wire nail, driven through the junction. If the tops of the respective trees thus inarched are intended to form an aggregation, some precautions are necessary for preserving an equilibrium in their vegetation. In employing this mode for the propagation of rare plants, these are suited with young stocks of kindred species, reared in pots, &c., and as soon as the organic union is well-formed, the head of the stock is cut off a little above the union; the sort inarched upon it should be separated from the stool or parent plant, by the proceeding indicated in treating of the previously-explained mode of inarching. *Translated from the French of D'Albret.*

* This separation or *severage* is often prepared for by a notch, or, what is better, an annular cut, which renders the final separation less hazardous.

## MARKET GARDENING ROUND LONDON.

No. IV. Carrots.—The Early Horn is the only kind employed. It is sown in frames and hooped beds in November and January. The plants are thinned out to 4 inches apart. Long Carrots for winter use are grown largely in the red sandy soil in the lower parts of Surrey as well as in Bedfordshire, &c.

Early Turnips.—The Early Stone or Dutch being in great demand in spring, various ways of producing it are practised, such as growing it in frames; but the best plan is to raise it like Potatoes, in hooped beds, *i. e.*, in trenches dug out and filled with 2 feet of hot dung. Sow in February, hoop and cover with straw, and expose the plants daily, the quality of a Turnip depends much upon quick growth and plenty of moisture. Late Turnips are not cultivated upon the dear land about London, they generally come from 10 or 12 miles off. The reason why a farmer cannot raise Turnips like a gardener is owing to the poverty of the land; so small a seed wants immediate and available nourishment the moment it vegetates. It is then able to grow away from the fly, and if the seed was mixed with Irish peat charcoal it would greatly assist in effecting this. Early and forced Turnips fetch from 2*d.* to 3*d.* apiece in Covent Garden market.

Onions.—The ground for the main crop is dressed with strong dung, such as night-soil or cow-manure. The seed for this crop is sown in February or the 1st of March, in beds 5 feet wide, the soil from the alleys being thrown on to cover the seed. The beds are then raked, and a light wooden roller passed over them. When up, small two-inch hoes are sent through them, which is all the labour they receive, the ground being so clear of insects, owing to its being often turned over. Market gardeners seldom fail to obtain a good crop of Onions. Where insects occur, however, a good dose of salt and soot sown with the crop will kill them. Another way of managing Onions is to sow about the middle of August, to allow them to stand in beds all the winter, and to plant them out on well prepared land 4 inches apart in the rows, and 6 inches row from row. A third plan is to save all the smallest bulbs, and plant them out in February, the same distance apart as the last.

Horse-Radish.—The root is like that of Seakale, as respects propagation; the whole roots are thickly studded over with eyes, and in order to make a new plantation all that is needed is to plant small pieces of them, or the tops cut off, in the bottom of a trench 1 foot apart each way, and about 15 inches deep. Horse-Radish is generally planted in February. When it comes up all the weakest shoots are pulled up, leaving only one; and should any more make their appearance afterwards, they are destroyed by the hoe. When taking up time arrives in autumn they are trenched up, cutting them down to about a foot or more with the spade. They are knifed after the mould is moved. The roots are sorted into best and second-best. The best are tied into bundles of 12 heads or more for market; the ground is then well manured with rotten cowdung, and the roots are again left to come up for another year's crop. The best ground for Horse-Radish is the "Jerusalem level" between London-bridge and Greenwich, and some parts of Battersea, where the river Thames, in days of yore, had thrown up a deep deposit. This ground also produces the best Seakale; hot dug ground or clay renders it hard and indigestible.

Winter Radishes.—These are sown from the first to the last week in December, choosing as warm ground for the purpose as possible; but acres of them may be seen in very exposed places. The ground being prepared the seed is sown broadcast. The alleys are marked out, and the mould from them is thrown over the seed. A wooden rake is then used to make all level; no iron rakes are employed in market gardens. After sowing, straw which has been previously shaken out of the London stable manure, is put over the beds 2 or 3 inches in thickness. When the plants come up, which depends upon the winter, the straw is removed every day and put on every night until all danger from frost is past; it takes 5° to hurt a Radish after it is half-grown. When off, the ground is again dug, for French Beans, or Vegetable Marrows, &c. *James Cuthill, Camberwell.*

## Home Correspondence.

*Some Facts about the action of Cold on Plants.*—Facts, however trivial in themselves individually, become in the aggregate of immense value in building up a theory, or illustrating a practice; for we must recollect that a theory is as often the child of experience, as that practice is illustrated by it, although such may not appear evident at the moment. The action of cold on plants is of vital importance to the practical gardener, as well as interesting to the natural philosopher. The relation of temperature to the healthy development of vegetable life is as yet but imperfectly understood. Every day, however, adds useful knowledge on this head to our acquired stock. In the early spring of 1846, a quantity of Geraniums and other soft-wooded

plants were despatched by railway, at the station of which they arrived safely enough, but having to be conveyed some 20 miles by waggon on a frosty night, and not being properly protected (although the baskets containing them were matted in the ordinary way) they were completely frozen through when they arrived at their destination, by daylight in the morning. So much were they frozen, that the succulent tops, for several inches, were apparently masses of ice, and nearly the whole of the leaves had suffered more or less. On the extent of the damage being known, the whole of the plants were quickly removed to a dark cellar; and, to make "assurance doubly sure," a covering of mats, supported by a temporary frame-work, was thrown over them. Water, only removed from the freezing temperature, was freely applied to the foliage, and no light admitted for 24 hours. On removing them, the damage they had sustained was but nominal. Scarcely a leaf had suffered, except such as had been bruised in the unpacking. Every leaf, or part of a leaf so damaged, had to be removed. Another instance:—On a festive night, in mid-winter, the person in charge of a conservatory forgetting, or by procrastination omitting to apply the necessary artificial temperature, to expel the frost (for it had set in severe rather unexpectedly) found, on his entering the house at 4 o'clock in the morning, that the tender plants were much frozen. He applied fire to the boiler, raised the temperature a degree or two above freezing, and then liberally applied cold water with the syringe. The result was that nothing beyond a few leaves on a stray shoot or so evinced any damage, and by sunrise all was as promising as could be wished; so completely were the plants recovered, that the circumstances would never have been reported in the *Chronicle* had not the delinquent revealed the mishap after all danger of detection was past. One more:—A house of Geraniums was penetrated by frost, the plants were much frozen, and the frost was on the increase when the circumstance became known in the morning. Cold water was in this case applied, but without the precaution of raising the temperature above freezing point. The result of course was that the water, as soon as it fell on the foliage, became ice, till the plant looked encased in candied sugar. The more water the greater evil. This detected, a fire was lighted, and the necessary temperature acquired, when the result was all that could be wished. Sunlight was prevented reaching the plants till a recirculation of the fluids had taken place. In all similar cases light should, if possible, be excluded; in fact, every incentive to a rapid reaction of the vital powers should be applied only in the most limited degree, increasing stimuli with the requirements of the plants retarding rather than accelerating vital action. As regards the action of light on plants, a wide field is open to the ingenious experimentalist. Let a given number of plants be frozen; admit to some light in its ordinary condition, from others exclude the chemical ray; from more, both the chemical and heating ray; to others only admit the luminous, or vary its application in the many ways which will occur to the chemist. The result must be of importance alike to the gardener or the pure man of science. *G. L.*

*Hint to Brickmakers.*—Ever since the repeal of the brick duties, I have been watching in vain your advertising columns, in the hope that some spirited manufacturer would provide sundry useful and ornamental matters required in gardens. What an excellent material would baked earth be for the architectural balustrades of garden terraces in various styles, especially that which is now so common, the Elizabethan, solid, cheap, and in good taste. How often are we in want of good pedestals to raise up choice plants and flowers to the eye in our garden walks, and what use might we not make of well-designed borderings, curved and straight, to enclose and contrast with the glowing masses of our flower beds in the summer? We all know that some such articles are offered in artificial stone, iron, and zinc; but if we are guided by the lamp of truth, so ably held forth by Mr. Ruskin, we shall turn aside from sham stone, the treachery of zinc, and the harshness and want of fulness of iron. Real carved stone is indeed admirable, but too dear for most people, particularly where there is no stone in the natural strata near at hand. There are indeed some good garden seats, in the manner of the Chinese perforated squares, made by Minton, in the Potteries; and there have been some elegant cornices, and other architectural ornaments produced by some patentees at Tunstall; but the wants of gardens have not been responded to; and there yet remains unoccupied an extensive field of speculation to adapt terra-cotta to horticultural purposes. *W. H. B., Uckfield.* [We quite agree with our correspondent. In fact, the repeal of the brick duties has hardly been felt as yet.]

*Earthing up Vegetables.*—Mr. Cuthill, in his very interesting and instructive papers on "Market Gardening round London," tells us that Cabbage plants "are never earthed up—a bad practice for almost any crop." The principal use of moulding up to growing plants is to steady them, and where the soil is light and the situation is exposed to strong winds, that process is absolutely necessary; at least, I find it so, and have never observed it in any way injurious to the Cabbage tribe. Late Broccoli I mould up with a vengeance, my practice being to take out every row in autumn and lay them down in the usual way; those that remain, being then 4 feet apart, have the soil from between the rows banked up (like earthing Celery), so as to cover the whole of the stems up to the lower leaves, which enables the plants to stand erect even in the roughest weather, and also protects them in a considerable degree from the influence of severe frosts. When the stalks are dug up in spring, many of them will have pushed a number of fibrous roots into the soil that surrounded them. I may here mention—for the benefit perhaps of some who, like myself, never have their eyes gladdened by the sight of a two-horse load of dung "emptied down (as if it were a barrowful) for every 30 feet" of ground—that these said Broccoli stalks make a capital dressing for Potatoes when chopped to pieces and dug in as manure. In poor sandy soil I have found green manure of this kind more beneficial to Potatoes than a dressing of the half-decayed leaves sparingly adulterated with stable litter, which many gardeners are obliged to substitute for dung. *J. B. W.*

*Covering or Mulching the Soil in Summer.*—You may have observed the practice which prevails in some gardens of covering the earth in summer with moss or stable litter. I happened lately to be in company where the propriety of this practice was discussed, and I now trouble you with some of the arguments that were urged for and against its use. One person (Mr. A.) asserted that mulching or covering the earth in summer was good practice, justified by experience, and based on sound principles, because, as he alleged, the temperature of the ground was thereby more uniformly maintained, evaporation lessened, and the plants benefited by the gradual decomposition of the covering. He further stated, that plants received the greater part of their nourishment from the atmosphere, and that they are less indebted to the earth for their nourishment than is commonly supposed; and sustained his argument by stating that Wheat, or other seeds, placed on glass, and covered with straw, vegetated luxuriantly. On the contrary, (Mr. B.) asserted that covering the ground in summer was bad both in practice and principle, because it was, in that case, impossible to stir the earth, and keep it open to the solar and atmospheric influences, which invigorate the roots, and consequently benefit the the plants. He, moreover, observed, that these coverings in summer kept the roots of plants in a cooler state than their tops, and thereby interrupted the equable flow of sap, from which cause both the flowers and fruit were often damaged. He also remarked, if plants are so little indebted to the earth for their nourishment (as Mr. A. had alleged), why then were alternations of crops necessary? For if plants mainly received their support from the atmosphere, it would, in that case, be unnecessary to remove them into fresh ground, as the atmosphere might supply their exigencies in one place as well as in another, an assumption, to which world-wide experience is opposed. A learned physician, who was one of the company, here startled us, by saying that by covering the earth, electric action was promoted, which is always beneficial to plants. Now, in these discrepancies of opinion, and "oppositions of science, falsely so called," we, "simple" amateurs, who look up to you as our "guide," respectfully request you to inform us which is the true philosophy and right practice in this case. *An Inquirer.* [We refer you to what we have said in a recent Leading Article on this point.]

*Fruit Tree Borders*—As concreting the foundation and surface of the borders of fruit trees appears to be recommended on good authority, I think the object would be better attained in point of ease, economy, and appearance, by the use of either slate, zinc, or galvanised iron, and drain pipes for the admission of air. To concrete the foundation and surface is more expensive than appears at first sight, on account of the time and labour required; and either slate, or sheet zinc, or galvanised iron, laid on the surface could be easily moved, and would not look unsightly. In some districts slabs of slate would cost very little, in others zinc or iron would not now be expensive. *H. T., Bristol.*

"*Packets*" *of seeds.*—The number of garden and flower-seed purchasers is increasing every year. Railways, and the general advance of civilisation, have multiplied the cultivators of both culinary and ornamental plants. Amateur gardeners, in the lower ranks especially, are appearing on every side. Now it is of consequence to such, and to many others, that they be able to purchase small quantities of seeds. But in the seed lists, below a quarter of an ounce, or a quarter of a pint, no weight or measure is to be found but the unsatisfactory quantity, "packet." A "packet" means anything, from a pinch to an eighth of an ounce. Now, I conceive that it would be useful to the public, and not unprofitable to the seed-sellers, to remove the word packet entirely from their lists. Why not, in weights, use the avoirdupoise drachm? And if less than a sixteenth of an ounce is sold, let there be half and quarter drachms. But, perhaps the seed merchants will object to the trouble of weighing such small quantities. Let them then imitate apothecaries in their prescriptions, and have recourse to fluid ounces and fluid drachms. The table for the latter will stand thus:

| pint | f. oz. | f. dr. |
|---|---|---|
| 1 | = 16 | = 256 |
| | 1 | = 16 |

Now a fluid drachm will be less than half a teaspoonful, and, of course, no farther division will be necessary. If complaints are made of the expense of attending to such a quantity of small parcels, let the seedsman charge so much per dozen for them beyond the cost of the seeds. The abolition of "packets" would be especially profitable to the principal seed merchants; for one of their packets, after it has travelled an hour by railway is divided by the country dealer into three or four "packets" with no diminution of price. *Sigma.*

*Royal Botanic Garden, Edinburgh.*—Having observed Mr. Balfour's letter, in your last volume, respecting the liberality of admission to this Botanic Garden, I beg to state the following fact. Being in Edinburgh, with my family, the summer before last, I took them to the Botanic Garden. I asked for admission to the houses and was refused, as they were not open without an order, except on Saturdays. I was referred to the curator's house in the garden, but there I could not procure an order, and we did not see them. It is, I believe, a condition on which a grant of public money for the support of those gardens is made, that they shall be open daily to the public. If so, we do not thank the curator much for that. But when we come to the part under his control, and find that the houses are only open to the public for three hours in winter and four hours in summer one day in the week, and that strangers are treated as I have above stated, we, on this side of the Tweed, cannot give him credit for much liberality, however we may admire his admirable treatment of plants, if we have an opportunity of visiting his garden between 12 and 4 on Saturdays—no easy matter for tourists. I have seen Heaths and Stephanotus better managed in those houses than anywhere else that I can remember; but if the public pay for their culture, they ought, I think, to be allowed to see them. *A. L. M., Lincoln.* [We insert this and similar letters because we agree in opinion with the writer, that what the public pays for should be freely open to the public at all reasonable times.]

*The Late Lieutenant Waghorn.*—On mentioning the deaths of distinguished men during the year 1850, a morning journal mentioned "Poor Waghorn!" The sound of the name should make Englishmen blush, and cause the ears of those in authority, both in the British Government and the Company's service, to tingle when they think of the manner in which Lieutenant Waghorn was treated whilst living, and how little his family have been considered now he is dead. If we turn to the history of men who have benefited their country by their talents, industry, and perseverance, we shall find few who have greater claims on our gratitude than Waghorn. It is quite unnecessary to enter into a detailed account of his exertions on behalf of his fellow-creatures. It will be sufficient to state that he brought India within six weeks of England. Surely all classes having friends in India must value the advantage of a quick and certain periodical communication with the East. Fathers, mothers, husbands, wives, brothers, and sisters, should vie with each other in paying a tardy tribute to the memory of the unfortunate and ill-used Waghorn, by immediately entering into a subscription for the purpose of placing his family above want. Horticulturists must not be omitted in the list of those who have been gainers by shortening the passage to India. Seeds and plants arrive in half the time they used to do, and are of course in better condition than when their journey occupied four or five months, and sometimes even more. I shall be happy to put my name down for 1*l.* 1*s.*, and I trust the love of justice so characteristic of Englishmen will induce many to follow my example. *Falcon.*

*Preserving Timber.*—Observing that an enquiry has been instituted upon the influence of paint upon out-door work, I am quite of opinion, as now applied, it in many instances is useless, and in many others injurious. Every description of timber work will last longer without paint than with it, unless the painting is done upon one side only. If an oak gate, for instance, however well seasoned by exposure previously, is kept constantly painted, it will become rotten, especially at the joints, laps, and mortices. Upon my farm the outer gates were kept painted, they are every one decayed; those put down at the same time not painted are perfectly sound. The black Huntingdon Willow will make paling almost as durable as Oak itself, if not painted; but if painted, soon becomes rotten. Laths made from this Willow are more durable than Fir, or even Oak, as rough cast laths. I can point out places where it has stood upwards of 40 years and is still sound. Stockholm tar is better than paint upon farm buildings and fences, and there coal tar will suffice. But if paint is applied it hermetically closes the external pores of the wood, and the fixed air acts internally (especially if assisted by moisture entering at the joints, or by having communication with the earth) exactly as dry rot. This is not the case with resinous woods. Paint preserves them greatly, and therefore all Fir sashes and framework of every description should be kept well painted. Elm is very liable to decay, but as weather-boarding is superior to Fir; and if kept tarred with Stockholm tar, will last a century. Oak gates, if painted only on one side, would be benefited, and the same of Oak weather boarding would be benefited. The main point to be looked to is, to paint the tenons before they are put into the mortices, or by tarring them the same object will be attained; and whether painted or tarred, or not, afterwards, the parts requiring preservation will be preserved. A friend of mine used to say, painting an Oak gate was like painting an old woman's face—it might make her handsomer, but could not make her younger. *Robert Baker, Writtle.*——Nothing can be more erroneous than to suppose that the application of tar is injurious to wood. If applied to "sappy" wood, or even to dry wood during damp weather, the effect produced will certainly not be beneficial, but will, in fact, be injurious, as tending to cause rot by shutting up damp within the pores of the timber, and excluding the air. I would recommend that all wood intended to be tarred, be allowed to become thoroughly dry before any tar or paint be applied, even if it takes a year or two to become

so, which it will do if green wood is used, as is often the case. A fine dry day, after a week or ten days of continuous warm weather, should be chosen for applying the tar, which should be used in as hot a state as possible. The result will be that the hot tar will be absorbed by the wood with its then open pores, like a sponge, and once there, wet cannot effect an entrance. Two coats of the following mixture properly applied, will last 10 or twelve years. Take two-thirds gas tar and one-third Stockholm tar, and after boiling them well, apply the mixture while in that state. Dealers in paints and anti-corrosives may say what they please, but I have proved that for the preservation of wood or iron, there is nothing equal to the above when well managed. My reason for mixing the two kinds of tar is, that gas tar, which is of a dry nature, but possessing a body, may be softened by the more oily Stockholm tar which wants substance. I mentioned in the *Chronicle* some time ago, that I tried the above plan for preserving iron hurdles now about 11 years since, and on examining some of them the other day, I found them still perfect. *G. F.*

*The "Observations upon Muling among Plants,"* in the last part of the "Journal of the Horticultural Society," have reminded me of a curious instance of cross-breeding which once came under my notice. A few flowers of the Chinese Azalea variegata (which is a mere variety of A. lateritia) were promiscuously dusted with the pollen of American Azaleas, Rhododendrons, and several varieties of Azalea indica, which happened to be in bloom at the time. The flowers so fertilised produced seeds, from which several plants were raised; but the constitution of them proved so extremely tender that, although I tried various methods of treatment, I found it impossible to make them thrive; and, after lingering in a weak state for several years, they all ultimately died. Some of these plants were so very different from their mother as to lead me to suppose that their male parent might have been either the Pontic Rhododendron or an American Azalea; for their foliage was much like that of some of the small-leaved Rhododendrons, and a flower-bud which formed on one plant was nearly as prominent as a bud of R. ferrugineum or hirsutum. This experiment, although conducted quite at hap hazard, seems to indicate the possibility of obtaining a distinct race of Azaleas, which, if amenable to culture, would no doubt be a valuable acquisition to our gardens. At any rate, it may be worth the while of professed hybridists to try the experiment. *J. B. W.*

*Rain.*—The following amount has fallen during these last six years at Bognor:

| | 1845. | 1846. | 1847. | 1848. | 1849. | 1850. |
|---|---|---|---|---|---|---|
| | In. | In. | In. | In. | In. | In. |
| January ... ... | 2.54 | 3.92 | 1.73 | 2 10 | 2.11 | 1.67 |
| February ... ... | 2 02 | 1.68 | 1 85 | 4.21 | 2.79 | 1.55 |
| March ... ... | 0.89 | 2.57 | 1.04 | 3.42 | 0 48 | 1.47 |
| April ... ... ... | 1.32 | 2.06 | 1.04 | 3.29 | 3 20 | 3.17 |
| May ... ... ... | 3.21 | 1.84 | 2.10 | 0.22 | 2.80 | 2 49 |
| June ... ... ... | 1.12 | 1 01 | 1.34 | 4.75 | 1.35 | 2.05 |
| July ... ... ... | 2.19 | 1.79 | 0.77 | 3.19 | 1.74 | 2 32 |
| August ... ... . | 2.54 | 4.18 | 1 37 | 4.53 | 0.31 | 2.94 |
| September ... ... | 2.63 | 3 06 | 1.32 | 2.10 | 2.94 | 2.52 |
| October ... ... .. | 2.41 | 6 31 | 2 37 | 4.51 | 3 49 | 1.93 |
| November ... ... | 3.43 | 2.12 | 1.57 | 1 65 | 1.20 | 3.52 |
| December ... ... | 2.90 | 1 80 | 3.88 | 3.73 | 2.90 | 2.10 |
| | 27.20 | 32.64 | 20 38 | 37 20 | 25.31 | 27.73 |

It is perhaps worthy of mention that this place is within 250 yards of the sea, and that this part of Sussex is very level, being about 10 miles from the Downs. *J. Graham, Bersted Lodge, Bognor.*——The following is the quantity which fell at Carlesgill, in the parish of Westerkirk, Dumfries-shire in 1850:

| | | | |
|---|---|---|---|
| Jan. ... ... ... | 3·40 | Brought over ... | 31·62 |
| Feb. ... ... ... | 10 38 | Aug. ... ... ... | 8·98 |
| March ... ... ... | 1·38 | Sept. ... ... ... | 2·53 |
| April ... ... ... | 5·59 | Oct. ... ... ... | 3·39 |
| May ... ... ... | 2·93 | Nov. ... ... ... | 10·67 |
| June ... ... ... | 4·34 | Dec. ... ... ... | 8·21 |
| July ... ... ... | 3·60 | | 65·40 |
| Carried forward ... | 31·62 | | |

Average fall for the last eight years, 57.89. Carlesgill is 24 miles direct north from Carlisle, 300 feet above the sea, and surrounded by steep hills, from 9 to 1200 feet high. April 20th, first swallow seen. 30th, cuckoo heard. May 5, ground deeply covered with snow, which fell from before daylight till 3 P.M. 7th, at 4·20 A.M., thermometer at 26°. 15, hoar-frost, and ice on the pools. June 16, hoar-frost early this morning. Aug. 20th, Potato shaws blackened by frost, growth consequently checked. 27th, 1·40 in. of rain fell in eight hours. Nov. 20 and 25, barometer at 27·85. 29th, at 8½ A.M., thermometer at 21°. N.B.—The barometer has been of very little use since the beginning of November, often standing comfortably at "fair," whilst it rained heavily. At this moment it is 29·65, though there has been a gale of wind, and rained for 16 hours at a time. *J. L.*

## Societies.

LINNEAN, *Jan.* 21.—W. YARRELL, Esq., V.P., in the chair. Mr. Gould exhibited a drawing, the size of life, of a new and very extraordinary bird, belonging to a genus and species entirely new, and which he had called Balæniceps Rex. It is an inhabitant of the interior of South Africa, and has the head and bill of a pelican, and the feet and legs of a crane. It stands four feet in height, and its principal food consists of young alligators. The bill is not so large, but stronger than that of the pelican, and its feet are not webbed.—A memoir was read from Joseph Woods, Esq., on the various forms of Salicornia, accompanied with additional notes by Mr. Richard Kippist, curator of the Society. The author commented on the varieties and sub-varieties of the species of the genus Salicornia, more especially the British species, S. herbacea. He proposed to make a new species, S. lignosa; and was disposed to regard the variety of herbacea, S. procumbens, as a distinct species. He questioned whether S. radicans was specifically distinct from S. herbacea. A species found in the South of France, with tubercled seeds, he proposed to call S. megastachya. This plant was the type of Moquin Tandon's genus Arthrocnemum. The seeds of the true Salicorniæ, according to Mr. Kippist, are covered with curved simple hairs, whilst the embryo is conduplicate and incumbent, and the seed exalbuminous. In Arthrocnemum, the testa of the seed is crustaceous: the embryo is only slightly curved, and lies in the midst of albumen. The paper was illustrated with drawings of the seeds, and dried specimens of the various species, with their seeds.—The Earl of Derby presented to the Society a series of drawings of the living animals at Knowsley Park, by Mr. Waterhouse Hawkins. These drawings were beautifully executed, and consisted principally of species of Ruminantia and Solidungulate Pachyderms. We were sorry to observe that the binder had carelessly injured several of the plates, and cut off the names. J. W. Bryans, Esq., was elected a Fellow of the Society.

BOTANICAL OF EDINBURGH, *Jan.* 9.—The President in the chair. The following papers were read:—1. Botanical Notes of a visit to Schleswig-Holstein, in August, 1850, by Mr. W. L. Lindsay. 2. On the Chemical Composition of Cytisus Laburnum, Euphorbia officinarum, Lunaria biennis, and Bryum ligulatum. By Mr. R. Smith. 3. Biographical Notice of the Rev. Dr. Rottler. By Dr. Cleghorn. The author had looked in vain for any memoir of the venerable Rottler, Danish missionary at Tranquebar, who formed one of the little knot of early botanists who searched the plains of Southern India, leaving comparatively little on the eastern coast for subsequent discovery, and he considered it a duty to draw attention to some MSS. which had fallen into his possession, giving fuller particulars than had yet appeared of this amiable and illustrious man. He stated that Dr. Rottler had been engaged by the English Government, in 1796, to make a tour in Ceylon, his acquaintance with the native language and his knowledge of botany enabling him to collect much valuable information after the island was captured from the Dutch. This venerable man, after attaining the age of 87 years, which few reach in India, died at Madras, in 1836, having devoted upwards of 60 years of his life to mission work. Dr. Cleghorn exhibited a drawing of the Rottleria tinctoria, named by Roxburgh in honour of his friend Rottler.—Mr. M'Nab exhibited specimens from the Botanic Garden, of Colquhounia vestita, which had been raised from seeds received in January, 1850, from Dr. Jameson, Saharunpore, also specimens of Stylosanthes cærulea, a leguminous plant from Venezuela, raised from seeds communicated by Mr. Buist, nurseryman in Philadelphia. He likewise exhibited leaves of a peculiar variety of Ivy, sent to him by Mr. Machray, from Doneraile, near Cork, and which it was proposed to name the Doneraile Ivy. Dr. Balfour exhibited a specimen of peat from Cantyre, received from the Duke of Argyll, which was composed of leaves of trees and shrubs in a good state of preservation. As the examination of the peat was not completed, Dr. B. deferred a notice of the plants composing it, until next meeting. Six gentlemen were elected fellows.

## Miscellaneous.

*The Scarlet Geranium at Sea.*—In the year 1825 I sailed for America in a ship conveying emigrants to Canada, all of them humble people from a rural district, to whom the inside of a ship or the waves of the sea were as strange objects as a sight of the man in the moon would have been, or a slice of the green cheese of which, according to nursery traditions, it is composed. Fine hearty sturdy country people they were, as rich in children as they were poor in pocket. Most of them had connexions in the land they were going to; but beyond a belief that there were no taxes in America, and consequently there could be no want, their ideas on the subject were vague enough. It was an amusing sight to an unreflecting young fellow, as I then was, to see their bits of furniture brought on board, the old carved chests containing their wardrobes, their various cooking utensils, and the little things with which they could not part, because "they had had them so long." Amongst these were various birds, a cat or two, and a dog; one little girl had a field-mouse in a cage; and a nice matronly woman had a Scarlet Geranium. Now my mother had been fond of Geraniums, and she had often permitted me when a child to water them as they stood near a spot where she was engaged with her household duties; so that it was like an old acquaintance, this said Geranium, in its green-painted tub. Its owner had been repeatedly told "it would die" on the voyage. "Never mind, then; let it die, so long as it dies with me," was her reply, as she fastened it up in a corner of the rude deck on which these poor emigrants were to live for seven long weeks. And so, with a strong breeze and a flowing sheet, we left the harbour together. The fair wind with which we sailed soon shifted into an adverse quarter, and off the coast of Scotland (for we were going north about), it became a dead *roser*, with all the usual amount of miseries. To a set of poor country folk, what can exceed the miseries of the temporary lower deck of a collier converted into an emigrant ship, hatches battened down to keep out the washing seas or heavy rain, foul air, sea-sickness? Miseries indeed! The word as understood when applied to felons in gaol, or paupers in a workhouse ashore, conveys no conception of the wretchedness in question It was soon found of no use to contend with the violence of the elements; so, when things were at the worst, the captain ordered the helm to be put up, and we made a fair wind of it by running to the south. As soon as the ship was fairly before the wind, the hatches were unbattened, light and air were admitted, and attempt was made to get things snug. As a sailor-boy, part of this pleasing duty fell to my lot; and well do I remember the thoughts of my comfortable home which were awakened when, amidst the desperate confusion of that lower deck, the old Geranium caught my eye. It had flowers on when it came on board; they had soon fallen off; day by day it sickened and languished; the colour went little by little out of its leaves; and then they dropped off altogether, and were succeeded by smaller and feebler ones, till at last all appearance of life had entirely vanished. Still it was kept. It had flourished for years in the cottage-window of its owners, which looked out upon pleasant green fields. That cottage and those fields, now tenanted and tilled by others, still lived in their recollection, and were associated, no doubt, with the plant in question. And so it went with us; crossed the wild dark ocean, accompanied us up St. Lawrence, and there we parted, for it went ashore with its owners. Yet I saw it once again; for being on shore upon some duty, I went upon Goudie's Wharf, where I found a family group sitting upon their effects preparatory to embarkation up the river in a steam-boat. They were part of our emigrant passengers. And standing by the side of their bedding and boxes was my old acquaintance, the Scarlet Geranium—dead, dead, looking as hopeless and miserable as the unhappy exiles themselves. But if, as I have little doubt, they have long ere this made for themselves a happy and independent home in the western solitudes, it may be hoped that with the Scarlet Geranium they did not lose the last link which bound their affections to their fatherland. *The Florist, Fruitist, and Garden Miscellany, for Jan.* 1851.

*Ripe Raspberries in January.*—J. Matthews, Esq., of Frogmore, near Kingsbridge, has a quantity of Raspberries in his garden; a proof of the extraordinary mildness of the season.—*Plymouth Herald.*

*The Ma-an-ga Rose.*—Knowing the interest you feel in the science of Horticulture, I have taken the liberty of inclosing a specimen of wild double Multiflora Rose that grows in this country. It was discovered by a young Wyandotte girl, whose perception of the beautiful is a source of admiration to me. As I had never seen a double wild Rose, and not recollecting that any were described in the books, I thought it might prove a valuable contribution to the flora of our country, and therefore determined to forward this specimen to you, and, if a new variety, through your present to the Horticultural Society of Cincinnati, a Rose bush in the spring, when it can be transplanted without hazard. I so much doubted its growing wild that its graceful discoverer piloted me through the prairie to the spot three days ago. There, on the point of a ridge, in a space not more than 20 feet square, they were climbing over under growth, making the wilderness indeed blossom like the Rose; but to me its situation was most curious, from the fact of its being surrounded, on the declivity of the elevation, by a wilderness of the single wild Rose and Pea Vines. A lively imagination might fancy the ridge to be the burial place of some of the aborigines, thus decorated by pious hands long since mouldered into dust. Should this prove a new variety, I would be glad that it should perpetuate the name of its graceful discoverer, *Teche Nehame Ma-an-ga*, which the United States interpreter tells me may be rendered into English, *The Rose of Wyandotte.* Me-an-ga is an epithet of endearment, meaning bright looking. I called at her mother's cottage, and found their garden filled with beautiful wild flowers and flowering shrubs, collected by the daughter. One shrub with its long spikes of pale yellow flowers and graceful, fairy, locust like leaves was very pretty, but her hedge of wild Roses excited most intense admiration. There is a cluster now lying before me, on which there are twenty full blown Roses and eight buds; they have been in bloom since June 15. *Cincinnati Horticultural Review.*

*Sea-side Plants.*—There are some plants which will endure a prodigious amount of blowing without material damage. And of these the Sycamore, and other Maples, the Elms (especially the Wych Elm, the Cornish Elm being rather liable to be broken), Birches, if planted young; Beech, when likewise planted in a small state; the common Alder, the mountain Ash, and several Services; and the Scotch Fir, Austrian Pine, Pinus laricio, montana, and pinaster, if a little sheltered, will make excellent trees for the sea-side. Poplars and Willows will be valuable for temporary shelter, as they will grow rapidly and tall, and thus protect the others till they become strong; after which they should, by degrees, be almost entirely weeded out. Among dwarf sea-side plants, the Dogwoods, the Ribes sanguineum and aureum and grossulariæfolium, the deciduous Viburnums, the Symphorias, the Elders, the Tamarisk, some of the Spiræas, particularly Salicifolia, the common fly Honeysuckle, and the Berberries are particularly hardy for deciduous shrubs; while all the

Hollies are invaluable as evergreens, and the common Rhododendrons, Heaths, Brooms, (when planted young), evergreen Oaks if once established, evergreen Berberries, double and single-flowered Furze, Phillyrea latifolia, Araucaria imbricata, common and Irish Yew, and Arbutus and Laurustinus if very slightly sheltered, will, with Privet, which is almost evergreen, be useful in rendering a marine villa garden green and lively during winter. Of these, the Tamarisk, the Elder, and the common Furze, will flourish on the very margin of the sea, and in the poorest sand-banks. *Kemp, on Small Gardens.*

## Calendar of Operations.

*(For the ensuing week.)*

GENERAL REMARKS.

The extraordinary mildness of the weather makes us more than usually solicitous regarding the fate of early blossoming fruit trees, many of which are already showing that they stand in need of a check. Should we have a continuance of this weather for another fortnight, nothing but downright perseverance and energy on the part of the amateur and gardener, will save their standard Marie Louise and other early kinds of Pears. It behoves us, then, to be on the alert in preparing coverings of cheap canvass or netting; or, if these cannot be obtained, such other protective measures must be used as best suit our circumstances. For the protection of our walls and trellises, we are providing a quantity of stout Scotch sheeting, 32 inches wide, at 3½ per yard; and with this, and a simple but effective arrangement of lines and pullies, we hope to counteract (as we did last year,) the ill effects of the cold, cutting winds of March, and the 16° of frost in April. Everything is now in the most tender state possible, and even the common garden vegetables are sprouting, as though it were May. As a means of protecting these from cold easterly winds, which are even more to be dreaded than severe frost, we are ranging evergreen branches among the rows of Spinach, Broccoli, and Parsley, at intervals of a few feet. Choice Roses are also in great danger, and should be well sheltered.

PLANT DEPARTMENT.

LET the Pelargoniums, intended for the early bloom in April, have sufficient space, and a free circulation of air, to prevent their being drawn. If kept too warm, they will become what is termed blind. Give sufficient water to keep the plants in a constantly progressing state; but avoid over-watering, which will cause the leaves to "spot." Plants, intended for flowering in the early part of June, should be shifted for the last time if necessary. Slight syringings on fine clear days will be beneficial to Pelargoniums, if the weather is not too cold to allow of the admission of air, until the damp has evaporated from the plants and the floor of the house. Heaths, and hard-wooded plants, generally, must have air whenever the atmosphere out of doors is above 40°, and the wind not too cutting; avoiding all due excitement of the plants until the season is more advanced. Bring on successions of bulbs to furnish the drawing-room and conservatory; and while there, supply them liberally with water, in order to prolong their flowering season. Primulas of sorts, Tree Violets, Mignonette, and Leschenaultias, will now be useful, and should receive their full share of attention. Let all such plants as Camellias, Daphne indica, and Azaleas, that have done flowering, be placed in a cool house where frost is excluded, until they show an inclination to grow, when they can be repotted and put at once into a warm Vinery or Peach-house to make heir growth.

FORCING DEPARTMENT.

VINERIES.—If the Vines have any of their roots in the open border, it should be covered with fermenting litter, to afford a slight heat to them. If the fermenting material rises to about 75° or 80°, it will generally be found that the soil beneath will range from 60° to 65°; this may be occasionally ascertained by inserting a thermometer into the soil, so that any injury to the roots, either by excess, or want of warmth, may be prevented. A little ingenuity is necessary to make young rods break regularly at this season; this may be managed by bending them down to the bottom of the rafter, and curving them in such a manner as to elevate the buds nearest the base, above their more precocious brethren, which, in their turn, must be induced to break regularly by the same method. Until the buds are broken, let the amount of heat and moisture be carefully regulated, not allowing the temperature to exceed 55° by night, nor 65° by day, unless with sun-heat. Great care will now be necessary to prevent weak and slender shoots, as an undue amount of artificial heat, for a few days at this season, will do irreparable injury in this respect. Rub off all buds which do not show fruit as soon as they are distinguishable, except when they are required for the formation of wood. If useless shoots are allowed to remain, they exhaust the stored up energies of the plants, which ought to be devoted to better purposes, and by the time they are able to elaborate sap, either for themselves or their neighbours, they must be cut out of the way. It should be remembered that only a certain breadth of foliage can be exposed to the direct influence of the sun's rays, and the whole of this should consist of the leaves belonging to the present and future fruit bearing spurs. It is no less a disadvantage to retain too many of those which do show fruit; if the Vines happen to be in first-rate condition, probably every bud will show a bunch or two, but to allow them all to remain would cause disappointment in this year's crop, and materially injure next year's also. As soon as the most promising shows can be distinguished, they should be reduced to a number consistent with the present power and future strength of the Vines, and in no case should more than one bunch be left on a spur.

FLOWER GARDEN AND SHRUBBERIES.

In situations where the Pentstemons and Antirrhinums require protection in cold frames, the stock of plants should now be carefully examined, to see that they are going on well. If the old plants of Pentstemons have been taken up to preserve through the winter, as recommended last October, they will be found now to be rooting freely, and should have plenty of ventilation whenever the air is free from frost. Propagating half-hardy plants for masses should now be proceeded with, in order that they may be well established before turning-out time arrives. Any kinds, of which you do not at present possess a sufficient quantity, should be put into a warm, moist temperature to induce them to make young shoots. These will strike freely in a similar situation, and after having produced several crops of cuttings, they may be gradually hardened off. Cuttings of scarlet Geraniums, Calceolarias, Petunias, Verbenas, and a host of other things struck now, and encouraged by careful management, as regards potting and a genial temperature, will not be much behind autumn struck plants; and, in many places, a fine summer display is made during winter, only a sufficient quantity of plants are kept to supply cuttings in February and March.

FLORISTS' FLOWERS.

Should severe weather set in, it will be absolutely necessary to hoop over Tulip beds, and afford the rising foliage some protection, as at this time or season of their growth, they are susceptible of severe injury, and if they get a check it is hardly gotten over during the season; a light net is, perhaps, the best thing for this purpose. RANUNCULUSES.—Look over the stock and make the final preparation for planting. Here we would give a word of advice to young beginners; roots that have not previously flowered are most likely to bloom finely, and should therefore be planted on the best bed. Those that were weakened last season by the flowers should be planted on a side bed for increase, and will make excellent succession stock for the next year. This plan will insure, under good treatment, a regular and even bloom. Seedlings should be put in directly; though the roots may be small, still they will often grow most luxuriantly, and therefore should have sufficient room, at least 4 inches root from root. Let Dahlias have a genial heat, with sufficient ventilation; as for the method of propagation we will give that in a week or two.

HARDY FRUIT GARDEN.

FILBERT BUSHES.—As soon as the female flowers can be distinguished, the bushes should be systematically pruned. All the shoots which do not show fruit should be shortened, regulating their length according to their strength, and spurring the weak ones in close to the old wood; it will be necessary to remove some of the shoots, to prevent over-crowding. After regulating the head, clear away the nest of suckers with which these bushes are too frequently encumbered. If the bushes appear weak they should be assisted during the growing season, or, if too strong, root pruned. There is no reason why a collection of Nut bushes may not be as fruitful and ornamental as a collection of dwarf Apples or of pyramidal Pear trees. In pruning, a little precaution is necessary not to remove the whole of the male catkins, until some days after all the female flowers are expanded; and as many of the bushes will, in all probability, be destitute of male flowers, it will be necessary to procure some well-furnished branches from other bushes, and shake them gently over those which have female flowers only.

KITCHEN GARDEN.

At this season we give a slight sprinkling of salt to all ground which has been trenched several weeks, as soon as it will bear treading upon; and after the salt has been applied we fork over the surface. The improvement in the crops by this means is very visible, and thousands of insects are destroyed by it. It is scarcely necessary to add, that a dressing of 2 lbs. to the superficial yard is of the greatest benefit to the Asparagus beds, and the dressing may be repeated in the beginning of April. The crops of Seakale will be equally benefited by the application of salt. Besides the increased vigour and health of these sea-side plants, when salt has been freely used, it possesses the additional good qualities of destroying insects and ordinary weeds, and thus economising labour in the regular keeping of the place. An early crop of round Spinach should be sown this week on a warm border. FRAME POTATOES.—For this purpose make up a bed of Oak or Beech leaves, sufficient to produce a gentle bottom heat. The potatoes should be started in boxes of leaf-mould, and planted as soon as they have produced shoots an inch long; by taking this precaution all gaps are prevented. They should be planted 9 inches apart and 6 inches deep, with 3 inches of soil between the sets and the bed of leaves. By planting them this depth at once, the trouble of earthing up is avoided, and an excellent opportunity is afforded of getting a crop of Radishes, which will be ready to draw before they are in the way of the Potatoes. It will be necessary, for the sake of both Radishes and Potatoes, to admit air freely, and to draw off the sashes entirely during mild weather. As soon as the ground will admit of it, preparations should be made for planting new beds of Horse-radish and Jerusalem Artichokes. For the former, the ground should be rich and finely broken in trenching, that the new underground stems may be formed clean and straight; and as the last-named vegetable seldom comes to maturity in this climate, a very favourable situation should be chosen, that it may have the best possible chance of forming its tubers, although it cannot perfect its flowers. The soil used should be a light sandy loam, as a rich soil makes them grow too rank, and puts off the formation of tubers to too late a period.

State of the Weather near London, for the week ending Jan. 23, 1851, as observed at the Horticultural Garden, Chiswick.

| Jan. | Moon's Age. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air. | | | Of the Earth | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 17 | 0 | 29.641 | 29.571 | 51 | 27 | 39.0 | 43 | 44 | S.W. | .48 |
| Satur.. 18 | 16 | 30.081 | 29.927 | 48 | 28 | 38.0 | 43 | 44 | S.W. | .00 |
| Sunday. 19 | 17 | 30.067 | 29.940 | 49 | 35 | 42.0 | 41 | 43½ | S. | .00 |
| Monday 20 | 18 | 29.852 | 29.422 | 50 | 40 | 45.0 | 41 | 43 | S. | .48 |
| Tues. .. 21 | 19 | 29.527 | 29.465 | 50 | 30 | 40.0 | 42 | 43 | S.W. | .09 |
| Wed. .. 22 | 20 | 30.144 | 29.808 | 46 | 22 | 34.0 | 42 | 43 | S.W. | .00 |
| Thurs.. 23 | 21 | 30.328 | 30.310 | 47 | 22 | 34.5 | 40 | 43 | W. | .00 |
| Average .. | | 29.953 | 29.777 | 48.7 | 29.1 | 38.9 | 41.7 | 43.3 | | 1.05 |

Jan. 17—Fine; with sun; heavy rain at night.
— 18—Clear; very fine; clear; slight frost.
— 19—Fine; cloudy and fine; overcast.
— 20—Densely and uniformly overcast; boisterous, with heavy rain at night.
— 21—Overcast; very fine; heavy rain in the evening.
— 22—Clear; exceedingly fine: clear.
— 23—Frosty; fine; clear and frosty at night.
Mean temperature of the week 2 deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Feb. 1, 1851.

| Jan. and Feb. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 26 | 44.9 | 32.7 | 38.4 | 11 | 0.34 in. | 1 | 4 | 2 | 2 | 1 | 8 | 4 | 3 |
| Mon. 27 | 43.7 | 32.5 | 38.1 | 11 | 0.43 | 1 | 3 | 3 | | 3 | 10 | 4 | 1 |
| Tues. 28 | 44.7 | 31.7 | 38.2 | 14 | 0.17 | 2 | 3 | 2 | 1 | 1 | 10 | 7 | 1 |
| Wed. 29 | 45.0 | 31.5 | 38.3 | 11 | 0.32 | 3 | 4 | 1 | 1 | 2 | 6 | 5 | 4 |
| Thurs. 30 | 43.7 | 31.9 | 37.8 | 10 | 0.20 | 2 | 2 | 3 | 3 | 3 | 5 | 6 | 1 |
| Friday 31 | 43.8 | 31.7 | 37.7 | 12 | 0.32 | 2 | 4 | 1 | 2 | 3 | 5 | 1 | 4 |
| Satur. 1 | 42.9 | 31.8 | 37.5 | 9 | 0.75 | 2 | 3 | 3 | 3 | 2 | 6 | 4 | 2 |

The highest temperature during the above period occurred on the 28th, 1843 and 1846—therm. 56 deg.; and the lowest on the 27th, 1827—therm. 17 deg.

## Notices to Correspondents.

AMERICAN BLIGHT: *S F and W D.* Wash the branches with spirits of tar, applied with a painter's brush. ‡

BORDER EDGING: *Tay.* You must be mistaken. Saxifraga tridactylites is a little annual wholly unfit for this purpose.

COALS: *K L.* It is not probable that coals are really at all improved by exposure to the open air; some of the inferior sorts appear to be injured by it, as the pyrites they contain begin to decompose, and hence the coal crumbles. Whether the object of exposure be to moisten the coals, or to dry them, the same end may be quite as well attained under cover. *E.*

CREEPERS: *Inquirer.* You will gain little by employing very large plants, unless you have excellent means and a good deal of skill for removing them. The foundation should be American creepers, Ivy, Evergreen Roses, Hops, Vines, and the Trumpet flower (Bignonia radicans), pushed on with plenty of dung.

DIRTY PLANTS: *Sub.* The smut Fungus can only be removed well by means of a sponge, soap, and warm water. The scale may be destroyed by water of the temperature of 150° or 160°; but all soft tops and unripened wood should be removed previously to its application. ‡

FANCY GERANIUMS: *Mrs. M.* Next week.*

FERNS: *K L.* The names are all right, with the exception of No. 1, which we presume should be pendulinum; No. 2 will be found under Aspidium. The new generic names are proposed by Mr. Smith, in Hooker's "Journal of Botany."

FINGERED CITRON: *A Devonian.* We are making inquiries after it.

GUANO: *W B J.* There is surely some mistake: we will inquire.

INDIAN ORCHIDS: *T J, Madras.* Pray do not send anything to us; we cannot undertake the business of agents. You had better correspond directly with Messrs. Stevens, to whom we shall hand the case on arrival. The speculation would be extremely doubtful as to profit.

NAMES OF PLANTS: *B M.* It is impossible to say what your plant may be; possibly it is Brunsvigia ciliaris. Plants cannot be named from slight unscientific descriptions. — *Erzeroum,* 250, Euphrasia tatarica; 220, Rhinanthus major.—*R G F.* Nicandra physaloides, called in the seed shops Aikekengi.—*A Devonian.* It is rightly named. A drawing is made for "Paxton's Flower-Garden;" and we should be glad of any further information you can give; especially it would be desirable to see the flower-spikes while enveloped in the sheath which they finally cast off. It is quite uncertain whether the aquatics you name would live; but it is worth the experiment. Any species of Villarsia, or Nuphar, would certainly grow; and probably also Caladium esculentum and Papyrus, with Richardia africana (*alias* Calla æthiopica). — *Young Gardener.* 1, common double red Hepatica; 2, Holly-leaved Berberry.—*Enquirer.* The Bread-fruit from Algoa Bay is a Zamia of some kind. The solid trunk is the Bread-*fruit.*—*T P H.* The piece of root that has been dug out of an old bank appears to belong to the Bryony. If so it is poisonous. —*A S.* Lycopodium stoloniferum, Radd. *S.*—*T C D.* Lycopodium involvens. It is dead, and cannot be propagated. Its motions are merely hygrometrical.

PEAS: *Inquirer.* No Pea is equal to Knight's Tall Marrow, in sugary quality. You may grow it for a main summer crop, and also for a late; but it requires strong and tall sticks and plenty of room. If you cannot command these, choose Knight's dwarf Marrow, or Woodford's Green Marrow. ‖

PROTECTING FRUIT TREES: *Inquirer.* No particular time can be stated, either for putting up or taking down, whatever protecting materials may be employed. That depends on season. Generally speaking, protection should be ensured some time before the blossoms expand; partially reduced when the fruit is set; and entirely removed as soon as injury from frost is no longer to be apprehended. ‖

SEED LISTS: *Scotus.* Apply to Drummonds, of Stirling, and Dawson-street, Dublin, for their seed list, which is simple, short, and one of the best we have seen. They are pursuing the sensible course we have so often insisted upon, for the sake of both sellers and buyers.

STANDARD ROSES: *H T.* The green dust does no harm; it is caused by the mild damp season, and is possibly connected with some debility in the stock. We should let it alone.

STOCKHOLM TAR *v.* HARES AND RABBITS: *Correspondent.* A small ring of Stockholm tar drawn round the lower part of the stems of young Larches would not hurt them; but we should not like to use more.

TUBEROUS NASTURTIUM: *W. Clowes.* Unless you can manage to eat the tuners we know of no use to which they can be put. In this country men will hardly prefer them to even Jerusalem Artichokes.

MISC: *Old Sub.* Your Camellia appears to have got into ill-health; but in the absence of more information about its treatment than your letter furnishes, we are unable to say how that has happened. The Euphorbia looks as if it wanted more heat, and as if it would be benefited by an occasional dose of *weak* liquid manure. ‡

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**The Agricultural Gazette.**

*SATURDAY, JANUARY* 25, 1851.

MEETING FOR THE FOLLOWING WEEK.

THURSDAY, Jan. 30—Agricultural Imp. Soc. of Ireland.

IN theory, as Dr. ANDERSON justly observes, a manure to be perfect ought to contain all the elements of the food of plants in the exact proportion in which they are required; but however true that may be in theory, it cannot be complied with in practice—and hence the need of the supplementary practice, for so it is, of the rotation of crops; and hence, again, the propriety of conjoining our theories of manuring and cropping, and of arranging in our experiments that both of these considerations shall have due attention.

The maintaining of the soil in the highest degree of fertility, by a proper system of manuring and cropping, and the gradual exhaustion of that fertility by careless or mistaken practice, have always been topics of the deepest interest. Almost every province bears witness to the fact of lands having become "tired" of growing Wheat, Turnips, Clover, or some other specific crop generally cultivated.

Prior to the introduction of artificial manures, complaints of this kind were more loud than they are at present, but even where artificial manures are now liberally applied, it is difficult to say what judgment another period of 30 years may pronounce as to the general fertility or exhaustion of the soil. And it is with the view of arriving at some definite conclusions on this subject, that we would recommend some more general system of reporting experiments with specific manures under different modes of cropping and management than has hitherto prevailed. It cannot as yet be said that a series of experiments has ever been conducted on a scale sufficient to establish any trustworthy guide to the manuring and cropping of land, so as to maintain it in the highest degree of fertility. Reports on experiments have generally been confined to individual crops. They have seldom extended over the whole rotation, though even that would be insufficient to establish a perfect system of manuring. An experiment with any specific manure, whether artificial or not, for one crop, only furnishes evidence as to that crop, and not for the others in the rotation; and one rotation speaks only for itself.

But reported experiments with specific manures have been not only confined, generally speaking, to one crop, but have been conducted apparently just to ascertain which of two manures applied to the soil will produce the greatest produce. Thus, a soil tired of growing Turnips, which at one period in its history (extending over three rotations with an application of 20 tons of farm-yard manure to each), would have given a return fluctuating between 25 and 30 tons of Turnips per acre, now, notwithstanding equal, and it may be superior management as regards draining and supply of manure, only yields from 15 to 20 tons, showing a defalcation of 10 tons per acre. But 4 cwt. of alkaline phosphates and organic matter are now applied per acre, instead of 20 tons of farm-yard manure, and we again realise the original productiveness of the land, in the case of the Turnip crop.

This experiment might lead one to conclude that the land has been restored to its original fertility, but any such conclusion is premature—the facts adduced prove nothing of the kind. All that they amount to is, that 4 cwt. of artificial manure, containing about ¼ cwt. of organic, and 3 cwt. of inorganic matter, with ½ cwt. of water, were applied to the soil, and that 3½ tons of organic and 5½ cwt. inorganic matter, with 31 tons 4½ cwt. of water were removed. Beyond this all is speculation without further experiment. And we put this case just to show the meagre character of experiments, as they are frequently reported. We are at liberty to say that these quantities of organic and inorganic matter have been applied and removed from the soil, but we have no right to say that after this has been done the soil consequently is exhausted of the difference, much less that the application of such a manure, along with the application of the farm-yard manure, to the corn and Grass crops will keep up the fertility of the soil to its highest degree. Of itself the experiment is useful as showing how the application of such a small quantity of artificial manure enables the soil to work up and manufacture such an increase of valuable produce. It introduces a new system, conferring many benefits upon the farmer. The increase of the Turnip crop is not the only advantage gained by him; for he can now apply the farm-yard manure arising from one crop to the lands for the ensuing corn crop, in cases where Barley, Oats, and spring Wheat are grown, instead of to the one succeeding it, as under the old system. There is in such cases a saving of manure—a saving of capital—and an increase in both corn and Turnip crops; so that, putting all advantages together, the general gain to the farmer is considerable. But although all this may be true for the time, yet the gains thus derived, so far as they are immediately connected with the experiment, are only of a temporary character, having no certain duration. Granting that, from the other advantages arising out of the system of growing Turnips with artificial manures, the soil is for the time restored to its original state of fertility, there is nothing arising out of the experiment to warrant the conclusion that a continuance of the application of the artificial manure will maintain it in this state, but rather the reverse; for, if the soil became tired of growing Turnips, and other crops generally cultivated, with the application of farm-yard manure, the inference is obvious that a manure still more defective of supplying all the elements of the crops will be at least as unable to maintain its fertility. The annual progress of exhaustion may be slow, and amid the fluctuations in the weight of crops, almost imperceptible. It was so under the old system. Few calculated as to amount; and yet at the expiry of 30 years, a decrease of 10 tons of produce had taken place per acre on one crop.

The individual experiment before us furnishes indeed but little useful evidence of any kind. The general fertility of the soil is a thing on which a thousand influences are at work; and a system of experiments upon the whole subject, involving the succession of crops, as well as the wants of particular crops, is needed. It is not experiments to test the comparative values of different manures alone, but of these as acting under and upon different systems of cropping, that are wanted; for before it can be ascertained that any equilibrium is kept up in the supply and consumption of manure, ou experimenters must extend their operations. Report must embrace both these subjects, in order to furnish the vast amount of material now needed by chemists, as well as farmers, to furnish sound theory, and guide good practice.

Many of our readers may probably think that experimenting will not "pay;" but as all applications of manure and cropping are experiments of the class which we principally suggest, difficulties of this kind disappear the moment we begin to handle the subject practically. All that is wanted, generally speaking, is REPORTS of experience and observation.

## SCOTCH AND ENGLISH FARMING.

THE animosity which existed in former times between the Scotch and English nations, occasioned many a hard-fought battle, which the historian has chronicled and handed down to us. The natural and happy union of the two countries has put an end to their mutual strife. The two, firmly banded together, now join hand in hand in repelling the common foe—they have, in regard to each other, turned their swords into ploughshares, and have long since buried all intentions of actual hostility. Some little remnant of the old leaven does, however, now and then appear, when the English and Scotch come into competition in the peaceful pursuits of their common industry—whether of manufactures, commerce, or agriculture. It is to a very amusing instance of the working of this old heartburning that we now wish to call attention. A Scotch farmer having made an excursion through the English counties, happened to publish some remarks, and in qualifying his praise of the agriculture of the natives, spoke rather disparagingly of their skill in some points. In retaliation Mr. Pusey invades East Lothian; "drives his own horses 20 or 30 miles a day; uses his eyes whilst sitting on the dickey;" returns home fully charged with electric ire, and watches an opportunity of firing off his thunder and lightning against the whole tribe of Scotch farmers. Truly his recent exhibition at the London Farmers' Club must have been a source of regret (or amusement) to all his friends in England or even in Scotland, where, notwithstanding this display, we can assure him he has many. Indeed, we can scarcely believe it is the same gentlemanly Mr. Pusey who writes in the "English Agricultural Journal"—the manner in which he has acquitted himself in this last instance is so different from his usual bearing. He tells his English friends that he once believed in the superiority of the Scotch farmers over the English, but knew more about it now, for in his recent tour he made the discovery that the low-land was "well farmed" (ah! does Mr. Pusey admit so much as this?)—the hill sides "very moderate," but "on the top of the hills no farming at all;" had the contrary been the case it would have been *high* farming with a vengeance. However, Mr. Pusey wished to be impartial, and did not want his hearers "to take his own opinion," being but a recent convert and unduly fired with zeal. Dr. Johnson, purblind, and in his dotage, is raised up to testify as to the fertility of the land. Oliver Cromwell, his next agricultural authority, goes another hundred years back to bear him out as to the richness of the soil. Since these times Mr. Pusey does not note any improvement in the agriculture of the country, but the morals of the people he admits are improved, for "the most impudent lying, and frequent swearing," which the people were formerly noted for, have been given up, or at least have been modified into a vile habit of "bragging, boasting, and humbugging the simple and credulous English." Such are the heads of Mr. Pusey's after-dinner speech. Let us say a few words in passing, on the general question. We have always been of opinion that the Scotch and English systems of farming never admitted of comparison as a whole, and have not failed before now to express our dissent from those who made sweeping and unqualified statements on this subject—there has certainly been by far too much of it from the north side of the Tweed. In fact, the greater number of the recent pamphlets which have issued from the Scotch press have generally harmonised with each other in this respect. Mr. Caird's "high farming" experience was particularly addressed to the farmers in the south. Lord Kinnaird's boasting on this head was most notorious, and his racy antagonist "Peter Plough," coincided with him. Mr. Munro on "Landlords' Rents and Tenants' Profits" saw nothing but ruin for the Scotch farmers, but admitted that the "Farming of the Lothians" would be a sufficient protection to the farmers in the south of England, and "Blackwood" styled this "a very able pamphlet," and joined in the general chorus. Although Mr. Milne, in his "Report" is rather dubious about this matter, he has given the northerns the credit of "making more of their land." Mr. Pusey might have attacked either or all of these authorities with good grace, had he not been indirectly implicated himself in encouraging all this nonsense, as we shall give him something more than a hint of, by-and-bye. In truth we should have been right glad to have seen him attack that Scotch "Preux Chevalier"—Lord Kinnaird; and the Docks amongst the Wheat in the Carse of Gowrie, to which Mr. Pusey refers, furnished him with a legitimate *casus belli*. A very pretty quarrel these two might have made of it, and one with which we should have been the last to interfere. Having, however, made up his mind for a passage of arms, Mr. Pusey has not thought it necessary to discriminate. But, like Don Quixote of old, he sallies forth, and, very *mal-apropos*, couches his lance and

makes a furious onset on an "East Lothian Farmer," who actually did great justice to English farming, who wrote "the farmers of Norfolk and Suffolk are equal, if not superior, to any class of farmers in Scotland, and they are entitled to hold the first place in agriculture." *He* therefore did not "laud the superiority of the Scotch over the English;" and, as to the difference in the number of years' purchase, Mr. Pusey in part misrepresented the statement made, for the purpose of making out a case; he has completely missed his mark, but he has discharged his battery, and what a noise he has made! The main reason why the Scotch farmers think themselves superior to the English is the fact, that, taking the practice of the latter generally, they are deficient in those details in which the former excel, viz., in the economy of power. Arthur Young is a much better authority in this matter than Dr. Johnson or Oliver Cromwell. But the Scotch writers, on the other hand, are continually underrating their own advantages and overrating those of their neighbours, in which they are encouraged by a few English landlords. We cannot believe the "East Lothian Farmer" has given occasion to such a tornado of abuse, in consequence of the quotations which Mr. Pusey has given in his speech. Have the English waggons not been attacked? Mr. Pusey is quite sensible of the "defects" of English farming, but he wishes to reserve to himself and friends (such as Mr. Mechi, who is specially licensed) the privilege of admonition or correction—a Scotchman must not have the impudence to recommend "the exchange of waggons for carts." Mr. Pusey, in this matter, reminds us of the sentiments addressed by our Scottish bard when inspiring his countrymen with a healthy hatred of the French:

"The kettle o' the kirk and state
Perhaps a clout may fail in't;
But deil a foreign tinkler loon
Shall ever ca' a nail in't."

In regard to the challenge which Mr. Pusey, a wealthy landlord, has given to the Lothian tenant farmers, not being interested, we have nothing to say, further than we think it would be a poor way of settling the question—a wager, at best, is but the fool's argument. The sensible speech of Mr. Torr, of Lincoln (which alone redeemed the London Farmers' Club from utter foolishness in this matter), was an admirable reproof to the previous speakers.

We must now conclude our observations with one word to Mr. Pusey, who it seems feels himself bound to act the part of knight errant, for the defence of the English farmers, their "character being in some degree in his hands." In the capacity of editor of the Agricultural Society's Journal we assail him on his chosen ground, we beg to tell him that the absurd articles which have appeared in that Journal on the science bearing so intimately and directly on the merits of Scotch and English farming, and which he has duly indorsed, shelter the whole of the disparaging writers which we have enumerated. If the Journal is right, Lord Kinnaird is also right. Mr. Pusey, in his recent review of the Progress of Agricultural Knowledge, should not have had respect to persons on this head, if he "were otherwise disposed to shrink from the task, the present state of English farmers rendered it doubly incumbent." Scotch practice is far in advance of English science. As to his "highest authority" in one department, we only wonder at his credulity, the stratum of errors, although covered by a mass of *debris*, yet crop out at his very feet. To our mind, Mr. Pusey has placed himself in a very ridiculous position; his unguarded speech can only be looked upon as the natural result of the false science which he has patronised.
*R. Russell, Kilwhiss, Fifeshire.*

## DRAINAGE UNDER THE ACT.

THE call for the observations of those "who have had a more favourable experience of the Act," may probably exclude the remarks of those who are disposed to state facts which have occurred during their experience whether "favourable or otherwise." Still I have ventured to trouble you with the following observations.

I think, with many of your correspondents, that the Act to authorise the advance of public money to promote improvements of land by works of drainage, is a good Act of Parliament, provided its provisions be economically carried out; but like most public enterprises it is liable to abuses, and not the least of which is the apparent desire to oblige the landowners to be extravagant, against their wishes, in carrying out some pet plan to which the inspector or others in office may have committed themselves, when the landowner knows from experience that such plan cannot answer physically or economically.

The field department is carried out by inspectors acting under orders from the office in London, who have, from what I have observed, a certain course of proceeding prescribed, and who appear to be enforcing the adoption on all soils, without exception, deep and wide interval draining, and are restricted to the use of pipes only. Landowners who borrow the money, and have to pay it back again, are not consulted as to how their lands ought to be drained; and their agents, who practically know much more about the qualities and capabilities of the soil of their estates than strangers can possibly know, are often treated as mere schoolboys. But I am digressing. It is experience that we require, for the practical experience developed by one little undertaking, well and properly executed, without all the fuss and humbug attempted to be cast around this subject, is worth all the theory that has been written on draining since the time of the flood.

In 1847 a gentleman applied to a company, who expressed a willingness to undertake the draining of his farm, and advance the money requisite, to be returned, with interest, by instalments; but before further steps could be taken, it was necessary to send their engineer to inspect the farm, and report on the mode of draining to be adopted, and the cost of execution. The inspection was made, and the estimate forwarded to the proprietor, which came to 6*l.* 5*s.* per acre. The landowner being very much surprised at the expense, and entertaining no hope of his tenant being able to pay the interest, decided on abandoning the idea of draining. Very soon after his tenant left, and the persons who looked at the farm, declined to take it, because the landowner, having only a lifehold interest in the land, could not promise that it should be drained. In this state of affairs, he asked my advice. I recommended him at once to apply to the Inclosure Commissioners, for part of the Government loan, which was promised; but he was informed that no part of it could be advanced, until some of the works were executed, and had been seen by an inspector under the commission, and that the cash would be advanced, in accordance with his certificate. Here was difficulty; the owner had not the means of either setting men to work, or of paying them. We soon arranged this matter, and I was desired to inspect the farm, to ascertain what portion really required draining, and to fix on the spot where to commence operations. The inspection was made, and a report forwarded to the proprietor, showing that his farm might be thoroughly drained for 425*l.*, which, on account of the smallness of the sum, as much surprised him as he had been astonished at the extravagance of the previous estimate, the difference being 625*l.*

Having obtained the promise of the loan, and authority to commence, we contracted with a drainer to execute the works, with the owner of a tile-yard to supply the pipes, and proceeded with the works until we had expended about 200*l.*, and then applied for an inspector. He visited the farm, made his report on our proceedings, and in due time an order for a sum, a little short of our expenditure, was remitted. The inspector visited us three times; twice during the progress of the works, and at the time of completion, for which something like 20*l.* was charged. He came from London by train, about 90 miles, in the morning, and returned in the evening of the same day. He went through his business in a quiet deliberate manner, and although much more theoretical than practical, gave little or no unnecessary trouble; neither did he exhibit the usual airs of an important man in office. He had too much good sense to insist on his notions being literally carried out, and was never heard, that I am aware of, to hint that if his propositions were not submitted to, and his directions scrupulously carried out, that a certificate would not be given, and of course the money expended would not be advanced. The money was advanced, including his own expenses, with the exception of a small sum which was disallowed, but it was never known why. The interest of the money, which from time to time had been paid to the workmen, until the advances could be obtained, was also disallowed. The total expenses amounted to a fraction under 427*l.*, and the cash received from Government 425*l.*, which shows that the undertaking was completed within 2*l.* of the estimate. The works have given the highest satisfaction to the landowner and tenant, and some of the land is as much improved as any we have ever seen, by draining. Although our progress in the works was as smooth as we could desire, yet we differed rather seriously on two points, and those we finally settled by bringing them to the test of experiment. The first bone of contention was relative to the best mode of draining a pasture field. Many years since this field had been ploughed, and when laid down to Grass, was left in high tortuous ridges rather more than 30 feet wide, the highest part of the ridges being 5 feet above the furrows. The soil is a clay loam, mixed with occasional streaks of sand, and very easy to drain. The land on the tops of the ridges, and about half way down the sides, was dry, and required no draining, the remaining portion being soft and spongy, and covered with aquatic Grasses and plants. We proposed to follow the furrows, and put the drains 2½ feet deep, at an expense of 50*s.* per acre, including pipes. This did not square with the views of the inspector, and he proposed, but did not insist, that the drains should be 2½ feet at the furrows, and should run perfectly straight down the field, from end to end, and cross the tops of at least two of the high ridges, where the drains would be 7½ feet deep. Drains thus made would pass one-third of the distance through soil which required no draining whatever, and be inefficient on part of the remainder, and would cost at least 5*l.* per acre. We declined to execute the works in the manner proposed, and drained it our own way, which answered the purpose perfectly. This was fully acknowledged on the visit of inspection which afterwards took place.

The other point of difference was on some very stiff tenacious clay land, which was scarcely worth cultivation, and had been neglected on account of its tenacity. We all agreed that this should be thoroughly, effectually, and permanently drained; but a question arose as to the plan to be adopted to secure this much-desired object. The inspector proposed 4 feet drains, 30 feet apart, which we objected to, having always been disappointed with wide interval draining in stiff clays. We prefer 20 feet apart, and 3 feet deep. It was finally arranged to have a portion executed on both the plans, to test the efficiency of each, and by way of still further testing the whim, which some entertain, that no stones should be put in on the top of the pipes, we selected about 4 acres of the most adhesive of the 10 acres on which to test the absurdity of a whim of our own. Three acres were executed precisely in accordance with the inspector's directions, 4 feet deep and 30 feet apart, the pipes nicely put in, and the clay and soil filled in, which had been thrown out of the drains. The three acres adjoining were drained 3 feet deep and 20 feet apart, the clay and soil being filled in as with the other three acres. The 10 acres only formed part of a field, the other portion being rock, which it was useless to drain, with a stonebrash soil, on which the farmer had gathered together a considerable quantity of small stones, which were laid in heaps on the land. We decided on using those stones in the drains by placing them 20 inches to 2 feet thick on the top of the pipes. The drains were cut 3½ to 4 feet deep, and 20 feet apart, and the pipes properly placed in the drains, and the small stones on the pipes, and the drains filled up rather above the surface with soil and clay, as in the other cases. When visited by the inspector, it was seen and admitted that the 4 acres were perfectly drained, the 3 acres in which the 3 feet drains had been placed, exhibited a a slight dampness in some of the furrows, and the 3 acres which had been done precisely as the inspector wished were scarcely benefited at all. He ordered additional 3 feet drains to be put in between those already there, thus draining the 3 acres 15 feet apart, which placed it on a par with the rest. More than 3 years have elapsed, and up to the present moment that part which had the stones placed on the top of the pipes proves decidedly to be the most effectually drained. This mode of draining is objected to by the commissioners and Mr. Girdwood; and the other inspectors either have the same objection, or urge it in obedience to instructions. I have adopted it, and found it answer admirably, and am not aware that any valid reason has been assigned for the objection which is made to the use of stones on the top of pipes.

We have also from practical experience extending over 25 years, proved that stone drains (the *till* drains of this district) are more substantial and permanent, and equally as good and effective as the pipe drains, and can only be set aside on the score of expense, which chiefly arises from the carting. If stone can be dug on the spot, or is thrown out of the drains in making them, in quantities sufficient to fill in the drains, they ought to be used, and will be more economical than pipes. I refrain from pursuing this part of the subject further, and consider our experience thus far in favour of the operation of the Act, but I cannot say so much for a similar undertaking which we are commencing. The inspector here is disposed to enforce his crotchets, on the faith of "four years' experience in all parts of England." By so doing he will inevitably nullify all the anticipated benefits to be derived from the draining, and in all probability entail a greater mischief on the owner, by saddling him with a higher interest than the increased value of the land will ever pay. I hope I may be disappointed, but if we are to take as a precedent, the estate pointed out by the inspector as an example worthy to be followed, I almost tremble for the safety of my employer, who cannot afford to be extravagant. He cannot expend 7*l.* or 8*l.* an acre on poor stiff clay soil, and hope the increased value to the tenant, by so doing, will enable him to pay the interest in increased rent. I know it will not. Some of the land in its present state is not worth more than 10*s.* an acre, and no one by draining alone can make it worth 20*s.* Then how is it to pay after being drained? It will require years of the best of cultivation before it will be worth 15*s.* per acre, thus yielding 5*s.* per acre only for interest, which is equivalent to an expenditure of 3*l.* 17*s.*; hence it is clear that on such land no more than 4*l.* an acre can be expended in draining with safety, and that whoever expends more will have to make up the interest from other resources. Can such draining answer—can it pay? Let speculators say what they may on this subject, economy must be insisted on by the landowner, or he will have bitterly to repent having borrowed the Government money, and particularly those who have only a life interest in the property on which it is expended. Why should not the landowner who has to pay interest and capital back again in 22 years, have a commanding voice in the matter, and be allowed to enforce a judicious expenditure of the money? And should not the judgment of a landowner on what really constitutes economy in his own district be preferred to that of an experienced stranger, who has no permanent interest at stake? A negative reply to this will place the landowner in a position which he does not deserve to occupy, and will infer that he is bigoted or ignorant, and incapable of judging for himself in a matter which is all but self-evident. Need I ask if this is the character due to the landowners of England? I cannot believe that they are so ignorant and short-sighted as to permit the uncurbed exercise of any arbitrary power in such a manner as to oblige a man to run the risk of ruin, under the pretence of being favoured with an immense benefit. It cannot be a benefit to any landowner to expend 7*l.* per acre of the Government money in draining. If any one is expecting this, the only advice we can give will be, to go into the following calculation.

A farm of 500 acres of poor clay soil having 7*l.* per acre expended on it, would be charged with 227*l.* 10*s.* per annum for 22 years; the same farm having 4*l.* per acre expended would be charged with 130*l.* a year for the same time, making a difference of 97*l.* 10*s.* per annum, and of 1500*l.* in the outlay. The 227*l.* 10*s.* will

not be obtained as additional rent, and some doubt may arise whether the 130*l.* can be realised, more likely 100*l.* only. Then it will be seen in this case, and it is not altogether hypothetical that at least 1500*l.* will have been expended, which is not warranted by the circumstances, and that at the end of 22 years the landowner will have sunk 2145*l.* on the farm, which he has no hope of seeing again—a pretty round sum to throw into the ditch, as the party would literally do who submitted to such wild extravagance; but then he will have the satisfaction of having paid for the best stereotyped theory of the day. I will conclude the subject by one more calculation, which may have its use. Take as an example a clergyman of a country village, with 2000*l.* spare cash at his banker's, and who, without the power to curtail his expenditure, is expending the rent derived from a glebe farm of 500 acres, which requires draining, and conceive him to have borrowed the Government money at 6½ per cent. with which to drain the land, and further that he is induced to do it extravagantly, at an expense of 7*l.* per acre, and that his tenant will agree to pay only the additional rent of 5*s.* per acre, it will be easily seen that in 22 years his 2000*l.* will have disappeared. Now, let us suppose that shortly afterwards he dies, the farm passes into other hands, and his children or representatives discover the sad and melancholy fact, that the 2000*l.* has been irrevocably lost. You may, perhaps, confer a service on some of your readers by inserting the following table, showing the interest to be paid for a certain cost per acre. The first column contains the expenditure on an acre, and the second the interest to be paid to Government at 6½ per cent.:

*6½ per Cent. Draining Table.*

| Per Acre. | Interest. | Per Acre. | Interest. |
|---|---|---|---|
| £1 0 0 ..... | £0 1 3¼ | £7 14 0 ..... | £0 10 0 |
| 1 11 0 ..... | 0 2 0 | 8 0 0 ..... | 0 10 4½ |
| 2 0 0 ..... | 0 2 7 | 8 1 6 ..... | 0 10 6 |
| 2 6 6 ..... | 0 3 0 | 8 9 6 ..... | 0 11 0 |
| 3 0 0 ..... | 0 3 10½ | 8 17 0 ..... | 0 11 6 |
| 3 2 0 ..... | 0 4 0 | 9 4 6 ..... | 0 12 0 |
| 3 17 0 ..... | 0 5 0 | 9 12 6 ..... | 0 12 6 |
| 4 0 0 ..... | 0 5 2¼ | 10 0 0 ..... | 0 13 0 |
| 4 12 6 ..... | 0 6 0 | 10 8 0 ..... | 0 13 6 |
| 5 0 0 ..... | 0 6 6 | 10 15 6 ..... | 0 14 0 |
| 5 15 6 ..... | 0 7 6 | 11 3 3 ..... | 0 14 6 |
| 6 3 0 ..... | 0 8 0 | 11 11 0 ..... | 0 15 0 |
| 6 11 0 ..... | 0 8 6 | 12 6 0 ..... | 0 16 0 |
| 6 18 6 ..... | 0 9 0 | 13 2 0 ..... | 0 17 0 |
| 7 0 0 ..... | 0 9 1 | 13 17 0 ..... | 0 18 0 |
| 7 6 3 ..... | 0 9 6 | 15 8 0 ..... | 1 0 0 |

*Fossa.*

## ON THE INFLUENCE OF DIFFERENT SALINE MATTERS ON THE SAINTFOIN.

By M. Isidore Pierre.

The action of any substance employed as a manure on a piece of primitive soil, should be considered as the *resultant* of the partial actions of this substance on each of the plants in the same soil. In order, therefore, to give an accurate account of the result of experiments made on this subject, it is necessary to be able to account for each of these partial effects, and this, in the present state of agriculture, is no easy matter.

An artificial meadow, in consequence of its simplicity in a botanical point of view, is much more fitted to such experiments; and for this reason we have chosen it for the special object of our study in the first instance.

We have, moreover, applied ourselves almost exclusively to that species of Saintfoin commonly called *large-seeded* or *double-crop* Saintfoin.

The saline matters employed in these experiments were: 1, carbonate of soda; 2, carbonate of potash; 3, sulphate of soda; 4, sulphate of potash; 5, sal ammoniac; 6, nitrate of potash; 7, nitrate of ammonia; 8, common salt; 9, burnt plaster; 10, burnt plaster, with salt, in different quantities; 11, crude plaster; 12, crude plaster, with salt, in various proportions.

These different substances produced different results on the different crops of Saintfoin, so much so, that if classed according to their efficacy, so far as it relates to the average of the whole of the four crops, or to any particular crop, they would not retain the same order.

This variation in order will be understood by a reference to the subjoined table, the matters enumerated in which are divisible into four great classes:

1. Those which produced an increase in the four successive crops of Saintfoin. 2. Those which produced an increase in one or more successive crops without producing a diminution in the remaining crops. 3. Those which acted favourably on one or more crops, and afterwards caused a diminution in the others. 4. Those which acted unfavourably on all four crops.

We were led to conclude, from our experiments, that certain costly substances, such as nitrates of potash and ammonia, might be advantageously employed; whilst others, such as salt and carbonate of soda, could only be used, in spite of their low price, at the expense of the Saintfoin, at least under the circumstances in which the experiments were tried.

It will be seen, too, that sal ammoniac, notwithstanding the heavy crop produced by it, cannot be recommended, in consequence of the great outlay necessary in the first instance, from its high price, which outlay is not afterwards covered by the returns obtained.

As to plaster, we prefer it crude rather than burnt, in equal doses. This preference we believe to be well founded, not only from our own experiments in the department of Calvados, but from those of other persons in the departments of Seine and Oise, and Seine and Marne.

Crude plaster, as is well known, only differs from that which is burnt by containing 10 or 11 per cent. more water; is consequently less rich in actual plaster than the latter. It would not be prudent at present to attempt to explain this superiority.

The proportions of substances which were chosen are no doubt arbitrary; what are the best proportions remain to be determined. Experiment, moreover, alone can show what influence soil and climate may have in these results, as also the comparative influence that all these substances may have on the subsequent crops obtained from an artificial meadow, submitted to their action for several successive years, and on the crops which may afterwards be reared thereon.

| Substances used. | Dose per hectare. | Order of Efficacy, after the 1st crop. | 2nd crop. | 3rd crop | 4th crop. | 4 crops. |
|---|---|---|---|---|---|---|
| | kilog. | | | | | |
| Crude plaster | 266¾ | 1 | 3 | 4 | 5 | 1 |
| Carbonate of potash | 33⅓ | 2 | 8 | 20— | 21— | 12 |
| Burnt plaster | 133⅓ | } 4 | 4 | 12 | 8 | 5 |
| Salt | 16⅔ | | | | | |
| Sulphate of soda | 133⅓ | 3 | 2 | 5 | 6 | 3 |
| Nitrate of potash | 33⅓ | 5 | 12 | 15 | 2 | 4 |
| Sulphate of soda | 66⅔ | 6 | 15 | 8 | 19— | 8 |
| Nitrate of ammonia | 16⅔ | 7 | 7 | 9 | 1 | 2 |
| Sulphate of potash | 33⅓ | 8 | 18 | 13 | 3 | 7 |
| Burnt plaster | 133⅓ | } 9 | 10 | 21— | 7 | 6 |
| Salt | 33⅓ | | | | | |
| Sal ammoniac | 66⅔ | 10 | 17 | 10 | 17— | 16 |
| Nitrate of potash | 16⅔ | 11 | 14 | 16 | 11 | 10 |
| Sulphate of potash | 16⅔ | 12 | 20 | 3 | 12— | 14 |
| Sea salt | 33⅓ | 13 | 16 | 14 | 4 | 9 |
| Nitrate of ammonia | 33⅓ | 14 | 11 | 6 | 10 | 11 |
| Burnt plaster | 266⅔ | 15 | 9 | 2 | 16— | 15 |
| Carbonate of soda | 133⅓ | 16 | 23— | 11 | 14— | 17 |
| Carbonate of potash | 66⅔ | 17 | 19 | 18— | 20— | 21— |
| Sea salt | 133⅓ | 18 | 13 | 23— | 18— | 20— |
| Sal ammoniac | 33⅓ | 19 | 5 | 1 | 15— | 13 |
| Sea salt | 66⅔ | 20 | 20— | 22— | 9 | 18— |
| Carbonate of soda | 66⅔ | 21— | 22— | 7 | 13— | 19— |
| Crude plaster | 133⅓ | } Could not be classed | | 6 | 17 | } Could not be classed |
| Salt | 16⅔ | | | | | |
| Crude plaster | 133⅓ | } Could not be classed | | 1 | 19— | |
| Salt | 33⅓ | | | | | |

The numbers marked — show that the crop obtained was inferior to that yielded by unmanured ground.

## SCOULAR'S IMPROVED GRUBBER.

Although a variety of implements, passing under the name of "grubbers" have been introduced into this district, none of them have hitherto so fully accomplished the purposes to which they are applied, as to supersede, to any considerable amount, the use of the common plough or harrow. I need scarcely say, that the point aimed at by the inventors of such implements has always been to get the soil cleaned and pulverised more easily and speedily than could be done by the old process; and that they have called them "grubbers" or "cultivators" according to their more peculiar adaptation to the one purpose or the other. The grubber which has hitherto been most approved in this county is that commonly known as Finlayson's harrow. I have long used it, and, in the main, with advantage; but still it is at best a very defective implement. When land is foul it constantly gets choked; it has such an effect in firming the soil, except on the mere surface, that it is always necessary to plough again after using it; and it is costly to purchase and keep in repair. I had often felt very anxious to get an implement free from these objections; and having, about a year ago, had lent to me by my landlord, Mr. Hay, of Dunse Castle, a pamphlet published 30 years ago by General Beatson, in which, after referring to the slim and contemptible looking implements with which he had seen the natives of India and China cultivate the soil, he figures and describes one of his own invention, with which alone he had succeeded in cultivating his farm. I was so convinced of the soundness of the principles propounded in this little treatise, that I sent it to Mr. Scoular at Haddington, whom I had long known as a skilful mechanic, asking him to read it with care, and to say whether he could furnish me with an implement, very much lighter and cheaper, and yet more effective than the grubbers commonly in use. Having heard about this time that several forms of light grubber had recently been introduced in different parts of Scotland, I was induced to visit a friend in Mid-Lothian, from whom I obtained much valuable information on the subject. On the same occasion I called upon Mr. Scoular, and found that just when I sent him General Beatson's treatise, he had been engaged in constructing a grubber, which he thought an improvement upon one which had shortly before been introduced into East Lothian from Ayrshire, and that he had got what he considered most useful hints from the pamphlet referred to. This Ayrshire implement having been first used on the farm of Traprain, is now currently known in East Lothian by that name, and has now come into very general use in that county. Through the kindness of my neighbour, Mr. White, Causeway-bank, I am enabled to exhibit one of them to-day, so that the members of the club may have the opportunity of comparing it with the implement invented by Mr. Scoular. He had several of these Traprain grubbers in his yard when I visited it in February last; but as his own implement appeared to me to be preferable in several respects, I purchased four, and shall now narrate my experience in using them. My first trial was upon a field which had been in Turnips the year before. These had been consumed by sheep early in the autumn, and the land ridged up about Martinmas, so that after the frost and rains of the whole winter, I found it too much weathered to admit of the seed being properly covered by the common harrows. I therefore sowed the Barley broadcast and then went over it with these grubbers, following it up with the harrows. The seed was as well covered as I could wish, any weeds that had sprung up were destroyed, and the surface soil nicely pulverised. The space gone over in a day by each implement was about four acres. My next trial of them was upon a field intended for Turnips. Part of this field had been under Potatoes in the previous rotation, and was very foul. After going over this piece of land, first lengthways and then across, the weeds were brought to the surface and removed with far less labour, and in much shorter time than I ever could do before. I may here mention that after the weeds had thus been brought to the surface, and well freed from the soil by frequent harrowing and rolling, I collected them by means of common hay-rakes. I have now ascertained that a given number of women will clear about five times more space in a day by raking than they could do by handpicking, and make quite as good work. I used in this instance the common hay-rakes; but I have found since that iron teeth, set a very little closer, do better than wooden ones. My next trial was upon a piece of very light moory soil, upon which the Turnips had just been consumed by sheep. This field I purposed to sow with Grass seeds without a corn crop. Part of it had already been ridged up and sown; but I resolved to try whether I could obtain a sufficient tilth on the remainder without using the plough at all. Taking advantage, therefore, of a moderate rain, which had softened the soil, I set these grubbers to work, and by going over it twice, I found my purpose effectually accomplished. The soil was stirred as deeply as was required, the manure kept near the surface, and a fine mould, most favourable for the brairding of small seeds, easily obtained. The ridges were then marked off by a ribbing plough, the seeds sown, covered in by Crosskill's Roller, and the whole work accomplished more speedily and satisfactorily than could have been done by ploughing. I was convinced, moreover, that had I wished to sow Barley, it could have been covered in by the second grubbing quite satisfactorily. Part of my Turnip break this year consists of a low lying boggy field, which was drained and brought into tillage for the first time about ten years ago. This I allowed to remain in the winter furrow until I was nearly ready to proceed with the sowing of it. It was then worked by these grubbers, and about three-fourths of it drilled up and sown without any ploughing. The remainder, not being so clean, got one furrow; and though sown in apparently as favourable circumstances, the crop is not nearly so good as on the part which was worked by the grubbing only. After my Turnip sowing was over, I found great advantage from the use of these implements in working a piece of strong clay land in bare fallow. From the size and hardness of the clods I was afraid, before trial, that here they would prove of little use, but in this I was agreeably disappointed. Since harvest I have again had recourse to them, and I think with advantage. From the earliness of harvest and the favourable weather, I have been enabled to do something towards cleaning a field intended for Turnips next year; and have found, as in spring, that the grubbers greatly furthered this process. Besides this, I have used them in preparing a piece of land for Wheat, after Potatoes. As soon as the Potatoes were removed it was twice gone over with the grubbers, and the Wheat drilled in immediately without any ploughing. Having a piece of Bean stubble alongside this Potato land, three ridges of it were, by way of experiment, worked in the same way, and from its present appearance it seems likely to do as well as the remainder which has been treated in the usual way. I have thus shown that this implement can be successfully applied to a great variety of purposes, and have no hesitation in giving it as my deliberate opinion, that by means of it much of our field labour can be accomplished in a better manner, and at greatly less expense, than by the customary processes. In particular I believe that if land intended for root crops be deeply ploughed in autumn, it can ordinarily be brought into a more favourable state for drilling, by working it with this or some similar implement, than by ploughing; and the reason seems just to be that the soil, which has been mellowed by frost, being kept a-top, and the winter sap retained, a good braird is almost certain to follow. I am convinced from what I have seen and heard, that in very many cases spring ploughing may thus be omitted with decided benefit to the Turnip crop, and with a very great saving of time and labour. The distinctive feature of this system of tillage consists in loosening and pulverising the soil to a sufficient depth without turning it over. This can be done by various implements; and I recommend Mr. Scoular's simply because I have proved it, and think it the best which has come under my notice. Its recommendations are that it is cheap—costing, with the apparatus for moving it from place to place, about 3*l.*; it is very light, of very easy draught, and quite under the control of the ploughman. It can be worked on the foulest land without checking, and it brings all fibrous rooted weeds to the surface without cutting them in pieces as the plough does. My object, however, is to recommend a system of culture, rather than a particular implement; and believing that these details of my own experience will be interesting to the members of this Club, I have had much pleasure in laying them before you. Being anxious to know how far the experience of others who had used this grubber agreed with my own, I some time ago applied by letter to six farmers in East Lothian, who, I ascertained, had tried them, from each of whom I got a most explicit and obliging answer in a few days, and who corroborate my statement in every particular. If time permitted, I should have liked to read their answers entire, but as I have already occupied much of your time, I

shall only make a few quotations. Mr. Turner, Northrigg, states that his farm consists chiefly of a strong clay soil—that he had tried this grubber chiefly in cleaning and preparing fallow for Wheat, the Turnip season being over before he got it. Its advantages he states to be cheapness, its keeping itself cleaner and freer in very dirty land—its easy draught (the Dynamometer showing that two horses worked it as easily as three did the common grubber)—and particularly that on his stiff soil the land when ploughed, after using this implement, turns up much freer and without that stiffness in the bottom of the furrow which he invariably finds after using the old heavy grubber. Mr. Wright, Hedderwick Hill, whose farm varies from stiff clay to rich loam and light sand, has used it with decided advantage in cleaning his fallows and Bean stubble; and by means of it sows his Turnips from the winter furrow without further ploughing. In preparing his Bean stubble for Wheat, he splits the drills with the plough before using the grubbers. Mr. Peacock, Papple, confirms these statements. His soil being also a strong one, he states that in preparing his land for Turnip sowing, he takes in only as much at a time as he can finish in a day, and leaves the remainder untouched until that is sown, as it sets into a solid mass when caught by rain after being so deeply pulverised. Messrs. Todrick, Spittal; Hall, Amisfield Mains; and Anderson, Huntington; testify to the same effect. The three first-named gentlemen use the Traprain grubbers as well as Scoular's; and while they are unanimous in commending *light* grubbers, are not quite decided as to which is in all respects the best. *Mr. Wilson, of Edington Mains, at the East of Berwickshire Farmers' Club.*

## Home Correspondence.

*Dairy Management.*—As I believe the management of milch cows to be superior here to that in any part of England—and more particularly so to that of my native county, Somerset, it may be interesting to tell you how I manage mine, and the quantity of produce I obtain weekly. I have a boiler containing about 40 gallons, and into it I put about 50 lbs. of Turnips, a considerable quantity of water, and about 12 lbs. of straw cut into chaff, and this is boiled for about two hours, when it becomes a dark nasty looking mess; one-half of this is taken out into two tubs, and whilst warm 1½ lb. of Bean or Pea-meal is stirred into each, and then given to each cow at about 110° of heat. That which is left in the boiler remains till morning, and if well covered up is still warm enough for use; it is then mixed with the Pea or Bean-meal, as before, and given to the cows at break of day; this, with hay *quantum suff.*, constitutes their daily diet; and I got about 6¼ lbs. of butter from each cow—I omitted to say I have only two cows. The butter produced in this way has no taste of Turnips, and the avidity with which the cows eat this boiled mess, is a good criterion of its value. When given to the cows, it should be thin and sloppy. *A Subscriber.*

*On Rabbit Keeping.*—I received your letter, and in reply, beg to forward you a plain account of my rabbit keeping. I have been in the habit of breeding rabbits, more or less, between 20 and 30 years. First, upon a small farm near here, and since, upon my present farm, of about 150 acres. The largest number of does I have ever kept is 101; but at this season of the year, I have only 50, and all the statements and calculations here given are based upon that number, with the addition of two bucks. The does rear from 12 to 14 each in the year; if ever a doe has more than seven at a time, I either kill them, or put the surplus to another doe; but it is seldom they have so many. With this number, I generally sell 12 every week, besides one now and then for my own eating. I contract, and a person fetches them away when from eight to nine weeks old; at this time, they weigh about 2½ lbs. to 3 lbs.; the price is, from the longest day to the shortest, 1*s.* per head, and from then to the longest day again, 1*s.* 2*d.* I feed them myself regularly four times a day; they require great attention to their feeding, and do better when always attended to by the same person. Their first meal is about a handful of Oats each; the second, a few sliced Swedes; the third, grains, with toppings, or a little Barley-meal; the fourth, good Clover hay, as sweet and green as I can find. The whole consumption, at this season of the year, is about two trusses of hay per week; 2½ to 3 bushels Oats and meal; 3 bushels Swedes, and 10 bushels grains, which would cost me about 15*s.* In summer, the food is varied; I give them Vetches or green Clover, and pick all the Crow Needles, Charlock, Hog-weed, and almost anything green, taking care not to have a bit of Hemlock, which would kill them; but I give them grains (which I get from the Tring Brewery, at 4*d.* a bushel), and a few Oats, all the year round. The sum received scarcely amounts to the entire cost of food; but the dressing is my remuneration. The present number makes me quite 10 bushels of dung per week, and although I buy other artificial manures (guano included), I do not find anything has so much effect upon my land as rabbit dung. I use it for various crops, sometimes with Turnips, at others as a top dressing for Grass and Wheat. I have always found that Wheat, dressed with rabbit dung, is ready for harvesting a fortnight before the other. I cannot estimate it at less than 6*d.* per bushel; it should be more. I keep my rabbits warm in winter, and cool in summer. Musty hay or bad food will soon cause them to die. I shall be happy to answer further if required. *Joseph Glenister.*

*Flue Boilers to Steam Engines.*—I dare say I am not the first or only farmer who has been plagued with black smoke and a bad draught from one's engine chimney. As I have conquered the difficulty, I may now save some pains and penalties to others. In my humble opinion, 9 out of 10 who fit up engines are rather defaulters as to flues. You are assured that no sweeping is required—that the draught will keep all clean, and so forth—the consequence is, that you find the engine that went off so freely when new and all the flues clear, gradually loses power, more stoking is required, and the neighbourhood is poisoned with smoke, which ought to be flame. The vexation and waste of coal is immense. Now I do assert that flues, especially in flue boilers—I mean those having a tunnel through the centre—should be set so that you can readily clean out, not only the brick flues, but that which passes through the boiler. On examining mine, by breaking through the brick-work, I found it almost choked by a fine heavy dust or sand from the coal or bricks, or both; I removed several barrow-loads. Surely such boilers should never be bricked up without accessible doors to clean them out occasionally. The moment you see a dense volume of smoke issuing from a steam chimney depend on it there is imperfect combustion and waste. I say, therefore, look to your flues and chimneys. When my man complained, "Sir, I cannot get the steam up!" "Well, are all your flues swept?" "Oh! yes." "Is the flue through the boiler swept?" "No, we can't get at that," and yet it was nearly full of sandy grit. Perhaps some of your correspondents can enlarge upon this subject. Flues should almost encompass the boiler, provided you have a high dome to it, to prevent its priming, or spoiling the water. P. S. An opening for cold air at the back of the bridge facilitates combustion. It is the want of draught caused by foul flues that causes the furnace bars to melt or warp. *J. J. Mechi, Tiptree, Jan.* 14, 1851.

*Poultry, Pinioning of.*—I am much obliged to your correspondent "H. Hottiman" for so gently correcting me in the ridiculous error I made, when employing the word "pinioning" in connection with Sir John Sebright's name. Far be it from me to impute to the late worthy baronet any ignorance on the subject in which he was so thoroughly versed. I take all shame to myself for writing so loosely. I should have expressed myself more intelligibly and more logically. The purport of Sir John Sebright's remark to me was, that with a view to try whether wild ducks could be rendered tame, and reconciled to the poultry yard, he had drawn out a number of their "flight" feathers. It was, as I observed, done merely by way of experiment; and I immediately made a note of the result. I hardly need repeat that Sir John's expectations were fully borne out. When the new flight feathers appeared, the ducks, naturally wild, took their speedy departure. All persons who have made the instinct of animals their constant study, can readily understand this. Nature's laws are universal, unchangeable. *William Kidd, New-road, Hammersmith.*

*Fat Breeding Stock.*—Allow me to suggest to the committee of the Agricultural Society of England, that instead of giving prizes to noblemen, gentlemen, and farmers who take a pleasure in feeding animals for the tallow-chandler, a place should be set apart for over-stuffed quadrupeds, in order that those who like such sights may be gratified, in the same manner that holiday people are amused with a Jack-pudding swallowing yards of tape, or any other extraordinary performance; but whilst the committee do not object to receive brutes weighed down with fat, let them not encourage men to cram animals, and reward them as a criterion of superior knowledge in farming. Any man with money can produce grease, and show oxen, sheep, and pigs unable to move without assistance. I have seen a pig, which for many weeks before it was killed, was fed by hand, being quite incapacitated, from obesity, from eating out of a trough. This disgusting proceeding was adopted for the purpose of bringing a certain breed into notice, and answered for a time—till it was found the expense of feeding such coarse animals did not pay. The object of the Agricultural Society being to improve the breeding and feeding of stock, I beg to point out the advantage that would arise from giving prizes for the best description of animals ready for the butcher, the most saleable and profitable to the owner and consumer. This desirable point can only be attained by insisting upon a Dr. and Cr. account being produced at the time of the exhibition. If the manufacture of lard and dripping can be proved lucrative according to £. *s. d.* value, let there be a few pens set apart, as those devoted to the interest of the grease and tallow-chandler. Rewards should only be given to men who show the finest and cheapest animals. Beef, mutton, and pork at 1*s.* per lb. may be wonderful to look at, but dissolves too much gold and silver at the present day. *Falcon.*

*Carrigeen Moss.*—The suspicions of your Beg Erin correspondent, in the *Gardeners' Chronicle* of the 4th, regarding Carrigeen, are correct. This vegetable production is certainly not a Moss, but belongs to the Algæ or sea-weed tribe, and is well known to the marine botanist as the Chondrus crispus. This plant, which is thrown abundantly on many parts of the English coasts, deserves a prominent place in the sick dietary, on account of its nutritive properties. It is a good substitute for isinglass for jelly or blanc-mange, and possesses one great advantage over the latter article for an invalid's night refreshment, as it never tastes perfectly cold; for this reason, however, I cannot agree with your correspondent in esteeming Carrigeen as "a delicate luxury" for the table to a healthy palate, added to which the strong saline taste can never be perfectly removed. With your correspondent, I confess that "I have never seen it growing," but I have collected it in great quantities on the Dorsetshire coast when thrown up fresh from the sea. In this state it is of a milk-white colour, but after being thoroughly rinsed in fresh water, and a long exposure to the sun in the open air, it changes colour, curls up, becomes extremely light in weight, in which state it should be packed away in paper bags, and kept hung up in a dry place for winter store. Carrigeen rarely nauseates, and has been known under my own experience to have been the sole support in several cases for some months, when the stomach would retain no other kind of food. It should never be given when the patient is suffering from diarrhœa, having a tendency to increase the complaint. *C. E. G.*

——Seeing another notice of the "Carrigeen Moss" in the *Agricultural Gazette*, and having seen two notices of a singular case in Carrot culture in the *Gardeners' Chronicle*, and seeing that neither has yet got from any botanist the consideration which the mere working farmer should expect, I am induced to trouble you again with a short notice of both, in the hope of stimulating further enquiry, if such be necessary. The plant called "Carrigeen" is noticed by Sir Robert Kane in his "Elements of Chemistry," page 878, under the head Lichenine, where he says: "This variety of starch, which is found in many Lichens, especially in the Iceland Moss and the Carrigeen (Spherococcus crispus), is not contained in the plant in grains, but in a soluble condition. To obtain it the Lichen is first digested in a cold dilute solution of carbonate of soda, to dissolve the bitter resinous principle; and this being completely washed away, the Lichen is boiled for a long time in water; a liquor is obtained, from which, on cooling, the Lichenine separates as an opaque grey jelly, which when dried is black, hard, and glossy. Its properties are very similar to those of Inuline. It gives with iodine a greenish-brown colour. Its composition is expressed by the same formula as the others. (Starches,) $C_{12}H_{10}O_{10}$." On reading the above I again looked into the "Flora Hibernica," by Dr. Mackay, where I find he has arranged this plant differently, and under a different name to Spherococcus. He calls it "Chondrus crispus," or curled Chondrus, and describes it in his "Algæ Rhodospermæ," pages 201 and 202. He says "it grows on our rocky shores very common, very variable in size, shape, and colour (often of a full green); yet the accustomed eye will find little difficulty in recognising it under all its varieties. On our western shores it is collected in large quantities by poor women and children, and sold under the name of Blancmange-weed (or as they call it Bullamonge). At one time it sold in Dublin at 2*s.* per lb., but latterly the price has greatly fallen away. It may now be bought, washed and dried, on the west coast of Clare, at from 1*s.* to 1*s.* 6*d.* per stone of 16 lbs." Your readers, who are, if any there still be, anxious to inquire about this plant, should bear in mind, that when Doctor Mackay speaks of "one shilling to one shilling and sixpence a stone of sixteen pounds;" he was speaking of such things about 20 years ago, when Potatoes were plenty, and such scenes of death from starvation did not occur, as you must have read of, but which *I saw* on the other coasts of Ireland, besides the coasts of Clare, outside the poor-houses of Scariff, Kilrush, Schull, Bantry, and Skibbereen, where I could get hundreds, nay thousands of once and lately able-bodied men to work for 2½*d.* to 5*d.* per day, of 12 hours, without meat or drink, and poor women and boys to carry this or any other sea weeds on their backs, 6 to 10 miles, at from 1*d.* to 2*d.* per hundred weight of 112 lbs. Judge, then, what now, or henceforward, may be the price at which "Carrigeen Moss" can be purchased at on the "coast of Clare, Cork, Kerry, Galway, or Mayo." Should any one desire to purchase it, your readers, I say, can now judge for themselves on this subject, without my inflicting further pain on them; such as I must ever feel myself when such things as I have seen are stirred up in my memory, no matter from what quarter. *Edward Carroll, Beg Erin, Castlebridge, Wexford, Jan.* 16.

## Farmers' Clubs.

HALESWORTH, *Dec.* 20: *The County Expenditure.*—The following resolutions were unanimously agreed to:—1. That we regard it as a settled maxim of the British constitution, that taxation and representation should be inseparable; and that, with the exception of the county rate, every tax to which an Englishman is liable, is made with the consent either of him or his representative. 2. That, as a consequence of the rate-payers having no control over it, the amount of money raised as county rate has, within the last twelve years, enormously increased in this county, as well as in others. 3. That various instances of extravagant expenditure of the county funds have been proved to have been, and to be still in existence. 4. That if the said funds were confided to the management of county boards, composed of representatives sent by different boards of guardians, we are fully convinced their amount would, under improved regulations introduced by men of business, be very greatly reduced. 5. That the accounts of such funds ought, at certain fixed times, to be audited and published for the information and satisfaction of the rate-payers. 6. That the decrease in the value of all agricultural produce, which has been caused by recent legislative measures, renders it more than ever imperative on British farmers to seek, by all constitutional means, a reduction of the burdens pressing upon them.

7. That petitions to both Houses of Parliament, praying them to pass an enactment giving the rate-payers the control of the county funds, be previously to our next meeting prepared for the signature of the members of the Club. 8. That these resolutions be printed, and a copy of them sent to the editors of the county papers; to the London and other agricultural journals; to the secretaries of the Winchester Farmers' Club, and of each of the other farmers' clubs in Suffolk and Norfolk. *Thomas Bishop, jun., Secretary, Chediston, near Halesworth, Dec.* 24.

SPROTBRO': "*The best method of Storing Turnips for Spring Feeding.*"—Mr. M. Clarke observed that he was not at all satisfied with his own experience, and was therefore desirous of hearing from the members present something which would improve his present system. He alluded to the several methods which he had seen. He found that by leading off the Turnips in frosty weather the crop of Barley was affected. Turnips pulled off and thrown up against a wall, and then covered with straw, were kept as successfully as by any plan he was aware of. It was urged by some, that sooner the Turnips were pulled off the better, but yet he thought that it was as well for those to remain on the land which were required to be consumed upon it, or at all events until they were fully grown. He had observed some parties, in taking up their Turnips, cut off the tops, and leave them on the ground to be ploughed in. He should be glad to hear from any present their experience upon such a system.—Mr. Newham, of Edlington, said that it was highly necessary to have the Turnips which they required for spring food taken up before the frost came. Some would take them up while in a frozen state. This was highly improper. It was requisite that they should be taken up when fully ripe, and they would best ascertain this in the clean manner they would leave the earth, by the fibres not in the least adhering to it. They would find Turnips left in an exposed situation very much deteriorated in value. His plan of preserving Turnips was carefully to shut out the effects of the west wind, and on that side of the pie he built a wall of stubble, covered with thatch, and instead of fastening it down as they did their corn stacks, he had the thatch rods laid in straight, so that by this means the water run off. The other side was also covered with straw in a similar manner; and he found the Turnips would remain good until spring. He was now placing about three loads in a heap. It was requisite they should have air. He strongly recommended that the Turnips should be taken up as early as ripe, and never allowed to make a second growth, as this would prove very injurious to the land. The following crop would be found to be much better than when they were allowed to grow again. He always avoided leading Turnips in frosty weather. They never kept well, and would generally become rotten. The plan he conceived best adapted for preserving Turnips was having them got off the land when fully ripe, not in a frozen state, and placed together in heaps in the manner he had described, and they would be found to keep well until the end of June. If they placed the tops of the Turnips upon the heaps they would rot, and it would be found that where the heaps had been placed there would be found a superabundance of tillage, and the succeeding crop injured rather than benefited. There was a large amount of tillage in the tops of Turnips, and it was quite natural to suppose that if they allowed them to rot upon the land the corn crop would be much better. They would find that frozen Turnips did not contain the same amount of food as those which were not so, and therefore not so good for their sheep and cattle; although it would be generally allowed that sheep improved more in frosty weather than in any other, provided their food was of good quality. He avoided cutting the Turnips as much as possible, and would rather give his workpeople a little more money to have them done well than otherwise. He was satisfied that a large amount of money was yearly thrown away from inattention to this point. He had the tops of the Turnips taken away and given to the ewes on the Grass, or to the cattle in the yards. There was undoubtedly a great amount of nutrition in the Turnip top, and he thought it better to have them consumed rather than plough them into the land. He had no doubt that ploughing them into the land would be productive of good to the land, but still he thought it a slovenly plan, and not worthy of general adoption. He preferred giving his Turnip heaps a south-east aspect, having a heavier portion of thatch placed upon the western side of those heaps in the fields. They did not require the Turnips to remain so long in the fields as they did those which were brought home. Hogs in high condition would suffer much by giving them Turnips deteriorated in value. Frozen Turnips would lose their colour, which could only be regained by allowing them to grow again, at an injury to the land. It was never in his opinion too soon to cut Turnips if they were only ripe, and he considered that those which had been taken up early and preserved were always better than those which had been pulled fresh. He had frequently found that those Turnips which were pulled the first would keep the best.—Mr. S. Vickers said that he did not remember a year when Turnips kept so well as last, although they grew until nearly Christmas. His Turnips this year were sown on the 3d, 4th, and 5th of June, and were still growing. What were intended for spring food he had led into the stack-yard and placed together in heaps of from 10 to 15 loads, covered with straw, and not quite air tight; and these last season were beautiful. Those which remained in the fields were covered with tops, but these decaying they were further covered with straw, and were remarkably good. Where the tops had decayed upon the heaps, their decomposition tainted many of the Turnips, and caused the Barley to be there more luxuriant than in other parts of the field, so much so that the crop was the first to be laid, and the extra tillage of the Turnip tops a positive injury. It was of great importance to know when the Turnips were really ripe, and if they were taken up in a frozen state, they would certainly rot. He always found, with Mr. Newham, that the west side of the field was the most unfavourable for preserving Turnips. After some further remarks, the meeting came to the following resolution:—"It is recommended that Turnips for spring feeding be cut as soon as ripe, placed in pies, with a south-east aspect, covered well with thatch, and on no account parted while in a frozen state."

## Miscellaneous.

*Beans as Cattle Food.*—In 1825, a sweepstake was entered into by five East-Lothian farmers, to be claimed by the one who should be pronounced the best feeder of cattle. In order that an equal chance should be enjoyed, Mr. Charles M'Combie, then an extensive dealer in Aberdeenshire, was instructed to forward 40 long-horned Aberdeen cattle. These were of the same age, and in equal condition, and were divided as fairly as possible among the five farmers. The price was 18*l.* per head. The cattle were put up to fatten in the second week of September. There was no restriction as to feeding. At Christmas following, they were exhibited at Haddington, and the improvement was most remarkable. The late Mr. Lee, of Skateraw, was declared the winner. He had used boiled Beans throughout in feeding. The other competitors fed very high, as on draff and dregs, Swedish Turnips, hay, bruised Beans, and Oats. The superiority of boiled Beans was here proved—a fact which deserves the particular attention of cattle-feeders at the present day. *Dickson on Breeding Live Stock.*

*Agricultural Tours.*—South-country farmers have generally but an imperfect or erroneous idea of the resources of the north of Scotland, which a personal inspection can alone correct. In Caithness, an exhibition of live stock is held in July, where there is generally, both in respect to numbers and quality—particularly as regards Short-horned cattle and Leicester sheep—as fine a show as in more favoured districts. These breeds, it is erroneously supposed, are not sufficiently hardy for this northern latitude; but an inspection of the animals collected at the above annual exhibition will prove the contrary. Every young man who intends following the occupation of a farmer should make such tours; but the sons of farmers are often prevented from obtaining the information they require, from the work at home occupying all their time. It would be well if farmers were to allow their sons sufficient opportunities to visit, at least, the markets and agricultural shows in their own localities, and not grudge the money or time thus expended. By means of visiting distant localities, young men are enabled to become acquainted with the general progress of agricultural improvements; and thus is created in them a spirit of emulation which stimulates to similar improvement on their own farms. How else is it to be expected that young farmers can be excited to such a spirit of emulation, if they are kept at home, toiling with their fathers in the dark, as it were, and following the empirical routine of their grandfathers? There are yet, even in this age of improvement, many farmers content to follow in the steps of those of the "old-school"—their sons seeing nothing, and therefore having faith in no system different to that they have followed from their youth up. The consequence is, that when they possess farms of their own, they have nearly all the elements of the improved systems of agriculture to learn. *Dickson on the Breeding of Live Stock.*

*Feeding Sheep.*—The practice of feeding sheep, netted or flaked on the land, and feeding on lea or Grass land with Turnips, has been much discussed of late, particularly by the Ayrshire farmers. They seem all to agree that feeding with Turnips on Grass land is not only the best, but most economical system. This may be the case in Ayrshire, where the climate is in general wet and moist, and much of the soil rather close bottomed and retentive. They also take the merit of feeding sheep better than the feeders in Forfarshire—affirming that their wedders of the same appearance fetch 2*s.* a-head more in the Glasgow market than those fed in the latter county. This is not generally understood, even by the Glasgow fleshers, as few counties can beat Forfarshire in this particular; but fat sheep, like many other good things, often come out of places from whence they are least expected. At one time, East Lothian and the Border counties were the only districts in Scotland famed for feeding sheep; but now almost every locality puts in its claim. Generally speaking, the preference is still to be awarded to East Lothian, particularly near Dunbar—the land in that neighbourhood being open bottomed, resting on a strata of red sandstone. Sheep will feed faster netted on the Turnip land, than when the Turnips are laid on Grass land. All East Lothian feeders are agreed on this point. The great point in feeding sheep with Turnips, either hoggs or old sheep, is to commence as early as possible, say about the middle of September, or at all events before the 1st of October. The Turnips should be given on fresh pastures for the first month, and afterwards treated as already mentioned. When feeding Leicester hoggs, the Turnip tops should be cut, as previously recommended, which will prevent many deaths. Regular shifting every four or five days, or not longer than a week, should also be attended to; and a supply of stored Turnips always at hand to give the sheep, in case of severe frosts, more especially when feeding on Grass land. *Dickson on the Breeding of Live Stock.*

METEOROLOGICAL REPORT.—JAN.

(*Continued from page* 45.)

| Date. | Time. | Max. | Min. | WIND, and REMARKS. |
|---|---|---|---|---|
| Friday 3 | 9.30 a.m. | 29.85 | ... | Calm. Steady rain all day, |
| | 4.40 p.m | ... | 29.75 | with very little wind. |
| * | 8.20 p.m. | ... | 29.75 | |
| | 11 p.m. | 29.79 | ... | W. |
| 4 | 10 a.m. | 29.69 | ... | S. Cloudy, with light scud. |
| | 10.55 p.m. | ... | 29.50 | S. Blowing hard P.M. |
| Sund. 5 | 8.30 a.m. | 29.50 | ... | S. 1 P.M. tremendous black cumuli, with white summits, about 26°, extending from NE. to SE., moving slowly to northward, as though the shower, which fell heavily during church-time, had gone away to the eastward. |
| | 9 p.m. | ... | 29.38 | S. |
| † 6 | 8.30 a.m. | ... | 29.38 | SE. A.M., clouds passing slowly from SE. and E., with very heavy appearance, to northward. |
| | 11.25 p.m. | 29.47 | ... | NE. P.M., cold and gusty, but not much wind. |
| 7 | 9 a.m | 29.45 | ... | E. Damp fog, little wind. |
| | 5.50 p.m. | ... | 29.37 | S. Heavy rain in evening. |
| 8 | 8 a.m. | 29.39 | ... | S. Heavy cumuli in E., at 8 A.M.; at 2.50 P.M. tremendous rain, with very heavy squalls; blowing hard. |
| ‡ | 3.40 p.m. | ... | 29.21 | S. |
| | 5.45 p.m. | ... | 29.24 | S. all the afternoon and evening. |
| | 11 p.m. | 29.39 | ... | S. More moderate. |
| 9 | 8.20 a.m | ... | 29.73 | W. Fine day, with very little wind. |
| | 1 p.m. | 29.84 | ... | W. |
| 10 | 7.30 a.m | ... | 29.82 | S. Dense fog A.M. |
| | 10.20 p.m. | 29.99 | ... | NW. Drizzling P.M., and misty. |
| 11 | 7.40 a.m. | 30.01 | ... | Calm. |
| | 2.40 p.m. | 30.00 | ... | SW. Fresh breeze, and drizzling. |
| | 10.15 p.m. | ... | 29.95 | SSW. Increasing; steady rain. |
| Sund.12 | 8.30 a.m. | ... | 29.86 | S. Steady rain, all day, with |
| § | 11.30 a.m. | 29.88 | ... | little wind. |
| | 3.10 p.m. | ... | 29.84 | S. Do. |
| 13 | 7.40 a.m. | 29.72 | ... | S. Squally and rainy, all day. |
| | 11.15 p.m. | ... | 29.54 | S. Blowing hard. |
| 14 | 8.30 a.m. | 29.39 | ... | SE. Gloomy to eastward. |
| | 10.20 p.m. | ... | 29.02 | SE. Blowing hard. |
| ‖ 15 | 8 a.m. | ... | 28.89 | SSE. Do. all day, with heavy passing squalls of rain. |
| | 12.30 p.m. | ... | 28.92 | SSW. |
| | 10.40 p.m | 29.44 | .. | W. Very little wind. |
| 16 | 2.30 a.m. | ... | 29.56 | Clear moonlight, almost calm. |
| | 5 a.m. | 29.57 | ... | WNW. Do., light fleecy clouds. |

* Could this fall of the barometer, and the low state of the thermometer, be owing to a storm at a great distance to the westward, and travelling northward?

† This storm passed up Channel, eastward and northward, producing fogs on the 6th and 7th.

‡ A storm travelling nearly due north; it passed west of Ushant at 11 A.M., and near Plymouth at 2 P.M. of the 8th.

§ If all the rain that fell during the 11th, 12th, and 13th was produced by the same storm, it must have travelled *very slowly* from the south; but I think it will turn out, on inquiry, that on the 11th and 12th a storm was travelling eastward up the Mediterranean, causing the unusually high temperature of those days.

‖ From the 13th to the 16th this storm was travelling northward; the wind on the 15th veering regularly as it passed to the westward of this island. I subjoin the detailed observations of that day, as a beautiful instance, rarely occurring on shore, of the coincidence between the fluctuations of the barometer, and the veering of the wind from SE., SSE., S., SSW., SW., W., WNW. Having passed off to a colder latitude, the back draught of it produced a frost on the night of the 15th.

| Date. | Time. | Bar. | Wind. | REMARKS. |
|---|---|---|---|---|
| Jan. 14 | 10.20 p.m. | 29.02 | SE. | Blowing hard, all night. |
| 15 | 8 a.m. | 28.89 | SSE. | Do. |
| | 10.40 a.m. | 28.89 | S. | Heavy squall, shower just passed. |
| | 12.30 p.m. | 28.92 | SSW. | Blowing hard, with heavy squalls. |
| | 3.5 p.m. | 29.01 | S.W. | Do. |
| | 5.10 p.m | 29.18 | W. | Wind moderating. |
| | 7.20 p.m. | 29.29 | W. | Much quieter. |
| | 10.40 p.m. | 29.44 | W. | Very little wind, cloudless sky. |
| 16 | 5 a.m. | 29.57 | WNW. | Almost calm, light fleecy clouds. |

Dorchester, Jan. 21st. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### JANUARY.

FEN FARM, *Jan.* 14.—Seeing the remark from one of your correspondents, "Everything is dull," apparently applied to the business of the farm, I merely write to show that it is not so in all cases. The diminished and inferior produce of last years' corn crops, the falling prices of the present period (excepting sheep and wool), are truly causes of depression of mind to hundreds of worthy industrious men, whose sufferings and losses will not permit them to take any pleasure in prospects of the future; but with all those who hope to weather the storm, who have trimmed their sails, taken an observation and steered truly, this season of the year is not so very dull after all; to see the result of your past cares in the shape of large pies of Turnips and Mangold Wurzel disappearing before the bullocks and sheep; to notice the varied effect on each head of stock of cake, roots, straw, hay, chaff, shelter, or other treatment; to notice the growth of the young stock, to change the fold for the sheep, to provide a sufficient supply of Turnips or dry food to ewes on grass; to store away manure, and remove the accumulated heaps and piles in alternate layers; the well-trodden compound from beast stalls, boxes, stables, and crew yards, saturated with tank liquor, and swelled with

town much, and topped with road scrapings, refuse heaps, or dyke bottomings, will sufficiently awaken into activity and stimulate reflection. The Wheat grows vigorously, requiring only a gratulatory glance, unless the slugs want a few barrowsful of salt, or cart-loads of lime, *if* the drains are right; and here is sure to be some signs of life; the outfalls all require clearing, deepening, or straightening; the brinks of the ditches want levelling, and rubbish removing; the hedges trimming and cleaning; gaps stopping, old stumps thinning out, and the spray carefully twined in; and nowhere is intelligence more necessary than in the management of the old hedge-row, hewing out the encroaching Elder, grubbing up the indigenous Elm, Ash, and Bramble, which chokes and weakens the more tractable and useful Thorn, invariably sensible of judicious treatment by the neatness, straightness, and *strength* of a narrow and well-kept fence. Dulness will vanish with the stroke of the axe; the clink of the tile, the rush of the water, converting a chill and poisonous swamp into a warm and fertile field. Oh, how much to do, and who is to do it? Neither the boasted old race of farmers, nor the mere aristocratic landlords, can do it. A new and vigorous effort is required, and will be forthcoming. "Sweet are the uses of adversity." All *men* shall be considered as countrymen; the only castes which will be retained are honesty and ability, as opposed to idleness, ignorance, and vice. The landlord shall no longer be the man-lord; the farmer no longer a subservient and servile clod; the labourer no longer a mere machine. Slavery will disappear with that cursed pride of mere station which has so long paralysed and bound the energies of the agriculturist; and now the true but homely axiom is to reign, that a man's proper station is that which he can worthily fill. *J. W., Peterborough.*

## Notices to Correspondents.

BONES: *R N C.* We know nothing of the bone trade, and cannot introduce you to any London dealers.

BUSBY'S PRIZE CART: *Tuesday.* It is a thoroughly practical one; can be copied by any village wheelwright; and, after the first, could be made cheaper than the common ones, having less carpentry and less iron work; for the principles, see Mr. Thomson's Report on Implements at the York Meeting of the Royal Agricultural Society, Journal, Vol. IX.

OSIERS: *K L.* The subject is discussed at page 69, vol. for 1845. You had better get cuttings of the right sorts from neighbouring osier grounds; for we know, if you can procure them safely by their botanical names, Salix triandra vitellina, and rubra, are considered the most useful for fine work. S. Forbyana and viminalis are rapid, strong growing kinds. Pieces 2 feet long of the two or three year old shoots, stuck 1 foot in the ground, in rows about 2 feet 6 inches apart, and 2 feet apart in the rows.

POULTRY: *C S.* Next week.

PUBLIC DRAINING ACTS: *X X.* The General Land Draining and Improvement Company (46, Parliament-street, Westminster), have powers "to contract for and execute all works for draining, navigating, warping, reclaiming, inclosing, fencing, *building* on, and otherwise improving flooded, uninclosed, waste and other lands, with money to be advanced by the Company, or by other parties." This hardly meets your case, we suspect; but you had better apply at the above address for further particulars.

RAT! RAT! RAT! *A Constant Subscriber.* It was reviewed in Dickens' "Household Words," and our knowledge of the pamphlet is confined to what was there said of it.

READING FARM: *G W.* Your critique refers more to grammatical than agricultural errors: and we do not think it would serve any useful purpose to publish it.

SHED-FEEDING SHEEP: *G S.* asks for the experience of farmers on the practice of open-shed-shelter of sheep in fields in winter.

WHITE CUMBERLAND BREED OF PIGS: *H T.* Apply to Mr. James Knowles, Tortworth, Wootten-under-Edge, Gloucestershire.

YOUATT'S TREATISE ON THE HORSE: *Yorkshire.* If you compare the two editions, you will find that the present one, advertised at 10*s.*, has been fully revised, so as to render it, in many respects, a new work. The chapter on the Diseases of the Horse confirms this remark. And it is also in other respects new. The wood engravings are all new. This work contains 50 or 60 pages more than the other edition of it; and 2*s.* is not an addition to the price which will be complained of by any one comparing the two editions.

# Markets.

## COVENT GARDEN, JAN. 25.

Hothouse Grapes and Pine-apples are scarce and dear. The supply of good dessert Pears is also limited. Apples are sufficient for the demand. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Vegetables of all kinds are abundant and good. Seakale, Asparagus, and Rhubarb are excellent. French Beans are more plentiful. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 3*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Chrysanthemums, Roses, and the different kinds of spring bulbs.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6*s* to 8*s* | Pomegranates, each, 3*d* to 6*d* |
| Grapes, hothouse, p. lb., 5*s* to 8*s* | Almonds, per peck, 6*s* |
| — Portugal, p. lb., 8*d* to 1*s* | — sweet, per lb., 2*s* to 3*s* |
| Pears, per doz., 2*s* to 5*s* | Chestnuts, per peck, 2*s* to 5*s* |
| — per half sieve, 6*s* to 15*s* | — per 100, 9*d* to 1*s* 6*d* |
| Apples, dessert, p. bsh., 6*s* to 10*s* | Nuts, Barcelona, per bush, 20 to 22*s* |
| — kitchen do., 5*s* to 8*s* | — Brizil, p, bsh., 12*s* to 14*s* |
| Oranges, per doz., 9*d* to 2*s* | Filberts, p. 100 lbs., 60*s* to 65*s* |
| — per 100, 6*s* to 10*s* | |
| Lemons, per doz., 1*s* to 2*s* | |

### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d* | Leeks, per doz., 9*d* to 1*s* |
| Cabbages, per doz., 6*d* to 1*s* | Shallots, per lb., 6*d* to 8*d* |
| Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Artichokes, Jerusalem. p. half sieve, 1*s* to 1*s* 6*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| French Beans, per 100, 2*s* to 3*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Endive, per score, 1*s* to 1*s* 6*d* |
| Asparagus, per 100, 2*s* to 8*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Rhubarb, p. bundl., 6*d* to 1*s* 6*d* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Potatoes, per ton, 60*s* to 100 | Red Beet, per doz., 6*d* to 1*s* |
| — per cwt., 3*s* to 5*s* | Mushrooms, p. pot., 1*s* to 1*s* 3*d* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Fennel, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* 6*d* to 4*s* | Savory, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Carrots, per doz., 2*s* to 5*s* | — Roots, p. bundl. 9*d* to 1*s* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Marjoram, per bunch, 2*d* to 4*d* |
| Onions, p. bunch, 3*d* to 4*d* | Mint, green, per bunch, 6*d* to 9*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Watercress, p. 12 bunch., 6*d* to 9*d* |

### HAY.—Per Load of 36 Trusses.

CUMBERLAND MARKET, JAN. 23.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72*s* to 77*s* | Inferior ... ... ... | 65*s* to 70*s* |
| Inferior ditto... ... | 50 65 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 75 80 | | |

JOSHUA BAKER.

### HOPS.—FRIDAY, Jan. 24.

Messrs. Pattenden and Smith report that the demand for Sussex Hops is on the increase; fine Weald of Kents are also in better demand.

### POTATOES.—SOUTHWARK, Jan. 20.

The Committee report that the market was well supplied with Potatoes from the Continent and coastwise, and though trade had been better this last week, it was only with a few fresh cargoes better prices had been made. The following are this day's quotations:—York Regents, per ton, 80*s.* to 100*s.*; Scotch do., 60*s.* to 75*s.*; ditto Cups, 60*s.* to 65*s.*; Cambridgeshire and Lincolnshire Regents, 60*s.* to 80*s.*; French whites, 50*s.* to 65*s.*

### COAL MARKET.—FRIDAY, Jan 24.

Eden Main, 14*s.* 6*d.*; Wallsend Tees, 16*s.*—Ships at market, 46.

### SMITHFIELD, MONDAY, Jan. 20.

There was a larger number of Beasts, and the average quality was good. The morning being cool, purchasers were plentiful, but prices were not higher. The supply of Sheep had also increased; the trade was more cheerful than on Friday, but it was difficult to make any more than on Monday last. Good Calves were scarce, and dearer. From Holland and Germany there are 366 Beasts, 110 Sheep, and 82 Calves; from Norfolk and Suffolk, 2000 Beasts; from Scotland, 500; and 900 from the northern and midland counties.

| Per st. of 8 lbs.—s | d | s | d | Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 4 to 3 | 8 | Best Long-wools . | 3 | 8 to 3 | 10 |
| Best Short-horns | 3 | 2 — 3 | 6 | Ditto Shorn ... | | ... | |
| 2d quality Beasts | 2 | 6 — 3 | 0 | Ewes & 2d quality | 3 | 0 — 3 | 4 |
| Best Downs and Half-breds ... | 4 | 0 — 4 | 4 | Ditto Shorn ... | | ... | |
| Ditto Shorn ... ... | | | | Lambs ... ... | | ... | |
| | | | | Calves ... ... | 3 | 8 — 4 | 8 |
| | | | | Pigs ... ... | 2 | 8 — 3 | 4 |

Beasts, 4327; Sheep and Lambs, 20,670; Calves, 119; Pigs, 285.

### FRIDAY, Jan. 24.

Although the supplies of all kinds of stock are but small, they are fully adequate to the demand; indeed, prices generally are barely so good as on Monday. The quality of Beasts is still middling; in consequence, choicest qualities make 3*s.* 8*d.* Good Calves are in a few instances dearer, but we cannot quote higher on the average. Our foreign supply consists of 60 Beasts, 420 Sheep, and 122 Calves; from Norfolk and Suffolk, 300 Beasts; from Scotland, 39; and 78 milch cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 | 4 to 3 | 8 | Best Long-wools . | 3 | 6 to 3 | 8 |
|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 2 — 3 | 4 | Ditto Shorn ... | | ... | |
| 2d quality Beasts | 2 | 4 — 3 | 0 | Ewes & 2d quality | 2 | 10 — 3 | 2 |
| Best Downs and Half-breds ... | 4 | 0 — 4 | 4 | Ditto Shorn ... | | ... | |
| Ditto Shorn ... ... | | | | Lambs ... ... | | ... | |
| | | | | Calves ... ... | 3 | 8 — 4 | 8 |
| | | | | Pigs ... ... | 2 | 6 — 3 | 4 |

Beasts, 615; Sheep and Lambs, 3850; Calves, 200; Pigs, 295.

### MARK LANE.

MONDAY, JAN. 20.—The supply of Wheat to this morning's market from Essex and Kent was small; some of it being in better condition met a more ready sale than this day se'nnight, but the damp was difficult to quit. Old foreign was in improved request; nevertheless, the amount of business was limited.—Barley, Beans, and Peas move off slowly at our quotations.—The Oat trade is heavy, and late rates are barely supported.—Flour is in somewhat better demand, but at no improvement in price.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 43—47 | Red ..... | 38—44 |
| — — fine selected runs...ditto | 43—48 | Red ..... | —42 |
| — — Talavera ..... | 46—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 36—50 | | |
| Barley, grind. & distil., 20*s* to 23*s*...Chev. | 27—31 | Malting . | 23—27 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 26—25 |
| Oats, Essex and Suffolk ..... ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 20—24 | Feed ..... | 17—21 |
| — Irish ..... Potato | 18—22 | Feed ..... | 17—19 |
| — Foreign .....Poland and Brew | 18—22 | Feed ..... | 16—20 |
| Rye ..... | 25—27 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... .22*s* to 26*s*.....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Winds | 37—43 | Longpod | 27—33 |
| — Foreign ..... Small | 23—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler | 24—27 | Suffolk... | 27—29 |
| — Maple.....27*s* to 30*s* .....Grey | 24—26 | Foreign . | 25—33 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 36—40 | | |
| — Suffolk ..... ditto | 28—36 | Norfolk . | 23—36 |
| — Foreign ..... per barrel | 18—24 | Per sack | 27—34 |

FRIDAY, Jan. 24.—The arrivals of grain this week have been moderate. The attendance at market this morning was even worse than of late, and prices of all articles may be considered nominally the same as on Monday, with scarcely any business doing. The late fleet of southern vessels on the coast have been pretty well all disposed of; the last price realised for fine Polish Odessa Wheat afloat was 35*s.* per qr.; for Galatz Maize the last price paid was 30*s.*

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Dec. 14..... | 39*s* 9*d* | 24*s* 3*d* | 17*s* 1*d* | 25*s* 11*d* | 27*s* 1*d* | 29*s* 5*d* |
| — 21..... | 39 5 | 23 10 | 17 1 | 23 1 | 27 13 | 28 2 |
| — 28..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Jan. 4..... | 38 10 | 23 5 | 16 6 | 22 8 | 26 5 | 28 1 |
| — 11..... | 38 1 | 22 9 | 17 2 | 22 1 | 26 9 | 27 0 |
| — 18..... | 38 0 | 22 8 | 16 9 | 24 8 | 26 7 | 26 11 |
| Aggreg. Aver. | 38 9 | 23 4 | 16 11 | 24 3 | 27 8 | 27 11 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | DEC. 14. | DEC. 21. | DEC. 28. | JAN. 4. | JAN. 11. | JAN. 18. |
|---|---|---|---|---|---|---|
| 39*s* 9*d* | — | ... | ... | ... | ... | ... |
| 39 5 | ... | — | ... | ... | ... | ... |
| 38 10 | ... | ... | — | ... | ... | ... |
| 38 10 | ... | ... | ... | — | ... | ... |
| 38 1 | ... | ... | ... | ... | — | ... |
| 38 0 | ... | ... | ... | ... | ... | — |

LIVERPOOL, FRIDAY, JAN. 17.—The imports of grain during the last three days are trifling; none from the United States; only one cargo of foreign Wheat—1420 qrs. from Egypt, and 344 sacks of French Flour. For the same time the exports to Ireland and coastwise consist of 3 30 quarters of Wheat; 944 barrels, and 444 sacks of Flour; 1534 qrs. Indian Corn, and 535 barrels of Indian meal. There was no activity in this market, and considering our heavy stocks, not so much choice of samples of Wheat and Flour offering. Purchasers, however, would only take retail quantities of any article, and the quotations of Tuesday last remain without the slightest change.

—TUESDAY, JAN. 21.—The arrivals this week are alike small of every article of the grain trade, while the exports to Ireland and coastwise are tolerably extensive. There has been no perceptible change in the value of any article during the week; the demand has been slack, and purchases have only been in retail. There was about the usual attendance of millers and dealers at our Corn Exchange this morning. All kinds of parcels of American was taken to hold over; very full prices were obtained, but no advance was established. Flour, both sacks and barrels, also sustained the rates of this day se'nnight. Oats were neglected, but Oatmeal was in favour, at a small advance. Barley, Beans, and Peas were unaltered in value. There was rather more doing in Indian Corn than of late, and a sale of American mixed was reported, at 29*s.* 6*d.* per 480 lbs.


GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.
21 oz. „ 3½*d.* 5*d.* „
26 oz. „ 3½*d.* 7½*d.* „
32 oz. „ 4*d.* 9½*d.* „

SHEET SQUARES.

In boxes of 100 feet. £. *s.* *d.*
Under 6 by 4 ... ... 0 12 6
6 by 4 and 6½ by 4½ ... 0 13 0
7 by 5 and 7½ by 5½ ... 0 15 0
8 by 6 and 8½ by 6½ ... 0 17 6
9 by 7 and 10 by 8 ... 1 0 0

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2½*d.* per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.*
7 by 5 „ 7½ by 5½ ... 13 6 | 9 by 7 „ 10 by 8 .. 16 6

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 5*s.*; 6 tubes, 7*s.* 6*d.* GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6¼ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12*s.* each.

6¼ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2¼*d.* to 2⅝*d.* per foot.

16*s.* per box; or 2⅝*d.* per foot if less than one box be taken:

| | | | |
|---|---|---|---|
| 11 inches by 8 inches | | 13 inches by 9 inches | |
| 12 „ by 8 „ | | 12 „ by 10 „ | |
| 12 „ by 9 „ | | 14 „ by 10 „ | |

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to how, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅜ in. thick. | ½ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0*s.* 6*d.* | 0*s.* 11*d.* |
| Above 15 inches and not above 35 ... | 0 8 | 1 1 |
| „ 35 „ „ 50 ... | 0 9½ | 1 3 |
| „ 50 „ „ 75 ... | 1 0 | 1 3 |
| „ 75 „ „ 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

16 oz. sheet ... ... ... 0*s.* 5*d.* | 26 oz. sheet ... ... ... 0*s.* 9*d.*
21 oz. „ ... ... ... 0 7 | 32 oz. „ ... ... ... 0 11

SUPERIOR ROUGH PLATE TILES.

⅜ inch ... ... ... ... 0*s.* 10*d.* | ⅝ inch ... ... ... ... 1*s.* 7*d.*
¼ inch ... ... ... ... 1 3 | ½ inch ... ... ... ... 2 0

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalised, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

GLASS FOR CONSERVATORIES, &c.

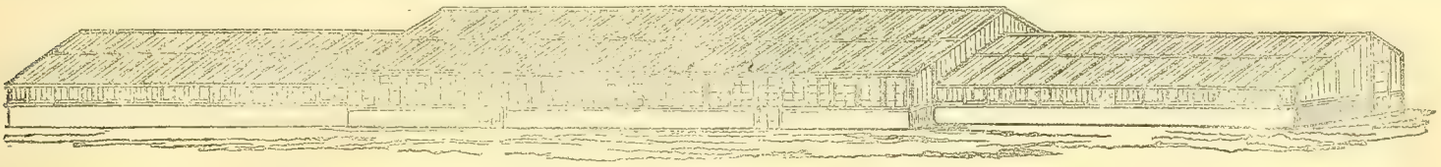
HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

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SALE OF AMERICAN PLANTS AND OTHER NURSERY STOCK.

MR. D. A. RAMSAY will Sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton one mile from Hyde-park Corner), on TUESDAY, Feb. 18th, at 12 o'clock, 1000 Rhododendrons, Azalea, Andromeda, Kalmia, &c., in fine varieties; Evergreens, Ornamental Trees and Shrubs, a quantity of Bulbs, a choice collection of Pinks, Yellow and other Picotees and Carnations; 1000 Victoria and other Rhubarb Roots, Fig Trees, Strong Grape Vines, Mushroom Spawn, Ash-leaf Kidney Potatoes, &c.—May be viewed prior to Sale, and Catalogues had at the principal Seed-shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

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HEALE'S NURSERY, DEVIZES, WILTS.

To Noblemen, Gentlemen, Nurserymen, Florists, and others, engaged in planting Important and unreserved Sale.

MR. FREDERICK ELLEN has received instructions to sell by Auction, on the premises, on MONDAY, 3d February, 1851, and following days (Thursday excepted), the whole of the choice and valuable NURSERY STOCK of Mr. Wm. Heale, Jun., under a deed of assignment for the benefit of creditors, comprising upwards of 30,000 fine English and Turkey Oak, several thousand Weeping and other Ash, Lime, Elm, Birch, Beech, both common and purple; 200,000 very fine Larch, Spruce, and Scotch Firs; 1500 Weymouth Pines; a few fine specimens of Ford's Oak; English and Irish Yew; about 300,000 of fine seedling and transplanted Thorns, seedling Oak, Ash, Spruce, Scotch, Larch, and Silver Fir; a quantity of common Laurels, Evergreens, ornamental Shrubs, American and coniferous Plants; choice stock of standard, dwarf, trained, and untrained Fruit Trees in great variety; 1500 fine Filberts; about 2000 Stove and Greenhouse Plants, and every other article in the trade for which Heale's Nursery has been so highly celebrated. Two well-built Greenhouses, one Stove, and one Propagating-house and fixing; single and double light Frames, Glasses; 5000 Seakale and flower pots; five spring and tip Carts, spring Waggon, Horses, Harness; two Sow Pigs; Stack of Hay; 30 Sacks of Potatoes; Agricultural and other Seeds; 12 tons of Mangold Wurzel, and numerous valuable property.

The above Nursery Stock is in a thriving and healthy condition, and will be sold without reserve, and offers to Gentlemen, Nurserymen, and others engaged in planting, an opportunity seldom to be met with. The Stock may be viewed any day previous to the Sale, commencing at 11 o'clock each day. —Catalogues may be had at the principal Inns in the county, on the premises—and of the Auctioneer, Andover and Devizes.

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FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, January 27, 1851, at 2 o'clock precisely, by order of Messrs. Antony Gibbs and Sons, the Importers, about 1200 tons (damaged) PERUVIAN GUANO. Catalogues and further particulars, in due time, from J. A. Rucker and Bencraft, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

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GLOUCESTERSHIRE.

ROYAL NURSERY, CIRENCESTER.

IMPORTANT AND EXTENSIVE SALE OF NURSERY STOCK.

To Noblemen and Gentlemen who may be about to make extensive Plantations and Ornamental Shrubberies, and to Nurserymen and the Trade generally.

THE FIRST OF A SERIES OF SALES.

JEFFERIES and CO. have been favoured with instructions from the Assignee of the Estate and Effects of Mr. William Gregory, to submit to public competition, upon the above-named premises, the whole of his NURSERY STOCK, the first portion of which will be prepared and offered on TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, the 28th, 29th, 30th, and 31st of Jan., and the 1st of Feb., 1851, including more particularly 5000 Grafted Elms, from 4 to 14 ft.; 10,000 Limes, 3 to 15 ft.; 20,000 English and Turkey Oaks, 2 to 8 ft.; 70,000 Ash, 2 to 6 ft.; 30,000 Larch, 1 to 3 ft.; 100,000 Spruce Firs, 1½ to 6 ft.; 50,000 Scotch Firs, 1½ to 3 ft.; 10,000 Balm of Gilead and Silver Firs; 6000 Weymouth Pines, 1 to 5 ft.; an immense quantity of Quicksets; 3000 Purple Beech, 2 to 12 ft.; together with a large quantity of Pinus austriaca, Pinus Laricio, Poplars, Beech, Hornbeam, Hazel, Maple, &c. Also an immense number of Standard, Dwarf, and Dwarf-trained Apples, Pears, Plums, and Cherries; Gooseberries, Currants, Raspberries, &c. Common and Portugal Laurels, Sweet Bays, Alaternus, Phillyreas, Red Cedars, Arbor Vitæ, Irish Yews, Common Yews, Tree Box, Lucombe's Oaks, Laurustinus, Aucubas, Mahonias, Variegated and Green Hollies, Evergreen and Box-leaved Privet, Standard Cratægus and Cytisus, with a general assortment of other kinds of Shrubs and Ornamental Trees. The well-known Stock of CONIFERS, which is not to be surpassed in the kingdom, is comprised of 80 species and varieties of Pinus, 35 Abies, 10 Piceas, 56 Juniperus, 21 Cupressus, 21 Thujas, 17 Taxus; Taxodiums, Araucarias, Cedrus, Cryptomerias, &c., of various sizes. The Stock of ROSES, both Standard and Dwarf, contains the choicest in cultivation, and in great variety. The Collection of Greenhouse and Stove Plants is extensive, and embraces many fine Specimens.

Catalogues of the First Series are in course of preparation, and will be issued at the earliest possible period prior to the sale. To be had at all the principal Inns in the neighbourhood; upon the Premises; at Baily and Jones's Printing Office; and at the Auctioneers' Office, Dyer-street, Cirencester. In consequence of the shortness of the days, the sale will commence at 11 o'clock.

The whole of the Stock will be sold in Lots to suit every class of purchasers, and may be viewed any time on application to Mr. R. Rea, at the Nursery; and every assistance will be given to purchasers in the removal and packing of their several lots.

As the whole of the above Stock has been grown under the superintendence of Mr. R. Rea, he begs to state that he will be happy to receive and execute any Commission with which he may be entrusted by parties residing at a distance.

---

NOTICE TO SEEDSMEN.

TO BE GROWN BY CONTRACT—1851.

ALTRINGHAM, SURREY, and HORN CARROT SEED; MANGOLD WURZEL, PEAS, &c., of true selected stocks. References given if required.—Letters, addressed T. B., Post-office, Colchester, Essex, will have immediate attention.

---

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, exclusive of sacks, 35s. per ton; in London, Liverpool, Bristol, and other seaports in England, 48s. per ton, exclusive of sacks; or 60s. per ton, sacks included.—Agents will be forthwith appointed in all the principal towns in England.

Head Office, 9, Waterloo-place, London.

Jan. 25, 1851. L. Parrott, Secretary.

---

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, Lea and Perrins, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "Lea and Perrins" are upon the label and patent cap of the bottle.

---

MATRIMONY MADE EASY; OR, HOW TO WIN A LOVER.—Miss Norrington continues to send free to any address, on receipt of 13 postage stamps, and a directed envelope, plain directions to enable Ladies or Gentlemen to win the affections of as many of the opposite sex as their hearts may desire. The proposal is simple, and so captivating and enthralling that all may be married, irrespective of age, appearance, or position; young and old, high and low, are alike subject to its influence; and last, though not least, it can be arranged with such ease and delicacy that detection is impossible.—Direct, Miss Lavinia Norrington, 7, King's-terrace, Bagnigge-wells-road, London.

N.B.—Beware of ignorant pretenders.

---

CLOSE OF HOLIDAYS.

NOW that the season of annual festivity is about to terminate, and the respective boarding-schools reinstated by the busy throng of youthful aspirants, their personal comfort and attractions become naturally an object of great solicitude with friends and relatives. Now it is that ROWLANDS' MACASSAR OIL, for accelerating the growth and for improving and beautifying the hair, ROWLANDS' KALYDOR, for improving the skin and complexion, and removing cutaneous eruptions, and ROWLANDS' ODONTO, for beautifying the teeth and preserving the gums, must be universally considered indispensable. The august patronage conceded by all the Sovereigns of Europe to these creative and renovating specifics, and the confirmation, by experience, of their infallible efficacy, have characterised them as perfect, and given them a celebrity unparalleled. ☞ *Beware of Spurious Imitations.* The only genuine of each bears the name of Rowlands' preceding that of the Article on the Wrapper or Label. Sold by them at 20, Hatton Garden, London, and by respectable Chemists and Perfumers.

---

THE BEST REMEDY FOR INDIGESTION.

"NORTON'S"

CAMOMILE PILLS are confidently recommended as a simple but certain Remedy, to all who suffer from Indigestion, Sick Headache, Bilious and Liver Complaints They act as a powerful tonic and gentle aperient, imparting strength to the stomach, and composure to the nervous system. Sold in bottles at 1s. 1½d. or 2s. 9d. each, by A. Willoughby and Co., late B. G. Windus, 61, Bishopsgate-street Without, and nearly all Medicine Vendors.

Caution.—Be sure to ask for "NORTON'S PILLS," and do not be persuaded to purchase an imitation.

---

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1s. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of John Willis accompanies each packet.

---

Price 1s., or free on receipt of 18 stamps,

GLENNY'S GARDEN ALMANAC and FLORIST'S DIRECTORY for 1851, containing Directions for the Management of an Amateur's Garden during the year; Lists of the best Show Flowers, Fruits, Plants, and Vegetables; useful information for Emigrants, &c.

London: C. Cox, 12, King William-street, Strand.

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Just published, New Edition, 12mo, 4s. 6d. bound,

MANGNALL'S HISTORICAL AND MISCELLANEOUS QUESTIONS. A New Edition, with the Author's last corrections, and other very considerable additions and improvements.

Contents of the *only genuine and perfect Edition*, as finally corrected by the Author, and brought down to the present time:—

Questions from the Earliest Times, comprehending a Sketch of General History.
Questions, containing the most remarkable Events from the Christian Era to the Reign of Queen Victoria.
Questions on Europe.
Miscellaneous Questions in Grecian History.
Miscellaneous Questions in General History, chiefly ancient.
Miscellaneous Questions in Roman History.
Questions in English History, from the Invasion of Cæsar to the present time.
Questions relative to the English Constitution.
Miscellaneous Questions before Christ.
Abstract of the English Reigns from the Year 800 to the Conquest.
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Abstract of the French Reigns, from Pharamond to Louis Philippe.
Abstract of Roman Kings, and most distinguished Heroes.
Abstract of the most celebrated Grecians.
Abstract of a few celebrated Characters from the Third Century before Christ, to the Sixth Century after Christ, inclusive.
Abstract of British Biography.
Sketch of General Modern Biography.
Explanation of Latin Words seldom translated.
The Elements of Astronomy.
Explanation of a few Astronomical Words.
The Planetary System.
List of Constellations.
Questions on Common Subjects.
Abstract of the Heathen Mythology.
Historical Questions on the History of the Old Testament, Chronologically arranged.

"The most comprehensive book of instruction existing, and to be preferred to all the others, to which it has served as a model."—*Quarterly Review.*

⁂ Messrs. Longman and Co.'s Edition should be ordered.

Also, a New Edition, 12mo, 5s. bound,

CORNER'S QUESTIONS ON THE HISTORY OF EUROPE: being a Sequel to Mangnall's Historical Questions.

Also, a New Edition, greatly improved, and brought down to the present time, price 7s. 6d.

MANGNALL'S COMPENDIUM OF GEOGRAPHY.

London: Longman, Brown, Green, and Longmans.

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This day is published, in post 8vo, price 6s. cloth; and in 16mo, price 2s. 6d. sewed, or 3s. 6d. cloth, the First Part of the Third and Concluding Volumes of

HUMBOLDT'S COSMOS. Translated with the Author's sanction and co-operation, and at his express desire, by Colonel and Mrs. Sabine.

⁂ The Third Volume of the German Original is divided into Two Parts, of which only the First has yet appeared, and of the whole of which the above is a Translation.

London: Longman, Brown, Green, and Longmans; and John Murray, Albemarle-street.

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MR. T. TATE'S SCHOOL ALGEBRA.

A New Edition, in 12mo, price 2s. cloth,

ALGEBRA made EASY. Chiefly intended for the use of Schools. By Thomas Tate, of Kneller Training College, Twickenham, late Mathematical Professor and Lecturer on Chemistry in the National Society's Training College, Battersea; Author of "Exercises on Mechanics and Natural Philosophy," &c.

London: Longman, Brown, Green, and Longmans.

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In One very thick Vol. 8vo, price 2l. 10s. the 3d Edition of

DR. URE'S DICTIONARY of ARTS, MANUFACTURES, and MINES; containing a clear Exposition of their Principles and Practice. Third Edition, corrected throughout; with 1241 Woodcuts.—Also,

RECENT IMPROVEMENTS in ARTS, MANUFACTURES, and MINES; being the 2d Edition of Dr. Ure's Supplement to 3d Edition of his "Dictionary." 8vo, price 14s.

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A NEW AND ENLARGED EDITION.

Next week will be published,

THE FORESTER. A Practical Treatise on the Planting, Rearing, and Management of Forest Trees, the Cutting and Preparation of Wood for sale, with an improved process for Transplantation of Trees of large size, by James Brown, Forester, Arniston. Second Edition, in one large volume, octavo, illustrated with upwards of 120 Engravings on Wood.

William Blackwood and Sons, Edinburgh and London.

**GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT, READING, BERKS.**

# SUTTON'S COLLECTIONS OF KITCHEN GARDEN SEEDS,

**Carriage free to any Railway or Packet Office in London, Bristol, Oxford, Gloucester, Exeter, Southampton, Portsmouth, Dover, or to any other Station on the above-named Railways.**

The economy and other advantages of these collections have been fully appreciated by those who have purchased them in former seasons, as indicated by the numerous orders this year received through their recommendations.

**No. 1. A complete collection of Kitchen Garden Seeds, for a large Garden, for one year's supply £2 10 0**
**No. 2. A complete collection of ditto, in quantities proportionately reduced - - - - - - 1 10 0**
**No. 3. A complete collection of ditto, equally choice sorts - - - - - - - - - - - - 1 1 0**
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*Persons who are already in possession of several kinds of Seeds, are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.*

JOHN SUTTON AND SONS have the pleasure of presenting the following SELECT LIST OF SEEDS, which they consider the best in cultivation, *from which, and other sorts, they compose the above complete collections,* and purchasers having preference for any particular sorts, *whether contained in this list or not,* are requested to name them, and their wishes will be strictly attended to. *Any of the under-mentioned articles may also be purchased separately at the prices affixed,* and will be sent, carriage free, as above, except parcels under 10*s.* value.

Choice collections of FLOWER SEEDS may also be had, consisting either of the most showy *Hardy sorts only,* or in assortments of Hardy and Tender, including splendid German Asters, Stocks, Zinnias, Balsams, Marigolds, Hollyhocks, Wallflowers, &c., as under. *The best 50 sorts,* 10*s.* 6*d.*; *the best 36 sorts,* 7*s.* 6*d.*; *the best 24 sorts,* 5*s.*; these will be sent free by post, or, with the other Seeds, by railway.

## KITCHEN GARDEN, FLOWER GARDEN, AND FARM SEEDS.

Having various kinds of Land, situate in different localities, which we occupy for the purpose of GROWING SEEDS TRUE TO THEIR KINDS, and proving the comparative merits of each sort, we are enabled to supply our customers with Seeds of the best kinds in cultivation, and of such quality as to prevent disappointment.

In proving the germinating qualities of Seeds, we do not trust to experiments made under glass, but subject them also to the trial of open ground sowing; and when, on a recent occasion of considerable interest in the Seed Trade, one of our firm was subpœnaed to give evidence before Lord Chief Justice Campbell, and a Jury of Agriculturists, as to the most certain test of the vegetative properties of Seeds, his Lordship highly complimented us upon our system of conducting our business. [*See "Times" of July 22d, and other Daily Papers.*]

### KITCHEN GARDEN SEEDS.

#### Peas.

**The sorts of Peas now in cultivation being numerous, and almost every variety being a favourite in certain localities, we have found it necessary to keep a stock of very many sorts to enable us fully to execute the orders we are receiving from our customers in various parts of the United kingdom. Having, however, tested the comparative merits of each in our sample ground, we are enabled to recommend especially the undermentioned.**

10 fine early, medium, *s. d.* and late sorts, for succession, 1 quart of each 7 6
6 do. do., 1 quart of each 5 0
6 do. do., 1 pint of each... 3 0

*Sorts growing only 1 to 1½ foot.*

| | per quart. |
|---|---|
| Bishop's Early Dwarf | 0 8 |
| Bishop's Longpod | 1 0 |
| Queen of the Dwarfs | 1 0 |
| Burbidge's Eclipse | 0 10 |

*Sorts growing 2 to 3 feet, if with sticks, but do not require sticking.*

| | |
|---|---|
| Sutton's Early Champion, forwardest known | 1 0 |
| Warner's Emperor | 0 10 |
| Scymetars | 0 8 |
| Bedman's Imperials | 0 8 |
| Cormack's Prince Albert | 0 8 |
| Hairs' Dwarf Mammoth | 5 0 |
| Knight's Dwarf Blue | 1 4 |

*Sorts growing only 3 to 4 feet.*

| | |
|---|---|
| Sutton's Early Goliah; fine flavour, very prolific, large pods—has gained many prizes; the best Pea for second crop, also thrives well if sown in June or July | 0 10 |
| Bellamy's Green Marrow | 0 9 |
| Auvergne | 0 9 |

*Sorts growing 4 to 5 feet.*

| | |
|---|---|
| Fairbeard's Surprise | 0 9 |
| Champion of England | 1 0 |
| Ne plus ultra | 2 0 |

*Sorts growing 6 feet.*

| | |
|---|---|
| British Queen, fine | 1 6 |
| Knight's Tall Blue | 1 4 |
| Queen of England, fine | 0 10 |
| Victoria Marrow | 0 8 |
| Waite's King of Marrows | 2 0 |
| Carter's Victoria | 2 0 |
| Ward's Incomparable | 1 6 |
| Tall Green Mammoth | 2 6 |
| Thurlstone's Reliance | 0 10 |

And many others.

#### Beans.

| | |
|---|---|
| Longpod, early | 0 5 |
| Longpod, Johnson's | 0 6 |
| Longpod, Marshall's | 0 6 |
| Hangdown, Gregory's New | 0 8 |
| Windsor, Taylor's | 0 6 |
| Windsor, Thick-seeded | 0 6 |
| Windsor, Green | 0 6 |
| New Royal Cluster | 0 8 |

*** Six fine sorts, for succession, quart each 3 0
Do., 1 pint each 1 9

#### French Beans, Dwarf.

| | |
|---|---|
| Fulmer's Early Forcing | 1 4 |
| Mohawk, or Six Weeks | 1 4 |
| Newington Wonder | 1 4 |
| Sion House Forcing | 1 4 |

And many others.

#### Runner Beans.

| | |
|---|---|
| York and Lancaster, productive & ornamental | 1 4 |
| Scarlet Runners | 0 9 |
| White Dutch Caseknife | 1 4 |

#### Beet.

| | per oz. |
|---|---|
| Sutton's Dark Red | 0 6 |
| Atkins's Crimson | 0 6 |
| Whyte's Large Black | 0 6 |

#### Borecole or Kale.

| | |
|---|---|
| Imperial Hearting, excellent curled | 1 0 |
| Dwarf Green, curled | 0 9 |
| Jerusalem Purple | 0 9 |

#### Brussels Sprouts.

| | |
|---|---|
| Fresh imported, fine | 0 9 |
| New Dwarf Belgian | 0 9 |

#### Broccoli.

This important tribe of culinary plants has for many years received our special attention, and having last season tested most of them carefully, we can confidently recommend the under-mentioned. Nos. 4, 9, 11, 24, 32, and 33 *come in for autumn and winter use; the others for spring and summer.*

| | per oz. |
|---|---|
| 1 Adams' Superb Early | 1 0 |
| 2 American, large white | 1 0 |
| 3 Chappel's Large Cream | 1 0 |
| 4 Dancer's Pink Cape | 1 0 |
| 5 Dwarf Siberian | 0 9 |
| 6 Early Close-headed Purple | 0 9 |
| 7 Elletson's Mammoth | 1 0 |
| 8 Fine Early White | 0 9 |
| 9 Grainger's Autumn White | 1 6 |
| 10 Hampton Court Early | 1 0 |
| 11 Hardy Green Cape | 1 0 |
| 12 Howden's Superb Purple | 1 0 |
| 13 Impregnated White | 1 0 |
| 14 Improved Purple Cape | 1 0 |
| 15 Improved Wilcove | 1 0 |
| 16 Knight's Protected | 1 0 |
| 17 Lake's Superb White | 0 9 |
| 18 Large Late White | 0 9 |
| 19 Late Close-headed Purple | 0 9 |
| 20 Late Dwarf Russian | 0 9 |
| 21 Late Dwarf Danish | 0 9 |
| 22 Miller's Dwarf | 1 0 |
| 23 New Victoria White | 1 0 |
| 24 Oldacre's Mottled Cape | 1 0 |
| 25 Portsmouth Large Cream | 0 9 |
| 26 Potter's New Pink | 1 0 |
| 27 Purple Sprouting (early) | 0 9 |
| 28 Snow's Winter, white | 1 6 |
| 29 Southampton, large | 0 9 |
| 30 Somner's Late White | 0 9 |
| 31 Tamworth Late White | 1 0 |
| 32 Walcheren | 1 6 |
| 33 White Cape | 1 6 |
| 34 Winter Imperial | 1 0 |

*** *Eight fine sorts for succession, 1 oz. each* 5 0
*Eight do. do., ½ oz. each* 4 0

#### Cauliflower.

| | |
|---|---|
| Large Asiatic | 1 6 |
| Walcheren, fine early dwarf | 1 6 |
| London Particular Early | 1 6 |

#### Cabbage.

The following sorts of Cabbages have been grown in different localities, great care being taken to keep them separate and true to their kinds; those marked thus * are especially recommended, as coming in early and fine in quality.

| | per oz. |
|---|---|
| *Sutton's Imperial, *the earliest in spring, and may be cut several times during summer — fine mild flavour* | 1 0 |
| *Atkin's Matchless | 0 6 |
| *Cattel's Dwarf Barnes | 0 8 |
| Cattel's Reliance | 1 0 |
| Cattel's Green Colewort | 0 8 |
| *Combe, very fine new | 2 0 |
| *Couve Tronchuda | 0 8 |
| York, large and small | 0 4 |
| *King of Cabbages | 0 8 |
| Drumhead | 0 3 |
| Nonpareil | 0 6 |
| Paignton or Penton | 0 6 |
| *Shilling's Queen | 0 6 |
| Warner's Incomparable | 0 8 |
| *Wheeler's Imperial and others | 0 6 |

*** *Eight fine sorts for succession, 1 oz. each* 4 0
*Eight ditto, ½ oz. each* 2 3
*Four ditto, ¼ oz. each* 1 3

#### Savoy Cabbage.

| | |
|---|---|
| Extra Fine Dwarf Curled | 0 6 |
| Drumhead and others | 0 6 |

#### Carrot.

| | |
|---|---|
| Early Horn, selected | 0 4 |
| James' Early Orange | 0 4 |
| Long Surrey (fine) | 0 3 |
| Selected Altringham | 0 3 |

#### Celery.

| | per packet. |
|---|---|
| Cole's Dwarf, Red | 0 6 |
| Sutton's Superb Pink (Walnut flavour) | 0 6 |
| Sutton's Solid White, very sweet; decidedly the finest White Celery | 1 0 |
| Seymour's Superb White | 0 6 |

#### Cress.

| | |
|---|---|
| American or Land | 0 3 |
| Double Curled | 0 3 |
| Plain (per pint, 8*d.*) | 0 3 |

#### Cucumbers.

| | |
|---|---|
| Sutton's Berkshire Champion, fine, from 20 to 24 inches, and free bearer | 1 0 |
| Conqueror of West, 24 to 30 inches, splendid | 2 6 |
| Cuthill's Black Spine (from Mr. Cuthill) | 0 6 |
| Sion House, improved | 1 0 |
| Victory of Bath (from Mr. Tiley) | 1 0 |
| Lord Kenyon's Favourite | 1 0 |
| Stockwood Ridge; 12 to 18 inches. This is the best sort for hand-lights, or open ground | 0 6 |

#### Endive.

| | per oz. |
|---|---|
| French Green Curled | 0 9 |
| Batavian Broad Leaved | 0 9 |
| Oldacre's Imperial do. | 1 0 |

#### Herb Seeds, &c.

| | per packet. |
|---|---|
| Of every kind | 0 3 |

#### Leek.

| | per oz. |
|---|---|
| Large London Flag | 0 6 |
| Musselburg | 0 8 |

#### Lettuce.

| | |
|---|---|
| Sutton's Superb White; possesses the valuable properties of the Paris White, and is larger | 1 6 |
| Sutton's Superb Green; splendid large close yellow hearts, crisp and sweet; requires no tying | 1 6 |
| Berkshire Brown, fine broad-leaved hearting | 1 6 |

*J. Sutton and Sons had the honour of supplying the Horticultural Society's Garden at Chiswick, with the above-named Lettuce seed, in Feb. 1849; and in March, 1850, the editor of the* Gardeners' Chronicle, *in a critique on Lettuces, says of the first of these:—*

"This is the very best Cos Lettuce, very large, light green, leaves hooded at the top, so that they close in without tying, blanching white, crisp, so excellent, that one would suppose no higher degree of perfection could be attained, as regards a summer Lettuce." *And of the other two, he further says,* "SUTTON'S SUPERB GREEN Cos: this very much resembles the preceding, but is of a darker green, and hardier, therefore is preferable for sowing early in spring, and also for autumn use; in warm, sheltered situations, it will stand the winter, if the latter prove mild. For the generality of winters, however, a hardier Cos is required; such is the following—SUTTON'S BERKSHIRE BROWN Cos: this is the best Cos for standing the winter; it is large, and of good quality, blanching very crisp; therefore its brown outside should not be considered objectionable."

| | per oz. |
|---|---|
| Black-seeded Bath | 1 0 |
| Asiatic, large Cabbage | 0 9 |
| Grand Admiral, ditto | 0 9 |
| Malta, or Drumhead | 1 0 |

And many others.

#### Melon.

| | per packet. |
|---|---|
| Bromham Hall (from Mr. Tiley) | 1 6 |
| Beechwood, very fine | 0 6 |
| Egyptian Green-flesh | 0 6 |
| Sefton's Scarlet-flesh | 1 0 |
| Snow's Prize Green-flesh, and others | 1 0 |

#### Maize.

| | |
|---|---|
| Keen's Forty-day | 0 6 |

#### Mustard.

| | per pint. |
|---|---|
| White and Brown | 0 8 |

#### Onion.

| | per oz. |
|---|---|
| Reading, fine | 0 4 |
| White Spanish | 0 4 |
| New White Globe | 0 6 |
| James' Long-keeping | 0 6 |

And others.

#### Parsnip.

| | |
|---|---|
| Improved Jersey Marrow | 0 4 |
| Hollow Crown | 0 3 |

#### Parsley.

| | |
|---|---|
| Sutton's Dwarf Curled | 0 6 |
| Mitchell's Matchless, extra fine Curled | 0 4 |

#### Radish.

1*s.* 4*d.* per pint, or 3*d.* per oz.
Wood's Early Frame.
Bleck's Superb Short-top.
Long White Naples.
Scarlet Olive-shaped.
Turnip, White and Red.

#### Spinach.

1*s.* per pint, or 3*d.* per oz.
Flanders Round.
Flanders Prickly.
Lettuce Leaf.

And others.

#### Turnips.

FOR TABLE USE.

| | per oz. |
|---|---|
| Early Snowball | 0 3 |
| New Red-top ditto | 0 4 |
| Early Six Weeks | 0 3 |
| Polly's Nonsuch | 0 4 |

And others.

#### Bulbous Roots.

| | per 100 |
|---|---|
| Anemones, mixed double, very fine, large | 7 0 |
| ,, double scarlet | 10 0 |
| ,, mixed single | 6 0 |
| Ranunculuses, finest mixed | 5 0 |

| | per doz. |
|---|---|
| Gladiolus floribundus | 2 6 |
| ,, Gandavensis | 9 0 |
| ,, ramosus | 6 0 |
| ,, cardinalis | 3 6 |
| ,, formosissimus | 9 0 |
| ,, rosa mundi | 6 0 |
| ,, Queen Victoria | 9 0 |
| ,, fine mixed | 2 6 |
| Tuberoses, double, fresh imported | 4 0 |
| Achimenes, finest mixed | 2 6 |
| Ferraria pavonia, red | 2 6 |
| ,, yellow | 5 0 |

| | each. |
|---|---|
| Dahlias, sound dry roots, of fine sorts | 1 0 |
| Lilium lancifolium album | 1 6 |
| ,, ,, punctatum | 3 6 |
| ,, ,, rubrum | 3 6 |

HOME GROWN AGRICULTURAL SEEDS.

#### Mangold Wurzel.

| | Per lb. |
|---|---|
| Yellow Globe | 0 8 |
| Red Globe | 0 8 |
| Long Red | 0 8 |
| Long Yellow | 0 8 |

#### Carrots.

| | *s. d.* |
|---|---|
| Large White Belgian | 1 0 |
| James's Short Orange (For Shallow Soils) | 1 6 |

#### Parsnip.

| | |
|---|---|
| Large Guernsey | 1 6 |

#### Turnips.

(*Seed saved carefully from selected Bulbs.*)

| | Per lb. |
|---|---|
| East Lothian Purple-topped Swede | 0 10 |
| Skirving's Liverpool | 0 8 |
| Laing's Improved Purple-topped Swede | 0 10 |
| Ashcroft Swede | 0 10 |
| Green-topped Yellow Swede | 0 8 |
| Sutton's Purple-topped Yellow Hybrid Turnip. (This is the best substitute for Swedes) | 1 0 |
| Sutton's Early Six Weeks | 1 0 |
| Lincolnshire New Red (very superior) | 1 0 |

And many others.

New Skinless Chevalier Barley; the finest sample, and the heaviest of all Barleys, 5*s.* per peck.

#### Natural Grass Seeds,

FOR PERMANENT PASTURES.

*Separate, or Mixed expressly to Suit the Soil.*

Messrs. SUTTON and SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of the Grasses which thrive in the various soils of Great Britain, for the purpose of laying down land to Permanent Pasture, are thereby enabled to supply the sorts and quantities of Seeds, varied to suit the soil for which they are intended; the cost will vary according to sorts and quantities the soil requires.

*Also, finest Lawn Grasses, 3s. per gallon, and mixtures for improving old Pastures, 2s. per gallon.*

*These consist of the finest sorts only.*

#### Seeds for Distribution to Cottagers,

ON VERY LIBERAL TERMS.

ALSO SEEDS OF SUITABLE KINDS FOR EXPORTATION TO INDIA AND THE COLONIES, PROPERLY PACKED.—PRICE 1*l.* 10*s.*; 1*l.*; AND 15*s.*, FOR CHOICE AND USEFUL COLLECTIONS.

#### FLOWER SEEDS.

**The following sorts being generally required in considerable quantities, for Beds, Parterres, and Edgings, are offered at the annexed low prices.**

*Those marked* 1, *are very dwarf—No.* 2, *medium—and No.* 3, *rather tall.*

| | per oz. |
|---|---|
| 2 Antirrhinums, splendid | 1 0 |
| 2*Aster, German, fine double, from imported stock, many colours | 3 6 |
| 2 ,, China, mixed | 1 0 |
| 1 Candytuft, carmine | 0 9 |
| 1 ,, purple and white | 0 6 |
| 2 Clarkia pulchella, lilac | 0 9 |
| 2 ,, ditto white | 1 0 |
| 2 ,, grandiflora, red | 1 0 |
| 1 Collinsia bicolor, pink | 0 6 |
| 1 Convolvulus, minor, blue | 0 9 |
| 1 ,, new dark | 0 6 |
| 3 ,, major, fine, mixed | 0 6 |
| 2 Erysimum (sweet) orange | 0 9 |
| 1 Gilia tricolor and others | 0 6 |
| 2 Godetia rubicunda, rosy | 1 0 |
| 3 Hollyhock, very fine | 1 6 |
| 1 Larkspur, dwarf, very double, many colours | 0 8 |
| 1 Leptosiphon, of sorts | 1 0 |
| 3 Lupins, of sorts | 0 3 |
| 2 Malope, grandiflora | 0 9 |
| 2*Marigold, French | 1 4 |
| 1* ,, new dwarf, splend. | 5 0 |
| 2* ,, African | 1 4 |
| 2 Mignonette, sweet | 0 6 |
| 3 Nasturtium, fine sorts | 0 6 |
| 1 Nemophila insignis, blue | 0 8 |
| 1 ,, maculata | 3 6 |
| 2 Œnothera rosea alba | 1 0 |
| 2 Poppies, splend., mixed | 0 9 |
| 1*Portulacca, splendid mixed | 5 0 |
| 1*Stock, German, very double dwarf, 12 distinct varieties, mixed | 5 0 |
| 1 Virginian, red | 0 6 |
| 1 ,, white | 1 0 |
| 2 ,, ten-week, three colours | 1 6 |
| 2 ,, Brompton, three colours | 1 6 |
| 2 ,, Queen, two colours | 1 4 |
| 3 Sweet Peas, eight sorts, separate | 0 3 |
| 3 ,, all mixed (pint 1*s* 6*d*) | 0 2 |
| 2 Wallflower, dark, fine | 1 0 |
| 2 ,, splendid mixed French and German | 1 6 |
| 2*Zinnia elegans, many colours | 5 0 |

☞ The sorts marked thus * should not be sown in open ground till the middle of May.

*** We have several hundred other sorts of Flower Seeds, from which we make assortments; but the foregoing are most desirable showy sorts for edgings and masses in the open ground.


Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JANUARY 25, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 5—1851.] SATURDAY, FEBRUARY 1. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Allamandas, culture of | 71 *a* | Grafting Cacti | 70 *b* |
| Ants, to kill | 71 *c* | Guano, Peruvian | 72 *c* |
| Birds, British song | 68 *b* | Henderson's (Messrs.), nursery | 71 *b* |
| — and white fruits | 70 *c* | Heracleum giganteum | 70 *c* |
| Brownea coccinea | 70 *a* | Highland Society—Manures | 75 *c* |
| Cabbage, Enfield | 69 *c* | Manures for Turnips | 75 *b* |
| Cacti, to graft | 70 *b* | — application of | 75 *b* |
| Calendar, Horticultural | 72 *a* | Market gardening | 68 *b*—70 *b* |
| — Agricultural | 77 *c* | Montreal Bot. Soc. | 71 *b* |
| Camellia reticulata | 71 *c* | Peas, early | 72 *c* |
| Carriage height of | 77 *b* | Plants, perspiration of | 67 *b* |
| Carrots, Siamese | 67 *a* | Potatoes, diseased | 70 *c* |
| Caterpillars, to kill | 71 *c* | — varieties of | 71 *c* |
| Cattle hides | 73 *b* | — Jackson's Kidney | 71 *a* |
| Christie (Mr.) death of | 71 *c* | Rain | 71 *b* |
| Chrysanthemums | 69 *b* | Roots, length of annual | 70 *a* |
| Cottage, labourers' | 75 *c* | Roses, continuous bloomers | 70 *b* |
| Cucumbers, seed | 70 *c* | Season, mildness of | 71 *b* |
| Dahlias, select | 72 *c* | Seeds, vitality of | 70 *c* |
| Devon, trip to | 73 *c* | Sheep | 75 *c* |
| Edgings | 70 *a* | Stratton's (Mr.) appointment to Cambridge Bot. Garden | 71 *c* |
| Education, Mr. Lawrence on | 73 *a* | Tulips, early | 70 *b* |
| Farming, English | 74 *c* | Turnips, manures for | 75 *b* |
| Fruit, white, and birds | 70 *c* | Villa gardening | 68 *c* |
| Fumigation | 70 *c* | Vines, out-door | 70 *b* |
| Garden edgings | 70 *a* | Walks, edgings for | 70 *a* |
| Gardening, market | 68 *b*—70 *b* | Wall plants | 72 *c* |
| Geraniums, fancy | 72 *c* | Weather, the | 77 *c* |
| Gooseberries, prize | 70 *c* | Winter gardens | 70 |
| Grafting | 69 *a* | | |



RENÉ LANGELIER, of the Clarendon Nursery St. Helier, Jersey, begs to draw the attention of the Public to his still unrivalled collection of PEAR TREES, not yet surpassed in Europe, in which will be found all the very best varieties, insured for the season required. Trees may be had already formed, either pyramidal or for espalier, in unusually fine and healthy condition, such as will give the most ample satisfaction to both purchaser and R. L. The price has been much reduced, and the quantity of Trees R. L. possesses enables him to supply the trade with guaranteed sorts equal to any house on the Continent, having given the greatest satisfaction for several years. Foreign correspondents will find a very great advantage if the selection is left to R. L., as they will be cheaper, and none but the best sorts will be supplied.

R. L.'s Descriptive Catalogue, which has been found the best and most correct yet published, is only to be had at his Nursery, Jersey, price 1*s.* 6*d.* and 6*d.* extra for postage.

A very great reduction has been made in the transit by steamers to all parts of England, so that R. L. can supply Trees cheaper than any other grower.

A fine collection of Roses, Camellias, and yellow Picotees.

PRICED CATALOGUE OF KITCHEN-GARDEN SEEDS. PRICED CATALOGUE OF FLOWER SEEDS.

JOHN CATTELL'S Descriptive Catalogues of the above may be had on application; if by post, by enclosing a penny stamp for each. They contain the best kinds in cultivation, and their genuineness may be relied on.

Westerham, Kent.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2*s.* 6*d.* per lb. Also, his superior dark-green Savoy, 1*s.* 6*d.* per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem | 42*s.* to 60*s.* |
| Extra superior selected Standards | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

THE NEW EARLY SWEET-KERNELLED KAISHA APRICOT.

MESSRS. VEITCH AND SON feel much confidence in bringing into public notice the above valuable new Syrian Apricot, sent to this country by the late JOHN BARKER, Esq., of Suedia, the gentleman by whom the valuable Stanwick Nectarine was introduced. Having obtained the entire Stock, they are now prepared to send out a limited number of healthy Young Trees at the following prices, and solicit the favour of early orders, which will ensure good trees and meet with immediate attention:

Healthy one year old Trees ... 21*s.* 0*d.*
" one year trained ... 31 6 } package included.
" two year trained ... 42 0 }
A few two year old trained, chiefly half-standards and standards ... ... ... ... 42*s.* each.

One plant over to the Trade when three are taken.

In offering the above valuable new early Apricot for sale, Messrs. VEITCH and SON beg to refer to the description given by Dr. LINDLEY, in the "Journal of the London Horticultural Society" for July, 1849, from which the following extract is given:

"The fruit semi-transparent, roundish 5½ inches, in circumference, skin slightly downy, pale citron-coloured where shaded, tinged and marked with red next the sun. Flesh tender, juicy, of a clear citron colour, parting freely from the stone, *sugary and delicious*, like well refined lump sugar combined with Apricot flavour; stone *small*, roundish; kernel sweet like a nut. A valuable early variety for the dessert, and probably excellent for preserving; if it be employed for this purpose, the transparency of its flesh will exhibit a new feature amongst Apricot preserves. Some of the fruits have ripened as early as the 12th of July, and on the *same wall* at the time were Moorpark and Turkey Apricots perfectly green and hard."

Exeter, Feb. 1851.

PLANT DOUBLE ANEMONES AND RANUNCULUSES THIS MONTH.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, can supply fine named ANEMONES at 3*s.* to 5*s.* per dozen, with full printed instructions for culture, for four labels. Choice named RANUNCULUSES, 5*s.* to 10*s.* per dozen. TYSO'S SUPERB SEEDLING ditto, 12*s.* to 18*s.* per dozen sorts. Treatise on Culture for eight labels.

Imported Seeds of the best quality: German Asters, Stocks, Salpiglossis, Balsams, Larkspurs, Poppies, Zinnias, 2*s.* 6*d.* per named assortment.

☞ All the above articles can be sent by post.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH. ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., PLYMOUTH, *have a large SURPLUS STOCK of the following TREES and SHRUBS; and as the ground is required for other purposes, they will be sold at the following low prices:*

*** CARRIAGE FREE (See below).

LARCH FIRS.—We have a very large stock of fine stuff, about 3 feet in height; the price will only be 18*s.* per 1000.

BERBERIS AQUIFOLIUM.—A large quantity of fine stuff, 18 inches, 16*s.* per 100. This is a fine Shrub for underwood.

SCOTCH FIR.—Large stock of fine stuff, 24 to 30 inches in height, 15*s.* per 1000.

PINUS AUSTRIACA.—We have an extensive stock of this valuable tree, of the finest possible growth, 12 to 18 inches, fine and stout, 35*s.* per 1000.

*** *This is a most excellent hardy Pine, being very superior to the Scotch Fir.*

PINEASTER.—18 inches, good stuff, 18*s.* per 1000. *First-rate Pine for the sea coast.*

ASH.—4 feet, 20*s.* per 1000.

BALM OF GILEAD.—3 to 4 feet, handsome species of Fir, 4*s.* per 100.

LILACS, 4 feet, 6*s* per dozen.

LAURESTINUS.—2 feet, busby, 6*s.* per dozen.

BAYS.—18 inches, 5*s* per dozen.

RHUBARB: MITCHELL'S ROYAL ALBERT, *the earliest of all.*—We have more than a thousand strong roots, 15*s.* per dozen.

RHUBARB: MYATT'S VICTORIA, very strong roots, 15*s.* per dozen; smaller ditto, 9*s.* per dozen.

RASPBERRIES: RENDLE'S LARGE BEEHIVE.—This is a large handsome variety, very prolific, delicious flavour, and has given the most complete satisfaction to all. Strong Canes, 20*s.* per 100; 3*s.* per dozen.

STRAWBERRIES: KITLEY'S GOLIAH, 3*s.* 6*d.* per dozen; 20*s.* per 100. CUTHILL'S BLACK PRINCE, 2*s.* per dozen; 10*s.* per 100.

SEAKALE AND ASPARAGUS in large quantities, very reasonable.

BLACK NAPLES CURRANTS, very superior to the old sort, 6*s.* per dozen.

CEDRUS DEODARA.—Fine stock of nice young seedling plants, two years old, in pots, 6*s* per dozen.

*Our Catalogue of Forest Trees, Shrubs, and Fruit Trees, can be obtained for one penny Stamp.*

All orders above 5*l.* will be delivered CARRIAGE FREE to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast. Steamers from this port to Cork, Dublin, and Belfast twice a week.

*The South Devon Railway is now open to Plymouth; the Station being within one minute's walk from our Counting-house.*

All Orders will be executed in strict rotation.

*** We have a few fine Trained Yews for Hedge work, 3 to 4 feet in height, and will spread as much, 24*s.* per dozen.

WILLIAM E. RENDLE and Co., Nurserymen, Plymouth. Established 1786.

POLYANTHUS SEED.

JAMES WOODS has a quantity of Polyanthus Seed, which he can recommend with confidence, saved from none but named and good laced Flowers, price 1*s.* per packet; or sent free on receipt of 13 stamps. Also, a few hundreds of Ranunculus roots of the best old named varieties, in one mixture, at 5*s.* per 100.—Address to JAMES WOODS, Florist, Harwich, Essex.

SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

We prove the growth of each kind before we send them out.

| | | | |
|---|---|---|---|
| No. 1. | A full collection, suitable for a large establishment, for | ... ... ... ... ... | 45*s.* 0*d* |
| No. 2. | Do., | in smaller quantities ... | 30 0 |
| No. 3. | Do., | " " | 20 0 |
| No. 4. | Do., | " " | 12 6 |
| No. 5. | Do., | " " | 8 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | |
|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each | ... ... ... | 25*s.* 0*d.* |
| 50 Ditto. | Ditto. Ditto. | ... ... | 14 0 |
| 25 Ditto. | Ditto. Ditto. | ... ... | 8 0 |
| Hardy kinds separate, per dozen packets | ... ... | 2 0 |
| Half hardy Ditto. | Ditto. | ... ... | 3 0 |
| Greenhouse Ditto. | Ditto. | ... ... | 4 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

SELECT INDIAN AZALEAS.—Healthy well-grown Plants, with bloom-buds, in 48*s* or 4-inch pots 1*s.* 6*d.* each:

| | |
|---|---|
| Alba | Macrantha alba |
| Augusta aurantia | Prince Albert |
| Delecta | Refulgens |
| Double Red | Robertsii |
| Fulgens | Rollissonii splendens |
| Herbertii | Rosea punctata |
| Louvoniensis | Superba duplex. |

THOS. RIVERS, the Nurseries, Sawbridgeworth, Herts.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENÉ LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT, FOR SUPPLYING GENUINE HOME-GROWN SEEDS, CARRIAGE FREE.

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden,* Messrs. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

| | £ *s. d.* |
|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply ... ... ... ... ... ... | 2 10 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... | 1 10 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... | 1 1 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... | 0 12 6 |

PERSONS who are already in possession of several kinds of Seeds are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.

*For particulars of the sorts contained in these Collections, see Advertisement on the last page of the* Gardeners' Chronicle, *of January 25.*

JOHN SUTTON and SONS are also extensive growers of early Potatoes, and Agricultural Seeds, particulars of which may be had by post.

*Reading Seed Warehouse, Reading, Berks.*

SUPERB RANUNCULI.—The present being the usual month for planting the Ranunculus, we beg to recommend the following selections.

*The new varieties have been selected with great care, of first-rate sorts, from immense quantities of seedlings, and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.*

| RANUNCULUS.—*Free by post.* | £ *s. d.* |
|---|---|
| 50 Splendid new varieties, with names ... ... | 2 0 0 |
| 25 do. do. do. ... ... | 1 2 6 |
| 100 do. varieties from new and other best named sorts ... ... ... ... ... ... ... | 3 10 0 |
| 50 fine named varieties ... ... ... ... ... | 0 15 0 |
| 100 finest mixed ... ... ... ... ... ... | 0 10 0 |
| 100 fine do. 5*s.*, or free by post, 6*s.* | |
| ANEMONES; by post, 3*s.* per 100 extra. | |
| 100 new and superb named double varieties ... ... | 1 14 0 |
| 50 do. do. 18*s.*; 25 do., 10*s.*; or, by post ... | 0 11 0 |
| 100 finest large mixed double ... ... ... ... | 0 10 0 |
| 100 fine do. do. ... ... ... ... | 0 7 6 |
| Fine new mixed single, per lb. ... ... ... ... | 0 4 0 |

Fine double varieties, per dozen: Apenina, light blue, 3*s.*; Cælestina, blue, 3*s.* 6*d.*; Coleur de Sang, red, 3*s.*: Cramoise Royale, scarlet, 3*s*; Josephine, crimson, 3*s.*; Prince Albert, blue, 3*s.*; Rose Surpassante, 3*s.*; Scarlet Superbe, 3*s.*; True Blue, 3*s.* 6*d.*

GLADIOLUS—Autumn varieties of the Floribundus and Gandavensis habit:—

| | Each. | | Each |
|---|---|---|---|
| Albus roseus ... ... | 1*s.* 6*d.* | Psittacinus, 1*s.* 6*d* p. doz. 0*s.* 2*d* | |
| Autumnalis, orange ... | 1 0 | " Sanguineus, dark, | |
| Brenchleyensis, scarlet | 3 6 | 7*s.* 6*d.* per doz.... | 0 9 |
| Floribundus, 2*s.* 6*d.* p. doz. | 0 3 | Splendens, rich, scarlet | 3 6 |
| Gandavensis, 5*s.* p. doz. | 0 6 | Vernalis Spicatus ... | 1 6 |

Copies of our Autumn Root Catalogue may still be had.

Remittances required from unknown correspondents.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall; they are warranted double, and large and choice roots of which are selected at 4s. per dozen. N.B.—Orders by post punctually attended to.

AN UNLIMITED STOCK OF REMARKABLY FINE SEEDLING AND TRANSPLANTED LARCHES AT REDUCED PRICES.

WM. WOOD AND SON, being very extensive holders of the above, and all other kinds of seedling and transplanted Forest trees, will be happy to furnish prices on application.

N.B. Catalogues of Vegetable, Flower, and Agricultural Seeds, also of Nursery Stock, will be forwarded free.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDS OF THE BEST QUALITY, CARRIAGE FREE.

J. C. WHEELER AND SON have had the honour of being appointed Seedsmen to the Gloucestershire Agricultural Association. Their Priced List of Seeds for this season is just ready, and will be forwarded free by post to any address on receipt of two postage stamps. This Catalogue is not a long list of useless names; it is really what it professes to be, a List of the best Seeds in cultivation, and will be found a safe guide to all purchasers.

Dr. LINDLEY, in the *Gardeners' Chronicle*, of the 2d March last, strongly recommends it in the following terms:

"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."

J. C. WHEELER and SON deliver their Seeds CARRIAGE FREE.

Kingsholm Nursery; and 99, Northgate-street, Gloucester.

RETAIL SEED LIST—1851.

ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, in returning thanks to their numerous patrons and friends for past favours, beg again to offer their priced Catalogue of Floral, Vegetable, and Agricultural Seeds; also of Early Seed Potatoes, free to any address, on application; or, with a packet of either superior summer Lettuce, Double Parsley, Mignonette, Nemophilas, Eschscholtzias, German Asters, Larkspurs, or Sweet Williams, for two penny stamps.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants:

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3s. 6d. to 10s. 6d. each.

CRYPTOMERIA JAPONICA SEEDLINGS.

2 years ... ... ... ... 18s. per doz., or 105s. per 100.
3 years ... ... ... ... 30s. ,, 210s. ,,
1 foot 6 inches to 2 feet 6 inches high, 60s. per dozen.
2 feet 6 inches to 3 feet 6 inches high, 90s. ,,
3 feet 6 inches to 4 feet 6 inches high, 126s. ,,
And larger plants in proportion.

The whole of the above, with the exception of the two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10s. 6d. to 21s.

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS, (North of China.)

6 inches high, 10s. 6d. each; 12 to 15 inches, 21s. each.

These plants are from the open border—robust specimens fit for immediate planting.

15 ins. to 24 ins., 31s. 6d. each; 24 ins. to 30 ins., 42s. each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7s. 6d. each; 9 to 15 inches, 10s. 6d. each.
15 to 24 inches, 21s. each; 2 to 3 feet, 31s. 6d.

CUPRESSUS LAMBERTIANA, 2 feet, 3s. 6d. each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3s. 6d. to 5s. each.

CEPHALOTAXUS FORTUNII, strong plants, 31s. 6d. each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet ... ... 1s. 6d. to 2s. 0d. each.
2 feet to 3 feet ... ... ... ,, 2s. 6d. ,,
3 feet to 4 feet ... ... ... 3s. 6d. ,, 5s. 0d. ,,

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1s. 6d. each.

Flowering plants ... ... ... ... 3s. 6d. ,,

This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42s. each.

QUERCUS INVERSA. (North of China) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42s.

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Ruga. Dwarfs, 5s.; Standards, 10s. 6d. each.

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 5 inches ... ... 2s. to 2s. 6d. each.
1 foot 6 inches to 2 feet 6 inches ... 3s. 6d. to 5s. ,,
3 to 4 feet ... ... ... ... 7s. 6d. to 10s. 6d. ,,
Larger in proportion.

VIBURNUM PLICATUM. (North of China). A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21s. each.

WEIGELA ROSEA.

6 inches high ... ... ... ... 1s. 0d. each.
1 foot to 1 foot 6 inches ... ... 1s. 6d to 2s. 6d. each
1 foot 6 inches to 2 feet ... ... 3s. 6d. to 5s. 0d. ,,
These last are fine bushy flowering plants.

Selections of the finest Autumnal Flowering Roses.

Standards ... ... ... ... 15s. 0d. per dozen.
Half Standards ... ... ... 12s. 0d. ,,

N.B.—We have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which can be sold very cheap, particulars of which can be had on application.

Bagshot Nursery, Feb. 1.

PEARS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, Clarendon Nursery, St. Helier, Jersey, Channel Islands, begs to offer the following new PEARS, of the first merit:

BEURRE CLAIREGEAU, bearing the name of the raiser of this valuable Pear.—A very large fruit, perfectly melting, and a late fruit of first merit. Price 5s.

BEURRE D'HIVER.—Also large, and keeps till April, perfectly melting, hardy, and great bearer. Price 5s.

BEURRE NANTAIS.—The earliest Pear known, excellent, and great bearer. Price 2s. 6d.

The above R. L. can strongly recommend. None will be forwarded to unknown correspondents except on the receipt of cash or reference.

PEAR AND QUINCE STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, St. Helier, Jersey, begs to inform the Public and the Trade that he has the following, of very superior growth, to dispose of:—A few thousands QUINCE, very free and healthy, fit to receive the buds next July, at 40s. per 1000; also PEAR Stocks, of superior growth, two years transplanted, and very vigorous, at 40s. per 1000; smaller ditto, transplanted, and very vigorous, at 35s. per 1000.

This is an opportunity R. L. has never before offered to the Public, for his stock is totally different from the French stock, which has always given R. L. superior growth of trees.—Orders will be punctually attended to. Reference or remittance from unknown correspondents.

FRUIT TREES.—The SUBSCRIBER having obtained near London, and planted in Essex, the 2000 FRUIT TREES advertised for in November last, is prepared to entertain further offers during the summer for the supply of several thousands more of APPLE and PEAR trees suitable for open Orchard planting next season. Age not to exceed two years grafts last spring. Also are wanted a few thousands of CRAB STOCKS and PEAR STOCKS.—Address particulars to D. MORRIN, Esq., 2, Chapel-terrace, near Kensington Gardens, Bayswater, near London.

TO BE DISPOSED OF, by an AMATEUR GARDENER, about 200 GOOSEBERRY BUSHES, in nearly 100 varieties, comprising the newest and finest prize sorts that have been raised—a great many standards and half-standards, root pruned. About 100 Prize CURRANT TREES, in 20 distinct varieties. About 20 varieties of STRAWBERRIES, of Black Prince alone nearly 1000 fine plants. About 100 pyramidal APPLE, PEAR, PLUM, and CHERRY TREES, selected from Mr. Rivers's collection at Sawbridgeworth; also a number of Rivers's double-bearing RASPBERRY. Likewise a fine collection of Ferns, Rock Plants, Hollyhocks, and Herbaceous Plants.

Any Gentleman forming an establishment, or wishing to improve his present collection, will find this an opportunity rarely offered, as likewise many country Nurserymen.—Can be seen at an easy distance of one hour's ride from London. Apply to DUNCAN HAIRS, Seedsman, 109, St. Martin's-lane, London.

DALSTON NURSERY, MIDDLESEX. — All Persons having any Claims against the Estate of Mr. JOHN SMITH, late of Dalston Nursery, deceased, are requested to forward the particulars thereof, addressed to Mr. THOMAS SMITH, at the Nursery, without delay; and all Persons indebted to the Estate are requested to pay the same either to Messrs. GRAHAM and LOYDE, Solicitors, 3, Mitre-court Chambers, Temple, London; or to Mr. WILLIAM HARRINGTON, at the Nursery.

SEED POTATOES, TRUE AND SOUND.

| | Bushel. | Gallon. |
|---|---|---|
| TRUE ASH-LEAF KIDNEY ... ... | 6s. 6d. | 1s. 0d. |
| JACKSON'S EARLY KIDNEY, grown from Messrs. Jackson's stock ... ... ... | 6 6 | 1 0 |
| SODEN'S EARLY OXFORD, direct from Messrs. Soden... ... ... ... ... | 8 6 | 1 6 |
| GRIGOR'S EARLY ROUND, grown from Messrs. Grigor's stock ... ... ... | 6 6 | 1 0 |
| LAWSON'S EARLY GLOBE, grown from Messrs. Lawson's stock ... ... ... | 6 6 | 1 0 |
| TRUE EARLY TEN-WEEK ... ... | 8 6 | 1 6 |
| RED ASH-LEAF KIDNEY ... ... ... | 7 6 | 1 3 |

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, strongly recommend the above sorts of Potatoes, which they will send at the above low prices, carriage free, as see their Advertisement in the last page of *Gardeners' Chronicle* of January 25.

CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber-growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Mills's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5s.; or three seeds, 2s. 6d.

E. T. has also seed of his three other superb Cucumbers at the following prices:

Victory of Bath, per packet ... ... ... 2s. 0d.
Gordon's White Spine, ditto ... ... ... 1 6
Lord Keynon's Favourite, ditto ... ... 2 6

This last is the best for winter cultivation.

MELONS.

BROMHAM HALL GREEN-FLESH MELON.—This has again this season surpassed all others for its superior flavour; it was placed first and second for flavour at the Chiswick Exhibition last season, and obtained a great number of first prizes throughout the country where exhibited. Sold in packets at 1s. 6d. each.

E. T. has also seeds of the following superb Melons, which he can with confidence recommend:

| | | |
|---|---|---|
| Camerton Court Green-flesh ... ... | 1s. 0d. | per packet |
| Queen Melon ... ... ... ... ... | 1 0 | ,, |
| Blackall's Green-flesh ... ... ... | 1 0 | ,, |
| Bailey's Green-flesh... ... ... ... | 1 0 | ,, |
| Bowood Green-flesh... ... ... ... | 1 0 | ,, |
| Beechwood Green-flesh ... ... ... | 1 0 | ,, |
| Windsor Prize ditto... ... ... ... | 1 0 | ,, |
| Emperor ... ... ... ... ... | 1 0 | ,, |
| Fleming's Trentham Hybrid ... ... | 1 0 | ,, |
| Duncan's Green-flesh do. Improved ... | 1 0 | ,, |
| Hampton Court Green-flesh ... ... | 1 0 | ,, |
| Egyptian do. do. Improved ... ... | 1 0 | ,, |

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

CHEAP PLANTING.

LUCOMBE, PINCE, AND Co. have a large quantity of fine LARCH, SPRUCE FIR, THORNS for Hedges, LAUREL, LAURESTINUS, PORTUGAL LAUREL, &c., all of very superior quality, of various sizes, which, owing to the Lease of one of their Nurseries on which they now grow expiring at Lady-Day next, will be sold at greatly reduced prices.—For particulars of size and prices, apply to the Exeter Nursery, Exeter.

TREES.—WANTED for Plantation Planting, good well-rooted transplanted TREES. State price; delivered carriage and package paid to Bishop's Stortford Station, on the Eastern Counties Railway.—Address W. W., Dunmow, Essex. Horse Chestnut (common and Scarlet), Copper Beech, Common Beech, Turkey Oak, Elm, Birch, Alder, Weeping Willow, Sycamore, Lombardy Poplar, Mountain Ash, Hornbeam, Acacia, Balsam, Poplar, Lime, Aspen, not under 5 feet; Spruce, Larch, Scotch, Silver Fir and Austriaca, Hemlock Spruce, not under 3 feet; Laurels, 18 inches to 2 feet; Portugal ditto; five years old Quick, three times transplanted; Standard Apples and Pears, fruiting size; Thorn Acacia, 15 to 20 feet high; Specimen Trees, three years old, in pots; Stone Pines, Nigrans, Deodara, Weymouth, Laricio, Cembra, Erecta, Erectum, Siberia, Picea Pinsapo, Picea Taxifolia, Pinus Macrophylla, Insignis, Douglasii, Lambertiana, Imbricata, and Gerardiana.

THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, and Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove, they can offer them, varying according to age and quality, from 20s., 40s., to 60s. per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, Feb. 1, 1851.

NEW KITCHEN GARDEN SEEDS.—Warranted Excellent quality. Carriage Free! (See below).

| | | £ | s. | d. |
|---|---|---|---|---|
| No. 1. | Complete collection of 20 quarts of the newest and most prolific Peas, with all other Seeds in proportion, for one year's supply ... | 2 | 10 | 0 |
| No. 2. | Complete collection, in smaller quantities ... | 1 | 10 | 0 |
| No. 3. | ditto ditto ditto ... | 1 | 0 | 0 |
| No. 4. | ditto ditto ditto ... | 0 | 12 | 6 |

*A List of the kinds furnished in the above collections will be found in our* PRICE CURRENT AND GARDEN DIRECTORY, *which can still be had on application.—See* Gardeners' Chronicle, *Jan.* 4, 1851, *back page.*

*** All Seed Orders above 2*l.* delivered Free of Carriage to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast, by steamers.

Apply to WILLIAM E. RENDLE & Co.,
Seed Merchants Plymouth.

N.B.—All the New Vegetable and Flower Seeds advertised from time to time in this Paper can be obtained from us, at the regular current prices.

HORTICULTURAL AND AGRICULTURAL SEED ESTABLISHMENTS, MAIDSTONE, AND ADJOINING THE SOUTH-EASTERN RAILWAY STATION, ASHFORD.

WM. JAS. EPPS begs to state that he has taken the Nursery and Seed-growing business late in the occupation of Mr. James Cutbush, Sen., adjoining the Railway Station, Ashford, where he is making extensive alterations for carrying on the above business, in conjunction with his Nursery and Seed Establishment, Maidstone. The proximity of the Ashford business to the Romney Marsh (which is the largest and by far the best seed-growing district in the kingdom), will enable him to offer many advantages; great attention will be paid in selecting and growing the stocks true to their kind. He is now prepared to receive commissions from any respectable wholesale house. The prices, per contract, this year are exceedingly low, and any further information upon this subject may be had upon application, also his wholesale and retail List of Seeds.

W. J. E. has a large and splendid stock of the following Seeds, which he can warrant to any extent, and at very low prices—terms, three months, upon satisfactory reference—Skirving's Purple-top Swede, Laing's Purple-top Swede, Mangold Wurzel, White Carrot, Parsnip, Champion of England Peas, Imperial, Victoria Marrow, Blue Prussian, Broccoli, and Cabbages of sorts; Kohl Rabi and Mustard. All seeds carriage paid to London.—Feb. 1.

SPLENDID NEW HARDY DIANTHUS.—"DIANTHUS REIDII."

J. REID begs to state that he has succeeded in saving a small quantity of the seed of his new Dianthus. The flower of this magnificent plant is from 3 to 4 inches in diameter, the colour is bright scarlet, laced with white. From the middle of May till the end of August this gem of the flower-garden is perhaps without a rival. J. R. is also sending out a small quantity of choice Polyanthus seed, which he can with confidence recommend.

Dianthus seed, 1s. per packet. Polyanthus seed, 6d. per packet. On the receipt of penny postage stamps to the amount, one or both will be sent free to any part.

J. REID, Seedsman, &c.

Richmond-street, Weston-Super-Mare, Somerset.

J. G. WAITE'S CATALOGUE OF VEGETABLE SEEDS is now Ready, with Prices to suit the times, and can be had on application.

181, High Holborn, London.

J. G. WAITE'S CATALOGUE OF FLOWER SEEDS is also Ready, and can be had on application.

181, High Holborn, London.

SION-HOUSE DWARF FRENCH BEAN, new, early, buff speckled. This is the earliest Bean known, and can be had in any quantity, price 21s. per bushel.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London, where every other kind of Seed in cultivation can be had, on better terms than at any other House in the Trade.

RHUBARB ROOTS TRUE TO NAME.—Myatt's Victoria, 6s. per doz; Myatt's Linnæus, 9s. per doz.; Mitchell's Albert, 9s. per doz.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

STRAWBERRY PLANTS.—Ridley's Goliah, 10s. per 100; Myatt's Eleanor, 4s. per 100.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

NEW GIANT ASPARAGUS PLANTS, 5s. per 100. LARGE GIANT SEAKALE PLANTS, 8s. per 100.

At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

TO BE SOLD, a decided bargain, about 100 Standard PEAR TREES, seven years old, in a bearing state; the present being the most appropriate season for Transplanting and Root pruning. Having been carefully attended to, will move with great certainty. Also, two Greenhouses, 35 feet by 12 feet each, in excellent repair.—Direct to THOMAS STACEY, Florist, near the Station, Church-street, Hackney, near London.

HEATHS AND OTHER PLANTS FOR EXHIBITION.

WILLIAM JAMES EPPS begs to state that he has for sale the finest Stock of Young HEATHS and other Greenhouse and Stove Plants possible, which will make splendid specimens in a short time. The superior character of Plants sent out from this Establishment is justly admitted by all who have purchased. The magnificent specimens of Heaths, &c., exhibited by him last season at the Exhibitions at Chiswick and the Royal Botanic Gardens, London, where he received the highest awards, fully justify the foregoing remarks.

Strong bushy Plants can be had at the following low prices, exclusive of packing, carriage paid to London:

| | £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| 100 fine varieties of Heaths ... ... | 5 | 0 | 0 | 100 fine vars. of Stove and Greenhouse Plants ... ... | 5 | 0 | 0 |
| 50 ditto ditto | 2 | 12 | 6 | 50 ditto ditto | 2 | 12 | 6 |
| 25 ditto ditto | 1 | 10 | 0 | 25 ditto ditto | 1 | 10 | 0 |
| 100, including all the finest varieties of ditto ... ... ... | 7 | 10 | 0 | 100 newest and finest vars. of ditto ... | 7 | 10 | 0 |
| 50 ditto ditto | 4 | 0 | 0 | 50 ditto ditto | 4 | 0 | 0 |
| 25 ditto ditto | 2 | 2 | 0 | 25 ditto ditto | 2 | 2 | 0 |

All the new leading kinds of Geraniums and Cinerarias 12*s.* to 21*s.* per doz.

Catalogues of the above may be had on application.

Bower Nurseries, Maidstone.—Feb. 1.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2½ feet, is three weeks earlier than the old dwarf Green Knight's, and the Peas and pods are twice the size. 5*s.* per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetars, and 20 to 24 per stem. 1*s.* per quart.

BURBIGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1*s.* per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c., Wholesale and Retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be furnished on application.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE OF SEEDS is now ready, being a part of their ANNUAL SEED AND PLANT LIST, which will shortly be complete, and forwarded as a newspaper, free by post. The Parts now ready may be had together for a penny stamp, viz.:

PART I. FLOWER SEEDS, containing a scale of priced selections of 422 of the new and most approved sorts, with colour, height, hardiness, duration, price of each packet, and other useful information.

PART II. VEGETABLE SEEDS, with priced scale of collections, time of sowing each description of Vegetable, and price of each variety, with heights of Peas, and other descriptive information.

PART III. AGRICULTURAL SEEDS, containing also much useful and descriptive information.

PART IV. ROOTS, FRUITS, AND BULBS for early planting.

PART V., as far as complete, contains a scale of prices of our choice selections of plants, and the principal part of our descriptive list of Geraniums.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY, THE QUEEN. The Exhibitions for the present season will take place as follows. The first on WEDNESDAY, April 23, 1851, in the Assembly Rooms, at the HORNS TAVERN, Kennington, and the following at the ROYAL SURREY ZOOLOGICAL GARDENS; on

WEDNESDAY, May 28th,
WEDNESDAY, June 25th,
THURSDAY, July 24th, and
WEDNESDAY, Sept. 3d.

List of Prizes, and the Rules of the Society, may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham, Surrey.

Subscriptions, 20*s.* per annum, entitling each Member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society, of Exhibiting Flowers, Fruit, and Plants, their own growth, in competition for Prizes, without any charge for entry; and, also, to have two Free Admissions for Friends, at each Flower Show, Lecture, or Meeting.

**The Gardeners' Chronicle.**

*SATURDAY, FEBRUARY* 1, 1851.

MEETINGS FOR THE ENSUING WEEK.

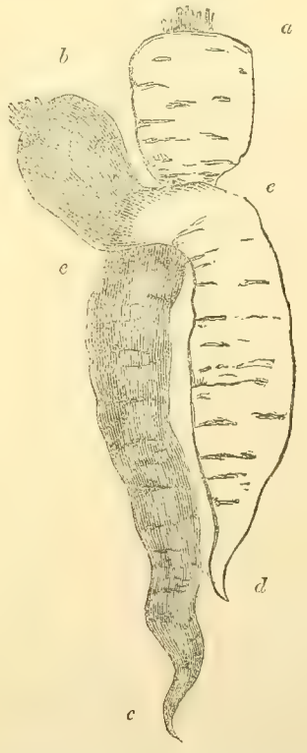
| | | | | |
|---|---|---|---|---|
| MONDAY, | Feb. | 3 | Entomological | 8 P.M. |
| | | | Chemical | 8 P.M. |
| | | | Linnean | 8 P.M. |
| TUESDAY, | — | 4 | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| WEDNESDAY, | — | 5 | Society of Arts | 8 P.M. |
| | | | Geological | 8½P.M. |
| | | | Zoological | 8 P.M. |
| THURSDAY, | — | 6 | Antiquarian | 8 P.M. |
| | | | Royal | 8½P.M. |
| | | | Botanical | 8 P.M. |
| FRIDAY, | — | 7 | Philological | 8 P.M. |
| | | | Royal Institution | 8½P.M. |
| SATURDAY, | — | 8 | Royal Botanic | 3½P.M. |
| | | | Medical | 8 P.M. |

WE owe to the kindness of a correspondent at Wexford the knowledge of the following very curious case of SIAMESE GRAFTING. Two Carrots, white and red, came into contact in the progress of their growth, and united; with this peculiar feature, that each assumed the characteristics of the other.

In a communication from Mr. EDWARD CARROLL, of Beg Erin, near Castlebridge, we gather the following additional particulars. These Carrots were grown together on the farm of JOHN LEARD, Esq., at Carrick Hill, from a mixed sample of seeds of the *White Belgian* and *Red Surrey*. The two roots grew so close to each other that each twisted half round the other, and they became united. The most singular matter was that the red Carrot with its small overgrown part above the junction took the colour and large dimensions of the white Belgian, which in like manner, with its larger head above the joining, took the colour and small dimensions of the red one at and below the union.

We are acquainted with no similar case. Turnips occasionally grow together; we have seen a root of that plant half yellow and half white, apparently in consequence of two young roots having been pressed together and compelled to unite when very young into one solid body; but in such cases each half retains its peculiar quality. In the present instance the roots only join by a narrow neck, the upper and lower portions remaining perfectly separate; and yet, strange to say, each gives its companion its own qualities, and receives in return other qualities belonging to its twin. Not, however, wholly, but in part; to use familiar language, the white-headed Belgian gives its red companion a white tail, while the carrotty-headed Surrey gives the Belgian a red tail.

Mr. CARROLL points out how much this case serves to confirm the theory of descending sap. Not that the theory stands in need of confirmation, for no one really familiar with living plants can have any doubt of it; but the present case seems to admit of no possible explanation upon any other principle. The Carrot *b d*, is joined to *a c*, at the point *e*, where each is thrown out of the perpendicular into nearly a horizontal position for a short space, after which each again resumes the perpendicular. The effect of this is, that the two Carrots continue to represent two perpendicular lines, but each perpendicular consists of two parts, the upper belonging to one Carrot, and the lower to another. It is evident that the red sap of *b*, when it reaches *e*, where an obstruction occurs, will more readily find its way to *c* than to *d*; and in like manner the white sap of *a*, impeded by the obstruction *e*, will more readily find its way to *d* than to *c*, to which, under ordinary circumstances, it would have proceeded; and thus the respective qualities of the two roots become transposed.




The heads of the two remain unaffected by the union; for there everything remains in its natural state, acted upon by the foliage, as is usual; but below the junction a great alteration is produced. The tail *e d*, naturally weak, is distended by the abundant matter poured into it by its new head *a e*; and, in like manner, the tail *e c*, naturally vigorous, is starved by the insufficient food derived from its new head *b e*, and becomes diminutive and shrunken. This seems to have been remarkably the case in the specimen itself, but is not so apparent in our diminished figure.

Now arises the question, what sort of plant will come from the seed to be produced by these twins. We trust that their possessor will save the seed of each separately; and let us know the result when it shall have produced a future crop. It is not altogether impossible that the red Carrot may produce red seed, in spite of its white tail; and *vice versâ*. But the probability seems to be that the seed will have properties somewhat intermediate between the two.

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A FORTNIGHT ago we briefly mentioned M. GARREAU'S very curious experiments on the perspiration of plants; we shall now redeem the promise we then gave, by describing his experiments more in detail, so that our readers may be in a position to judge for themselves of the value of his conclusions. M. GARREAU'S object in the first place was to ascertain the ratio in which the cuticle and covering membrane of plants is able to absorb or give out gaseous matters, what differences exist between the same membrane on the various parts of a given plant, and how these differences are modified by circumstances. The first series of experiments were made to measure the real porosity of the epidermis, by ascertaining the rate at which endosmosis takes place through it, between various dissimilar fluids. Small portions of the epidermis of different plants, carefully prepared, were cemented at the end of glass tubes; a weak solution of sugar was then poured into the tube, the lower end of which was thus closed by the film of vegetable membrane, and the tube was then immersed for a given number of hours in some other liquid, after which the quantity of the latter drawn through the membranes by endosmosis, was carefully measured.

The result of these experiments showed that the epidermis of old leaves permitted little or no endosmosis, whilst that of young leaves allowed it to a very sensible degree; a fact apparently caused by the considerable quantity of oleaginous matter, which covers and impregnates the epidermis of the former. On comparing together the epidermis taken from different parts of the same leaf, it was found that it varied considerably in its relation to this passage of fluid; the epidermis of the nerves, and of the lower part of the leaves, nearest to the leaf-stalk, being those which permitted it most freely. An epidermis, which does not allow of endosmosis in its natural state, becomes permeable to liquids, when it has been washed with ether, solution of soap, or in some cases even with distilled water alone. These effects are quite independent of the action of the stomata, and may be observed quite as well with a membrane wholly destitute of those openings. The fact that the epidermis of leaves will not permit the passage of water in their natural state, but will do so when the greasy matter which coats their surfaces is artificially removed, may be proved by immersing a faded leaf for some hours in water, keeping the whole of the leaf-stalk out of the fluid, it will absorb little or no water; but if it has been previously carefully washed with soap in distilled water, it will then be able to absorb a very notable quantity of the water in which it is subsequently immersed. This absorption is found to be quite as great in those leaves which are furnished with very few stomata, as it is in those which have many, provided the washing be carefully conducted, and all pressure avoided, which would cause the forcible introduction of water through the stomata.

The chief conclusions to which M. GARREAU arrives, as the results of these and a number of similar experiments, are as follows:—Firstly, That the cuticle of plants possesses the power of allowing endosmosis to take place whilst the parts are young, but that it loses it as they grow old. Secondly, that this power is in proportion to the quantity of oleaginous matter which exists in the cuticle, being greatest in those membranes which contain least fatty matter, or in which it has been artificially removed by washing. Thirdly, that the cuticle which covers the upper surface of the nerves, and particularly that which clothes the axillary part of the leaf-stalk, is that which permits the most abundant endosmosis. Fourthly, that the epidermis sometimes interferes with this power of the cuticle, because plants which have no epidermis permit endosmosis to a remarkable extent; and young bark which has this organ, permits much less endosmosis than that which is without it: and lastly, that if simple washing with distilled water is able to increase the absorbent power of leaves, it is plain that rain water must produce the same effect.

These results are certainly highly interesting, and unquestionably point to a new and hitherto unsuspected office of rain; they show the importance of keeping the surface of plants clean, and lead to numerous useful hints to the practical gardener. We must, however, confess that we do not feel altogether satisfied with some of the experiments, because we are not quite sure that it is fair to compare the endosmosis or passage of water through a membrane, with the gaseous transpiration which would occur through the same membrane; because the conditions most favourable to the one are not necessarily also always those best suited to the other. The experiments of the author do not bear upon this question; he merely shows that such vegetable tissue is really permeable to carbonic acid, but does not by direct experiment prove that this permeability is increased in any definite ratio by washing. The author endeavours to prove that carbonic acid gas is able to pass through the cuticle of plants which have no stomata, by referring to the growth of water-plants, which are without them; and by an experiment in which a portion of lime-water was enclosed in a tube, the end of which was covered with a small piece of such a membrane, and the tube then plunged for some hours in an atmosphere of carbonic acid; under

these circumstances the gas penetrated the membrane and rendered the lime-water turbid. This experiment, however, is by no means quite unexceptionable, because the question is not whether pure carbonic acid will pass through the membrane and mix with common air on the other side, but rather whether common air, containing 1 per cent. of carbonic acid, will so pass through to mix with air containing no carbonic acid. It is evident that the gradual filling up of the pores with oleaginous or resinous matter, which destroys the power of permitting endosmosis, does not necessarily also prevent the cuticle from absorbing carbonic acid; and indeed M. Garreau says this himself, for he observes that a cuticle which has lost the power of transmitting water, may still be permeable to that gas.

The second division of the paper contains a very valuable and careful series of experiments on the evaporation of water from the two surfaces of the leaf, and on the emission of carbonic acid gas from leaves. In those experiments leaves growing on healthy plants were selected, and a circular portion inclosed between two closely fitting glass receivers, so arranged that the leaf formed the division between the two glasses—the upper surface was in the one glass, whilst the under surface of the leaf was in the other glass. The quantity of moisture given off was ascertained by placing in each glass a weighed portion of dry chloride of calcium, which being hygroscopic, or very greedy of moisture, would absorb all the vapour as fast as the surface of the leaves gave it out. The result of these experiments is that the lower surface of the leaves gives off, from an equal quantity, three times as much as the upper surface does; sometimes the proportion is as high as five to one; and the ratio is quite independent of the position of the leaf itself. This exhalation of water has some connection with the number and size of the stomata, but is by no means wholly dependent on it, as there is evidently a large quantity of water given off independently of them. The evaporation is most abundant along the course of the nerves, and in those parts of the epidermis, on which there is the least quantity of oily matter.

As by the experiments already mentioned it has been shown that the transmission of water is greatly checked by the accumulation of oil and resin in the epidermis, it might naturally be expected that the perspiration or evaporation of water would likewise be diminished by the same cause. The experiments made with a view of ascertaining the correctness of this supposition, consisted chiefly in exposing leaves of different plants, the exact weight of which is known, to the air, and by subsequently weighing them again, observing the quantity of water which they had lost, and consequently the rate at which they were able to give off water. It was found in every case that cleansing, or washing the leaves with soap and water, increased their power of evaporation to a very considerable extent.

The emission of carbonic acid by the leaves of plants, under certain conditions, was first ascertained by Saussure, but since his first experiments, made half a century ago, no one has attempted to measure exactly the quantity of this gas which leaves give out; the careful and exact experiments of M. Garreau on this point are, therefore, of great value. He employed the same sort of apparatus for this purpose, which has already been mentioned, as being used in estimating the evaporation of moisture from the upper and lower surfaces of leaves, namely, two circular glass vessels, which being applied respectively to the upper and under sides of the leaf, enclosed a circular disk of the leaf between them, in a way very convenient for the purposes of the observer. In these experiments, however, in place of using dried chloride of calcium, a portion of lime-water was used, and the chalk formed in it by the absorption of carbonic acid subsequently weighed. The general results of these experiments are, that in the shade or diffused daylight, no carbonic acid is evolved by the leaves; that in the night it is given out by both surfaces, but in greater quantity from the lower than from the upper surface; and that when exposed to the influence of a very bright and hot sunshine, so that the rate of evaporation is very rapid, carbonic acid is likewise given off. In the latter case, the quantity of the gas thus evolved is comparatively small, and by far the larger portion of it is given off by the lower surface of the leaves. It also appears that the proportion of carbonic acid given off by different leaves, bears a closer relation to the number and size of the stomata than the proportion of water which the leaves are able to evaporate does.

All these experiments of M. Garreau teach us this fact, that under ordinary circumstances the growth of a plant causes the formation and deposition of certain substances, which in time fill up its pores, check perspiration, and consequently interfere with the nourishment and further growth of the plant. On the one hand, there can be little doubt that in very hot weather these matters must sometimes be useful in checking extreme perspiration, and in diminishing for the time the powers of the plant to absorb too much food from the air, or to part with water and carbonic acid too rapidly. On the other hand, the effect of rain must be to wash away a portion of these deposits, and so to favour the perspiration and consequent growth of the plant. Lastly, as the more heat a plant is exposed to, the more it perspires, and the faster it grows, the greater will the tendency be to fill up its pores; so it follows that when plants are exposed to great heat in a close house, and not in any way artificially washed or syringed, they are placed in an unnatural condition, and the very care of the gardener defeats, to some extent, the object which he has in view.

## MARKET GARDENING ROUND LONDON.

No. V. Leeks.—These are sown in February or early in March, in rich ground. When the plants are strong, and about 10 inches high, they are planted or dropped into holes 8 inches deep, made by the dibber. After they are planted, hoes are sent through them, to loosen the ground. In this operation mould drops down upon the roots, and the next hoeing fills the holes up loosely, which is what is wanted, for the soil must not be pressed tightly round the stem, as that would prevent its thickening.

White Cos Lettuce.—This variety is grown by the million, and is highly esteemed by every body. The seed is sown from the 10th to the middle of October, in frames, which are filled with soil to within 6 inches of the top, giving a slope of one foot in four, the length of the lights, which always face the north. As soon as the seeds are sown the sashes are removed, and a man is placed in this department, to keep off the sparrows, give air, and shut up in case of rain; the great secret being to keep them as dry as possible, and to let them have all the air they can get. They are planted out in February, or early in March, in rich well trenched ground (after Celery), one foot apart each way. Gentlemen's gardeners buy the same seed, but owing to their mismanagement during winter, and the poor state of the ground, they cannot grow such fine Lettuces as the market gardener. Some of the latter are, however, too greedy in regard to crops; for instance, they have often three crops in the ground all coming forward one after the other; but the best cultivators do not do this; it tramples the ground, and does not give any crop fair play. The rapid growth of a Lettuce depends much upon hoeing or stirring the soil. When well grown no tying is required; but badly managed plants have to be tied up a fortnight before they are sent to market.

Ridge Cucumbers.—I have seen 14 acres of these in one man's ground; they are germinated under glass, hardened off, and planted out 6 feet asunder, and 10 feet row from row; hand-glasses are put over them. When they begin to grow, the ground is well mulched with straw, to keep the earth moist and the fruit clean. Gherkins are sown in the open air at once, in well prepared ground, at the above distances; and I have known one party to cut in one day 200,000 fruit, which were all bespoken by oil merchants. Ever since the commencement of the Potato disease, however, Gherkins will not grow round London.

Scarlet Runners.—These are very often sown amongst Lettuces, 6 feet apart, about the 1st of April; but by far the best plan is to sow in beds thickly, and transplant by means of the dibber. No plant lifts better, and the moving makes them show flower much sooner. The usual practice is to take the heads off all the plants, leaving them a foot high, and to keep topping all the summer, which induces them to bear heavy crops; but the way of getting them to bear earliest is to save the roots in autumn, pack them away like Dahlia roots, and to transplant them again in March, 6 inches root from root, in rows 5 feet apart. It should be borne in mind, that if Beans are left to ripen, the roots will not be near so strong as they otherwise would be.

French Beans.—The best are the Negro, on account of the Beans being all green, and not marked or blotched like some others. They are also all one breadth, very narrow and handsome, and they are very dwarf and first-rate bearers; they are generally sown amongst Lettuces, Cauliflowers, &c., to succeed the standing crop; but the best way is to give them a piece of ground to themselves. The French Bean transplants nearly as well as the Scarlet Runner; therefore it might be treated in the same manner; they would also come in much earlier and grow less robust. The crop would not be quite so heavy; but earliness is everything for the London market.

Parsley.—The main winter crop is sown in April and May, and thinned out to 6 inches asunder, and a foot apart in the row. In picking, all the large or oldest portions are removed first, the head is never cut off at once, but not one bit is allowed to pass perfection. Parsley pays well for the attention it receives. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

No. XVI.—All needful matters connected with an "Aviary" have now been minutely and fully discussed. On looking back upon what has been written, I can find nothing to alter, nothing to add, and nothing I could wish unsaid.

It is no more than right to acknowledge; before dismissing this branch of our subject, my obligations to very many kind subscribers to the *Gardeners' Chronicle*, for "strengthening my hands" from week to week, by their written expressions of approval of what my pen has jotted down. Also, for their unsolicited confirmation of the truthfulness and great practical utility of my remarks in connection with the general subject. It is no less encouraging than it is surprising, to have given satisfaction to so large a mass of readers; nor will a knowledge of this, fail to give new life to what has to follow.

"A change now comes o'er the spirit of our dream." We turn from the "land of liberty," and have henceforward to speak of those little prisoners *only* whose fate "for better for worse" is more immediately in the hands of a master, a mistress, a servant, or a child. Before proceeding one step further, I beg again most earnestly to protest against any song bird being entrusted to the tender mercies of the two latter. Servants, in particular, are notoriously thoughtless, careless, and indifferent; children (as we all know but too well) are, in addition, too often remorselessly cruel.

Most of our pet birds owe their immediate death to neglect. To speak within compass, one-half of them, at least, perish from starvation. Herein lies a great moral evil, which cannot be too loudly nor too frequently spoken against. If people would but "reflect" for a moment, they surely would never be guilty of such a *sin*—for sin it is. *Verbum sat.*

Before entering on the universally-interesting subject of "Cage Birds," and speaking of each, individually, I wish to offer one or two passing observations which deserve attention.

In the first place, I would suggest that, before purchasing any cages, due regard should be paid to their being of a proper size, and in every respect adapted to the comfort and convenience of the intended occupant. This is a most important consideration. I have very frequently seen birds hung outside a window, with an open top, and with open sides to their cages—admitting not only the scorching rays of a meridian sun, but strong eddies of wind, and drenching showers. Many a bird falls sick from such gross neglect; and however fine his song may have been, it will, if he be thus exposed, soon be for ever silenced or ruined.

In no one instance is this unpardonable neglect more observable than in the case of the sky-lark—the very prince of our songsters. He unfortunately has the reputation of being a "hardy" bird, and therefore is hung out of the window, as we may see daily, the first time the sun shines; and in a cage with open wires on both sides! The currents of air passing the live-long day through the cage, over his head, and against his breast (the pressure of which he frequently cannot withstand)—are enough to ruin his constitution and his song for ever. The natural consequence of this exposure is—the bird gets puffy, and his voice becomes wiry, husky, and hoarse. He may rather be said to shriek than to sing; melody there is none. It is truly wonderful to observe the almost universal practice prevailing in this matter. It is no less impolitic than it is cruel.

Nothing can be more easy than to obviate all this. If one side of the cage were of wood, projecting the entire length of the front, and the other of wire, the birds would get plenty of air, and be snugly protected from the wind. If it were considered necessary to make them "hardy," by leaving them out in all weathers—a hideous fallacy—they would then find a sheltered corner in which to take refuge from the storm.

I have had sky-larks in full song for 14 years; and I have always treated them in this way. People have said, they could not possibly imagine how I got my birds to live so long. The fact is, they would not take any trouble about their birds; nor would they think how best they might contrive to keep them well, and make them happy in their confinement. When they died, as the saying is, "there was an end of them," and their places were quickly supplied with others. Miserable bird-fanciers, these!

Nor is due attention to the proper sizes of your cages the only thing required. The birds' perches must be well arranged, and so fixed as not to interfere one with the other. By no other method can you keep them, and consequently your birds' feet, clean. The water, too, must be changed in summer twice daily; and the seed looked to every morning. The gravelly sand, also, must be changed thrice weekly, and the birds' claws kept neatly cut.

In the matter of food, I should recommend a constant variety, in addition to the regular diet—such as egg, boiled hard; Lettuce, Chickweed, Groundsel, &c.; but no sugar. A little German paste, now and then, mixed with grated stale bun, is an agreeable change for your canaries, goldfinches, and linnets.

*Au reste*,—let your good sense be in active exercise day by day. Observation will tell you what your birds like, and what deranges their stomach. They are easily pleased, and as readily tamed. If you study *them*, they will study *you*. Above all, remember to keep them in every respect as clean, and give them as much change of air and scene, as you would your own children. They will render you, in return, the affection of a child. *Crede experto. William Kidd, New-road, Hammersmith.*

## VILLA AND SUBURBAN GARDENING.

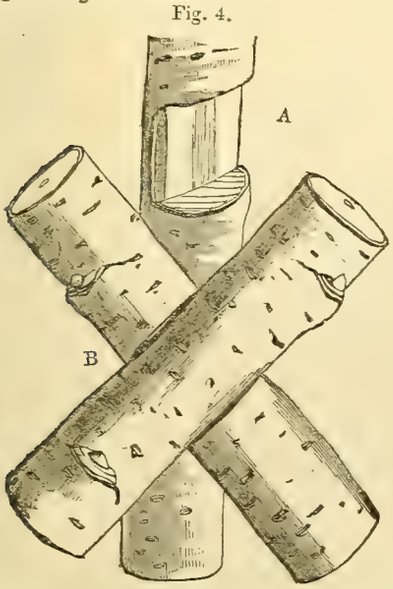
Next to proper planting is a consistent arrangement of the plants employed in embellishing villa residences. Than this, no part of decorative gardening is in a

general way so badly executed. It may be performed, it is true, to suit the planter's pocket, but without any regard to the interest of the person who employs him. In this, however, the employed are not so much to blame, for he is screwed down to the last farthing; no margin is left for him, nor even a reasonable profit. Possessors of such residences are led to believe, that planting is efficient, when the borders are covered, and a formidable display of plants is exhibited. Their kinds are not questioned—their suitableness never considered, shrubs are shrubs, all the world over; and as long as there is abundance of them, parties feel that they are not taken in. They are to a great degree ignorant of the fact, that all kinds of plants will not thrive equally well in every soil. Rhododendrons and Kalmias are, on that account, thrust into clay to languish and ultimately to disappear. Weeping Willows are placed in sand-banks the first season which, together with other circumstances, in their train entail disappointment and disgust. But in the case of the soil being good, we then have Laurustinus perishing under Limes, Laurels smothering Azaleas, Portugal Laurels and Hollies obstructing walks, or blinding windows; in short, it would appear, that villa residences are planted with a total ignorance of the relation which plants have to particular situations. In this kind of gardening, apparent economy is indisputable extravagance; there can be no economy wherein the object to be attained is frustrated. How different would be the result, were these matters entrusted to competent persons, whose reputation depended upon the proper execution of the work?—and under such control, how different also would be the general aspect of our residences? In such cases, the first consideration with a planter of experience, would be to examine the soils, and to employ such plants only as would thrive vigorously in it. Those requiring peculiar soils, such as *American plants*, must have a congenial compost prepared for them, otherwise they will only become objects of pity. The next point will be their proper disposition, at the same time having an eye to their comparative growth, as well as to other circumstances, such as their contiguity to walks, buildings, and external views. These matters should be well matured beforehand, which they are sure to be by one who understands his business. The gross absurdities and obvious improprieties in laying out villa residences would thus be obviated, or at all events much alleviated. *Pharo.*

## GRAFTING.

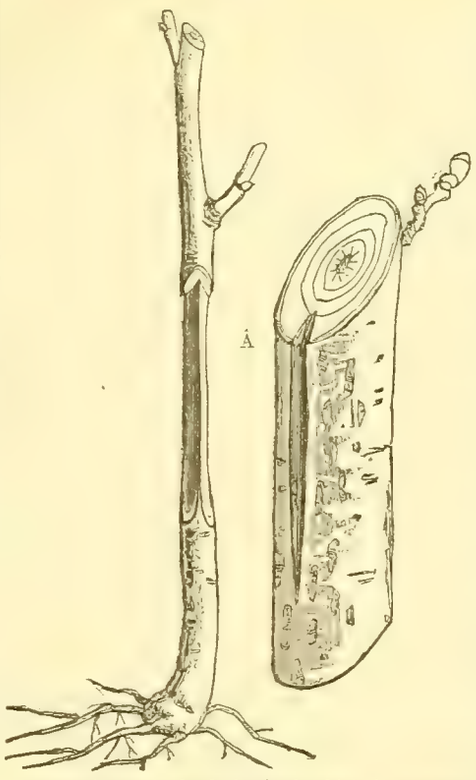
No. V. Sylvain Inarching (*Greffe Sylvain*), *fig.* 4.—This mode of inarching is more especially adapted for uniting lozenges made with fruit-trees, Pear and Apple trees, trained as vases, of which the excessive vigour is required for the extension of the leading branches; this operation, performed at their points of junction, puts their sap in communication and unites the different parts in a remarkable manner. We may also practise this mode on trees with strong stems. Being planted at some distance, bend their head towards each other so as they may cross; make at this point a corresponding notch in each, like that represented at A, and unite the parts, as at B; and if they are thick, secure their contact with a strong nail, which should always be preferred to ligatures when there is much strain. The trees inarched by this proceeding may also serve for economical purposes, such as we have described in the preceding details. I am astonished that this simple mode of inarching is not more in use amongst some of our nurserymen who grow hedge-row trees.

Fig. 4.




Inarching small Plants on large Stocks; *fig.* 5.—When one has plants with slender branches and shoots to inarch on strong stocks, proceed as follows:—Cut the head of the stock in a slanting direction opposite to an eye or small branch; make at the base of this wound a long triangular cut in the substance of the bark and alburnum, as at A; its dimensions should always be proportioned to the size of the part to be inarched; cut the latter of an opposite form, and unite the parts; this union is sometimes difficult, on account of the difference which occasionally exists in the thickness of the barks. When perfectly taken, the inarched portion is separated from its parent stem, as explained in treating of the Monceau inarching.

Fig. 5.




After this we cut back the heel, which has hitherto served as a point of attachment for the ligature, and a magazine for the sap which has aided in uniting the parts inarched. If we wish to perform this mode of inarching on a large tree, of which the top has been broken by the winds, we plant near it a young one, and this can be inarched on the broken trunk as above indicated, excepting that instead of being sloped, it is cut horizontally. M. Thouin states that this mode is employed in the good climate of Caux; but in many other places they prefer crown grafting such trees, in the manner described by Pliny; others prefer grubbing them up. *Translated from the French of D'Albret.*

## THE CHRYSANTHEMUM INDICUM.

This is a plant which will amply repay the amateur for all the care he may bestow upon it. Blooming at a season when most other flowers are on the wane, it may truly be called "the last flower of autumn;" by it, a greenhouse or conservatory, during the dullest months of the year, may be made as attractive as at any other period. Until very lately few persons were aware of the perfection to which it might be brought by proper cultivation. Being perfectly hardy it was allowed to remain in the open ground throughout the year. This has been the principal cause of failure, amateurs forgetting that, although the winters of its own climate were as cold as our own, yet the summer heat was much greater, and consequently the blooming season was accelerated. It is one thing to grow a plant, but another to bloom it in perfection. In our variable climate it is not possible to reckon with certainty upon fine weather in October and November, without which the buds formed in September will not attain perfection; and frequently the early frosts of October cripple them altogether. To overcome these difficulties it is necessary to place the plants under glass as soon as the flower-bud begins to expand; but it must be borne in mind that air is as necessary as light or heat. By such means the flower may be enjoyed in perfection from October until January, and the greenhouse will present a succession of gay and varied colours.

The Chrysanthemum shows at Stoke Newington in 1849 and 1850, have done much to bring this beautiful autumnal flower into notice; in fact, none but those who were present on those occasions can form any idea of the size, beauty, or symmetry to which, under proper treatment, it may attain. What Messrs. James, Taylor, Lockner, Sanderson, and other amateurs of that neighbourhood have done will, next season, be attempted in other localities, and exhibitions of Chrysanthemums will, ere long, be as popular as those of the Dahlia or Pelargonium.

To such as intend growing specimen plants or cut flowers for competition, it will be necessary to prepare good rooted cuttings in April. These should be planted singly in 5-inch pots, in good rich soil, and plunged in a warm, airy situation. By the middle of May they should be stopped and shifted into larger pots. To insure dwarf bushy plants they should be again stopped in June, and then shifted into larger pots to bloom. During the summer months they must never be allowed to flag. If this once takes place the lower leaves will assuredly fall, and all hopes of fine specimens will be destroyed; towards the middle of September, the plants will have attained their full growth, and it will then be proper to put them under glass, but at the same time give as much air as possible in fine weather; the buds will now begin to show themselves; not more than one or two should be allowed to remain on each branch; liquid manure may at this time be applied with advantage; under such treatment, a fine show of blooms may be confidently expected. even in the most unfavourable seasons. Such as do not desire specimen plants or cut flowers for exhibition, I would recommend to plant their cuttings in the open ground at the end of April; to stop them in May, and again in June. By the end of September they will be fine large plants; and as soon as the buds begin to swell, they may be taken up with a good ball of earth and planted in 11 or 9-inch pots, and plunged in the open ground for 8 or 10 days, during which time they should be well watered every day, to prevent flagging; after that time they may be removed to the conservatory, which they will ornament till the month of January.

The following varieties will be found most proper for Specimen Plants, Cut Blooms, and Conservatories; each of these purposes is distinguished by its initials:—

Annie Salter, S., C. B., and C., yellow.
Astreé Brillant, C. B. and C., yellow buff.
Beauty, C. B., blush.
Biscio, C., violet carmine.
Christine, S., C. B., and C., rose peach.
Campestroni, C. B. and C., deep rose.
Calypso, C. B. and C., peach.
Cloth of Gold, C., golden yellow.
Defiance, S., C. B., and C., white.
Dupont de L'Eure, S., C. B., and C., purple and orange.
Duke, C. B. and C., blush.
Doria, C. B. and C., yellow.
Duchesse d'Aumale, C., white.
Fleur de Marie, S., C. B., and C., white anemone.
Golden Cluster, S., C. B., and C., golden yellow.
Gluck, S., C. B., and C., yellow anemone.
Goliah, C. B. and C., white.
General Morceau, C. B. and C., buff.
Jenny Lind, S., C. B., and C., sulphur white.
Imperial, C. B. and C., blush.
King, C. B., rose.
King of Crimsons, C., deep crimson.
Lysias, S., C. B., and C., reddish salmon.
Lady Talfourd, C., pure white.
Lady Hunloke, C. B. and C., buff and orange.
L'Ange Gardien, C., white.
Madame Poggi, S., C. B., and C., crimson.
Madame Comerson, S. and C., crimson tipped gold.
Madame Godereau, C. B. and C., blush anemone.
Medusa, S. and C., rosy carmine.
Nancy de Sermet, S., C.B., and C., white anemone.
Pilot, S., C. B., and C., bright rose.
Princess Marie, S., C. B., and C., rose.
Pio nono, S., C. B., and C., crimson-tipped gold.
Pygmaleon, S. and C., rose carmine.
Peruvienne, S. and C., deep yellow.
Prince of Wales, C., red salmon.
Phidias, New, C. B. and C., rose and white.
Queen of England, S., C. B., and C., blush.
Rebecca, S., C.B., and C., peach.
Rabelais, C. B., reddish carmine.
Sulphureum Pallidum, C., yellow anemone.
Sydenham, S. and C., light red crimson.
Temple de Salomon, S., C.B., and C., bright yellow.
Two-Coloured Incurved, C.B., red and yellow.
Uranus, C. B. and C., rosy yellow.
Vesta, S., C. B., and C., white.
Vulcain, S., C.B., and C., deep crimson.
Vortigern, S., C. B., and C., dark crimson.
Warden, C. B., orange.

*John Salter, F.H.S., Versailles Nursery, Hammersmith Turnpike.*

## Home Correspondence.

*A Useful Cabbage.*—In the summer of 1847, I had presented to me a handful of Cabbage seeds by Mr. Charles Farnes, late of St. John's-street, Smithfield, in order that I might, with him, further test the quality of the then new variety since named the "Enfield Market." These seeds were sown in the third week of July, of that year, in a freshly-dug, and finely pulverised border, and as the weather set in very hot and dry, I covered the bed with an old mat, pegging it down, to prevent its removal by wind. Treated in this way, the seeds germinated quickly, and the mat was then removed. The plants were pricked out into a nursery bed, about the middle of September, 4 inches apart, and in rows 6 inches asunder. They remained here till the first week in March, of the following year, only receiving an occasional stirring between the plants, after heavy rains, when the soil had become sufficiently dry for that purpose. Under these circumstances, the watering-pot was never needed. The quarter into which they were planted had been well trenched and ridged during the winter, and it was broken down to receive the plants early in March. They were placed in rows 20 inches apart, and the plants stood 12 inches asunder in the rows. They soon got established, and, in a short time, made a goodly display, forming a plantation 22 yards long by 9 yards wide. From this area, an early supply of summer Cabbages of medium growth was obtained, free from coarseness, very fleshy, mild in flavour, having compact and solid hearts, very uniform, and in every respect by far the best and most serviceable vegetable of the Brassica tribe I possessed. Mr. Kenwick, then manager of the firm from which I received the seeds, stated that I should need no other variety, and so it has since proved; for its earliness, hardiness, and continuance thoroughly justify me in asserting that I require no other. After the summer cutting its disposition is to reproduce a constant supply, each plant making three or four nice compact and hearted heads, and even after these are removed it makes an effort to yield a third crop, as may be seen in my Cabbage quarter at the present time. The same treatment has been continued each season since I first received the sample, and, if possible, with increased success. One sowing, one pricking out, and one planting have sufficed to provide for my demands (14 of a family), during the past summer. Mr. Cuthill, in his papers on Market Gardening, omits to mention the kinds of Cabbages generally grown round London, but I am aware that the Enfield Market is highly prized by all who have tried it (for it is yet comparatively new). I know that one grower alone sowed 16 lbs. of seed of it

last year, so satisfied was he of its good qualities. He said, "I cannot get on without it." Mr. Cuthill remarks that certain allowances are made for "runaways." Now, for these three years past, and sowing as I do so early, I have never had a plant run: no mean recommendation. I am unable to give the *aliases*, which pertain to it, and which are sure to follow every really good thing; but the "Enfield Market," if I am not mistaken, has already given us a "King of Cabbages." *J. Edwards, Wace Cottage, Holloway.*

*Browæa coccinea.*—It is somewhat surprising that this fine stove shrub is not more generally cultivated, for the flowers are rich and brilliant, and the foliage beautiful. It is certainly one of the finest flowering shrubs in cultivation, and may be almost ranked with the noble Amherstia itself. The flowers are naturally produced during the winter months, when few things are in bloom, which enhances its value and makes it eminently adapted for decorating the stove at this dreary season. Perhaps the high degree of temperature and moist atmosphere necessary to bring it to perfection form the greatest objections to its general cultivation, but some believe that it will not produce flowers until it has attained a considerable size; this however is a mistake. Specimens here, about 2 feet high, have flowered abundantly. As regards propagation, young shoots taken off with a portion of well ripened wood adhering to their base, root readily if firmly planted in silver sand, placed under a bell-glass, and plunged in bottom-heat. The best soil for it is a mixture of rough peat and turfy loam, with the addition of a little sand. In shifting use good sized pots, for it delights in having plenty of root room. Being an inhabitant of the hottest parts of South America and the West Indies, a strong heat, well saturated with moisture, is indispensable at the respective periods of flowering and growth; at the former a temperature ranging from 65° to 75° suits it; during the latter, which takes place in the spring and early part of the summer, the temperature may be allowed to increase to 90° or even 100° by the heat of the sun; and the air at this period can scarcely be too much saturated with humidity. It will bear exposure to the sun. Plants of it here have not been shaded even during the hottest days of summer. Watering at the roots should be carefully attended to, and an occasional application of weak liquid manure will be beneficial. In the latter part of the summer, water should be gradually withheld and the temperature lowered, so as to give the plants a rest, when little care is required. This will induce flower-buds to be formed; they are produced in bunches along the main stem and near the extremities of the branches. When the buds begin to swell, heat and moisture should again be gradually given. Under the above treatment a large plant here is now flowering profusely. *Walter Hill, Royal Gardens, Kew.*

*Length of Fibrous Roots of Annuals.*—I was invited a short time since by a gentleman of this town to inspect the roots of a plant of Mignonette, which had penetrated through several courses of bricks, and descended far into a wine cellar. Over the cellar, which was outside the dwelling-house, was a brick pavement, between the joints of which Mignonette seed had been sown from year to year. At the extreme end a small portion of soil was allowed, and here a plant or two grew more vigorously than the rest, though not so luxuriantly as is often found in a common border. The roots of these plants had penetrated through 18 inches of brickwork, and some of them were hanging inside the arched roof, nourished by the damp atmosphere only. A few, more favourably situated, were attached to the end wall of the cellar, and had descended 5 feet 5 inches down the wall into the decaying sawdust of the wine bin. Others were beautifully spread over the wall, with a thousand ramifying rootlets, bespangled with minute chrystal-like damp drops, and extending over a space of 5 feet in width. It was difficult to trace the brittle roots that had penetrated the sawdust, but I measured some upwards of 7 feet below the surface of the brickwork on which the plants were growing. *Carey Tyso, Florist, Wallingford.*

*Cottage Garden Edgings.*—I have an idea that the most economical material for this purpose, in East Norfolk, will be found to be flint stones, and those from Cromer Beach will be the best colour. Next to them I would select those taken from marl and chalk pits. The soil in the borders being level with the gravel in the walks, use ball-shaped stones for the sharp bends and curves, and egg-shaped ones in straight lines and gentle curves. If your East Norfolk correspondent will honour me with a visit, I will show him, in my own garden, a superior edging for raised flower beds. *W. Thorold, Thorpe Bower, near Norwich.*——I would recommend the adoption of slate as a neat and durable edging for cottage garden-walks. Not the kind in common use for the roofs of buildings, but that of ⅝ of an inch in thickness. The width, or what would be the depth when set up, need not be more than 6 inches. It should be rounded off a little on that edge intended to remain above ground. In order to make it remain firmly fixed in its place, the ends of the different lengths could be made to rest on small blocks of well-seasoned Oak, and let into a groove cut perpendicularly in the wood 2½ inches. This would allow the block to be covered with soil 2 inches deep, leaving 1½ inches of the slate above ground for the edging. This would necessarily take a little more time than planting a Box edging, which is, for several reasons, objectionable; but it might be well enough executed by an intelligent labourer. The ground under the blocks would require to be rammed down solid to prevent their sinking, and a common level or line applied to get them down even, so that the ends of the different pieces of slate would fit closely together. *A. D., Arundel.*

*Out-door Vines.*—As respects the Vine at Nettlecombe, I beg to refer Mr. Elworthy again to the article at page 822; he says that I assert "it is impossible to give it any assistance in the shape of nourishment," and adds that "it receives a great deal of nourishment from rain water, &c." Now everybody must have known that a Vine, in the open air, could not well escape that. It is planted near a door-way, and children play their wanton games above its roots. The surface is firm, and on a sharp declivity, so that the water passes readily away. As to mortar, I had Mr. E's. own words on that point, as well as regards its name. Mr E. says "your correspondent is right in stating that the fruit is very fine," but I could not say that, for the berries are far too small. The garden contains different kinds of stones—one part is on a fine lime-stone rock covered with grit-stone. I glean from my scrap-book for 1844 and 1845, that the Vine was winter pruned to two eyes, and summer pruned in the end of June. The shoots were a good length; it would strengthen the bunch to pinch the top off the shoot soon after the bunch had formed, and to remove all useless buds as soon as possible. *W. Culverwell.*

*Early Tulips.*—I have grown these for many years, two and three in a pot; but when blooming time has arrived I have often been disappointed; for they seldom were all in an equally forward state. This season, however, I have managed things better; I planted in shallow pans, and moved them into pots after they came into blossom. I find that they may be transplanted without risk; and in this way I have had charming pots of well-flowered Van Thols, which were quite the admiration of the neighbourhood. *J. M. H.*

*Grafting Cacti.*—At page 22, Cereus triangularis is strongly recommended as a stock for C. flagelliformis, on account of its rapidity of growth, and comparative hardihood. I have no experience with it as a stock, but I have grafted C. flagelliformis on C. speciosissimus. I find it difficult to retain the scions in their position when inserted in the angle of the stem, and therefore I tried the following method. I cut the top off the stocks horizontally, and then inserted the grafts, which were about 2 inches in length, and wedge-shaped at the base; as many were placed on each stock as could conveniently be inserted. In my opinion they are more interesting when grafted in this manner than in any other; and, by stopping, the shoots may be multiplied to a great extent. *W. R., Chesterfield.*

*Market Gardening round London.*—In his article of the 4th inst., I consider Mr. Cuthill to have fallen into an error, which I venture to correct. He states that "when the 5 acre piece is cleared of Coleworts, say by the 1st of March, it is dunged and trenched two spades deep, and sown with Onions; and often Lettuces are planted on the beds as well as in the alleys." I do not know where he has seen Onions, which are intended to bulb, grown on the bed system, but I am certain not at Fulham. If he wishes to infer that that is the best plan for a private grower, I hold with him; but he is writing about the market-gardeners' plan, and I can assure him that that is not their system. I was brought up in the parish of Fulham to market gardening, which my father and his father before him followed all their lives, and having had years of experience in the business myself under my relations, who carry on market gardening now, and having assisted both to sow and hoe many an acre, I think myself qualified to give your readers the exact plan adopted, which is as follows. In autumn, the ground which is intended for Onions, is dunged and dug, and planted with Coleworts. About Christmas they commence taking them to market; and as fast as the ground is cleared, it is either dug up roughly, or else ridge-trenched (but not again dunged); it is all cleared and dug by the beginning of March, and in the middle of that month it is forked down. It is then man-harrowed lengthways and crossways; then it is rolled with a wooden roller, sowed broadcast, and harrowed again twice over. After this it is trod by women as closely as they can tread, and raked, with wooden rakes, to make it quite level, which finishes the operation. It is true that market gardeners often sow a little Lettuce seed with their Onions, but this is merely done in order that if the Onions should fail in any particular spot, the men, when hoeing, may have an opportunity of leaving a Lettuce or two to fill up, but if the Onions prove a regular crop they have orders to cut up all Lettuces, for if left they would injure the Onions, which are the most valuable of the two. They are hoed out to 4 inches apart, leaving the plants singly and free from weeds. *J. Steel, Clitheroe.*

*Roses in continuous Bloom.*—The subject of "Crito's" letter, at p. 5, on continuous blooming Roses, is a very interesting one. Nothing would more tend to improve the beauty of our Rose borders than such a classification as he suggests, and which I have myself, for several years, been taking much pains to effect. I greatly fear, however, that it will be exceedingly difficult, if not altogether impossible, because, I have, in many cases, observed that a particular variety will be a very late bloomer in one garden, when it does not prove so in another; and even that a variety which has peculiarly deserved the name of "perpetual" in my own garden, one season, will not always do the same. A striking instance of this occurs in the list given by "Crito," of Roses which he considers the most to be depended upon as perpetual bloomers. Among others, he names "William Jesse." This is, with me, a very favourite Rose; but I have always considered it to be its only fault, that it is not a perpetual, though called so. In my garden, and in others which I am acquainted with, in other counties, it proves very little better, in point of duration, than a summer Rose. I named the circumstance some time ago to Messrs. Paul, and asked why they classed it as a perpetual. They replied, that some had found fault at its being called a perpetual, and others at its being classed among the hybrid Chinas; and that he had, consequently, placed it in both classes. In their list for the present year we find it in both. This seems to me to throw a great doubt upon our ever being able to accomplish that very great desideratum, which is the subject of "Crito's" communication. I am afraid that the evil which he deprecates, of having a number of blanks in our Rose beds, from some of the varieties, in some seasons, not flowering so late as the rest, will prove (with our present Roses, at least) unavoidable. "Crito" is certainly correct, in stating that the Bourbons, Chinas, and Noisettes, are the sorts most to be depended on, especially the varieties he has named. *Omicron, Ashby-de-la-Zouch.*

*How to smoke a Greenhouse effectually.*—I have tried the plan mentioned at page 38, and have much pleasure in adding my testimony to its excellence. My house being rather large, I used six rolls of tobacco in touch-paper, placed them in various parts of the house, and the result has been the entire destruction of the green fly. I beg to express my gratitude to Mr. Huggins for making public this simple and effectual remedy. *J. J. F., Devizes.*

*Heracleum giganteum.*—This is the proper season for sowing the seed of the fine herbaceous plant, Heracleum giganteum. For rough scenery, this is one of the best plants that can be grown, and in a moist situation in a garden, its appearance is very striking. *Hardy and Son, Maldon.*

*Prize Gooseberries.*—Thinking it might be useful, I have ventured to send you the names of the following Gooseberries, six varieties in each colour, and the number of prizes each has won the last season, with the weight of the heaviest berries attached to each variety.

| | Prizes. | Heaviest Berries. dwts. | grs. |
|---|---|---|---|
| **Red.** | | | |
| London | 276 | 27 | 10 |
| Companion | 253 | 25 | 4 |
| Wonderful | 159 | 23 | 5 |
| Conquering Hero | 140 | 22 | 19 |
| Slaughterman | 129 | 23 | 8 |
| Lion's Provider | 99 | 25 | 0 |
| **Yellow.** | | | |
| Leader | 235 | 24 | 14 |
| Catherine | 225 | 26 | 4 |
| Drill | 100 | 21 | 0 |
| Peru | 93 | 21 | 14 |
| Pilot | 85 | 21 | 11 |
| Broom Girl | 72 | 18 | 0 |
| **Green.** | | | |
| Thumper | 238 | 23 | 8 |
| Queen Victoria | 131 | 22 | 0 |
| Turn Out | 129 | 19 | 21 |
| General | 114 | 19 | 18 |
| Weathercock | 73 | 20 | 4 |
| Overall | 61 | 19 | 12 |
| **White.** | | | |
| Freedom | 264 | 25 | 20 |
| Queen of Trumps | 157 | 24 | 0 |
| Lady Leicester | 121 | 22 | 10 |
| Eagle | 116 | 19 | 8 |
| Snowball | 92 | 22 | 15 |
| Lady Stanley | 62 | 20 | 11 |

—*E. T.*

*Potatoes.*—Every year since the Potato disease began I have sorted my Potatoes, and boiled those which were infected, and when soft, beat them down with salt in air-tight casks. The knowledge of this induced a relation of mine to try if there was any degree of heat that would stop the disease without destroying life in the Potato. This was done by placing diseased Potatoes in water of 130°, and keeping them there for 10 minutes. There is evidently life in them, as they are now growing in the drawer in which they have been kept. *C. A. A. Lloyd, Whittington, Oswestry.*

*Saving Cucumber Seed.*—Many have failed in saving seed from good varieties; they expect that the seeds of long fruit will produce long Cucumbers: but in my opinion it does not matter whether the fruit is long or short. My plan is to save fruit on the first, second, or third joints. If you go beyond the latter joint, 19 times out of 20 the result will be no seed, and then a good sort is lost. Seed certainly may be obtained beyond these joints in the more common kinds, but seldom in the case of a good sort. If I have a choice kind of Cucumber I like to save the first fruit I can get at one of these joints. This I have proved to be a safe plan. *H. Stillwell, Frogmore, St. Alban's, Herts.*

*White Fruit not Attractive to Birds.*—Birds appear to prefer red or purple fruit to white. The white Tartarian Cherry, a native of the Crimea, and a fine sweet-flavoured fruit, is not subject to their depredations, while the Mayduke, Bigarreau, and other varieties, suffer from their attacks. The white-fruited Elder escapes the notice of blackbirds, even when they have stripped bushes of the common purple fruit; and what is more striking, if not so palatable in flavour as the white variety. This kind is sold in the markets of Dresden for the purpose of making preserves. Boiled with sugar, they form a very fine dainty. Fruit devoid of colour, not having the appearance of being ripe, seems to be the reason why those epicures of Nature are not tempted to try it. *C. May, Hope Nursery, Bedale.*

*Winter Gardens* (*Jardins d'hiver*).—Why should not every square in London have a portion of its extent covered in as a jardin d'hiver? What an unwholesome waste for five months is Russell-square, and how plea-

sant would it be to exchange it for a certainty of finding always a dry and airy walk! A little management would insure very little of it being seen from outside, particularly as it need be of no height. How well would it pay to cover in Leicester-square thus, and light it at night, instead of allowing it to be the vile object it has been for many years. *Tay, Somerset.*

*Vitality of Seeds.*—In numerous works on botany, and kindred subjects, are recorded instances of the long sustained vitality of seeds, the sudden springing up of vegetable forms previously unknown in the locality, or the disappearance of existing species, and the occupation of their habitats by other species far removed in affinity from their predecessors. Professor Lindley, in the "Theory of Horticulture," tells us that he has raised "Raspberry plants from seeds found in an ancient barrow in Dorsetshire, which seeds, from the coins and other relics met with near them, may be estimated to have lain there 16 or 17 centuries." And from Professor Henslow we learn, that when portions of the fens of Cambridgeshire are drained and ploughed, crops of black and white Mustard appear; and I think the same author mentions a circumstance occurring at Chelsea, of a plant till then unknown in the neighbourhood, being found growing in the soil, taken from an old ditch there. Passing lately over a very wild track of land called the "Chase," belonging to the Marquis of Anglesea, adjoining his seat "Beaudesert," Staffordshire, I was struck with the following analogous circumstance. In many places the patches of Gorse or Furze had been burnt; wherever this occurred, thousands of plants of Foxglove (Digitalis purpurea) had sprung up. I could not see a plant in any other situation. The outline of the patches of Gorse were very intricate, and the young plants of Digitalis had followed them exactly, but nowhere except the burnt patches. *G. L.*

*Jackson's Kidney Potato.*—In the advertisement respecting this Potatoe, there is a testimonial from Mr. Sharp, late gardener at Pitfour, Perthshire, in which he states that he has found it to be earlier and a superior flavoured Potato to any other he knows; and, on account of its dwarf habit, he recommends it as an excellent variety for frame forcing. I had a small quantity of this sort last year; I planted about half a bushel of it on the end of a border, the rest of which was occupied with the old Ash-leaved Kidney. Both sorts were put in whole, on the same day, and received the same treatment in every respect. The old Ash-leaved Kidney was full grown, taken up, and sold, three weeks before Messrs. Jackson's was ready. As for its dwarf habit, with me it grew fully two feet high, while the other sort was not more than one. It produced a good crop, but not better than the other. I suspect that I must have got the wrong variety, though I had the seed from Messrs. Jackson. Perhaps the latter or some of your readers who have grown this Potato will clear up the matter, by stating their experience in regard to its qualities. *A Market Gardener, near Edinburgh, Dec.* 19.

*Allamanda cathartica.*—I have always luxuriant specimens of this fine stove shrub clad with flowers from the beginning of June to the end of July. Whenever it ceases flowering the weaker shoots should be cut back half their length, and the plant at the same time plunged up to the rim of the pot in some loose material, such as half-decayed leaves or tan-bark, where it will have the benefit of a bottom heat of 55°. A gentle, but steady warmth of this kind round the roots keeps them in a sound, healthy state, ready to push and do their work whenever it is desired, and there is scarcely a leaf lost; whereas if left on a dry table or stage, as is customary with many stove plants in the winter time, it requires water oftener, as it quickly escapes by evaporation; and consequently the sudden change that takes place about the roots, by watering at times in a low temperature, and more especially when the plant is at rest, very often proves fatal to the delicate spongioles of the Allamanda; or, at least, prevents it from flowering until it recovers its health in a high temperature. In the beginning of February it is necessary to turn it out of the pot, in order to ascertain the state of the roots. If they are found to have made a considerable number of young fibres, they will require to be potted at once into a size larger pot, using strong turfy loam, which is well mixed with vegetable matter, and that has laid in a heap a year at least, adding one-third of peat obtained where the common Heath grows best. These must be well mixed, and should receive a good sprinkling of silver sand. The drainage must be efficient; over the large circular piece of broken pot place at least 2 inches of smaller crocks, which will require to be covered neatly all over with the tough pieces of peat. Then partly fill in with the compost alluded to, so that the collar of the plant is half an inch below the top of the pot. The ball of the plant is placed on this, and the soil pressed gently down all round the roots with the fingers, making it equal to the original in firmness, in order that all may absorb water alike, and when completed the whole should get a good watering of lukewarm water. The plant must now be replunged where it will have an additional bottom-heat of 15°, increasing the temperature of the house as the day lengthens. In March it will be found to have made pretty good shoots, which must be encouraged by keeping up a bottom-heat of 90°, with a moist atmosphere of 80°, giving manure-water once every fortnight. In May the roots will be found to have nearly filled the pot, and flower-buds will make their appearance, when it is necessary to lift it by degrees out of the plunging material, and to place it on a table or stage where it will flower. It should be trained when the shoots are nearly their full length. A Melon bed made of stable-dung is one of the best places I ever found for growing the Allamanda in. A large plant may be made of it in one season. *J. M'Pherson, Reswallie, Forfarshire.*

*The Mildness of the Season* is sufficiently indicated by the number of flowers prematurely distributed about our borders, as well as by the rapid growth of many herbaceous plants. This day, Jan. 29, the following are in flower in my garden, viz., Scilla sibirica, Polyanthuses, Snowdrops, Wallflowers, yellow Crocuses, single white Hepaticas, and Helleborus niger, the latter a mass of 13 fully expanded blossoms, each measuring from 2½ to 3 inches in diameter; Roses, Antirrhinums, Aconites, Ranunculuses, Japan Anemones, Pansies, Potentillas, Pæonies, Sisyrinchium grandiflorum. Some Phloxes and Tulips, &c., are making vigorous growth, for which I fear some may yet be punished, as was very generally the case during last April and May. The Coreopsis Atkinsoni (seeds of which I received last spring from the Horticultural Society) has withstood the winter. My plant is now of a lively green colour, very robust, and to all appearance it will bloom early. Is it considered an annual? *J. Edwards, Holloway.*

*Rain.*—The following fell at Goodamoor, Plympton St. Mary, Devon, during 1850. It was measured by Howard's rain gage:

| | Inches. | Days. |
|---|---|---|
| Jan. | 5.04 | on 15 |
| Feb. | 5.28 | ... 16 |
| March | 0.98 | ... 13 |
| April | 8.76 | ... 19 |
| May | 3.41 | ... 17 |
| June | 2.14 | ... 10 |
| July | 4.44 | ... 15 |
| Carried forward | 30.05 | ... 105 |

| | Inches. | Days. |
|---|---|---|
| Brought forward | 30.05 | on 105 |
| Aug. | 4.22 | ... 23 |
| Sept. | 5.81 | ... 12 |
| Oct. | 4.06 | ... 19 |
| Nov. | 7.13 | ... 21 |
| Dec. | 5.56 | ... 17 |
| | 56.83 | ... 197 |

*Henry H. Treby.*——Rain at Cobham, Surrey, during 1850.

| | Inches. | Days. |
|---|---|---|
| January | 0.84 | on 8 |
| February | 1.28 | ... 13 |
| March | 0.19 | ... 6 |
| April | 2.73 | ... 19 |
| May | 2.21 | ... 16 |
| June | 1.17 | ... 7 |
| July | 3.39 | ... 14 |
| Carried forward | 11.81 | ... 83 |

| | Inches. | Days. |
|---|---|---|
| Brought forward | 11.81 | on 83 |
| August | 1.56 | ... 15 |
| September | 1.14 | ... 12 |
| October | 1.43 | ... 11 |
| November | 2.02 | ... 14 |
| December | 1.51 | ... 15 |
| | 19.47 | ... 150 |

——*H. H. Treby.*

## Garden Memoranda.

Messrs Henderson's Pine-apple Place.—Jasminum nudiflorum, in the shape of a small bush, has been blooming in the open ground here for some weeks past. It promises to be one of the most desirable of our winter-flowering shrubs. The show house is already gay with the various spring bulbs, such as Hyacinths, Roman Narcissus, Van Thol and Tournesol Tulips, &c., intermixed, here and there, with small examples of the deliciously sweet-smelling Daphne odora rosea, Cyclamens, Chinese Primulas, and Cinerarias. These, again, are backed up by Epacrises, the Winter Heath, Linum trigynum, Camellias, Rhododendron Nobleanum, and one or two other plants. The stove contained flowering specimens of Centradenia floribunda, Pentlandia miniata, an Amaryllid or two, some Begonias, which are always gay during winter; the white variety of Poinsettia pulcherrima, and some other things; the specimen house was filled with excellent plants, neatly arranged. Eriostemon intermedium, the most handsome of the genus, was just coming into flower, in which condition it will remain for many months. Styphelia tubiflora, one of the earliest of Epacrids, was in full blossom, and we observed a spike or two of the curious hybrid Veronica Andersoni coming into beauty. Double Chinese Primulas, the red and fringed white, were in bloom here. These were in deep pans, and were specimens of considerable size. The way in which they are cultivated here is to strike them cuttings, in Spring; keep them growing slowly till August, when they are more liberally shifted and more generously treated, and they blossom about Christmas. After they have done flowering they are placed near the glass, and kept rather dry and cool, so as to give them a season of rest till the beginning of August, when they are repotted, their branches spread out and pegged down, and under this kind of management they blossom much better the second year than the first, beginning about Christmas and continuing on till May. The old plants are thrown away after they have flowered, the second year, and their places are supplied by one-year-old plants. The variety of Correæ called "Brilliant" was in blossom here, as was also a small plant of the deep purple-coloured Hovea pungens, a beautiful New Holland shrub; but difficult to manage. We likewise remarked in this house some "tree" Carnations, whose perpetual habit of blooming must render them favourites. After flowering they will be shortened back, summered in the open ground, and then brought into the greenhouse to blossom again next winter. It is stated that Cryptomeria japonica, though hardy, becomes brown in winter, when to be effective it should be green. A specimen in this nursery exhibited this defect. It was growing close to the edge of a small pond.

## Miscellaneous.

*Montreal Botanical Society.*—We learn from the *Montreal Gazette* that a meeting had been held on the 29th of December last, for the purpose of forming a Botanical Society in that city. It was resolved that it should have for its object, principally, mutual instruction in the study of botany, the investigation of plants indigenous to the country, and the classification and examination of the fruits cultivated in Canada. It was also resolved, in order that information regarding the structure, uses, and classification of plants may be more widely disseminated, that a library be formed, principally of botanical works. Office bearers were appointed and another meeting convened for the further prosecution of the objects of the society.

*Botanic Garden, Cambridge.*—We understand that Mr. J. Stratton, of the Royal Botanic Garden, Edinburgh, has been elected Curator of this Botanic Garden, in the room of the late Mr. Murray.

*How to Destroy Ants and Caterpillars.*—The following method of destroying ants and caterpillars, though old, is but little known, and very successful and simple. It consists in scattering spirits of turpentine over the places where the insects are, by means of a brush struck against the hand so as to cause the turpentine to fall out like rain. If the ants are in a pot, they will all leave if a little turpentine be applied, so as to form a circle round it. Soap and water has been long a famous remedy against caterpillars; but M. Manelle, to whom we are indebted for this article, finds that soap lather is much more efficient. A wet brush rubbed on a piece of soap produces, as is well known, a great quantity of lather, and if this be applied to the parts attacked by caterpillars, they are instantly destroyed. If the caterpillars cannot be reached with the hand, the soap may be applied to them by a horse-hair brush on a long handle. The morning and evening, when the caterpillars collect together, are the best times for performing this operation. *Flore des Serres.* [We presume that soft soap is here intended.]

*Method of compelling the buds of Camellia reticulata to develop.*—Every amateur is aware of the tendency of Camellia reticulata to bud but not to produce branches; this tendency causes the plant to appear much poorer than the other varieties, and accounts for the small quantity of flowers usually found upon it. Last year, towards the end of April, I pinched the young shoots of a vigorous plant when they were about 6 inches long. This year the plant has three flowers and 27 buds, many of them being on three or four-year old wood, which never happens when this Camellia is left to itself. Another similar operation will give me a plant with as many flowers as the other sorts. I only remove the two last eyes. *Neumann.*

*Death of Mr. Christie.*—We regret to announce the death of Mr. Thomas Christie, which happened on the 19th ult., at Blackrock, Dublin. He was 98 years of age, and had discharged the duties of steward and gardener to the present Sir Harcourt Lees and his father, the late Sir John Lees, during the long period of 75 years. He was born in Fifeshire on the 2d February, 1753, and went to Ireland in June 1772, to act in the capacity of a journeyman gardener to the late Lord Mountjoy, in the Phœnix Park. Early in 1776, he went to live with the late Sir John Lees, as steward and gardener, where he remained until his death. A service of such long duration is, perhaps, not on record, and certainly, no man ever performed the duties intrusted to him with more fidelity. Within four days of his death he was superintending his men. He was a keen observer of political events, and living as he did during the most eventful periods of Ireland's history, he was able to record many remarkable scenes he had witnessed, as well as to refer to the great changes which had taken place within his recollection. In appearance and dress he personified the respectable gardeners of the last century.

*Potato Cultivation in Jersey.*—*Notes on several varieties of early and second early Potatoes, grown last year by Mr. Bernard Saunders, as extracted from a register kept by him:*—1. "Shepherd's Fame," "Cockney," or "Barrington," planted the first week in January, were ready for use early in May, and were dug up for seed in July, first-rate in quality; dwarf, and produced no blossom; crop, from 6 to 8 cabots per perch. 2. "Early Frame," planted on the 4th of January, were fit for use early in May, very dwarf, no bloom, dug up for seed on 12th July, quite ripe, a good middle-sized Potato; produce, full 8 cabots to the perch, and excellent in quality. 3. "Martin's Early," planted on 6th January, fit for use by the middle of May, moderately dwarf, shows bloom, but does not expand, the stalks were destroyed by blight in June, which caused the produce to run small, and only at the rate of 4 cabots to the perch; in some seasons that quantity is doubled. 4. "Forty-fold," or "Osborne's Early," red or blue, planted on 6th January, fit for use in the beginning of May, dug up on the 12th July, quite ripe, very small, but of good quality, dry and floury; produced about 5 cabots to the perch, and were free from blight. 5. "Gold-finder," planted on 10th January, dug up ripe in July; did not bloom, but grew strongly, and were fit for use in middle of May; a well known variety; crop full 8 cabots to the perch, and of excellent quality. 6. "Hammond's Seedling," planted 12th January, were fit for use in the middle of May, and were finally dug up ripe in July; very sound, and a fine large Potato; no bloom; produced about 6 cabots to the perch, and excellent in quality — some seasons the crop is 8 cabots to the perch. 7. "King's Seedling," planted 4th January, were fit for use in the beginning of May, and ripe in July, a fine new oval-shaped Potato, raised from "Martin's Early." It produces but very few small ones, has no bloom, and very little stalk. It is remarkably white when boiled, mealy and good flavoured; produced from 6 to 7 cabots per perch; this is only its second year's trial, so that it promises to be an acquisition. 8. "Thurston's Conqueror," a very dwarf kind with no

bloom, planted 4th January, fit for use the beginning of May—ripe in July, middle size, quite round, and good in quality; produce about 5 cabots to the perch. Out of the above eight varieties (of the best early round sorts) five can be highly recommended, viz.: 1, 2, 5, 6, and 7, both for produce and for quality. *Early Kidney Potatoes, planted in January, and dug up Ripe in July.*—9. "Ash-leaf Kidney," decidedly one of the earliest and best for forcing, stalks short with no bloom; but it seldom produces above 1 or 2 cabots to the perch, and it is not fit for farm culture, or for profit to the gardener. 10. "Smith's Early White Kidney." This has no bloom, and is quite dwarf in growth, planted 10th of January; they were fit for use in the beginning of May, dug up quite ripe on 12th July, a beautiful clean silver-skinned, almost transparent kind—excellent in quality, and one of the most productive Kidney Potatoes known; crop from 6 to 7 cabots per perch. 11. "Champion Kidney," planted 6th January, ready for use middle of May, and fully ripe for seed in the end of July: it shows bloom, but it does not expand; finely shaped, and not over large; produces from 5 to 6 cabots per perch, sometimes more. *Second early Round Varieties.*—12. "Cork Red," planted 15th January, were fit for use in the beginning of June, and were ripe in July. It has a fine rough skin, and is of superior quality; size large; crop from 8 to 10 cabots per perch. 13. "York Whites," planted 18th January—fit for use in June, and fully ripe in the end of July; quality very superior; blooms do not expand; keeps good for use during the whole year; produces from 6 to 8 cabots per perch.—14. "Silver-skin," planted 1st February, were fit for use in the beginning of June, and ripe for seed in the end of July—equal in quality to "York whites"—remarkable for having scarcely a small Potato among them; produced from 7 to 8 cabots per perch; free of disease; skin very clean.—15. "Coole Curly," or "Scotch Regents," planted February 10, and dug up in the beginning of August, when they were quite ripe; quality excellent: keeps well through the winter, and is highly esteemed in the London markets; crop from 6 to 8 cabots per perch. *Second Early Kidneys.*—16. "Axbridge Kidney," planted 25th January, fit for use in the end of May, and fully ripe in the end of July; a very fine flavoured rich Potato, whose blooms drop off before opening; produces from 6 to 8 cabots per perch. 17. "Chalmers' Kidney," planted middle of February, were fit for use in the middle of July, and were fully ripe in the end of August; they are finely shaped, excellent in quality, and produce from 6 to 7 cabots per perch; as a market Potato there is not its equal. The above 17 varieties are selected from upwards of 50 sorts, grown by Mr. Saunders within the last 10 years, and have been carefully watched and most of them repeatedly tried, so as to prove fully their qualifications. It may be also useful to give the names of some sorts which he has had under cultivation, and which he would not recommend as productive varieties. They are as follow:—1, Red Kidney, a very uncertain cropper; 2, Pink Eye, very unproductive; 3, Devonshire Reds, ditto; 4, Cork Whites, ditto; 5, China Early, ditto; 6, Douglas Kidney, ditto; 7, Ash-leaved Kidney, ditto; 8, Red Kidney, ditto; 9, Yorkshire Kidney, ditto; 10, Easton Early Red, ditto; and 11, Black, ditto. The above-mentioned crops were (with the exception of two) manured with horse-dung, at the rate of 10 cart-loads to the vergée; and, when they were from 4 to 6 inches high, they were well dusted with dry slaked lime, about 2 hogsheads to the vergée, prepared for the purpose (this operation should be performed early in the morning whilst the dew is on them), after which they were flat-hoed to a good depth, and about a week or 10 days afterwards the earth was drawn round them. *Jersey Times.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Forcing-house.—Here, there will of necessity be many plants differing from each other in their nature, and in the degree of heat which they require. Some will bear more heat than others, and these will be best placed by themselves at the warm end of the house; while those requiring less heat can have the cool end, and be more freely supplied with air. The structure used for plant-forcing, should be of the lightest possible description, the inside being painted or coloured white, and the plants placed on or plunged in white gravel, or light coloured sand, in order that the greatest possible amount of light may be diffused and reflected amongst the foliage. The glass and laps should be perfectly clean. The ventilators should be so arranged that the air may be admitted under the pipes, and thus warmed to the temperature of the house before it comes in contact with the plants. Top air should be given by opening every sash a little, in preference to admitting the same quantity in several large currents. As the flowers expand, the plants should be removed to a cooler and drier atmosphere, with a view to prolong their period of blooming. It should be remembered that forced plants require a greater supply of water than the generality of things at this season; and when they are in a fit state to receive water, let sufficient be given to moisten thoroughly every part of the soil. Except in very dull weather, the syringe may be used with advantage once a day, upon those plants whose flowers have not yet expanded. Use water of the same temperature as the house for this purpose, as well as for watering the plants.

FORCING DEPARTMENT.

The early sown Melons will now be progressing, and a bed or pit should be got in readiness for them. In preparing beds for them, which are to be heated with litter, they should be so contrived that the necessary degree of heat may be obtained without the risk of burning the roots; but, at this early period, heating by means of hot-water pipes is far preferable. The pipes for supplying bottom heat should be merely a continuation of the top heat pipes through the pit, and should be covered with a few inches of gravel, upon which is laid from 14 to 18 inches of soil, for putting the plants into. We thus obtain top and bottom heat by the same circulation; and nothing can answer better. The earliest Melon I have tried is the Trentham Hybrid, which is also a free bearer. Look carefully to the litter upon the early Vine border, and see that it does not become too warm; 65° to 70° are sufficient at this early season.

FLORISTS' FLOWERS.

Dahlias may be placed in heat forthwith; the thick first shoots do not strike root so readily, neither do they make so good plants as those which are thinner. When they are about 2 inches long, they may be taken off, and cut across, immediately below a joint, and placed round the sides of a small pot in sand; plunged in a brisk heat they root quickly. Pansies.—Examine the beds carefully for snails, &c.; during the mild nights that we have lately had, ours suffered considerably; but a dusting of soot appears to have proved a riddance, besides causing the plants to assume a more healthy green colour.—In the Auricula frames the plants are fairly making a move, and, unless a severe check takes place, an early bloom may be expected. If retardation is desired, the plants may be placed in a colder situation, or, if the frame is a revolving one, they may be made to front the north. The quantity of water given may now be increased, taking care at all times to avoid hard or spring-water. The foliage should not be moistened, or the hearts of the plants filled with water, as careless florists will sometimes do, to their almost certain detriment. Keep a current of air amongst the plants, night and day, it is conducive to health and hardiness; bearing always in mind, that few plants suffer so much, from damp, or confinement, as the Auricula.—Other floral requirements as last week.

HARDY FRUIT GARDEN.

The training of wall trees should now be progressing with all speed, and Peaches or Nectarines on the open walls, which have any show for fruit should be protected, if this has not already been attended to. (See our remarks on this in January.) Among the espalier fruit trees, the flower buds of many of the hardier kinds are swelling fast; and as we may yet expect some severe weather, prudence points out the propriety of protecting anything which is choice or valuable. For this purpose, nothing is cheaper than Spruce or Yew branches, which are also of considerable service in retarding the opening of the blossoms, until the season is more favourable for their safe development. The ground should be forked over amongst bush fruits, taking care to injure the surface roots as little as possible, for upon these the fertility of the tree mainly depends. The Strawberry beds should also be looked over, the dead leaves and runners removed, and if it was omitted last autumn, the plants should be thinned where they require it. Some dry soot should now be dusted in amongst them to destroy snails; after which the spaces between the rows should be manured, and lightly forked over without breaking their roots. We find old Mushroom-beds excellent top dressings for Strawberries.

State of the Weather near London, for the week ending Jan. 30, 1851, as observed at the Horticultural Garden, Chiswick.

| Jan. | Month's Age | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 24 | 7 | 30.219 | 30.045 | 34 | 25 | 29.5 | 39 | 42 | S.W. | .00 |
| Satur.. 25 | 8 | 29.946 | 29.892 | 42 | 29 | 35.5 | 38 | 41 | S. | .00 |
| Sunday.. 26 | 9 | 29.829 | 29.690 | 42 | 28 | 35.0 | 38 | 40½ | S.E. | .02 |
| Monday 27 | 10 | 29.929 | 29.868 | 48 | 27 | 37.5 | 38½ | 40½ | S.W. | .02 |
| Tues. .. 28 | 26 | 29.789 | 29.691 | 49 | 39 | 44 0 | 39 | 40½ | S.W. | .12 |
| Wed. .. 29 | 27 | 29.722 | 29.463 | 52 | 32 | 42.0 | 39 | 41½ | S.W. | .20 |
| Thurs.. 30 | 28 | 29.520 | 29.252 | 46 | 30 | 38.0 | 41½ | 42 | S.W. | .35 |
| Average ... | | 29.850 | 29.700 | 44.7 | 30 0 | 37.3 | 39 0 | 41.1 | | 0.74 |

Jan. 24—Dense fog throughout; clear and frosty at night.
" 25—Cloudy; overcast; clear.
" 26—Fine; overcast; rain at night.
" 27—Clear; very fine; clear at night.
" 28—Fine; slightly clouded; very fine; rain.
" 29—Overcast; cloudy; rain at night.
" 30—Rain; fine; lightning; rapid hail-shower, followed by constant heavy rain.
Mean temperature of the week 1 deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Feb. 8, 1851.

| Feb. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 2 | 44.1 | 30.7 | 37.4 | 9 | 0.12 in. | 2 | 3 | 3 | 3 | 2 | 6 | 4 | 1 |
| Mon. 3 | 44.7 | 31.8 | 38.2 | 12 | 0.42 | 2 | 3 | 3 | 1 | 1 | 10 | 3 | 2 |
| Tues. 4 | 44.5 | 33.2 | 38.8 | 12 | 0.31 | 2 | 4 | 2 | — | 6 | 6 | 4 | 1 |
| Wed. 5 | 44.3 | 32.2 | 38.3 | 9 | 0.39 | 2 | 3 | 2 | 1 | 3 | 5 | 4 | 5 |
| Thurs. 6 | 45.6 | 32.8 | 39.2 | 13 | 0.25 | 2 | 1 | 3 | 3 | 4 | 5 | 6 | 1 |
| Friday 7 | 46.3 | 33.2 | 39.7 | 13 | 0.29 | 2 | 1 | 3 | — | 3 | 8 | 5 | 3 |
| Satur. 8 | 48.6 | 33.5 | 41.0 | 15 | 0.67 | 1 | 3 | 2 | — | 4 | 10 | 4 | 1 |

The highest temperature during the above period occurred on the 3d and 4th, 1833—therm. 56 deg.; and the lowest on the 8th, 1847—therm. 5 deg.

## Notices to Correspondents.

Apples: *J P.* These keep best in the dark, in a cool situation, if not below 40°; but, at all events, the place should not be subject to vicissitudes of temperature, to prevent which it should be lined with wood.‖

Back Numbers: Full price will be given for No. 38, 1848, and No. 47 for 1849. Full price will be given for Nos. 1, 2, 3, 8, 9, for 1846; and 40 and 50 for 1847.

Dahlias: *J C.* The following 36 are the best sent out in 1848, 49, and 50. Those of 1850 will not be high in price this spring; it would, therefore, be injudicious to omit them. Oakley's Gem, white and lavender; Shylock, scarlet; Toison d'Or, buff; Grenadier, ruby crimson; Mr. Seldon, rosy lilac; Miss Chaplin, peach and crimson; Privateer, yellow and red; Princess Louisa, salmon; Queen of the East, blush; Fearless, lilac; Richard Cobden, dark; Violet Perfection, violet purple; Charles Turner, blush and purple; Earl of Clarendon (Union), mottled orange; Duke of Wellington, orange; Duke of Cambridge, silvery lilac; Fame, shaded plum; Sir F. Bathurst, dark crimson; Elizabeth Daniels, pale rose; Magnificent, shaded rose; Mrs. Seldon, yellow; Queen of Lilacs, pale lilac; Seraph, bright orange; Snowflake, pencilled white; Utilis, crimson; Negro, dark maroon; John Edwards, orange scarlet; Queen of the Isles, white and lake; Thames Bank Hero, deep crimson; Mrs. C. Bacon, blush; Blanchfleur, white; Black Prince, dark crimson; Imbricata, dark purple; Anticipation, silvery lilac; Frederick Jerome, purple; Windsor Castle, shaded crimson. Twelve best Fancies of 1848 49, and 50. Conspicua, white and violet; Prockter's Elizabeth, blush and pink; Empereur de Maroc, maroon and white; Jeannette, red carmine, and white; Lady Grenville, dull red and white; Miss Compton, salmon scarlet and white; Girling's Jenny Lind, maroon and white; Mrs. Labouchere, scarlet and white; Gasparine Furstin Reuss, rich maroon and white tip; Lady Cullum, yellow tipped with white; Striata perfecta, lavender, spotted and striped with purple; and Madame Wachy, purple and white.*

Dracontium: *A H.* This Aroid plant, which they call the Spotted Dracontium, will live out of doors; a south wall is unnecessary. It is quite hardy.

Exposed Gardens: *Reader.* In an exposed garden, about 40 feet square, surrounded by 5 feet walls, on high ground, near the Thames, you may cultivate Potatoes, Onions, Lettuces, Cabbages. Parsley, Spinach, and Strawberries. As to Climbers, the Virginian Creeper or Clematis montana will possibly suit the situation you mention.

Fancy Geraniums: *Mrs M.* The following are a few of the best in cultivation:—Alboni, rosy pink, good in shape and size; Anais, cherry pink, shaded with white; Bouquet tout fait, shaded purple, good in shape; Beauty, dark crimson; Belle d'Epiany, in the way of Jenny Lind; Defiance, dark maroon, very fine; Empress, style of Queen Superb; Fairy Queen, good light; Formosum, pink and white; Hero of Surrey, maroon and white, good in shape; Jenny Lind, light pink and white, fine; Jehu Superb, dark purple and white, small; Madame Miellez, dark maroon; Magnificum, dark; Minerva, rosy pink, very compact; Orestes, good rosy pink and white; Picturatum, bright rose, very pretty, and a free bloomer; Perfection, upper petals crimson, lower ones bright pink; Queen Victoria, pale pink and white; Queen Superb, pinkish lilac, fine; Reine des Francais, showy pink and white, large; Rosati, attractive, light, good in habit; Wintonia, rosy lilac and white; Ytolinski, dark maroon, good in shape, and a free grower.*

Fruit Trees: *H B.* We presume your young fruit trees are intended for standards. As they have made vigorous shoots, you must shorten them to about a foot.—*C B H.* You should add to your present collection the Winter Nelis, Beurré Bosc, Thompson's, and Beurré Rance.‖

Heating: *x τ λ.* Arnott's stoves are unfit for your purpose, unless they have an evaporating pan on the top. You had better trust to a good flue built with *dished* tiles on the top, so that water can be retained. Let your front and end walls be solid brickwork; the roof only glazed. Do not give it a high pitch, only just avoid drip. Remember that Ferns do not like sunshine; but are always handsomest in imperfectly lighted places. Damp, warmth, and the diffused light of a thick wood are what you have to provide. They care little for ventilation

Insects: *G B L.* The larvæ which have appeared in millions beneath old tough sward are neither those of the gad-fly nor of the cockchaffer. They are those of some other species of beetle not hitherto recognised as destructive to vegetation. We will endeavour to rear them. *W.*—*Sir O. M.* The gall-like excrescences on the shoots of the Vine do not appear to us to have been caused by the larvæ of the beetle Otiorhynchus sulcatus, as we only found one of these larvæ in the galls sent. Nothing of this kind is recorded either by Audouin or the Baron Walckenaer. Unfortunately the single larva we found has escaped out of the box. It is, however, certainly that of one of the Curculionidæ. *W.*

Lilium monadelphum: *A H.* We apprehend that the reason why this plant lives for years in your border, and never flowers, is, that it has not heat enough in summer and autumn.

Monstrous Pears: *A G N.* Very curious. A woodcut is preparing, and in a week or two they will be a subject of a leading article.

Mowing Machines: *Sub.* We never recommend dealers.

Mulching: *Inquirer.* See p. 787 of our last year's volume.

Names of Plants: *E J R.* Photinia glabra.—*J N.* 1, Nothoiæna rufa, Presl.; 2, N. lævis, Mart. et. Gal. *S.*—We have to ask for the patience of one or two correspondents till next week, when they shall receive the best reply we can give them.—*Erzeroum.* 58, Ajuga orientalis; 635, Ajuga reptans? 151, Aj. chia.—*H B.* We never name Mosses.

Netting: *B H T.* Tanning woollen netting will help to preserve it, and will tend to prevent the moth from destroying it.

Orchard-houses: *B L.* See a Leading Article at p. 35 of the current year's volume. ‡

Peas: *M W.* Bishop's new Long-pod is the best early dwarf Pea, and Woodford's Dwarf Green Marrow is good for later sowing.‖

Peruvian Guano: *W B J, Clonkelly.* It is true that the house of *Gibbs, Bright, and Co.* of *Liverpool*, have no longer a contract with the Peruvian Government, but the contract of Messrs. Anthony Gibbs and Sons, of London, with the Peruvian Government, for the exclusive right of importing Peruvian guano into the United Kingdom, has still six years to run. This firm imports equally into Liverpool as to London, and in the former place they are represented by Messrs. Gibbs, Bright, and Co., who, however, have no other interest in the business than as their agents, Messrs. Anthony Gibbs and Sons, of London, being the sole principals of all that is imported into the kingdom. We take the present opportunity of warning you and others that the trade in spurious guano is as brisk as ever, the folly of buyers being, apparently, inexhaustible; and we counsel you most seriously to have nothing to do with any sellers unless they can satisfy you that they are accredited agents of Messrs. Anthony Gibbs and Sons, of 15, Bishopsgate-street, London.

Sun-dials: *Sub.* Sun-dials, for placing over the entrances of houses, &c., may be had of any of the great London opticians. Their cost varies from 30s. upwards, according to their size, and the angle at which they are set.‡

Wall Plants: *C A.* The following may possibly answer your purpose:—Cydonia japonica, scarlet; Jasminum officinale, white; Ceanothus azureus, blue; Magnolia grandiflora (Exmouth variety), white; Passiflora cærules, blue; Chimonanthus fragrans, brown and yellow; Wistaria sinensis, lilac; the larger variety of Bignonia radicans, orange scarlet; Lonicera flexuosa, white; Berberis fascicularis, yellow; Clematis montana, white; the Pyracantha, and common China, crimson Bourgault, and other Roses.‡

Misc.: *Lanarkshire.* The Calendar will be sent on receipt of seven postage stamps. We never recommend dealers.‡—*P T O.* We are unacquainted with "Meladores." Begonia fuchsioides will succeed under the treatment usually given to other Begonias.

IRISH PEAT CHARCOAL.
TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, exclusive of sacks, 35*s.* per ton; in London, Liverpool, Bristol, and other seaports in England, 48*s.* per ton, exclusive of sacks; or 60*s.* per ton, sacks included.—Agents will be forthwith appointed in all the principal towns in England.

Head Office, 9, Waterloo-place, London.
Feb. 1, 1851. L. PARROTT, Secretary.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

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|---|---|---|---|
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| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

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The Agricultural Gazette.
*SATURDAY, FEBRUARY* 1, 1851.

MEETINGS FOR THE FOLLOWING WEEK.
WEDNESDAY, Feb. 5—Agricultural Society of England.
THURSDAY, — 6—Agricultural Imp. Soc. of Ireland.

Mr. LAWRENCE, of Cirencester, has added a very excellent pamphlet to the number of the exhortations which have been addressed to the farmer upon EDUCATION.* In the course of it he illustrates the distinction between science and experience:—"While experience records *effects*, and is barren of all intelligence as to the *why* and the *wherefore*, science unfolds the causes, and their mode of operation." And he speaks of experience as of great importance in agricultural education:—"It teaches the seasons of the year, and even the dates at which the various preparations of the soil for the several crops, the planting, the sowing, and the harvesting will, in ordinary seasons, and under ordinary circumstances, be most successfully accomplished in the particular latitude, and on various soils. It teaches the circumstances under which, and the mode in which the various operations may be successfully performed, to a given extent. It teaches the selection of the breeds of animals best adapted to particular localities; everything in the breeding, and much in the rearing and general management of stock of all kinds; and it is omnipotent as respects all purchases and sales involved in farming operations. Experience, therefore, allied with attentive observation, is of great value, and her lessons should never be disregarded by you." But it is on the sciences related to agriculture that he lays the greatest stress as necessary to the complete education of the young farmer. "Science is knowledge, and knowledge is power:" it alone is able as a guide in untried circumstances:—

"Experience is nothing more than the observation of facts, and the remembrance of them with their attendant circumstances. It is the mere memory of effects, disconnected from their causes." "Attention to the lessons of both is necessary to your success in the practice of agriculture; and when you comprehend clearly what it is that each teaches, you will perceive, while the lessons of experience must be regarded with attention and respect, science also merits especial cultivation."

The pamphlet details the particulars in which science has been and will be of real utility in agriculture; it states and describes the efficiency of the agricultural college at Cirencester, and concludes with the following appropriate anecdote:—"On advising a farmer, recently, to give his son the advantage of three years' education, such as I have recommended, he observed, 'Why, Sir, that would cost 150*l.*, a pretty little fortune to begin business with;' I told him it was a *little* fortune, and the probability was much in favour of its dissipation by his untrained son within a year, either from want of knowledge or judgment, or from misfortune or fraud; but if invested in the *capital* of education, it would be beyond the reach of accident, diminution, or robbery, and would produce certain, and probably abundant, interest."

We strongly advise those who are debating with themselves how best to spend 150*l.* in the education of a son, to procure and study Mr. LAWRENCE's pamphlet. We must, however, add one word, not by way of criticism, for the point on which we should in that case say this pamphlet is deficient is one which hardly comes within the scope of scholastic education. There are three things necessary to make a successful farmer, even supposing him to have the means of energetically pursuing his business. The 1st—Intelligence, or as it is named in Mr. LAWRENCE's pamphlet—Science; the 2d—Experience, or the knowledge of good methods; the 3d is BUSINESS HABITS; and it is not referred to in this pamphlet. Now, so far as we have had experience, we believe that agriculturists will generally permit you to tax them with ignorance of science; the way they meet you there, if they are disposed for controversy on the point, is to dispute the exceeding usefulness of science; they will, however, rarely admit a want of practical ability, and in general there is much less ground for such a charge; if made, however, it is often taken as something very like an insult: but the third, in which we really believe that agriculturists are most deficient — and undoubtedly to their great injury—is ground on which we must not tread. It is not to bad book-keeping, or anything of that kind, pronounced although it is by a late Attorney-General as the high-road to bankruptcy in any business, that we now refer—that is a subject on which we may occasionally scold. But if we ever venture to hint that those among the farmers have themselves *alone* to blame for deficient balance-sheets, who throughout the year cannot be said to have regarded farming as a trade, requiring, as every other occupation does, the close and constant superintendence of a master—we are charged with insolently interfering where we have no business. Nevertheless, to this, as much as anything, we look for the improvement of agriculture—a closer and more constant attention to the details of the profession. Of course, such remarks will admit of personal application only here and there; but they do apply in many instances most justly, and wherever the pleasures of a country life are more regarded than the fieldwork of the agriculturist, he need not wonder if low prices do, indeed, destroy his capital. We venture, then, to add this remark on this one point, as a postscript to the letter Mr. LAWRENCE has addressed to "those who have resolved on farming, as their future occupation."

* A Letter on Agricultural Education, addressed to a Youth who has resolved on Farming as his future occupation. By CHARLES LAWRENCE, Esq. J. RIDGWAY, Piccadilly.

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FOR some time past, as many of our readers doubtless know, two of the London daily newspapers have employed special correspondents to investigate the condition of our rural provinces; and they have collected a vast amount of information of great value to the farmer, which we hope to see reprinted ultimately as separate publications. The objects of the two inquiries are different. The correspondent of the *Times* confines himself almost exclusively to agriculture, while his contemporary takes up the much more comprehensive subject of labour in every branch of industry.

Labour is, of course, to every one an interesting subject: but the farmer who provides the raw material of many manufactures, and the food for all, must feel a deeper and more general interest in it than almost any other man. This appears not only in the case of those great channels of employment connected with the wool and cotton trades, where such stores of agricultural produce are annually consumed; but also in more limited and peculiar cases of less general importance: and to all of them we propose at present to direct attention.

The 45th letter of the correspondent of the *Morning Chronicle* relates to "the boot and shoemakers of Northampton."

The writer, to do justice to his subject, soon finds it necessary to describe the labours not only of the shoemaker but those of the tanner also, the currier, and the *grower of hides:* thus bringing home the subject to the door of the farmer himself. In reporting on the income of the currier, he says, "Where the person is paid by the piece, the amount of his earnings will depend to a great extent upon the quality of the skins upon which he is employed. The skins which are considered by the curriers as the best to work, are those which are tanned at Stourbridge. A great deal appears to depend not only upon the quality of the tanning which the skin undergoes, but upon the mode in which the beasts have been fed. The state of the hide affords a clear indication of the feeding of the beast; if he has not been forced it will run regular all through, but if forced it will be unequal, thick in the butt, and thin in the shoulder." Now it may seem idle to discuss the influence of different modes of feeding cattle, on the value of their hides—when the effects of these different modes upon their carcases have not yet been determined: but the question is of some importance, and as we believe the writer of the above to be in error, we shall take the liberty of stating our reasons.

(1.) The quality of the hide, generally speaking, will depend very much upon the breed. The skins of different breeds, although equally fed, are yet widely different from each other, both as to thickness and fineness of texture and "greasiness." The hide of the short-horn, for instance, differs widely from that of the Welsh breeds, or the Kyloe, or Galloway. (2.) The original quality of the hides of different individuals of any one breed are widely different from each other in all the above particulars, altogether independently of the treatment they receive. It is very obvious, then, that very great differences will exist in the tan-yard, where hides are promiscuously collected, and that still greater differences will result to the currier if the whole is subjected to a hasty and uniform process of tanning.

Again, the expression *forcing* a beast, although still used among farmers, is by no means a proper or scientific one; and it is therefore liable to be misapplied by parties probably not familiar with its meaning, for the forcing of an ox is neither less nor more than the proper feeding of an ox. We may cram a chicken, but we cannot get at the third stomach of a ruminating animal. The practice of changing food, so as to encourage the appetite, presupposes a previous defect in the quality given, and neither that nor mixing food, to tempt the animal to eat, can be construed into "forcing" it. The facts of the case are simply these. In the olden time the ox was fattened during summer, and starved during winter; and indeed in modern times the practice is but still too common; but, generally speaking, we are now striving to do away with the latter half of the practice, by fattening without intermission from the time the animal is calved.

The question, then, resolves itself into the effect produced upon the hide of the ox by the starving and proper feeding him, respectively; if he has been starved, it will "run regular all through!" but if "properly fed," it will be unequal—"thick in the butt and thin in the shoulder"—which seems absurd enough. If the starved ox turns his tail to the storm, as he invariably does, that certainly is not likely to make its skin grow thinner there than on the shoulder; nor, conversely, when properly fed and sheltered, is it likely that the opposite should be true. No doubt hides are younger now than formerly, resembling in this respect more nearly calf than neat hides; but taking into account the changes which have taken place in travelling, this makes them better adapted for the wants of the present age, provided they are equally well tanned. The skins of extra stock at Christmas exhibitions are complained of as "greasy;" and skins generally may be more greasy than formerly, and hence less fit for the more hasty system of tanning; but even granting they are so, the difficulty remains the same of solving the uneven quality charged upon the hides produced by improved farming; for although grease may resist the tannin longer, yet we must suppose hides to be pretty equally greasy throughout. Again, we have heard it said, we overstretch the hides of cattle now-a-days! "You farmers now so stuff and stretch the hides of oxen as to make them thinner; and, therefore, of less value!" Now, such theorists quite forget the continual change to which the animal system is subject, and also that what makes beef grow makes hide grow quite as fast to hold it.

And so we have glanced at the *pros* and *cons* of this question, to the extent the farmer is concerned in it, and find that raw hides, as produced by him, are better fitted for the times than those of former days, and that the complaints of tanners and of curriers to the contrary are without foundation—so that the greater difficulties experienced by the latter fall to be attributed to the less perfect state of the art of the former—a difference which they have a right to settle between themselves, but not to lay at the door of the farmer, or saddle him with their bad leather.

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## A TRIP TO NORTH DEVON.

AT a time when we are all agreed that agriculture must progress, it may be interesting and instructive to watch and exhibit amendment wherever we find it. Having received a polite invitation from Earl Fortescue to inspect his agricultural operations, the Great Western Railway brought me to Tiverton, from whence to Castle Hill is a pleasant coach ride of about 25 miles—quite a

treat on a fine day in these railway times. The beautiful Devonshire hills form a strange and pleasant contrast to our level eastern counties. Imagine an endless vista of ruined hills, like so many inverted wash-basins of all heights and sizes, presenting at every turn delightful undulating perspectives. Towering high on your left, in sullen misty grandeur, is Dartmoor, a wild waste of 250,000 acres, 800 feet high, frowning on you in the distance for several miles, like some dark cloud. On your right rises Exmoor, another extensive waste, less stern and elevated than its opposite neighbour, exhibiting occasionally on its bald surface the powdering of lime and cultivation. In fact, for 30 miles we see but hills and valleys; such is the country between Tiverton and South Molton. The first three miles from Tiverton is on the red sandstone, and exhibits generally good soil and careful cultivation, the watered and well-drained hill sides presenting an intense and pleasant verdure; but soon we pass to the cold and poverty-stricken clay slate, showing too painfully and plainly poverty and a low neglected state of cultivation and buildings. It is true, occasionally the eye falls on a verdant patch, indicating combined irrigation and drainage, but this is the exception.

The most striking agricultural deformity is the miserably small dimension of the fields. From three-quarters of an acre to 2 and 3 acres is a common size. No doubt in a primitive pastoral county, without other shelter for stock, such enclosures were once found needful, but they must now give way to the introduction of a different system, or their occupiers will succumb, and the rental become depreciated. In fact one of the great wants of this district is accommodation for house-feeding, combined with drainage, irrigation, and Turnip growing. The clay slate, dirty white heavy unctuous clay, with tough and laminated layers cropping out on the sides of the numerous hills, keeps everything miserably wet. The climate, as may be supposed, from the physical character and conformation of the soil, must be mild and humid—the evaporation of the valleys and condensation of the hill-tops acting concurrently. In fact it is a Grass country, so far as the climate goes, but the absence of calcareous matter in the soil produces a coarse hassocky herbage. Owing to the extreme moisture, it is very difficult to eradicate weeds, especially as the soil is undrained, so Couch Grass reigns triumphant. Excess of moisture renders the growth of Wheat precarious; and I was assured that 12 bushels per acre was a common average. Successive crops of Oats are often grown, which I consider most injudicious, and in fact ruinous. Of course roots are seldom taken, as it would be impossible to feed or remove them without drainage. Some few attempts that met my eye looked abortive.

The beautiful North Devon cattle are seen to perfection, and deserve a better fate than eating Turnips on an exposed and wet pasture.

But there is great hope for this part of Devonshire. She has an unfailing mine of gold when worked. I mean the constant means of irrigation. Every hill supplies its stream, and if the land were drained, would be available on the catch-meadow principle for the production of the finest Grasses, which, immediately upon irrigation, supersede the coarse rushy herbage. Looking over an irrigated field, the intense green evidences unmistakeably the result, whilst any elevated portions that have not been covered, retained their rusty and worthless appearance. Our brother agriculturists who have never witnessed this operation, can easily appreciate the advantage of an abundant early feed of excellent Grass, fed to the middle of April, and then in six weeks a crop of 2 tons of hay per acre. I have no doubt if sheep were folded after hay time and fed with Rape cake, as is done by Mr. Pusey, summer irrigation might be available. The cost of the operation of catch-meadowing is seldom much more than 20*s.* per acre, with an annual charge of about 5*s.* Who would not covet such an advantage? and yet it is too seldom availed of, for want of drainage, which is an imperative preliminary, the soil being heavy.

I will now proceed to describe Earl Fortescue's improvements. His estate in that neighbourhood (South Molton), consists of about 12,000 acres, and partook of the general character. There were 72 fields on 126 acres of one farm; now only 12 enclosures. His lordship's own occupation consists of about 700 acres, which have been all drained under the Drainage Commissioners, superintended by Mr. Josiah Parkes. The pipes are placed 4 feet deep, at intervals of about 30 feet, and the drains answer admirably generally; but I am sure my friend Parkes will excuse me for saying there are several instances where the springs ought to have been tapped by deeper drains, so as to intercept their rising, and interfering with the surface water. The hills are full of springs rising up through the patchy and party-coloured soil, which varies from a dirty drab to an occasional dark, boggy, or silty, and sometimes yellow appearance. It is quite clear that these springs, rising up to the level of the drains, saturate the earth to a foot or two above them, by capillary attraction, thus preventing the descent of the rain or surface water. This was clearly indicated by the almost impassable and wet state of many of the fields. The same remark does not apply to the clays of uniform character, having no springs.

Those springs should certainly be tapped at deeper levels. As a proof of this the evil is not much felt in the spring or summer, when the springs are low. Another great mistake is the recommendation to lay such heavy land on the flat. I am aware that many of my Scotch friends, and my friend Parkes, too, have condemned my practice of using furrows at intervals of every 7 feet; but experience has taught me its advantage, and that our county of Essex is right in this respect.

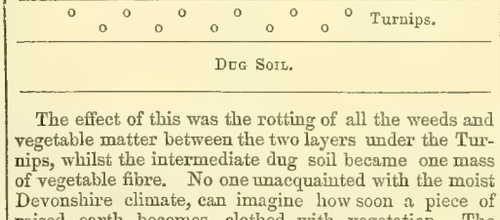
My own prejudices were originally strong against the system, but a trial of one acre on each field soon settled the question, and convinced me of my error. The fact is, however well drained heavy land may be, its physical and chemical character will not permit a percolation or permeation of the winter rains so fast as they sometimes fall. The open furrows here come in aid as auxiliaries, and prevent the bursting of the seed by stagnated saturation. This was forcibly evidenced by a griped field at Earl Fortescue's, from which the water was rapidly passing away on the grips, the sub-drains also acting profusely. This field was infinitely drier than the adjoining ones. The cutting of these furrows does credit to Mr. Graburn's sound judgment in the matter.

I hope your correspondents will discuss this question of open furrows, for it is a most important one on heavy land. I shall revert to it some day. His lordship has enlarged the fields by the removal of useless fences. The management of the farming operations, as well as the planning and erection of the buildings, machinery, &c., have been intrusted to Mr. Robert S. Graburn, of Butleigh, Glastonbury; and, in my opinion, are perfectly sound and business-like, in almost every respect. The most striking evidence of this was his first providing accommodation for house feeding an immensely increased head of stock, and concurrently and cheaply providing an abundant supply of winter as well as summer food for them at a very moderate cost. The result of this will be a permanent increase of manure, cultivation, and production. The administration of the food, when grown, is equally judicious and economical—greater results might have been produced by greater expenditure, but his lordship most judiciously determined to trust most to cultivation, and those economical means, the employment of manual labour within the immediate reach of small farmers, rather than to an extraordinary outlay for purchased manures.

I consider the raising of 120 acres of good Swede Turnips, Mangold, &c., on a heavy land, that had never before produced them, quite a triumph; and this without much expensive cultivation on a previously exhausted, and indeed partly deserted soil.

Let us see how this was done:

In some cases, where the surface, after drainage, was one mass of accumulated weeds, Grass, Rushes, &c., a spit was dug from the surface, and the grassy side placed on the surface of the undug ground next to it, thus raising a terrace, as it were, or an embankment, 27 inches wide, on which the Turnips were to be grown. Another spit was then dug and turned over, not removed, so as to aerate the soil and facilitate the descent of the water through this adhesive clay.




The effect of this was the rotting of all the weeds and vegetable matter between the two layers under the Turnips, whilst the intermediate dug soil became one mass of vegetable fibre. No one unacquainted with the moist Devonshire climate, can imagine how soon a piece of raised earth becomes clothed with vegetation. The ridge is, after the removal of the Turnips, split or turned over, nicely clean, on the dug furrow, ready for another crop of Turnips, similarly treated, or for a Corn crop, according to the state of the land.

The cost of the double trenching above described is, I think, 3*l.* per acre. But methinks I hear some of our friends, who plough six or eight times for Turnips, inquire, Where is your fine seed bed?

Now comes Mr. Graburn's strong point, borrowed from Mr. Huxtable, and improved upon. It is certainly a most admirable one, judging from the results. One man having a dibbler of the ordinary form, about the size of half a large Pine-apple, presses his foot on it, and leaves a hole large enough to contain one pound or pint of animal excrement (free from straw), a woman follows with a box of manure, and a half circular trowel, which contains just a pint of manure, which she deposits in the whole made by the dibbler. Another woman, with a supply of superphosphate of lime mixed with fine mould or ashes, uses a large extinguisher, with a handle, which she presses into the dung, and then empties its contents into the opening made. This extinguisher contains three drachms of superphosphate of lime mixed with fine earth and ashes. A child then follows and deposits a pinch of seed in the seed-bed of the extinguisher, pressing it gently in, and, if the adjoining earth is fine, pushing a little over it.

The combined operations, though tedious in description, are rapid and easy, as I can testify. The result is an unfailing plant of either Mangold Wurzel or Swedes, without regard to the condition of the surrounding soil or weather. The seed bed derives moisture from the manure, and the plant having its food at immediate command grows rapidly and luxuriantly. The cost of the operation is from 7*s.* 6*d.* to 10*s.* 6*d.* per acre. There will be about 17,000 plants to the acre, so 17,000 lbs. or pints of dung will be between 7 and 8 tons of dung per acre, and 3 cwt. of superphosphate of lime. I should say that a cross piece on the dibbler serves to mark the distance for the next dibble hole. The hand and horse hoe may be at once employed, and I shall certainly practise it, especially after Tares, in dry weather. If the land is in stetches it would be desirable to mark the lines with the drill where no manure could be spared; the mould and superphosphate were alone used, at a cost of 20*s.* per acre. *J. J. Mechi.*

(*To be continued.*)

## ENGLISH AGRICULTURE—1851.

As in all probability the approaching Exhibition will bring together a vast number of persons from nearly all the civilised nations in the world, a great effort will doubtless be made by each to excel the others in the productions of manufacture, commerce, arts and science, and also agriculture. Surely then, England, the projector of the great design, will make a strenuous effort to stand foremost in the ranks.

It must be admitted that agriculture is to England as well as to most nations a subject of unquestionable importance, and one upon which their prosperity greatly depends. For some years past ingenuity and mechanical skill have been at work; numerous valuable and useful implements have been invented, science and art have rendered their important assistance, great theories and principles, the result of chemical investigation, have been submitted, publications have issued from the press of a most useful description, developing various subjects and diffusing light and knowledge; numerous meetings have been held, and many practical suggestions made. But the great question naturally arises, Have the practical farmers of this country properly availed themselves of these things? Have not a considerable majority only heard of this, and not attempted to carry it out? Such truly is the character (in too many instances) of the English farmer, that he appears to be bound by a certain set of fixed notions to follow in the footsteps of his ancestors, whether they are right or wrong; and pursues an undeviating course of old customs, quite regardless of the consequences, without even taking the trouble to inquire into any new suggestions or ideas which might, if adopted, essentially conduce to his prosperity. At many of the Agricultural Associations, at Farmers' Clubs, and also in able treatises, great and important principles have been propounded, their adoption urged, their utility explained; but in how few instances are they practically carried into operation? There may be, generally speaking, some want of enterprise and persevering skill in the English farmer, but in most instances (especially now that a low remuneration awaits him) it is his limited means, his want of ample capital, as well as inclination, which cause his apparent apathy, his tardy movements, in attending to those matters which would be most desirable, and conduce to his prosperity; consequently the various theories and suggestions which have been made have only been partially carried into effect, and in comparatively few instances by the practical man, who depends upon his business for his maintenance. True it is, there are some persons of enterprise, capital, and skill, who have availed themselves of some of the circumstances alluded to, who have adopted a judicious system of cultivation, attending to the suggestions made by others, and who have reaped a considerable harvest of profit from it. But the surprise is, that in the present state of agricultural depression, when the farmers of England are scarcely in a position "to make both ends meet," that they do not awake from the seeming lethargy in which they are, and make a strenuous effort, while so many plans and notions are before them, and which, they are told, will enable them to produce a much larger quantity of corn from the same number of acres, and at about the same cost. The man of commerce, the manufacturer, and the tradesman are always alive to the circumstances and events of the day; and are ready to avail themselves of any new idea, or fresh suggestion, and at once endeavour to carry them out, when it is frequently attended with the desired success. But in too many instances the farmer continues plodding on, in one continuous course of uniform practice, just because his grandfather did so before him, and his ancestors a hundred years ago. Probably some of the new systems and plans which are suggested may be vague and visionary, attended with much risk and improbable success ultimately, expensive to carry out, and require a large amount of theoretical as well as practical knowledge and experience, with an additional quantity of implements, and a much larger amount of capital; all these things may place it beyond the reach of the generality of farmers, but, on the contrary, some things are simple and easy of adoption, within the reach of most, and only require the inclination to commence, and the perseverance of the farmer to carry them out. There cannot be a doubt that the soil of England (with its climate) is capable of producing a much larger quantity of corn than has ever yet been the average growth; and as this is a matter of vital importance in a national, as well as every other sense, surely it is most desirable to ascertain, if possible, how it can best be accomplished, and how England can be placed in fair competition with the corn-growing nations of the world, for with all these she has now to compete. How the British farmer, with his present rent, taxes, poor-rates, tithes, &c., with numerous expenses, can be in a position to grow corn with foreign nations, and surrounded by all his difficulties, continue to maintain

the honourable character of an English farmer, which has always been the pride and boast of the nation. This may be a difficult question to answer, still, perhaps, it may be accomplished, and it may be worth while to look seriously at the subject; and the question may be asked, Has a fair trial yet been made? Have the various theories, systems, and plans, which have been propounded, as the result of scientific research and investigation been properly tested, and carried into operation, or have they only been partially and incorrectly attended to; probably in some few instances they may have been and now are carried out, though only to a very limited extent, and certainly not sufficient to afford a fair and suitable trial. Agriculture, unlike the other great concerns of the empire, requires a considerable time to test an experiment properly. Time alone will do it; it has to contend with the changes of seasons, and various and numerous contingencies and circumstances which no earthly power can control, and which some unexpected and unlooked-for occurrence may prevent success for a season, when probably it might answer well another year and the like disappointment not again happen. Thus time, patience, expense, and perseverance are required. But the practical farmer will exclaim, How can I do all this? I cannot afford it; I depend upon my year's produce to meet my unavoidable expenses, and therefore I am not in a position to experimentalise, as probably I may meet with disappointment, and not succeed. All this is correct, it becomes a question whether the dependant farmer is the person to run the risk of testing experiments; who then is to do it? If it is admitted that agriculture is of so much importance to the welfare of the empire, and if the farmer is to maintain his position amidst all the difficulties with which he has to contend, surely it becomes a serious question who is to try these schemes, who is to carry into effect the theoretical suggestions now before the world properly and fairly, and thereby ascertain whether they will answer the purpose or not, and remunerate the farmer who depends upon his business for his support, and who doubtless would avail himself of them if the fact could be demonstrated that they were worthy his adoption.

Is the landed proprietor, then, the proper party to look into the matters, or must it be done by some public or national institution? The subject requires to be seriously inquired into, and ample resources must be appropriated to the purpose of giving the new schemes a fair and proper trial, in order that those which are vague and visionary may be abandoned, and those which are worthy of adaptation recommended to the farmer from a source upon which implicit confidence may be placed. Some of the following important items, for the improvement of which many suggestions have been made, ought to be attended to, viz.:—The best system of drainage; management of manures, farm-yard, liquid, and chemical or artificial; the possibility of advantageous continual cropping, and discontinuance of long fallows; steam machinery, and selection of suitable implements; subsoiling, ploughing, &c.; thick or thin sowing; rotation of crops and cultivation of root crops; management and selection of live stock, and the means of keeping an additional quantity; economy of labour of all descriptions; agricultural chemistry; proper management of accounts, and result of experiments.

Many items in the above enumeration, even at the present period of what is called agricultural improvement, are only known theoretically, and consequently have been but little tested by the farmers, and chiefly because so few of them can afford to do it; but were they properly and carefully carried out, and their utility in a remunerating sense demonstrated, no doubt numbers would gladly make strenuous efforts to adopt them.

As regards the present system of drainage, the introduction of what is called artificial manure, the preservation of the liquid drainage of the farm-yard—subsoiling, thin sowing, agricultural chemistry, steam machinery, &c. They appear to open a new era in English agriculture, and are subjects which demand diligent and serious attention; for if by some of them, together with a judicious system of rotation in cropping, the land can be continuously at work instead of reposing for a year under the burden of all its expenses, and producing no return, a most important object will be attained: and as much light is now let in upon the subject by chemical applications, chemistry can lend her invaluable aid, and suggest the best methods of freeing the soil from the remains of a previous crop. By the use of some of the valuable implements now invented, a great deal may be done both during and after harvest to restore fertility to the land, and which will be greatly promoted by its exposure to the winter season. At this serious but important period of English farming, it behoves all whom it may concern, properly to consider what can best be done—what are the most prudent measures to adopt, and to avail themselves of any well tested theories or suggestions which may assist them.

As regards the very important subject of live stock, it seems to be quite a question whether it has been discussed as it ought to be in this country. In some instances much care and judgment are shown in endeavouring to produce a superior breed of animals; and many are to be found of perhaps almost unequalled quality. But it is not carried out sufficiently. As well may a farmer breed a superior animal as one of an inferior description. And why not to a much greater extent than now. And instead of putting himself in considerable difficulty to raise a sum of money to purchase his cattle at the fair or market, why is he not to look to his own resources—to his farm for them? With judicious management stock may be reared without much discoverable outgoing in the way of payment; and when ready for sale a convenient amount may be received. Truly much attention has been paid to this subject during the past few years, and some advances have been made; but it has not yet been done to a sufficient extent. Has there been as much stock produced as might have been? and do the farmers keep a proper quantity? Upon investigation it would be found there is a great deficiency. This is a subject worthy of serious consideration. Certain it is that in this country a splendid breed of animals is to be found, such as no other country can produce; but it is not universally spread, and while the nation must commend the persevering industry and consummate judgment of those whose names might be recorded as the breeders of various animals of real excellence, and almost perfect symmetry, it is to be regretted that the numbers are so limited. An inferior animal is as costly to keep as one of the best description, and perhaps more so. And as the live stock upon a farm is a subject of vast importance, not only in itself but as regards the productiveness of the land (as much depends upon the stock which is kept upon it), the subject altogether demands more attention and consideration than has yet been bestowed upon it.

The object of this paper is to call the serious attention of those who are interested in British agriculture to its position at the present serious crisis; to arouse the farmers of England to consider their situation and the circumstances by which they are now surrounded; and to enquire whether anything can be done to improve it which is tangible or practicable. Certain schemes may be concocted, principles and theories laid down, and numerous suggestions made; but it ought to be known by some means, from a source upon which dependence can be placed, whether they will ultimately answer the purposes and ends which the practical farmer needs, and therefore be desirable for him to adopt them. One may say he has tried this scheme and another the other, and that it has answered well; but the important result in the form of a balance-sheet is not forthcoming, and this is a main object of attainment so far as the practical farmer is concerned. Another may say he has pursued a certain system, but it was only on a peculiar piece of land, and under some peculiar circumstances; while others may have attempted to carry out experiments, and have either failed in the attempt or not submitted the results to the world.

In order fully to appreciate the value of what has been published, and in other ways brought before the farmers of England, they ought to have some data to refer upon which they can implicitly rely—a comprehensive, yet simple detail of facts, the result of experiments superintended by competent skill and knowledge, that the business calculations may be arrived at, and then the farmer may know whether it is worth his while to adopt them upon an extensive scale. *J. Low.* [The thing is impracticable; the data desired, whether furnished by some public institution or not, would be true only of the circumstances under which they arose. And the results of individual experience, on which we now depend, are trustworthy just in the same degree, be it great or small, as those of any public institution whatever.]

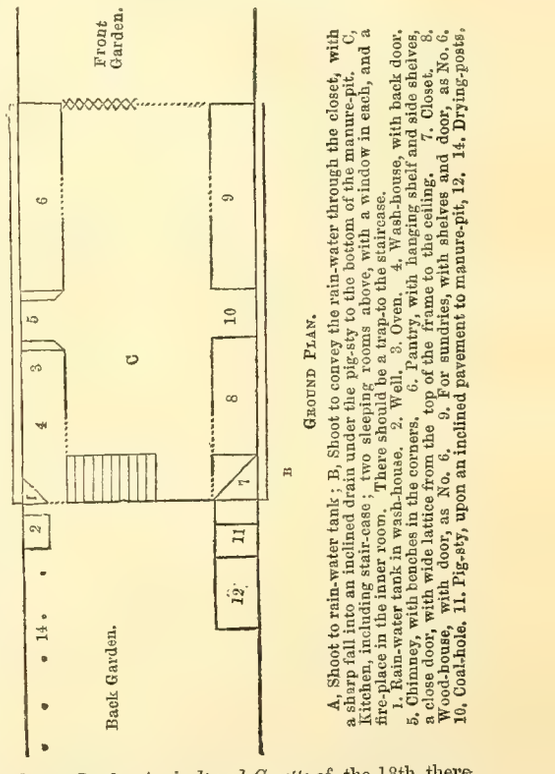
## Home Correspondence.

*Test of Manures for Turnips.*—I send you the following particulars of an experiment on 7 half acre lots of Swede Turnips, grown on a poorish sandy loam, in a second-rate climate, on high land, in North Staffordshire, at the cost of 25*s.* for the different manures applied to each half acre: (Skirving's seed) sown the 20th June last, in ridges 28 inches apart, hoed out to 14 ins. in the row, taken up the 3d inst., tops, roots, and dirt taken off, and weighed in the field. My practice has generally been to apply 12 tons of good farm-yard manure, and 2½ cwt. of Peruvian guano to a statute acre; this dressing I value at 3*l.* 13*s.* Ridged and separated as above, and in the same field adjoining the experimental lots, sown June 19; taken up and weighed the day the lots were. The return on that acre was 23 tons 3 cwt. 2 qrs. 15 lbs. I give the weight of each lot, as if grown on an acre, at the cost of 2*l.* 10*s.*

| | tons. | cwt. | qrs. | lbs. |
|---|---|---|---|---|
| Lot 1. Horn shavings ... ... ... | 15 | 0 | 0 | 0 |
| „ 2. Bone sawdust ... ... ... | 20 | 10 | 3 | 24 |
| „ 3. Superphosphate ... ... | 19 | 7 | 3 | 1 |
| „ 4. Peruvian guano ... ... ... | 21 | 15 | 1 | 13 |
| „ 5. Farm-yard dung alone, 6 tons | 20 | 5 | 1 | 18 |
| „ 6. Ichaboe guano ... ... ... | 16 | 4 | 3 | 15 |
| „ 7. Buenos Ayres animal manure (dried flesh and bones partially calcined) | 11 | 3 | 0 | 8 |

*Remarks.*—Lot No. 1 made a bad start, and continued in that state three months, when 43 of the plants threw out no bulb at all, but produced a stalk and top, the stalk like an Ash tree root, and the top like a Gooseberry bush. The stalk was so fast in the ground that a stout young man could not pull it up without the aid of a fork. As I have no experience in this extraordinary production, perhaps some well-wisher to agriculture will give you a cause for it. There were only three of these bushy plants to be found on lot 2, not one in the field besides. This lot came badly at first, and made but little progress till October—then grew fast. No. 3 started rather slowly at first; like No. 2, came up well at the latter end. No. 4 started well at the end of the first month, was ahead of the others, and continued so. No. 5 came up weak at first, at the end of three months was a fair competitor with lots 2, 3, and 4. No. 6 was a good while in the ground; when up made slow but steady progress. No. 7 was long in the ground, and when up, at the end of two months was weak and stunted; some died away. A few only of good Turnips were to be found when taken up. The land was all of equal quality, and the dressings were deposited by hand. *J. C. Etches, Harly Thorn, Stone, Staffordshire, Jan.* 22.

*Cottages.*—As you have often kindly attended to hints of mine, I venture to send for your *Gazette* my plan for a labourer's cottage; you will at once see that it meets all their wants, and I know all their wishes too. I grieve to tell you, that they only fear that it will be thought too good for them. I have forwarded a copy to the Agricultural Society, and one to the Marquis of Londonderry, and others, so that if you will insert it in your universally approved paper, it may not require more publicity from me. *One who is too often a grieved witness to the unworthy Cottages of the Poor.*




Ground Plan.

A, Shoot to rain-water tank; B, Shoot to convey the rain-water through the closet, with a sharp fall into an inclined drain under the pig-sty to the bottom of the manure-pit. C, Kitchen, including stair-case; two sleeping rooms above, with a window in each, and a fire-place in the inner room. There should be a trap to the staircase.
1. Rain-water tank in wash-house. 2. Well. 3. Oven. 4. Wash-house, with back door. 5. Chimney, with benches in the corners. 6. Pantry, with hanging shelf and side shelves, a close door, with wide lattice from the top of the frame to the ceiling. 7. Closet. 8. Wood-house, with door, as No. 6. 9. For sundries, with shelves and door, as No. 6. 10. Coal-hole. 11. Pig-sty, upon an inclined pavement to manure-pit, 12. 14. Drying-posts.

*Sheep.*—In the *Agricultural Gazette* of the 18th there is a "Village Lecture" on sheep. The lecturer has given a fair description of what the southdown was, but of late years the character of this animal is very much changed. It is rare now to meet with a pure southdown of the Sussex breed; the farmers have, by high feeding, and by crossing the breed with what are termed Hampshire southdowns, changed their character so much that they scarcely deserve the name. The reason for this change, I believe, is the profit which the farmer derives from increased size, and from the increased quantity of wool they yield; it is true the wool formerly was finer, and was generally worth more in the market than coarser kinds, but this is overbalanced by the quantity of wool and extra weight of the sheep. As a manufacturer, I regret this circumstance, because the wool of this coarse heavy breed is ill adapted to the use which it was formerly put to. I am not quite sure, but the farmers may ultimately beat themselves by the change, because we are compelled to use colonial and foreign wools instead, which would be prevented if we could get fine English, as formerly. Australian wool will have a tendency to go up in price, while the other will naturally recede, for want of more extensive consumption. *J. J. F.*

## Societies.

Highland and Agricultural, *Jan.* 8: *The Best Mode of Preparing and Applying the different Manures produced on the Farm.*—Mr. Finnie, Swanston, said: I will arrange my observations under two heads:—first, the preparation; and, second, the application. In treating of the preparation, I am naturally led to refer to the sources from which it is obtained; and these are found to be from horses, cattle kept for either dairy feeding or rearing purposes, and pigs; the second mentioned live stock, being kept in open courts, byres, or boxes, as the practice of the farmer may be. The two leading general principles, which, from experience and observation, I hold to be essential for the most profitable practice are—first, to have the whole dung that is daily removed from the bestial kept on the farm, carefully collected into one place, regularly mixed, and, at the time, adding such other earthy or vegetable material as is necessary to absorb the excess of liquid that exists. Secondly, to preserve the dung-heap during the process of collection, preparation, and prior to application, as much as possible, from the effects of the atmosphere, and this both in winter and summer. To follow out these principles in practice, it is requisite for every farm to have a convenient and well-formed dung depôt, with liquid manure tank attached, provision being also made for the liquid manure, as it comes from the animals kept in houses, not mixing, in the first instance, with their

solid excrement, but conveyed under-ground direct to the spot where the manufacture of manure (as it may be termed) is to take place. To lay down any one plan for the construction of every dung depôt, would be injudicious. But, by way of illustration, I shall suppose a case, and assume it to be formed where the ground is level, and at a lower elevation than the steading. Under such circumstances, I would excavate a space sufficiently large to admit of it holding a half more dung than what can possibly be accumulated, say for one half year, at least, from the sources I have referred to, wide enough to admit of a cart turning in it with ease; the depth from the surface, when completed, may be from 3 to 4½ feet or more. On three sides a retaining wall, and at one end the outlet, with such a gradual slope as to allow of well laden carts being taken out. If the soil is retentive, little provision need be made for preventing the liquid oozing from the dung escaping; but if porous, the retaining walls should receive one foot of clay puddle behind the building; the bottom of the depôt should be covered with a similar thickness of the same material, and, upon the top of the latter, one foot of well broken road metal, to give solidity for cartage. A very simple plan for allowing the horses to get out with ease, is to lay a tramway of flat stones. This, I may say, completes the formation, unless the preferable mode of having a covered depôt is adopted, which in passing, I may remark, is likely, ere long, to be considered an essential building for every farm. So far, therefore, for the reception of the solid manure. I shall now state what appears to me a simple process for conveying the liquid portion to the depôt; and I am glad to say the old and expensive mode of constructing drains of mason work may be entirely superseded by the use of circular clay pipes, 3 feet long, with spigot and faucet joints, made to any bore, from 2½ to 3 inches will, I think, be found sufficient for such a purpose as I am speaking of. At the extremity of each house where live stock is kept, or any other more convenient spot, where the liquid will readily run to, as well as at the lowest point of every yard and part of the steading, where the liquid worth preserving accumulates, there may be formed a small cesspool, say from 20 inches to 2 feet square, and about 30 inches deep, and which may even be made by sinking old herring barrels (costing from 9*d.* to 1*s.*) puddled round the sides with clay, and the bottom embedded in it; the tops of these cesspools kept sufficiently below the level of the adjoining surface as to admit of a stout flag with iron grating on hinges, in its centre, first to admit the liquid, and secondly to provide for the cesspool being emptied of any sediment, which, when attended to, no danger exists of the pipes silting up. When such a distance from the top of the cesspool, as will admit of a sufficient covering for the pipes, a hole is made to admit one end of the circular pipes, which are laid to connect these different tanks (as they may be called), together, and ultimately discharging from the one, on the lowest level into a trough, which may be made of wood, say 15 inches deep, sloped to 20 inches at the top, placed at the side of the dung depôt, equidistant from each end of it when taken lengthways, and sufficiently long to admit of the urine being scooped out over any part of the accumulating mass, the latter having likewise an overflow pipe unto the manure tank or liquid reservoir, as also there being a connexion between the lowest part of the dung depôt and the manure tank, which can be opened or cut off at pleasure. I already mentioned that the liquid manure from the cattle kept in houses should not be allowed to mix in the first instance with their solid excrement. I shall briefly explain how this may be effected. About 20 inches from the gutter behind the cattle, and parallel to it, let a continuous opening be made, extending right across the different cattle stances, sufficiently deep at first, to admit some inches of clay in the bottom, upon the top of which the common horse-shoe drain tiles, in size from 3 to 3½ inches, are laid upon their back; these are supported on each side by a common building brick on edge or small thin flagstone, which projects about 2 inches above the tile, and reaches within 1½ or 2 inches of the causeway. A plank perforated with holes in the centre is made to fit in and rest upon the bricks or thin flags, and when in its place is level with the rest of the causeway, and forms part of the standing room for the cattle; when the animal stales, water at once finds its way into the tiles, and by them it is conveyed to the first small cesspool. No doubt this arrangement does not suit for either dairy stock or when queys are fed, but the same provision may be made on the side of the gutter or in its centre. I will not trouble you with any observations as to the construction of the large liquid manure tank, with which you are all familiar. Having now provided for the reception of the dung, both solid and liquid, I shall in a word or two explain what I would propose to mix with, in order to absorb the urine. On all farms where moss (peat) can be procured, and care taken to have it turned over, and exposed to the atmosphere in dry summer weather, no better absorbent can be got. In the absence of peat there are, generally speaking on the majority of farms, high head ridges or other accumulations of earth, and when these are exhausted, I would be disposed to recommend the use of any earthy material, even although it should not be soil of the best description. In fact, pure clay, when turned over in dry weather and exposed to the atmosphere, will prove not the least valuable for such a purpose. I need not add, that whatever is used to supplement the dung-heap should be carted home in summer, and stored as close to the dung depôt as possible, so as to be ready for application when required; rack (seaweed) or any other decaying vegetable substances may be all set aside for the same end, as one or two good soakings of the urine will soon extinguish any vegetating tendency it has. The process of manufacture requires few remarks. In the first instance, the bottom of the depôt receives a covering of from 12 to 16 inches of the absorbent, and as the byres and stables are emptied, and the dung from each properly mixed and spread, a thin covering of the absorbent is given, and then the whole saturated with the liquid that has gathered in the trough already referred to, the absorbent serving the double purpose of both protecting the manure daily obtained from the horses and other cattle, not only from the effects of the atmosphere, but also for absorbing the liquid which the same could not otherwise retain. Such being the case, the quantity of absorbent used must be so far regulated by the liquid at command. The mass goes on thus increasing, until it is either turned over to be applied directly to land, or carted away to be stored for after use. When the latter takes place, I would recommend that the bottom of the stance where it is intended to be laid, should receive a covering of earth or of what is in general used for absorbing the urine, and then if manure has been accumulating in boxes, or carts, or piggeries, let it be regularly mixed with what is led out from the depôt, layer about. When manure is intended to remain any time in middens on the fields, it is always desirable to have it carted upon them while these are forming; this prevents premature decomposition, but often this is not practicable, from its being so far decayed, before removal from the steading. It should, however, whether carted or not, have the sides and top well covered with some earthy substance to preserve it from the action of the atmosphere.

*On the application of Manure.*—Dung, when applied to land to be immediately sown or planted, should invariably be in a state to afford instant food to the plants, or, in other words, well rotted. When applied to land not to be sown or planted for several months afterwards, little previous decomposition is necessary, that had better take place in the soil itself; and the land will work more freely in the spring when it does so. At whatever time, or for whatever purpose, it is applied, it ought to be well soaked with urine previous to being driven out; or in the absence of urine, common water may be used, and the less time that elapses between filling at the dung heap, and covering it with the plough, the greater will be its effect, and particularly when put into the drill in spring, the Turnips never fail to braird well, and the Potatoes withstand drought better. I have found much benefit result from attention to these rules. I have an idea which I propose acting upon, having tried it already on a limited scale, of raising my Turnip crop entirely with portable manures, but before sowing my Barley and Wheat, to give a proportion of farm-yard manure. My opinion is, that by being a little liberal with the portable manures, I can raise a sufficiently bulky crop of Turnips, and by applying the farm-yard manure after these are either eaten, in whole or in part, by sheep, or removed entirely, I will ensure better Grass and succeeding crops, in the rotation—of course, apportioning the dung under these different systems accordingly. My former practice has been to give the proportion of farm-yard manure, viz., 20 tons, in ploughing over the stubble, adding in addition in spring, upon sowing my Turnips, 5 cwt. of guano per Scotch acre, or some other mixture of the portable manures; but I think less of the home-made manure, viz., 12 tons, under the new system, will be attended with more beneficial and profitable results. In the former case, suppose,

| | | | |
|---|---|---|---|
| 20 tons of manure, at 7*s.* per ton ... ... | £7 | 0 | 0 |
| 5 cwt. guano in spring, at 10*s.* per cwt. ... | 2 | 10 | 0 |
| | | | £9 10 0 |

In the other view,

| | | | |
|---|---|---|---|
| 7 cwt. guano in spring, at 10*s.* per cwt. ... | £3 | 10 | 0 |
| 12 tons manure when grain crop is sown at 7*s.* per ton ... ... ... ... ... | 4 | 4 | 0 |
| | | | 7 14 0 |
| Difference ... ... ... ... ... | | | £1 16 0 |

I am prepared for the remark, "This is expensive manuring," but my experience and observation lead me to the conclusion that, taking the soil and climate of Scotland as a whole, it will be found that in proportion to manure used, will be the produce obtained; and however expensive it may be to secure it in sufficient quantity, we farmers need never flatter ourselves into the belief that whether we drain, subsoil, or have recourse to other methods for changing the character of the land, a liberal supply of manure can be dispensed with, but under very rare and peculiar circumstances. Previous to the existence of that calamity, which has, to so unprecedented an extent, interfered with the Potato culture, the practice was, and found beneficial, to apply the dung for that root almost exclusively in spring. Experience seems to show, however, that the tendency to disease is aggravated in proportion to the quantity that is placed in immediate contact with the sets. It is accordingly safer either to apply the whole in autumn, or at least two-thirds. The proportion, therefore, ploughed down with the stubble requires little previous decomposition; but what is put into the drill ought to be in a very advanced state in that respect. A portion of guano proportioned to the quantity of farm-yard manure used has been attended with good effects. The use of liquid manure in the liquid form I have practised to considerable extent, and although I do not undervalue its effects, and would just do what the Messrs. Harvey of Glasgow have done, had I the same inexhaustible supply, and even adopt other modes of irrigation, if practicable and profitable, still I would say applying it in the solid form, such as I have described in treating of the preparation of manure, will be found most beneficial to the farmer whose resources for obtaining it are, comparatively speaking, of a very limited description. It has various drawbacks when carted out in the liquid state. In wet weather the Grass is poached, and if applied in frost or dry weather, it produces little visible effect. In short, now that we can command such stimulants as nitrate of soda and sulphate of ammonia, I would almost conclude that these in a great measure supersede the necessity for applying it to the surface in the liquid form. All I contend for is this, that the management of manure should be conducted under the great leading principle of converting as much of the liquid into solid as possible, and as little of the solid into liquid; and this I will further maintain that whether or not it is expedient to manufacture dung occasionally in the field, it is absolutely necessary to have a regular depôt for solid and liquid manure at the steading, and also to practise a methodical and systematic way of daily collecting into it what requires to be removed from the live stock. The very use of such a means tends to other improvements about the farm. For I would wish to ask any one who has been obliged to force his way through accumulations of dung at stables and byre doors, whether or not he ever found the interior of these houses either clean or the cattle kept in them so, and, upon examination of the horse-dung heap, failed in nine cases out of ten to find it fire fang (an expression familiar to all farmers), and that of the cows sending from it a stream which, from its odour and colour, gave certain proof that the essential elements of the dung were finding their way by the readiest outfall to the nearest rivulet, or otherwise disappearing, to the loss of the farmer. — Mr. Main, Whitehill, Mid-Lothian, in the course of an interesting address, stated in reference to the application of home manure: I am aware that it is the practice of many of our best agriculturists to apply their manure in autumn. I have done the same for experiment, and have seen others do it, but I have found the crop manured from the heap, though exposed the whole winter, to be greatly superior to the autumn applied dung, and I have now given up the practice. It is true, when a large quantity is applied, say 40 or 50 cart-loads, necessity may compel a portion of it to be given in autumn; but it may be questionable whether a smaller quantity, with an addition of guano applied in the spring, would not be of equal, if not greater advantage. A neighbour of mine, a few years since, told me he was going to try autumn manuring. On my recommendation, he did only the half of his field in autumn, and the other half in spring; the crop was Potatoes. The result of the experiment was, that he never tried autumn manuring again. Still I would not condemn the practice. I only state my own experience, and what I have seen in the case of others. The state of preparation in which manure should be applied is a question of considerable interest. From the results of my experience this year, I am disposed to think that manure does most for the benefit of the immediate crop, at least, and I should think for succeeding crops too, when it is applied in a recent state. I never had such a crop of Potatoes as I had this year, from manure applied in this way; and it appears to be equally applicable to Turnips. The following is an experiment I conducted this year, to determine this question. The field was a light sandy loam. The manure prepared exactly in the same way from cattle fed on oilcake and Turnips, the only difference was, the one lot was manured from a heap thoroughly rotten, and which had lain for four months in heap; the other lot got manure taken immediately from the cattle courts. Each lot got at the rate of 28 cart-loads per imperial acre. The results are as follows, showing a distinct advantage from the use of recent manure:—

| | Produce. tns. | cwt. | lb. |
|---|---|---|---|
| Rotten Manure, in heap 4 months, 28 carts per imperial acre, ... ... ... ... ... ... | 21 | 5 | 28 |
| Rotten Manure, as above, 20 carts per imperial acre } Peruvian Guano, 64 lbs. per imp. acre ... ... } | 21 | 0 | 84 |
| Rotten Manure, 12 carts per imp. acre ... ... } Peruvian Guano, 128 lbs. do. ... ... } | 20 | 17 | 105 |
| Rotten Manure 12 carts do. ... ... } Peruvian Guano, 228 lbs. do. ... ... } | 21 | 13 | 14 |
| Recent Manure from courts, 28 carts per imp. acre | 21 | 18 | 84 |
| Rotten Manure, 12 carts per imp. acre ... ... } Nitrate of Soda, 202¾ lbs. do. ... ... ... } | 17 | 6 | 56 |
| Rotten Manure 12 carts do. ... ... ... } Peruvian Guano, 328 lbs. do. ... ... ... } | 20 | 18 | 56 |
| Rotten Manure, 12 carts do. ... ... ... } Nitrate of Soda, 291¾ lbs. do. ... ... ... } | 18 | 8 | 49 |
| Rotten Manure, 12 carts do. ... ... ... } Hen Manure, 5 cwt. do. ... ... ... } | 19 | 13 | 84 |

The best return from the mixture of guano with farm manure is from lot 4, where 12 carts of manure are aided by 228 lbs. of guano. This application results in 13 cwt. 56 lbs. of Turnips, over the crop manured with 28 acres of rotten home manure alone. In lot 7, where the 12 carts were aided with 328 lbs. of guano, or 100 lbs. more than lot 4, the result is not so favourable to the guano. I attribute this to an over dose of guano, without an equivalent increase of manure. The power of the guano was expended in the production of shaw to an extent, out-running the capability of the small quantity of manure applied, to equal it in growth of bulb. I have no doubt, that had I applied a few cart-loads additional, the result would have been very different. It will be seen, however, that the recent or green manure is the most productive manure of the

experiment. I applied the nitrate of soda in opposition to guano, apportioning the application of both substances to the equivalent of the nitrogen in each. But if my calculations are right in respect of nitrogen, the guano is decidedly superior. It is right, however, to state that the drought seemed to affect the nitrate to a greater extent than the guano. After rains came, the crops from the nitrate made the greatest amount of progress, but too late to be of much service, at least, in overtaking the guano. The auxiliaries of application is perhaps the greatest question of the day connected with the economy of farm management. My own experience is all in favour of using guano and other foreign substances in connection with farm-yard manure. Not only do we effect a saving in expense, but we are enabled to grow a large breadth of Turnips or Potatoes, and by intermixing sheep husbandry with our management, we do equal, if not greater justice to our soil. But instead of enlarging, I prefer to give an experiment of this year, which very clearly shows the advantages of using guano. The mode I adopted in this experiment was to determine, as nearly as possible, from authority, the quantity of nitrogen in home manure, and, by withdrawing a proportion of this from each lot, to supply it in the form of guano. In consequence, my quantities of manure are not exactly what I generally use. I prefer giving not less than from 16 to 20 cart-loads of manure. The field is the one already alluded to. The results are as follows. The experiment decidedly proves the advantages of using guano in connection with farm-yard manure. As I have already said, however, I prefer giving a larger quantity of home dung than 12 cart-loads. My usual quantity is from 16 to 20 carts of dung, and from 3 to 5 cwt. of guano. For raising Turnips, bones dissolved are quite equal to guano ; but I prefer a mixture of the two substances. — In answer to a question by Mr. Balfour, Mr. Main explained that the rotten manure referred to in his experiment was not turned over previous to applying it to the crop. It had lain in heap for four months, and cut quite rotten in the spring. He did not consider it necessary to turn it over.— Dr. Anderson said : He agreed with the opinion of Mr. Finnie, that the plan of absorbing the liquid manure by some substance capable of retaining its valuable matters, and then applying it to the soil, as a general rule, would be found more practically applicable than the many plans proposed for distributing it in the liquid form. No doubt instances existed in which its application, by means of pipes distributed over the farm, might be, and he believed was, employed with profit ; but these were exceptional cases, and he was of opinion that the plan could never be advantageously applied to the general husbandry of the country. It could, in fact, only be used where the circumstances of the farm were such as caused the production of what he might call a disproportionately large quantity of liquid manure, such as would admit of its application in large quantity at any time. In an ordinary farm, producing the ordinary amount of liquid manure, he believed that the benefits derived from its application were not likely to repay the large outlay required for pipes. He believed, in fact, that, as often happens when matters have been altogether neglected, and then brought prominently into notice, that there was rather a tendency to over-rate the value of liquid manure. He trusted that in this statement he would not be supposed to wish to depreciate this manure, but rather to guard against an over-estimate of its worth. It ought to be remembered, that the amount of ammonia in liquid manure was very small, and that in phosphates it was entirely deficient, so that it could never be relied on alone, but must be conjoined with a certain proportion of the solid manure. Mr. Finnie and Mr. Balfour had referred to the increased value of the manure made under cover over that made in the ordinary way, and that was a point in which theory strongly supported them. Curiously enough, however, we were remarkably deficient in experiments, to show their relative values. He knew, indeed, but one experiment on the subject, which was made on the home farm of a very zealous and active member of the Society, Mr. Campbell, of Craigie, in which two different quantities of Turnips were grown with manure made under cover, and one with it much in the old way, and the result was, that no appreciable difference existed between the two crops. He must say, however, that that experiment did not by any means exhaust the subject, it did no more than determine the effect of the manure upon the present crop, taking no account of the value of the unexhausted manure, which was probably considerable, for it appears to be consistent with theory, that manure prepared under cover will undergo decomposition more slowly than that made on the old plan. He had been particularly interested by some of the statements of Mr. Main's experiments, which appeared to him of great importance. He might particularise Mr. Main's experiment, with recent and with well-rotted manure, in which he found that from 28 tons of each, he obtained a somewhat larger crop from the fresh manure. The experiment was a particularly important one, and even more than might at first sight appear. The fact, then, was a matter which might not strike the audience, but which was really of great importance. Mr. Main compared 28 tons of fresh with 28 tons of rotted manure ; but it ought to be borne in mind that 28 tons of fresh manure, if rotted for four months, as in Mr. Main's experiment, would be reduced in quantity to less than 20 tons. So that the 28 tons of rotted manure corresponded to somewhere about a quarter more ; or about 35 tons of the fresh, so that there would appear in this process of decomposition to have been a loss of about a quarter of the manure. At this late period of the day, he was unwilling to occupy the time of the Society by entering upon many other subjects of interest. There was only one other matter to which he would refer, which was the nature of the absorbents to be employed for absorbing the liquid manure. His attention had been particularly directed to this subject of late, by its having been remitted to him by the Committee of the Highland Society, to enquire into the economic uses of peat, which have of late excited so much attention. Much of that enquiry, which included the distillation of peat, &c., was irrelevant to the subject of the present debate. But he had also enquired into the comparative absorbent powers of peat charcoal, and of peat itself for ammonia. His experiments had been made by adding to dry peat and peat charcoal, successive small quantities of a diluted solution of ammonia of known strength, and ascertaining how much could be added without communicating the smell of ammonia or its alkaline properties. He had thus found that peat absorbs a much larger amount of ammonia than peat charcoal, but that the amount of ammonia absorbed is dependent upon the dryness of the peat. When absolutely dry he found it to absorb about 5 per cent. of ammonia, but when not so dry, about 3 per cent. ; while his peat charcoal was incapable even of absorbing 1 per cent. of ammonia. These, however, were merely the preliminary experiments, which he intended to repeat and vary, so as to ascertain all the circumstances of the absorption. Other substances might also be employed, such as dry earth, and the like, but he believed their value to be inferior to that of peat.—Lord Kinnaird agreed with Dr. Anderson that the experiments made by Mr. Campbell of Craigie, and which went to show that covering did not improve the manure, were not quite satisfactory. As to Turnip shaws, whether these should be ploughed in immediately after being pulled, or be allowed to decompose, a difference of opinion exists. He had made the experiment with one-half ploughed in and the other half allowed to rot, and then afterwards ploughed, and found no difference whatever. It might be explained by the different effects produced in winter compared with summer, as in the latter case the loss would be greater. Remarks were also made about passing the whole straw of the farm through the cattle, and the consequent saving of Turnips by using the straw along with them. I was giving 130 to 200 lbs. of Turnips per day to my cattle. After reading Mr. Milne's paper, I wrote to Mr. Huxtable to learn if the statement was fully correct that he only gave 50 lbs. weight, and received the following answer: — "The amount stated by Mr. David Milne in his pamphlet is strictly correct, though the quantity consumed by each animal can scarcely be considered 'a constant quantity,' exceeds 10 lbs. per head in the daily average of 50 lbs. The method employed is this :—The Turnips are rasped into very thin slices by a machine called 'Moody's Crusher.' The Turnips so finely divided, are well mixed with rather more than an equal bulk of straw. The cattle are thus compelled, along with the roots, to get a considerable bulk of straw. The chief use of the straw is, that 'it takes off the chill,' where the employment of a large amount of watery Turnips (90 per cent. of cold water, I believe) is apt to give, exhibited in a loose state of the animal's bowels. I am not sure of the value of this explanation, but I am of the practice itself. It was taught me by a practical farmer some years ago, to whom, when I pointed out some oxen who made no progress, though eating nearly 200 lbs. of Swedes daily, I owe the instruction that they would do better with one-quarter the amount of roots, if I would employ Moody's Crusher, and mix straw chaff as before described. The additional nutriment necessary to fatten animals I apply in the shape of 3 lbs., 5 lbs., and, for six weeks at the end of the process, 7 lbs. of meal daily. We feed our beasts four or five times a day ; give the meal at two or three other intervals, always throwing it amidst the roots and straw which may be left over the last meal, enticing them to eat up every bit of straw or left Turnip clean ; they, in fact, lick their own mangers perfectly clean, in the process of eating up the dusty meal. I have no experiments (of my own) to determine the relative value of Swedes and Mangold Wurzel. Such a determination would be very difficult, for I find that the Mangold Wurzel grown upon my chalk land is very superior for early use to that grown upon clay soil. At this season of the year, I greatly prefer Swedes to Mangold Wurzel. I do not always steam the straw with the roots, nor consider it essential ; but I think that the cost of the process is more than paid for by the increased solubility of the woody fibre of the straw thus treated. When I feed my cattle upon straw and meal only, I consider it absolutely necessary to steam the straw ; and I have found the beasts do very well upon this diet, for a month at a time ; but I have only had recourse to this system in certain moments of scarcity, which have twice or thrice occurred to me, in selling cattle in the late spring."

## Miscellaneous.

*Height of Carriage.*—A good labourer, digging a soil of ordinary consistency, will turn over more than 200 square yards, probably 2000 square feet, in a day, from 10 to 12 inches deep; he will thus turn over from 80 to 100 tons of earth per diem: the same man, if he had to fill a wheel-barrow, could not lift more than from 16 to 20 cubic yards, while if he had to throw this earth over the side of a cart or a waggon, he could not manage more than one-fifth part of the weight he lifted in the first case; and of course the higher the edge over which the material has to be thrown—the higher the edge of the cart or the waggon that he is filling—the more will be the labour connected with the shifting of a given weight of material. To lower the edge and bed of the vehicle one foot, would lessen the labour of filling it by a fifth or sixth part, a most important difference; and when, as in Stratton's Northampton cart, compared with the waggon, the difference between the levels on which the load is to be carried amounts to nearly 2 feet, the relative merits of the two, on the score of economy, appear plainly enough. *J. C. M., in Morton's Cyclopedia of Agriculture.*

METEOROLOGICAL REPORT.—Jan.
(*Continued from page* 61.)

| Date. | Time. | Max. | Min. | Wind, and Remarks. |
|---|---|---|---|---|
| Thur. 16 | 5 a.m. | 29.57 | ... | Blowing at S. all day, and a |
| * | 10.35 p.m. | ... | 29.29 | very heavy gale all the evening and night. |
| 17 | 7.40 a.m. | ... | 29.43 | Stiff SW. breeze, and fine |
| | 1.20 p.m | 29.52 | ... | morning, but very heavy showers in afternoon. Evening calm and raining. |
| 18 | 8 a.m. | ... | 29.81 | NW. Gentle air and white |
| | 10.40 p.m | 29.94 | ... | frost. Fine, sunny. SW. and S. day, and clear evening. |
| Sun. 19 | 8.30 a.m. | 29.90 | ... | S. Very rough early A.M. and |
| | 10.30 p.m. | ... | 29.79 | cold day, and blowing very hard all evening and night. |
| 20 | 8.20 a.m. | 29.70 | ... | S. Wet afternoon and cold, |
| † | 10.40 p.m. | ... | 29.29 | and a very heavy gale of wind and rain all evening. |
| 21 | 7.50 a.m | ... | 29.33 | SW. Bright forenoon ; 4.30 |
| | 9.45 a.m | 29.38 | ... | P.M., very heavy squall of wind and rain, lasting about half an hour ; the barometer remained steady the entire day, from 9.45 A.M. till night. |
| 22 | 8 a.m. | ... | 29.73 | W. to N.W. Light airs and |
| | 10.30 p.m. | 30.06 | ... | slight frost and fine. P.M. W. Massive clouds moving slowly. |
| 23 | 8.30 a.m. | ... | 30.18 | W. by N. Almost calm, and |
| | 11.20 a.m. | 30.20 | ... | very beautiful day. |

* This storm came from the southward, and probably lay very heavily along the coast of Portugal, and went away to northward.

† I anticipate that this storm will have been felt very severely by the North American and Liverpool steamers off the banks of Newfoundland, as it must have come from the west and north, from the unusual cold which *preceded* it. Probably it passed up the Irish chanel, and across the south of Scotland.

Dorchester, Jan. 24th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

An Essex Farm.—The horses have been doing little since my last, the weather being very wet. We have now ploughed all the land intended for Beans, and most of that intended for summer fallowing and Turnips. The ewes are now fast dropping their lambs, and hitherto we have not lost either ewe or lamb. Those that have lambed are turned out on fine days on a dry pasture that has been partly Gurneyised—with this difference, that it has long dung instead of straw, and this is an improvement. There is a nice bite, quite as much as one has generally at the beginning or middle of April ; they receive as many cut Turnips as they will eat, with chaff cut, half red Clover, and half Wheat straw. Those which have not lambed run during the day on the pastures, and have some whole Turnips strewed about to amuse themselves with ; and they have some chaff in their fold at night, and this seems to keep their bowels from getting too much relaxed. The breed is half-bred Norfolk and Hampshire Downs, and is much liked by the London butchers, being not over-large and coarse. They are better suited for heavy land than a larger breed. The day-men are now land ditching and draining, and have been so for the last two months, and will be so employed for the next fortnight or three weeks, weather permitting. It is part of the agreement in this part to drain a certain quantity every year, as this was no doubt intended to employ the labourers during the winter ; but I must say that it would be difficult to find work for them without it, for, from the latter end of November till February, many of the farmers are adopting a system of only employing men when the weather is fine, and suitable for different field operations ; and as the machine is employed to thresh almost all the corn, there is, of course, nothing for them to do, except those engaged about the horses and cattle. It is heart-rending to see such a number of strong hearty men walking about doing nothing. Poor fellows, they live hard and work hard enough when fully employed, and their privations must be dreadful when only employed a day or two now and then. Draining is done by the piece, and they earn a little more than at day work, as day-men receive only 1s. per day. It is done by the score rods (5½ yards), and the price this winter is about 3s. per score; mixed soils a little more, and some less, as from the great number anxious to get a job, a man may get it done at his own price. In fact, this county is overrun with labourers, with nothing but the land to employ them ; a good hand may be able to earn 1s. 4d. per day, but he must be a good one; and if he was able to earn more, a reduction would be made in the price. This is in effect a perfect preventive of any exertion on the part of the men ; and so long as the present system continues, of farmers not informing men what they are to receive for their work until it is finished, it cannot be expected that they will endeavour to do as much work as they otherwise would. The greater part of the land now draining appears to have been drained three times at least, from the present cutting going across them ; the oldest drain is not more than 12 inches from the surface, the next about 15 inches, and the last a little more than 18 inches. This shows how much they fill up during a certain number of years. According to the custom in this part of Essex, each field would be drained about every 15 years ; and in looking over the books kept for the last 50 years, this appears to have been the case on this farm ; the drains were, I believe, always rammed till within the last 10 years, and they seem to have stood pretty well, as most of them appear to be almost as perfect, except the bottom, as the day they were cut, but they are most silted up at the upper end. It seems that the quantity of water running down has not had sufficient power to carry the soil dropping from the top and sides ; the drains now are cut 2 feet deep, about six inches being ploughed out, and two spits of 9 inches each ; they are filled in with bushes, and some with straw ropes twisted very tight. Pipes are little used here, from their great expense, and they are not thought so much of here ; and from the frequent complaints made respecting their stopping up, it does not appear that they are always successful. *E. X., near Braintree, Essex.*

## Notices to Correspondents.

Books: *E.* Blackie's "Cyclopedia of Agriculture."

Carrot-tops: *G S.* We find them palatable to all sorts of stock without any difficulty. If they are rotten you *cannot* make them palatable.

Deformed Turkeys: *C. R.* You will find the subject noticed in the Poultry Miscellany in our No. for Sept. 18, last. It is apt to be brought on by neglect of the bird while in a growing state, by bad seasons, and by late hatching. *Perhaps* it may be desirable that you should change your stock birds, but of that you will be the best judge.

Drainage: *Seven Years' Subscriber.* So that you begin in time enough to finish all you have to do before your seed time—the later the period, *i.e.* the drier the ground, the better.

Education for an Australian Sheep Farm: *X Y.* Send the young man to Cirencester for attendance on lectures, &c., one year, and to a stock farmer in South Scotland for another year.

Farm Capital: *E T.* We must beg for another week. We do not understand your request about an introduction to an instructor. Do you wish to reside on a farm or a year?

Feeding Sows with Swede Turnips: *An Amateur Farmer* says:—"The manager of my small farm has been feeding four sows that are suckling pigs for some time with uncooked Swede Turnips, in addition to wash and a little Barley-meal. The Turnips are sliced with one of Gardner's admirable cutters, and given them between the regular times for feeding. I find the pigs grow fast, and look very full of health and thrifty."

Flax: *A G.* Mr. Schenks' patent has been, and is carried out successfully in Ireland. We do not know his charge for working it. You had better apply to the Secretary of the Irish Flax Society, Belfast. T. K. Short's pamphlet gives details of cultivation. So does Blackie's Cyclopedia of Agriculture.—*A B, Effingham.* T. K. Short's pamphlet. Half a bushel of Canary seed is sown per acre.

Flax and Chicory: *G S.* A sandy clay or "loam" is the right soil for both. Information on both shall be given in articles here before seed-time.

Gorse and Hemp. The Editor would be glad to meet with any one personally acquainted with the cultivation of these crops.

Grass Land: *V R.* Five small horses, 8 Alderney cows, and 10 calves, can easily be kept on 45 acres of Grass land of ordinary quality—yielding say 26 or 28 cwt. of hay per acre. You will need 27 or 28 tons of hay for winter food, so that half the land should be kept for hay every year. A plot of the land for Cabbages and Mangold Wurzel would be a great assistance.

Italian Rye-grass: *Amateur.* Italian Rye-grass, if cultivated properly, will yield far more weight per acre than Tares. You may cut it many times in the season—Tares only once. But then it ought to have been sown last summer to be useful this one.

New Zealand Flax: *W W.* Phormium tenax withstands the rigour of our winters; but the results of experiment in Ireland tend to show its produce here is much inferior to that imported. *Lawson.*

Pigs: *H T.* Raw Swedes and Mangold Wurzel will keep them in store condition perfectly.

Poultry: *C S.* Your questions, all but one, have been abundantly answered in former numbers of the *Agricultural Gazette*, which you can easily refer to by means of the indexes to each volume. The only new inquiry is "whether you know of any mode of *marking* fowls, so as to be able to identify them if stolen." You would get the best advice as to this from a rural policeman. But, we may remark, it is a more Christian office to *prevent* the commission of crime than to detect it when committed. The web of feathers may be snipped in unseen places; the foot-webs of water-fowl may be marked; the feathers will be moulted, and the marks will grow out. Moreover, skilful fowl-stealers mostly pluck and partially dress their prey *upon the spot*, leaving plenty of "wrecks behind." *D.*

# Markets.

## COVENT GARDEN, Feb. 1.

Hothouse Grapes and Pine-apples are still somewhat dear, and the supply of good dessert Pears is limited. Apples are sufficient for the demand. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Vegetables of all kinds are abundant and good. Seakale, Asparagus, and Rhubarb are excellent. French Beans are very scarce. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Musbrooms fetch 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Chrysanthemums, Roses, and the different kinds of spring bulbs.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Pomegranates, each, 3d to 6d |
| Grapes, hothouse, p. lb., 5s to 8s | Almonds, per peck, 6s |
| — Portugal, p. lb., 8d to 1s | — sweet, per lb., 2s to 3s |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| — per half sieve, 6s to 15s | — per 100, 9d to 1s 6d |
| Apples, dessert, p. b-b., 6s to 10s | Nuts, Barcelona, per bush, 20 to 22s |
| — kitchen do., 3s to 8s | — Brazil, p. bsh., 12s to 14s |
| Oranges, per doz., 9d to 2s | Filberts, p. 100 lbs., 60s to 65s |
| — per 100, 6s to 10s | |
| Lemons, per doz., 1s to 2s | |

### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 8d |
| Cabbages, per doz., 6d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bun., 1s 6d to 2s 6d | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Endive, per score, 1s to 1s 6d |
| Asparagus, per 100, 2s to 8s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 6d to 1s 6d | Horse Radish, p. bundl., 1s to 4s |
| Potatoes, per ton, 60s to 100 | Red Beet, per doz., 6d to 1s |
| — per cwt., 3s to 5s | Mushrooms, p. pot., 1s to 1s 3d |
| — per bush., 1s 6d to 2s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. doz. bundl., 1s to 2s | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 4s | Savory, per bunch, 2d to 3d |
| Lettuces, per d z., 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Capsicums, per doz., 2s to 5s | — Roots, p. bundl. 9d to 1s |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, per bunch, 2d to 4d |
| Onions, p. bunch, 3d to 4d | Mint, green, per bunch, 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per doz., 9d to 1s | |

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 30.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Clover ... ... ... | 70s to 80s |
| Inferior ditto ... ... | 60 70 | Second cut ... ... ... | 60 70 |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 23 27 |
| New Hay ... ... ... | — — | | J. Cooper. |

Trade dull.

CUMBERLAND MARKET, Jan. 30.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 65s to 72s |
| Interior ditto... ... | 50 65 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 78 84 | | Joshua Baker. |

WHITECHAPEL, Jan. 30.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 68s to 72s | New Clover ... ... | —s to —s |
| Interior ditto ... | 60 63 | Inferior ditto... ... | 65 70 |
| New Hay ... ... | — — | Straw ... ... ... | 22 24 |
| Old Clover ... ... | 78 84 | | |

POTATOES.—Southwark, Jan. 27.

The Committee report that the arrivals last week were limited, but trade has been so heavy that the quotations are without alteration, except for Scotch Regents, which were a little dearer. Cups are bad to sell at any price. The following are this day's quotations:—York Regents, per ton, 80s. to 100s.; Scotch do., 65s. to 80s.; ditto Cups, 60s. to 65s.; Cambridgeshire and Lincolnshire Regents, 70s. to 80s.; French whites, 50s. to 65s.

COAL MARKET.—Friday, Jan. 31.

Hollywell, 14s. 6d.; Eden Main, 14s.; Davison's West Hartley, 14s.; Wallsend Haswell, 15s. 9d.; Wallsend Lambton, 15s.; Wallsend Tees, 15s. 6d.—Ships at market, 105.

SMITHFIELD, Monday, Jan. 27.

The number of Beasts is not very large; the weather being favourable trade is more cheerful, and our top quotations more cheerfully given. We have about an average supply of Sheep; trade is about the same as on Monday last. Good Calves are scarce and dear; although we are enabled to quote 5s. for a choice one, it must be considered an extreme price. Pigs are still selling very badly. From Holland and Germany there are 405 Beasts, 1210 Sheep, and 100 Calves; from Norfolk and Suffolk, 2100 Beasts; from Scotland, 400; and 900 from the northern and midland counties.

| Per st. of 8 lbs.—s d | s d | Per st. of 8 lbs.—s d | s d |
|---|---|---|---|
| Best Scots, Hereford, &c. ... 3 | 6 to 3 8 | Best Long-wools . 3 | 6 to 3 10 |
| Best Short-horns 3 | 4 — 3 6 | Ditto Shorn ... ... | |
| 2d quality Beasts 2 | 4 — 3 0 | Ewes & 2d quality 2 | 10 — 3 2 |
| Best Downs and Half-breds ... 4 | 0 — 4 4 | Ditto Shorn ... ... | |
| | | Lambs ... ... ... | |
| Ditto Shorn ... ... | | Calves ... ... 3 | 6 — 5 0 |
| | | Pigs ... ... 2 | 10 — 3 6 |

Beasts, 3763; Sheep and Lambs, 20,640; Calves, 145; Pigs, 280.

Friday, Jan. 31.

The supply of Beasts is small—fully adequate, however, to the demand. Trade is exces-ively dull, and Monday's prices are barely supported. The number of Sheep is very small, as is usual at this time of year. There are but few buyers, and prices are no better. Calves are more plentiful, the average quality is middling. Prices are considerably lower than on Monday, and several remain unsold. From Germany and Holland we have 48 Beasts, 180 Sheep, and 140 Calves; from Norfolk and Suffolk, 200 Beasts; 100 from the northern and midland, and 80 milch cows from the home counties.

| Per st. of 8 lbs.—s d | s d | Per st. of 8 lbs.—s d | s d |
|---|---|---|---|
| Best Scots, Hereford, &c. ... 3 | 4 to 3 8 | Best Long-wools . 3 | 6 to 3 10 |
| Best Short-horns 3 | 2 — 3 6 | Ditto Shorn ... ... | |
| 2d quality Beasts 2 | 4 — 2 10 | Ewes & 2d quality 2 | 10 — 3 2 |
| Best Downs and Half-breds ... 4 | 0 — 4 4 | Ditto Shorn ... ... | |
| | | Lambs ... ... ... | |
| Ditto Shorn ... ... | | Calves ... ... 2 | 8 — 4 4 |
| | | Pigs ... ... 2 | 8 — 3 4 |

Beasts, 587; Sheep and Lambs, 2020; Calves, 239; Pigs, 204.

MARK LANE.

Monday, Jan. 27.—The supply of Wheat from Essex and Kent this morning was unusually small; the former realised the terms of this day se'nnight, the latter remained unsold at a late hour. Business in foreign was of the most limited character, and excepting for particularly fine qualities late prices were with difficulty maintained.—English malting Barley is unaltered in value. Owing to a large arrival of Danish, distillers hold off from purchasing, in the hopes of coming in at cheaper rates.—Beans must be written the turn cheaper.—The value of Peas is unaltered.—The Oat trade is very heavy, and we reduce our quotations 6d. per qr.

| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 43—47 | Red ..... | 38—44 |
| — — fine selected runs...ditto | 43—48 | Red ..... | —42 |
| — — Talavera ..... | 46—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 36—50 | | |
| Barley, grind. & distil., 20s to 23s...Chev. | 27—31 | Malting . | 23—27 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 20—25 |
| Oats, Essex and Suffolk ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 20—23 | Feed..... | 17—21 |
| — Irish .....Potato | 18—22 | Feed..... | 16—19 |
| — Foreign .....Poland and Brew | 18—23 | Feed..... | 16—20 |
| Rye ..... | 23—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..20s to 26s.....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Wind- | 37—43 | Longpod | 27—33 |
| — Foreign .....Small | 23—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler- | 24—27 | Suffolk... | 27—29 |
| — Maple.....27s to 30s .....Grey | 24—26 | Foreign . | 25—33 |
| Maize .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 36—40 | | |
| — Suffolk .....ditto | 28—36 | Norfolk . | 28—36 |
| — Foreign .....per barrel | 18—24 | Per sack | 27—34 |

Friday, Jan. 31.—The arrivals of foreign Wheat since Monday amount to 29,210 qrs. and the attendance of buyers both on Wednesday and to-day being very limited, sales have been restricted, and where forced some concession in price has been necessary. Having scarcely any demand for spring corn prices must be considered entirely nominal.—Flour continues a dragging sale at our quotations.—Polish Odessa Wheat afloat is held at 34s. to 35s., and Galatz Maize at 30s. to 31s. per qr. Our advices, both foreign and English, represent the trade of the past week as continuing very depressed and dull.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Dec. 21..... | 39s 5d | 23s 1d | 17s 1d | 23s 1d | 27s 8d | 28s 2d |
| — 28..... | 38 10 | 23 5 | 16 6 | 22 8 | 27 5 | 28 1 |
| Jan. 4..... | 38 10 | 24 5 | 16 6 | 22 8 | 26 5 | 28 1 |
| — 11..... | 38 1 | 22 9 | 17 2 | 22 1 | 26 9 | 27 0 |
| — 18..... | 38 0 | 22 8 | 16 9 | 24 8 | 26 7 | 26 11 |
| — 25..... | 38 5 | 22 7 | 16 7 | 23 2 | 26 4 | 27 5 |
| Aggreg. Aver. | 38 5 | 23 1 | 16 10 | 23 10 | 27 10 | 27 7 |
| Duties on Foreign Grain | 1 0 | 1 0 | 0 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Dec. 21. | Dec. 28. | Jan. 4. | Jan. 11. | Jan. 18 | Jan. 25. |
|---|---|---|---|---|---|---|
| 39s 5d | — | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |
| 38 1 | ... | ... | ... | ... | ... | ... |
| 38 0 | ... | ... | ... | ... | ... | ... |
| 38 0 | ... | ... | ... | ... | ... | ... |

Liverpool Friday, Jan. 24.—The arrivals of grain and Flour since Tuesday have not been of importance, and, with a slack demand, prices generally have undergone no change. There was no activity in the corn market to-day. Wheat and Flour were held with much firmness, and late prices were quite supported. Oats and Oatmeal were without change in value. Egyptian Beans were 6d. per qr. cheaper. Barley and Peas were neglected. Indian Corn was more in request than for several market days, and an advance of fully 6d. per qr. was established.—Tuesday, Jan. 28.—The supplies of British grain and Flour are still insignificant. The foreign arrivals this week are fair. At this morning's market there was a fair attendance of town and neighbouring millers. Good fresh samples of English and foreign Wheat were in request, at full prices, but every other description moved slowly. Sack and barrel Flour were taken moderately, at similar rates as on Tuesday last. Several parcels of Indian Corn were bought for Ireland, and the stands were well cleared of this article, at an advance of fully 1s. per qr. on the price of this day se'nnight; 31s. per 480 lbs. was paid for good mixed American, and prime yellow is now held for 31s. 6d. to 32s. Oats, Barley, Beans, and Peas were in limited demand, and prices remain unaltered.


HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in the Gardeners' Chronicle of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. Hartleys, and sold by messrs. James Phillips & co., 116, Bishopsgate street."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

| | | | | | |
|---|---|---|---|---|---|
| 8 by 6 under 10 by 8 | ..... | 4½d. | ; 10 by 8 under 14 by 10 | ..... | 5d. |
| 14 by 10 under 1½ foot, not above 20 inches long | | | | | ...5½d. |
| 1½ foot | — 3 feet | — 30 | — | | ...6d. |
| 3 feet | — 4 feet | — 30 | — | | ...6½d. |
| 4 feet | — 5 feet | — 35 | — | | ...7d. |

PACKED IN BOXES of 50 feet each.

| | | | |
|---|---|---|---|
| 6 by 4 and 6½ by 4½ | .....12s. 0d. | 8 by 6 and 8½ by 6½ | .....15s. 0d. |
| 7 by 5 and 7½ by 5½ | .....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 | .....16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

| Sizes. Inches. | | | Inches. | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|
| | | Under 6 | by 4 | at | 1½d. is | £0 12 6 |
| From 6 | ,, 4 | ,, 7 | ,, 5 | ,, | 2d. ,, | 0 16 8 |
| 7 | ,, 5 | ,, 8 | ,, 6 | ,, | 2½d. ,, | 0 18 9 |
| 8 | ,, 6 | ,, 10 | ,, 8 | ,, | 3d. ,, | 1 0 10 |
| 10 | ,, 8 | ,, 12 | ,, 9 | ,, | 2½d. ,, | 1 2 11 |

Larger sizes, not exceeding 40 inches long.

| | | | | |
|---|---|---|---|---|
| 16 oz. from | 3d. to 3½d. | per square foot, | according | to size. |
| 21 oz. ,, | 3½d. | 5d. | ,, | ,, |
| 26 oz. ,, | 3½d. | 7½d. | ,, | ,, |

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sashes is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to James Hetley and Co., 56, Soho-square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12s. each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13s. each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15s. each.

Large sizes, 16 oz., 2d. and 2½d. per foot.

Large sheets, to 240 and 300 feet cases 2½d. to 2¾d. per foot.

16s. per box; or ½d. per foot if less than one box be taken:

| | | | |
|---|---|---|---|
| 11 inches by 8 inches | | 13 inches by 9 inches | |
| 12 ,, by 8 ,, | | 12 ,, by 10 ,, | |
| 12 ,, by 9 ,, | | 14 ,, by 10 ,, | |

Boxes charged 1s. each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other house can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| Not above 15 inches long ... ... | ⅛ in. thick. 0s. 6d. | ¼ in. thick. 0s. 11d. |
|---|---|---|
| Above 15 inches and not above 35 ... | 0 8 | 1 1 |
| ,, 35 ,, ,, 50 ... | 0 9½ | 1 3 |
| ,, 50 ,, ,, 75 ... | 1 0 | 1 5 |
| ,, 75 ,, ,, 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

| | | | |
|---|---|---|---|
| 16 oz. sheet ... ... ... | 0s. 5d. | 26 oz. sheet ... ... ... | 0s. 9d. |
| 21 oz. ,, ... ... ... | 0 7 | 32 oz. ,, ... ... ... | 0 11 |

SUPERIOR ROUGH PLATE TILES.

| | | | |
|---|---|---|---|
| ⅛ inch ... ... ... ... | 0s. 10d. | ⅜ inch ... ... ... ... | 1s. 7d. |
| ¼ inch ... ... ... ... | 1 3 | ½ inch ... ... ... ... | 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our prices 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the purity of Milk: four tubes in frame, 6s. each. Wasp Traps, 4s. per dozen. Shades for Pianofortes, 9d. each.

MILK PANS 2s. to 6s. each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 1d. each; Pastry Slabs; Glass Plates, in wooden frames, for pine and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1s. for each packing case will be made which we think will be an inducement for parties to retain them; but if not back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (amongst other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN, LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Greenhouses and Garden purposes, may be had (safely packed) for any part of the Kingdom, or for exportation, on application at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10s. 6d. per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalised, Sulcated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

---

HALL'S GARDEN NETS, LIGHT, STRONG, AND DURABLE—a good protection against Frost, Hail, and Wind, also from Wasps and Insects.

No. 1. } 56 inches wide, per yard ... ... 6d.
,, 2. } which is 4d. a square yard.
,, 3. 56 inches wide, per yard ... ... 8
,, 4. do. do. do. ... ... 8

Agents for Sale—London: Mr. Benjamin Edgington, 2, Duke-street, Southwark; Messrs. Charlwood and Cummins, 14, Tavistock-row, Covent Garden; Messrs. Minier, Nash, and Nash, 60, Strand; Mr. J. Carter, 238, Holborn; Mr. W. Clark, 25, Bishopsgate-street, Within; Messrs. Hurst and McMullen, Leadenhall-street; Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street.—Peter Lawson and Son, Edinburgh; T. D. Watkinson, Market-place, Manchester; H. Bigland & Co., do., do.; F. and J. Dickson and Co., 106, Deansgate, do.; John Shaw, 19, Oxford-street, do.; F. and J. Dickson, Chester; H. J. Oldroyd, High-street, Shrewsbury; Fisher, Holmes, and Co., Sheffield.

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GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

---

COCHIN CHINA FOWLS.

Some Pure Bred COCHIN CHINA COCKS for sale; weigh from 7½lbs. to 8lbs. each, age 8 months, price 30s. each.—Direct A. C. S., Post-office, Andover.

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FIRE IN THE HOUSES OF PARLIAMENT, JAN. 27.
FIRE AT MESSRS. BOUSFIELD'S, HOUNDSDITCH, JAN. 27.
FIRE AT THE NEW CROSS RAILWAY STATION, JAN. 28.

THE FIRE in the CLOCK-TOWER of the HOUSES PARLIAMENT was caused by ignition of a quantity of timber stored in it, and it was nearly an hour before the fire could be subdued, with the help of seven or eight Engines in the immediate vicinity of the Thames—a similar fire in a two-story house erected for the purpose at Vauxhall, and filled with timber and shavings saturated with tar and turpentine has been extinguished by PHILLIPS' PATENT FIRE ANNIHILATORS in a few minutes see *Times* and other Morning Papers of the 18th January last); this experiment will satisfy the most sceptical that the fire in the Houses of Parliament, as well as the fires in Houndsditch and at the New Cross Station could have been checked and extinguished at their commencement, by the use of the FIRE ANNIHILATORS. Further to satisfy public inquiry as to the efficacy of the e Machines, a demonstration will take place on Thursday next, the 6th February, at 4 o'clock, P.M., precisely. Orders for admission may be obtained on application to the Secretary at the Company's Offices, 105, Leadenhall-street.

FIRE ANNIHILATORS.

PHILLIPS' PATENT MACHINES for EXTINGUISHING FIRE may be had at the Offices of the Company, 105, Leadenhall-street, City, nearly opposite the India-house, complete with all necessary apparatus, at the following prices, viz.—2l. 2s., 3l., 4l., 5l., and 6l.—N.B. The Machines are of such simple construction that a child can use them, and the vapour emitted from them enables a person to breathe with safety in a room previously filled with flames and smoke, while without it he would be liable to be suffocated

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BAROMETERS FOR THE MILLION.

BROWN'S REGISTERED BAROMETER is sold by HENRY BAKER, INSTRUMENT MAKER TO THE BOARD OF ADMIRALTY, 90, Hatton-garden, London, price 10s. 6d. This unique little instrument has given great satisfaction, the price placing it within the reach of persons who would not be able to purchase a more expensive article. Persons purchasing a dozen supplied at the wholesale price, for cash only. Night Thermometers for registering the extreme of cold, 5s.

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THE REGISTERED ROSE GIRDLE-LABEL.—A Rose Grower (having found, by long experience, the present method of securing Standard Plants by wires of any kind, and cord or rope of whatever description, to be highly injurious to the bark, and otherwise detrimental to the growth of the plant, besides being clumsy, troublesome, and ineffectual), has the pleasure of submitting to Amateurs and the Public a new Invention which he has recently introduced, for the more efficient and neat fastening of Roses and other Standard Plants to their Stakes.

The REGISTERED ROSE GIRDLE now offered to the Public, besides the advantage of being well adapted for a neat and permanent Label to the plant which it secures, will greatly diminish the time and trouble attending the mode hitherto pursued in the tying of Standard Plants to their stakes. The utility of this invention, while combining two important objects (till now very imperfectly attained), cannot but entitle it, from those who wish a neat and permanent Label as well as an efficient fastener for their Standard Plants, to an additional claim. It is neat as it is efficacious, and as cheap as it is useful.

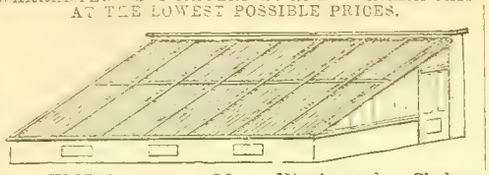
EXTRACT FROM "FLORIST'S DIRECTORY."—"We consider it one of the most useful articles that have been invented—it forms a permanent Label as well as an unerring fastening, and we shall be disappointed if it is not generally used for Roses and Standard Cytisuses. We shall adopt it for everything we can apply it to in the garden."

Sold, wholesale and retail, by WILLIAM HAMILTON, Seedsman and Florist, 156, Cheapside, London; and to be had of all Nursery and Seedsmen. Price 1s. 6d. per dozen.

---

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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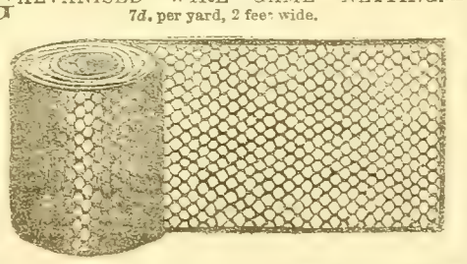
STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wirework, &c

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GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



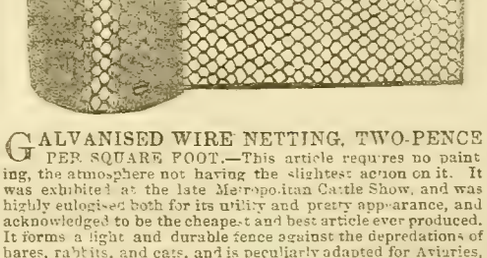
| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7d. per yd. | 7½d. per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6¼ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1¾-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1¾-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1¾-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry: and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

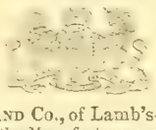
| | | | |
|---|---|---|---|
| 12 inches wide | 3d. per yard. | 30 inches wide | 7½d. per yard. |
| 18 ,, ,, | 4½d. ,, | 36 ,, ,, | 9d. ,, |
| 24 ,, ,, | 6d. ,, | 48 ,, ,, | 1s. ,, |

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; it galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each, Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

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CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

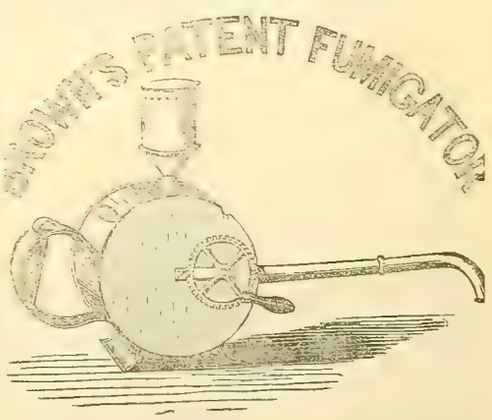
The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

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PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

---

DR. S. NEWINGTON'S PATENT DIBBLES, HAND-HOE CULTIVATORS, DRILLS, and other Agricultural Implements for effecting a more scientific system of cultivation, and insuring more abundant crops. Early orders must be given to ensure early execution. An illustrated Catalogue, &c., may be obtained on application to Messrs. DUFAUR and Co., sole manufacturers, 21, Red-lion-square, London.

---

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the works in the Grove, Southwark, London.

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THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the teeth. Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designating unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. ROWLANDS ODONTO, or PEARL DENTRIFICE, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

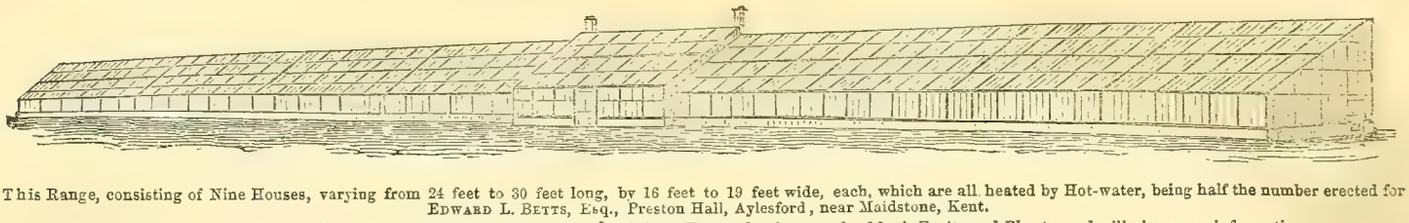
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**BY HER MAJESTY'S ROYAL LETTERS PATENT.**

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| Purchaser's selection of 12 for ... | ... | ... | ... | 14s. | 0d. |
| Ditto | ditto | 18 | ... | ... | ... | 16 | 0 |
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| Ditto | ditto | 48 | ... | ... | ... | 34 | 0 |

These prices will not apply where more than one or two of a sort are selected.

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| 12 Climbing Roses for ... | ... | ... | ... | 6s | 0d. |
| 12 Standard Roses... | ... | ... | ... | 15 | 0 |

N.B. Descriptive Catalogues on application.

Archibald Godwin, Rose Grower, Ashbourne, Derbyshire.

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the Stanwick Nectarine. Upon examining the young plants in Mr. Rivers's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. William Brailsford, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. William Brailsford, who, upon their receipt, will return an order upon Mr. Rivers for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

SUTTON'S LETTUCES AND CUCUMBERS.

JOHN SUTTON AND SONS, Seed-Growers, Reading, Berks, have much pleasure in referring their friends to the description of their superior sorts of Lettuces, given by the Editor of the *Gardeners' Chronicle*, in March last, which will be seen in Messrs. Sutton's advertisement on the last page of the *Gardeners' Chronicle*, of January 25. Also, the following extract from a letter just received:—

"Messrs. Sutton and Sons:—Gentlemen,—I have grown all the sorts of Cucumbers which I have seen advertised, but the 'Conqueror of the West' is far before any other in my estimation. I have now grown it several years, and intend to grow none other this season. Your Lettuce, too, is excellent, and certainly I have never seen any sort so large. I have observed that it is not so apt to run to seed as others, which renders it very valuable in hot dry summers, and for autumn use."—*From Mr. Smithers, Head Gardener to the Earl of Carnarvon, High Clere, near Newbury.*

*N.B. These Lettuce Seeds will be sent free by post on receipt of postage stamps in payment, in good-sized packets, at 1s. each; but the stock having become very short, they cannot now be sold by the ounce.*

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AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5l., 7l. 10s., and 10l. per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

SILVER SAND, PEAT, &c.—REDUCTION OF PRICE.

EDWARD KEMP begs to return his grateful acknowledgments to his Friends and Patrons for favours hitherto received, and informs them that he has made considerable reduction in the price of Silver Sand, which he trusts will ensure a continuance of their support. Particulars will be forwarded on application addressed Edward Kemp, 16, Ann's-place, East-street, Old Kent-road, London.

N.B. No connection with any other party.

SEED.—Any persons having good Seed of fine kinds of PRIMULA SINENSIS, may meet with a purchaser by addressing a line, stating quantity, colour, and price, to Y. Z., post-office, Brompton, near London.

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TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. J. Ronalds, to offer to public competition, by Auction, on the premises, the Butts and Twolands Nurseries, about the first week in March, the whole of the remaining NURSERY STOCK, consisting of a rich assortment of Fruit and Forest Trees, Evergreens, Ornamental and Deciduous Shrubs, American Plants, &c.—May be viewed, and Catalogues had, prior to the sale, of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FARM TO LET—COUNTY MEATH.

TO BE LET, from the 25th day of March next, the TOWNLAND OF PONDERLOUGH, containing about 198 acres Irish plantation measure, on which stands the Carman's Stage at "The Bush," on the great northern road, within 10 miles of Dublin.

This farm being within two miles of the Dunshaughlin Workhouse, is well situated for the supply of milk to that establishment. The land is also suitable to the growth of Flax and Wheat, and is capable of great improvement in the hands of an industrious, intelligent farmer.

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Application to be made to John Maher, Esq., Ballinshula, Enniscorthy; Francis Murphy, Esq., Kilcairn House, Navan; or Wm. O'Hara, Esq., 13, Upper Merrion-street, Dublin.—Jan. 25th, 1851.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

"WHERE SHALL WE GO THIS MORNING?" Such is usually the query over the breakfast-table with visitors to London. Let us answer the question. If you can admire the most beautiful specimens of Papier Mache manufacture which are produced in this country, displayed in the most attractive forms—if you want a handsome or useful Dressing-case, Work-box, or Writing-desk—if you need any requisite for the work-table or toilet—or if you desire to see one of the most elegant emporiums in London, then you will go to MECHI'S, 4, Leadenhall-street, near the India House, in whose show-rooms you may lounge away an hour very pleasantly.

This day is published, Part III., price 7d., of the COTTAGE GARDENER'S DICTIONARY. Edited by G. W. Johnson, Esq., Conductor of the "Cottage Gardener," &c. Assisted by Messrs. Beaton, Errington, Fish, Appleby, Barnes, and Weaver. The work will form, when completed, a handsome volume of 800 pages, illustrated with Woodcuts.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 6—1851.] SATURDAY, FEBRUARY 8. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agriculture, improvement in | 91 *b* | Grafting | 85 *c* |
| — Irish | 92 *a* | Grapes, shows of | 87 *c* |
| Agricultural Society of England | 92 *b* | Grape scissors | 87 *a* |
| America, gardening in | 88 *a* | Hepatica | 86 *c* |
| Arums | 88 *c* | Lands, waste, to plant | 86 *b* |
| Bees | 87 *a* | Latch | 93 *c* |
| Begonia Fuchsioides | 87 *a* | Leaves, dead | 87 *c* |
| Birds, British song | 84 *c* | Linnean Society | 87 *a* |
| Bostrichus capucinus | 85 *b* | Manures, price of | 93 *a* |
| Cabbage, Shantung | 87 *c* | Market gardening | 84 *b*—87 *c* |
| — Drumhead | 93 *b* | Peat, value of | 83 *c* |
| Calendar, Horticultural | 88 *a* | — charcoal | 84 *b* |
| Chapman's (Mr.) Vauxhall | 87 *c* | Plants and nitrogen | 86 *c* |
| Currant trees | 83 *b* | Poultry | 91 *c* |
| Dairy management | 91 *c* | Pusey's (Mr.), speech | 89 *b* |
| Devon, trip to | 90 *a* | Rain | 87 *b* |
| Drain pipes | 91 *b* | Season, mildness of | 87 *b* |
| Edgings for walks | 86 *a* | Sheep, to shed feed | 90 *c* |
| Farming, Scotch | 89 *b* | Skylark | 87 *a* |
| Fences | 93 *b* | Timber, to preserve | 86 *c* |
| Fruits, useful | 86 *b* | Trees, old | 87 *a* |
| Garden ornaments | 86 *c* | Tulips, early | 86 *a* |
| Gardening, market | 84 *b*—87 *a* | Walks, edgings for | 86 *a* |
| — in America | 88 *a* | Weather, the | 93 *a* |
| Gooseberry trees | 83 *b* | Wheat, blight in | 92 *a* |



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N.B.—All the New Vegetable and Flower Seeds advertised from time to time in this Paper can be obtained from us, at the regular current prices.

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| 50 ditto ditto | 4 | 0 | 0 |
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| Gordon's White Spine, ditto ... ... ... | 1 | 6 | |
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This last is the best for winter cultivation.

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E. T. has also seeds of the following superb Melons, which he can with confidence recommend:

| | | | |
|---|---|---|---|
| Camerton Court Green-flesh ... ... | 1*s.* | 0*d.* | per packet |
| Queen Melon ... ... ... ... | 1 | 0 | ,, |
| Blackall's Green-flesh ... ... ... | 1 | 0 | ,, |
| Bailey's Green-flesh... ... ... ... | 1 | 0 | ,, |
| Bowood Green-flesh... ... ... ... | 1 | 0 | ,, |
| Beechwood Green-flesh ... ... ... | 1 | 0 | ,, |
| Windsor Prize ditto... ... ... ... | 1 | 0 | ,, |
| Emperor ... ... ... ... | 1 | 0 | ,, |
| Fleming's Trentham Hybrid ... ... | 1 | 0 | ,, |
| Duncan's Green-flesh do. Improved ... | 1 | 0 | ,, |
| Hampton Court Green-flesh ... ... | 1 | 0 | ,, |
| Egyptian do. do. Improved ... ... | 1 | 0 | ,, |

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.
Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

SUTTON'S LETTUCES AND CUCUMBERS.

JOHN SUTTON AND SONS, SEED-GROWERS, Reading, Berks, have much pleasure in referring their friends to the description of their superior sorts of Lettuces, given by the Editor of the *Gardeners' Chronicle*, in March last, which will be seen in Messrs. SUTTON'S advertisement on the last page of the *Gardeners' Chronicle*, of January 25. Also, the following extract from a letter just received:—
"MESSRS. SUTTON AND SONS:—Gentlemen,—I have grown all the sorts of Cucumbers which I have seen advertised, but the 'Conqueror of the West' is far before any other in my estimation. I have now grown it several years, and intend to grow none other this season. Your Lettuce, too, is excellent, and certainly I have never seen any sort so large. I have observed that it is not so apt to run to seed as others, which renders it very valuable in hot dry summers, and for autumn use."—*From Mr. Smithers, Head Gardener to the Earl of Carnarvon, High Clere, near Newbury.*
*N.B. These Lettuce Seeds will be sent free by post on receipt of postage stamps in payment, in good-sized packets, at* 1*s. each; but the stock having become very short, they cannot now be sold by the ounce.*
The CONQUEROR OF THE WEST CUCUMBER is 2*s.* 6*d.* per Packet, or three seeds for 1*s.*

SEEDS OF THE BEST QUALITY, CARRIAGE FREE.

J. C. WHEELER AND SON have had the honour of being appointed Seedsmen to the Gloucestershire Agricultural Association. Their Priced List of Seeds for this season is just ready, and will be forwarded free by post to any address on receipt of two postage stamps. This Catalogue is not a long list of useless names; it is really what it professes to be, a List of the best Seeds in cultivation, and will be found a safe guide to all purchasers.
Dr. LINDLEY, in the *Gardeners' Chronicle*, of the 2d March last, strongly recommends it in the following terms:
"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."
J. C. WHEELER and SON deliver their Seeds CARRIAGE FREE.
Kingsholm Nursery; and 99, Northgate-street, Gloucester.

AN UNLIMITED STOCK OF REMARKABLY FINE SEEDLING AND TRANSPLANTED LARCHES AT REDUCED PRICES.

WM. WOOD AND SON, being very extensive holders of the above, and all other kinds of seedling and transplanted Forest trees, will be happy to furnish prices on application.
N.B. Catalogues of Vegetable, Flower, and Agricultural Seeds, also of Nursery Stock, will be forwarded free.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CHEAP PLANTING.

LUCOMBE, PINCE, AND Co. have a large quantity of fine LARCH, SPRUCE FIR, THORNS for Hedges, LAUREL, LAURESTINUS, PORTUGAL LAUREL, &c., all of very superior quality, of various sizes, which, owing to the Lease of one of their Nurseries on which they now grow expiring at Lady-Day next, will be sold at greatly reduced prices.—For particulars of size and prices, apply to the Exeter Nursery, Exeter.

SUPERB RANUNCULI.—The present being the usual month for planting the Ranunculus, we beg to recommend the following selections.
*The new varieties have been selected with great care, of first-rate sorts, from immense quantities of seedlings, and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.*

| RANUNCULUS.—*Free by post.* | £ | *s.* | *d.* |
|---|---|---|---|
| 50 Splendid new varieties, with names ... ... | 2 | 0 | 0 |
| 25 do. do. do. ... ... | 1 | 2 | 6 |
| 100 do. varieties from new and other best named sorts ... ... ... ... ... ... ... | 3 | 10 | 0 |
| 50 fine named varieties ... ... ... ... ... | 0 | 15 | 0 |
| 100 finest mixed ... ... ... ... ... ... | 0 | 10 | 0 |
| 100 fine do. 5*s.*, or free by post, 6*s.* | | | |
| ANEMONES; by post, 3*s.* per 100 extra. | | | |
| 100 new and superb named double varieties ... ... | 1 | 14 | 0 |
| 50 do. do. 18*s.*; 25 do., 10*s.*; or, by post ... | 0 | 11 | 0 |
| 100 finest large mixed double ... ... ... ... | 0 | 10 | 6 |
| 100 fine do. do. ... ... ... ... | 0 | 7 | 6 |
| Fine new mixed single, per lb. ... ... ... | 0 | 4 | 0 |

Fine double varieties, per dozen: Apenina, light blue, 3*s.*; Cælestina, blue, 3*s.* 6*d.*; Coleur de Sang, red, 3*s.*: Cramoise Royale, scarlet, 3*s*; Josephine, crimson, 3*s.*; Prince Albert, blue, 3*s.*; Rose Surpassante, 3*s.*; Scarlet Superbe, 3*s.*; True Blue, 3*s.* 6*d.*
GLADIOLUS—Autumn varieties of the Floribundus and Gandavensis habit:—

| | Each. | | Each |
|---|---|---|---|
| Albus roseus ... ... | 1*s.* 6*d.* | Pscittacinus | 1*s.*6*d* p.doz. 0*s.* 2*d* |
| Autumnalis, orange ... | 1 0 | ,, Sanguineus, dark, | 7*s.* 6*d.* per doz.... 0 9 |
| Brenchleyensis, scarlet | 3 6 | Splendens, rich, scarlet | 3 6 |
| Floribundus, | 2*s.* 6*d.* p.doz. 0 3 | Vernalis Spicatus ... | 1 6 |
| Gandavensis, | 5*s.* p. doz. 0 6 | | |

Copies of our Autumn Root Catalogue may still be had.
Remittances required from unknown correspondents.
BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

LILIUM LANCIFOLIUM, RANUNCULUSES, ANEMONES, AURICULAS, AND PELARGONIUMS.

HENRY GROOM, CLAPHAM RISE, near LONDON, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS. He begs to say that this is a good season of the year to make a selection of the various kinds. Ranunculuses and Anemones should be planted this month.

| | £ | *s.* | *d.* |
|---|---|---|---|
| LILIUM LANCIFOLIUM ALBUM, each, from 1*s.* to | 0 | 2 | 6 |
| ,, ,, PUNCTATUM, do. ... 3*s.* to | 0 | 10 | 6 |
| ,, ,, ROSEUM, do. ... ... 3*s.* 6*d.* to | 0 | 10 | 6 |
| ,, ,, RUBRUM, or SPECIOSUM, do. 3*s.*6*d.* to | 1 | 1 | 0 |
| ,, ,, CRUENTUM, do. ... ... 5*s.* to | 0 | 10 | 6 |
| ,, JAPONICUM, do. ... ... ... 5*s.* to | 0 | 7 | 6 |
| A new collection of HYBRID SEEDLING LILIES, 6 sorts, named for ... ... ... ... ... | 0 | 15 | 0 |
| 100 RANUNCULUSES, in 100 superfine sorts, named Superfine mixtures, per 100, from 5*s.* to 21*s.* | 2 | 10 | 0 |
| 100 ANEMONES, in 50 superfine sorts, named ... Superfine mixtures (double), per 100, from 6*s.* to 10*s.*6*d.* | 2 | 2 | 0 |
| 25 AURICULAS, in 25 superfine sorts, named ... Good named varieties, per dozen, 18*s.* | 2 | 10 | 0 |
| 25 PELARGONIUMS, in 25 superfine sorts, named... Fine named varieties, per dozen, from 12*s.* to 18*s.* | 3 | 3 | 0 |
| AMARYLLIS from RIO JANEIRO, without name, fine large bulbs. per dozen ... ... ... ... | 2 | 2 | 0 |
| LILIUM LANCIFOLIUM ALBUM, excellent for planting in shrubberies, being perfectly hardy, per 100 ... ... ... ... ... ... ... | 3 | 15 | 0 |

A Catalogue will be forwarded on application.

DOUBLE ITALIAN TUBEROSE ROOTS, 3*s.* PER DOZEN.

ROBERT HALL, 63, South Audley-street, Grosvenor-square, facing the chapel. Postage Stamps taken in payment.
R. H. begs to remark that his TUBEROSE ROOTS have been left in the ground a sufficient time to mature, instead of, as is too generally the case, being hurried out to secure an early market when only about one-half of them will bloom. Also small Yorkshire Breakfast Hams, 10*d.* per pound.

CLEMATIS TUBULOSA, FROM MONGOLIA.

HUGH LOW AND Co. having a considerable stock of the above-named beautiful free flowering, hardy, suffruticose plant, producing splendid masses of purple flowers during the autumn months, offer strong plants at 1*s.* 6*d.* each, or 12*s.* per dozen.
They also have for sale very fine, healthy bushy plants of CITRUS JAPONICUS, or as it is commonly called, OTAHEITE ORANGE. Wherever this plant is known, it is universally admired, on account of the facility with which it can be made to produce fruit in abundance in a very small state. Price 42*s.* per dozen.—Clapton Nursery, London.

NEW YELLOW WEIGELA MIDDENDORFFIANA, FROM SIBERIA.

HUGH LOW AND CO. have the pleasure to announce that they will be prepared to send out, in June next, plants of the above-named magnificent Shrub, alike suitable for early forcing or the shrubbery, it being perfectly hardy. With the exception of the colour of the flowers, which is a beautiful pale yellow, it bears considerable resemblance to the universally admired Weigela rosea.
Price per plant, 10*s.* 6*d*, with the usual discount to the Trade when more than one is ordered.
Clapton Nursery, London, Feb. 8.

GERMAN FLOWER SEEDS.—Our Selections of the above showy Ornaments of the Flower Garden having for several years given general satisfac ion, we hereby announce the arrival of our annual supply, selected by us in Erfurt from those personally known to us as the most select and careful growers. It includes the most distinct varieties of Stocks, Asters, Balsams, Larkspurs, Zinnias, Wallflowers, and Hollyhocks. They will be made up in 5s. 10s., 20s., and 40s. packets, and each packet will contain part of the whole collection, if not otherwise ordered by th purchaser.

We have also a carefully selected assortment of all the leading and most approved varieties of Vegetable and Flower Seeds, which we offer at the current prices.

A Catalogue of General Nursery Stock stamped, free by post, may be had on application.

HUGH Low and Co., Clapton Nursery, London.

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LIBOCEDRUS CHILIENSIS, Endlicher (THUJA CHILIENSIS, Don).—A noble Evergreen Conifer, a native of the Andes of Chili and the southern provinces of Antucco and Valdivia, growing to the height of 65 to 80 feet. Sir Wm. Hooker says—

"*It is a tree of great beauty, and well worthy of being introduced into our gardens. There can be little doubt, from its native regions (inhabiting the same elevations on the mountains as the Araucaria imbricata), that it will thrive well in the open ground.*"

The following is an extract from a letter lately received from the well known botanical collector Mr. Bridges:—"In one of the late numbers of the *Gardeners' Chronicle* I see some doubts expressed relative to the Thuja Chiliensis being hardy in England. It will, in my opinion, be perfectly so, judging from what I have seen of the plant in the province of Colchagua, south lat. 35°, which is its most northern limit. It is found near the snow, and where it freezes, I should say, quite as severely as it does in the vicinity of London. Where the tree grows alone it is very graceful, the lower boughs are even on the ground, and it elevates itself to a great height. The timber is esteemed by the natives for building purposes. I have myself seen it as far south as 42°, and I learn it is found in the vicinity of Cape Horn."

Fine healthy well-established one-year-old plants, from seed, in single pots, 7s. 6d. each, three for 21s., or 4l. per dozen.

HUGH Low and Co., Clapton Nursery, London.

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MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2s. 6d. per lb. Also, his superior dark-green Savoy, 1s. 6d. per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.

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AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5l., 7l. 10s., and 10l. per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

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RENÉ LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, begs to draw the attention of the Public to his still unrivalled collection of PEAR TREES, not yet surpassed in Europe, in which will be found all the very best varieties insured for the season required. Trees may be had already formed, either pyramidal or for espalier, in unusually fine and healthy condition, such as will give the most ample satisfaction to both purchaser and R. L. The price has been much reduced, and the quantity of Trees R. L. possesses enables him to supply the trade with guaranteed sorts equal to any house on the Continent, having given the greatest satisfaction for several years. Foreign correspondents will find a very great advantage if the selection is left to R. L., as they will be cheaper, and none but the best sorts will be supplied.

R. L.'s Descriptive Catalogue, which has been found the best and most correct yet published, is only to be had at his Nursery, Jersey, price 1s. 6d. and 6d. extra for postage.

A very great reduction has been made in the transit by steamers to all parts of England, so that R. L. can supply Trees cheaper than any other grower.

A fine collection of Roses, Camellias, and yellow Picotees.

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HORTICULTURAL AND AGRICULTURAL SEED ESTABLISHMENTS, MAIDSTONE, AND ADJOINING THE SOUTH-EASTERN RAILWAY STATION, ASHFORD.

WM. JAS. EPPS begs to state that he has taken the Nursery and Seed-growing business late in the occupation of Mr. James Cutbush, Sen., adjoining the Railway Station, Ashford, where he is making extensive alterations for carrying on the above business, in conjunction with his Nursery and Seed Establishment, Maidstone. The proximity of the Ashford business to the Romney Marsh (which is the largest and by far the best seed-growing district in the kingdom), will enable him to offer many advantages; great attention will be paid in selecting and growing the stocks true to their kind. He is now prepared to receive commissions from any respectable wholesale house. The prices, per contract, this year are exceedingly low, and any further information upon this subject may be had upon application, also his wholesale and retail List of Seeds.

W. J. E. has a large and splendid stock of the following Seeds, which he can warrant to any extent, and at very low prices—terms, three months, upon satisfactory reference—Skirving's Purple-top Swede, Laing's Purple-top Swede, Mangold Wurzel, White Carrot, Parsnip, Champion of England Peas, Imperial, Victoria Marrow, Blue Prussian, Broccoli, and Cabbages of sorts; Kohl Rabi and Mustard. All seeds carriage paid to London.—Feb. 1.

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J. G. WAITE'S CATALOGUE OF VEGETABLE SEEDS is now Ready, with Prices to suit the times, and can be had on application.

181, High Holborn, London.

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J. G. WAITE'S CATALOGUE OF FLOWER SEEDS is also Ready, and can be had on application.

181, High Holborn, London.

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SION-HOUSE DWARF FRENCH BEAN, new, early, buff speckled. This is the earliest Bean known, and can be had in any quantity, price 21s. per bushel.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London, where every other kind of Seed in cultivation can be had, on better terms than at any other House in the Trade.

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RHUBARB ROOTS TRUE TO NAME.—Myatt's Victoria, 6s. per doz.; Myatt's Linnæus, 9s. per doz.; Mitchell's Albert, 9s. per doz.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

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STRAWBERRY PLANTS.—Kidley's Goliah, 10s. per 100; Myatt's Eleanor, 4s. per 100.—At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

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NEW GIANT ASPARAGUS PLANTS, 5s. per 100. LARGE GIANT SEAKALE PLANTS, 8s. per 100.

At J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

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PEARS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, Clarendon Nursery, St. Helier, Jersey, Channel Islands, begs to offer the following new PEARS, of the first merit:

BEURRE CLAIRGEAU, bearing the name of the raiser of this valuable Pear.—A very large fruit, perfectly melting, and a late fruit of first merit. Price 5s.

BEURRE D'HIVER.—Also large, and keeps till April, perfectly melting, hardy, and great bearer. Price 5s.

BEURRE NANTAIS.—The earliest Pear known, excellent, and great bearer. Price 2s. 6d.

The above R. L. can strongly recommend. None will be forwarded to unknown correspondents except on the receipt of cash or reference.

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PEAR AND QUINCE STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, St. Helier, Jersey, begs to inform the Public and the Trade that he has the following, of very superior growth, to dispose of:—A few thousands QUINCE, very free and healthy, fit to receive the buds next July, at 40s. per 1000; also PEAR Stocks, of superior growth, two years transplanted, and very vigorous, at 40s. per 1000; smaller ditto, transplanted, and very vigorous, at 35s. per 1000.

This is an opportunity R. L. has never before offered to the Public, for his stock is totally different from the French stock, which has always given R. L. superior growth of trees.—Orders will be punctually attended to. Reference or remittance from unknown correspondents.

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THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42s. to 60s. |
| Extra superior selected Standards ... ... ... | 18s. to 24s. |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10s. to 16s. |
| Superb do. do. (for exhibition) ... | 18s. |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50s. |
| Good do. do. without names, per 100 | 30s. |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

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SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

We prove the growth of each kind before we send them out.

| | | | | |
|---|---|---|---|---|
| No. 1. | A full collection, suitable for a large establishment, for ... ... ... ... ... | | 45s. | 0d |
| No. 2. | Do., | in smaller quantities ... | 30 | 0 |
| No. 3. | Do., | ,, ,, | 20 | 0 |
| No. 4. | Do., | ,, ,, | 12 | 6 |
| No. 5. | Do., | ,, ,, | 8 | 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | | | |
|---|---|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each ... ... ... | | | | 25s. | 0d. |
| 50 | Ditto. | Ditto. | Ditto. ... ... | 14 | 0 |
| 25 | Ditto. | Ditto. | Ditto ... ... | 8 | 0 |
| Hardy kinds separate, per dozen packets ... ... | | | | 2 | 0 |
| Half hardy | Ditto. | Ditto. | ... ... | 3 | 0 |
| Greenhouse | Ditto. | Ditto. | ... ... | 4 | 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

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SURPLUS STOCK OF FOREST TREES, SHRUBS, AND FRUIT TREES, now on Sale at RENDLE'S NURSERY, Plymouth. See Advertisement, page 83, in this Paper.

Larch Firs, 3 feet, 18s. per 1000; very stout and fine Scotch Firs, 2 feet, 15s. per 1000.

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SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED and PLANT LIST for 1851 is now complete, and stamped as a newspaper, to go free by post. It is prefaced with a page of Instructions for SOWING and RAISING SEEDS, with allusions to Sorts requiring peculiar treatment, and contains the following:

PART I.—FLOWER SEEDS, consisting of lists of 422 new and most showy sorts, with colour, height, hardiness, duration of each, price per packet, and other useful information.

PART II.—VEGETABLE SEEDS, with time of sowing each kind, prices of each, and other descriptive information.

PART III.—AGRICULTURAL SEEDS, containing also much useful information.

PART IV.—ROOTS, FRUITS, BULBS, &c. for early planting.

PART V.—Contains our Descriptive Priced Catalogue Lists of Show, Fancy, Scarlet, and other Geraniums; Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica; Greenhouse, Stove, and Miscellaneous Select Plants.

PART VI.—Contains NEW PLANTS of 1851.

The following Collection will be highly approved:

| VEGETABLE SEEDS. | £ | s. | d. |
|---|---|---|---|
| A collection in full proportion, one year's supply, for a large garden, of first-rate sorts, including 24 quarts of Peas, 6 quarts Broad Beans, 10 sorts Broccoli, 6 of Cabbage, 3 of Cauliflower, 8 of Lettuce, 5 of Onion, 5 of Radish, and all other sorts in proportion | 3 | 0 | 0 |
| The same collection, in smaller quantities ... ... | 2 | 0 | 0 |
| Collection, in reduced proportion ... ... ... | 1 | 0 | 0 |
| Collection, for a small garden, of good sorts ... ... | 0 | 10 | 6 |

If any vegetables not required, enlarged quantities of others sent to make up the amount. A list of the sorts furnished if required.

| SELECT FLOWER SEEDS, Free by post, with full directions for sowing, heights, colours, &c. | s. | d. |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12 for | 5 | 0 |

| IMPORTED GERMAN SEEDS. | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3s. 6d.; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2l. and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

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KNIGHT AND PERRY have great pleasure in soliciting the attention of their Patrons to their NEW LABURNUM, L. AUTUMNALE, which, from its peculiar property of FLOWERING PROFUSELY THROUGHOUT THE AUTUMN, must be considered one of the most important as well as most beautiful acquisitions that has been made. They are supplying good plants of it at 10s. 6d. each.

KNIGHT and PERRY have also a good and healthy stock, their own growth, of most of the new and rare Trees and Shrubs, especially the former, which they have, by diligent research, collected from the Continent and other parts. Their average price is about 30s. per dozen.

EXOTIC NURSERY, KING'S ROAD, CHELSEA.

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NEW RANUNCULUSES, ANEMONES, SEEDS, &c.

CAREY TYSO, FLORIST, &c., Wallingford, Berks, begs to announce that this is the season for planting, and that he can supply strong Roots, *per post*, as under:

| TYSO'S SEEDLING RANUNCULUSES. | £ | s. | d. |
|---|---|---|---|
| 50 First-rate Show Flowers ... ... 3l. 15s. to | 5 | 0 | 0 |
| 100 Roots, superior quality, mixed ... ... 10s. to | 2 | 0 | 0 |
| SELECTIONS FROM OTHER RAISERS. | | | |
| 100 Superb named sorts ... ... ... ... 2l. to | 4 | 0 | 0 |
| 100 Fine double mixed ... ... ... 8s., 15s., and | 1 | 0 | 0 |
| Double Anemones, 50 sorts ... ... 12s. 6d. to | 1 | 0 | 0 |

IMPORTED SEEDS—German Asters, Stocks, Salpiglossis, Balsams, Hollyhocks, Poppies, Zinnias, post free, 2s. 6d. per named assortment.

New Treatise on "THE ANEMONE," for four labels; Ditto "RANUNCULUS," eight labels; CATALOGUE, 1851, two labels.

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ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

Standard Roses, in 12 superior vars., 18s. to 24s. per doz.
Dwarf Standard do. do. 12s. to 18s. ,,
Climbing Roses do. 9s. to 12s. ,,

A priced descriptive Catalogue forwarded on receipt of one postage stamp.

All packages delivered free of carriage to London.

Nurseries, Cheshunt, Herts, Feb. 8.

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NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.

ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

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MESSRS. J. AND H. BROWN'S NEW PRICED CATALOGUE OF PLANTS FOR 1851, will be sent to all Applicants, for Six Postage Stamps. It includes Orchidea, Stove and Greenhouse Plants, Roses, Geraniums, Fuchsias, Camellias, Azaleas, Conifers, &c. They also offer the following Choice Plants and Fruit Trees:—

| | s. | d. |
|---|---|---|
| Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears and Cherries, the best and most approved sorts of these respective kinds, true to name, 2s. 6d. each, or, per dozen ... ... ... | 24 | 0 |
| Untrained or Maiden do. 1s. 6d. each, or per dozen ... | 15 | 0 |
| Fine Gooseberries, Currants, Raspberries, and Filberts, per dozen ... ... ... ... ... ... ... | 3 | 0 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... | 20 | 0 |
| 25 American Azaleas, ditto ditto ... ... | 15 | 0 |
| 6 Andromedas of sorts, including floribunda ... ... | 8 | 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen ... | 8 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... ... | 12 | 0 |
| New Hardy Yellow Rhododendrons, each 7s. 6d. to ... | 10 | 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for ... ... | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort ... ... ... | 10 | 6 |
| Cryptomeria Japonica, 6 choice hardy Pinus, for ... | 10 | 0 |
| 50 Dwarf Roses, on their own roots, by name ... ... | 16 | 0 |
| Standard and half-standard Roses, per dozen, 12s. and | 15 | 0 |
| Climbing Roses, choice sorts, per dozen ... ... | 9 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots ... | 9 | 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each ... ... ... ... ... ... ... ... | 3 | 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, ditto ditto ... ... ... | 30 | 0 |
| 12 Orchidea, choice species and good plants, for ... | 30 | 0 |
| New Camellia seeds, just imported, seat free, 50 for ... | 5 | 0 |
| Flower Seeds, 18 papers, 5s.; 36 ditto, 10s., of the most approved varieties, sent free by post. | | |

Gardeners are especially invited to send us their list of seeds required, as they will be liberally treated.

Albion Nursery, Stoke Newington, London, Feb. 8.

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WM. DENYER, SEEDSMAN and FLORIST, 82, Gracechurch-street, London (near the Spread Eagle), begs to offer the following:

| | s. | d. |
|---|---|---|
| ASTERS (GERMAN), four splendid varieties saved by an Amateur in this country, warranted to produce all double show flowers ... ... ... ... ... ... | 2 | 0 |
| BALSAMS, very double, saved from one of the finest collections in the country, six beautiful varieties ... ... | 2 | 0 |
| LARKSPURS, double, eight distinct colours ... ... | 2 | 0 |
| STOCKS (GERMAN), very double, six varieties, best and brightest colour ... ... ... ... ... ... | 2 | 0 |

The above four collections, all in sealed packages, for 7s., or separately at the prices quoted.

W. D. has just received, from a large continental grower, a fresh supply of GLADIOLUS GANDAVENSIS, 6d. each, or 5s. per dozen—the beautiful dark variety, extra size roots.

A descriptive and priced catalogue of Flower and Vegetable Seeds, &c., may be had on application.

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THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove, they can offer them, varying according to age and quality, from 20s., 40s., to 60s. per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, Feb. 8, 1851.

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BRITISH QUEEN POTATO.—A new and superior variety, as early as the SHAW, and quality of the REGENT, coming in a month before that kind. The grower says:—"I planted them last year close by a good stock of Shaws; they were quite as early, and, when each were full grown, the BRITISH QUEEN were worth considerably more money, being much like a Regent, and ready nearly a month before it. My salesman considers them preferable to any Potato he ever saw. They grow short haulm and in a clus er, and will admit of being planted closer together than most sorts."

To be had only of NUTTING and SONS, Seedsmen, 46, Cheapside, London, at 9s. per bushel; where may be had every approved kind of Agricultural, Horticultural, and Floricultural Seeds.

NEW SEEDS.—POSTAGE FREE.

ORACH, *strongly recommended by Dr. Lindley in the leading article, Jan. 25th.*

ENFIELD MARKET CABBAGE, *strongly recommended by J. Edwards, Esq., Holloway (See Chronicle for February 1st.) Our Original Stock of this Variety was procured from Mr. Charles Farnes. 6d. per packet.*

CUTHILL'S BLACK SPINE CUCUMBER, from Mr. Cuthill, 1s. per packet.

CUTHILL'S SCARLET-FLESH MELON, from Mr. Cuthill, 1s. per packet.

MYATT'S TREBLE GARNISHING PARSLEY, saved by Mr. Myatt, 1s. per ounce.

MYATT'S TRUE WALCHEREN BROCCOLI, saved by Mr. Myatt, 1s. per packet.

RENDLE'S SUPERB WILLCOVE BROCCOLI, *own saving*, 1s. per packet.

MITCHELL'S MATCHLESS WINTER PARSLEY; *the hardiest and best winter variety. 6d.* per packet.

RENDLE'S EARLY ADMIRABLE CABBAGE, *own saving, 6d.* per packet.

COLE'S SUPERB RED CELERY, *first-rate variety, 6d.* per packet.

TRUE CASSABAR MELON, *presented by the Pacha of Egypt to Lieut. Tancock, 2s. 6d.* per paper.

*** ALL THE ABOVE POSTAGE FREE.

All the newest and best vegetables grown can be procured from WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

GEO. SMITH has much pleasure in offering his superb SEEDLING VERBENAS, FUCHSIAS, and PETUNIAS, which have been so universally admired. Strong Plants will be sent out the third week in April. Early orders earnestly solicited.

VERBENAS.

ENCHANTRESS (Smith), a superb flower, pip large, smooth, and flat; colour, an exquisite shade of pink, flushed with brilliant salmon rose, with a splendid eye of bright lemon green, a compact and noble trusser. A first class certificate at the Royal South London, North London, and the London Floricultural Societies, also the premier prize as the best light Seedling of 1850.

BRITISH QUEEN (Smith), a splendid flower; colour delicate white, with rosy purple centre, pink eye, a fine trusser, smooth on the edge, one of the finest fancies raised. Was awarded a first-class certificate at the Royal South London and North London Societies, and a premium and certificate at the London Floricultural Society, as the best fancy of 1850.

EXQUISITE (Smith), brilliant rosy lilac; centre pure white, eye very desirable, pale lemon, of excellent form, smooth on the edge, large size, a noble and compact trusser, extra fine. A first-class certificate at the London Floricultural, Royal South London, and North London Societies, and Grecian Saloon.

SHYLOCK (Smith), a most exquisite flower; colour cerise, or vermilion scarlet; eye pale lemon, very large pip and perfectly smooth—the gem of the season. Received a first class certificate at the Royal Chelsea, London Floricultural, Grecian Saloon, Royal South London, and North London Societies.

KING (Smith), colour a deep rose, with carmine centre, pips extra size, and a larger trusser than any Verbena known, with compactness—a rival on St. Margarette, or any other in its class. A first class certificate at the Royal Surrey Gardens, Grecian Saloon, London Floricultural and North London Societies.

OTHELLO (Smith), a magnificent crimson, blotched with rich purplish red, centre splendidly suffused with crimson lake, eye creamy white, large, and by far surpasses any in its class. Was awarded a first class certificate at the London Floricultural Society, and the premier prize as the best dark Verbena of 1850. A first class certificate at the North London Society, &c.

GRANDIS (Smith), a remarkably beautiful flower of salmonish rose of extreme brilliancy, with fine distinct lemon eye; an excellent trusser. First class certificate at the London Floricultural and North London Societies.

LADY OF THE LAKE (Young), a superb white, burnished with a silvery tint, pale lemon eye, with an elegant circle of beautiful rose surrounding it; a noble trusser. First class certificate a the Royal South London and London Floricultural Societies.

VOLTIGEUR (Smith), pip large, round, smooth on the edge, and perfectly flat; colour superb purplish rose of exquisite shade, white eye, and noble trusser. First class certificate at the London Florticultural and North London Societies.

ELIZA (Smith), colour blush, with rosy purple centre, eye pink, extra large truss, very attractive and fine habit.

PRINCE OF WALES (Smith), a delicate pearl colour, finely blotched with crimson, large and showy, good habit.

WONDER (Smith), colour silvery lilac, with a beautifully rosy purple centre, eye pink, very large, and finely arranged trusses.

The set of twelve will be sent out at 2*l.*, or six at 1*l.* 5*s.*, and at 5*s.* per plant.

G. S. is willing to exhibit six or eight from the above against an equal number of new varieties, to be sent out in 1851, for 10*l.*, in July, either English or Continental.

FIRST-RATE SEEDLING FUCHSIAS.

SIDONIA.—Tube and sepals blush white, well reflexed and tipped with green, corolla violet purple, large and circular. This variety is in the style of Venus Victrix, thrice the size, and free in growth. It has been highly recommended by the Editor of the *Gardeners' Journal*, and also by Mr. Glenny, as being the greatest novelty he has seen. A free bloomer and fine habit. 7*s.* 6*d.*

ALPHA.—Tube and sepals rich red and well reflexed, corolla fine purple; this flower is the largest known, with good contrast; of first-rate habit. A fine show flower. 5*s.*

PSYCHE.—Tube and sepals pure white, well reflexed, corolla rosy scarlet. Free bloomer, of full size and excellent habit, similar to Dr. Jephson. 5*s.*

PETUNIAS.

ATTRACTION (Young), richly veined with brilliant puce on a delicate blush ground, throat round and very dark, extra fine form. Awarded two first class certificates at the Royal South London Society, and one at the Camberwell Society.

ROSY CIRCLE (Young), a beautiful glossy rose, with a large pure white throat, extending over one-third of the corolla, flower flat and full size. First class certificate at the Royal South London and London Floricultural Societies.

CRIMSON KING (Young), very dark crimson, throat jet black, which is very large and conspicuous, the corolla is round, flat, and of great substance, very large and fine. A first class certificate at the London Floricultural Society.

STRIATA (Smith), rosy blush, beautifully striped with rich purple lake, throat dark, the corolla round and flat, a splendid striped variety. Was awarded a first class certificate and the premier prize as the best striped seedling of 1850, at the London Floricultural Society, a first class certificate at the Royal South London, also at the North London and Camberwell Societies.

GRANDIS (Parsons), crimson purple, most beautifully veined with black, perfectly circular and very large, the finest bedder ever offered.

The above at 3*s.* 6*d.* each, or 15*s.* the set.

G. S.'s Catalogue of Verbenas, Fuchsias, Geraniums, Dahlias, Petunias, and Chrysanthemums, will be sent on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road,
Islington, near London.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT,

FOR SUPPLYING GENUINE HOME-GROWN SEEDS, CARRIAGE FREE

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden,* Messrs. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

| | £ | s. | d. |
|---|---|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply ... ... ... ... ... ... | 2 | 10 | 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... | 1 | 10 | 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... ... | 1 | 1 | 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... | 0 | 12 | 6 |

Persons who are already in possession of several kinds of Seeds are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.

*For particulars of the sorts contained in these Collections, see Advertisement on the last page of the* Gardeners' Chronicle, *of January 25.*

JOHN SUTTON and SONS are also extensive growers of early Potatoes, and Agricultural Seeds, particulars of which may be had by post.

*Reading Seed Warehouse, Reading, Berks.*

EARLY SEED POTATOES, &c., packages free, and carriage to London, if One Pound value, from ABRAHAM HARDY and SON, SEED-GROWERS, &c., Maldon, Essex.

| | Bushel. | Peck. |
|---|---|---|
| Dwarf Frames, Victoria, Albert, and Forty-fold ... ... ... ... ... | 3*s.* 8 | 1*s.* 0*d.* |
| Prolific Kidneys, Ashleaf, Chalmer's, and Pitman's ... ... ... ... ... | 3 8 | 1 0 |
| Prolific Rounds, Cockney, Golden-cluster, and Shaw ... ... ... ... ... | 3 0 | 0 10 |

H. and S. confidently recommend the above.

Selected Potato Seed, Early Round, or Kidney, 6*d.* per pkt.
Treatise on Potato Culture, 6*d.*
Heracleum giganteum, roots, 1*s.* each, seed, 6*d.* per. pkt.
Priced Retail Seed List, on application. See Advertisements, January 26, and February 1.
} Post free.

TO BE SOLD, a decided bargain, about 100 Standard PEAR TREES, first-rate sorts, true to name, seven years from graft in a bearing state. This being the most desirable season for transplanting, and root pruning having been carefully attended to, they will move with great certainty. Also two GREENHOUSES, 35 feet by 12 each, recently built, in good repair, the grounds being required for public works.—Apply to T. STREACY, Florist, near the Station, Hackney.

Train from Fenchurch-street, every 10 minutes.

ESCHOLTZIA ALBA.

JOSEPH EVANS has great pleasure in offering the above new and beautiful Annual, which he has flowered the last two seasons, and which has been greatly admired. J. E. begs to call attention to the favourable notice of it in the *Gardeners' Chronicle* of August 10, 1850, and the *Cottage Gardener* of August 15, 1850. J. E. will commence sending out packets of 20 seeds, at 2*s.* 6*d.* per packet, postage free, on and after Monday, February 17. A remittance from unknown correspondents is respectfully requested.

Rosina Garden, London-road, Cheltenham.

PITTDOWN NURSERIES, MARESFIELD, SUSSEX.

JAMES MITCHELL begs to announce that he purposes sending out in May, in strong plants, his superb new Dahlias, also all the leading varieties of other growers.

MITCHELL'S QUEEN OF BEAUTIES.—This novel and extraordinary flower has one of the most rich and beautiful Rose tips ever seen on a pure enamel white ground, two-thirds of a globe, with an outline smooth and round; very double, very symmetrical, the eye level with the surface, and has been admired by everybody who has seen it. It obtained a first-class certificate at the Royal South London Show, the Grand Annual Trial Show, at the Grecian Saloon, also at all the principal shows in Sussex and Kent—4 feet, 15*s.* per plant.

MITCHELL'S ELEGANTISSIMA.—This is also an extraordinary novelty, a fancy variety, marked with tortoiseshell, and perfectly unlike everything that has been seen before. This also had a certificate at the great Trial Show, on the ground of its novelty—4 feet, 10*s.* 6*d.* per plant.

NEW SEEDLING PANSIES—"COMMANDER-IN-CHIEF" AND "PRINCE ARTHUR."

YOUELL and CO. beg to announce they are now prepared to execute orders for the above first-rate PANSIES, which they guarantee will give the highest satisfaction.

"COMMANDER-IN-CHIEF" was exhibited at the Worton Cottage Meeting of May 29th, under the initials of "T. T.," and the following opinion is given in "Beck's Florist" of July last: "No. 2, Yellow ground, bronzy purple top petals, lower ones margined with the same colour, bold eye, showing to great advantage: *a fine flower for Exhibition.*"

The following opinion of this fine flower is also given in the *Gardeners' Chronicle*, of June 20th, under the initials of "Y. Y." "No. 2, Rich yellow ground, top petals dark maroon, lower petals margined with the same colour, eye good; a full-sized and fine flower."

"PRINCE ARTHUR," white ground, top petals rich dark purple, lower ones margined with the same colour, eye good—flowers large and of great substance.

This was exhibited with "Commander-in-Chief" at the Worton Cottage Meeting, and obtained the following opinion: "No. 38, Style of Optimus, and a considerable improvement upon it, having more ground colour."

Strong plants of the above 5*s.* each, in pots, or per post free if required, and one over to the Trade when three are ordered.

12 Finest first-rate Pansies, including the above, well-established, in small pots, or per post free, for 1*l.*

YOUELL and Co. can also supply

CAMELLIAS, of the newest and best kinds, with flower-buds, 30*s.* per dozen.

ROSES, standard, half-standard, and dwarfs, of the very best kinds in cultivation, 12*s.* to 15*s.* per dozen.

ESCALLONIA MACRANTHA, 5*s.* each.

Royal Nursery, Great Yarmouth.

TRANSPLANTED FOREST TREES NEAR LANCASTER.—On Sale, by private treaty, a quantity of Oaks, Ash, Larch, Highland Pine, Scotch Fir, Spruce Fir, Silver Fir, Sycamore, Beech, and Elms (large and small stuff). Also strong Thorns, Evergreens, and Fruit Trees, on most reasonable terms, on taking a large quantity. The delivery to places near the lines of railway from Lancaster will be trifling. Or delivered, carriage paid, to the nearest railway station.—Apply to the Foreman, at the Leighton Nursery Grounds, near Lancaster.—February 8.

CHOICE FRUITS, &c. &c.—CARRIAGE FREE on all orders of 2*l.* and upwards to any Station on the Eastern Counties Railway; also per Steamers to Hull and Newcastle-on-Tyne direct, forming an advantageous mode of transit to the North of England and Scotland. Planters are respectfully informed that YOUELL and Co. possess an extensive stock of strong and healthy plants of the under-mentioned:

FASTOLFF RASPBERRY (true), as originally sent out by Youell and Co., 15*s.* per 100.
Large White do., 21*s.* per 100.
Cornwall's Victoria, 8*s.* per 100.

CURRANTS.—Improved large White Dutch, 5*s.* per dozen.
Large Black Naples 6*s.* per dozen.
Raby Castle, or Victoria (red), 6*s.* per dozen.
Knight's Sweet Red, 6*s.* per dozen.
Knight's Large Red 6*s.* per dozen.
Red Grape, 4*s.* per dozen.

GOOSEBERRIES of the finest sorts, by name, selected for size, combined with flavour, 5*s.* per dozen.

RHUBARB.—Myatt's Linnæus, Mitchell's Royal Albert, and Myatt's Victoria, 12*s.* per dozen.
Youell's Tobolsk, fine, for forcing, 6*s.* to 9*s.* per dozen.

ASPARAGUS.—Giant, strong, 4 years old, for forcing, 5*s.* per 100.
Do. do. 2 and 3 years old, 2*s.* 6*d.* and 3*s.* 6*d.* per 100.

SEAKALE, strong, 1*s.* 6*d.* per dozen.

Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots, of the newest and most approved kinds, selected from the Garden of the London Horticultural Society, and warranted true to name, can be supplied in maiden and trained trees of the finest quality, and forward for bearing.

TO PLANTERS AND CONTRACTORS.—WHITETHORN, twice transplanted (very strong), 7*s.* 6*d.* per 1000.
Do. 1 and 2 years transplanted, 4*s.* 6*d.* and 5*s* 6*d.* per 1000.
Do. 4 years, strong and fine, with an abundance of fibrous roots, as good as transplanted, 3*s.* per 1000, or 12*l.* 10*s.* per 100,000.
EVERGREEN PRIVET, 1½ to 2½ feet, fine and stout, 25*s.* per 1000.

Royal Nursery, Great Yarmouth.

**The Gardeners' Chronicle.**

*SATURDAY, FEBRUARY* 8, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | Feb. | 10 | British Architects | 8 P.M. |
| | | | Geographical | 8½ P.M. |
| | | | Syro Egyptian | 7½ P.M. |
| TUESDAY, | — | 11 | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 12 | Literary Fund | 3 P.M. |
| | | | Microscopical (Anniversary) | 7 P.M. |
| | | | London Institution | 7 P.M. |
| | | | Society of Arts | 8 P.M. |
| | | | Graphic | 8 P.M. |
| | | | Ethnological | 8 P.M. |
| | | | Pharmaceutical | 9 P.M. |
| THURSDAY, | — | 13 | Royal Soc. of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| FRIDAY, | — | 14 | Astronomical (Anniversary) | 3 P.M. |
| | | | Royal Institution | 8½ P.M. |
| SATURDAY, | — | 15 | Asiatic | 2 P.M. |
| | | | Medical | 8 P.M. |

FEW things in gardening are more generally cultivated than the GOOSEBERRY and CURRANT; they are indeed everybody's fruits, and at this season everyone possessing a garden, however small, will be devoting some little attention to regulating their plantations of these useful plants. We not unfrequently notice these fruits occupying some out-of-the-way corner of the garden, as though they were only a secondary consideration; and even when ranged along the sides of the kitchen garden walks, their branches are allowed to spread out so far horizontally, that the fruit is shaded, and much valuable space is lost. But in some gardens, as those at Trentham, for instance, considerable importance is given to the small bush fruits, by having them either trained to neat trellises, or as standards or pyramids. By adopting such methods, the trees are more exposed to the action of the sun and air, and the fruit is consequently much improved both in quantity and quality, besides being kept perfectly free from grit, which destroys so much of the fruit upon low bushes; while, by the use of half-inch netting, the fruit is secured from the depredations of birds, and the late kinds are preserved for a considerable time after they are fully ripe.

We would not devote the whole of the side borders of a kitchen garden to these fruits, for the Apple and Pear answer admirably for such situations; but would prefer arranging the Gooseberry and Currant bushes by themselves, in such a manner as to obtain the greatest quantity of fruit from the least possible space consistent with a proper admission of sun and air, and so that they could be more easily protected either from birds or weather. Some varieties, such as the Champagne and other upright kinds of Gooseberries, and all the Currants, are admirably adapted for training as pyramids; these we would plant 5 feet apart, along the centre of a border 8 feet wide, having a gravel path 2 feet in width between it and the vegetable compartment. These should be trained to a central stem, 6 feet high, and the side shoots shortened in, so that when the plants have arrived at their full size, they should be of a pyramidal form, 2½ feet in diameter, at the base, and 5 feet high, supported by a stem 1 foot in height. The weeping kinds, such as the Warrington Red, should be trained as standards, with stems 3 feet high, from which the branches spread and hang around, umbrella fashion. These should occupy the side rows of the border, standing opposite to each other, and alternating with the pyramids; filling up the vacant spaces with Strawberries, not in rows but in groups.

A border treated in this manner has the most

orderly and pleasing effect possible; besides which, the economy of the plan is evident, as the pyramids being high, much fruit is obtained; and by placing the dwarfs alternately with them, no space is lost, while the sun has perfect freedom of access to every part of every tree.

A kitchen-garden having the borders along the sides of the principal walks furnished with neatly-trained fruit trees and bushes, has a much better appearance than when the Apple, Pear, Gooseberry, and Currant, are intermixed one with another, and the stronger growing kinds are allowed to overshadow the weaker, by throwing their coarse watery shoots so high into the air as to exclude the sun from everything near them. A few years back the space at Trentham devoted to fruit trees and bushes in the kitchen-garden was reduced to nearly one-half, with the view to growing more vegetables; the Apples and Pears were trained to vase-shaped and bell-shaped trellises alternately; and the Gooseberries and Currants as standards and pyramids. By having the trees planted on a prepared bottom, and carefully root-pruned when necessary, and the branches properly pruned and trained, there is now not only an increased quantity of fruit, but the quality is finer.

No doubt there are parts of this country where Apple and Pear trees grow almost as freely as Willows, and yet ripen their wood perfectly, even when left nearly to Nature; and in such places orchards of considerable extent are formed; but we have in view such situations only as the best of our new hardy kinds of Pears and Apples do not succeed in, and where the gardener is notwithstanding expected to have plenty of fruit. In such circumstances is it that the placing of the various kinds of fruit trees and bushes under as perfect control as possible, becomes a matter of importance not only to the gardener but to the owner.

Another plan adopted at Trentham would be not only economical in kitchen gardens of limited space, but a most agreeable thing, particularly during hot weather. It consists in throwing a light arched trellis of iron about 8 feet high over a walk or walks running south and north, or in any other direction, if the kind of fruit intended to be grown on it is suited to the aspect. Such trellises as these are cheaply put up, and are not only much admired for their effect, but are so readily got at to prune, tie, and otherwise manage the trees, that we look upon this as the very best way of growing the hardier kinds of Pears and choice Apples. The effect of an occasional red Currant planted between the other trees upon these arched trellises is excellent, and is the nearest approach that can be made in the open air in this country to the Vine-covered walks of warm climates, as we sometimes see them represented in old Italian paintings.

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When it was stated, a few years ago, that certain wonderful discoveries had been made, and that means had been found of extracting all sorts of valuable materials out of Peat and turf; in short, that the bogs of Ireland (instead of being, as now, almost a curse to the country) were henceforth to be regarded as inexhaustible mines of national wealth and prosperity; though the announcement was naturally received by the many with applause and rejoicing, yet, for the most part, shrewd, practical men held back altogether; they were sceptics or entire unbelievers. There is no doubt whatever that, when a really good thing is found out, men are not over anxious to draw the attention of others to what they are about; they go on as quietly as they can, and are content if they make a large fortune themselves, without any great anxiety to call all their neighbours around them, to share in their good luck. When a scheme is greatly lauded, and when the immense profits to be realised are very widely advertised, it is generally known that the scheme is really good for very little; in most cases the fact is, that the original projectors, having found out that it is impracticable, or not likely to give them any immediate return for their money, are anxious, if possible, to get back the whole or part of what they have already expended. In such cases a company is got up, and the merits of the scheme are puffed to the greatest possible degree.

When we remember the vast extent of the Irish peat bogs, which are reckoned to extend over one-seventh of the whole country, or nearly three millions of acres, it certainly is very remarkable that so little has been done to render them useful; for even a slight knowledge of the subject will convince every one that, as a source of national industry, they are of very great value. The absurd statements which were current a few years since, when the value of peat was described in truly Californian language, and when the substances to be prepared from a ton of it were said to be worth scores of pounds sterling, would hardly deceive any one; and no one can wonder that the false and temporary excitement which was raised in the minds of speculators soon died away; but every calm observer must continue to wonder that these bogs are not turned to any real and lasting advantage. Though we do not allow ourselves to be carried away by the golden dreams of the over sanguine, yet we cannot shut our eyes altogether to the value of the substance, the practical uses to which it unquestionably might be applied, and considering the large quantity of it which exists in Ireland, the great importance of it to the nation at large.

A number of ingenious men have, from time to time, turned their attention to the subject, have regretted the waste of so much dormant capital, and have endeavoured in various ways to overcome the practical difficulties which interfere with its general use; but their experiments have nearly all been failures. It is not enough to tell us that the experiment was tried, and that at last the result was perfectly successful, if we find that, after a year or two, the very man who had obtained this successful result abandoned his process, and returned again to some old mode.

The time must certainly come, and the sooner it comes the better, when the true value of peat will be better appreciated, and when it will be largely and profitably employed in various ways. From the bad mode in which it is at present generally prepared, and from the imperfect manner in which it is dried, more than one-third of what is cut is rendered completely useless. This may obviously be prevented by mechanical compression, artificial drying, and protection from the weather when dried. At the present time three distinct processes are practically at work on peat, from each of which, some benefit may be reasonably anticipated; these are, its compression, its distillation, and its carbonisation.

The compression of peat is, in the first instance, a purely mechanical operation, but it is one which modifies the chemical properties of the peat and renders it a much better fuel. By getting rid of the large quantity of water which it contains, and by condensing it into a smaller bulk, either by simple pressure, or by pressure and the subsequent addition of tar or some similar substance, peat is rendered a more powerful and economical fuel; because one of the chief objections to the use of peat as a fuel, where intense heat is required, is its bulky spongy state, which renders it incapable of acting like the denser kinds of fuel.

In the distillation of peat the substance itself is wholly destroyed, for the sake of various matters which are formed during its decomposition. Some 50 years ago Platel and others proposed to distil peat, something in the same way as wood is distilled in the manufacture of pyroligneous acid; the products obtained were excellent peat charcoal, abundance of combustible vapours which were employed to aid the heat of the furnace itself, water, tar, certain combustible oils, and a portion of nitric acid. It is curious to see in the account of these old experiments how closely they resemble the results which are at the present time brought out as new. The chief difference between the new mode and the old one appears to be, that whilst formerly the peat was really distilled, which must be obviously a very expensive process, now it is burnt in a large kiln or close furnace, all the products of its imperfect combustion being caused to pass through a condenser. In this process the cost of apparatus, &c., is greatly diminished; but, on the other hand, the charcoal is lost. It is stated that 100 tons of peat may be burnt or distilled in such a kiln in 24 hours, and that exclusive of four tons of ash, and an enormous volume of combustible vapour, it yields enough ammonia to make a ton of sulphate, enough acetic acid to make 14 cwt. of acetate of lime, 52 gallons of wood spirit or naphtha, and more than 1000 gallons of tarry and oily matters. Whether in the face of all this, the plan turns out a profitable one, and really *pays*, remains to be seen.

As in the distillation of peat, the charcoal is burnt, and the volatile matters only are saved; so, in its carbonisation, the charcoal alone is cared for, and the volatile products are entirely burnt. Various modes of doing this have been devised, the principle being in all, of course, the same. The peat is dried as much as possible, and then, either in its natural state, or after compression, is burnt in a kiln or stove, the supply of air to which is under thorough control, so that when the peat ceases to flame, and it is therefore known that all volatile matter is driven off, the access of air can be at once shut off, and the peat charcoal allowed to cool. There is no question that the charcoal thus obtained is an excellent and powerful fuel, particularly that prepared from the compressed peat. Its absolute value must of course depend on the cost of other sorts of fuel, and on its purity; but, for some purposes, good peat charcoal is no doubt preferable to most other kinds of fuel, even though the latter could be had at less cost.

Peat charcoal is also valuable as an element of manure, for which some of its properties eminently fit it. It appears to possess the property of absorbing gases to a very considerable degree, a power to which its peculiar open porous nature greatly contributes. The value of charcoal as a constituent of the soil depends almost wholly on its physical condition; for a dense charcoal, like plumbago, is of little or no use; and the more cellular and porous it is, the more serviceable it is to plants, acting as a constant magazine of gaseous food. Peat charcoal, for horticultural purposes, will probably be found of great use by the gardener, both as an addition to soils, and also in the formation of manures. In the preparation of various composts, and in reducing night-soil and similar fetid waste matters into a portable and convenient state, its value is considerable. That it can be so used with very great advantage there is no doubt; the only question is, whether it can be supplied at a sufficiently low price. It is the interest of those who make it to sell it at the lowest figure, which leaves them a profit, and not to try and give it a fictitious value, by comparing it with guano, or any similar manure. Really good manures are not unfrequently altogether kept out of the market by this foolish system of standing out for a fancy price, instead of looking only for a small profit and a large sale. As a disinfecting agent, peat charcoal will be peculiarly valuable, because we are certainly still in want of a good, efficacious, and economical mode of removing the smell of night-soil; and a great deal of good manure which is now lost altogether, would no doubt be saved and usefully applied, could its offensive odour be thus removed.

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## MARKET GARDENING ROUND LONDON.

No. VI. Asparagus. — There is but one kind of Asparagus. A Mr. Grayson, an extensive grower on the south bank of the Thames, introduced what he called his "Giant" Asparagus; but it proved to be only the usual kind. He made it a "giant" by putting mould over a few of the very largest heads he could find on his extensive beds, which covered about 30 acres. The heads were cut and shown in market as a new sort. They were about 13 inches or more in length, and 100 heads weighed 42 lbs.; but unfortunately, like other Asparagus, only 3 or 4 inches were fit for eating. There can be no doubt that the present plan of saving seed from the strongest plants has much improved Asparagus. Immense quantities of roots are forced on 2 feet of dung in trenches, having 6 inches of mould to plant in. These are then hooped over, and blanched, to make it look fine and white; the beds are prepared by putting on an immense quantity of manure, and trenching the ground 3 or 4 feet deep, mixing the manure as the work proceeds. In March the ground is measured out after the following manner. Suppose that a fence runs south and north, or otherwise, 3 feet is allowed between it and the first row; a drill is drawn about 2 inches deep, and the seed is sown thinly—say 6 inches or a foot apart, which gives choice of drawing out the weakest, in order that the permanent crop may stand 1 foot apart. The next row is sown 18 inches from the one just mentioned; then for the alley and two sides of the bed 5 feet are allowed; then another row of seeds and so on, which gives two rows to each bed. The first year Onions are generally sown all over the ground; the second season Lettuce, or any dwarf growing vegetable that will not choke the Asparagus, and so on until the third year, when the beds are formed out, and a few inches of mould dug out of the alleys and put on the crowns; only a few, however, of the finest heads are cut this year. Autumn arrives, and when the haulm is cut the whole of the ground is forked over, and planted with Cabbage, Coleworts, or Winter Greens; then in spring the beds are largely supplied with mould out of the alleys, covering the crowns from 8 to 10 inches deep. The finishing of the cutting must be left to the grower. A fair crop of heads must be left after four or five weeks' cutting, in order in some measure to strengthen the young buds for the next year's growth, and to restore to the roots what has been taken from them in the shape of a crop; but not one head must be allowed to grow until you leave off cutting entirely at the end of the fourth year. When the haulm gets ripe it is all cut down, and the mould thrown into the alleys, and there enriched, and the whole of the beds and alleys are planted again with Cabbages, Greens, &c.

Seakale.—This is propagated by roots, or portions of them, after the following manner:—Towards spring, after the produce has been all cut out of the hooped beds, the roots are removed, all the "thongs" are cut off, and laid in large heaps; and as soon as the cut part or upper portion becomes calliced, ground is prepared for its reception, by manuring and trenching. The roots are then planted out a foot apart, in rows 18 inches asunder, and a crop of Lettuces is planted between them; as soon as the buds become visible, all are cut out, except the strongest, the ground is kept clean, and nothing more is done until November, when forcing is commenced. Then all the frames are removed, the dung and mould where Cucumbers grew during summer are taken away for Cabbages or Coleworts. The trenches,

which are 2 feet deep, are again filled with hot dung, and mould to the depth of 8 inches is put on the dung. The Seakale roots are dug up, all the small buds round the main eye are pared off, leaving that by itself, which induces it to push stronger and finer; and now planting is commenced, a furrow is cut out by the spade across the bed, and they are put in as thickly as possible. Five feet across will hold from 25 to 30 roots; the next furrow is cut out 4 inches from the last, and so on till the whole is finished; from 4 to 6 inches of straw is placed immediately on the crowns. The beds are hooped over, and straw is put over the hoops; and in this way I have seen 50,000 plants forced during the winter and spring, and by one man. All roots are removed from where they grow in summer, as they can be put in a much smaller compass elsewhere. Such is the way in which this delicious vegetable is grown by market gardeners, who thus bring it on slowly, excluding all air, and producing excellent food. Mr. Martin's plan of increasing Seakale is this: At taking up time all the thongs are cut off before the plants are put in to force. In November the small prongs or end roots are at once cut into 4-inch pieces and laid altogether in a heap for the winter. In February they are deposited thickly in beds,* and covered with mould an inch deep; when sprouted it is seen by the buds which is the top, and by the roots which is the bottom. The ground being prepared, they are planted out as above. This last plan makes finer plants, as the whole of the strength is in the roots when cut off in winter, which is not the case after they have produced a crop. After forcing, the pores of the thongs must be empty, and they take a long time in recruiting. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

[Cage Birds, No. I.]

No. XVII.—It will have been observed that, throughout our remarks connected with an aviary, I have only given an occasional hint, *en passant*, touching the habits, peculiarities, and dispositions of some particular birds; reserving for a future opportunity, which at present offers, a more minute discussion on the subject at large. What now lies before us is still more generally interesting, though not one whit more important, than what has preceded; nor can the two subjects be disunited.

It would be quite unnecessary to travel out of our road, to select any particular songster to commence with; as ALL will receive due notice in turn. However, as the *Canary* is associated with my earliest and happiest reminiscences, and as certain of his tribe have been my constant companions from boyhood upwards, I feel inclined to give *him* precedence over all others. Our first consideration will therefore be of—the CANARY.

Of all birds, this appears to be the general favourite. There are very few families, comparatively speaking, in which he is not to be found domesticated. Nor is it to be wondered at; for his natural disposition is to be friendly and affectionate, and he will sing *any where*.

Although originally a native of the Canary Islands, the canary has been so long "naturalised" in this country, that he may truly be pronounced an English bird. When first introduced here, he was very tender, delicate, and difficult to rear; but the race are now robust, and among the heartiest of the feathered tribe, if properly tended.

The great marts which supply London and the provinces with canaries, are—Norfolk, and some parts of Yorkshire. The Norwich birds are celebrated for their high colour, and freeness of song; also for their liveliness, and trim plumage. The Yorkshire birds are splendid songsters; but they are not handsome, either in form or plumage, and their colours are bad; neither are they so lively as the Norwich birds. However, their voices are infinitely finer, they sing more steadily, and with more harmony; while their constitution is wonderfully strong.

These birds arrive in considerable numbers—very many thousands of them in one week—immediately before the season of Christmas. They are sent to the written order of the various dealers in London, who await their arrival at the railway stations, and attend to their little wants immediately they are delivered into the safe custody of their new masters. The principal dealers reside in Great St. Andrew-street, Holborn, and its immediate vicinity. All persons who are anxious to secure *good* birds, should pay an early visit here.

The best time to select your birds is by gas-light. They will be found all ranged in cages round a large square room. To keep them in a state of excitement, a quantity of Peas are placed in a wooden box, which is then rattled violently backwards and forwards. This noise, for it is nothing better, puts the birds on their highest mettle; and every one of them, resolved on not being outdone, sings bravely against his fellow. This is the time to test your judgment. If you have a fine ear, and a quick eye, you will readily detect the best songster of the lot. Do not be in a hurry, but show a state of the utmost repose; neither let the dealer know where your heart is set. Take at least half an hour before you finally decide. Sometimes a very extraordinary song-bird has a damaged tail, and an otherwise defective plumage. This is *nothing*; if he be in other respects perfect. By drawing his feathers, you can quickly reinstate his beauty. Three short weeks will suffice to regenerate him entirely. By proper management you may pick out a first-rate bird, at a cost not exceeding a crown-piece. If I might advise, I should say, sacrifice colour to accomplishments—you will never repent it. Nature seldom gives us rare beauty and great accomplishments united.

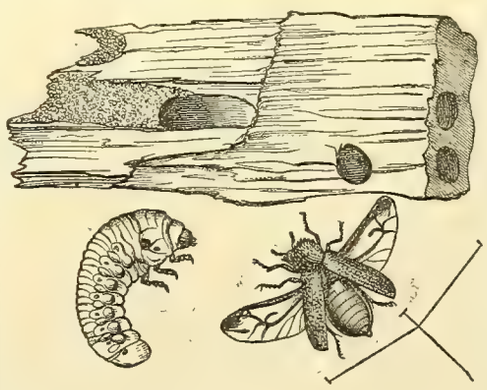
When you have selected your birds, one or more, and looked to their legs and feet, to see that they are healthy and perfect, on no account allow the dealer to touch them, or remove them from their cages. Pay him a "deposit" on the cages, and take the birds away in your hand. You should previously have prepared a "local habitation" for them at home, well furnished with seed and water; and have nothing to wait for on your arrival. When introducing them into their new residences, do not touch them with your hand; but open the door of the new cage, placing the old one *dos-à-dos* against it. Place a lighted candle in front, and your little prisoners will hop in cheerfully, well-pleased at the change—for their late cramped and ill-savoured abode will have had little charms for them. I shall speak of the proper-sized cages, &c. anon.

It will be desirable to hang them up at once, in the place you intend them to occupy. If purchased at the season I have spoken of, the chances are—they will sing within 10 minutes after they have been caged off. The best trait in the character of a canary is, he will sing, place him where you may. These birds very seldom show a sulkiness of disposition; and even if they should occasionally do so, a single Hempseed, or a morsel of Chickweed, would set all to rights in a moment. An amiability of disposition is herein shown, which should put some of us to the blush. Intellect does not always confer wisdom. *William Kidd, New Road, Hammersmith.*

## ENTOMOLOGY.

Bostrichus capucinus, (the Scarlet-back Cowled beetle.)

Before giving an account of another species of beetle, which is occasionally destructive to Oak timber in our dock-yards, it will be serviceable to refer back to our article on the Lymexylon navale (October 26, 1850), for the purpose of making a few additional observations on that species, as well as of correcting one or two typographical errors which crept into it, and to which our attention has been kindly called by Sir Thomas Sabine Pasley, the head of the dock-yard at Pembroke, who furnished us with the materials for our article upon that species, as well as those which are contained in the present article. Amongst the larvæ of the Lymexylon sent us by Sir T. S. Pasley, were two of a much longer and far more slender form than those of the Lymexylon. These, when put into a box with the the latter, immediately commenced destroying them, seizing hold of them by the back of the neck, and eating a hole in them, in which way they killed seven in a few minutes. These larvæ belong to the order Coleoptera, but are quite unlike those of any Coleopterous insect with which I am acquainted, nor can any of my friends, either here or in Paris (whither I took the specimens for the purpose) form any idea as to the genus of beetles to which they belong. The best idea that I can suggest to indicate their form is that of a rather long thick pin. It is curious that these larvæ should seize the larvæ of the Lymexylon behind the head, where they are provided with a swollen dilatation which indeed offers a *point d'appui* for their attack.



The clerical errors in the former article are these: the thick stuff is plank *above* 4 inches thick (not *about*), and the plank is steamed to bend round the bows and sterns (not *stems*) of the ships. A correspondent who has adopted the signature of "Alpha" (*Gardener's Chronicle*, 1850, p. 726) seems to suggest some doubt as to the identity of the larva observed by Mr. G. R. Waterhouse in a living Oak in Windsor Forest, referred to in our article on the Lymexylon (p. 677). That gentleman has, however, since seen the specimens of the larvæ of that insect, sent by Sir T. S. Pasley, and is quite convinced of their identity; and as his knowledge of Coleopterous larvæ is very considerable, there is no reason to doubt his statement, especially as there is no other known Coleopterous larvæ at all like that of the Lymexylon. Hence "Alpha's" distinction between the habits of Lymexylon and Hylæcetus is ill-founded, as he may further see by referring to Ratzeburg's excellent "Forst Insekten," vol. i. If "Alpha" will also take the trouble of referring to our "Introduction to the Modern Classification of Insects," vol. i. p. 274, and fig. 30, 16-19, he will see the curious palpi of the males which he mentions represented, as well as those of the allied genera Hylæcetus and Atractocerus. The suggestion that the males (which alone possess these remarkable branching palpi), may be attached to flowers, is an ingenious suggestion which certainly merits examination.

In the course of last August we also received, from Sir T. S. Pasley, several specimens of another Coleopterous insect which burrows into the Oak in our dock-yards. The beetle is the well known reputed indigenous Bostrichus capucinus, and some of the specimens were found dead in Istrian Oak timber, which had been a few years in Pembroke dock-yard, and others alive in Italian Oak timber, then just landed out of a vessel from Leghorn. These beetles were found in the *timber*, and not in the *thick stuff*, and they do not penetrate deeper than the sap wood. We subsequently (at the beginning of October) received from Sir T. S. P. specimens of the larvæ, and a portion of the wood, showing the burrows of the insect, together with two of the beetles alive. The burrows are circular, varying from one-eighth to one-sixth of an inch in diameter. The great portion of the mischief is, of course, caused by the larvæ, which are thick fleshy grubs, with the body curved and the hind extremity obtuse, having very much the appearance of small specimens of the grubs of the common cockchaffer, except that the legs are much shorter, the body much swollen behind the head and the terminal segment of the body small; the head is also very small, and the antennæ and palpi are short, and not at all prominent; the jaws, although small, are strong. In its general form this larva approaches very closely to that of the larva of the death-watches, Anobium and other Ptinidæ, which also reside in wood, and to which the perfect insect is also allied, although it only possesses four joints in all the tarsi, for which reason Latreille united it with his other Xylophaga, at the end of the family of the Weevils (Curculionidæ.) In respect, therefore, to its position in the distribution of the order Coleoptera, this genus is almost as interesting as Lymexylon, and therefore the knowledge of its larva state is of much consequence. It would be curious to ascertain whether the singular statement of M. Schmidberger, concerning the habits of the larvæ of the nearly allied Bostrichus dispar, given by Kollar, in "Treatise on Insects injurious to Farmers," &c. (Miss Loudon's translation), p. 258, is confirmed by those of the larvæ of B. capucinus. The annexed figure of the larva is about twice its natural length.

The perfect beetle belongs to the family Bostrichidæ, most of the members of which possess wood-boring habits; and as some of the species are upwards of an inch in length, they must commit much havoc in the timber of tropical climates, of which they are mostly natives. Our figure represents the Bostrichus Capucinus, with its wings extended; it is of a black colour, except the wing-cases and abdomen, which are red, the former being thickly marked with impressed punctures; the front of the thorax is rugose and sloping off, forming a kind of hood to the head, which is attached below, and deeply immersed into the thorax, so that when its wings are closed, the insect exhibits a nearly cylindric form, the fittest for inhabiting the burrows made by the larvæ. The perfect insect measures rather less than half an inch in length; and I believe that up to the present time only three specimens have been taken alive in this country; one in London, another near Cromer, in Norfolk (both places where the insect might probably have been imported), and the third from Matlock, in Derbyshire. As the insect is common in France and Germany, there is scarcely any reason to doubt that it is an indigenous, although rare British insect. *J. O. W.*

## GRAFTING.

No. VI.—Section II. General Observations on Cleft Grafting.—This mode of grafting is understood to consist in cutting the trunk, branches, shoots, and even the roots of plants, and making in the section a cleft which generally divides it into two equal parts,* for the introduction of kindred grafts, in order that these may draw their nutrition from the stock during the period of its existence; sometimes the grafts survive the stock in consequence of striking root.

Without following the order of arrangement of those grafts by our great masters, I have united the small number of them which I propose to describe under one point of view; and shall treat of these in two paragraphs.

The first comprehends all those of which the stocks are thicker than the grafts, and for which ligatures may be generally dispensed with. As regards those constituting the second, the parts intended to be joined ought to be of an equal size; some of them the operator will be under the necessity of maintaining in their position by an envelope, or casing of paper; all ought to be secured with cotton thread, india rubber, or other elastic substance. By means of the modes of grafting comprised in these two paragraphs, all the kinds of plants to which these modes are applicable, will unite perfectly by taking the precaution of joining, as exactly as possible, all the parts of the graft operated upon with those of the cleft made in the stock; but above all, especial care should be taken to make their libers coincide;† then cover the other wounded or exposed parts with some plaster, different kinds of which will be spoken

* In some plants, of which the fibres are not strongly united, their trunks, or their roots are sometimes unequally parted, by splitting the sides; this is the case with the Vine, the roots of Dahlias, &c.

† Liber, the line of demarcation which is found between the bark and alburnum of all woody and herbaceous plants; and when the cambium is carried abundantly towards this part, we can separate this line by raising up or deflecting the bark by a slight effort. When this is the case, we then say the trees are in sap. This condition indicates the time when most kinds of grafting should be performed.

of. With regard to those grafts on which the leaves are preserved, we should endeavour to keep them in a moist temperature of between 60° and 75° in a still atmosphere, and not subjected to bright light during a certain number of days, according to the tenderness of their foliage, which ought not to be exposed to the free air until it has been gradually accustomed to it. The places where the modes of grafting detailed in these two paragraphs ought to be performed cannot be fixed here, seeing that some of them ought to be made invariably below the level of the soil, on the under part of stems; others are made on roots, either woody or spongy, separated from their parent tree, and which, after being worked, are planted in the ground, there to maintain their vital state, and feed the grafts which have been placed upon them; at other times, and most generally, we graft at the height of between 4 and 6 inches above the surface of the ground, and progressively; but it very rarely happens that it is necessary to graft higher than 32 feet. The thickness of the stocks, branches, &c., intended for the reception of the grafts mentioned in the first paragraph, varies from one-fifth of an inch to an inch and half. All those approaching the latter size, and those still larger, intended for crown grafting, ought to be roughly cut back in winter, before they exhibit any signs of vegetation.

This operation ought to be performed from 8 to 12 inches above the point marked out for the reception of the graft. The principal object in shortening back in winter, is to retain all the sap for the benefit of the grafts when they come to be joined at the time it is in full movement, and this somewhat precedes that of the scions, as we have stated in speaking of their preservation.

All the latent or adventitious shoots which spring from the stems or branches of grafted trees, ought to be checked, on small stocks, as soon as they make their appearance; but with regard to large subjects the proceeding is different; for until these shoots have acquired the length of 6 or 8 inches, so long their presence is necessary, especially near the grafts, in order to attract or draw up the sap, which would otherwise frequently remain for a long time stagnant in the trunks and roots of large trees; as soon as they have fulfilled this function they should be cut back. The grafts, which till then are somewhat languid, acquire all at once a great development, and cannot, in consequence, sustain themselves without supports. *Translated from the French of D'Albret.*

## Home Correspondence.

*Cottage Border Edgings.*—It does not sufficiently appear, whether your correspondent wishes for a vegetable ornamental border edging or merely something to keep up the earth. Slate, tiles, flints, and freestone, all suffer from the spade, and flints collect weeds, but stoneware if made into tiles, and Peake's terro-metallic, if made 1½ inch thick, would last for ever. Stone and slate are very liable to "open," and any very dark or neutral tint, that is, any tint with blue in it, and not red or brown, is not agreeable as a border to earth, still less to Grass. The colour of the material should be something between dingy yellow and brown; any intermediate tint would do, but of course the colour of the soil would make one or the other superior to the rest; in a light-coloured soil I would use a dark border, and *vice versa*; slate never looks well in the country, our greens are too blue and our skies too neutral; it is never introduced into a painting. *Jay, Somerset.*—I have found an edging of Thyme particularly neat and lasting. I am sorry to say I am not botanist enough to designate it by any other term than the flowerless, sweet-scented Thyme; it is quite a creeper, may be kept to any width by simply cutting off what is superfluous, and it does not harbour any sort of vermin. It has edged my shrubbery border for, at least, six years. If accidentally trod upon, it returns good for evil by its sweet perfume. The time to plant it is April. It flourishes with me in a light gravelly soil. *H. M., Jan.* 30.

*Early Tulips.*—These being now in bloom, an opportunity is afforded of making a selection, and for the amateur of limited means, I know of no more valuable spring flowering plants. They are cheap and easy to cultivate, requiring but little attention; and while they annually adorn the flower clump or sitting-room window, their numbers will increase, until the only difficulty will be to find room for them. They form charming beds during April and May, and from the present time till May they may be easily had in flower for the window. I began with Van Thol, single and double; Rex Rubrorum, Tournesol, Florentine, and Mariage de ma Fille. The outlay for a dozen of each of these varieties did not exceed the cost of a dozen of first-class Hyacinths; and while the latter have to be bought annually, these last for years. The Van Thol is the earliest, and ought to be treated as such, except variety is desired; in that case, take Rex Rubrorum and Tournesol. These are in flower now, and if properly tended with water will retain their gaiety for at least a month. The Tournesol panaché is a somewhat new variety, larger, and more showy than the old Tournesol; but its beauty is of shorter duration. The single variety, called Keizar Kroon, yellow flaked with scarlet, is a noble flower, large and showy. Royal Standard is a pleasing kind, with a white ground flaked with carmine, and the single flower, Belle Alliance, is an attractive red. There is also I believe a new scarlet Van Thol, of which I have no experience; but it is reported to be very fine. The best double white with which I am acquainted is La Candeur, and white Swan and Pottebakker are the best single whites. Amongst yellows, in addition to the dwarf and showy Van Thol, we have the yellow Pottebakker, and the old double yellow rather later in flowering. With the above, together with Crocuses, Snowdrops, Hyacinths, Narcissus, and other early flowering plants, I manage to keep not only my beds but my windows gay all the spring. It is but right to mention, however, that I generally make the bulbs which have flowered in the open ground one season change places with those in the windows, and *vice versa*; for I find that under pot-culture they become weak, and do not flower so well. —*C. F.*

*Planting Waste Lands with Forest Trees.*—I have been tempted to address you on a subject which I think you will agree with me is one of national importance, viz., the eligibility of vast tracts of waste land in the United Kingdom for the production of timber. Not that I would recommend the owner of land to plant forest trees on lands fit for cultivation, as in this country timber can be imported cheaper than it can be grown on such lands; but on our hill and moor ground timber will pay for planting, and it ought to excite surprise that in this enlightened age the planting of trees in such situations does not demand more attention. I have taken the liberty of making an extract from an article bearing on this subject, which appeared in a gardening periodical nearly 20 years ago; but which, to a great extent, holds good to the present time. The writer says—"To what cause then but an unaccountable want of information as to the advantages to be derived from wooded lands properly managed can we account for the necessity which exists for importing timber into a country where for centuries millions of acres of land capable of producing valuable timber have been permitted to remain totally unproductive. When we traverse the wilds of Connemara, or the Grampians, we are incessantly struck with the vast amount of country suitable for the growth of timber. That the hills of Yorkshire and Derbyshire in the north, or the level plains of Hampshire in the south of England, should be suffered to produce Heath instead of Oak and Deal; and that too in a country where unlimited capital exists, and industry only requires permission to exert itself, must be ranked amongst the most extraordinary anomalies connected with the history of the country itself. Ireland, with her five millions of acres of waste land, three-fourths of which is adapted to the growth of timber, and her population perishing for want of employment, presents a picture of bleak desolation not elsewhere to be met with. Lord Melville, in his letter to Mr. Percival, predicts, with good reason, that if this culpable apathy to the interests of the nation shall continue, England will ere long experience a fatal want of an article on which her existence as a nation in no mean degree depends." The following very sensible remarks occur in Mr. John Tuke's "Survey of the Agriculture of the North Riding of Yorkshire:"—"Most people, I think, concur in this point, that for the last half century the wood in this kingdom has been terribly on the decline. That gloomy prospect has now become tremendous, and sufficiently visible to awaken the fears of every thinking person. The axe is often heard, but the planter is seldom seen. Let us cast our thoughts towards the future support and welfare of our navy—our sole protection—and we must tremble at the continual disappearance of our Oak. Some speedy method must be adopted to remedy this great national evil; or, besides the danger from fierce external foes, we must determine to go barefoot: we should never think of looking to foreign countries for a constant supply of Oak bark to tan our leather. Let Britain help herself. Each nobleman and gentleman should insert in the agreement with his tenants a clause to compel them to plant and protect in the corners of their fields, and upon pieces of waste ground, a certain number of good Oak, Elm, and Ash trees annually. These trees should be found by the landlord, and he should enforce the performance of this clause as rigidly as the payment of the rent; then will the rising generation have cause to bless the wisdom and policy of the present age." I think the above remarks need no comments from me, as they carry with them convincing proof of the solid sense of their authors. *A Young Gardener.*

*Useful Fruits.*—One of your correspondents gives a very high character to Chapman's Prince of Wales' Plum, as a fine fruit, and an excellent bearer. So far as the experience of two seasons justifies my doing so, I can fully confirm this statement, though this is a locality where Plums generally don't bear well; but an intelligent nurseryman in this neighbourhood says that this Plum is exceedingly apt to canker and die off, and that in consequence of this failing he has ceased to propagate it. So far, I don't find this to be the case with mine. In speaking of good Plums, none of your correspondents appear to be aware of the exquisite flavour of the purple Gage; it is, in my opinion, very superior to the green Gage; but, in order to have it in perfection, it must hang on the tree until it shrivels; before that time, it is only a second-rate fruit, but when it has hung a week or 10 days after it has become melting, it begins to shrivel, and then becomes by far the richest and sweetest Plum I know, and upon a wall, even in this miserable climate, it will hang on the tree until the beginning of November, and retain its flavour to the last. There is another fruit which I don't see so often mentioned as it deserves to be, and that is the Beurré de Capiaumont Pear; with me it is a most profuse and certain bearer; and if not allowed to hang too long upon the tree, and when gathered, if it be hung up in a warm room until it becomes melting (this is essential), it is only second to the Marie Louise in flavour; but to obtain it in this perfection, the tree must not be overcropped, which is very probable, if it is not most resolutely thinned. *T. G., Clitheroe.*

*Garden Ornaments.*—How many means of creating picturesque effect are wasted by every gardener! How pretty could a common red Grape jar be made to look, if a rough trellis were put across its mouth and a creeper planted in it, with plenty of drainage, with four bricks as a pedestal it would look well, and cost at most only 1*s.* 6*d. Jay, Somerset.*

*Timber Preserving.*—At the back of the house No. 22, Essex-street, Strand, a rail of Oak was, in the year 1771, placed round a flat roof of lead, at a height of perhaps 90 feet above high water in the Thames. The rail was exposed to all the violence of storms from south to the northward of west, the leads being two or three stories above the roofs of the houses in those directions. The rail was composed of an upper and an under bar, each of them might have been about 4 inches in the square, the upper bar rounded off as a hand-rail; into these bars were morticed uprights of about 2½ inches square. Robert Mylne (the architect of Blackfriars-bridge), directed that the whole rail should be left without paint or any other coating for two or three years, to season; it, however, never was either painted or coated in any way between that time and the year 1800, a period of nearly 30 years, and yet it was as sound at the end of it as when first put up. How long afterwards the rail lasted is not known. *M.*——The remarks which have lately appeared on this subject, remind me of the following conversation. Walking one day with the late Mr. Atkinson, of Silvermere, in his grounds near a lake, where he had recently built a summer-house of home-grown wood, I asked him whether he did not mean to give it a coating of something to preserve the timber? He said "No." Would not brushing it over with linseed oil be a good precaution, without altering its appearance? "No; I think all such applications more calculated to induce decay," or words to that effect. He did not enter into the *modus operandi* of the application, nor did I ask him, but such was his opinion. When on this subject, I may mention an instance of durability in naked wood that, some years ago, fell under my own observation. Being engaged in alterations in a garden of which I had charge, it became necessary to remove an old frame-ground, surrounded by a Reed-fence 6 feet high. The rails of the old frame were of Cherry-tree, cut triangularly and fixed to Oak posts. These rails were never either pitched, tarred, nor painted. When taken down, they were crusted over with a brittle crust about one sixteenth of an inch deep, and all besides was sound and hard as bone; an old man who had worked in the garden between 40 and 50 years told me that these rails had been there ever since he had been, and to his knowledge had worn out two sets of Oak posts. Again, I have frequently known green poles of Willow, peeled and used as fencing rails, to last many years, and attain a sort of toughness and durability from exposure, that any one at first thought would hardly expect; and even Ash poles, split and peeled, will last many years; the action of the weather on the outer surface raises a sort of short woolly covering that wards off the rain. So far my observation coincides with some of the remarks of your correspondents on this subject. *Quercus, Jan.* 27.

*Sources whence Plants derive their Nitrogen.*—In your article on this subject you appear to me to have overlooked one source from which they must derive a considerable portion of it. Every student of chemistry is told in the rudimentary treatises on that science that if an electric spark is passed through a jar containing atmospheric air, the latter is converted into nitric acid. Presuming this is true, does not it warrant our supposing that an immense supply of nitric acid is generated by the electric explosions of thunder storms? There must be millions of acres of electric clouds exposed to these explosions, and thousands of hogsheads of nitric acid generated thereby. At least, so it appears to me; but not being a chemist, I may be wrongly informed in the matter. Will you kindly say whether I am so or not? *T. G., Clitheroe.* [Nitric acid is unquestionably formed in the air in other modes than by the oxidation of ammonia; not merely by flashes of lightning, but also, indeed, whenever any substance is burnt in the air. The quantity, however, thus generated is probably much less than that resulting from the oxidation of ammonia. The rain which falls in the most violent thunder-storms contains only a minute trace of nitric acid. It is only in the immediate course of the electric flash that a small quantity of nitric acid is formed; and many thousand electric sparks must pass through a jar of air before an appreciable quantity of the air is changed into nitric acid.]

*Hybridising the Hepatica.*—As the season is arriving when one of our prettiest spring flowers, the Hepatica (Hepatica triloba), will show its bloom, I very much wish again to call the attention of amateurs and some of our leading cultivators to the fact, that there appears to be only five varieties of this charming little plant; viz., single white, single red, double red, single blue, and double blue; and although these plants have been known and cultivated in our gardens for upwards of two centuries, and are also found wild in many of the woods of Europe, yet there appears to have been no attempt made to obtain varieties. The single sorts seed readily, and so does the double white; and as they are raised

without difficulty, and flower the second year, perhaps some one may take the subject up, and be enabled, at no distant period, to obtain varieties of this charming little plant by cross impregnation, as well as of many other plants on which much care has been bestowed, but without half the claim to the merit of this little spring favourite. *George Wood, Rochford, Feb.* 3.

*Bees.*—One of your correspondents, a short time since, related an incident which occurred to a friend of his, who, on removing some bees to a new locality, found them destroyed by the attacks of other bees, and asks, "Whether it might be the 'natives' excited by the dread of famine which perpetrated the mischief?" On reading it I was strongly reminded of some information I received some 30 or 40 years since from an old gentleman in Buckinghamshire, who had kept bees for many years, and had the best and firmest honey I ever remember to have met with. The old gentleman attributed the superior quality of his honey to the honey dew yielded by some very fine Lime trees in the neighbourhood, with which the inmates of his apiary made free. But *àpropos* to the robber-bees: on one occasion I found some of his bees drowned in a tub that stood adjacent to the hive; and on enquiring into the cause of the catastrophe, was informed that an accident had occurred to the queen bee belonging to one of the hives, and that he had destroyed all the bees belonging to it, since those which survived would turn robber-bees, and in that way do serious mischief. *W., Lancashire.*

*Grape Scissors.*—I have frequently seen fine-pointed scissors recommended for thinning Grapes. Now I beg to state that any person (however careful, or steady handed and well up in practice) may often regret having pierced or punctured a prime looking berry when he wished to pass the finer points of his scissors past it to sever the one he wanted away. I have used for two years a pair of scissors one blade of which is probe pointed, the other as fine as can be desired; and can with comparative ease and speed introduce it to the centre of a bunch of Grapes without fear of wounding a berry—then open the blades—grasp and cut the objectionable berry off as close as required. In my operations in thinning Grapes, my curve-bladed scissors with one probe-pointed have saved me a deal of time, which to me, and every one else, is a point worthy of great consideration. *Samuel Swinnerton, Market-Drayton, Salop.*

*Begonia Fuchsioides.*—This plant rarely flowers well until the second year of its growth. Encourage it to attain the size required the first season, but never cut it, rest it like other Begonias, and when you start it for flowering, top-dress it, but do not repot; give tepid water copiously, but if over done the leaves will turn yellow. It likes a temperature of 70° by day, and 60° by night. Under this treatment it will put forth short-jointed flowering branches abundantly. I have had a plant of it in bloom here for these last two months, and another is resting in a cold house for late spring flowering. *W. Culverwell, Thorp Perrow.*

*Market Gardening.*—Mr. Cuthill states that the general crop of Cabbage is sown between the 25th Aug. and the 1st Sept., but it will be found that this crop is sown from the 3d to the 8th of Aug. He also mentions that Cauliflowers are sown about the 20th Sept., but they are always sown between the 21st and 28th Aug. As regards the sort of Celery now in use, he says, "there is no solid Celery grown now, as there was 20 years ago;" but if he will walk over to Deptford I will show him 20 acres, at the commencement of any season, of such Celery as could not be produced 20 years ago. I have some even at this advanced season, as solid as ever he saw it. *J. M., Market Gardener, Deptford.*

*Longevity of the Skylark.*—Mr. Kidd states, in reference to the sky-lark, that he has had them in full song for 14 years. As a proof of their longevity, even when confined in the narrow limits of a small prison-house, I may state that Mr. A. Fry, of Capel, near Tonbridge, has one which has been in full song for 20 years, and, to all appearance, it is as hale and hearty as when first immured in his wire cage, proving that they are undoubtedly happy in their confinement; and they amply repay any pains and care that may be bestowed upon them. *George Fry, Manor-House, Lee.*

*Re-invigorating old Forest-trees.*—Some Ashes that were considered old trees more than 60 years ago, were, as if by accident, made the subject of an experiment. About 20 years ago, when some alterations were making, these trees stood somewhat in the way; and as they appeared to be in an unhealthy state, with a great number of dead branches upon them, sentence of removal was nearly pronounced against them. However, they were allowed to remain. To make up a bank where shrubs were to be planted, a considerable quantity of peat was used, and the roots of the Ash-trees got a good covering of the peat put upon them. It was no wonder that the old trees made little progress the older they grew, for the food in the soil in which the roots were, appeared to be nearly exhausted, and the trees were dying, branch by branch, and the rate at which they were giving way, would have soon made them all fit for firewood. But the peat, although a coarse kind of food, was quickly seized upon by the Ash roots, and, to all appearance, made as welcome as a supply of provisions to a starving garrison after a long siege; for the young fibres were found in clusters among the partially decayed matter that was within their reach. The trees soon assumed a different aspect, a more healthy appearance; they were, as it were, rescued from death of a lingering nature, and started afresh into life and vigour. Their foliage was of dark green, and remained longer on the trees, the shoots were stronger, and the layers of alburnum or sap-wood increased in thickness, although the ground above the roots of the Ash-trees has been for many years covered with healthy evergreens; the Ash-trees still continue to thrive, although the evergreens must deprive them of a considerable part of the food which they ought to have, and also of the sunlight, for the ground is doubly cropped, which is too often the case in different departments of cultivation, as well as in the growing of timber-trees. From the cases I have seen from time to time, of decaying forest-trees becoming healthy, when proper food was put within the reach of their roots, I would be inclined to think that the decrease of the diameter of the trunk, after a certain age, of certain species of trees, is the result of starvation in some shape or another; for, as some one remarks, "a very large proportion of plants appear to be capable of an almost indefinite period of existence, if it were not for accidents and disease, independent of old age." And there is much ground for believing that many accidents and diseases would be prevented, if the natural wants of our forest-trees were better understood, a knowledge of the food they required, of the benefit of sunlight, of the functions the leaves performed; in short, a knowledge of vegetable physiology, and of the agents required for successful culture. In many parts of our country, we meet with a solitary tree, commonly an Ash, or it may be an Elm, or a fine specimen of a Scotch Fir, growing far apart from other trees, and we often wonder how they came there, or were allowed to remain. Sometimes there is a small clump of trees, some of them fine specimens of their kind, others in the last stage of existence, bearing the marks of the buffetings of many storms, and, it may be, a short allowance of provisions. Old age and poverty are ill to bear in the vegetable kingdom, even when they assail the monarchs of the woods, as well as in the animal; they make the strong bend before them. Neglect, and the destroying hands of admiring pilgrims, have wrought the destruction of many a noble plant, and nothing remains for the gratification of future generations, but the spot on which they grew. If our trees could speak, many of them would cry out, "Gentle woodman, spare the tree." When inquiry is made respecting these old weather-beaten trees, of a bygone age, we commonly learn that once on a time a cathouse stood near by, or, it may be, an old farm-steading, and the trees grew near the garden, and they are all that remains to mark the spot where numbers of the human family were born, lived, and died. It may be a long time before much manure can be spared for growing forest-trees; and there are some kinds to which it would do more harm than good, if it were applied, such as the Pine and Fir trees; but much is thrown away, or allowed to waste. If applied to the purpose of arboriculture, there would be both pleasure and profit derived from the application. Many a tree may be seen growing in soils naturally poor, and unfitted to carry heavy timber, without assistance; and trees, considered by many to be in the last stage of existence, may be made to renew their growth; for, give a tree room to grow, and food to live upon, and vegetable physiologists will not be able to tell how long it should live, or how large it should grow. *Peter Mackenzie, West Plean, Stirling.*

*Rain* which fell at Landue, near Launceston, Cornwall, in 1850:

| | Inches. | Days. |
|---|---|---|
| January | 3.19 | 13 |
| February | 4.88 | 14 |
| March | 2.07 | 8 |
| April | 11.63 | 18 |
| May | 3.28 | 17 |
| June | 2 15 | 9 |
| July | 2.40 | 8 |
| Carried forward | 29.00 | 81 |
| Brought forward | 29.00 | 87 |
| August | 2.89 | 22 |
| September | 4.09 | 10 |
| October | 3.01 | 18 |
| November | 4.89 | 20 |
| December | 6.06 | 17 |
| | 49.94 | 174 |

Ditto at St. Breoke, near Wadebridge, Cornwall:

| | Inches. | Days. |
|---|---|---|
| January | 2.21 | 19 |
| February | 2.85 | 18 |
| March | 1.59 | 9 |
| April | 4.29 | 20 |
| May | 2.46 | 15 |
| June | 1.67 | 11 |
| July | 2.73 | 16 |
| Carried forward | 17.80 | 108 |
| Brought forward | 17.80 | 108 |
| August | 2.70 | 21 |
| September | 3 00 | 13 |
| October | 3.37 | 17 |
| November | 4.68 | 22 |
| December | 4.11 | 18 |
| | 35.66 | 199 |

Ditto at Ham, near Plymouth:

| | Inches. | Days. |
|---|---|---|
| January | 3.38 | 12 |
| February | 5 12 | 14 |
| March | 1.15 | 13 |
| April | 6.97 | 16 |
| May | 2.73 | 8 |
| June | 2.37 | 10 |
| July | 3.19 | 7 |
| Carried forward | 24.91 | 80 |
| Brought forward | 24.91 | 80 |
| August | 2.82 | 8 |
| September | 5.16 | 12 |
| October | 3.76 | 20 |
| November | 5.02 | 16 |
| December | 5 43 | 13 |
| Total | 47.10 | 149 |
| Do. at Radstock, near Bath | 30.57 | 150 |

Ditto at Broadhembury, Honiton, Devon:

| | Inches. |
|---|---|
| January | 1.44 |
| February | 2.13 |
| March | 0 59 |
| April | 5.93 |
| May | 2 39 |
| June | 2.29 |
| July | 2.39 |
| Carried forward | 17.16 |
| Brought forward | 17.16 |
| August | 2-22 |
| September | 2 92 |
| October | 2.74 |
| November | 3 52 |
| December | 2 81 |
| | 31.37 |

*H. H. Treby.*

*Mildness of the Season.*—You may perhaps be interested to hear that I saw on Friday last, the 31st January, in an open garden at Morningside, a suburb of Edinburgh, a Pear tree with one of its blossoms expanded, while the whole tree was bristling with blossoms just ready to open. The tree is one of Mr. Rivers' pyramidal "Marie Louise." Another pyramidal tree of "Sucré Vert," in the same garden, was in an equally forward state. Does this not prove that some kinds of Pears at all events could be forced so as to ripen their fruit a month or two earlier than usual? Would you kindly suggest some cheap means of protecting the blossoms on the two trees above-mentioned, which are trees of some considerable size, or must we give up all hopes of obtaining fruit from the present show of bloom, and trust to a second pushing forth of blossom-buds; and in this case would not the best plan be to strip off all the present flowers, so as not to waste the vital energies of the trees? Θ. I., *Edinburgh.* [We should strip off the flowers.]

*The Shantung Cabbage.*—A correspondent of mine at Shanghae writes to me that he is sending me some seeds of the Shantung Cabbage, which one of the French missionaries had procured in the north of China; he says it somewhat resembles the Savoy in appearance, is of a delicious flavour, and weighs 60 lbs. Do you know anything of this Cabbage? If so, will you be kind enough to say when would be the best time to sow the seeds, so that it would have the best chance of getting through the winter without running to seed prematurely; if it is as good and large as he represents it to be, and if it will grow to the same size in England, it may be an acquisition to the country. *T. G., Clitheroe.* [This has always hitherto run to seed in this country, without forming a heart. It is supposed that August is the right month for sowing it in. The failures have been sown in spring.]

*Dead Leaves.*—I am rather out of season with my question, but ever since the leaf-gathering of the autumn I have been thinking whether any advantage could be gained by keeping the leaves of different sorts of trees by themselves—whether their respective qualities are sufficiently different to make it worth while. We know that the leaf of the Beech is particularly endowed with antiseptic properties. The Oak seems to possess more tannin than most others. I have the means of getting leaves from groups of Ash, Horse Chestnut, Lime, Elm, Oak, and Beech, almost without intermixture. If some of your correspondents would say if their experience has led to any conclusion on this subject, I should be much obliged, and I think it might edify many. *Jack, Castle Carey.*

*Fruit Shows.*—The forthcoming exhibitions for 1851 will, without doubt, call into existence many new competitors, in consequence of the Exhibition for the world's industry. To those intending to show black Grapes, I would just hint that the Dutch or Wilmot's Black Hamburgh is on his march to the great arena; and if you do not possess it, you may (unless you can depend on something great) keep your Grapes at home until they are shown separately. Strength of habit and large berries are its chief characteristics; I may add, its only recommendation. The true Black Hamburgh has no more chance with it than I with Hercules. *Caustic.*

## Societies.

Linnean, *Feb.* 4.—R. Brown, Esq., in the Chair. A letter was read from Mr. Hartmann, a Swede, on the discovery of a manuscript of Linnæus, entitled "Iter Dalecarlicum," in the Museum of the Linnean Society. In this manuscript the details are given of a journey made by Linnæus through the province of Dalecarlia, in the year 1734. Like the published journals of the great botanist, this manuscript gives an account of the physical geography, the agriculture, the economy of the people, and the plants and animals of the province through which he travelled.—A catalogue of recent land and fresh-water mollusca found in the neighbourhood of Nottingham, with notes and observations by J. E. Lowe, Esq., was communicated by Dr. Lindley, and read by the secretary. The President called attention to two genera of plants, Kingia and Xanthorrhea, both natives of Australia, remarkable for a structure adapted to resist the action of fire, which was so unscrupulously applied to them by the settlers of New Holland. In Kingia, the leaves sent down between the true stem and the bases of the petioles which formed the only bark of the tree, a series of adventitious roots, which closely covered the stem, and resisted to the greatest extent the action of external destructive agents. A further development of this structure was seen in the stems of certain Blood-worts, namely, Vellozia and Barbacenia. The other genus, Xanthorrhea, was remarkable for secreting a resinous matter at the base of the leaf-stalks, which, remaining upon the stem, were thus united together so as entirely to resist the action of fire. Transverse and vertical sections of the stems of various species of these plants, with drawings by Ferdinand Bauer, were exhibited to illustrate the President's remarks. Dr. Iliff exhibited specimens of mice, which had been found with an apparently fungous growth covering their head and ears.

## Garden Memoranda.

Mr. Chapman's Forcing Grounds, Vauxhall.—Mr. Chapman has been long and deservedly celebrated as a general forcing market-gardener; his place consists of about an acre and a half, covered with glass erections of all forms, both large and small. The north and east boundary walls are covered with lean-to houses, with the Vines planted along the back wall, and trained down towards the front. In some of the houses they run both ways. The centre of the ground is occupied by span-roofed houses, varying from 30 to 70 feet in length, some run east and west, others south and north. It is surprising to see the famous crops which are pro-

duced in these houses, when we consider that their position is in the very centre of Vauxhall, and in the midst of a dense smoky atmosphere, where often for weeks together the glass is covered with soot and dust, excluding much light, of which, under the best of circumstances, we have little enough in winter. Mr. Chapman has never made what is called a Vine border. His ground naturally consists of a rich, dark, vegetable deposit, in which the Vine grows with the greatest luxuriance, the subsoil being gravel. Under each light are two Vines, with wood from 5 to 6 inches between the joints, firm and finely ripened. He never removes any bark until it hangs loosely, and very little then, for he is of opinion that by leaving the old bark on moisture is absorbed, and the live skin is kept in a more natural state. He paints all his Vines every autumn with a mixture of black sulphur, newly-slacked lime, and soft soap, together with as much soot as makes the composition so nearly the colour of the old bark as to be scarcely distinguishable from it. No insects trouble him, and he has never experienced the ill effects of Vine mildew. He never covers the Vine roots with any heating material, but using, as he does, a large quantity of tan in the production of Mustard and Cress, he covers over his borders with spent tan. In the earliest house the Vines are planted against a wall, whose foundation is not more than a foot deep, consequently, one-half the roots may be expected to be on the outside of the wall, in land belonging to another person. Therefore, no protection could be applied here, and yet the Vines bear satisfactorily. The shoots are already all stopped, one joint beyond the bunches of which there is a beautiful display. The Vines in this house are always sufficiently luxuriant, and differ in no respect from those situated in the centre of the ground where the borders are covered with old tan every winter before forcing is commenced. Requiring, as Mr. Chapman does, so much tan for growing Salads in, he generally starts his Vines with the heat evolved in the fermentation of new tan, which is laid in one or two long ridges along the houses, or in the centre pits where Pines were once grown. A natural and uniform "break" is thus obtained, the heat is then increased, and the Vines progress gradually, and under these conditions, the fruit, even in the worst of seasons, is generally well coloured, while many thousand pots of Strawberries, French Beans, &c., are produced under the same roof. In the centre of one of the houses was a Black Hamburgh, nearly a month in advance of its neighbours, which were also black Hamburghs, and which were all started at the same time. If this early habit therefore proves constant, the variety will be an acquisition. Mint, Marjoram, Basil, and Taragon, &c., are grown largely here. A long span-roofed pit was full of these herbs; but Chicory, and that useful ingredient in a Salad, Lamb Lettuce, were nowhere to be seen. They have unfortunately not yet become favourites with the London public.

## Miscellaneous.

*United States Horticulture.*—The annual value of the product of Horticulture in this country now amounts to nearly five millions of dollars, while that of orchards probably exceeds ten millions. But there is another and yet more pleasant aspect in which to view the commerce in plants. There is a value in a flower or fruit which cannot be estimated in money. It is found in that beauty which exceeds all price; in those odours which breathe fragrance; and in that luscious and delicate taste which nothing but the products of the garden can ever yield. The heathen poets talked of the nectar handed round the tables of Olympus, and the golden Apples in the garden of the Hesperides; but this only proved that they had never seen the Pippins, the Grapes, or the Roses of this western world. The poet who has seen the fruits in a modern garden, will never try his art in calling upon modern imagination for what imagination cannot equal! The part of commerce which is thus above fixed, and to which I now allude, is the trade in *bouquets*, or culled flowers, as the ornament of dress, or rooms. There is not a modern city in which the sale of flowers is not quite extensive. There is hardly a lady who does not wear them, and hardly a gentleman who does not really or professedly pay homage to the refined taste, which has thus associated the graces of her person with the loveliness of flowers! The trade in this branch of Horticulture is rapidly increasing, and of all the fashions to which luxury has given rise, this is one of the most innocent and the most to be commended. In spite of all the artificiality of civic life, there is something in this association, which calls us back to the bloom and beauty of primitive creation! *Cincinnati Horticultural Review.*

## Calendar of Operations.

*(For the ensuing week.)*

GENERAL REMARKS.

Those houses which have not already undergone a thorough cleaning, should now be attended to; and if necessary, the inside of the sashes and rafters should be painted. Late Vineries will now be cleared of their crop; and in these, the cleansing and preserving processes should be applied. The hot-water pipes should not be allowed to rust; but should be thoroughly cleaned, and then while slightly warmed have a coat of paint applied. The furnaces too should be attended to, as shattered and loose bricks about the frames of the furnace doors cause too great a draught, and consequently a waste of fuel. By putting all these matters in order once a year, much after expense will be saved; and no time is more suitable for doing so.

PLANT DEPARTMENT.

Some of the plants which flowered in December will now be commencing their growth, and preparations for potting such should be made. A sufficient stock of all requisite materials should be prepared before-hand; and with regard to soils, this should be particularly attended to. It is in many places a difficult matter to get good peat, but, without it, fine-rooted, hard-wooded plants cannot be grown in perfection. If, therefore, healthy well-grown specimens of these kinds are objects worth trying for, no trouble must be considered too great in procuring suitable soil. As the amount of day-light increases, the temperature of the greenhouses may be slightly raised, particularly in fine clear weather; but be cautious not to excite stove plants, especially hard-wooded ones, until the days are longer, as a much greater difference exists between the light of their natural habitats, and of our climate at this season, than between the latter and that of the countries whence our greenhouse plants are introduced; hence, these last are less liable to be injured by a temperature approaching their own natural one, in conjunction with our own dull atmosphere. Stoves and the Orchid-house should not range higher than 55° to 58° at night; forcing-house, 60°; greenhouse, 40°; Heath-house, 36 to 40°. Take care that no moisture falls on the flowers of Orchids, or their beauty will soon be destroyed. If a speedy development of the flowers of any species which are now showing be desired, they may be removed into the forcing-house.

FLOWER-GARDEN AND SHRUBBERIES.

If our previous suggestions have been carried out, the whole of the beds in this department will now have had their annual dressing, and everything in and about the flower-garden will be wearing a neat and orderly appearance. The shrubberies should next claim our attention, for, when well regulated, they possess a charm at all times; and here there is in every garden much that may be done at this season. The shrubbery, as it is often seen, is nothing more than a confused mass of sickly ill-looking trees and shrubs striving for existence; while, by allowing each plant a sufficiency of room, they would soon wear a healthy appearance. If fine specimens are desired, let every bush or tree stand distinct and free from its neighbour; spread out and peg down all bushes that will admit of it, and prune, support, or remove dead wood, according to their individual requirements. In regulating the clumps, very fine specimens of different shrubs will attract attention, either on account of the symmetry of their form, or the peculiar beauty of their general habit. The best of these should either be exposed to view, or removed and planted in appropriate situations on the lawn, where they will show themselves to the greatest advantage on all sides. While the regulating of the shrubs is being carried on, let any bare spaces left for showy herbaceous plants be forked over. Level turf where necessary, and put the edgings of walks in proper order, as by finishing every part as we proceed, the work is carried on to much greater advantage.

HARDY FRUIT GARDEN.

Few things are more annoying to a gardener, than to see all his Cherry-trees, and his Gooseberry or Currant bushes, cleared of their buds by birds, as would be the case annually in some gardens, if great diligence were not used in destroying the bullfinches as fast as they appear. It is impossible to paint over the branches of tall trees with lime wash, in a similar way to the Gooseberry and Currant bushes; and however cruel it may seem, we can recommend no other remedy than the gun. A single pair of these birds will, in a few days, entirely destroy the buds of a very large tree; this will also show that these enemies cannot be too strictly watched.

KITCHEN GARDEN.

Some early dwarf Peas should now be sown as soon as possible in turf, and raised in heat, to be planted out on a warm border as soon as they are about 3 inches high, and have been gradually hardened. The most economical way of doing this is to cut stripes of turf 4 or 5 inches wide, and lay them on boards with their grassy side downwards; a drill is then to be made along the middle of the turves by pressing a strip of wood into them; and in this the seeds are to be sown, and covered with a little light soil. The boards may be placed under the trellis of a Peach-house, or in a similar situation, where the night temperature does not exceed 50°. The best situation for hardening them is close to a south wall, where they can be sheltered by placing a few Spruce or Yew branches in front of them, until, by gradual exposure, they become thoroughly inured to the open air. The varieties best adapted for this purpose are the Prince Alberts and Bishop's Long-podded, of which a sowing should also be made on an open sunny border. Fairbeard's Champion of England, which is a fine flavoured Pea, and an excellent cropper, may be sown once a fortnight, from this time till the middle of June. Sow also some more Broad Beans. Cardoons, Leeks, and Celery, require checking, as they are commencing to run, in consequence of the mildness of the season. They should be taken carefully up and laid among some light leaf-mould, or old tan, in the shade of a north wall, where they must be well moulded up as a protection in case of severe weather. A piece of rich ground should now be planted with early Cabbage. The distance between the rows should be 18 or 20 inches, and the plants about 9 inches apart in the row, so that every other may be pulled for use first, leaving the rest to become larger. The planting of early Potatoes should be no longer delayed. Light soil, an open situation, and no manure, are the points to be attended to in the cultivation of this very useful, but now fickle, root. The sets should be planted 6 inches deep, and if a few handfuls of burnt clay, or charred refuse, be placed about them, the produce seems to ripen quicker and cleaner, without being deteriorated in quality or size. On a warm border make another sowing of Radishes, and one of Early Horn Carrots. In very favourable localities, Onions, and an early bed of Parsley, may now be sown. The Leek is very hardy, and cannot be sown too early, as its excellency depends upon this, and upon being transplanted as soon as the plants are large enough, into a piece of rich, well-prepared ground.

State of the Weather near London, for the week ending Feb. 6, 1851, as observed at the Horticultural Garden, Chiswick.

| Jan. and Feb. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 31 | 29 | 29.289 | 29.194 | 45 | 28 | 36.5 | 40 | 41½ | S.W. | .07 |
| Satur.. 1 | 30 | 29.470 | 29.424 | 43 | 29 | 36.0 | 40 | 41½ | N.E. | .04 |
| Sunday. 2 | 1 | 29.575 | 29.513 | 40 | 22 | 31.0 | 39½ | 41½ | N.E. | .10 |
| Monday 3 | 2 | 29.567 | 29.491 | 44 | 25 | 34.5 | 39 | 41 | S. | .06 |
| Tues. .. 4 | 3 | 29.939 | 29.793 | 45 | 23 | 34.0 | 38½ | 40½ | N.W. | .00 |
| Wed. .. 5 | 4 | 29.794 | 29.508 | 49 | 39 | 44.0 | 38 | 40½ | S.W. | .14 |
| Thurs.. 6 | 5 | 30.148 | 29.772 | 46 | 23 | 35.5 | 40 | 40½ | W. | .00 |
| Average .. | | 29.683 | 29.527 | 44.5 | 27 3 | 35.9 | 39.3 | 41.0 | | 0.41 |

Jan. 31—Rain; sleet in very broad flakes at 8 a.m.; cloudy; rain.
Feb. 1—Overcast; fine: clear.
" 2—Rain; hazy; slight fog at night.
" 3—Frosty and foggy; overcast; rain; cloudy.
" 4—Clear; cloudy and fine; clear and frosty.
" 5—Densely overcast; with drizzling rain; cloudy.
" 6—Clear; low white clouds; fine; clear.
Mean temperature of the week 2 deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Feb. 15, 1851.

| Feb. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 9 | 45.7 | 32.2 | 39.0 | 7 | 0.30 in. | 1 | 3 | 1 | 2 | 1 | 11 | 1 | |
| Mon. 10 | 45.2 | 31.4 | 38.3 | 9 | 0.52 | 2 | 4 | 1 | 2 | 4 | 7 | 3 | |
| Tues. 11 | 44.8 | 31.2 | 38.0 | 12 | 0.34 | 5 | 2 | 1 | 1 | 5 | 7 | 2 | |
| Wed. 12 | 45.2 | 30.3 | 37.7 | 11 | 0.23 | 3 | 2 | 1 | 1 | 4 | 9 | 5 | |
| Thurs. 13 | 45.0 | 31.1 | 38.1 | 10 | 0.30 | 1 | 2 | 1 | 1 | 5 | 8 | 5 | |
| Friday 14 | 46.4 | 33.3 | 39.8 | 8 | 0.50 | 1 | 1 | 2 | 1 | 4 | 8 | 7 | |
| Satur. 15 | 47.2 | 32.6 | 39.9 | 11 | 0.25 | 2 | 2 | 2 | 1 | 4 | 6 | 7 | |

The highest temperature during the above period occurred on the 10th, 1831—therm. 65 deg.; and the lowest on the 11th, 1845—therm. 3 deg. below zero.

## Notices to Correspondents.

American Blight: *A.* See p. 56 of the current volume.‡

Arums: *A H.* Arum tenuifolium, italicum, and triphyllum will flower out of doors and thrive there, if put at the foot of a south wall in a border dry in winter. Ar. arborescens of Linnæus is from the West Indies; it was called a Caladium by Ventenat, and has since been regarded as a Philodendron.

Books: *C M T.* There is no illustrated work upon the plants of all the tropical parts of the world; nor can there be, when you consider that at least 40,000 plants would have to be illustrated.

Burrs: *Anon.* The substances thus called are the half-vitrified masses found in brick-kilns after they are burnt. They are very hard, and not at all liable to crumble. Large porous dross *may* do, but we never tried it.

Coffee: *A B.* It is a stove plant, and therefore can only be cultivated in England under glass, and in heat.‡

Conifers: *J E.* Juniperus Bedfordiana is a very doubtful plant. It is otherwise called J. Gossainthanea, and is not hardy near London.

Dodecatheon: *A H.* None are much worth growing except the two common kinds mentioned by you. D. integrifolium, in the gardens, is quite inferior. Some of the Pæonies are well known Moutans; but, upon the whole, the list is not worth notice. As for 5*s.* for R. gallica, why its utmost value is 6*d.*

Emigration: *E.* We cannot undertake to point out countries for intending emigrants. It is much too serious a matter. In the absence of other information they must be guided by the books which have been published on the subject.‡

Garden Plans: *A New Beginner.* Study "Loudon's Self Instruction for Young Gardeners," and "James's Gardening," if you can procure it.

Heating: *C F Johns.* One of Mr. Rivers' brick Arnott stoves figured at p. 51, 1846, will perhaps answer your purpose. ‡

Larch: *W B.* You may plant Larch in Ireland at any elevation you please. ‡

Meteorology: *T S P.* You shall have an answer in a post or two.

Names of Plants: *M J.* Polystichum angulare. *S.—Adiantum.* Platyloma flexuosum. *J. Sm.*; Adiantum trapeziforme, *Linn. S. — G H K.* Saurauja villosa — *G C B.* Arbütus not Arbūtus; Gladiōlus not Gladiōlus—*B S.* Acacia biflora. —*G P L.* 1. Phalaris arundinacea; 2. Poa aquatica.

Notice: *C J E.* You cannot give less than a month's notice, unless there is very strong cause for dissatisfaction. A week is however *legally* sufficient under the circumstances.

Orache: *R.* Some of the London seedsmen can no doubt supply you with it.‡

Pine-apples: *A D.* Old turf and leaf-mould will suit them perfectly, provided the turf is light and fibry, and used in a rough state. ‡

Potatoes, &c.: *E N.* We never recommend dealers.

Roses: *Jack.* They have not heat and light enough. That is the reason why they do not expand well, but exhibit the appearance you mention. ‡

Rosewood: *H F.* The tree from which the rosewood of commerce is procured is a species of Trioptolomea, a leguminous genus. See Lindley's "Vegetable Kingdom," p. 548.

Vine at Nettlecombe: *C E.* This subject does not require further discussion.

Yew: *Reader.* Although "few things will flourish under a Yew tree," you need not be at all apprehensive that branches of it used for the spring protection of wall trees will exercise any injurious influence on the forthcoming blossoms. They may, however, have the effect of "drawing" them and thereby rendering them weak if applied too thickly. ‡

Misc.: *W D C.* If your enquiry has not been noticed, it has not been received. If you will kindly repeat it we will give it attention. ‡ — *Z Y X.* You cannot perhaps do better than keep your Morello Cherry tree well syringed during summer with clean water; but to be effectual it should be applied with considerable force. That will keep it clean. ‡ —*F. L.* is not just of a master to insist upon his gardener procuring plants, and at the same time to refuse to defray their expense: such a demand is like desiring the gardener to become either a beggar or a thief. As to the other matters we cannot give an opinion; in fact you express yourself so indistinctly, that we probably do not understand your meaning.

YORKSHIRE AGRICULTURAL SOCIETY.—Prize Sheets of this Society for Stock, Implements, Essays, &c., are now ready, and may be had free on application to M. M. MILBURN, Secretary, Sowerby, Thirsk, Yorkshire.

NEW SKINLESS CHEVALIER BARLEY.—This is far superior to any other Skinless Barley, both in the size of the grain and malting properties. It is also very productive, and altogether the most profitable sort of Barley to cultivate. Messrs. SUTTON intend to send specimens to the Great Exhibition. Samples may be had by post, on application, enclosing two penny stamps. Cash price, 5s. per peck. Quantities, not less than two pecks, will be sent, carriage free, as other Seeds enumerated in Messrs. SUTTON'S Advertisement, at last page of *Gardeners' Chronicle*, of January 25.

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TO FARMERS, AGRICULTURISTS, &c. &c.

G. H. FOLEY, Essex Wharf, Lea Bridge, Middlesex, Agent, by appointment, to the Irish Amelioration Society, for the sale of IRISH PEAT CHARCOAL, an excellent Fertilizer, and when mixed with night-soil or sewage matter renders both inoffensive and retains all their fertilizing properties, and producing, combined, a very valuable Manure, at a remarkably low cost; capable of being conveyed in sacks or otherwise. Price of the Charcoal, in its pure state, 60s. per ton; mixed with Night-soil, 45s. per ton, sacks included.

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Tree Guards, Garden Seats, Hay Racks, Wheelbarrows;
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Prince Regent, ditto, ditto, 10s.
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Early orders accompanied by remittances will receive prompt attention.

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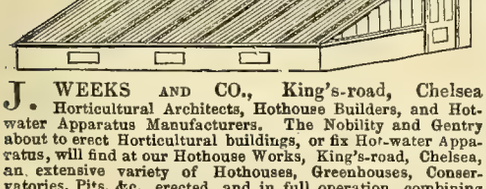
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EDWARD PURSER, Secretary.
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The Agricultural Gazette.
*SATURDAY, FEBRUARY* 8, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Feb. 12—Agricultural Society of England.
THURSDAY, — 13—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 19—Agricultural Society of England.
THURSDAY, — 20—Agricultural Imp. Soc. of Ireland.

A GOOD deal of angry feeling has lately been excited in Scotland by Mr. PUSEY'S speech at the annual meeting of the London Farmers' Club, and it has, to some extent, found expression in our own columns. The condemnation of Scottish egotism which that speech pronounced—the superiority which it claimed for English farming—the wager on that point which it proposed—all of them, no doubt, in the best natured spirit, before a social meeting of English farmers—have been seriously discussed, and sorely felt in the North. And many critiques have appeared of the unfortunate harangue, to which so wide a publicity has been given. To two of them only shall we refer at present—that of Mr. RUSSELL (Fifeshire), published in a late Number of the *Agricultural Gazette;* and that of Mr. COWIE (Kincardineshire), published in the *Scotsman*, of Jan. 22. The former shifts, we think with justice, all the blame which Mr. PUSEY would attach to *Scottish* egotism—upon the extravagance of *English* praise. We hardly know where to *look* for evidence of Scottish egotism, though we have *heard* enough of it no doubt. With one exception, all the written testimonies of Scottish agricultural superiority that at present occur to us are by English authors, and on them must rest the weight of Mr. PUSEY'S blame. The exception alluded to is the published speech, delivered at an agricultural meeting, on Monday, the 13th of January, by the gentleman already named—Mr. COWIE, of Haulkerton Mains, Kincardineshire. This gentleman draws a picture of English farming from the reports of the *Times* commissioners, and from personal observation, "obtained, not while perched up on a dickey, driving two in hand, but while travelling on foot, with knapsack on back, and working his way through." He finds evidence of English inferiority so soon as he arrives at Carlisle, in the neighbourhood of which "dung is so little valued, that it can frequently be got for nothing." He travels through Devon, Dorset, Sussex, Surrey, Essex, Gloucestershire, Oxford and Suffolk, and he finds in the different districts he visits, "working-people drinking 3 hogsheads of cyder a piece per annum"—"tenants little above the labourers"—"ploughs of the most clumsy make, drawn by six bullocks, all in a line"—"drains filled, not with tiles or stones, but with two feet long stubble, left in harvest, and now cut for the purpose"—"farm buildings formed of wood, and thatched and spread reel-ral over a given surface in the most admired state of confusion and disorder"—"the farmers left almost entirely to provide houses and steadings to themselves." What will the gentlemen of Suffolk say to being spoken of as "the poor, struggling, crazy tenants, of that comparatively rich and accessible county?" Mr. COWIE concludes thus:

"We have not provoked this contest. We are not our own trumpeters. If it so happens that a stranger, previously acquainted with English farming, in passing through Scotland, finds science in combination with practice the rule with us, and the exception among our neighbours—if he here finds threshing-mills as common as roads and bridges, and among *them* as rare as earthquakes and water-kelpies—if he finds us draining and manuring well, and they in general doing neither—and if he chooses to go and publish what he has seen—and if, instead of benefiting by such information (like their leader, Mr. PUSEY), their blood gets up, the spirit of jealousy is roused among them, because they are not our match; the misfortune and fault rest not with us. We have made no invidious comparisons, nor boasted of our superiority; but when assailed (as we have been by Mr. PUSEY and others, and the laurels we have gained attempted to be snatched from our brow) we are not the men to stand silently by and shrink from the combat. We envy what Nature has bestowed in her rich profusion on our neighbours—their good climate—their rich soil; but we wish them joy of what *art* they profess—of their wooden and thatched houses, their 40-feet wide hedgerows, and their stubble drains—and finally, to show our good-will towards them, we hope to see the day when, with the superior natural advantages they possess, they may soon shoot as far ahead of us as they are at present in the rear."

Mr. COWIE may disclaim what he pleases; but our readers will no doubt agree with us in thinking that he *can* blow a pretty good blast with his trumpet, notwithstanding his disclaimer. It is the unfortunate result of the speech which Mr. RUSSELL has criticised that it raises such a spirit as that which Mr. COWIE appears to us to have exhibited. It would be easy to reply in terms similar to those which he has used—to take up the *missed* counties, or even large portions of those which he has blamed, and to point to districts, as large as any in Scotland, where the land is farmed as well, by men as able—and where all this prosperity cannot be attributed to "the number of Scotch bailiffs who have emigrated into England and carried their system with them"—a circumstance which satisfactorily explains to Mr. COWIE whatever exceptions exist, to that general rule of mismanagement, carelessness, and poverty which he asserts English agriculture to present!

But it is very desirable that this contest between Scottish and English agriculture should cease. The terms should altogether drop. Each country contains developed within it many styles of farming, and in each every style exhibits many a grade of quality. The better plan would be to compare contrasted districts, whether in England or Scotland, simply with the desire for instruction, and if there be any noticeable difference in the results which they respectively display, to enquire for the cause in an unprejudiced manner. In this way the results of climate, of soil, of peculiarity of relationship between landlord and tenant, of an educated peasantry, and, if you will, even of national character, may be eliminated with some probability of accuracy. But if under the influence of temper such conclusions are arrived at as Mr. PUSEY suggests—viz., that the excellence of Scottish farming is a merely local phenomenon attributable to extraordinary fertility, or as Mr. COWIE asserts, *namely*, that in England Nature has been extraordinarily kind, and man extraordinarily idle—that the soils of Essex would be a good top-dressing for those of Kincardineshire!—or that descriptions locally true may not be generally false—then the more closely we confine our attention to our own doings, and the less we look on those of our neighbour, the better. This, however, is an absurd determination, for it is possible to look outside our farm, and even to overstep the boundaries of our country, without either jealousy or temper, and to return home again laden with useful information.

We believe that much misconception has hitherto prevailed among many English landowners regarding the universal excellence of Scottish farming: and we believe that a great misconception prevails among Scottish farmers at this day about our English superiority of soil and climate. Mr. PUSEY'S speech represents the reaction of the former extravagance; and a few more such as Mr. COWIE'S, and we should soon have a reaction just as violent of the latter.

## A TRIP TO NORTH DEVON.

(*Concluded from page 74.*)

A crop of Turnips being now grown, how are they to be removed from heavy wet land in a wet climate? (Some idea may be formed of the wetness, when I state that they had scarcely a week's suitable condition for drilling since October, whilst in Essex air drains had not been called upon to act). By using 220 yards of Crosskill's moveable railway, which cost, complete with trucks and turn-tables, 53*l.*, the whole 120 acres were removed by manual labour—advantage being taken of any incline in the ground. Mr. Graburn assured me that a man could move in the truck from 13 to 15 cwt. of roots. The cost of pulling, topping, tailing, and removing to the nearest headlands, is about 6*s.* to 7*s.* per acre. I was gratified to see a large supply in each field well thatched, in various clamps. I believe, about 40 yards is the distance cleared, two each side of the rails. Of course, the railway itself is removed on a long light cart. Suitable occasions are availed of to cart home the roots in dry or frosty weather; or at other times by donkeys and panniers, each one bringing 112 lbs. A number of these useful animals are kept at a trifling expense.

Lord Fortescue's home farm consists of 373 acres, arable, 339 Grass (park, &c.). The live stock consists of 50 cows and heifers in calf, 2 bulls, 300 sheep, 50 pigs, 38 fat cattle, 16 working oxen, 11 three-year-old steers, 52 two-year-old steers, 118 calves. Total 637. The breeding animals partially occupy the old farmery, but new, useful, and extensive buildings have been erected, at a cost of about 3500*l.* The arrangement is simple and economical, the whole being under one slated roof, having a wide span and considerable length. An open-sided barn, or hay and corn shed, is at one end, then comes the steam engine, threshing machine, chaff cutter, cooking apparatus, with a ready access in direct lines to the feeding animals; at the other end is the dung house and urine tank. The roof is span, slated, and the timbers light, owing to the numerous supports it has on the uprights of the various departments.

The bullocks are mostly on boarded floors; no straw is used for litter; a few are in boxes, on Mr. Warnes's plan, but the boards are considered most convenient and economical, setting free the straw for feeding purposes. The floors between the bullocks being of slate, and perfectly smooth, offer a sort of railway facility in feeding, and in removing the solid excrement; the liquid flows in a gutter to its destination.

The whole arrangements of the feeding department appear to me regular and economical. The cut hay, straw, and Turnips are all mixed; the meal, and Linseed, boiled by steam, is poured over and mixed with them, and given to the animals quite warm. The piggeries and external calves' places were not, in my opinion, warm enough, but in all other respects the general body of the building was well lighted, and perfectly ventilated. The steam-engine worked well, without smoke, having only cost 14*s.* for repairs in three years; the only defect being in a pair of vertical mill-stones. I noticed particularly that the draught and flues were well arranged for the economy of fuel and avoidance of smoke. The engine was by David Glasgow, of Birmingham; the chaff-cutter by Ransome; and the Turnip bruiser by Moody. The Turnips were washed and elevated by machinery; the Oats, for food, were threshed daily; the straw was received from the shakers, and passed at once through the chaff-cutters, the chaff being carried up by elevators to its proper deposit. In fact, the interval between each meal was employed in threshing and preparing corn, chaff, and roots, for the succeeding one. The bullocks appeared to be doing well; their hind quarters would have been cleaner, had the openings between the boards been wider. The most interesting objects were 60 fattening sheep, tied up to stakes, in pairs, like bullocks. These occupied the vacant space in the roof, over the bullocks; their excrements following the same direction on an upper floor. I never saw any stock progress faster, being perfectly gentle and tranquil, except when disturbed by strangers. Those at Earl Bathurst's, at Cirencester, are treated much in the same way. Mr. Graburn told me it does not answer so well for lambs as for full-grown sheep. The undisturbed manner in which each animal gets its own share of food, and their perfect quiescence, almost lead me to prefer the tying up to the loose system. But it is still an open question in my mind.

The bullocks consume, daily, about 9 lbs. of hay, 9 lbs. of corn and Linseed, 6 lbs. of straw, 50 lbs. of Turnips, 2 oz. salt, 40 lbs. of water; given warm in three meals. The total of water, including that in the food, would be about 83 lbs a day.—The sheep: 12 lbs. of Turnips, 1½ lb. of Oats, 1 lb. hay chaff. Not cooked—no water. The water in the food about 10 lbs. a day.—Calves eat about one-fifth as much as an ox. The working oxen eat about 30 per cent. more than the fattening oxen.—A barren fattening cow eats in summer 100 lbs of Grass daily.—a milking cow eats 150 lbs. Showing our milk to be a costly affair. There is a singular coincidence between the mode of fattening here, at Mr. M'Culloch's, at Auchness, and at Mr. Warnes's, in Norfolk.

One fact is interesting, viz., that the mixed bullock and other manure, free from straw litter, will neither ferment nor subside. This I have proved practically on my own farm. Mr. Graburn showed me a large accumulated mass, the produce of a twelvemonth, unaltered and undiminished. Its density excludes air, consequently it can neither ferment nor evaporate. It is on this principle that the bullock-pudding under my floors does not give off smell.

The use of straw, as food, is evidently and principally to give bulk and mechanical fitness to richer food, although we must not decide too hastily that it does not contain the carbonaceous elements of fat. On another part of the same farm an old store barn has been cheaply converted into a calf-house, where 80 calves, on boards, tied up to stakes and fed on cooked food, presented all the necessary evidence of progression, with comfort and economy both of food and manure.

To me the most interesting operation was the management of a small off-hand farm of 52 acres. It is an example worthy to be followed, where there are small holdings and limited means. It may be readily imagined that in its primitive state it produced neither much meat nor corn. The fields being enlarged and the land drained, I was most agreeably surprised to find 27 bullocks fattening, tied up on boarded floors, in what had recently been a barn. There was the necessary accompaniment of a copper for cooking, a corn bruiser, a Turnip cutter, a chaff cutter, and a threshing machine! Do not be alarmed, gentle reader; a real threshing machine on a 52 acre poor farm. Well, there it was, a hand threshing-machine by Barrett, Exall, and Co., but his lordship would not suffer such a barbarism as to make a beast or steam engine of mind and matter combined. No—a simple overshot water wheel, supplied from the hill, gave power and velocity to all the machines I have described; and at what cost, think you? about 63*l.* for the whole. I buttoned up my coat and felt resolved that Old England could and should feed her own population; aye, and employ them too. But where is the food for 27 bullocks? All provided, now and *in futuro*. Plenty of Oats, of Turnips, of Tares on the Wheat-stubble, of Clover and of straw, and 4 acres of nice watered meadow available at almost any period of summer. Plenty of manure in the manure-house to grow the next root crops. No guano—bought. Nothing but 2 cwt. of superphosphate of lime, and the home-made manure. Oh! it was a delightful sight, and a beautiful landscape. The abrupt and winding and shaded road, the primitive buildings, standing out in relief from the towering hill that sheltered them, the rushing water and simple wheel, the shaded vale beneath, all carried back the mind's eye to our choicest old landscapes.

But let us leave the enthusiastic for the practical. Here were the elements of compound fertility and reproduction. The produce of the farm is to be beef, pork, and Wheat. Depend upon it if animals do not pay (which I do not admit) they leave us a legacy without which we cannot, as farmers, succeed.

Oh! but says some lynx-eyed critic, where are your horses, Mr. Mechi? Aye, where are the horses? Why, I am happy to say nowhere, on this 52 acre farm; but I saw a pair of new Devon bullocks (capital beef they will make some day) ploughing deep and well—an acre per day. These are the horses—they take their place and food beside the other bullocks. In fact, one of the most pleasing symptoms of my visit was not to find a horse (excepting three or four condemned ones) on his lordship's great farm.

The whole management is simplicity itself. The father ploughs in the morning, the son in the afternoon. The intermediate periods are occupied in threshing Oats, crushing them, cutting Turnips and chaff, and cooking, with the assistance of another man. By simply turning on the water, away goes all the machinery like mad—one fancies there must be a steam engine.

Now, I do say that we must turn our barns into bullock-sheds—fill them with meat instead of corn. The question is settled in my mind. Some years ago Earl Ducie (I was told) writing to a friend said, "I agree with Mr. Mechi in nearly all his principles except his 'great barn.'" Hereafter I shall call it a bullock-house.

Altogether I do say this 52 acre farm of Lord Fortescue's is a most edifying and pleasurable fact, and stands in strange contrast and comparison with others of a similar size. I am hourly more convinced that the salvation of our heavy land farms depends on boarded floors, more stock, and ample drainage.

Passing from this little farm, we examined the tilery on the estate (the first ever erected in Devonshire). The earth makes excellent pipes: the clay is prepared by Clayton's machine, and the pipes passed through Spraggs's. His lordship finds wood-fuel (of which there is an abundance on the estate) and pays 8*s.* 6*d.* for the manufacturing, up to 4 inches in size.

The drying was going on by flues, but the sheds were not considered so advantageous for winter drying, as those kilns now in connection with the heat of the burning kilns at Ainslie's tilery.

We now enter upon Lord Ebrington's farm of 126 acres, on which there were formerly 76 enclosures! now reduced to 12. Here are the same improvements as at his father's, Earl Fortescue's; drainage, root growing, excellent new buildings, and abundance of stock—house fed—in fact, the same elements of increasing fertility: say, 62 fattening oxen on boards and in boxes; 8 working ditto ditto; 2 horses; 64 fattening sheep (tied up); 30 fattening hogs; 2 sows; manure house, liquid tank, &c. Some quiet practical agricultural friends of mine will open their eyes rather wide on comparing the stock with the acres.

The sheep were shorn early, as an experiment: they instantly consumed 2 to 3 lbs. more Turnips per day each, showing that they required a warmer temperature. The pigs appeared to be doing well on Turnips and meal, although I should strongly recommend boarded floors and more warmth for them also.

The Earl of Fortescue's rental is, I believe, about 16*s.* per acre for arable land, and 27*s.* for Grass, tithe included. His lordship appears to me to be meeting the times with a just and liberal spirit. Although he pays 6½ per cent. to the drainage committee for drainage, he only charges his tenantry 5 per cent., and this does not commence till Lady-day twelvemonths after the completion of the work. He is willing to put up water-power and threshing-machines at 6 per cent. from the time of their completion, the tenants keeping them in repair, but being allowed rough timber for the purpose. He is also ready to consider favourably the case of any of his tenants who wish for more extensive and additional machinery.

With regard to grubbing up coppices and useless fences, making drains or water-meadows, or erecting additional buildings, he will give one-half of their reasonable cost, if done by the tenant with his Lordship's approval, within the last seven years; or one quarter, if within the first seven of the term of 14 years. These allowances are made, not in money, but in guano or superphosphate of lime.

His Lordship advances to any of his tenants guano for grain crops, or superphosphate for Turnip crops, without requiring repayment till the Lady-day following, and then only at three-fourths of their cost. The same advantages extend to the purchase of lime.

In conclusion, I have been thus minute in the description of an improving entailed estate on public grounds, as an example to others. I consider the arrangements generally as insuring a greatly-improved condition of the land, the labourer, the tenant, and the proprietor; and, as a necessary consequence to society at large, by diminishing crime and increasing the demand for manufactures. Let me impress respectfully but earnestly on our noble legislators the necessity and justice and advantage of extending the provisions of the Drainage Act to buildings and other necessary permanent improvement. If the individual instance before us is considered proper by the heir to the estate (whom I assume to have concurred in it), and if such provisions are found to work beneficially in a sister kingdom, let them no longer be delayed in England, so that our aristocracy may participate in the honours and advantages of a general national progression.

P.S. The absence of railway communication is a sad drawback to this portion of North Devon. When larger quantities of food are produced by improved farming, it will become an indispensable requisite. I heard there was some good farming in the neighbourhood of Barnstaple, but had not time to visit there. Much farm produce is shipped from Barnstaple to the Welch iron districts, but I heard great complaint of extravagant freights. A good deal of land had been formerly leased for lives, and exhibits the usual evil consequences. The want of root crops and suitable buildings for winter-housing, compels the sale of much stock before winter sets in, although the winters are mild compared with those of our eastern counties.

Lord Fortescue has improved much land by catch and water-meadowing. *J. J. Mechi, Tiptree Hall, Jan.* 27.

## ON SHED-FEEDING SHEEP.

It has occurred to me, during the late wet weather, that the fattening of sheep might be carried on in a much better way than by letting them have their Turnips in the usual manner. At present they are exposed to all weathers, the cutting frost, cold winds, and rain of winter, sometimes in their muddy folds scarce able to move about, much less lie down and rest. Now every one knows that these circumstances are very much opposed to the fattening of the animals, and any plan that could be adopted whereby they might be more quickly got ready for the butcher, a greater number fed on the same quantity of Turnips, and thus a saving of food made, and which at the same time would not be attended with too great an expense, appears to me, and I suppose is admitted by every one, to be very desirable. I know not whether the following remarks will be considered to come within these conditions, but should you deem them worthy a place in your valuable Paper, I shall be most happy to see the criticisms of some of your numerous and able correspondents upon them.

The plan I propose then is this. On the headland, or perhaps along the middle of the Turnips would be better, a space should be cleared sufficiently wide for a moveable shed to be built, which shed is to be large enough to contain, in one long row, side by side, the sheep to be fattened. The shed, I think, would be best made of hurdles, but of course of a different form to those now in use; they should be about 6½ feet high for one side, and 5 feet for the other, and 6 feet in length, this would be the most convenient size for moving about; they could be made of three stoutish upright posts, with a cross piece at bottom, top, and in the middle, the top piece having holes bored in it to fix the roof to; there would require to be some slighter pieces nailed about 4 inches apart, each side of these uprights, and then have straw stuffed tightly between them; this would exclude the air. The roofing could be made of hurdles in the same manner, or, instead of straw, asphalted felt might be used; the whole to be secured against wind by being tied to stakes in the same way as hurdles now are, and the roof would be fixed by pegs fitting in the holes on the top of the side walls. The light might be admitted either from the roof or sides. I do not know what the expense of such hurdles would

amount to, but certainly not much, and once made they would last a long time. The width of the shed should be about 6 feet, and the sheep would stand with their heads towards the higher side, a row of troughs fixed in front of them, and space enough left between the troughs and wall for a man to pass along and feed them; the sheep to be tied up having liberty to stand or lie down.

Suppose, then, 300 sheep in a shed of this kind, I imagine they would require a length of about 650 feet, including a place in the centre for the Turnip house, which might be large enough to contain one day's consumption; in commencing a piece of Turnips (which of course would have to be carted to them), the shed would be first set in the space that has been cleared—at, say, 5 chains from the beginning; and until the sheep had eaten all the food from the ground, both before and behind the house, and 5 chains (or any length you like) at each end, the shed would not require to be moved. The Turnips would be all given cleaned and cut; and where a large number are fed, a small pony or donkey would be a great help in cutting them; a boy to supply the cutter and drive the pony, and a man to carry the cut Turnips, would soon feed the whole. The greatest difficulty would be the manure; but I propose that a thick coat of short straw should be the bedding for the sheep, and about 14 inches of burnt earth put under this, or if peat charcoal could be had it would be better, as it would more likely retain the ammoniacal gases, &c., and then by a little litter being given every day, I think the whole of the droppings would be absorbed, the great object being to prevent any from passing through to the ground, as it would make it too rich. Of course the number of times the shed was moved would depend upon the size of the field, and also upon how far you would choose to cart your Turnips. But suppose we say once a week, and imagine the sheep in their fresh quarters, there would be a long line of manure left behind; this should be thrown up into heaps of a convenient size, and allowed to heat until short enough to cart out on the land, which I recommend to be done by donkeys in small carts that can go about in wet weather without injuring it. Some perhaps will say that the quantity being so small could not be equally distributed over the field, but with care this might be done, and I do not suppose the cost would be very great. Boys could do the whole, only having a good shepherd to keep a sharp look-out and superintend them. At the time the shed was moved these carts would be handy to carry the hurdles, and the sheep might be left until their house was again ready for them. These same donkey carts would also cart the Turnips. If the manure could be made sufficiently short there would be no better plan than to mix it with some dry ashes, and at the time the Barley or Wheat was sown, drill this in with them; the well known drills of the Messrs. Garrett answer for this purpose.

The Turnips for the flock ewes and young ewe hoggets would be eaten off in the common way as, I think, none could be found to answer better. My plan applies only to those sheep intended for the butcher; and if by pursuing this, the animals, from being placed in a warm comfortable house, should fatten quicker, and it is now an unquestioned fact, that heat, to a certain extent, is equivalent to food, I believe we should find ample compensation for the extra trouble and expense involved. I do not overlook the circumstance that some lands require the stamping of the sheep to consolidate them, but it is possible to do this in another way. The main difficulty with which the plan is attended, is to devise some expedient to prevent the sheep-droppings reaching the ground. I do not know at what price peat charcoal could be procured; if cheap, I can think of nothing better, and a little short straw, to keep the beasts comfortable. In cases where the field of Turnips is very large, it would be advisable to parcel it out in divisions; by this means, the food and manure would have a shorter distance to be carted.

Another mode for very flat districts could be used, but, perhaps, this would be too expensive. I only mention it as an instance applicable to the shed-feeding of sheep. The Turnips would have a space cleared across the drills in the middle of the field, as before proposed, and in this space a portable railway is to be laid down; on this railway the trucks or sheds for the sheep would stand; and as soon as all the roots in front and behind, and each end, are consumed, yoke the horses to the carriages, and draw the whole establishment a notch further on; thus the rails would require to be double the length of the sheds, so that they can be taken up when the houses are moved, and placed again in front. It is only on very level farms where it would be possible to follow this plan, and even on these, I presume, it would be found too costly.

That there will be many objections urged against both of these propositions I do not doubt, and shall be glad to see them; if, however, by writing these observations I shall have brought this important subject to a discussion in your columns, so as in the end to arrive at a satisfactory conclusion upon it, my purpose will be gained. Allow me, ere I finish, to add a word or two in behalf of our poor farm labourers. It will be said, granting that the sheep, by adopting this mode, may be more easily and quickly fattened, where is the gain, after paying the greater number of hands required to carry it out? My opinion is, as I said before, there will be enough left for this; and surely it is a pleasure at this time of the year, when work is generally scarce, to see them earning their own bread, and to know that by thus employing them, in many instances the dread, dislike, and restraint of the Union-house is exchanged for the love, enjoyment, and freedom of home. *T. H., Wooddittton, near Newmarket.*

## Home Correspondence.

*Drain Pipes.*—I have read "Fossa's" letter in your last Number, and really hope that it will not have the injurious effect of inducing any one to put stones upon the pipes in drains. When I first began to drain, many years ago, I thought these necessary; but I found out by degrees that beyond, perhaps, making the land dry a few months sooner, they did no good, and it was impossible to tell when they had been used after the second season, except from the inferior quality of the crop, caused by poaching of the land with the carts carrying the stones, of which the evil effects were not removed entirely for three seasons. I quite agree with "Fossa" that economy in outlay is most desirable in all cases, and in none more than in draining; but I think that the true measure of economy is to accomplish a purpose perfectly with the most simple means; and I am quite satisfied that, with proper arrangements, 5*l.* per acre might drain all the land in the kingdom, but certainly not according to "Fossa's" plan; for, by my calculations, such drains as he approves of would cost here at least 10*l.* per acre, which, according to the very useful table he has given, would create a charge of 13*s.* per acre annually. I give my calculation, that "Fossa" may correct me if he can do the work cheaper; but I may perhaps say, as I am anxious to hinder such a mischievous practice as is proposed from gaining any footing, that I speak from a somewhat lengthened experience. I began draining before landlords came forward to lay out their money for tenants, and before Drainage Acts were dreamt of. I had to think whether what I meant to do would help or hinder me to pay my rent—a pretty stiff one—and I had to look to my balance at my banker's for the funds. For many years I laid every main drain and joining with my own hands, and one year I nearly killed a stable of ten horses, and totally destroyed the whole of my carts, in carrying out the very views "Fossa" now promulgates. I mention these facts, not from any wish to disparage scientific men who have devoted their attention to draining, and who have seen its effects under different circumstances. I always learn much from such men, and find that their knowledge is only equalled by their modesty.

| | £ | s. | d. |
|---|---|---|---|
| Cutting and filling 90½ rods of 4-feet drains at 10*d.* | 3 | 15 | 7 |
| 2178 pipes, say ... ... ... ... | 1 | 15 | 0 |
| Quarrying, breaking, and carting 90 yards stones, at 1*s.* ... ... ... ... ... | 4 | 10 | 0 |
| | £10 | 0 | 5 |

—*Agricola Redivivus.*

*Agricultural Improvements.* — Thorough draining is allowed to be one of the first of agricultural improvements, without which, where requisite, all other efforts are unavailing. But there is much difference of opinion as to the means of effecting it; and though there are rules that are generally applicable, they must occasionally be deviated from, on account of local peculiarities. Though a stranger may be well acquainted with the subject generally, he is liable to make great mistakes as to the drainage, management, or value of land, in some places the peculiarities of which he is unacquainted with: of this I have known several notable proofs. These remarks are the result of a judicious letter from "Fossa," in the *Agricultural Gazette* of the 25th of January. The writer is evidently a practical man, well acquainted with his subject, and his remarks are truly worthy of consideration; for though spirited improvement is absolutely required, it must be guided by judgment, without which it will only tend to discouragement and ruin. Though my own experience is decidedly in favour of making under-drains as deep as circumstances allow and require, I have found particular cases in which very shallow ones have answered well; and certainly others in which shallow drains have soon become useless. This has often been the case where landlords have given tiles for their tenants to put in. On looking over a farm where the landlord proposed to do so, I asked the tenant what depth he would cut the drains? His answer was, a foot, or a foot and a half, for as the land was strong, he thought the shallower the tiles were put in the better, if they were only safe from the plough and the horses. My own confident opinion, founded on experience of similar land in the neighbourhood, was that they ought to be double that depth at least, and therefore I advised that no tiles should be entrusted to the deposition of the tenant. I may here observe that the farm, which, if well drained, and in the hands of a liberal and skilful cultivator, was capable of growing fine crops of corn, Clover, and Turnips, was producing but little of either produce or profit, in consequence of the niggardly spare-penny practice of the tenant, who seemed more eager of a reduction in a moderate rent, than of raising the value of the farm above it. Instead of employing labourers to make the most of the land, he was trying to manage, or rather to mismanage it, with as little labour and expense as possible. Though a fine deep loamy soil, it was ploughed shallow, and fallowed nearly every third year; bringing only two light crops in three years, excepting an occasional crop of Clover, Beans, Potatoes, or Turnips on a small portion, and that only of late years. Here, then, it is evident there is much need of agricultural improvement; and I could refer to many other similar cases. I will just mention the case of a somewhat similar but naturally poorer and more unkindly farm. For many years the regular routine had been two poor white corn crops, and then a bare fallow. The tenant and his family were exceedingly industrious and careful, and the rent was very low, yet he was so poor that he could hardly raise it when produce sold well. With much persuasion and considerable difficulty, I got him out of his old prejudices and practices, and induced him to under-drain field by field, as he could manage it, the landlord giving tiles. I also persuaded him to sow some Grass seeds every year, to plough deeper, to drill and hoe Turnips and corn, and to give up sowing two white corn crops together, and occasionally to dibble Beans on wide ridges, and plough and scuffle between them. And now I have great pleasure in hearing that the industrious man is thriving on his farm, low as prices are; for the increase of his produce does much more than make up for the decrease in price. But to return to the subject of drainage. Experience has convinced me that your correspondent is quite right in preferring drains of 3 or 3½ feet, at 20 feet intervals, to 4 feet drains, at 30 feet distance, on some tenacious soils; and on such soils I strongly recommend his plan of putting stones over the pipes or tiles. A field of tenacious clay was drained with tiles, laid 30 or 40 inches deep, and 30 feet apart, and it did well for a few years, but soon required draining over again. That was done by cutting intervening drains, of the same or rather greater depth (for stone drains require to be cut rather deeper than pipe or tile-drains), and filling them with stones, which made the field permanently dry. On other fields of the same kind stone drains of the same depth were found to answer well at 30 feet intervals, though tile-drains did not. On retentive clay the safest and best plan is to place a pipe at the bottom, cover it with a sod Grass side downwards, and then put in small stones, covering them also with a sod; this plan makes a safe, effectual, and permanent cure. I know also that there is some strong land where very small pipes, laid deep and at wide intervals, are perfectly efficacious; but that land, though strong, is of a more porous nature. Prejudice and ignorance often prevent the untravelled farmer from seeing the practicability of such improvements as are evident to a stranger; and yet that stranger, though he may suggest some valuable alterations, may in some respects be more incompetent to judge than the less informed local inhabitant: hence it is needful that they should consult together. It is not enough merely to subdue an enemy: we ought to endeavour to convert him into a friend. Stagnant water on or in the soil is very injurious, but that water is capable of being turned to many valuable purposes; and it behoves us in these difficult times to make the most of every drop of water, every particle of manure, and every yard of land. It is possible that water may be profitably retained in large reservoirs, and raised at will by machinery, so as to become exceedingly valuable in irrigation, both of Grass and tillage land, and in its application as a motive power by which various operations may be performed. P.S. If I were a landlord, I would give liberal assistance to the tenant in the improvement of the farm and its cultivation, rather than make a small abatement of rent. *O. F.*

*West of Scotland Dairy District.* — In your *Gazette* of the 25th ult., headed "Dairy Management," and signed "A Subscriber," it is stated that the practice of feeding milk cows is by giving them each about 25 lbs. of boiled Turnips, and 6 lbs. of cut straw, and 3 lbs. of Bean or Pea meal per day. The expression is, "this constitutes their daily diet, and I got from each cow 6½ lbs. of butter." Now, does this mean *per day?* [No! No!] It is of importance to know this, as in the dairy country here we never heard of such a produce; it is enormous. *Subscriber.* [We hope our correspondent alluded to will state the particulars of his case more fully, specifying particularly any circumstances which may tend to place his experience beyond the ordinary average of his district.]

*Poultry.*—As many of your readers are like myself, probably, poultry fanciers, the experience of one who has paid considerable attention to their habits, &c., may not be uninteresting. I commenced first with the common barn-door fowl; but found that, although I obtained a fair quantity of eggs, yet when I allowed them to hatch, they were so long with their chickens that the season was pretty well past before they commenced laying again, and that the chickens were very long before they arrived at an edible size. My next trial was with Poland pullets, and a Cochin China cock, and two pullets of the same breed; the expense of these last was high, but I found their superiority very shortly, and although I never obtained two eggs in one day, as has been stated, yet the number of eggs laid by them was most extraordinary—certainly, three times as many as I obtained in proportion from the Polands; and another advantage is, that when allowed to sit, they only remain with the chickens about three weeks or a month before they begin to lay afresh. I was so pleased with them that I have cleared my yard of all but the Cochin Chinas (with the exception of one old patriarchal hen, that I have had for some years, and am rather attached to), and have now as handsome an assortment of Cochin Chinas as I believe are anywhere to be met with. One of the cock birds, which I disposed of to a friend, weighed, when five months old, between seven and eight pounds, and this without being cooped, just as taken from the yard, which is gravelled, and kept perfectly clean, as well as the hen-house; the birds have also a long private roadway, at one end of which there is plenty of cinder ashes and a Grass plat. I have also a large open shed for them when the weather is unfavourable; by this means the hen-house is kept pure,

as it is only used for laying and roosting at night; they they are fed on Barley, Oats, and off-corn, mixed, as much as they can eat twice a day, with occasionally a little Pollard and Cayenne pepper, which they eat greedily, with now and then a Cabbage, Potatoes, and Carrots, to vary the food. The eggs are of a brownish flesh colour, with minute specks of white, and most delicious eating; and even at this season of the year my hens are laying from five to six eggs a week each, and I expect all my pullets to begin laying in a few days. I was very particular in the selection of my stock, which is very necessary, now more particularly; the parents of my birds were from those at Windsor, and I have every reason to believe perfectly pure. I forgot to say that I crossed a few last year with the common hen for the table, and found the progeny were, if anything, larger than the true kind; this, I believe, is usually the case. I feel much pleasure in reading the remarks made in your paper on poultry, and am glad to see that the subject is receiving more attention than it was wont to have. Why should not the London Show, in Baker-street, add poultry to their exhibition, as is done in the Midland districts? It certainly would be much more interesting to the lady visitors than the mountains of obesity usually displayed there. *Henry Copland, Chelmsford.*

*The Blight of Wheat.*—The Oxford Farmers' Club has been discussing the origin or cause of this disease; some of its members attribute it to hedge-rows, want of draining, and to a proper cultivation of the soil. The writer of this cannot, from past experience, attribute it to any of these causes. Sometimes very forward crops of Wheat are attacked; and, again, very backward crops are equally liable to this disease. Land that has received a good coating of manure has suffered much from this disease, whereas the other half of the field that received no dressing of dung, was strong, luxuriant, and yielded 10 sacks an acre. The yield of the blighted portion was between 5 and 6 sacks per acre. The autumn of 1850 was the period the Wheat crop suffered more than any farmer in these parts ever remembered. Fields of Wheat, in a forward state of growth, and somewhat thickly sown, were almost annihilated, as was the case of the Wheat crops around Reading, in Berkshire. Early sown Barley crops suffered at the same time, and the attack of this disease was distinguished by the redness of the straw; that redness was attributed by strangers as being a different variety of Barley! I saw this last-mentioned crop at harvest, and upon examining the ears I found the leading stem had been stunted or arrested in its growth, and the ear had ripened almost in the sheath. The sample of Barley was not bad, but the grain was not so plump as it otherwise would have been. These crops all suffered from a westerly and south-westerly gale—and during the last 3 or 4 years those winds have done much harm both to Bean crops and Potatoes. How is it the blight attacks Vines, encrusting the Grapes with a sort of scab? It is said to be a new disease within the last two years. *X. Y. Z., Hants.*

*The Present Condition of Irish Agriculture.*—Perhaps the unprejudiced reflections of an Irish subscriber on this subject, and the means employed for its elevation, may not be unacceptable to your readers. Ireland, as she is, presents a sad picture of rural and social disorganisation. Many causes have been set forth to account for the physical decrepitude of the nation, and no matter how opinions may clash, the main cause must be traced to the defective agriculture of the country. This defective system of cultivation has been encouraged by two principal causes. 1. The apathy of landholders as to the improvement of their tenantry. 2. To the absence of an industrial education among the agricultural population. Landlords have studiously neglected the improvement of their tenants, they have kept too great a distance from them, they have disregarded their wants, requiring only their rent; no matter how that rent was made up, whether it was wrung from the honest savings of industry, or drawn from the expiring fertility of their farms. To meet a heavy rent, the chief object of the farmer was to take as much out of the soil as possible, with a total disregard to every principle, either for maintaining the soil's present productiveness, or adding to its permanent fertility. Decaying industry thus led to habits of imperfect cultivation, which, by repeated practice, settled down into fixed principles. The culture of the Potato, affording a large return for very little expended labour, was quite in accordance with the farmer's inclination—plenty to eat, and nothing to do. The people having thus the means of procuring plenty of food at a trifling cost, marriages were encouraged, population increased—a demand for land ensued, and the landlord, following the law of selling, let out his land to the highest bidder, neither considering the character of the purchaser, nor even giving a thought as to the permanent improvement of the land. Why should he? since as long as Potatoes were to be grown, he felt satisfied land would be required to produce them; for in those days no one even dreamt of the Potato disease. But there was an infinitely worse disease which affected both landlord and tenant, which slowly preyed upon their vital interests. The landlord's income annually prospered by the annual increase of a people for food, or what was the same, a demand for land to produce it. The consequence was, holdings were subdivided and parcelled out, and the cursed conacre system ensued. Land rose to treble, aye, quadruple its value, landlords intoxicated with their ill-amassed wealth became profligate, middle-men aspiring to hopes beyond their reach became extravagant; agents accumulated fortunes by squeezing out the last penny from the wretched profits of an infatuated people, and "drivers" were employed to snatch from the ebbing industry of the nation the only remains of a wrecked prosperity. Could the small farmer prosper under the evil lynx eye of an agent, who but watched for the smallest outward mark of improvement on his farm or person, as a pretext to raise his rent; or, perhaps, bribed by a selfish neighbour, coupled with the offer of a higher rental, to eject him? Were these not sufficient causes to induce a partial, faithless, and ungenerous agent to dislodge, perhaps, a thriving tenant? A heavy purse and a swelled rent-roll were agreeable to both agent and landlord. The farmer, to prevent himself from being suspected as well-doing, had to resort to the meanest subterfuges to counteract the too evident designs of an unscrupulous agent. This led to the practising of that low cunning which is peculiarly characteristic of the lower Irish. They have been thus forced by circumstances to overlook the duties of outward decency, to deny themselves those domestic little comforts which exhilarate the blessings of life, and to dwell in the most miserable abodes, at which feeling humanity must shudder, as the only safeguards from rack-rent and eviction. Where was improvement to spring from such an anomalous position of society? Was not the road to progress, here, the road to ruin? And let a consideration of these things mitigate our censure upon an unfortunate people, whose industry was checked, whose energy destroyed by the oppressive workings of a system. Thus things went on—the cultivation of the land was in an inverse ratio to the fertility of soil, until the Potato, the sole esculent of millions, was destroyed, and the hopes of thousands blasted, fortunes shattered, enterprises wrecked, and the grave prematurely opened to receive its early victims The income of proprietors being checked in its flow to their coffers, we can now imagine the bitterness they feel in the possession of a diminished income. They can no more settle princely dowers upon their daughters, or bring up their sons as idle "'squireens" to ride roughshod over the honest industry of a tenantry. Rich and poor must follow the law of subsidence in their fortunes, and the former may, in the retirement of an inferior, but perhaps not the less happy home, find room for calm reflection. Not by building sanguine hopes on the "baseless fabric" of renewed protection, which, alas, to many, is yet the nightmare of their thoughts; but in the hope that better men will fill their much neglected office, who will, by studying the improvement of their Irish tenantry, raise Irishmen to the enjoyment of every physical, moral, and social happiness, and treating them as rational men, not mere serfs, nor yet mere machines; but as individuals, in whose proper management the interests of the landlord and happiness of the tenant are inseparably bound. *Libra, Jan.* 29.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover Square, on Wednesday last, the 5th of February; present, His Grace the Duke of Richmond, K. G., President, in the chair; Lord Camoys, Lord Southampton, Lord Feversham, Lord Ashburton, Lord Portman, Hon. Robert Henry Clive, M. P., Hon. Dudley Pelham, M. P., Hon. Henry William Wilson, Sir Thomas Dyke Acland, Bart., M. P., Sir Robert Price, Bart., M.P., Colonel Austen, Mr. Raymond Barker, Mr. Barnet, Mr. S. Bennett, Mr. Bramston, M. P., Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. Evelyn Denison, M. P., Mr. Druce, Mr. Foley, M. P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Kinder, Mr. Miles, M. P. (Leigh Court), Mr. Milward, Mr. Pusey, M. P., Prof. Sewell, Mr. Shaw (London), Mr. Shaw (Northampton), Mr. Villiers Shelley, Prof. Simonds, Mr. Slaney, M. P., Mr. Stanfield, M. P., Mr. Thompson (Moat Hall), Mr. C. Hampden Turner, Mr. Villebois, Prof. Way, Mr. Jonas Webb, and Mr. Wilson (Stowlangtoft).

Zachary Daniel Hunt, Esq., of the Old Bank, Aylesbury, and William Augustus Commerell, Esq., of Strood Park, Sussex, were elected Governors of the Society. The following new members were elected:—

Gow, James, Fowler's Park, Hawkhurst, Kent.
Hale, John, Fellcourt, East Grinstead, Sussex.
Gosselin, Martin Hadsby, Ware Priory, Herts.
Pelly, John Henry, Oak Hill, East Barnet, Herts.

The names of 53 candidates for election at the next meeting were then read.

Sir. Francis Lawley.—The Council received with a deep feeling of regret the announcement of the death of Sir Francis Lawley, Bart., of Middleton Hall, Staffordshire, one of the members of the Council in the class of Trustees, and an original Life-Governor of the Society, who, preferring the hereditary rank of his ancient family, as one of the oldest baronets of the United Kingdom, to the honours of the peerage, which were offered for his acceptance, devoted his time and means to the happiness of all around him. He was indeed, in the highest sense, a truly English country gentlemen, whose name and memory will be long cherished with affection by the wide circle of his friends, and the results of whose benevolent consideration will be long felt by the tenantry on his estates, who were more immediately within the sphere of his influence, and by the "poor and needy" of every class, to whom he ever proved so great a blessing.

Finances.—The current cash balance in the hands of, the bankers on the last day of the month just ended, was found to be 2177*l.*

Nomination of Judges.—Lord Portman, as Chairman of the Judges' Committee, presented to the Council the following report, which was unanimously adopted:—

The Committee beg to recommend to the Council the adoption of the following course, to be pursued in future for the nomination and selection of the Judges of Implements and of Stock at the Country Meetings of the Society,—namely,—

1. That prior to the Monthly Meeting of the Council in May, the Secretary shall write to each of the Judges who have acted in the three preceding years, asking whether he is willing to allow himself to be again put in nomination; and, if so, for what description of stock or class of implements he would be ready to act, if he should be appointed by the Council.

2. That the members of the Society will materially aid the Council, if they will exercise their privilege of forwarding to the Secretary, before the 1st of May in each year, the names of such parties, willing to act, as they would recommend to fill the office of Judge, stating the particular kind of implements or description of stock for which their experience would render their services most likely to be useful to the Society.

3. That the Secretary, immediately after the 1st of May, should form a schedule of the names of persons so obtained, and supply each member of the committee of selection with a copy thereof as soon as possible after their appointment.

4. That the Committee, or Committees, appointed by the Council in May, for the selection and recommendation of fit persons to be appointed Judges at the ensuing Country Meeting of the Society, should consist of not less than 10 members each, of which the quorum for business should be five. (Signed) Portman, Chairman.

Veterinary Science.—Lord Portman, having laid before the Council the following Report, which was unanimously adopted, gave notice, that, at the next Monthly Council, he should move the annual grant of 200*l.* should be made to the Royal Veterinary College, as proposed by the Committee:—

The Committee, appointed to confer with a Deputation from the Royal Veterinary College, beg to report to the Council the result of that Conference: namely—

1. That, on July 10th, 1839, the Royal Agricultural Society of England made a communication to the Royal Veterinary College, inviting their co-operation, and requesting them to turn their attention to the diseases of cattle, sheep, and pigs; and they voted to the College the sum of 200*l.* per annum, as a contribution towards the additional expenses to which the Royal Veterinary College would be subjected.

2. That the Royal Veterinary College readily responded to this appeal, and expended a considerable sum of money in building sheds, &c.; and appointed a professor to attend to this department, at a cost to the Royal Veterinary College of about 400*l.* a-year.

3. That since that time the pupils in the College have received instruction in these branches, namely, in the pathology of cattle, sheep, and pigs; and a body of young men, thus instructed, have been spread over the country.

4. That the Royal Veterinary College, during the suspension of the grant, have continued for the last two years the same course of instruction, and the same expenditure, and in addition have paid to Professor Simonds 50*l.* for lectures given to the Royal Agricultural Society of England.

5. That the Committee, after a full consideration of the question, are unanimously of opinion, that the best mode of expending the sum of 200*l.* per annum, devoted by the Council of the Royal Agricultural Society of England to the improvement of Veterinary Science, is, to renew the annual grant to the Royal Veterinary College.

6. The Committee propose, however, that the renewal of the grant should be accompanied by the following conditions: namely—

(1.) That the Royal Veterinary College make a report annually of their proceedings in these particulars to the Royal Agricultural Society of England.

(2.) That the Royal Veterinary College admit to the Members of the Royal Agricultural Society of England, the privilege of sending to the Royal Veterinary College, Cattle, Sheep, and Pigs, on the same terms as if they were subscribers to the Royal Veterinary College.

(Signed) Portman, Chairman.

Show of 1851.—Lord Portman then laid before the Council the Report of the General London Committee, along with the "conditions" transmitted to him by Lord Seymour, her Majesty's Chief Commissioner of Woods and Forests, and a Letter from Lord John Russell, First Lord of her Majesty's Treasury, communicating to Lord Portman his own views, as well as those of the Duke of Wellington, Commander-in-Chief and the Ranger of Hyde Park, in reference to the show of live stock which the Society had been invited to hold in Hyde Park during the present year. This Report, which, on the motion of Lord Feversham, seconded by Mr. Miles, M.P., was unanimously adopted by the Council, recommended in the most decisive terms, that the Council, acting on the part of the Royal Agricultural Society of England, should not consent to the "conditions" proposed for their acceptance by the Office of Woods and Forests; but, on the contrary, that they should request the Duke of Richmond, as their President, to wait upon Lord John Russell, agreeably with his lordship's expressed willingness to promote the objects of the Society, and confer with him on the site most suitable for the purposes of the Society's Show of Stock, in order that her Majesty's pleasure may be taken on the subject.

The Duke of Richmond intimated his intention to take the earliest opportunity, consistent with the convenience of members, to hold a special Council for further decision on this important subject; to which occasion, also, it would be desirable to refer the conditions and regulations of the Society's Prize Show for 1851.

Flax-Cotton.—Mr. Pusey, M.P., gave notice that M. Claussen would attend at the Weekly Council on Wednesday next, for the purpose of showing specimens of the new mode of preparing flax for its conversion into flax-cotton; and of giving to the members some account of the process.

Exeter Meeting.—Mr. Spreat, of Exeter, presented to the Council a first-class coloured print of his View of the Fore-street in that City, on the occasion of the Society's Country Meeting in 1850, and of the decorations of the city on the occasion; dedicated, by special permission, to Her Most Gracious Majesty the Queen; for which, and other presents made to the Society, the Council ordered their best thanks to be communicated.

## Miscellaneous.

*Prices Current of Manures.*—These prices vary in some instances according to the quantity of manure taken,

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Finest pale Peruvian Guano, per ton | £4 | 10 | 0 | to | £10 | 0 | 0 |
| Brown ditto ... ... ... ... | 8 | 10 | 0 | to | 9 | 0 | 0 |
| Brown Patagonian ... ... ... | 5 | 10 | 0 | to | 6 | 0 | 0 |
| Saldanha Bay ... ... ... | 5 | 0 | 0 | to | 5 | 10 | 0 |
| Nitrate of Soda, per cwt., in dock ... | 0 | 14 | 9 | to | 0 | 15 | 6 |
| Nitrate of potash ... ... ... | 1 | 9 | 0 | to | 1 | 10 | 0 |
| Bonedust, per qr. ... ... ... | 0 | 16 | 0 | to | 0 | 17 | 0 |
| Bone sawdust, per ton ... ... | 6 | 0 | 0 | to | 7 | 0 | 0 |
| Sulphuric acid, per lb. ... | 0 | 0 | 1 | to | 0 | 0 | 1½ |
| Gypsum, per ton ... ... ... | 1 | 7 | 6 | to | 1 | 10 | 0 |
| Charcoal ... ... ... ... | 3 | 0 | 0 | to | 4 | 0 | 0 |
| Sulphate of ammonia, per cwt. ... | 0 | 15 | 0 | to | 0 | 18 | 0 |
| Muriate of ammonia, per cwt. ... | 1 | 4 | 0 | to | 1 | 6 | 0 |
| Carbonate of ammonia, per cwt. ... | 3 | 0 | 0 | to | 3 | 5 | 0 |
| Sulphate of magnesia ... ... | 0 | 8 | 0 | to | 0 | 10 | 0 |
| Sulphate of soda, per cwt. ... ... | 0 | 4 | 0 | to | 0 | 6 | 0 |
| Sulphate of potash, per cwt. ... | 1 | 0 | 0 | to | 1 | 4 | 0 |
| Sulphate of copper ... ... ... | 1 | 16 | 0 | to | 2 | 0 | 0 |
| Sulphate of iron ... ... ... | 0 | 5 | 0 | | | | |
| Soda ash (wireworm destroyer) per ton | 11 | 0 | 0 | to | 12 | 0 | 0 |
| Super-phosphate of lime ... ... | 6 | 0 | 0 | to | 7 | 10 | 0 |
| Agricultural salt ... ... ... | 1 | 6 | 0 | | | | |
| Petre salt ... ... ... ... | 2 | 0 | 0 | to | 2 | 10 | 0 |
| Rape cake ... ... ... ... | 5 | 0 | 0 | to | 5 | 10 | 0 |
| Rape dust ... ... ... ... | 5 | 10 | 0 | to | 6 | 0 | 0 |
| Clarke's desiccated compost, per hhd. | 3 | 13 | 6 | | | | |
| Urate ... ... ... ... ... | 4 | 4 | 0 | | | | |
| Dry nightsoil ... ... ... | 2 | 0 | 0 | to | 2 | 10 | 0§ |

—*Kemp's Agricultural Physiology.*

METEOROLOGICAL REPORT.—Jan. and Feb.

(*Continued from page 77.*)

| Date. | Time. | Max. | Min. | Wind, and Remarks. |
|---|---|---|---|---|
| Thur. 23 | 4.30 p.m. | 30.20 | ... | Calm. Fine afternoon. |
| | 11 p.m. | ... | 30.18 | Overcast. Raining fast. |
| 24 | 8.20 a.m. | 30.08 | ... | SE. a.m. Gentle breeze and dense fogs in S. horizon, and heavy clouds coming up from the west. |
| | 11 p.m. | ... | 29.89 | SW. p.m. Calm and overcast. |
| 25 | 6.15 a.m. | 29.82 | ... | S. a.m. Overcast and rainy. |
| | 10.10 p.m | ... | 29.73 | SSW. p.m. Blowing hard at night. |
| Sun. 26 | 8 a.m. | 29.62 | ... | SSE. a.m. Driving wind and rain all day. |
| * | 6.30 p.m. | ... | 29.45 | SE. p.m. Do. do. |
| | 10 p.m. | 29.46 | ... | S. 10 p.m. Do. do. |
| 27 | 7.50 a.m. | ... | 29.72 | W. a.m. Almost calm; white frost and fine sunny morning. |
| | 0.30 p.m. | 29.80 | ... | |
| | 5 p.m. | 29.79 | ... | S. Massive clouds to SW. |
| | 10.15 p.m. | ... | 29.71 | S. Blowing hard. |
| † 28 | 7.30 a.m. | ... | 29.65 | 1 a.m. Terrific squall of wind and hail (qy.), lasting nearly an hour. Fine morning. |
| | 0.15 p.m. | 29.71 | ... | WSW. Noon bright and sunny. |
| | 1.10 p.m. | 29.70 | ... | S. p.m. Stiff breeze, densely |
| ‡ | 7 p.m. | ... | 29.58 | overcast with large dark |
| | 10.20 p.m. | 29.62 | ... | floating clouds, and towards sunset raining fast. |
| 29 | 8 a.m. | 29.67 | ... | SW. Overcast gloomy morning. |
| | 10.10 a.m. | 29.66 | ... | SW. Heavy gale at evening, |
| § | 10.30 p.m. | ... | 29.42 | moderating towards night. |
| 30 | 7.15 a.m. | ... | 29.47 | WSW. Stiff breeze, fine |
| | 11 a.m. | 29.49 | ... | sunny morning. |
| | 2.10 p.m. | 29.35 | ... | WSW. Blowing hard and raining fast, moderating at sunset. |
| | 10.20 p.m. | ... | 29.19 | Almost calm; clear night. |
| 31 | 8 a.m. | 29.09 | ... | WSW. Bright fine day, and |
| ‖ | 8 p.m. | ... | 29.07 | very little wind. |
| Feb. 1 | 7.50 a.m. | ... | 29.22 | NE. Noon, NNE.; 4 p.m., N.; stiff breeze all day. |
| | 10.40 p.m. | 29.38 | ... | Overcast a.m., with heavy clouds to windward at 10.30 a.m.; after 4 p.m., fine clear evening, and cold. |
| Sund. 2 | 8 a.m. | ... | 29.40 | N. a.m. Stiff breeze, with a |
| | 10 p.m. | 29.47 | ... | little snow at 8 p.m.; calm and overcast. |

* On Friday, 24th p.m., I watched the dense masses of this storm gathering in the SW., as though it lay beyond Ushant, and over the Bay of Biscay (at which time it probably blew hard at W. off Lisbon). All the 25th I travelled to the NNE. in advance of it, the rain commencing as I halted from time to time, and ceasing as I resumed my drive. It crossed the S. of England, and went away to NE.

† This storm came from the westward, and I travelled parallel with it, on the Great Western Railway, from Chippenham to London, between noon and 3 p.m. of the 28th, having a bright sunny day, with very heavy clouds, about 20° of the southern horizon. Shortly after our arrival at Paddington, the rain overtook us; and during that evening it rained heavily at Woolwich.

‡ This storm came from the westward. I think that this, and also the last, must have gone eastward; but I regret that from accidental circumstances I was prevented from observing the weather during their passage.

§ This storm came from N. of W., producing intense cold in London on the 30th, with a westerly wind, an unusual circumstance, easily explained by its having its left hemisphere in a colder latitude. As this storm travelled over the centre of Ireland and England in a course nearly due east (*i. e.* parallel to the equator), and moving slowly, it produced on the storm of the succeeding days (which travelled rapidly from the SW.), the unusual effect of causing it to recurve to the E. and SE.

‖ A very extensive storm, of which the central storm's-eye must have been passing very slowly over the south of England during the afternoon of the 31st, travelling a little south of east, probably up the Channel, and passing over Frankfort on the 2d and 3d of February. With very little wind, and only one heavy shower of rain of 10 minutes' duration, soon after noon on the 31st, my barometer remained at 29.09 from 8 a.m. until 4 p.m., and only fluctuated .02 between that hour and 10 p.m. The back draught of this storm brought heavy fogs and frost over London on the night of the 2d Feb. From the warmth of the weather during its passage, and rapid fall of the barometer previous to its arrival, I suppose it to have come from the S. or SW., and having run against the southern limb of the preceding storm, to have been deflected by it from its proper course; an interesting instance, should this anticipation be verified, of storms meeting from different parts of the North Atlantic Ocean.

Dorchester, Feb. 5th. *F. P. B. M.*

(*To be continued.*)

* I am ignorant of the nature of one or two of these substances.

## Notices to Correspondents.

Bituminous Shale as Manure: *W B H.* Have any of our readers tried the "Shale" manure for heavy lands? We should be glad to know their experience.

Cabbages: *W D C.* A. Pontey, Plymouth, tells us that he has Drumhead Cabbage of a variety that will keep hard and good all March and April, and sometimes later. This Cabbage is impregnated with the Red Cabbage of the Dutch, and should be sown in August and transplanted in beds, and finally planted out early in May. "This Cabbage frequently grows from 60 to 80 lbs. weight."

Cream: *Y Z.* You must allow the milk to run off more slowly than you have been accustomed to do. One hole for a large surface is not able to draw it off well.

Fences: *Yorkshire.* Your workman is wrong. If your hedge is in a situation where stock are not likely to break through it, the thinner (in reason) you plant in the twigs the better, from "4 to 6 inches apart," will be suitable interstices to leave between the thorns. The old stools by the side of the hedge should be grubbed up, and your fence made to occupy the least possible space. See article "Fences" in the "Cyclopedia of Agriculture."

Gorse and Hemp: The Editor of this Journal would be glad to meet any one acquainted with the cultivation of either of these crops.

Grass Land: *V R.* You will find your question was answered last week.

Grubber: *Mr. Rous* will obtain all the information he requires by applying to the maker, Mr. Scoular, Haddington.

Hydatids in Sheep: *Mutton.* Decidedly insectivorous. If the hydatid be carefully dissected and placed in water, its alternate contractions and expansions may be readily distinguished. Breeding in and in has with much reason been considered in the human subject to be productive of cranial diseases. The writer doubts the truth of the analogy when applied to animals, particularly in such diseases as may be referred to "*omne ex ovo.*" See Youatt on the Sheep, also Spooner on the same subject. *W. C. S.*

Limestone: *Farmer.* Limestone may be converted into gypsum by the addition of sulphuric acid; but as the acid alone for such a purpose would make the gypsum so made cost 6*l.* or 7*l.* a ton, this process is not likely to be used. Gypsum occurs naturally in the marls of the new red sandstone; and that is the place where it is obtained for agricultural purposes.

Oats: *M T H.* The error was doubtless typographical, and 1200 feet were intended.

Potatoes: *E Johnston.* We think the application of guano *would* make the crop more liable to disease. At the same time we would, in our own locality, where an immediate sale of the produce is possible, rather have a luxuriant crop somewhat diseased, than a scanty crop though healthy.

Saw-mill: *G B P.* We are informed that 2-horse power will drive an 18-inch saw.

Self-shutting Latch: *L S G.* You must depend either upon the spring or the weight of the latch for its operation. The following is perhaps one as good as any:—A projecting horizontal bed with a notch in it is presented by the post to which the gate shuts, and over this the tongue of the latch projects as it swings to and fro. This tongue is placed horizontally, and is weighty enough to support an upright shaft from its further end, which passes through the upper bar of the gate; and by pressing which down it is lifted out of the notch by which, when it is at rest, it holds the gate in its place.

Stable Manure: *J L B.* Spread it every morning over the accumulating heap; it is best to mix it in this way with all the other descriptions of dung on one square bed, allowing that to rise 3 feet or so before covering it with earth, and then commencing another.

## Markets.

COVENT GARDEN, Feb. 8.

Hothouse Grapes and Pine-apples are still somewhat dear, and the supply of good dessert Pears is limited. English Apples are scarce, but foreign ones are sufficient for the demand. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Vegetables of all kinds are abundant and good except French Beans, which are scarce. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. per pottle. Cucumbers, though good, meet with an unusually dull sale. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Chrysanthemums, Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Lemons, per doz., 1s to 2s |
| Grapes, hothouse, p. lb., 6s to 10s | Almonds, per peck, 6s |
| — Portugal, p. lb., 8d to 1s | — sweet, per lb., 2s to 3s |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| — per half sieve, 6s to 15s | — per 100, 9d to 1s 6d |
| Apples, dessert, per bushel, 6s to 10s | Nuts, Barcelona, per bush, 20 to 22s |
| — kitchen do., 5s to 8s | — Brazil, p. bsh., 12s to 14s |
| Oranges, per doz., 9d to 2s | Filberts, p. 100 lbs., 60s to 65s |
| — per 100, 6s to 10s | |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 8d |
| Cabbages, per doz., 6d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bun., 1s 6d to 2s 6d | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Endive, per score, 1s to 1s 6d |
| Asparagus, per 100, 2s to 8s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 6d to 1s 6d | Horse Radish, p. bundl., 1s to 4s |
| Potatoes, per ton, 60s to 100 | Red Beet, per doz., 6d to 1s |
| — per cwt., 3s to 5s | Mushrooms, p. pot., 6d to 9d |
| — per bush., 1s 6d to 2s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. doz. bundl., 1s to 2s | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 4s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Carrots, per doz., 2s to 5s | — Roots, p. bundl. 9d to 1s |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, per bunch, 2d to 4d |
| Onions, p. bunch, 3d to 4d | Mint, green, per bunch, 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per doz., 9d to 1s | Corn Salad, p. hf. sieve, 1s to 1s 6d |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 6.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Clover ... ... ... | 70s to 80s |
| Inferior ditto ... ... | 60 68 | Second cut ... ... | 63 70 |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 23 27 |
| New Hay ... ... ... | — — | | J. Cooper. |

A good supply and a fair demand.

WHITECHAPEL, Feb. 6.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 68s to 72s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 55 60 | Inferior ditto... ... | 65 68 |
| New Hay ... ... | — — | Straw ... ... ... | 22 24 |
| Old Clover ... ... | 78 84 | | |

POTATOES.—Southwark, Feb. 4.

The Committee report that though the arrivals last week have been low from Scotland, we have had quite enough from Yorkshire, the Continent, and by rail for the wants of the trade, which have been so limited that it is with difficulty the following prices have been realised:—York Regents, per ton, 80s. to 100s.; Scotch do., 65s. to 80s.; ditto Cups, 55s. to 65s.; Cambridgeshire and Lincolnshire Regents, 70s. to 85s.; French whites, 50s. to 65s.

COAL MARKET.—Friday, Feb. 7.

Hollywell, 13s. 9d.; Eden Main, 14s.; Tanfield Moor, 12s. 6d.; Wallsend Haswell, 15s. 3d.; Wallsend Stewarts, 15s. 3d.; Wallsend Tees, 15s. 3d.—Ships at market, 200.

HOPS.—Friday, Feb. 7.

Messrs. Pattenden and Smith report that there is a good demand for middling and fine Hops, at better prices. Mid. and East Kents, 70s. to 120s.; Weald of Kents, 63s. to 90s.; Sussex, 59s. to 80s.; Yearlings and old Hops, 20s. to 40s.

SMITHFIELD, Monday, Feb. 3.

The supply of Beasts is moderate: however trade is exceedingly dull, and although 3s. 8d. is quoted for a choice article, it is an extreme price. The number of Sheep is small; enough, however, for the demand. Prices are about the same as on Monday last. Trade is dull for Calves at Friday's quotations. From Holland and Germany there are 519 Beasts, 1380 Sheep, and 137 Calves; from Norfolk and Suffolk, 2000 Beasts; from Scotland, 400; and 600 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 6 | to 3 | 8 | Best Long-wools . | 3 | 6 | to 3 | 10 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 8 | — 3 | 0 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and | | | | | Ditto Shorn ... | | ... | | |
| Half-breds ... | 4 | 0 | — 4 | 4 | Lambs ... ... | | ... | | |
| Ditto Shorn ... | | ... | | | Calves ... ... | 3 | 4 | — 4 | 4 |
| | | | | | Pigs ... ... | 2 | 4 | — 3 | 4 |

Beasts, 3892; Sheep and Lambs, 19,100; Calves, 193; Pigs, 295.

Friday, Feb. 7.

The number of Sheep is small and the demand still less; prices are on the average lower than Monday, and several remain unsold. There are rather more Sheep than on Friday last; trade is very dull, and late rates with difficulty obtained. We have a few shorn Sheep from Gloucester, and also a few forward Lambs from the home counties; but it being early in the season for these things, there is but little demand for them, and they make low prices. Calf trade is no better. Foreign supply consists of 39 Beasts, 280 Sheep, and 172 Calves; from Norfolk and Suffolk, 250 Beasts; from Scotland, 40; and 75 milch cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 6 | to 3 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and | | | | | Ditto Shorn ... | | ... | | |
| Half-breds ... | 4 | 0 | — 4 | 4 | Lambs ... ... | | ... | | |
| Ditto Shorn ... | | ... | | | Calves ... ... | 3 | 4 | — 4 | 4 |
| | | | | | Pigs ... ... | 2 | 4 | — 3 | 4 |

Beasts, 601; Sheep and Lambs, 3670 · Calves, 244; Pigs, 230.

MARK LANE.

Monday, Feb. 3.—Although the supply of English Wheat to this morning's market was small, best qualities barely obtained late prices, and inferior must be written 1s. per qr. cheaper. The demand for foreign was very limited, and in retail, the finest nearly realising late quotations. English Barley, excepting picked samples for malting, is very difficult of disposal, and the turn lower.—Beans, Peas, and Oats are each rather lower in value.—Flour is nominally the same as last week.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | —47 | Red ..... | 37 | —44 |
| — — fine selected runs...ditto | 42 | —48 | Red ..... | | —42 |
| — — Talavera ..... | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 35 | —50 | | | |
| Barley, grind. & distil., 18s to 22s...Chev. | 26 | —31 | Malting . | 22 | —27 |
| — Foreign... grinding and distilling | 18 | —23 | Malting . | 23 | —24 |
| Oats, Essex and Suffolk ..... | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 20 | —22 | Feed..... | 17 | —21 |
| — Irish .....Potato | 18 | —22 | Feed..... | 16 | —19 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed..... | 16 | —19 |
| Rye ..... | 22 | —24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan .....20s to 26s.....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... Winds | 37 | —43 | Longpod | 27 | —33 |
| — Foreign .....Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler- | 24 | —27 | Suffolk... | 27 | —29 |
| — Maple.....27s to 30s .....Grey | 24 | —26 | Foreign . | 25 | —32 |
| Maize .....White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 18 | —24 | Per sack | 25 | —34 |

Friday, Feb. 7.—The arrivals of grain either English or foreign have been small this week. To-day's market was but moderately attended, and little business transacted. The value of Wheat, Peas, Beans, and Oats is nominally the same as on Monday, but Barley can only be disposed of at a slight reduction.—In Flour there is no alteration.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Dec. 28..... | 38s 10d | 23s 5d | 16s 6d | 22s 8d | 27s 5d | 28s 1d |
| Jan. 4..... | 38 10 | 23 5 | 16 6 | 22 8 | 26 5 | 28 1 |
| — 11..... | 38 1 | 22 9 | 17 2 | 22 1 | 26 9 | 27 0 |
| — 18..... | 38 0 | 22 8 | 16 9 | 24 8 | 26 7 | 26 1 |
| — 25..... | 38 5 | 22 7 | 16 7 | 23 2 | 26 4 | 27 15 |
| Feb. 1..... | 37 10 | 22 9 | 16 7 | 22 7 | 25 11 | 26 6 |
| Aggreg. Aver. | 38 2 | 22 11 | 16 9 | 23 9 | 26 8 | 27 4 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Dec. 28. | Jan. 4. | Jan. 11. | Jan. 18. | Jan. 25. | Feb. 1. |
|---|---|---|---|---|---|---|
| 38s 10d | — | ... | ... | ... | ... | ... |
| 38 10 | ... | — | ... | ... | ... | ... |
| 38 1 | ... | ... | — | ... | ... | ... |
| 38 0 | ... | ... | ... | — | ... | ... |
| 38 0 | ... | ... | ... | ... | — | ... |
| 37 10 | ... | ... | ... | ... | ... | — |

Liverpool, Tuesday, Feb. 4.—Excepting a fair quantity of Oatmeal from Ireland, the arrivals of grain, &c., thence and coastwise this week are small. The supplies from abroad are less than of late, and embrace 13,171 barrels of Flour, and 2080 quarters of Indian Corn from the United States; and 8641 sacks of Flour and 3000 quarters of Wheat from France. The exports are again large to Ireland and ports on our coast, and this week comprise 3097 quarters of Wheat, 2496 barrels and 332 sacks of Flour, 4788 quarters of Indian Corn, and 190 barrels of Indian meal. The business transacted has been limited, and the tendency has been towards lower rates. At this morning's market sales of Wheat and Flour proceeded slowly, at a decline on the former of 1d., and in some instances 2d. per bushel on the price of last Tuesday, and also 6d. per sack and barrel on Flour. Indian Corn was 6d. per qr. lower, and the demand not so good as of late. Oats, Barley, Beans, and Peas were each alike neglected, and the quotations are unvaried.—Trade the last two days has been inactive, and prices nominally the same. The corn market this morning was dull generally. Wheat and Flour barely supported the rates of last Tuesday. Indian Corn was also easier to purchase, and a parcel of fine American flat yellow did not exceed 31s. per 480 lbs. Oats, Barley, Beans, and Peas were each unchanged in value.

THE APPROACHING COLD WEATHER.

THERMOMETERS FOR REGISTERING THE EXTREMES OF HEAT AND COLD, of the best construction, 1*l.* 1*s.* and 1*8s.*; of the common construction, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.* Night Thermometers for Registering Cold only, 10*s.*, 7*s.* 6*d.*, 5*s.*, to 2*s.* 6*d.* Thermometers for Baths or Brewing, 12*s.* 6*d.*, 10*s.*, 7*s* 6*d.*, to 2*s.* 6*d.* Hotbed Thermometers to 4 feet long, 25*s.*, 20*s.*, 17*s.* 6*d.* Steam pressure Gauges, 2*l.* 5*s.* and 2*l.* 2*s.* Rain Gauges, from 10*s.* Lactometers for showing the Quality of Milk, with instructions for use, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, 5*s.* Hydrometers, for trying Sulphuric Acid, 10*s.*, 7*s.* 6*d.*, 5*s.* Barometers, Microscopes, Telescopes, Drawing Instruments, &c.

HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

SILVER SAND, PEAT, &c.—REDUCTION OF PRICE.

EDWARD KEMP begs to return his grateful acknowledgments to his Friends and Patrons for favours hitherto received, and informs them that he has made considerable reduction in the price of Silver Sand, which he trusts will ensure a continuance of their support. Particulars will be forwarded on application addressed EDWARD KEMP, 16, Ann's-place, East-street, Old Kent-road, London.

N.B. No connection with any other paty.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5¼ ins., 6½ by 5 ins., 12*s.* each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2¼*d.* to 2¾*d.* per foot.

16*s.* per box; or 2¾*d.* per foot if less than one box be taken:

| | | | |
|---|---|---|---|
| 11 inches by 8 inches | | 13 inches by 9 inches | |
| 12 ,, by 8 | ,, | 12 ,, by 10 | ,, |
| 12 ,, by 9 | ,, | 14 ,, by 10 | ,, |

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅛ in. thick. | ¼ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0*s.* 6*d.* | 0*s.* 11*d.* |
| Above 15 inches and not above 35 ... | 0 8 | 1 1 |
| ,, 35 ,, ,, 50 ... | 0 9½ | 1 3 |
| ,, 50 ,, ,, 75 ... | 1 0 | 1 3 |
| ,, 75 ,, ,, 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

| | |
|---|---|
| 16 oz. sheet ... ... ... 0*s.* 5*d.* | 26 oz. sheet ... ... ... 0*s.* 9*d.* |
| 21 oz. ,, ... ... ... 0 7 | 32 oz. ,, ... ... ... 0 11 |

SUPERIOR ROUGH PLATE TILES.

| | |
|---|---|
| ⅜ inch ... ... ... ... 0*s.* 10*d.* | ⅝ inch ... ... ... ... 1*s.* 7*d.* |
| ½ inch ... ... ... ... 1 3 | ½ inch ... ... ... ... 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for cash.

| CUT TO SIZE. | SHEET SQUARES. |
|---|---|
| | In boxes of 100 feet. £. *s. d.* |
| 16 oz. from 2*d.* to 3¼*d.* per foot. | Under 6 by 4 ... ... 0 12 6 |
| 21 oz. ,, 3½*d.* 5*d.* ,, | 6 by 4 and 6½ by 4½ ... 0 13 0 |
| 26 oz. ,, 3¾*d.* 7¼*d.* ,, | 7 by 5 and 7½ by 5½ ... 0 15 0 |
| 32 oz. ,, 4*d.* 9½*d.* ,, | 8 by 6 and 8½ by 6½ ... 0 17 6 |
| | 9 by 7 and 10 by 8 ... 1 0 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2¾*d.* per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.* |
| 7 by 5 ,, 7½ by 5½ ... 13 6 | 9 by 7 ,, 10 by 8 ... 16 6 |

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 5*s.*; 6 tubes, 7*s.* 6*d.* GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HALL'S GARDEN NETS, LIGHT, STRONG, AND DURABLE—a good protection against Frost, Hail, and Wind, also from Wasps and Insects.

No. 1. } 56 inches wide, per yard ... ... 6*d.*
,, 2. } which is 4*d.* a square yard.
,, 3. 56 inches wide, per yard ... ... 8
,, 4. do. do. do. ... ... 8

Agents for Sale—London: Mr. Benjamin Edgington, 2, Duke-street, Southwark; Messrs. Charlwood and Cummins, 14, Tavistock-row, Covent Garden; Messrs. Minier, Nash, and Nash, 60, Strand; Mr. J. Carter, 238, Holborn; Mr. W. Clark, 25, Bishopsgate-street, Within; Messrs. Hurst and McMullen, Leadenhall-street; Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street,—Peter Lawson and Son, Edinburgh; T. D. Watkinson, Market place, Manchester; H. Bigland & Co., do., do.; F. and J. Dickson and Co., 106, Deansgate, do.; John Shaw, 19, Oxford-street, do.; F. and J. Dickson, Chester; H. J. Oldroyd, High-street, Shrewsbury; Fisher, Holmes, and Co., Sheffield.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 8*s.* 6*d.* each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 | ... | 5 by 2½ | ... | 6 by 2½ | ... 6 by 3½ inches. |
| 4½ by 3 | ... | 5 by 3 | ... | 6 by 3 | ... 6½ by 3 |
| 4½ by 3¼ | ... | 5½ by 3 | ... | 6½ by 3 | ... 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

REGISTERED ROLLER MILL for Crushing Linseed, Oats, Malt, Barley, &c., and Breaking Beans and Peas. Manufactured by E. R. TURNER AND CO., late HURWOOD and TURNER, St. Peter's Foundry, Ipswich.

E. R. TURNER and Co. claim for their registered Roller Mill the particular attention of Agriculturists, Housekeepers, and others. Besides accomplishing all the purposes of the well-known Roller Mill for crushing Corn and Seeds, by an entirely novel arrangement it is made to break Beans and Peas most effectually, and without involving any delay in adapting the Mill from one process to the other. They are very simple in construction, and therefore not liable to get out of repair; may be worked with ease by one man, and for efficiency and cheapness are superior to any Implement of the kind yet manufactured. Price complete, 9*l.* 9*s.*

E. R. T. and Co. also manufacture a Roller Mill for Crushing only, of the same size as the Registered Roller Mill, and a larger Mill, for which HARWOOD and TURNER were awarded the Royal Agricultural Society's Prize at Norwich in 1849.

Price of Small Roller Mill ... ... ... £7 10*s.*
,, Norwich Prize Mill for Horse, Steam, or Hand Power ... ... ... 10 10

Delivered Free to London, Norwich, Bury St. Edmunds, and all intervening Stations. To Hull by water, and all places within 30 miles of Ipswich.

A Discount of Five per cent. allowed for Cash payments.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1*l.* per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, exclusive of sacks, 35*s.* per ton; in London, Liverpool, Bristol, and other seaports in England, 48*s.* per ton, exclusive of sacks; or 60*s.* per ton, sacks included.—Agents for the sale of the Society's Charcoal have been appointed at several of the principal seaports and Inland towns, a list of whom, together with all other information, may be had on application at this office.

By order of the Court,
Feb. 8, 1851. GEORGE L. PARROTT, Secretary.
Head Office, 9, Waterloo-place, London.

KING'S ROAD, CHELSEA.

REGISTER FOR GARDENERS.—No charge except for Postage.—The Nobility and Gentry, in want of Gardeners, Bailiffs, Foresters, &c., are respectfully informed that Gardeners are here classed according to their various qualifications. By sending full particulars, such Gardeners only will be introduced as are worthy, and well adapted for each particular situation.

Gardeners in want of situations are requested to apply to J. WEEKS and Co., Horticultural Establishment, Chelsea.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and obtaining a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be inserted next week, being now in the hands of first-rate professional men. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s. d.* | | Per 1000—*s. d.* |
|---|---|---|---|
| York Regents .. .. | 10 6 | New Early Ebrington Kidney .. .. | 15 0 |
| American Native .. | 10 6 | Do. Ash-leaved .. | 15 0 |
| White-blossomed Kidney .. .. .. | 10 6 | Do. Frame Round .. | 10 6 |
| Soden's Early Oxford .. | 15 0 | Do. Radical .. .. | 10 6 |
| Early Cockney .. .. | 15 0 | Fox's Seedling .. .. | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, Feb. 8.

IMPROVED METALLIC FLOWER LABEL

ADVANTAGES OF THE IMPROVED METALLIC FLOWER LABEL OVER ALL OTHERS. They are less liable to disturb the roots; they are indestructible; they are uniform and ornamental; they are smoother, and can be written upon either with lead pencil on wet paint, as on wood, or with chemical ink. Price 2*s* per 100.

May be had of T. LOCKHART, Seedsman, 84, Fleet-street, London; or Wholesale to Dealers, of S. ROOKE, jun., 7, Whitrall-street, Birmingham.

ECONOMIC LIFE ASSURANCE SOCIETY, 6, NEW BRIDGE-STREET, BLACKFRIARS.

Established 1823.

Empowered by Act of Parliament, 3 William IV.

*Directors.*

The Right Hon. Sir T. FRANKLAND LEWIS, Bt., M.P., *Chairman.*
HENRY FREDERIC STEPHENSON, Esq., *Deputy Chairman.*

| | |
|---|---|
| A. Kingsford Barber, Esq. | Sir Alex. Duff Gordon, Bart. |
| Arthur Kett Barclay, Esq. | Archibald Hastie, Esq., M.P. |
| Henry Barnett, Esq. | John Mendham, Esq. |
| Robert Biddulph, Esq. | Charles Morris, Esq. |
| Thomas Edgar, Esq. | William Routh, Esq. |

*Auditors.*

| | |
|---|---|
| Edward Charrington, Esq. | Capt. Robert Gordon, R.N. |
| Francis Dumergue, Esq. | John Gilliam Stilwell, Esq. |

*Physician*—John Ayrton Paris, M.D., Cantab., Hon. D.C.L. Oxon, F.R.S., 27, Dover-street (President of the Royal College of Physicians).

*Surgeon*—Benjamin Travers, Esq., F.R.S., No. 12, Bruton-st.

*Solicitor*—Henry Young, Esq., No. 12, Essex-street, Strand.

*Actuary*—James John Downes, Esq., F.R.A.S.

The advantages offered by this Society are—Economy combined with Security, and Lower Rates of Premiums than those of any other office, which entitle the Assured to participate in the profits, and considerably lower than those of any other Mutual Insurance Society.

The whole of the profits are divided every fifth year among the Assured, and a Bonus is added, after the payment of the Fifth Annual Premium, to every Policy effected on the participating scale, if a claim accrue thereon prior to the next division of profits.

The Bonus declared in 1849 (arising from the whole of the profits), upon the mutual principle, averaged 62½ per cent. on the premiums received.

Loans granted on such Policies as are purchasable by the Society.

The Assurance Fund exceeds 1,000,000*l.* Income 180,000*l.* per annum.

The subjoined Table shows the advantages offered by the Society, resulting from low premiums, and a division of the entire profits among the assured:

| Age at Entry. | The Annual Premium, according to the Northampton Rates, to Assure 1000*l.* | Assures by the Economic Rates. | Thus giving an immediate Bonus of | Economic Bonus on Policies of seven years' standing in 1849 was | Also a Contingent Bonus on Policies becoming Claims in 1851. | Total sum payable at death. |
|---|---|---|---|---|---|---|
| | £ *s. d.* | £. | £. | £. | £. | £. |
| 20 | 20 15 10 | 1260 | 260 | 108 | 36 | 1404 |
| 30 | 26 13 5 | 1205 | 205 | 110 | 36 | 1375 |
| 40 | 33 19 6 | 1140 | 140 | 118 | 33 | 1313 |
| 50 | 45 6 0 | 1030 | 30 | 129 | 30 | 1209 |

Prospectuses and full particulars may be obtained on application to ALEXANDER MACDONALD, Secretary.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, LEA and PERRINS, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

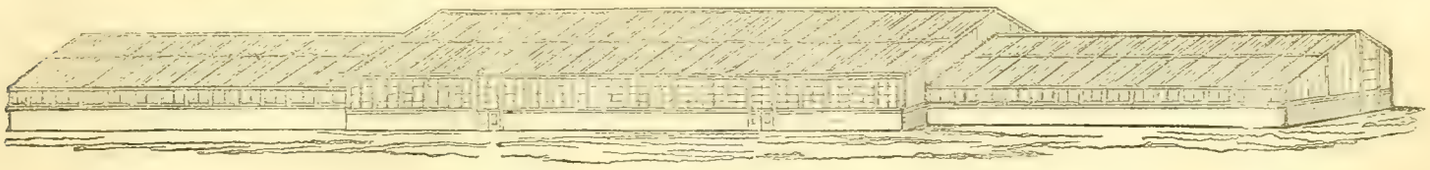
N.B.—To guard against imitations, see that the names of "LEA and PERRINS" are upon the label and patent cap of the bottle.

WIRE FENCING, painted, an effectual fence against hares, rabbits, sheep, cats, dogs, deer, &c.; also for enclosing pheasants, fowls, &c.; for heightening existing walls, fences, &c.; and as a protection against petty thieves:—15 inches high, 3*d.* per yard; 18 inches, 3½*d.*; 2 feet, 4½*d.*; 3 feet, 6¾*d.*; 4 feet, 9*d.*; and 6 feet, 1*s.* per yard; less than 2-inch mesh. Being worked in oil it will not rust when painted, and will last twice as long before it requires repainting as any other kind of wire-work that is made. Also, sparrow-proof wire-work, 2*d.* per square foot; wirework, 4-inch mesh, ½*d.* per square foot. Wire-work to order. Numerous testimonials of approval.—R. RICHARDSON, 21, Tonbridge-place, New-road, London. N.B. As this wire kept painted would last 20 years, farmers and others may, at a small expense, preserve their crops from hares and rabbits.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



| Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 10 ft. |
|---|---|---|---|---|---|

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

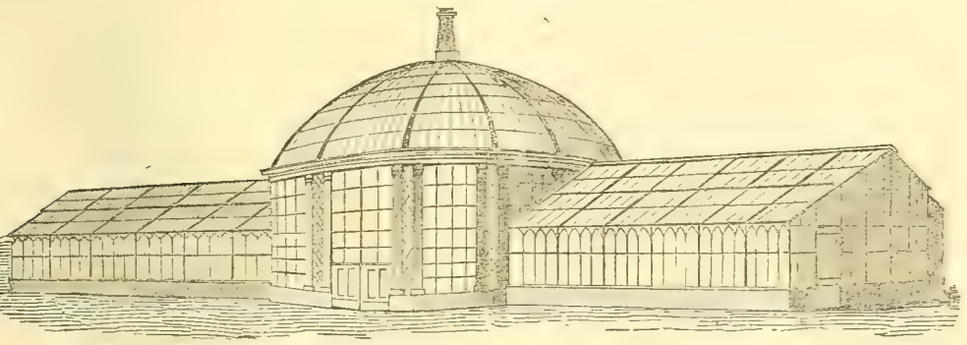
(Signed.) "James Fraser, Gardener, Luton Hoo Park."

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## BY HER MAJESTY'S ROYAL LETTERS PATENT.

# PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

## E. DENCH, PATENTEE.



Two Wings erected for the Earl of Crawford and Balcarras, Haigh Hale, Wigan, Lancashire.
Mr. Varty, his Lordship's Foreman, will answer any inquiry.

THE PATENT consists of two distinct principles for all Horticultural Erections—on one plan the Roof is formed wholly of Iron and Glass, no wood or putty, &c., and not more than three-quarters of an inch of light being taken up anywhere, and is very light, strong, and elegant, free from drip, and perfectly impossible for the rain to penetrate; the other principle consists of the Roof being formed in Sashes, and the surface of the Roof being Iron, Glass, and Putty, and, the work being hollow, is perfectly free from contraction or expansion. These Houses have been proved in all parts, and are found to excel all others. Heating by Hot-water on most scientific principles.

ONE GOOD SECOND-HAND HOUSE FOR SALE.

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TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.
UNRESERVED SALE OF CAMELLIAS OF THE CHOICEST DESCRIPTION, BOTH AS TO FORM OF THE PLANTS AND VARIETIES, FROM MESSRS. LODDIGES.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, February 21, at 12 for 1 o'clock, a remarkably CHOICE SELECTION OF CAMELLIAS, from Messrs. Loddiges' Nursery; comprising beautifully formed Plants, from 3 to 8 feet, well set with bloom, and of the following favourite sorts: Double White (very fine), Imbricata, Elegans, Donckelarii, Chandlerii, Candidissima, and a few flowering Plants of the rare and beautiful Aulica.—May be viewed on the day prior and morning of sale, and Catalogues had of Mr. J. C. Stevens, 38, King-street, Covent-garden.

TO GENTLEMEN, FLORISTS, AMATEURS, AND OTHERS.

MR. H. ALEXANDER will sell by Auction at the Mart, near the Bank of England, on WEDNESDAY, Feb. 12, 1851, at One precisely, the finest collection of named RANUNCULUS ever offered for Sale by Auction, from the most celebrated Scotch growers, viz., Lightbody, Waterston, Neilson, Kilgour, and Reid, comprising all the new and most esteemed varieties in cultivation, also several new flowers only in this collection. Catalogues to be had at the Mart, and of the Auctioneer, Shacklewell.

EXTENSIVE SALE OF VALUABLE NURSERY STOCK.

THOMAS PERRY, Nurseryman, Banbury, begs to inform the Nobility, Gentry, Nurserymen, Railway Contractors, and Planters generally, that he has commissioned Messrs. Danby and Caless to offer for public competition, on MONDAY and TUESDAY, the 10th and 11th days of February, about a million of fine healthy FOREST TREES, of nearly every description, including a very superior Stock of the True English Elms, 100,000 Evergreen and Flowering Shrubs, Fruit Trees in great variety, and 500,000 Thorn Quicksets. Catalogues of which may be obtained of Mr. Perry, the Proprietor, or the Auctioneers, Banbury. T. P. begs to call particular attention to his unrivalled collection of Roses.—The above Stock may be viewed the mornings of Sale until 10 o'clock, at which time the Auction will commence.

FINAL SALES.
TO NURSERYMEN, BUILDERS, AND OTHERS.

MR. D. A. RAMSAY having received instructions from Messrs. Dennis and Co. to submit the whole of the remaining NURSERY AND OTHER STOCK, GREENHOUSES, IMPLEMENTS IN TRADE, &c., to public competition during the ensuing season, in consequence of the lease expiring at Christmas next, will sell by Auction, on the premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY, February 25th, and following day, at 12 o'clock, without reserve, a portion of the valuable Nursery Stock, comprising extra large Aucuba, Hollies 3 to 5 feet high, Box, Laurels, and other Evergreens; prize Gooseberries, fruit bearing and other Mulberries; large Ivies, Jasmines, and other Climbers; Roses, Deciduous Shrubs, Garden Frames and Lights, &c. Due notice will be given of future sales of the above stock.—May be viewed prior to sale. Catalogues may be had on the premises; at the principal Seed Shops; and of the Auctioneer, Brompton Auction Ground, Fulham-road, Brompton, near London.

TO MARKET GARDENERS, NURSERYMEN, BUILDERS AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, on the premises, near the Wheatsheaf, New-road, Shepherd's Bush, Hammersmith (late in the occupation of Mr. John Day), on FRIDAY, February 21, at 12 o'clock, the Growing Crops on about five acres of ground, which must be immediately cleared for building; consisting of 1500 of the celebrated Rifleman Gooseberry, and other market varieties, British Queen and other Strawberries, Raspberries, Currants, Rhubarb Roots, Broccoli, and other Vegetable Crops, &c. Also a quantity of Nursery Stock, comprising fine Rhododendrons, Azalea, Hardy Heaths, Grape Vines, Fig-trees, Evergreens of sorts, Fruit Trees, Dwarf and Pillar Roses, Mushroom Spawn, &c., the property of a Country Nurseryman. The whole to be sold without the least reserve.—May be viewed one day prior to sale. Catalogues had at the Wheatsheaf, the principal Seedshops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

SALE OF AMERICAN PLANTS AND OTHER NURSERY STOCK.

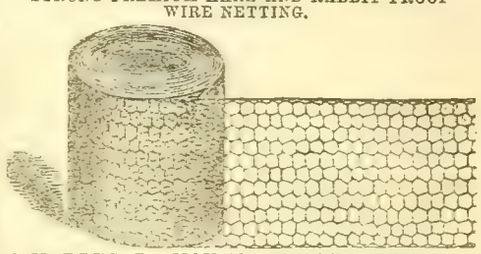
MR. D. A. RAMSAY will Sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, (one mile from Hyde-park Corner) on TUESDAY, Feb. 18th, at 12 o'clock, 1000 Rhododendrons, Azaleas, Andromedas, Ledums, &c., in fine varieties; Evergreens, Ornamental Trees and Shrubs, a quantity of Bulbs, a choice collection of Pinks, Yellow and other Picotees and Carnations; 1000 Victoria and other Rhubarb roots, Fig Trees, strong Grape Vines, Mushroom Spawn, Ash-leaf Kidney Potatoes, &c.—May be viewed prior to the Sale, and Catalogues had at the principal Seedshops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

BRENTFORD, MIDDLESEX.—FINAL SALE.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. J. Ronalds, to offer to public competition, by Auction, on the premises, the Butts and Twolands Nurseries, about the first week in March, the whole of the remaining NURSERY STOCK, consisting of a rich assortment of Fruit and Forest Trees, Evergreens, Ornamental and Deciduous Shrubs, American Plants, &c.—May be viewed, and Catalogues had, prior to the sale, of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. Samuel Allsopp and Sons, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cork-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 33, Virginia-street, Glasgow.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | |
|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | .. | £3 15 0 |
| Do. of 100 yards, 24 ins. wide | .. | .. | 5 0 0 |
| Do. of 100 yards, 30 ins. wide | .. | .. | 6 5 0 |
| Do. of 100 yards, 36 ins. wide | .. | .. | 7 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| 1½-inch " light " ... | 8 " | 6 " |
| 1½-inch " strong " ... | 10 " | 8 " |
| 1½-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

YOUR POWERS, PASSIONS, AND PECULIARITIES.—The mystic art of Graphiology, as practised by Professor Ellison, enables him to discover and describe from a single short specimen of Writing, the mental character, talents, and defects, showing what the writer really is, and what worth—the full analysis of character filling a sheet of paper. Send any specimen of the writing of yourself or of those in whose character you are interested, with the fee of 13 postage stamps, addressed to Mr. Raphael Ellison, 151, Strand, London.

# JOHN KERNAN

4, GREAT RUSSELL STREET' COVE NT GARDEN, 1851.

*Begs to offer a Select List from his*

# GENERAL CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

WHICH MAY BE RELIED ON WITH CONFIDENCE AS THE MOST DESIRABLE FOR CULTIVATION.

## Peas.

| Per qt.— | s. | d. |
|---|---|---|
| Prince Albert | 0 | 9 |
| Early Emperor | 1 | 0 |
| Early Warwick | 0 | 9 |
| Shilling's new early Grotto | 0 | 9 |
| Bishop's new long-podded | 1 | 0 |
| Fairbeard's Surprise | 0 | 9 |
| ,, Champion of England | 1 | 0 |
| British Queen | 1 | 0 |
| Knight's dwarf green | 1 | 0 |
| ,, tall ditto | 1 | 0 |
| Ne plus ultra | 1 | 0 |
| Scimetar | 0 | 9 |
| Woodford or Nonsuch | 0 | 9 |
| Victoria Marrow | 0 | 9 |
| Burbidge's Eclipse | 1 | 0 |

With all other varieties worth cultivating.

## Beans.

| Per qt. | s. | d. |
|---|---|---|
| Early Mazagan | 0 | 8 |
| Sword Longpod | 0 | 8 |
| Hangdown | 0 | 8 |
| Taylor's Windsor | 0 | 8 |
| Johnson's Wonderful | 0 | 8 |
| Green Genoa | 0 | 9 |
| All the varieties of dwarf French Beans | 1 | 0 |
| Painted Lady and Scarlet Runners | 1 | 0 |

| Per oz. | s. | d. |
|---|---|---|
| Beet, fine London Red | 0 | 6 |
| ,, Silver, or Seakale | 0 | 6 |
| ,, Castelnaudary | 0 | 6 |
| ,, Whyte's black, per packet | 0 | 6 |
| Borecole, dwarf curled | 0 | 6 |
| Borecole new heading, per paper | 0 | 6 |
| Brussels Sprouts (foreign seed, fine), per oz. | 1 | 0 |
| Kohl Rabi, per paper | 0 | 6 |
| Borecole, red and white, variegated, for garnishing (very beautiful) | 0 | 6 |
| Savoy, green curled, per oz. | 0 | 8 |

## Broccoli.

| Per oz. | s. | d. |
|---|---|---|
| Myatt's Early Purple Cape | 1 | 0 |
| Miller's Dwarf | 1 | 0 |
| Chappell's Cream | 1 | 0 |
| Bowles's Sulphur | 1 | 0 |
| Somner's Late White | 1 | 0 |
| Willcove White, late, per packet | 0 | 6 |
| Grange's Early White,— from the original raiser per oz. | 1 | 0 |
| Invisible White | 1 | 0 |
| Purple Sprouting | 1 | 0 |
| Walcheren | 1 | 0 |
| Imperial Winter | 1 | 0 |
| Hampton Court | 1 | 0 |
| Dwarf Siberian | 1 | 0 |
| Purple Syrian | 1 | 0 |

## Cabbage.

| Per oz. | s. | d. |
|---|---|---|
| Nonpareil | 0 | 9 |
| Shilling's New Queen, fine | 1 | 0 |
| Atkin's Matchless | 1 | 0 |
| Early Venus, per packet | 0 | 6 |
| Knight's Early Dwarf, p. oz. | 1 | 0 |
| Early York | 0 | 6 |
| Early Battersea | 0 | 6 |
| Peake's Incomparable | 1 | 0 |
| Robert's Emperor | 1 | 0 |
| True Cornish, per packet | 0 | 6 |
| Perpetual | 1 | 0 |
| Vangirard (Winter) per packet | 0 | 6 |
| Large Drumhead — (for cattle), per lb. | 2 | 6 |

And all other kinds in cultivation.

## Carrot.

| Per oz. | s. | d. |
|---|---|---|
| Early Scarlet Horn | 0 | 4 |
| Long Orange | 0 | 4 |
| Fine Surrey | 0 | 4 |
| Parsnip, Hollow crown | 0 | 3 |
| Altringham, per lb. | 1 | 0 |
| White (for Agriculture), per lb. | 1 | 0 |

## Cauliflower.

| Per oz. | s. | d. |
|---|---|---|
| Mercer's fine Pearly | 1 | 0 |
| London Particular | 1 | 0 |
| Large Asiatic | 1 | 0 |
| Walcheren | 1 | 0 |
| Fine late | 1 | 0 |

## Cress.

| | s. | d. |
|---|---|---|
| Plain, per pint | 0 | 6 |
| Curled | 1 | 0 |
| American, per oz. | 0 | 3 |
| Water, per paper | 0 | 6 |
| Mustard, per pint | 0 | 6 |

## Parsley.

| | s. | d. |
|---|---|---|
| Plain, for feeding early lambs, per bushel | 16 | 0 |
| Extra Curled, per oz. | 0 | 3 |

## Celery.

| Per paper. | s. | d. |
|---|---|---|
| Cole's Superb Red | 1 | 0 |
| Seymour's Superb White | 0 | 6 |
| New Rose, solid | 0 | 6 |
| Dwarf White Siberian, very solid, per packet | 0 | 6 |
| Seymour's Superb Red, per packet | 0 | 6 |
| New Giant | 0 | 6 |

## Cucumber.

| Pea paper. | s. | d. |
|---|---|---|
| Victory of Bath | 1 | 0 |
| Acme of Perfection | 1 | 0 |
| Syon House | 1 | 0 |
| Weedon's Free bearer | 0 | 6 |
| Early Frame | 0 | 3 |
| Kerrison's | 1 | 0 |
| Walker's Rambler | 0 | 6 |
| Windsor Prize | 0 | 6 |
| Early Handglass | 0 | 3 |
| Early Ridge | 0 | 3 |

## Melons.

| | s. | d. |
|---|---|---|
| Seymour's Golden Perfection | 0 | 6 |
| True Syon House | 0 | 6 |
| Snow's Hybrid Green flesh, per packet | 0 | 6 |

And all the better sorts cultivated for this market.

## Endive.

| | s. | d. |
|---|---|---|
| New Imperial, per packet | 0 | 6 |
| Batavian per oz. | 0 | 6 |
| Green curled | 0 | 6 |
| White curled | 0 | 6 |
| Herbs, all the kinds, per packet | 0 | 6 |

## Lettuce.

| | s. | d. |
|---|---|---|
| Brighton Cos, per oz. | 1 | 0 |
| Imperial Cos | 1 | 0 |
| Artichoke-leaved, a fine new hardy sort, per pkt. | 0 | 6 |
| Victoria Cabbage, p. paper | 0 | 6 |
| Green Paris Cos | 0 | 6 |
| White Summer Cabbage | 0 | 6 |
| Fine London White Cos, per oz. | 0 | 9 |
| Paris Cos | 1 | 0 |
| Ady's Cos | 1 | 0 |
| Drumhead | 0 | 9 |
| Bath Cos, & others, p. oz. | 1 | 0 |

## Onion.

| Per oz. | s. | d. |
|---|---|---|
| James's Long Keeping | 0 | 6 |
| Fine White Spanish | 0 | 6 |
| Globe | 0 | 6 |
| Strasburgh | 0 | 6 |
| Deptford | 0 | 6 |
| Silver-skin | 0 | 9 |
| Tripoli | 1 | 0 |
| Blood-red | 0 | 6 |
| Two-bladed, for pickling | 0 | 8 |

## Radish.

| | s. | d. |
|---|---|---|
| New Scarlet Olive-shaped, a delicious new variety, per packet | 0 | 6 |
| New rose | 0 | 6 |
| Early Frame, per pint | 1 | 0 |
| Long Scarlet | 1 | 0 |
| Red and White Turnip | 1 | 0 |
| Black Spanish, per oz. | 0 | 3 |

## Spinach.

| | s. | d. |
|---|---|---|
| New Flanders, per pint | 0 | 6 |
| Round, or Summer | 0 | 6 |
| Lettuce-leaved (new), per paper | 0 | 6 |
| New Zealand, per oz. | 0 | 6 |

## Turnips.

| per oz. | s. | d. |
|---|---|---|
| Early Snowball | 0 | 3 |
| Red American Stone | 0 | 3 |
| Teltow, for stewing | 0 | 3 |
| Early Dutch | 0 | 3 |
| Yellow Maltese | 0 | 3 |
| ,, Stone | 0 | 3 |
| Early Snowball, per lb. | 1 | 6 |
| Early Dutch (earliest), true imported | 2 | 0 |

AGRICULTURAL TURNIPS.

| Yellow Bullock per lb.— | 0 | 9 |
|---|---|---|
| Skirving's Swede | 0 | 9 |
| Laing's ditto | 0 | 9 |
| Ashcroft ditto | 0 | 9 |
| Dale's Hybrid | 0 | 9 |
| Red Round | 0 | 9 |
| White Round | 0 | 9 |
| White Globe | 0 | 9 |
| Oxheart | 0 | 9 |

Furze, per lb., 1s.; Broom, per lb., 1s.
Coarse Grasses for Game Covers, 6s. per bushel.
Long Red and Globe Mangold Wurzel, per lb., 9d.
White Silesian, or Sugar Beet, per lb., 2s.
Chevalier Barley; Hopetown, Tartarian, Sandy, and other Oats.
Flax, from Riga seed, one year grown in this country.
A fine Collection of all the best permanent Grasses (hand picked), separate or mixed; if mixed, per bushel, 8s.
Sweet Vernal, the earliest and most suitable Grass for early Lambs, 1s. 6d. per lb.
White and Red Clover, 8d.; Lucerne, 1s.; and Trefoil, 6d. per lb.
Kohl Rabi, for Agriculture, per lb., 2s.
Italian Rye Grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1s. 6d.
Myatt's fine new Strawberries.

Asparagus plants, according to age, per 100, 2s. 6d. to 5s.
Seakale do. do. do. 5s. to 10s.
Dulley's Early Scarlet Admirable Rhubarb, per root, 1s. 6d.
Myatt's Victoria do. (the largest in cultivation), 1s. 6d.
Mushroom Spawn, per bushel, 5s.
Cornwell's Victoria Raspberry, per dozen, 4s.
All the fine new Raspberries, 2s. 6d. to 3s. per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.

## Potatoes.

per bushel

| | s. | d. |
|---|---|---|
| Soden's Early Oxford, per bushel | 7 | 0 |
| Barnard's Early Frame | 8 | 0 |
| Shilling's Early Prolific, per peck | 2 | 0 |
| Kirke's True Ash-leaved Kidney, per bushel | 8 | 0 |
| England's Fair Beauty Kidney | 6 | 0 |
| Walnut-leaved Kidney, | 8 | 0 |
| Jackson's Ash-leaved Kidney | 7 | 0 |
| Ash-leaved Kidney, bshl. | 8 | 0 |
| Forty-fold | 5 | 0 |
| Early Hen's Nest do. | 6 | 0 |
| Early Shaw do. | 5 | 0 |
| Prince Regent's do. | 5 | 0 |
| Kentish Mignon do. | 4 | 0 |
| Albany Kidneys do. | 5 | 0 |
| Flour-ball do. | 5 | 0 |

And many other most productive late kinds; also seed saved from the best varieties, 6d. per packet.
Garlic, per lb., 6d. Shalots, per lb., 6d.
Budding and Pruning Knives.
Russia Mats, 1s. 6d. each. Cuba Bass, per lb., 2s. 6d.
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind. Catalogues may be had on application.

## Flower Seeds.

Asters, 20 distinct German varieties, in sealed packets, suitable for exhibition, the collection 10s.
A mixture, including all the colours of the above, per paper, 6d.
Do. in 12 distinct colours, the collection, 4s.
A mixture of the best varieties of late Asters, 6d.
Superb German and Prussian Stocks, 25 distinct varieties, for exhibition, the collection 10s.
12 varieties of do., distinct in colours, 4s.
12 autumn flowering do., in distinct colours, 4s.
A mixture of all the finest varieties of Ten-week, per paper, 6d.
A mixture of Brompton do., per packet, 6d.
12 named varieties of Hollyhocks, 3s.

| Per packet— | s. | d. |
|---|---|---|
| Achimenes, seeds & bulbs of all the varieties. | | |
| Anagallis Phillipsii | 0 | 6 |
| ,, superba grandiflora | 0 | 6 |
| ,, indica | 0 | 3 |
| ,, carnea | 0 | 3 |
| ,, latifolia | 0 | 6 |
| Amethystea cærulea | 0 | 6 |
| Anemone, fine mixed | 0 | 6 |
| Antirrhinum (all the new kinds) | 0 | 3 |
| Argemone grandiflora | 0 | 3 |
| ,, Barclayana | 0 | 3 |
| ,, speciosa | 0 | 3 |
| Aquilegia glandulosa | 1 | 0 |
| ,, Skinnerii | 1 | 0 |
| ,, siberica | 0 | 3 |
| ,, fine mixed German varieties | 0 | 6 |
| Auricula, from fine named flowers | 1 | 0 |
| ,, alpine | 0 | 6 |
| Brachycome iberidifolia | 0 | 6 |
| ,, alba, new | 0 | 6 |
| Balsams, 12 very fine distinct colours, all double | 5 | 0 |
| ,, mixture of above | 0 | 6 |
| Bartonia aurea | 0 | 3 |
| Blumenbachia insignis | 0 | 6 |
| Browallia, of sorts | 0 | 6 |
| Calceolarias, from a collection of named shrubby kinds | 1 | 0 |
| Calceolarias, from Herbaceous do. | 1 | 0 |
| Calceolaria pinnata | 0 | 6 |
| Calendrinia discolor | 0 | 3 |
| ,, grandiflora | 0 | 3 |
| ,, umbellata — (new), fine for rockwork | 0 | 6 |
| Campanula pulcherrima. | 0 | 6 |
| ,, Loreii, blue | 0 | 6 |
| ,, ,, white. | 0 | 6 |
| ,, stricta | 0 | 6 |
| ,, sylvatica new | 0 | 6 |
| And many other sorts, fine, as a contrast with bedded out Verbenas, &c. | | |
| Catananche bicolor | 0 | 3 |
| Centranthus macrosiphon, new | 1 | 0 |
| Cistus guttatus, very dwf. | 0 | 6 |
| Clintonia pulchella | 0 | 6 |
| ,, elegans | 0 | 3 |
| Cockscomb, Dwarf Scarlet | 0 | 6 |
| Cuphea viscosissima | 0 | 6 |
| ,, silenoides | 0 | 6 |
| ,, platycentra new | 0 | 6 |
| ,, miniata | 0 | 6 |
| Cineraria, selected from 36 of the latest new kinds | 1 | 0 |
| Commelina cœlestis | 0 | 3 |
| Carnation, from named flowers | 1 | 0 |
| Clarkias, all the varieties | 0 | 3 |
| Coreopsis, new marbled | 0 | 6 |
| ,, tinctoria | 0 | 3 |
| ,, Drummondii | 0 | 3 |
| Candytuft, new crimson | 0 | 3 |
| ,, purple | 0 | 3 |
| ,, white | 0 | 3 |
| ,, Sweet scented | 0 | 3 |

| Per packet— | s. | d. |
|---|---|---|
| Convolvulus major | 0 | 3 |
| ,, minor | 0 | 3 |
| ,, do. new dark | 0 | 3 |
| ,, minor, striped | 0 | 3 |

CLIMBERS.

| | | |
|---|---|---|
| Cobœa scandens | 0 | 6 |
| Calampelis scaber | 0 | 6 |
| Lophospermum erubescens | 0 | 6 |
| ,, Hendersonii | 0 | 6 |
| Loasa aurantiaca | 0 | 6 |
| Maurandya Barclayana | 0 | 6 |
| ,, new scarlet | 0 | 6 |
| Tropæolum peregrinum | 0 | 6 |
| ,, pentaphyllum | 0 | 6 |
| ,, Jarrattii | 1 | 0 |
| ,, tricolorum grandiflrm. | 1 | 0 |
| ,, trimaculatum, new | 1 | 0 |
| ,, minor coccinea | 0 | 6 |
| ,, Brachyseras | 1 | 0 |
| Ipomœa rubra cærulea | 0 | 6 |
| ,, punctata | 0 | 6 |
| ,, nil | 0 | 6 |
| ,, rosea | 0 | 6 |
| ,, striata & others | 0 | 6 |
| Thunbergia alata | 0 | 6 |
| ,, ,, alba | 0 | 6 |
| ,, aurantiaca | 0 | 6 |
| ,, Fryerii | 0 | 6 |
| ,, new yellow | 0 | 6 |
| Cleome pentaphylla | 0 | 6 |
| ,, rosea | 0 | 6 |
| Collinsia grandiflora | 0 | 3 |
| ,, bicolor | 0 | 3 |
| ,, new dwarf | 0 | 3 |
| Dahlia scabigera (dwarf lilac) | 0 | 6 |
| Datura fastuosa, purple | 0 | 6 |
| ,, white | 0 | 6 |
| Delphinium or Larkspurs, distinct or mixed | 0 | 3 |
| Ditto, biennial and perennial varieties | 0 | 3 |
| Digitalis grandiflora | 0 | 3 |
| ,, new spotted | 0 | 3 |
| ,, fulgens | 0 | 3 |
| Dianthus, double white, Indian pink | 0 | 6 |
| ,, Knight's new hybrid | 0 | 6 |
| ,, double Indian | 0 | 3 |
| ,, latifolia | 0 | 3 |
| ,, Cherii | 0 | 6 |
| and others. | | |
| Didiscus cæruleus | 0 | 6 |
| Dahlia, fine mixed | 0 | 6 |
| Eucharidium grandiflorum | 0 | 3 |
| Eutoca viscida | 0 | 3 |
| Egg plant, white | 0 | 6 |
| ,, purple | 0 | 3 |
| Eschscholtzia, 3 sorts | 0 | 3 |
| Erysimum Perofskianum | 0 | 3 |
| Fuchsias from named sorts | 1 | 0 |
| Gaillardia picta | 0 | 6 |
| ,, bicolor | 0 | 3 |
| ,, Richardsonii | 0 | 3 |
| ,, aristata | 0 | 3 |
| Globe Amaranthus, of sorts | 0 | 3 |
| Gentianas, of sorts | 0 | 6 |
| Geum splendens | 0 | 6 |
| ,, Wicei | 0 | 6 |
| Geranium, from fine sorts | 1 | 0 |

| Per packet— | s. | d. |
|---|---|---|
| Grahamia aromatica | 0 | 6 |
| Gramnanthes gentianoides, new | 1 | 0 |
| Godetia, all the new sorts | 0 | 3 |
| Heartsease, from first-rate prize flowers | 1 | 0 |
| Humea elegans | 0 | 6 |
| Helichrysum macranthum | 0 | 6 |
| ,, bracteatum album | 0 | 3 |
| Heliotropium Peruvianum | 0 | 6 |
| ,, Voltareanum | 0 | 6 |
| Hibiscus Richardsonii | 0 | 6 |
| ,, africanus | 0 | 3 |
| ,, Humboldtii | 0 | 6 |
| Heliophila araboides | 0 | 3 |
| Helianthemum (Rock Cistus | 0 | 3 |
| ,, Voltareanum | 0 | 6 |
| Hollyhock, Chinese | 0 | 6 |
| ,, fine mixed | 0 | 3 |
| Hydrolea spinosa | 0 | 6 |
| Ipomœa Burridgii | 0 | 6 |
| ,, quamoclit | 0 | 6 |
| ,, hybrida Kermesina | 0 | 6 |
| And others | 0 | 6 |
| Ipomopsis elegans | 0 | 6 |
| Isotoma axillaris | 0 | 6 |
| Jacobæa, double crimson | 0 | 3 |
| ,, ,, purple | 0 | 3 |
| ,, new lilac | 0 | 3 |
| Kaulfussia amelloides, for edging | 0 | 3 |
| ,, trachelioides | 0 | 6 |

HANDSOME ORNAMENTAL GRASSES.

| | | |
|---|---|---|
| Lagurus ovatus (Hare's-tail Grass) | 0 | 6 |
| Agrostis pulchella | 0 | 6 |
| Briza gracilis | 0 | 6 |
| ,, maxima | 0 | 6 |
| Stipa pinnata | 0 | 6 |
| Larkspurs, 12 distinct German vars. | 4 | 0 |
| ,, mixed dwarf | | |
| ,, Rocket | 0 | 3 |
| Leptosiphon densiflores | 0 | 3 |
| ,, androsaceus | 0 | 3 |
| Loasa pentlandica | 0 | 6 |
| ,, aurantiaca | 0 | 6 |
| Linum monogynum, fine | 0 | 6 |
| ,, grandiflorum | 0 | 3 |
| ,, perenne | 0 | 6 |
| ,, album | 0 | 3 |
| Lymnanthus grandiflora | 0 | 6 |
| ,, Douglasii | 0 | 3 |
| Lobelia heterophylla major, fine | 0 | 6 |
| ,, bicolor | 0 | 3 |
| ,, gracilis, for edging | 0 | 3 |
| ,, ramosus | 0 | 6 |
| ,, ,, rosea | 0 | 6 |
| ,, erinoides | 0 | 3 |
| ,, propinqua | 0 | 6 |
| And many other biennial and perennial varieties. | | |
| Lisianthus Russellianus, in plants (seed does not vegetate well). | | |
| Lupinus Hartwegii | 0 | 3 |
| ,, nanus | 0 | 3 |
| ,, Cruikshankii | 0 | 3 |
| ,, affinis, new | 0 | 6 |
| ,, hirsutissima | 0 | 6 |
| and many others. | | |
| Lychnis speciosa, new | 0 | 6 |
| ,, flos Jovis | 0 | 3 |
| ,, cœli-rosea | 0 | 3 |
| ,, prostrata | 0 | 3 |
| ,, scarlet | 0 | 3 |
| Malope grandiflora | 0 | 3 |
| Mallow, new zebra | 0 | 3 |
| Malva miniata | 0 | 6 |
| Marvel of Peru, 6 distinct colours, each | 0 | 3 |
| Marigold, dwarf pigmy French | 0 | 6 |
| Other varieties | 0 | 3 |
| Mesembryanthemum tricolor | 0 | 6 |
| Mignonette, per oz. | 0 | 6 |
| Mimosa sensitiva (Sensitive plant) per packet | 0 | 6 |
| Mimulus, from 12 distinct named varieties | 0 | 6 |
| Mimulus moschatus | 0 | 3 |

| Per packet— | s. | d. |
|---|---|---|
| Martynia fragrans | 0 | 6 |
| Nasturtiums, all the sorts | 0 | 3 |
| Nemesia floribundus | 0 | 6 |
| ,, versicolor | 0 | 6 |
| Nemophila insignis major | 0 | 3 |
| ,, insignis alba (new) | 0 | 6 |
| ,, discoidalis | 0 | 6 |
| ,, maculata (new) | 0 | 6 |
| Neirembergia splendens | 0 | 6 |
| ,, violacea | 0 | 3 |
| ,, fine mixed | 0 | 6 |
| Nolana atriplicifolia | 0 | 3 |
| ,, paradoxa | 0 | 3 |
| Nycterinia selaginoides | 0 | 6 |
| Œnothera Sellowii | 0 | 6 |
| ,, Drummondii | 0 | 6 |
| ,, densiflora | 0 | 6 |
| ,, macrocarpa | 0 | 6 |
| ,, and others | 0 | 3 |
| Papaver Marcelli | 0 | 3 |
| ,, nudicaulis | 0 | 3 |
| Poppy, carnation, mixed | 0 | 3 |
| Peas, sweet, all the colours separate or mixed | 0 | 3 |
| Pentstemon, of sorts | 0 | 6 |
| Phlox Drummondii, various shades | 0 | 6 |
| ,, Drummondii, white | 0 | 6 |
| ,, Leopoldii, new | 1 | 0 |
| ,, new, scarlet | 0 | 6 |
| Picotee, from named flowers | 1 | 0 |
| Platystemon californica | 0 | 3 |
| Potentilla Garnieriana | 0 | 3 |
| ,, Russelliana | 0 | 6 |
| ,, insignis, fine new | 0 | 6 |
| Polyanthus, fine mixed | 0 | 6 |
| Portulacca splendens | 0 | 6 |
| ,, Thellusonii | 0 | 6 |
| ,, grandiflora | 0 | 6 |
| ,, striata alba | 0 | 6 |
| ,, Gilliesii | 0 | 6 |
| ,, yellow | 0 | 6 |
| Primula sinensis (white fringed) | 1 | 0 |
| ,, lilac | 1 | 0 |
| ,, cortusoides | 0 | 6 |
| Rhodanthe Manglesii | 0 | 6 |
| Salvia patens | 0 | 6 |
| ,, bicolor | 0 | 6 |
| Sanvitalia procumbens | 0 | 6 |
| Schizanthus Hookerii | 0 | 6 |
| ,, Grahamii | 0 | 6 |
| ,, retusus alba, new | 1 | 0 |
| ,, humilis & others | 0 | 3 |
| ,, Priestii | 0 | 3 |
| ,, venustus | 0 | 3 |
| Schizopetalon Walkerii, very sweet | 0 | 6 |
| Sphænogyne speciosa | 0 | 3 |
| Streptocarpus Rexii | 0 | 6 |
| Silene shafta | 0 | 6 |
| ,, compacta | 0 | 6 |
| Stock white pyramidal | 0 | 6 |
| ,, Buck's Intermediate, 16 out of 20 will come double | 0 | 6 |
| ,, Chapman's Scarlet 10-week | 0 | 3 |
| ,, Shepherd's White | 0 | 3 |
| ,, ,, Purple | 0 | 3 |
| Sedum cæruleum, for rock-work | 0 | 6 |
| Sultan, yellow | 0 | 3 |
| ,, white and purple | 0 | 3 |
| Tagetes, signata | 0 | 6 |
| ,, lucida | 0 | 6 |
| Thunbergia (*see* Climbers.) | | |
| Tropæolum (*see* Climbers). | | |
| Viscaria oculata | 0 | 3 |
| ,, new dwarf | 0 | 6 |
| ,, white | 0 | 6 |
| Violet, Russian (everflowering) | 0 | 6 |
| Verbena, a mixture of 6 best sorts | 0 | 6 |
| Wallflower, blood red | 0 | 3 |
| ,, Double German, of sorts | 0 | 6 |
| ,, changeable | 0 | 6 |
| Zinnia elegans coccinea | 0 | 6 |
| ,, purpurea | 0 | 6 |
| ,, aurea | 0 | 6 |
| ,, mixed, from 20 separate varieties | 0 | 6 |

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, } 2s. 6d. to 10s. 6d. each.
Named Double Anemones and Ranunculuses; Gladiolus ramosus and floribundus; Tigridia pavonia and conchiiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.
All the better named Heartsease from 6s. to 30s. per dozen.
Fine named Dahlias, per dozen, 12s.
,, Chrysanthemums, new kinds, 12s.
Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s. Rivers's Orchard House, 2s. 6d.
Rivers' new edition of the "Rose Amateur's Guide," 6s.
Paxton's "Cottagers' Calendar," 3d., which ladies and gentlemen should distribute to cottagers.
Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s.
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5s.
Seeds selected and carefully packed for North and South America, India, New Zealand, and Australia, in the most secure way to arrive safe at any of the above places.

Where a post-office order accompanies an order for any of the above-named Seeds, J. KERNAN will allow, as discount, additional articles to the amount of 2s. in the pound.
Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to the amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.
Although this list is condensed in the present enumeration, all other new and necessary seeds may be ordered. Gentlemen coming to town, having but one day to remain, wishing to take on return plants of any kind, will greatly oblige by giving one day's notice.


Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 8, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 7—1851.] SATURDAY, FEBRUARY 15. [PRICE 6*d*.


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 106 *c* | Mignonette | 102 *a* |
| Analysis of Oat husks | 110 *b* | Morphology | 99 *b* |
| Auckland Islands | 103 *c* | Oat husks, analysis of | 110 *b* |
| Birds, British song | 100 *a* | Pears, deformed | 99 *b* |
| Calendar, Horticultural | 104 *a* | Plants, reproductive organs of | 103 *a* |
| — Agricultural | 110 *a* | Planting, style in | 101 *c* |
| Californian forests | 103 *b* | Pollard tree, artificial | 102 *b* |
| Corn growing, or a word in season | 105 *c* | Poultry | 105 *a* |
| Entomological Society | 102 *c* | Robin on the Reproductive Organs of Plants, noticed | 103 *a* |
| Farm labourers | 106 *b* | St. Petersburgh | 100 *c* |
| Flax growing | 107 *a* | Sculpture, garden | 101 *b* |
| Garden sculpture | 101 *b* | Season, mildness of | 102 *b* |
| — ornaments | 102 *b* | Timber, to season | 102 *b* |
| Gardening, market | 100 *a* | Trees, fruit | 104 *c* |
| Gleanings, foreign | 100 *c* | Trees in the "Crystal Palace" | 99 *c* |
| Grafting | 101 *a* | Verbenas, select | 104 *c* |
| Groom's (Mr.) nursery | 103 *b* | Villa gardening | 100 *c* |
| Hides, qualities of | 106 *b* | Vines, to graft | 104 *c* |
| Labourers, farm | 106 *b* | Waterproofing composition | 104 *a* |
| Market gardening | 100 *a* | Weather at Pembroke | 102 *b* |



SEEDLING PELARGONIUM EXHIBITION.

THE THIRD ANNUAL SEEDLING PELARGONIUM EXHIBITION will be held (by kind permission) on JUNE 11th, in connection with the ROYAL BOTANIC SOCIETY'S JUNE SHOW, Regent's Park.

Balance from 1850 in hands of Treasurer, 5*l*. 8*s*. 6*d*.

SUBSCRIBERS:

| | £ | *s*. | *d*. | | £ | *s*. | *d*. |
|---|---|---|---|---|---|---|---|
| Mr. Ambrose | 0 | 10 | 0 | Mr. A. Henderson, Pine Apple-place | 0 | 10 | 6 |
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| Mr. Black | 1 | 0 | 0 | Mr. Robinson | 0 | 5 | 0 |
| Mr. Bragg | 1 | 0 | 0 | J. Riley, Esq. | 1 | 0 | 0 |
| Mr. Dobson | 1 | 0 | 0 | R. Staines, Esq. | 1 | 0 | 0 |
| E. Foster, Esq. | 1 | 0 | 0 | H. Story, Esq. | 1 | 0 | 0 |
| G. W. Hoyle, Esq. | 1 | 0 | 0 | Mr. C. Turner | 2 | 0 | 0 |
| W. Hocken, Esq. | 1 | 0 | 0 | | | | |
| W. E. Rendle and Co. | | | 10*s*. 6*d*. | | | | |

Subscriptions and suggestions may be forwarded to EDMUND FOSTER, Esq, Clewer Manor, near Windsor; EDWARD BECK, Esq, Worton Cottage, Isleworth; or to the Treasurer, Mr. JOHN EDWARDS, Wace Cottage, Holloway.—Feb. 15.

WM. DENYER, SEEDSMAN and FLORIST, 82, Grace-church-street, London (near the Spread Eagle), begs to offer the following: *s*. *d*.

ASTERS (GERMAN), four splendid varieties saved by an Amateur in this country, warranted to produce all double show flowers ... ... ... ... ... ... 2 0

BALSAMS, very double, saved from one of the finest collections in the country, six beautiful varieties ... ... 2 0

LARKSPURS, double, eight distinct colours ... ... 2 0

STOCKS (GERMAN), very double, six varieties, best and brightest colour ... ... ... ... ... ... 2 0

The above four collections, all in sealed packages, for 7*s*., or separately at the prices quoted.

W. D. has just received, from a large continental grower, a fresh supply of GLADIOLUS GANDAVENSIS, 6*d*. each, or 5*s*. per dozen—the beautiful dark variety, extra size roots.

A descriptive and priced catalogue of Flower and Vegetable Seeds, &c., may be had on application.

THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND CO. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20*s*., 40*s*., to 60*s*. per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, Feb. 15.

SELECT INDIAN AZALEAS.—Healthy well-grown Plants, with bloom-buds, in 48s or 4-inch pots 1*s*. 6*d*. each:—

| | |
|---|---|
| Alba | Macrantha alba |
| Augusta aurantia | Prince Albert |
| Delecta | Refulgens |
| Double Red | Robertsii |
| Fulgens | Rollissonii splendens |
| Herbertii | Rosea punctata |
| Louvoniensis | Superba duplex. |

THOMAS RIVERS, the Nurseries, Sawbridgeworth, Herts.

POTATOES FOR PLANTING. — Early Shaws, Early Prolific, and White-blossom Kidneys, may be had in any quantity, by applying to HENRY JUER, Battersea, near London.

TO SEEDSMEN AND MARKET GARDENERS.

GENUINE NEW SEEDS.

| | |
|---|---|
| Warner's Emperor Peas | Drumhead Cabbage |
| Clarke's Ringwood Marrows | Mignonette |
| Altringham Carrot | Sweet Peas |
| White Belgian Carrot | Skirving's Liverpool Swede. |
| Improved Jersey Parsnip | |

JOHN SUTTON and SONS, Reading, having grown rather more of the above articles than they will require for retailing, beg to offer them to the Trade, as being Stocks which they can confidently recommend.—*Low prices will be given in answer to applications stating quantities required.*

GRASS SEEDS.

SUTTON AND SONS can supply every kind of FESCUE, POA, and other natural GRASS SEEDS for permanent Pasture at lowest market prices, either separate or mixed, expressly to suit the soil for which they are required.

Any information desired will be furnished in answer to applications by post, addressed JOHN SUTTON and SONS, Seed Growers, Reading, Berks. Also Mangold, Carrot, and Turnip Seeds, of superior quality, carriage free.

HUGH LOW AND CO. have to offer fine large Tubers of the under-named Tropæolums:—

| | | | |
|---|---|---|---|
| Azureum | 5*s*. 0*d*. | Edule | 7*s*. 6*d*. |
| Brachyseras | 1 6 | Tricolorum | 1 6 |

Prices to the Trade on application.—Clapton Nursery, London.

GERMAN FLOWER SEEDS.—Our Selections of the above showy Ornaments of the Flower Garden having for several years given general satisfaction, we hereby announce the arrival of our annual supply, selected by us in Erfurt from those personally known to us as the most select and careful growers. It includes the most distinct varieties of Stocks, Asters, Balsams, Larkspurs, Zinnias, Wallflowers, and Hollyhocks. They will be made up in 5*s*., 10*s*., 20*s*., and 40*s*. packets, and each packet will contain part of the whole collection, if not otherwise ordered by the purchaser.

We have also a carefully selected assortment of all the leading and most approved varieties of Vegetable and Flower Seeds, which we offer at the current prices.

A Catalogue of General Nursery Stock stamped, free by post, may be had on application.

HUGH LOW and Co., Clapton Nursery, London.

LIBOCEDRUS CHILIENSIS, Endlicher (THUJA CHILIENSIS, Don).—A noble Evergreen Conifer, a native of the Andes of Chili and the southern provinces of Antucco and Valdivia, growing to the height of 65 to 80 feet. Sir Wm. Hooker says—

"*It is a tree of great beauty, and well worthy of being introduced into our gardens. There can be little doubt, from its native regions (inhabiting the same elevations on the mountains as the Araucaria imbricata), that it will thrive well in the open ground.*"

The following is an extract from a letter lately received from the well known botanical collector Mr. Bridges:—"In one of the late numbers of the *Gardeners' Chronicle* I see some doubts expressed relative to the Thuja Chilieusis being hardy in England. It will, in my opinion, be perfectly so, judging from what I have seen of the plant in the province of Colchagua, south lat. 35°, which is its most northern limit. It is found near the snow, and where it freezes, I should say, quite as severely as it does in the vicinity of London. Where the tree grows alone it is very graceful, the lower boughs are even on the ground, and it elevates itself to a great height. The timber is esteemed by the natives for building purposes. I have myself seen it as far south as 42°, and I learn it is found in the vicinity of Cape Horn."

Fine healthy well-established one-year-old plants, from seed, in single pots, 7*s*. 6*d*. each, three for 21*s*., or 4*l*. per dozen.

HUGH LOW and Co., Clapton Nursery, London.

CLEMATIS TUBULOSA, FROM MONGOLIA.

HUGH LOW AND CO. having a considerable stock of the above-named beautiful free flowering, hardy, suffruticose plant, producing splendid masses of purple flowers during the autumn months, offer strong plants at 1*s*. 6*d*. each, or 12*s*. per dozen.

They also have for sale very fine, healthy bushy plants of CITRUS JAPONICUS, or as it is commonly called, OTAHEITE ORANGE. Wherever this plant is known, it is universally admired, on account of the facility with which it can be made to produce fruit in abundance in a very small state. Price 42*s*. per dozen.—Clapton Nursery, London.

UNRIVALLED GERMAN ASTERS,

TWENTY-FOUR VARIETIES MIXED.

These superb Globe Asters have never been placed on an Exhibition table without the first prize being awarded to them. The under-mentioned may be considered sufficient to justify their being offered to the public. At the Bath Royal Horticultural Society 10 first prizes were awarded to them. At the Chepstow Horticultural Society, six first prizes; at the Devizes Horticultural Society, six prizes. By enclosing 12 penny postage stamps to J. REID, Nurseryman and Seedsman, Richmond-street, Weston-super-Mare, a packet of seed will be sent in return.

LISIANTHUS RUSSELLIANUS.—Very fine strong plants, 5*s*. each; second size, 3*s*. 6*d*.; third size, 2*s*. 6*d*. Cucumber, Melon, and Lisianthus seeds at 1*s*. per packet. CUTHILL'S pamphlet of 56 pages, containing the Belgian Prize Essay on the Potato, as well as many of the leading vegetables, price 2*s*., or by post 2*s*. 4*d*.; also to be had of HAMILTON and ADAMS, Paternoster-row; or RIDGWAY, Piccadilly.

JAMES CUTHILL, Camberwell, London.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2½ feet, is three weeks earlier than the old dwarf Green Knight's, and the Peas and Pods are twice the size. 5*s* per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetars, and 20 to 24 per stem. 1*s*. per quart.

BURBIDGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1*s*. per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c. Wholesale and retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be had on application.

NEW KITCHEN GARDEN SEEDS.—Warranted Excellent quality. Carriage Free! (See below).

| | £ | *s*. | *d*. |
|---|---|---|---|
| No. 1. Complete collection of 20 quarts of the newest and most prolific Peas, with all other Seeds in proportion, for one year's supply ... ... | 2 | 10 | 0 |
| No. 2. Complete collection, in smaller quantities ... | 1 | 10 | 0 |
| No. 3. ditto ditto ditto ... | 1 | 0 | 0 |
| No. 4. ditto ditto ditto ... | 0 | 12 | 6 |

*A List of the kinds furnished in the above collections will be found in our* PRICE CURRENT AND GARDEN DIRECTORY, *which can still be had on application.—See* Gardeners' Chronicle, *Jan.* 4, 1851, *back page.*

*** All Seed Orders above 2*l*. delivered Free of Carriage to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast, by steamers.

Apply to WILLIAM E. RENDLE & Co.,
Seed Merchants Plymouth.

N.B.—All the New Vegetable and Flower Seeds advertised from time to time in this Paper can be obtained from us, at the regular current prices.

HEATHS AND OTHER PLANTS FOR EXHIBITION.

WILLIAM JAMES EPPS begs to state that he has for sale the finest Stock of Young HEATHS and other Greenhouse and Stove Plants possible, which will make splendid specimens in a short time. The superior character of Plants sent out from this Establishment is justly admitted by all who have purchased. The magnificent specimens of Heaths, &c., exhibited by him last season at the Exhibitions at Chiswick and the Royal Botanic Gardens, London, where he received the highest awards, fully justify the foregoing remarks.

Strong bushy Plants can be had at the following low prices, exclusive of packing, carriage paid to London:

| | £ | *s*. | *d*. | | £ | *s*. | *d*. |
|---|---|---|---|---|---|---|---|
| 100 fine varieties of Heaths ... ... | 5 | 0 | 0 | 100 fine vars. of Stove and Greenhouse Plants ... ... | 5 | 0 | 0 |
| 50 ditto ditto | 2 | 12 | 6 | 50 ditto ditto | 2 | 12 | 6 |
| 25 ditto ditto | 1 | 10 | 0 | 25 ditto ditto | 1 | 10 | 0 |
| 100, including all the finest varieties of ditto ... ... ... | 7 | 10 | 0 | 100 newest and finest vars. of ditto ... | 7 | 10 | 0 |
| 50 ditto ditto | 4 | 0 | 0 | 50 ditto ditto | 4 | 0 | 0 |
| 25 ditto ditto | 2 | 2 | 0 | 25 ditto ditto | 2 | 2 | 0 |

All the new leading kinds of Geraniums and Cinerarias 12*s*. to 21*s*. per doz.

Catalogues of the above may be had on application.

Bower Nurseries, Maidstone.—Feb. 15.

AMERICAN PLANTS.

C. LODDIGES AND SONS, in consequence of part of their Nursery being given up for building purposes, they are enabled to offer the following at extraordinarily low prices for cash:—Finest Ghent Azaleas, named, very handsome bushy plants, well set with flowers, and peculiarly adapted for forcing, 18*s*. per dozen; Azalea pontica, 8 feet in circumference, 12*s*. per doz.; Andromeda floribunda ditto, 7*s*. 6*d*. to 10*s*. 6*d*. each; Vaccinium, 30 species, 6*s*.; Andromeda, do., 63*s*.; Rhododendron campanulatum, very fine, 10*s*. 6*d*. each.—Post-office orders made payable at Hackney.

HART AND NICKLIN, FLORIST, Guildford, Surrey, possess a fine healthy Stock of the under-named Plants, which they offer to the public, feeling assured they will give satisfaction to purchasers.

FANCY GERANIUMS—Alboni, Jenny Lind, Reine des Francais, Queen Superb, Magnifica, Wintonia, Jehu Superb, Madame Miellez, Lady Rivers, La Belle de Africane, Beauty of Winchester, Diadematum coccinia, Fairy Queen, Ytolinski; 21*s*. the Set.

GERANIUMS—Emily, Crusader, Brilliant, Belle of the Village, Rosalind, Princess; 21*s*. the Set.

PANSIES—Helen, Juventa, Premier, Negro, Lucy Neal, Polyphemus, Uttoxeter Hero, Conductor, Pre-eminent, Gem, Viceroy, Criterion, Duke of Norfolk, Mr. Beck, Masterpiece, Androcles, Heroine, California, Duchess of Norfolk, Ariel; 20*s*. the Set.

No charge for Package, and Carriage paid to London, or any Station on the South-Western or South-Eastern Railways.

"ORACHE," SUPERIOR IN EVERY RESPECT TO SPINACH.—The leading article of the *Gardeners' Chronicle* of January 25, 1851, fully bears out the above assertion, that this is one of the very best summer vegetables, superior to Spinach in its flavour, and possesses the advantage of affording a constant and permanent supply (without going to seed) of large luxuriant leaves throughout the summer months. It was most successfully grown last season at the seat of Joseph Hume, Esq., M.P., Burnley Hall, in this county, and much preferred to Spinach. Sealed packets 2*s*. 6*d*. and 5*s*. each, per post free, containing a sufficient supply for a large or small family.

Also may be had, Seeds of the "True Custard Gourd," a most delicious Vegetable Marrow. Packets containing 6 seeds, 1*s*., per post free. Payments by postage stamps or Post-office order.—YOUELL and Co., Royal Nursery, Great Yarmouth.

EVERGREENS.—The attention of the Nobility, Gentry, Builders, and all engaged in Planting, is directed to an extensive Stock of fine large Evergreens, consisting of common and Portugal Laurels, common and Irish Yews, American, Chinese, and Siberian Arbor-vitæ, Green and variegated Hollies, Red Cedars, Cedars of Lebanon, and Deodara, Phillyreas, Alaternus, Aucubas, Green and variegated Box, &c., which are to be had of all sizes, from 2 to 7 feet high, and at extremely moderate prices, of JOHN ADAMS, Brompton Park Nursery, Kensington-road, London, opposite the Great Exhibition.

LILIUM LANCIFOLIUM, RANUNCULUSES, ANEMONES, AURICULAS, AND PELARGONIUMS.

HENRY GROOM, CLAPHAM RISE, near LONDON, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS. He begs to say that this is a good season of the year to make a selection of the various kinds. Ranunculuses and Anemones should be planted this month.

| | £ | *s*. | *d*. |
|---|---|---|---|
| LILIUM LANCIFOLIUM ALBUM, each, from 1*s*. to | 0 | 2 | 6 |
| ,, ,, PUNCTATUM, do. ... ... 3*s*. to | 0 | 10 | 6 |
| ,, ,, ROSEUM, do. ... ... 3*s*. 6*d*. to | 0 | 10 | 6 |
| ,, ,, RUBRUM, or SPECIOSUM, do 3*s*. 6*d*. to | 1 | 1 | 0 |
| ,, ,, CRUENTUM, do. ... ... ... 5*s*. to | 0 | 10 | 6 |
| ,, JAPONICUM, do. ... ... ... 5*s*. to | 0 | 7 | 6 |
| A new Collection of HYBRID SEEDLING LILIES, 6 sorts, named, for ... ... ... ... ... ... | 0 | 15 | 0 |
| 100 RANUNCULUSES, in 100 superfine sorts, named | 2 | 10 | |
| Superfine mixtures, per 100, from 5*s*. to 21*s*. | | | |
| 100 ANEMONES, in 50 superfine sorts, named ... | 2 | 2 | 0 |
| Superfine mixtures (double), per 100, from 6*s*. to 10*s*. 6*d*. | | | |
| 25 AURICULAS, in 25 superfine sorts, named ... | 2 | 10 | 0 |
| Good named varieties, per doz., 18*s*. | | | |
| 25 PELARGONIUMS, in 25 superfine sorts, named | 3 | 3 | 0 |
| Fine named varieties, per doz., from 12*s*. to 18*s*. | | | |
| AMARYLLIS from RIO JANEIRO, without name, fine large bulbs, per doz.... ... ... ... ... | 2 | 2 | 0 |
| LILIUM LANCIFOLIUM ALBUM, excellent for planting in shrubberies, being perfectly hardy, per 100 ... ... ... ... ... ... | 3 | 15 | |

A Catalogue will be forwarded on application.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under, the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42s. to 60s. |
| Extra superior selected Standards ... ... ... | 18s. to 24s. |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10s. to 16s. |
| Superb do. do. (for exhibition) ... | 18s. |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50s. |
| Good do. do. without names, per 100 | 30s. |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

SUPERB RANUNCULI.—The present being the usual month for planting the Ranunculus, we beg to recommend the following selections.

*The new varieties have been selected with great care, of first-rate sorts, from immense quantities of seedlings, and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.*

| RANUNCULUS.—*Free by post.* | £ | s. | d. |
|---|---|---|---|
| 50 Splendid new varieties, with names ... ... | 2 | 0 | 0 |
| 25 do. do. do. ... ... | 1 | 2 | 6 |
| 100 do. varieties from new and other best named sorts ... ... ... ... ... ... ... | 3 | 10 | 0 |
| 50 fine named varieties ... ... ... ... ... | 0 | 15 | 0 |
| 100 finest mixed ... ... ... ... ... | 0 | 10 | 0 |
| 100 fine do. 5s., or free by post, 6s. | | | |

| ANEMONES; by post, 3s. per 100 extra. | | | |
|---|---|---|---|
| 100 new and superb named double varieties ... ... | 1 | 14 | 0 |
| 50 do. do. 18s.; 25 do., 10s.; or, by post ... | 0 | 11 | 0 |
| 100 finest large mixed double ... ... ... ... | 0 | 10 | 6 |
| 100 fine do. do. ... ... ... ... | 0 | 7 | 6 |
| Fine new mixed single, per lb. ... ... ... | 0 | 4 | 0 |

Fine double varieties, per dozen: Apenina, light blue, 3s.; Cælestina, blue, 3s 6d.; Coleur de Sang, red, 3s.: Cramoise Royale, scarlet, 3s; Josephine, crimson, 3s.; Prince Albert, blue, 3s.; Rose Surpassante, 3s.; Scarlet Superbe, 3s.; True Blue, 3s. 6d.

GLADIOLUS—Autumn varieties of the Floribundus and Gandavensis habit:—

| | Each. | | Each. |
|---|---|---|---|
| Albus roseus ... ... | 1s. 6d. | Pscittacinus 1s.6d p.doz. | 0s. 2d. |
| Autumnalis, orange ... | 1 0 | ,, Sanguineus, dark, 7s. 6d. per doz. | 0 9 |
| Brenchleyensis, scarlet | 3 6 | | |
| Floribundus, 2s.6d p.doz. | 0 3 | Splendens, rich, scarlet | 3 6 |
| Gandavensis, 5s. p. doz. | 0 6 | Vernalis Spicatus ... | 1 6 |

Copies of our Autumn Root Catalogue may still be had.
Remittances required from unknown correspondents.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

PEAR AND QUINCE STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, St. Helier, Jersey, begs to inform the Public and the Trade that he has the following, of very superior growth, to dispose of:—A few thousands QUINCE, very free and healthy, fit to receive the buds next July, at 40s. per 1000; also PEAR Stocks, of superior growth, two years transplanted, and very vigorous, at 40s. per 1000; smaller ditto, transplanted, and very vigorous, at 35s. per 1000.

This is an opportunity R. L. has never before offered to the Public, for his stock is totally different from the French stock, which has always given R. L. superior growth of trees.—Orders will be punctually attended to. Reference or remittance from unknown correspondents.

SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

We prove the growth of each kind before we send them out.

| | | | | | |
|---|---|---|---|---|---|
| No. 1. A full collection, suitable for a large establishment, for ... ... ... ... ... | | | | | 45s. 0d |
| No. 2. | Do., | in smaller quantities ... | | ... | 30 0 |
| No. 3. | Do., | ,, | ,, | | 20 0 |
| No. 4. | Do., | ,, | ,, | | 12 6 |
| No. 5. | Do., | ,, | ,, | | 8 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | | | |
|---|---|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each ... ... ... | | | | | 25s. 0d. |
| 50 | Ditto. | Ditto. | Ditto. | ... ... | 14 0 |
| 25 | Ditto. | Ditto. | Ditto | ... ... | 8 0 |
| Hardy kinds separate, per dozen packets | | | | ... ... | 2 0 |
| Half hardy | Ditto. | Ditto. | | ... ... | 3 0 |
| Greenhouse | Ditto. | Ditto. | | ... ... | 4 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

TO CUCUMBER AND MELON GROWERS.

WILLIAM HUSSEY begs to offer the undernamed sorts of CUCUMBERS and MELONS in packets, containing Six Seeds, at the following prices:—

| | | | |
|---|---|---|---|
| Cucumbers, Walker's Rambler, black spine ... | 0s. | 8d. |
| ,, Mackie's improved black spine ... | 0 | 6 |
| Melons, Bromham-hall, green flesh ... ... | 1 | 0 |
| ,, Emperor, green flesh ... ... ... | 0 | 8 |
| ,, Duncan's, green flesh, improved ... | 0 | 8 |
| ,, Pine Apple ... ... ... ... ... | 0 | 8 |
| ,, Beechwood, green flesh ... ... ... | 0 | 8 |

The above can be had, post free, on receipt of Post-office order, or the amount in penny stamps.
Horticultural Gardens, Norwich, Feb. 15, 1851.

SEEDS FOR THE FARM, THE KITCHEN-GARDEN, AND THE FLOWER-GARDEN.

JAMES SALTER having tested the Growing Qualities of the Seeds he is now sending out, can with confidence warrant them to be as good, and as low in price, as at any respectable Seed Establishment in the Kingdom. All the most approved varieties of CUCUMBER and MELON, 1s. per packet. Flower Seeds forwarded (free) by post. Descriptive Lists, with instructions for sowing, sent on application.

N.B.—Just imported, a Fine Collection of CONTINENTAL FLOWER SEEDS; also, Fine Double ITALIAN TUBEROSES.
SEED ESTABLISHMENT, 2, New Bond-street, Bath.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT,

For Supplying Genuine Home-Grown Seeds Carriage Free.

JOHN SUTTON AND SONS, SEED-GROWERS, Reading, Berks, being extensive Growers of Seeds, and having many Customers in the Southern, Midland, and Western Counties of England, and in South Wales, have made arrangements with the Directors of the above-named Railways (all of which converge at Reading), whereby they are enabled to deliver their Goods *Carriage Free* to any Station on either of these Lines; or to any Railway Terminus in London; or Packet Office in London or Bristol.

SUTTON'S NEW PRICED CATALOGUE OF HOME-GROWN SEEDS, being a careful selection of only the very best kinds of KITHEN GARDEN, AGRICULTURAL and FLOWER SEEDS, *with prices affixed to each article*, will, it is presumed, be found the *most useful* and convenient of any yet presented to the public, the prices being remarkably low, while the sorts are the best in cultivation. *It will be sent post paid on application, enclosing one penny stamp.*

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden,* Messrs. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

The Collections are increased in quality this year, and are far superior to any others yet offered to the public, both in quantity and quality.

| | £ | s. | d. |
|---|---|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply | 2 | 10 | 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... ... ... | 1 | 10 | 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... ... ... ... | 1 | 1 | 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... ... ... | 0 | 12 | 6 |

*Choice Collections of Flower Seeds* may also be had, either all hardy or half hardy sorts, and will be sent carriage free with the above, or free by post if Flower Seeds only are required, viz.:—*The best 50 Sorts, 10s. 6d.; the best 36 Sorts, 7s. 6d.; the best 24 Sorts 5s.*

N.B.—*It is not necessary that remittances should accompany orders from Clergymen, Resident Gentlemen, or their Gardeners.*

Address, JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

WOKING NURSERY, SURREY.

GEORGE JACKMAN has to offer from his extensive Stock of CONIFERS, EVERGREEN, and FLOWERING SHRUBS, the following, which are all kept safe for removal. Prices will be furnished on application, or priced Catalogue, by enclosing two postage stamps.

N.B.—Reference required from unknown Correspondents.

Arbor-vitæ American, 3 to 4 ft.; Ditto, close Siberian, 2 to 4 ft.; Aucuba japonica, 1½ to 2 ft.; Berberis aquifolium, 1 ft.; Ditto, dulcis, 1 to 2 ft.; Bays, Sweet, 1 to 2 ft.; Box-tree, variegated, 1½ to 2 ft.; Chimonanthus fragrans, in pots; Clematis, in sorts; Cedar, red, 2 to 3 ft.; Cryptomeria japonica, 2½ ft., in pots, from seeds; Ditto, nana; Hollies, green and variegated, 1 to 3 ft.; Ilex latifolia; Ditto, latispina; Ditto, dypirenna; Juniperus Bedfordiana, 1 ft.; Ditto, Chinese, 2 to 6 ft.; Ditto, macrocarpa; Laurustinus, 1 to 2 ft.; Laurels, common, 1 to 3 ft.; Ditto, Portugal, 1 to 3 ft.; Ditto, Portugal, quartered, fine, 3½ to 4 ft.; Magnolia, Exmouth; Ditto, soulangiana; Privets, evergreen, 1½ to 2 ft.; Ditto, Chinese; Pinus excelsa, 3 to 5 ft.; Ditto, insignis, 2 ft.; Ditto, Cembra, 1 to 2 ft.; Cedrus Deodara, 2 to 4 ft.; Ditto ditto, very fine, 5 to 6 ft.; Ditto, Lebanon, 2 to 3 ft.; Abies Douglasii, from seed, in pots, 2 ft.; Ditto, Smithiana, 2 to 3 ft.; Phillyrea, Ilex leaf, 1 to 2 ft.; Taxodium sempervirens, 1 to 3 ft.; Taxus adpressa: Ditto, elegantissima; Dovaston, 3½ ft.; Tulio-tree, 2 to 4 ft.; Yews, common, 1 to 2 ft.; Ditto, Irish, 1 to 5 ft.; Limes, 6 to 10 ft.—Woking, Feb. 15, 1851.

TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam, 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.
Woking Nursery, Feb. 15, 1851.

HORTICULTURAL AND AGRICULTURAL SEED ESTABLISHMENTS, MAIDSTONE, AND ADJOINING THE SOUTH-EASTERN RAILWAY STATION, ASHFORD.

WM. JAS. EPPS begs to state that he has taken the Nursery and Seed-growing business late in the occupation of Mr. James Cutbush, Sen., adjoining the Railway Station, Ashford, where he is making extensive alterations for carrying on the above business, in conjunction with his Nursery and Seed Establishment, Maidstone. The proximity of the Ashford business to the Romney Marsh (which is the largest and by far the best seed-growing district in the kingdom), will enable him to offer many advantages; great attention will be paid in selecting and growing the stocks true to their kind. He is now prepared to receive commissions from any respectable wholesale house. The prices, per contract, this year are exceedingly low, and any further information upon this subject may be had upon application, also his wholesale and retail List of Seeds.

W. J. E. has a large and splendid stock of the following Seeds, which he can warrant to any extent, and at very low prices—terms, three months, upon satisfactory reference—Shirving's Purple-top Swede, Laing's Purple-top Swede, Mangold Wurzel, White Carrot, Parsnip, Champion of England Peas, Imperial, Victoria Marrow, Blue Prussian, Broccoli, and Cabbages of sorts; Kohl Rabi and Mustard. All seeds carriage paid to London.—Feb. 15.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5l., 7l. 10s., and 10l. per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

"HERO OF SURREY" CUCUMBER.

J. BURLEY begs to inform the Public that he has the pleasure of offering the above new Cucumber, with confidence, as a first-rate one for ridge or frame, he having grown it from 20 to 24 inches on the ridge last season, without any bottom-heat. It can be sent by post in packets of eight seeds for 2s., or postage stamps. Pentstemon Murrayanum, strong plants, 18s per dozen.—Limpsfield, Godstone, Surrey.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12s. per dozen. Also Myatt's Linnæus, 12s. per dozen; and Victoria, 9s. per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2s. 6d. per lb. Also, his superior dark-green Savoy, 1s. 6d. per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.

CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Mills's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5s.; or three seeds, 2s. 6d.

E. T. has also seed of his three other superb Cucumbers at the following prices:

| | |
|---|---|
| Victory of Bath, per packet ... ... ... | 2s. 0d. |
| Gordon's White Spine, ditto ... ... ... | 1 6 |
| Lord Keynon's Favourite, ditto ... ... | 2 6 |

This last is the best for winter cultivation.

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

TO CUCUMBER GROWERS.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, having grown from 15 to 20 lights of Aban's Conqueror of the West Cucumber successfully for three years, can with confidence recommend it to the Public, as being one of the best kinds in cultivation. Packets containing 12 seeds 1s. each.

N.B. An extensive stock of Dwarf-trained Fruit Trees, Standard Mulberries, Gooseberries, Currants, and Raspberries of sorts, with a general assortment of Nursery Stock, at very low prices, which may be obtained on application.

THE "BLACK BARBAROSSA" GRAPE.

JOHN BUTCHER begs to call the attention of Grape Growers to the above truly valuable late Grape, introduced from the Continent by C. S. Ward, Esq., and was exhibited at the Horticultural Society's Rooms, Regent-street, London, in January, 1849, for which a Certificate was granted; and again on the 19th February, 1850, when a Banksian Medal was awarded it. In the Covent Garden Market Report of 9th March, it is stated that "Hothouse Grapes, excepting the Barbarossa, are over."

It has the following good properties:—The Vine a most luxuriant grower, a free bearer, large and finely shouldered; berries large and globular, flavour equal to the Hamburgh, will hang on the Vine for at least another month to come without sinking in size of berry or losing in flavour; as hardy as the Hamburgh; the average weight of the bunches 4 lbs. each. To those families requiring late Grapes it will prove a valuable acquisition.—Good plants, from eyes, 10s. 6d. each, including package. London Agent—Mr. FREDERICK WARNER, Seed Merchant, 28, Cornhill, London. May be had of JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

Also Butcher's Hybrid Black Spine Cucumber; length from 18 to 30 inches, exhibited at the Royal Botanic Garden, Regent's-park, 1846, for which a Certificate was granted. 1s. per paper.

Butcher's Shakspeare Cabbage, a nearly splendid variety. 1s. per paper.

Butcher's Early Warwickshire, do., 1s. per paper.

Golden Cos Lettuce, true, undoubtedly the best Lettuce grown. 1s. per paper.

A remittance must accompany the order, either in cash or penny postage stamps, from unknown correspondents.

SPLENDID MULBERRIES.—FINEST PRIZE GOOSEBERRIES.

AS the present is one of the best SEASONS FOR PLANTING, WILLIAM DENNIS and Co., Florists, &c., King's-road, Chelsea, beg respectfully to call the attention of the public to the fact, that the whole of their really useful and Ornamental Stock must absolutely be cleared off this season; and in order to dispose of it as expeditiously as possible, they have called a SALE BY AUCTION, which takes place Feb. 25.; and as it is their intention not to place the slightest reserve on any portion of the Stock, they consider for Gentlemen engaged in Planting, it is an unusually good opportunity. The Stock consists of some extra fine large Fruiting Trees of the Black Mulberry. Pine Plants established in pots, and fine dwarf plants for training. A considerable quantity of Standards of the best sorts of Prize Gooseberries, and above 300 kinds of good bushy Plants, two to five years old; also a large quantity of Evergreens, Deciduous Shrubs, Ornamental Trees, &c. Stove and Greenhouse Plants, comprising fine specimens of Orchidæ, Cacti, fine standard and dwarf bushy Geraniums, Greenhouse and hardy Bulbs, &c. Catalogues may be had on the premises and of the principal Seedsmen, or sent by inclosing two postage stamps.

PEARS.

RENÉ LANGELIER, Nurseryman and Florist, Claremont Nursery, St. Helier, Jersey, Channel Islands, begs to offer the following new PEARS, of the first merit:

BEURRE CLAIRGEAU, bearing the name of the raiser of this valuable Pear.—A very large fruit, perfectly melting, and a late fruit of first merit. Price 5s.

BEURRE D'HIVER.—Also large, and keeps till April, perfectly melting, hardy, and great bearer. Price 5s.

BEURRE NANTAIS.—The earliest Pear known, excellent, and great bearer. Price 2s. 6d.

The above R. L. can strongly recommend. None will be forwarded to unknown correspondents except on the receipt of cash or reference.

MESSRS. STANDISH and NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Feb 15.

BEAUTIFUL, USEFUL, AND CHEAP!
WARRANTED TO PLEASE.

The following COLLECTIONS of SEEDS and PLANTS are deserving especial notice, and are important to all who have a Garden.

No. 1.—100 varieties of HERBACEOUS PLANT SEEDS, hardy PERENNIALS, comprising the most select and beautiful sorts from our unrivalled Collection—never before offered—purchaser's selection, free by post, 1l. 5s.

No. 2.—50 varieties fine do., purchaser's selection, 15s.

No. 3.—25 do. do., 8s.

A list containing height, colour, and time of flowering, with much other useful information relative to their culture, may be had on application.

ANNUAL FLOWER SEEDS—post free.

No. 4.—100 vars. purchaser's selection, from list containing the newest and showiest sorts of hardy, half-hardy, and tender Annuals, 18s.

No. 5.—50 vars., purchaser's selection, 10s.

No. 6.—25 do. do., 8s.

Or we shall be happy to make selections for purchasers of the quantities at the above prices. The Annuals will be contained in Ayres and Moore's descriptive cultural labels.

The following are WARRANTED GENUINE, and are very superior:

HOLLYHOCK, from a most superb Collection of named double flowers, per packet, 1s.

CINERARIA, from the newest and best show flowers of 1850 per packet, 1s. 6d.

CALCEOLARIA, do. do., splendid, per packet, 2s. 6d.

PANSY, do. do. do., per packet, 1s.

PETUNIA, do. do. do., per packet, 1s.

N.B.—The above five unique lots may be had separate, or if required will be included in Collection No. 1. They have all been collected from our own plants and purchasers may rely with confidence on their quality.

GREENHOUSE PLANTS.

ERICAS, 50 fine healthy plants, most of them large enough to bloom the coming season, and all ready for growing into specimens. Purchaser's selection from list, in 50 superb varieties, for 3l. 10s.; or per doz., 21s.

ERICAS, 50 finest vars. as above; large plants, own selection, for 2l. 10s.; or 15s. per doz. In the above Collections will be found all the leading sorts of the day, selected with the greatest care for beauty and display.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 superior varieties, purchaser's selection, comprising the handsomest species and varieties of all the leading kinds, for 3l. 10s., or 21s. per dozen.

50 varieties as above, own selection, 2l. 10s., or 15s. per doz.

CHINESE AZALEAS.—20 fine varieties, purchaser's selection, for 25s., or 18s. per doz.

20 do. do., own selection, for 21s., or 15s. per doz.

ROSES.—50 splendid sorts Standards, own selection, per 100, 5l.; or 18s. per doz.

100 fine varieties, Dwarfs, in 100 sorts, 2l. 10s.; or 9s. per doz., own selection.

CALCEOLARIAS.—Fine healthy, established Plants from the most eminent growers, per doz., 30s., own selection, of best sorts. When the selection is left to ourselves purchasers are desired to furnish lists of such plants, seeds, &c., as are already in their collections, that duplicates of any article may not be sent, every wish will be strictly complied with.

HOLLYHOCKS, No. 1, fine double named kinds, all shades of colour, 9s. per doz., or 2l. 10s. per 100. HOLLYHOCKS, No. 2, for border display, very good, 6s. per doz., or 1l. 10s. per 100. These are selected out of some hundreds of seedlings, and may be confidently relied on.

HERBACEOUS PLANTS.—Purchaser's selection, from List, per 100, 3l. 3s.

W. May's selection, extra fine, No. 1, 2l. 2s. per 100;
" " really good, No. 2, 1l. 10s. "

Having an immense stock they can be furnished at these low prices. The collection extends over 700 species and varieties selected from the choicest stocks in the country (regardless of expense) for display, and warranted second to none. To meet our customers in every way, we hope to be favoured with lists of such plants as are already in their collections, that duplicates of any articles may not be sent where the selections are left to ourselves.

FLOWERING SHRUBS AND ORNAMENTAL TREES.—The finest varieties, purchaser's selection, from the list, per 100, 3l. 3s.

W. May's selection, No. 1, extra fine, per 100, 2l. 2s.
" " No. 2, good kinds, " 1l. 5s.

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. Kemp, for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4l.; or per 100, 10s., fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5l.—per 100, 15s.

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4l., in 100 varieties, or 10s. per 100 in 50 varieties; the stock extends over 30,000; and is very fine and healthy.

CURRANTS.—White, Red, and Black, including Black Naples, per 100, 10s., fine.

Catalogues may be obtained on application, and the fullest information will be given. Apply to John May, to whom all Post-office orders must be made payable. Orders above 5l. carriage paid to London, or within 150 miles of the Nurseries. Address William May, Hope Nurseries, Leeming-lane, Bedale, Yorkshire.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH. Established 1786.

WILLIAM E. RENDLE and Co., Plymouth, *have a large SURPLUS STOCK of the following TREES and SHRUBS; and as the ground is required for other purposes, they will be sold at the following low prices:*

*** CARRIAGE FREE (See below).

LARCH FIRS.—We have a very large stock of fine stuff, about 3 feet in height; the price will only be 18s. per 1000.

BERBERIS AQUIFOLIUM.—A large quantity of fine stuff, 18 inches, 16s. per 100. This is a fine shrub for underwood.

SCOTCH FIR.—Large stock of fine stuff, 24 to 30 inches in height, 15s. per 1000.

PINUS AUSTRIACA.—We have an extensive stock of this valuable tree, of the finest possible growth, 12 to 18 inches, fine and stout, 35s. per 1000.

*** *This is a most excellent hardy Pine, being very superior to the Scotch Fir.*

PINEASTER.—18 inches, good stuff, 18s. per 1000. *First-rate Pine for the sea coast.*

ASH.—4 feet, 20s. per 1000.

BALM OF GILEAD.—3 to 4 feet, handsome species of Fir, 4s. per 100.

LILACS, 4 feet, 6s per dozen.

LAURESTINUS.—2 feet, bushy, 6s. per dozen.

BAYS.—18 inches, 5s per dozen.

RHUBARB: MITCHELL'S ROYAL ALBERT, *the earliest of all.*—We have more than a thousand strong roots, 15s. per dozen.

RHUBARB: MYATT'S VICTORIA, very strong roots, 15s. per dozen; smaller ditto, 9s. per dozen.

RASPBERRIES: RENDLE'S LARGE BEEHIVE.—This is a large handsome variety, very prolific, delicious flavour, and has given the most complete satisfaction to all. Strong Canes, 20s. per 100; 3s. per dozen.

STRAWBERRIES: KITLEY'S GOLIAH, 3s. 6d. per dozen; 20s. per 100. CUTHILL'S BLACK PRINCE, 2s. per dozen; 10s. per 100.

SEAKALE AND ASPARAGUS in large quantities, very reasonable.

BLACK NAPLES CURRANTS, very superior to the old sort, 6s. per dozen.

CEDRUS DEODARA.—Fine stock of nice young seedling plants, two years old, in pots, 6s. per dozen.

*Our Catalogue of Forest Trees, Shrubs, and Fruit Trees can be obtained for one penny Stamp.*

All orders above 5l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast. Steamers from this port to Cork, Dublin, and Belfast twice a week.

*The South Devon Railway is now open to Plymouth; the Station being within one minute's walk from our Counting-house.*

All Orders will be executed in strict rotation.

*** We have a few fine Trained Yews for Hedge work, 3 to 4 feet in height, and will spread as much, 24s. per dozen.

William E. Rendle and Co., Nurserymen, Plymouth. Established 1786.

**The Gardeners' Chronicle.**

*SATURDAY, FEBRUARY* 15, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| Monday, | Feb. | 17 | Chemical | 8 P.M. |
| | | | Statistical | 8 P.M. |
| Tuesday, | — | 18 | Horticultural | 2 P.M. |
| | | | Linnean | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| Wednesday, | — | 19 | Society of Arts | 8 P.M. |
| Thursday, | — | 20 | Antiquarian | 8 P.M. |
| | | | Royal | 8½P.M. |
| | | | Geological (Anniversary) | 1 P.M. |
| Friday, | — | 21 | Philological | 8 P.M. |
| | | | Royal Institution | 3½P.M. |
| Saturday, | — | 22 | Royal Botanic | 3½P.M. |
| | | | Medical | 8 P.M. |

To the many cases of unusual structure, illustrating the doctrine that flowers and fruits are mere modifications of leaves, we have now to add the following, examples of which have been sent by our correspondent, "A. G. N." He states that he found an abundance of similar cases on an Easter Beurré Pear tree, which he lately pruned, and which bore, last year, a fine crop of large and beautiful fruit.




It will be evident that the two specimens now figured represent a couple of branches of the Pear tree, producing three abortive fruits, out of the centre of two of which twigs have grown. But that is not all. At *c* there is also a lateral fleshy shoot hollowed out obliquely at the extremity, where it shows a few scales or rudiments of leaves, and has its whole substance fleshy; and so at *b* and *a*, although but one leaf has left its trace behind; yet the whole branch has become swollen and soft, as if about to become a Pear.

From this we may infer that the same tendency to change the nature of leaves, which results in the combination of several leaves into a solid fleshy fruit, may also operate upon the very branch itself on which a fruit appears. And that in this way a fruit may consist, not merely of a number of rows of transformed leaves, but of a transformed branch in addition. Of this fact, indeed, we have a well-known illustration in the Chinese tree, called Hovenia, whose fruit consists of a swollen fleshy fruit-stalk, which is succulent enough to be eatable, and of a hard dry uneatable capsule, formed in the usual way from modified leaves. Upon this view, we must say then that the long tapering Pear is a fleshy branch, hollowed out at the upper end, where it terminates in numerous transformed leaves partially blended with it into one common succulent mass.

We have long since shown that this must be the case in many instances, and that, in truth, the hep of the Rose can be interpreted in no other way; but although that is so, it by no means follows that the practice of the gardener requires alteration in consequence. On the contrary, the important doctrine of vegetable transformations is more confirmed than weakened by such examples as that of the Pear tree in question.

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Everybody is now inquiring about the health of the Elms in Hyde Park, enclosed beneath the roof of the "Crystal Palace." "Will they live? Are they dead? What will become of them?" are questions asked in every direction. The world seems to be as anxious about them as if they were of value; as if they had conduced to the ornament of the Park, or in themselves possessed some elements of beauty, or had been associated with great events, or were living records of national deeds of glory. Yet no such interest attaches to them; the greater part are decrepid and stagheaded, frightful as trees, worthless as timber, associated with no greater event than being planted by one of King William's Dutch gardeners, and records of nothing except the power of what is miscalled public opinion, when brought to bear upon the Houses of Parliament.

No gardener would fear for the life of these Elms, now that they are to remain for a season under glass; for their roots have the freest access to air through the spaces between the flooring-boards which cover the ground, and Mr. Paxton has pledged himself to the roots being abundantly provided with water. Two, then, of the conditions requisite for their health, namely, air and moisture to the roots, are amply provided. Of air and light to the branches and leaves there will be abundance beneath the crystal vault where they are placed, and there is no reason to apprehend ill consequences from heat. It will perhaps turn out that the building in the Park will be over cool rather than over hot, when the apparatus for ventilation is set to work; but supposing the internal temperature to be all that our sun can produce in the dogdays, there is no probability of the trees suffering on that account. The "English Elm" is a doubtful native of Great Britain; if really wild here it is on the most northern limits of its natural range. Spain and Southern Europe are its favourite resort, and there is little reason in fearing lest a Hyde Park summer, even beneath a vault of glass, should equal in intensity that of the Mediterranean. On the contrary, well watered at the roots, screened from the soot and dust of London by an arch of glass, and warmed by a sun of more than usual fervour, it is to be anticipated that these "trees of liberty," as some one calls them, will be penetrated by a vigour they never knew before.

And herein, in the augmented force of vegetation of these Elms, lies such danger as attends their remaining where they are; they may not die, but they may be the cause of death to others. The truth is, they are rotten to the core; a dead and decaying body is covered by a living skin. A few days since, one of the most careful workmen in the building was severely hurt by a fall, in consequence of having trusted himself to a stout limb, which snapped beneath his weight; although alive in appearance, it was as brittle as a Carrot. To what extent this rottenness goes, may be judged of by two of the very trees over which Parliament has thrown its shield, and which a few years ago broke *across the solid trunk*, some feet from the ground, destroyed by the weight of their own heads. Now if it should happen that the branches of these old trees become loaded with foliage more healthy than usual, they will have a more considerable weight to bear; and it is by no means impro-

bable that the additional weight will snap the limbs, in which case accidents may occur against which no care or skill can guard. It is therefore a very serious question, whether those trees, to which this statement is applicable, can with safety be allowed to remain within the building. It is fortunate that they all stand where the first-class refreshment-room is to be placed, because those who have the power to cause their removal are the very persons who are most likely to suffer from accidents attendant upon their remaining; so that a catastrophe will, at least, serve to increase the list of cases of self-immolation, and thus a great lesson will be read to foreigners, who will not fail to admire the patriotism that would rather put its life and limbs in jeopardy than sanction the destruction of a rotten tree.

## MARKET GARDENING ROUND LONDON.

No. VII. Rhubarb.—Mr. Joseph Myatt, of Deptford, who is celebrated for his fine Rhubarb, was the first to cultivate it on a large scale. It is now nearly 40 years since he first sent his two sons to the Borough Market with five bunches, of which they could only sell three. Next time they went they took ten bunches with them, which were all sold. Mr. Myatt could even then see that Rhubarb would, in time, become a public favourite, and the result has proved the correctness of his views, for it is now generally used both by rich and poor; it is no longer called "physic," as it was wont to be in bygone days. Rhubarb will grow in almost any soil, provided it is rich; but light land, well manured, will always produce a better flavoured stalk than a stiff, retentive clay. We have had a great deal of rain this winter, and Rhubarb in consequence is not near so well flavoured as in a dry and rather frosty season; the stalks are full of watery juice, which the roots have taken up; and in some places the tops of the leaves are beginning to rot amongst the straw. This has led some market gardeners to adopt means of keeping the roots dry. Mr. Mitchell, of Enfield, has grown his Early Rhubarb this winter in the following manner. He lifted the roots, packed them, with a little mould between them, on the floors of long sheds, and covered the crowns 2 feet thick with tree leaves. These produced sufficient heat to bring it forward gently; and I never saw better or finer Rhubarb at Christmas. The usual plan of forcing it about London consists in digging long pits to the depth of 2 to 3 feet, introducing 18 inches of hot dung, and then packing the roots closely together in a little mould, covering the crowns with hoops or with 6 inches of straw; then hurdles or mats, and finishing with 6 or 8 inches of straw, the amount of the latter depending on the severity of the winter. In this way strong well flavoured stalks are produced, provided the weather is dry. The colour is bright red, and the leaf is always very small. Many prefer forced Rhubarb, on account of its tender fibre. No skinning is required, and it is much less acid than that from the natural ground. Those who desire this kind of Rhubarb, therefore, might easily obtain it by placing about a barrowful of straw over each crown. This covering would be cheap, and, besides bringing it on a little earlier, it would help to manure the ground and keep off frost. Rhubarb growing out of doors is so simple that little can be said respecting it. The ground being heavily manured, a plant is taken up and divided into as many eyes or buds as it possesses. These are planted 4 feet apart, and by the autumn they will have produced roots from 6 lbs. to 10 lbs. in weight. The oldest roots are generally taken up for forcing; and by always having a good rotation, the grower has the power of continually changing the ground, and thus obtaining a heavier crop. The forced plants will furnish eyes for a continual succession, without growing plants for the purpose, and the eyes may be divided and planted again for a main crop. I have practised this plan on a small scale many years ago.

The following are four first-rate sorts: Mitchell's Early Albert, Randall's Early Prolific (this is as yet little known, but it is eight or 10 days earlier than the Linnæus; it is high coloured and well flavoured), Myatt's Linnæus is next in earliness, and Myatt's Victoria is the latest. Twelve heads (leaves and stalks) of the latter weighed 70 lbs.

Early Peas.—These are sown in rows 3 feet 6 inches apart, in December, on borders under walls, and by the sides of hedges; Cabbages or White Cos Lettuces pricked out of the frames, or from under the hoops, where they were becoming crowded, are planted between the rows. The Peas are never staked up. The sorts used are the Early Frame and Improved Bishop's and Groom's Dwarf. Peas do not now pay the London growers. They are therefore largely grown in Kent, Essex, Surrey, and Bedford, where the ground is equally early and cheaper.

Beans.—The Early Mazagan and Early Long-pod are grown upon warm borders in rows 2 feet 6 inches apart, with some other crop between the rows. The only care they require is taking their heads off after the plants show a fair quantity of blossom. This concentrates the sap, and makes them a week earlier. The main crops of Beans are obtained from the counties above-mentioned. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 2.)

No. XVIII.—By purchasing your birds in the manner I have recommended, you will not, cannot be deceived as to their sex. But *more* than this must be regarded in the purchase. All the canaries sent up from the country are young birds; brought up under good tutors (such as the titlark and the nightingale), but apt to degenerate in song if not properly taken care of. To keep them, therefore, steady to their acquired song, do not hang them with any other noisy, racketty birds, but in a room by themselves. A few months' drilling will cause them to be staunch. They may then be suspended anywhere, and associated with any other songsters.*

Those birds are considered most valuable, which lead off with the nightingale's note; concluding with that of the tit-lark. The jug-jug, swelling slur, and water-bubble of the former, blended with the "chewing" and "wisking" of the latter, kept up in a long-continued strain, are, when observable in any of these birds, certain signs of excellence.

There are a vast variety of tastes, and a vast number of opinions, with respect to a "fine bird." With some—a large number!—noise, shrillness, and a rapid execution carry the palm. Others are pleased with a lengthy song, whether musical or not—its duration being regarded as the test of value. *Chacun à son gout.*

For my own part, now that my ear is more attuned to real "music," I infinitely prefer the German canary before all others. Not that all, or a twentieth part of those that are brought over here from Germany are a whit better than those of our own rearing. Some few, however, are placed by "Canary" breeders under first-rate tutors; and they sing with so much melody, so much pathos, so *con expressione*—that their value can hardly be overrated. The birds *I* speak of, will cost from three to four guineas each. The age to purchase them at, is in their second year. They are then "true" to their song. To listen to *these* birds by candlelight, is a treat perfectly indescribable. Their's is the "music of the spheres."

Canaries are of various colours. Those most in request are the Jonque, or bright yellow. The finest are the bright yellow, with an admixture of black spots. They should have no white feathers whatever. Then there are the mealy, the mottled, the buff, and the grey. It must be borne in mind, as I have before remarked, that many birds despised for their colour, are in reality the finest songsters of any. Plumage, therefore, should be a secondary consideration, if you want a good *song* bird.

A bird in good health should be thin and trim; and very sprightly in his cage. If ever you see a bird with his head behind his wing, in the day-time, conclude that "his days are numbered." His sickness is "unto death." Be very careful, when purchasing, to bear this remark in mind. Keep a close eye, also, when any bird is performing a call of nature, on the movement of his tail. If he "bolts" it, like the nightingale, he is in very bad health. I speak, of course, now, of seed-birds. If what is voided be of a darkish hue in the middle, and quickly dry, the bird is in robust health. Previous to dissolution, what passes will be white and slimy, having no black in it. A few hours more, and the curtain will close on *his* career for ever.

Young birds, as I have already mentioned, are apt to be unsteady in their song. All undue excitement therefore must be avoided. Never, under any circumstances, keep hen canaries in their vicinity. Although they may not see them, yet they can hear them twitter; and they will answer each other from morning till night. Thus is the serenity of their minds unduly disturbed, and their strains of melody are interrupted. *Hen* birds should only be kept for "breeding" purposes, and in a room far remote from the males. The male bird may be easily recognised from the hen, by his "dare-devil" sprightliness and vigour. He will be found to sit bolt upright on his perch, and to stretch out his neck at full length, to see all that is going forward. He is also taller, and more vivacious about the eye; the eye of the hen being "tame," and her movements lack-a-daisically "measured." The larynx of the throat is also more fully developed in the male. He opens his mouth to good effect, and every note tells. The hen, on the contrary, jabbers, and makes "much ado about nothing."

Canaries, when young, are most assuredly imitative; if, therefore, you associate them with other birds, let it be with a first-rate linnet, woodlark, or titlark. Whatever strains they may borrow from these, are unobjectionable. They all "discourse most eloquent music."

By the way, all lovers of *candle-light songsters* (which beat *all* others hollow), should associate these four birds in one room, arranged so as they may not see each other, but listen to each other's song. The effect produced by such a choir is enchantingly beautiful.

In order to keep your birds in continual song, hang them up in situations where they cannot by possibility get a sight of each other. I have often heard people express surprise at their canaries not singing; and I have frequently been consulted as to the cause. It has arisen, in nearly every instance, from the manner in which their cages have been suspended in the room. Immediately after the arrangement has been altered, and the birds have been kept out of each other's sight, they have commenced singing in all the joyousness of their nature. The reason is obvious. Their attention, when thus separated, is not diverted from their song; and a spirit of rivalry induces them to do their utmost not to be surpassed.

If you particularly wish your birds to sing by candle-light, darken their cages in the day-time, so as to prevent their over luxuriance in song. Also, keep them scantily supplied with food. When the candles are lighted, when the fire is seen to blaze upon the hearth, and when the cups and saucers are heard to rattle on the table—then you will be treated to "something worth listening to." *William Kidd, New Road, Hammersmith.*

* Several anxious "Enquirers" are informed, that the popular subject of "Breeding" canaries *will* be introduced; and commenced in "Cage Birds, No. 5." Notice will also be taken, in due course, of the "Belgian" Canaries.

## FOREIGN GARDEN GLEANINGS.

St. Petersburgh.—St. Petersburgh, built on the banks of the Neva, in lat. 59° 56′ 31″ N., and long. 47° 59′ 30″ E. (of Paris), is about 1535 miles from Paris; it covers a surface of more than 16,735 acres, of which about 2447 are occupied by nursery and pleasure gardens, 2938 by kitchen gardens, and as many by meadows. The town being 54 feet above the level of the Baltic, the solar heat is able to penetrate the soil to a greater extent than would otherwise be possible, and thus to increase its fertility, and render it more fit for the cultivation of many flowers and vegetables.

In the year 1714, a splendid garden was made, by the orders of Peter the Great, in the Apothecary's Island, with a view to promote the study of botany. Some years later, the Emperor Alexander converted the marshy islands in the Neva into agreeable promenades, which were soon surrounded by elegant villas. We shall hereafter give a more detailed description of these gardens.

The soil for a few miles aronnd the town appears poor and difficult of cultivation; the vegetation is weak, and the woods, composed for the most part of Willows, Alders, Maples, Aspens, and especially of Fir and Birch, attain but a very moderate size, except in the parks belonging to the Emperor and the principal nobility; but on the other hand, the woods and marshes are full of a great variety of bushes, with berries, amongst which we recognised Rubus * and Vaccinium †. The fruits of the former constitute, even at St. Petersburgh, a considerable article of commerce; they are eaten instead of Strawberries.

In spite of its poverty, the soil of St. Petersburgh yields an abundance of market garden plants, and supplies all the wants of the population of this great city. The soil was found, on examination, to consist of a siliceous clay; the stratum of vegetable earth only covers strata of turf and pure clay.

*Its climate.*—The total absence of any shelter from forests, allows the north and west winds to exercise a fatal inflence over St. Petersburgh; and its climate is severe and changeable As to the seasons, as a general rule, winter affords 162 days of continual frost; then follow 40 or 60 days of spring, if that term can be applied to a season in which it freezes regularly day and night; lastly, summer continues for 143 days, and is, without any intermediate stage, followed by winter. The mean maximum degree of cold is —16° F.; but there are always certain days, on which the thermometer stands as low as —22° or —27°. The heat in summer is extreme; in June and July, the mercury often reaches 86° and 91°. The frost usually sets in about the end of September, and continues until the end of April, or even the middle of May.

There are, in fact, but two seasons at St. Petersburgh, viz., summer and winter; for that part of the year can hardly be called spring, when the Neva is still a frozen road. Mild weather is first felt in the beginning of May, and then vegetation is developed with inconceivable rapidity, and in less than a week, summer is at its height. The real summer ends in the beginning of August. In no place is the value of the fine season felt so much; as soon as it makes its appearance, the town is deserted, and every one betakes himself to the country. It is but seldom that the fine days of summer are interrupted by a storm; those we witnessed were short, and not violent. The summer nights at St. Petersburgh are more beautiful than anything we can conceive in our temperate climate. They are like days; we have often sat reading and writing at all hours of the night in June and part of July without any other light than that afforded by Nature. It might almost be said, that in this season the Russian capital enjoys one continuous day two whole months long; for the soft light of night does not disappear until the sun returns to the eastern horizon and announces the approach of day. The greatest length of any day is 20 hours; but, as we have already said, there is at this period of the year, no such thing as darkness, and the vitality of the plants is constantly stimulated by light. *Masson's Report.*

* R. chamæmorus, and arcticus, L. † V. Myrtillus, L.

## VILLA AND SUBURBAN GARDENING.

The rage which has existed of late years for massing plants in beds, has, unfortunately, reached even the villa garden. I say unfortunately, because it detracts from that variety and interest which arises from more general and varied collections. It may be imagined, that what is desirable in extensive gardens, must be equally so in those of limited extent; but this is a mistake, because in the former there is ample room for the display of all kinds of ornamental flowering plants, while in the latter the great art is to bring into so limited a space as much variety as possible, without producing confusion. What are termed herbaceous and alpine plants, have of late years been greatly neglected, arising principally from the prevalence of the taste for massing and grouping individual varieties, so as to produce a blaze of flower at a particular season. The nakedness of such gardens during a great portion of the year cannot be denied, unless the beds are supplied with dwarf flowering shrubs, the expense of which, under the cir-

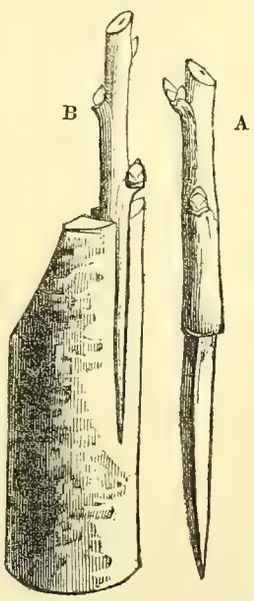
cumstances, few are inclined to incur. Gardens so laid out should have at least three seasons, viz., the summer display of flowering things, to be succeeded by dwarf ornamental plants; then a spring season of bloom by means of bulbs. A geometrical garden so managed has doubtless a very striking effect, but this can only be carried out at great labour and much expense. I question, however, whether such collective masses ever impart to the man of taste the enjoyment which a more varied arrangement secures. I should therefore urge the occupiers of such gardens to employ a greater number of the different kinds of hardy flowering herbaceous plants, in order that both in winter and summer the garden may be kept to a great extent continually gay. Such an arrangement will always present new charms, whereas the first frosty morning sweeps off the entire beauty of geometrical massing, and leaves the whole a mournful wreck, and such a display can only be reproduced after a lapse of many months.

But the arrangement I am advocating has another recommendation, viz., it is by far the least expensive, both to furnish and maintain. The former requires glass frames or pits to protect the young stock for the succeeding season, entailing continued covering and attention in securing the plants from the inclemency of the weather throughout the whole winter and spring. No such care or expense is necessary in the case of hardy plants, and the immense variety of these which are easily procurable, and which will stand all weathers, gives an opportunity for selection to suit all tastes and situations. If these are planted with some regard to their respective heights and time of flowering, I apprehend that no massing will give the proprietor of a small residence a similar amount of pleasure. *Pharo.*

## GRAFTING.

No. VII Cleft Grafting (*Par. 1st*); with one Scion, and the Stock cut Sloping: fig. 6. (*Greffe à un seul rameau, dont une partie du sujet est coupée en biseau.*)—M. Thouin has named this in honour of Bertemboise. It is one of the most usual modes of propagating many woody plants.

Fig. 6.




*Operation.*—The stock is prepared as indicated by fig. 6. The lower part of the scion, A, should be made thin by slicing off a portion from each side, and forming a small shoulder at the top of the slope, as near as possible to which there should be an eye; the side of the scion on which the bark is left should be broader and longer than the opposite side, by one-fourth, or frequently by one-third, or more, according as the stocks are large or small. For the latter, the inside of the scion should be cut very thin, with a short slope; and when intended for large stocks, the same side should be left fuller, so that the scions may better resist the pressure to which they may be subjected when they are introduced into the cleft. They usually leave two eyes to the scion, but the second is often superfluous; for the one nearest the small shoulder has an immense advantage in this respect, that when the scion is introduced, as is represented at B, it is close to the top of the stock, and as soon as it begins to grow, it forms a basis on the latter, and thus co-operates in healing over the wound of the stock. This position of the lower bud ought to be attended to in all the modes of grafting described in this section.* The scion, such as it is represented, should be introduced in the cleft prepared as follows:—by means of a strong knife, or, preferably, by a sort of cleaver and small bat.† The first of these should be placed across the transverse section of the stock, and driven into the latter in such a manner as to split the bark before the wood; and always taking care that the cleft extend but little, if at all, to the bark on the opposite side, at the lower part of the slope; and on the other side, where the scion is to be inserted, it ought to be, at first, shorter than the wedge-shaped portion of the graft. This being done, the instrument is quickly raised by one or more strokes of the small bat on its under side, thus avoiding any kind of twisting; then the wedge-shaped beak, at the end of the handle of the cleaver, is introduced slightly into the cleft, so as to keep it sufficiently open for the introduction of all the wedge part of the scion; and this should be done in such a manner that the liber, or inner bark of the stock, may correspond as nearly as possible with that of the scion. But as we cannot always judge when this is exactly the case, it is better that the liber of the scion should be slightly outside of that of the stock rather than that it should be placed in contact with the young wood. The graft being properly placed, we cover the wound with a mixture of equal parts of fresh loam and cow-dung; but it is better to do over the parts with the resinous composition adapted for covering the large wounds of fruit trees and others.* This composition ought to be applied more especially on the eye of the scion next the top of the stock, in order to secure it against insects and the bad weather which may supervene. Afterwards, there need not be any uneasiness on account of this coating; when the sap is put in motion, the resin liquifies sufficiently for permitting the growing shoot to pass freely through it. (What I have stated concerning the appliances to this mode of grafting ought to be rigorously observed as regards all the others comprised in this paragraph.) *Translated from the French of D'Albret.*

* The good M. Thouin has not sufficiently urged the importance of this practice, and one of his compilers has not even mentioned it. M. Thouin only states that there are some persons who place this eye in the cleft of the stock; and he adds, with reason, that the upper part of the section of this stock cannot be covered by woody layers, seeing that there is nothing to attract the sap to that part, which consequently dries up, and forms an obnoxious stub in all the trees thus operated upon, not even excepting the Vine, for which this mode of proceeding has been extolled.

† This bat is a small round wooden instrument, resembling a constable's staff. It is used to strike downwards upon the back of the knife, and upwards against its edge.

## GARDEN SCULPTURE.

(Extracts from a Letter to the Very Reverend Thomas Garnier, D.D., &c., &c., Dean of Winchester, and Rector of Bishopstoke, Hants. By Frederick Tatham. London: W. H. Dalton, 28, Cockspur-street.)

If there is one thing above another your excellent taste may have recognised as incomplete and unpleasant, it is that the basement of the good English country gentleman's house, whose white crest you see from a distance as you approach it—

"Bosom'd high in tufted trees,'

should at its basement be immediately overlapped, or nearly so, by long Grass and the wild Briar. There is evidently a principle, which will settle at once an important point on landscape gardening; that *habitation and order are unities.* The gentleman beginning to feel this, having perhaps, not long built his house, the site being a hill rising in a wood, his progress is as follows:—he extends his lawn, makes a parterre; he seeks for a high ridge for a terrace, which is a really valuable ornament; he sets to work to cut down oppressive trees, and pushes the forest well back; plants small shrubs and evergreens, varied as much as possible with other trees, to obtain diversity of foliage, with choice hardy exotics of different shades of green and shapes of growth, avoiding the old style of Portugal Laurels planted in continuous rows; his place looks bare and flat at first, until Nature, with her waving exuberant lines, and her horn filled with plenty, not only follows him, but overwhelms him. He prunes again—something however is even then wanting, he tries a summer house and a conservatory—that does good; but they being the mere artificial and not art, he is still unsatisfied. He sees a vase somewhere, and then he doubts lest it should bring a cockney look to his place; he buys two, as an experiment, and, almost to his surprise, they answer. The trees continue to grow, the plot thickens, and everything becomes every year more gorgeous. Much, it is evident, must now have more, and works of art can only be the accumulate and acme of such a state of things. The straight line which stands for man's rule over Nature is wanting, and that joined with the rotund form also, the straight to act as a contrast, and the rotund to sympathise with all around, he addresses himself to sculpture, with joyful abandonment; statues united with their interlineal forms of pedestal, base, &c., are his alternative, and his place now gives him ample delight—it is perfect: he possesses the fairies to the "Midsummer Night's Dream," he has heightened things into persons, it is now Paradise filled with its inhabitants.

But the decoration of a garden or place in true and perfect taste, is more fraught with difficulty, as you well know, than would generally be supposed. The expense of marble or Sicilian stone, and its getting black in this climate, preclude the employment of great marble sculptors, and they being educated in the routine of monument work, are from habit and line of study not entirely fitted for the fanciful and exuberant, yet corrected and disciplined style requisite for garden sculpture; the consequence is, that when a gentleman has conceived the idea to decorate his garden or grounds, he can run only to a mason who, pressed by demand, may have opened a trade in the cheap and durable material of artificial stone (which, in passing, I may observe is exceedingly appropriate to our use), and who may possess a stock of statues and pateras, some good, some moderate, and some very bad.

The untutored mason has filled churches with painful eye-sores and feeble timorous attempts at monumental architecture. The mere mason may yet do the like for garden sculpture. When the arts were led forward by such great artists as Michael Angelo, Raphael, and Guilio Romano, these men acted as great wheels, keeping in order the smaller ones; but in England, however perfect the tram roads of social order may be, there is evidently too great a distance between the professional man and and the trader. Sir Jeffery Wyattville, who was first a builder, has left one of the finest works of architecture in Europe, Windsor Castle; he was the mature blending of the practical with the inventive; therefore, if it be possible to enlist the able artist who, while practical and constructive, has the variety and beauty of Nature reflected into a large and many-sided imagination, whose loves are with the very flutter of the foliage which is to be the background of his design, and who rejoices infinitely in the pellucid shadows of sun-light, which are to establish his shapes; that would be the most probable way of obtaining a grand work, and then of getting it rightly placed. The situation ought to propose that which it should contain. The pier, the rise of ground, the recess, the umbrageous nook, or the flat open space, should each be treated differently:—what size and character the foliage, how large the limbs of trees, whether the object is a fit one to be seen at a distance, or whether come upon suddenly are all unities and harmonies that would strike the mind as most needful, and require knowledge and perception to develope to the best advantage.

* This consists of Burgundy pitch, four parts; black pitch, yellow resin, and beeswax, of each one part.

The selection of any style should depend on the principal mass, such as the architecture of the house, and should either be in accordance or in judicious contrast, both of which extremes come within the reach of choice, as in music. The height and size are determinable by the house, as you, Reverend Sir, have been kind enough to inform me, and of which your own beautiful place is an illustration; where with so much taste and skill, you have kept the elaborate embellishment of your garden in complete subordination to the simple and rural character of your parsonage.

Now as regards the different styles; the principal and the most common is the Greek, where the external line of all their great works, was to a vase or a patera, what the outline is to the limb; and it is quite evident, that the derivation of all the beauty in their vases (which from the Etruscan downwards, stand as quite up to concert pitch, and any work of art cannot be more in the catalogue of the perfect) was the human form; the figure sculptors, taking no doubt the lead over the Greek potteries upon the principle before mentioned. The Greek, being continually able to study the human form, every subordinate operation of the artistic mind necessarily became exquisite. The Greek style has however of late been much used and abused, being handled by those who do not see its affinity to the figure.

The Egyptian is ponderous and sublime, and when kept away from figures, very grand and massive, but if not used with great judgment, will look barbarous, and bear from sympathy a sentiment of extreme severity and even cruelty. The Roman being intermingled with the Greek generally, nothing need be said of it in this brief sketch. The Gothic and Elizabethan do not apply to figures, but in architecture they are wonderfully harmonious with landscape. The French has with great propriety been much used for gardens and all ornamental work; the serpent line, as Michael Ange'o called it, being the line expressive of life, fitted the French style exceedingly well for out of doors, but the French national tendency to abandon themselves recklessly to the imaginative, rendered their style most abundantly and luxuriously vicious, for which you have only to look over the highly talented, but extreme designs and etchings of their great Le Pautre.

Louis Quatorze took a first-rate thing in hand, the living line, and buried it under the heavy weight of excess and overplus—but of such dead,—"*nil nisi bonum.*"

The rustic may in good hands be made the appropriation of all in one. It must be massive, for Nature is so, it must be flowing, for Nature has life all through it, it must be elegant, for she has that in all her ways, and it must have the sign of rule, and order, for she loves to be in subjection. The rustic thus combined and put together, not treated as the expression of coarseness, but interlined with the characters of tenderness, elegance, and accumulativeness, is the complete thing for out-of-door sculpture, and may, and ought to be made the focus and acme of all the power, plenitude and inexhaustible exuberance of all around it.

## STYLE IN PLANTING.

Everybody makes a great fuss about the ground outline of new planting; but how few pay a proper regard to sky outlines, or to the surface forms of the glade, the vista, or the plantation. "With leaden eye that loves the ground," said one of our British poets, and the critique is, in many instances, richly deserved.

When we cast our eyes through a beautiful vista, and behold the elegant and feathery Beech, with its leafy tracery, the delicate and pensile Birch, with its nodding plumes, the Abies canadensis, or Hemlock Spruce, with its rich and pendulous masses, waiting to adorn a winter's sky, we have an idea of how much lies in the planter's power; whose business it is continually to take *fresh lessons* from the hand of Nature, and to seize on and imitate beautiful combinations, wherever found.

Again, to observe the effect of massive flat-headed forms, as some Oaks, the formal Sycamore, and the pointed forms of some Poplars, or the Larch, peering forth here and there above and amongst them; and the whole *lighted up*, on some fine October morning, with the gorgeous tints of the Liquidambar, the various tinted Maples, and coloured Oaks, and even the old Merry tree—their crimson glow enhanced by the faint yellow of such as the Chestnut and the Lime; we have here a scene which might teach the most apathetic how lavish Nature has been in furnishing the means of gratification to the eye of man, whether in form or colour, or in both combined.

In adorning the banks of water what care should

be taken in a proper selection of forms! The combined effects of some trees or shrubs, in conjunction with the Weeping Willows, all softened down by the limpid and rippled stream, have many a time suggested to me the idea of a Fairy-land in the bottom of the deeps.

There is a disgraceful mannerism frequently to be met with in fresh planting, which deserves severe reprobation. Perhaps these remarks apply in the main to town or suburban gardens; but great places are not wholly free of this rebellion against true taste—this horticultural heresy. I mean the "sticking in"—I will not term it planting—trees or shrubs, merely with regard to their height. Here all "expression" (as emanating from not only a proper selection, but a proper disposition of forms) is lost sight of. To be sure, when all is finished, it is *new work*, and looks charming, as say ladies and gentlemen who have spent half their days behind the counter. And indeed it so happens, that in due time, by means of the chapter of accidents, many a noble form bursts its bonds, and rushes fearlessly upwards; at once a standing rebuke of the planter, and an illustration of the futility of attempting to fetter entirely, either noble forms or minds.

Our greenhouses are generally a pretty good indication of the amount of style the "stager" possesses. I do not say, by any means, an infallible indication, for here the picturesque is out of the question; and moreover the health and beauty of the plants individually have to be considered. The latter very frequently requires that the plants be staged with a frigid formality; such generally occurs with soft-wooded plants, and is indeed a question of light.

When, however, we come to the conservatory style, where we have ample room, and have such materials to deal with as huge Camellias, Rhododendrons, Araucarias, Acacias, the Eucalypti, with other expressive forms, in huge boxes, we have here the means out of which the most beautiful intricacy of outline may be created; almost everything that can be done in a shrubbery may be done here, whether as to forms or tints.

A judicious planter will arrange his finest forms, his greatest heights (ultimately), and, indeed, all his most significant materials, first; all the subsequent planting or filling up, becomes subservient in a very great degree to these. The finishing off the mere ground outline is a very simple affair, and need scarcely concern the points previously alluded to. Yet here there is room for some exercise of taste, in the mere disposal of forms, independent of floral beauty. Where the outline is boldly irregular, the most prominent points should be composed of materials of a bold and prominent character, as they will long continue to maintain the bold indentations of which this style is capable.

If the ground outline is defined by that old and high-starched deformity termed "a verge," why the village tailor will probably make as good a thing of it as the artist. A verge is sometimes, indeed, a thing of necessity; those who are scant of territory (as some of our town gardeners), must needs have a green stripe. I confess, notwithstanding, that I pity the taste of the possessor of acres, if he thus hedge in the beautiful forms of the vegetable world. *Robert Errington, Oulton Park, Nov.* 19.

## Home Correspondence.

*Mignonette.*—I have nice pots of Mignonette just coming into bloom, which were sown in August last. I sowed it in small pots, with the view of economising room, but where space is no object, it gives less trouble, and succeeds equally as well sown at once in the pots in which it is to flower. I have wintered it in a shallow frame, removing the lights entirely in fine weather, so as to give it as much air and light as possible. Many complain that they lose their Mignonette in winter; this, I believe, to be owing to their keeping it too damp. I give my plants little or no water for about three months during the dull season, and I take care to keep them free from drip, which is almost sure to kill whatever plants it happens to fall on. When I employ small pots, I am not very particular about the soil being very rich, provided it is light; but when I sow at once in the flowering pots I use richer material, draining well and placing on the top of the crocks flaky pieces of decayed manure, for the double purpose of nourishing the plants when they are coming into bloom, and for keeping the soil from choking up the drainage. My autumn sown plants, which were shifted into larger pots about Christmas, will blossom from the present time till about May, and another sowing now will succeed them, after which it may be had plentifully in the open ground, but last year having had more plants than I wanted for the stage of my greenhouse, I picked out all the worst pots, topped the plants back about this time, and they came in nicely for my window boxes in May, and which I managed in the following manner. Having some Tom Thumb Geraniums (any other dwarf showy plant, as Intermediate Stocks, would look equally well), I placed three of these in a box, one near each end, and one in the middle, and between them I introduced carefully, so as not to break the ball, my pots of Mignonette, filling the boxes up with rich light soil, and finishing with a good watering, to settle the earth round the balls. The after treatment consisted in keeping the boxes watered always when they required it; for be it remembered if Mignonette is ever allowed to flag it seldom succeeds so well afterwards. Under this arrangement my boxes were greatly admired during the summer months, the Geraniums giving gaiety of colour, while the Mignonette yielded scent. *G. M.*

*How to make a Pollard Tree which shall not decay in a few years.*—Many persons like an old tree covered with Ivy, but the most picturesque which can be procured artificially, are Oak trees with the bark stripped off, which never last many years. My idea is, to get the root part of a good sized Larch, leaving the roots as long as possible, and turn this upside down on a trunk built of old bricks, flints or rough stone; the tree need not be put on the built trunk till the Ivy shall have covered the stonework, whilst the Ivy (pushed forward by bone-dust and liquid manure) is covering the trunk, the Larch root may be getting "mellowed" in the shade. By building the trunk any size can be given and any shape, care being taken to give one complete twist from bottom to top, as is invariably the case in old trees. *Jay, Somerset.* [We can hardly imagine anything in worse taste.]

*Mildness of the Season.*—As remarkable instances of the singular forwardness of vegetation in the Isle of Wight, I may mention having, on the 14th of January, been kindly presented with magnificent blooms of a scarlet Rhododendron, grown in the open air at Fernhill, in this island, the seat of Samuel Sanders, Esq., where fine Rhododendron blooms were also obtained on the 13th of the preceding month. Referring to memoranda of a former year, I observe a note of my having been much struck with the singular beauty and freshness of a bouquet of Rhododendron, grown in the open air, which was placed in the drawing-room of the abovementioned residence, on the 27th of April, 1849, while the surrounding country was completely enveloped in snow. *P. S., Newport, Isle of Wight.*—I sent in to the Editor of the *Cork Constitution* newspaper 11 new Potatoes, dug from one stalk out of several in my garden, planted last August, and which were pronounced by him "to be perfectly sound and healthy." I look upon early sowing as the only safeguard from "the fatal disease;" any one who had them planted in the months of February, both in 1849 and 1850, had them larger and much better eating than those sown later.—All our fruit trees are showing their blossom too soon, and are as forward as they ought to be at the end of March of another year; consequently they will be cut off by the frosts, in the latter end of April and beginning of May. I have had beautiful Broccoli and salads all the winter, and "the British Queen" Strawberry has been showing blossom in a way that must injure its crop in due season. *John B. Warren, Warren's Grove, Crookstown, Ireland, Feb.* 7.

*Weather at Pembroke.*

| Date. | Thermometer. | | | | | | Rain in Inches. | | Number of Wet Days. |
|---|---|---|---|---|---|---|---|---|---|
| | Absolute Maximum. | Absolute Minimum. | Mean. | Average Maximum. | Average Minimum. | Mean. | 8-inch Gauge. | 5-inch Gauge. | |
| 1850. | | | | | | | 42 feet 6 inches above ground. | 5 feet 6 inches from ground. | |
| January ... | 51 | 23 | 37.0 | 41.8 | 34.9 | 38.3 | 2.083 | 1.964 | 13 |
| February... | 53 | 35 | 44.0 | 49.5 | 42.4 | 45.9 | 2.146 | 1.414 | 17 |
| March ... | 58 | 24 | 41.0 | 47.7 | 36.3 | 42.0 | 0.667 | 0.813 | 11 |
| | | | | | Melted snow | | 044 | 0.065 | |
| April ... | 58 | 36 | 47.0 | 55.3 | 43.6 | 49.4 | 3.261 | 3.070 | 19 |
| May ... | 68 | 35 | 51.5 | 58.6 | 45.0 | 51.8 | 1.586 | 1.515 | 15 |
| June ... | 80 | 45 | 62.5 | 65.5 | 53.2 | 59.3 | 0.755 | 0.661 | 9 |
| July ... | 76 | 49 | 62.5 | 66.8 | 55.3 | 61.0 | 1.041 | 0.797 | 12 |
| August ... | 72 | 42 | 57.0 | 64.7 | 53.5 | 59.1 | 2.269 | 1.843 | 18 |
| September | 67 | 44 | 55.5 | 62.7 | 50.4 | 56.5 | 2.800 | 2.839 | 11 |
| October ... | 61 | 34 | 47.5 | 54.3 | 45.2 | 49.7 | 1.552 | 1.639 | 19 |
| November | 59 | 31 | 45.0 | 52.0 | 46.1 | 49.3 | 3.516 | 3.178 | 20 |
| December | 56 | 29 | 42.5 | 48.9 | 41.5 | 45.2 | 3.007 | 2.795 | 18 |
| Mean ... | 63.2 | 35.5 | 49.2 | 55.7 | 45.6 | 50.6 | 24.718 | 22.593 | 182 |

MEAN OF SEASONS.

| Winter. | Spring. | Summer. |
|---|---|---|
| *i. e.* Dec. Jan. Feb. 1849. 1850. 41.9 | March, April, May, 1850. 47.73 | June, July, Aug. 1850. 59.76 |
| **Autumn.** | **Year,** | |
| Sept. Oct. Nov. 1850. 51.83 | As above. 50.6 | |

Difference between Hottest and Coldest Months ... 27.07
Difference between Summer and Winter ... ... 17.86
Rain at Bowness, Windermere, 1850, 64.284 inches.
Wet Days, 213.

—*T. S. P, Pembroke Dockyard.*

*Seasoning Timber.* — Your correspondent "J. F." expressed a wish to be informed of the manner in which the seasoning of wood might be practised economically on a small scale. There seems no doubt but that it might be effected either by means of warm air, as practised long ago by the Messrs. Strutt, at Belper, or by means of a steaming apparatus, where there may already be one for other purposes. If by warm air, as at Belper, there would be required an air-heating chamber, and a seasoning-chamber above it. The air-chamber need only be large enough to receive a stove, and to afford space for attendance upon it; into this chamber air should be admitted through two pipes, each of them large enough to allow passage for the requisite quantity of air for seasoning the wood, as well as to supply the fire; these pipes should pass to the exterior at opposite points of the compass, since it has been found that when air is admitted on only one side of a building, heated air from within passes out when the wind is in the opposite direction. These pipes should be furnished with slides or valves, so that the one opposite to the wind might be closed at pleasure. Such slides or valves might be made self-acting by connecting them with a vane; but where cheapness of the apparatus is an object of importance, the entrance of air might be sufficiently well regulated by hand. Above the air-heating chamber should be that for the reception of wood to be seasoned, and having communication with the hot-air chamber for the passage upwards of heated air. It would be desirable, if easily practicable, that spaces should be left for the air between the several flooring boards, so as to promote a general diffusion of it, but this is not essential. The seasoning chamber should, of course, be large enough to contain the whole quantity of wood it might be wished to season at one time; the boards, quartering, deals, &c., should be arranged perpendicularly in the chamber, and so that no one piece should touch another, excepting at the point of support, thus leaving a passage for air between each of the several pieces. An exit for air, charged with moisture, should be provided at the part of the chamber most distant from the entrance of the heated air from below. This exit aperture may be formed as a chimney of some height, and surmounted by a cowl turning with the wind, to favour the exit of heated air charged with water. In this way planks were seasoned at Belper in three weeks; deals and thin stuff in a much shorter time. It is evident that the seasoning chamber need not of necessity be immediately above the heating chamber, since hot air might be conveyed from the latter by means of well-jacketed pipes through several stories. Some little experience would be requisite in the use even of this simple apparatus; a carpenter does not make a straight cut at the first attempt. The error most to be guarded against is that of proceeding too rapidly in the drying process, since thereby cracking and splitting of the wood might be expected, or that the interior of it might not be perfectly seasoned, though the outside were so. The great desideratum in seasoning wood is that the external parts should be kept open till all moisture from the interior has been evaporated. The exact heat kept up at Belper, in the drying-chamber, is not recollected, but to the feeling it did not exceed the temperature of a warm summer's day. The degree of heat, would, however, require to be little varied according to the kind of wood to be seasoned, and to its different states during the process of desiccation. A few pounds would pay the expense of the whole apparatus. Seasoning by steam would be more costly on a small scale, excepting where a proper boiler was in use for other purposes; but in the latter case the only additional expense to be incurred would be that of a receptacle for the wood to be seasoned, a pipe connecting this receptacle with the boiler, a tap for turning on or off steam, and a chimney with its cowl, and closable at pleasure. The usual attendant on the steam apparatus for other purposes would be competent to the turning steam on or off from the seasoning chamber. In this mode no injury to the wood need be apprehended from frequent interruptions of the desiccating process, since the seasoning chamber, being filled with vapour, the external parts of the wood within it would be kept moist and open, supposing only that exit of the vapour were prevented by shutting up the chimney. It need scarcely be added that a longer time would be requisite for seasoning wood where interruptions of the steam should have place, and that more or less according to their length and frequency. *M. B.*

## Societies.

Entomological, *Jan.* 27.—G. R. Waterhouse, Esq., President, in the chair. This being the Anniversary Meeting, the chairman delivered an address on the state and prospects of the Society, and on the general progress of the science at home and abroad, during the past year. Messrs. F. Smith, S. Stevens, E. Shephard, and Wilkinson, were elected into the Council, in the room of Messrs. Spence, Stephens, Parry, and Desvignes. Mr. J. O. Westwood was elected President; Mr. Yarrell, Treasurer; Messrs. Douglas and Staunton, Secretaries, and Mr. Janson, Curator, for the ensuing year. The usual votes of thanks to the retiring officers were then passed. *Feb.* 3.—J. O. Westwood, Esq., President, in the chair. The President returned thanks to the society for his election, and urged on the members the necessity of supporting the character of the Society's Transactions and meetings, by the preparation for, and publication of, monographs and memoirs on the natural history and economy, the anatomy, internal and external, and the natural relations of insects. Various donations to the Society's library and museum were announced, including a very large collection of insects from Silhet, in the East Indies, presented by Robert Grant, Esq., of Elchies, N. B. Three new members were balloted for, and elected, and several additional certificates of membership read. The President nominated Messrs. W. W. Saunders, G. R. Waterhouse, and F. Bond, to be vice-presidents. The Publication and Museum Committees were also re-appointed. A highly characteristic full length portrait of the late Honorary President, the Rev. W. Kirby, drawn by W. Spence, jun., Esq., and lithographed by R. J. Lane, Esq., A.R.A., was presented by W. Spence, Esq. It is intended to be inserted in the next Part of the Transactions, and copies were also upon the table for sale to the members. Mr. S. Stevens exhibited two very interesting species of butterflies, collected at Shanghai, by Mr. R. Fortune, one a new Thaumantis, and the other the Papilio Telamon, a species known only by Donovan's figure in the "Insects of China," and which now proves to differ generically from Papilio, and to approximate to Thais and Doritis. [M. Motschulsky has informed the reporter that some of the Coleoptera, received from Mr. R. Fortune are identical with species described by Falder-

mann, in his work on the insects of Northern and Western China.] Mr. W. W. Saunders exhibited various singular moths from Brazil, having the palpi extraordinarily developed, resembling long erect brushes. Mr. Douglas exhibited some sprigs of the common Yew, the leaves of the terminal shoots of which had grown into an oval mass, within which he had discovered a larva which he thought might possibly be that of Ditula angustiorana. He also exhibited a thin silk case enveloped with leaves, apparently formed for the winter residence of some species of spider; Mr. Lubbock also exhibited several similar nests, formed at the top of long Grass, the seeds of several shoots of which had been drawn together and formed into a globular envelope. He had observed a species of Epeira about the cases when half formed. Mr. Stainton had exhibited some living specimens of Oxystoma ulicis, and stated that, although in the perfect state, they remain within the pod until it bursts, making no previous attempt to escape. He likewise exhibited a branch of the common Ilex, the leaves of which were mined by the larvæ of some small moth, and pointed out the difference of habit of the larvæ which mine the leaves of deciduous trees, and evergreen ones. Mr. Westwood exhibited some galls upon the common Vine, received from Sir Oswald Mosley, several of which had been found to contain the larvæ of a species of weevil, a fact not hitherto observed. A very interesting memoir by Mr. W. W. Saunders was read upon the various species of insect which attack the Cotton crops in North America, the West Indian islands, and the East Indies. From the communications of Drs. Royle and Horsfield, and Mr. Simpson he was enabled to increase the number of Cotton insects to 12 different species, the transformations of most of which were illustrated with figures.

## Notices of Books.

*Mémoire sur l'existence d'un Œuf ou Ovule chez les males comme les Femelles des végétaux et des animaux produisant, l'un les grains de pollen ou les Spermatozoides, l'autre les cellules primitives de l'embryon.* Par C. Robin.

This interesting paper, which has reached us in the form of an extract, from the "Revue Zoologique," for Oct. and Nov., 1848, was read first before the Society of Biology, and later in the same year before the Academy at Paris. It is well known that both in the animal and vegetable world, the development of the embryo is due to the division into cells of the grumous contents of the ultimate embryonic sac, under whatever name it may be known; and the author contends that the same, or a similar process, takes place with respect to the male organs. We shall confine our observations to that part of the memoir which relates to those organs in the vegetable kingdom. The pollen grains are thus due to the successive division of the original mother cell or cells of the anther. These grains the author considers to be the proper analogues of the spermatozoa of animals, and not of the grains of the Fovilla, and he is borne out by the fact that the analogues of pollen granules amongst Cryptogams, as far as has been observed hitherto, resemble so very closely true spermatozoa. The author does not seem to be aware that the development of these bodies in distinct cells, somewhat after the manner of pollen grains, has been recorded in Chara and other Cryptogams, but he has given very interesting details as to their formation in Ulva lactuca, having been led to the examination by observing the surface of the pools of water left by the tide at Dieppe, after a storm, to be covered by a green scum, which consisted of four different forms of the so-called Zoosperms of Algæ. Three of these forms appeared to be referable to Halidrys siliquosa, Fucus serratus and vesiculosus; the fourth he was not able at once to assign to its proper origin. As he found, however, that they did not vegetate, and resisted like spermatozoa, and cells of the epithelium, certain chemical agents, he began to suspect that they were not Zoosperms; and on an examination of Ulva lactuca, he observed the development of spermatozoids, perfectly identical, from the central or medullary cells of the fronds.

These cells are first divided by a single partition; and shortly afterwards each of the two new cells is again similarly divided, the partitions being formed simultaneously or shortly after each other. If the cell was originally small, the division proceeds no further, the primary cell not increasing in magnitude. But if there is sufficient room, each of the four cells gives rise to four new cells, and occasionally the 16 cells thus formed are divided once more, making in all 32, the greatest number which the author has hitherto observed. When the division of the cells is completed, a single spermatozoid is formed in each at the expense of its grumous contents. During this process the cells become more distinct, their colour paler, and the inclosed body acquires apparently spontaneous motion, which is at first very slow; but soon becomes lively and energetic, till the membrane ruptures and the spermatozoids escape.

These phenomena, though so complicated, are effected in from three to five hours, according to the conditions in which the cells are placed, or the nature of the cells themselves. After the escape of the spermatozoids, the four ciliæ at the smaller extremity of their ovoid body become visible, being half as long again as the bodies themselves. They resemble exactly the Zoosperms observed by Thuret, but they do not germinate; and a larger number, except in extreme exceptional cases, is produced in each parent.

As regards the motility of these and similar bodies, the author, with great reason, does not consider it as an indication of animality; but precisely of the same nature as that of the bodies on epithelium and other vibratile filaments, whether in animals or vegetables. The bodies then are merely special cells, destined for a particular object, and endowed with motion, and not destined to reproduce bodies similar to themselves, which seems an essential attribute of any insulated specific organism. They are formed in a particular organ by a peculiar mechanism, and they produce in the corresponding organ of the female the formation of similar cells by a similar mechanism.

Such is an imperfect sketch of the view of the author, which opens a curious field for investigation and reflection, and one which can scarcely be without useful results; for while mere fanciful analogies confuse rather than clear our notions, few things are more productive of just and rational deductions than those analogies which arise from the actual study of phenomena in the exercise of an intelligent and well instructed mind. Since the publication of the memoir, an analysis of the prize memoirs of Thuret, and Messrs. Derbès and Solier, has been published. As far as we can judge from the slight sketch there given, they do not confirm the account just given of the development of the spermatozoids (Phytozoaires, Thuret), which, according to M. Robin, is the same in one species, at least of Algæ, as in Ferns, Equisetaceæ, Characeæ, Hepaticæ, and Mosses.

## Garden Memoranda.

Mr. Groom's Nursery, Clapham.—The Tulips in Mr. Groom's beds are from 1 to 3 inches, and in some cases even more above the soil, and consequently they require extra watchfulness, in order to guard them against frost. At one time their growth was at least three weeks in advance of that of ordinary seasons; but lately, the weather having become colder, they have not progressed so rapidly, and it is anticipated that ultimately they will not be much in advance of their usual time. Those in the best bed more especially look uncommonly well; and in order to keep them back, they are allowed all the air and light that it is possible to give them. Ground for Ranunculuses and Anemones, that was dunged and ridged in autumn, to be mellowed by the frost, is now being levelled down and planted. The roots are placed in beds about 5 inches apart each way, and are covered from 1 to 2 inches deep. A bed of the Siberian Squill was beautifully in bloom, its deep blue flowers having a very interesting appearance at this season of the year. It will be found a very suitable plant for rock-work, where its blossoms would contrast admirably with those of the Crocus, Snowdrop, Primula altaica, and other spring flowers, cheating the winter of half its gloominess. The Auriculas in pits exhibited a very healthy appearance, here and there throwing up a premature truss, and the Camellias in the houses were coming beautifully into blossom. Along the front shelf of the Camellia-house the charming little Cyclamen coum was flowering copiously; and associated with it were small "worked" plants of the deliciously sweet-scented Daphne odora rosea, which every greenhouse should possess. In the show house, Amaryllids, of which Mr. Groom has a nice collection, have been and are still very gay; and here we saw three varieties of Crocus, which, on account of their size and beauty, are well worth attention. Their names were, New Large Yellow; Alexander Rizzio, violet purple; and Queen Victoria, white. These are distinct, and decidedly three of the best Crocuses of their colours.

## Miscellaneous.

*The Pine and Cedar Forests of California*—Of all the wonders I have ever seen in the vegetable kingdom, nothing will bear comparison with the magnificent and lofty growths of Cedars and Pines which embellish the hills and mountains that lead to, and make up the great Sierra Nevada Range. The magnificence and grandeur of scenes in which these trees abound, cannot be imagined by any man who has not seen them, and felt the awe and sublimity to which they give rise. I have counted in a circle of 50 feet in diameter, 13 Pine trees, not one of which was less than 3 feet in diameter, or less than 250 feet in height, nor was any one of them marked by the slightest curve or inclination. They are the inimitable and lofty monuments of nature, uninfluenced by sweeping storms and winds, unbent and undecayed by a centurian age. Not a limb or a knot can be found upon their bodies until you reach an altitude of from 100 to 200 feet, beyond which height they continue to grow until their towering majesty overawes all surrounding objects, and affords a fit refuge for the noble bird which adorns the banner of our country. No man can travel through these scenes without feeling that the grandeur of Omnipotence itself is teaching him his finite and insignificant powers. Such was the moral influences of those leviathan growths of Cedars and Pines upon my mind, I would not have dared to have given entertainment to a fugitive thought against the supremacy, wisdom, and power of Jehovah. Such are the Pine and Cedar forests of California. And when you reflect that they cover an area of hundreds, if not thousands of square miles, you are prepared to admit the importance of this claim, which we would urge upon the consideration of our friends in the East. *From the Toronto Globe.*

*Some Account of the Vegetation and Climate of the Auckland Islands.*—"The character of the country is basaltic, with the stone running into columns, much of which is likely to be serviceable, since it is found in pieces of convenient size for building, and in situations from whence it may be easily transported. Whin, or green stone, has been found of very fine quality; also fine sand on Enderby Island. The soil is everywhere rich beyond description, and with a depth of from 7 to 9 feet; it is covered with vegetation from the water's edge to the summit of the hills, that is, with trees, Ferns of a variety of sorts, and Grasses. The trees (of which there are four or five different descriptions) are of a very crooked and twisted form; the wood, however, is very hard, often exceeding 2½ feet in diameter, and a large quantity of knees, breast-hooks, &c., of the very best description for ship-building might be supplied from it. Planks of from 10 to 12 feet in length may likewise be obtained, and much of the wood will, doubtless, be valuable for furniture purposes; but we have not yet found any fit for masts or boat-boards. Although these trees do not often reach an elevation exceeding 40 feet, they are not unfrequently found 60 feet in length, for almost every tree has apparently been bent down about 20 or 30 feet from the roots, and again shot upwards. This will account for the great difficulty experienced in traversing the country, for the passage is obstructed and crossed in all directions by these trees, under and over which you have alternately to pass, and the tops of which are ever covered with foliage as thick and even as the very best trimmed hedge. There is a great variety of tints in the foliage, and but for the number of dead trees, the naked and blanched branches of which meet the eye in all directions in the northern part of the Island, the scenery could scarcely be surpassed; the trees overhang the sea 20 feet, which washes their branches, while under these may be seen wild ducks, &c. The hills gradually rise at the back to an elevation of 800 or 900 feet, with, occasionally, very large masses of basaltic rock cropping out. There are many sorts of Grasses on the Islands and of very fine quality, but on no one spot comprising 10 acres together near the Company's station, or close to the shore, except on Enderby Island, where there is sufficient Grass to depasture many hundred head of cattle; and I am happy to learn that this Grass is to be obtained all the year round. A large extent of Grass land is also to be found on Auckland Island, situated about one mile from the shore on that part nearest Rose Island, which land will be very valuable, and may be made available when a passage to it is cleared." . . . "The officers of the ships of war were particularly struck with the appearance of two different sorts of trees, one well known as the 'ratah,' which was in bloom, and exceeded in brilliancy and extent anything of the sort they had before seen. The other is a very ornamental tree (not described) growing on Ewing Island; the stem is from 18 inches to two feet in diameter, whilst the wood is very hard, and has much the appearance of Maple. It grows rapidly, and has a blossom something resembling the Chesnut, but of a dull lead colour. Its leaves are nearly as large as those of the Fig tree, but of a darker colour; the bark and young stems are covered with a white film-like cotton, and the branches spread out from close to the ground a distance of 25 feet." . . . "The rock which forms the basis of the Company's settlement, is surmounted and covered, except near the water's edge, by a humul or peaty soil, varying in depth from a few inches to several feet, in some instances as many as 10, and affording not only a valuable nidus for the growth of vegetable, but, if properly prepared, an excellent substitute for coals for all domestic purposes. The peaty soil supports a luxuriant vegetation of trees, shrubs, Grasses, Ferns, and Mosses, which together form an underwood so dense that it is almost impossible for man to penetrate unaided through it, except where native paths have been formed, or fire has been permitted to make its way through it. The trees consist of a well-known species of the Myrtaceous family—the Metrosideros lucida; and of one of the Arbaceous or Fig family—the Panax simplex. The principal shrub is a fine species of Veronica, frequently to be met with, and forming occasionally a beautiful feature in the landscape." . . . "As regards the climate of the Auckland Islands, the Commissioner by no means thinks unfavourably of it. His journal shews that although there is much wind and rain at the Islands, as might be expected from their latitude and situation, there is also much fine weather. The circumstance that the New Zealanders (found on the Islands, in all about 70 persons) had resided there eight years without any clothing, and were unwilling to be removed, affords some evidence of the correctness of his views. His experience embraced the summer and the beginning of the autumn months, and he could only surmise as to the character of the winter, respecting which, however, he felt no anxiety. He states that the unfavourable weather which prevailed for some time after the arrival of the expedition affords no criterion for the future, since the New Zealanders reported the summer and likewise the previous spring to have been unusually wet, and that but for this circumstance the vegetables, though of good size, would have been still larger. Respecting the climate, Mr. Mackworth, the Commissioner's chief assistant, remarks: 'We had very bad weather for about a month after my arrival; but during the last seven weeks the climate may be considered quite equal to that of March and April in England.' The New Zealanders had further reported that in winter 'the snow, although sometimes exceedingly heavy, never con

tinues on the ground more than five days at a time.' This statement the Commissioner considers to be in a great measure corroborated by the fact that birds, such as larks and other small land birds which do not migrate, are very numerous, and must find the means of obtaining food during winter. He concludes his remarks upon the seasons in the following terms : 'That the quantity of rain or snow during winter cannot be very excessive, there is very conclusive evidence, to which I have drawn the attention of all parties—namely, that the streams of water, which are very numerous and often very considerable, in no one place present indications of having been extended : the soil on each side is always loose, deep, and rich, and covered with rank vegetation ; nor are there any traces visible of trees having been washed down, but, as in all other parts, they bear the same twisted and bent form.'" *Southern Whale Fishery Company Commissioner's Reports, dated 25 April*, 1850.

*Composition for rendering Canvas and other Fabrics, and Leather, Waterproof.*—This invention, for which a patent was taken out in July last, is the property of Mr. Jennings, Chemist, Great Tower-street, London. It consists in obtaining an insoluble varnish, applicable to the waterproofing of fabrics, from the decomposition of any soluble mineral or metallic salt, by any soluble soap, by double decomposition. The *modus operandi* specified by the patentee is as follows :—1 cwt. of soft soap is boiled in a copper vessel, in from 25 to 30 gallons of water. When dissolved, from 56 to 66 lbs. of sulphate of zinc are added. Double decomposition ensues, and the alkali of the soap unites with the sulphuric acid from the sulphate of zinc, and forms sulphate of potash. The oxide of the zinc combines with the oil or stearine, and forms an insoluble metallic soap. In the case of hard soap being used instead of soft, sulphate of soda will result instead of sulphate of potash. This metallic soap, which is collected from the solution when cold, and has the appearance of a white hard mass, is subsequently boiled to purify it from any sulphate of soda or potash which may remain. Next, heat 50 gallons of raw Linseed oil, as free as possible from mucilage, mixed with 5 lbs. of carbonate of potash and 1 gallon of water, until it saponifies. Then add 10 per cent. of animal charcoal, and an equal quantity of water ; continue the boiling for an hour ; filter, to remove the phosphate of lime and other matters which would tend to render the oil opaque. This last process need only be used when a colourless waterproof varnish is required. To this quantity of oil, thus purified or not, add 1½ lb. sugar of lead, 2 lbs. litharge, 4 lbs. red lead, 21 lbs. black resin ; maintain these matters at 212° Fahrenheit, until their mixture is completed, taking care to stir them all the while for that purpose. Then incorporate with them 30 lbs. of the metallic soap, after which, add 48 ozs. of caoutchouc, dissolved in 2 gallons of oil of turpentine. The mixture may be applied to fabrics at a temperature of from 150° to 160°, by a brush. One or more coats may be applied as required. When cooled, which generally takes about 36 or 40 hours, the fabric will be waterproof. To waterproof leather, it should be steeped in a solution, at 225°, of equal quantities of linseed oil and metallic soap, until cold. Then remove, by scraping, the mixture in excess. *From the Architect, Feb. 8.*

## Calendar of Operations.

*(For the ensuing week.)*

### GENERAL REMARKS.

There are so many things which can be done within doors to forward the work of a garden, that no workman need ever be exposed to wet. There is a double pleasure in seeing the men at work in the sheds and houses during inclement weather, for while we know that they are usefully employed, we are equally certain that their health is not likely to be injured. In a well regulated garden there is always an abundance of work to be done under cover, such as washing and painting sashes, making baskets, pointing pea-stakes and flower-stakes, and a great many other things too numerous to be named here. To carry on such work to the best advantage everything should be in readiness for the men to commence work at any moment, when driven indoors by bad weather.

### PLANT DEPARTMENT.

Stove plants generally do best when plunged in some medium supplying bottom-heat ; and it is particularly beneficial to them when newly potted, by assisting the roots to freely penetrate the new compost. Get all plant trellises painted, that they may be ready for use when required. Besides conducing to their preservation and neat appearance, the paint effectually smothers any insects or eggs which may be lurking about them. Active exertions should now be made to eradicate scale, mealy bug, or other insects, with which any of the plants (particularly those in the stoves), are infested. Hot water is the best remedy ; it may be safely used at 130°, and even higher. It may undoubtedly be applied much hotter, at this season, on the old well-ripened shoots and leaves, than would be safe a month or six weeks hence, when the plants have commenced their new growth. Insects of all kinds can be eradicated with much greater ease, now that they are, comparatively speaking, in a dormant state, than they can be a few months hence.

### FLOWER-GARDEN AND SHRUBBERIES.

Continue to regulate the plants in the shrubbery ; and where large deciduous trees are standing among them, it will beneficial to the shrubs to have a top-dressing of decayed leaves worked in among their roots. If not assisted in this way, the trees, by shading and robbing them, soon destroy the beauty of the evergreens, and often cause unsightly gaps, which are difficult to fill up. A circle of bare ground is frequently left round specimen trees and shrubs, to afford greater facilities for top-dressing with manure or compost, and for loosening the ground to admit the sun and air more freely. The effect of this, however, is not so pleasing as when the turf is continued close up to the plant, and it is besides much more troublesome to keep in order ; and for this reason, as soon as the plants are thoroughly established, and have began to grow freely, the bare ground should be entirely turfed over. In small gardens, it is a common practice to cultivate flowers in and round the shrubbery beds, and (though scarcely in good taste), to make a similar use of the circles round single specimens, rather than allow them to be covered with turf. Where such is the case, some leaf soil should be dug or forked in, to stimulate the plants into vigorous growth ; and, when planting the flowers, a space should be left quite clear between them and the base of the specimen. We have often seen the lower branches of fastigiate trees completely spoiled by neglect on this latter point.

### FLORISTS' FLOWERS.

Pansies are making growth fast, it will be therefore requisite to stop those which are too luxuriant, by pinching out the leading bud. Those cultivated in pots will now require more water, at the same time giving abundance of air, and free exposure at all times, when the weather is favourable. Snails have been more than usually troublesome this season with our plants ; we find no trap so good for the marauders as fresh bran, placed beneath a tile. Polyanthuses are showing in many instances a premature bloom ; earthworms are often extremely injurious to seedling plants, when grown on beds ; they will draw them out of the ground, therefore late planted ones, particularly, must have especial attention. We should much like to see some alteration in the ground colour of these flowers ; to casual observers they present great sameness. We think that by judicious hybridization, much might be done. We have now in bloom in our garden a bright blue Polyanthus ; certainly, it is defective in form, lacing, eye, &c., but why not endeavour to improve this by crossing and seeding, &c. ? At all events, if rotundity were obtained, with a bright lemon eye and lacing, the ground colour would, we think, be desirable ; and we are sure if this plan were persevered in, many interesting hybrids would be obtained. Cover Tulips on appearance of frost, and plant Ranunculuses when the beds are in good order for so doing.

### FORCING DEPARTMENT.

In clear fine weather assist Nature by giving some additional heat to all the Pineries, as well as to the Vineries and Peach-houses, now in operation. This increase, accompanied by a proportional circulation of air, by means of ventilators, will be very beneficial ; but during dull cloudy weather it is advisable to be sparing of artificial heat, for the double purpose of husbanding the energies of the plants and preventing the needless waste of that expensive article fuel. Avoid too moist an atmosphere in the Pineries, or some of the shows will be liable to come without their crowns ; and be very careful in syringing not to allow any moisture to fall upon the flowers. A little neglect on these points, added to a deficient circulation of air, is productive of monstrous crowns, and frequently, deformed fruit. A slight syringing may be given about 3 P.M. to Peaches which are fairly set, but with caution, for much splashing of water at this season is injurious both to roots and branches. Leave a small portion of air on at all times. The Cherry-house, if not already done, should now be put in order for forcing, by having the trees well washed with a mixture of soft soap and sulphur in some warm soft water, in the proportion of half an ounce of each to a pint of water.

### HARDY FRUIT GARDEN.

Gardens are frequently seen crowded with large fruit trees, the greater portion of which is of inferior or worthless varieties, and even the good ones are, from want of proper management, generally unproductive ; besides which their roots exhaust the ground, and their tops shade it, thereby causing injury to the crops of vegetables which are planted near them. This system should be entirely changed ; all inferior varieties should be removed, and of the remaining ones the standards should be drawn down, if they will bear it, and the dwarfs trained as pyramidal or goblet-shaped bushes. If the soil is rich, which may be expected among vegetables, the production of gross and superfluous wood should be prevented by regular and systematic root pruning. An economical arrangement of fruit trees for a kitchen garden is to form rows of pyramidal or goblet-shaped trees on the south side of all walks running east and west, and on both sides of all running south and north. The Gooseberries and Currants should occupy a border by themselves ; and the Raspberries should also have a separate border or compartment, by which means more space would be made available for vegetables. It will be necessary to support the fruit trees with stakes for a few years until properly formed, after which they will support themselves. We mention this now, as all planting of fruit trees should be completed as soon as possible.

### KITCHEN GARDEN.

Draw up ridges of soil on each side of the rows of early Peas which are above ground, in order to protect them from cold sweeping winds ; it will be as well also to put the stakes to them at once, and by using the small spray to fill up the bottom, it will contribute to their more perfect protection. Care must be taken to prevent the ravages of mice and birds ; rats also frequently attack Broad Beans just as they are starting, and if not noticed in time, they will destroy the crop. Broad Beans raised in boxes may be planted out in warm rich soil whenever the weather is mild. In warm situations a sowing of Onions and early Horn Carrots may be made. The Potato Onion is much esteemed by many, and these being early rooting plants and hardy, may be got in with advantage.

State of the Weather near London, for the week ending Feb. 13, 1851, as observed at the Horticultural Garden, Chiswick.

| Feb. | | Mean of Aggr. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. | 7 | 6 | 30.171 | 29.897 | 49 | 35 | 42.0 | 39 | 41 | S.W. | .19 |
| Satur.. | 8 | 7 | 30.144 | 29.836 | 49 | 28 | 38.5 | 40 | 41 | N.W. | .0 0 |
| Sunday. | 9 | 8 | 30.375 | 30.326 | 51 | 36 | 43.5 | 40 | 41 | N.E. | .00 |
| Monday | 10 | 9 | 30.049 | 30.3 6 | 42 | 23 | 32.5 | 40 | 41 | E. | .00 |
| Tues.. | 11 | 10 | 30.230 | 30.208 | 47 | 23 | 35.0 | 39½ | 40½ | N.E. | .02 |
| Wed.. | 12 | 11 | 30.152 | 30.040 | 46 | 27 | 36.5 | 39½ | 40½ | W. | .06 |
| Thurs.. | 13 | 12 | 30.074 | 30.002 | 47 | 34 | 40.5 | 40 | 41 | S.W. | .00 |
| Average ... | | | 30.173 | 30.091 | 47.3 | 29 4 | 38.3 | 39.7 | 40.8 | | 0 27 |

Feb. 7—Densely and uniformly overcast ; rain.
— 8—Fine ; heavy clouds ; clear at night.
— 9—Fine ; cloudy and fine : overcast.
— 10—Overcast ; hazy ; cloudy.
— 11—Frosty ; clear ; cloudy at night.
— 12—Fine ; very fine : overcast.
— 13—Hazy ; cloudy ; rain ; slight fog.
Mean temperature of the week ½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending Feb. 22, 1851.

| Feb. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 16 | 46.2 | 31.4 | 38.8 | 4 | 0.23 in. | 3 | 3 | 1 | 2 | — | 7 | 6 | 3 |
| Mon. 17 | 46.4 | 32.3 | 39.3 | 9 | 0.32 | 3 | 1 | 2 | 3 | 3 | 4 | 7 | 1 |
| Tues. 18 | 45.0 | 32.4 | 38.7 | 11 | 0.30 | 3 | 1 | 3 | 1 | 4 | 6 | 6 | 1 |
| Wed. 19 | 45.5 | 32.1 | 38.8 | 13 | 0.64 | 4 | — | 3 | 4 | 1 | 8 | 3 | 2 |
| Thurs. 20 | 45.6 | 32.6 | 39.1 | 15 | 0.31 | 4 | — | 3 | 4 | 1 | 7 | 3 | 3 |
| Friday 21 | 47.3 | 33.9 | 40.6 | 14 | 0.20 | 1 | 3 | 2 | 4 | 2 | 6 | 3 | 2 |
| Satur. 22 | 46.6 | 34.4 | 40.5 | 11 | 0.29 | 3 | 4 | 5 | — | 2 | 5 | 3 | 1 |

The highest temperature during the above period occurred on the 17th, 1847—therm. 57 deg. ; and the lowest on the 19th, 1845—therm. 16 deg.

## Notices to Correspondents.

Back Numbers : One shilling will be given for No. 1, 1846.

Fancy Geraniums : *S H H W.* Anais and Queen Victoria will suit you.*

Ferns : *A Correspondent.* The most economical plan of getting a good and large collection of Ferns is to beg or barter for them. The easiest and best is to purchase them of Messrs. Loddiges or others.

Fruit Trees : *Novice.* As you require late Pears for use in Jan., Feb., and March, you should graft your Jargonelle, growing on the south end of a barn, with Winter Nelis, Knight's Monarch, Easter Beurré, and Beurré Rance, and your other trees with March Bergamot and Ne plus Meuris.‖

Fungi : *J F, jun.* The specimen of fungus growing upon an old hollow Willow stump in which Geraniums are planted seems to be a slice of some Polyporus.—*Tis.* The fungus on the Potato is so shrivelled that we do not recognise it. It will not remain examinable while going through the Post-office, unless wrapped in damp paper within the box.

Insects : *W S.* The centipede (or millipede) is the common Julus pulchellus generally found in the roots of decaying vegetables. The small beetle is the Rhyzophagus rufus, generally found under the damp loose bark of trees ; and the small caterpillars may be the species which bores into the corks of wine bottles. *W.*—*D G.* We suppose the leaves of Tropæolum tricolor may be gnawed by woodlice. Place damp moss or slices of Turnips in the angles of the bed, and examine them every morning and destroy the woodlice which will there congregate together. *W.*

Laurels : *Pod.* We never recommend dealers. ‡

Lime : *Questor.* There is no material difference between the two kinds of lime, except that that from oyster shells is the purest.

Mesembryanthemums : *A Lady.* Your cuttings probably had more water than the heat and light, one or other or both, to which they had been exposed would enable them to digest.

Mushrooms : *A B.* Your bed appears to have been properly made, but you have kept it too dry. If you give it a good watering with lukewarm water now, it may possibly produce you a crop yet.‡—*A Y G.* Seven inches in diameter is certainly large for a forced Mushroom.

Names of Plants : *Anon.* 1, Some Crinum, indeterminable from such a specimen ; 2, Rhododendron dauricum ; 3, Andromeda axillaris ; 4, Pyrus Aria.—*D T.* The seed of the common Mango.—*W J.* The Juniper is not in a state for identification ; we, therefore, are unable to answer your inquiry.—*John James.* Acacia conferta.—*T W L.* Clematis balearica.—*R E.* Your specimen is in so withered a state that it is doubtful whether it can be determined. At all events it requires more time than we can possibly spare this week.—*Anon.* Erica herbacea, Clematis balearica.

Orache : *J S and Sons.* No neglect was intended ; but London seemed more convenient for distant correspondents, who probably have agents there.

Orchids : *F D R.* All the species in your list are free flowerers and handsome, nor do any except the Dendrobiums demand unusual heat. For species likely to suit you we must refer you to p. 308 of our last year's volume.

Temperature : *Holkham.* Under inquiry.

Verbenas : *S H H W.* The following six will possibly answer your purpose. Defiance, scarlet ; Mont Blanc, white ; Beauty Supreme, rose ; Imperatrice, Josephine, blue ; Princess Alice, white, with a pink centre ; and Emperor of China, crimson.*

Vines : *A Subscriber.* One Vine for each rafter is quite enough, and preferable to two.‖—*Novice.* We presume you have pruned your Esperione Vine, which you intend to graft ; then all you have to do is to wait till the buds have just burst into leaf, when you may safely graft every spur, or whatever part of the stem you please, without danger of bleeding. ‖

Willow : *Salix.* The Huntingdon Willow is S. Russelliana, we believe. If we are wrong, some correspondent will perhaps correct us.

Misc : *S H H W.* Plants of Campanula carpatica alba may be had of any respectable nurseryman.‡—*P T O.* Prune your Roses now and your evergreens in April. In removing your Pear tree preserve its roots as much as possible. The transplanting will have the effect of sufficiently checking any over luxuriance it may possess.‡

### SEEDLING FLOWERS.

Cinerarias : *R L.* Beautiful in colour, but in its present state a little deficient in shape. It may, however, come better as the season advances.*

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.

EDWARD FURBER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 10*s.* per ton; and for 5 tons or more, 9*l.* 5*s.* per ton, in dock. Sulphate of Ammonia, &c.

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DR. S. NEWINGTON'S PATENT DIBBLES, HAND-HOE CULTIVATORS, DRILLS, and other Agricultural Implements for effecting a more scientific system of cultivation, and insuring more abundant crops. Early orders must be given to ensure early execution. An illustrated Catalogue, &c., may be obtained on application to Messrs. DUFAUR and Co., sole manufacturers, 21, Red-lion-square, London.

FARM TO LET—COUNTY MEATH.

TO BE LET, from the 25th day of March next, the TOWNLAND OF PONDERLOUGH, containing about 198 acres Irish plantation measure, on which stands the Carman's Stage at "The Bush," on the great northern road, within 10 miles of Dublin.

This farm being within two miles of the Dunshaughlin Workhouse, is well situated for the supply of milk to that establishment. The land is also suitable to the growth of Flax and Wheat, and is capable of great improvement in the hands of an industrious, intelligent farmer.

The farm will be let to a tenant willing to employ a proportionate capital in its cultivation, on a lease for such time as may be agreed on, with such conditions as will secure a septennial revision of rent on the market averages, and a full compensation for the increased value at the termination of his occupation. The landlord will also assist in draining such portions of the farm as may be necessary by loan from the Commissioners of the Board of Works.

Application to be made to JOHN MAHER, Esq., Ballinshula, Enniscorthy; FRANCIS MURPHY, Esq., Kilcairn House, Navan; or WM. O'HARA, Esq., 18, Upper Merrion-street, Dublin.—Feb. 15.

NOTICE.

MR. M'INTOSH begs to inform his Friends and the Public, that he has ceased, from the 1st February instant, to edit the HORTICULTURAL DEPARTMENT of the NORTH BRITISH AGRICULTURIST AND JOURNAL OF HORTICULTURE, and has now no further connection with that journal.—Dalkeith Park, February 15.


# The Agricultural Gazette.

*SATURDAY, FEBRUARY* 15, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, Feb. | 19— | Agricultural Society of England. |
| THURSDAY, | — 20— | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, | — 26— | Agricultural Society of England. |
| THURSDAY, | — 27— | Agricultural Imp. Soc. of Ireland. |

IT is now notorious to the world that the *Agricultural Gazette* has at command an inexhaustible fund of poultry lore, and that we are ready to distribute our accumulated knowledge at all reasonable applications; but the drafts made by students of this journal on the stores that are known to be contained in its treasury, are sometimes of so incongruous a purport that we are obliged to give them merely fragmentary replies. Any attempt to weave a whole packet of them into a continuous essay would result in something resembling the "very tragical mirth" of that logical poem, the opening stanza of which is,

"BARNY BODKIN broke his nose;
Want of money makes us sad;
Without feet you can't have toes;
Crazy folks are sometimes mad."

A less isolated motto for discourse turns up to-day in the inquiry, "What breed of Fowls are to be recommended for profit to the farmer; and how is he to get them established in his yard?"

Both for appearance and for profit's sake, it is advisable that the farmer should keep to some one breed. To retain several breeds in their purity requires more personal attention, hired labour, and choice of outbuildings, than he can usually afford. It is best managed by such country gentlemen as have three or four lodges to their park, at each one of which a distinct set of fowls may be maintained, and another or two quartered upon the gardener and the gamekeeper, if the former official will submit to be plagued with them. In this way things will go on satisfactorily, especially if the people can be brought to take an interest in their charges, and perhaps to feel a little rivalry as to whose stud is the best managed. A large farmer may often attain the same object by making a like use of the cottages of his work-people. But that is not the thing which *he* requires. Pure chickens may be had from fowls that *usually* live together in miscellaneous socialism, by secluding the intended parents in an airy outbuilding, and rejecting a few of the eggs first laid by each hen. This plan requires constant attention and a pitiless hand to clear off the many good-looking mongrels that will be constantly displaying their new-fashioned charms in the yard. The farmer had better decide to keep *one* pure breed only of cocks and hens.

"Then, Mr. Editor, which do you advise?"

The advice given must be accommodated to what the farmer *wants*. Are eggs greatly in demand in his neighbourhood, and does he wish to be spared the trouble and expense of rearing many young birds? Then let him take some of the non-sitting breeds. At the head of these stand the black Spanish fowls, and their subvariety the Andalusians; next come the Hamburghs, the races that are so idolatrously worshipped in the midland and northern counties, *i.e.* the Bolton bays, the Bolton greys, the silver moonies, and the copper moss fowls, according to the numerous local *aliases* of the four subraces; last in profitableness among the non-sitters, though not in beauty nor in excellence of flesh, are the Polish fowls. But the Spanish fowls are large birds, and consume a good deal; it is true their eggs are of proportionate size and excellence: but, in the market, an egg is an egg; and we believe that greater *numbers* will be obtained, at the same cost of food, by adopting one of the Hamburghs as the established colonist of the farm-yard; and we beg leave to take the Bolton bays, or golden pencilled Hamburghs, by the hand, and introduce them to the favourable consideration of the farmer and his amiable consort. Whichever breed of non-sitting fowls is selected, the *stock* must annually be kept up by sending out eggs to the neighbouring cottages to be hatched, and paying for all reared a certain amount of head-money at an age agreed upon.

If Madame the *Fermière* can see to the rearing of a good many broods, and has three or four rosy-cheeked sons and daughters to assist her in the amusement, besides a boy and a maid to do the heavier work, then let one of the off-incubating breeds be destined to people her barn-door paradise with a philo-progenitive set of inhabitants. She may honour the Dorkings and the Surrey, or the game fowls, or the Cochin Chinas with her preference. There cannot be a better sort for the farmer than the family of Surrey fowls known as the cuckoo fowls. They are somewhat dull and quaker-like in plumage, and inactive in their movements—so much the better; the fowl-stealer cannot spy them out so well in the dusk, and they fatten famously, besides being good layers, sitters, and nurses, and in short possessing every gallinaceous virtue. Game fowls are more beautiful, and are equally good *parents;* their flesh too is delicious, but it wants the weight of the cuckoos, and is apt not to dress so white for market. The cocks, as they get old and jealous, are very prone to kill the other male occupants of the poultry-yard, such as turkeys, guinea-fowl, and even drakes, if they fancy themselves insulted. They are more suited to the lodge, the dog-kennel, the coach-house court, or the cottage ornee, than they are to the farm-yard, to which, when very good, they are apt to give a sort of sporting or even flash look. It must be confessed that they are often birds of great beauty; but the quiet cuckoos are much more business-like.

The Cochin Chinas are as yet more in the hands of wealthy amateurs and exhibitors at poultry shows, than available for farmers as a *main crop* of fowls. The prices asked for specimens that have been cried up by the fancy are, what shall we say? Exorbi—very high indeed. Still we have seen one farm-yard entirely peopled with them; the effect was good, the result stated to be satisfactory. A difficulty in advising the farmer about them lies in there being two or three somewhat different races imported from the East, each asserting that they alone have a right to the title of Cochin Chinas, and that the others are false pretenders, mere bastards, who must yield their claims to the legitimate representative of the house of Cochin China. These disputants have several marks in common, and several merits. They are all excellent for the farmer, if he will but keep his own set pure, though they are a sad bone of contention between breeders, and dealers, and customers, and exhibitors, and those unhappy mortals whom all the rest join in badgering—the judges at the poultry shows; a set of people who ought to think themselves happy if they are spared the compliments lately paid to HAYNAU in London. But, we repeat, each of these competing breeds have their great and not very dissimilar merits; all they want to settle down amicably, is a separate title, which, as the poultry kingdom has no acknowledged sovereign, it is not easy for any dealer or writer to guarantee and ensure, even if he feel justified in conferring it. Each of these varieties have been imported from Shanghae, and each probably from Cochin China and Java. If one sort would be content to be called Cochin China and the other Shanghae fowls, and another Java, if another proves distinct, all would go on smoothly. The breeds would have their claim to favour acknowledged, instead of being in turn depreciated by each other's advocates. In Mr. DIXON's second edition, two are described in an extract from an American correspondent:

"Some say here that the QUEEN of England's fowls came from Shanghae. I will give you some idea of the bloods I have at present. I have two varieties, if not breeds, imported in 1847, direct from the city of Shanghae; the one in the American ship Huntress, the other in the ship Tartar. They differ somewhat from each other; one being almost smooth-legged, the other heavily feathered on the legs. The colours differ; the smooth-legged being all, the cocks some shade of yellow or red, the hens some shade of bay; these weigh—the cocks when grown, 9 lbs.; the hens, 6 or 6½ lbs. [And a most useful and valuable breed they are.] The heavily feathered on the legs differ from the above as to weight; the full-grown cock will weigh 12 lbs., and the hen 8 lbs. As to colour, the cocks come, about one-half of the number, a reddish *Dominique*, the other half red with some black intermingled. Eggs of both kinds very much alike; the colour a reddish yellow, and would weigh from 2½ to 3 oz. each. *J. J. K.*"

Mr. BAILY, of Mount-street, Grosvenor-square, who deservedly stands very high in his trade, has favoured us with *his* description of what the Cochin Chinas ought to be (or what ought to be Cochin Chinas); and he feels sure that he is correct, as he has taken every opportunity and gone to some expense to see the best *imported* fowls, and from those he has formed his judgment.

"The principal features of a pure Cochin China fowl, are a small fine head; red, thin, and skinny face; diminutive, erect, single comb, rising from immediately above the nostril; large body, and very deep from the back downwards; the outer part of the wing concealed by the covering of the breast feathers; the flight of the wing turned in under the middle feathers, and the extremities of them all tucked under the saddle feathers. Scarcely any tail; a few projecting feathers in the hen, and a little tuft turning over like the ostrich in the cock but nothing erect, or sickle fashion, like other cocks; great rotundity behind, composed of *fluffy* feathers; the thighs are also covered with the same, giving them the appearance of great size; the legs are yellow and feathered; more distinctness of anatomical division through the feathers, than in any other fowl."

The farmer and his lady having held a committee, to which, perhaps, the dairy-maid and the bailiff have also been summoned, and having decided what breed of fowl will best fulfil their requirements, must themselves go to market for a cock, and three or four hens of the purest blood, sparing no expense, and applying to a respectable and trustworthy vendor. This is not the place to insert an advertisement; and if it were, we have found the office of recommending buyers and sellers to each other, so thankless, as to be glad to escape it, whenever possible. The same reserve must be maintained here as to prices. The founders of the new population are arrived; they will be provided with some temporary, but very convenient aviary accommodation; and then comes the task, which requires a stern purpose to execute efficiently. Of all the cocks and cockerels on the farm, a merciless Mameluke massacre, or a hopeless transportation for life, must be made *instanter*. Ditto of all the old hens and immature pullets that cannot be warranted to turn their hand cheerfully to the nursing line. By consuming *their* eggs, and making *them* hatch all those produced by the usurpers in the aviary, at the end of the summer the new race will be established, and the nurses themselves must then each be served with a *lettre de cachet*. And in carrying out this exterminating process is often found the stumbling-block, which renders all previous care nugatory, and purity of blood impossible. Miss Mary's dear little hen, or Master Tommy's bantam, or those two or three pretty fowls that the great lady let us have the eggs for, or cook's chicken, that was left her as a legacy by her grandmother, are pleaded for with the earnestness of despair. It is so cruel to make away with *them* darling birds! What harm *can* two or three do? Only four or five, perhaps, at most! Miss Mary cries, Master Tommy sulks, Mamma looks injured and heart-broken, cook gives warning; the farmer cannot stand all this at once; he relents, the bantams knock the cuckoo cocks heels over head, cook's chicken brings out some beautiful cross-breds, and the yard of fowls is spoiled!

## A WORD IN SEASON; OR, HOW THE CORN GROWER MAY YET GROW RICH,

Is the title of a little pamphlet, which I would earnestly recommend to the attention of farmers and landowners. It gives an account of a system of agriculture, attended, as I can bear witness, with extraordinary success; I have had the pleasure of seeing it in practice, and I consider, whether I view it in the light of a tenant farmer, anxious to gain the largest returns at least cost, or of a landowner, desirous to encourage a practice which shall permanently improve the soil, I have never inspected any cultivation more deserving of attention.

I am not going to give the author credit for novelty, for Jethro Tull advocated the principle 100 years ago, and the advantages to be gained from deep culture have been well shown by others; nor am I wishing to bring forward the practice there laid down as the one best suited for farmers' adoption. All I wish to do is, to draw attention to the advantages gained from deep cultivation and frequent moving of the soil, for my own experience in farming has taught me to look with distrust at the pains many are taking to impress upon arable farmers the necessity for placing their chief dependance on stock keeping, to give them the means to profitably grow corn, for I have ever found the losses from stock kept upon the produce of arable land, largely interfered with the profits from cultivation; and as I, too, have experienced, and on a large scale of farming, how much the occasion for manure to grow corn may be lessened by deep and good cultivation, and how much larger my profits grew as my occasion for manure became less, I introduce with much pleasure the work to your readers.

To give the confidence which is so much wanting on introducing new systems, I begin with drawing attention to the author's very satisfactory balance-sheet, showing the cost of growing an acre of Wheat, with the return which he has obtained from land where he has grown Wheat, without manure, for five successive years, the return given being the last year's:—

THE OUTLAY.

| | | | |
|---|---|---|---|
| One double-digging of the fallow ground, being two feet of every five feet ... ... ... ... | £ | 1 | 10 | 0 |
| Two single forkings ... ... ... ... ... | | 1 | 0 | 0 |
| Pressing, sowing, hoeing, carrying, threshing, and rates ... ... ... ... ... ... | | 2 | 1 | 0 |
| Seed, two pecks ... ... ... ... ... ... | | 0 | 2 | 6 |
| | £ | 4 | 13 | 6 |

RETURN.

| | | | |
|---|---|---|---|
| Wheat, 4 quarters 2 bushels, at 40s. ... ... | £ | 8 | 10 | 0 |
| Straw, 1 ton 12 cwt., at 40s. ... ... ... ... | | 3 | 4 | 0 |
| | £ | 11 | 14 | 0 |

Now, if we add to the charges 40s. an acre to cover rent and interest of capital, and 40s. an acre more for provision for contingencies and dressing (for I would not encourage the idea that land can be farmed for ever without dressing), a net profit of 3*l.* 0s. 6*d.* per acre, per annum, remains; and this is gained by cultivation, which permanently deepens the staple of the land.

The practice which has given this extraordinary return is as follows:—The ground is laid out in stetches of five feet, each of which is thus appropriated—one-half is given to growing three rows of Wheat, at intervals of one foot. The other half is left to admit of being worked as follows: as soon as the young Wheat shows, this part is trenched two feet deep, and to within six inches of the young Wheat. The top soil being placed undermost and the bottom uppermost. In this state the wide intervals lie all the winter exposed to the action of frost and atmospheric changes, which are so beneficial to newly turned-up earth. In the spring, this space is again turned over with the fork one spit deep, and has the cultivator run through it as often as the incrustation of the surface calls for it. In this period, so long as the growth permits, the young Wheat receives several horse hoeings. As soon as the Wheat is harvested, the fallowed space is again turned over with the fork, and levelled, and channels are made by a three-wheel presser to receive the seed, which is carefully dropped, grain by grain, three inches apart, at the rate of two pecks per acre. In this way upwards of four quarters of Wheat have been grown from the same land, and without manure, for five successive years. By this simple process, with nothing beyond the use of a simple cultivator, the spade, the fork, and the presser, has the same acre of land been made to pay back so bountifully for the farmer's labour; the fertility has been gained from the decomposing action of heat and cold, wet and drought, wind and rain upon the well tilled intervals, which, at the same time, has been gathering the treasures of nitrogen, ammonia, and decomposed organic matter, the descending rains carry into the substrata made pervious by the deep tillage. When we reflect on the identity of the constituent of grain, with the matter afforded by decomposed soils, or supplied from water and the atmosphere, it will not appear surprising after this wintering and summering under deep and constant exposure, that the teeming earth should so soon be ready to receive the seed; but I must not trespass further. The little book may be had of James Ridgway, Piccadilly, and the farming may be seen by application to the Rev. S. Smith Lois, Weedon, near Towcester, Northamptonshire. There can be no doubting of the practice or the return, for it is in any one's power to see the former, and, as to the latter, I privately saw the farmer in whose barn the corn was threshed, and who assisted to measure it; and unwilling as farmers generally are to admit of facts that tell against their own practice, he neither questioned the accuracy of the labour, nor the returns, nor disputed the advantages; but simply, and with astonishment, told me "he knew it was all true." There is a recommendation of this plan of farming which I must not omit to allude to, for in this appears one of its greatest merits to the very worthy gentleman who has taken such pains to spread the practice. The hand labour it calls for would give employment to our rural population through the winter; and knowing how desirable is this, and how readily the system may be applied to small holdings, the little capital it calls for, and its simplicity, I hope many others will follow the example of Mr. Smith; and with Jethro Tull in hand, and Mr. Smith's practice in their eye, will establish their example farms, and become teachers of truths which as yet are unknown to some of the honourable members of the Royal Agricultural Society. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London.*

## Home Correspondence.

*Quality of Hides.*—The observations of the correspondent of the *Morning Chronicle*, which you quote in last week's *Gazette*, can only excite ridicule in the minds of a tanner or currier. As a practical currier of 20 years' experience, I can without hesitation confirm your general view of the question. The matter may be of small importance to the farmer, for though an advance of 30 per cent. has taken place in hides, no portion of it has found its way into his pocket; but, where such absurd and careless statements are made, it is desirable that they should be exposed, that the public may receive with caution similar announcements. The statement that "if an animal has been forced (I presume highly fed), it will be unequal, thick in the butt and thin in the shoulder," is directly the opposite of the fact. Every tanner or currier, who has the misfortune to come into the possession of the hide of a prize beast, knows it is as deficient in substance as in quality. I have now in stock a hide from one of Prince Albert's prize animals, and there is not a piece of thick leather in it. This hide, like most of a similar character, disproves your statement, that hides are "pretty equally greased throughout;" a portion near the tail (at least a superficial yard) is rendered comparatively worthless by saturation with fat. I have not unfrequently been able to squeeze out the grease from such hides after tanning; and where this is the case, no length of time or strength of liquor will enable a tanner to convert such material into good leather. I think also, with great submission to your authority, that the distension of the hide by full feeding does diminish the substance. Your suggestion, that the animal, by turning his tail to the storm, thickens the hide in the butt, is an ingenious mode of accounting for what is certainly a physiological fact; for all my experience confirms your opinion that the hides of such animals are the most irregular in substance. A thin, bad shoulder is the usual characteristic of the skin or hide of an ill-conditioned animal. In the breed, however, we find the greatest influence upon the pelt; and the change which has taken place in this particular has almost revolutionised the trade. In this county, for instance, where the old long-horns almost exclusively prevailed, we had the best hides in England for substance; and I have heard my father say that they had at one time great difficulty in supplying thin leather. Now it is completely reversed. The best hides, as proved by current prices, are from the West of England. Climate also appears to have much influence: the Cornish hides are of the finest grain, in some cases being hardly inferior to calf-skins in texture; French hides have the same superiority, and, in comparison with the inferior Welsh and Irish, are not more dissimilar in character than the beasts which produce them. I must apologise for the length of these observations, which I have endeavoured to limit to that part of the question which interests your readers. *J. S. Whitten, Coundon, near Coventry, Feb. 6.*

*The Labourers in Agricultural Districts* deserve the sympathy of the public on many accounts, and certainly their patience under poverty and hard fare is not one of their least virtues. The idea of striking out any plan which may generally improve their condition is one which cannot be carried out, so much depends upon the locality in which they reside, and the masters for whom they either work or should work. The formation of a society for the purpose of finding profitable employment for the poor might be attended with advantage, if properly organised, in every parish, but is met by the objection that a company not looking for gain would undersell the farmer and gardener, and thus injure a class already reduced to the lowest scale of emolument to be obtained from the cultivation of land. So far from damaging the interests of the farmer, a society of the above description would relieve the rates from a number of able-bodied paupers who are now provided for without making any return to the public purse. Men are disinclined to lay out money unless they can touch a sure per centage for time, trouble, and capital expended; they are not satisfied with an indirect benefit proceeding from their exertions. Would it not be better for an individual, in tolerably comfortable circumstances, to expend 10*l.* in labour on his property, although he could only anticipate receiving back again the same sum, without interest, than paying one-half the amount in rates, encouraging idleness, and losing his money? This is no imaginary case, but one of daily occurrence, and may truly come under the old saying, "Penny wise and pound foolish." Suppose that in making work for the labourer a portion of the money expended should not return to the master, yet he would be a gainer by promoting industrious habits amongst the poor, and rendering them independent of the Union, which takes so much out of the agriculturist's pocket, because he will not consult his own interest, and keep the collector from his door, by thoroughly cultivating his land; but whilst advocating the cause of the husbandman, it must be confessed great disappointment is too often experienced by those anxious to improve the condition of their neighbours, by a disinclination on the part of the labourer to do justice to his employer, scrambling over his task, and caring little how it is executed, if not well looked after. This may be, and no doubt is, in a great measure the fault of early education, and the want of proper management on the part of the parents, and the great want of occupation for lads after they leave school. Nothing tends more to diminish crime than an abundance of employment, which the statistics of the country will verify. The value of spade husbandry having been proved, particularly upon clay lands, why should it not be practised to a great extent, as, after all, the expense of digging 15 inches deep is not greater than ploughing 6 inches with a dressing of manure, and the former will, if turned up in time, bear the heaviest crop. Farmers may have some difficulty in collecting a sufficient number of men to dig their land, when they require a few acres prepared for root crops, and may not have time personally to attend to the work. This might be obviated by establishing gangs with a responsible headman to contract for the job at so much per acre, a certain depth of soil being moved. It is almost impossible to lay down decided rules applicable to all localities, but general hints may be given which may induce men of influence to exert themselves in promoting the welfare of the labouring classes, although it may cause more trouble than profit—the latter appearing in the conduct of the men, making them more respectable and trustworthy, in proportion to the interest evinced towards them by their superiors in wealth and position. *Falcon.*

*Smithfield Market.*—Human beings living in large towns are too much absorbed in business, or pleasure, to think about anything which does not immediately touch upon their particular occupations or fancies—hence few trouble themselves to inquire from whence the food comes, or what misery the animals may endure before the joints are placed on their tables. Of course it would not answer any good purpose, if the exit of every sheep and ox was lamented over; they were created to serve as food for man, and their ignorance of this fact renders their lives happy, provided they are treated with common humanity. It would not require any great research to prove that it is more expensive to torture brutes than to use them kindly. However, it appears the contrary is attempted to be proved, by the strenuous exertions made to continue Smithfield market. Surely the public must be permitted to have a voice on this important point, and one of such vital interest to all classes, more particularly to those whose purses will not allow them to purchase meat from first-class butchers. Do those who sit down to the sirloin and haunch ever picture to themselves the unnecessary misery the ox and the sheep endured, before they supplied the smoking dishes? or how many of their companions, belonging to the same flocks, were, by ill usage, rendered only fit (or rather unfit) for the sausage and preserved meat manufactories? Supposing Smithfield could be enlarged so as to give an extra inch to unfortunate bullocks, it cannot be increased in area, as the people multiply; and if twenty acres could be added to-morrow, a few years would make the nuisance more intolerable than ever, by congregating a greater number of quadrupeds in the centre of the metropolis, without the possibility of again stretching the market, independent of the injury to the health of the inhabitants of London, which loudly calls for its extermination. The short time it can last, even if doubled in size, ought to induce those who advocate the continuance of Smithfield to change their opinions, for the sake of persons who may be inclined to expend money, on what must one day become extinct, and sooner than most people anticipate, in spite of all improvements. London, with two millions of inhabitants, should have four capacious abattoirs, after the French plan, where animals should be slaughtered and carried through the streets as beef and mutton, instead of goaded and hunted through the thoroughfares as oxen and sheep, maddened by fever, and their corrupt carcases sold to feed our fellow-creatures, propagating disease and death to a fearful extent. Should any one doubt the result of eating unhealthy meat, let him for one day try the experiment, and he will then feel convinced of the awful consequences that must follow where people are in the habit of partaking of this disgusting and dangerous food. Perhaps some farmer who is in the habit of supplying Smithfield market with live stock would be kind enough to furnish a history of twelve months' experience of the advantages and disadvantages of sending his animals into a crowded space in the heart of the metropolis. The opinions of men who can relate facts on their own knowledge, having probably suffered in their pockets, will be worth all the anonymous statements that can be collected. Let salesmen point out the losses sustained by the present system, and the public voice may then compel an influential press to treat the subject with a full determination of extinguishing the nuisance. Or are we to wait till a few more lives are sacrificed, and the mortality increased, the former by the horns and hoofs of infuriated bullocks, and the latter by the unwholesome carcases, disguised, and devoured by the poorer classes? The idea of increasing the sanatory condition of London, by draining, and at the same time feeding the people on bad provisions is odd. *Falcon.*

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday last, the 12th of February; present, Mr. PUSEY, M.P., trustee, in the chair; Lord Ashburton, Hon. Dudley Pelham, M.P., Right Hon. Sir James R. G. Graham, Bart., M.P., Right Hon. Thomas Francis Kennedy, Sir Thomas Dyke Acland, Bart, M.P., Sir Thomas Tancred, Bart., Sir

Robert Price, Bart., M.P., Mr. Alcock, M.P., Mr. Raymond Barker, Mr. Bramston, M.P., Mr. Burke, Mr. D. Burton, jun., Dr. Calvert, Mr. Pole Carew, Colonel Challoner, Mr. Christopher, M.P., Mr. Clavering, Mr. Commerell, Mr. Layton Cooke, Mr. Dyer, Mr. T. B. Evans, Mr. Foley, M.P., Mr. R. Fox, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Leveson Gower, Mr. Hamond, Mr. Fisher Hobbs, Mr. Jacson, Mr. Langston, M.P., Mr. W. Long, Mr. Maddison, Mr. Magendie, Mr. Marshall, M.P., Mr. Wykeham Martin, Mr. Miles, M.P. (Leigh Court), Mr. W. Mundy, Mr. Ralph Neville, M.P., Mr. C. E. Overman, Mr. Paynter, Mr. Pendarves, M.P., Mr. C. Pocock, Mr. D. Pugh, M.P., Captain Rushout, M.P., Professor Sewell, Mr. Villiers Shelley, Professor Simonds, Mr. Slaney, M.P., Mr. Augustus Smith, Mr. Stansfield, M.P., Mr. H. Strafford, Mr. Spencer Trower, Professor Way, Mr. Wilson (Stowlangtoft), and Mr. Wrightson, M.P. Among the distinguished visitors present (not being members of the Society), were Sir George Grant Suttie, Bart., Mr. Macartney, LL.D., Vice-President of the Flax Society of Ireland, Dr. Cooke, Professor of Chemistry and Mineralogy in Harvard College, America, Dr. Ryan, and Mr. George Hoare.

The following new members were elected :

Marjoribanks, Edward, Fawley Court, Henley-on-Thames
Bell, Matthew (High Sheriff for the county of Kent), Bourne Park, Canterbury
Rixon, Wm. Augustus, jun., Carshalton, Surrey
Ainslie, Rev. Robert, Tromer Lodge, Down, Kent
Taylor, John, Burnfoot House, Wigton, Cumberland
Reynolds, James, Lea-bridge-road, Leyton, Essex
Hamilton, William, Orchard Place, Canterbury
Browning, Edward, Bulmer Kitchen Farm, Sudbury, Suffolk
Dennis, John Charles, Rosebrough, Alnwick, Northumb.
Borton, John Barton-le-Street, Malton, Yorkshire
Carden, Captain, 13, Cumberland-terrace, Regent's Park
Kinglake Arthur, (banker), Taunton, Somersetshire
Searby, John, Foith Bank, Boston, Lincolnshire
Sandford, Mark, jun., Martin, Dover
Bramley, Charles, Westville, New Bolingbroke, Lincolnshire
Rayer, William Carew, Tidcombe, Tiverton, Devon
Morgan, Thomas, Maesgwrda, Laugharne, Carmarthenshire
Cornes, James, Barbridge, Nantwich, Cheshire
Maybery, Rev. Charles, Rector of Penderyn, Brecon
Hulton, James Dott, Islington-hall, Lynn, Norfolk
Stephens, John, Wilton, Taunton, Somersetshire
Howell, Francis, Ethy, Lostwithiel, Cornwall
Trevelyan, Sir Walter Calverley, Bart., Nettlecombe, Taunton
Wilson, Stephen, Boakfield, Ballitore, Ireland
Bland, Nathaniel, Leathernead, Surrey
Langton, Capt. Edward Gore, Stapleton-park, Bristol
Toplis, James, Bernard-street, Russell-square
Peel, Lawrence Henry, Llanstephan, Radnorshire
Sharpe, William, Copthall, Epsom, Surrey
Savery, A. B., Hardwick-lodge, Chepstow, Monmouthshire
Chapman, James, Tontine-street, Folkestone, Kent
Jackson, Thomas, Eltham-park, Kent
Mangles, George, Givendale-grange, Ripon, Yorkshire
Serrell, Sheffield, Leeson-house, Swanage, Dorsetshire
Carnegie, W. F. L., of Boysarth, Kinblethmont-house, Arbroath, Forfarshire
Evans, George, Wimborne, Dorsetshire
Hood, Alexander Acland, St. Audries, Bicknoller, Taunton
Webber, Henry, Park-hall, Bromsgrove, Worcestershire
Dunn, Thomas, York-gate, Regent's park, London
Orde, Sir John Powlett, Bart., Kilmorey, Lochgilphead, Argyleshire
Firmin, Harcourt, Stratford-hills, Colchester, Essex
Campbell, Alexander, Achindarrock, Argyleshire
Walker, Lawrence, 46, Welbeck-street, London
Newton, Robert Pillans, Halyburton, Coupar-Angus, Fifeshire
Broadmead, Philip, Milverton, Somersetshire
Thompson, Frederick, Sheriff-Hutton Park, York
Balmer, Thomas, jun., Goodwood, Chichester
Dearsley, Henry Richard, 3, Plowden-buildings, Temple
Yeoman, Thomas Lawrence, Richmond, Yorkshire
Lewis, Rt. Hon. Sir Thomas Frankland, Bt., Hampton-court, Herefordshire
Sergeaantson, George John, Camp-hill, Ripon, Yorkshire
Prosser, Francis Wegg, M.P., Belmont, Herefordshire
Baxter, Henry John, Brook-lodge, Cheadle, Cheshire

The names of seven candidates for election at the next meeting were then read.

FLAX-COTTON.—The CHAIRMAN informed the Council, that in consequence of the great interest, in a national point of view, attached to the recent discoveries of M. Claussen in rendering Flax subservient to the purposes of cotton, and the importance to the farmers of this country of every fact affecting the cultivation of Flax ; he had requested that gentleman to favour them with his attendance on that occasion, in order that he might explain to those members present his views on the subject of the increased demand that might possibly arise for the article of Flax by the British manufacturer, in consequence of the facilities offered by his new process, for adopting it to purposes of a more general character, and the greater attention the Flax crop would deserve on the part of the agricultural community, reserving to a further meeting the opportunity of detailing to the Council the chemical and mechanical processes by which Flax is converted into a substance possessing for manufacturing purposes all the properties of foreign cotton. The Chairman hoped that this discovery, if found to be equal to the expectation formed of it, might, perhaps, constitute a new bond of union between the farmer and the manufacturer of this country. He need scarcely add the caution, that the Council were not responsible for the opinions which might be laid before them on this subject, as their own rule, like that of other similar bodies, guarded them from any danger of misapprehension on that point. The statement of M. Claussen would rest on its own merits, or otherwise ; and they were obliged to that gentleman for favouring them with his views on the subject, at their first weekly Council of the session, and previously to the final enrolment of his specifications.

The Chevalier CLAUSSEN, attended by Mr. Edward M'Dermott, Mr. J. S. Christopher, of Gresham-street, Mr. Thomas Graves, Dr. Ryan, and Mr. C. J. Pownall, were then introduced to the Council, when M. Claussen stated that as he feared he should not be able to make himself sufficiently intelligible in English, he had requested his friend, Mr. M'Dermott, to draw up a paper on the general question of the cultivation of Flax, which, with the permission of the Council, that gentleman would read ; after which, he and other of his friends would be happy to afford the Council such information, as to his process, as the circumstance of his not having finally enrolled his specification would be prudent for him to state. Mr. M'Dermott then read the following paper :

## REASONS IN FAVOUR OF AN EXTENDED CULTIVATION OF FLAX AND HEMP IN THE UNITED KINGDOM.

My object, gentlemen, in reading the present paper, at the request of your esteemed Chairman, is to submit to you, and through you, to the great agricultural body of England, a few facts bearing on the importance and advantage which, in a national and individual point of view, would result from a more extensive cultivation of fibrous plants in this country. In venturing humbly to submit these facts and opinions to so important and influential a body of gentlemen as those who compose the Council of the Royal Agricultural Society, I am far from wishing it to be understood either that I conceive them to be ignorant of many of the facts which I shall have occasion to adduce, or that the subject of Flax culture is one to which they have not already paid some considerable attention. On the contrary, many of the valuable reports of your Society, and the prizes given for Essays on the subject, prove that it has at various times engrossed your consideration, and formed the theme of serious deliberation at your Councils. Market's comparatively undeveloped ; ignorance of the true character and structure of the plant ; prevalence of modes of cultivation and preparation of the fibre, wasteful and injurious in themselves, and attended with an enormous amount of risk and trouble to the grower, have, hitherto each had their weight in inducing your Society to withhold its valuable recommendation in favour of an extension of Flax culture.

The progress of science, and the skill and enterprise displayed by many of the agriculturists of England and of Ireland, have, however, now placed the matter upon a perfectly different footing, and upon one which I venture to submit should induce the Royal Agricultural Society, in the most strenuous manner, to urge upon the farmers of the United Kingdom the propriety of immediately devoting some portion of their land to the cultivation of Flax.

CLIMATE AND SOIL OF ENGLAND SUITED TO ITS GROWTH.—That Flax *can* be produced in this country is a point upon which I apprehend little doubt now exists ; and it is unnecessary for me, especially before such a body as that which I have now the honour of addressing, to argue such a question. Suffice it, therefore, upon this point, to say, that in many respects our climate is better adapted for its growth than even Belgium, inasmuch as we are not subject to those severe droughts which, occurring in the spring, in that country, frequently inflict very serious damage upon the young crop. Flax is grown, to some extent, in almost every part of the United Kingdom—it has been grown with success upon an Irish bog, and in the fen districts of England—on the summit of the Wicklow mountains, and upon the Beacon-hill of Norfolk, in the midland counties of England and the western shores of Galway and Mayo, upon rich and poor, clayey, gravelly, alluvial, and every variety of soil.

IMPORTANCE ATTACHED TO GROWTH OF FLAX BY GOVERNMENTS.—This suitability of our climate and soil, to the production of Flax, and the importance which in earlier times was attached to it, is sufficiently evidenced by the numerous legislative measures which at various times, from the reign of Henry VIII. to that of George III., have been passed in order to promote and encourage its growth. The "Transactions of the Board of Agriculture" for 1742, contain a letter, written by Robert Somerville, Esq., of the East Lothians, in which the writer regrets, notwithstanding these encouragements and the bounties offered by the liberality of the Government, that the cultivation of Flax should then have been so extremely limited, and the management in every stage, both of its culture and manufacture, so very defective.

"This," he says, "is the more to be regretted, as there can be little doubt that immense quantities might be raised in Britain with little labour, and that, too, upon soils where hardly anything else will grow. The accomplishment of an object so truly desirable as that of the extended cultivation of Flax, would be attended with the most salutary effects, by affording employment for an increased population, and materially lessening *our dependence upon foreign countries.*"

But if, upwards of a century since, great importance was attached to this subject, on the ground of *increased population and dependence on foreign countries*, of how much greater importance and advantage ought it not to be considered at a time when our population is more than doubled, and our *consumption of cattle food*, formed from Flax seed, and of raw material for our manufactures, have increased to an extent which, a *century* since, would have been considered fabulous and incredible ; and at a time, too, when our railways and improved means of transit give such increased facilities to the grower for the disposal of his produce.

MARKETS.—In urging upon the agriculturists of England the propriety of an extended cultivation of Flax, I am anxious first to show them the enormous extent of the *existing markets* for their produce, which is now almost exclusively engrossed by the foreign producer ; and the vast demand which is now opening up, in consequence of the recent discovery by which Flax may be employed in our silk, woollen, and cotton manufactures ; and which, if not speedily secured by our home producer, must in like manner, be supplied by the foreign grower. The markets which at *present* exist for Flax are twofold in their character—agricultural and manufacturing. Under the former are comprised those large quantities of oil-cake, and of Flax seed for sowing and crushing purposes, which are annually consumed in this country.

OIL-CAKE.—Upwards of 70,000 tons of oil-cake are annually imported, the value of which exceeds 500,000*l.* The whole of which might be produced by our agriculturists with the most perfect ease, and with profit and advantage to themselves. In connexion with our supply of foreign oil-cake, it is worthy of remark, that by far the larger proportions are sent from those countries which are the largest exporters of cattle to this country. By the almost total neglect of the cultivation of Flax our farmers are thus placed in the anomalous position of *dependence upon those countries* for the supply of food for their cattle, which compete with them in our markets, and in several instances we are actually compelled, in addition to the price set upon the cake, to pay a considerable duty imposed by the Government of the exporting countries.

FLAX-SEED FOR CRUSHING.—From *Russia* we import annually half a million of quarters of Flax-seed, the value of which is upwards of a million sterling. Our total imports of Flax-seed for sowing and crushing, from all countries, in round numbers, is about 650,000 quarters, the value of which, at the low price of 7*s.* per bushel, is 1,820,000*l.* There is no reason whatever why this large sum might not be annually saved to the pockets of our agriculturists, nor why the makers of linseed oil should not be supplied exclusively with home grown seed for the purposes of their manufacture. The cultivation of Flax at home, *if only for the seed*, would render our oil-pressers independent for their supply upon foreign countries, and would give to our agriculturists a return of upwards of 2,000 000*l.* annually. It would also give them an article more valuable for cattle food than the oil-cake purchased from foreign countries, and which consists of the mere refuse and husks which remain after the expression of the oleaginous properties from the seed ; or if it should be preferred by some still to use cake, the seed could be sold to the "oil-presser," and the grower might fatten his cattle upon cake produced from home-grown instead of from foreign Linseed.

SOWING SEED.—With an increased cultivation of Flax at home, we should also be spared the dependence upon foreign countries for our supply of seed for sowing purposes, and which we now import to the value of some 200,000*l.* per annum ; for it is absurd to suppose that flax can only be grown in this country from foreign seed. The reason for this opinion being no doubt traceable to the prevalent mode of pulling the Flax before fully ripe.

MANUFACTURES.—Passing on, however, from the agricultural demand which exists for the production of the crop in the shape of *seed*, I will now call your attention to the existing market and the sources of supply for the *fibre* of the plant required in our manufactures. It cannot fail to be a matter of deep regret to every well-wisher of his country, that in the two main branches of our textile manufactures we are so completely dependant for the supply of the raw material upon foreign countries. Our cotton manufactures, absorb, *daily one thousand tons* of cotton wool, the produce of foreign countries alone. For our supply of cotton, we must, no doubt, still continue to be dependant upon foreign countries, inasmuch as the material cannot be produced *at home* ; but there is every reason to believe, that by the adaptation of Flax to cotton machinery, this extent of dependence will in future be considerably less than it has hitherto been, provided our agriculturists will but come forward in earnest and endeavour to supply the new demand for their produce thus created. Our linen and other manufactures in which Flax is employed, are all but completely dependant upon foreign countries for their supply, and of the 100,000 tons now annually consumed, not more than one-fourth is produced in this country. The total value of the Flax fibre imported for manufacturing into linen, sail cloths, tarpaulings, rick covers, sacking, and other materials, exceeds 5,000,000*l.* annually ; and there is no doubt, judging from the rapid progress of our linen manufacturers, that if the supply of the raw material could be more readily obtained at home, the consumption would be increased to a still greater extent. The progress of the linen trade, in consequence of the great improvements which have been made in machinery, has within the last 20 years been almost unparalleled. The exports of linen have increased since that time from 50,000,000 to 105,000,000 of yards, and its declared value from 1,700,000*l.* to upwards of 3,000,000*l.* No attempt whatever has been made on the part of our agriculturists to meet this enormous and rapid increase in the demand for the raw material ; and as a consequence, the foreign producer has been reaping a golden harvest from the monopoly which he has possessed. The imports of foreign Flax have increased from 936,000 cwts. in 1831 to 1,800,000 cwts. in 1842. The value of the *increased* imports being not less than *two millions and a half*, nearly the whole of which is paid for in money sent out of the country.

HEMP.—We also import large quantities of Hemp, which might, like Flax, be easily and profitably grown at home. The value of the Hemp annually imported is about 1,500,000*l.* We have thus a demand existing for Flax and Hemp, and for the supply of which we are dependant upon foreign countries, shown in round numbers, by the following figures :

| | |
|---|---|
| Flax fibre | £5,000,000 |
| Seed for crushing | 1,800,000 |
| ——— sowing | 200,000 |
| ——— Oil-cake | 600,000 |
| ——— Hemp | 1,500 000 |
| | £8,800,000 |

NEW MARKETS.—Hitherto I have spoken only of the *existing markets*. I am now anxious to call your attention to that great demand which will be opened up by my discovery of the mode of adapting flax to cotton and woollen machinery. The substitution of flax for cotton is now no longer a matter of doubt. Recent experiments at Rochdale have completely set that question at rest. Important as may be the considerations connected with the present linen manufactures, and cogent as may be the arguments deduced from them, in order to induce you to obtain possession of the ground now occupied by the foreign producer—infinitely more important, and far more forcible, are those which may be drawn from the prospective demand now springing up in our cotton manufactures. The consumption of the raw material must of necessity be governed by the machinery which exists for its manufacture, and the spindles of Belfast, of Dundee, and of Leeds, are already supplied with the produce of foreign countries. Not so, however, with respect to flax and its adaptation to the cotton manufactures. Millions of cotton spindles are ready at once to take to the new material and spin it for you, without the slightest alteration being required in their arrangement. A thousand tons of cotton daily, or 770,000,000 of lbs. annually are consumed in our cotton manufactures, and the result of my recent experiments has been such as to show that flax may be substituted for one-half at least of this amount. In order, therefore, to supply the *new demand* for a *new material* thus created, the produce of 2000 acres will be required for each day, and the whole of the Flax grown in the United Kingdom does not amount to more than one-seventh of the supply required for Manchester alone. It is a duty imperative upon the agriculturists of the country to endeavour to meet this enormous demand, and not to allow it to pass into the hands of foreign countries, which will inevitably be the case, if they do not immediately exert themselves in this respect.

WOOL.—But not Manchester alone, but the woollen districts of England await with anxiety an increased supply of Flax which shall be available for the purpose of spinning in combination with wool, upon the existing wool machinery. I will not trouble you with statistics upon the subject of our woollen manufactures. The population of Leeds, Bradford, and other towns in the woollen districts, are kept in a state of prosperity by the employment which it affords ; and the introduction of Flax into that particular branch of our manufactures would have the effect of reducing the price of the material by 25 per cent., and of giving an increased amount of employment in those districts. A firm in Bradford has already taken steps to carry on the manufacture, and will alone require the produce of 5000 acres in the ensuing year.

DEFICIENT SUPPLY OF COTTON.—In connection with the supply of the markets already referred to, a further argument is to be found in the fact of the present diminished supply of the raw material from foreign countries. "There is," says Mr. Porter, in his remarks on the statistics of the cotton trade, in a paper read before the British Association last year, "a growing opinion that now, and for some years past, we have reached the maximum supply of cotton from the United States—a fact which, should it prove to be correct, makes it a matter of absolute necessity, either to seek for further supplies of the article from other sources, or to find some efficient substitute that shall provide the means of employment for our continually growing numbers." So great has been the deficiency of cotton in the United States during the past year, that the prices have risen cent. per cent. as compared with those of 1849, and our manufacturers are straining every nerve to endeavour to obtain an additional supply of cotton, and to reduce their dependence upon the United States for the supply of their staple article. The Manchester Chamber of Commerce, feeling the importance of the subject, have at considerable expense, sent a gentleman to India for the purpose of obtaining information as to the probable extent to which they might depend upon that country for an increased supply of cotton. But to realise this much desired benefit there must be introduced into India a totally new system of managing the crop,

and new and convenient modes of transit for bringing the produce of the interior down to the coast for shipment. Those acquainted with the habits and prejudices of the people of that country need hardly to be told with what difficulty such a change would be brought about, and how many years must elapse before the establishment of railways, or the formation of roads for the conveyance of the material produced under such an altered system. So far, then, as the arguments for an extended growth of Flax in this country, founded upon the present position of our cotton manufactures are concerned, our agriculturists have to consider the diminished supply and increased price of cotton; the difficulty of obtaining the requisite supplies from other countries; and above all, the fact that Flax can be advantageously employed as a substitute in those manufactures in which cotton is required.

Deficiency of Flax.—If again we turn to the position of our linen manufactures, it will be found that there exists in that branch also a most extraordinary deficiency in the supply of the raw material. In Ireland the cultivation of Flax has fallen off during the past year, as compared with 1845, by nearly 60,000 acres. In Russia, from whence we derive our largest supplies, there has been a decrease in the amount of exports of Flax of nearly 150,000 "poods," or about 20 per cent.; and I find in the *Morning Chronicle*, which has devoted much attention to the subject of an extension of the growth of Flax, a circular of one of the largest houses in St. Petersburgh, in which the following statement occurs:

"We are to have a small supply of Flax next season, *not above one-half* of that which we had two years ago, and such high prices are consequently paying in the interior, that the dealers will not be able to lay it down here, to cost less aboard, than it is now selling for on your side; so that we are not likely to have anything doing on contract for a long time, if at all this winter, unless the relative state of the two markets experience mutual alteration by an improvement on your side."

In Belgium, where the finest qualities of Flax are produced, the cultivation of Flax is considerably less than on the average of former years.

It is under these circumstances, with an increasing demand on the part of the manufacturers, and a diminished supply on the part of the foreign producer, that I venture to submit to the British agriculturist the taking some steps calculated to meet the existing state of things, to diminish our dependence upon foreign countries, and by so doing confer lasting benefits, both upon himself and upon his country. There is a happy conjuncture with this state of things and the time at which the present demand arises. Formerly, when our laws imposed restrictions upon the importation of grain for human food, our agriculturists might have conceived that there existed some kind of moral impediment in the way of increasing our home growth of articles for any purpose not of equal primary necessity. That impediment, whether rightly or wrongly I pronounce no opinion, has, however, passed away, and there is now no reason whatever why their fields should not henceforth be used for the production of any article that promises an adequate profit to the grower.

"It is," says Mr. Porter, of the Board of Trade, "especially desirable so to apply the productive power of the soil for the supply of articles *as indispensable* to the support of millions of our people as corn itself; and an *additional inducement* to the growth of Flax, beyond that offered by other articles, may be found in the fact that, to bring it to the same condition as that in which it is imported from foreign countries, calls for the employment of a considerable amount of human labour."

Objections to Growth of Flax: Agriculture—But, if satisfied that ample markets exist for the sale of his produce, and that this sort of moral impediment to its growth has been removed, the agriculturist may still point to the objections entertained against the growth of Flax, both on account of its supposed exhaustive character, and the trouble, risk, and expense attendant upon its preparation for markets, as reasons why he should not enter upon the cultivation of the plant. With respect to the exhaustive character of the plant, and its consequent injurious effects upon the soil, there appears to be no reason for supposing that, under a proper and judicious mode of treatment, it is more exhaustive or injurious than any other seed-producing crop. An examination of the stem of the plant shows that those portions of it which are required for the purpose of manufacture, are derived almost exclusively from the atmosphere. Indeed to so small an extent do the inorganic properties of the soil enter into the fibre, that it has been found upon analysis that 100 lbs. does not contain upon an average more than 2 lbs. of mineral matters, including lime, magnesia, oxide of iron, carbonic, phosphoric, sulphuric acid, and silica. It is the woody parts of the plant, the resinous matter of the seed, with its capsules and husks, which absorb from the soil the phosphoric acid and other fertilising ingredients. If the Flax, unlike other crops, be not allowed to return anything to the soil; if the seed be thrown into the steep pit or "retery" with the stem of the plant, and there destroyed; if instead of being employed as food for cattle, the straw or woody parts be rendered perfectly useless for all the purposes of manure, or mixing with cattle food, then undoubtedly Flax, like every other crop, would be *in itself* an exhausting crop. But practical experience, however, has fully proved that under a judicious mode of treatment, so far from being an exhaustive, Flax is actually a renovating crop. Numerous instances might be cited upon this subject. Mr. Edmonds, of Stonehouse, near Plymouth, stated, in 1843, "It is a mistaken opinion that Hemp and Flax impoverish the land; from *long experience* I have found the contrary; these are crops that make a *greater return as to manure than any corn crop.*"

Sir Richard O'Donnell, who is one of the largest cultivators of Flax in Ireland, and who has grown to the extent of 700 acres in one year, states in the *Morning Chronicle*, "As the results of many years' experience, that when grown in its regular rotation, Flax is so far from being exhaustive, that it tends greatly to improve the soil and the character of the other crops in the rotation. It is above all most valuable for laying down land after Wheat or Oats, as the process of pulling the Flax, by loosening the earth around the roots, improves greatly the quality of the Grass crop."

Mr. Warnes, whose exertions as a practical agriculturist, to promote the extension of Flax culture, are deserving of all praise, and whose system of agriculture rests upon the growth of Flax, and the fattening of cattle in boxes, upon the seed, incorporated with other produce of the farm, both summer and winter, has introduced the Flax plant into every rotation upon his farm; and, judging from the results of his own experience, he states that no rational assertion can now be urged against the growth of Flax, as the improved systems of cultivation and preparation have rendered obsolete the clauses in old leases, prohibiting the culture of the plant, and the antiquated notion that fibre and seed cannot be secured at the same time. So far, therefore, as the exhaustive character of the plant is concerned, there appears to be no sufficient ground for entertaining such an opinion.

Preparation for Market.—A further objection to the growth of Fax is, however, to be found in the nature of the process hitherto required to be employed previous to its preparation for the market. So long as it shall continue to be considered necessary for the grower to embark in the present troublesome and uncertain process of steeping the Flax in the straw, it will be in vain to expect any very general or extensive growth of the plant. Although considerable advance has no doubt been made in the preparation of the fibre during the last few years, still the present mode is far from being suitable to the great body of the farmers of the United Kingdom.

Dew Retting.—Under the system of preparing the Flax, hitherto four modes of steeping or retting the plant are resorted to. The first consists of the plan of "dew retting," or allowing the Flax to remain exposed on Grass land for a considerable number of days exposed to the action of the rain, dews, and atmosphere. The plan, however, is one which, from its obvious inconveniences, is not calculated to meet with general approval in the present advanced state of agriculture, and is indeed very rarely adopted.

Steeping in Streams.—Probably the best mode of steeping the Flax is that of placing it in running streams, according to the mode adopted in Courtrai, the principal Flax-producing district of Belgium. The Flax so prepared generally realises a much higher price than any other description of Flax. There are, however, certain peculiarities in the water of the river Lys which makes it admirably adapted for steeping purposes, and which are not possessed by any other streams in this country. Independent of the peculiarities of the water, the steeping of Flax in running streams cannot be made generally available in this country, as they are mostly too rapid in their character.

Steeping in Pits.—In the absence of suitable streams, recourse is had to a mode of steeping in pits or pools sunk in the ground. But so many favourable conditions are required to be obtained, and so many unfavourable ones to be avoided, in the selection of the site for the pool, and the supply of the water required, that it is probable that a desirable or perfect steep pool could not be formed in any part of the country. The soil forming the bottom and sides of the pit will have an influence on the colour of the fibre; clay, gravel, alluvial and peaty soil, will each impart some peculiar dye to the material, which more or less affects its value. The water used in the pit or pool must not be spring water, and it must not have flowed over any soil containing metallic deposits; and rain water is not well calculated for the purpose. But, in addition to all these difficulties attendant upon obtaining the requisite means, the grower of Flax has to contend against all the uncertainties and risks of either over or under-steeping his Flax. "One sultry night," says one of the reports of the Royal Flax Society, "while it is in the steep, and nearly rotted sufficiently, is enough to carry the fermentation beyond the safe point. So much is this feared by farmers, that almost all Flax is underwatered; and although much of it is afterwards mannered on the Grass, yet the great proportion is brought to market with the shores still unseparated in bits on the fibres." But while the sultry nights of summer are unfavourable to the steeping of Flax, and inconvenient to the farmer, inasmuch as his labourers are at that season generally otherwise employed, it is also obvious that during the winter, when comparatively little farm labour is carried on, the process of steeping must be discontinued altogether, in consequence of the temperature.

Schenck System.—A fourth process has, within the last few years, been very strenuously advocated by the Royal Flax Society in Ireland, which consists in steeping the Flax in hot water. This mode, although doubtless an improvement upon any of the existing plans, still does not afford the means of obtaining that complete separation of the fibres which it is desirable to obtain. The Belfast Society do not pretend that this is a mode generally applicable to the use of the producer of Flax, for under what they term a "division of labour," they propose that the whole process of preparation, with the profits attendant upon it, and the additional labour required, shall be taken out of the hands of the growers, whom it designates as "a class of persons ignorant of the commonest chemical principles," and handed over to capitalists or speculators who would erect the required machinery in districts where the growth of a certain quantity of Flax would be previously guaranteed. According to the reports of the Society, it appears that the profits upon the preparation of an Irish acre of Flax, would be something like 200 per cent. upon the amount paid to the grower for his produce. The farmer is paid for his Flax a price ranging from 5*l.* to 8*l.* per acre, the steeper, upon this principle of "division of labour," receiving a net profit (I take the figures of the advocates of the plan) of upwards of 20*l.*

With such *inducements* as these offered by the Flax Society, I doubt much whether the agriculturists of this country will feel very much disposed to enter upon the growth of Flax to the extent which the circumstances of the case require; and in Ireland I have no doubt but that the whole scheme, fraught with so many of the abuses of the middlemen system, will soon be found alike intolerable to producer and consumer. The whole of these difficulties may I believe be easily overcome, by the adoption of a system more in accordance with the present advanced state of practical science and knowledge, and which involves *the entire abolition* of the whole of the existing modes of steeping the Flax in the straw.

Steeping Injurious.—Not only is the present process of steeping inconvenient and unnecessary, but it is highly injurious, as it imparts its injurious dyes to the fibre, deteriorates, and gives to it an inequality of strength, which, in the subsequent stages of manufacture, are exceedingly difficult to be overcome. I have found this to be more particularly the case in the preparation of the Flax into a material capable of being spun alone or in combination with wool and cotton upon the existing machinery. I am anxious that the grower should not resort to any of the existing modes in the preparation of his Flax, for any one step taken in that direction entails subsequently the necessity of much additional trouble and expense, in addition to most materially affecting the strength and quality of the yarns and thread produced from it.

Purchase in the Straw.—The mode in which I should most prefer to purchase the Flax would be in the straw, precisely as it is left after the removal of the seed. In this state it can be dealt with, with a far greater degree of certainty than in any other, and may be, within four-and-twenty hours from the time of its being pulled ripe from the field, placed in a condition fit for preparation for spinning upon any of the Flax, cotton, wool, or silk machinery of the country.

Facility of Transit.—As there would be obviously many inconveniences connected with the transit and carriage to a large distance of a material so bulky as that of Flax in the straw, the grower might in certain cases, by the use of a common breaker and a pair of toothed cylinders, remove a great portion of the more bulky part of the plant, and thus send the fibre in a partially cleaned state to the market. The chaff obtained from this partial separation of the straw from the fibre, which contains a very large proportion of the inorganic matter from the soil, and which, not having been destroyed by the process of steeping, will form a most valuable material for mixing with cake, crushed seed, the mucilage formed from it, or other articles of cattle food.

Further Process.—I am anxious, however, to see the growers of Flax deriving the full amount of benefit which is to be obtained from the complete preparation of the material into a substance suitable at once for the markets of Belfast, Dundee, Manchester, and the woollen districts. I am aware that in the hands of individual growers the process, although not a complicated one, but which still requires some larger amount of acquaintance with the *higher* branches of chemistry than generally exists among the agricultural classes, must not be considered as generally available. I believe, however, that a plan might be very easily devised by which the Flax-grower might secure for himself these benefits, which, according to the recommendation of the Royal Flax Society, are to be exclusively engrossed by speculators and capitalists. Indeed, several applications have already been made by parties, requesting me to grant them monopolies under my patent, for the perfection of Flax, within an area of a certain number of miles in various parts of the country. I believe that such a course is one eminently calculated to rob the grower of his legitimate profits, and to retard that extension of the growth of Flax which I conceive to be indispensably necessary for the welfare of the country. Within the last few days, I have been informed of a case in which a gentleman in Ireland, who has for several years grown Flax to a very great extent in one of the districts in which a monopoly is possessed by a "steeper," under the patent system. Possessed of this monopoly over a large tract of country, such an individual has the whole of the growers entirely at his mercy, and can offer them whatever sum he pleases for their produce, knowing full well that no other available market exists for many miles. Indeed, to such an extent has this system of extortion been practised, that many of the growers have been compelled, after keeping the Flax in stack for the last two or three years, to sell for 30*s.* per ton that for which he would have received, but for this monopoly, from 3*l.* to 4*l.* The gentleman to whom I have referred has now about 700 tons of Flax in stack, which he will not sell at the ruinous price offered by the "steeper," and further states that he will not sow a single acre of Flax in the present year, unless some fresh mode of disposing of his produce is created.

Joint Stock Associations.—The mode in which I would venture to suggest this system may be prevented, and the growers be enabled to derive the full benefit of the perfection of the Flax, would be by the establishment in different localities throughout the country, by means of joint subscriptions among the Flax growers in such district, at which the preparation of the material could be carried on, and the profits derived from the process distributed at stated periods among the shareholders in proportion to the amount of shares or interest which they held in the undertaking. This system is one which has been found to work well among the cultivators of the sugar cane in the West Indies—and there is no doubt but that it would work equally well among the producers of Flax in this country.

Local Societies.—A second mode by which this object could be attained would be by the erection of suitable premises and apparatus by each of the various local agricultural associations or farmers' clubs in the country, the buildings and plant being the property of the club or association, and the use of them being allowed to members or subscribers, upon payment of such sums per ton or per acre as might be agreed upon by the parties.

Landlords.—There is also a third mode which might be made available in the case of the failure of either of the preceding plans, which is, that of the erection of the required accommodation by the landlords for the use of their tenants, upon the payment of such sums as would be calculated to cover the interest of the capital invested, and the cost of keeping the buildings and apparatus in an efficient state of repair.

Profit.—There remains yet one very important point to which I have at present only incidentally alluded—I mean, the profit to the farmer upon the cultivation of Flax. If I have succeeded in convincing you of the extent and certainty of the market which exists for the produce, and of the absolute necessity which exists for your endeavouring to obtain possession of those markets, I have no doubt that I shall be enabled most satisfactorily to prove that you can do so with considerable profit and advantage to yourselves.

Seed and Fibre.—It will be found in the first place that the profit derived from Flax under the present modes of steeping, combined with the saving of the seed, is considerably greater than can be obtained from the cultivation of *Wheat*, at present prices. Mr. Warnes states that the profit upon 14 acres of Flax, grown and prepared by him last year, was upwards of 6*l.* per acre over that of his Wheat. His figures are

| | £ | s. | d. |
|---|---|---|---|
| Prepared Flax sold at Leeds ... ... ... | 238 | 16 | 0 |
| Value of seed ... ... ... ... ... | 126 | 0 | 0 |
| | 364 | 16 | 0 |
| Deduct cost of preparing Flax ... | 140 | 0 | 0 |
| Gross profit ... ... ... ... | 224 | 16 | 0 |
| Value of produce of 14 acres of Wheat, at 38 bushels to the acre, at 40*s.* per quarter ... | 133 | 0 | |
| Total balance in favour of Flax over Wheat, not including 6 tons 6 cwt. of husks equal to Hay, 26 cwt. of tow, and many loads of refuse for littering cattle ... ... ... ... | £91 | 16 | 0 |

Seed Alone.—The above is an instance in which both the seed and the fibre were saved and prepared. There are cases, however, in which the Flax is grown solely for the purpose of seed; and others in which the seed is wasted or destroyed, the only object in such case being to obtain the fibre. In either case there is a greater profit to the grower than can be obtained from almost any other crop. Mr. Beare, probably one of the best farmers in the county of Norfolk, grows every year one or two acres of Flax after Wheat, and without manure, for the seed only. His crop last year yielded 26 bushels, which, at 10*s.* per bushel, would be worth 13*l.*; while his Wheat crop did not exceed five quarters, which, sold at 40*s.*, would yield but 10*l.*, leaving a profit in favour of Flax seed alone (the straw being used as litter for cattle) of 3*l.* per acre. I may state upon this point, as a general rule, under the present system, that, when grown for its seed alone, the Flax fibre is coarse, and is not considered of so much value as that of a finer description.

Fibre Alone.—Seed Destroyed.—Numerous instances might be adduced, from the reports of the Royal Flax Society, to show that even in cases where the seed has been thrown into the steep pits and destroyed, the profit upon the sale and preparation of the fibre was still greater than that of many other of the crops. As the example thus set is one, however, which is not likely to be generally followed by enlightened agriculturists in this country, it is unnecessary for me to trouble you with any figures upon that point.

New Process.—These, however, are returns obtained under the *present mode* of steeping and preparing the Flax. According to the plan which I venture to submit, the returns will, I anticipate, be even more favourable to the grower.

Sold in Straw.—In the case in which he may elect to dispose of his *Flax in the straw*, the farmer would derive the full value of his crop of seed, and the straw would be worth to him 4*l.* per ton, the produce being about 2 tons per acre. He will not be required, as is the case at present, to pull his Flax before it is perfectly ripe, or before the seed has been fully and completely formed. Indeed the *coarser and more developed* is the stem of the plant, the more valuable will it be for the purpose of adaptation to the woollen and cotton machinery, and the fine gossamer threads can be produced from it with greater certainty and precision than when pulled in an earlier stage of its growth. The grower, therefore, need be under no fear as to the fineness of his crop, and he may obtain from it as large an amount of seed as his land will produce.

Partial Cleaning.—If the difficulty of transporting the flax in the straw to any great distance should render it necessary for the grower to reduce its bulk, by the removal of some of the woody part of the plant, he will obtain by so doing, in addition to the seed, a valuable article of food for his cattle, and the enhanced value of the fibre will more than repay the amount of labour bestowed upon it.

Complete Preparation.—If disposed to carry the preparation of the flax to its final stage of adaptation to the spindles of the manufacturer, whether cotton, linen, wool, or silk, he will derive a profit larger and more certain than any which he can obtain under the present process; while, from the refuse straw impregnated with the salts used in its preparation, he will obtain a manure of the richest and most fertilising character.

Social Advantages.—One word upon the social advantages which must result from an extended cultivation of Flax, and my remarks (already, I fear, too protracted) will have been brought to a close. Upon this point, I cannot do better than quote a few words from the report

of one of the special correspondents of the *Morning Chronicle* who visited the small village of Trimingham, where Mr. Warnes has for several years most sedulously and successfully devoted himself to the cultivation and preparation of the plant.

"The condition of the inhabitants of the village," he says, "was a few years since most deplorable, and the amount of pauperism exceeded that of the adjoining parishes. Since the introduction of Flax culture, this state of things has passed away. There is not a pauper in the parish; the poor-rates are nominal; there is not one able-bodied labourer, nor any portion of his family, who may not obtain constant employment throughout the whole of the year, and the moral and social state of the village will bear comparison with most. If the growth of Flax can produce results elsewhere similar to those which I have witnessed at Trimingham, there can be no doubt that the sooner it is cultivated to a greater extent in this country, the sooner will the enormous burden of pauperism decrease; and happiness and contentment be more generally diffused among the large masses of our labouring population.

The Chevalier CLAUSSEN then laid before the Council the following different specimens:

1. Samples of Flax in the straw, pulled and rippled.
2. Sample of Flax-straw, prepared according to the new process, adapted for linen manufactures.
3. Sample of long fibre scutched from part of No. 2.
4. Samples of Flax-fibre, adapted for spinning on cotton machinery.
5. Sample of yarn spun on cotton machinery, some from all the above Flax-fibre, others mixed in various proportions with the American cotton; these mixtures being termed by the inventor Flax-cotton.
6. Samples of Flax-fibre prepared for mixing with wool.
7. Samples of yarn produced on ordinary woollen machinery, composed of wool and Flax in various proportions, termed by the inventor Flax-wool.
8. Samples of flannel woven from the above.
9. Samples of fine cloth woven from yarn composed of Flax and fine wool in various proportions.
10. Flax-fibre prepared for mixing with silk, and dyed of various colours.
11. Flax-fibre mixed with spun silk, and termed by the inventor Flax-silk.
12. A sample of yarn produced from the above.
13. Samples of Flax-cotton yarn dyed of various colours.
14. Samples of cloth woven from Flax-cotton yarn and wool, dyed.

The following are the advantages detailed by the Chevalier Claussen and his friends, as possessed by the new process over the old methods:

1. That by the Chevalier Claussen's process the preparation of long fibre for scutching is effected in less than one day, and he always produces a fibre uniform in strength and entirely free from colour, much facilitating the after process of bleaching either in yarns or in cloth.
2. That he can also bleach it in the straw at very little additional expense of time or money.
3. That the former tedious and uncertain modes of steeping are superseded by one perfectly certain with ordinary care.
4. That in consequence of a more complete severance of the fibres from each other, and also from the bark and boon, the process of scutching is effected with half the labour usually employed.

[These advantages referred to that portion of the invention that includes the preparation of Flax for spinning upon the ordinary Flax machinery, and suited to existing markets. The further advantages have reference to the creation of new markets for British produce.]

5. That by the new process Flax is rendered capable of being spun, either in whole or in part, on any existing spinning machinery.
6. That the fibre, to be mixed with cotton, or spun alone on cotton machinery, is so completely assimilated in its character to that of cotton, that it is capable of receiving the same rich opaque colour that characterises all dyed cotton; and, consequently, any cloth made from Flax-cotton yarn can be readily printed, dyed, or bleached by the ordinary cotton processes.
7. That Flax-fibre can be always produced with profit to the British grower at a less price than cotton can be imported into this country with profit to the foreign producer.
8. That as a consequence of this advantage, the manufacturers of this country will be less dependant on the fluctuations of the cotton crop for a supply of the raw material, and a more regular employment will be given to the manufacturing population, and the present amount of local rates be greatly diminished thereby.
9. That the British grower will derive great benefit from a supply of the wide demand thus opened to him.
11. That with respect to the advantages of being able to spin Flax in combination with wool on the existing woollen machinery, the first is, that the Flax prepared by M. Claussen is capable of being scribbled, spun, woven, and milled, in all respects as if it were entirely wool; having an advantage in this respect over cotton, which has not the slightest milling properties; on the contrary the Flax-fibre is capable of being even made into common felt hats with or without an admixture of wool. To such an extent has the milling properties of Flax been proved, that the sample of cloth exhibited had been woven to 54 inches wide, and milled up to 28 inches wide.
12. That the Flax-fibre will not, under any circumstances, when prepared for spinning with wool, cost more than from 6*d.* to 8*d.* per lb., while the wool with which it may be mixed will cost from 2*s.* to 4*s.* per lb.; consequently reducing the price of cloth produced from this mixture 25 or 30 per cent. below the present prices of cloth made wholly from wool, and being of equal, if not greater durability.
13. That short-wool refuse, which cannot by itself be spun into a thread may, by being mixed with this thread, be readily spun and manufactured into serviceable cloths.
14. That there is a probability of a further demand being opened up for this fibre in the flannel and woollen trade.
15. That by this process Flax may be also so prepared as to be spun in any certain proportions with silk upon the existing silk machinery; that when so spun, it is capable of receiving considerable brilliancy of tint. That the fibre may be prepared for thus spinning at an uniform price of from 6*d.* to 8*d.* per lb. That as it may be spun in any proportions with silk, it is evident that the price of the yarns must be reduced according to the relative proportions of the materials employed, thus extending the markets, and giving increased employment to the operatives.
16. That, by M. Claussen's process of bleaching, any useless Flax can be converted into a first-rate article for the paper-maker, at a less price than the paper-maker is now paying for white rags; and suitable for the manufacture of first-class papers.

In conclusion, M. Claussen and his friends had no doubt that a plan might be devised by which the grower of Flax should derive not only the benefits he would obtain from the sale or consumption of his Flax seed, and the sale of his straw, as stated in the paper read, and the further advantages to be derived by him from the partial separation of the woody part of the stem from the fibre, which would reduce the cost of transit, and provide for a larger return to the land. But also the larger profit to be derived from the transforming of the straw into fibres suitable for any of the purposes above described, according to the suggestions pointed out in the paper read to the meeting, and thus secure to themselves that double profit which, under the present system, it was all but impossible for them to obtain.

## Calendar of Operations.

### FEBRUARY.

DORSET FARM, *Feb.* 3.—Since the last report we have had the weather very wet, and work has been kept back very much; and if it had not been previously well forward we would now be looking forward to a busy spring. But we have been contented to let the fields rest for a time. Grass is now growing fast, especially the water meadows, which look beautiful; and Wheat is good everywhere on land that lies dry, although on some of the low lying parts it is a little checked by excess of moisture; and if dry weather were to succeed rapidly it would no doubt suffer materially. Food of every kind is very plentiful. We are now taking up all our Swedes, as they are now making their second growth. We drive them together in heaps, about 6 feet wide, as high as they will pile up, and cover them with straw. We have now about half of our ewes lambed, and the lambs have hitherto done very well, although the weather has not been favourable. Our sows are now beginning to farrow. I think I mentioned before that they have had nothing but Mangold Wurzel since their last young were weaned; and as some of your correspondents say that such feeding is apt to slip their young, I can say that we have found nothing of that, and we have had 22 sows living entirely on them. And although we keep so many, we have not, in the course of five years, had one slip. Pork is selling very low, not more than from 6*s.* 6*d.* to 7*s.* 6*d.* per score, and in this locality hardly to be got rid of at that. And we find it far more profitable, even with grain so low in price, to sell them lean; for I have no doubt that in the lean state they sell at more per score. *G. S.*

SOMERSETSHIRE FARM, *Feb.* 1.—If not trespassing on the space of your paper, I wish to send a few papers on the subject of "land most applicable to the growth of Wheat and other crops," which are, in fact, more for the assistance of beginners and amateurs in farming, than claiming any credit for throwing much new light on the subject; my only idea being to make a change from the mere Calendar which I have sometimes communicated. To take the subject of Wheat, then, for our first paper:—The land most suited for Wheat is a deep and rather heavy soil; clays, well drained, being peculiarly adapted for it, and also for Beans, which on some lands are grown alternately, in which case a winter's fallow is requisite. Supposing Wheat after Beans, the land should be ploughed up as soon as ever the Beans are off; after harvest a good dressing of manure laid on, or, as is the custom in some districts, sheep folded on "muckle," as the term is, which plan must depend on a dry season. It is, however, safer to take a green crop between, such as Vetches or Clover. For example—Beans, Vetches, Wheat, Clover, mown first, and fed with sheep in July. On light sandy soils, such as the county of Norfolk, the land is (as indeed we think the best general system) cultivated on the 4-course shift of Turnips, Barley, sown down with Clover, 4th Wheat, which is said to succeed after the latter "on one earth," as the term is, better than anything, if we except in some cases Mustard. The rather frequent recurrence of Clover, however, makes it advisable to substitute Grass seeds or Tares every fourth year, taking Clover only every eighth; as the land, if sown oftener with it, becomes, as the well known term is, "Clover sick." Where the land is poor, such as on the stone-brash kind, as it is called, a more irregular system necessarily presents itself, and the following course I suggest from my own experience of the plan pursued on the farm in this county, mentioned in my last report, which partook of the above-named description of land belonging to the estate of Mr. Dickinson, late M.P. for that division, which is farmed by his agent in a very superior manner. On this soil Vetches were much cultivated, both as a good preparation for Wheat, and to follow it; in each case on this farm it was well folded with sheep (a sufficient quantity of which should always be kept, as they render the soil firm and compact for Wheat, and by the goodness of their manure, almost insure a crop, presuming the land to be previously well drained. They should for that purpose, to save much trouble, be wethers, the Southdowns being well suited for it, in these parts, from their hardy nature; the above was the system pursued on Mr. D.'s farm. To continue; on the heavy clays, when the weather is wet, sheep must be taken off, as though their folding on the above-mentioned light soils do good, of course, on the latter the reverse would be the case. Not that I advocate folding to extremes in any case. I think where practicable, an outlet from the fold on Grass, &c., is very desirable during the day; also when sheep are being fattened up for sale, they may be withdrawn in small lots from the fold; perhaps, where possible, under cover at home, as occasion requires. Another course on the farm I above alluded to was taking Turnips after the Vetches, thus folding off two green crops in succession, and doubly improving the land. If the Turnips were off the land in time, on this farm, the Wheat was put in during winter, the ground being very thinly ploughed, to nicely cover in the manure and Turnip refuse; in other cases the Wheat was sown in spring. Another way is, as on the above-named farm, to take Mustard, as a preparation for Wheat, which whether fed or ploughed in, answers well on most lands. It grows to a great height, and is little affected by frost; the sheep, however, when on it, do better when they have an outlet during the day "in their walk," as Mr. John Gray (Mr. D.'s agent), states in his description of the growth of white Mustard, addressed in a letter to Mr. Philip Pusey, which appeared in the "Royal Agricultural Journal." With regard to the time for Wheat sowing, there is, of course, as well as in the quantity to be sown per acre (and whether dibbled or drilled, or whether dug for or ploughed), much diversity of opinion. My own is, that at any rate on poor land as on the stony description I mentioned, the first fortnight in November is soon enough, and the quantity of seed per acre six pecks. On Mr. Dickenson's estate, where I resided two years, the yield of Wheat was commonly 40 bushels per acre, and much of this grown on poor stony land (varying in some parts to heavy loam with a hard clay subsoil): this I am sure is greatly owing to the constant folding of large flocks of sheep, as a few years ago when the farm was under other hands, with a ewe flock and no folding, there was, I have been told, not more than 25 bushels of Wheat to the acre, if so much. With respect to the method of depositing the Wheat crop; whether dibbled or drilled, &c, as I have not seen much of the former system pursued, I can only answer for drilling, which I can at any rate place before broadcast sowing, in most cases, as being a more regular and business-like plan. Dibbling, I should think, would hardly answer on large farms, or the spade in a backward season, when the fallows wanted getting forward for sowing. Beans are, in my opinion, best dibbled, with regard to their more effectual hoeing in spring; in this plan we may also class (though a very dissimilar crop) Mangold Wurzel. We used to drill the Beans on Mr. D.'s farm at 27 inches apart, and when planted at about 12 inches; quantity by dibble, two bushels for winter Beans, and a sack for spring; by the drill, from six to eight pecks. In concluding this short summary I wish to ask you, or some of your intelligent correspondents, if they could give me any account and explanation of draining land by steam, as practised in Lincolnshire Fens, and other levels; as to how the water is got rid of, and other particulars. As I stated in last report, we have a large extent of land, something similar to fen land, which, in such wet weather as we have lately had, becomes much inundated with water. It is about 2½ miles from the Bristol Channel—different plans have been promulgated, such as canals, &c., like on the east coast of the Fens, and latterly the idea of steam draining, which I take it would put the county to some expense. I should feel obliged by any account of the system in any of its bearings. *H. E.*

## Notices to Correspondents.

BARLEY: *A B.* You need not fear that it will give the scab. It is good food for sheep.

BOOKS: *W B Harvard.* Johnson's "Modern Cowkeeper," a shilling book, may answer your purpose. We do not know the bituminous shale manure, and must therefore depend upon any information with which correspondents may favour us.

COTTAGES: *One who has been a grieved witness of the unworthy Cottages of the Poor.* We have received enquiries about your plan, which was not explicit enough to make any intelligible woodcut. Please specify rent and cost of such a cottage—and you would oblige many readers by giving us a scale.

DRAINS: *C M K.* Under your circumstances we would cut off the upper spring water, by a cross drain at the top of the field, and drain the rest 3 feet deep (or half a spit *into* the dry bed below) and 24 feet apart. The impervious subsoil at that depth proves its impermeability by its perfect dryness; and in that case it seems useless to penetrate it.

FOOD FOR COWS: *Spes.* In a mild climate, or deep calcareous soil, Lucerne is a first-rate crop. But under the ordinary conditions of climate and soil we should prefer Italian Rye-grass and the annual cultivation of the soil to Lucerne, and six or seven years' rest. Italian Rye-grass may be sown in June if you choose, 3 or 4 bushels an acre. Lucerne should be sown in 14 or 16 inches wide shallow drills; about 10 lbs. of seed being used per acre.

HUSK OF OATS: *J J.* The average of two specimens examined by Professor Norton was—

| | |
|---|---|
| Oil ... ... ... ... ... | 1.21 |
| Sugar and Gum ... ... ... | 0·61 |
| Gluten ... ... ... ... ... | 1.88 |
| Cellulose ... ... ... ... ... | 89.57 |
| Saline matter ... ... ... ... | 6.7 |
| | 100.00 |

MALT DUST: *T P.* It has been applied with success as a top-dressing to Barley and Wheat. It is well to moisten it with liquid manure first and let it ferment slightly. It contains 29 per cent. of nitrogenous compounds. Apply 20 or 30 bushels an acre in a drill manure; having first rotted it and then dried it up along with the superphosphate or other manure you are going to use for Turnips. You can buy it for 6*s.* or 7*s.* a quarter.

"MR. SHORT'S PAMPHLET" ON FLAX. *R P Gardner.* Groombridge and Son.

SCOULAR'S GRUBBER: *Anon.* "Scoular, Haddington," will find him.

SUBSTITUTE FOR LITTER: *L A.* Boards and *attention.* Sawdust. Sand has been used. Cocoa-fibre matting would be costly to begin with, and so far destructible as to make it costly in the long run also.

THE BEST DRILL FOR SOWING TURNIPS ON FLAT GROUND, AND GUANO AT THE SAME TIME: *J R P.* Any of the Suffolk drills will do it. Garrett's, of Saxmundham; or Hornsby, of Grantham.

THE DRAINAGE ACT: *A Friend to Draining.* We cannot publish any personal attack unless authenticated by the name and address of the correspondent; and we will not do so unless some useful end is to be attained.

TOLLS: *T B Harness.* A chaff-cutter is no doubt toll free to the farmer; that is in going from place to place for *use.* The article you refer to related we think to guano.

ERRATA: For "all of them," in line 19 from the bottom of column *b*, page 73, read "one of these."—In the "Trip to North Devon," published Feb. 1, for "ruined hills," read "round hills." And observe the amended punctuation in the following sentence. "If the land is in stetches it would be desirable to mark the lines with the drill. Where no manure could be spared the mould and superphosphate were alone used at a cost of 20*s.* per acre."

## Markets.

COVENT GARDEN, FEB. 15.

Hothouse Grapes are all but over for a season. Pine-apples are still dear, and the supply of good dessert Pears is limited. English Apples are scarce, but foreign ones are sufficient for the demand. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Vegetables of all kinds are abundant and good, except French Beans, which are scarce, but which are, nevertheless, rather more plentiful than they were last week. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* per pottle. Cucumbers, though good, meet with an unusually dull sale. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6*s* to 8*s* | Lemons, per doz., 1*s* to 2*s* |
| Grapes, hothouse, p. lb., 6*s* to 10*s* | Almonds, per peck, 6*s* |
| — Portugal, p. lb., 8*d* to 1*s* | — sweet, per lb., 2*s* to 3*s* |
| Pears, per doz., 2*s* to 5*s* | Chestnuts, per peck, 2*s* to 5*s* |
| — per half sieve, 6*s* to 15*s* | — per 100, 9*d* to 1*s* 6*d* |
| Apples, *dessert*, per bushel, 6*s* to 10*s* | Nuts, Barcelona, per bush, 20 to 22*s* |
| — kitchen do., 5*s* to 8*s* | — Brazil, p, bsh., 12*s* to 14*s* |
| Oranges, per doz., 9*d* to 2*s* | Cobs, per 100 lbs., 70*s* to 75*s* |
| — per 100, 6*s* to 10*s* | |

### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d* | Shallots, per lb., 6*d* to 8*d* |
| Cabbages, per doz., 6*d* to 1*s* | Garlic, per lb., 4*d* to 8*d* |
| Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d* | Artichokes, Jerusalem, p. half sieve, 1*s* to 1*s* 6*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Endive, per score, 1*s* to 1*s* 6*d* |
| Asparagus, per 100, 2*s* to 8*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Rhubarb, p. bundl., 6*d* to 1*s* 6*d* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Potatoes, per ton, 60*s* to 100 | Red Beet, per doz., 6*d* to 1*s* |
| — per cwt., 3*s* to 5*s* | Mushrooms, p. pot., 6*d* to 9*d* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Fennel, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* 6*d* to 4*s* | Savory, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Carrots, per doz., 2*s* to 5*s* | — Roots, p. bundl. 9*d* to 1*s* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Marjoram, per bunch, 2*d* to 4*d* |
| Onions, p. bunch, 3*d* to 4*d* | Mint, green, per bunch, 6*d* to 9*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Watercress, p. 12 bunch., 6*d* to 9*d* |
| Leeks, per doz., 9*d* to 1*s* | Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d* |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 13.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | | Clover ... ... ... | 76*s* to 80*s* | |
| Inferior ditto ... | ... 60 | 70 | Second cut ... ... | 63 | 70 |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 22 | 27 |
| New Hay ... ... | — | — | | J. COOPER. | |

Trade dull.

WHITECHAPEL, Feb. 13.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | ... 68*s* to 74*s* | | New Clover ... ... | —*s* to —*s* | |
| Inferior ditto | ... 55 | 63 | Inferior ditto... ... | 65 | 70 |
| New Hay ... ... | — | — | Straw ... ... ... | 22 | 26 |
| Old Clover ... ... | 78 | 84 | | | |

CUMBERLAND MARKET, Feb. 13.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 74s to 80s | | Inferior ... ... ... | 65s to 72s | |
| Inferior ditto... ... | 50 | 65 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 28 | 30 |
| Old Clover ... ... | 78 | 84 | | JOSHUA BAKER. | |

POTATOES.—SOUTHWARK, Feb. 11.

The Committee report that the arrivals coastwise and by rail have been very considerable, which with several from France has made the supply large; trade is heavy, and it is only with a few of the best samples our top quotations are realised. The following are the prices:—York Regents, per ton, 70s. to 100s.; Scotch do., 65s. to 80s.; ditto Cups, 50s. to 70s.; Cambridgeshire whites, 50s. to 80s.; French whites, 50s. to 65s.

SMITHFIELD, MONDAY, Feb. 10.

The supply of Beasts continues to be very good, and the trade does not at all improve. There are several left unsold, and many of excellent quality are sold under our top quotation, although that is pretty readily given for anything very choice. The number of Sheep is small, and readily disposed of at fully late rates. Choice Downs, in a few instances, make rather more money, Calves are not so plentiful, and rather dearer. From Holland and Germany there are 357 Beasts, 1080 Sheep, and 99 Calves; from Norfolk and Suffolk, 2100 Beasts; from Scotland, 500; and 400 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 8 | to 4 | 0 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| Best Downs and Half-breds ... | 4 | 2 | — 4 | 6 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | | ... | | |
| | | | | | Calves ... ... | 3 | 4 | — 4 | 8 |
| | | | | | Pigs ... ... | 2 | 8 | — 3 | 6 |

Beasts, 3851; Sheep and Lambs, 18,170; Calves, 139; Pigs, 320.

FRIDAY, Feb. 14.

We have only a small supply of Beasts on offer; trade is, however, so exceedingly bad that these cannot be disposed of. A few choice qualities meet with purchasers at about Monday's quotations, but all other kinds are lower. The number of Sheep is large enough for the time of year; they are freely sold at fully late rates. Trade is very slow for Calves at lower prices. Our foreign supply consists of 148 Beasts, 470 Sheep, 133 Calves, and 10 Pigs; we have 80 milch cows from the home counties.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 8 | to 4 | 0 |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| Best Downs and Half-breds ... | 4 | 2 | — 4 | 6 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | | ... | | |
| | | | | | Calves ... ... | 3 | 0 | — 4 | 4 |
| | | | | | Pigs ... ... | 2 | 8 | — 3 | 4 |

Beasts, 759; Sheep and Lambs, 3040; Calves, 214; Pigs, 295.

MARK LANE.

MONDAY, Feb. 10.—The supply of Wheat to this morning's market by land carriage samples was unusually small, and the condition being generally bad, the greater part remained unsold at a late hour, although a slight reduction would have been acceded to in order to clear the stands. In foreign, business was extremely limited, too much so to allow of any alteration in price.—We reduce our quotatious 1s. per qr. on Barley of all descriptions.—Beans support their previous value. —Peas of all sorts are 1s. per qr. lower.—The Oat trade is heavy at a decline of 6d. per qr.—Flour is also difficult of disposal, and secondary descriptions of foreign the turn cheaper.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42—47 | Red ..... | 37—44 |
| — — fine selected runs...ditto | 42—48 | Red ..... | —42 |
| — — Talavera ..... | 45—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 35—50 | | |
| Barley, grind. & distil., 17s to 21s...Chev. | 26—30 | Malting . | 22—26 |
| — Foreign... grinding and distilling | 17—22 | Malting . | 22—24 |
| Oats, Essex and Suffolk ..... | 17—19 | | |
| — Scotch and Lincolnshire...Potato | 19—23 | Feed ..... | 16—21 |
| — Irish .....Potato | 17—21 | Feed ..... | 16—18 |
| — Foreign .....Poland and Brew | 17—21 | Feed ..... | 15—18 |
| Rye ..... | 22—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... .20s to 26s.....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Winds | 37—42 | Longpod | 27—33 |
| — Foreign .....Small | 22—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler- | 24—26 | Suffolk... | 26—28 |
| — Maple.....27s to 29s .....Grey | 24—25 | Foreign . | 24—31 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—40 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 18—24 | Per sack | 25—34 |

FRIDAY, Feb. 14.—This week the arrivals of grain of all sorts have been good. This morning the indisposition to purchase continues unabated, and prices of all descriptions of corn must be written nominally the same as on Monday, although to make progress with sales to any extent it would be necessary to accept lower prices on each. The same applies to Flour.—A cargo or two of Polish Odessa Wheat afloat have been sold at 33s. per quarter.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Jan. 4..... | 38s 10d | 22s 5d | 16s 6d | 22s 8d | 26s 5d | 28s 1d |
| — 11 ..... | 38 1 | 22 9 | 16 2 | 22 1 | 26 9 | 27 0 |
| — 18..... | 38 0 | 22 8 | 17 9 | 24 8 | 26 7 | 26 11 |
| — 25..... | 38 5 | 22 7 | 16 7 | 23 2 | 26 4 | 27 5 |
| Feb. 1..... | 37 10 | 22 9 | 16 7 | 22 7 | 25 11 | 26 6 |
| — 8..... | 38 1 | 22 10 | 16 9 | 23 11 | 25 10 | 26 0 |
| Aggreg. Aver. | 38 0 | 22 10 | 16 9 | 23 11 | 26 5 | 27 0 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | JAN. 4. | JAN. 11. | JAN. 18. | JAN. 25. | FEB. 1. | FEB. 8. |
|---|---|---|---|---|---|---|
| 38s 10d | | ... | ... | ... | ... | ... |
| 38 1 | ... | | ... | ... | ... | ... |
| 38 0 | ... | ... | | ... | ... | ... |
| 38 0 | ... | ... | ... | | ... | ... |
| 38 1 | ... | ... | ... | ... | | ... |
| 37 10 | ... | ... | ... | ... | ... | |

LIVERPOOL, TUESDAY, Feb. 11.—The supplies of grain, &c., from Ireland this week are again small, but of Barley and Malt coastwise, fair quantities have come to hand. The import of foreign Wheat is more moderate than of late. The attendance at our Corn Exchange this morning was slender, and the demand for Wheat and Flour again very limited; nearly all sorts of the former declined 2d. per bushel from the rates of this day se'nnight, and Flour also 1s. per sack and barrel. Oats were ½d. per bushel, and Oatmeal 3d. per load cheaper, with a slow sale. Barley, Beans, and Peas stand nominally as before quoted. There was a little more doing in yellow Indian Corn, at a reduction of 6d. per qr. No white corn at market.——FRIDAY, Feb. 7.—The arrivals of grain, &c., since Tuesday are moderate, and consist chiefly of Flour and Wheat from France. Prices have not varied the last two days, and the demand has been very sluggish. The operations at our Corn Exchange this morning were quite in retail. As regards Wheat and Flour, the price inclined to the buyer, but no quotable reduction was noticed. Indian Corn was in slack demand, and the top price of Tuesday was barely supported. No change was observable in the value of any other article of the grain trade.


HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

8 by 6 under 10 by 8.....4½d.; 10 by 8 under 14 by 10.....5d.
14 by 10 under 1½ foot, not above 20 inches long ...5½d.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1½ foot | — | 3 feet | — | 30 | — | ...6d. | |
| 3 feet | — | 4 feet | — | 30 | — | ...6½d. | |
| 4 feet | — | 5 feet | — | 35 | — | ...7d. | |

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½ .....12s. 0d. | 8 by 6 and 8½ by 6½ .....15s. 0d.
7 by 5 and 7½ by 5½ .....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8.....16 6

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 2d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12s. each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13s. each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15s. each.

Large sizes, 16 oz., 2d. and 2½d. per foot.

Large sheets, in 200 and 300 feet cases, 2½d. to 2¾d. per foot.

16s. per box; or 2¾d. per foot if less than one box be taken:

| | | | | | |
|---|---|---|---|---|---|
| 11 inches by 8 inches | | | 13 inches by 9 inches | | |
| 12 ,, | by 8 | ,, | 12 ,, | by 10 | ,, |
| 12 ,, | by 9 | ,, | 14 ,, | by 10 | ,, |

Boxes charged 1s. each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

| | ⅛ in. thick. | ¼ in. thick. |
|---|---|---|
| Not above 15 inches long ... ... | 0s. 6d. | 0s. 11d. |
| Above 15 inches and not above 35 ... | 0 8 | 1 1 |
| ,, 35 ,, ,, 50 ... | 0 9¼ | 1 3 |
| ,, 50 ,, ,, 75 ... | 1 0 | 1 3 |
| ,, 75 ,, ,, 100 ... | 1 3 | 1 4 |
| 100 inches and above ... ... ... | ... | 1 6 |

SHEET GLASS TILES.

| | | | |
|---|---|---|---|
| 16 oz. sheet ... ... ... | 0s. 5d. | 26 oz. sheet ... ... ... | 0s. 9d. |
| 21 oz. ,, ... ... ... | 0 7 | 32 oz. ,, ... ... ... | 0 11 |

SUPERIOR ROUGH PLATE TILES.

| | | | |
|---|---|---|---|
| ⅛ inch ... ... ... ... | 0s. 10d. | ⅜ inch ... ... ... ... | 1s. 7d. |
| ¼ inch ... ... ... ... | 1 3 | ½ inch ... ... ... ... | 2 0 |

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6s. each. Wasp Traps, 3s. per dozen. Stands for Pianofortes, 9d. each.

MILK PANS 2s. to 6s. each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1s. for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

IRON GATES, HURDLES, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfields Wrought and Cast-iron Works, Bilston, Staffordshire, Manufacturers of every description of Park Entrance, Carriage and Field Gates, Wickets, &c.; Plain and Ornamental Fencing and Palisading; Ox, Cattle, Sheep and other Hurdles; Tree Guards, Garden Seats, Hay Racks, Wheelbarrows; Land and Garden Rollers, Stable Fittings, &c. &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and most moderate terms. A great variety of the above articles always kept in Stock at the London Warehouse, and at the Works. Drawings and prices may be obtained on application, or furnished free by post.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

BEAUTIFYING AND PRESERVING THE HAIR.—To preserve the human hair has been for a long time the unsuccessful pursuit of innumerable chemists and naturalists, and although there have been various compounds professing to accomplish this desirable end, still nothing really capable of restoring and preserving one of the most beautiful of Nature's gifts was discovered until 1821, when the result of a series of experiments, tried for a long previous period upon persons of all constitutions, fully established the infallible virtues of

C. AND A. OLDRIDGE'S BALM OF COLUMBIA.

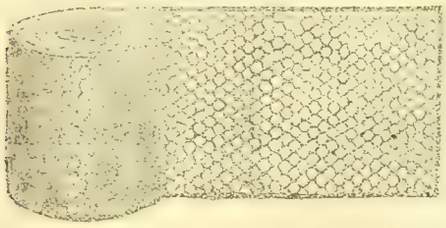
The wonderful efficacy of this inestimable compound in restoring the hair to its pristine beauty, and the certainty with which its conservative agency operates in preserving it, has received, as might be expected, the most flattering testimonials from the grateful thousands who have experienced its effects.—3s. 6d., 6s., and 11s. per bottle; no other prices.—When you ask for OLDRIDGE'S BALM, never let the shopkeepers persuade you to use any other article as a substitute.—13, Wellington-street North, Strand, a few doors above the Lyceum Theatre, on the opposite side.

METCALFE AND Co's NEW PATENT TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

GALVANISED WIRE GAME NETTING.—
7*d.* per yard, 2 feet wide.

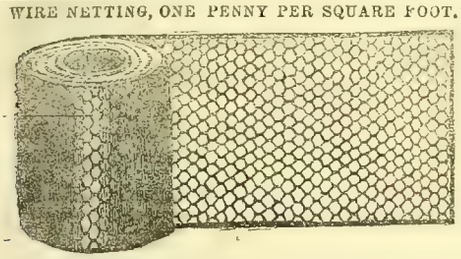


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



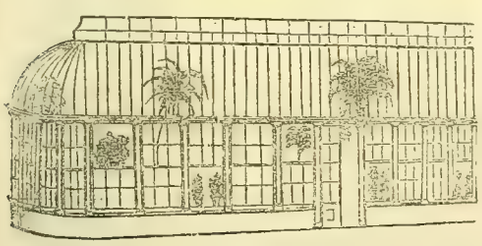
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 ,, | 4½*d.* ,, | 36 ,, | 9*d.* ,, |
| 14 ,, | 6*d.* ,, | 48 ,, | 1*s.* ,, |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

FLAX AND FLAX COTTON.

FARMERS, Manufacturers, Unions, and Parishes, desirous of taking Licenses for preparing Flax on the economical and expeditious process of Chevalier CLAUSSEN, may now apply to Mr. J. S. CHRISTOPHER, 26, Gresham-street, London.

IRISH PEAT CHARCOAL.
TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, exclusive of sacks, 35*s.* per ton; in London, Liverpool, Bristol, and other seaports in England 48*s.* per ton, exclusive of sacks; or 60*s.* per ton, sacks included.—Agents for the sale of the Society's Charcoal have been appointed at several of the principal seaports and Inland towns, a list of whom, together with all other information, may be had on application at this office.

By order of the Court,
Feb. 15, 1851. GEORGE L. PARROTT, Secretary.
Head Office, 9, Waterloo-place, London.

MANURE DEPOT.—PEAT CHARCOAL.
TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 48*s.* per ton, exclusive of sacks; or 60*s.* per ton, sacks included. Mixed with Nightsoil, 45*s.* per ton, sacks included.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.
Incorporated by Act of Parliament, 12 and 13 Vict., c. 91.
*Directors.*

HENRY KER SEYMER, Esq, M.P., Hanford, Dorset—Chairman.
JOHN VILLIERS SHELLEY, Esq, Maresfield Park, Sussex—Deputy-Chairman.

| | |
|---|---|
| John C. Cobbold, Esq., M.P. | Edward J. Hutchins, Esq., M.P. |
| William Cubitt, Esq. | Samuel Morton Peto, Esq., M.P. |
| Henry Currie, Esq., M.P. | Colonel G. A. Reid, M.P. |
| Thomas Edward Dicey, Esq. | William Tite, Esq., F.R.S. |
| William Fisher Hobbs, Esq. | William Wilshere, Esq. |

The Company is empowered to execute—1. All works of Drainage (including Outfalls through adjoining Estates,) Irrigation, Reclaiming, Enclosing, and otherwise improving Land.

2. To erect Farm Homesteads, and other Buildings necessary for the cultivation of Land.

3. To execute Improvements, under contract, with Commissioners of Sewers, Local Boards of Health, Corporations, Trustees, and other public bodies.

4. To purchase Lands capable of Improvement, and fettered by restrictions of Entail, and having executed the necessary works, to resell them with a title communicated by the Company's Act.

All owners of Entailed Estates, Trustees, Mortgagees, Corporations, Incumbents, Life Tenants, and other persons having only limited interests may obtain the use of the Company's powers to carry out every kind of permanent Improvement, either by the application of his own or the Company's funds, secured by a yearly charge on the property improved.

Proposals for the execution of Works to be addressed to 52 Parliament-street, London. WILLIAM CLIFFORD, Secretary.

FARMS AT STANTON FITZWARREN, NEAR HIGHWORTH, WILTS.
And within about four miles of the Swindon and Shrivenham Stations, on the Line of the Great Western Railway.

TO BE LET BY TENDER, from MICHAELMAS, 1851,

PARSONAGE FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. | |
|---|---|---|---|---|
| | 183 | 1 | 19 | of Arable Land, and |
| | 38 | 1 | 12 | of Meadow, Pasture, and Homestead. |
| Total | 221 | 2 | 31 | |

AKER'S FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. | |
|---|---|---|---|---|
| | 225 | 3 | 32 | of Arable Land, and |
| | 75 | 0 | 28 | of Meadow, Pasture, and Homestead. |
| Total | 301 | 0 | 20 | |

HUNTER'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. | |
|---|---|---|---|---|
| | 50 | 2 | 37 | of Arable Land, and |
| | 53 | 1 | 29 | of Meadow, Pasture, and Homestead. |
| Total | 104 | 0 | 26 | |

MATTHEW'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. | |
|---|---|---|---|---|
| | 18 | 3 | 10 | of Arable, and |
| | 57 | 3 | 30 | of Meadow, Pasture, and Homestead. |
| Total | 76 | 3 | 0 | |

To view the Farms, and for further particulars, apply at Stanton House, near Highworth, Wilts. Sealed Tenders to be sent, addressed to the Rev. J. A. TRENCHARD, at the same place, on or before the 25th March next.

February 15.

TO MARKET GARDENERS, NURSERYMEN, AND OTHERS.

TO BE LET, and entered on immediately, about 2500 feet of GLASS, well stocked with excellent young Vines, just coming into full bearing, and a choice collection of Orchidaceous, Stove, Greenhouse, and Hardy Plants, fit for immediate sale; with a neat COTTAGE, and 6 or 7 acres of Land, as may be convenient to a person taking the same, situated in a most sheltered and picturesque spot, about three miles from the increasingly populous town of Southampton, which communicates by railway with the metropolis, and all other parts of England. Some of the soil is peculiarly adapted for a Nursery of American Plants. The stock to be taken at a valuation.—For particulars, apply to JAMES TEE, Gardener, Aldermoor, near Shirley, Southampton.

GREENHOUSES, SECOND-HAND.

TO BE SOLD, a Lean-to, 15 by 12 feet; and a Half-span, 19 by 9 feet, fixed at Holloway. The above, which are fitted with Stage, Shelves, &c., and heated by hot water in the most complete manner, will be parted with at a great sacrifice, in consequence of the Proprietor removing. Apply to Messrs. STEPHENSON and PEILL, Hot-water Apparatus Manufacturers, 17, New Park-street, Southwark.

## *SALES BY AUCTION.*

BRENTFORD, MIDDLESEX.—FINAL SALE.
To Noblemen, Gentlemen, Nurserymen, Market-Gardeners, and others engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. J. RONALDS to offer to public competition, by Auction, on the premises, the Butts and Twolands Nurseries, Brentford, Middlesex, on MONDAY, February 24th, and following day, at 11 o'clock. The whole of the remaining NURSERY STOCK, consisting of a rich assortment of Fruit and Forest Trees, Evergreens, Ornamental and Deciduous Shrubs, American Plants, &c. May be viewed, and Catalogues had (6*d.* each, returnable to purchasers), prior to the Sale, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, February 27th, about 200 choice double Camellias, from 2 to 5 feet, well set with bloom buds; also a quantity of Lilium lancifolium, in varieties; a selected assortment of standard and dwarf Roses, American plants, comprising fine Hybrid Rhododendrons, Ghent Azaleas, Andromedas, &c.; together with a choice collection of Dahlias in dry roots. May be viewed the morning of sale, and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

HIGHBURY NURSERY.
To Gentlemen, Nurserymen, Proprietors of Tea Gardens, &c.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the Premises, Highbury Nursery, opposite Highbury Barn Tavern, Islington, on MONDAY, March 3d, 1851, and following day, at 11 o'clock each day, by order of the Proprietor, in consequence of the land being let for building, the whole of the CHOICE NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, and Ornamental Trees; also, the selected Greenhouse Plants, comprising large Camellias, Azalea indica, large Araucaria, Rhododendron Arborea, Oranges, Myrtles, Ficus elastica, Geraniums, Fuchsias, Cyclamen, &c.; together with the Pits, Frames, and Lights, Hand-glasses, Wheelbarrows, a quantity of well seasoned Bog, Potting Mould, &c.; a Summer House; an Erection or Tea Booth, 36 feet by 18; Tables, Forms, Tea Trays, Crockery; 2 Coppers; a Swinging Boat; Utensils in Trade, &c. May be viewed prior to the Sale; Catalogues had, 6*d.* each, returnable to Purchasers on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.
UNRESERVED SALE OF CAMELLIAS OF THE CHOICEST DESCRIPTION, BOTH AS TO FORM OF THE PLANTS AND VARIETIES, FROM MESSRS. LODDIGES.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, February 21, at 12 for 1 o'clock, a remarkably CHOICE SELECTION OF CAMELLIAS, from Messrs. Loddiges' Nursery; comprising beautifully formed Plants, from 3 to 8 feet, well set with bloom, and of the following favourite sorts: Double White (very fine), Imbricata, Elegans, Donckelarii, Chandlerii, Candidissima, and a few flowering Plants of the rare and beautiful Aulica; also some fine specimens of Andromeda, Floribunda, Rhododendron campanulatum, &c.—May be viewed on the day prior and morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden.

SALE OF AMERICAN PLANTS AND OTHER NURSERY STOCK.

MR. D. A. RAMSAY will Sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, (one mile from Hyde-park Corner) on TUESDAY, Feb. 18th, at 12 o'clock, 1000 Rhododendrons, Azaleas, Andromedas, Ledums, &c., in fine varieties; Evergreens, Ornamental Trees and Shrubs, a quantity of Bulbs, a choice collection of Pinks, Yellow and other Picotees and Carnations; 1000 Victoria and other Rhubarb roots, Fig Trees, strong Grape Vines, Mushroom Spawn, Ash-leaf Kidney Potatoes, &c.—May be viewed prior to the Sale, and Catalogues had at the principal Seedshops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

TO MARKET GARDENERS, NURSERYMEN, BUILDERS, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, on the premises, near the Wheatsheaf, New-road, Shepherd's Bush, Hammersmith (late in the occupation of Mr. John Day), on FRIDAY, February 21, at 12 o'clock, the Growing Crops on about five acres of ground, which must be immediately cleared for building; consisting of 1500 of the celebrated Rifleman Gooseberry, and other market varieties, British Queen and other Strawberries, Raspberries, Currants, Rhubarb Roots, Broccoli, and other Vegetable Crops, &c. Also a quantity of Nursery Stock, comprising fine Rhododendrons, Azalea, Hardy Heaths, Grape Vines, Fig-trees, Evergreens of sorts, Fruit Trees, Dwarf and Pillar Roses, Mushroom Spawn, &c., the property of a Country Nurseryman. The whole to be sold without the least reserve.—May be viewed one day prior to sale. Catalogues had at the Wheatsheaf, the principal Seedshops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

TO SEEDSMEN, FLORISTS, &c.

TO LET, an ESTABLISHED BUSINESS, in the main thoroughfare of a densely populous neighbourhood, doing a good retail trade in Seeds and Plants, with an excellent opportunity of increasing. The above contains a large showy Shop, four Rooms, &c. Rent only 18*l.* per year. Coming in for the whole, including Stock, Fixtures, &c., 60*l.* Present returns 300*l.* a year.—Apply to G. BALDWIN, 4 and 5, Greenwich road, Greenwich, Kent.

TO BE DISPOSED OF, in a fashionable Watering-place in the centre of England, a Small MILK ESTABLISHMENT, where 12 Cows are kept, together with the occupation of 25 Acres of Land, in a high state of cultivation; and also a Furnished Lodging House in a good part of the town.—Apply by letter, post-paid, to B. D., Office of this Paper.

HOSE FOR LIQUID MANURE, FIRE-ENGINES, and AGRICULTURAL PURPOSES, made of Canvas, lined and coated with Gutta Percha. It is about one-third the price of Leather or India Rubber; it will convey Liquids of all kinds under a heavy pressure, is extensively used at the Government Public Works, by the Navy, and amongst Agriculturists, giving universal satisfaction.—Testimonials and Prices may be obtained at Messrs. BURGESS and KEYS, 103, Newgate-street. London agents: Messrs. DEANE, DRAY and DEANE, Swan-lane; Messrs. TILLEY, Blackfriars-road.—Country agents:—Messrs. RANSOME and PARSONS, Ipswich; Messrs. J. and S. JOHNSON, Liverpool; Messrs. DICKSON, Hull; Mr. SAMUEL WILSON, agent for Scotland.

NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON.—An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting, or immediate effect, from 3 to 12 feet, 25s. to 5l. per 100.

Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 30s., and 40s.; Larch Fir, 7s. 6d. to 20s.; Spruce, 20s., 30s, and 40s.; Scotch, 10s, 15s., 20s.: Pinaster, 10s, 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahonia, for cover, 40s. to 80s.; Hazel, 15s., 20s., and 35s.; English Oak, 15s., 20s., and 40s.; Poplar, 20s., 30s., and 40s. Quicks, 5s., 7s. 6d., and 10s.

Planting contracted for to any extent, from 5l. to 20l. per acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20s., 40s., and 80s. per 1000; 1 foot, single stems, fit for working, 10s. per 100; 1½ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once for cover; 4 to 6 feet, single stems, for working the beautiful scarlet and other fine kinds, 50s. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen; hybrid scarlet, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25s.; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d. per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100; Epigæa repens, 50s. per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 18 inches to 2 feet, 60s. per dozen; Arbutus, 12 inches, 8s. per 100; 1½ foot, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s per 100; Laurustinus, bedded, 40s. per 1000, 8s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts, named, 50s. per 100; Double White, Double Red, and New Crimson Thorns, 40s. per 100, 6s. per dozen; Large Dutch Honeysuckles, 12s. 6d. per 100; Giant Irish Ivy, 8s. per 100; 2 years seedlings, Scotch Fir, fine, 2s. 6d. per 1000; 1 years seedling Larch, 2s. 6d. per 1000; 2 years seedling Horse Chestnut, 12s. 6d. per 1000.

The prices are for wholesale; if ordered in less quantities a higher price will be charged. All orders above 5l., carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American steam-packets take their departure, thus saving the delay and expenses of land carriage.

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MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—s. d. | | Per 1000—s. d. |
|---|---|---|---|
| York Regents .. .. | 10 6 | New Early Ebrington Kidney .. .. | 15 0 |
| American Native .. | 10 6 | Do. Ash-leaved .. .. | 15 0 |
| White-blossomed Kidney .. .. .. | 10 6 | Do. Frame Round .. | 10 6 |
| Soden's Early Oxford .. | 15 0 | Do. Radical .. .. | 10 6 |
| Early Cockney .. .. | 15 0 | Fox's Seedling .. .. | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1s.—Newington Butts, London, Feb. 15.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15¼ per cent. |
| Salesman, No. 1 ... ... ... ... ,, ,, | 11¾ ,, |
| ,, No. 2 ... ... ... ... ,, ,, | 9½ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

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STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

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SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED and PLANT LIST for 1851 is now complete, and stamped as a newspaper, to go free by post. It is prefaced with a page of Instructions for SOWING and RAISING SEEDS, with allusions to Sorts requiring peculiar treatment, and contains the following:

PART I.—FLOWER SEEDS, consisting of lists of 422 new and most showy sorts, with colour, height, hardiness, duration of each, price per packet, and other useful information.

PART II.—VEGETABLE SEEDS, with time of sowing each kind, prices of each, and other descriptive information.

PART III.—AGRICULTURAL SEEDS, containing also much useful information.

PART IV.—ROOTS, FRUITS, BULBS, &c. for early planting.

PART V.—Contains our Descriptive Priced Catalogue Lists of Show, Fancy, Scarlet, and other Geraniums; Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica; Greenhouse, Stove, and Miscellaneous Select Plants.

PART VI.—Contains NEW PLANTS of 1851.

The following Collection will be highly approved:

VEGETABLE SEEDS.

| | £ | s. | d. |
|---|---|---|---|
| A collection in full proportion, one year's supply, for a large garden, of first-rate sorts, including 24 quarts of Peas, 6 quarts Broad Beans, 10 sorts Broccoli, 6 of Cabbage, 3 of Cauliflower, 8 of Lettuce, 5 of Onion, 5 of Radish, and all other sorts in proportion | 3 | 0 | 0 |
| The same collection, in smaller quantities ... ... | 2 | 0 | 0 |
| Collection, in reduced proportion ... ... ... | 1 | 0 | 0 |
| Collection, for a small garden, of good sorts ... ... | 0 | 10 | 6 |

If any vegetables not required, enlarged quantities of others sent to make up the amount. A list of the sorts furnished if required.

SELECT FLOWER SEEDS,

| Free by post, with full directions for sowing, heights, colours, &c. | s. | d. |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8s. 6d., 30 for 5s. 6d, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3s. 6d.; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2l. and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

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NEW LAPSTONE KIDNEY POTATO.—This Potato is of first-rate quality, and has been highly spoken of by Dr. Lindley in the *Gardeners' Chronicle*, and also by every one that has grown it. It is a most abundant bearer, and the best in quality of any Potato grown, and keeps good up to May or June. They are of good size, and have been grown on warp land near the banks of the Trent, and therefore will be a good change for any other soil.

New Lapstone Kidney Potatoes, in sacks of 2 cwt., at 16s., sacks included.
Prince Regent, ditto, ditto, 10s.
Early Shaws, ditto, ditto, 9s.

Early orders accompanied by remittances will receive prompt attention.

WILLIAM STENT, Nursery and Seedsman, Stockwith, Gainsborough, Lincolnshire.

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DOUBLE ITALIAN TUBEROSE ROOTS, 3s. PER DOZEN.

ROBERT HALL, 63, South Audley-street, Grosvenor-square, facing the chapel. Postage Stamps taken in payment.

R. H. begs to remark that his TUBEROSE ROOTS have been left in the ground a sufficient time to mature, instead of, as is too generally the case, being hurried out to secure an early market when only about one-half of them will bloom. Also small Yorkshire Breakfast Hams, 10d. per pound.

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RENE LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, begs to draw the attention of the Public to his still unrivalled collection of PEAR TREES, not yet surpassed in Europe, in which will be found all the very best varieties, insured for the season required. Trees may be had already formed, either pyramidal or for espalier, in unusually fine and healthy condition, such as will give the most ample satisfaction to both purchaser and R. L. The price has been much reduced, and the quantity of Trees R. L. possesses enables him to supply the trade with guaranteed sorts equal to any house on the Continent, having given the greatest satisfaction for several years. Foreign correspondents will find a very great advantage if the selection is left to R. L., as they will be cheaper, and none but the best sorts will be supplied.

R. L.'s Descriptive Catalogue, which has been found the best and most correct yet published, is only to be had at his Nursery, Jersey, price 1s. 6d. and 6d. extra for postage.

A very great reduction has been made in the transit by steamers to all parts of England, so that R. L. can supply Trees cheaper than any other grower.

A fine collection of Roses, Camellias, and yellow Picotees.

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CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36s., 40s., and 50s. per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

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ESCHOLTZIA ALBA.

JOSEPH EVANS has great pleasure in offering the above new and beautiful Annual, which he has flowered the last two seasons, and which has been greatly admired. J. E. begs to call attention to the favourable notice of it in the *Gardeners' Chronicle* of August 10, 1850, and the *Cottage Gardener* of August 15, 1850. J. E. will commence sending out packets of 20 seeds, at 2s. 6d. per packet, postage free, on and after Monday, February 17. A remittance from unknown correspondents is respectfully requested.

Rosina Garden, London-road, Cheltenham.

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PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1l. per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; his unprecedented low price last year, and the prospects of agricultural ure, having created an unlooked-for demand,

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PILTDOWN NURSERIES, MARESFIELD, SUSSEX.

JAMES MITCHELL begs to announce that he purposes sending out in May, in strong plants, his superb new Dahlias, also all the leading varieties of other growers.

MITCHELL'S QUEEN OF BEAUTIES.—This novel and extraordinary flower has one of the most rich and beautiful rose tips ever seen on a pure enamel white ground, two-thirds of a globe, with an outline smooth and round; very double, very symmetrical, the eye level with the surface, and has been admired by everybody who has seen it. It obtained a first-class certificate at the Royal South London Show, the Grand Annual Trial Show, at the Grecian Saloon, also at all the principal shows in Sussex and Kent—4 feet, 15s. per plant.

MITCHELL'S ELEGANTISSIMA.—This is also an extraordinary novelty, a fancy variety, marked with tortoiseshell, and perfectly unlike everything that has been seen before. This also had a certificate at the great Trial Show, on the round of its novelty—4 feet, 10s. 6d. per plant.

---

IMPROVED METALLIC FLOWER LABEL

ADVANTAGES OF THE IMPROVED METALLIC FLOWER LABEL OVER ALL OTHERS. They are less liable to disturb the roots; they are indestructible; they are uniform and ornamental; they are smoother, and can be written upon either with lead pencil on wet paint, as on wood, or with chemical ink. Price 2s. per 100.

May be had of T. LOCKHART, Seedsman, 84, Fleet-street, London; or Wholesale to Dealers, of S. ROOKE, jun., 7, Whitrall-street, Birmingham.

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MELONS! MELONS! MELONS!

The finest flavoured in the world is the BROMHAM HALL, Green Flesh.

EDWARD TILEY respectfully informs the Nobility, Gentry, and Melon Growers in general that he has still a stock of good old Seed of this splendid Melon saved in 1848, and which has given universal satisfaction to all purchasers of last season. To prove its superiority of flavour over all other Melons, the following opinion has been given. It was forwarded to the Editor of the *Gardeners' Chronicle*, July 22, 1848, for his judgment, and he was of opinion that the Bromham Hall Melon was the finest flavoured he had ever tasted. It was exhibited at the Chiswick Exhibition, July 11, 1849, where it was awarded by the judges the Silver Knightian Medal for its luxuriant flavour. Again it was forwarded to Dr. Lindley, August 11, 1849:—"We have received your Bromham Hall Melon; it was much over-ripe, nevertheless it was by far the best flavoured Melon we ever tasted." It was exhibited at the Horticultural Society's Rooms, Regent-street, September 4, 1849, and pronounced by the judges to be the best flavoured Melon they ever tasted, and was awarded the Banksian Medal. On the 20th July, 1850, again exhibited at Chiswick, and obtained first and second prizes for its superior flavour. It was grown last season at the Horticultural Society's Gardens, London, by Mr. Thompson, superintendent to the fruit department, whose opinion was in accordance with the others. The fruit is very handsome, round shaped, hollow crown, beautifully netted, thin skin, and flesh very firm; a free setter and abundant bearer, weight from 3 to 4½ lbs. It may be as easily grown by an amateur in a frame as the common Vegetable Marrow; also retains its fine flavour for a considerable time after being cut. Sold in packets at the reduced price of 1s. 6d.; also the following other fine varieties can be highly recommended, all true old Seed:—

| | 1s. 0d. per packet |
|---|---|
| Camerton Court Green-flesh ... ... | 1 0 ,, |
| Queen Melon ... ... ... ... ... | 1 0 ,, |
| Blackall's Green-flesh ... ... ... | 1 0 ,, |
| Bailey's Green-flesh... ... ... ... | 1 0 ,, |
| Bowood Green-flesh... ... ... ... | 1 0 ,, |
| Beechwood Green-flesh ... ... ... | 1 0 ,, |
| Windsor Prize ditto... ... ... ... | 1 0 ,, |
| Emperor ... ... ... ... ... | 1 0 ,, |
| Fleming's Trentham Hybrid ... ... | 1 0 ,, |
| Duncan's Green-flesh do. Improved ... | 1 0 ,, |
| Hampton Court Green-flesh ... ... | 1 0 ,, |
| Egyptian do. do. Improved ... ... | 1 0 ,, |
| Coles' superb Celery ... ... ... | 1 0 ,, |

Any quantity of the above will be sent postage free to any part, but a remittance must accompany the order from unknown correspondents either by Post-office order or penny postage stamps.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

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COCHIN CHINA FOWLS.—Cocks of the Cochin China breed, reared from the Prize Fowls, shown by Mr. Punchard, of Blunt's Hall, Haverhill, Suffolk, at the late Birmingham and Midland Counties exhibition, may be obtained of Mr. PUNCHARD, at Two Guineas each.

---

GREAT SALE OF NURSERY PLANTS.

PETER BOOTH, NURSERYMAN, Falkirk, is Selling off, at his very extensive grounds, a very large stock of Transplanted LARCH, SCOTCH, and SPRUCE FIR PLANTS, of strong and smaller sizes, including Seedlings, with a great variety of all the other kinds of Forest Trees, Shrubs, &c., generally grown in large Nurseries, of most excellent quality, and at prices much reduced.

---

GARDEN AND FARM SEEDS.

W. DRUMMOND AND SONS, SEEDSMAN, Stirling, Scotland, beg to announce, that they are now prepared to execute orders for the above from a large and carefully-selected Stock.

Their Catalogue of Vegetable and Flower Seeds may be had free, by post, on application. It will be found to contain only the names of such varieties as are really worth cultivating; and, from an accurate description being affixed to each, the Gardener and Amateur can have no difficulty in making a suitable selection. In reference to this Catalogue, the Editor of the *Gardeners' Chronicle* says—"It is simple, short, and one of the best we have seen. They are pursuing the sensible course we have so often insisted upon, for the sake of both seller and buyer."

Priced Lists of Farm Seeds are also ready, and may be had on application.

N.B. Parcels of Seeds are in most cases delivered carriage paid.

Agricultural Museum, Stirling, N.B.; and 58, Dawson-street, Dublin.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Churchrow, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 15, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 8—1851.] SATURDAY, FEBRUARY 22. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 123 *b* | Market gardening | 117 *b* |
| Begonia fuchsioides | 118 *a* | Mycology, contributions to, noticed | 119 *b* |
| Beech trees | 118 *b* | Pæonies, to propagate | 119 *b* |
| Birds, British song | 116 *c* | Peaches, to force | 118 *b* |
| Bouquet trade in New York | 118 *a* | Pears for espaliers | 120 *c* |
| Broccoli, Snow's | 118 *a* | Plants, effects of putrefying matter on | 116 *b* |
| Calendar, Horticultural | 119 *c* | Poultry | 123 *a* |
| Cyclamens | 118 *c* | Rhubarb | 118 *a* |
| Drainage Act | 123 *a* | St. Petersburgh | 116 *c* |
| Farms, small, schemes for | 122 *b* | Season, the | 122 *a* |
| Flower beds, mixed | 117 *c* | Seeds, to germinate | 116 *a* |
| Gardening, market | 117 *b* | Soil, management of the | 121 *b* |
| Garden gleanings | 116 *c* | Spade husbandry | 121 *b* |
| Gleanings, foreign | 116 *c* | Temperature, Chiswick *v.* Holkham | 118 *b* |
| Grafting | 117 *b* | Trade memoranda | 117 *c* |
| Holly, variegated, large | 113 *a* | Trees, Beech | 118 *b* |
| Horticultural society, new regulations of | 115 *c* | Trenching | 121 *b* |
| — report of meeting | 119 *a* | Weather, the | 125 *a* |
| Lycaste Skinneri | 118 *a* | Weeds and manure heaps | 116 *a* |
| Manure, liquid | 122 *c* | | |
| Manure heaps and weeds | 116 *a* | | |



SURPLUS STOCK OF FOREST TREES, SHRUBS, AND FRUIT TREES, now on Sale at KENDLE'S NURSERY, Plymouth. See Advertisement, page 83, in this Paper.

Larch Firs, 3 feet, 18*s.* per 1000; very stout and fine Scotch Firs, 2 feet, 15*s.* per 1000.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem | 42*s.* to 60*s.* |
| Extra superior selected Standards | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

Rose Nippers, of various sizes, for pruning, 2*s.* 6*d.* to 4*s.* each. The Nippers are of an improved shape, being made so as to remove a shoot without bruising the part left; they are highly recommended as a useful addition to the implements of amateurs. Metallic Labels for pot Roses, 2*s.* per 100.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5*l.*, 7*l.* 10*s.*, and 10*l.* per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

CUCUMBER—"PHENOMENA."

EDWARD TILEY begs to offer to Cucumber growers generally the above superb CUCUMBER, which he feels confident will give the greatest satisfaction to them, as did the former kinds sent out by him during the last seven years, being Victory of Bath, Gordon's White Spine, and Lord Keynon's Favourite.

The above splendid Cucumber, "Phenomena," was a hybrid between Hamilton's Black Spine and Milla's Jewess, which it surpasses, both for its prolific qualities and length of fruit, generally growing from 22 to 28 inches. It is a beautiful black spine, of a dark green colour, and free from ribs or shrivels; it also grows quickly, carries its bloom well, and will be found first-rate for exhibition. As a proof of its prolific qualities and length, the following may be vouched for, viz.:—There were cut from two plants, grown in a one-light box, the size of which was 4 feet by 6, 24 brace of Cucumbers, each fruit averaging 22 inches long—total length of the whole amounting to 29 yards 1 foot. It is solid, and eats very crisp. Sold in packets containing seven seeds, 5*s.*; or three seeds, 2*s.* 6*d.*

E. T. has also seed of his three other superb Cucumbers at the following prices:

| | |
|---|---|
| Victory of Bath, per packet | 2*s.* 0*d.* |
| Gordon's White Spine, ditto | 1 6 |
| Lord Keynon's Favourite, ditto | 2 6 |

(This last is the best for winter cultivation.

Any quantity of the above will be sent postage free to any part on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

GARDEN AND FARM SEEDS.

W. DRUMMOND AND SONS, SEEDSMAN, Stirling, Scotland, beg to announce, that they are now prepared to execute orders for the above from a large and carefully-selected Stock.

Their Catalogue of Vegetable and Flower Seeds may be had free, by post, on application. It will be found to contain only the names of such varieties as are really worth cultivating; and, from an accurate description being affixed to each, the Gardener and Amateur can have no difficulty in making a suitable selection. In reference to this Catalogue, the Editor of the *Gardeners' Chronicle* says—"It is simple, short, and one of the best we have seen. They are pursuing the sensible course we have so often insisted upon, for the sake of both seller and buyer."

Priced Lists of Farm Seeds are also ready, and may be had on application.

N.B. Parcels of Seeds are in most cases delivered carriage paid.

Agricultural Museum, Stirling, N.B.; and 58, Dawson-street, Dublin.

SPLENDID MULBERRIES.—FINEST PRIZE GOOSEBERRIES.

AS the present is one of the best SEASONS FOR PLANTING, WILLIAM DENNIS and Co., Florists, &c., King's-road, Chelsea, beg respectfully to call the attention of the public to the fact, that the whole of their really useful and Ornamental Stock must absolutely be cleared off this season; and in order to dispose of it as expeditiously as possible, they have called a SALE BY AUCTION, which takes place Feb. 25.; and as it is their intention not to place the slightest reserve on any portion of the Stock, they consider for Gentlemen engaged in Planting, it is an unusually good opportunity. The Stock consists of some extra fine large Fruiting Trees of the Black Mulberry. Pine Plants established in pots, and fine dwarf plants for training. A considerable quantity of Standards of the best sorts of Prize Gooseberries, and above 300 kinds of good bushy Plants, two to five years old; also a large quantity of Evergreens, Deciduous Shrubs, Ornamental Trees, &c. Stove and Greenhouse Plants, comprising fine specimens of Orchidæ, Cacti, fine standard and dwarf bushy Geraniums, Greenhouse and hardy Bulbs, &c. Catalogues may be had on the premises and of the principal Seedsmen, or sent by inclosing two postage stamps.

WOKING NURSERY, SURREY.

GEORGE JACKMAN has to offer from his extensive Stock of CONIFERS, EVERGREEN, and FLOWERING SHRUBS, the following, which are all kept safe for removal. Prices will be furnished on application, or priced Catalogue, by enclosing two postage stamps.

N.B.—Reference required from unknown Correspondents.

Arbor-vitæ American, 3 to 4 ft.; Ditto, close Siberian, 2 to 4 ft.; Aucuba japonica, 1½ to 2 ft.; Berberis aquifolium, 1 ft.; Ditto, dulcis, 1 to 2 ft.; Bays, Sweet, 1 to 2 ft.; Box-tree, variegated, 1½ to 2 ft.; Chimonanthus fragrans, in pots; Clematis, in sorts; Cedar, red, 2 to 3 ft.; Cryptomeria japonica, 2½ ft., in pots, from seeds; Ditto, nana; Hollies, green and variegated, 1 to 3 ft.; Ilex latifolia; Ditto, latispina; Ditto, dypirenna; Juniperus Bedfordiana, 1 ft.; Ditto, Chinese, 2 to 6 ft.; Ditto, macrocarpa; Laurustinus, 1 to 2 ft.; Laurels, common, 1 to 3 ft.; Ditto, Portugal, 1 to 3 ft.; Ditto, Portugal, quartered, fine, 3½ to 4 ft.; Magnolia, Exmouth; Ditto, soulangiana; Privets, evergreen, 1½ to 2 ft.; Ditto, Chinese; Pinus excelsa, 3 to 5 ft.; Ditto, insignis, 2 ft.; Ditto, Cembra, 1 to 2 ft.; Cedrus Deodara, 2 to 4 ft.; Ditto ditto, very fine, 5 to 6 ft.; Ditto, Lebanon, 2 to 3 ft.; Abies Douglasii, from seed, in pots, 2 ft.; Ditto, Smithiana, 2 to 3 ft.; Phillyrea, Ilex leaf, 1 to 2 ft.; Taxodium sempervirens, 1 to 3 ft.; Taxus adpressa; Ditto, elegantissima; Dovaston, 3½ ft.; Tulip-tree, 2 to 4 ft.; Yews, common, 1 to 2 ft.; Ditto, Irish, 1 to 5 ft.; Limes, 6 to 10 ft.—Woking, Feb. 22, 1851.

TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam, 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.

Woking Nursery, Feb. 22, 1851.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18*s.* to 24*s.* per doz. | |
| Dwarf Standard do. | do. | 12*s.* to 18*s.* ,, |
| Climbing Roses | do. | 9*s.* to 12*s.* ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.

All packages delivered free of carriage to London.

Nurseries, Cheshunt, Herts, Feb. 22.

SUPERB RANUNCULI.—The present being the usual month for planting the Ranunculus, we beg to recommend the following selections.

*The new varieties have been selected with great care, of first-rate sorts, from immense quantities of seedlings, and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.*

| RANUNCULUS.—*Free by post.* | £ | *s.* | *d.* |
|---|---|---|---|
| 50 Splendid new varieties, with names | 2 | 0 | 0 |
| 25 do. do. do. | 1 | 2 | 6 |
| 100 do. varieties from new and other best named sorts | 3 | 10 | 0 |
| 50 fine named varieties | 0 | 15 | 0 |
| 100 finest mixed | 0 | 10 | 0 |
| 100 fine do. 5*s.*, or free by post, 6*s.* | | | |

| ANEMONES; by post, 3*s.* per 100 extra. | | | |
|---|---|---|---|
| 100 new and superb named double varieties | 1 | 14 | 0 |
| 50 do. do. 18*s.*; 25 do., 10*s.*; or, by post | 0 | 11 | 0 |
| 100 finest large mixed double | 0 | 10 | 6 |
| 100 fine do. do. | 0 | 7 | 6 |
| Fine new mixed single, per lb. | 0 | 4 | 0 |

Fine double varieties, per dozen: Apenina, light blue, 3*s.*; Cælestina, blue, 3*s.* 6*d.*; Coleur de Sang, red, 3*s.*: Cramoise Royale, scarlet, 3*s*; Josephine, crimson, 3*s.*; Prince Albert, blue, 3*s.*; Rose Surpassante, 3*s.*; Scarlet Superbe, 3*s.*; True Blue, 3*s.* 6*d.*

GLADIOLUS—Autumn varieties of the Floribundus and Gandavensis habit:—

| | Each. | | Each. |
|---|---|---|---|
| Albus roseus | 1*s.* 6*d.* | Psittacinus, 1*s.* 6*d* p. doz. | 0*s.* 2*d.* |
| Autumnalis, orange | 1 0 | ,, Sanguineus, dark, 7*s.* 6*d.* per doz. | 0 9 |
| Brenchleyensis, scarlet | 3 6 | Splendens, rich, scarlet | 3 6 |
| Floribundus, 2*s.* 6*d.* p. doz. | 0 3 | Vernalis Spicatus | 1 6 |
| Gandavensis, 5*s.* p. doz. | 0 6 | | |

Copies of our Autumn Root Catalogue may still be had. Remittances required from unknown correspondents.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2*s.* 6*d.* per lb. Also, his superior dark-green Savoy, 1*s.* 6*d.* per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Pounder's End, Enfield, Middlesex.

DOUBLE ITALIAN TUBEROSE ROOTS, 3*s.* PER DOZEN.

ROBERT HALL, 63, South Audley-street, Grosvenor-square, facing the chapel. Postage Stamps taken in payment.

R. H. begs to remark that his TUBEROSE ROOTS have been left in the ground a sufficient time to mature, instead of, as is too generally the case, being hurried out to secure an early market when only about one-half of them will bloom. Also small Yorkshire Breakfast Hams, 10*d* per pound.

NEW EARLY POTATOES (Carriage free).—

| | Per bush. | Per peck. |
|---|---|---|
| JACKSON'S GOLDEN DROP (direct from Messrs. Jackson) | 5*s.* 6*d.* | 1*s.* 6*d.* |
| JACKSON'S IMPROVED KIDNEY | 7 6 | 2 0 |
| SUTTON'S RED ASH-LEAF KIDNEY | 7 6 | 2 0 |

The above are three of the best Potatoes in cultivation, being exceedingly early, prolific, mealy, and good for keeping.

Post-office orders are requested in payment, addressed JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

Also the Reading Giant Asparagus Plants, very strong, 3*s.* 6*d.* per 100.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| Per 1000—*s. d.* | | Per 1000—*s. d.* | |
|---|---|---|---|
| York Regents | 10 6 | New Early Ebrington Kidney | 15 0 |
| American Native | 10 6 | Do. Ash-leaved | 15 0 |
| White-blossomed Kidney | 10 6 | Do. Frame Round | 10 6 |
| Soden's Early Oxford | 15 0 | Do. Radical | 10 6 |
| Early Cockney | 15 0 | Fox's Seedling | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, Feb. 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15½ per cent. |
| Salesman, No. 1 | 11½ ,, |
| ,, No. 2 | 9½ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

SAMUEL FINNEY AND CO.'S CATALOGUE OF SEEDS, for 1851, is now ready, and may be had postage free, on application. It contains a Select List of all the most approved sorts of Culinary Vegetables in cultivation. Also an extensive collection of Flower Seeds, including the imported German kinds, with descriptions, stating the proper time for sowing, hardiness, duration, height, time of flowering, and the colour of each, with much other useful information. The collections of Seeds sent out last year by S. F. and Co. having given general satisfaction, they again offer them as under.

VEGETABLE SEEDS.—CARRIAGE FREE.

| | | | |
|---|---|---|---|
| We prove the growth of each kind before we send them out. | | | |
| No. 1. A full collection, suitable for a large establishment, for | | 45*s.* | 0*d* |
| No. 2. Do., in smaller quantities | | 30 | 0 |
| No. 3. Do., ,, ,, | | 20 | 0 |
| No. 4. Do., ,, ,, | | 12 | 6 |
| No. 5. Do., ,, ,, | | 8 | 0 |

FLOWER SEEDS—CARRIAGE OR POSTAGE FREE.

| | | | |
|---|---|---|---|
| 100 of the most select hardy, half hardy, and greenhouse kinds, 1 packet of each | | 25*s.* | 0*d.* |
| 50 Ditto. Ditto. Ditto. | | 14 | 0 |
| 25 Ditto. Ditto. Ditto | | 8 | 0 |
| Hardy kinds separate, per dozen packets | | 2 | 0 |
| Half hardy Ditto. Ditto. | | 3 | 0 |
| Greenhouse Ditto. Ditto. | | 4 | 0 |

The kinds and quantities contained in each collection are stated in the Catalogue.—We have constant communication by Railway and Steamboat with all parts of the kingdom.—A remittance or reference is required from unknown correspondents.—Nursery and Seed Establishment, Gateshead, Newcastle-upon-Tyne.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Feb. 22.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

NEW KITCHEN GARDEN SEEDS.—Warranted Excellent quality. Carriage Free! (See below).

| | | £ | *s.* | *d.* |
|---|---|---|---|---|
| No. 1. | Complete collection of 20 quarts of the newest and most prolific Peas, with all other Seeds in proportion, for one year's supply ... ... | 2 | 10 | 0 |
| No. 2. | Complete collection, in smaller quantities ... | 1 | 10 | 0 |
| No. 3. | ditto ditto ditto ... | 1 | 0 | 0 |
| No. 4. | ditto ditto ditto ... | 0 | 12 | 6 |

*A List of the kinds furnished in the above collections will be found in our* PRICE CURRENT AND GARDEN DIRECTORY, *which can still be had on application.—See* Gardeners' Chronicle, *Jan.* 4, 1851, *back page.*

**** All Seed Orders above 2*l.* delivered Free of Carriage to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast, by steamers.

Apply to WILLIAM E. RENDLE & Co.,
Seed Merchants Plymouth.

N.B.—All the New Vegetable and Flower Seeds advertised from time to time in this Paper can be obtained from us, at the regular current prices.

HEATHS AND OTHER PLANTS FOR EXHIBITION.

WILLIAM JAMES EPPS begs to state that he has for sale the finest Stock of Young HEATHS and other Greenhouse and Stove Plants possible, which will make splendid specimens in a short time. The superior character of Plants sent out from this Establishment is justly admitted by all who have purchased. The magnificent specimens of Heaths, &c., exhibited by him last season at the Exhibitions at Chiswick and the Royal Botanic Gardens, London, where he received the highest awards, fully justify the foregoing remarks.

Strong bushy Plants can be had at the following low prices, exclusive of packing, carriage paid to London:

| | £ | *s.* | *d.* | | £ | *s.* | *d.* |
|---|---|---|---|---|---|---|---|
| 100 fine varieties of Heaths ... ... | 5 | 0 | 0 | 100 fine vars. of Stove and Greenhouse Plants ... ... | 5 | 0 | 0 |
| 50 ditto ditto | 2 | 12 | 6 | 50 ditto ditto | 2 | 12 | 6 |
| 25 ditto ditto | 1 | 10 | 0 | 25 ditto ditto | 1 | 10 | 0 |
| 100, including all the finest varieties of ditto ... ... ... | 7 | 10 | 0 | 100 newest and finest vars. of ditto ... | 7 | 10 | 0 |
| 50 ditto ditto | 4 | 0 | 0 | 50 ditto ditto | 4 | 0 | 0 |
| 25 ditto ditto | 2 | 2 | 0 | 25 ditto ditto | 2 | 2 | 0 |

All the new leading kinds of Geraniums and Cinerarias 12*s.* to 21*s.* per doz.

Catalogues of the above may be had on application.

Bower Nurseries, Maidstone.—Feb. 22.

CLEMATIS TUBULOSA, FROM MONGOLIA.

HUGH LOW AND Co. having a considerable stock of the above-named beautiful free flowering, hardy, suffruticose plant, producing splendid masses of purple flowers during the autumn months, offer strong plants at 1*s.* 6*d.* each, or 12*s.* per dozen.

They also have for sale very fine, healthy bushy plants of CITRUS JAPONICUS, or as it is commonly called, OTAHEITE ORANGE. Wherever this plant is known, it is universally admired, on account of the facility with which it can be made to produce fruit in abundance in a very small state. Price 42*s.* per dozen.—Clapton Nursery, London.

LIBOCEDRUS CHILIENSIS, Endlicher (THUJA CHILIENSIS, Don).—A noble Evergreen Conifer, a native of the Andes of Chili and the southern provinces of Antucco and Valdivia, growing to the height of 65 to 80 feet. Sir Wm. Hooker says—

"*It is a tree of great beauty, and well worthy of being introduced into our gardens. There can be little doubt, from its native regions (inhabiting the same elevations on the mountains as the Araucaria imbricata), that it will thrive well in the open ground.*"

The following is an extract from a letter lately received from the well known botanical collector Mr. Bridges:—"In one of the late numbers of the *Gardeners' Chronicle* I see some doubts expressed relative to the Thuja Chiliensis being hardy in England. It will, in my opinion, be perfectly so, judging from what I have seen of the plant in the province of Colchagua, south lat. 35°, which is its most northern limit. It is found near the snow, and where it freezes, I should say, quite as severely as it does in the vicinity of London. Where the tree grows alone it is very graceful, the lower boughs are even on the ground, and it elevates itself to a great height. The timber is esteemed by the natives for building purposes. I have myself seen it as far south as 42°, and I learn it is found in the vicinity of Cape Horn."

Fine healthy well-established one-year-old plants, from seed, in single pots, 7*s.* 6*d.* each, three for 21*s.*, or 4*l.* per dozen.

HUGH Low and Co., Clapton Nursery, London.

GERMAN FLOWER SEEDS.—Our Selections of the above showy Ornaments of the Flower Garden having for several years given general satisfaction, we hereby announce the arrival of our annual supply, selected by us in Erfurt from those personally known to us as the most select and careful growers. It includes the most distinct varieties of Stocks, Asters, Balsams, Larkspurs, Zinnias, Wallflowers, and Hollyhocks. They will be made up in 5*s*, 10*s.*, 20*s.*, and 40*s.* packets, and each packet will contain part of the whole collection, if not otherwise ordered by the purchaser.

We have also a carefully selected assortment of all the leading and most approved varieties of Vegetable and Flower Seeds, which we offer at the current prices.

A Catalogue of General Nursery Stock stamped, free by post, may be had on application.

HUGH Low and Co., Clapton Nursery, London.

AMERICAN PLANTS.

C. LODDIGES AND SONS, in consequence of part of their Nursery being given up for building purposes, are enabled to offer the following at extraordinarily low prices for cash:—Finest Ghent Azaleas, named, very handsome bushy plants, well set with flowers, and peculiarly adapted for forcing, 18*s.* per dozen; Azalea pontica, 8 feet in circumference, 12*s.* per doz.; Andromeda floribunda ditto, 7*s.* 6*d.* to 10*s.* 6*d.* each; Vaccinium, 30 species, 63*s.*; Andromeda, do., 63*s.*; Rhododendron campanulatum, very fine, 10*s.* 6*d.* each.—Post-office orders made payable at Hackney.

GREAT SALE OF NURSERY PLANTS.

PETER BOOTH, NURSERYMAN, Falkirk, is Selling off, at his very extensive grounds, a very large stock of Transplanted LARCH, SCOTCH, and SPRUCE FIR PLANTS, of strong and smaller sizes, including Seedlings, with a great variety of all the other kinds of Forest Trees, Shrubs, &c., generally grown in large Nurseries, of most excellent quality, and at prices much reduced.

NEW LAPSTONE KIDNEY POTATO.—This Potato is of first-rate quality, and has been highly spoken of by Dr. Lindley in the *Gardeners' Chronicle*, and also by every one that has grown it. It is a most abundant bearer, and the best in quality of any Potato grown, and keeps good up to May or June. They are of good size, and have been grown on warp land near the banks of the Trent, and therefore will be a good change for any other soil.

New Lapstone Kidney Potatoes, in sacks of 2 cwt., at 16*s.*, sacks included.
Prince Regent, ditto, ditto, 10*s.*
Early Shaws, ditto, ditto, 9*s.*

Early orders accompanied by remittances will receive prompt attention.

WILLIAM STENT, Nursery and Seedsman, Stockwith, Gainsborough, Lincolnshire.

BEAUTIFUL, USEFUL, AND CHEAP!
WARRANTED TO PLEASE.

The following COLLECTIONS of SEEDS and PLANTS are deserving especial notice, and are important to all who have a Garden.

No. 1.—100 varieties of HERBACEOUS PLANT SEEDS, hardy PERENNIALS, comprising the most select and beautiful sorts from our unrivalled Collection—never before offered—purchaser's selection, free by post, 1*l.* 5*s.*

No. 2.—50 varieties fine do., purchaser's selection, 15*s.*

No. 3.—25 do. do., 8*s.*

A list containing height, colour, and time of flowering, with much other useful information relative to their culture, may be had on application.

ANNUAL FLOWER SEEDS—post free.

No. 4.—100 vars. purchaser's selection, from list containing the newest and showiest sorts of hardy, half-hardy, and tender Annuals, 18*s.*

No. 5.—50 vars., purchaser's selection, 10*s.*

No. 6.—25 do. do., 8*s.*

Or we shall be happy to make selections for purchasers of the quantities at the above prices. The Annuals will be contained in Ayres and Moore's descriptive cultural labels.

The following are WARRANTED GENUINE, and are very superior:

HOLLYHOCK, from a most superb Collection of named double flowers, per packet, 1*s.*

CINERARIA, from the newest and best show flowers of 1850 per packet, 1*s.* 6*d.*

CALCEOLARIA, do. do., splendid, per packet, 2*s.* 6*d.*

PANSY, do. do. do., per packet, 1*s.*

PETUNIA, do. do. do., per packet, 1*s.*

N.B.—The above five unique lots may be had separate, or if required will be included in Collection No. 1. They have all been collected from our own plants and purchasers may rely with confidence on their quality.

GREENHOUSE PLANTS.

ERICAS, 50 fine healthy plants, most of them large enough to bloom the coming season, and all ready for growing into specimens. Purchaser's selection from list, in 50 superb varieties, for 3*l.* 10*s.*; or per doz., 21*s.*

ERICAS, 50 finest vars. as above; large plants, own selection, for 2*l.* 10*s.*; or 15*s.* per doz. In the above Collections will be found all the leading sorts of the day, selected with the greatest care for beauty and display.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 superior varieties, purchaser's selection, comprising the handsomest species and varieties of all the leading kinds, for 3*l.* 10*s.*, or 21*s.* per dozen.

50 varieties as above, own selection, 2*l.* 10*s.*, or 15*s.* per doz.

CHINESE AZALEAS.—20 fine varieties, purchaser's selection, for 25*s.*, or 18*s.* per doz.

20 do. do., own selection, for 21*s.*, or 15*s.* per doz.

ROSES.—50 splendid sorts Standards, own selection, per 100, 5*l.*; or 18*s.* per doz.

100 fine varieties, Dwarfs, in 100 sorts, 2*l.* 10*s.*; or 9*s.* per oz., own selection.

CALCEOLARIAS.—Fine healthy, established Plants from the most eminent growers, per doz., 3*os.*, own select on, of best sorts. When the selection is left to ourselves purchasers are desired to furnish lists of such plants, seeds, &c., as are already in their collections, that duplicates of any article may not be sent, every wish will be strictly complied with.

HOLLYHOCKS, No. 1, fine double named kinds, all shades of colour, 9*s.* per doz., or 2*l.* 10*s.* per 100. HOLLYHOCKS, No. 2, for border display, very good, 6*s.* per doz., or 1*l.* 10*s.* per 100. These are selected out of some hundreds of seedlings, and may be confidently relied on.

HERBACEOUS PLANTS.—Purchaser's selection, from List, per 100, 3*l.* 3*s.*

W. MAY's selection, extra fine, No. 1, 2*l.* 2*s.* per 100;
" " really good, No. 2, 1*l.* 10*s.* "

Having an immense stock they can be furnished at these low prices. The collection extends over 700 species and varieties selected from the choicest stocks in the country (regardless of expense) for display, and warranted second to none. To meet our customers in every way, we hope to be favoured with lists of such plants as are already in their collections, that duplicates of any articles may not be sent where the selections are left to ourselves.

FLOWERING SHRUBS AND ORNAMENTAL TREES.—The finest varieties, purchaser's selection, from the list, per 100, 3*l.* 3*s.*

W. MAY's selection, No. 1, extra fine, per 100, 2*l.* 2*s.*
" " No. 2, good kinds, " 1*l.* 5*s.*

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. KEMP, for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or per 100, 10*s.*, fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*—per 100, 15*s.*

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4*l.*, in 100 varieties, or 10*s.* per 100 in 50 varieties; the stock extends over 30,000; and is very fine and healthy.

CURRANTS.—White, Red, and Black, including Black Naples, per 100, 10*s.*, fine.

Catalogues may be obtained on application, and the fullest information will be given. Apply to JOHN MAY, to whom all Post-office orders must be made payable. Orders above 5*l.* carriage paid to London, or within 150 miles of the Nurseries. Address WILLIAM MAY, Hope Nurseries, Leeming-lane, Bedale, Yorkshire.

PILTDOWN NURSERIES, MARESFIELD, SUSSEX.

JAMES MITCHELL begs to announce that he purposes sending out in May, in strong plants, his superb new Dahlias, also all the leading varieties of other growers.

MITCHELL'S QUEEN OF BEAUTIES.—This novel and extraordinary flower has one of the most rich and beautiful rose tips ever seen on a pure enamel white ground, two-thirds of a globe with an outline smooth and round; very double, very symmetrical, the eye level with the surface, and has been admired by everybody who has seen it. It obtained a first-class certificate at the Royal South London Show, the Grand Annual Trial Show, at the Grecian Saloon, also at all the principal shows in Sussex and Kent—4 feet, 15*s.* per plant.

MITCHELL'S ELEGANTISSIMA.—This is also an extraordinary novelty, a fancy variety, marked with tortoiseshell, and perfectly unlike everything that has been seen before. This also had a certificate at the great Trial Show, on the round of its novelty—4 feet, 10*s* 6*d.* per plant

UNRIVALLED GERMAN ASTERS,
TWENTY-FOUR VARIETIES MIXED.

These superb Globe Asters have never been placed on an Exhibition table without the first prize being awarded to them. The under-mentioned may be considered sufficient to justify their being offered to the public. At the Bath Royal Horticultural Society 10 first prizes were awarded to them. At the Chepstow Horticultural Society, six first prizes; at the Devizes Horticultural Society, six prizes. By enclosing 12 penny postage stamps to J. REID, Nurseryman and Seedsman, Richmond-street, Weston-super-Mare, a packet of seed will be sent in return.

LILIUM LANCIFOLIUM, RANUNCULUSES, ANEMONES, AURICULAS, AND PELARGONIUMS.

HENRY GROOM, Clapham Rise, near LONDON, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS. He begs to say that this is a good season of the year to make a selection of the various kinds. Ranunculuses and Anemones should be planted this month.

| | £ | *s.* | *d.* |
|---|---|---|---|
| LILIUM LANCIFOLIUM ALBUM, each, from 1*s.* to | 0 | 2 | 6 |
| " " PUNCTATUM, do. ... ... 3*s.* to | 0 | 10 | 6 |
| " " ROSEUM, do. ... ... 3*s* 6*d.* to | 0 | 10 | 6 |
| " " RUBRUM, or SPECIOSUM, do 3*s* 6*d.* to | 1 | 1 | 0 |
| " " CRUENTUM, do. ... ... 5*s.* to | 0 | 10 | 6 |
| " JAPONICUM, do. ... ... ... 5*s.* to | 0 | 7 | 6 |
| A new Collection of HYBRID SEEDLING LILIES, 6 sorts, named, for ... ... ... ... ... ... | 0 | 15 | 0 |
| 100 RANUNCULUSES, in 100 superfine sorts, named Superfine mixtures, per 100, from 5*s.* to 21*s.* | 2 | 10 | |
| 100 ANEMONES, in 50 superfine sorts, named ... Superfine mixtures (double), per 100, from 6*s.* to 10*s.* 6*d.* | 2 | 2 | 0 |
| 25 AURICULAS, in 25 superfine sorts, named ... Good named varieties, per doz., 18*s.* | 2 | 10 | 0 |
| 25 PELARGONIUMS, in 25 superfine sorts, named Fine named varieties, per doz., from 12*s.* to 18*s.* | 3 | 3 | 0 |
| AMARYLLIS from RIO JANEIRO, without name, fine large bulbs, per doz.... ... ... ... ... | 2 | 2 | 0 |
| LILIUM LANCIFOLIUM ALBUM, excellent for planting in shrubberies, being perfectly hardy, per 100 ... ... ... ... ... ... ... | 3 | 15 | |

A Catalogue will be forwarded on application.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.

A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy ornamental Trees and Shrubs.
C. " Fruit Trees.
D. " Hardy Herbaceous Plants.
E. " Forest Trees.
F. " Greenhouse Plants, &c.
G. " Agricultural, Garden, and Flower seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.

ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK invites attention to the fact that there is a regular and steady demand for SLATE TUBS for Orange Trees, Camellias, and Ornamental Plants, their superiority over all others being proved by this fact, and their extensive use in the Royal Gardens, Kew.

E. B. will be glad to forward a printed description in answer to all applications.

All articles in Slate manufactured by E. B. may be seen extensively in use at Worton Cottage, on application to the gardener, Sundays excepted.

MELONS! MELONS! MELONS!
The finest flavoured in the world is the BROMHAM HALL, Green Flesh.

EDWARD TILEY respectfully informs the Nobility, Gentry, and Melon Growers in general that he has still a stock of good old Seed of this splendid Melon saved in 1848, and which has given universal satisfaction to all purchasers of last season. To prove its superiority of flavour over all other Melons, the following opinion has been given. It was forwarded to the Editor of the *Gardeners' Chronicle*, July 22, 1848, for his judgment, and he was of opinion that the Bromham Hall Melon was the finest flavoured he had ever tasted. It was exhibited at the Chiswick Exhibition, July 11, 1849, where it was awarded by the judges the Silver Knightian Medal for its luxuriant flavour. Again it was forwarded to Dr. Lindley, August 11, 1849:—"We have received your Bromham Hall Melon; it was much over-ripe, nevertheless it was by far the best flavoured Melon we ever tasted." It was exhibited at the Horticultural Society's Rooms, Regent-street, September 4, 1849, and pronounced by the judges to be the best flavoured Melon they ever tasted, and was awarded the Banksian Medal. On the 20th July, 1850, again exhibited at Chiswick, and obtained first and second prizes for its superior flavour. It was grown last season at the Horticultural Society's Gardens, London, by Mr. Thompson, superintendent to the fruit department, whose opinion was in accordance with the others. The fruit is very handsome, round shaped, hollow crown, beautifully netted, thin skin, and flesh very firm; a free setter and abundant bearer, weight from 3 to 4½ lbs. It may be as easily grown by an amateur in a frame as the common Vegetable Marrow; also retains its fine flavour for a considerable time after being cut. Sold in packets at the reduced price of 1*s.* 6*d.*; also the following other fine varieties can be highly recommended, all true old Seed:—

| | 1*s.* 0*d.* per packet |
|---|---|
| Cameron Court Green-flesh ... ... ... | 1 0 " |
| Queen Melon ... ... ... ... ... | 1 0 " |
| Blackall's Green-flesh ... ... ... | 1 0 " |
| Bailey's Green-flesh... ... ... ... | 1 0 " |
| Bowood Green-flesh... ... ... ... | 1 0 " |
| Beechwood Green-flesh ... ... ... | 1 0 " |
| Windsor Prize ditto... ... ... ... | 1 0 " |
| Emperor ... ... ... ... ... | 1 0 " |
| Fleming's Trentham Hybrid ... ... | 1 0 " |
| Duncan's Green-flesh do. Improved ... | 1 0 " |
| Hampton Court Green-flesh ... ... | 1 0 " |
| Egyptian do. do. Improved ... ... | 1 0 " |
| Coles' superb Celery ... ... ... | 1 0 " |

Any quantity of the above will be sent postage free to any part, but a remittance must accompany the order from unknown correspondents either by Post-office order or penny postage stamps.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA." LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s* per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, Feb. 22.

OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS *is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. KEMP, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2*l.* Carriage Free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED and PLANT LIST for 1851 is now complete, and stamped as a newspaper, to go free by post. It is prefaced with a page of Instructions for SOWING and RAISING SEEDS, with allusions to Sorts requiring peculiar treatment, and contains the following:

PART I.—FLOWER SEEDS, consisting of lists of 422 new and most showy sorts, with colour, height, hardiness, duration of each, price per packet, and other useful information.

PART II.—VEGETABLE SEEDS, with time of sowing each kind, prices of each, and other descriptive information.

PART III.—AGRICULTURAL SEEDS, containing also much useful information.

PART IV.—ROOTS, FRUITS, BULBS, &c. for early planting.

PART V.—Contains our Descriptive Priced Catalogue Lists of Show, Fancy, Scarlet, and other Geraniums; Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica; Greenhouse, Stove, and Miscellaneous Select Plants.

PART VI.—Contains NEW PLANTS of 1851.

The following Collection will be highly approved:

| VEGETABLE SEEDS. | £ | *s.* | *d.* |
|---|---|---|---|
| A collection in full proportion, one year's supply, for a large garden, of first-rate sorts, including 24 quarts of Peas, 6 quarts Broad Beans, 10 sorts Broccoli, 6 of Cabbage, 3 of Cauliflower, 8 of Lettuce, 5 of Onion, 5 of Radish, and all other sorts in proportion | 3 | 0 | 0 |
| The same collection, in smaller quantities ... ... ... | 2 | 0 | 0 |
| Collection, in reduced proportion ... ... ... | 1 | 0 | 0 |
| Collection, for a small garden, of good sorts ... ... | 0 | 10 | 6 |

If any vegetables not required, enlarged quantities of others sent to make up the amount. A list of the sorts furnished if required.

| SELECT FLOWER SEEDS, Free by post, with full directions for sowing, heights, colours, &c. | *s.* | *d.* |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for | 5 | 0 |
| IMPORTED GERMAN SEEDS. | | |
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON.—An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting, or immediate effect, from 3 to 12 feet, 25*s.* to 5*l.* per 100.

Ash, Beech, Birch, 15*s.* to 30*s.* per 1000; Spanish Chestnut, 20*s.*, 30*s.*, and 40*s.*; Larch Fir, 7*s.* 6*d.* to 20*s.*; Spruce, 20*s.*, 30*s.*, and 40*s.*; Scotch, 10*s.*, 15*s.*, 20*s.*: Pinaster, 10*s.*, 15*s.*, and 20*s.*; Sea Pine, adapted for exposure to the sea, 15*s.*, 25*s.*, and 40*s.*; Mahonia, for cover, 40*s.* to 80*s.*; Hazel, 15*s.*, 20*s.*, and 35*s.*; English Oak, 15*s.*, 20*s.*, and 40*s.*; Poplar, 20*s.*, 30*s.*, and 40*s.*; Quicks, 5*s.*, 7*s.* 6*d.*, and 10*s.*

Planting contracted for to any extent, from 5*l.* to 20*l.* per acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, strong, 20*s.* to 40*s.* per 100, fit for planting out at once for cover; 4 to 6 feet, single stems, for working the beautiful scarlet and other fine kinds, 50*s.* per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18*s.* per dozen; hybrid scarlet, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25*s.*; 1 foot, 40*s.* per 100; Kalmia latifolia, 2 to 4 inches, 8*s.* to 12*s.* 6*d.* per 100; 1 to 2 feet, blooming buds, 50*s.* per 100; 2 to 3 feet, fine, 75*s.* per 100; Epigæa repens, 50*s.* per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8*s.* per 100; Single Camellias, 25*s.*, 40*s.*, and 50*s.* per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12*s.* per dozen; Pinus (Abies) Douglasi, from seed, 18 inches to 2 feet, 60*s.* per dozen; Arbutus, 12 inches, 8*s.* per 100; 1½ foot, 20*s.* per 100; 2 feet, 30*s.* per 100; Laurel, 8*s.* to 20*s.* per 100; Laurustinus, bedded, 40*s.* per 1000, 8*s.* per 100; Variegated Holly, 1 foot, 25*s.* per 100; Clematis azurea grandiflora, 6*s.* per dozen, 42*s.* per 100; D utzia scabra, 2 feet, 12*s.* per 100; Common China Rose, 12*s.* 6*d* per 100; Tree Roses of the most select kinds, 5*l.* per 100; Dwarf Roses, 50 sorts, named, 50*s.* per 100; Double White, Double Red, and New Crimson Thorns, 40*s.* per 100, 6*s.* per dozen; Large Dutch Honeysuckles, 12*s.* 6*d.* per 100; Giant Irish Ivy, 8*s.* per 100; 2 years seedlings, Scotch Fir, fine, 2*s.* 6*d.* per 1000; 1 years seedling Larch, 2*s.* 6*d.* per 1000; 2 years seedling Horse Chestnut, 12*s.* 6*d.* per 1000.

The prices are for wholesale; if ordered in less quantities a higher price will be charged. All orders above 5*l.*, carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American steam-packets take their departure, thus saving the delay and expenses of land carriage.

SUTTON'S SUPERB LETTUCES, POST FREE.

J. SUTTON and SONS *had the honour of supplying the Horticultural Society's Garden at Chiswick, with the above-named Lettuce Seed, in Feb.* 1849; *and in March,* 1850, *the Editor of the* GARDENERS' CHRONICLE, *in a critique on Lettuces, says of the first of these:—*

SUTTON'S "SUPERB WHITE" LETTUCE.

"This is the very best Cos Lettuce, very large, light green, leaves hooded at the top, so that they close in without tying, blanching white, crisp, so excellent that one would suppose no higher degree of perfection could be attained, as regards a summer Lettuce." *And of the other two, he further says,* "SUTTON'S SUPERB GREEN COS: this very much resembles the preceding, but is of a darker green, and hardier, therefore is preferable for sowing early in spring, and also for autumn use; in warm, sheltered situations, it will stand the winter, if the latter prove mild. For the generality of winters, however, a hardier Cos is required; such is the following—SUTTON'S BERKSHIRE BROWN COS: this is the best Cos for standing the winter; it is large, and of good quality, blanching very crisp; therefore its brown outside should not be considered objectionable."

These superior Lettuces may be had in good sized packets of Seed, sufficient to raise several thousand plants, at 1*s.* (or 12 postage stamps) for each sort.

*Address*—JOHN SUTTON and SONS, *Seed Growers, Reading, Berks.*

Also Sutton's Solid White Celery, and Sutton's Imperial Cabbage, 1*s.* per packet, decidedly the best sorts in cultivation. Conqueror of the West Cucumber, 1*s.* per packet; Orache, 6*d.*, same sort as described by the Editor of the *Gard. Chronicle.*

ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS by special appointment to the SOUTH DEVON AGRICULTURAL ASSOCIATION, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded 1000 bushels; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

COMPOSITION for HEATHS, NEW HOLLAND, and all other STOVE and GREENHOUSE PLANTS, may be obtained of superior quality, by applying to W. COOPER, Florist (late with Mr. Pawley), Bromley, Kent, at 12*s.* 6*d.* per sack, including sack, and carriage-paid to London.

A remittance is respectfully solicited from unknown correspondents.

MESSRS. J. AND H. BROWN'S NEW CATALOGUE OF PLANTS FOR 1851, free by post, includes Orchidea, Stove and Greenhouse Plants, Roses, Geraniums, Fuchsias, Camellias, Azaleas, Conifers, &c. They also offer the following Choice Plants and Fruit Trees:—

| | *s.* | *d.* |
|---|---|---|
| Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears and Cherries, the best and most approved sorts of these respective kinds, true to name, 2*s.* 6*d.* each, or, per dozen ... ... ... | 24 | 0 |
| Untrained or Maiden do. 1*s.* 6*d.* each, or per dozen ... | 15 | 0 |
| Fine Gooseberries, Currants, Raspberries, and Filberts, per dozen ... ... ... ... ... ... ... | 3 | 0 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... | 20 | 0 |
| 25 American Azaleas, ditto ditto ... ... | 15 | 0 |
| 6 Andromedas of sorts, including floribunda ... ... | 8 | 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen ... | 8 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... ... | 12 | 0 |
| New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to ... | 10 | 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for ... ... | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort ... ... ... | 10 | 6 |
| Cryptomeria Japonica, 6 choice hardy Pinus, for ... | 10 | 0 |
| 50 Dwarf Roses, on their own roots, by name ... ... | 16 | 0 |
| Standard and half-standard Roses, per dozen, 12*s.* and | 15 | 0 |
| Climbing Roses, choice sorts, per dozen ... ... | 6 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots ... | 9 | 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each ... ... ... ... ... ... ... ... | 3 | 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, ditto ditto ... ... ... | 30 | 0 |
| 12 Orchidea, choice species and good plants, for ... | 30 | 0 |
| 50 choice Greenhouse Plants, one of a sort, by name ... | 45 | 0 |
| 24 choice Ericas, one of a sort, by name ... ... ... | 16 | 0 |
| 24 choice Fuchsias, one of a sort, by name ... ... | 10 | 0 |
| 12 Pæonies, new white, pink, and blush, of sorts ... | 8 | 0 |
| First-rate Carnations and Picotees, per dozen 9*s.* and | 12 | 0 |
| Verbenas and Petunias, best new sorts, per dozen ... | 6 | 0 |
| 25 choice Hardy Herbaceous Plants, named ... ... | 7 | 6 |
| New Camellia seed, just imported, sent post free, 50 for | 5 | 0 |

Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.*, of the most approved varieties, sent free by post.

Albion Nursery, Stoke Newington, London, Feb. 22.

SEEDLING LARCHES.

WILLIAM WOOD AND SON having on hand a very extensive stock of the above in fine condition, beg to offer them as under.

One year seedling Larch, at 1*s.* 3*d.*, 1*s.* 6*d.*, and 1*s.* 9*d.* per 1000.
Two year ditto, 3*s.* to 3*s.* 6*d.* per 1000.
One year seedling Alder, 3*s.* 6*d.* per 1000.
One year seedling Ash, 2*s.* 6*d.* per 1000.
Two year ditto, 3*s.* 6*d.* per 1000.
One year seedling Birch, 2*s.* per 1000.

TRANSPLANTED.

Larch, 12 to 15 inches, 7*s.* 6*d.* per 1000.
Scotch Fir, 1 to 2 feet, 12*s.* 6*d.* per 1000.
Birch, 3 to 4 feet, 30*s.* per 1000.
Do., 4 to 5 feet, 35*s.* per 1000.
Thorns at reduced prices.

With every other kind of Forest Trees equally cheap.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW AND CHOICE FLOWER SEEDS, GERMAN STOCKS, GERMAN ASTERS, &c.

J. C. WHEELER AND SON, NURSERYMEN and SEEDSMEN, by Official Appointment, to the Gloucestershire Agricultural Association, 99, Northgate-street, Gloucester, have selected, out of a large collection of Flower Seeds, 20 of the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. Each variety is distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these 20 varieties, care has been taken to exclude all which are shy-bloomers, or have an insignificant appearance; so that the collection will comprise only those which are really showy and handsome, and which, it is believed, would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb.—The 20 Packets are neatly packed up in one paper, and will be sent free by post, to any part of the Kingdom, for 5*s.*

HART AND NICKLIN, FLORIST, Guildford, Surrey, possess a fine healthy Stock of the under-named Plants, which they offer to the public, feeling assured they will give satisfaction to purchasers.

FANCY GERANIUMS—Alboni, Jenny Lind, Reine des Francais, Mazeppa, Magnifica, Wintonia, Jehu superb, Anais, Lady Rivers, La Belle de Africaine, Beauty of Winchester, Diadematum coccinia, Madame Celeste, Yoolinski; 21*s.* the Set.

GERANIUMS—Emily, Crusader, Brilliant, Belle of the Village, Rosalind, Princess; 21*s.* the Set.

PANSIES—Helen, Juventa, Premier, Negro, Lucy Neal, Polyphemus, Uttoxeter Hero, Conductor, Pre-eminent, Gem, Viceroy, Criterion, Duke of Norfolk, Mrs. Beck, Masterpiece, Androcles, Heroine, California, Duchess of Norfolk, Ariel; 20*s.* the Set.

No charge for Package, and Carriage paid to London, or any Station on the South-Western or South-Eastern Railways.

"ORACHE," SUPERIOR IN EVERY RESPECT TO SPINACH.—The leading article of the *Gardeners' Chronicle* of January 25, 1851, fully bears out the above assertion, that this is one of the very best summer vegetables, superior to Spinach in its flavour, and possesses the advantage of affording a constant and permanent supply (without going to seed) of large luxuriant leaves throughout the summer months. It was most successfully grown last season at the seat of Joseph Hume, Esq., M.P., Burnley Hall, in this county, and much preferred to Spinach. Sealed packets 2*s.* 6*d.* and 5*s.* each, per post free, containing a sufficient supply for a large or small family.

Also may be had, Seeds of the "True Custard Gourd," a most delicious Vegetable Marrow. Packets containing 6 seeds, 1*s.*, per post free. Payments by postage stamps or Post-office order.—YOUELL and Co., Royal Nursery, Great Yarmouth.

BECK'S SEEDLING PELARGONIUMS AND THE BEST OF OTHER RAISERS' VARIETIES. Fine plants, ready for shifting into large pots; twelve for two guineas, including carriage to London and the packing-case. This is the proper time for purchasers to procure them. Catalogues may be had on application to J. DOBSON, Worton-cottage, Isleworth, Middlesex. The stock was never finer, and purchasers may rely on the best selection being made for them, if they cannot choose for themselves.


# The Gardeners' Chronicle.

*SATURDAY, FEBRUARY* 22, 1851.


MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | Feb. | 24 | British Architects | 8 P.M. |
| | | | Geographical | 8½ P.M. |
| TUESDAY, | — | 25 | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 26 | Society of Arts | 8 P.M. |
| | | | Geological | 8½ P.M. |
| THURSDAY, | — | 27 | Royal Soc. of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| FRIDAY, | — | 28 | Royal Institution | 8½ P.M. |
| SATURDAY, | March | 1 | Asiatic | 2 P.M. |
| | | | Medical | 8 P.M. |

IN anticipation of the coming Industrial Exhibition, the Council of the HORTICULTURAL SOCIETY have decided upon some new regulations, which it is now time to make public.

In the first place, each Fellow of the Society may have 48 privileged tickets, instead of 24, as heretofore.

It is also settled that all Fellows shall have an early admission at 12 o'clock, together with one friend; and that the same privilege shall be extended to the wife or sister of a Fellow: he not being able himself to attend. And in order to make this regulation the more valuable, the public will not be admitted till 2 o'clock, instead of 1, as in former years.

At the same time the admission fee payable on the election of a Fellow is reduced from six guineas to two guineas.

Mr. HOSEA WATERER, of Knap-hill, who has withdrawn from the Royal Botanic Society's Exhibitions in the Regent's-park, has also made arrangements for displaying his magnificent American plants in a part of the garden recently prepared for the purpose. Admission to this exhibition will be by tickets, 1*s.* each; but Fellows are personally exempt from that charge.

Finally, it is intended to authorise all Foreign Ambassadors, Ministers, or Consuls-General, to obtain tickets for the strangers belonging to the nation they represent, without the formalities formerly insisted upon in such cases.

By these arrangements the privileges of Fellows are very substantially enlarged, and at the same time the utility of the Society will be much increased.

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THERE is an amusing book called "The Art of Pluck," in which are given full instructions how a young man, when he commences his course of university education, may best ensure *not* getting a degree; what he should do to ensure being plucked at his examination, and how, by suitable reading, occupation, and companions, he may best fit himself to become a disgrace to his college. The book is cleverly written, and though, perhaps, its real use

may be questionable, yet it is witty and entertaining; for everything that a young man should not do is gravely and seriously described and recommended, as if university disgrace was above all things the most desirable distinction a young man could strive after; and as though this praiseworthy end could only be attained by the most constant and unremitting care and attention! We have often thought that an equally entertaining, and perhaps more truly useful book might be written for the use of gardeners, and those who cultivate the soil generally, "on the best mode of cultivating weeds;" and this, perhaps, might be well followed by "hints to landlords how to diminish as much as possible the value of their estates, and to increase the growth of vermin." The idle habits, vulgar associates, and dissipated vices which form the stumbling-blocks of the young student, are not more injurious at the time, nor more fatal in their consequences, than the deep-rooted prejudices of sensible practical men, when the old rule of thumb once gets the ascendancy over their minds, and leads them to persevere even in what they know to be wrong, merely because "they have always done so."

When a gardener has some choice and scarce seeds, or when he is endeavouring to raise a particularly early crop, he takes more than ordinary care with them. He selects some good soil, sows his seeds, waters them enough but not too much, and takes the greatest care to fit all the conditions to the nature and requirements of the young plants. If he is anxious to hurry on the germination of the seeds, so as to bring the young plants forward as rapidly as possible, he gives them a little bottom heat, sowing the seeds in fine mould resting on half rotten dung, because, under those circumstances, the gentle heat of the still fermenting manure, and the vapours which it gives out, are highly favourable to the germination of the seeds. This is one of the best known modes of raising young plants; for notwithstanding all that has been said about seed steeping, and other wonderful modes of accelerating the growth of plants, we have, at the present time, no more powerful mode of aiding germination, and forcing the growth of young plants. This is the plan adopted by the best gardeners with their choicest seeds; and, strange to say, it is also the mode very commonly adopted all over the country for the cultivation and encouragement of the most troublesome weeds!

The management of manure heaps is, no doubt, a very important affair to all who occupy themselves with the growth and cultivation of plants, whether on a large or small scale, and we are much obliged to the chemists who have pointed out the importance of fixing ammonia, and told us how that desirable end can be best obtained. But there is another matter equally important, to understand which we need no scientific knowledge, a little plain common sense being all that is required, and that is, the growth of weeds on manure heaps and mixens. A manure heap in the open air, exposed to all the changes of the weather, and placed, as is frequently the case, so that any water which drains away from it is altogether lost, must suffer injury in two important points; the volatile matters produced during the fermentation of the dung will be carried away in the air, whilst the soluble substances which it contains will be washed away by rain. ARTHUR YOUNG says somewhere, in one of his numerous books, "He who is within scent of a dunghill, smells that which his crops would have eaten if he had permitted it. Instead of manuring his land, he manures the atmosphere, and before his dunghill is finished turning, he has manured another parish, perhaps another country." There is a great deal of truth in this remark.

It is the custom in Cornwall to plant Cabbages on the dunghills; the plants grow often to an enormous size, and, though they generally have a bad flavour, being more or less tainted from the gross matters in which their roots have been feeding, yet it is found worth while to grow them thus, and for some purposes they answer exceedingly well. The Cornish farmers are often censured for this practice, as it is said that the manure must be greatly injured, a great part of its goodness being extracted by the Cabbages before it is, in fact, used. It is plain that a considerable portion of the goodness of the manure must be absorbed by the Cabbages; but it is quite another question whether any loss necessarily results. All that which the Cabbages absorb, and which contributes to their growth, cannot be said to be lost; though it is very doubtful whether it would not, for the most part, be really lost, and carried away in the air, if it were not for the Cabbages. Be this as it may, there can be no manner of doubt that it is better to grow Cabbages than to grow weeds, and this unfortunately is too often the case; for in many parts of England it is the constant practice to leave manure-heaps untouched so long that they become covered with a thick mass of weeds, growing in the most luxuriant profusion, blossoming abundantly, and bearing a plentiful crop of ripe seeds.

The man who wastes manure, by letting the volatile portions evaporate in the air, neglects his own interest, but he benefits his neighbours rather than injures them; on the contrary, he who cultivates weeds on his manure-heaps (thus giving them all the advantage of abundant manure and gentle bottom-heat), whilst he injures himself, at the same also injures his neighbours. A single weed is easily and rapidly destroyed; but, when it has been suffered to grow and produce hundreds of seeds, which are then spread over a large surface of ground, its extermination becomes a serious difficulty. We have sometimes seen a piece of ground most carefully cleansed, and then well manured with a good dressing of rotten dung, containing an abundant supply of weed seeds; and, if the evil were not so serious a one, it would be almost laughable to see a man thus, in the first case, taking such care to eradicate all weeds, and then, when he had done so, taking quite as much care to ensure a fresh crop of them, reared under the most favourable circumstances.

An immense deal of unnecessary labour is caused by the spread of weeds all over the country, which are sown broadcast, and carried about by the air over gardens and fields; a great portion of this evil may be traced to the cultivation of weeds in the way just adverted to, and to the frequent practice of keeping wide and foul hedges. Indeed, it will generally be found that the manure-heaps are made on some small piece of waste ground by the way-side, and surrounded by remarkably high and wide hedges, which serve chiefly to shelter weeds and harbour vermin. The seeds of these weeds must, of necessity, fall on the fresh manure placed by their side; the seeds germinate; the plants they produce grow with uncommon vigour, and consequently bring forth a very fine crop of seed, ready to be carried out, and sown with the well-rotted manure in which they have been raised.

The direct absorption of putrifying organic matter by growing plants is another and curious subject, which has been hitherto but partially examined. It is well known that plants are very differently affected by what are termed strong manures; for some can endure almost any quantity of it, not only without injury, but are even all the better for it; whilst others are at once damaged when their roots come in contact with such manure, and are soon killed by any large quantity of it. Plants, to a certain extent, possess the power of selection by their roots; that is to say, they absorb different substances, at a very different rate; and it is therefore presumed that, under natural circumstances, they only absorb those substances which are of service to them, and reject any others which are presented to their roots, and which are useless or hurtful. This may be true to some extent, but there are evidently limits to this power of selection, for plants are readily poisoned by the absorption of poisonous matters by means of their roots. It not unfrequently happens that a plant which has absorbed a considerable portion of strong manure, continues nevertheless to grow in the most healthy and luxuriant manner, although the manure which it has absorbed would have killed a more delicate plant. This is especially the case sometimes with highly manured vegetables, which even acquire a distinct flavour or taint from the manure used. Delicate plants, under such circumstances, are either at once killed, or they are poisoned by the introduction of putrid matter into their systems, and die after a short time. Examples of this sort of poisoning of plants are by no means uncommon, and, indeed, the Potato blight is of a somewhat similar nature; for whatever may be the primary cause of that disease, there is no doubt that the proximate cause of the destruction of the plant is disorganisation resulting from the presence of putrescent matter.

We had lately an opportunity of observing a curious example of this kind of action, in the destruction of some fruit trees in an orchard, resulting from the action of putrefying vegetable matter on their roots. A quantity of Grass cuttings having been heaped up, and allowed to ferment and heat, in an orchard, it was subsequently proved that whenever the liquor which drained from the heap soaked into the ground, and came in contact with the roots of the fruit trees, it gave them a blue colour; evidently diseased them, and by thus introducing poisonous matter into the systems of the trees, caused their death. If plants are able to absorb a small quantity of putrefying matter, which, though it does not kill them, is, nevertheless, poisonous, and would kill more delicate plants, it becomes a question worth investigating, whether plants which are cultivated for food may not sometimes, especially when they are highly manured, contain a small quantity of such poisonous matter? And if so, whether, though it is not enough to interfere with the growth of the plant, it may not tend to render it less wholesome as an article of food. When a plant grows naturally, it generally is able entirely to decompose such matters, but when it is over-manured that is no longer the case; and though a healthy animal may receive no injury whatever from eating such food, yet it is possible that during the prevalence of any disease or epidemic, over-manured and rapidly forced vegetables, containing a portion of putrescent matter, may produce serious effects, by introducing into the systems of animals matter which is unwholesome, if not poisonous.

## FOREIGN GARDEN GLEANINGS.

ST. PETERSBURGH PUBLIC PROMENADES.—The summer garden is the most remarkable of any in the town. This beautiful piece of ground is more than 800 yards long, and is bounded towards the west, by the Champ de Mars, and towards the north by the Neva. On this side is the magnificent iron screen erected by the Empress Catherine. It is 350 yards long, and is supported by 36 columns, each consisting of one solid piece of polished granite, resting on as many granite pedestals, and surmounted by urns with golden handles: the three large gates which are in it are as beautiful as anything can be conceived to be. The distribution of the garden itself is simple; a carriage way surrounds it; two alleys, shaded by old Lime trees, cross it from end to end. It is here that the inhabitants and *beau monde* assemble in innumerable numbers; but the place is deserted the moment hot weather sets in, and remains so until the spring of the following year.

ISLANDS IN THE NEVA.—The Neva, which runs through St. Petersburgh for a distance of about four miles, surrounds a dozen islands, which were formerly little better than quagmires, but were drained and laid dry in 1720; they are now beautiful gardens, and are dotted here and there with elegant country houses of such diversity of architecture that almost every style may be seen amongst them. Nowhere that I know of are there so many beautiful villas, fine groves, and delightful grounds; nowhere, in short, so much luxury for three or four months in the year. But I must leave these general features, and describe what is more interesting to gardeners in general.

YELAGUINE ISLAND.—To the left of Kaméni-ostroff, and a mile and a quarter from St. Petersburgh, is situate Yélaguine island, the private property of the Empress, who has converted it into a fine English park. The palace, situate in the middle of the park, and of modern date, can be seen through clumps of Weeping Birch, Larch, Scotch Fir, and Abies taxifolia. The place is crowded with visitors in the fine season. The garden in front of the palace is worthy of notice; its circular walks, carefully covered with red sand, contrast strongly with a thick turf broken here and there with small beds of bushes and herbaceous plants in full flower; the garden and its hothouses are under the care of a M. Bouch, a German gardener.

The hothouses are, for the most part, filled with young and healthy tropical plants: there are a great many Camellias, but they are small; the Rhododendrons, on the contrary, are remarkably fine. M. Bouch appeared to us to be eminently successful in the cultivation of small ornamental flowering plants; he rears with the greatest success several varieties of Antirrhinum, Verbena, Calceolaria, Wallflowers, Petunias, Phlox, and particularly of the pink Drummondi and white Drummondi, which, grouped in masses on the Grass plots, produce a very pleasing effect. We may also mention the small Chinese Dianthus, Eutoca, Bartonia, Coreopsis, and Gilia. The turf is remarkably close and fine. Instead of Lolium, which perishes annually, M. Bouch chooses fine but common Grasses, which are better suited to the climate and do not trample down; the Grass, in fact, appears to us to be perfection.—*Masson's Report.*

## BRITISH SONG BIRDS.

[CAGE BIRDS, No. 3.]

No. XIX.—The average duration of a canary's life, in the hands of a kind master, is from 16 to 20 years. With *me*, the "oldest inhabitant" lived 15½ years. Not long since, there was one to be seen, at the house of Mr. William Spooner, Wood-lane, Shepherd's Bush, strong and vigorous in his 21st year. He was even then rich in song; but, about the middle of that year, his legs were getting gouty, and his sight was beginning to fail. He died before he had attained the age of 22. I never remember to have seen a finer bird, in every respect. His affection towards his master and mistress was, as is usual with these birds, firm to the last. They sorely mourned his loss.

In order to secure longevity for your birds, be careful in the selection of your cages. Herein lies the grand secret. The cages generally in use, are altogether ill-adapted to comfort; being open to the air at every point, and admitting a succession of draughts from morning till night. Hence the cause of so much sickness, and of so many deaths. Birds so attended to, speedily become asthmatic; and seldom live more than three or four years, as daily experience shows.*

* A "Naturalist" asks me, why I consider the canary, when first brought over to this country, was "tender and difficult to rear?" In addition to its being recorded as an "historical fact,"

Above all things, religiously avoid the circular, open-barred brass cages, with sliding doors, now so much in vogue. I mean those resembling a parrot's cage, on a reduced scale. They are frightful instruments of destruction; bringing full many an innocent songster prematurely to his place of final rest. The brass, I need hardly observe, when water lodges on it, presents gangrene; and this, when tasted, produces sometimes a lingering, sometimes sudden death. All manner of "cheap" cages, too, must be discarded as inadmissible. They are made of dry deal, and invariably harbour vermin. Of these latter, I shall, ere long, have to tell a pretty tale. As a rule, buy no cages whatever, excepting those made of mahogany.

The proper description of tenement for a canary, is a mahogany cage, 12 inches long, 10 inches high, and 8 inches deep. The top, back, and one of the sides, should be of wood; the other side should be of wire-work (also the front), so as to admit the air, and at the same time exclude a thorough draught. Over this wire-work should be a wooden slide, running in a groove. It might then be used, or not, as occasion might require. The cage, inside, should be painted white. This, if your bird were of a fine bright yellow colour, would show him off to advantage. The external ornaments to your cage may, of course, be applied *ad libitum;* and every body can consult his own taste.

A long, square but narrow perch, should run from end to end, about the centre of the cage; and a second, of a similar kind, directly behind the two tin pans inserted at the front of the cage (one on either side) to hold the seed. In the middle of the wirework, at the front, should be a hole, sufficiently large to admit the bird's head while drinking. Never use glasses or fountains for holding water; but receptacles of tin, suspended by bent wires. Glasses, and glass fountains, are apt to get displaced; and many a prisoner dies for want of water, thus unthinkingly removed beyond his reach. By having these two perches only, the bird's feet will be kept clean, and he will have plenty of room for exercise, without injuring his plumage.

A bird, thus lodged, may be placed anywhere, or hung out of any window. He will never know what fear is, and he will be steady to his song. It is quite a mistake (irrespective of its being cruel), to place *any* bird in an open cage, if you wish him to sing well. By allowing him to gaze about, his attention becomes distraught, and his thoughts are divided. So well do the Germans know this, that they frequently run *red-hot needles* through the eyes of their choicest birds, with a view to keep them "intent upon their song alone." These fiends, habited in the shape of humanity, rarely have the temerity to send any of their birds, so mutilated, over here. All honour be to our nation, for "setting their faces" resolutely against any such frightful atrocities.

When hanging your birds out in the garden, or at an open window, avoid as much as possible exposing them to the intense heat of a scorching sun. Although protected from its baneful influence by the covered roof of their cages, to a certain extent, they yet run considerable risk of being killed by a *coup de soleil*—the fate of many a noble songster. The bough of a tree, well covered with foliage, is what they delight in. This should be allowed to depend from the top of their cages. So protected, they will not be annoyed either at the sight of a cat or dog, or any other noxious animal—indeed they will be strangers to fear of any kind.

The proper food for this tribe is Canary, Flax, and a small quantity of Rape seed. All these should be new, and of the very best quality. It is miserable economy to purchase "cheap" seed. It will assuredly injure, if it does not kill your birds. Every morning the seed should be carefully examined, the husk removed, and the tins replenished.

The bottoms of your cages should be well cleansed, thrice weekly, and be kept well covered with red gravelly sand. It is also desirable to have a small quantity of old mortar, well bruised, mixed with it. In addition to the water supplied in the tin, it is always expedient to have a square earthenware bath, fitted in a mahogany frame, ready for daily use. These are so made as to be easily suspended on the doors of the cages, when the latter are opened. They are over-arched with wire, to prevent the birds escaping, and are obtainable of almost any dealer. Never let a day pass in the summer season without administering the bath. It is a grand secret of health, and assists wonderfully in keeping your birds in fine feather. In the winter, forbid its use altogether.

To make your pets familiar, give them every now and then a small quantity of yolk of egg, boiled hard; and a small quantity of German paste, mixed with a stale sponge cake. Put this, lovingly, into a little "exclusive" tin pan, fitted in a sly corner of the cage, and the "treat" will have a double charm. These innocent little creatures love to flirt with any "nice pickings," thus mysteriously conveyed to them, and they will keep on chattering to you, in a language of their own, for many minutes, while viewing the operations in which you are actively engaged for their particular benefit. How many happy hours have I spent, in days gone by, in thus harmlessly participating in the enjoyment of my little friends! *William Kidd, New-road, Hammersmith.*

I imagine that though these birds love hot climates, the cause might proceed, in no small degree, from the ignorance and want of skill exhibited in his care and culture. It is of late years, more particularly, that he has been fully studied; and that his inherent excellencies have been duly appreciated. Now, in fact, he may be said to be acclimatised. He is, indeed, one of the hardiest of our song birds.

## MARKET GARDENING ROUND LONDON.

No. VIII. Brussels Sprouts.—These are not sown until May; but it should be March. The Scotch sow them in August. Sown in May, it is impossible for the plants to get tall, stout, and cover the stems so well with fine large close Sprouts, as when sown in March. I have had them three feet high, covered from top to bottom, each stem producing one peck of large close Sprouts. Brussels Sprouts are always dear, and the poor and middle classes hardly know what they are. Their cultivation is very simple; sow in beds, and transplant when the plants are 4 or 5 inches high. Select, if possible, a rich stiff loam for them; plant 18 inches plant from plant, and 2 feet row from row: keep the ground well loosened with the hoe. Moulding up the stems is never practised, and as soon as the plants reach their height, which is known by the top beginning to cabbage, *the latter ought to be pinched out.* This throws all the strength into the Sprouts down the stem, making the bottom ones as good as those on the top. I am well aware that the present plan of producing them does not pay the grower, even at the high prices obtained for them, but that is his own fault; and if some good farming gardeners, who cultivate the land well, would take to growing this vegetable, even if it were but to feed cattle with, it would answer their purpose. It is perfectly hardy; it does not rot, like Drumhead Cabbage and Savoys, and an immense acreage of it might be obtained.

Beet-root.—This is in great demand during winter. Growers are very particular about the time of sowing it; for one week too soon sown spoils it. It is generally put in about the first week of May; but even with the same seed and the same soil it makes a great difference if it is transplanted; because, in removing the seedlings, all forked ones are thrown away. In this operation great care must be taken that the points of the roots are not broken off. Beet is generally planted out about a foot apart each way. It is wintered in large sheds, stored in moderately damp mould, and banked up with straw. It is a mistake to pack it up in dry sand or earth for the winter, and the same may be said in regard to Carrots, Parsnips, Salsify, Scorzonera, and similar roots. Dark coloured Beets are not esteemed; but they are much richer and better than the pale kinds.

Globe Artichokes.—These require very rich deep land; when planted they are thinned out to three or four plants in each stool every spring. They are well supplied with manure every winter. I have seen an acre which had not been fresh planted these 10 years. A famous plan, where the land is stiff and clayey, is to dig out a trench 18 inches deep, and fill it up with a mixture of dung and mould, and in spring to plant out on this mixture. I have practised this system with Asparagus, taking out a spit and filling in the furrows with dung and mould, and planting out in April.

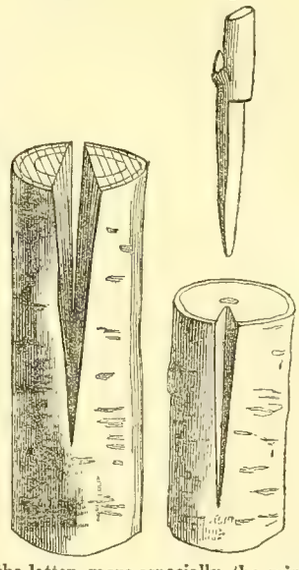
Spinach.—The prickly is sown from the 12th of August to the 1st of September. It succeeds whatever crop is removed at the time. It is sown in beds 5 feet wide. It grows best and finest upon light deep land, on which it is less liable to canker. New Zealand Spinach is not grown for market, neither are the silver Beet leaves, both of which are most useful, and are much used by the French, who are also fond of Orache, a capital substitute for Spinach.

Broccoli.—The only sorts grown for the London markets are the Walcheren, Grange's Early White, Late London White, Purple Cape, and the Purple sprouting Broccolies. These are all sown in May; they are planted after a crop of Lettuces, Radish, or any of the early crops which happen to be cleared off the land at the time. The only formidable enemy to Broccoli is clubbing; they are, therefore, sown in the richest land, and far more are raised than are wanted. If any club, therefore, they are thrown away at transplanting time. They never make good plants afterwards. I have seen an acre planted upon a deep rich soil, and another acre on hungry gravelly soil, the plants being from the same beds; the latter were almost wholly worthless on account of clubbing, while the former all escaped. *James Cuthill, Camberwell.*

## GRAFTING.

No. VIII. Cleft-Grafting with a single Scion, formed as the preceding; the stock cut horizontally: fig. 7. (*Greffe Atticus of Thouin.*)—Some additions have been made to this mode of grafting, in order to avoid repetition, seeing that they often employ modifications of it for large tubercular roots, herbaceous stems, &c., on which they graft, with good success, young herbaceous twigs, and others; but it is a bad proceeding for woody plants in all cases where the stocks are as thick, or thicker, than the little finger, because their transverse horizontal section is difficult to heal. But for small stocks, only two or three times the thickness of slender scions, such as we meet with in the state of small shoots, bearing leaves, sometimes flowers and fruits, it is well adapted; in this case these young shoots are split on one side,* see fig. 8.; and in this cleft the scion is introduced. If it should happen that the latter be too large for the stock, cleft as already detailed, and of which the fibres are not sufficiently elastic for permitting the scion to be inserted, we take off from the cleft one or two small parings, so as to give it a triangular form (see Fig. 7); in this case we modify also the cut of the scion, in order that it may fill exactly the opening prepared for it.

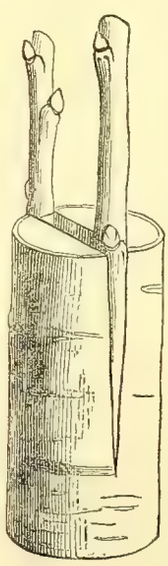
Fig. 7. Fig. 8.



By this method of grafting, and its modifications, we may propagate a great many hard-wooded evergreens; and likewise many with herbaceous stems or branches; such as the young shoots of Pelargoniums; Melons on Gourds and Cucumbers, Tomatoes on the stems of Potatoes, Sunflowers on the Jerusalem Artichoke, &c. For the latter, more especially, the minute care of shading, which we have mentioned, is indispensable.

Cleft-grafting with two Scions: fig. 9. (*Greffe en fente à deux rameaux.*) (*Greffe Palladius, of Thouin.*)

Fig. 9.



*Operation.*—The stock, as may be seen, is cut horizontally, then split across the middle in two equal parts, or nearly so, without regarding the medullary sheath (*a maxim strongly recommended by ancient authors.*) The operations are similar to those required for the Bertemboise mode, fig. 6, excepting that the stock is cut across horizontally, and two scions are inserted in the cleft. This mode is only used for stocks that are too large for one scion, and too small for being cleft for four. In many cases we cut back one of the grafts when both take, if their growths are likely to prove injurious to each other. This, however, is not the case when these grafts are intended to form either fan-trained, or vase-shaped trees. We also use this mode for grafting the strong stem of a bad sort of Vine with a better variety; but the wood of the Vine being flexible, it is necessary to bind, securely, the parts operated upon; then, when the graft is above ground, and generally exposed to the sun, we cover the wound with the resinous composition, binding the whole with a piece of cloth, in order to prevent the composition from being loosened, or even thrown off by the flow of sap, formed in the small vesicules, which being evacuated, weakens the stock, and consequently the graft, which in this case runs the risk of perishing. Vines ought to be grafted when their sap flows abundantly from one or more small trial cuts made on their stems. [To prevent bleeding they should be in leaf.]

Fig. 10.



Cleft Grafting (*Paragraph 2d*); with Stock and Scion of equal Size: fig. 10. (*Greffe Ferrari of Thouin.*)—This is applicable to herbaceous and to woody parts.

*Operation.*—The scion, of whatever nature it may be, should be cut wedge-shaped at the base; the stock should be split down the middle, and the two parts thinned as they are represented, in order that the wedge-shaped part of the scion may fill all the space, and coincide in every point. This particularly nice mode may be applied to many woody plants, and to a great number of large herbaceous ones. *Translated from the French of D'Albret.*

* When we adopt this mode of grafting on herbaceous stems or branches, they ought to be cut above a leaf, or young branch; then the cleft should be made opposite to them, and these small productions from the stock immediately below its section, ought to be preserved almost entire until such time as the graft shall have completely taken.

## TRADE MEMORANDA.

Who is Mr. John Wild, of Fetter-lane, Manchester? and who is his companion, who lives in Park-place of the same town?

## Home Correspondence.

*Mixed Flower Beds v. Masses.*—I rejoice to see your correspondent "Pharo's" remonstrance against the universal adoption of the bedding system, and his remarks in favour of the much-neglected hardy perennials. Allow me to suggest the re-introduction to notice of many very beautiful North American plants, which have been so neglected as to be nearly if not wholly lost. Among them are some of the Trilliums, the Sanguinaria

Monarda fistulosa, and some of the Phloxes and Aquilegias, quite as hardy and beautiful as those in cultivation, and a vast number of others. The quick and constant communication with North America would render it easy to procure all plants from thence, if you could once turn the powerful tide of fashion in their favour. A list of a few of the best from time to time in your pages would be most useful, and also hints of where the best collections of plants of this description can be procured. One consequence of the small demand for this class of plants is that they are, when found in a nurseryman's collection, in general much dearer than they would be if more frequently enquired for. *A Lover of a Gay Flower Garden.*

*The Variegated Holly.*—This plant, properly a shrub, seldom assumes the importance of a timber tree. Indeed, the only instance of this which I have ever seen is at this place, and no doubt many of your readers who have visited the Scruton Nurseries will recollect the tree—a few yards from the front carriage entrance gate to Mr. Jackson's residence. Its length, from the ground to the first branches, is 12 feet; the circumference of the bole, 6 feet from the ground, is 4 feet, and the height is 36 feet. It is nearly 300 years old. *J. Carnegie, the Nurseries, Scruton, Bedale.*

*Lycaste Skinneri.*—This Orchid ought to have a place in every stove, for it is truly a beautiful object. During these two years past, a young plant has flowered here in January, and the blossoms remain in perfection for six weeks at a time; at present it has seven open blooms on it, each about 4 inches across. It grows freely in peat from which the earthy matter has been shaken, but it likes plenty of drainage, a moist atmosphere, and shading from the sun in very hot weather. The temperature I have grown it in has been from 55° to 70° in winter, and from 65° to 90° in summer. *I. Rust, Pashley, Ticehurst.*

*Snow's Superb White Broccoli.*—With me this has proved by far the most valuable winter Broccoli that I have ever seen or cultivated. With it I have been enabled to supply my employer's table every day since the beginning of December with heads equal, or nearly so, to any Cauliflower, however fine. In fact, its general character partakes more of the Cauliflower than the Broccoli, being dwarf, close, and compact. When it approaches maturity numerous small leaves fold over the centre, so as to envelop the head and protect it in a very considerable degree from frost; but this has not been a season for testing its hardiness. I have had it excellent in the open quarters, but the principal part of my crop was carefully stored beyond the reach of frost, however intense it might have been. To those who prefer good Broccoli in the depth of winter, this variety will be found an acquisition. *G. Fry, Manor House, Lee, Kent.*

*Begonia Fuchsioides.*—In one of your recent Numbers I saw an article on the successful flowering of this Begonia under pot culture. I have a very fine specimen, some 10 years old at least, grown in a bed in a conservatory, and trained up a rafter, but no means have yet been able to make it flower, with the exception of one summer (a very hot one), when it was quite a show. Perhaps some of your correspondents can give me some useful hints on the subject. *A. M.* [We are not aware that any better directions can be given than those at p. 87 of the current year's volume.]

*Rhubarb.*—I am induced to offer you a few remarks on the merits of Mitchell's Prince Albert Rhubarb. In February, 1850, I bought 10 strong roots of this variety from Messrs. Low, of Clapton; these were divided into as many as 30 buds. I planted each bud 3 feet apart every way on a south border, which had been previously well trenched and manured. They grew rapidly. During the season I gave the roots twice a soaking of liquid manure; and in the following summer we gathered several dishes from them. In the latter part of October, over half the roots, I placed Seakale pots, and covered the latter with leaves, and by the third week in December most of the pots were full of strong stalks, equal to any I saw exposed for sale at the same period; and they have continued to yield up to the present time. The roots which have not been excited have now stalks issuing from them 6 inches in height. The flavour of this Rhubarb is excellent, and it is very productive. It is very suitable for early forcing. *John F. M'Elroy, Gardener to W. J. Lancaster, Esq., Stamford-hill.*

*Bouquet Trade in New York.*—The following extract of a letter from a young acquaintance at New York may be interesting to some of your readers:—"New York, Jan. 20, 1851: Last week I made up a bouquet for the world's fair. It was put into a patent metallic safe, the lid screwed down, and the air extracted. I fear it will not answer, but the patentee says he has proved it before. I had to see it deposited, and then made affidavit, that I made it, and saw it placed in the safe, then, and there—so you will have a chance of seeing a specimen of our 5 dollar bouquets. It has fine white Camellias in it; of course, it will be shown amongst the New York State division of the American department. On New Year's morning we sent out above 200 dollars' worth of flowers, arranged in bouquets, baskets, and vases. Six of us were at work all night. These were principally ordered by young gentlemen, as new year's presents for their lady acquaintances, upon whom they call on that day. It is laughable to see the driving, and running about, from house to house; there being full liberty to take and introduce any of their friends on that occasion, and it is generally taken full advantage of by the gentlemen. The ladies, on their part, pride themselves, and boast of the number of their visitors. This is done by all ranks in New York." *J. Little, Langholme, N. B.*

*Chiswick Temperature* v. *Holkham.*—The table which accompanies this contains the Chiswick observations for January, as given in the *Chronicle*, and the comparison of the Holkham observations of minimum thermometers in three different positions; the first column being those taken according to the Chiswick method, and the remaining two by our usual plan for minimum observations. The result shown at the foot of the first column appears to corroborate the remark in my last communication, giving a higher night temperature at Holkham than Chiswick, which our proximity to the sea would lead us to expect, while the series display the singular fact of the reading of a thermometer placed but a foot above the ground, and fully exposed to the sky, being but 0.2° below one placed at 4 feet from the ground, protected fully from radiation, and nearly 4½° higher than another thermometer on the Grass immediately beneath it. The occurrence, however, of an overcast or a perfectly cloudless night, we find, has a material effect on the difference between the first two, while the difference between the readings of the exposed thermometer is much more constant. The points, however, with which we originally started, the remarkable difference occasionally between the temperature of the two places, do not seem to receive any satisfactory explanation at present, nor does the number of the discrepancies decrease as the readings of the 4th, 9th, 10th, 13th! 16th, 18th, 19th, and 23d sufficiently testify, although the occurrence of the + sign in clusters, with the greatest difference on the intermediate day, would seem to point to a more satisfactory result than the suspicion of error or negligent observation. In the table I have placed the several temperatures opposite to the days on which they are read off, according to the plan we adopt, and on each day throughout the lowest reading has occurred previous to 9 A.M., the time of observation. The following is the table alluded to:

| Chiswick. Minimum—recorded between 10 and 11 A.M. on each day named. | | Holkham. Minimum—recorded at 9 A.M. on each day named. | | |
|---|---|---|---|---|
| 1851. | Minimum at 1 foot above (?). | 1 ft. above Grass. + Higher. — Lower. | 4 ft. above soil, protected from radiation. + Higher — Lower. | On Grass. + Higher. — Lower. |
| January 1 | 50 | — 1.8 | — 3.3 | — 6.8 |
| " 2 | 51 | + 0.5 | + 0.4 | — 3.2 |
| " 3 | 43 | — 5.5 | — 2.8 | — 8.7 |
| " 4 | 35 | + 7.2 | + 6.8 | + 4.7 |
| " 5 | 39 | + 1.8 | + 1.2 | — 3.5 |
| " 6 | 24 | — 1.0 | + 2.7 | — 2.0 |
| " 7 | 31 | — 7.5 | — 4.8 | — 8.0 |
| " 8 | 27 | + 4.2 | + 6.0 | + 0.6 |
| " 9 | 27 | + 7.0 | + 6.3 | + 2.6 |
| " 10 | 23 | + 8.5 | + 8.0 | + 3.0 |
| " 11 | 39 | — 0.2 | + 0.2 | — 3.5 |
| " 12 | 45 | + 1.0 | + 0.2 | — 4.5 |
| " 13 | 47 | —15.8 | —12.0 | —19.0 |
| " 14 | 44 | — 6.5 | — 9.0 | — 8.2 |
| " 15 | 40 | — 2.2 | — 2.0 | — 8.2 |
| " 16 | 28 | + 7.5 | + 7.8 | + 1.3 |
| " 17 | 40 | — 3.3 | — 3.8 | — 8.0 |
| " 18 | 27 | + 7.0 | + 8.0 | + 2.5 |
| " 19 | 28 | + 8.0 | + 7.2 | + 2.5 |
| " 20 | 35 | + 1.2 | + 0.8 | — 4.6 |
| " 21 | 40 | — 4.2 | — 3.5 | — 8.0 |
| " 22 | 30 | + 2.6 | + 3.0 | — 1.7 |
| " 23 | 23 | + 9.0 | + 9.4 | + 4.5 |
| " 24 | 22 | + 5.2 | + 8.0 | + 1.2 |
| " 25 | 25 | — 0.8 | + 2.0 | — 3.2 |
| " 26 | 29 | + 4.6 | + 2.3 | — 2.2 |
| " 27 | 28 | + 6.3 | + 5.8 | + 0.4 |
| " 28 | 27 | + 2.7 | + 5.0 | — 2.0 |
| " 29 | 39 | — 1.0 | — 1.4 | — 7.2 |
| " 30 | 32 | + 2.3 | + 1.6 | — 3.0 |
| " 31 | 30 | + 1.3 | + 0.8 | — 3.0 |
| Means | 33.7 | + 1.23 | + 1.64 | — 3.67 |

*S. S., Holkham, Feb.* 10. [It will be seen, from the above table, that in some instances the indications of our correspondent's three differently situated thermometers nearly agree with each other; but that at other times they differ as much as 7°. This being the case he cannot be much surprised at an occasional discrepancy of 15° between thermometers so far apart as Holkham and Chiswick; the one probably acted upon by a north-east wind, and the other by a south-west. At all events such discrepancy will cause little astonishment to those who have long been in the habit of comparing returns of temperature from many parts of the country. The observations at Chiswick are correct; and we see no reason to doubt the correctness also of those at Holkham.]

*Beech Trees.*—Observing at p. 87 some interesting remarks on re-invigorating old forest trees, I thought, perhaps, some of your readers could inform me what would be the proper food for Beech trees. The plantation (intermixed with a few Oaks and Firs) is, I suppose, nearly a hundred years old. It is situated on the side of a hill in a sandy soil, and invariably when the Beeches have arrived at a certain growth they appear, after a little time, to die away gradually. This is attributed by some to the roots having spread down through the sandy soil, and reached the gravel below. For many years it has been the custom to rake the dead leaves up every autumn, and I have lately been more particular in having this done, in order to promote the growth of the Grass underneath, for the sake of appearance. *Nemus.*

*Forcing Peaches.*—My object in the following remarks is to throw out a few useful hints to young gardeners, respecting the management of the early Peach-house. After shutting up the Peach-house, pruning and tying may be proceeded with, and should the house contain old trees which have long been forced, it might be advisable to paint them over with the following composition, viz., four gallons of soft water, one quart of train or whale oil, half a pound of flowers of sulphur, two pounds of soft soap, one quart of tobacco water, together with sufficient clay to give the whole the consistency of paste. Apply the mixture with a sponge or soft brush, made of bast, keep the composition well stirred up from the bottom, dip your sponge or brush into it, and gently draw it up the branches two or three times so as to give them a good coating of the material, more especially the older branches, closely examining all cracks and apertures where the larvæ of insects are likely to be found. This operation being accomplished, fork over the borders carefully, so as not to injure the roots, and at the same time mulch inside and outside with fresh cow manure, giving the whole a supply of soft water sufficient to penetrate to the bottom of the borders. If, however, they have been previously properly attended to, they will not require such a deluge at this time. The house having been shut up since the middle of December, in order to have ripe Peaches about the middle of June, light the first fire early in January, and should frosty weather prevail, maintain a temperature between 45° and 48° as a minimum, allowing a range of 10° higher before you admit the external air, of which, in favourable weather, you can hardly have too much, provided the inside temperature is not permitted to fall too low. If frost is excluded, the slower the sap is put in motion the stronger will the flower-buds break, and the wood-buds will push with greater regularity and strength. The maintenance of a steady temperature is of the utmost importance, both to the trees and the crop. The fire heat should never be so great as to compel you to give air before the external temperature has been warmed by the rays of the morning sun. By that kind of over heating, you are forced to ventilate, in order to prevent burning, and thus you expose your tender shoots to cutting wintry winds. About the middle of the month, the temperature may be raised some 4°, using the syringe morning and evening, with a view to facilitate the expansion of the buds. About the beginning of February, the temperature may be slightly increased, and, as soon as the buds begin to expand, the use of the syringe must be discontinued, for a superabundant supply of water, either at the roots or over the branches, would prove injurious. In order, however, to keep the air moist, sprinkle all pathways, &c., but do not allow any water to fall upon the hot flues or pipes. This latter would cause a burning steam to ascend, which would be injurious to vegetation. The house ought now to assume a gay appearance. Air should be admitted freely upon every bright day, and also on dull days, if the weather is mild, using a little extra fire to keep up the heat. Airing materially strengthens the blossom, and insures its setting. About the middle of the month, if all has gone on well, the fruit will begin to exhibit itself. The temperature may now be raised 2° or 3° with safety. The syringe may be again applied gently, night and morning; but never use it in the morning until the sun's rays are sensibly raising the temperature of the house. From the 26th of February to the beginning of March the fruit ought to be swelled to the size of large Peas. At this stage, syringing may be employed freely until, say, the 6th of April, about which time the fruit will begin to stone; and from that time until the 12th of May the syringe and watering-pot must be sparingly used, or the fruit will drop off. I would not advise a higher temperature to be maintained yet than 60°, for the Peach is very impatient of much heat and close confinement. By the end of May the stoning process will be completed; and, if fine fruits are wanted, they should be thinned out to 9 or 10 inches apart, or even more; but weakly trees ought not to be permitted to produce above half that quantity. The temperature may be gradually raised to 65°, giving air when the house is raised to 75° by sun heat, and the fruit will now be in its last stage of swelling, when water may be liberally supplied, both to root and top. This will have the effect of keeping down red spider; and if green fly appears, fumigate with Tobacco before the fruit begins to ripen. By the beginning of June the fruit will begin to change colour. Relieve any that are covered with leaves, and admit air freely as maturity approaches, by which means fine flavour and high colour will be obtained. Watering must now be discontinued; begin first by withholding it from the roots, and spare by degrees the use of the syringe, until the whole be left off. Ripe fruit may be gathered about the middle of June, if the above hints have been carefully put into practice. *J. M., Eardeston.*

*Cyclamens.*—Permit me to direct attention to that much neglected, but really beautiful plant, the sweet-scented Persian Cyclamen. Surely it must be an idea that it is difficult to cultivate that keeps it so much a stranger to our greenhouses and window-gardens; few plants, however, are more easily managed or better repay the attention they receive. The Cyclamen being a fleshy bulb, and never throwing out any off-sets, it can only be propagated from seed. It naturally flowers about this season of the year; but if it is placed in heat it may be bloomed much earlier. While they are in flower, those who possess a few bulbs should select those which are sweet scented (for some of them have no scent at all), and place them in a greenhouse or fram

where they can have plenty of air. They will there produce abundance of seed, which, when ripe enough, should be sown as soon as it is gathered in seed pots or pans, well drained, and filled with equal parts of good loam, sandy peat, and leaf mould, or well decomposed dung. The seed should be distributed evenly, slightly covered with mould, and kept moderately damp. Early in autumn, the plants will begin to show themselves. They should remain in the seed pans till May following, when a bed should be prepared for them in the following manner :—Put down a layer of well rotted dung 3 or 4 inches deep, and upon this place a mixture of equal parts good loam, sandy-peat, and leaf-mould, at least 9 inches deep. On this plant out your seedlings from 4 to 6 inches apart, protect them by a frame or hand-lights, give plenty of air, and as the weather becomes warm remove the glasses altogether, and during the summer months keep them free from weeds, and water them when they require it. Early in September they should be taken up carefully, and potted into pots varying in size according to the bulk of the plants. Place them in a warm frame for a short time until they have taken hold of the soil, which should be similar to that mentioned above, with the addition of one-third well decomposed dung, and a little silver sand. At the general time of housing greenhouse plants, give them a good airy position in the greenhouse, and in the following spring most of them will yield a fair crop of flowers. Those who have no greenhouse may keep them in a cold frame during the winter months, removing them when they are showing flowers, to the sitting-room window, where, intermixed with Crocuses, &c., of different colours, lifted and potted from the open ground, they will make an attractive display. The Cyclamen should not be forced to rest as soon as it has done flowering ; for in that case the foliage is destroyed before it has laid up in the bulb a sufficient store of nutritive matter to sustain it through its forthcoming trial. When your plants have gone out of flower, place them in a cold frame and pay as much attention to their wants as at any other season of the year. In May turn them out in a sheltered spot protected from the mid-day sun. In September lift them carefully, pot them, and place them on the shelf of the greenhouse or in a frame. As the season advances a portion of them may be introduced into heat, where that can be commanded. These will blossom earlier than the rest, and in this way a long continuance of flower may be maintained. Some grow their Cyclamens in the same pots without shifting them for years ; but, although they may bloom well under this system for a time, the plan is not to be recommended. *Beta.*

## Societies.

HORTICULTURAL, *Feb.* 18.—J. R. GOWEN, Esq., Treasurer, in the chair. Mrs. Lawrence, of Ealing Park, sent a charming collection of Orchids, for which a Banksian medal was awarded. It consisted of a nice specimen of the long-tailed Lady's Slipper (Cypripedium caudatum), the handsome Lycaste Skinneri, Cœlogyne cristata, the white-blossomed Odontoglossum pulchellum, Cyrtochilum hastatum, the yellow Oncidium Cavendishii, and cut specimens of Heliconia Braziliensis. From Mr. Ingram of the Royal Gardens, Frogmore, came an exceedingly handsome Begonia manicata. It could not have measured less than 3 feet high, and as much through, and it was loaded with blossoms which had, however, suffered considerably from travelling. The same establishment also contributed three seedling Cyclamens in the way of persicum, beautifully grown and flowered. A Banksian Medal was awarded for these and the Begonia. Messrs. Lee, of Hammersmith, furnished a small example of Rondeletia (Rogiera) thyrsiflora, which promises to be useful. Mr. Cole, gr. to H. Collyer, Esq., of Dartford, sent the Nerium-leaved Allamanda. This proves to be a smaller flowered kind than the old A. cathartica ; but it is nevertheless handsome, and well deserved the Certificate of Merit which was awarded it. Mr. Gaines, of Battersea, contributed Centradenia floribunda, and Rondeletia thyrsiflora. Mr. Kinghorn, gr. to the Earl of Kilmorey, exhibited two beautiful seedling Epacrises. One, named Kinghornii, was white ; the other, grandiflora rubra, was red, tipped with white. A Certificate of Merit was awarded for the white one. From Mr. Hamp, gr. to J. Thorn, Esq., of Mawbey House, South Lambeth, came a large plant of the Tankerville Phaius, and a handsome Camellia tree (C. tricolor) some seven feet high, loaded with flowers and flower-buds. A Certificate of Merit was awarded for the Camellia. Blooms of two Rhododendrons, and the Corsican Hellebore, were furnished by the Hon. Fox Strangways, from Abbotsbury, in Dorsetshire. Mr. Fleming, gardener to the Duke of Sutherland, at Trentham, exhibited two bunches of Muscat of Alexandria Grapes, somewhat shrivelled, but excellently flavoured. These weighed respectively 1 lb. 1 oz. and 15½ oz. Along with them came a bunch of white Tokay, which was plump and good, and appeared as if it would have kept sound for at least a month to come ; but it was not comparable with the Muscats, as regards flavour. To this bunch, which weighed 1 lb. 5⅞ oz., a Certificate of Merit was awarded, on account of its fresh presentable appearance. Mr. Fleming stated that the Muscats were from a Vine grafted on the old white Tokay, which being a very strong grower, and continuing to grow late in the season, seemed not only to improve the Muscats, but to keep them plump and fresh for a month or five weeks later than those on Vines on their own roots in the same house. The bunch of white Tokay was cut from one of the stocks below the graft. Mr. Butcher, gr. to W. Leaf, Esq., of Park-hill, Streatham, furnished a large punnet of Cannon-hall Muscats, which in this case were not so well flavoured as the Muscats of Alexandria above alluded to. A Certificate of Merit was awarded them. Two very fine heads of "Penzance Broccoli" were shown by Messrs. Rendle and Co., of Plymouth, who stated that one of the heads weighed 3¾ lbs., and was 2 feet 10 inches in circumference ; the other weighed 3½ lbs , and was 2 feet in circumference. These weights and measurements are without the leaves. They mentioned that they have seen some heads with the leaves on which weighed above 30 lbs. Mr. Tye, of Birmingham, exhibited six Hyacinth bottles of various colours, and furnished with convenient wire supports for the flowers. These are handsome clever contrivances, and if cheap enough cannot fail to be universally approved of. —From the Garden of the Society came three species of Acacia, eight varieties of Epacris, Styphelia tubiflora (a useful winter and early spring flowering shrub), the two-coloured Corræa, a Cape Heath, the useful winter plant Selago distans, the sweet-scented Pittosporum undulatum, and Galanthus plicatus. The latter only requires to be known to be generally cultivated, for it is a great improvement on the common Snowdrop in point of size. The same establishment also furnished the following vegetables : — *Navet jaune de Finlande.* — Seeds of this were received from M. Vilmorin, of Paris. It appears to be a variety of the Malta Turnip. *Variegated Plumage Kale.*—This is used for garnishing ; but it is also much esteemed by some, when it is cooked like a winter Green. *Corn Salad.*—This is the common Corn Salad, which is now more used than it has been in this country ; but it is likely be superseded by the Italian Corn Salad, *Mâche d'Italie,* seeds of which are now amongst those that are distributed to the Fellows of the Society.

## Notices of Books.

*Beiträge zur Mycologie, von G. Fresenius, M.D., Erstes Heft.* Frankfort, 1850, 4to, pp. 38, tab. lith. 4.

THESE contributions to Mycology, however excellent in themselves, would not demand notice in our Journal, merely as descriptions of species, which have little to do directly or indirectly with its objects. It will be enough to say of the descriptions, notwithstanding some species are described as new, though published years ago, that they are, for the most part, good, and accompanied by useful observations, and that the figures, though far from being all that might be desired, have, as far as they go, an air of truth about them, but must be regarded rather as materials (disjecta membra) from which an idea of a species is to be formed, than as finished representations. For figures of two or three scattered branches of various forms, as seen under the microscope, will never convey a correct general notion, to which end a certain degree of tact is requisite, which makes all the difference between a first and second-rate observer. If we take, for instance, some of the complicated sketches of Messrs. Tulasne, though any practised microscopist will at once allow that such figures are, to a certain extent, ideal, in so much at least as every individual cell and thread has not been copied, for no hand, however delicate, could make such successful sections, yet there is a truthfulness about them which perhaps has never been surpassed.

It is not however to this that we wish especially to point attention, but to the circumstance that such a work should be undertaken in utter ignorance of almost everything that has been done in other countries for the last 30 years. The latest work of any English mycologist to which allusion is made is that of Greville, and the bare existence of such observers as Léveillé, Montagne, and the Tulasnes in France, or De Notaris in Italy, is not even recognised. Now we have the greatest respect possible for national feeling and genuine love of one's country ; but when that is carried so far as to create an indisposition to look beyond the limits, however extensive, to which the term of fatherland may be confined, especially in subjects of universal interest, and where the errors or negligences of one are a constant source of vexation and perplexity to every one whose studies run in the same direction, it certainly calls for reprobation. We are far from wishing to assert that such a feeling is common to German naturalists, though we could bring forward many instances to this effect. It is an invidious thing to point out individual cases, and we the rather avoid doing so, because some who began by an early disregard of a great portion of what had been published by their predecessors, have in their later works nobly redeemed their errors in this respect ; and in one instance, which we could name, with a measure of disinterestedness which is highly honourable both to the head and heart. Nor do we think that the evil is entirely confined to systematists ; for we have seen a tendency of a like nature in other quarters. It is the duty of every man, who writes on any subject, to take every possible pains to acquaint himself with the state of knowledge existant on the subject at the time ; or, to use the words of a celebrated lawyer, "to read up to Saturday night ;" but the author of the work before us has, at least, a quarter of a century to make up, notwithstanding the means of information which are available to every German, in such works as the "Botanische Zeitung" and many others of a more or less similar character. The native industry and powers of application which seem the birthright of every German, make everything in the shape of wilful neglect quite inexcusable ; and, if our remarks should be felt to be just, we trust that they will be received with the good-will with which they are offered, and induce a little more deference to authors whose works have been long before the public, and which cannot be neglected without reflection either upon the modesty or information of those who pass them by without observation.

## Miscellaneous.

*New Mode of Propagating Herbaceous Pæonies.*—Over a tuft of Pæony with herbaceous stems, place a box or pot without a bottom ; fill the box or pot up with well-worked vegetable mould ; the stems have then to make their way through this earth before they can produce any flowers. If the height of the box or pot is from 13 to 15 inches, it is of no consequence ; the stems always rise through this thickness, and always attain the height fixed for them, and then develop their flowers. The soil should be kept damp all the summer, in order that roots may be formed in a proper way. Towards November or December, the stems may be cut off flush with the bottom of the box or pot, for they will be found furnished with roots throughout their entire lengths. The same stems may be cut into lengths, and each length, having a bud and some roots, will, if placed in well-worked soil, produce a new plant. In planting these lengths, each should be covered with earth, about 2 inches deep, so that the plant may draw nourishment from the soil, and not be killed in frosty weather. In this way the stems of the double-flowered Pæonia officinalis, which are commonly annuals, become perennials, by the absence of light, and the obstruction artificially applied to their growth. All my experiments have been made on this plant, but I am convinced that similar results could be obtained from others of like nature. Although the common Pæony is exceedingly hardy and strong in constitution, no mode of multiplying it has been hit upon, except by dividing its roots, which greatly disorders the course of its vegetation. By the new process, many plants can be obtained, and the large roots of the original one remain undisturbed. Propagation by dividing the great roots is exceedingly easy, for each piece carefully treated gives in time a plant, but the plant thus obtained does not bear any flowers for the first three years, after which time development proceeds rapidly ; the new process above described is much quicker. Chinese Pæonies, which have been hitherto universally propagated by the division of their under-ground stem, may, I have every reason to believe, be multiplied in the new way. The common purple Pæony and its varieties are often planted in the most unsuitable situations ; they are put under trees in large parks, or in clumps in pleasure gardens ; their stems are consequently poor, and their flowers not half so large as they should be. Placed in proper situations the common height of the purple Pæony and its varieties is about three feet. In order that a tuft of Pæony may grow well, it should occupy a circumference of two yards, and be placed where the gardener's spade can never wound its roots. The plant likes to be left alone and undisturbed ; it does not like to be placed near other plants with long roots which intermix with its own, and deprive them of the moisture they require. It is only when these conditions are observed that fine Pæonies are produced ; if they are put under the shade of a large tree, their stems are weak, and are beaten down by the first storm of wind and rain. The space of two yards may seem unnecessary in the eyes of many amateurs, but let them recollect that it will soon be filled by stems themselves a yard long, and which spread out from a common centre ; besides the roots are longer than the stems, and ought not to be interfered with. There used to be, many years ago, in M. Molé's park, at Méri-sur-Oise, a horse-shoe plantation of clipped Yews. Between each Yew there was a Pæony ; there was plenty of room for the growth of the Pæonies ; they had plenty of air and light, were never disturbed in any way, and bore magnificent flowers which produced a very fine effect. I have never since seen so beautiful a plantation. The ground intended for Pæonies must be well dug and loosened at least 3 feet deep, so that the roots, which spread in every direction, may act freely and for a long time ; for these plants will continue to flourish for 40 or 50 years without showing any symptoms of decay, provided always they are never disturbed. The Pæony is one of the few plants not attacked by grubs and insects ; this is true of all its varieties. The earwig alone is sometimes found among the petals ; but they do not stay long, as the first fall of rain or heavy dew causes them to decamp. What we have said about the preparation of the earth is of special importance when we are dealing with the Chinese Pæonies, for their roots are as long again as those of the common variety, and their stems cannot acquire their proper height ; nor can their flowers attain perfection unless there is a plentiful supply of nourishment. Pæonia edulis requires peculiar attention, for its stems naturally grow 3, 4, or 4½ feet high. Pæonies are extremely useful for decorating gardens, as the quality of the soil is not of great consequence, and the beauty and odour of the flowers are of the highest degree of merit. *Duval ; Flore des Serres.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

As soon as the newly potted plants begin to grow freely, let attention be paid to the training and stopping

of the shoots, rather than allow them to expend their vigour in long rambling growths, which must be cut off when unmanageable, and perhaps when too late in the season to repair the injury thus sustained by the plant. Another portion of the stock of Gesneras, Gloxinias, &c., should now be placed in heat; and the former lot of Achimenes will be ready for potting off. Let them be put at once into the size of pot in which they are to flower, as no plant suffers so much from the checks and sudden starts produced by being frequently repotted. If they are treated as recommended, the size of the plants will be proportionate to that of the pots; and when these are filled with roots, the plants will naturally arrive at a flowering state. The opposite method of frequently repotting these plants causes the embryo flower buds to be metamorphosed into small scaly bulbs. They are most useful for decorative purposes when grown in a brisk bottom heat, with a liberal supply of top heat, and a free admission of air, as they make sturdier, better shaped plants than when grown in a close temperature; besides which, they are better enabled to endure the cold currents of air in the conservatory and other places, where they are generally placed when in flower.

### FORCING DEPARTMENT.

In preparing new Vine borders, pay particular attention to forming a good sound bottom, and making provision for thorough drainage; the great desideratum being to form a warm porous bed, which may serve as a medium by which suitable nutriment can be afforded to the roots. The soil should consist principally of warm, sandy loam, in which the Vine makes fibres much more freely than in soil of a stiffer, or more unctuous quality. The admixture of manure is of less importance, as any amount of richness can be added by means of top-dressings and liquid manure; but if the loam is light and open in texture, a small quantity of sheep, deer, or cow-dung may be incorporated with it: bone-dust is also a suitable manure for soil of this description, and is excellently adapted for the Vine, but should never be used with soil which is stiff and cold. Some lime rubbish and brick chippings should be added to render the border more porous. Look closely after Vines and Peaches, to see that the foliage is not being injured or destroyed; the former is liable to be attacked by a small species of beetle, which must be carefully sought for at night, that being the time at which it commits its depredations. Thrips and green fly should be destroyed, as soon as observed, by fumigating with tobacco. Figs, started about this time in a mild temperature of 45° to 50° by night, with a rise of a few degrees by day, and not hurried by too much heat at any after period, will stand a good chance of succeeding well; the rapidly increasing length of day, with brighter weather, giving them the advantage over those earlier started. If the soil is dry, let sufficient water be given to moisten every part thoroughly, avoiding rich stimulants, such as liquid manure and fat top-dressings, which at this period tend more to produce strong growth than good fruit. Cherries.—If the early started Cherry trees are now in bloom, let a drier atmosphere be kept up until the fruit is fairly set. The temperature should not exceed 50° by night, nor 60° by day, with a constant admission of air, but carefully avoiding cold currents. Very little air need be left on during the night, as a circulation is kept up by very small openings, especially when the pipes or flues are warm. Strawberries.—Plants put into the forcing pit in the end of December will now be in bloom; and a steady heat of 50° by night should be maintained, with a rise of 5° or 10° during the day. Air is indispensable to the health of the plants and the setting of the fruit; and care should be taken to open every light a little, according to the state of the weather, in preference to giving an equal quantity of air by opening only part of the lights. As soon as 5 or 6 fruit are set in each pot, they should be removed to the Peach-house or Vinery-shelves, and placed close to the glass near the ventilator. Some pans partly filled with rough grit or sand should be placed under the pot, which will thus be kept moist and cool during warm sunshine, while the superfluous water which passes from the pots can easily be emptied without the grit or sand going also.

### FLOWER-GARDEN AND SHRUBBERIES.

The propagating of half-hardy plants for bedding purposes should now be going on with activity. The following is the plan which we have adopted. About this time the beds are prepared by filling up to within a few inches of where the surface of the soil ought to be, with leaves and hot dung, which have been previously well fermented. The surface of the fermenting material should consist of leaves alone, as they are less liable to give off noxious exhalations; and, as an additional precaution, an inch of sand or coal-ashes may be laid over them. On this we lay 3 inches of light soil, and upon it 1 inch of sand, into which the cuttings are inserted. To assist in sustaining a strong bottom-heat, we have a hot-water pipe passing beneath the bed, which we make use of when there are any symptoms of the heat declining. The cuttings strike in this way very quickly; and after being fairly rooted, are taken up with balls of earth, and transplanted into cooler quarters, in frames of prepared soil. Much time is saved by this means, as the labour attending the draining and filling of pots is all avoided. The soil should not exceed 4 or 5 inches in depth, and should consist of one-third loam, one-third decomposed leaf-mould, and one-third sand, and may rest on a bed of coal-ashes. The young stuff should be set in rows from 4 to 6 inches apart, according to the habit of the plant, and the length of time which will intervene before they are planted out. By passing a knife or sharp trowel down into the soil, between and across the rows once or twice during this period, their roots will be prevented from intruding upon each other, and when required for planting out, they will lift with nice balls of fibrous roots. Their tops also must be kept within bounds by timely and periodical stopping. It is true that one of these plants will occupy more space under glass than two thumb pots; but it is no less certain that when the turning out season arrives, one of the plants grown as recommended will be worth half a dozen of the miserable things which have been starved in pots; besides which, the labour of watering is materially lessened, an important matter during the busy spring months. All kinds of plants intended for flower-garden masses come earlier into flower, and make greater progress if treated on this plan than when turned out of pots, in which they have been growing any length of time. We recommend particular attention to this, as we have practised it extensively for some years, and have found it to answer extremely well.

### HARDY FRUIT GARDEN.

To guard against the effects of late spring frosts, we again urge the necessity of affording artificial protection to the blossoms of our choice fruit trees, not on the walls only, but on those in the open ground also; this will be particularly required in damp low situations, where the slightest frosts do considerable damage. As a matter of course, gardeners will make use of canvas and netting as far as they will go; but as few have sufficient of these to protect all their trees, they will find the fan-shaped branches of Spruce or Yew a tolerable substitute. By applying these covering materials early in the season, the slight shade they afford prevents the untimely excitement which is the result of unseasonably warm weather during spring. The moderate sized espalier pyramidal Pear trees, which have a sufficient quantity of flower-buds to make it worth the trouble, may be protected by rearing a few small poles over them, tent fashion, and thinly covering them with branches of evergreens, which thus form an excellent shelter. Our success in protecting pyramidal Pears, and other fruit trees on trellises, induces us to press the necessity of protecting as many of these tender kinds of fruit trees as possible. It is satisfactory when our efforts are crowned with success; and should we fail, after doing all in our power, we are at any rate better satisfied than if we had not taken any precautions.

### KITCHEN GARDEN.

As soon as the ground is sufficiently dry to allow of the surface being pulverised, the main crop of Onions should be sown. The piece of ground selected for this crop should be well drained, and sufficiently rich to prevent the bulbs being too small; but, at the same time, the opposite extreme must be avoided, or the produce will be watery, thick-necked, and less likely to keep well during winter. Early sowing of this vegetable is essential, in order to get the bulbs matured and housed before the short sunless days of October. A second crop of Early Horn Carrots may now be sown, but the main crop usually suffers less from the maggots when sown in April, or even in May, than those which are sown earlier; and although the roots of late sown ones are somewhat smaller, their good quality generally makes them more profitable. An early crop of Stone Turnips should now be sown, and Asparagus seeds on the beds formerly prepared. Regular sowings of spring salads should be made in frames and warm borders. In planting out Cabbages, if you have more than enough for the regular crops, the rows may be planted only half the usual distance asunder, and the alternate rows drawn and used as Coleworts when about half-grown. A sowing of one of the larger Cabbages should now be made in a frame, and also some Cauliflowers for the earliest spring sown crop, with some more under a warm wall to succeed them. A sowing of Celery should also be made on a moderate hot-bed; it should be sown very thinly, that the plants may not require pricking out so soon; and that, when pricking out is necessary, they may be moved with more soil to their roots. It is especially necessary to grow the earliest crop with as few checks as possible, to prevent its running to seed. A successional sowing of round Spinach should be made this week. Garlics and Shallots should now be planted on dry ground, if it were not done in November as already recommended; they should be planted 6 inches asunder, on the surface of the soil, with merely sufficient fastening to keep the bulbs steady. Autumn sown Tripoli Onions should now be transplanted, 6 inches apart, in rich soil, for Midsummer use; they should be secured in their places by closing the soil about the roots, not about the bulbs, the bases of which should always rest upon the surface of the soil. The small button Onions, which were saved last autumn, should also be transplanted in the same manner; if the ground is good, without being over rich, these will make fine specimens by autumn.

State of the Weather near London, for the week ending Feb. 20, 1851, as observed at the Horticultural Garden, Chiswick.

| Feb. | Moon's Age. | Barometer. | | Temperature. Of the Air | | | Of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 14 | 13 | 30.235 | 30.170 | 46 | 27 | 36.5 | 40 | 41 | E. | .00 |
| Satur.. 15 | 14 | 30.351 | 30.270 | 48 | 18 | 33.0 | 40 | 41 | S. | .00 |
| Sunday. 16 | 15 | 30.261 | 30.166 | 45 | 17 | 31.0 | 39 | 41 | S.E. | .00 |
| Monday 17 | 16 | 30.112 | 30.061 | 47 | 34 | 40.5 | 37 | 40 | S.W. | .00 |
| Tues. .. 18 | 17 | 30.015 | 29.965 | 57 | 47 | 52.0 | 38 | 39½ | S.W. | .00 |
| Wed. .. 19 | 18 | 29.911 | 29.831 | 54 | 42 | 48.0 | 41 | 40 | S.W. | .00 |
| Thurs.. 20 | 19 | 29.758 | 29.714 | 53 | 35 | 44.0 | 42 | 41½ | S.W. | .26 |
| Average ... | | 30.092 | 30.025 | 50.0 | 31.4 | 40.7 | 39.5 | 40.5 | | 0.26 |

Feb. 14—Dense fog; hazy; slight fog; frosty.
— 15—Foggy; exceedingly fine; sharp frost.
— 16—Frosty; clear and fine; more severe frost than has occurred this season.
— 17—Sharp frost, with fog: clear; cloudy.
— 18—Cloudy; fine; overcast.
— 19—Densely clouded throughout.
— 20—Fine; cloudy and very fine; heavy rain at night.
Mean temperature of the week ½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending March 1, 1851.

| Feb. and March. | Average Highest Temp. | Average Least Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 23 | 47.2 | 33.6 | 40.4 | 9 | 0.44 in. | 2 | 2 | 4 | 1 | — | 9 | 3 | 3 |
| Mon 24 | 47.1 | 34.8 | 41.0 | 12 | 0.29 | — | 2 | 5 | 2 | 5 | 1 | 3 | 6 |
| Tues. 25 | 44.2 | 33.7 | 39.0 | 14 | 0.92 | 1 | 4 | 3 | — | 5 | 6 | 3 | 2 |
| Wed. 26 | 47.6 | 34.2 | 40.9 | 14 | 0.48 | 2 | 3 | 4 | 1 | 4 | 2 | 6 | 2 |
| Thurs. 27 | 48.1 | 35.1 | 41.6 | 13 | 0.40 | 1 | 4 | 3 | 1 | 5 | 6 | 3 | 1 |
| Friday 28 | 49.2 | 34.7 | 41.9 | 10 | 0.24 | — | 5 | 4 | — | 2 | 5 | 5 | 5 |
| Satur. 1 | 47.5 | 33.6 | 41.6 | 10 | 0.23 | — | 4 | 3 | — | 5 | 5 | 4 | 2 |

The highest temperature during the above period occurred on the 25th, 1846—therm. 64 deg.; and the lowest on the 25th, 1847—therm. 21 deg.

## Notices to Correspondents.

To Correspondents. The Editor trusts that his illness will excuse him for not having answered everyone this week, as usual.

Apple Trees: *Amateur.* We should prefer tying bundles of "Quick" or straw ropes round their stems to smearing them with tar or grease, with a view to prevent rabbits and hares from barking them. The other will do no harm, unless the plants are very young.‡

Books: *J H E.* Loudon's "Encyclopædia of Gardening" can be obtained in monthly parts. We never recommend dealers or give prices.‡

Cucumbers: *Ignoramus.* Cuthill's Black Spine.‡

Datura ceratocaulon: *Marianne.* If the seed is good you cannot fail to raise this with bottom heat, and the treatment given to the commonest tender annual. St. Bruno's Lily is hardy. Give your Roses plenty of manure; they seem to be starved. We presume that you mean the Azalea nudiflora; all the North American Azaleas are hardy.

Fruit Trees: *G D.* Although the Apricot succeeds on the Plum stock, it is doubtful whether the Apricot will prove hardy enough, if employed as a stock for the Plum. You may try the Greengage upon it.‖—*Hallett.* Six Pears to be trained as espaliers: Marie Louise, Passe Colmar, Glout Morceau, Knight's Monarch, Thompson's, Beurré Rance. Six Apples for the same mode of training: Bleuheim Pippin, Golden Reinette, Court of Wick, Ribston Pippin, Old Nonpareil, and Scarlet Nonpareil.‖—*R K J.* The following is a list of Standard Cherries suitable for marketing, to come in succession: Werder's Early Heart (a few), May Duke, Knight's Early Black, Elton, Bigarreau, Bigarreau Napoléon, Florence, Kentish or Flemish, Late Duke, Morello.‖—*E T C.* Taking into consideration the kinds of trees you have already planted against your south wall, we should recommend the following for your 55 yards of south-east aspect:—Barrington Peach, Impératrice Nectarine, Moorpark Apricot; May Duke, Knight's Early Black, and Elton Cherries; two Green-gage, Purple-gage, and Coe's Golden Drop Plums; Marie Louise, two Glout Morceau, Winter Nelis, Easter Beurré, and Beurré Rance Pears. We should recommend you to have studs instead of wire for training.‖—*A M G.* For a greenhouse where no fire is kept, excepting to exclude frost, you cannot do better than plant four Black Hamburgh and three Royal Muscadine.‖

Greenhouses: *A M.* Iron is so far better than wood that it is more durable, and much lighter; but it is dearer. Plants thrive under iron as well as under glass, in the hands of a gardener who knows his business; but we should doubt the propriety of using so costly a material for a purpose like that which you describe. A common plant shed, low, and with a glass roof made of rough steam-cut sash-bars, is quite sufficient.

Guano: *Sub.* It suits everything for which manures are useful; but unless the ground is very poor, it is safest not to use any manure for Potatoes.‡

Lime Trees: *X Y.* They are usually propagated by layers.‡

Melons: *Ignoramus.* The Beechwood.‡

Moss on Trees: *Z A.*—The best remedy is to scrape the roughest of the moss from the trees, and then wash them with a mixture of soap-suds, quick-lime, wood-ashes, and cow-dung; the root of the evil is bad drainage.‡

Names of Plants: *T W.* Peziza coccinea.—*M L.* Lastrea spinulosa, fertile and barren. *S.*—*J R.* Pteris aquilina, *L.* This is the form it assumes in the stove. *S.*—*H. d.* Not a Jossinia, but a new Diospyros (*D. amplexicaulis*). We have it in our herbarium from the Isle of France.—*B M.* Euphorbia nereifolia.—*R E.* After a long examination, we remain uncertain as to the genus of this plant. Its pollen masses are gone, and they are essential to the identification of doubtful Maxillarids.—*T D H.* Lælia erubescens.

Peach Trees: *J H J M.* You are, no doubt, correct in attributing the dropping of the buds to the borders being kept too dry. You will find an article on forcing Peaches in another column of to-day's Paper.‡

Pelargonium Leaves: *C C.* They are affected by the "spot," a disease which is believed to be caused by cold and damp.‡

Rain Water: *J L* It is practically a uniform composition. Any variation in this respect is owing to accidental circumstances. ‡

Rhododendrons: *S M.* It is the fault of such Rhododendrons that they bloom out of doors in winter; for, in severe weather, their flowers are always cut off by frost.‡

Ripening Wood: *J L.* The best and most economical mode of aiding the setting of blossoms and ripening of wood in bad climates or places, is—1, by thoroughly draining the border, and taking care that it is formed of light materials, able to absorb all the heat that is produced by summer suns; 2, by laying wood in thin; 3, by protecting the blossoms by canvas or woollen screens, or by Spruce Fir or Birch twigs interwoven among the branches. Air, sun, and drainage, are all in all. If however circumstances are so bad that air, sun, and drainage enough cannot be secured, then you had better have flued walls.

Sweetbriar: *S M J.* Make the fence at any time during the planting season. Set the plants alternately in a double row, a short distance, say 2 feet, apart; then when they begin to be shabby, cut down one row and leave the other. Afterwards reverse the operation. This is necessary in consequence of the shabbiness of Sweetbriar hedges. Put in Laurel cuttings under hand-glasses in April or August.

Verbenas, &c.: *Gardener.* 70° or 80° are much too warm for them.; 40° are ample.‡

Vines: *Old Sub.* It will not injure them to cover their roots with a temporary framework, provided the border in which they grow can be watered when it requires it. You had better not pave with bricks.‡

Water Butt: *Geo F Harris.* We are unacquainted with any means of removing the green Conferva which infests your water, without injuring the quality of the water itself. The most likely way would be to supply the tank with rain-water instead of the lime-water which you now receive. The seeds of the Conferva come with the water that passes through your iron pipes. If you can do what we advise, empty your tank and pitch the inside, if of wood; or give it a good coat of cement, if of stone or brickwork.

NATURAL GRASS SEEDS, FOR PERMANENT PASTURES, AND IRRIGATED OR CATCH MEADOW,
Which may be had Separate, or Mixed, expressly to suit the soil.

MESSRS. JOHN SUTTON AND SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses which grow naturally in the various soils of England and Wales, for the purpose of introducing an improved system of laying down land to permanent pasture, are thereby enabled to supply the sorts and quantity of Seeds best adapted to suit the soil for which they are intended; and *at much less expense* than is usually incurred.

JOHN SUTTON and SONS *are also extensive growers of Turnip, Carrot, Mangold Wurzel, and other Agricultural Seeds, which they sell at lowest market prices, carriage free, and which they can warrant new and true.*

Any particulars required respecting Grasses or other Seeds, will be promptly given to applications addressed to JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

TRUE DRUMHEADS for CATTLE, also EARLY BATTERSEA, the large Imperial, Early Vanack, &c., at THOMAS WELLANDS, Surrey Gardens, near Godalming, Surrey, packed and delivered at the Godalming Station, 3*s.* 6*d.* per 1000; the large Asiatic Cauliflower Plants, 3*s.* per 100.

GLASS FOR CONSERVATORIES.
JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.
21 oz. ,, 3¾*d.* 5*d.* ,,
26 oz. ,, 3¾*d.* 7½*d.* ,,
32 oz. ,, 4*d.* 9½*d.* ,,

SHEET SQUARES.
In boxes of 100 feet. £. *s. d.*
Under 6 by 4 ... ... 0 8 6
6 by 4 and 6½ by 4½ ... 0 13 0
7 by 5 and 7½ by 5½ ... 0 15 0
8 by 6 and 8½ by 6½ ... 0 17 6
9 by 7 and 10 by 8 ... 1 0 0

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.
Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2¾*d.* per foot.

HARTLEY'S PATENT ROUGH PLATE,
packed in boxes of 50 feet each:
6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.*
7 by 5 ,, 7½ by 5½ ... 13 6 | 9 by 7 ,, 10 by 8 .. 16 6

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6*s.*; 6 tubes, 8*s.* 6*d.* GLASS SHADES.—Estimates and List of Prices forwarded on application
TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR PIT FRAMES, HOTHOUSES, &c,
in Boxes of 100 feet, 8*s.* 6*d.* each.
4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
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Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.
Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.
Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.
PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.
Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.
For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.
Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.
HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.

FARMS AT STANTON FITZWARREN, NEAR HIGHWORTH, WILTS.
And within about four miles of the Swindon and Shrivenham Stations, on the Line of the Great Western Railway.
TO BE LET BY TENDER, from MICHAELMAS, 1851,
PARSONAGE FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. | |
|---|---|---|---|---|
| | 183 | 1 | 19 | of Arable Land, and |
| | 38 | 1 | 12 | of Meadow, Pasture, and Homestead. |
| Total | 221 | 2 | 31 | |

AKER'S FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. | |
|---|---|---|---|---|
| | 225 | 3 | 32 | of Arable Land, and |
| | 75 | 0 | 28 | of Meadow, Pasture, and Homestead. |
| Total | 301 | 0 | 20 | |

HUNTER'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. | |
|---|---|---|---|---|
| | 50 | 2 | 37 | of Arable Land, and |
| | 53 | 1 | 29 | of Meadow, Pasture, and Homestead. |
| Total | 104 | 0 | 26 | |

MATTHEW'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. | |
|---|---|---|---|---|
| | 18 | 3 | 10 | of Arable, and |
| | 57 | 3 | 30 | of Meadow, Pasture, and Homestead. |
| Total | 76 | 3 | 0 | |

To view the Farms, and for further particulars, apply at Stanton House, near Highworth, Wilts. Sealed Tenders to be sent, addressed to the Rev. J. A. TREECHARD, at the same place, on or before the 25th March next.
February 22.

FLAX AND FLAX COTTON.
FARMERS, Manufacturers, Unions, and Parishes, desirous of taking Licenses for preparing Flax on the economical and expeditious process of Chevalier CLAUSSEN, may now apply to Mr. J. S. CHRISTOPHER, 26, Gresham-street, London.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.
Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | | |
|---|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 10*s.* per ton; and for 5 tons or more, 9*l.* 5*s.* per ton in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.
EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

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THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

**The Agricultural Gazette.**
*SATURDAY, FEBRUARY* 22, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Feb. 26—Agricultural Society of England.
THURSDAY, — 27—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, March 5—Agricultural Society of England.
THURSDAY, — 6—Agricultural Imp. Soc. of Ireland.

"TO MAKE TWO BLADES OF GRASS GROW WHERE ONE ONLY GREW BEFORE," has long been a favourite problem in England; and as Mr. MECHI lately observed in our columns, "To raise 120 acres of good Swede Turnips and Mangold Wurzel on an adhesive clay soil which never produced them before, is quite a triumph." There are three points noticed by Mr. MECHI as involved in the successful issue of this problem—the drainage of the soil, its aeration, and the rotting of vegetable matter within it. The two first are necessarily connected. The removal of water from the soil by drainage admits air; thus, both increasing its fertility and reducing the expense of cultivation. Trenching, again, both aerates the soil and promotes drainage, by opening and permitting a freer passage for the water through it. And the third point, the rotting of weeds, is the conversion of the greatest enemy of the farmer into his greatest friend. We might dwell at length upon the theories involved in these points, but we choose at present rather to deal with facts similar to those brought before us by Mr. MECHI; for in the United Kingdom we have still a large extent of adhesive clays, and even soils more easily worked, both of which are either under profitless culture, or under pasture of the most worthless kind; and to raise a good crop of Swede Turnips and Mangold Wurzel on them is one of the most important problems presented to British agriculture.

In corroboration of the practice pursued by Earl FORTESCUE, in the moist climate of Devon, as reported by Mr. MECHI, a correspondent mentions a similar practice pursued by his Grace the Duke of MANCHESTER, both in the equally moist climate of Ireland and in the drier neighbourhood of Kimbolton, Huntingdonshire. Both in England and the sister country his Grace was equally successful, the practice proving itself, in both examples, very much superior to several other methods of breaking up Grass land—such as paring and burning, ploughing up the rough sward, digging one spit deep, &c. But although, being dependent upon the same theories—those of draining, aeration, and decomposition of vegetable matter—the examples of the two noblemen correspond, yet their practices differ materially in detail, for the latter trenched the whole of the soil to the depth of 20 inches, turning the top spit to the bottom, and the bottom spit to the top, thus leaving a flat surface for the Turnips to be sown upon, with a soil equally loosened throughout; whereas, according to the system of the former, two years are required to loosen the whole of the soil, the Turnip growing on the undug sward the first year like a Potato on the lazy-bed of an Irishman's conacre. It is only when the lazy-bed, as an Irishman would call it, or the terrace of Mr. MECHI is reversed the second year, and the whole of the soil loosened, that Lord FORTESCUE's system is completed.

In Ireland the soil drained and trenched by the Duke of MANCHESTER was of three kinds, clay, gravelly clay, and a gravelly soil without clay, the latter two being full of stones, but fertile when relieved of water, and the whole incumbent on the shale and rock of the greywacké formation. Previously it was under different management, part being under Grass, part young wood, and part under the plough. The Grass was worthless, the young trees were choked with weeds, and the whole drowned in water. Draining and trenching preceded a fallow crop, doing away with the necessity of ploughings and cross ploughings, a double stroke of the harrows being all that was necessary prior to putting in the seed over the rotting turf below. The Turnip seed, a hybrid yellow, was sown on artificial manures of different kinds, but principally on bones along with a few ashes to start the plants, and the result was about 20 tons of bulbs per acre from the heavy clay, and 30 tons from the best gravelly Turnip soil. The trenching was done by task-work, and cost 3*l.* 4*s.* per acre, exclusive of 4*d.* for every ton of stones the labourer threw to the surface. The stones were measured in the drains, the quantity required to fill a perch, when broken, having been previously weighed, to satisfy parties. The lands subject to cultivation had little vegetable matter in them to rot, and after being drained and trenched were manured from the farm-yard, and cropped with Potatoes in drills, part being limed and part not. The difference of crop in favour of liming deserves special consideration, for the lands limed yielded 17 tons of Cups per Irish acre, while those not limed only yielded 10. The lands were in separate fields, but almost adjoining each other; and although the former were a degree better than the latter, yet the difference of quality was by no means sufficient to account for such a difference of crop. The crop was that of 1844, and the beneficial effects of lime were manifest.

In Huntingdonshire paring and burning was the fashion, so to speak; and with the exception of a few acres in the park, which were trenched as above, and planted with young trees, it was not departed from at Kimbolton. Liberty was given to the labourers to grow Potatoes, Peas, Carrots, &c., in the young plantation the first season, and the crops grown were very much superior to those grown after paring and burning, the difference being more than sufficient to cover the difference of expense. Indeed about 60 acres, which were sown with Turnips in 1846, cost as much between paring, burning, ploughing, harrowing, clod-crushing, &c., as would have trenched them, so that, in this case it would appear that rotting the sod is a superior practice to burning it, and more easily effected.

"Paring and burning," according to our correspondent, "has never been a popular practice, generally speaking, among farmers, and with the progress of science is daily becoming less so. The results arising from it are not only temporary, but fallacious, never yielding in corn according to appearance as of straw, while the opposite are obtained from the rotting system. Many pare and burn, not of choice, but of necessity, the practice being merely adopted as the least of two evils; but now that draining is becoming better understood, the practice of rotting, which could not successfully be adopted without it, will doubtless gain ground and supersede that of burning."

We would remark on this, that while the theory of the process condemns it as wasteful wherever much vegetable matter is present in the substance burned, yet that the question of economy when put to the farmer has always to be answered relatively to the means at his command—and that very often this is the cheapest process within his reach for reducing the tough material which he has to bring to a tilth. The subject of burning clay soils depends of course upon altogether different considerations from that of paring and burning Grass lands; and theory here commends the practice.

The moist climates of Devon and Armagh, with many others in the kingdom, are favourable to the rotting system, but even in the drier climate of Huntingdon and others, if the soil is got drained and trenched in time the process of rotting will be pretty well advanced before the scorching months of July and August set in. If once it has got to a certain stage it will imbibe moisture from the atmosphere to supply the young plants during the drought of summer. Much, however, depends upon the mode in which the work has been effected. If carelessly

trenched, without any regard to the rotting of the turf, and the getting of a proper tilth above it, the practice may not only turn out a failure, but that failure may be fallaciously imputed to the turning up of unsound subsoil to the surface. On the contrary, if carefully executed, and early enough in the season to benefit by sun, rain, and frost, it will be otherwise; for under such circumstances lands trenched suffer less from drought than those not trenched.

Many still entertain strong prejudices to turning up the subsoil to the surface, and no doubt great caution is necessary before such a work is begun; but with proper drainage, effected in the previous year, much less is to be apprehended from it than under the old system, when trenching resulted only in the stagnation of a greater quantity of water in the soil, reducing the whole to something worse than the subsoil quality. Sometimes the subsoil is even more fertile than the surface; and when spread over it produces better crops, both as to quantity and quality. The rain tends to wash much fertile matter out of the soil downwards, to where, under shallow cultivation, it is useless. In short, shallow culture is incompatible with successful husbandry, especially the cultivation of Turnips.

There cannot be a doubt, we think, that when the means of the cultivator and his time admit of it, the plan of trenching the soil, as pursued by the Duke of Manchester, is the best mode of breaking up tolerably deep soils in sward.

And we are glad to have the opportunity of thus describing the successful issue of the practice in so many instances, under such a variety of circumstances.

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"What an uncommonly mild season have we had?" is the remark of every one. Winter seems to have lost its place amongst the seasons. The pastures have been clothed with the verdure of spring, and vegetation, roused to activity, may, in some instances, be ill-prepared to withstand the extremes of the early spring months.

The contrast which the rigours of one season present to the mildness of another, furnishes matter for pleasing reflection to many, and recondite speculation to not a few. A mild moist winter was anticipated by some as a compensation for the dry and unusually fine autumn which had preceded it. It is very probable that there is some general connection between the two, although the special or local phenomena will ever be entirely beyond our foresight. Some, who seem to have no taste or patience for unravelling the complex processes, which act and react on each other, in the minuter changes of the weather, study the subject under the two grand divisions—fair and foul—and endeavour to link the great deviations from the mean or average with certain conjunctions and positions of the planetary orbs towards each other and the earth, which they imagine have the effect of upsetting the equilibrium of our aerial ocean. The phases of our satellite have also long been held in respectful awe by the weather-wise; but it is very generally admitted that this and all other signs fail to instruct us.

It is a somewhat prevalent opinion that cultivation has considerable influence in mitigating the rigours of our winters, and giving us warmer summers. Each and every one of these theorists will freely give examples as illustrations of the truth of their positions. This circumstance alone ought to make us extremely cautious of applying isolated meteorological figures, when attempting to trace the relation of one phenomenon with another, and especially when we are solving practical questions, when there are so many conditions to be taken into account.

What effect has the improved operations of modern agriculture had upon our climate? To discuss the special action of these agencies would, in the meantime, be out of place. A few only will be alluded to. Any country drained and cleared of wood will, undoubtedly, have its summers hotter; the one operation saves the expenditure of the heat, in evaporating the water which falls from the heavens; the other accomplishes a somewhat analogous effect, for vegetation in active growth is a powerful absorbent of solar heat, much of it being rendered latent during the mysterious processes of assimilation; but a bare dry soil is soon heated, and deprived of its moisture. Some tracts in Mexico have been rendered comparatively barren, through the destruction of its forests by its first conquerors from the old world. A country cleared of wood permits other agents to come into play, or act with greater intensity, which thus may have a larger share in producing changes in the capabilities of its soil, for raising certain crops, than the slight differences in meteorological figures, owing to this clearance, would lead us to expect. Thus an overwooded estate, in a moist climate, renders it totally unfit for the cultivation of cereal crops, however well its climatic conditions may be suitable in other respects. But moisture, fogs, and clouds, keep us warm in winter, and dry land sooner cools from frosts than when wet, as water in the act of congelation gives out a large amount of latent heat. Dry air and cold air are almost synonymous terms in winter. Cultivation will therefore rather have a tendency to increase the winter's cold.

In regard to the influence of cultivation in effecting changes in the character of the season in the British Islands, we think it admits of considerable doubt, in so far at least as to make it appreciable to our instruments. From its insular position it is, perhaps, less susceptible of these effects—our observations are by far too inaccurate to serve our purpose; and besides we do not know how far the extremes vibrate on either side of the means. One day varies from another, and there were never two exactly alike. The same may be said of weeks, months, and years; but in almost every season there appear certain characteristics which it assumes and maintains. The ameliorating agencies of cultivation have, however, far more to do with the "terrestrial" climate than with the atmospheric. Over the great forces of the air man has no control; they will act quite independent of him, and the winds will ever blow where they list. Extreme seasons of mildness and rigour do not fall out by accident, but, on the contrary, their concomitants are numerous and striking. The south-west winds laden with moisture have not only given us an open season, but they have penetrated into Western Europe, which has also shared their heat and moisture; but the western seaboard of North America appears to have got their own share of winter's cold and ours also. In Britain the temperature of January varies more than of any other month in the year; this is determined by the currents of wind, whether they may blow from the expanse of sea to the west, or from the wide extent of continent on the north and east. The temperature and directions of the winds for the two following years are good examples of their effects:

1834, Jan., mean temperature 45.40.
Days of wind, 1 N., 0 N.E., 1 E., 0 S.E., 9 S., 11 S.W., 6 W., 3 N.W.

1838, Jan., mean temperatare 27.79.
Days of wind, 5 N., 11 N.E., 5 E., 3 S.E., 4 S., 1 S.W., 0 W., 2 N.W.

The character of our seasons is entirely dependent on the directions in which the winds may settle, but they produce opposite effects in summer and winter—for in the former the moisture of the south-west winds obscures the sky with clouds, and prevents the sun from heating the earth and lower strata of the atmosphere. Drought and heat generally go together in summer, and dry air and cold weather are still more inseparable in winter.

Those who study the language of the heavens find a certain consistency and constancy in the mode in which the contingencies of the weather are worked out—order and method are observed which the philosopher and the poet attempt to trace; the one through the cold material laws of nature, the other intuitively, or by inspiration. The southerly and northerly winds, especially in winter and autumn, seem to prying man to be joined and knit to each other, apparently in artful perplexity; the two are ever ready, at each other's call, to wage a keen conflict, in which the one tries to undo the other; instead of growing weary with their continual strivings, they rather appear to glory in each other's strength. True, the relaxing breezes from the warm south have rather had the upper hand of their northern antagonist this winter, and have mixed the warmth of April with the moisture of November in mid-winter. But are the two to be looked upon as one grand whole performing wheeling gyres in its progress towards the polar circles, there to be robbed of the watery treasures, which are evidently one of the main elements of discord? The philosopher of late replies in the affirmative. The rotary theory of storms has, however, always appeared an enigma to us, though the following lines certainly do inspire a certain respect for it. How beautifully and truthfully is the circuit of the winds, in our mild winters, expressed by frolicsome Mercutio. Who would have thought there was such philosophy in him?

> "What more inconstant than the wind, who wooes,
> Even now, the frozen bosom of the north;
> That being angered, puffs away from thence,
> Turning his face to the dew-dropping south."

*R.*

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## SCHEME OF CULTIVATION FOR SMALL FARMS.

The farm consists of 110 acres of light land, 16 acres of which are water meadow, and 10 permanent Grass land. The mode of cropping deemed advisable, the implements and stock required, and the capital needed, are all desired. We shall assume that markets are so situated that the green crops must all be converted into beef, and we shall suppose that the land is good deep Barley soil, worth 30*s.* an acre.

1. *Course of cropping.*—84 acres of arable land will divide into 6 fields of 14 acres each; and the soil will allow of the following rotation.

1. Wheat, with Rye sown in autumn.
2. Rye and Swedes.
3. Barley, with Grass and Clover seeds.
4. Clover.
5. Wheat.
6. Carrots and Mangold Wurzel.

The produce will be.

140 tons of Rye.
240 ,, Swedish Turnips.
120 ,, Clover.
100 ,, Carrots.
200 ,, Mangold Wurzel.

800 tons of green food from the arable land.

And 100 tons of Grass from the pasture land, and 300 from the water meadow, making 400 tons of Grass, of which we may suppose 200 to be made into 50 tons of hay. There will then be for winter consumption 50 tons of hay, and 540 tons of roots, and for summer consumption 140 tons of Rye, and 320 tons of Clover and Grass. About 18 tons of green food per week for them in summer, and 20 tons of green food, with nearly two tons of hay a week for them in winter; and the same stock which would consume the former in summer time, would consume the latter in winter. You will then be able to keep about 25 oxen, besides a pair of horses, summer and winter, selling them in March, April and May, to weigh 7 cwt. or 7½ cwt. apiece.

2. *Stock.*—Perhaps the best plan of consuming this by stock would be to purchase two-year-old oxen in May and June, feeding them on the Rye at first, and grazing them in the Clover and pasture fields during summer, and bringing them in for consuming the hay and roots in winter.

3. *Labour.*—One pair of horses is enough to manage the land, if you employ a little extra manual labour on the headlands of fields and so on, leaving the horses to do only the main portion of the work. If there be any difficulty about the horses getting over their work, you might dig the Wheat stubble for Carrots. The labour need not amount to more than 2*l.* 10*s.* per acre over the land.

4. *Implements needed.*

| | | |
|---|---|---|
| One plough, 4*l.*; two harrows, 5*l.*; one roller, 8*l.*; scarifier, 10*l.*; two carts, 20*l.*; Bean-machine, chaff-cutter, &c., 50*l.*; feeding, horse and stable apparatus, harness, &c., 20*l.*; total, 117*l.* | | |

5. *Capital.*

| | | | |
|---|---|---|---|
| *Stock*— 2 horses ... ... ... ... | £60 0 0 | | |
| 25 oxen ... ... ... ... | 250 0 0 | | |
| | | £310 | 0 0 |
| *Labour*—110 acres, at 50*s.* ... ... ... | £275 0 0 | | |
| *Food for horses*—50 sacks of Oats ... | 20 0 0 | | |
| | | 295 | 0 0 |
| *Implements* ... ... ... ... ... ... ... | | 117 | 0 0 |
| *Seed*—Wheat, Barley, Clover, Swedes, &c. ... ... | | 45 | 0 0 |
| *Rent and Taxes*—110 acres, at 30*s.*, for rent alone ... | | 247 | 0 0 |
| | | £1014 | 0 0 |

6. *Balance Sheet for the year.*

| | | | |
|---|---|---|---|
| *Received*—for 25 oxen, 7½ cwt., at 5*d.* per lb. ... ... ... | £437 10 0 | | |
| For 28 acres of Wheat, at 36 bushels, at 5*s.* 6*d.* per bush. | 277 4 0 | | |
| For 14 acres of Barley, at 52 bushels, at 3*s.* 6*d.* per bush. | 127 8 0 | | |
| | | £842 | 2 0 |
| *Paid*—Stock ... ... ... ... ... | £250 0 0 | | |
| Labour ... ... ... ... | 295 0 0 | | |
| Seed ... ... ... ... ... | 45 0 0 | | |
| Rent ... ... ... ... ... | 247 0 0 | | |
| Depreciation in value of implements and horses, 10 per cent. on 117*l.* ... ... ... .. | 11 14 0 | | |
| | | £848 | 14 0 |

This lands you in a loss on the year's proceedings; but having arrived at this result, weighing each step in the process as well as I could while taking it, I do not see that I am at liberty, because of the unfortunate result at which I have arrived, to remodel the different parts of the scheme. Nevertheless, I may state for your encouragement, that it is quite possible to keep one-half more stock than I have named, by careful management, by taking "stolen" crops, such as Mustard, Rape, &c., capable of growing between corn harvest and the spring seed time, and by purchasing cheap cattle food, such as Linseed, and consuming your straw. *M. S.*

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## Home Correspondence.

*Liquid Manure.*—I wish to call your attention to a remark contained in a speech made by Dr. Anderson, at a recent meeting of the Highland and Agricultural Society, as reported in your paper of the 1st inst., and to request your opinion as to its correctness. Dr. Anderson says, "It ought to be remembered that the amount of ammonia in liquid manure was very small, and that in phosphates it was entirely deficient (!), so that it could never be relied on alone; but must be conjoined with a certain proportion of the solid manure." Now this appears to me to be a very important question, and one well deserving your attention and consideration. I have certainly always considered liquid manure to be deficient in anything like a store of ammonia, but I certainly supposed it was especially valuable on account of the phosphates and other salts that it contained; and if I am altogether wrong in this respect, I should much like to know to what the very striking effect of a few repeated applications of liquid manure, even when considerably diluted, is owing. For, although it may be questionable whether it will answer to apply it, on a

large scale, by any very expensive system of pipes, or carts, or such like, there can, I think, be no doubt of its well repaying the cost of its application, in a more simple and inexpensive way; such, for instance, as by means of irrigation, when much diluted, or by mixing it with dry mould, marl, ashes, or other convenient substance, if it be tolerably free from water. *W. M. H., Bashley, Lymington.*

*Poultry.*—Observing in your valuable Paper of Feb. 1st last that one of your correspondents is anxious to know how he may mark his poultry, I take leave to suggest a system which I have followed for some years to my satisfaction. It is simply as soon as the chicken is hatched to remove with a sharp pair of scissors the hind claw on the right or left foot, which in no way injures or retards the growth of the chicken. I keep a hundred head of poultry for the sake of the eggs only; and as it is of importance to me to know the age of my hens, which I never keep beyond the third year as layers, I find this system of marking exceedingly useful. My plan is to take off the hind claw on the right foot of those hatched (we will say) in 1851; the hind claw of those on the left foot will have to be removed from those hatched in 1852, and in 1853 it will not be necessary for me to make any mark.

EXAMPLE:

| HATCHED. | LAYING. | SOLD OFF. |
|---|---|---|
| 1851, Hind claw right foot... | 1852, 1853, 1854... | Christmas of 1855. |
| 1852, Hind claw left foot | ...1853, 1854, 1855... | ,, 1856. |
| 1853, No claw taken off | ...1854. 1855, 1856... | ,, 1857. |
| 1854, Hind claw right foot... | 1855, 1856, 1857... | ,, 1858. |

*A Subscriber, Midland Counties.*

*Drainage Acts and Drainage.*—The article entitled "Drainage under the Act," in the *Gazette* of the 25th ultimo, evinces the practical knowledge of the writer both as to the mode of execution and the effect which good drainage should produce, and is deserving the careful perusal of all who contemplate the drainage of their estates, whether done under the Acts or not. One would fain believe the impression erroneous respecting the compulsory adoption of deep and distant drains under all circumstances; for I can affirm that no such instructions, direct or implied, have ever been given to myself. My Reports to the Board have invariably advised the execution of the several works at such various depths and distances as were best suited to the character of the respective subsoils; and in no case have I been called upon to reconsider the plan proposed. With two or three trifling exceptions, however, I certainly have never been permitted to carry to completion the systems recommended in those Reports, but whether this is indicative of the accuracy of the surmises that "some pet plan to which the inspector or others in office may have committed themselves," is expected to be enforced, I know not. If it be, I am content to wait until, as in the instance given, results work conviction of the error. Facts are irresistible by ingenuous minds, and even the dogmatical teaching in this respect of the deservedly admired Drainage Essay of the *Quarterly*, must give way before them. If the standard of excellence be, as most will allow, complete and permanent effect at the least cost, then must depth and distance be regulated by the requirements of each case; but if efficiency is to be secured irrespective of cost, then may 4, 5, and even 6 feet drains be cut in all land, care only being taken to put them near enough. The principle, however, upon which the universal application of the deep and distant system became fashionable was, that extra depth compensated for wider intervals, and hence that an equally effectual result was obtained at a less cost. It is impossible, with daily evidence of the contrary, to concur in the opinion that landowners and their agents practically know more about the qualities and capabilities of the soils of their estates than strangers do, and particularly as regards the operation of drainage. An inspector under the Drainage Acts in Scotland has just favoured me with a communication, in which he remarks, "I certainly think that no applicant I have had to deal with has any right to complain of the expenses of the working of the Act; for many of them, as well as all the people on their estates, were so thoroughly ignorant of what good drainage was, that they would have wasted most of their money if the inspectors had not interposed and shown how it should be done." And it will be equally evident to all who will take the trouble to read the Acts, that the legislature were as fully sensible of the same fact, and consequently provided for the drainage being properly done under the supervision of inspectors selected for their knowledge of the subject. My Scotch correspondent, in reference to the necessity for seeing the drainage during its progress, in order to be satisfied of its proper execution, says, "I have sometimes been rather puzzled and doubtful how to act when I have been called upon to inspect and pass extensive drainage works when I had not been called in to see them when being executed. I quite agree with you that there ought to be an intermediate inspection while the works are in progress. It is a delicate thing, however, to propose an inspection without being called in or sent for, as it may be said or thought that we are acting for our own pecuniary interests, and wishing to make a job of the business." Feeling the necessity of definite directions on this essential point, I wrote, about two years ago, to the board especially on the subject; for from the general instructions we had received, it appeared to me that we had no power to make intermediate inspections, or indeed any inspections, without direct instructions to do so. Our general instructions say, "it will be desirable that you should ascertain under whose superintendence and direction the applicant for the advance intends to place the execution of his works, and that you should satisfy yourself, as far as practicable, as to the extent of the fitness and trustworthiness of that individual, in order that the commissioners may be enabled to decide what amount, if any, of occasional inspection will be requisite during the progress of the works." Clearly, then, this point was exclusively for the board to deal with; but no answer was ever given to my letter, and the matter remains, as we see, in the same unsettled and unsatisfactory position. Now all this difficulty and jealousy about the assistant commissioner's charges might be at once obviated by paying them annual salaries proportionate to their respective districts or on some other suitable basis. I do not suppose that were this done our demands would be unreasonable; but on the contrary, it is very probable that, on the ground of certainty, we should be ready to accept very moderate remuneration, and such at least as should be commensurate with the times. There would then only remain actual expenses to be charged for—the salary being apportioned to each applicant along with the other official charges. It would not be necessary to stipulate for exclusive service, but for the diligent and efficient discharge of the duties of his office whenever required, and without delay. In conclusion, I cannot refrain from briefly directing the attention of the landed interest to no less than three instances of the misapplication of deep and distant drainage which have been made public within the last fortnight, and which, for their edification and government, are worth all the theory that has been written on draining since the time of the flood; or rather, which confirm the soundness of the theory that forewarned them of such results. The first instance is that which your correspondent of the 25th ult. details, and which is of the greater value from being a special experiment, having the deep work "executed precisely in accordance with the inspector's directions," and having also his admission on subsequent inspection that the 3 acres so drained "were scarcely benefited at all." The second instance is that recorded in the *Times* of the 28th ult. by their commissioner in his report on the agriculture of Cumberland. Speaking of the drainage which had been done on Lord Lonsdale's estates, and the necessity of providing in the drainage of that district for the percolation of a very much larger amount of annual rain-fall than occurs in other parts of England, says "it can never be safe to act altogether in defiance of local experience until we have had time to mature our own; and accordingly further experience has shown that very wide intervals and excessive depth will not do for the soil of Cumberland. Four feet deep and 7 to 10 yards apart are now the standard on Lord Lonsdale's estate; an additional drain having been in many fields put in between the wide intervals which were at first unsuccessfully adopted." I am told also of another instance in this county, where the same additional drains have been put in to remedy the defective results of the first execution. The third instance is one rather deducible by inference than from a statement of the fact itself, but is to my judgment little less conclusive. The testimony alluded to is that given by Mr. Mechi in last week's *Gazette* in his "Trip to North Devon," where he says, "Another great mistake is the recommendation to lay such heavy land on the flat;" that is, when thoroughly drained. If to lay such land flat be a mistake, it is only so by reason of its drainage not being effective, and hence that probably there is in this case also a misapplication of depth and distance. But on this subject of laying drained land flat, I purpose shortly to avail myself of Mr. Mechi's invitation to discuss this question of open furrows, which is one of no inconsiderable interest and importance as affecting the efficiency of proper drainage. *John H. Charnock, an Assistant Commissioner under the Act, Wakefield, Feb. 3.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

### CULTIVATION OF FLAX.

(*Continued from p. 109.*)

SIR JAMES GRAHAM enquired of M. Claussen, whether the farmer, in separating the seed from the straw, would be liable to injure the fibre: to which M. Claussen replied, that no such injury to the fibre would arise from any of the present modes of separating the seed from the straw, so long as the separation is made longitudinally; that an ordinary threshing-machine might be so employed as not to injure the fibre: in fact, that the only injury that could arise would ensue from breaking the fibre across, or steeping it on the old system.—The Chairman thought it desirable that no time should be lost in putting the farmer in possession of all the conditions under which Flax could be grown advantageously, and conveyed to market at a profit, as the time for sowing the crop was near at hand.—Mr. Alcock, M.P., stated that coals could be brought from Yorkshire at 7*s.* 6*d.* per ton, but they were a compact heavy article of transit, while Flax would be bulky and light.—Mr. M'Dermott observed, that the bulk of the Flax might be reduced (without license) by partial removal of the straw by a machine that would cost 10*l.*, and also by hydraulic pressure, as in the case of hay for exportation, and that the railways might eventually contract at lower rates for the conveyance of this new branch of traffic.—Mr. Majendie thought if the machine was portable, it might be let out from farm to farm. If the Claussen process did not produce any injurious effect on Flax that rendered it unfit, in any degree, for subsequent use in all the ordinary stages of manufacture, it would prove of great benefit to the country.—Mr. Christopher, M.P., and Col. Challoner, thought it desirable that the cost of machinery required by farmers for commencing this branch of cultivation, so new to many of them should be accurately ascertained.—Mr. Miles, M.P., had been just endeavouring to obtain that information from one of M. Claussen's friends near him, and it appeared that one machine only was essential, but that two might, for further preparation of the Flax, be employed, if the former thought proper; the first machine cost 10*l.*, and the object of it was to separate the fibre for the manufacturer, and to leave the shoves or gross remaining matter, amounting to two-thirds of the original Flax, behind it, to be returned by the former to the land; the second machine would cost 50*l.*, and was adapted for clearing the fibres effectually from the refuse after the first chemical process.—The Hon. Dudley Pelham, M.P., conceived it important to inquire into the effect that the introduction of this new system would have on the relative employment of labourers in Flax culture and its operations.—Mr. Kennedy inquired the price of new British cotton compared with that of the ordinary foreign cotton, and was informed that it was from 4*d.* to 6*d.* per lb, while the foreign cotton ranges from 8*d.* upwards, according to quality.—Mr. Fisher Hobbs informed the Council of the result attending Flax cultivation in the eastern counties, where the growers were unable to obtain a market for their produce. The farmer's capital was, he thought, too nearly exhausted at the present moment to render it prudent for him to embark in any new line of cultivation, without being first well assured that after having overcome all the practical difficulties of a new crop, and its preparation for sale, he should find a ready market for its disposal. He hoped, as in the case of wool, that there would be a probability of farmers having a Flax-market, so that the article might be taken off their hands at so much per acre or ton, without loss or risk of their capital employed. Seeing among them that day a member of the distinguished family of the Leeds Flax spinners, he would appeal to him on this point, in the hope that he would be able, from experience of the whole question, to favour them with an opinion on the subject.—Colonel Challoner then ascertained, by inquiries addressed to M. Claussen, that Flax injured by the farmer for sale and use under the old system, was available and equivalent to uninjured Flax for the purposes of M. Claussen, who would give as good a price for it.—Mr. Marshall, M.P., replied to Mr. Fisher Hobbs, that while his brothers were the Flax spinners, he was only, to a limited extent, a grower of that crop for their use. They were, he believed, in the habit of paying 7*l.* or 8*l.* per acre for the use of land for the Flax crop, they bearing all the expenses of cultivation, while the farmer had the benefit of the land for the remainder of the year. There was at the present time a market for Flax. In Belgium the "fabricant" relieved the grower of all trouble and responsibility attending his crop, visiting his farm in person and taking it at a valuation. On the old principle, the object had been to obtain long fibre; a mixture of which in the warp with cotton in the weft was stronger than cotton, and more durable in wear, being employed for sheeting and shirts. On the new principle, the Flax is broken up into short instead of long fibre; and instead of steeping in hot or cold water, chemical means were employed to facilitate the process without injury to the material. If land is clean and in good order, Flax may be grown without manure. But the farmer cannot do two things; he could not under the present system, and for the present market, both grow it and prepare it for the manufacturer. With regard to thick and thin sowing, that question had reference to the object of the cultivator, namely, whether a fine fibre and little seed were required, or a coarser fibre with a full crop of seed. On the banks of the Lys, in Belgium, where the finest Flax had been grown for centuries, and used for making the finest lace, they practised thick sowing, 3½ bushels per acre, and obtained about 14 bushels of seed per acre; but the stems were long and straight, without branches, and the longest fibre was obtained. In Ireland and Russia thin sowing was practised, from 2 to 2½ bushels per acre, and from 16 to 20 bushels of seed were obtained; but the stems of Flax branched out more, and an inferior fibre was the result. It would be the safest plan for beginners in this country to sow thin, and thus get more linseed and straw. He concluded by remarking that if M. Claussen succeeded in his laudable endeavours, so much the better would it be for the farmers of this country.—Mr. Macartney thought that the average growth of Flax in Ireland had not fallen off. He referred to Lord Clarendon's liberal aid in promoting its cultivation in that part of the United Kingdom, to the mode in which the factors purchased the crops, to the cost of conveyance, and to Schenck's improvement in steeping.—Mr. Hamond had grown Flax in Norfolk, but finding no market for his produce he had sent his Flax to be manufactured into linen for his own shirts. He had also had several of the cottages on his estate thatched with the straw, and more beautiful thatch he never saw.—Mr. Fuller, M.P., had also grown Flax, in Sussex, but he had no better success in getting it off his hands; and when he offered it to a large manufacturing house, he was told that they could only give him linen in return for it.—Mr. Shelley remarked, that there was no difficulty in farmers growing Flax, the only difficulty was to get a market for it. In Sussex it could not be turned into money. If M. Claussen could make it

marketable for them, he would find no want of growers. It was, he thought, of little purpose to tell farmers of the quantity grown and the price it ought to fetch.—M. Claussen replied, that it was both simple and easy to prepare the Flax for the spindle, and he would undertake to furnish persons properly instructed who would direct the farmers how to proceed. There was one house at Bradford, that of Messrs. Quitzow, Schlesinger, and Co., Flax-spinners, dyers, and merchants, whose only fear was that enough Flax would not be grown for their use; and they were, he believed, ready to give 4*l.* per ton for Flax of fair quality.—Professor Way observed that the present system of preparing Flax only applied to existing markets. M. Claussen's method, as he understood it, had the merit of opening new and extensive markets for this article; and there was one important point in the new plan—that there would in future be no distinction of Flax into fine or coarse qualities. The farmer, too, under the new system, would not be obliged to pull his Flax, as under the system hitherto in use, before it was ripe, in order to secure a higher price for his fibre; but, on the contrary, it will not be necessary to pull it until the seed and stalk were fully ripe. The farmer would thus obtain a larger proportion of fibre in proportion to the bulk, and a heavier crop of seed. He understood the quality of fibre in the new process not to be so essentially of importance as under the former plan, and that farmers may break the Flax to reduce its bulk. The new material would be intermediate between linen and cotton; less valuable than the one, but more valuable than the other.

Mr. Shelley then rose to propose a vote of thanks to M. Claussen for the favour he had done them in his attendance on the occasion, and the information he had laid before the Council. He heartily wished him success in the practical development of his discovery, and hoped that the farmers would reap the benefit of it, and obtain a fair remuneration for their produce.

Mr. Miles, M.P., seconded the motion. Kind, indeed, it had been of M. Claussen to come before them that day, before he had completely secured his patent, to give them the earliest notification of the agricultural bearing of his researches. He trusted that the result would prove as good for himself as for the farmers, whose interests he had then advocated.

The Chairman then put the vote, which was carried unanimously. He was sure they all felt deeply obliged to the Chevalier Claussen for the favour he had done them. The information had been fully submitted to their consideration, but of course they received it without any inference being drawn from such reception that the Council held themselves responsible in any degree for the opinions expressed by M. Claussen. He thought it his duty, as their chairman, to repeat this caution. On that day fortnight, namely on Wednesday, the 26th of February, at noon, M. Claussen had consented to again attend, for the purpose of detailing, after the completion of his specifications, the details connected with his new process. Mr. Beale Browne would probably on the same day bring forward the statement, of which he had given notice, of his long experience in the cultivation of Flax.

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A Weekly Council was held at the Society's House, in Hanover-square, on Wednesday last, the 19th of February: present, his Grace the Duke of Richmond, K.G., President, in the chair, Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart. M.P., Mr. Raymond Barker, Mr. Burke, Mr. D. Burton, jun., Dr. Calvert, Mr. W. Clavering, Mr. Gadesden, Mr. Leveson Gower, Mr. Jacson, Mr. Majendie, Mr. C. E. Overman, Mr. Sanford (Ninehead-court), Professor Sewell, Professor Simonds, Mr. Stansfield, M.P., Mr. R. Thompson, Professor Way, and Mr. Wilson (Stowlangtoft).

The following new members were elected:

Erle, the Hon. Sir William, Knt., one of her Majesty's Judges of the Court of Queen's Bench, Park Crescent, Regent's Park, and Bramshot Grange, Hampshire.
Helyar, William Hawker, Coker Court, Yeovil, Somersetshire.
Gonne, Charles, Warley Lodge, Brentwood, Essex.
Peacocke, Warren, Tanhurst, Dorking, Surrey.
Garrad, Abraham, Colchester, Essex.
Collins, George B., St. Colomb, Cornwall.
Charlesworth, John Barff, 158, New Bond-street, London.

The names of 4 candidates for election at the next meeting were then read.

Phosphorite.—The President made an interesting statement to the meeting on the subject of native phosphate of lime, and the probability of its occurrence among the metaphoric masses in this country. His Grace had been in communication with Sir Roderick Murchison and Professor Daubeny on this subject, which might prove one of great importance to the practical farmers of the United Kingdom, should the mineral phosphorite, containing as it did so large an amount of bone-earth, be either obtained from abroad at a moderate cost, or be found occurring in our own islands. The council, at the suggestion of the President, directed the secretary to make such inquiries for the information of the members, in reference to this mineral, as might lead to farther researches for the discovery of its occurrence.

Political Neutrality.—Mr. Dawson, of Osgodby Hall, near Selby, addressed a letter to the Council, complaining, as a member of the Society, of political bias in the proceedings of the Council. The President expressed his regret, that any individual should suppose it possible, constituted as the Society was, and engaged as it had now so long been in the promotion of practical agriculture, that the Society could become in any degree political. Neither the individual who for the year presided, as his Grace then did, over the body, nor the Council, as its representatives, had the slightest power, under the stringent conditions of the royal charter of its incorporation, to infringe its neutrality in this respect; on the contrary, if it could be proved that they did so, it would be the duty of her Majesty's Attorney-General, *ex officio*, to take steps for depriving the Society of its chartered privileges. The condition in the charter to which his Grace particularly alluded, was the following:—

"And know ye further, that in granting this our Royal Charter to the said Royal Agricultural Society of England, we do hereby declare it to be our full and entire will and pleasure, that we extend our Royal protection to its national objects, under the condition, that a principle of its constitution shall be the total exclusion of all questions at its meetings, or in its proceedings, of a political tendency, or having reference to measures pending, or to be brought forward, in either of our Houses of Parliament; which no resolution, bye-law, or other enactment of the said body politic and corporate, shall on any account or pretence whatever be at any time allowed to infringe."

The Duke of Richmond concluded by observing, that should unfortunately the Society ever endanger its constitution by any deviation from this salutary restriction, and thus prive itself of the united energy it now derived from the union of all parties in the patriotic object of promoting the practical agriculture of the country, he would be the first man to quit its ranks. On the contrary, believing, as he did, that the Society had been, and would continue to be, of the greatest national importance in developing the resources of the kingdom and promoting the common interest of all who were connected in any relation with the cultivation of the soil, he should give to it, on all occasions, his warmest and steadiest support.

Miscellaneous Communications.—Mr. Graham, of Dalby-terrace, Islington, communicated a paper on what he conceived to be errors in some of the present modes of farming in England, and the plan of a farm homestead.—Dr. Calvert laid before the Council a paper, accompanied by statistical details, on the loss sustained by the grower of corn and the producer of animal food, by the indirect means through which it reached the consumer through the baker and the butcher as "middle-men."—Mr. Dalgairns, President of the Royal Agricultural Society of Guernsey, on measures taken in that island for the production of silk, by the formation of a model farm and the establishment of a laboratory; many hundred Mulberry trees having been planted last spring, several thousand cocoons produced, and the raw material sold to so great an advantage, as to render the growing of silk a subject worthy, in Mr. Dalgairns' opinion, of the attention of English cultivators.—Mr. Law, of Urmston Lodge, presented ears of Cobbett's and Keene's varieties of Indian Corn, grown near Manchester.—Mr. Aplin, of Combe St. Nicholas, called the attention of the Council to the complaints made in Dorsetshire and Somersetshire, that the horned sheep of those counties, being a distinct breed, and unqualified to compete with the Southdowns, had not had a distinct class for fair competition at the Society's Shows. The Council referred this letter to the special Council in Dec. 1851, when the prizes of the next year will be taken into consideration.—Mr. Cotham suggested, that a heavier fine ought to be levied on those exhibitors of implements at the Society's Shows, who bespoke a greater amount of space and shedding than they actually occupied at the time of the Show. This suggestion will be referred to the Council in August next, when the conditions for the show of implements next year would be decided upon.—Sir John Conroy called the attention of the Council to a simple apparatus, by which sacks, filled with heavy substances, may be lifted by a man on his own back, without the assistance usually required of two other men.—M. von Blücher transmitted a copy of his papers on fertilising the surface of land.—The Council ordered their usual thanks for the favour of these respective communications. The Council granted leave for the exhibition to the members, at the next weekly meeting, of a new gutta percha pump for liquid manure.

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A Special Council was held on Thursday last, the 20th of February, for deciding on the site of the show-yard, &c., and the regulations connected with the Society's country meeting of 1851; present, his Grace the Duke of Richmond, K.G., President, in the chair, Lord Southampton, Hon. R. H. Clive, M.P., Sir Charles Lemon, Bart., M.P., Mr. Bramston, M.P., Mr. Brandreth (Houghton House), Colonel Challoner, Mr. Druce, Mr. Foley, M.P., Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Kinder, Mr. Sanford (Ninehead Court), Professor Sewell, Mr. Shaw (London), Mr. Villiers Shelley, Mr. Stansfield, M.P., Mr. C. Hampden Turner, and Mr. Jonas Webb.

The President having detailed to the Council the various steps he had taken, agreeably with their request, in reference to a suitable site for the Society's show of breeding stock this year, and the communications into which he had entered with several members of her Majesty's Government on the subject, proceeded to read to the members the correspondence which had taken place between himself and those distinguished individuals. His Grace then desired Colonel Challoner to lay before the meeting the report of the Inspection Committee. The Secretary then received from Colonel Challoner, and at his request, read to the Council the following report:—

REPORT OF THE INSPECTION OF SITES' COMMITTEE.

His Grace the Duke of Richmond, as President of the Society, having placed himself in communication with Lord John Russell, and Lord Seymour, agreeably with the request of the Council, at their last monthly meeting, transmitted to the Secretary of the Society, on the 10th instant, the correspondence which his Grace had had with those noblemen, in reference to the site of the cattle show in 1851; his Grace, at the same time, expressing his wish, that such of the members of the Inspection Committee as were in town, should take an early opportunity of waiting upon Lord Seymour, at the office of Woods and Forests, and of ascertaining from his lordship the conditions required by that department, in reference to a site chosen at Hampton Court, Bushy Park, or Kew, the localities which Lord John Russell had her Majesty's command to place at the disposal of the Society, for the selection of the site in question. His Grace further requested, that after such interview with Lord Seymour, the whole Inspection Committee should be summoned to visit such locality, as might appear, under all circumstances, to be most eligible for the purposes of the Society; in order that they might be prepared to report the result of their inspection to the Special Council, for deciding on the site, to be held on Thursday, the 20th instant.

Accordingly, Colonel Challoner, Mr. Villiers Shelley, and Mr. Brandreth Gibbs, waited, by appointment, on Lord Seymour, on Saturday last; and they had the satisfaction to find, that every disposition was felt by his lordship to promote the objects of the Society, and that the office of Woods and Forests would endeavour to agree to whatever conditions the Council might think it desirable to propose, for the consent and confirmation of that department; his lordship suggesting, that the Committee should, in the first instance, inspect a site of ground in Bushy Park, which he thought, in every respect, admirably adapted for the purposes of the show.

In consequence of this suggestion, the members of the Inspection Committee were summoned to meet in Bushy Park on Tuesday last, the 18th instant, when Colonel Challoner, Mr. Jonas, Mr. Fisher Hobbs, and Mr. Brandreth Gibbs, Members of the Committee; Mr. Hudson, Secretary of the Society; Mr. Manning, Contractor of Works to the Society; and Mr. Stovin, General Manager of Traffic to the South-Western Railway Company, were met by Mr. Wilson, Clerk of the Works under the Commissioners of Woods and Forests, and conducted over the ground. Having made an accurate survey of that portion of the park to which Lord Seymour, after his own personal inspection, had directed their attention; and having taken into consideration its bearings in relation to the convenience of the public, the facilities it afforded to the contractor, and the supply of water for the cattle, the Committee agreed to the following recommendations to the Council:

I. That the open area in Bushy Park, bounded on the north by the public footpath, on the south and east by the running blank wall of the Queen's Paddocks, and on the west by the Lime trees, being a firm level turf on sandy loam, and conveniently situated for the supply of water from the adjoining stream and ponds, the access of the contractor during the progress of the works, and the admission, at several entrances, of the public during the time of the show, whether arriving at either the Kingston or Hampton Railway Station, comprises a space of ground admirably adapted for the purposes of the Society, from which to select a particular site for the show-yard, when the size of the yard required shall be known after the entries have been completed.

II. That leave should be requested—

1. To erect a pump for raising the water from the stream or ponds above the level of the show-yard, for the purpose of having it conducted by water-proof tubing, or otherwise, into the yard.
2. To allow the Society's contractor to convey his materials for the erection of the yard through the Hampton-Wick double carriage gates, near the Clapper Stile.
3. To make at the Society's expense a direct entrance from the Stud-gates (in the turnpike-road between Hampton-court Park and Bushy Park) through the wall of No. 15 Paddock into Bushy Park, immediately opposite to the contemplated site for the show-yard.
4. To be afforded facilities of free ingress, egress, and occupation granted on all former occasions to the Royal Agricultural Society of England by the great municipal corporations throughout the kingdom.

III. That His Grace the Duke of Richmond be requested, as the President of the Society, to enter into further communication with Lord Seymour, as Chief Commissioner of her Majesty's Woods and Forests, in reference to these recommendations.

(Signed) C. B. Challoner.
W. Fisher Hobbs.
B. T. Brandreth Gibbs.

On the motion of Mr. Brandreth, seconded by Mr. Kinder, this report was unanimously adopted by the Council.

On the motion of Colonel Challoner, seconded by Mr. Fisher Hobbs, a vote of thanks was passed unanimously to Lord Seymour, for the plans of Bushy Park, presented by his Lordship to the Society for the use of the Council. Colonel Challoner took that opportunity of explaining these plans to the Council; and of remarking, that the site in question was adapted in every respect to the purposes of the Society, being situated within a short distance from the three Railway Stations of Kingston, Hampton, and Twickenham, by which the show would be fed by visitors from every part of the country: in fact, that had the Society had the choice of the whole kingdom, a more advantageous site could not possibly have been found.

The report of the general Middlesex Committee was read and adopted.

The Council then agreed to resolutions having reference to the following points:—

1. That at the Hampton Court Meeting of the Society, in 1851, there shall be a Pavilion dinner for 2500 persons, on Wednesday, the 16th of July.
2. That Saturday, the 17th of May, shall be the last day for receiving entries of stock for the Show.
3. That the week commencing Monday, the 14th of July, be the week of the Show.
4. That stock may be admitted into the yard at 8 A.M. on the Friday previous to the Show week; but must all be in the yard by 4 P.M. on the Saturday.
5. That the judges make their awards on the Monday.
6. That on the Monday evening, after the judges have completed their awards, the public may be admitted at 1*l.* each person; and governors of the Society, and members of Council, at 2*s.* 6*d.* each.
7. That the days of public show be—
   (1) Tuesday, at 5*s.*
   (2) Wednesday, at 2*s.* 6*d.*
   (3) Thursday, at 1*s.*
   } From 6 in the morning till sunset.
8. That on the Thursday the sheep hurdles shall have an extra upper bar screwed into them, for the purpose of protecting the animals from injurious handling by the public; and that a notice be put up on that day interdicting all attempts to handle the sheep.
9. That at 9 P.M., on Thursday, the stock may be allowed to leave the yard.

The Council then agreed to the regulations of the prize sheet, referring the details consequent on these resolutions to the decision and arrangement of the general Middlesex committee.

The Council stands adjourned to Wednesday next, at 12 o'clock, when the Chev. Claussen will explain his process for the preparation of British cotton.

METEOROLOGICAL REPORT.—FEBRUARY.

(*Continued from page 93.*)

[We regret that through press of matter the first part of this report was omitted in our Number of last week.—ED.]

| Date. | Time. | Max. | Min. | WIND, and REMARKS. |
|---|---|---|---|---|
| Mon. 3 | 7.30 a.m. | 29.42 | ... | S. SSW. a.m. Cloudy and moderate. |
| * | 1.15 p.m. | ... | 29.38 | SW. p.m. Overcast, rain. |
| | 7.30 p.m. | ... | 29.44 | |
| | 10.15 p.m. | 29.48 | .. | S. at night. Gentle wind. |
| 4 | 7.15 a.m. | ... | 29.67 | WNW. a.m. White frost; fine; clear. |
| | 6 p.m. | 29.84 | ... | NW. p.m. Day, and gentle breezes. |
| | 10.15 p.m | 29.83 | ... | Almost calm. Bright starlight. |
| 5 | 7 30 a.m | 29.67 | ... | S. Blowing hard, with driving |
| † | 6 30 p.m. | ... | 29.41 | rain, till 6.30 p.m. |
| | 8 45 p.m. | ... | 29.44 | S. 45 p.m. Westerly light |
| | 10.10 p.m. | 29.45 | ... | breeze, and starlight night. |
| 6 | 7.45 a.m. | ... | 29.73 | NW. a.m. Gentle breeze; white frost. |
| | 10.10 p.m. | 30.06 | ... | NW. p.m. Gentle breeze; Fine; night overcast. |
| 7 | 7.15 a.m. | 30.06 | ... | SW. a.m. Increased wind, and rain. |
| | 10.20 p.m. | ... | 29.88 | WSW. p.m. Ditto, with frequent squalls. |
| ‡‡ 8 | 8 a.m. | ... | 29.86 | WNW. a.m. NNW. noon, and blowing hard (but fine) till 2 p.m. |
| | 10.20 p.m. | 30.11 | ... | N. at 5 p.m., with white cumuli; fine. |
| Sun. 9 | 7.40 a.m. | ... | 30.20 | NNE. a.m. Frosty; overcast, with light fleecy clouds and light winds. |
| | 9 50 p.m. | 30.27 | ... | N. p.m. The whole day. |
| 10 | 7.30 a.m. | 30.27 | ... | NNW. Almost calm; barometer steady; clear. |
| | 9.25 a.m. | ... | 30.27 | NNW. Sunny morning, occasionally overcast. |
| | 3.40 p.m | 30.24 | ... | ESE. p.m. Light winds and |
| | 10.30 p.m. | ... | 30.20 | massive white clouds. |
| § - 11 | 7.20 a.m. | ... | 30 15 | Forenoon, NNW. Almost |
| | 11.30 a.m. | ... | 30.15 | calm, frosty, the barometer flat, but steady. |
| | 1.40 p.m. | 30.14 | ... | SSW., noon; S., evening. |
| | 7.40 p.m. | ... | 30,10 | Light airs, and very mild fine day. |
| 12 | 7.40 a.m. | 30.06 | ... | Hard frost; fine sunny day, |
| | 10.5 p.m. | ... | 29.97 | with gentle breezes at NW. a.m., WSW. p.m., SW. evening, and heavy white masses in the south. |
| ‖ 13 | 7.20 a.m. | ... | 29.91 | SW. a.m., noon calm, W. |
| | 7.50 p.m. | ... | 29.91 | p.m. Gentle breezes. |
| | 10.30 p.m. | 29.94 | ... | At night, rain. |
| 14 | 7.50 a.m. | ... | 30.01 | N. a.m, calm and dense fog; |
| | 10.30 p.m. | 30.10 | ... | noon, ENE.; afternoon, ESE.; evening, SSE. Light airs, fine warm sunny day, with heavy white masses. |
| 15 | 7.50 a.m. | ... | 30.12 | ESE. a.m.; noon till night, |
| | 11 a.m. | 30.14 | ... | SE. Barometers very steady, light winds, beautiful day, and bright moonlight night. |
| Sun. 16 | 7.30 a.m. | 30.12 | ... | E. a.m. White frost, fine clear day. |
| | 6.5 p.m. | ... | 30.06 | ESE. to ENE. p.m. Bright night. |
| 17 | 7.25 a.m. | ... | 30.01 | NNW. a.m. Severe frost, light airs, bright day, and sunny. |
| | 10.40 p.m. | ... | 30.01 | SW. p.m. Densely overcast, but mild. |
| ¶ 18 | 7.25 a.m. | ... | 29.97 | S. a.m. Moderate gusts, overcast. |
| | 3 p.m. | ... | 29.97 | SW. p.m. Clearing off, and warm. |

* This storm came from S.W., and went to N. and N.E. Probably it crossed the centre of Scotland and went towards Norway.

† From the warm, incessant, driving, southerly rain during the first portion of this storm, I infer that it came from the Bermudas and the Westward, and that on reaching Ireland it curved to the Eastward, crossing that island, over Dublin, the Isle of Man, and North of England.

‡‡ A storm crossing England merely due Eastward; and producing frosts from the back current of a centre, rotating over the German Ocean.

§ A storm passing up Channel from W. to E., being the storm's eye, and similar to that of the 31st January; but of small diameter, and being rapidly succeeded by the following, viz.,

‖ A storm of very extensive diameter, which came from the west, and which I watched during the whole of the 13th from the high ground near Shaftesbury and Blandford. I think it must (after crossing England) have curved to the southward, a very unusual circumstance; but if the hypothesis be correct, likely to have produced heavy north-westerly winds in the south of France. I apprehend the gales of the Gulf of Lyons to arise from currents of this description, which travelling to the south, and being confined between the high lands in that direction, seek to escape along the western coast of Italy.

¶ During the afternoon of Tuesday, the 18th, I watched the passage of this storm from the Island of Portland, as it moved slowly to the eastward; the heavy, massive, and beautifully defined line of vapour presenting a most singular contrast to the bright blue sky immediately bounding it.

From the unusual mildness of the past season, a cold and late spring is generally apprehended; it will therefore be interesting to observe whether a long and hard frost be the result of a current similar to the above, travelling from West to East, or of one travelling from South to North. The most severe frost experienced this season was from one of the latter description, the last week in November; but as the transit of storms of this class is always rapid, their effect may possibly be less permanent, whereas in the case of a transit from West to East (which at this moment of writing causes the present chilliness of the atmosphere), the rate of progress being slow, a greater time elapses before the influence of its backward current ceases to be felt.

Dorchester, Feb. 20th. *F. P. B. M.*

*(To be continued.)*

## Notices to Correspondents.

BRITISH COTTON. We have received a sample of Flax, prepared according to M. Claussen's method, from Mr. Christopher, who advertises on the subject in our columns. It appears well adapted for manufacture from cotton machinery.

COAL TAR: *J. J.* We have not seen an analysis. Coal will yield about 6 per cent. of it. It contains hardly any ash and no nitrogen. It is a compound of oxygen, hydrogen, and carbon, and by distillation separates into coal naphtha and oil and pitch.

COCHIN CHINA FOWLS: *A Subscriber.* See our advertising columns.

ITALIAN RYE-GRASS: *H Thomas.* It is not suitable for permanent pasture. It is good as a mixture, because for the first two years, or perhaps a third, it retains its vigour; but it dies away rapidly, especially if allowed to seed.—*M W.* Sown next month it will give a crop this summer, on land suited for it.

MANGOLD WURZEL: *L A.* They are best planted out in autumn, when they should be set about 2 feet apart every way, and *buried* under the soil. They may be planted *now* in a sheltered spot, without any covering.

MR. COWIE'S SPEECH: *N B.* You will find that it was referred to and commented upon in our Paper two weeks ago.

NORWEGIAN HARROW: *Querist.* It is a clod-crusher, without being a roller. It does not answer to use it except on dry land. It is a good preparer of the land as seed-bed for Wheat.

PAMPHLET: *A B., Leicester.* See page 109

POULTRY. The next exhibition of poultry at Birmingham will probably take place in the middle of December.—*W N.* We know no other way of confining your wild cock or hen within their separate walk, inclosed by a 6 feet paling, surmounted by a wire netting, than either to have a roof of netting over all, or to clip the quill feather of one wing on each bird.—*W D.* We fear the state of the poultry market, including butter and eggs, cannot be given here, as, to make it complete, it would be necessary to establish correspondents in every large town in the kingdom.—*R H M.* You will find all we know about the deformed breast-bones of fowls in the "Poultry Miscellany" for September 18, 1850. Of course deformed birds had better be made ready for the spit as soon as possible, and not kept as stock.—*Aylesbury Ducks.* These are not more delicate in constitution than other kinds; but their young require especial care, because they are produced at least two months earlier than any other duck, and the disadvantages of the weather at that time of the year must be counterbalanced by care and good keep. The advantage of their early breeding is, that you have from them a good fat duckling for the table, just at the period when common ducks are beginning to lay. Brick or stone are considered the very worst flooring a poultry-house can have; boards are bad enough, but both the others are worse. There is nothing like earth rammed down till it is quite hard. For ducks, some straw should always be laid in one part of the roosting-place, which should be removed when it becomes unclean. The disease in your ducks probably arose from the damp unwholesome bricks.

TURKEYS: *F S W* is anxious to know where he can get the dark copper-coloured turkeys. They should be as dark as a dark chestnut horse, or the bronze of a tea-urn.

TURNIPS, &c.: *A B.* If it be a good crop of Turnips the feeding of them on the land will secure your crop of Barley. The best plan for Potatoes is to plant whole sets medium size. If you have none such we would cut the rose end in two, and plant the other half uncut. About sheep: no plan will obviate the need of a daily examination while the fly are about. Lambs may be dipped, to kill tick, &c.; but sheep are not treated so. Keep them in good condition, and the tick need not trouble you.

# Markets.

COVENT GARDE, FEB. 22.

Hothouse Grapes are now over for a season. Pine-apples are still dear, and the supply of good dessert Pears is limited. English Apples are scarce, but foreign ones are sufficient for the demand. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good, except, perhaps, French Beans, which are still somewhat scarce. Carrots and Turnips are good in quality, and so are Potatoes? Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. per pottle. Cucumbers, though good, do not meet with a ready sale. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Lemons, per doz., 1s to 2s |
| Grapes, hothouse, p. lb., 6s to 10s | Almonds, per peck, 6s |
| — Portugal, p. lb., 8d to 1s | — sweet, per lb., 2s to 3s |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| — per half sieve, 6s to 15s | — per 100, 9d to 1s 6d |
| Apples, dessert, per bushel, 6s to 10s | Nuts, Barcelona, per bush, 20 to 22s |
| — kitchen do., 5s to 8s | — Brazil, p. bsh., 12s to 14s |
| Oranges, per doz., 9d to 2s | Cobs, per 100 lbs., 70s to 75s |
| — per 100, 6s to 10s | |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 8d |
| Cabbages, per doz., 6d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bun., 1s 6d to 2s 6d | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Endive, per score, 1s to 1s 6d |
| Asparagus, per 100, 2s to 8s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 6d to 1s 6d | Horse Radish, p. bundl., 1s to 4s |
| Potatoes, per ton, 60s to 100 | Red Beet, per doz., 6d to 1s |
| — per cwt., 3s to 5s | Mushrooms, p. pot., 6d to 9d |
| — per bush., 1s 6d to 2s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. doz. bundl., 1s to 2s | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 4s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Carrots, per doz., 2s to 5s | — Roots, p. bundl. 9d to 1s |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, per bunch, 2d to 4d |
| Onions, p. bunch, 3d to 4d | Mint, green, per bunch, 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per doz., 9d to 1s | Corn Salad, p. hf. sieve, 1s to 1s 6d |

ENGLISH TIMBER AND BARK.—FEB. 22.

| | Round Timber. Per Load. | Plank. Per Foot Cube. | Inch Board. Per Foot Super. |
|---|---|---|---|
| Oak | £5 10 0 to £7 10 0 | 3s. 0d. to 5s. 0d. | 0s. 4½d. to 0s. 6d. |
| Ash | 4 10 0 — 6 0 0 | 2 6 — 3 6 | 0 3 — 0 4 |
| Elm | 3 0 0 — 4 0 0 | 1 6 — 2 0 | 0 2 — 0 3½ |
| Beech | 2 10 0 — 3 10 0 | 1 3 — 2 3 | 0 2 — 0 2½ |
| Lime | 3 0 0 — 4 0 0 | 2 0 — 2 6 | 0 3 — 0 4½ |

Few transactions have taken place in Bark, and prices continue unaltered, viz., from 18*l.* to 15*l.* per load of 45 cwt.—J. S.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 20.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Clover ... ... ... | 76s to 80s |
| Inferior ditto ... | 60 70 | Second cut ... ... | 63 70 |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 25 30 |
| New Hay ... ... | — — | | J. COOPER. |

The supply short.

CUMBERLAND MARKET, Feb. 20.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 60s to 72s |
| Inferior ditto... ... | 50 60 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 27 30 |
| Old Clover ... ... | 78 84 | | JOSHUA BAKER. |

WHITECHAPEL, Feb. 20.

| | | | |
|---|---|---|---|
| Fine Old Hay | 68s to 74s | New Clover ... ... | —s to —s |
| Inferior ditto | 55 60 | Inferior ditto... ... | 65 70 |
| New Hay ... ... | — — | Straw ... ... ... | 24 26 |
| Old Clover ... ... | 78 84 | | |

COAL MARKET.—FRIDAY, Feb. 21.

Hollywell, 15s.; Eden Main, 15s. 6d.; Wallsend Hetton, 16s. 6d.; Wallsend Lambton, 16s. 6d.; Wallsend Stewarts, 16s. 9d.; Wallsend Adelaide Tees, 15s. 6d.; Wallsend Tees, 16s. 6d.—Ships at market, 61.

HOPS.—FRIDAY, Feb. 21.

Messrs. Pattenden and Smith report that the demand for fine Hops continues good, and prices are fully maintained.

SMITHFIELD, MONDAY, Feb. 17.

We have again a large supply of Beasts, and of good quality. The favourable weather causes a better clearance to be effected, but there is no advance on prices on the average. The number of Sheep is rather larger to-day, still it is small; they are freely disposed of at fully late rates. Trade is more active for Calves, but 4s 6d. is an extreme quotation. From Holland and Germany there are 452 Beasts, 990 Sheep, and 76 Calves; from France, 80 Sheep; from Norfolk and Suffolk, 2200 Beasts; from Scotland, 300; and 200 from the northern and midland counties.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 to 3 | 6 | | Best Long-wools | 3 | 10 to 4 | 0 | |
| Best Short-horns | 3 | 2 — 3 | 4 | | Ditto Shorn ... ... | | ... | | |
| 2d quality Beasts | 2 | 4 — 3 | 0 | | Ewes & 2d quality | 3 | 4 — 3 | 6 | |
| Best Downs and Half-breds | ... 4 | 2 — 4 | 6 | | Ditto Shorn ... ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | | ... | | |
| | | | | | Calves ... ... | 3 | 4 — 4 | 6 | |
| | | | | | Pigs ... ... | 2 | 8 — 3 | 4 | |

Beasts, 3797; Sheep and Lambs, 19,090; Calves, 127; Pigs, 280.

FRIDAY, Feb. 21.

The supply of Beasts to-day is not very large; however, it far exceeds the demand. Lower prices are taken, yet many remain unsold. The number of Sheep is again small; in consequence we maintain Monday's quotations, but trade is hardly so brisk. Choice Calves are scarce, consequently 4s. 6d. is reached for these, but other kinds are lower. Our foreign supply consists of 60 Beasts, 310 Sheep, and 140 Calves; we have 78 milch cows from the home counties.

| Best Scots, Herefords, &c. | ... 3 | 2 to 3 | 4 | Best Long-wools | 3 | 10 to 4 | 0 |
|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 — 3 | 2 | Ditto Shorn ... ... | | ... | |
| 2d quality Beasts | 2 | 2 — 2 | 10 | Ewes & 2d quality | 3 | 4 — 3 | 6 |
| Best Downs and Half-breds | ... 4 | 2 — 4 | 6 | Ditto Shorn ... ... | | ... | |
| Ditto Shorn ... ... | | | | Lambs ... ... | | ... | |
| | | | | Calves ... ... | 3 | 0 — 4 | 6 |
| | | | | Pigs ... ... | 2 | 8 — 3 | 4 |

Beasts, 627; Sheep and Lambs, 2740; Calves, 210; Pigs, 295.

MARK LANE.

MONDAY, FEB. 17.—The show of Wheat from Essex and Kent this morning was exceedingly small, and the sale by no means brisk; prices must be quoted about the same as on this day se'nnight. Business in foreign continues very limited, almost confined to forced sales, which can only be effected at some reduction in prices.—The value of Barley is supported for all descriptions, as is also that of Beans and white Peas, but grey and Maple are 1s. per qr. cheaper.—The Oat trade is rather firmer than last week, and prices maintained.—Flour is a heavy sale, and we observe no alteration in its value.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 42—47 | Red ..... | 37 | —44 |
| — — fine selected runs... | ditto | 42—48 | Red ..... | | —42 |
| — — Talavera ..... | | 45—52 | | | |
| — Norfolk, Lincoln, & York... | White | — | Red ..... | | — |
| — Foreign ..... | | 3?—52 | | | |
| Barley, grind. & distil., 17s to 21s... | Chev. | 26—30 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | | 17—22 | Malting . | 22 | —24 |
| Oats, Essex and Suffolk ..... | | 17—19 | | | |
| — Scotch and Lincolnshire... | Potato | 19—23 | Feed ..... | 16 | —21 |
| — Irish ..... | Potato | 17—21 | Feed ..... | 16 | —18 |
| — Foreign .....Poland and Brew | | 17—21 | Feed ..... | 16 | —18 |
| Rye ..... | | 22—24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | | — | | | |
| Beans, Mazagan .....20s to 26s..... | Tick | 23—27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... | Winds | 37—43 | Longpod | 27 | —33 |
| — Foreign ..... | Small | 22—28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent..... | Boiler | 24—26 | Suffolk... | 26 | —28 |
| — Maple.....26s to 28s ..... | Grey | 23—24 | Foreign . | 24 | —31 |
| Maize ..... | White | — | Yellow ... | — | |
| Flour, best marks delivered ...per sack | | 34—40 | | | |
| — Suffolk ..... | ditto | 27—34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | | 16—23 | Per sack | 26 | —34 |

FRIDAY, Feb. 21.—This week the arrivals of foreign grain are unimportant, those of Flour good. The attendance at market this morning was small, and business more limited than of late. Foreign must be quoted nominally as on Monday.—Barley of all descriptions is held rather more firmly.—Beans and Peas are unaltered in value.—Oats meet an improved sale at a trifling advance.—The Flour trade is exceedingly heavy, and sales at current rates are impracticable.—Floating cargoes of Black Sea Wheat and Indian Corn remain nominally as last week.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Jan. 11..... | 38s 1d | 22s 9d | 16s 2d | 22s 1d | 26s 9d | 27s 0d |
| — 18..... | 38 0 | 22 8 | 16 9 | 24 8 | 26 7 | 26 11 |
| — 25..... | 38 5 | 22 7 | 17 7 | 23 2 | 26 4 | 27 5 |
| Feb. 1..... | 37 10 | 22 9 | 16 7 | 22 7 | 25 11 | 26 6 |
| — 8..... | 38 1 | 22 10 | 16 9 | 23 11 | 25 10 | 26 0 |
| — 15..... | 37 8 | 22 11 | 16 2 | 23 10 | 25 5 | 26 10 |
| Aggreg. Aver. | 37 11 | 22 9 | 16 8 | 23 4 | 26 2 | 26 9 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Jan. 11. | Jan. 18. | Jan. 25. | Feb. 1. | Feb. 8. | Feb. 15. |
|---|---|---|---|---|---|---|
| 38s 1d— | | ... | ... | ... | ... | ... |
| 38 0 | ... | | ... | ... | ... | ... |
| 38 5 | ... | ... | | ... | ... | ... |
| 38 1 | ... | ... | ... | | ... | ... |
| 37 10 | ... | ... | ... | ... | | ... |
| 37 8 | ... | ... | ... | ... | ... | |

LIVERPOOL, TUESDAY, FEB. 18.—We have fair supplies of Oats and Oatmeal from Ireland this week, and of Barley and Malt coastwise. The foreign arrivals consist chiefly of Flour. The business transacted during the week has been moderate, without any change in the quotations of last Tuesday. There was about the usual attendance at our Corn Exchange this morning. Good fresh parcels of Wheat were in fair request, at similar prices to those paid on Tuesday last, but old granaried samples were quite neglected. The best marks of French Flour commanded full prices, but the rates for other descriptions were irregular. American barrels were unaltered in value and neglected. Barley, Beans, and Peas were dull. Oats and Oatmeal supported late rates. Indian Corn was in moderate request, and could not be bought so well as during the week.——FRIDAY, FEB. 14.—There are no symptoms at present in the corn market. The weather is exceedingly mild and open, and the winter season is passing over rapidly. France continues to pour in upon us her Flour. The same dulness prevailed at our Corn Exchange this morning, and the sales of any article were in mere retail quantities, at prices much the same as were paid on Tuesday last.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

THE APPROACHING COLD WEATHER.

THERMOMETERS FOR REGISTERING THE EXTREMES OF HEAT AND COLD, of the best construction, 1l. 1s. and 18s.; of the common construction, 15s., 12s. 6d., 10s., 7s. 6d. Night Thermometers for Registering Cold only, 10s., 7s. 6d., 5s., to 2s. 6d. Thermometers for Baths or Brewing, 12s. 6d., 10s., 7s 6d., to 2s. 6d. Hotbed Thermometers to 4 feet long, 25s., 20s., 17s. 6d. Steam pressure Gauges, 2l. 5s. and 2l. 2s. Rain Gauges, from 10s. Lactometers for showing the Quality of Milk, with instructions for use, 15s., 12s. 6d., 10s., 7s. 6d., 5s. Hydrometers, for trying Sulphuric Acid, 10s., 7s. 6d., 5s. Barometers, Microscopes, Telescopes, Drawing Instruments, &c.

HENRY BAKER, Instrument Maker to the Board of Admiralty, 30, Hatton-garden, London.

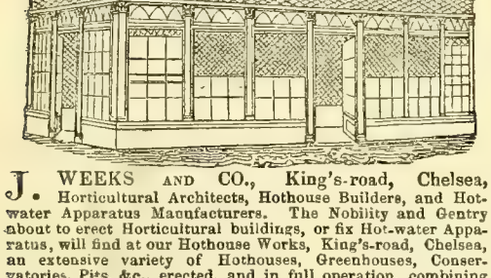
BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Aloert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks. &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hot-house Builder, Claremont-place, Old Kent-road, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

REGISTERED ROLLER MILL for Crushing Linseed Oats, Malt, Barley, &c., and Breaking Beans and Peas. Manufactured by E. R. TURNER AND CO., late HURWOOD and TURNER, St. Peter's Foundry, Ipswich.

E. R. TURNER and Co. claim for their registered Roller Mill the particular attention of Agriculturists Housekeepers, and others. Besides accomplishing all the purposes of the well-known Roller Mill for crushing Corn and Seeds, by an entirely novel arrangement it is made to break Beans and Peas most effectually, and without involving any delay in adapting the Mill from one process to the other. They are very simple in construction, and therefore not liable to get out of repair; may be worked with ease by one man, and for efficiency and cheapness are superior to any Implement of the kind yet manufactured. Price complete, 9l. 9s.

E. R. T. and Co. also manufacture a Roller Mill for Crushing only, of the same size as the Registered Roller Mill, and a larger Mill, for which HURWOOD and TURNER were awarded the Royal Agricultural Society's Prize at Norwich in 1849.

Price of Small Roller Mill ... ... ... £7 10s.
" Norwich Prize Mill, for Horse, Steam, or Hand Power ... ... ... 10 10

Delivered Free to London, Norwich, Bury St. Edmunds, and all intervening Stations. To Hull by water, and all places within 50 miles of Ipswich.

A Discount of Five per cent. allowed for Cash payments.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, 47s. per ton; in London, Liverpool, Bristol, and other seaports in England, 60s. per ton, sacks included.—Agents for the sale of the Society's Charcoal have been appointed at several of the principal seaports and Inland towns, a list of whom, together with all other information, may be had on application at this office.

By order of the Court,
Feb. 22, 1851. GEORGE L. PARROTT, Secretary.
Head Office, 9, Waterloo-place, London.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

SALT for Agricultural Purposes, Asparagus Beds, Garden Walks, &c., &c., price 23s. per Ton, delivered in Sacks to any Railway Station in London. Sacks to be paid for or returned. Apply to JOHN MEREDITH, Salt Merchant, 10 Wharf, City-road Basin, London. N.B. Rock Salt.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | | | |
|---|---|---|---|
| 6 by 4 to 6½ by 5 ... 12s. each. | | 9 by 7 to 10 by 8 ... 15s. each. | |
| 6½ by 5½ to 8 by 6 ... 13 | " | 11 by 8 to 14 by 10 ... 16 | " |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

HOSE FOR FIRE ENGINES AND AGRICULTURAL PURPOSES, made of canvas, coated and lined with gutta percha, at about one-third the price of leather or India rubber; it is well suited for the conveyance of water, acids, and liquid manure, under great pressure. It is patronised by the Admiralty, at the Government Public Offices, and is extensively used by Agriculturists, giving great satisfaction.—Testimonials and prices can be obtained at Messrs. BURGESS and KEYS, 103, Newgate-street, sole Manufacturers.

COCHIN CHINA EGGS.—As a general answer to various Correspondents and others, H. COPLAND will supply the public with Eggs from these fine and prolific Birds, at 10s. a setting of 13 Eggs.—Apply to Mr. H. COPLAND, Chelmsford, Essex.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

IRON GATES, HURDLES, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfields Wrought and Cast-iron Works, Bilston, Staffordshire, Manufacturers of every description of Park Entrance, Carriage and Field Gates, Wickets, &c.; Plain and Ornamental Fencing and Palisading; Ox, Cattle, Sheep and other Hurdles; Tree Guards, Garden Seats, Hay Racks, Wheelbarrows; Land and Garden Rollers, Stable Fittings, &c. &c.

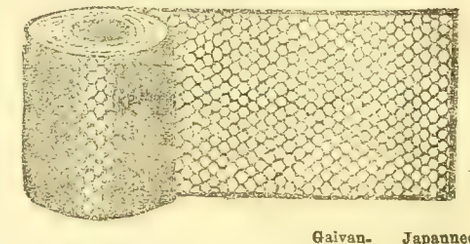
The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and most moderate terms. A great variety of the above articles always kept in Stock at the London Warehouse, and at the Works. Drawings and prices may be obtained on application, or furnished free by post.

METCALFE AND CO'S NEW PATENT TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

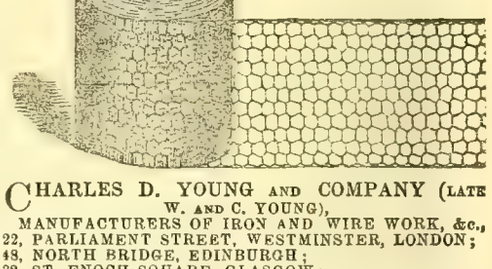


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| ¾-inch " light " ... | 8 " | 6 " |
| 1⅝-inch " strong " ... | 10 " | 8 " |
| 1½-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

| | | | |
|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | .. | £3 15 0 |
| Do. of 100 yards, 24 ins. wide | .. | .. | 5 0 0 |
| Do. of 100 yards, 30 ins. wide | .. | .. | 6 5 0 |
| Do. of 100 yards, 36 ins. wide | .. | .. | 7 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cork-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 33, Virginia-street, Glasgow.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties, enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

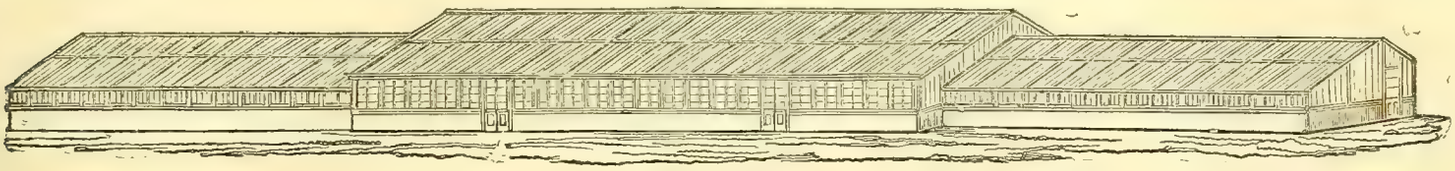
Sold by the Proprietors, LEA and PERRINS, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "LEA and PERRINS" are upon the label and patent cap of the bottle.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

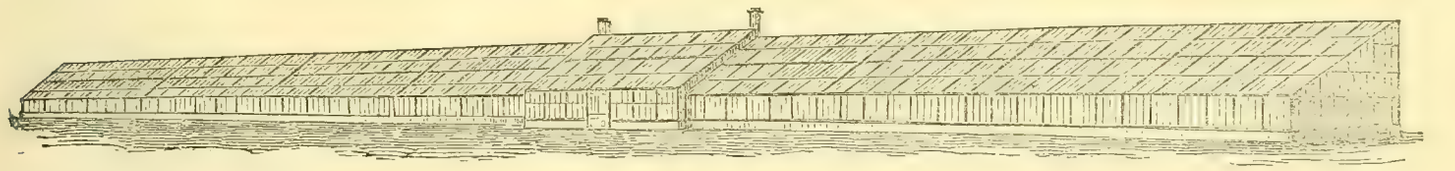
(Signed.) "James Fraser, Gardener, Luton Hoo Park."

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### BY HER MAJESTY'S ROYAL LETTERS PATENT.

# PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

## E. DENCH, PATENTEE.



This Range, consisting of Nine Houses, varying from 24 feet to 30 feet long, by 16 feet to 19 feet wide, each, which are all heated by Hot-water, being half the number erected for Edward L. Betts, Esq., Preston Hall, Aylesford, near Maidstone, Kent.

Mr. Thomas Frost, the Head Gardener, has proved the superiority of these Houses for the growth of both Fruits and Plants, and will give every information.

THE PATENT consists of two distinct principles for all Horticultural Erections—on one plan the Roof is formed wholly of Iron and Glass, no wood or putty, &c., and not more than three-quarters of an inch of light being taken up anywhere, and is very light, strong, and elegant, free from drip, and perfectly impossible for the rain to penetrate; the other principle consists of the Roof being formed in Sashes, and the surface of the Roof being Iron, Glass, and Putty, and, the work being hollow, is perfectly free from contraction or expansion. These Houses have been proved in all parts, and are found to excel all others. Heating by Hot-water on most scientific principles.

ONE GOOD SECOND-HAND HOUSE FOR SALE.

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## *SALES BY AUCTION.*

BRENTFORD, MIDDLESEX.—FINAL SALE.
To Noblemen, Gentlemen, Nurserymen, Market-Gardeners, and others engaged in planting.

MESSRS. PROTHEROE and MORRIS are instructed by the Executors of the late Mr. J. Ronalds to offer to public competition, by Auction, on the premises, the Butts and Twolands Nurseries, Brentford, Middlesex, on MONDAY, February 24th, and following day, at 11 o'clock. The whole of the remaining NURSERY STOCK, consisting of a rich assortment of Fruit and Forest Trees, Evergreens, Ornamental and Deciduous Shrubs, American Plants, &c. May be viewed, and Catalogues had (6*d.* each, returnable to purchasers), prior to the Sale, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed to sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, February 27th, about 200 choice double Camellias, from 2 to 5 feet, well set with bloom buds; also a quantity of Lilium lancifolium, in varieties; a selected assortment of standard and dwarf Roses, American plants, comprising fine Hybrid Rhododendrons, Ghent Azaleas, Andromedas, &c.; together with a choice collection of Dahlias in dry roots. May be viewed the morning of sale, and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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HIGHBURY NURSERY.
To Gentlemen, Nurserymen, Proprietors of Tea Gardens, &c.

MESSRS. PROTHEROE and MORRIS will sell by Auction, on the Premises, Highbury Nursery, opposite Highbury Barn Tavern, Islington, on MONDAY, March 3d, 1851, and following day, at 11 o'clock each day, by order of the Proprietor, in consequence of the land being let for building, the whole of the CHOICE NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, and Ornamental Trees; also, the selected Greenhouse Plants, comprising large Camellias, Azalea indica, large Araucaria, Rhododendron Arborea, Oranges, Myrtles, Ficus elastica, Geraniums, Fuchsias, Cyclamen, &c.; together with the Pits, Frames, and Lights, Hand-glasses, Wheelbarrows, a quantity of well seasoned Bog, Potting Mould, &c.; a Summer House; an Erection or Tea Booth, 36 feet by 18; Tables, Forms, Tea Trays, Crockery; 2 Coppers; a Swinging Boat; Utensils in Trade, &c. May be viewed prior to the Sale; Catalogues had, 6*d.* each, returnable to Purchasers on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

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FINAL SALES.
TO NURSERYMEN, BUILDERS, AND OTHERS.

MR. D. A. RAMSAY having received instructions from Messrs. Dennis and Co. to submit the whole of the remaining NURSERY AND OTHER STOCK, GREENHOUSES, IMPLEMENTS IN TRADE, &c., to public competition during the ensuing season, in consequence of the lease expiring at Christmas next, will sell by Auction, on the premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY, February 25th, and following day, at 12 o'clock, without reserve, a portion of the valuable Nursery Stock, comprising extra large Aucuba, Hollies 3 to 5 feet high, Box, Laurels, and other Evergreens; prize Gooseberries, fruit bearing and other Mulberries; large Ivies, Jasmines, and other Climbers; Roses, Deciduous Shrubs, Garden Frames and Lights, &c. Due notice will be given of future sales of the above stock.—May be viewed prior to sale. Catalogues may be had on the premises; at the principal Seed Shops; and of the Auctioneer, Brompton Auction Ground, Fulham-road, Brompton, near London.

Important Sale of about 200 Camellias, from 18 in. to 5 ft., and some very strong Camellia Stocks, American Plants, Standard and Dwarf Roses, and Dahlias in dry Roots, &c.

MESSRS. PROTHEROE and MORRIS beg to announce that their Annual Sale of Camellias will take place at the Auction Mart, Bartholomew Lane, on THURSDAY, March 6th, at 12 o'clock. The Plants are very healthy, and beautifully furnished with bloom buds. May be viewed the morning of sale; Catalogues may be obtained at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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SOUTHAMPTON.—FINAL SALE.
To Noblemen, Gentlemen, Nurserymen, and others engaged in planting.

MESSRS. PROTHEROE and MORRIS are instructed to offer to public competition, by Auction on the premises, Page's Hill and Sidford Nurseries, the second week in March, the remainder of the valuable NURSERY STOCK, consisting of Evergreens, Ornamental Fruit and Forest Trees, Deciduous Shrubs, Greenhouse Plants, several Lights and Boxes, Seeds, &c. May be viewed, and Catalogues had, one week prior to the Sale, on the premises of Mr. Brooks, Accountant, 24, Portland-street, Southampton; at the principal Inns in the neighbourhood; Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

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EXTENSIVE IMPORTATION OF DUTCH FRUIT TREES, BELGIAN CAMELLIAS, STANDARD ROSES, AZALEAS, &c. &c.

MR. HASLAM will sell, as above, at Auction Mart, on WEDNESDAY, March 5, and following days. Further particulars in next week's *Chronicle*.

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GLOUCESTERSHIRE.—ROYAL NURSERY, CIRENCESTER. SECOND SALE.

MESSRS. JEFFERIES and CO. beg to notify that they will proceed to the Second Sale of Nursery Stock, upon the above-named premises, by order of the Assignee of the Estate and Effects of Mr. William Gregory, on TUESDAY, WEDNESDAY, and THURSDAY, March 4th, 5th, and 6th. The second portion of the Stock comprises black and white American, Norway, and Hemlock Spruce; Silver, Scotch, Larch, and Balm of Gilead Firs; Weymouth Pines, Pinus austriaca, Laricio, Mughus, &c., of various heights; Limes, Acer, Birch, and other Ornamental Trees, 12 to 15 feet high, fit immediately for Park Trees; Oaks, grafted Elms, Beech, Hornbeam, Hazel, &c.; many thousands of variegated and other Hollies, Yews, Irish Yews; American, Chinese, and Siberian Arborvitæ; Mahonias, Red Cedars, Phillyreas, Aucubas, hardy Heaths, common Laurels, Lucombe's and Evergreen Oaks; pink, scarlet, and other Thorns; Laburnums, purple and fern-leaved Beech, Fraxinus, Sorbus, Cytisus, together with an immense number of ornamental Deciduous Shrubs, such as Lilacs, Ribes, Honeysuckles, Syringas, Deutzias, Guelder Roses, Berberis, Spiræas, &c.; Standard and Dwarf Roses, in great variety; the well-known choice and extensive collection of Conifers, which drew forth such general admiration at the last Sale, will be arranged in Lots of 150, 100, 50, 25, &c., also the extensive assemblage of Stove and Greenhouse Plants, together with a large quantity of Standard and Dwarf Apples, Pears, Plums, and Cherries, Gooseberries, Currants, &c. The whole of which will be fully detailed in Catalogues, to be had at the Nursery; at the principal inns in the neighbourhood; at Baily and Jones' Printing-office, and at the Auctioneers' Office, Cirencester. The Sale will commence each morning punctually at 11 o'clock. Parties residing at a distance and requiring Catalogues shall be supplied with them on their enclosing four postage stamps. As the whole of the above stock has been grown under the superintendence of Mr. R. Rea, he will be happy to receive and execute any commission with which he may be entrusted by parties residing at a distance.

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PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 150 lbs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5*l.* per ton. Orders received by Mr. Henry Hill, Corn Exchange, Mark-lane; Mr. George Bush, 22, Abchurch-lane; and Mr. Bennett, 73, Mark-lane.

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PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1*l.* per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

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IMPROVED METALLIC FLOWER LABEL

ADVANTAGES OF THE IMPROVED METALLIC FLOWER LABEL OVER ALL OTHERS. They are less liable to disturb the roots; they are indestructible; they are uniform and ornamental; they are smoother, and can be written upon either with lead pencil on wet paint, as on wood, or with chemical ink. Price 2*s.* per 100.

May be had of T. Lockhart, Seedsman, 84, Fleet-street, London; or Wholesale to Dealers, of S. Rooke, jun., 7, Whitall-street, Birmingham.

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DESTRUCTIVE ANIMALCULÆ.

READ'S GARDEN ENGINES and MACHINES.—As Spring approaches, the Larvæ of destructive insects are propagated in infinite multitudes, to the great injury of the young Shoots of Trees, Vines, Plants, and every species of Vegetation put into motion and growth by the genial influence of the season. Richard Read, Instrument Maker (by special appointment) to her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable Improvements in his GARDEN ENGINES and MACHINES, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent.

Manufactured only by R. Read, 35, Regent-circus, Piccadilly, London.

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HAYTHORN'S HEXAGON GARDEN NET.

Noblemen, Clergymen, and Gentlemen who have Gardens or Hothouses, are respectfully invited to transmit their address to Mr. J. W. Haythorn, 4, Clinton-street, Nottingham, who will forward free, by post, particulars and patterns of his HEXAGON GARDEN NET, the best and cheapest article, highly approved, and now generally used for the protection of bloom, fruit, and flowers, from frosts, birds, wasps, flies, children and servants, and also for placing on Hothouses, effectually keeping out birds and insects, without preventing the admission of light and air. Parcels are sent, carriage-paid, to London, Liverpool, Bristol, Newcastle, Hull, &c., and intermediate stations.

# PRICE LIST OF GENUINE SEEDS FOR 1851.

GEORGE BAKER begs most respectfully to tender his sincere thanks to his numerous Patrons, who, for so many years, have favoured him with their orders; and to assure those who have not yet given him a trial, that all orders entrusted to his care shall meet with prompt attention, every article shall be of the best quality, and carefully proved before sent out. The following choice collection of Garden Seeds are now ready for sending out, carefully packed in cases, for 1*l.* 1*s.*; cases not charged.

## GENUINE KITCHEN GARDEN SEEDS.

PEAS—1 pint Early Emperor
,, Early Frame
,, Woodford's Marrow
,, Knight's Dwarf Marrow
,, Bedman's Imperial
,, Fairbeard's Surprise
,, Hairs' Dwarf Mammoth
BEANS—1 quart Early Longpod
,, Green Windsors
1 pint Scarlet Runners
,, Dwarf French
BEET—1 oz. Superb Crimson
,, Silver or Seakale
BORECOLE—1 oz. fine Curled
BRUSSELS SPROUTS—1 oz. Imported
BROCCOLI—1 oz. Early White
½ oz. fine Portsmouth
,, Ellitson's Mammoth
,, Cape
BROCCOLI—½ oz. Sprouting
,, Winter Imperial
,, Walcheren (True)
CABBAGE—1 oz. Dwarf Somerset
½ oz. Nonpareil
,, Shilling's Queen
CARROT—1 oz. Earliest Horn
,, Improved Altringham
CELERY—¼ oz. Superb White
CRESS—½ lb. Curled
MUSTARD—1 lb.
CUCUMBER—Packet fine Frame
,, Ridge
ENDIVE—½ oz. Green Curled
LEEK—½ oz. London Flag
ONION—2 oz. White Spanish
1 ,, James' Keeping
,, Tripoli
LETTUCE—½ oz. Bath Cos
LETTUCE—½ oz. Drumhead Cabbage
,, White Cos
PARSLEY—2 oz. Myatt's treble Curled
PARSNIP—2 ,, Improved Guernsey
RADISH — 6 ,, Early Salmon
2 ,, White and Red Turnip
SPINACH—½ lb. Round
½ lb. Prickley
TOMATO—Packet
TURNIP—2 oz. Early Stone
,, Six Week
VEGETABLE MARROW—Packet
SAVOY—1 oz. Green Curled
CAULIFLOWER—½ oz. fine London
MELON—Packet Beechwood
CHERVIL—Packet
CORN SALAD—Packet
SALSAFY—Packet
SCORZONERA—Packet

Purchasers joining together and taking Four Collections, would receive them carriage paid to London, Exeter, Liverpool, Cork, or Dublin, at any of the principal Ports of the United Kingdom, or at any Station on the Great Western, Bristol, and Exeter, or South Devon Railway.

N.B.—Every known variety of Kitchen Garden and Flower Seeds raised by the most celebrated growers.

## NEW AND CHOICE FLOWER SEEDS,—POST FREE.

G. B. begs to recommend to the Nobility and Gentry, and his Friends in general, the following very superior assortment of Flower Seeds, which are now ready to be sent out in sealed packages, at the prices affixed, post paid:—

| | *s.* | *d.* |
|---|---|---|
| 100 Packets choicest Annuals, including the newest and most approved varieties ... ... ... ... | 10 | 0 |
| 50 Ditto ditto ditto | 5 | 0 |
| 25 Ditto ditto ditto | 2 | 6 |
| 12 Ditto ditto ditto | 1 | 6 |
| 30 Packets half-hardy Annuals ... ... ... ... | 5 | 0 |
| 15 Ditto ditto ditto | 2 | 6 |
| 15 Packets Tender Annuals ... ... ... ... ... | 3 | 6 |
| 20 Packets Perennials, including splendid mixed varieties Verbena, Heartsease, Cineraria, Petunia, Pentstemon, Primula Sinensis, Calceolaria, &c., &c. ... | 5 | 0 |

| | *s.* | *d.* |
|---|---|---|
| 20 Large Packets Dwarf Annuals for filling Beds on Lawns | 5 | 0 |
| 24 Distinct varieties German Stocks ... ... ... | 4 | 0 |
| 12 Ditto ditto ... ... ... ... | 2 | 6 |
| 24 Varieties German Asters ... ... ... ... ... | 5 | 0 |
| 12 Ditto ditto ... ... ... ... | 2 | 0 |
| 12 Varieties Double Balsam ... ... ... ... ... | 2 | 0 |
| 12 Ditto Cockscomb ... ... ... ... ... | 3 | 6 |
| 10 Ditto Mimulus ... ... ... ... ... | 3 | 6 |
| 8 Ditto Zinnias ... ... ... ... ... | 2 | 0 |
| 12 Ditto Hollyhock ... ... ... ... ... | 2 | 6 |
| 12 Ditto German Larkspur ... ... ... ... | 2 | 6 |

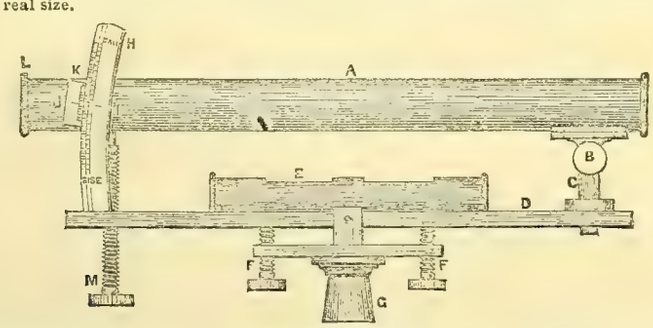
The above are recommended with confidence, and cannot fail of giving satisfaction. Particular attention is paid in packing Seeds for exportation. A remittance or reference expected from unknown Correspondents. Payment may be made either by Post-office Order or Postage Stamps.

GEORGE BAKER, SEEDSMAN, WELLS, SOMERSET.

# DRAINAGE.

## NEW LEVELLING INSTRUMENT, REGISTERED 28TH DECEMBER, 1850.

THIS is a Simple and Effective SELF-RECORDING INSTRUMENT suitable for Levelling DRAINS, SEWERS, or ROADS, or for measuring the Elevations and Depressions of Ground. The Figure represents the Instrument one-fourth the real size.




A is a telescope; B, a joint; E, a level; M, screw for raising or lowering the eye end of telescope; H, a segmental graduated scale. The zero of this scale is at I, in a line coincident with the horizontal axial line of the telescope, and an index J is carried on the side of the telescope for cutting the graduations. The graduations are so proportioned as to show the rise or fall in feet and inches per 100 ft. of the horizontal distance. The socket G is fitted to the ordinary tripod stand, which is about 5 feet high.

INSTRUMENT, with Tripod Stand and Box, 3*l.* 12*s.*

From the *Practical Mechanics' Journal*, 1st February, 1851.

"In the hands of even the most unlettered farm servant this little instrument will afford the most correct measurements, as the operator has only to level the plate D, and bring his sight to bear upon the object, when the elevation or depression is given at once. It will be a most useful contrivance for Draining or Road-making."

**Made only by GARDNER AND CO., Opticians, 21, Buchanan-street, Glasgow.**

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT,
FOR SUPPLYING GENUINE HOME-GROWN SEEDS, CARRIAGE FREE.

## SUTTON'S COLLECTIONS OF GARDEN SEEDS.

*For the convenience of Gentlemen who may not be well acquainted with all the best kinds of Garden Seeds, and the proper proportions of each generally necessary to stock a large or small Garden,* MESSRS. SUTTON *have during the last seven years been in the practice of making complete Collections for one year's supply, the economy and other advantages of which system have been fully appreciated by the purchasers, as indicated by numerous recommendations and annual increase of orders.*

| | £ | *s.* | *d.* |
|---|---|---|---|
| No. 1. A COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS FOR A LARGE GARDEN, for one year's supply ... ... ... ... ... ... ... | 2 | 10 | 0 |
| No. 2. A COMPLETE COLLECTION OF DITTO, in quantities proportionately reduced ... ... ... | 1 | 10 | 0 |
| No. 3. A COMPLETE COLLECTION OF DITTO, equally choice sorts ... ... ... ... ... | 1 | 1 | 0 |
| No. 4. A SMALL AND CHOICE ASSORTMENT OF DITTO ... ... ... ... ... ... ... | 0 | 12 | 6 |

Persons who are already in possession of several kinds of Seeds are requested to send the names, that they may be omitted in the collections they may order, and additional quantities of other sorts will be given in lieu of them.

*For particulars of the sorts contained in these Collections, see Advertisement on the last page of the* Gardeners' Chronicle, *of January* 25.

JOHN SUTTON and SONS are also extensive growers of early Potatoes, and Agricultural Seeds, particulars of which may be had by post.

*Reading Seed Warehouse, Reading, Berks.*

TO POTATO AND CUCUMBER GROWERS.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the Public that he is now ready to send out his Seedling FIFTY-FOLD KIDNEY POTATO, which has been proved and highly recommended by Dr. Lindley, Messrs. Beck and Henderson, Hurst and M'Mullen, and many others. Price 4*s.* per peck.

London Agent: Hurst and M'Mullen, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER successfully for three years, can with confidence recommend it to the Public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s.* each.

EARLY ALBION KIDNEY POTATO.

EDWARD MITCHELL having a surplus stock of SEED POTATOES of this first-rate early variety, begs most respectfully to offer them to the public, and the trade generally, as being one of the very best and earliest varieties grown, it being full three weeks earlier than the Ash-leaf or Walnut-leaf Kidney Potatoes; also a greater cropper, and far superior in flavour, than any other variety grown. Price, per bushel, 8*s.*, with the usual discount to the trade.

EARLY COLCHESTER.—A round variety, of superior quality, as early as the Early Frame, but a more prolific cropper, and of first-rate flavour. Price 6*s.* per bushel, with the usual discount to the trade.

Post-office orders are expected from unknown correspondents.

Bristol Gardens, Kemp-town; and 55, Marine Parade, Brighton.

SEEDLING SCOTCH FIRS.—The Subscribers have to offer to the trade a few hundred thousand 2-year SEEDLING SCOTCH FIRS, the produce of seed from Strathspey natural Forests. Price moderate.

HOWDEN, Brothers, Muirtown Nurseries, Inverness.—Feb. 22.

*** There is direct steam communication from Inverness to London, Glasgow, and Edinburgh.

WANTED, a place as a MARKET GARDEN, from 2 to 6 acres, not more than 10 miles from town; one with a Greenhouse on the Premises would be preferred.—Direct, stating all particulars, to J. H., Ivy-cottage, Harrow Weald, Stanmore.

THE REGISTERED ROSE GIRDLE-LABEL.—A Rose Grower (having found, by long experience, the present method of securing Standard Plants by wires of any kind, and cord or rope of whatever description, to be highly injurious to the bark, and otherwise detrimental to the growth of the plant, besides being clumsy, troublesome, and ineffectual), has the pleasure of submitting to Amateurs and the Public a new Invention which he has recently introduced, for the more efficient and neat fastening of Roses and other Standard Plants to their Stakes.

The REGISTERED ROSE GIRDLE now offered to the Public, besides the advantage of being well adapted for a neat and permanent Label to the plant which it secures, will greatly diminish the time and trouble attending the mode hitherto pursued in the tying of Standard Plants to their stakes. The utility of this invention, while combining two important objects (till now very imperfectly attained), cannot but entitle it, from those who wish a neat and permanent Label as well as an efficient fastener for their Standard Plants, to an additional claim. It is neat as it is efficacious, and as cheap as it is useful.

EXTRACT FROM "FLORIST'S DIRECTORY."—"We consider it one of the most useful articles that have been invented—it forms a permanent Label as well as an unerring fastening, and we shall be disappointed if it is not generally used for Roses and Standard Cytisuses. We shall adopt it for everything we can apply it to in the garden."

Sold, wholesale and retail, by WILLIAM HAMILTON, Seedsman and Florist, 156, Cheapside, London; and to be had of all Nursery and Seedsmen. Price 1*s.* 6*d.* per dozen.

BRITISH QUEEN POTATO.—A new and superior variety, as early as the SHAW, and quality of the REGENT, coming in a month before that kind. The grower says:—"I planted them last year close by a good stock of Shaws; they were quite as early, and, when each were full grown, the BRITISH QUEEN were worth considerably more money, being much like a Regent, and ready nearly a month before it. My salesman considers them preferable to any Potato he ever saw. They grow short haulm and in a cluster, and will admit of being planted closer together than most sorts."

To be had only of NOTTING and SONS, Seedsmen, 46, Cheapside, London, at 9*s.* per bushel; where may be had every approved kind of Agricultural, Horticultural, and Floricultural Seeds.

TO BE LET, with immediate possession, in the flourishing market town of Reading, within a short distance of the Market-place, close to the Reading and Reigate Railway Station, and also within 10 minutes' walk of the Station of the Great Western Railway, a SMALL NURSERY GROUND, with Seed-shop and Cottage attached, and three Greenhouses.—For particulars, apply to F. J. BLANDY, Esq., Solicitor, Reading, Berks.

FARM IN HAMPSHIRE.

TO LET, a Good STOCK FARM, of about 484 acres, of which 24 acres are Water Meadow, 55 acres dry Pasture, and the remainder Arable. The Poor Rates are very low, and the Tithe amounts to about 4*s.* 6*d.* per acre. The Farm adjoins the Great London Road, and is four miles from the Andover Road Station. No applications will be received unless accompanied with satisfactory references.—For particulars, apply to Mr. HUGH RAYNBIRD, Laverstoke, Andover Road, Hants.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90*l.*; 21 feet long by 13 feet wide, 50*l.*; 12½ feet long by 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Herrmann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine comb unnecessary.

Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle. N.B. Each bottle of the genuine article has the words ROWLANDS' MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton-garden, London; and by Chemists and Perfumers.

WHERE TO BUY A DRESSING-CASE.—In no article perhaps is caution more necessary than in the purchase of a Dressing-Case, for in none are the meretricious arts of the unprincipled manufacturer more frequently displayed. MECHI, 4, Leadenhall-street, near Gracechurch-street, has long enjoyed the reputation of producing a Dressing-Case in the most finished and faultless manner. Those who purchase one of him will be sure of having thoroughly-seasoned and well-prepared wood or leather, with the fittings of first-rate quality. The prices range from 1*l.* to 100*l.* Thus the man of fortune and he of moderate means may alike be suited, while the traveller will find the Mechian Dressing-Case especially adapted to his necessities.—4, LEADENHALL-STREET.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 2, 1851.

# THE GARDENERS' CHRONICLE

AND

# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 9—1851.] SATURDAY, MARCH 1. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Beans, culture of | 138 c | Market gardening | 133 b |
| Begonias | 134 a | Orange trees, substitute for | 131 c |
| Birds, to keep from fruit | 134 a | Pasture, permanent | 130 b |
| Botanical Society | 135 a | Peat charcoal, Irish | 132 b |
| Brewing | 139 c | Pit, forcing | 134 c |
| Broccoli | 132 c | Plants, sale of | 153 c |
| Cacti | 134 b | Plant buying | 134 c |
| Calendar, Horticultural | 135 c | Pusey (Mr.), on farming | 140 b |
| — Agricultural | 140 c | Rain | 131 b |
| Calves, slipping | 140 b | Rhubarb, to cook | 135 a |
| Charcoal, peat | 132 b | Season, mildness of | 135 b |
| Dendrobium nobile | 135 b | Seed, to prepare | 140 a |
| Foals, slipping | 140 b | Sheep, in East Kent | 140 a |
| Garden, bricklayer's | 135 b | Soils absorptive powers of | 157 c |
| Gardening, market | 133 c | Timber trees | 134 c |
| Grafting | 133 c | Torenia asiatica | 134 a |
| Insect, what is a? | 132 c | Trade memoranda | 133 c |
| Land, Tullian culture of | 138 a | Trees, in "Crystal Palace" | 133 c |
| Laurels, standard | 131 c | — timber | 134 c |
| Linnean Society | 135 a | Villa gardening | 132 c |
| Linné's Nemesis Divina | 135 a | Weather, the | 140 c |
| Mangold Wurzel | 140 a | Wireworm | 134 b |



TO "PHARO."—"A Lover of a Gay Flower Garden," and all others, can have their wants supplied, and queries answered, on application to JOHN MAY, who begs to refer all enquirers to his advertisements of the 11th, 18th, and 25th of January last, and also to the 15th and 22d of February, and to-day's *Chronicle*.—Address to W. MAY, the Hope Nuseries, Leeming-lane, Bedale, Yorkshire.

TO CUCUMBER AND MELON GROWERS.

WILLIAM HUSSEY begs to offer the under-named sorts of CUCUMBERS and MELONS in packets, containing Six Seeds, at the following prices:—

| | | |
|---|---|---|
| Cucumbers, Walker's Rambler, black spine | 0*s.* | 8*d.* |
| ,, Mackie's improved black spine | 0 | 6 |
| Melons, Bromham-hall, green flesh | 1 | 0 |
| ,, Emperor, green flesh | 0 | 8 |
| ,, Duncan's, green flesh, improved | 0 | 6 |
| ,, Pine Apple | 0 | 8 |
| ,, Beechwood, green flesh | 0 | 8 |

The above can be had, post free, on receipt of Post-office order, or the amount in penny stamps.

Horticultural Gardens, Norwich, March 1.

CUCUMBER "PHENOMENA," AND "BROMHAM HALL" MELON.

EDWARD TILEY wishes to inform the Nobility, Clergy, Gentry, and Growers in general, that he has still a Stock of good sound Seeds of the above superb CUCUMBER and MELON, and other varieties, as advertised by him in the *Gardeners' Chronicle*, Feb. 22d, 1851. Cucumber Phenomena, 2*s.* 6*d.* per packet; Bromham Hall Melon, 1*s.* 6*d.* ditto; Fleming's Trentham Hybrid Melon, 1*s.* ditto; and about 20 other good varieties of Cucumbers and Melons, at the prices mentioned in the former Advertisement.

Any quantity will be sent postage free on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 12, Abbey Churchyard, Bath.

WILLIAM JACKSON AND CO., beg to offer the following at the reduced prices annexed; all are well grown and well rooted, and are sure to please, their goods having given great satisfaction throughout the kingdom for many years.

| | *s.* | *d.* |
|---|---|---|
| Trained FRUIT TREES, for Walls and Espaliers, correct to name, and of the most useful and approved sorts. | | |
| Apples, 3 and 4 years trained, dwarfs, each ... 1*s.* 6*d.* to | 2 | 6 |
| Pears, Plums, Peaches, and Nectarines, 2 and 3 years trained, handsome plants, each ... ... 2*s.* to | 3 | 0 |
| Dwarf Roses, in 50 named first-rate show vars., 100 for | 40 | 0 |
| Herbaceous Plants, in 50 named showy useful kinds, 100 for ... ... ... ... ... ... ... ... | 30 | 0 |
| Fine proved Hollyhocks, large plants, to flower in the autumn, per 100 ... ... ... ... ... ... | 35 | 0 |
| Fine prize Hollyhocks, for exhibition, per doz. ... ... | 21 | 0 |
| Ornamental flowering and evergreen shrubs, including some of the handsomest American plants, 100 for ... | 42 | 0 |

The rarest and most ornamental Coniferæ, all from Seed, handsome plants in pots. Prices and sizes on application.

The Nurseries, Scruton, Bedale, Yorkshire, March 1.

THE NEW EARLY SWEET-KERNELLED KAISHA APRICOT.

MESSRS. VEITCH AND SON feel much confidence in bringing into public notice the above valuable new Syrian Apricot, sent to this country by the late JOHN BARKER, Esq., of Suedia, the gentleman by whom the valuable Stanwick Nectarine was introduced. Having obtained the entire stock, they are now prepared to send out a limited number of healthy Young Trees at the following prices, and solicit the favour of early orders, which ensure good trees and meet with immediate attention.

Healthy one year old Trees ... 21*s.* 0*d.*
,, one year trained ... 31 6
,, two year trained ... 42 0
} package included.

A few two year old trained, chiefly half-standards and standards ... ... ... ... 42*s.* each.

One plant over to the Trade when three are taken.

In offering the above valuable new early Apricot for sale, Messrs. VEITCH and SON beg to refer to the description given by Dr. LINDLEY, in the "Journal of the London Horticultural Society," for July, 1849, from which the following extract is given:

"The fruit semi-transparent, roundish, 5½ inches in circumference, skin slightly downy, pale citron-coloured where shaded, tinged and marked with red next the sun. Flesh tender, juicy, of a clear citron colour, parting freely from the stone, *sugary and delicious*, like well refined lump sugar combined with Apricot flavour; stone *small*, roundish; kernel sweet like a nut. A valuable early variety for the dessert, and probably excellent for preserving; if it be employed for this purpose, the transparency of its flesh will exhibit a new feature amongst Apricot preserves. Some of the fruits have ripened as early as the 12th of July, and on the *same wall* at the time were Moorpark and Turkey Apricots perfectly green and hard."

Exeter, March 1.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, has the following desirable Plants, very cheap, now ready to send out (those marked thus * J. C. can supply in large quantities to the trade very liberally), viz.:—CALCEOLARIAS, fine show varieties, at 2*s.* 6*d.* each; Madame Merric, Emperor, Supreme, Masterpiece, Standishii, Mr. Wilcke, and Beauty Supreme, Ditto Bedding varieties, Kentish Hero *, and Intermedia, at 6*s.* per doz.; Cattell's Hero, 3*s.* 6*d.*

Tigridia pavonia *, 2*s.* per doz.; Ditto, Conchiflora *, 2*s.* 6*d.* per doz.; Delphinium Barlowii *, and grandiflora maximum, 8*s.* per doz.; Œnothera macrocarpa *, 8*s* per doz.; Anemone pavonia, fine scarlet, now coming into flower, 6*s.* per doz.; Gladiolus Brenchliensis, 2*s.* each; Ditto, Gandavensis, 6*s.* per doz.; Geranium "Flower of the Day," very strong, 10*s.* 6*d.* each; also a fine stock of clean healthy plants of most of the leading sorts of Florist, Fancy, Scarlet, Pink, and other Geraniums, Dwarf Rose Geant des Batailles, on their own roots, or budded, at the purchaser's option, 2*s.* each, or 18*s.* per doz.; Cedars of Lebanon, from 5 to 6 feet, in large pots, 10*s.* 6*d.* to 15*s.* each.—N.B. No Goods sent from this Establishment to unknown correspondents without a remittance or reference.

AMERICAN PLANTS.

C. LODDIGES AND SONS, in consequence of part of their Nursery being given up for building, are enabled to offer for cash—

Finest Ghent Azaleas, strong bushy plants named, and being well set with buds, are peculiarly adapted for forcing, 18*s.* per doz.

Azalea pontica, large, 12*s.* per doz.
Andromeda floribunda, 3 to 4 feet across, 10*s.* each.
Vacciniums, 30 species, 12*s.* per doz.
Andromeda Ditto 24*s.* per doz.

Post-office Orders to be made payable at Hackney, near London.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

DICKSONS AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, Leith Walk, beg to call the attention of Landed Proprietors and others to their very extensive stock of FOREST TREES. Their collection of Fruit Trees is also very extensive, comprising all the most approved varieties lately introduced. Catalogues of Greenhouse Plants, Calceolarias, Pansies, &c., are in course of publication.

Seed Warehouse, 1, Waterloo-place, Edinburgh, March 1.

ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS by special appointment to the SOUTH DEVON AGRICULTURAL ASSOCIATION, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded *one thousand bushels*; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS *is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, and Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. KEMP, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2*l.* Carriage Free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

NEW AND CHOICE FLOWER SEEDS, GERMAN STOCKS, GERMAN ASTERS, &c.

J. C. WHEELER AND SON, NURSERYMEN and SEEDSMEN, by Official Appointment, to the Gloucestershire Agricultural Association, 99, Northgate-street, Gloucester, have selected, out of a large collection of Flower Seeds, 20 of the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. Each variety is distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these 20 varieties, care has been taken to exclude all which are shy-bloomers, or have an insignificant appearance; so that the collection will comprise only those which are really showy and handsome, and which, it is believed, would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb.—The 20 Packets are neatly packed up in one paper, and will be sent free by post, to any part of the Kingdom, for 5*s.*

SUPERIOR GARDEN SEEDS, CARRIAGE FREE.
(All of home growth.)

KITCHEN-GARDEN SEEDS, including all the New Sorts yet introduced, as advertised in previous Numbers of the *Gardeners' Chronicle*; and FLOWER SEEDS as under:—

The best sorts of imported Asters, Zinnias, Stocks, Larkspurs, Marigolds, Phloxes, &c., in complete collections for a large garden ... ... ... ... £1 1 0
Ditto, in smaller quantities ... ... ... ... ... 0 10 6
Ditto, for a small garden ... ... ... ... ... 0 7 6

Instructions for Cultivation will accompany the Flower Seeds.

JOHN SUTTON and SONS, Reading, Berks.

HUGH LOW AND CO. have to offer fine large Tubers of the under-named Tropæolums:—

| | | | |
|---|---|---|---|
| Azureum ... ... | 5*s.* 0*d.* | Edule ... ... | 7*s.* 6*d.* |
| Brachyseras ... | 1 6 | Tricolorum ... | 1 6 |

Prices to the Trade on application.—Clapton Nursery, London.

SEEDLING LARCHES.

WILLIAM WOOD AND SON having on hand a very extensive stock of the above in fine condition, beg to offer them as under.

One year seedling Larch, at 1*s.* 3*d.*, 1*s.* 6*d.*, and 1*s.* 9*d.* per 1000.
Two year ditto, 3*s.* to 3*s.* 6*d.* per 1000.
One year seedling Alder, 3*s.* 6*d.* per 1000.
One year seedling Ash, 2*s.* 6*d.* per 1000.
Two year ditto, 3*s* 6*d.* per 1000.
One year seedling Birch, 2*s.* per 1000.

TRANSPLANTED.

Larch, 12 to 15 inches, 7*s.* 6*d.* per 1000.
Scotch Fir, 1 to 2 feet, 12*s.* 6*d.* per 1000.
Birch, 3 to 4 feet, 30*s.* per 1000.
Do., 4 to 5 feet, 35*s.* per 1000.
Thorns at reduced prices.

With every other kind of Forest Trees equally cheap.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam, 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.

Woking Nursery, March 1.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants:

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.

CRYPTOMERIA JAPONICA SEEDLINGS.

2 years ... ... ... ... 18*s.* per doz., or 105*s.* per 100.
3 years ... ... ... ... 30*s.* ,, 210*s.* ,,
1 foot 6 inches to 2 feet 6 inches high, 60*s.* per dozen.
2 feet 6 inches to 3 feet 6 inches high, 90*s.* ,,
3 feet 6 inches to 4 feet 6 inches high, 126*s.* ,,
And larger plants in proportion.

The whole of the above, with the exception of the two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10*s.* 6*d.* to 21*s.*

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS, (North of China.)

6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 21*s.* each.

These plants are from the open border—robust specimens fit for immediate planting.

15 ins. to 24 ins., 31*s.* 6*d* each; 24 ins. to 30 ins., 42*s.* each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.
15 to 24 inches, 21*s.* each; 2 to 3 feet, 31*s.* 6*d.*

CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet ... ... 1*s.* 6*d.* to 2*s.* 0*d.* each.
2 feet to 3 feet ... ... ... ,, 2*s.* 6*d.* ,,
3 feet to 4 feet ... ... ... 3*s.* 6*d.* ,, 5*s.* 0*d.* ,,

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.
Flowering plants ... ... ... 3*s.* 6*d.* ,,

This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s.* each.

QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Rugæ. warfs, 5*s.*; Standards, 10*s.* 6*d.* each.

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 6 inches ... ... 2*s.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet 6 inches ... 3*s.* 6*d.* to 5*s.* ,,
3 to 4 feet ... ... ... ... 7*s* 6*d.* to 10*s.* 6*d.* ,,

Larger in proportion.

# EXHIBITIONS AT THE GARDEN

OF THE

# HORTICULTURAL SOCIETY OF LONDON,

FOR THE YEAR 1851.

## THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS:

MAY 3, JUNE 7, AND JULY 19.

## SCHEDULE OF THE PRIZES.

## FLOWERS.

*(Pots are to be measured inside, one inch below the rim.)*

### Division I.—IN WHICH NURSERYMEN AND PRIVATE GROWERS EXHIBIT INDEPENDENTLY OF EACH OTHER.

1. Pelargoniums; in collections of 12 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS.
   N.B. The collections in which the varieties are most distinct *will have the preference.*
2. Pelargoniums; in collections of 9 varieties, in 11-inch pots. SG—CE—LS.
   N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.
3. Fancy Pelargoniums; in sixes, in 8-inch pots. CE—LS—SK.
4. Roses, in pots; in collections of 12 distinct varieties, in 13-inch pots. GB—SG—CE. *(In May and June only.)*
   N.B. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.
5. Yellow Roses, best six varieties. SK—SB—C. *(In June only.)*
   N.B. To be really yellow; pale-cream colours are inadmissible.
6. Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE.
   N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next number, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.
7. Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS.
8. Carnations, in collections of 12 distinct varieties, in 11-inch pots. CE—LS—SK. *(In July only.)*
9. Picotees, in collections of 12 distinct varieties. CE—LS—SK. *(In July only.)*
10. Pinks; in collections of 12 distinct varieties. SK—SB—C. *(In June only.)*
    N.B. Carnations, Picotees, and Pinks can only be shown as perfect plants grown in pots. Cut flowers in boxes will no longer be received.
11. Calceolarias, in twelves; in 11-inch pots. LS—SK—SB.
    N.B. No medals are to be awarded unless the plants are in very high health and extremely well grown. *(In May and June only.)*

### Division II.—IN WHICH NURSERYMEN ALONE CAN SHOW.

12. Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

### Division III.—IN WHICH ALL PERSONS ARE ADMITTED TO EQUAL COMPETITION.

13. Single specimens of very superior cultivation, excluding everything which can be shown singly in other numbers, and plants not in flower. CE—LS—SK
14. Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB.
    N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove and Greenhouse plants. Only three species or varieties of the same genus can be allowed in this and the following number.
15. Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG.
16. Stove or Greenhouse plants; in collections of 10 plants. GB—SG—CE.
    N.B. Only two species or varieties of the same genus can be allowed in this number.
17. Stove or Greenhouse plants; in collections of 6 plants. SG—CE—LS.
    N.B. Not more than one species or variety of the same genus can be allowed in this number. No one can show in more than one of the classes of Stove and Greenhouse plants.
18. Greenhouse Azaleas in 12 distinct varieties. GB—SG—CE.
19. Greenhouse Azaleas; in 12 of the newer kinds, in 8-inch pots. SG—CE—LS.
20. Greenhouse Azaleas; in 6 distinct varieties. SG—CE—LS.
    N.B. No one can show in more than one class of Azaleas.
21. Indian Rhododendrons, and their hybrids; in 12 distinct varieties. GB—SG—CE. *(In May only.)*
22. Cape Heaths; in sixes, grown in 8-inch pots. CE—LS—SK.
23. Exotic Orchids; in collections of 20 species of superior cultivation. LG—GK—GB.
24. Exotic Orchids; in collections of 10 species of superior cultivation. GB—SG—CE.
25. Exotic Orchids; in collections of six species. SG—CE—LS.
    N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.
26. Exotic Orchids; single specimens displaying *very* superior cultivation. SK—SB—C.
    N.B. No duplicate Medals can be here awarded.
27. Fuchsias; in threes, of three distinct colours. LS—SK—SB *(In July only.)*
28. Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK.
    N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.
29. Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*
30. Tall Cacti; six distinct varieties in flower. SG—CE—LS.
31. Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK. *(In July only.)*
    N.B. No one who exhibits in this number can also compete in the following.
32. Roses, exhibited as in No. 31, and in 25 varieties. LS—SK—SB. *(In June and July only.)*
    N.B. Private growers only can exhibit here. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.
33. Helichrysums. CE—LS—SK.
34. Calosanths; in sixes. LS—SK—SB. *(In July only.)*
35. Statices; in collections of six species. CE—LS—SK.
36. Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB. *(In July only.)*
37. New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and garden cross-breds, such as Gloxinias and the like. SG—CE—LS.
    N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.
38. Epacrises; in sixes. CE—LS—SK *(In May only.)*
39. Newly introduced or extremely rare ornamental plants in flower, not introduced by the Society. SG—CE—LS.
    N.B. These Medals will be awarded by the Society's officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this number. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season,* nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.
40. Miscellaneous subjects, exclusive of Ferns. SK—SB—C.
    N.B. Exhibitors under No. 40 will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded from this number.
41. Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C.
    N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.
42. Pansies; in twelves, in 8-inch pots. SK—SB—C.
43. Alpines; in twelves. SK—SB—C.
44. Cinerarias; in sixes, in 8-inch pots. SK—SB—C. *(In May only.)*
    N.B. Prizes will only be given to extremely fine specimens.
45. Seedling Florists' Flowers.
    A tent will be provided for the exhibition of these; but no medals will be awarded, *nor will they be entered.* The exhibitors will themselves mark their seedlings in their own way. The Society declines to express any opinion upon the merits of seedlings.

## FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in **O** and **P**. No person can take more than one award in each Letter, except in **B, D, I, L, O, P.**

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

**A** Collections of Fruit. GK—GB—SG *in May.* GB—SG—CE *in June.* SG—CE—LS *in July.*
N.B. No person receiving a prize for a collection, can also receive a prize for any separate exhibition of fruit.

**B** Pine Apples, in single specimens:—
1. Queens. LS—SK—SB.
2. Enviles, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB.
3. Providences. LS—SK—SB.

**C** Grapes in pots; three specimens to be shown. CE—LS—SK.

**D** Grapes; in three bunches for private growers, and six bunches for Market Gardeners:
1. Black Hamburgh. LS—SK—SB.
2. Black Prince, or West's St. Peters. LS—SK—SB.
3. White Muscadines, or Sweetwaters. LS—SK—SB.
4. Muscats. LS—SK—SB.
5. Frontignans, or other sorts, distinct from the foregoing. LS—SK—SB.

**E** Peaches, in sixes. SK—SB—C.

**F** Nectarines, in sixes. SK—SB—C.

**G** Apples and Pears of the previous year. SB—C.

**H** Figs, in sixes. SB—C.

**I** Cherries, in dishes of 1lb. each:
1. Black. SB—C. 2 White. SB—C.

**K** Strawberries, in pots; six pots to be shown. SK—SB—C.
N.B. They must have grown in the pots in which they are shown.

**L** Strawberries, one dish each:
1. British Queen, and similar kinds. SB—C.
2. Keens' Seedling, and similar kinds. SB—C.
3. Other kinds. SB—C.

**M** Oranges, Citrons, &c., in pots; no one to show more than one pot. LS—SK—SB.
N.B. This class of Fruits is excluded if gathered.

**N** Melons, one specimen each, for the best flavoured. SK—SB—C.

**O** New varieties of any of the preceding kinds of fruit.

**P** Other kinds of fruit of peculiar excellence and value.
N.B The medals under this and the preceding letter will be given at the discretion of the Society's officers.

## PRIVILEGE OF FELLOWS.

Each Fellow of the Society has free personal admission to these Exhibitions without a Ticket. He may also personally introduce a Friend with an "Admission Ticket," at half-past Twelve, at Gate No. 4, in the Duke of Devonshire's Road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an "Admission Ticket" to which his signature is subscribed.

## ADMISSION OF VISITORS.

The Garden will be opened, on each day, to the Public, at TWO o'clock, under the following Regulations:—

All Fellows of the Society will be admitted without tickets, from TWO till Six o'clock, on signing their names in a book at the entrance.

Visitors can be admitted only by tickets, to be obtained by the personal or written orders of Fellows of the Society. The Council trust that Fellows of the Society will not give orders for tickets to persons with whom they are unacquainted.—N.B. *The presentation of the visiting card of a Fellow of the Society cannot be regarded as an authority to receive tickets.*

All Fellows who shall apply, on or before SATURDAY, the FIFTH of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of tickets not exceeding FORTY-EIGHT; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the* FIFTH *of April, during which they may claim them.* AFTER THAT PERIOD ALL THE *3s. 6d.* TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

After the FIFTH of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of *Five Shillings* each ticket.

Each ticket will be available for the admission of one Visitor, after TWO o'clock, to either of the Three Exhibitions, at the option of the Visitor.

All applications for tickets must be made at the Society's Office, 21, Regent-street.

NO TICKETS WILL BE ISSUED IN REGENT-STREET ON THE DAYS OF EXHIBITION. On those days two Offices, near the Garden Gates, will be opened at ONE o'clock for the issue of tickets at *7s. 6d.* each; but still under the regulations above stated.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1*l.* per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

RARE AND BEAUTIFUL COLUMBINE.—The Subscribers have for Sale strong Roots of AQUILEGIA GLANDULOSA, sent free by post at *2s. 6d.* per pair, or *9s.* per dozen, and Seeds at *1s.* per packet, or for stamps of that value. Respecting this beautiful flower, Dr. LINDLEY, in the *Gardeners' Chronicle*, says, "This plant is perhaps the handsomest hardy perennial in cultivation;" and having described it he adds, "No description that we have formerly given of it has done justice to its exquisite appearance." The trade supplied at the wholesale rate.

JOHN GRIGOR and Co., Nurseries, Forres, N.B.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK invites attention to the fact that there is a regular and steady demand for SLATE TUBS for Orange Trees, Camellias, and Ornamental Plants, their superiority over all others being proved by this fact, and their extensive use in the Royal Gardens, Kew.

E. B. will be glad to forward a printed description in answer to all applications.

All articles in Slate manufactured by E. B. may be seen extensively in use at Worton Cottage, on application to the gardener, Sundays excepted.

TO NURSERYMEN.

WANTED, the Price per 1000 of Common Ivy, Hypericum calycinum, Periwinkle, Berberis aquifolium, or similar plants, that will cover ground rapidly.

Apply by letter, post paid, to J. M'H., at the Office of this Paper.

TO POTATO AND CUCUMBER GROWERS.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the Public that he is now ready to send out his Seedling FIFTY-FOLD KIDNEY POTATO, which has been proved and highly recommended by Dr. Lindley, Messrs. Beck and Henderson, Hurst and M'Mullen, and many others. Price 4s. per peck.

London Agent: Hurst and M'Mullen, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER successfully for three years, can with confidence recommend it to the Public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1s. each.

SEEDLING SCOTCH FIRS.—The Subscribers have to offer to the trade a few hundred thousand 2-year SEEDLING SCOTCH FIRS, the produce of seed from Strathspey natural Forests. Price moderate.

HOWDEN, Brothers, Muirtown Nurseries, Inverness.—March 1.

*** There is direct steam communication from Inverness to London, Glasgow, and Edinburgh.

BEAUTIFUL, USEFUL, AND CHEAP!
WARRANTED TO PLEASE.

The following COLLECTIONS of SEEDS and PLANTS are deserving especial notice, and are important to all who have a Garden.

No. 1.—100 varieties of HERBACEOUS PLANT SEEDS, hardy PERENNIALS, comprising the most select and beautiful sorts from our unrivalled Collection—never before offered—purchaser's selection, free by post, 1*l.* 5*s.*

No. 2.—50 varieties fine do., purchaser's selection, 15*s.*

No. 3.—25 do do., 8*s.*

A list containing height, colour, and time of flowering, with much other useful information relative to their culture, may be had on application.

ANNUAL FLOWER SEEDS—post free.

No. 4.—100 vars. purchaser's selection, from list containing the newest and showiest sorts of hardy, half-hardy, and tender Annuals, 18*s.*

No. 5.—50 vars., purchaser's selection, 10*s.*

No. 6.—25 do. do., 8*s.*

Or we shall be happy to make selections for purchasers of the quantities at the above prices. The Annuals will be contained in Ayres and Moore's descriptive cultural labels.

The following are WARRANTED GENUINE, and are very superior:

HOLLYHOCK, from a most superb Collection of named double flowers, per packet, 1*s.*

CINERARIA, from the newest and best show flowers of 1850 per packet, 1*s.* 6*d.*

CALCEOLARIA, do. do., splendid, per packet, 2*s.* 6*d.*

PANSY, do. do. do., per packet, 1*s.*

PETUNIA, do. do. do., per packet, 1*s.*

N.B.—The above five unique lots may be had separate, or if required will be included in Collection No. 1. They have all been collected from our own plants and purchasers may rely with confidence on their quality.

GREENHOUSE PLANTS.

ERICAS, 50 fine healthy plants, most of them large enough to bloom the coming season, and all ready for growing into specimens. Purchaser's selection from list, in 50 superb varieties, for 3*l.* 10*s.*; or per doz., 21*s.*

ERICAS, 50 finest vars. as above; large plants, own selection, for 2*l.* 10*s.*; or 15*s.* per doz. In the above Collections will be found all the leading sorts of the day, selected with the greatest care for beauty and display.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 superior varieties, purchaser's selection, comprising the handsomest species and varieties of all the leading kinds, for 3*l.* 10*s.*, or 21*s.* per dozen.

50 varieties as above, own selection, 2*l.* 10*s.*, or 15*s.* per doz.

CHINESE AZALEAS.—20 fine varieties, purchaser's selection, for 25*s.*, or 13*s* per doz.

20 do. do., own selection, for 21*s.*, or 15*s.* per doz.

ROSES.—50 splendid sorts Standards, own selection, per 100, 5*l.*; or 18*s.* per doz.

100 fine varieties, Dwarfs, in 100 sorts, 2*l.* 10*s.*; or 9*s.* per oz., own selection.

CALCEOLARIAS.—Fine healthy, established Plants from the most eminent growers, per doz., 3*s.*, own selection, of best sorts. When the selection is left to ourselves purchasers are desired to furnish lists of such plants, seeds, &c., as are already in their collections, that duplicates of any article may not be sent, every wish will be strictly complied with.

HOLLYHOCKS, No. 1, fine double named kinds, all shades of colour, 9*s.* per doz., or 2*l.* 10*s.* per 100. HOLLYHOCKS, No. 2, for border display, very good, 6*s.* per doz., or 1*l.* 10*s.* per 100. These are selected out of some hundreds of seedlings, and may be confidently relied on.

HERBACEOUS PLANTS.—Purchaser's selection, from List, per 100, 3*l.* 3*s.*

W. MAY's selection, extra fine, No. 1, 2*l.* 2*s.* per 100;
" " really good, No. 2, 1*l.* 10*s.* "

Having an immense stock they can be furnished at these low prices. The collection extends over 700 species and varieties selected from the choicest stocks in the country (regardless of expense) for display, and warranted second to none. To meet our customers in every way, we hope to be favoured with lists of such plants as are already in their collections, that duplicates of any articles may not be sent where the selections are left to ourselves.

FLOWERING SHRUBS AND ORNAMENTAL TREES.—The finest varieties, purchaser's selection, from the list, per 100, 3*l.* 3*s.*

W. MAY's selection, No. 1, extra fine, per 100, 2*l.* 2*s.*
" " No. 2, good kinds, " 1*l.* 5*s.*

This Nursery has long held high celebrity for possessing a most splendid stock of flowering shrubs, extending over upwards of 600 species and varieties of the choicest kinds. Some hundreds were selected by Mr. E. KEMP, for the Park at Birkenhead; and for correctness of naming, quality, and health, not excelled by any.

To gentlemen forming Arboretums, or making extensive Ornamental Shrubberies, this is an opportunity seldom offered.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or per 100, 10*s.*, fine healthy stuff; 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*—per 100, 15*s.*

GOOSEBERRIES, all the finest Lancashire show sorts, per 1000, 4*l.*, in 100 varieties, or 10*s.* per 100 in 50 varieties; the stock extends over 30,000; and is very fine and healthy.

CURRANTS.—White, Red, and Black, including Black Naples, per 100, 10*s.*, fine.

Catalogues may be obtained on application, and the fullest information will be given. Apply to JOHN MAY, to whom all Post-office orders must be made payable. Orders above 5*l.* carriage paid to London, or within 150 miles of the Nurseries. Address WILLIAM MAY, Hope Nurseries, Leeming-lane, Bedale, Yorkshire.

BECK'S SEEDLING PELARGONIUMS AND THE BEST OF OTHER RAISERS' VARIETIES. Fine plants, ready for shifting into large pots; twelve for two guineas, including carriage to London and the packing-case. This is the proper time for purchasers to procure them. Catalogues may be had on application to J. DOBSON, Wortoncottage, Isleworth, Middlesex. The stock was never finer, and purchasers may rely on the best selection being made for them, if they cannot choose for themselves.

HEATHS AND OTHER PLANTS FOR EXHIBITION.

WILLIAM JAMES EPPS begs to state that he has for sale the finest Stock of Young HEATHS and other Greenhouse and Stove Plants possible, which will make splendid specimens in a short time. The superior character of Plants sent out from this Establishment is justly admitted by all who have purchased. The magnificent specimens of Heaths, &c., exhibited by him last season at the Exhibitions at Chiswick and the Royal Botanic Gardens, London, where he received the highest awards, fully justify the foregoing remarks.

Strong bushy Plants can be had at the following low prices, exclusive of packing, carriage paid to London:

| | £ | s. | d. |
|---|---|---|---|
| 100 fine varieties of Heaths ... ... | 5 | 0 | 0 |
| 50 ditto ditto | 2 | 12 | 6 |
| 25 ditto ditto | 1 | 10 | 0 |
| 100, including all the finest varieties of ditto ... ... ... | 7 | 10 | 0 |
| 50 ditto ditto | 4 | 0 | 0 |
| 25 ditto ditto | 2 | 2 | 0 |

| | £ | s. | d. |
|---|---|---|---|
| 100 fine vars. of Stove and Greenhouse Plants ... ... | 5 | 0 | 0 |
| 50 ditto ditto | 2 | 12 | 6 |
| 25 ditto ditto | 1 | 10 | 0 |
| 100 newest and finest vars. of ditto ... | 7 | 10 | 0 |
| 50 ditto ditto | 4 | 0 | 0 |
| 25 ditto ditto | 2 | 2 | 0 |

All the new leading kinds of Geraniums and Cinerarias 12*s.* to 21*s.* per doz.

Catalogues of the above may be had on application.

Bower Nurseries, Maidstone.—March 1.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2*s.* 6*d.* per lb. Also, his superior dark-green Savoy, 1*s.* 6*d.* per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.

CLEMATIS TUBULOSA, FROM MONGOLIA.

HUGH LOW AND Co. having a considerable stock of the above-named beautiful free flowering, hardy, suffruticose plant, producing splendid masses of purple flowers during the autumn months, offer strong plants at 1*s.* 6*d.* each, or 12*s.* per dozen.

They also have for sale very fine, healthy bushy plants of CITRUS JAPONICUS, or as it is commonly called, OTAHEITE ORANGE. Wherever this plant is known, it is universally admired, on account of the facility with which it can be made to produce fruit in abundance in a very small state. Price 42*s.* per dozen.—Clapton Nursery, London.

LIBOCEDRUS CHILENSIS, Endlicher (THUJA CHILENSIS, Don).—A noble Evergreen Conifer, a native of the Andes of Chili and the southern provinces of Antucco and Valdivia, growing to the height of 65 to 80 feet. Sir Wm. Hooker says—

"*It is a tree of great beauty, and well worthy of being introduced into our gardens. There can be little doubt, from its native regions (inhabiting the same elevations on the mountains as the Araucaria imbricata), that it will thrive well in the open ground.*"

The following is an extract from a letter lately received from the well known botanical collector Mr. Bridges:—"In one of the late numbers of the *Gardeners' Chronicle* I see some doubts expressed relative to the Thuja Chilensis being hardy in England. It will, in my opinion, be perfectly so, judging from what I have seen of the plant in the province of Colchagua, south lat. 35°, which is its most northern limit. It is found near the snow, and where it freezes, I should say, quite as severely as it does in the vicinity of London. Where the tree grows alone it is very graceful, the lower boughs are even on the ground, and it elevates itself to a great height. The timber is esteemed by the natives for building purposes. I have myself seen it as far south as 42°, and I learn it is found in the vicinity of Cape Horn."

Fine healthy well-established one-year-old plants, from seed, in single pots, 7*s.* 6*d.* each, three for 21*s.*, or 4*l.* per dozen.

HUGH Low and Co., Clapton Nursery, London.

GERMAN FLOWER SEEDS.—Our Selections of the above showy Ornaments of the Flower Garden having for several years given general satisfaction, we hereby announce the arrival of our annual supply, selected by us in Erfurt from those personally known to us as the most select and careful growers. It includes the most distinct varieties of Stocks, Asters, Balsams, Larkspurs, Zinnias, Wallflowers, and Hollyhocks. They will be made up in 5*s.*, 10*s.*, 20*s.*, and 40*s.* packets, and each packet will contain part of the whole collection, if not otherwise ordered by the purchaser.

We have also a carefully selected assortment of all the leading and most approved varieties of Vegetable and Flower Seeds, which we offer at the current prices.

A Catalogue of General Nursery Stock stamped, free by post, may be had on application.

HUGH Low and Co., Clapton Nursery, London.

ORNAMENTAL PLANTING.

C. LODDIGES AND SONS are still supplying collections of ORNAMENTAL TREES at the same extraordinary low prices for cash in consequence of their Arboretum (the largest in Europe) being broken up.

Fine specimens, 5 to 10 feet, correctly named, of the following genera: Acer, Æsculus, Alnus, Betula, Cornus, Corylus, Cotoneaster, Cratægus, Cytisus, Fraxinus, Populus, Prunus, Pyrus, Ribes, Robinia, Salix Sorbus, Spiræa, Tilia, Ulmus, &c., at 4*s.* per dozen. A selection from the above, unnamed, well adapted for Park planting, 25*s.* per 100, or 10*l.* per 1000.

A COMPLETE ARBORETUM, containing upwards of 1200 distinct species, correctly named, can be supplied for 50*l.*

Post-office orders on Hackney.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42*s.* to 60*s.* |
| Extra superior selected Standards ... ... ... | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) ... | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

Rose Nippers, of various sizes, for pruning, 2*s.* 6*d.* to 4*s.* each. The Nippers are of an improved shape, being made so as to remove a shoot without bruising the part left; they are highly recommended as a useful addition to the implements of amateurs. Metallic Labels for pot Roses, 2*s.* per 100.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, &c., may be obtained gratis on application. It describes the colour of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections. He has many thousands of Rhododendron ponticum in sizes very suitable for planting immediately into Game Preserves, very healthy bushy stuff, price 5*l.*, 7*l.* 10*s.*, and 10*l.* per 1000.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway, and three miles from Blackwater, South-Eastern Railway.

NEW KITCHEN GARDEN SEEDS.—Warranted Excellent quality. Carriage Free! (See below.)

| | £ | s. | d. |
|---|---|---|---|
| No. 1. Complete collection of 20 quarts of the newest and most prolific Peas, with all other Seeds in proportion, for one year's supply ... | 2 | 10 | 0 |
| No. 2. Complete collection, in smaller quantities | 1 | 10 | 0 |
| No. 3. ditto ditto ditto | 1 | 0 | 0 |
| No. 4. ditto ditto ditto | 0 | 12 | 6 |

*A List of the kinds furnished in the above collections will be found in our* PRICE CURRENT AND GARDEN DIRECTORY, *which can still be had on application.—See* Gardeners' Chronicle, *Jan.* 4, 1851, *back page.*

*** All Seed Orders above 2*l.* delivered Free of Carriage to any Station on the Great Western, Bristol and Exeter or South Devon Railways; or to Cork, Dublin, or Belfast, by steamers.

Apply to WILLIAM E. RENDLE & Co.,
Seed Merchants Plymouth.

N.B.—All the New Vegetable and Flower Seeds advertised from time to time in this Paper can be obtained from us, at the regular current prices.

SEEDS FOR THE FARM, THE KITCHEN-GARDEN, AND THE FLOWER-GARDEN.

JAMES SALTER having tested the Growing Qualities of the Seeds he is now sending out, can with confidence warrant them to be as good, and as low in price, as at any respectable Seed Establishment in the Kingdom. All the most approved varieties of CUCUMBER and MELON, 1*s.* per packet. Flower Seeds forwarded (free) by post. Descriptive Lists, with instructions for sowing, sent on application.

N.B.—Just imported, a Fine Collection of CONTINENTAL FLOWER SEEDS; also, Fine Double ITALIAN TUBEROSES.

SEED ESTABLISHMENT, 2, New Bond-street, Bath.

THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s* per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, March 1.

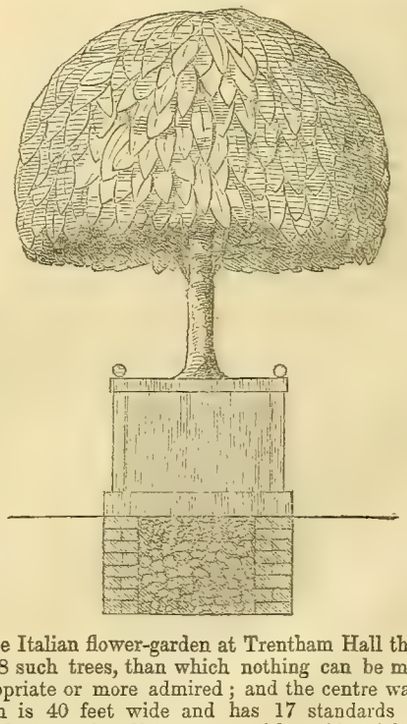
# The Gardeners' Chronicle.

*SATURDAY, MARCH* 1, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | March | 3 | Entomological | 8 P.M. |
| | | | Chemical | 8 P.M. |
| | | | Horticultural | 3 P.M. |
| TUESDAY, | — | 4 | Linnean | 8 P.M. |
| | | | Pathological | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| WEDNESDAY, | — | 5 | Society of Arts | 8 P.M. |
| | | | Zoological | 3 P.M. |
| THURSDAY, | — | 6 | Antiquarian | 8 P.M. |
| | | | Royal | 8 P.M. |
| | | | Botanical | 8 P.M. |
| FRIDAY, | — | 7 | Philological | 8 P.M. |
| | | | Royal Institution | 8 P.M. |
| | | | Royal Botanic | 3 P.M. |
| SATURDAY, | — | 8 | Medical (Anniversary) | 5 P.M. |

THE inquiry of a correspondent, signing himself "Pod," respecting some standard Portugal Laurels, in the gardens at Trentham, has reminded us of promises made to other inquirers on the same subject; and, in order to convey a clearer idea of the appearance of these trees, we herewith give a sketch of one of them, which is 8 feet high, with a straight stem 3½ feet in height, carrying a head 8 feet in diameter.



In the Italian flower-garden at Trentham Hall there are 68 such trees, than which nothing can be more appropriate or more admired; and the centre walk, which is 40 feet wide and has 17 standards arranged at regular distances on either side of it, is said to be the finest thing of the kind in the king-

dom. The time and attention required to bring these trees to perfection accounts for our correspondent being unable to procure them ready formed from the nurseries. We are aware that some of the nurserymen are endeavouring to obtain them; but, when we state that at least six years are requisite in preparing them for placing in their permanent situations, it will be seen that there is much need for the exercise of patience.

The trees at Trentham, when first bought (about 13 years ago), had their stems formed, but they had very small heads. They were then about 10 years old; but we believe that, by selecting Portugal Laurels already large bushes, and by judicious management, standards may be obtained fit for placing in their tubs in five or six years. We would therefore advise those who wish to possess standard Portugal Laurels to form them for themselves; and to commence a search forthwith among plantations of trees from 8 to 10 feet high, selecting those with the cleanest and straightest stems, upon which the beauty of the standards considerably depends. Portugal Laurels which have been drawn up when young, from having been planted thickly together or among faster-growing trees, are very commonly found with clean stems 3 feet, or even 4 feet, in height; but, when allowed plenty of room, they seldom grow with straight stems, but generally begin to branch out close to the ground. If any very strong branches have to be cut off the stem, they, like nearly all the Prunus family, are liable to gum, and ultimately the trees die; therefore, in selecting plants of considerable size for standards, choose those which have only slender shoots upon the part intended for the stem. These shoots should be cut in at first about half their length; in April, of the following year, they will again require shortening; and, about the same season of the third year, they may be entirely removed. The upper branches should be regulated, so as to cause the head to assume a globular form, by shortening in any strong shoots to within 3½ feet of the centre of the intended head, and keeping the young growths pinched in twice every summer afterwards, until the tree is formed, and in its tub.

In preparing a place for the tree the ground should be first dug out the full size of the stone plinth to a depth of 2 feet, and a communication should be made with the drain at the sides of the walks, in order to carry off superfluous moisture from the roots. A 9-inch brick pillar should then be built in each corner of the hole, to support the plinth, and the hole should be filled with rough draining material to within 6 inches of the general surface, finishing off with some that has been finely broken, the remaining space being filled up with appropriate soil. The plinth should be next set properly, and cramped well at the angles; and the slates forming the sides of the tub should fit together, resting in a rabbet in the plinth, and fasten with screws at the corners. The tubs, which are 3½ feet square, should have no bottoms, as the trees should be permitted to root into the surrounding soil, which they will readily do, and also into the gravel walks. The mouldings shown in our sketch upon the tub are of wood; these are merely ornamental, and may be made so as to move off and on easily, and thus afford greater facilities for painting.

Before the tree is removed from its situation in the plantation, it must be prepared, by being root pruned; and it is important that the roots should be *carefully* cut, so as to leave a square mass of soil and roots, measuring about 2½ feet across from side to side, with the stem exactly in the centre, thus allowing 6 inches on all sides between the ball and the tub for the fibres, and the admission of fresh mould. Some chopped turfy soil, of a rather strong and rich nature, mixed with rough leaf soil, should be used for this purpose; and a top-dressing of the same mixture should be applied about 3 inches deep. These are the first steps to be taken with trees intended to represent Orange trees, and the plants will now be in a fair way to form handsome standards in a short time, particularly if well attended to in watering with liquid manure, whenever they are the least dry; and the young growths carefully stopped when necessary throughout the summer. If the original situation of the tree was very sheltered, and its final position is much exposed, it is necessary to be careful lest the transition be too sudden. In taking up the plants for the tubs, every possible pains should be taken to preserve the newly formed fibres, by working the soil from among them until the ball has been reduced to the size mentioned above. Two stout leather straps made to buckle over strong poles answer best for carrying the trees, and letting them down into the tubs; as they are readily drawn out after the tree is placed in its proper position. In filling in the soil round the ball, let it be well worked in, and copiously watered. Abundance of water should be given during the first and second summers after the trees are placed in the tubs; by which time they will be establishing themselves in the soil outside, to which they have ready access between the pillars which support the plinth.

If the heads are not perfectly formed when the roots first enter the soil and gravel (for they will extend as far into the walk as they do into the soil under the turf), they will not be long in becoming so. Some of the plants at Trentham looked nearly dead the second year after planting, but by the end of the third year, when they had got their roots under the general surface, they were completely restored. After the trees are perfectly formed, cut them once a year in April; but they should be thinned as well as pruned, in order to allow air to penetrate the interior of the head, and to prevent the leaves from appearing thick, as in a hedge.

Should any of the trees exhibit a disposition to flower too abundantly, it is a sign of weakness; and every flower should be pinched off as early as possible in the spring. Give some liquid manure to such plants when requisite, and they will soon become vigorous again.

No Orange trees that we have ever seen are half so handsome as these standard Portugal Laurels are when in flower; and their beautiful dark green and healthy foliage adds a richness to the scene which no other tree but the Sweet Bay or Hodge's Broad-leaved Holly could possibly effect.

To form standards from young plants, it would be necessary to commence with two or three-year-old seedlings; planting them out in rich soil in a sheltered situation, and frequently pinching in all the side branches until the leading shoot has attained the desired height, when it should be stopped and the head encouraged to extend regularly. The roots should be cut round once in two years, in order to keep them near home, and to encourage numerous fibres, instead of long naked roots. Some fresh rich soil should be applied every time the roots are examined, and plenty of manure water given frequently in dry weather. In this manner most perfect specimens could be obtained; and we have no doubt that many other kinds of evergreens would readily yield to similar treatment.

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Gentlemen who propose to contribute to the forthcoming Number of the Journal of the Horticultural Society, are requested to favour the Vice-Secretary, 21, Regent-street, with their communications as soon as possible.

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## IRISH PEAT CHARCOAL.

I have tried the following plants in a mixture of this material and earth, with the following results:—

Geraniums.—These luxuriate in a mixture of 3 oz. of pure charcoal to 1 lb. of mould. In this material they make good saleable plants in half the usual time. Cuttings strike freely, either in the pure charcoal, or in the mixture.

Cucumbers.—For these I mixed the charred peat with mould during winter, and when the plants were put into it, they grew famously, and produced a heavy crop. The peat charcoal not only yields nutriment, but it affords good drainage. Cucumber tops strike root freely in pure charred peat.

Melons.—These succeeded in a mixture of charred peat and soil equally well with the Cucumbers; and if a large proportion of the soil consists of peat, I am of opinion that the flavour of the fruit will be improved, more especially in cloudy sunless seasons.

Strawberries grow admirably in charred peat mixed with soil, and in the case of pot plants they like a good handful of the pure peat placed in the bottoms of the pots. This latter has a tendency to prevent the ingress of worms, who do not appear to like its sharp edges.

Vines.—I have not yet tried the effect of charred peat on Vines'; but, judging from analogous cases, I am certain that it will prove of much advantage to them, not only as a fertiliser, but also as a means of keeping the borders porous, and thereby bringing better into action the other materials of which they may be composed. Under such an arrangement, finer flavoured fruit may be expected.

Potatoes.—I have found those manured with charred peat drier and more mealy than others to which farmyard manure was applied. In the former the foliage and stalks are more compact and firm, and when taken up the tubers were found to be clean skinned. In my case no wireworm came near them. Where Potatoes are pitted in long ridges, in the open ground, a layer of peat between them and the soil helps to keep them dry, and if this heap could be covered with it below the straw it would also be an advantage.

In Flower Gardens, peat charcoal will be found invaluable, inducing, as it does, quick growth; but not over luxuriant, and consequently plenty of blossoms. Under its influence the colours of the latter are also well "brought out."

For Sweetening Cesspools, and other unavoidable nuisances, peat charcoal finely pounded will be found universally useful. I say finely pounded, because the more intimately it is mixed with the material to be disinfected the greater will be its power. 1 lb. of charred peat takes 1½ lb. of water to saturate it, and hence, in addition to its sweetening qualities, it possesses great value in giving night-soil mixed with urine such a consistency as to render it capable of being transferred from our large cities, where it is not wanted, to our rural districts, where it is wanted, and where it will assist our at present distressed agriculturists to farm more highly. In this way "a plague may be turned into a profit."

The experiments mentioned above were all tried last year. This season I have found that if, instead of horse-dung being turned and sweetened for a month before it is used for forcing, it is allowed about a week's laying, and then put into a four-light pit and covered over with an inch of peat charcoal, all will be well. Under this system, by the time my Cucumber plants came up, all smell was removed. Again, gardeners are much annoyed in January and February by plants damping off. I dusted my Cucumber plants in the pans every morning with peat, and I did not lose six out of 600. I have, unfortunately, had to repeat the experiment, on account of my lad having overheated the flue and burned the whole of the interior of my pit. I have again about 600 plants dusted with peat, and they look as well as the first did. In filling the pots I made holes in the mould with the finger, and dropped the Cucumber plants in, in the manner in which Leeks are planted out of doors. I then filled up the hole with peat. Those treated in this way throve better than the others, and produced a more healthy dark green leaf. In short I consider charred peat in a Melon ground to be as necessary as a telegraph to a railroad. The one is incomplete without the other. The sort of charred peat that I use is the granulated kind. *James Cuthill, Camberwell.*

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## VILLA AND SUBURBAN GARDENING.

Suburban gardens are, of necessity, limited in extent, and surrounded by houses and high walls, which prevent a free circulation of air; vegetables produced in them are frequently but indifferent, as regards a crop; attenuated, and, of course, liable to numerous casualties. Winter crops in particular are often swept off by a moderate frost; and to no one kind of vegetable does this remark apply more truly than to Broccolies. How different, indeed, are even the same varieties, when cultivated in open fields, where a free circulation of air, and a full exposure to sunlight, perfectly elaborate their juices, rendering the plants sturdy, compact, and dwarf. What are known as low-growing kinds in the open fields, become standards in enclosed gardens; but, then, from the nature of the circumstances, this is unalterable, and must be put up with. Were a different system of planting adopted, however, much of the evil could be obviated. I should think that, if such a method of culture was introduced as that which market-gardeners in the northern districts pursue in regard to their Celery, it would answer. This consists in planting in beds having rows stretching across them, and the soil is thrown from the paths between the rows. If this operation was performed in the autumn, a double benefit would be the result. The plants would be firmly secured in their position, and the trenches on either side of the beds would keep them much drier; for such trenches would act as a ready drain to receive the heavy autumn and winter rains. Before the earthing took place, it would be advisable to remove all the under leaves which indicate any tendency to decay. This should be done cautiously; for if carried to an extreme, the wounds inflicted upon the stems would be liable to induce rot.

Where an unoccupied glass structure exists, such as a Grapery, a good winter supply of this vegetable may easily be obtained. A dozen or two of the plants may be taken up at a time, and laid in a little soil by the heels. They will soon thrust up their heads, and by pursuing this course, a constant supply may, with little trouble or expense, be maintained. An amateur of my acquaintance winters his Broccoli under his Pelargonium-stage, together with Rhubarb and Seakale, an asphalte covering being suspended a little way under the stage, to carry off the water that escapes from the plants. The asphalte is attached to a few laths, and a slight inclination is given to it. By this simple contrivance the vegetables cultivated beneath the stage are kept perfectly clean. In a mild winter, like the present, such schemes may not be necessary; but, in severe seasons, Broccoli is not so easily obtained. In regard to winter vegetables, we have much yet to learn from our Continental neighbours, who adopt various ingenious plans to secure them, of which we at present know but little. *Pharo.*

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## WHAT IS AN INSECT?

If we were to publish only a very few of the many queries which we receive, and which a slight knowledge of the first rudiments of zoology would solve, we should at once establish the proof of the necessity which exists for the occasional publication, in scientific journals like our own, of articles treating upon the first principles of natural science. To those who are acquainted with the routine of education on the Continent, and especially in Germany, where natural history, zoology, and botany are taught in all the burgher, or, as we should term them, grammar schools, it does seem something like a reproach to ourselves that there are many, otherwise well educated, persons who firmly believe that both a whale and a lobster are fishes, that a leech is a kind of insect, that the small house-fly is only the young of the blue-bottle-fly, that the dragon-fly

bears a most poisonous sting, that the departure of crickets from a house is as sure a sign of some foreboding evil as the ticking of the death-watch, and that it is the natural habit of the earwig to creep into the ears of sleeping persons, causing madness by penetrating the brain. We propose in the present, and a few subsequent articles, to offer to our readers a simple digest of the leading principles of Entomology as a science, which, from the every-day occurrence of its objects, and the great effects they produce upon the labours of the gardener, merit at least some portion of attention.

One of the commonest errors into which the ordinary inquirer falls, arises from the general notion that every small animal which is neither a bird, beast, nor fish, must be an insect. Such a notion is often imbibed from the manuals of natural history placed in the hands of children; from the greater interest attaching to the higher animals, the greater portion of such works are occupied with mammals, birds, and fishes, and all remaining kinds of animals are crammed into the smallest possible compass. Here, under the head of Insects, or Insects, &c., we find the lobster and the shrimp, the scorpion and the spider, the butterfly and the beetle, the leech and the worm, the snail and the oyster, the starfish and the polype, all classed together, and thus, without any definite idea as to what are the real characters of the classes to which these various animals belong, a general idea impresses itself on the mind that the name of Insect may be applied to them all.

But *what is an insect?* This is a question which can only be satisfactorily answered after a few preliminary remarks on the chief divisions into which the *invertebrated* animals, or animals without back-bones, are divisible.

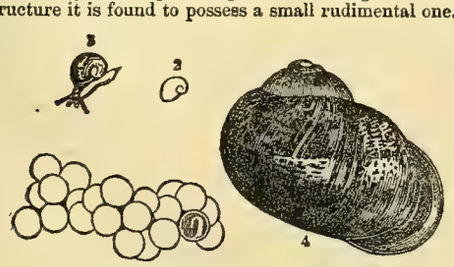
A first great division, or sub-kingdom of those animals which do not possess an internal vertebral column (or back-bone) is termed *Radiated,* and consists of great numbers of creatures for the most part resident in the ocean, or in fluids, which have the limbs or arms radiating from a centre. Many of these exhibit so fantastical a resemblance to flowers, that a poet thus writes of them:—

> "Seas have,
> As well as earth—Vines, Roses, Nettles, Melons,
> Mushrooms, Pinks, Gillyflowers, and many millions
> Of other plants, more rare, more strange than these—
> As very fishes living in the seas."

Here belong the sea-anemone, sea-urchin, starfishes of various kinds, Medusæ, coral plants, and the many strange sorts of zoophytes and polype—creatures, of whose nature, whether as animals or plants, doubts have been entertained by many eminent writers. Amongst the radiated animals have also been arranged by the first zoologists, the strange tribes of intestinal parasites, or Entozoa, such as the ascarides, tape-worms, &c., in all which the radiated character of the sub-kingdom is more or less obsolete; and a greater resemblance to the general notion of the type of insect-form is adopted, but which, from their internal structure, nervous system, and mode of development, are more properly referable to the sub-kingdom Radiated.

A second great division or sub-kingdom is termed *Articulated;* it comprises all those animals which have the body of a symmetrical form, composed of a series of rings or segments, and having a peculiar arrangement of the nervous system, consisting of a double thread running along the whole length of the body, united at certain distances by knots or ganglions, from each of which knots extend nerves, so that each may be likened to a separate brain; and hence the dissemination of nervous intelligence over the entire body, and the facility with which many of these animals pursue their functions after part of their bodies have been injured, or even cut off. We need hardly state that insects, spiders, crabs, leeches, and earthworms, are Articulated animals.

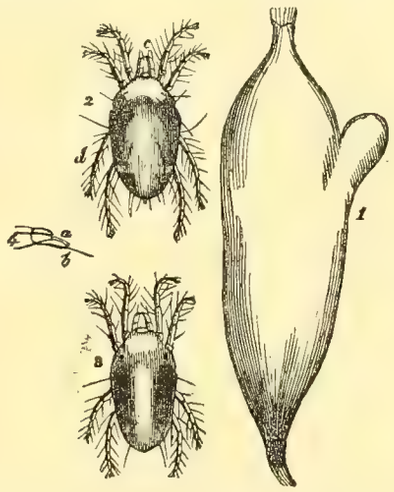
The third and last great division or sub-kingdom of Invertebrated Animals is termed the *Molluscs;* it consists of those soft-bodied animals which neither possess a radiated nor articulated body, but which are covered with a soft integument, are destitute of jointed legs, and have the nervous system unsymmetrical in its arrangement. The soft consistence of the body of most of these animals renders defence necessary, and this is effected by the formation of hard calcareous coverings of infinitely various forms, which are called shells, the materials for which are secreted by the animals themselves. The oyster and garden snail are the most familiar instances of this sub-kingdom, and closely allied to the latter is the slug, which is not furnished with an outer shelly covering, although on examining its internal structure it is found to possess a small rudimental one.




Eggs, young, and shell of garden snail.

On reviewing the characters of these three sub-kingdoms, we at once obtain a first answer to the query, What is an insect? namely, that an insect is an articulated animal with a symmetrically arranged knotted nervous system; and at the same time we have learned that the star-fish and the polype, the tape-worm and the ascarid, the snail and the oyster, are not articulated animals, and therefore cannot be insects.

But although the articulated structure of the body is a character exhibited by all insects at some period of their existence (generally, indeed, throughout all the stages of their lives), all articulated animals are not necessarily insects. Here, however, we must bear in mind the excellent observation of Messrs. Kirby and Spence, "There is no general rule without exceptions, and no character is so universal as to be distinctly exhibited by every member of a class or other natural group. Thus in the majority of the mites (Acarus, Linn.) the body is marked by no segments, and the only articulation, or incision, is in the legs, palpi, &c.; but as the exception does not make void the rule, so neither does the extenuation or absence of some primary character at its points of junction with others in some individuals annihilate the class or group." (Introd. to Entomology, vol. iii. p. 4, note *d.*)




The red-spider, or mite (Acarus telarius), male and female, with the mouth and web.

Strictly speaking, indeed, the term insect (that is, an animal cut into sections), is synonymous with Articulated or Annulated; but the Linnæan character of the class Insecta, "small many-footed animals, breathing by lateral spiracles, defended by a bony skin, and provided with moveable sensitive antennæ," excludes not only crabs and other shell-fish breathing by gills (which Linnæus introduced among insects), but also spiders, which have no antennæ, and all the Annelids (or earthworms, leeches, seaworms, &c.), which are equally articulated and furnished with a double knotted nervous system.

The distribution of the articulated animals will furnish us with a more extended reply to the query, "What is an Insect?" and will be the subject of our next article. *J. O. W.*

## MARKET GARDENING ROUND LONDON.

No. IX. Mushrooms.—These are much sought after in Covent Garden market, where their annual sale amounts to several thousand pottles, each pottle weighing a pound. Mushroom beds are made after the following manner:— As the fresh manure is brought home from the London stables, the short material is shaken out of it, and the long strawy part is kept for the purposes of covering as well as for forming the interior of ridges, for all Mushroom beds out of doors are made into ridges. The manure is not allowed to heat before it is put into the beds, if that can be prevented; for previously heated material does not produce such fine Mushrooms. The fresher the horse-dung is the longer will the crop last; and every gardener who makes up beds with unheated droppings, knows how superior they are to fermented manure. If this is properly attended to, it does not signify what kind of mould is used for surfacing the bed with. Market gardeners obtain enormous crops from ridges covered with common light well-enriched mould. When the interior temperature of the ridge gets down to 80°, it is spawned with pieces about 2 inches square, placed about a foot apart: the bed is then moulded over 2 inches thick, pressed with the feet, and afterwards beaten with the spade. It is then watered and beaten again with the spade, and smoothed down. The more the mould is pressed the finer the crop is, and the more solid the texture of the Mushroom. This and green or unheated manure constitute the two grand secrets in Mushroom growing. Mushroom beds made up in this way want but little watering, and when they are watered, it ought to be with liquid manure. The ridges are covered with straw and mats; such ridges as these are continually being made, and when well formed, they last from two to three months in good bearing. I believe I am correct in stating that there are about 10 acres of ground round London continually under Mushrooms, which are all wanted for the various metropolitan markets.

Mulching.—Summer covering, or mulching, with stable litter, is extensively practised by many of the first-rate market-gardeners, not only in the case of Strawberries, but also in that of plantations of Gooseberry and Currant trees, as well as in some orchards. This mulching not only keeps all fruit clean, but it has many other advantages; for instance, it maintains the surface of the earth in a moist state, thereby preserving all top fibres, and, in addition to keeping down weeds, when dug in, it enriches the ground. Unfortunately, if this covering or mulching was practised in private kitchen-gardens, it would be considered slovenly. Nevertheless, it is my opinion that, during summer, all crops ought to have a good mulching. This would greatly assist hungry gardens in which a necessary quantity of manure is not allowed. *James Cuthill, Camberwell.*

## GRAFTING.

No. IX. English Cleft Grafting: fig. 11. (*Greffe en fente dite à l'Anglaise.*) This mode is not generally employed, except for hard-wooded plants, with little sap, and small medullary sheath.

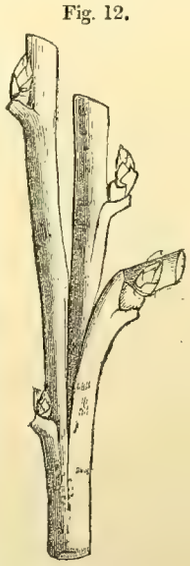
Fig. 11.



*Operation.*—Take a straight well-grown shoot, and cut it to the length of two or three eyes; cut the base with a long slope opposite the lower eye; make a longitudinal slit in the face of the slope, so as to form a tongue. Let a counterpart be made in a stock of the same size as the scion; introduce the tongues of each into the slits prepared for them, and thus unite the whole. A piece of paper tied round this graft will be sufficient for securing it.*

Cleft-grafting in the side of young Stems, Branches, and Shoots, of the same size as the Scion: Fig. 12. *Operation.*—Whatever may be the nature of the scion, its base should be cut in as lengthened a wedge-shape as circumstances will permit. The place intended for it in some analogous stock should be previously fixed upon, and always in the fork of a small ramification of the young stem, or in the axil of one of its leaves, or of an eye. This young stem should be cut back a little above the place intended for the insertion of the scion, always taking care that the small stump has one or two eyes left, or some small branchlets, half leaves, &c.

Fig. 12.



We make at the place selected for the operation in the stock a somewhat slanting cut, downwards, till it reach the medullary sheath, dividing it into two nearly equal parts, as may be seen by the figure. This cleft should be made by a single effort, and as quickly as possible, in order that the blade of the knife may not have time to deposit oxide of iron, which is always injurious to vegetation. The place being thus duly prepared for the reception of the scion, it is inserted; and it must be maintained in its position, and otherwise attended to according to the principles explained under the head of "General Observations."

This newly-invented mode may be substituted for all the others comprised in this group, and it possesses many advantages which cannot be obtained from them; for it is applicable to plants of which the branches and other younger productions are of the smallest possible dimensions. I have grafted by this proceeding some Heaths and Junipers, of which the parts worked were scarcely one-twenty-fifth of an inch in diameter.

The different species of Oaks, Beeches, Walnuts, and Chestnuts, &c., either in the solid or herbaceous state, generally take well by this mode of grafting. We can, moreover, easily comprehend the advantages which result from the small stump being reserved for the purpose of drawing the sap, which, forced to collect in it, descends along the bark, and powerfully contributes to the union of the adjoining parts. During the time that the graft is taking, the productions which are developed on the small stump should be pinched, or otherwise kept in check, in order to prevent them from producing a different effect from that for which they were intended; after the graft has fairly taken, the small stump should be gradually more and more reduced, till it entirely disappears. *Translated from the French of D'Albret.*

## TRADE MEMORANDA.

Can any one inform us who J. Bruce, of 17, Burlington-street, Liverpool, is? Perhaps some agricultural implement dealer may be able to answer the question.

## Home Correspondence.

*The large Elms in the "Crystal Palace."*—I have read, with attention, your observations upon the pro-

* In M. D'Albret's figure the tongues are represented much too long. Fig. 11, as here given, will convey a correct idea of the form which the respective parts should possess.

bable fate of these trees, in which the world seems to take so much interest. I believe with you that they will not suffer, if the conditions proposed by Mr. Paxton are fully carried out, more particularly that part of them which secures the access of air to the roots. Had the floor been of concrete, asphalte, or paving, my opinion is that the result would have been highly injurious, and probably fatal. In proof of the injury done by covering the earth in which the roots of trees are growing with such materials (without making some extraordinary provision for aeration), I may mention the following instance of mischievous results:—In the year 1849, I had occasion to concrete the surface of a border under a north wall, for the purpose of setting pots upon during the summer months, thus rendering it impervious to worms. Upon this wall, there were two fine healthy Morello Cherry trees growing, in a well-drained, porous border of fine sandy loam, and of course under all the conditions favourable to their healthy progress, excepting the one I have just mentioned. The following year, they began to decline in vigour, and this year they are wholly dead. I think you do wisely in pointing out to those who are in authority, that these trees, although safe themselves, are fraught with danger to the public. My own experience confirms your view of the treacherous nature of the branches of old Elms. Living in the midst of fine trees of the English Elm, I am a constant eye-witness to the sudden fall of a mighty limb, with a report like the discharge of artillery, and this in the most still and sultry weather, when scarcely a zephyr is breathing; while in the midst of the storms and desolation of winter the trees are rarely injured, unless the branches are loaded with snow. My conviction of the insecurity of large branches of Elm in the summer months is such, that I would not willingly stand under one, or cause a seat to be placed under it. Undoubtedly the increased leverage caused by the weight of foliage is one cause; but may it not be owing to the expansion by heat of the fluid matter which the tree contains, in some degree? May not the expansion of the vessels to a greater degree than usual weaken the tissue, and render it less capable of sustaining the superimposed weight? What say you? The question is of grave importance as far as the Crystal Palace is concerned. Should the dangerous trees be retained, however agreeable and inviting their shade may be, I would repeat the maxim of the old poet, "Nimium ne crede colori." I fully believe that casualties of this kind are in the proportion of three to one more in calm summer days than in stormy wintry ones. *Henry Bailey, Nuneham, Oxford.*

*To Keep Birds from Picking Fruit.*—As the season is coming on for the depredations of birds, I beg to report my experience of last year, when I saved my Currants and Gooseberries, by winding coloured worsted round and across my bushes; and my Cherries, by hanging up several pieces of tin with strong thread in the different trees, two pieces being hung near enough together to clash with the wind, which sound, with the bright reflection of the tin in the sun, certainly frightened them away, and I had my due share of fruit, which, the preceding year, I was obliged to relinquish to them. *H. M.*

*Begonias* (see p. 118).—I would advise your correspondent, "A. M.," to give his Begonia fuchsioides a moist atmosphere, and from 65° to 70° of heat by day, lowering the temperature at night. B. incarnata will do well in a conservatory, and it is by far the most showy of the genus. I have some plants now in bloom here, which have been in flower ever since the beginning of October, and they are likely to continue in bloom two months longer. I would prefer incarnata to fuchsioides for a cold conservatory. *W. Culverwell, Thorp Perrow.*

*Torenia asiatica.*—This Torenia may be grown in the following manner, so as to form a highly ornamental object. Take a cutting from a specimen that is free from insects in August. When it has struck root, pot it in a 3 inch pot in peat, loam, and silver sand; then place it in the hothouse under a hand-glass for three or four days, after which it should be hardened by degrees, by removing it to a shady part of the same house. Afterwards place it near the glass, and frequently stop it, in order to encourage it to make laterals. About the 1st of December it should be shifted into a pot a size larger than that which it occupied, using turfy peat, loam, and silver sand. In the beginning of April it should be potted for the last time into a 7-inch pot, in the same compost as before, to which a little manure has been added. After this, all stopping should be discontinued, and it should be placed where it will not become drawn up, by being too near other plants or too far from the light. In May it should be staked in the following manner: one upright stake 4 feet in length should occupy the centre, and four others 3 inches shorter should be placed at equal distances round it. Then four more 2½ feet long should stand a little nearer the rim of the pot, and eight more 3 inches shorter should be placed round these, so as to form an outer circle. The whole of the stakes should incline outwards, except the centre one. With regard to the disposition of the shoots, three of the strongest should be tied round the middle stake, and two to each of the other supports, except the two outer rows, to which the outside branches should be suspended in regular gradation, one below the other, observing that the longest shoots be trained towards the centre. If staked in this way, and a very liberal supply of water be given, so as to allow it to flag from May until August, occasionally watering it with liquid manure, and slightly shading it when the sun is powerful, it will have covered the stakes by the end of June; and, by the end of August, the branches will droop from all sides of the plant, covered with their beautiful blossoms, while the pot will scarcely be seen. *W. K., Knowsley-hall Gardens, Lancashire.*

*Cacti.*—"I manage these plants myself," remarked a gentleman to me in allusion to a nice little collection of Cacti, in which were representatives of most genera of that interesting tribe of plants. "They are my favourites, not perhaps from actual taste, but from circumstances. You see I am the greater part of my time buried beneath that murky atmosphere yonder," pointing towards London, for the garden in which we were was attached to a pretty villa some eight or ten miles distant from the metropolis, "and I could not afford the necessary attention to plants of delicate habits and constitutions. I find no difficulty in making them bloom profusely, and almost at any season of the year. The great secret—if secret it may be termed—lies in the proper application of water. A dry season and a moist one they must have—alternate periods of rest and growth are the great essentials to satisfactory culture. Here you see are Mammillarias, Epiphyllums, Cereuses, and Opuntias, all in excellent condition. At all seasons I find something in them to admire. Now it is the rich corollas of the Epiphyllums, then the serpent-like trailing of the Cereuses, and anon the grotesque forms of the Mammillarias or the Melo-cacti. In fact I love my plants. I have tended them so long with my own hands that I entertain a real affection for them, and—don't believe it a weakness—I always imagine they look brighter when I pay them my accustomed morning visit. I said the great secret was water. I believe it. Before I took their management into my own hands, death was for ever making merry amongst my pets. Rot, rot, rot. About every alternate week my man would meet me with a rueful visage and something like the following complaint:—'Another of them Cactuses is dead, Sir. He had'nt got no roots. The nurseryman you bought 'em on, Sir, cheated you; and as he had'nt had no roots, why, in course, the water rotted 'en.' In nine cases out of ten the water had 'rotted 'en,' beyond all cure. So, tired with constantly buying, and receiving no pleasure for my money, I determined to try what common sense would effect in their management. I had been reading a work on physical geography, and a page or two of the work detailed the natural conditions of the succulent plants found on the plains of tropical America and Africa, the home of so many of the Cactus tribe. I learned that the two seasons, the wet and the dry, were excessive. At one time the soil is scorched, and at the other flooded. Here Cacti flourish. Provided with a skin that will, to a great degree, resist evaporation, they struggle almost unhurt through the fiery ordeal, and when the periodical rains saturate the soil and moisten the atmosphere—for from the latter they imbibe a large portion of nourishment—thousands of flowers stud their grotesque forms. I followed as near as possible these conditions, and my success was perfect. When I water I flood the whole plant, not only the soil in which it grows, but its whole surface. This treatment, after a period of rest, induces immediate growth and blossom. After this I gradually permit the plant to sink again into repose, to be again brought into flower. A long period of rest is not necessary. We can outstrip Nature, divide one season into two, mimic the Sahara twice a year in the hothouse, and enjoy its beauties without any disagreeable addenda." *Alpha.*

*Rain.*—The following is an account of that which fell at Thurston, near Dunbar, N. B., during the last five years. Thurston is 280 feet above the sea, from which it is distant two miles. Latitude, 55.57 N.; Longitude, 2.29 W.

| | 1846. | 1847. | 1848. | 1849. | 1850. |
|---|---|---|---|---|---|
| | In. | In. | In. | In. | In. |
| January ... ... | 2.0 | 2.2 | 0.8 | 3.0 | 0.7 |
| February ... ... | 1.3 | 1.4 | 6.0 | 0.5 | 3.2 |
| March ... ... ... | 2.1 | 2.0 | 2.6 | 0.3 | 0.8 |
| April ... ... ... | 1.4 | 1.0 | 1.5 | 4.0 | 2.9 |
| May ... ... ... | 2.0 | 2.8 | 2.3 | 3.3 | 4.1 |
| June ... ... ... | 4.0 | 1.3 | 5.4 | 3.2 | 1.2 |
| July ... ... ... | 3.9 | 2.0 | 1.3 | 2.4 | 1.0 |
| August ... ... ... | 3.7 | 1.1 | 1.4 | 2.3 | 0.8 |
| September ... ... | 7.0 | 1.2 | 1.2 | 2.1 | 2.3 |
| October ... ... ... | 3.6 | 2.3 | 5.1 | 2.3 | 1.3 |
| November ... ... | 0.7 | 1.7 | 2.4 | 1.5 | 2.2 |
| December ... ... | 0.8 | 4.2 | 2.2 | 1.4 | 0.3 |
| Annual amounts | 32.5 | 23.2 | 32.2 | 28.3 | 20.8 |

*Destruction of the Wireworm.*—I beg to furnish you with a copy of the following plan for destroying wireworm. I know nothing of its merits myself; but I intend trying it for Carnations. Some years ago, Mr. Charnock was complaining, in the presence of Sir Wm. Cooke, of the injury his field crops had sustained from wireworm, and lamenting that there was no way of destroying them. Sir Wm. then informed him that he had heard of and adopted a plan which had proved perfectly effective, and which Mr. C. subsequently followed with the same success. In lieu of the ordinary top-dressing of Rape dust, apply to the land, and mix well with the soil, 5 cwt. per acre of Rape cake, crushed into lumps about the size of half inch ground bones, and the result will be that the wireworms will congregate on these lumps of cake, devouring them with such avidity as to become glutted, and perish either from repletion or from the peculiar properties of the Rape. Rape dust will not answer the purpose, because it presents no surface upon which the worms can fix themselves, and no substance into which they can eat their way. Perceiving that a satisfactory result was being attained in the first field to which the cake was applied, Mr. Charnock took up and examined many lumps, and found them full of the defunct and expiring enemy. The practice was of course followed wherever the worm prevailed, until in a year or two the land was perfectly freed, and that without any recurrence of the evil. Mr. Charnock also, on several occasions since, has had recourse to the same means for preserving his Carnations, which are very liable to be attacked, and he has invariably witnessed the same satisfactory results. The plan is so simple, an apparently so efficacious, that I need not dilate farther upon it than to remind those who may be disposed to try it, that whilst they may hope to destroy the worm, they will certainly add a rich fertiliser to their ground at a reasonable cost. It should perhaps be mentioned that the land to which Mr. C. applied the remedy, is a dry soil on the magnesian limestone, and I believe Sir W. Cooke's was the same, but I see no reason for supposing that it would not be equally efficacious on other soils. *E. F. K.*

*Timber Trees.*—A short time ago your columns contained a few suggestions from a correspondent, who signed himself "A Young Gardener." After lamenting (not without good reason) the little attention that is paid to rearing timber for naval purposes, and expressing sundry dismal apprehensions on the subject; in the height of his enthusiasm for "British Oak," he advises that farmers shall in future be compelled to rear some clumps of trees in their fields. Now, with all deference, I would suggest that so long as the country possesses capital, if we do not get home-grown timber we shall always be plentifully supplied from other sources. I almost fancy I hear the "British farmer" exclaiming, in his present depressed state, "save us from our friends." I cannot help thinking the suggestion an unhappy one, more especially at this crisis, when the utmost must be made of every inch of ground. On arable land, groups of trees are most objectionable; they both do mischief to the cultivator, and are ruinously treated, by having their roots cut off, and by careless lopping. A few trees in parks or Grass grounds are desirable, but a war of extermination has set in against them upon well cultivated arable fields. Let our woods be better managed; but let our fields be unincumbered by the large fences and trees which are so frequently seen. *Henry Bailey, Nuneham.*

*A Plan for forcing Asparagus, Seakale, Rhubarb, Chicory, &c.*—Nothing is more easy than to have the above all the winter, and that too by the most simple means. All that is wanted is a good supply of roots. Asparagus three years old; Seakale grown from pieces of roots planted in the spring, make fine plants in one summer; Rhubarb also makes fine plants, by dividing a large root into as many pieces as there are eyes to the crown, planting it out in January. Chicory sown in May or the 1st of June, makes fine roots for forcing, and a brick pit divided into two lights or more, according to the size of the family, will be necessary for the purpose. The pit should be heated with hot water in a three-inch pipe, which should run along within a foot of the glass, descending at the further end, and returning along the bottom in the centre of the pit to the boiler. The length of the pit should not be less than 16 lights, which will afford the means of producing a regular rotation of the above vegetables. Its depth need not be more than 4 feet in the back, and 2 feet 6 inches in the front; and for convenience in getting at the centre it should be 6 feet broad. When the above vegetables are out of season the pit would be suitable for the production of Cucumbers, Melons, and many other things. It may, perhaps, be needless to mention that Seakale must be kept quite dark; as must also Chicory; and Rhubarb is more tender if too much light is not allowed to reach it. It would be well if no other heating power were employed than hot-water. Dung is good in the shape of manure, and cannot be dispensed with; but men's time would be more usefully employed in keeping other parts of a garden in good order than in turning over and over dung with a view to keep up heat, and at the same time destroying its best qualities. Such a pit as the above need never be idle, and might with much propriety be called the "industrious pit." *James Cuthill, Camberwell.*

*Plant buying.*—If I purchase a horse, I either rely on my own eyesight and judgment, or I require a warranty; and if I do not require a warranty, if the horse turn out lame or sick, it is all "on my own account and risk" as the merchants say, unless indeed a gross case of fraud or concealment can be proved against the horse-jockey, and then perhaps (at a cost far greater generally than the first loss) I may obtain redress. If I buy a plant or tree of a nurseryman, I am bound to judge from the general appearance of the plant, of its general health, and no guarantee is required; if it die, it is the fortune of war: however, to prevent disappointment, the wisest course in dealing with all tradesmen, is to adopt the political economists, maxim, and pay "for verification of quality," by going to the tradesman of the best character, paying, as is usual, some 25 per cent. extra. I have, however, understood that many nurserymen, on learning that a plant sent out has died, where there is no reason to suppose it has perished from ill-treatment, replace it—but I believe there is no such general rule in the trade; indeed this would be obviously inconvenient, and would lead to dispute if it were. I have been led to the consideration of this point by having my advice sought by one under the following circumstances. My friend purchased of a gentleman collector through his gardener by a list, without inspection, a set of plants, and when de-

livered to his own gardener they appeared to be in fair condition; but it turned out that the greater part of these plants, though carefully treated, died; none however of the others in the original collection partook of this mortality, and the fair inference was that the plants sold had either been unduly exposed, or were not in a good state when sold; in fact, like some of the chinamen's plants they had no roots, &c. I advised, that unless actual fraud or misrepresentation could be proved, my friend had no remedy, beyond ineffectual remonstrances. I added a recommendation that for the future my friend should make his purchases perhaps at a greater cost, but where he had the character of the tradesman to rely on. The point however, being new, have any of your correspondents any information on the subject to give? *D.*

*Rhubarb.*—In comparing the relative qualities of forced and natural grown Rhubarb, Mr. Cuthill observes that the former is so delicate and tender, that it is not necessary (as with the latter) to remove the outside or stringy portion of the stalk. Now, as observed on a former occasion, the best and proper way to prepare this vegetable for a tart, is simply to wipe and wash it, and then chop it into pieces, of at least an inch in length. By no means remove the outer portion of the stalk, for this deprives it of the beautiful scarlet colour, which growers take so much pains to obtain, by covering each plant with litter. At this moment, within a few minutes' walk, are acres of Rhubarb so covered, not with a view to get it earlier, but solely to obtain the rich colouring which renders it saleable, and which the skinning process would remove. Your correspondent, Mr. M'Elroy, of Stamford Hill, very justly praises Mitchell's Prince Albert; it is certainly the best early Rhubarb, it was pulled from the open and unprotected ground on this spot, and sent to market on the 17th instant. Its principal defect seems to be want of continuous vigour, and in this respect it is immeasurably inferior to Myatt's Linnæus and Victoria. The Albert comes remarkably well the first season after planting, and continues tolerably good for three or four years; it then becomes puny, throwing up a quantity of small stalks. It should, I believe, be renewed every four or five years. Not so the Victoria or Linnæus—give them plenty of dressings, and they will stand for 12 years, without showing any signs of exhaustion. I have known them produce astonishing crops after having been planted 18 years. *G. T. W.*

## Societies.

Linnean, *Feb.* 18.—W. Yarrell, Esq., in the chair. Mr. Thomas Moore, of Chelsea, was elected a fellow. A letter was read from Benjamin Clarke, Esq., to the President of the Society, on the subject of the position of the carpels in some genera of plants, that had not been determined in his recent paper read before the Society. A paper was read, communicated by the President, giving an account of the *Aquilaria Agallachum*, of Roxburgh, the tree which produces the wood known by the name of Aloe's wood, Eagle wood, &c., by Messrs. Dicks and Colebroke. The tree which produces this precious wood grows in various parts of Hindostan, and also in Cochin China. In order to produce the wood the trees are cut down, and only those portions are cut out which contain the scent, for which the wood is so highly prized. The wood is powdered, and used for burning as incense in the temples of China, as also for religious purposes in this country. When distilled, it yields an essential oil, which goes under the name of Uttur or Uggur. The portions of wood which contain the oil are heavier than water, and are known by their sinking in it. The paper was illustrated by an original drawing of the plant, by Dr. Roxburgh.

Botanical, of London, *Feb.* 7.—A. Henfrey, Esq., in the chair. The following donations were announced: British plants, from Mr. Fenton, J. A. Hort, Mr. B. D. Wardall, and Mr. J. Lynam: also, the "Royal Agricultural Society's Journal," and the "Pharmaceutical Society's Journal," from their respective societies; and the "Magazine of Botany," from the Editors.—Read the continuation of Mr. Daniel Stocks's Paper "On the Botany of Bungay, Suffolk."

## Notices of Books.

*Carl von Linné's Anteckningar öfver Nemesis Divina. Inljudning's-Skrift til morgondagens Philosophiska Promotion från Upsala Universitets Stiftelse den Sjuttiondesjunde af tillförordnad Promotor Elias Fries.* Upsala Kongl. Ac. 1848. Fol. pp. 20.

Though this academical paper has no connection either with gardening or botany, we think that it may not be uninteresting to notice it, as an account of a recently discovered treatise of the celebrated Swedish botanist, to whom science is so much indebted, though for many years the extravagant deference paid by his admirers to everything that came from his pen, had rather a tendency to obscure that real and peculiar merit which has caused him to be considered legitimately as the father of botany.

The pamphlet before us then, the possession of which we owe to the kindness of the author, is simply a lecture delivered at the University of Upsal to the young men graduating there on the day before taking their degrees, a kind of commencement sermon, in fact—without a text, the subject taken up by the lecturer, the well-known Elias Fries, being a work of Linné's, called "Nemesis Divina," which was never published during his lifetime, nor indeed intended for publication, being merely, as it appears, a collection of instances of the retributive justice of Providence, designed for the instruction of his son. Such a collection Linnæus was known to have made, but the papers were entirely lost sight of, and only discovered a few years since by Dr. Acrell, a son of Professor Herell, who had the disposal of the manuscripts left by the younger Linnæus. It has now been deposited in the public library at Upsal, by Dr. Calmer.

The work, if a judgment may be formed from the extracts here given, does not seem to be of any great value, except so far as it may throw light on the character and mind of Linnæus. The lecturer commences with some remarks on retributive justice as displayed in the Providence of God, and alludes to the peculiarity of Linnæus' ideas thereon, the peculiarity consisting apparently in his having imagined a kind of regular system, upon which the workings of Providence develope themselves. That such a system exists who can doubt, but, embracing as it does relations infinitely too extended and complicated for man's research, it must lie far beyond the sphere of his understanding. After this opening, an account is given of the work itself and its discovery, together with some extracts, first of sundry moral maxims and then of some practical examples of providential retribution, chiefly instances occurring under the writer's own eye, and lastly, of some curious ghost stories, omens, warnings, &c., to which he appears to have attached considerable credit.

The pamphlet concludes with some good advice to the students, and good wishes for themselves, their friends, the university, and finally for mankind in general.

## Garden Memoranda.

Carhead, Yorkshire, the Seat of W. B. Wainman, Esq.—A fine specimen of the noble Dendrobe (Dendrobium nobile) is now in bloom at this place. It measures fully 5 feet in diameter, is graceful and elegant in shape, and promises to remain in beauty for some time yet to come. There also exists here a remarkable instance of the mildness of the season, in the shape of two Rhododendrons, which are now in full bloom in the open ground, where no protection whatever has been afforded them. The kinds are varieties of Nobleanum, from both of which beautiful trusses have been obtained for drawing-room decoration, from the first week in January up to the present time. *S.*

## Miscellaneous.

*The Bricklayer's Garden.*—But now for the "garden." The ground at the back of the house was levelled and enclosed by walls, in the shape of the house, as nearly as possible. It would have been a square by choice, but circumstances have caused it to be somewhat too long. In short, it is of that well-known outline, called a "strip," being, of all others, the most difficult to deal with for the picturesque or graceful laying out of a garden, even when the dimensions are of some extent; but when small, needing the greatest exercise of ingenuity to prevent ugliness and awkwardness, or the hardest lines that can offend the eye. But what is the gardener about? He has got a bricklayer's line, and is drawing it along parallel with the wall, for the formation of a long border, thus repeating the hard outline; and instead of carrying the eye away from it, or endeavouring to conceal it, he is literally forcing it into the most riveting attention. Gardener did I call him? —no, it is one of the bricklayers, assisted by a hodsman. Several cart-loads of mould are now brought into the garden, and shot down, and to work they go in "laying-out." Each strip of ground is separated from that belonging to the next house by a long wall. The wall of the first one is only half finished, and a bricklayer is at work upon the other side, while the gardening bricklayer on this side is laying down the mould for a border. Numerous pieces of broken and chopped off brick, with corresponding dabs of mortar, consequently fall over and are mixed up with the border mould, which the bricklayer on this side carefully buries, and then proceeds to make the border very fine on the surface. A path is next measured off by the bricklayer's line, parallel with the border, thus again repeating the sharp outline of the wall; and this path is covered with brick-rubbish and stones, and well trodden and beaten down, so that it would be no small trouble to change the form and direction of the path, if any tenant had the taste and moral courage to attempt it. By way of making this laying out perfect of its kind, a long central bed is now marked off, and covered with mould, parallel with the previous lines, and being an exact counterpart of the outline of the entire strip, only some sizes less. The gardening bricklayer manages his spade very assiduously, and neatly too, considering it is not his proper tool,—in fact, from his general handiness, I conjecture him to be an Irishman; and also, I must add, from his want of forethought: for this morning I perceive he is about to finish the top row of the wall bricks, to do which he stands on this side, thus trampling down all his fine surface of border-mould as he goes, besides strewing it all over with a second fall of fragments of brick and mortar. By night he has done. Next morning he is there again; not with his trowel, but his spade, carefully burying all the bits of brick and rubbish, and once more working the surface of the mould very fine to look at. Morning after morning have I watched these various operations during three months, and now, finally, I behold, a long row of new square brick-boxes, set upon damp clay—drained on an old and very bad system, and having in other respects, the most inconvenient arrangement—a succession of dust-holes close under the kitchen-windows, and in a line beneath the back dining-room window—and I am presented with a succession of some eighteen straight walls, enclosing straight strips of garden, each lined out by the bricklayer, in parallel lines, as a bricklayer naturally would do, and each one being the exact counterpart of the other. The whole set are made neat and sightly for letting, by the use of the broom to sweep out all manner of rubbish from the houses,—and the spade to bury it carefully in the garden beds and borders. Some poor woman, a bankrupt laundress, a servant-of-all-work out of place, or a charwoman with her family, is put in to "mind the house," and open the door to those who are looking out for a house. The rubbish and refuse she and her family will accumulate during her stay, perhaps of one month, perhaps of six, must not be thrown into the dust-hole, for that has to be kept tidy for letting; she therefore gets a man, or her husband when he comes home in the evening, to bury it "somewhere" in the garden. The extreme ends of these garden walls are met by the ends of other garden walls on the opposite side. I turn my gaze on them very often while sitting at my dressing-table, but gain little consolation from what I see. On this side, the outline of the garden walls is nearly the same as those I have been describing, and the laying out displays no better taste. Several of these strips are laid out in three round puddings of beds, one after the other, with the largest round pudding in the middle. Others have great beds made like aces of diamonds; three of them have made hard-favoured sets of little beds, like furrows cut across the whole width of the garden, with narrow walks between, like ruled copy books; and two of them have fairly given up the matter, and allowed the whole strip to lie like the fallow-field of rank grass, from which they were originally separated by the builder's walls. *Dickens' Household Words.*

*Sale of Plants.*—One hundred and sixteen lots of Camellias, together with a few Rhododendrons, Andromedas, and Araucarias, were sold the other day by Mr. Stevens. They fetched from 5*s.* to 30*s.* per lot, with the exception of one or two Double White Camellias, which fetched more than 2*l.* The latter invariably realized higher prices than any of the other varieties, though all of them were good sorts.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

The generality of plants are now about to commence their new growth, and with the gradually increasing light, will require a proportionate increase of heat and moisture. Encourage their healthy development, by sufficient room, and by placing them as near the glass as circumstances will allow. Admit air enough at all times to ensure a circulation, and as much more as the weather renders necessary; but carefully avoid cold currents during the growing season. In repotting, be guided more by the state of the roots than by the tops, as the latter, when exposed to a disproportionate heat, are liable to start into growth without the roots progressing in a corresponding ratio; and they are, therefore, not so well prepared to take advantage of the new soil, as those whose roots are in motion. These last may be repotted with safety; and when the plants are passing through your hands for this purpose, let everything needful in the way of pruning, tying, or freeing them from insects be done, that the work may progress in the most economical manner. Before any plant is potted, the state of the soil should be carefully examined; and if the ball is dry, it should be soaked in a pail of water, not too cold; after which it should stand long enough to allow the superfluous moisture to drain away. A sowing should now be made of Thunbergias, Ipomœas, and other stove annuals, required for the decoration of the conservatory in summer and autumn; the two first, with others of a similar character, should be sown in 3-inch pots, two seeds in each, and the rest in ordinary seed-pans; the whole should be plunged in a hotbed, and shaded till they make their appearance above-ground. As the majority of plant-houses are better adapted for small and moderate-sized plants than for large ones, and as the same description of plants is most generally useful for placing in ornamental china vases in the drawing-room, &c., it is important that at this season a young stock be raised of all the choice things that are ornamental and interesting as small plants. And this matter should be particularly attended to with reference to such as will be useful next winter; of a few of these we subjoin a list. Euphorbia fulgens, Gesnera elongata, Manettia bicolor, Begonia nitida and B. insignis, Abutilon venosum, Poinsettias, Polygalas, Francisceas, Tremandra verticillata, and T. Hugelii, &c. Such well-known favourites as Chrysanthemums, Cinerarias, Primulas, &c., will suggest themselves to every one. All plants of which it is desirable to increase the stock should be propagated as soon as they make shoots fit for the purpose; these should be watched, and slipped off with a heel when 2 or 3 inches long, as they will strike with great facility in that stage if placed in a temperature resembling as nearly as possible that in which they have been grown; taking care to keep them close, to shade them from sunshine, and to guard them against damp, or excessive dryness. If the young plants of the various kinds of Ipomœa are liberally treated

with pot room and a strong moist heat, they will be useful in the autumn for placing in the conservatory. Few things are more attractive when well managed; and as they may be preserved in any warm shed during winter they are not much trouble.

FORCING DEPARTMENT.

Perhaps nothing is more worthy of notice in this department, at the present period, than that one of the greatest errors committed by the forcing gardener is to allow too few leaves and too much fruit to remain upon Vines. It is impossible to lay down any rule for others to go by in this matter; but we would rather reduce the number of bunches upon a Vine of moderate vigour to six, and have these fine, than have twelve indifferent bunches, if the Vine was likely to be injured by them. An old but healthy Vine will bring a great number of Grapes to the best perfection, while a young Vine will be injured for years, by being allowed to carry one or two bunches too many. In the first place, the spurs should be limited to a number which will allow of their leaves being freely exposed to the influence of the sun and air; and of this number not more than half should be allowed to produce fruit this year, nor should any one of these be allowed to mature more than one bunch. The remaining half of the spurs ought to be confined to making wood for next year's crop. Weak spurs, which are not to bear fruit this season, should be encouraged, by allowing them to produce six or eight leaves before they are stopped; this practice will be particularly useful with Vines, which are weakly from excessive cropping last year, or from other causes. To expose the foliage as much as possible to the action of light, the spur shoots should be tied at right angles with the main rods. Any plants in pots, under the Vines, will by this be much shaded; but if your Grapes be the chief object, other considerations must not be allowed to interfere with whatever is necessary for their perfect development. PEACHES.—In disbudding Peach trees, it is desirable to retain as many of the side or even foreright shoots as will fill with leaves any part of the tree which would otherwise be bare; all the young shoots so retained, with the exception of those required for laying in, should be stopped above the third or fourth leaf, as in spurring. By this means, the appearance of the trees will be improved, and a supply of fruit-bearing spurs secured, where there would otherwise be nothing but naked wood; and if at any time it be found necessary, they will be available for the production of young wood, to fill up where old, worn out branches have been removed. We have generally found the largest and finest fruit in our Peach houses upon these spurs; and sometimes on those situated very near the main stem of the tree. Constant attention must be paid to tying in the young shoots nearly parallel with those from which they proceed, as, on early attention to this matter, much of the beauty of fan-trained fruit trees depends. Strawberries are very liable to be attacked by the green fly, for destroying which, recourse must be had to smoking or fumigating. If any pot plants are growing in the forcing houses, they should be closely watched, for in nine cases out of ten they bring mischief along with them. It is very necessary to nip all these plagues in the bud, as by so doing much labour is saved, and the disappointment consequent upon the unchecked ravages of insects is avoided.

FLOWER-GARDEN AND SHRUBBERIES.

If the soil of any of the beds or clumps for masses has not been prepared for its summer occupants, it should be immediately done. Where a certain kind of plant suits a particular situation, there is no impropriety in placing it there every year; but in such cases it is advisable to remove the whole, or a large portion of the old soil, once in two or three years, and to fill up with new material. For some plants, however, as scarlet Pelargoniums, this practice would be injurious, unless the soil were very poor, for they generally grow too luxuriantly. Our situation being moist, and the growth of Geraniums, consequently, being often too vigorous, we beat or tread the bed firmly, and then in planting, lay the plants on the hardened surface, and cover them with light soil. By this means, our plants are entirely covered with flowers. Pay every attention to the propagation of the more excellent bedding plants, preferring those which combine a compact habit, and hardy constitution, with a decided colour. Dwarf, compact, blue beds will be best furnished by the different varieties which have originated from Lobelia gracilis; and which may be increased with great facility by cuttings or seeds. The latter should be sown immediately in boxes or pans, and pricked out into a frame of soil, as soon as they are large enough to handle. The best variety is the L. Erinus compacta grandiflora, than which a more beautiful plant for dwarf dense masses of a deep blue, or violet colour, does not exist. For a taller bed of pale blue, the Ageratum Mexicanum might answer; and for a purple bed the purple variety of Branching Larkspur is a most desirable thing; and in damp situations, where many other things would prove a failure, nothing excels, as a pale blue, the late-flowering Forget-me-not (Myosotis scorpioides). Verbenas will supply beds of all shades and colours; except yellow and good blue; but the greater portion of the varieties in cultivation are too diffuse in habit to make compact effective beds. If about a dozen of the most distinct, free-flowering, compact-growing kinds are selected, the rest may be very conveniently discarded. For white beds, one of the best and most satisfactory of flowering plants, is Verbena Mont Blanc; and next to this, we may mention, the varieties of Pelargoniums with variegated leaves, the Lobelia Erinus compacta alba, and the variegated Alyssum; the latter planted thickly, answers the purpose very well, as the flowers and leaves are both white. The white flowering Geraniums are not yet perfect, but we have every reason to believe that by attention to hybridizing, we shall soon have them everything that can be desired. Get the fancy varieties of Pelargoniums as strong and bushy as possible previous to planting out, so that they may begin to bloom evenly. They all flower in such abundance, that there is little doubt of their continuing to make a good display throughout the season, particularly if the soil is light. Sandy peat, a little loam, and leaf-mould, suit them best.

FLORISTS' FLOWERS.

The season almost puzzles the oldest florists; we have Tulips far advanced above-ground; they consequently must be carefully sheltered from the dry cutting winds of March. This can easily be effected by some of the nets advertised in our columns. A slight protection will now prevent extensive mischief, and a little trouble will be worth the while; for we learn that the Great Northern or the Great Midland (the last we believe is the appropriate designation), is offering very handsome premiums for the Queen of flowers. Therefore those of our friends who mean to win must begin their care now.—Plant Ranunculuses. The beds of course are prepared according to our previous directions. We recollect one of the best blooms we ever saw was grown on a bed that had been previously well trampled, and when the bulbs were pressed on the hard surface and covered over, the surface of the bed was beaten by the back of a spade. Give Auriculas plenty of air at all times, provided the air is not too cold, for a check at this season is highly detrimental. Begin to make active preparation for potting off the stock of Carnations; the soil ought to be under a shed, well worked, and a sixth part of peat charcoal, whether Irish or English, will be found highly beneficial.

State of the Weather near London, for the week ending Feb. 27, 1851, as observed at the Horticultural Garden, Chiswick.

| Feb. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 21 | 20 | 29.911 | 29.810 | 48 | 27 | 37.5 | 43 | 42 | E | .00 |
| Satur. .. 22 | | 30.007 | 29.937 | 50 | 29 | 39.5 | 41½ | 42 | E. | .00 |
| Sunday . 23 | 22 | 29.894 | 29.792 | 49 | 31 | 40.0 | 40 | 42 | S.E. | .00 |
| Monday 24 | 23 | 29.766 | 29.761 | 53 | 31 | 42.0 | 40 | 41½ | S. | .02 |
| Tues. .. 25 | 24 | 29.947 | 29.816 | 53 | 34 | 43.5 | 40 | 41½ | E | .00 |
| Wed. .. 26 | 25 | 30.3.6 | 30.212 | 44 | 23 | 33.5 | 40½ | 41½ | N E. | .00 |
| Thurs.. 27 | 26 | 30.363 | 30.334 | 45 | 30 | 37.5 | 39 | 41½ | N.E. | .00 |
| Average ... | | 30.030 | 29.951 | 48.8 | 29 3 | 39.0 | 40 7 | 41.7 | | .02 |

Feb. 21—Hazy; fine; slight fog.
" 22—Dense fog; very fine; clear at night.
" 23—Fine; very fine; clear.
" 24—Hazy; cloudy; foggy at night; slight rain.
" 2—Foggy throughout; overcast at night.
" 26—Fine; clear; sharp frost at night.
" 27—Cold, with a few snow-flakes; dense dark clouds.
Mean temperature of the week 1½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending March 8, 1851.

| March. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 2 | 49.2 | 38.2 | 43.7 | 9 | 0.62 in. | 3 | 2 | 3 | — | 2 | 9 | 5 | 1 |
| Mon 3 | 50.0 | 35.1 | 42.6 | 12 | 0.45 | 2 | 3 | 2 | 1 | 3 | 7 | 5 | 2 |
| Tues. 4 | 49.2 | 32.7 | 41.0 | 10 | 0.48 | 3 | 7 | — | 3 | 2 | 5 | 4 | 1 |
| Wed. 5 | 48.3 | 32.3 | 40.3 | 7 | 0.40 | 2 | 5 | 3 | — | 4 | 5 | — | 2 |
| Thurs. 6 | 47.9 | 32.4 | 40.1 | 9 | 0.55 | 1 | 6 | 2 | 1 | 2 | 4 | 4 | 5 |
| Friday 7 | 49.2 | 32.6 | 40.9 | 10 | 0.10 | 2 | 4 | 3 | 1 | 4 | 6 | 2 | 2 |
| Satur. 8 | 49.9 | 33.1 | 41.5 | 9 | 0.17 | 3 | 4 | 3 | — | 5 | 3 | 2 | 5 |

The highest temperature during the above period occurred on the 8th 1826, and 7th and 8th, 1841—therm. 61 deg.; and the lowest on the 25th, 1845 —therm. 13 deg.

## Notices to Correspondents.

A FIELD: *Constant Reader*. You should put yourself in communication with one of the great London seed houses, and contract with them to grow whatever they would like to have saved in your field, which seems to be very favourably placed for a crop which requires nicety in saving it.

ARAUCARIA: *J H*. The bleeding cannot be stopped, nor can we judge the cause. There is nothing that you can do except wait the worst with hope or resignation.

CAMPANULA VIDALII: *G*. This is a fleshy-stemmed straggling shrub, with good-sized cream-coloured flowers, said to grow two or three together at the end of a long stalk. What it may be worth will be seen hereafter: we do not expect much from it.

CINERARIAS: *Ignoramus*. Flora M'Ivor, brilliant crimson; Lady Gertrude, dark blue; Nymph, white; Cerito, white, with a lavender edging; Climax, clear white, with a crimson edging; and Edmondiana, white, with a blue edging.*

CLUB IN CABBAGES: *Tamworth*. The usual remedy is to put wood-ashes into the holes in which the Cabbages are planted. An article on the destruction of wireworm will be found in another column.‡

COLOURS: *C E G*. There is a certain sort of truth in the assertion that pure blues and pure yellows do not coexist in the same genus of plants. For instance, you have no blue Ranunculus or Dahlia. But, on the other hand, exceptions abound, as in Salvia and Hyacinths, which contain both blue and yellow colours. Fortune's yellow Salvia did not reach England alive.

CONIFERS AND CATTLE: *E*. We are not aware that the Cedar of Lebanon, or the Deodar, has proved injurious or poisonous to cattle; but any Coniferous tree is likely to disagree with them if they eat it.

CRATÆGUSES: *Constant Reader*. All are handsome; the best are the varieties of oxyacantha, Aronia, Constantinopolitana, nigra, cordata, tanacetifolia, odoratissima, and orientalis. Trust to a respectable nurseryman. And so of the Belgian Azaleas; it is of little use to order them by name; a respectable nurseryman will make a better selection for you than you can yourself.

FIGS: *M B*. The sort of Fig most cultivated at Argenteuil is the Blanche ronde. With regard to disbudding, the terminal buds of all shoots above 6 inches long, with the exception of that of the leading shoot, are removed when the trees are uncovered in spring; and likewise about the half of the wood buds along these same shoots ‖

FORCING: *An Old Sub*. No plants can flower well till they have made good roots; that is the first thing to look to, and is true of every case. After forcing Ghent and other Azaleas it is better to turn them out and grow them in the open air for a clear year before forcing them again. In forcing them and all other things proceed slowly; haste ruins everything. They ought to be a month after their buds swell before the flowers open, if the flowers are to be fine and to stand well. Roses are forced every year; but they are also well grown and well rested every year. All plants *must* have rest, unless you wish to kill them; none demand this more than Chinese Azaleas in pots. Manure should be applied to plants in pots only while they are making their growth; while at rest it does no kind of good, and may do much harm. You must kill green-fly with tobacco smoke.

GARDENER IN PARIS: *W*. Such a person could be easily found, but not for such wages. Living is as dear near Paris as near London, and here the minimum wages for such a gardener would be 80*l*. a year. We are afraid it will be difficult to induce men to go abroad for *less* than they receive at home.

GARDEN MEMORANDA: *H M*. We never allow any one to write these except our own reporter. Your statement is an advertisement——and something more.

GLASS: *J Redwood*. Hartley's patent rough plate. The Black Hamburgh Grape will possibly suit your purpose best.‡

GOLD FISH: *Horatio*. These spawn exactly like other fish, and it is important that they should have weeds and gravel among which to deposit it.

HEATING: *Inquirer*. In distributing heated air, it may be convenient to have more openings than one; but no general answer can be given to such inquiries. What it may or may not be desirable to do depends upon a variety of delicate considerations, which vary with plans, objects, and circumstances.

HEBBABIA: *Hortus Siccus*. If you wash your dried plants in a weak solution of corrosive sublimate in spirit, they will not become mouldy.

INSECTS: *J P S*. The small white grubs in the interior of the Wheat stalks are the young of the Wheat-fly (Chlorops lineata), of which a full history is given in this work for 1848, November 25 and December 2. We believe it is not decidedly injurious to the plants. *W.—G T W*. The grubs found under-ground are the small larvæ of the common cockchaffers. Turn a lot of ducks into the field. *W*.

LILY OF THE VALLEY: *T G B*. You will find the cultivation of this in such books as Loudon's "Encyclopædia of Gardening." What it wants is well drained soil, and plenty of dead leaves, rotten sticks, &c., among which to run about—just what it gets in its native woods. It dislikes to be buried deep. You may trap the woodlice with pieces of Potato, or destroy them by toads; but it requires perseverance and patience.

MULBERRY TREES: *Sub*. We never saw Mulberry trees planted under glass, and trained against the back wall of a late hothouse; but we see no reason why they should not be so treated, if they are worth the situation.

NAMES OF FRUITS: *F H L*. We cannot pay the carriage of articles sent for names; 2*s* 8*d*. were demanded by the Dublin Steam-boat Company, who have the box.—*X Y*. No. 1 you say is not so large as the Court of Wick; this is probably owing to the state of the tree, for it appears to be nothing else. 2, quite worthless; one would suppose it had been produced by the stock. 3, Grange's Pearmain. 4, worthless; resembles the American Sops of Wine.‖—*J J*. The Flemish Bon Chretien.‖

NAMES OF PLANTS: *J W*. Schomburgkia rosea, and Maxillaria scabrilinguis.—*J P*. 1, nothing but Centaurea nigra with white flowers; 2, Juncus obtusiflorus; 3, Lycopodium clavatum; 4, Myosotis palustris; 5, Trifolium fragiferum; 6, Stachys sylvatica.—*R E*. After a long search we are unable to find any trace of the Maxillaria-like plant; but it is not in a state which will permit its being named and published as new.—*M A G*. Erica herbacea; the taller is perhaps E. mediterranea very young. Bud Orange stocks either now or in autumn as soon as the bark will run; but take care that the buds are quite ripe.—*J S C*. Barbarea vulgaris, the common Belleisle or broad-leaved Cress.—*A Reader*. Apparently a flower of Iris reticulata.

PAWLOVNIA: *Gallicus*. There is no reason why it should not be moved, but there is no time to lose. It requires a hot dry place, and if you can give it a berth where the soil *burns* in summer, so much the better. It will bear much more cold than you ever have, but will not flower unless you can prevent exuberant growth and ripen its wood well. We believe no one has yet tried training it to a south wall.

PINE APPLES: *Amateur*. You should have stated the age of the Pines from which you wish to have ripe fruit in May, June, and July; and the temperature at which they have been kept during winter. "Starting" them, as you propose, is not so good as *growing them without check until they fruit*. Let the temperature be about 60° by night, and from 70° to 85° by day, with a bottom heat of from 80° to 85°. Any fruit that may come up in March will be ripe in June and July; but to have ripe Pines in May, the fruit should now be set and swelling.‡

RHUBARB: *J C*. The sample of Rendle's Prolific was very good, solid, and well flavoured. About its earliness we have no personal means of judging.

ROOKS: *M P* asks for information concerning the best means of persuading rooks to build in trees. Answers have occasionally been given to this inquiry, but our correspondents seem desirous of further information.

SCALE: *Sub*. The best remedy for it is hot water. You may apply it to Vines in a dormant state at a temperature varying from 140° to 160°.‡

STEAM-CUT SASH-BARS: *Amateur*. Mr. Montgomery, of Brentford.

STOVES: *W Br*. We do not perceive the connection between Cundy's stove and horticulture.

VINEGAR PLANT: *M A*. This is the spawn or mycelium of Penicillium glaucum. These substances are figured in Lindley's "Medical and Œconomical Botany," p. 17.

VINE S: *W W*. Your mixture will answer perfectly. Apply it with a painter's brush.‡

WAGES: *M P*. A master is not justified in withholding the wages of his gardener, earning 21*s*. a week, in the event of such gardener being temporarily disabled by illness from working; a labourer earning 7*s*. a week stands in a different position, not being a domestic servant.

WALL TREES: *B L*. Nail them up at once, or they will be caught by the frost while you are thinking of doing the work. Cannot you weave a few Birch twigs or something of the sort amongst the flowers of the earliest kinds. It is a bad plan on every account to leave the fruit shoots unnailed at this time of year. Blossoms close to a wall are not so likely to be cut off as those which are loose and unprotected in front of it.

WILLOWS: *Salix*. We are corrected by the following memorandum. "The Huntingdon Willow is the Salix alba of Linnæus, according to Selby's 'Forest Trees' and Loudon's 'Arb. Brit.' ch. ciii. p. 1522, there quoted. *S. S.*"

SEEDLING FLOWERS.

CINERARIAS: *F P E*. Both well worth growing; but not sufficiently distinct to be sent out as new varieties.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PURCHASERS OF AGRICULTURAL SEEDS are recommended to peruse Messrs. SUTTON'S New Price List, which appears *in the last page of the present Number of the Gardeners' Chronicle.*

The advantages Messrs. SUTTON are enabled, by their extensive trade to afford Agriculturists *in supplying genuine home-grown Seeds at the low prices therein quoted, and free of carriage,* will doubtless be appreciated in these times of economy and agricultural improvement.

THE SKINLESS CHEVALIER BARLEY.—The valuable malting properties of this Barley, and the handsome appearance of the grain, are as superior to the Peruvian Skinless Barley as the finest Wheat is superior to Rye. Messrs. SUTTON have but a limited quantity; therefore, to prevent disappointment, it is requested that those of their friends who wish to try it will apply early for the Seed. Price 5*s.* per peck. Samples may be had by post, by enclosing two postage stamps. *See* Messrs. SUTTON'S *Advertisement in the last page of the present Number of the Gardeners' Chronicle.*

EXHIBITION OF CAMELLIA JAPONICA.

A COLLECTION OF THESE BEAUTIFUL EXOTICS is now in bloom, at CHANDLER and SONS' Nursery, Vauxhall. Admittance gratis.

EARLY ALBION KIDNEY POTATO.

EDWARD MITCHELL having a surplus stock of SEED POTATOES of this first-rate early variety, begs most respectfully to offer them to the public, and the trade generally, as being one of the very best and earliest varieties grown, it being full three weeks earlier than the Ash-leaf or Walnut-leaf Kidney Potatoes; also a greater cropper, and far superior in flavour, than any other variety grown. Price, per bushel, 8*s.*, with the usual discount to the trade.

EARLY COLCHESTER. — A round variety, of superior quality, as early as the Early Frame, but a more prolific cropper, and of first-rate flavour. Price 6*s.* per bushel, with the usual discount to the trade.

Post-office orders are expected from unknown correspondents.

Bristol Gardens, Kemp-town; and 55, Marine Parade, Brighton.

TWELVE EXTRA FINE DOUBLE BALSAMS—Striped, Spotted, and Selfs, in sorts, 2*s.* 6*d.*; mixed packet, 1*s.* 6*d.* or 5*s.* per oz. 12 Superb Double Hollyhocks, in sorts, 2*s.*; mixed, 1*s.* 12 sorts of first-rate Melons, 5*s.* Ultra Crimson Phlox Drummondii, and new Carmine 10-week Stock, 6*d.* per packet. The most popular and approved Border Annuals, including Asters, Lupins, Stocks, Larkspurs, &c. &c., 30 packets for 2*s.* 6*d.*, or 60 for 5*s.* All post free.—Enclose stamps or money order to WILLIAM JONES, Florist and Seedsman, Stoke Newington-road, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30*s.* per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1*s.* 2*d.* per lb.

Fine sorts, for forming Lawns, 1*s.* 3*d.* per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s.* | *d.* | | Per 1000—*s.* | *d.* |
|---|---|---|---|---|---|
| York Regents .. .. | 10 | 6 | New Early Ebrington Kidney .. .. | 15 | 0 |
| American Native .. | 10 | 6 | Do. Ash-leaved .. .. | 15 | 0 |
| White-blossomed Kidney .. .. .. | 10 | 6 | Do. Frame Round .. | 10 | 6 |
| Soden's Early Oxford .. | 15 | 0 | Do. Radical .. .. | 10 | 6 |
| Early Cockney .. .. | 15 | 0 | Fox's Seedling .. .. | 10 | 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, Feb. 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15¾ per cent. |
| Salesman, No. 1 ... ... ... ,, ,, | 11¼ ,, |
| ,, No. 2 ... ... ... ,, ,, | 9¾ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to offer the following New Plants:—

NEW FUCHSIAS.

| | *s.* | *d.* |
|---|---|---|
| PRIME MINISTER (HENDERSON'S), bright glossy crimson sepals, short and good tube, crimson purple corolla, good habit. A handsome well reflexed variety, that will give much satisfaction ... ... ... ... | 7 | 6 |
| RESPLENDENT (HENDERSON'S), glossy crimson sepals, short stout tube, rosy purple corolla. A handsome well-reflexed variety, of first-rate habit, and most desirable ... ... ... ... ... ... ... ... | 7 | 6 |
| LORD OF THE ISLES (HENDERSON'S), a very large and handsome dark variety, of stout substance, and very distinct from the above ... ... ... ... ... | 7 | 6 |
| MADAME SONTAG (HENDERSON), beautiful waxy white, short tube and sepals, which are thrown quite back, exposing a rosy crimson partially expanded corolla, the base of which is clear white; good substance and good habit ... ... ... ... ... ... ... | 7 | 6 |

E. G. H. recommends the above Fuchsias with perfect confidence, as being marked improvements on all that have been sent out.

NEW SCARLET GERANIUM.

| | | |
|---|---|---|
| BEAUTY OF THE PARTERRE.—This is one of the best and most distinct varieties yet introduced, possessing handsome marked foliage. The colour is bright salmon, and quite different to any other Geranium yet sent out, from its very dwarf and compact habit, rendering it a very attractive variety; and as it blooms in masses, it will be valuable for bedding or other purposes ... ... ... ... ... ... ... | 10 | 6 |

NEW VARIEGATED SCARLET GERANIUMS.

| | | |
|---|---|---|
| PEACH-BLOSSOM.—Leaves large, like "Flower of the Day." Flowers salmon-colour, good form, and a very free bloomer ... ... ... ... ... ... ... | 10 | 6 |
| BRIDAL BOUQUET.—Leaves very clear white, with green centre; better in colour than the other; dark crimson scarlet flower, and a very free bloomer ... | 10 | 6 |

E. G. H. has also much pleasure in introducing the two following beautiful

NEW POTENTILLAS.

| | | |
|---|---|---|
| BICOLOR GRANDIFLORA.—Golden yellow, with broad scarlet margin, a very handsome variety, and the largest of all the Potentillas ... ... ... ... | 5 | 0 |
| ANTWERPENSIS.—Brilliant orange, dwarf habit, and being semi-double, does not close in the evening. Very fine, and continues blooming from May to Nov.... | 7 | 6 |

All the above will be ready for sending out the last week in April.

NEW GREENHOUSE CLIMBER.

| | | |
|---|---|---|
| HARDENBERGIA OVATA ALBA.—Clear white, and blooms freely; a very handsome variety. Plants now ready ... ... ... ... ... ... ... ... ... | 15 | 0 |

NEW STRAWBERRIES.

| | | |
|---|---|---|
| PREMISSES DE BAGNOLET.—A very large and excellent flavoured fruit, remarkable for its lateness. Highly recommended. Good established plants in pots, each ... ... ... ... ... ... ... ... ... | 1 | 0 |
| CREMONT'S PERPETUAL.—A new double-bearing Strawberry, of superior quality, strongly recommended by the National Horticultural Society of France, who appointed a committee to inquire into its merits, and awarded it a special medal. Dr. Lindley also refers to it in the *Gardeners' Chronicle* of Nov. 9, 1850. Good plants, each ... ... ... ... ... ... ... ... | 2 | 6 |

E. G. H. has also strong plants now ready of the following New Fancy Geraniums and Cinerarias, which he highly recommends:—

NEW FANCY GERANIUMS.

| | *s.* | *d.* |
|---|---|---|
| BLACK PRINCE (HENDERSON'S), fine rich dark maroon (upper and lower petals same colour), slightly margined with rose, light centre; a free bloomer, good habit and distinct ... ... ... ... ... ... ... ... | 10 | 6 |
| MARION (HENDERSON'S), upper petals rich crimson with clear white margin, lower petals clear white with belt of bright rose, white centre; a good dwarf close habit and an abundant bloomer, and continues flowering in perfection the whole season ... ... ... ... ... | 10 | 6 |
| PRIMA DONNA (HENDERSON'S), upper petals dark crimson purple, shading off in veins to a light edge; lower petals blotched and pencilled, having a striped appearance; a good trusser, free bloomer, and retains its flowers for a considerable time ... ... ... ... | 10 | 6 |
| PRINCE ALBERT (HENDERSON'S), upper petals deep crimson velvet with clear white margin; under petals white, blotched and veined with violet; a large flower, very constant, and a free bloomer ... ... ... ... | 10 | 6 |
| REINE DES FLEURS (HENDERSON'S), clear white ground with intense violet plum blotch and broad belt of white; lower petals white, slightly marked with rosy purple; good form and a free bloomer ... ... ... ... | 10 | 6 |
| EXQUISITE (HENDERSON'S), a fine clear smooth-edged flower; upper petals blotch of lilac with deep belt of bright rose, margined with white; under petals marked with rose; a nice compact trusser, good habit and an early bloomer ... ... ... ... ... ... ... ... | 10 | 6 |

E. G. H. having himself raised and proved the above new fancy Geraniums, can therefore with the greater confidence recommend them as being perfectly distinct in themselves, as well as from any other varieties in cultivation. They are also excellent growers and free bloomers.

E. G. H. will also have the following new Pelargoniums to send out at the same time, viz:—

| | *s.* | *d.* |
|---|---|---|
| CORA (raised by an amateur seedling grower), orange scarlet, white centre, moderate size; a remarkably early blooming variety ... ... ... ... ... ... | 7 | 6 |
| FIREBALL (HENDERSON'S), a beautiful rich crimson scarlet, centre violet shading to white (a decided improvement on "Salamander") ... ... ... ... ... | 10 | 6 |
| PRINCESS ROYAL (HENDERSON'S), light purple under petals, black velvet upper petals, with small regular deep red margin; fine truss ... ... ... ... | 7 | 6 |
| STANDARD BEARER (raised by an amateur seedling grower), a fine bold flower; upper petals rich orange crimson; under petals bright salmon; excellent habit and free bloomer ... ... ... ... ... ... | 10 | 6 |

CINERARIAS.

| | | |
|---|---|---|
| AMY ROBSART (E. G. HENDERSON'S), lilac rose, self, dark disc; fine form ... ... ... ... ... ... | 7 | 6 |
| CLARA MOWBRAY (E. G. HENDERSON'S), ruby carmine, with black disc; large flower and novel colour ... | 7 | 6 |
| DELICATA (E. G. HENDERSON'S), white and bright lilac, equally divided; dwarf habit and a most abundant bloomer ... ... ... ... ... ... ... | 7 | 6 |
| EFFIE DEANS (E. G. HENDERSON'S), white deeply edged with dark purple, dark disc; good habit ... ... | 7 | 6 |
| FAIRY QUEEN (E. G. HENDERSON'S), white ground with an edging of light rose; large flower and good habit ... | 7 | 6 |
| *LADY HUME CAMPBELL (E. H. HENDERSON'S), the purest white ground we have ever seen, with a bright purple blue edging: excellent form and habit; first rate | 10 | 6 |
| *MADAME SONTAG (E. G. HENDERSON'S), beautiful clear white, with deep edging of porcelain blue, dark disc, dwarf and excellent habit: fine form ... ... | 10 | 6 |
| MARGARETTA (E. G. HENDERSON'S), dark blue purple self: a moderate-sized and well-arranged flower; free bloomer ... ... ... ... ... ... ... ... | 7 | 6 |
| LADY ARAMINTA (E. G. HENDERSON'S), blue, with a circle of violet crimson round the disc: dwarf habit and well-arranged flower (gratis to purchasers of the set). | | |

E. G. H. is now sending out the above set (with the exception of the two marked thus *, "Lady Hume Campbell" and "Madame Sontag," which cannot be sent out until the spring.) Purchasers ordering the set will have their names put down for plants of those two beautiful varieties for spring, as the stock is limited.

E. G. H. also calls attention to the following new and choice

FLOWER SEEDS.

| | Per packet. | *s.* | *d.* |
|---|---|---|---|
| Choice Calceolaria, from best named flowers ... ... | | 5 | 0 |
| Ditto Cineraria ditto ditto | 2*s.* 6*d.* and | 5 | 0 |
| Ditto mixed Primula sinensis ... ... ... ... | | 1 | 0 |
| Escholtzia alba, a handsome new white biennial ... | | 2 | 6 |
| Campanula Vidalii, a new species from the Azores; grows 2 feet high, compact shrubby habit, with numerous spikes of pure white flowers; valuable for bedding or pot culture ... ... ... ... ... ... | | 2 | 6 |
| Ipomœa rubro cœrulea ... ... ... ... ... ... | | 1 | 0 |
| Grammanthes gentianoides, new ... ... ... ... | | 1 | 0 |
| Eucnida bartonicides, yellow, new ... ... ... ... | | 1 | 0 |
| Schizanthus retusus albus ... ... ... ... ... | | 0 | 6 |
| Cobœa scandens, new seed ... ... ... ... ... | | 0 | 6 |

Imported German Stocks and Asters, in collections.

Geranium "Flower of the Day," 7*s.* 6*d.* and 10*s.* 6*d.*

Dry tubers of Achimenes longiflora alba, to flower this year, post free, 2*s.* 6*d.* and 3*s.* 6*d.* each.

N.B. Catalogues of Seeds and Plants, post free on application.

SUPERB RANUNCULI.—The present being the usual month for planting the Ranunculus, we beg to recommend the following selections.

*The new varieties have been selected with great care, of first-rate sorts, from immense quantities of seedlings, and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.*

| RANUNCULUS.—*Free by post.* | £ | *s.* | *d.* |
|---|---|---|---|
| 50 Splendid new varieties, with names ... ... | 2 | 0 | 0 |
| 25 do. do. do. ... ... | 1 | 2 | 6 |
| 100 do. varieties from new and other best named sorts ... ... ... ... ... ... ... | 3 | 10 | 0 |
| 50 fine named varieties ... ... ... ... ... | 0 | 15 | 0 |
| 100 finest mixed ... ... ... ... ... ... | 0 | 10 | 0 |
| 100 fine do. 5*s.*, or free by post, 6*s.* | | | |

ANEMONES; by post, 3*s.* per 100 extra.

| | | | |
|---|---|---|---|
| 100 new and superb named double varieties ... ... | 1 | 14 | 0 |
| 50 do. do. 18*s.*; 25 do., 10*s.*; or, by post ... | 0 | 11 | 0 |
| 100 finest large mixed double ... ... ... ... | 0 | 10 | 6 |
| 100 fine do. do. ... ... ... ... | 0 | 7 | 6 |
| Fine new mixed single, per lb. ... ... ... ... | 0 | 4 | 0 |

Fine double varieties, per dozen: Apenina, light blue, 3*s.*; Cœlestina, blue, 3*s.* 6*d.*; Coleur de Sang, red, 3*s.*: Cramoise Royale, scarlet, 3*s*; Josephine, crimson, 3*s.*; Prince Albert, blue, 3*s.*; Rose Surpassante, 3*s.*; Scarlet Superbe, 3*s.*; True Blue, 3*s.* 6*d.*

GLADIOLUS—Autumn varieties of the Floribundus and Gandavensis habit:—

| | Each. | | Each. |
|---|---|---|---|
| Albus roseus ... ... | 1*s.* 6*d.* | Pscittacinus 1*s.* 6*d.* p. doz. | 0*s.* 2*d.* |
| Autumnalis, orange ... | 1 0 | ,, Sanguineus, dark, 7*s.* 6*d.* per doz.... | 0 9 |
| Brenchleyensis, scarlet | 3 6 | Splendens, rich, scarlet | 3 6 |
| Floribundus, 2*s.* 6*d.* p. doz. | 0 3 | Vernalis Spicatus ... | 1 6 |
| Gandavensis, 5*s.* p. doz. | 0 6 | | |

Copies of our Autumn Root Catalogue may still be had.

Remittances required from unknown correspondents.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

SALT for Agricultural Purposes, Asparagus Beds, Garden Walks, &c., &c., price 23*s.* per Ton, delivered in Sacks to any Railway Station in London. Sacks to be paid for or returned. Apply to JOHN MEREDITH, Salt Merchant, 10 Wharf, City-road Basin, London. N.B. Rock Salt.

FARM IN HAMPSHIRE.

TO LET, a Good STOCK FARM, of about 434 acres, of which 24 acres are Water Meadow, 55 acres dry Pasture, and the remainder Arable. The Poor Rates are very low, and the Tithe amounts to about 4*s.* 6*d.* per acre. The Farm adjoins the Great London Road, and is four miles from the Andover Road Station. No applications will be received unless accompanied with satisfactory references.—For particulars, apply to Mr. HUGH RAYNBIRD, Laverstoke, Andover Road, Hants.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.


# The Agricultural Gazette.

*SATURDAY, MARCH* 1, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, March 5—Agricultural Society of England.
THURSDAY, — 6—Agricultural Imp. Soc. of Ire.and.
WEDNESDAY, — 12—Agricultural Society of England.
THURSDAY, — 13—Agricultural Imp. Soc. of Ireland.

WE have not yet directed that attention which they deserve to the experiments of Mr. THOMPSON, and the researches of Mr. WAY upon THE ABSORPTIVE POWERS OF SOILS. The truths ascertained by these gentlemen are certainly of the very highest importance to agriculture. In ignorance of them many of the more striking facts of every-day observation by the farmer seem impossible of explanation. Take, for instance, the increasing fertility of well managed land in the face of an annual washing by from 2000 to 5000 tons of water per acre. Every year our soils are washed by a quantity of rain equal to a depth of from 2 to 4 feet of water over their whole surface, and much of this of course penetrates the earth, and is carried, with all that it has taken, by the rivers to the sea. Fertility is for the most part an altogether quantitative affair; and it is upon the quantity of certain *soluble* matters in the soil that it is dependent; and yet, notwithstanding this annual washing, our soils retain and even increase their productiveness. Take also the fact that spring water is not always, nor indeed ever, a saturated mineral or other solution. Springs exist of uniform productiveness throughout the year, notwithstanding the extremely irregular character of our annual rain-tables; and, considering how heavy falls of rain fail to exert any immediate influence upon such springs, we may say of them, the water which is being yielded by them *now* must have fallen from the sky many weeks ago; and yet, with all the wonderful powers of solution which rain-water is known to possess, exerted during the whole of that long interval throughout the whole tedious journey from the spot on which it fell to that from which it has again issued to the light, the water has failed to saturate itself with the spoils of the territory it has traversed. Ammoniacal salts existing in the soil before the rain, exist

there after it also—they are not found in our spring waters; and even the water of our drains yield but a small quantity of a few mineral salts to the reagents of the analyst.

This fact has been ascertained to be true, in the case of certain selected salts and certain specimens of soil placed in glass tubes for the purpose of experiment. Solutions of the carbonate and sulphate of ammonia are found by Mr. THOMPSON to yield most, and in some cases all their ammonia, in traversing 6 inches of soil. Light sandy loam, black vegetable mould, and strong clay soil, were used. And the only exceptional case was where a strong solution of the carbonate of ammonia was used over the vegetable mould. The general result convinced Mr. THOMPSON that either sandy, clayey, or black vegetable soils, possessed the power of retaining a much larger amount of ammoniacal salts than they received in the most liberal manuring. The practical inferences he drew from the inquiry were as follows:

1. That clay soils might be manured a considerable time before sowing without loss.

2. That light shallow soils should not be manured long before sowing; should not be heavily manured at one time; and that the manure should be kept as near the surface as practicable without leaving it uncovered.

3. That it is desirable to deepen the cultivated soil of all light land, as it then gives it a greater power of holding manure.

Some of these inferences, it will be observed, already had a place in the minds of all intelligent practical farmers; others, if found practically sound, would justify the adoption of an altered and often more economical management of manure.

Mr. WAY, unacquainted with Mr. THOMPSON'S experiments, had his attention directed by that gentlemen, and by Mr. HUXTABLE, to this subject, in 1848, and has since prosecuted a most successful inquiry in connection with it. The results being published in the last volume of the "English Agricultural Journal."

Solutions of various strength of caustic ammonia, carbonate, sulphate, nitrate, and muriate of ammonia, were passed through columns of soil, ferruginous, calcareous, clayey, sandy, dried, moist, burned, through white sand, and plastic clay; through burnt clay, as brick-dust and powdered tobacco pipes; through soil altogether destitute of vegetable matter, and through soil containing vegetable matter; and the results from the 42 experiments which the research included, indicate the existence of a power in the soil, which appears to reside in the clayey ingredient of removing ammonia from its solutions, and even from its acid combinations, and retaining it, notwithstanding the passage of water, so powerful a solvent of it, through the medium containing it.

But Mr. WAY'S experiments related to potash and soda, both caustic and as carbonate, muriate, sulphate, and nitrate, as well as ammonia, and here, too, he found that the soil employed removed the alkalies from their solutions. Its power over solutions of lime, magnesia, and phosphoric acid, was also sought for and found. And besides this piecemeal investigation of the subject, experiments were instituted which any one can readily perform for himself, for the purpose of ascertaining the effect of the soil upon putrid tank-water, town sewerage, and other liquids more nearly approaching to the solutions of manure in freshly dressed land; and it was found that a few inches of any soil containing a certain proportion of clay, was able to remove all taste and smell; and, therefore, of course, all those volatile ingredients to which their taste and smell are owing.

Mr. WAY deduces a number of "practical conclusions" from his valuable investigations, relating chiefly to the importance of claying sandy soils, to the safety of using liquid manure, even on lands unoccupied by a crop, to the advantages of comminution and perfect tillage of the land, and to the indifference, in reference to ammoniacal salts, as to which of these be used, so long as the requisite quantity of the base be present. Of these the safety and economy of the use of liquid manures, even in the winter season, to fertilise the soil against the period of growth, appears to be practically the most important; and it will, no doubt, be extensively put to the test ere long. It seems very desirable that Mr. WAY'S paper on this subject should have an independent and separate publication. If republished as a pamphlet, it would, we are sure, have an extensive circulation.

## ON THE TULLIAN CULTIVATION OF LAND.

No. I.

INASMUCH as our markets are, and probably will be, continuously near the continental and transatlantic level of prices, free trade must for a time seriously affect the farming interests, and this will continue to be felt more stringently and longer by those who were previously embarrassed, or who from having had too limited capitals, found their land in a state that precluded an immediate increase in its productiveness; this has been much more general in Ireland than in either of the sister kingdoms, for here there has ever been a very great and common deficiency of agricultural capital, and, in addition to the deterioration in the price of agricultural produce felt by all, the disease in the main-stay crop of the country came to augment the difficulties of the crisis; for the larger part of our income was derived from the export of our grain, which the Potato enabled us well nigh altogether to dispense with. This income has been for the last six years all but annihilated, for though still an exporter of our own grain we have been a very large importer of foreign grain (Maize), the meal of which retailed in our inland markets at 2*d*. a stone lower than our oatmeal, is almost the exclusive food of the humbler classes; Potatoes, from their high price, having become unattainable by them, and even a luxury in respectable houses.

I must think it lamentable that means could not have been devised to let us down more easily. The chief obstacle in our way to meet a lessened value by an increased produce is the want of capital; this might have been foreseen, and the deficiency supplied by banking accommodations, extended beyond the time suitable to the trading communities to that adapted to the more distant returns of the farmer; we might not then have been so ruinously affected by the change, and in Ireland much life, property, and suffering would have been saved; and what is yet more to the weal of the empire, this island would not have been depopulated by an emigration, which, increasing in a geometrical progression, promises to leave us without labourers, and, should a struggle come on, without soldiers to fight our battles. There are no men or women who go to America, but endeavour either by their own means or by the help of those emigrants who have arrived before them, to remit money to Ireland, to bring over their relatives. A servant saves his wages, a small farmer, and even a larger one, furtively disposes of his stock and crop, where not permitted by his landlord, to enable him to find his way to this El Dorado: and well they may; the accounts transmitted of the high wages they receive, and the ready employment they obtain, are so exciting to a people struggling with a precarious existence, that we cannot be surprised at the efforts they make to migrate; and yet they would not leave their native land could they obtain moderate wages and steady employment, for they are willing to labour. It is most general that the sober and industrious emigrants (even such as could or would do no good at home), before he or she has been 12 months in America, pays the passage money of, and sends money home for, the fitting out of some one or more of the family. And this, while marriages and births have much diminished in number. What country can stand this drain?

Although such is our condition, yet we are most certainly recovering from the shock; the demand for land has increased, and farms rarely become untenanted without a competition arising for them, and with scarcely a wall on them, there are now tenants enough found to give the landlord a sum of money in hand to obtain a preference; it has also become common with landlords to ask a year's rent in advance, as a security from the incoming tenant, and these farms are almost totally without dwelling-houses, offices, or gates, the fences in bad repair, the lands water-soaked, and a considerable part of them having borne from two to six crops of Oats in succession. The wretched tenant enters on his land with, in most cases, not more than a pound an acre of capital. I am speaking of farms under 50 acres, the larger ones are not very generally in much better state. The farm I at present hold contains 50 acres of strong clay, badly fenced, undrained, every Grass field full of rushes, every tilled field in Oat stubbles, some having had five crops of Oats taken off in succession for the last six years; the hay and straw have been sold off, and no part of the land manured; the dwelling-house, a small cottage, and offices, of a mean description, were all gutted, doors and windows carried off, and parts of the roofs pulled down, and yet this steading was in the best condition of any untenanted land in this neighbourhood, or on this estate, which was valued, before the depression, at 8000*l*. a year.

Although in England and Scotland there are neither the same deficiency of capital or the same miserable want of farm accommodation, capital is yet wanting to make the only resource—high farming—that has been offered to meet the low prices of to-day and to-morrow available to many; and it is even somewhat questionable whether high farming, with abundant capital, will pay so well as its advocates assert; the high farming of Caird has been much relied on, but the farm of Auchness is evidently an exception, the best paying crop on it, and which swells the amount of its profits, is even too great for Potato consuming Ireland; to the majority of farmers the profits of high farming, if realisable, offer but the cup of Tantalus. It then becomes a question worth mooting, whether a system of cultivation more within the reach of the majority of farmers may not be found; and I think this is to be found in the system long ago promulgated by Tull, or in modifications of it. In this system of perpetual fallow, Nature, in the atmosphere, supplies the dung-heap which high farming raises by high feeding, and the farmer may then, instead of feeding for his dung heap, feed alone on what it may either be profitable to feed, or in such way as he can afford, and to such extent.

Tull contended that his constant fallow enabled him to produce crop after crop without manure; to deficient crops arising from this cause alone, it may be supposed, the system did not survive him, but in availing ourselves of the advantages of a perpetual fallow in fertilising our soil from the atmosphere, we may augment the fertility thus induced by supplying the soil with what fertilising matters our capitals enable us, and we may farm without that abundant capital that this so-called high farming requires; indeed, I think we may in this way obtain more certain, and even higher results than are promised by this high farming, at far less cost. I hope to show, practically, that in Ireland this may be effected with a capital not exceeding 4*l*. an acre, on land in a much more reduced state than is usually met with in England. And we may also, with greater surety, manure heavily by proportioning our distances to the quantity and strength of the manure; in our common tillage of the Potato in lazy beds, we find it is very easy to over-manure them. While in drills we can safely and profitably use larger quantities of manure. Some years ago I planted a few Potato sets, some three or four pounds weight, in very deep drills, full three feet apart, excessively manured, as it was thought, and I turned out from them between 7 and 8 stones. From two rows of Chevalier Barley, sown in very rich ground, 3½ feet apart and 1 foot 9 inches from the contiguous rows, I reaped at the rate of near 7 quarters to the acre, a standing crop, with between 5 and 6 feet length of straw; while in the adjacent rows, at 1 foot 9 inches, the crop averaged under 5 quarters to the acre, with lodged straw only between 4 and 5 feet long.

In ground well tilled and in good heart, not in very high condition, from various experiments through a course of 28 years, I have found about 2 feet, from row to row, the most productive distance for a grain crop; at such distances I have invariably found as many, if not more, stems, and with better heads, than at any lesser distances, while ample space is afforded for working the land between the rows till the blossoming. The farmer has then the option of a successional grain crop, by sowing in the well-prepared and invigorated intervals, or of a green or root crop on ground in fine tilth for small seeds, without requiring the labour which makes these crops so costly. His Turnips at 5*s*. a ton will not then trench on the profits of his grain crops. *J. M. Goodiff, Granard, Jan.* 31*st*, 1850.

## ON BEAN CULTURE.

THE Bean has been propagated into a great number of varieties, both for the use of the garden and the field. But the general character remains, of thriving in a soil that possesses a very considerable degree of tenacity, with a loamy tendency that is sufficient to encourage the speedy and healthy germination of the seed, and the proper development of the roots, which are partly fibrous and tap formed. In Britain the Bean does not thrive beyond the 56th degree of north latitude, and under that parallel it requires the best lands and the warmest situations.

Beans thrive well on all clay lands of the best description, whether the clayey loams admitting of the green crop culture, or the most friable soils. But the favourite soil is a deep loam that is rich and moist, such as is seen near Dunbar, in East Lothian, where the Bean yields the largest crops. The red clay lands of that county which overlie the trap rocks are sufficiently friable to admit some cultivation in the early spring, and the preparation of the land for the Bean is similar with the clayey loams that produce Potatoes and Beetroot. On both soils the Bean follows the Oat crop, the farm-yard dung being spread in broadcast on the stubble, and ploughed under with a good round furrow of 8 or 9 inches. In the first part of the month of February, or so soon as the season will admit, the land is wrought lengthwise and crosswise by Finlayson's harrow, or some similar grubber, and the weeds are carefully picked by hand and removed. The land is then made into drills of 27 inches apart, by one furrow of the common plough. The Beans are sown in the hollows by the double drill Bean sower, and the drills are split and reversed over the seed by one furrow of the common plough, and the land is harrowed across by the light seed harrows before the leaves of the stem appear above the ground. In this way the dung is rotted in the ground during winter, and is intimately mixed with the soil by the workings of the grubber.

Another method lays the farm-yard dung in a trampled heap in a corner of the field before the 1st of February. The land is winter ploughed, and wrought in the spring by the grubber, as before mentioned; then made into drills by one furrow of the common plough. The dung is spread along the hollows in which the Beans are sown by the machine, and the drills are reversed over the dung by the common plough. The drills are levelled by harrowing as before.

The quantity of farm-yard dung used on an acre may be averaged at eight cart-loads of two horses. The quantity of seed at 2 to 3 bushels. The seed time from the middle of February to the end of March. The sowing is not profitably prolonged beyond that time. Opinions differ in the preference of applying the dung on the autumn stubbles, or on the wrought land in the spring. On the very best lands the stubble dunging is preferred, while on the inferior and higher lying grounds the manure in the drills is universally esteemed. The climate may have an influence in show-

ing the different results on the best and inferior lands from the two methods of sowing the crop, the later climate requiring the dung to be more collected and to exert a greater force. The best soils are also more friable, and permit the dung to be minutely mixed with the land by the operations of the grubber. The quantity of land to be sown with Beans on any farm, in the precarious weather of the spring months, often determines the method that is pursued, a large amount of acres requiring the stubble dunging, and a smaller quantity allowing more time for the performance of work.

When the drills are harrowed lengthwise or crosswise, the weeds torn up by the harrows are carefully picked by hand, and removed. When the young plants are all fairly grown above the ground, the intervals of the drills are wrought by a scuffler, provided with tines and knives, which tear and cut the ground in successive operations. A small plough drawn by one horse has been used and rejected, as the sole plate "glazes" the ground by the slipping movement along the earth. This glistening consolidation is most hurtful on all clay lands, and particularly to Beans, which delight in deep cultivation and extensive loosening of the ground. The scarifying of the intervals is deeply done, and about three times in the season, all weeds being removed by hand; and at the end of the season a light furrow is in some cases laid to each side of the row of Beans by a light plough for the purpose. This last operation is not a general rule.

Of all preparations of land, the cultivation of Beans, as now described, constitutes the best precursor for Wheat, which is ever earliest in maturity, and fullest in the ear and pickle, from the tilth which has been left by the Bean. This fact has been tried to be accounted for by the theory of fecal exudation, which supposes that the excrementitious voidances of any plant of one class are food or aliment to another plant of a different class, as are Beans and Wheat. Be this as it may, the fact was known as certain before the theory was dreamed of. A close crop of Beans shades the ground by a thick umbrage of leaves, which retains moisture, prevents exsiccation, and commences a decomposition on the surface of the earth, in the terrestrial elements that there exist. The main or tap root of the plant penetrates and divides the ground, and all fleshy roots exude a juice that blackens the earth in contact, and has a very fertilising effect. These natural reasons may be able to account for the benefits which the land receives from a crop of Beans, without having recourse to the doubtful theory of fecal ejectments.

The above method of cultivating Beans applies to lands of sufficient loaminess to admit cultivation in the spring, and enjoying a climate of earliness to favour the operations. The clay lands that can be used in that way are comparatively of small extent, and on the greater amount a very different process becomes necessary. The plastic clays that overlie the chalk hills of Surrey, and the clay of the London basin, are both of them formations possessing an adhesive stubbornness that almost defies cultivation. On these lands no spring cultivation can be attempted. The ploughing of the land at any season of the year requires the strength of four stout horses, and should only be wrought in the driest season. Beans are generally, and almost of necessity, sown in broadcast, and occupy the place of a corn crop in the rotation, as the land is not subjected to any working, and does not produce a fallow crop of any kind. During the earliest growth of the Beans the weeds are checked by one or two hand-hoeings, as the plants are thinly planted, and cover little ground. But as the plants rise to height, the weeds grow in the vacant places, and broadcast Beans are most generally a specimen of very foul farming. Wheat cannot be sown till the land undergoes the bare summer fallowing process; consequently Beans are not an eligible crop.

On some few soils of the more loamy descriptions of these clay lands, where the deposit joins the iron sands, the spring cultivation is practicable, and the treatment of the Beans falls under the foregoing statement. A rather stiffer sort, but which does not fall under the most tenacious kinds, admits the Beans to be sown by dibbling on the alternate furrow slices of the winter ploughing, after the surface has been very severely harrowed by heavy implements, and the utmost possible tilth raised from the pulverisation of the winter's exposure. This method admits the horse and hand-hoeing, though the former operation is done more lightly than when the land is stirred by the grubber, and consequently the cultivation is much less complete. Sometimes the rows of Beans are placed on each furrow slice, and then the hand-hoe only is admitted. The wide drilling cultivation prepares the land for Wheat, more or less effectually, as the soil is friable, or obdurate. But on the most obdurate and plastic of these clay lands the drilling on the surface of the winter ploughing is wholly impracticable, as well as moving the ground by any implement. The operation of harrowing will not produce any quantity of tilth on these waxy soils, and the trampling of the dibbling operation will do much damage by consolidation; consequently a broadcast crop is indispensable, and generally makes very foul farming. Beyond it, modern improvements have not yet gone in cultivating Beans on these most unruly soils.

The lias clay which forms the base of the oolitic deposits, the "clunch" clay which occupies the moist valleys of the middle oolites, and the kimmeridge clay, which is overlooked by the higher rocks of the upper oolites, fall under the same treatment in the cultivation of Beans as the clays above described. The stiffest kinds are sown broadcast; while the greater part admit the dibble on the harrowed surface, or the sowing in rows by the coulters of the machine, or in drills made by the one-horse plough. The loamy modifications of these clays admit a pretty deep cultivation of the intervals, and consequently a very fair preparation of the land for Wheat, which, as a grain crop, should always follow the Bean cultivation, whenever the land can be manured, and wrought in some tolerable degree.

The gault clay, as seen near Godstone in Surrey, is very stiff and adhesive, and prevents any spring stirring of the land, and also, in many cases, the drilling on the harrowed surface of the winter ploughing; consequently, the cropping in broadcast is used, with a check of the weeds by an early hoeing, which does not form a preparation for Wheat but for a crop of Oats that is followed by fallowing. On the modifications of the gault in the Tetsworth clay of Oxfordshire, and in the deep valleys of Huntingdon, where the debris of the chalk forms a mixed ingredient; the first-mentioned culture of Beans is practised on the more friable description of land, while the drilling or dibbling on the spring harrowed surface is the more general method on the greater part of the soils of that description. Broadcast sowing is not necessary on these modifications of the gault clay.

In the county of Essex, where Beans are produced in great perfection, the clay lands are formed of a mixture of the plastic and London clays, with occasional appearances of the clunch or fen formation of that body. Dry, gravelly, clay grounds are found on the undulations of the surface, which rise in loaminess and reach to Turnip soils, while the stiff lands yield good crops of Beans. The alluvial lands are very extensive along the estuary of the Thames, and the soil is very suitable for Beans. These soils and the gravelly clays admit the spring cultivation for Beans by the grubber, and the manure to be applied on the autumn stubble, or in drills in the spring. The true clay lands of Essex are planted with Beans by the dibble on the alternate slices of the furrows of the winter ploughing, as before mentioned, and the farm-yard dung laid on the stubble and ploughed under by a deep furrow. The intervals of the drills are cultivated during summer as deeply as possible by the grubber, the weeds are carefully cut by hand-hoe, and the land is thus well prepared for Wheat, which is sown in broadcast on the furrow of one ploughing, or drilled in rows by machine on the harrowed surface of the gathered ridges.

The Wealden formation of clay is so aluminous as to forbid any spring movement of the land, and in many cases also the drilling or dibbling on the harrowed surface of the ground. In the county of Kent, modifications of that clay are found overlying the lower ledges of the limestones and sandstones of the tertiary formation, and on these soils Beans are cultivated as on the best lands that have been mentioned. But on the lower deposits of the Wealden formation, where no extraneous bodies are adjacent to mix the composition, the clammy adhesiveness and stiffness of the soil compels the broadcast cultivation of Beans in which the crop is small in the return, and confers little benefit on the land. In that way it neither defers the fallowing process, nor renders it easier of accomplishment.

Over much of the extent of England, and largely in Durham and Northumberland over the coal deposits, soils are formed of thin arid clay, on which Beans can only be cultivated in broadcast, and are little used, on account of the foul state of the land which follows the crop. The quality of the soil is much below the power of the Bean plant, and the insertion of it in the rotation of cropping is very judiciously rejected. In these counties, the soil and the climate are both adverse, the quality of the one not correcting the deficiency of the other, for the growth of Beans.

Beans are sometimes grown on Grass layers, when the seed is best deposited by dibbling, on the well harrowed surface of one ploughing. The drills may be wide, on alternate slices, for the grubber, or narrow on single slices for the hand-hoe; and if the firm state of the land does prevent the deep working of the grubber, the weeds will be completely checked by the hand-hoe, either in wide or narrow drills, and assisted by the shallow operation of the drill cultivator.

The shrivelling leaves of the haulm, and the black colour of the pod or legume, with the hardened state of seeds, give notice of the maturity of the Bean plant. The crop is most generally cut by the sickle, tied into sheaves, and built into ricks, thatched with straw, or lodged in barns. The straw and the grain are very easily separated, by flail or by machine, and winnowed for use. The sheaves are tied by straw ropes, or tarred twine, which will last for many seasons, on being kept from year to year. The straw of Beans, when well harvested, is very particularly relished by horses, and the husks of the legumes by sheep, and it forms, in any shape, very useful litter for swine in sties, and for sheep confined in cots. In a good state, it is reckoned equal to the best hay, of any kind or quality.

The chief use of Beans in this country is, to feed horses, for which purpose they are very usefully mixed with Oats, as they contain a large proportion of nitrogenous ingredients, and therefore feed the muscular parts of animals. They are also used in feeding swine, bruised and unbruised; they make the flesh very firm. Bean-meal is used in fattening oxen; mixed with water, and given to cows, it greatly increases both the quantity and quality of the milk. Some Beans are also mixed with new Wheats in grinding, and millers generally contrive to use a due proportion, pretending that the new clammy Wheats will not grind without some such mixture.

On the best Bean lands, which admit the drilling and manuring in the highest perfection, the average produce of Beans per acre may be stated at 4½ qrs., and on the remaining inferior soils at 2½ qrs., making the general average 3½ qrs., which may be fully equal to the truth.

The proportion of nutritive matter in Beans, compared with other grains, is thus given by Einhof:—

| | By weight; or, | by bushel. |
|---|---|---|
| Wheat | 74 per cent. | 47 lbs. |
| Rye | 70 ,, | 39 ,, |
| Barley | 65 ,, | 33 ,, |
| Oats | 58 ,, | 23 ,, |
| Beans | 68 ,, | 45 ,, |
| Peas | 75 ,, | 49 ,, |
| French Beans | 84 ,, | 54 ,, |

The ashes of Beans contain—

| | |
|---|---|
| Phosphate of potash and soda | 63 59 |
| ,, of lime | 9 35 |
| ,, of magnesia | 19.11 |
| Sulphate of potash and common salt | 1.84 |
| Silicate of potash | 1.11 |
| | 100.00 |

The ashes of Bean straw contain—

| | |
|---|---|
| Carbonate of potash | 3.32 |
| ,, of soda | 6 06 |
| Sulphate of potash | 32 04 |
| Common salt | 0 28 |
| Carbonate of lime | 39.50 |
| Magnesia | 1 92 |
| Phosphate of lime | 6 43 |
| ,, of magnesia | 6 66 |
| ,, of iron and alum | 3 49 |
| Silica | 7 97 |

Beans contain in 10,000 parts about 200 parts of potash. *J. D.*

## Home Correspondence.

*Brewing.*—I gladly comply with the request of "A. B." as far as I can, and I do so the more willingly because in reading over the article to which he refers I detect a mistake, not in the receipt itself (for the temperatures are given correctly as far as precept goes), but in the phenomena of the process, viz., the temperature which the mash tun will attain at the commencement of the first mash, if the directions which I then gave are followed. I stated the addition of the second quantities of water at 182° would bring the temperature of the mash up to 165° to 167°. Those figures ought to have been 155° or 157°., which is the temperature which results from the preceding quantities and heats. I find from my notes that this temperature varies from 155° to 157° in cold weather in March, and from 157° to 159° in summer or autumn. The temperature of the second mash is correctly stated, and ranges from 168° to 172°. I do not know that much practical error would occur from this mistake, as any one who followed my directions in other respects would discover that it was a mistake, but I am glad to have the opportunity of correcting it. Thus much premised, I proceed to "A. B.'s" queries. I have no experience of German yeast, and should be afraid to use it, except it were in a small brewing of strong beer, for the purpose of procuring beer yeast for a further process. Rain water I consider best for brewing, and I use none other; but I should hesitate to use it if sooty or otherwise offensive. It will throw off much filth by boiling, and afterwards by fermentation; but if really foul it could not fail to affect the flavour of the beer. That which I use is preserved in a large tank, and is tolerably pure, containing only a little lime, which is derived from the Roman cement. To "A. B.'s" last query I can give no very satisfactory answer. If he possessed a knowledge of chemistry, he would hardly ask such a question; and without such knowledge, he will hardly understand any answer I can give. He probably knows that the same Potato will be waxy, mealy, ropy, and paste-like, according as it is boiled for a longer or a shorter time; somewhat analogous to this fact is the process which produces sugar or gum from the same materials. If "A. B." has some knowledge of chemistry, he will find some of the information he seeks in p. 943 of the seventh edition of "Turner's Elements of Chemistry," by Liebig and Gregory, 1842; and he will collect more by consulting different Cyclopædias on the subjects of Diastase, Gum, Sugar, &c.; but I cannot now exactly recollect or refer to the various sources from which I have picked up the little information which I possess on this subject. Suffice it to say, that as far as it has been investigated, between 158° and 148° appears to be the temperature at which Grape-sugar is formed most freely; and it is not destroyed below 170° or 172°. The best temperatures, therefore, would seem 158° for the first mash, and 168° for the second. Another year's experience has confirmed the excellence of the receipt which I ventured to give in March last; and by the addition of a false bottom to my mash-tun, and the accurate fitting of its wooden cover; my mash seldom loses more than 3° per hour, that is to say, that commencing at 158°, it does not fall to 148° in less than 3¼ hours; so that I can maintain the mash fully 3 hours, between the limits which Payen and Persoz state to be most favourable to saccharification. In conclusion, I will remind "A. B." of Virgil's lines:

"Felix qui potuit rerum cognoscere causas,
Fortunatus at ille Deos qui novit agrestes,
Panaque Sylvanumque senem."

If we cannot attain to the first and highest rank of knowledge, we must be contented and thankful in the second. I wish I could answer his inquiry into the rationale of the process, by which I am converted into a palatable and refreshing beverage; as I cannot, I

resign myself to the tender mercies of Ceres, or which other soever of the rural deities presides over the destinies of a *Barleycorn*.

*Management of Sheep in East Kent.*—Seeing a short account "On the Farming of Sheep," in your *Agricultural Gazette* (of which I am a subscriber) of the 25th ult., I beg to send you "the plan adopted, generally, in the Isle of Thanet, and in many parts of East Kent."—First: We buy the lambs at Romney or Hamstreet fairs, by a salesman or ourselves, or of upland breeders known to us, in the latter part of August or first part of September. Fold them a few days after the journey, on a Saintfoin rowen, (which most of us have), then let them run over the grattens, [Pray tell us what "grattens" and "rowens" are?] attended by a boy, for which he is paid 4*s.* per week. At night they lie in fold on the before-mentioned Saintfoin, changing the fold once a week. As soon the food gets scanty, they are then put on the Cole (after Peas), or white Turnips, changing them every two or three days (lambs are best on a variety), giving them at the same time Pea or Bean straw, and at times Clover hay (second heads). We do not mind wasting a fold or two at first, till they get into the way of eating Turnips as a boy picks them up, and they are carted into the yard for the hogs. In the spring about the beginning of April, they are sent down to the marshes, (Barton Valley, Minster, &c., &c), there remain till October, when they come to the upland again, and are put on Swede Turnips, first having cut Clover hay (second head), with 1½ gallon common salt sprinkled in it; the above quantity is sufficient for a cart-load (to the floats). After a fortnight they are draughted off, the best, about 50 or 60, according to the size of the flock, and feed a little higher than the rest; the refuse having ½ pint of Peas or Oats a day each, the best ¾ to 1 pint each, and one bushel of ground oilcakes to two score. We sell these all out by the time the Turnips are gone (April), and the lambs bought this year are sent to marsh, and return the following autumn to be fattened. When very wet weather during the time of fattening, we litter a corner of the field with straw; those that have pasture land put them upon it for the time. *A Young Agriculturist.*

*On the Culture of the Mangold Wurzel.*—The Mangold Wurzel is probably one of the most useful vegetables ever introduced into the country, particularly the Yellow Globe, and long rooted yellow kinds; and there can be little doubt that, as it becomes better known, it will be more generally cultivated. One great reason that continues to operate against it is, the difficulty, not only of obtaining a crop, but of getting the seed to vegetate. If the following instructions be attended to (the result of three years' practical observation) no one need fear to realise a crop, which, of all others, is the most valuable for feeding stock—namely, beasts, sheep and pigs. *Rules for preparing the Ground for the Seed*:—Let the ground be well ploughed or dug to a good depth in autumn. About the first week in April, let the land be thrown into ridges, as for planting Potatoes; manure it well with good yard manure, say, from 10 to 12 tons per acre. Before covering the manure, sow two hundredweight of the best Peruvian guano broadcast over the whole; then let the ridges be closed, and rolled down with a light roller, just enough to level and press their surface; after which, let the holes be made with a dibble two inches deep, and 12 inches from each other, to receive the seed, which should be prepared as follows: *Preparing the Seed for Sowing*:—For an acre of land, take four pounds of good seed, of the true Yellow Globe, or the New Long Yellow; but this must depend upon the quality of the land. If it be of a light moor or bog kind, I should recommend the Long Yellow; but if otherwise, the Yellow Globe. A few days before the land is ready, place the seed in a pail, then add as much water as will cover it; to which add six ounces of the best Peruvian guano, and stir well together. In this state, let it remain 36 hours, stirring it up well twice a day. After which, take a wet cloth, lay it on a warm place, and spread the seed upon it, to the thickness of about two inches; cover it down with another wet cloth, taking care to keep both cloths damp. Stir up the seed once a day, until it begins to sprout, which it will do in four or five days, if kept warm. You may then commence dibbling the seeds, say, one or two in a hole; after this just close the whole down with the head of a garden rake. When the plants are up two inches high, should any of the seed have missed, draw out from those places where there may be two together, and fill up the vacancies, taking care to leave the best plant undisturbed. Nothing more need be done but to keep the ground clear of weeds, until September, when you may commence gathering the under leaves for your stock, say, about one-third at a time, which may be done once in a month, until the latter end of November, when you may prepare for taking up the roots. *Storing the Roots*:—Much care is requisite in taking up the roots, so as not to cut or wound them with an instrument; but twist off the leaves by hand, and take care to choose a dry day for the purpose. When taken up, they should be led into a ridge, as you would Potatoes, and cover down with a good thickness of straw, and a final covering of about four inches of earth. It is of the utmost importance that all evaporation should pass away; and this may be easily effected by chimneys being placed at distances of three feet apart, and formed of the common drain tile. In this state, they may be kept in perfect preservation until April or May, if required, and will be found really valuable for milch cows during the winter months, for sheep in lambing time, and for feeding pigs in autumn; but in the latter case, I should recommend a small quantity of Peas or Beans to be given with them. *W. Stent, Nursery and Seedsman, Stockwith, Gainsborough.*

*Slipping Calves and Foals.*—Having been entirely free from such occurrences on my farm, I was induced to consider the cause of this exemption, and believe I have arrived at a sound conclusion; but throw out a few remarks, to elicit from your various correspondents some evidence on this important subject. I believe foul water to be a principal cause of these mishaps, having observed that where pure water is given there is an almost total exemption, whilst the most numerous cases occur (particularly in Herefordshire) where the animals drink at ponds receiving the drainage of the farm-yard. That which is but slightly injurious to the mother, evidently destroys the fœtus. I am not sure that foul air and want of ventilation have not an evil tendency. 'Tis quite certain, I have experienced, that young calves have been destroyed in a night, by a vitiated atmosphere that has not apparently injured the more robust parents. So particular are cattle and sheep about water, that having tarred the joints of a slate cistern, the animals refused the food saturated by the water from this cistern. Although some farmers consider foul ponds non-injurious, I know a case where a mare, unused to such liquid, was nearly destroyed by it. *J. J. Mechi, Feb.* 20, 1851.—[You are probably aware of the pernicious effects of ergot—a disease to which the Grasses are more generally liable than was once supposed.]

## Review.

*What ought Landlords and Farmers to do?* By Ph. Pusey, M.P. for Berkshire. John Murray, Albemarle-street.

The editorship of the "English Agricultural Journal," is not the least of the services which Mr. Pusey has done to English agriculture. The task of preparing the index of its first eight volumes having been confided to us, no one is better able than ourselves to testify of the rich mine of agricultural wealth which those volumes contain. The collection of the valuable papers which make up the contents of the work, has been conducted by intelligence enough to secure to its readers the earliest trustworthy novelties in the agricultural world, and by judgment enough to save them from most of the extravagances with which it abounds. A sound view of the connection between the sciences on which agriculture rests, and the practices of which it consists, has always conducted Mr. Pusey through the duties of his post, so that he has been a safe guide for the large body of readers whom he has influenced; and his journal has, undoubtedly, been the leading agricultural periodical throughout the 10 years of its existence.

The pamphlet named above is the "leading article" of the current volume of this journal. It attempts to concentrate the light of all the past volumes upon the present position of agriculturists. And a very instructive and satisfactory light it gives. The present position of chemistry and meteorology, in relation to agriculture, is described, the present state of agricultural mechanism is pointed out, the means which the landowner possesses of improving the soil are referred to; and the details of farming, under the heads of "Management of Manure," "Foulness of Land," "Winter Cropping," with reference to some of the cultivated plants, are discussed.

The first and second sections of the review are very interesting and useful in guiding to a correct estimate of theory; but it is in the latter and more practical portion of his performance that Mr. Pusey's statements will be most useful. The improvement of the soil, including draining, removal of fences, diminution of four-footed game, the use of burnt clay, marling or claying, liming, boning pastures, chalking, irrigation, breaking up of Grass lands, improvement of buildings and warping, is discussed, of course very generally, when you consider that the whole of this part of the pamphlet occupies only 12 pages, but still usefully as an index to point the attention of agriculturists in the proper directions. On some of the points which are discussed, our own experience is very different from Mr. Pusey's—as for instance on the cost of digging drains, where he finds it possible to dig a 5 feet deep drain for 4½*d.* per perch! and on the amount of capital required in farming, where the sum of 6*l.* per acre, he states, is ample allowance, "with sheep-farming at least," for the highest possible farming; but it is the very leading point in his views of agriculture, and indeed in every sensible view of the subject, that all sorts of experiences are possible, and may each of them be justifiable and compatible with skill and good practice in different parts of this country, which is unmatched by any other in the world for its variations in soil and climate. Mr. Pusey's name is sufficient surety for the wide circulation of this pamphlet among the agricultural readers of England; but we willingly add whatever influence a recommendation of it in these columns may possess in the eyes of our subscribers.

## Miscellaneous.

*Hints on Laying Down Land to Permanent Pasture.*—It is highly important that the land should be cleaned from weeds, and well pulverised by repeated ploughing and harrowing before the seed is sown; and in cases where the soil is particularly loose or sandy it is desirable that it should be also rolled before sowing; if this is not effected, the seeds (many of which are very minute), will some of them be too deeply imbedded in the soil, while others may not be covered at all. It is also desirable that the seeds should be sown when there is not much wind, and that they should be delivered from the machine or the hand, placed rather near to the soil, otherwise the smallest and most valuable of the seeds may be carried by the wind into the adjoining field or hedgerow. The harrows, which should be very light, must be again drawn over after sowing, and, if the soil is very light and dry, the roller also; if the soil is poor, a dressing of Peruvian guano or superphosphate may be harrowed in with the seeds, at the rate of 2 cwt. per acre. The sorts of seeds should, of course, be selected in accordance with the nature of the soil, and the purposes to which the pasture is intended. This and much other useful information may be obtained from "Lowe's Elements of Agriculture," "Stephens' Book of the Farm," "Sinclair's Hortus Graminiensis," and other works; or from seedsmen and agriculturists who have paid especial attention to this part of botany and agriculture. If corn is sown with the Grass seeds, it should not be more than 1 or 1½ bushels to the acre of corn, and for this purpose Oats are preferable to Barley. *On Improving Old Pastures.*—Having as far as possible eradicated the strong growing weeds and coarse Grasses, and improved the condition of the land according to its requirements if any, heavy harrows should be drawn over the old turf early in the spring, to loosen the soil for the admission of seeds of the finest and most nutritive kinds of perennial natural Grasses and Clovers, which, if sown freely, will occupy the numerous small interstices between the plants of Grasses already growing, and thereby prevent the luxuriant growth of coarse Grasses and noxious weeds. It is a good practice to sow these seeds at the same time as the top-dressing is applied, but this is by no means necessary. *From Messrs. Sutton's "Catalogue of Natural Grass Seed," just published.*

### METEOROLOGICAL REPORT.—February.

(*Continued from page* 125.)

[By an accidental oversight, the note at the foot of our last week's report was misplaced; it should have been inserted after the storm marked ‡‡, and have had the date February 10, attached to it.—Ed.]

| Date. | Time. | Max. | Min. | Wind, and Remarks. |
|---|---|---|---|---|
| Tues. 18 | 5 p.m. | 29.97 | ... | SW. Overcast, with a stiff breeze. |
| 19 | 7.15 a.m. | 29.89 | ... | SW. Steady breeze, and overcast the whole day. |
| | midnight. | ... | 29.77 | |
| 20 | 7.20 a.m | 29.70 | ... | SW. Almost calm; dull |
| * | 2.45 p.m. | ... | 29.65 | cloudy day, with alternating dark clouds and sunshine, but not cold. |
| 21 | 2 a.m. | ... | 29.68 | N. all day. Calm, occasional |
| | 10.40 p.m. | 29.80 | ... | gentle breezes, and overcast; but a very pleasant day. |
| 22 | 10.5 a.m. | 29.81 | ... | ESE. Moderate breeze, fine, and sunny. |
| | 4.40 p.m. | 29.79 | ... | SE. Stiff breeze all day (in- |
| | 8.30 p.m. | ... | 29.76 | creasing towards night), and fine. |
| Sun. 23 | 7.45 a.m. | 29.70 | ... | ENE. a.m., gentle. White |
| | 6 p.m. | ... | 29.65 | frost; fine; Noon, E. Stiff breeze, dark clouds; p.m. E. less wind; overcast. |
| 24 | 7.40 a.m. | 29.62 | ... | ENE. to ESE. with gentle |
| † | 11.40 p.m. | ... | 29.61 | breezes, and fine sunny day; barometer steady. |
| 25 | 7 a.m. | ... | 29.61 | NNE. to ENE. a.m. Brisk |
| | 11.25 p.m. | 29.83 | ... | breezes. E. noon, and p.m. Although it rained the whole day, more or less, the barometer rose steadily, and towards night the wind drew round towards N., and went down to calm. |
| 26 | 7 a.m. | ... | 30.04 | NNE. all day; brisk. Bright |
| | 11 p.m. | 30.25 | ... | day and fine, but *very cold*, with dry clouds (as of snow) floating by; Even. N. Clear bright night and hard frost. |
| 27 | 7.15 a.m. | 30.26 | ... | N. and NNW. Gentle breeze; white frost, clear and fine. |

* On the afternoon of Tuesday, the 18th, whilst watching the last storm moving away slowly to the Eastward and Northward from the Island of Portland, I observed a heavy bank of clouds collecting in the South West, and on my return home the barometer had begun to fall. This storm travelled across England from SW. to East.

† It is with a certain degree of hesitation that I offer this explanation of the weather from February 22, to this moment of writing; partly because no storm which I have yet noticed has taken this route, and partly because I venture to infer from it the future; and hitherto I have only offered explanation of that which has already occurred, but whereas all the storms I have hitherto observed either travel from West to East, or from South to North, having the Continent to the right of their central track; this storm is travelling from South to North over the Continent of Europe, having come from the Westward over Spain, and passed up the Gulf of Lyons, over Germany, and up the Baltic. Until the barometer falls, from the approach of another storm, continued frost may be expected.

Dorchester, Feb. 27th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### FEBRUARY.

"An Essex Farm, *Feb.* 18.—The fine weather last week has set every one to getting in their spring corn, Peas, Beans, &c.; and we have nearly finished dibbing Beans, not growing more than half the quantity of spring-sown since we have tried the winter sort, finding them a more average crop one year with another, though they do not yield near so many in a good season as the Long-pods, the only other kind grown here; the Long-pods are dibbled with a common dib, the land being previously marked out with the drill. This gives the Beans an additional 2 inches in depth, the distance being about a foot each way, thus giving you a good chance to hoe them well. They require going over three times at least (a man dibbing from one-half to three-quarters of an acre a day), and are then covered with light harrows. The Barley is all drilled on this farm 4½ inches. We have tried it at a greater distance, but found it did not yield so well, nor was it of so fine a sample; this led to a return to the old way. The only kind grown is the Chevalier; it is liked most

by the maltsters, and yields well. We shall finish drilling Barley next week, if fine weather, then begin sowing Oats, having a large breadth this year from breaking up a quantity of old pasture; and the Oat crop is generally very good on this kind of land when burnt. We grow the white Tartarian; it is a sort that yields well, and improves so much on this land that you would hardly know it was the same kind, with the seed; we always have it from the Fens, where it is a long thick-skinned Oat, nearly all husk. The ewes have nearly all dropped their lambs, and we have been tolerably fortunate, having only lost two ewes out of a flock of 200; and there are more twins than generally—quite one-third of them. The ewes now have Mangold Wurzel and half Swede Turnips, with as much chaff (half Clover hay and half straw) as they will eat. The Turnips and Mangold Wurzel are given on the pasture, which is much barer than it was a month ago. The ewes are put into the yard every night, a man being engaged to get up once or twice during that time to attend upon those lambing. We have had a lot of two-year old wethers fatted in a barn this winter, which we have sold; and the plan has given much satisfaction, for they gained much more fat than when on the land, and appeared to enjoy the shelter given them greatly. We put down about 9 inches of burnt earth on the floor before putting them in, and a sprinkling of straw over it; this, with the addition of a barrowful or two spread morning and evening with the other straw, has kept them very clean, and has made a large quantity of excellent manure, fit to drill in with anything. *E X., near Braintree, Essex.*—[Please send us the rest of your poultry article.]

Lammermuir Sheep Farm.—Another month has passed away—so mildly, too, that one can hardly persuade oneself that winter is now about half over, if, indeed, it is to be restricted to a definite number of months and weeks. True, we have very variable weather, and much rain—though we hear there has been a very moderate fall in the lowland districts—so much so, that some stock-masters, whose grazings are naturally wet, are longing for frost, being afraid of rot. Fortunately, there has been no appearance of this scourge as yet, though it may show itself in some few cases in spring. In the meantime our flocks are unusually healthy; indeed, we do not remember seeing them more so at this particular season. Still we believe that a moderate frost, and slight covering of snow, to preserve vegetation, would be useful. "Everything is beautiful in its season." And as our sheep cannot expect to live their usual time, without encountering some hard winters, the sooner they are inured to them the better. As mentioned in our last, the rams were removed from the ewes at the new year. We have taken Turnips elsewhere, for such as we do not intend using again, to be sold as soon as fat. The rest are receiving as many at home as will suffice to keep them in good health and spirits. As a general rule, we are averse to using rams above two or three seasons; being satisfied that the produce of young sheep are most vigorous. Still, when about 50 rams are required on the farm every year, it is no easy matter to procure such a number of really good shearlings, especially of Cheviots and Blackfaces, which are difficult to obtain at all, and not except at a high figure, being actually higher priced than average Leicesters of the same age. It may be accounted for in this way: From a given number of lambs retained, there is always a much smaller proportion of *good* sheep from the two former than from the latter breed, most probably because, unfortunately, until of comparatively late years, the same attention has not been bestowed upon the breeding of mountain sheep, and also because there are seldom the same facilities, in the shape of enclosures, for making a careful selection of ewes to be put to the first-class rams, which are to be found on all lowland farms. Consequently, though the best male lambs from the best ewes have been retained, still, from the latter never having been separated from the rest of the flock, the sire may not have been suitable in every respect. The necessity for a frequent change of rams will also be apparent, when we remember that hardiness is a *sine qua non* in mountain sheep; and hence, though a breeder may have first-rate stock himself, all in and in breeding must be avoided as much as possible. The late open weather has certainly forwarded ploughing operations greatly. We have finished the lea for Oats, and have begun to ridge up for Oats after Turnips. The latter we purpose stirring with Scouler's two-horse grubber when sown. Oats twice in a four-course rotation may seem hard work, but having repeatedly tried Barley, we find the elevation too high (700 feet) for this crop. Besides, most of the straw being consumed by the cattle and horses, that of the latter grain makes very poor fodder. The carting out of manure for Turnips progresses very slowly. The greater part of the field for which it is intended being very steep, renders it next to impossible to cart up heavy stuff, except during frost. Still, as the work at sowing time is better and more expeditiously got through when the manure is to carry over the hill at that time, we will wait yet a little longer for frost. Besides straw, all the cattle are now getting a moderate allowance of Turnips. We have a few calves, which receive about seven quarts of new milk daily, with Swedes and Clover hay *ad libitum*. *A Lammermuir Farmer.*

## Notices to Correspondents.

Beer: *S Dynes.* Will any correspondent state if he has found any prejudicial effect to be produced either on the article or its consumer by cooling or working beer in vessels lined with zinc. [We should not expect any harm.]

Beans: *C C.* They need not be boiled at all. Soak them in cold water long enough.

Drainage Acts: *A Poor Landlord.* It will be quite competent for you to back out of the whole affair, at any time, on paying the expenses incurred. The business of the inspectors is not so much to lay down plans of drainage, as to see that those selected by applicants are economical and efficient. Inspectors but too often find that neither landlord nor tenant know anything of draining, and then, of course, they have to explain the plans which they conceive best under the circumstances. The inspectors are generally men of the greatest practical experience, and we firmly believe, that so far from your having occasion to grumble at their proceedings, as you appear to anticipate, you will, upon trial, derive the greatest benefit from their advice.

Eggs: *E A R.* An Irish correspondent suggests that the best way of preserving eggs is to have pullets hatched in February that will begin laying in December. Fuller information will be found in the chapter on eggs in Dixon's "Ornamental Poultry."

Fences: *J C.* Quicks should be cut at the time of planting and put into the ground, leaving an inch or two only above the surface. On inspection you will perceive by the colour how far up the stem the soil has covered it whilst growing in the nursery-bed. The tops of the Quicks should all be cut off about two inches above this point, previously to being inserted in the soil. See Morton's "Cyclopedia of Agriculture," article "Fences," for the mode of raising and planting Quick. *B.*

Flax: *X Y.* See report of M. Claussen's statement before the English Agricultural Society.

Grasses: *Street.* Will any one tell us what mixture of Grasses is generally sown for permanent pasture on the fen soil of Lincolnshire.—*An Old Subscriber.* You should state the soil. If it be a light, gravelly, Barley soil, the following is a list of seeds:—Alopecurus pratensis, 1 lb.; Avena flavescens, 1; Dactylis glomerata, 2; Festuca duriuscula, 2; F. heterophylla, 1; F. rubra, 2; Lolium italicum, 3; L. perenne, 5; Poa nemoralis, 2; P. pratensis, 1; Medicago lupulina, 1; Trifolium pratensis perenne, 3; T. repens, 4 lbs.; in all 28 lbs. per acre.

Harrows: *T L.* The teeth of iron harrows need not be screwed in; they may be wedged in, as they are in wooden frames, and may be just as easily removable. If they wear more that proves their greater efficiency. In every respect we should prefer the iron implement.

Lazy-bed Planting: *W Keith.* The system is to dig the land; planting the Potatoes on the surface in narrow beds, and covering them with the earth taken out in forming alleys between the beds. The advantages are the furrow drainage and the depth of good soil. See Richardson's shilling book on the pig.

Oil-cake: *Oxford.* It will take nearly 50 bushels of Linseed, weighing 60 lbs. a bushel, to make a ton of oil-cake.

Paint: *M B* says, "I have been making a large outlay in farm buildings, and they are just come to a conclusion; I am at a loss what paint or other material to make use of for all the wood work—doors, windows, shutters, &c., for outside work, and in a county where as much rain falls as any part of the United Kingdom. I wish for the most durable, at the same time with a due regard to economy. Can any of your correspondents with their experience in these matters assist me?"

Poison: *Anon.* In Australia and New Zealand the wild dogs commit great ravages upon the sheep; if with the poison (strychnine), which the settlers place for their dogs in the sheep walks, there were anything which would attract them to it, it would be a great benefit. Can any of our correspondents say what dog stealers and others are supposed to use to attract dogs to them?

Poultry: *A H.* We know of no other way of preventing fowls from eating eggs, except to supply them liberally with crushed egg-shells, calcined oyster shells, &c., besides a sufficiency of insect or animal food. Hens, that are set on too many eggs, will often eat as many as they think above the due number, and carefully hatch the rest.—*C E C.* The black spots on the combs of the Dorking fowls *may* be frost-bites and chilblains only, or they *may* be symptoms of severe organic disease within. In the first case, good keep and comfortable housing will check the complaint, in the latter, the patients are in a bad way. What a pity it is that ladies and gentlemen who send us inquiries do not indicate whether the answer is to apply to Caithness or to Cornwall.—*A F.* Your bantams are evidently all out of health from being "brought up in a small inclosure under a net," or they would not all have the same difficulty in laying eggs, which, when laid, prove defective. Send them out for a week or two to a country walk. Beware of giving them salt, or you will soon poison them.

Tullian System: *G T W.* By trenching half the ground in the way described, the surface of the fallowed space is getting the benefit of aeration and the mechanical action of frost, at the same time that it is affording space underneath for the roots of the Wheat to extend into, and draw nutriment from, and in this way it is being prepared for the next year's planting. I believe it will be an improvement on the practice, to begin with trenching all the land, and to sow the Wheat 21 inches apart, and to trench the intervals, and this I am going to try; but this is neither the plan of Jethro Tull nor of Mr. Smith. I am sowing all my Oats and Barley and spring Tares at these intervals, to be able to cultivate between them, such is my confidence of the value of moving the soil between the young corn. I advise every one disposed to try the effect to begin with reading Jethro Tull, and a visit to Mr. Smith. *Hewitt Davis.*

Youatt on the Horse. We have the two editions, and should greatly prefer the 10*s.* copy.

# Markets.

COVENT GARDEN, March 1.

Hothouse Grapes are now over for a season. Pine-apples are still dear, and the supply of good dessert Pears is limited. English Apples are scarce. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good. The trade for French Beans and Cucumbers is improving. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 6*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

### FRUIT.

Pine-apples, per lb., 6*s* to 8*s*
Grapes, Portugal, p. lb., 8*d* to 1*s*
Pears, per doz., 2*s* to 5*s*
— per half sieve, 6*s* to 15*s*
Apples, dessert, per bushel, 6*s* to 10*s*
— kitchen do., 5*s* to 8*s*
Lemons, per doz., 1*s* to 2*s*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Oranges, per doz., 9*d* to 2*s*
— per 100, 6*s* to 10*s*
— Seville, p. 100, 7*s* to 14*s*
— — p. doz., 1*s* to 2*s* 6*d*
Chestnuts, per peck, 2*s* to 5*s*
— per 100, 9*d* to 1*s* 6*d*
Nuts, Barcelona, per bush, 20 to 22*s*
— Brazil, p. bsh., 12*s* to 14*s*
Cobs, per 100 lbs., 70*s* to 75*s*

### VEGETABLES.

Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d*
Cabbages, per doz., 6*d* to 1*s*
Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, p. doz., 1*s* 6*d* to 4*s*
Broccoli, p. doz. bundl., 7*s* to 12*s*
Seakale, per punnet, 6*d* to 2*s*
Asparagus, per 100, 2*s* to 8*s*
Rhubarb, p. bundl., 6*d* to 1*s* 6*d*
Potatoes, per ton, 60*s* to 100
— per cwt., 3*s* to 6*s*
— per bush., 1*s* 6*d* to 3*s*
Turnips, p. doz. bundl., 1*s* to 2*s*
Cucumbers, each, 1*s* 6*d* to 4*s*
Radishes, per doz., 1*s* to 1*s* 6*d*
Celery, p. bundle, 6*d* to 1*s* 6*d*
Carrots, per doz, 2*s* to 5*s*
Spinach, per sieve, 1*s* to 1*s* 6*d*
Onions, p. bunch, 3*d* to 4*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*
Leeks, per doz., 9*d* to 1*s*
Shallots, per lb., 6*d* to 8*d*
Garlic, per lb., 4*d* to 8*d*
Artichokes, Jerusalem, p. half sieve, 1*s* to 1*s* 6*d*
Lettuce, Cab., p. score, 6*d* to 9*d*
— Cos, per score, 1*s* to 1*s* 6*d*
Endive, per score, 1*s* to 1*s* 6*d*
Small Salads, p. punn., 2*d* to 3*d*
Horse Radish, p. bundl., 1*s* to 4*s*
Red Beet, per doz., 6*d* to 1*s*
Mushrooms, p. pot., 6*d* to 9*d*
Sorrel, per hf. sieve, 6*d* to 9*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, per doz. bun., 2*s* to 3*s*
— Roots, p. bundl. 9*d* to 1*s*
Marjoram, per bunch, 2*d* to 4*d*
Mint, green, per bunch, 6*d* to 9*d*
Watercress, p. 12 bunch., 6*d* to 9*d*
Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d*

POTATOES.—Southwark, Feb. 24.

The Committee report that the market continues to be well supplied from Yorkshire and Scotland; the weather being so mild, this has been the worst week for trade we have had for the season, and it is with difficulty our highest quotations are realised. The following are the prices:—York Regents, per ton, 70*s.* to 90*s.*; Scotch do., 60*s.* to 70*s.*; ditto Cups, 50*s.* to 70*s.*; Cambridgeshire and Lincoln Regents, 60*s.* to 75*s.*; French whites, 50*s.* to 60*s.*

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 27.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | | Clover ... ... ... | 70*s* to 80*s* | |
| Inferior ditto .. ... | 63 | 70 | Second cut ... ... | 63 | 70 |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 24 | 30 |
| New Hay ... ... | — | — | | J. Cooper. | |

Trade brisk.

Cumberland Market, Feb. 27.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | | Inferior ... ... ... | 60*s* to 72*s* | |
| Inferior ditto... ... | 55 | 65 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 26 | 30 |
| Old Clover ... ... | 78 | 84 | | Joshua Baker. | |

Whitechapel, Feb. 27.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 70*s* to 75*s* | | New Clover ... ... | —*s* to —*s* | |
| Inferior ditto ... | 60 | 63 | Inferior ditto... ... | 65 | 70 |
| New Hay ... ... | — | — | Straw ... ... ... | 25 | 27 |
| Old Clover ... ... | 78 | 84 | | | |

COAL MARKET.—Friday, Feb. 28.

Hollywell, 15*s.*; Carr's Hartley, 14*s.*; Eden Main, 14*s.* 6*d.*; Davison's West Hartley, 14*s.*; Wallsend Haswell, 15*s.* 9*d.*; Wallsend Stewarts, 15*s.* 6*d.*; Wallsend Tees, 15*s.* 6*d.*—Ships at market, 249.

HOPS.—Friday, Feb. 28.

Messrs. Pattenden and Smith report that fine Sussex Hops are in great request, at an advance in prices.

SMITHFIELD, Monday, Feb. 24.

The supply of Beasts is again large; trade is, however, somewhat more active, and prices have recovered from the depression of Friday. The number of Sheep, although small, is sufficient for the demand. Best Downs are fully as dear as of late, but other kinds are on the average lower. There are but few Calves on offer; choice ones are readily disposed of, but it is difficult to obtain higher prices. From Holland and Germany there are 350 Beasts, 640 Sheep, and 26 Calves; from Norfolk and Suffolk, 2300 Beasts; from Scotland, 400; and 200 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Here- | | | | | Best Long-wools . | 3 | 10 | to 4 | 0 |
| fords, &c. ... | 3 | 4 | to 3 | 6 | Ditto Shorn ... | ... | | | |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 2 | 10 | Ditto Shorn ... | ... | | | |
| Best Downs and | | | | | Lambs ... ... | ... | | | |
| Half-breds ... | 4 | 4 | — 4 | 6 | Calves ... ... | 3 | 4 | — 4 | 6 |
| Ditto Shorn ... | ... | | | | Pigs ... ... | 2 | 8 | — 3 | 8 |

Beasts, 3713; Sheep and Lambs, 19,000; Calves, 70; Pigs, 380.

Friday, Feb. 28.

The number of Beasts is small, but fully adequate to the demand; we retain Monday's quotations, they are not, however, so readily obtained. The supply of Sheep is very short, but we cannot quote any advance, trade being rather worse at the dead markets. Trade is active for choice Calves; prices on the average are no better. Our foreign supply consists of 85 Beasts, 750 Sheep, and 158 Calves; we have 85 milch cows.

| Best Scots, Here- | | | | | Best Long-wools . | 3 | 10 | to 4 | 0 |
|---|---|---|---|---|---|---|---|---|---|
| fords, &c. ... | 3 | 4 | to 3 | 6 | Ditto Shorn ... | ... | | | |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 2 | 10 | Ditto Shorn ... | ... | | | |
| Best Downs and | | | | | Lambs ... ... | ... | | | |
| Half-breds ... | 4 | 4 | — 4 | 6 | Calves ... ... | 3 | 4 | — 4 | 6 |
| Ditto Shorn ... | ... | | | | Pigs ... ... | 2 | 8 | — 3 | 8 |

Beasts, 561; Sheep and Lambs, 2920; Calves, 257; Pigs, 350.

MARK LANE.

Monday, Feb. 24.—The supply of English Wheat continues small, and the condition generally bad, in consequence of which the greater part could only be disposed of at a reduction of 1*s.* per qr. upon the prices of this day s'ennight. Low priced foreign was taken slowly in retail, but the better descriptions are entirely neglected.—Barley of all kinds is firm at our quotations.—There is no alteration in the value of Beans or Peas.—The Oat trade continues firm, but the sale is limited.—Flour remains dull and neglected.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42—46 | | Red ..... | 36—43 | |
| — — fine selected runs...ditto | 42—47 | | Red ..... | —40 | |
| — — Talavera ..... | 45—52 | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 3?—52 | | | | |
| Barley, grind. & distil., 17*s* to 21*s*...Chev. | 26—30 | | Malting . | 22—26 | |
| — Foreign... grinding and distilling | 17—22 | | Malting . | 22—24 | |
| Oats, Essex and Suffolk ..... ..... | 17—19 | | | | |
| — Scotch and Lincolnshire...Potato | 19—23 | | Feed ..... | 16—21 | |
| — Irish .....Potato | 17—21 | | Feed ..... | 16—18 | |
| — Foreign .....Poland and Brew | 17—21 | | Feed ..... | 15—18 | |
| Rye ..... | 22—24 | | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20*s* to 26*s*.....Tick | 23—27 | | Harrow . | 23—27 | |
| — Pigeon.....25 — 31... Winds | 37—43 | | Longpod | 27—33 | |
| — Foreign .....Small | 22—28 | | Egyptian | 20—22 | |
| Peas, white, Essex and Kent.....Boiler | 24—26 | | Suffolk... | 26—28 | |
| — Maple.....26*s* to 28*s* .....Grey | 23—24 | | Foreign . | 24—31 | |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34—40 | | | | |
| — Suffolk .....ditto | 27—34 | | Norfolk . | 27—34 | |
| — Foreign .....per barrel | 16—21 | | Per sack | 26—34 | |

Arrivals in the Port of London last Week.

| | Wheat. | Barley. | Malt. | Oats. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Flour, 14384 sks — 2990 brls | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. |
| English ..... | 2200 | 1831 | 3122 | 995 | 284 | 377 |
| Irish..... | — | — | 20 | 2160 | — | — |
| Foreign ..... | 9336 | 700 | — | 6181 | 1940 | — |

Friday, Feb. 28.—The arrivals of English grain into London this week have been moderate, those of foreign small. The attendance at market this morning was small, and the demand for Wheat exceedingly limited, so much so that we are unable to make any alteration in quotations. The same will apply to Barley, Beans, and Peas.—The Oat trade is firm, and prices of foreign fully supported.—Foreign and country Flour is offered on easier terms.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Jan. 18..... | 38*s* 0*d* | 22*s* 8*d* | 16*s* 9*d* | 24*s* 8*d* | 26*s* 7*d* | 26*s* 11*d* |
| — 25 ..... | 38 5 | 22 7 | 16 7 | 23 2 | 26 4 | 27 5 |
| Feb. 1..... | 37 10 | 22 9 | 17 7 | 22 7 | 25 11 | 26 6 |
| — 8..... | 38 1 | 22 10 | 16 9 | 23 11 | 25 10 | 26 0 |
| — 15..... | 37 8 | 22 11 | 16 2 | 28 10 | 25 5 | 26 10 |
| — 22..... | 37 2 | 22 10 | 15 11 | 23 8 | 25 4 | 27 1 |
| Aggreg. Aver. | 37 9 | 22 9 | 16 5 | 23 8 | 25 11 | 26 9 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Feb. 22. | Jan. 18. | Jan. 25. | Feb. 1. | Feb. 8. | Feb. 15. |
|---|---|---|---|---|---|---|
| 38*s* 0*d* | — | ... | ... | ... | ... | ... |
| 38 5 | ... | ... | ... | ... | ... | ... |
| 38 1 | ... | ... | ... | ... | ... | ... |
| 37 10 | ... | ... | ... | ... | ... | ... |
| 37 8 | ... | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Feb. 25.—Our supplies of grain and Flour are this week upon a smaller scale than of late. The trade during the week has been without activity, and no change observable in the general quotations. We had another dull market to-day, and Wheat was taken sparingly by the millers, at prices for both English and foreign barely equal to those of Tuesday last. Flour also was difficult to quit, and French sacks declined 1*s.* per 280 lbs., and American barrels 6*d.* per 196 lbs. Oats were ½*d.* per bushel, and Oatmeal 3*d.* per load lower. Barley, Beans, and Peas were unchanged in value. There was rather more inquiry after Indian Corn, and prices were tolerably well maintained.—Friday, Feb 21.—At this morning's market we had a poor attendance of either local or country buyers; the trade ruled exceedingly dull for Wheats of all descriptions, the sales effected being altogether of retail extent, at nominally unaltered rates. The quantity of French Flour still pressing for sale, much of which is short of strength, causes continued difficulty in promoting transactions in such, even at 6*d.* to 1*s.* per sack decline, neither do the best marks support their late value. Fine malting Barley is now less valuable, and firm, and grinding parcels are steadily retailed at the quotations of our last. Oats and Oatmeal in limited demand, without change in prices. Beans and Peas unaltered.

TO THE TRADE.

THE Subscriber has now ready a LIST OF SURPLUS STOCK of many New and In eresting Plants, in every department. He will be happy to correspond with parties who have anything desirable to offer, and may be disposed to exchange. — ROBERT M. STARK, Nurseryman, Florist, and Botanist, Edinburgh, March 1.

STRONG TRANSPLANTED THORNS.

JOHN STEWART AND SONS, NURSERYMEN and SEED-MEN, Dundee, N.B., have 200,000 or 300,000 2 and 3 years TRANSPLANTED THORNS, which they offer at 5s. 6d. per 1000.—Dundee, March 1.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED and PLANT LIST for 1851 is now complete, and stamped as a newspaper, to go free by post. It is prefaced with a page of Instructions for SOWING and RAISING SEEDS, with allusions to Sorts requiring peculiar treatment, and contains the following:

PART I.—FLOWER SEEDS, consisting of lists of 422 new and most showy sorts, with colour, height, hardiness, duration of each, price per packet, and other useful information.

PART II.—VEGETABLE SEEDS, with time of sowing each kind, prices of each, and other descriptive information.

PART III.—AGRICULTURAL SEEDS, containing also much useful information.

PART IV.—ROOTS, FRUITS, BULBS, &c. for early planting.

PART V.—Contains our Descriptive Priced Catalogue Lists of Show, Fancy, Scarlet, and other Geraniums; Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica; Greenhouse, Stove, and Miscellaneous Select Plants.

PART VI.—Contains NEW PLANTS of 1851.

The following Collection will be highly approved:

| VEGETABLE SEEDS. | £ | s. | d. |
|---|---|---|---|
| A collection in full proportion, one year's supply, for a large garden, of first-rate sorts, including 24 quarts of Peas, 6 quarts Broad Beans, 10 sorts Broccoli, 6 of Cabbage, 3 of Cauliflower, 8 of Lettuce, 5 of Onion, 5 of Radish, and all other sorts in proportion | 3 | 0 | 0 |
| The same collection, in smaller quantities ... ... | 2 | 0 | 0 |
| Collection, in reduced proportion ... ... ... | 1 | 0 | 0 |
| Collection, for a small garden, of good sorts ... ... | 0 | 10 | 6 |

If any vegetables not required, enlarged quantities of others sent to make up the amount. A list of the sorts furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.

| | s. | d. |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | | |
|---|---|---|---|
| 20 varieties splendid double Stocks, 3s. 6d.; 12 ditto ... | 2 | 6 | |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 | |
| 12 vars. fine globular Asters ... ... ... ... | 2 | 6 | |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 | |
| 9 vars. Tall ditto ... ... ... ... ... ... | 1 | 6 | |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2l. and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

GREENHOUSES.

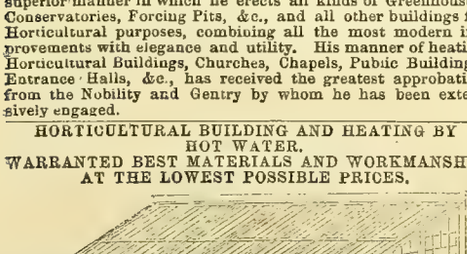
HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90l.; 21 feet long by 13 feet wide, 50l.; 12½ feet long by 10 feet wide, 30l. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cork-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 33, Virginia-street, Glasgow.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton in dock. Sulphate of Ammonia, &c.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application.

PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 1501bs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5l. per ton. Orders received by Mr. HENRY HILL, Corn Exchange, Mark-lane; Mr. GEORGE BUSH, 22, Abchurch-lane; and Mr. BENNETT, 73, Mark-lane.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

IRON GATES, HURDLES, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfields Wrought and Cast-iron Works, Bilston, Staffordshire, Manufacturers of every description of Park Entrance, Carriage and Field Gates, Wickets, &c.; Plain and Ornamental Fencing and Palisading; Ox, Cattle, Sheep and other Hurdles; Tree Guards, Garden Seats, Hay Racks, Wheelbarrows; Land and Garden Rollers, Stable Fittings, &c. &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and most moderate terms. A great variety of the above articles always kept in Stock at the London Warehouse, and at the Works. Drawings and prices may be obtained on application, or furnished free by post.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

TO THE NOBILITY AND AMATEURS OF USEFUL INVENTIONS.

INVENTION FOR SALE.—Owing to the great expense of the EXISTING PATENT LAWS and delay in the amendment thereof, the Inventor of a most useful and valuable portable Apparatus for HATCHING AND REARING GAME AND POULTRY at all Seasons, for the MILLION, and which has been successfully tested, being unable in consequence to bring out the Invention, and deterred from exhibiting at the Exhibition, determines on parting with it to any Person or Company for a certain sum. This Invention is decidedly one of a more than ordinary promising character, nothing of the kind having yet been discovered on so simple and economical a plan, with every requisite for Hatching and Rearing Poultry, and full directions for use. Within the comprehension of the most inexperienced person; the machines may be made and sold for 5l., to contain 200 Eggs. By this compendious and portable apparatus, Poultry may be Hatched in any department without additional buildings or expence. It must be evident to all that an invention of such simplicity and world-wide utility, when once brought before the public, cannot fail to bring in profits to an unlimited extent, bringing within the reach of all grades of society a hitherto unattainable and nutritious food. It is particularly adapted for Private Families and Game Preserves.—Direct to R. S. T., Mr. Dobson's, Goat-lane, Norwich.

TO BE LET, A SUPERIOR SHEEP FARM, pleasantly situated under the South Downs, near to Arundel, Sussex, consisting of about 170 Acres of Arable, 9 of Grass, and 190 of Down Pasture, with superior Farm, Residential, and Homestead accommodation. The Land lies compact and Dry, and the fields are open and of good size. The Cultivation is light, and the soil well suited to Sheep Grazing, and the alternate growth of Roots and Grain. Immediate possession to be had.—For particulars, apply to Messrs. DAVIS and VIGERS, Land Agents, 3, Frederick's-place, Old Jewry, London.

HOSE FOR LIQUID MANURE, FIRE ENGINES AND AGRICULTURAL PURPOSES, made of Canvas lined and coated with Gutta Percha. It is about one-third the price of Leather or India-rubber; it will convey liquids of all kinds under a heavy pressure; is extensively used at the Government Public Works by the Navy, and amongst Agriculturists, giving universal satisfaction. Testimonials and Prices may be obtained at Messrs. BURGESS and KEY'S, 103, Newgate-street, sole Manufacturers.

London Agents:—Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.

Country Agents:—Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. Samuel Wilson, Glasgow, agent for Scotland.

HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

| | | | | | |
|---|---|---|---|---|---|
| 8 by 6 under 10 by 8 | 4½d. | 10 by 8 under 14 by 10 | 5d. | | |
| 11 by 10 under 1½ foot, not above 20 inches long | 5½d. | | | | |
| 1½ foot | — 3 feet | — 30 | — | 6d. | |
| 3 feet | — 4 feet | — 30 | — | 6½d. | |
| 4 feet | — 5 feet | — 35 | — | 7d. | |

PACKED IN BOXES of 50 feet each.

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ..... 12s. 0d. | 8 by 6 and 8½ by 6½ ..... 15s. 0d. |
| 7 by 5 and 7½ by 5½ ..... 13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 ..... 16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes. Inches. | | | | | Inches. | | | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Under | 6 | by | 4 | at | 1½d. | is £0 12 6 |
| From 6 | ,, | 4 | ,, | 7 | ,, | 5 | ,, | 2d. | ,, 0 16 8 | |
| 7 | ,, | 5 | ,, | 8 | ,, | 6 | ,, | 2½d. | ,, 0 18 9 | |
| 8 | ,, | 6 | ,, | 10 | ,, | 8 | ,, | 3½d. | ,, 1 0 10 | |
| 10 | ,, | 8 | ,, | 12 | ,, | 9 | ,, | 2½d. | ,, 1 2 11 | |

Larger sizes, not exceeding 40 inches long.

| | | | | | |
|---|---|---|---|---|---|
| 16 oz. from | 3d. | to | 3½d. | per square foot, according to size. | |
| 21 oz. | ,, 3½d. | 5d. | ,, | ,, | ,, |
| 26 oz. | ,, 3½d. | 7½d. | ,, | ,, | ,, |

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | |
|---|---|
| 6 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each. |
| 6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,, |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.

87, BISHOPSGATE-STREET, WITHOUT,

Same Side as Eastern Counties Railway.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... | 6 by 3½ inches. | | |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... | 6½ by 3 | | |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... | 6½ by 3½ | | |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

## *SALES BY AUCTION.*

HIGHBURY NURSERY.

To Gentlemen, Nurserymen, Proprietors of Tea Gardens, &c.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the Premises, Highbury Nursery, opposite Highbury Barn Tavern, Islington, on MONDAY, March 3d, 1851, and following day, at 11 o'clock each day, by order of the Proprietor, in consequence of the land being let for building, the whole of the CHOICE NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, and Ornamental Trees; also, the selected Greenhouse Plants, comprising large Camellias, Azalea indica, large Araucaria, Rhododendron Arborea, Oranges, Myrtles, Ficus elastica, Geraniums, Fuchsias, Cyclamen, &c.; together with the Pits, Frames, and Lights, Hand-glasses, Wheelbarrows, a quantity of well-seasoned Bog, Potting Mould, &c.; a Summer House; an Erection for Tea Booth, 36 feet by 18; Tables, Forms, Tea Trays, Crockery; 2 Coppers; a Swinging Boat; Utensils in Trade, &c. May be viewed prior to the Sale; Catalogues had, 6*d.* each (returnable to Purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, March 6th, about 200 choice DOUBLE CAMELLIAS, from 18 inches to 5 feet, beautifully furnished with bloom buds, and in the finest state of cultivation; strong Camellia Stocks; also a choice assortment of Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c.; a fine collection of American Plants, comprising Gheut and other Azaleas, Andromeda floribunda, Kalmias, Ledum, &c.; choice Dahlias in dry roots, Pæonies, Fuchsias, Verbenas, &c. —May be viewed the morning of sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FINAL SALE.—SOUTHAMPTON.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to an unreserved sale, by Auction, on the premises, Page's-hill and Sidford and Above-bar Nurseries, Southampton, on TUESDAY, March 11th; and following day, at 11 o'clock, the whole of the remaining NURSERY STOCK, consisting of Evergreens, Ornamental Fruit and Forest Trees, Stove and Greenhouse Plants; together with six 2 and 3-light Boxes, Chaise Harness, Garden Pots, Flower Seeds, &c.—May be viewed, and Catalogues had, one week prior to the sale, on the premises; of Mr. BROOKS, 24, Portland-street, Southampton; at the principal Inns in the neighbourhood; Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

MR. HASLAM begs to inform the Public that he will sell, at the Auction Mart, on WEDNESDAY, March 5, and two following days, an extensive importation of DUTCH FRUIT TREES, in Standard and Trained; also a large assortment of Double Camellias, well set with opening bloom, Perpetual Standard Roses, Azalea Indica, Evergreen Shrubs, Ranunculus, Anemones, Gladiolus, &c. To be described in Catalogues, to be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping, Essex.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

THE IRISH AMELIORATION SOCIETY beg to draw the attention of the public generally to the fertilising and deodorising properties of Irish Peat Charcoal. Mixed with night-soil or sewage matter it instantly and wholly destroys all offensive smell, renders it easy of manipulation, adapts the fertilising properties as a ready food for plants, and enables it to be transported by Railway or any other conveyance without the slightest inconvenience.

The extent to which Charcoal (carbon) enters into the composition of every article of agricultural produce, and the value of night-soil as a manure, render any observations on these points unnecessary. Mixed with night-soil, in about equal weights, a most efficacious manure is produced at a very small cost.

Price of the Charcoal, ready for use, at Dublin, 47*s.* per ton; in London, Liverpool, Bristol, and other seaports in England, 60*s.* per ton, sacks included.—Agents for the sale of the Society's Charcoal have been appointed at several of the principal seaports and Inland towns, a list of whom, together with all other information, may be had on application at this office.

By order of the Court,

March 1, 1851. GEORGE L. PARROTT, Secretary.

Head Office, 9, Waterloo-place, London.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

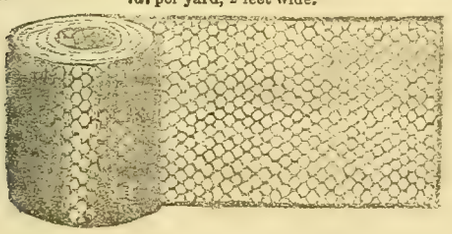
G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60*s.* per ton, sacks included. Mixed with Nightsoil, 45*s.* per ton, sacks included.

ART UNION OF LONDON.—In consequence of numerous enquiries, the Council think it necessary to state that the Pair of Prints, "The Smile" and "The Frown," may be had for a subscription of the current year, with a series of outlines, and a chance in the distribution of obtaining the right to select a work of art.—No. 444, West Strand, March 1.

GEORGE GODWIN and LEWIS POCOCK, Hon. Secretaries.

GALVANISED WIRE GAME NETTING.—*7d.* per yard, 2 feet wide.

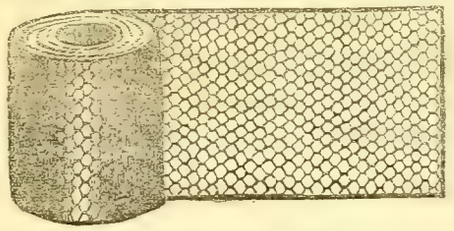


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| ¾-inch " light " ... | 8 " | 6 " |
| 1½-inch " strong " ... | 10 " | 8 " |
| 1½-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | | | |
|---|---|---|---|---|---|
| 12 inches wide | 3*d.* | per yard. | 30 inches wide | 7½*d.* | per yard. |
| 18 " | 4½*d.* | " | 36 " | 9*d.* | " |
| 14 " | 6*d.* | " | 48 " | 1*s.* | " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

FARMS AT STANTON FITZWARREN, NEAR HIGHWORTH, WILTS,

And within about four miles of the Swindon and Shrivenham Stations, on the Line of the Great Western Railway.

TO BE LET BY TENDER, from MICHAELMAS, 1851,

PARSONAGE FARM, comprising a Farm-house and requisite Outbuildings, with

| A. | R. | P. | |
|---|---|---|---|
| 183 | 1 | 19 | of Arable Land, and |
| 38 | 1 | 12 | of Meadow, Pasture, and Homestead. |
| Total 221 | 2 | 31 | |

AKER'S FARM, comprising a Farm-house and requisite Outbuildings, with

| A. | R. | P. | |
|---|---|---|---|
| 225 | 3 | 32 | of Arable Land, and |
| 75 | 0 | 28 | of Meadow, Pasture, and Homestead. |
| Total 301 | 0 | 20 | |

HUNTER'S FARM, with a Farm-house and Outbuildings, and

| A. | R. | P. | |
|---|---|---|---|
| 50 | 2 | 37 | of Arable Land, and |
| 53 | 1 | 29 | of Meadow, Pasture, and Homestead. |
| Total 104 | 0 | 26 | |

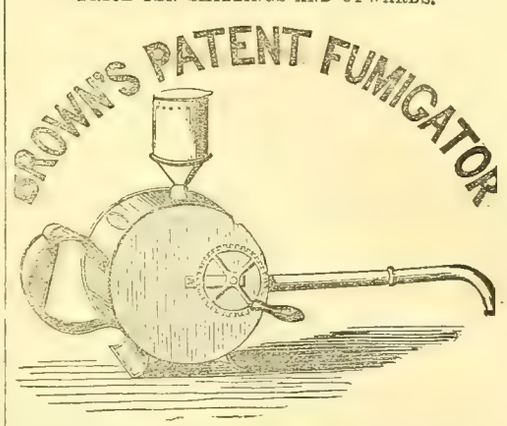
MATTHEW'S FARM, with a Farm-house and Outbuildings, and

| A. | R. | P. | |
|---|---|---|---|
| 18 | 3 | 10 | of Arable, and |
| 57 | 3 | 30 | of Meadow, Pasture, and Homestead. |
| Total 76 | 3 | 0 | |

To view the Farms, and for further particulars, apply at Stanton House, near Highworth, Wilts. Sealed Tenders to be sent, addressed to the Rev. J. A. TRENCHARD, at the same place, on or before the 25th March next.

March 1.

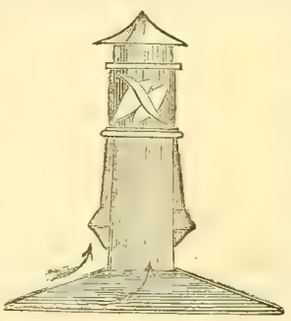
PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

PASCAL'S PATENT FUMIVORE AND SELF-ACTING VENTILATOR.—The attention of the public is respectfully directed to this truly valuable invention. The scientific arrangement of this apparatus entirely obviates the inconvenience and annoyance of Smoky Chimneys, arising from any cause whatever. It is also adapted to all purposes of sanitory ventilation, particularly in places of public resort. Schools, Chapels, Barracks, Banks, large retail Shops, Hospitals, Taverns, and Ships' cabins, and such other places where gas is consumed or close stoves are in use. The three vanes or fans, as shown in the section, are set in rapid motion by the ascensive force of the heated air or smoke, causing a powerful exhaustion or withdrawal of the smoke from the chimney or vitiated air generated in close rooms. It obviates the necessity of all chimney stacks or high tubes.



For particulars apply to Mr. SEPTIMUS BRAITHWAITE, 108, Great Russell-street, Bloomsbury, where contracts may be entered into for the warming by improved methods, and ventilating of any building.



DEPARTURE OF THE MAIN BODY OF CANTERBURY COLONISTS, for 1851. Under the Management of the Canterbury Association (Incorporated by Royal Charter, 13th November, 1849).

The ARCHBISHOP OF CANTERBURY, PRESIDENT.

| | |
|---|---|
| The Archbishop of Dublin | Right Hon. H. Goulburn, M.P. |
| The Duke of Buccleuch, K.G. | Right Hon. Sidney Herbert, M.P. |
| The Marquis of Cholmondeley. | Hon. Sir Edward Cust, K.C.H. |
| The Earl of Ellesmere | The Dean of Canterbury. |
| The Earl of Harewood | Lieut.-Colonel Archer. |
| Viscount Mandeville, M.P. | W. H. Pole Carew, Esq., M.P. |
| The Bishop of London | W. Forsyth, Esq. |
| The Bishop of Winchester | Ven. Archdeacon Hare. |
| The Bishop of Exeter | Rev. Dr. Hook. |
| The Bishop of Ripon | E. Hulse, Esq. |
| The Bishop of St. David's | Rev. H. W. Maddock. |
| The Bishop of Oxford. | Captain Simeon. |
| Lord Ashburton. | A. Stafford, Esq., M.P. |
| Lord Wodehouse. | Hon. J. Talbot. |
| Lord Ashley, M.P. | Rev. R. C. Trench. |
| Lord A. Hervey, M.P. | W. S. W. Vaux, Esq. |
| Lord J. Manners, M.P. | F. R. West, Esq., M.P. |
| Sir W. Heathcote, Bart., M.P. | Ven. Archdeacon Wilberforce. |
| Sir Willoughby Jones, Bart. | |

COMMITTEE OF MANAGEMENT.

LORD LYTTELTON, Chairman.

| | |
|---|---|
| The Duke of Newcastle. | Edmund Halswell, Esq. |
| The Bishop of Norwich. | Rev. E. Hawkins. |
| Lord Brooke, M.P. | John Hutt, Esq. |
| Lord Courtenay. | Samuel Lucas, Esq. |
| Sir Walter Farquhar, Bart. | F. A. M'Geachy, Esq. |
| Sir W. James, M.P. | G. K. Rickards, Esq. |
| C. B. Adderley, Esq. M.P. | H. Sewell, Esq. |
| Hon. Francis Baring, M.P. | J. Simeon, Esq., M.P. |
| Hon. R. Cavendish. | Rev. Charles Mar in Torlesse. |
| Hon. F. Charteris, M.P. | Rev. Nugent Wade. |
| Thos. Somers Cocks, Esq., M.P. | Charles G. Wynne, Esq. |
| Rev. E. Coleridge. | Rev. Cecil Wynter. |
| Rev. G. R. Gleig. | |

ECCLESIASTICAL AND EDUCATIONAL COMMITTEE.

THE BISHOP OF NORWICH.

| | |
|---|---|
| The Rev. Ernest Hawkins. | The Rev. Nugent Wade. |
| The Rev. C. Martin Torlesse. | The Rev. James Cecil Wynter. |

The COUNCIL of CANTERBURY COLONISTS, forming the Main Body for 1851, hereby give notice that their first ships will sail from the Port of London for Port Lyttelton on Thursday, the 8th of May.

The First-class Ship DOMINION, already Chartered, may be inspected at her berth in the East India Dock. Information concerning freight and passage in the chief cabin, second cabin, steerage cabin, and steerage of these vessels, will be given on board the Dominion, and at the Shipping Office of the Canterbury Association, 74, Cornhill.

A limited number of Assisted Passages in the Steerage will be granted to persons of the Working Classes, being gardeners, shepherds, farm servants, labourers, and country mechanics, for which application should be made at the Emigration Office of the Canterbury Association, 9, Adelphi-terrace, Strand.

For the Council of Colonists,

CHARLES SIMEON, Chairman.

The First-class Ship, Labuan, now in berth alongside the Dominion, will sail from the Port of London on Tuesday, the 8th April.

**GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT, READING, BERKS.**

*FOR SUPPLYING HOME-GROWN SEEDS, CARRIAGE FREE, to any Railway or Packet Office in London, Bristol, Oxford, Gloucester, Exeter, Southampton, Portsmouth, Dover, or to any other Station on the above-named Railways.*

PRESENT CASH PRICES OF

# Natural Grass Seeds, Clovers, Turnips, Mangolds,

**AND OTHER AGRICULTURAL SEEDS, CARRIAGE FREE.**

## GROWN AND SOLD BY JOHN SUTTON & SONS, SEED GROWERS, READING, BERKS.

Under the Patronage and Recommendation of Several of the Leading Members of the Royal Agricultural Society.

Having various kinds of Land, situate in different localities, which we occupy for the purpose of GROWING SEEDS TRUE TO THEIR KINDS, and proving the comparative merits of each sort, we are enabled to supply our customers with Seeds of the best kinds in cultivation, and of such quality as to prevent disappointment, which system has gained us an increasing connection during upwards of 40 years.

*In proving the germinating qualities of Seeds, we do not trust to experiments made under glass, but subject them also to the trial of open ground sowing; and when, on a recent occasion of considerable interest in the Seed Trade, one of our Firm was subpœnaed to give evidence before* LORD CHIEF JUSTICE CAMPBELL *and a Jury of Agriculturists, as to the most certain test of the vegetative properties of Seeds, his Lordship highly complimented us upon our system of conducting our business, and further said—"Well,* Mr. SUTTON, *if I should have occasion for Seeds, I shall certainly apply to you, because you appear to act so fairly."*—See "Times" of July 22, and other Daily Papers.

| | Per bushel—s. d. |
|---|---|
| **Barley.** | |
| New Skioless Chevalier—the finest sample, heaviest and most productive of all Barley. To be sent to the Great Exhibition | 20 0 |
| Skinless Peruvian | 10 0 |
| Buckwheat | 5 0 |
| Burnet | 0 0 |
| **Saintfoin.** | |
| Giant (true sort, very productive) | 10 0 |
| Common | 0 0 |
| **Rye.** | |
| St. John's Day | 8 |
| Tyrolese Giant | 8 0 |
| Common | 0 0 |
| **Tares, or Vetches.** | |
| Spring (or Summer) | 6 6 |
| Winter | 0 0 |
| Racer (or Early Essex) | 0 0 |

| | Per lb.—s. d. |
|---|---|
| **Carrots.** | |
| Large White Belgian, from selected roots | 0 9 |
| Large Red Altringham | 0 10 |
| Green-topped Short Orange, for shallow soils, and for late sowing | 1 0 |
| Large Yellow Belgian | 1 0 |
| **Cabbage.** | |
| Sutton's selected Drumhead | 2 0 |
| Thousand-headed | 2 0 |
| Large Flat Pole | 2 6 |
| Turnip-rooted, or Kohl Rabi | 2 0 |
| **Mangold Wurzel.** | |
| Globe Yellow (or Orange) | 0 6 |
| ,, Red | 0 6 |
| Long Yellow | 0 0 |
| ,, Red | 0 6 |
| The Elvetham Long Red, an improved variety, now first offered by J. Sutton and Sons | 1 0 |
| White Sicilian (or Sugar Beet) | 0 0 |
| Large Purple (or Black Beet) | 0 0 |
| **Mustard.** | |
| Best Agricultural or 12*s* per bushel. | 0 3 |

| | Per lb.—s. d. |
|---|---|
| **Parsnip.** | |
| Common Cattle | 0 9 |
| Sutton's new large Guernsey ditto | 1 3 |
| **Rape, or Cole.** | |
| Best Broad-leaved | 0 4 |
| **Miscellaneous.** | |
| Lucerne | 0 9 |
| Broom | 0 9 |
| Chicory | 0 0 |
| Furze (Ulex europæus) | 0 9 |
| Flax—Riga imported | Fluctuating. |
| ,, English (clean) | |
| Gold of Pleasure | |
| Maize (Keene's Forty-day) and others | |
| **Turnips.** | |
| Ashcroft Swede | 0 9 |
| Purple-topped Swede (Sutton's fine stock) | 0 9 |
| Green-topped Yellow Swede | 0 9 |
| Laing's fine Purple-topped Swede | 0 9 |
| Skirving's Liverpool Swede | 0 8 |
| Fettercairne Bronze-topped Swede | 0 10 |
| East Lothian Purple-topped Swede | 0 9 |

| | Per lb.—s. d. |
|---|---|
| Matson's Purple-topped Swede | 0 9 |
| Tankard Swede (or Yellow Pudding Turnip) | 1 0 |
| Sutton's Purple-topped Yellow Hybrid Turnip (this is the best substitute for Swedes; may be sown later than Swedes) | 1 0 |
| Sutton's Green-topped Yellow Hybrid | 0 10 |
| Dale's Hybrid | 0 8 |
| Yellow Bullock | 0 8 |
| Yellow Aberdeen (or Scotch) | 0 8 |
| Skirving's Purple-topped Scotch | 0 10 |
| Lincolnshire Red Globe, a superior new Turnip, presented to J. S. and Sons, by Philip Pusey, Esq., M.P. | 1 0 |
| Tankard, Red, Green, and White | 0 8 |
| Globe, Red, Green, and White | 0 8 |
| Pomeranian White | 0 8 |
| Hertfordshire White | 0 8 |
| Stubble Stone | 0 6 |
| Sutton's Early Six Weeks, the forwardest Turnip known; excellent for first crop, or as a Stubble Turnip | 0 10 |
| Green Round, and several others | 0 6 |

*N B. The foregoing prices cannot be strictly adhered to in very small quantities.*

# NATURAL GRASSES, PERENNIAL CLOVERS, &c.

The following sorts of NATURAL AND ARTIFICIAL GRASS MAY BE HAD SEPARATE, at the low prices annexed to each. All the best and most suitable of them are contained in Messrs. SUTTON'S Mixtures for the several purposes described below :—

| | Per lb.—s. d. |
|---|---|
| Achillea millefolium (Yarrow) | 2 6 |
| Agrostis stolonifera (Creeping Bent Grass) | 1 3 |
| Anthoxanthum odoratum (Sweet Vernal) | 1 9 |
| Alopecurus pratensis (Meadow Foxtail) | 1 0 |
| Avena flavescens (yellow Oat Grass) | 2 0 |
| Aira cæspitosa (Tufted Hair Grass) | 1 3 |
| Aira lutescens (yellow Hair Grass) | 2 0 |
| Agrostis alba (white Bent Grass) | 1 3 |
| Agrostis canina (Dog Bent Grass) | 1 6 |
| Agrostis vulgaris (common Bent Grass) | 1 3 |
| Bromus arvensis (Field Brome Grass) | 1 0 |
| Cynosurus cristatus (Crested Dogstail) | 1 0 |
| Dactylis glomerata (round-headed Cocksfoot) | 0 9 |
| Festuca duriuscula (hard Fescue) | 1 0 |

| | Per lb.—s. d. |
|---|---|
| Festuca loliacea (Darnel Fescue) | 1 0 |
| Festuca ovina (Sheep's Fescue) | 1 0 |
| Festuca rubra (Red Fescue) | 1 3 |
| Festuca pratensis (Meadow Fescue) | 0 10 |
| Festuca elatior (Tall Fescue) | 1 0 |
| Festuca heterophylla, various leaved | 1 3 |
| Festuca tenuifolia (fine-leaved Fescue) | 1 3 |
| Glyceria fluitans (floating sweet Grass) | 1 6 |
| Glyceria aquatica (water sweet Grass) | 2 0 |
| Holcus avenaceus (tall Oat like Grass) | 0 9 |
| Holcus lanatus (Woolly Grass) | 0 9 |
| Hordeum bulbosum (Bulbous Barley Grass) | 3 6 |
| Lolium perenne (Perennial Rye-grass) | 0 5 |
| Lolium perenne sempervirens | 0 6 |
| Lolium perenne Paceyanum | 0 6 |

| | Per lb.—s. d. |
|---|---|
| Lolium perenne Stickneyanum | 0 6 |
| Lolium perenne tenue | 0 8 |
| Lolium Italicum (Italian Rye-grass) | 0 9 |
| Lotus corniculatus (Bird's-foot Trefoil) | 3 6 |
| Medicago lupulina (Black Medick Grass; or yellow Trefoil) | 0 4 |
| Milium effusum (Wood Millet Grass) | 2 6 |
| Phleum pratense (Timothy) | 0 10 |
| Poa nervosa (Nerved Meadow Grass) | 2 0 |
| Poa nemoralis (Wood Meadow Grass) | 1 6 |
| Poa pratensis (Smooth Meadow Grass) | 1 0 |
| Poa trivialis (Rough Meadow Grass) | 1 0 |
| Poa angustifolius (Narrow-leaved) | 1 9 |
| Poa fertilis (Fertile Meadow Grass) | 1 9 |
| Poa sempervirens (Evergreen) | 2 0 |
| Trifolium minus (Red Suckling) | 0 10 |

| | Per lb.—s. d. |
|---|---|
| Trifolium pratense perenne (Perennial Red Clover) | 0 9 |
| Trifolium repens (White Clover) best | 0 8 |
| Trifolium hybridum (Alsike Clover) | 1 6 |
| And many others. | |
| The following kinds are also sold by measure, at the prices affixed. | |
| | Per bushel.—s. d. |
| Cocksfoot | 6 0 |
| Meadow Fescue | 9 0 |
| Hard Fescue | 9 0 |
| Sheep's Fescue | 10 0 |
| Italian Rye-grass | 7 0 |
| True Perennial Rye-grass | 7 0 |
| Common Rye-grass | 0 0 |
| Holcus avenaceus | 5 0 |

*As some Agriculturists feel a pleasure in making their own selection of Grass Seeds, the above List is presented with their lowest Market Prices (much lower than is usually charged,) but the greatest economy and certainty of success will be obtained by procuring* Messrs. SUTTON'S *Mixtures as under. In these Mixtures the large and small Seeds are thoroughly incorporated, so as to insure proper combinations of sorts throughout the land sown; but, if it should be preferred, the large Seed may be had in one Mixture, and the small in another, to be sown at two casts.*

## Mixtures for laying down to Permanent Meadow or Pasture.

The sorts contained in these Mixtures are grown in different localities, and gathered separately, by the hand, expressly for this purpose, by which means all noxious weeds are excluded, and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most natural to the soil to be laid down. The annually increasing demand for Messrs. SUTTON'S Seeds has enabled them on a larger scale to grow and collect the Seeds at much less expense than formerly; so that a mixture which *a few years since* would have cost 45*s.* or 50*s.* per acre, *can now be supplied for* **24s.** *to* **28s.** *per acre,* according to the sorts which the soil may require.

### Mixtures for Reclaimed Marshes and Heath Lands.

Many acres of Land of this description have been successfully laid down to Permanent Pasture by Messrs. SUTTON, with Seeds which they have found invariably to thrive on such soil; and *the cost for this purpose will be but* **22s. 6d.** *per acre.*

### Mixtures for laying down Chalky or Gravelly Uplands and Sheep Downs.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and, after many years' experience, Messrs. SUTTON can confidently assure their friends that a *good and permanent* Sward may be obtained on *any* upland, however dry or poor the soil. Cost of Seeds, **28s.** per acre.

## Mixtures for Irrigation or Water Meadows.

In this department also Messrs. SUTTON have been very successful, many customers having expressed their great gratification at the effect of these Seeds; one of these, an eminent Agriculturist, and MEMBER OF THE COUNCIL OF THE ROYAL AGRICULTURAL SOCIETY, has contributed A VALUABLE ESSAY ON THIS SUBJECT, which has recently been published by that Society in their Journal (Vol. X., Part II., page 462.) COST OF SEED NOW REDUCED TO **26s.** PER ACRE.

### Mixtures to lay down New Park Lawns.

For this purpose all coarse-growing kinds are carefully excluded, and the Sward will at all seasons present a luxuriant verdure so desirable in Parks contiguous to the Mansion. The cost of Seeds for this purpose will vary according to the nature of the soil, and other circumstances.

## Renovating Mixture for Improving Old Pastures.

Many old Upland Pastures, Parks and Meadows, are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case Messrs. SUTTON are in the practice of furnishing such sorts only as are wanting; if these Seeds are SOWN EARLY IN THE SEASON, the improvement in the Pasture will be very considerable, and at a small expense. Quantity of Seed required, 6 to 8 lbs. per acre **Price reduced to 10d. per pound.**

### Fine Grass Lawns in Flower Gardens, &c.

The great expense of cutting and carting turves from a distance may be avoided, and a SUPERIOR turf produced in a few months, by sowing Messrs. SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. Price **3s.** per Gallon, or **21s.** per Bushel, or **1s. 3d.** per pound.

Goods Delivered Free of Carriage to London, Bristol, Bath, Exeter, Gloucester, Oxford, Southampton, &c.—Sacks and Bags are charged at cost price only, and the full amount allowed if they are returned.


Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex. Printers at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Commmunications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 1, 1856.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 10—1851.] SATURDAY, MARCH 8. [PRICE 6*d*.


INDEX.


| | | | |
|---|---|---|---|
| Agriculture, Tullian | 154 *b* | Gardening, market | 149 *a* |
| Agricultural Society of England | 155 *b* | Gardeners' Benevolent Institution | 151 *c* |
| Birds, British song | 149 *c* | Grafting | 148 *b*—152 *c* |
| Bouquet trade in New York | 150 *b* | Grass seeds for pasture | 155 *a* |
| Calendar, Horticultural | 152 *a* | Horticultural Society | 150 *c* |
| — Agricultural | 157 *c* | Land, Tullian culture of | 153 *b* |
| Campanula Vidalii | 150 *b* | Linnean Society | 150 *c* |
| Cattle on boards | 154 *c* | Market gardening | 149 *a* |
| Chandlers' (Messrs.) Camellias | 151 *c* | Peat, charcoal | 150 *a* |
| Charcoal, peat | 150 *a* | Plants, water | 147 *b* |
| Chicory, culture of | 154 *a* | Rookery | 154 *b* |
| Chrysanthemums | 151 *a* | Season, mildness of | 150 *b* |
| Conifers, varieties of | 150 *a* | Steam-boiler flues | 154 *c* |
| Draining | 155 *a* | Strawberry, the | 149 *a* |
| Ehrenberg on the dust carried by the trade winds | 151 *b* | Timber trees | 150 *b* |
| Farm, a ram breeding | 154 *b* | Vegetation, researches in, 147 *c*—148 *c* | |
| Farming, open furrows in | 154 *c* | Water plants | 147 *b* |
| Farm accounts | 153 *c* | Winds, trade, dust deposited by | 151 *b* |
| Flax | 155 *b* | Wireworm | 150 *b* |


HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the EXHIBITIONS of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following SATURDAYS, viz.: May 3, June 7, and July 19; and that SATURDAY, April 5, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. Each Fellow may, this year, purchase 48 such Tickets, at 3*s*. 6*d*. each, at the Society's Office, 21, Regent-street, London.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—GENERAL EXHIBITIONS — Wednesdays, May 14, June 11, and July 2.

AMERICAN PLANTS—Saturdays, May 31, and June 7.

ROSE GARDEN—Saturday, June 21.

Tickets, which will admit the Bearer to either of the above Exhibitions, or upon ANY ONE DAY in the month of JUNE, except Sundays, are now ready, and may be obtained at the Gardens, by orders from Fellows of the Society. Price on or before Saturday, May 3, 4*s*.; after that day, 5*s*.; or on the Exhibition days, 7*s*. 6*d*. each. Fellows of the Society may have, on or before May 3, any number of packets containing Thirty Tickets each, for Five Guineas the packet, being at the rate of 3*s*. 6*d*. each Ticket.

HIGHBURY AND NORTH LONDON HORTICULTURAL SOCIETY.—EXHIBITION DAYS: Thursdays, 15th May, 12th June, and 31 July.

The Shows will be held in the Grounds at the rear of Highbury Crescent, on the above days, from 3 to 6 p.m.

A Military Band in Attendance.

HIGHBURY AND NORTH LONDON HORTICULTURAL SOCIETY.—NURSERYMEN'S PRIZES.—No Entrance Fees, for the SHOW on Thursday the 15th of May, 1851, to be held in the Grounds at the rear of Highbury Crescent. CENSORS.—Mr. A. Henderson, Pine-apple-place; Mr Hugh Low, Clapton; Mr. Neville, Sec. of South London Floricultural Society.

| | PRIZES. First. | Second. | Third. |
|---|---|---|---|
| | £ *s*. | £ *s*. | £ *s*. |
| Eight Geraniums, distinct varieties | 2 0 | 1 10 | 1 0 |
| Ten Azaleas ditto | 2 10 | 2 0 | 1 10 |
| Eight Calceolarias ditto | 1 0 | 0 15 | 0 10 |
| Eight Heaths ditto | 2 0 | 1 10 | 1 0 |
| Fifteen Greenhouse or Stove Plants, distinct varieties | 3 10 | 2 10 | 1 10 |
| One Specimen Greenhouse Orchid, or Stove Plant | 0 15 | 0 10 | 0 5 |
| Twelve Pots of Roses, distinct varieties | 2 10 | 2 0 | 1 10 |
| Stand of 18 (single) Roses, distinct varieties | 1 0 | 0 15 | 0 10 |

For the Show on Thursday the 12th of June, 1851.
To be held as above.

| | PRIZES. First. | Second. | Third. |
|---|---|---|---|
| | £ *s*. | £ *s*. | £ *s*. |
| Eight Geraniums, distinct varieties | 2 0 | 1 10 | 1 0 |
| Eight Calceolarias, ditto | 1 0 | 0 15 | 0 10 |
| Eight Heaths, ditto | 2 0 | 1 10 | 1 0 |
| Fifteen Greenhouse or Stove Plants, distinct varieties | 3 10 | 2 10 | 1 10 |
| One Specimen Greenhouse Orchid, or Stove Plant | 0 15 | 0 10 | 0 5 |
| Collection of Fifty Bunches of Roses, distinct varieties | 2 0 | 1 10 | 1 0 |
| Twelve Pots of Roses, distinct varieties | 2 0 | 1 10 | 1 0 |
| Collection of Eight Fuchsias, ditto | 1 10 | 1 0 | 0 15 |

For the show on Thursday the 3d of July, 1851.
To be held as Above.

| | PRIZES. First. | Second. | Third. |
|---|---|---|---|
| | £ *s*. | £ *s*. | £ *s*. |
| Eight Geraniums, distinct varieties | 2 0 | 1 10 | 1 0 |
| Eight Heaths | 2 0 | 1 10 | 1 0 |
| Eight Gloxinias | 1 10 | 1 0 | 0 15 |
| Fifteen Greenhouse or Stove Plants, distinct varieties | 3 10 | 2 10 | 1 10 |
| One Specimen ditto | 0 15 | 0 10 | 0 5 |
| Collection of 50 Bunches of Roses, distinct varieties | 2 0 | 1 10 | 1 0 |
| Twelve Pots of Roses, distinct varieties | 2 0 | 1 10 | 1 0 |
| Collection of eight Fuchsias, ditto | 1 10 | 1 0 | 0 15 |
| Stand of 24 Blooms of Carnations, distinct varieties | 2 0 | 1 10 | 1 0 |
| Stand of 24 Blooms of Picotees | 2 0 | 1 10 | 1 0 |

N. ROBSON, Highbury Park.
T. R. SCOTT, Highbury Grange. } Hon. Secs.

HANDSWORTH AND LOZELLS HORTICULTURAL SOCIETY.—The EXHIBITIONS for the present year will be held on the following days, *viz*, WEDNESDAY, April 30th; TUESDAY, June 24th; TUESDAY, July 29th; and TUESDAY, August 26th.

Schedules of Prizes, with the Rules and Regulations, may be had on application at the *Midland Counties Herald* Office, Birmingham.

CHARLES JAMES PERRY, Hon. Sec.

Hamstead-road, March 8.

GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given, that an Election of two Pensioners on the Funds of this Charity will take place on Wednesday, the 11th of June next. All persons desirous of becoming Candidates are requested to send in their testimonials and applications to the Secretary, on or before the 31st inst., after which time they will not be received.

Printed forms of petition may be had upon application.

By order of the Committee. E. R. CUTLER, Secretary.

LISIANTHUS RUSSELLIANUS.—Now ready, fine Plants, 5*s*., 3*s*. 6*d*., and 2*s*. 6*d*. each. The Early Black Prince Strawberry, 10*s*. per 100, or 6*s*. for 50. Black Spine Cucumber, Early Scarlet-flesh Melon, and Lisianthus Seed 1*s*. per packet Cucumber Plants always ready.

CUTHILL'S Pamphlet on the Potato, containing the Belgian Prize Essay, with other first-rate vegetables, such as Asparagus, Seakale, Rhubarb, &c. 56 pages, 2*s*.; or by post, 2*s*. 4*d* —Direct JAMES CUTHILL, Cumberwell, London.

NEW PANSY.

HART AND NICKLIN, FLORISTS, &c., Guildford, Surrey, offer the undernamed new Pansy. "Mrs. Anderson," a large sized flower of good substance, smooth petal and edge, white ground, broad light purple margin, dense eye, free from rays, 5*s*. per plant.

Collection of choice PANSIES—Helen, Juventa, Premier, Negro, Lucy Neal, Polyphemus, Uttoxeter Hero, Pre-eminent, Gem, Viceroy, Criterion, Duke of Norfolk, Mrs. Beck, Masterpiece, Androcles, Heroine, California, Duchess of Norfolk, Ariel, Conductor; 20*s*. the Set. Free by post.

FANCY GERANIUMS—14 fine varieties, strong Plants, 21*s*.

GERANIUMS—12 fine kinds, 20*s*.

Primula Sinensis Seed, from a first-rate variety, 1*s*. per packet. German Aster Seed (saved from fine mixed varieties), 6*d*. per packet, and free by post. Border Pansies, 4*s*. per doz. Border Picotees and Carnations, 4*s*. per doz.

MESSRS. J. AND H. BROWN offer the following CHOICE PLANTS and FRUIT TREES:

| | *s* | *d*. |
|---|---|---|
| Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears and Cherries, the best and most approved sorts of these respective kinds, true to name, 2*s*. 6*d*. each, or, per dozen | 24 | 0 |
| Untrained or Maiden do. 1*s*. 6*d*. each, or per dozen | 15 | 0 |
| Fine Gooseberries, Currants, Raspberries, and Filberts, per dozen | 3 | 0 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name | 20 | 0 |
| 25 American Azaleas, ditto ditto | 15 | 0 |
| 6 Andromedas of sorts, including floribunda | 8 | 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen | 8 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties | 12 | 0 |
| New Hardy Yellow Rhododendrons, each 7*s*. 6*d*. to | 10 | 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort | 10 | 6 |
| Cryptomeria Japonica, 6 choice hardy Pinus, for | 10 | 0 |
| 50 Dwarf Roses, on their own roots, by name | 16 | 0 |
| Standard and half-standard Roses, per dozen, 12*s*. and | 15 | 0 |
| Climbing Roses, choice sorts, per dozen | 6 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots | 9 | 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each | 3 | 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, ditto ditto | 30 | 0 |
| 12 Orchidea, choice species and good plants, for | 30 | 6 |
| 50 choice Greenhouse Plants, one of a sort, by name | 45 | 0 |
| 24 choice Ericas, one of a sort, by name | 16 | 0 |
| 24 choice Fuchsias, one of a sort, by name | 10 | 0 |
| 12 Pæonies, new white, pink, and blush, of sorts | 8 | 0 |
| 6 fine Pæonia Arborea, choice varieties for | 10 | 0 |
| First-rate Carnations and Picotees, per dozen 9*s*. and | 12 | 0 |
| Verbenas and Petunias, best new sorts, per dozen | 6 | 0 |
| Best Cinerarias and Calceolarias, strong plants, 9*s*. per dozen to | 12 | 0 |
| 25 choice Hardy Herbaceous Plants, named | 7 | 6 |
| New Camellia seed, just imported, sent post free, 50 for | 5 | 0 |

Flower Seeds, 18 papers, 5*s*.; 36 ditto, 10*s*. of the most approved varieties, also their Catalogue of Plants, sent free by post.

Albion Nursery, Stoke Newington, London, March 8.

WM. DENYER, SEEDSMAN and FLORIST, 32, Grace-church-street, London (near the Spread Eagle), begs to offer the following:

| | *s*. | *d*. |
|---|---|---|
| ASTERS (GERMAN), four splendid varieties saved by an Amateur, warranted to produce all double show flowers | 2 | 0 |
| BALSAMS, very double, saved from one of the finest collections in the country, six beautiful varieties | 2 | 0 |
| LARKSPURS, double, eight distinct colours | 2 | 0 |
| STOCKS (GERMAN), very double, six varieties, best and brightest colour | 2 | 0 |

The above four collections, all in sealed packages, for 7*s*., or separately at the prices quoted.

FIRST-RATE NEW FUCHSIAS, GERANIUMS, AND CINERARIAS.

WM. RUMLEY AND SON have to offer 12 of the following first-rate new Fuchsias for 10*s*. 6*d*., 20 for 15*s*., or six for 6*s*., fine strong Plants, free by post, securely packed. Acteon, Beauty of Richmond, Beauty of Stortford, Confidence, Corinium, Corymbiflora alba, Diadem of Flora, Distinctus, Duchess de Bordeaux, Don Giovanni, Fair Rosamond, General Changarnier, Inaccessible, Kossuth, Nonpareil, Orion, Pearl of England, Rosaline, Striata, Yorkshire, Eclipse, &c. Geraniums: 12 of the following first-rate new varieties for 15*s*., or six for 8*s*., hamper and package included. Antagonist, Cruenta, Cassandra, Elegans, Eclipse, Flora's Flag, Gulielma, Jenny Lind, Luna refulgens, Prometheus, Queen of Kent, Princess, Rolla, &c. Cinerarias: six of the following choice varieties for 7*s*. Albonii, Beauty of Eccles, Climax, Cerita, Clara, Incomparable, Resplendens, Unique, Vulcan, &c. The above will be forwarded to any part on receipt of a post-office order, payable at Richmond.

A Descriptive Catalogue of Fuchsias and Verbenas, Geraniums, Dahlias, Pansies, Cinerarias, Petunias, Chrysanthemums, Stove, Greenhouse, Bedding Plants, &c., may be had on application.—Gilling, Richmond, Yorkshire.

ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS by special appointment to the SOUTH DEVON AGRICULTURAL ASSOCIATION, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded *one thousand bushels*; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS *is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, and Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. KEMP, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2*l*. Carriage Free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

TO THE TRADE.

THE Subscriber has now ready a LIST OF SURPLUS STOCK of many New and Interesting Plants, in every department. He will be happy to correspond with parties who have anything desirable to offer, and may be disposed to exchange.—ROBERT M. STARK, Nurseryman, Florist, and Botanist, Edinburgh, March 8.

EARLY ALBION KIDNEY POTATO.

EDWARD MITCHELL having a surplus stock of SEED POTATOES of this first-rate early variety, begs most respectfully to offer them to the public, and the trade generally, as being one of the very best and earliest varieties grown, it being full three weeks earlier than the Ash-leaf or Walnut-leaf Kidney Potatoes; also a greater cropper, and far superior in flavour, than any other variety grown. Price, per bushel, 8*s*., with the usual discount to the trade.

EARLY COLCHESTER.—A round variety, of superior quality, as early as the Early Frame, but a more prolific cropper, and of first-rate flavour. Price 6*s*. per bushel, with the usual discount to the trade.

Post-office orders are expected from unknown correspondents.

Bristol Gardens, Kemp-town; and 55, Marine Parade, Brighton.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | |
|---|---|
| Standard Roses, in 12 superior vars., | 18*s*. to 24*s*. per doz. |
| Dwarf Standard do. do. | 12*s*. to 18*s*. ,, |
| Climbing Roses do. | 9*s*. to 12*s*. ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.

All packages delivered free of carriage to London.

Nurseries, Cheshunt, Herts, March 8.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem | 42*s*. to 60*s*. |
| Extra superior selected Standards | 18*s*. to 24*s*. |
| Fine Dwarfs and Dwarf Standards | 10*s*. to 16*s*. |
| Superb do. do. (for exhibition) | 18*s*. |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 | 50*s*. |
| Good do. do. without names, per 100 | 30*s*. |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

Rose Nippers, of various sizes, for pruning, 2*s* 6*d*. to 4*s* each. The Nippers are of an improved shape, being made so as to remove a shoot without bruising the part left; they are highly recommended as a useful addition to the implements of amateurs. Metallic Labels for pot Roses 2*s* per 100.

NEW AND CHOICE FLOWER SEEDS, GERMAN STOCKS, GERMAN ASTERS, &c.

J. C. WHEELER AND SON, NURSERYMEN and SEEDSMEN, by Official Appointment, to the Gloucestershire Agricultural Association, 99, Northgate-street, Gloucester, have selected, out of a large collection of Flower Seeds, 20 of the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. Each variety is distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these 20 varieties, care has been taken to exclude all which are shy-bloomers, or have an insignificant appearance; so that the collection will comprise only those which are really showy and handsome, and which, it is believed, would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb.—The 20 Packets are neatly packed up in one paper, and will be sent free by post, to any part of the Kingdom, for 5*s*.

# PRICE LIST OF GENUINE SEEDS FOR 1851.

GEORGE BAKER begs most respectfully to tender his sincere thanks to his numerous Patrons, who, for so many years, have favoured him with their orders; and to assure those who have not yet given him a trial, that all orders entrusted to his care shall meet with prompt attention, every article shall be of the best quality, and care ully proved before sent out. The following choice collection of Garden Seeds are now ready for sending out, carefully packed in cases, for 1*l.* 1*s.*; cases not charged.

## GENUINE KITCHEN GARDEN SEEDS.

PEAS—1 pint Early Emperor
,, Early Frame
,, Woodford's Marrow
,, Knight's Dwarf Marrow
,, Bellman's Imperial
,, Fairbeard's Surprise
,, Hair's Dwarf Mammoth
1 quart Early Lonzpod
,, Green Windsors
1 pint Scarlet Runners
,, Dwarf French
BEET—1 oz. Superb Crimson
,, Silver or Seakale
BORECOLE—1 oz. fine Curled
BRUSSELS SPROUTS—1 oz. Imported
BROCCOLI—1 oz. Early White
½ oz. fine Portsmouth
,, Fillitson's Mammoth
,, Cape
BROCCOLI—½ oz. Sprouting
,, Winter Imperial
,, Walcheren (True)
CABBAGE—1 oz. Dwarf Somerset
½ oz. Nonpareil
,, Shilling's Queen
CARROT—1 oz. Early Scarlet Horn
,, Improved Altringham
CELERY—¼ oz. Superb White
CRESS—½ lb. Curled
MUSTARD—1 lb.
CUCUMBER—Packet fine Frame
,, Ridge
ENDIVE—½ oz. Green Curled
LEEK—½ oz. London Flag
ONION—2 oz. White Spanish
1 ,, James' Keeping
,, Tripoli
LETTUCE—½ oz. Bath Cos
LETTUCE—½ oz. Drumhead Cabbage
,, White Cos
PARSLEY—2 oz. Myatt's triple Curled
PARSNIP—2 ,, Improved Guernsey
RADISH—6 ,, Early Salmon
2 ,, White and Red Turnip
SPINACH—½ lb. Round
¼ lb. Prickly
TOMATO—Packet
TURNIP—2 oz. Early Stone
,, Six Week
VEGETABLE MARROW—Packet
SAVOY—1 oz. Green Curled
CAULIFLOWER—½ oz. fine London
MELON—Packet Beechwood
CHERVIL—Packet
CORN SALAD—Packet
SALSAFY—Packet
SCORZONERA—Packet

Purchasers joining together and taking Four Collections, would receive them carriage paid to London, Exeter, Liverpool, Cork, or Dublin, and any of the principal Ports of the United Kingdom, or at any Station on the Great Western, Bristol, and Exeter, or South Devon Railway.

N.B.—Every known variety of Kitchen Garden and Flower Seeds raised by the most celebrated growers.

## NEW AND CHOICE FLOWER SEEDS,—POST FREE.

G. B. begs to recommend to the Nobility and Gentry, and his Friends in general, the following very superior assortment of Flower Seeds, which are now ready to be sent out in sealed packages, at the prices affixed, post paid:—

| | *s.* | *d.* |
|---|---|---|
| 100 Packets choicest Annuals, including the newest and most approved varieties ... ... ... ... | 10 | 0 |
| 50 Ditto ditto ditto | 5 | 0 |
| 25 Ditto ditto ditto | 2 | 6 |
| 12 Ditto ditto ditto | 1 | 6 |
| 30 Packets half hardy Annuals ... ... ... ... | 5 | 0 |
| 15 Ditto ditto ditto | 2 | 6 |
| 15 Packets Tender Annuals ... ... ... ... ... | 3 | 6 |
| 20 Packets Perennials, including splendid mixed varieties Verbena, Heartsease, Cineraria, Petunia, Pentstemon, Primula Sinensis, Calceolaria, &c., &c. ... | 5 | 0 |
| 20 Large Packets Dwarf Annuals for filling Beds on Lawns | 5 | 0 |
| 24 Distinct varieties German Stocks ... ... ... | 4 | 0 |
| 12 Ditto ditto ... ... ... ... | 2 | 6 |
| 24 Varieties German Asters ... ... ... ... ... | 5 | 0 |
| 12 Ditto ditto ... ... ... ... | 2 | 0 |
| 12 Varieties Double Balsam ... ... ... ... | 2 | 0 |
| 12 Ditto Cockscomb ... ... ... ... | 3 | 6 |
| 10 Ditto Mimulus ... ... ... ... | 3 | 6 |
| 8 Ditto Zinnias ... ... ... ... ... | 2 | 0 |
| 12 Ditto Hollyhock ... ... ... ... ... | 2 | 6 |
| 12 Ditto German Larkspur ... ... ... ... | 2 | 6 |

The above are recommended with confidence, and cannot fail of giving satisfaction. Particular attention is paid in packing Seeds for exportation. A remittance or reference expected from unknown Correspondents. Payment may be made either by Post-office Order or Postage Stamps.

GEORGE BAKER, SEEDSMAN, WELLS, SOMERSET.

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FINAL PLANTING OF THE RANUNCULUS.—As the final planting of our superb Collection is about to take place, we beg to recommend early orders from persons desirous to plant. Selections, in strong roots, at the following reasonable charges, and sent free by post, with printed directions for planting and treatment:

| | £ | *s.* | *d.* |
|---|---|---|---|
| 50 Splendid seedling varieties, with names ... ... | 2 | 0 | 0 |
| 25 Ditto ditto ditto ... ... | 1 | 2 | 6 |

50 Fine older varieties 15*s.*; or 25 for 8*s.*

100 Finest mixture, 10*s.*; 100 fine border varieties, 5*s.*; or post free, 6*s.*

DOUBLE ANEMONES.

Finest mixture, 1*s.* 6*d.* per dozen; or 10*s.* 6*d.* per 100; fine, 1*s.* 3*d.* per dozen; or 7*s.* 6*d.* per 100.

Anemones free by post, 8*d.* per dozen extra, or 3*s.* per 100.

Bass and Brown, Seed and Horticultural Establishment Sudbury, Suffolk.

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CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps Remittance or reference from unknown correspondents

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"HERO OF SURREY" CUCUMBER.

J. BURLEY begs to inform the public that he has the pleasure of offering the above new Cucumbers with confidence, as a first-rate one for Ridge or Frame, he having grown it from 20 to 24 inches on the ridge last season, without any bottom heat. It can be had in 2*s.* packets, of Eight Seeds, of the following Nurserymen and Seedsmen, who have kindly offered to be Agents:—Mr. John Kernan, Covent-garden; Messrs J. A. Henderson & Co., Pine Apple-place; Messrs. Clark, Borough; Mr. Edward Tiley, Bath; Mr. W. J. Epps, Maidstone; Mr. J. Smith, Westerham, Kent; Messrs. Rendle, Plymouth.—A reference, or the amount in Postage Stamps, will oblige.—Limpsfield, Godstone, Surrey.

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HOLLYHOCK SEED.

EDWARD TILEY begs to inform the lovers of that beautiful flower that he has been successful in procuring a quantity of good sound SEED of the above from an Amateur Gentleman who has one of the most superb and choice collections in cultivation, the seed having been selected with every care and attention; he can confidently recommend it. Sold at 2*s.* 6*d.* per packet, containing 150 seeds, or 5*s.* for a packet of 400 seeds.

GERMAN ASTER SEED.

Unequalled for the superiority of flower, the shape of which forms that of half a globe, and has been admired by thousands of spectators at numberless exhibitions. There are from 20 to 30 varieties, 1*s.* per packet.

SWEET-WILLIAM SEED.

Saved from 24 superb varieties. The flowers are very large, and of dwarf habit. They were much admired when in bloom, by countless spectators, and the Seed numerously ordered by them; 1*s.* per packet.

ANTIRRHINUM SEED.

E. T. being a most extensive grower of all the choicest sorts known in cultivation, has selected the Seed with great care from the finest varieties, as to colour, shape and habit of plant. There are more than 50 distinct varieties; 1*s.* per packet.

DWARF ORANGE AFRICAN MARIGOLD SEED.

Unrivalled for its superior size and darkness of colour, many of the flowers last season measuring 5 inches over, and not more than 1 foot high; 6*d.* per packet.

Or, if preferred, a 5*s.* packet of Hollyhock and a packet of each of the above varieties for 7*s.*

| | | |
|---|---|---|
| Walcheren Cauliflower Broccoli (as imported) | 1*s.* 0*d.* | p. packet. |
| Tamworth Broccoli ... ... ... ... | 1 0 | ,, |
| Wilcove Broccoli ... ... ... ... | 1 0 | ,, |
| Cole's Superb Solid Celery ... ... ... | 0 6 | ,, |

A remittance must accompany the order, either in cash or penny postage stamps for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

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VERY FINE TWICE TRANSPLANTED SPRUCE FIRS AND BRITISH OAKS.

MESSRS. WOOD AND INGRAM beg to offer SPRUCE FIRS as above, 2 to 3 feet, 3*s.*, and 3 to 4 feet, 35*s.* per 1000. These are very fine stuff, well feathered to the ground. British Oaks, 6 to 8 feet high (raised from very fine trees in Brampston Park, the seat of Lad O. B. Sparrow), at 60*s.* per 1000. These are admirably adapted for filling up old plantations, being stout in proportion to the height. If 10,000 are taken a reduction will be made.

Huntingdon Nurseries, March 8.

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JOHN WILMOT (late WILMOT and SON), begs to inform the Nobility, Gentry, and the Trade, that any orders they may honour him with will be attended to with the same punctuality as during his father's life-time.

Isleworth, March 8

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THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s.* per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, March 8

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AMERICAN PLANTS.

C. LODDIGES AND SONS, in consequence of part of their Nursery being given up for building, are enabled to offer for cash—

Finest Ghent Azaleas, strong bushy plants named, and being well set with buds, are peculiarly adapted for forcing, 18*s.* per doz.

Azalea pontica, large, 12*s.* per doz.
Andromeda floribunda, 3 to 4 feet across, 10*s.* each.
Vaccinium, 30 species, 12*s.* per doz.
Andromeda Ditto 24*s.* per doz.

Post-office Orders to be made payable at Hackney, near London.

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MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

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SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1851 *is stamped as a Newspaper, to go free by post, and may be had on application. It will be found to contain the newest and best articles which can be procured, with full description and other useful information.*

SELECT AND CHOICE FLOWER SEEDS.

The following of our best selections supplied free by post, with proper directions for sowing, heights, colours, &c., given in the Catalogue.

| | *s.* | *d.* |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

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TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.

Woking Nursery, March 8

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HUGH LOW AND CO. have to offer fine large Tubers of the under-named Tropæolums:—

| | | | |
|---|---|---|---|
| Azureum ... ... | 5*s.* 0*d.* | Edule ... ... | 7*s.* 6*d.* |
| Brachyseras ... | 1 6 | Tricolorum ... | 1 6 |

Prices to the Trade on application.—Clapton Nursery, London.

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MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s.* | *d.* | | Per 1000—*s.* | *d.* |
|---|---|---|---|---|---|
| York Regents .. .. | 10 | 6 | New Early Ebrington | | |
| American Native .. | 10 | 6 | Kidney .. .. | 15 | 0 |
| White-blossomed Kid. | | | Do. Ash-leaved .. | 15 | 0 |
| ney .. .. .. | 10 | 6 | Do. Frame Round .. | 10 | 6 |
| Soden's Early Oxford .. | 15 | 0 | Do. Radical .. .. | 10 | 6 |
| Early Cornish .. .. | 15 | 0 | Fox's Seedling .. .. | 10 | 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, Feb. 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15¼ per cent. |
| Salesman, No. 1 ... ... ... ,, ,, | 11½ ,, |
| ,, No. 2 ... ... ... ,, ,, | 9½ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

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RARE AND BEAUTIFUL COLUMBINE.—The Subscribers have for Sale strong Roots of AQUILEGIA GLANDULOSA, sent free by post at 2*s.* 6*d.* per pair, or 9*s.* per dozen, and Seeds at 1*s.* per packet, or for stamps of that value. Respecting this beautiful flower, Dr. LINDLEY, in the *Gardeners' Chronicle*, says, "This plant is perhaps the handsomest hardy perennial in cultivation;" and having described it he adds, "No description that we have formerly given of it has done justice to its exquisite appearance." The trade supplied at the wholesale rate.

JOHN GIBSON and Co., Nurseries, Forres, N.B.

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NORMAN'S "LORD NELSON" NEW PICOTEE. The best-edged purple-rayed, quite free from spot or bar, and good pod, with superb white and large petals, 10*s.* 6*d.* per pair, warranted a fine show variety. Catalogues on pre-paid application to BENJAMIN NORMAN, Florist, Bull Fields, Woolwich.

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PINES.—TO BE SOLD, a Quantity of Fruiting and Succession Pines. The Plants are perfectly clean and healthy, and may be seen on application to Mr. PHILLIPS, Stamford, Lincolnshire.

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MORGAN'S KING OF THE DAHLIAS.—The entire Stock will be sold to any one making early application; or otherwise, in ground roots at five guineas each, or pot roots at two guineas each; Plants first week in May, 10*s.* 6*d.* each. The usual allowance to be made to the trade where a dozen are ordered. The roots are now beautifully broke. This Dahlia was named by Mr. Glenny; and for further particulars see "Glenny's Garden Almanac," page 94; and also "Glenny's Journal," Dec 14th, 1850. In his answers to Correspondents he says, "We will never give another opinion of a Dahlia publicly, if 'The King of the Dahlias' does not prove the best of all the Crimsons; and we shall be dreadfully disappointed if it be not the best of all the Dahlias, not barring colour. We may be wrong, but if so we will never be wrong any more; and we are quite sure of its being the most extensively grown of any." A remittance will be required from unknown correspondents.

A MORGAN, Cross-street, Oswestry, Shropshire.

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STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and with fruit blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

VERBENAS.—A Set of Twelve of the most extraordinary Seedling Verbenas ever offered. As a proof of their excellence, they have been awarded 30 first-class certificates; three of them will be figured in the "Gardener's Magazine of Botany," April 1. G. S. begs to say that they are very distinct, and far surpass any previously raised. The set in strong plants, the third week in April, at 21., or 5s. per plant. For descriptions, see Catalogue, which will be forwarded on the receipt of one postage stamp, with the description of the beautiful Fuchsia Sedonia, figured in the "Gardener's Magazine of Botany," for March. Also his new Petunias and Heliotropes. Selections, with prices of Verbenas, Fuchsias, Dahlias, Chrysanthemums, Geraniums, &c., at moderate prices.—GEORGE SMITH, Tollington Nursery, Hornsey-road, Islington, London.

THE "BLACK BARBAROSSA" GRAPE.

JOHN BUTCHER begs to call the attention of Grape Growers to the above truly valuable late Grape, introduced from the Continent by C. S. Ward, Esq., and was exhibited at the Horticultural Society's Rooms, Regent-street, London, in January, 1849, for which a Certificate was granted; and again on the 19th February, 1850, when a Banksian Medal was awarded it. In the Covent Garden Market Report of 9th March, it is stated that "Hothouse Grapes, excepting the Barbarossa, are over."

It has the following good properties:—The Vine a most luxuriant grower, a free bearer, largely and finely shouldered; berries large and globular, flavour equal to the Hamburgh, will hang on the Vine for at least another month to come without sinking in size of berry or losing in flavour; as hardy as the Hamburgh; the average weight of the bunches 4 lbs. each. To those families requiring late Grapes it will prove a valuable acquisition.—Good plants, from eyes, 10s. 6d. each, including package. London Agent—Mr. FREDERICK WARNER, Seed Merchant, 28, Cornhill, London. May be had of JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

Also Butcher's Hybrid Black Spine Cucumber; length from 18 to 30 inches, exhibited at the Royal Botanic Garden, Regent's-park, 1846, for which a Certificate was granted. 1s. per paper.

Butcher's Shakspeare Cabbage, an early splendid variety, 1s. per paper.

Butcher's Early Warwickshire, do., 1s. per paper.

Golden Cos Lettuce, true, undoubtedly the best Lettuce grown. 1s. per paper.

A remittance must accompany the order, either in cash or penny postage stamps, from unknown correspondents.

SUPERIOR GARDEN SEEDS, CARRIAGE FREE.
(All of home growth.)

KITCHEN-GARDEN SEEDS, including all the New Sorts yet introduced, as advertised in previous Numbers of the *Gardeners' Chronicle*; and FLOWER SEEDS as under:—

| | |
|---|---|
| The best sorts of imported Asters, Zinnias, Stocks, Larkspurs, Marigolds, Phloxes, &c., in complete collections for a large garden ... ... ... ... | £1 1 0 |
| Ditto, in smaller quantities... ... ... ... ... | 0 10 6 |
| Ditto, for a small garden ... ... ... ... ... | 0 7 6 |

Instructions for Cultivation will accompany the Flower Seeds.
JOHN SUTTON and SONS, Reading, Berks.

CUCUMBER "PHENOMENA," AND "BROMHAM HALL" MELON.

EDWARD TILEY wishes to inform the Nobility, Clergy, Gentry, and Growers in general, that he has still a Stock of good sound Seeds of the above superb CUCUMBER and MELON, and other varieties, as advertised by him in the *Gardeners' Chronicle* Feb. 22d, 1851. Cucumber Phenomena, 2s. 6d. per packet; Bromham Hall Melon, 1s 6d. ditto; Fleming's Trentham Hybrid Melon, 1s. ditto; and about 20 other good varieties of Cucumbers and Melons, at the prices mentioned in the former Advertisement.

Any quantity will be sent postage free on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 12, Abbey Churchyard, Bath.

TO POTATO AND CUCUMBER GROWERS.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the Public that he is now ready to send out his Seedling FIFTY-FOLD KIDNEY POTATO, which has been proved and highly recommended by Dr. Lindley, Messrs. Beck and Henderson, Hurst and M'Mullen, and many others. Price 4s. per peck.

London Agent: Hurst and M'Mullen, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER successfully for three years, can with confidence recommend it to the Public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1s. each.

IMPROVED GIANT ASPARAGUS ROOTS.—Fine Roots may be had of FREDERICK WARNER, Seedsman, 28, Cornhill, at 5s. per 100, with printed particulars for planting. Also the following:—Myatt's Prince Albert Rhubarb, 1s. per root; Myatt's New Victoria Pine-Apple-flavoured Rhubarb, 9d. per root; Myatt's New Linnæus Rhubarb, earliest in cultivation, 1s. 6d. each; Mitchell's Royal Albert Rhubarb, 1s. 6d. each. Fine Seakale Plants, 8s. per 100. Strawberry Plants, all the New Varieties, &c. &c.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from weeds and coarse Grasses, per bushel, 21s.; or 3s. per gallon (with instructions.)

Also PERMANENT PASTURE GRASSES mixed expressly to suit the soil at 28s. per acre, and all other Agricultural Seeds of home growth at low prices, carriage free.

*As see Messrs. Sutton's Priced List in last Page of the Gardeners' Chronicle of March 1.*

| FLORISTS' FLOWERS. | £. | s. | d. |
|---|---|---|---|
| 25 pairs of Carnations, in 25 varieties ... ... | 1 | 0 | 0 |
| 25 pairs of Picotees do. ... ... | 1 | 0 | 0 |
| 25 pairs of Pinks do. ... ... | 0 | 8 | 0 |
| 25 Pansies do. ... ... | 0 | 12 | 0 |

Packing, Hamper, &c., included.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester having a large stock of the above FLORISTS' FLOWERS, begs to offer fine show varieties, in strong well-rooted plants, at the above low prices. Priced Catalogues may be obtained by inclosing a postage stamp.

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B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower Seeds.

N.B.—The prices are attached to every article. All packages delivered free of carriage to London.

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THE CALIFORNIAN HORSE-CHESTNUT (Pavia Californica).—A few fine young trees of this rare Chestnut, collected by Mr. Hartweg for the Horticultural Societies, and described as blooming with long fragrant spikes of flowers, are offered at 21s. each. They are budded on 4 feet stems of the common Horse Chestnut, and are 6 feet or more in height.

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VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited, 1s packets.

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NEW VALUABLE FLOWER SEEDS.—Portulaca novarogea, new Rose var., very handsome, 1s. per pkt.

| | | |
|---|---|---|
| Ipomœa Quamoclit alba, half-hardy ... ... | 1s. | ,, |
| ,, Burridgii, splendid hardy ... ... | 6d. | ,, |
| Saponaria Calabrica, var. multiflora ... ... | 6d. | ,, |

No garden should be without this most valuable Annual.

| | | |
|---|---|---|
| Martynia angularis, new and handsome ... | 6d. | ,, |
| Gloxinia, hybridised by a first-rate grower ... | 1s. | ,, |
| Calendrinia umbellata, new and handsome half-hardy Annual ... ... ... ... | 1s. | ,, |
| A few packets of Lisianthus Russellianus ... | 1s. | ,, |
| Tropæolum speciosum, very handsome ... | 1s. | ,, |

DUNCAN HAIRS' object, in selecting the above few Seeds from his collection, is to draw the particular attention of those who are fond of novelty and beauty. Amongst other departments of his business, D. H. prides himself on having some first rate Seeds of Florist Flowers—viz., Calceolaria, Cineraria, Heartsease, Dahlia, Verbena, Carnations, Pink, Cockscombs, and Balsams, &c., in 6d and 1s. packets.

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BEAUTIFUL HARDY CYPRESS, CUPRESSUS GOVENIANA.

ADAM PAUL AND SON beg to offer handsome Seedling Plants of the above new CALIFORNIAN CYPRESS. Well feathered to the base, 1 to 2 feet, 10s. 6d. each; 2 to 3 feet, 15s. each. Package 1s. extra, carriage free to London.

N.B. A large stock of Cedar of Lebanon, Cedrus Deodara, Abies morinda, and Pinus excelsa, handsome seedling Plants, 1, 2, 3 4 and 5 feet high, prices moderate, and furnished on application.—Nurseries, Cheshunt, Herts. March 8.

NEW DAHLIAS, &c. &c.

THOMAS BARNES begs most respectfully to announce that his Spring Catalogue, with description of all the leading novelties for the season, is now ready, and may be had on application.

DANECROFT NURSERIES, Stowmarket, Suffolk.

**The Gardeners' Chronicle.**
*SATURDAY, MARCH 8, 1851.*

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | March | 10 | British Architects | 8 P.M. |
| | | | Geographical | 8½ P.M. |
| TUESDAY, | — | 11 | Syro Egyptian | 7½ P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 12 | Literary Fund (Anniversary) | 2 P.M. |
| | | | London Institution | 7 P.M. |
| | | | Society of Arts | 8 P.M. |
| | | | Graphic | 8 P.M. |
| | | | Geological | 8½ P.M. |
| | | | Pharmaceutical | 9 P.M. |
| THURSDAY, | — | 13 | Royal Soc. of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| FRIDAY, | — | 14 | Astronomical | 8 P.M. |
| | | | Royal Institution | 8½ P.M. |
| SATURDAY, | — | 15 | Asiatic | 2 P.M. |
| | | | Statistical (Anniversary) | 3 P.M. |
| | | | Medical | 8 P.M. |

WE perceive that the success which has attended the cultivation of the Victoria WATER LILY, at Chatsworth and at Syon, has excited a general desire to follow the example. But as glass-houses of such a magnitude as a plant of the Victoria requires, are much beyond the means of the great majority of the public, the question has been raised whether it and similar aquatics cannot be obtained in open ponds.

The probability of tropical water-plants being cultivable in open ponds, strikes us as precisely equal to that of tropical shrubs being willing to grow in open fields. In neither case can success be anticipated, for this simple reason, that in all plants whatsoever vitality can only exist in the presence of a peculiar temperature—high in tropical productions, low in those from temperate and rigorous climates. This peculiarity is part and parcel of their nature; they cannot lay it aside; they cannot modify it at will, but they stand alike helpless and motionless to abide by the temperature in which accident places them; if high enough they flourish, if too low they are paralysed, become victims of gangrene, and perish limb by limb.

This is so notoriously the case with plants in general that we cannot imagine water plants to form an exception; the reverse may rather be anticipated, considering their highly cellular and delicate fabric, the rapidity of their growth, and the excess of vital power which the latter circumstance seems to indicate. Nor is it the mere temperature of the air or earth which governs water plants; plunged as they are almost wholly below the surface of water, it is indispensable that this fluid should also have a temperature constantly high enough to maintain an active growth. In the hot countries to which tropical aquatics belong, this is always the case; in the climate of England, never. Out of considerations of this kind has arisen the well-known rule of cultivation, that the water in which stove aquatics are planted should stand as nearly as possible at 84° while they are growing. The water in our open ponds cannot average more than 50°.

But while these statements are true in general, it must be admitted that startling exceptions present themselves here and there. For instance, Richardia æthiopica, a Cape plant, will certainly grow vigourously in some places, although merely plunged in the bottom of a pond; and in like manner the beautiful Aponogeton distachyum, from the same country, grows with more than its native vigour in the open pond at Edinburgh and in South Devon. Of these cases we can only say that we are little acquainted with the circumstances under which they are found wild; and that when they do succeed here it is probably in connection with the presence of springs having a higher temperature than that of the surrounding water. We have never ourselves been able to keep Richardia alive in the warmest ditch, although we have seen it in the greatest beauty in a pond at Cheshunt; and the Rev. CHARLES OSMOND, who had hundreds of flowers open last February, informs us that the place where Aponogeton grows is fed by a spring, that the water rarely freezes, and is always clear. We understand, however, that it thrives as well in many Cornish ponds, to which it has been introduced by Sir CHARLES LEMON.

Why then should not Nelumbium speciosum grow likewise? The question was raised in the "Botanical Magazine" many years ago, how this plant could be tender in England, and hardy at Pekin, where the rivers are said to carry waggons on their backs. To this it may seem that there are but two solutions. Either that the plant is not tender (at a due depth) in England; or else, that some other plant, not that, flourishes at Pekin. But we have no reason whatever to suppose that the Nelumbium of Pekin is distinct, if different, from that of the Italian Water-tanks; nor on the other hand is there the smallest evidence that it will grow in the open air in England, although our rivers will not carry waggons on their backs. And here again, we presume that a solution of the enigma is to be found in temperature—not that of winter, but of summer. It is well known that many plants will endure an extraordinarily rigorous winter, if they have passed through a summer of equal fierceness; but that, nevertheless, these hardy species perish in the equable climates of such countries as England and Ireland. That we take it is the case of Nelumbium. MEYEN observed that the temperature of water in the Paddy grounds of China was 113°; and the black sides of the boat that conveyed him stood at 142 50°. When we obtain a long succession of summer weather like this we may hope to see Nelumbiums and Victorias and tropical Nymphæas helping the Nuphars, and Menyanths, and flowering Rush, to decorate our garden ponds; but we greatly fear, not till then. At the same time we admit that experiments will probably teach us more than we anticipate; and to experiments we would therefore confine this interesting question for the present.

THE experiments of M. VILLE, to which we drew attention five weeks ago, (p. 52) have led to the publication of other researches on the same subject, and we to-day give an abstract of a paper in the *Comptes Rendus*, by MM. CLOEZ and GRATIOLET, on various matters connected with the theory of vegetation, and especially on the direct absorption of nitrogen by plants. These experiments are confessedly in an incomplete state, and the authors are only induced to publish their results at once, in consequence of the recent memoir of M. VILLE. As these gentlemen do little more than state the general conclusions to which they have arrived, and give very little experimental evidence, it would perhaps be premature in us to pronounce any very decided opinion on the accuracy of their conclusions; there are, however, several parts of the memoir which we may at once notice, reserving some other observations till the whole paper, and the full account of the experiments on which these conclusions are founded, is published.

It appears to be the fashion at the present time, in writing an experimental essay on the growth of plants, to commence by stating a number of well-known facts, as if they were newly-discovered phenomena, which the reader had to receive on the simple authority of the author; and, therefore, not

to be quite out of the fashion, MM. CLOEZ and GRATIOLET commence by informing us, with a good deal of ceremony, as one of the conclusions they have arrived at, that plants evolve abundance of oxygen in the sunshine, very little in diffused daylight, and none whatever in the dark; facts which were pretty well known and acknowledged before the breaking out of the first French Revolution. They then go on to state that plants never give out carbonic acid in the dark, in which they revive the favourite belief of SENEBIER. When INGENHOUSZ, somewhere about the year 1782, following in the footsteps of PRIESTLEY, published the results of his experiments, and deduced from them the general conclusion, that in the day-time plants give out oxygen, and that in the night they exhale carbonic acid or fixed air; in the day-time improving the atmosphere, and in the night deteriorating it, by the emission of a poisonous gas; he was loudly assailed by SENEBIER and many others, who accused him of inventing a foul calumny on plants, and of endeavouring to detract from the completeness and perfection of the whole creation! They repeated his experiments, but without success, for they could not observe that any carbonic acid was given out by healthy plants during the night; and hence they came to the conclusion, that the carbonic acid evolved in his experiments was the result of fermentation or disease in the plants. To all this INGENHOUSZ replied with a good deal of warmth; he repeated and confirmed his experiments, and denied that he had in any way calumniated Nature. "I have merely stated what is true," said he, "and if it is true that during the night plants evolve a small portion of carbonic acid gas, surely it is no more calumny to say so, than it is to assert that there are such things as venomous snakes, mad dogs, or arsenic, in the world."

The question thus raised, was, however, not satisfactorily settled, and subsequent writers and experimenters adopted alternately the views of INGENHOUSZ and of SENEBIER; gradually the opinion of SENEBIER gained ground, and at last, when the careful and minute experiments of PEPYS were published, the matter was decided; he found that healthy leaves do not evolve carbonic acid during the night. The present experiments of CLOEZ and GRATIOLET merely confirm that which Mr. PEPYS had already proved.

We pass over for the present altogether the experiments on the influence of temperature; they too do not seem to possess much novelty, though they are probably valuable and trustworthy results. The third series of experiments, those on the influence of the surrounding medium, is that most nearly connected with the experiments of M. VILLE, and the great question of the direct absorption of nitrogen by plants. It is of course impossible to judge correctly of the real value of these experiments, until we know the kind of plants with which they were made; but as far as the preliminary statement goes, it is certainly by no means altogether satisfactory; and the remarks we made when speaking of M. VILLE's results, may with equal propriety be applied to these. We have very little faith in experiments made with land plants, plunged under water, and therefore placed in a most unnatural situation; and on the other hand, it is a very questionable thing to examine the growth of a water plant growing wholly in water, and then assume that land plants growing wholly in the air must feed precisely in the same way. We are told that the plants grew well in river water, which contained common air, and therefore free nitrogen, provided the water was renewed every day, but that they soon became unhealthy if they were kept in water which did not contain air; now if this be true, it may be caused in various ways, and may be quite independent of the assimilation of nitrogen.

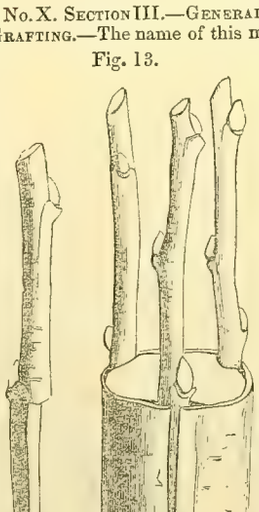
It is stated by M. CLOEZ and GRATIOLET that when a plant is plunged in pure water, which contains nothing but a small portion of carbonic acid, at first it appears remarkably healthy, and abundance of oxygen is evolved, which is contaminated with nitrogen; that after a time the oxygen comes off in less quantity, but is then nearly pure; after which the plant begins to suffer. Now setting aside the very unnatural circumstances in which the plant is thus placed, we do not see how, from such an experiment, it is possible to conclude that the nitrogen which contaminates the first portions of oxygen is produced by the decomposition of the plant itself, that a fresh supply of free nitrogen is necessary to supply this waste, and that the plant suffers because it loses nitrogen on the one hand, and none is supplied to it on the other to counterbalance that loss! We think that if the nitrogen which is at first given off really arises from the decomposition of the plant, it only shows that the conditions of the experiment are so entirely forced and unnatural, that no satisfactory conclusions whatever can be drawn from it. But in truth there is no need to assume that the nitrogen has any such source; at the commencement of the experiment, the plant, it is to be supposed, was in a tolerably healthy state; and if it was, it would naturally contain a considerable bulk of atmospheric air, as most plants do, and this air would be gradually given out, along with the oxygen evolved by the plant, under the influence of the sun's light. Hence the first portions of oxygen would contain a small quantity of nitrogen; but, as there could only be a limited quantity of air in the vessels of the plant, and as it could not absorb any more under the peculiar conditions of the experiment, the oxygen would soon be given off in a nearly pure state; when this was the case, the tissues of the plant, instead of being charged with atmospheric air, would be saturated with nearly pure oxygen, and a fresh unnatural condition would be added. Chemical action would then begin to get the upper hand over the vital powers of the plant, and it would unquestionably soon become unhealthy. The effects observed in this experiment might be explained in other ways, and there does not seem any sufficient reason to assume that plants are subject to this continual waste of nitrogen, which, in fact, might be compared to the respiration of animals. As far as we are yet able to judge, the experiments do not warrant such a conclusion.

The general result, deduced from similar experiments, in which various solutions of ammonia and ammoniacal salts were employed, is, in the same way, by no means satisfactory; and, as a generalisation, could not be admitted. It is stated that water plants are able to obtain the nitrogen which they require from atmospheric air, but not from ammonia. It is quite certain that this does not hold good with common land plants, on the growth of all of which ammonia exerts a most beneficial influence, increasing the formation of vegetable matter, and not merely rendering them richer in nitrogen, but, at the same time, by making them more healthy and vigorous, enabling them to absorb a larger quantity of carbon also from the air. Until all the details of these experiments therefore are published, we cannot but feel rather sceptical as to the results; we doubt whether the authors, any more than M. VILLE, have established on good evidence, and by clear and distinct experiments, the assertion that plants are able to absorb and assimilate the free uncombined nitrogen of the atmosphere.

## GRAFTING.

No. X. SECTION III.—GENERAL OBSERVATIONS ON CROWN GRAFTING.—The name of this mode of grafting indicates sufficiently the manner in which it is usually applied (see Fig. 13), but it is not unique, as will be seen. It is adapted for the regrafting of large old Pear and Apple trees* of bad sorts, or others that are too numerous, or that are placed in situations unfavourable for the variety of fruit which they bear. The stocks ought to be treated in February as the strong trees destined for being cleft-grafted are at that period. It does not make old trees young, as has been stated by many authors; but it gives them a somewhat youthful appearance by the renewal of their branches. It is an advantageous substitute for the lopping in of good sorts, for the shoots from grafts are more proper for training than those are which spring naturally through the old bark.

Fig. 13.

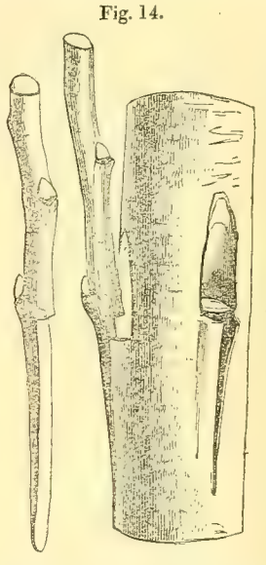


We can know the proper time by the movement of the sap in some reserved shoots, as in the case of cleft grafting; besides this inspection, we may assure ourselves by ascertaining whether the bark of the stock is easily detached from the alburnum, and if so, we proceed with the operation as follows.

Before amputating afresh the branch or trunk, fix upon the most suitable place for the graft, and with a saw shorten back to that point, regulating and smoothing the wound with a knife; then mark out the place for each scion, about $1\frac{2}{10}$ inch apart, always choosing those points where the bark is the most regular; but as the latter is always coarse and tough on such trees, we cut it lengthwise for about an inch in length, taking care that the blade of the grafting-knife does not penetrate the alburnum. As this instrument is frequently insufficient for raising the bark so as to make way for the scion, we make use of a small piece of hard wood, cut in the form of the scion, such as the latter is represented, *fig.* 13; and in introducing the point between the bark and alburnum, we must always be careful to bruise the latter as little as possible. In order to avoid this, the instrument should not go down farther than the end of the cut made in the bark, thus effecting merely a slight entry for the scion, which, it will be observed, is cut with a long slant, and a small shoulder at the upper part of the slope, opposite to an eye. The scion thus prepared is inserted in the opening commenced for it, and gently pushed down till its shoulder rests on the top of the stock. The operation is similar for all the other scions which the stock may require, their number depending upon its size. The whole being placed, they are secured by a split Osier firmly fixed to the stock, and brought two or three times round, and as near to the amputated part as is possible.

We may employ this mode of grafting, in some extraordinary cases, without cutting off the top of the stock, when we would wish to place one or more scions along a stem destitute of lateral branches. This, which M. Thouin has enumerated amongst the varieties of side-grafting, has received some modifications, which we shall here detail, referring, in the first place, to fig. 14. By means of a sharp chisel, three-quarters of an inch broad, make in the stock a transverse cut the whole breadth of the chisel, and about as deep as the thickness of a finger; above this, cut out with the same tool a somewhat triangular notch, of $1\frac{1}{2}$ to 2 inches in length, with its depth almost nothing at the commencement; but increasing progressively as the chisel is made to penetrate towards the bottom of the first cut, as is represented at A. The object of this notch is to stop a small portion of the ascending sap, in order that it may be absorbed by the scion. In putting on the latter, we place it as directed in the preceding case. *Translated from the French of D'Albret.*

Fig. 14.




* Stone-fruit trees cannot be grafted by this proceeding, because their bark will not rise at the time.

## RESEARCHES ON VEGETATION.

(BY MM. CLOEZ AND GRATIOLET.)

ALTHOUGH we have been occupied in researches on vegetation for upwards of three years, we refrained from publishing our results, until they should have attained the greatest degree of accuracy and extent of which they were susceptible. The late publication of M. Ville compels us, however, to make them known, and to state that we have been endeavouring to solve the same question as this gentleman, although by a different method. Our experiments were made in M. Chevreul's laboratory, in the Museum of Natural History, and under his auspices. Our principal conclusions have been laid before M. Decaisne, and have been, to a certain extent, already made public, as they were incorporated by M. Frémy in the lectures given by him at the Museum last spring.

We do not intend to state in this place the details of our experiments; they will be explained at length in a work which we are preparing for the press; we merely lay before the academy such of our results as seem to us to be certain and correct.

It has long been known that the green part of plants decomposes carbonic acid gas, and separates the oxygen from it. This process is performed with great rapidity, by submerged aquatic plants, and they separate more oxygen in a given time than most other plants. This fact induced us to select for our experiments different species of *Potamogeton*, *Ceratophyllum*, *Myriophyllum*, and *Conferva*.

Our conclusions may be stated thus:

1. *Influence of Light.*—Oxygen is disengaged rapidly in solar light, insensibly in diffused light, and not at all in darkness. In the latter case, no carbonic acid whatever is given off by plants; the contrary is generally supposed.

We endeavoured to discover the comparative influence of coloured glass on the decomposition of carbonic acid by the green parts of plants; as well as we could ascertain decomposition is most rapid under colourless, unpolished glass, then comes yellow glass, then colourless transparent glass, then red, green, and lastly, blue glass. We satisfied ourselves that these differences were not caused by differences of temperature.

2. *Influence of Temperature.*—The decomposition of carbonic acid gas by aquatic plants exposed to light in a temperature raised gradually from 39·2° F. does not commence until the temperature is 59° F., and is at its maximum at 86° F. The decomposition of the same gas by plants exposed to light in a temperature which

is lowered from 86° F., continues when the temperature is as low as 57·2°, 55·4°, 53·6°, 51·8°, but ceases when it is as low as 50° F.

These results are in every way conformable to those arrived at by M. Chevreul, from his observations on the circulation and ascension of the sap in plants. ("Journal des Savants;" May, 1822, p. 302.)

3. *Influence of the surrounding medium*—Vegetation of submerged plants can continue for several months in Seine water aerated and renewed every day. In river water deprived of air by boiling, and containing nothing but carbonic acid in the same proportion as Seine water, and also renewed every day, decomposition is at first very active, but soon grows less so, and ceases entirely at the end of 4 or 5 days. After this time the green colour of the plants is singularly reduced in intensity.

The phases of this phenomenon are very remarkable. First of all, the gas wnich is produced is mixed with a certain quantity of nitrogen, which diminishes little by little, so that the last portions of disengaged oxygen are nearly pure. The total quantity of nitrogen disengaged is much more considerable than the volume of the plant; and, if the plant be analysed, it will be found that, taking equal weights, it contains less nitrogen than another portion of the same plant not submitted to the experiment. These facts show that, in the vegetation of submerged plants, nitrogen is produced from the decomposition of their very elements; that a fresh supply is therefore necessary; and that nitrogen, free or combined, is an *article of food* essential to the life of an aquatic plant.

We were led by this to inquire into the influence of ammonia and its salts. We found that ammonia and its salts, dissolved in 10,000 times their weight of water, were always hurtful. The decomposition of carbonic acid diminished, and ceased at the end of a few hours. We therefore think we are justified in concluding that nitrogen, dissolved in water, is directly assimilated by the plants we operated upon.

4. *On the Movements in Plants of the absorbed or exhaled Elements.*—It is a fact, of the truth of which any person may easily satisfy himself, that in whatever position leaves of a Potamogeton may be placed in water, carbonate of lime is constantly deposited on the upper, and never on the lower surface of the leaves (upper and lower being used in their botanical sense). This seems to show that carbonic acid is essentially absorbed by the upper surface of leaves. The oxygen, which is produced by the decomposition of carbonic acid, has a perfectly defined course. It constantly descends from the leaves towards the roots. So that if a piece of Potamogeton, having a few leaves upon it, be placed horizontally in water, the oxygen is exhaled from the section nearest the root end of the plant. *Comptes Rendus.*

## MARKET GARDENING ROUND LONDON.

No. X. The Strawberry.—This most delicious and wholesome fruit is very largely cultivated for the London markets, and more fruit is even consumed in the villages surrounding the metropolis than in the largest provincial town in England. It is difficult to discover the correct acreage devoted to this kind of crop in the different counties surrounding London; but at a rough guess it may be estimated at near 100 acres.

In cultivating Strawberries the runners are generally planted out upon well prepared ground in August, but in the case of dry weather the operation is often deferred until about the 1st of September. They cannot, however, be planted out too soon; and for the British Queen the old-fashioned plan of saving the runners amongst the old plants, or what is better, pricking them out into winter beds 4 inches apart, and planting them out in March between Lettuce or some other dwarf crop answers best; any blossoms that are thrown up afterwards are picked off. Mr. Joseph Myatt, of Deptford, who has been so long justly celebrated for rearing and growing Strawberries, has kindly furnished me with the following answers to questions which I put to him respecting this fruit.

*Q.* What number of acres have you under Strawberries?

*A.* Seven.

*Q.* What sort of soil and manure do you use, and how much?

*A.* Sandy loam, horse and cow-dung, mixed, and applied at the rate of 30 loads to an acre.

*Q.* How many years do you allow the plants to bear?

*A.* Two, but if the sorts are very productive, three.

*Q.* What distance apart do you plant?

*A.* My beds contain three rows of plants, which stand 18 inches apart each way, leaving 2½ feet alleys, and clearing out the middle row after the fruit is picked off the first year.

*Q.* At what time do you straw them?

*A.* As soon as the first fruits are set.

*Q.* Do you use any water?

*A.* I have none within a mile of me, or I would employ it.

*Q.* What regulations are observed in the picking season?

*A.* The best fruits are put into 1 lb. punnets; the "seconds" into pottles; the pottles and punnets are made up professionally.

*Q.* Do you approve of sending them to market in the 4 or 5 lbs. wicker baskets, which are used by some growers?

*A.* This plan is only fit for hard ones, and Strawberries for preserving.

*Q.* How do you transmit your fruit to market?

*A.* To the latter by means of a spring-van; to shops, on women's heads.

*Q.* What sorts do you grow?

*A.* British Queen, Eleanor, Deptford Pine, Comte de Paris, Surprise, Goliah, Keens' Seedling, and many other seedlings.

Such are the answers of one of the best cultivators we have round London. Having no water near him, Mr. Myatt depends entirely upon the immense quantity and quality of his manure for keeping the ground moist, together with a good coat of straw; but where manure is scarce, perhaps my plan, which I have practised for many years, would be the best. I always mulch between the rows with fresh straw, mixed with horse droppings, laying it on at least an inch in thickness, just when the plants are coming into flower; and if the weather is dry I water frequently, but not over the flowers, until all the fruit is set. By the time the latter is ripe, the strength of the manure is washed down amongst the roots when they most want it, leaving the straw clean and sweet. Some market gardeners plant the British Queen 2 feet 6 inches apart between the rows, and 18 inches plant from plant. By this means large fruit is obtained; and should the autumn prove so dry as to ripen and set the buds properly, the crop in the following year is very heavy. Keens' Seedling does not require such treatment; if it is planted out in July or August it makes fine plants, and bears a heavy crop the first year, but the plantation must consist of runners from plants that have produced a good crop. And the safest plan is to go over them when they are coming into flower, and before they are mulched, in order to pull up any plants that are unproductive. In some years, acres are destroyed, on account of their not bearing fruit. This happens after a wet autumn, which causes the plants to grow into leaf without forming flower buds, and this occurs oftenest on light land. In the Strawberry season, market gardeners provide themselves with thousands of pottles, called quarts. These are formed of white Fir, or laths split up very thinly. The length of the London pottle is 11 inches. The inside diameter at the bottom is an inch, but it gradually enlarges until it is 3½ inches wide at the top, which is finished with a handle rising about 4 inches above the rim. This pottle properly filled with fruit ought to weigh from 12 to 14 ounces. For the first early Strawberries, what are called pint pottles are used. These are the same size at the bottom as those just mentioned; but they are only 7 inches long, and not quite 3½ inches in diameter at the top, finishing with a handle 2 inches high. They hold, when filled, about from 4 to 6 ounces of fruit. "Punnets" are made of the same material as the pottles. They hold ½ lb., 1 lb., 2 lbs. and upwards, according to the purposes for which they are wanted.

Considerable skill is exercised in what is termed, "topping up of a pottle," so as to give to its top the form of a cone. The first row of fruit sits partly on the rim, and exhibits its best broad side half way round the pottle. The next row occupies the bosom of the last, and so on to the top. The other side of the pottle is then "put up" in the same way, and when well done, the fruit is not easily displaced, the pottles are then sent off to market in light spring vans, which hold two tiers of light white wicker baskets; the latter contain 36 pottles, but in the case of the best fruit these baskets are divided by first putting in a layer of 1 lb. punnets, and then a division, filling up with punnets. The supply for the shops is conveyed to them by Welsh or Irish women, who carry them on their heads; these women being paid for every journey they make, earn a good deal of money at this occupation, in which they often walk 48 miles a day, *i. e.*, three times, say, from Isleworth, and three times back. This is, however, hard work, which I hope some day to see performed by the cheap steam-boats which now ply so plentifully up and down the Thames.

Market-gardeners exercise much ingenuity, in order to secure early fruit, such as planting closely in beds, and placing frames over them early in the spring; taking up plants with good balls and putting them into frames, in a little bottom heat; as well as planting at the foot of old walls, &c. They have also tried all sorts of ways to forward the ripening out of doors, as well as to keep the fruit clean, without encouraging insects. Among the materials used for this purpose may be mentioned slates, tiles, flints, boards, &c.; but the great fault of all these is, that they breed and harbour insects, whilst they cook the fruit before it is ripe, rendering it spongy and acid. All those contrivances have been abandoned, in order to give place to the much more sensible and economical plan of mulching with litter, which answers every purpose for which it is intended perfectly.

For private growers, terraces faced with burrs, as recommended in the *Chronicle* for last year, would, I have no doubt, be found everything that could be desired. By planting close behind the burrs, the latter running east and west, the fruit would hang over the burr without touching it, and so circumstanced would experience all the benefit arising from the reflection of the sun's rays, and would ripen much earlier than it otherwise would do, in addition to which the free play of air round it would give it a very superior flavour. This plan reminds me of our native banks, where the Strawberry grows wild, and from which such high flavoured fruit is obtained, especially where the situation faces the sun. In small places within the sight of windows such Strawberry terraces would not only be useful but might be made very ornamental and agreeable to look at. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 4.)

No. XX.—When a bird is about two years old, he is considered "steady" (if he has been carefully educated), and may be allowed to hang in the company of any others—however loud they may be. Each successive year tends to his improvement; for, if he be at all given to imitation, he will copy no notes but such as are sweet, and essentially musical. No better tutor could be found to instruct young canaries, than a staunch bird in his second or third year. They very quickly forget, in the sweet strains of his melodious voice, the "gibberish" they have learnt, while keeping promiscuous, and "loose" company, elsewhere. Always let them be much together, if you value a fine songster. When you really do become possessed of a rare bird, make much of him. Such are not to be met with every day.

I have, before, given sufficient reasons for not allowing any of your birds to see each other. Only let them *hear* each other, and you will have unceasing music from "morn till dewy eve." Such is the rivalry among birds that, not unfrequently, the one that is "outdone" falls lifeless from his perch. His heart has been broken, from the magnitude of his efforts to stand his ground! In some cases, if death does not ensue from over exertion, the bird's *spirit* (courage) will have fled for ever. He may "exist" for years; but he will never be heard to "sing," from that day forward. Of this, I have had oft-repeated proofs.

In this variable climate, you must take special care never to leave your birds in a cold room, or in a room without a fire. Keep them at one equable warmth, and they will thrive—neglect them in this matter, and their feathers will become ruffled; their head will find its way behind their wing; and their dissolution will be speedy. In an aviary, this precaution is unnecessary. No birds "winter" better in an aviary, than canaries; but this is owing to their *never* being used to a fire, and also, to their being gradually inured to the succession of the seasons.

The "habits" of the canary are no less remarkable than they are diverting, and his natural disposition is truly amiable. He bears no malice—entertains no resentments that cannot be coaxed away by a single Hemp seed. "*Semper idem*," is his family motto; and it is well chosen. He is never so happy as when he is in your company, and he will chatter to you by the hour together. It is no punishment for him to be in his cage; though he loves occasionally to hop on the table, and help himself to a morsel of sweet cake. He is of all birds the least shy, and the least suspicious—so thoroughly does he confide in the good-faith of his master and mistress. Would that such confidence were never misplaced! If you feel inclined to humour him in his little visits to you on the table, provide him regularly every morning with a square china bath, half filled with water; first placing it within a deep wash-hand basin, to prevent damage to your furniture by his splashing. An "invite" of this nature is irresistible, and he will soon be seen immersed to his very throat. On his return from the bath, his appearance will be found ludicrously comic. His sly look of self-satisfaction, and assumption of importance, whilst nearly drenched, and in a state of utter helplessness withal—are "as good as a play." Touch him, if you dare! With extended wings, and unrestrained fury, he will resent the indignity by pecking fiercely at you with his open beak, and he will often give you, in addition, "striking" proofs of his anger. These "airs of state" are very frequently practised. I merely throw out a "hint" for my readers to improve upon; for you may teach these "Majestic" birds *anything*.

In my early days, I was never without the company of some half-dozen canaries. They were allowed free liberty during the day, and they would fly after me from room to room all over the house, perching on my head or shoulder with the familiarity of a pet child. While making my toilet—a grand "study" with a gay young man—one or other of these little fellows would sit on my forehead, and seeing himself reflected in the glass, he would incontinently dance a hornpipe there—his little throat the while distended with song, and his trembling wings describing the arc of a circle.

How often, too, have I taken up a book to read, and found one of my little friends speedily perched on the summit thereof, bidding me defiance to say him "Nay!" All my remonstrances have been silenced by a flood of harmony, and in every instance I have "gone to the wall."

Were I to go on thus leisurely particularising the many little tricks I have witnessed, as practised by my winged minstrels, I should exceed the bounds of propriety. *One*, however, of our joint performances, I must, through favour, record; enforcing, at the same time, the necessity for extreme care, on all who may hereafter try the experiment. It is not quite free from danger. Aware of the perfect understanding existing beween myself and little family, I was in the constant habit of playing them off some "practical joke," rewarding them afterwards with a Hemp-seed, by way of compromise. The sight of a Hemp-seed, therefore (of which my mules and canaries were inordinately fond), was a signal for some favour to be granted—some "game to come off." Taking up four or five duodecimo volumes of printed books, I opened each in the middle; and placing them in a line on their front edges, in a slanting position, there was formed, beneath, an avenue throughout their entire length. It was like a railway tunnel on a small scale. In this opening, I placed some

half-dozen birds, one by one, gently forcing them, in the first instance, to travel onwards, *pari passu*, until they emerged from the tunnel. As each successively made his appearance, I presented him, lovingly, with one of his favourite Hemp-seeds, as a "reward of merit." Shall I be credited when I affirm that, before I had thrice repeated this little experiment, my pupils thoroughly comprehended the *fun* of the thing? It is indeed strange, but positively true.

Day by day, I extended the range of volumes; till by degrees I had formed a complete circle round the room. Here and there I left small loop-holes, just to give the travellers a "bird's-eye view" of the surrounding neighbourhood—occasionally exhibiting the magical Hemp seed; a sight of which quickened their pace amazingly. When their journey was a *very* long and tedious one, their looks, as they pattered past the loop-holes, were most imploringly expressive. However, an encouraging "*Allons, Messieurs!*" kept them up to their work bravely. Arrived at the *terminus*, the strut of triumph, as each came forward, and claimed his reward, can only be faintly imagined. I cannot, and will not, attempt to describe it. *How* these pleasing scenes of early life linger in the memory! *William Kidd, New Road, Hammersmith.*

## Home Correspondence.

*Varieties among Conifers.*—In the classification of Coniferous plants, the recognised distinction of the three, five, and two-leaved Pines, affords a basis for grouping that genus, of which one of the chief recommendations lies in its simplicity, and the broad evident principle on which it rests. The grand demarcation of species which separates the Strobus from other Pines, applies to the general classification of Coniferæ It lies certainly within the boundary of the five-leaved Pinus, so far only as the near connections of the species can be marked by the number of leaves in a sheath; but its great value is in the higher characteristics it affords for the primary division of the genus and species of Conifers. I say thus much only to express the certain amount of value I consider to be due to the classification of Pines by the number of leaves in a sheath. There are, as your readers are aware, several exceptions to this rule—as, for instance, in the uncertain number of leaves in the sheath of Pinus mitis, and one or two others which form a connecting link between the two and three-leaved Firs, in the same way as, to a certain extent, is observable in Pinus Hartwegii, which breaks the rule by having frequently four leaves in a sheath. But there has always appeared to me a very valuable regularity in the rule which supplies that simple mode of subdivision; a regularity to which the great majority of species are obedient. Among them are the varieties of Laricio. My object in addressing you is to draw information from such of your readers as have, like myself, applied a long and exclusive attention to the cultivation of Coniferous plants—to draw information which will be both interesting and valuable. I conceive it very possible that the varieties which we cultivate may have frequently arisen from accidental causes of soil and climate, and have been perpetuated in their newly acquired characteristics by the ripening of their seeds; which, whether in the course of centuries, scattered over wide extents of surface by running streams, or owing their original existence as varieties, and their subsequent propagation, to the unconscious acts of birds and insects, have now in our time acquired such constancy in their habits, as to claim distinct places in the catalogue of their fellow species. I enclose two specimens of leaves which I picked from a Pinus austriaca in my Pinetum. The austriaca is a recognised member of the family of Laricio, and has always appeared to me to be not less easily distinguished by its two-leaved foliage, than by the form of bud, and cone, and general habit of growth; but the leaves I send you are singular exceptions to the general rule. One set of leaves was (when on the tree) bound up and twisted together like the two leaves of the plant long known as monophylla, but you will observe that they are a twist of three leaves. The other set is a bunch of three separate leaves in one sheath, not twisted together; but of a thickness, length, and vigour more common to a Pinus ponderosa than an austriaca. These are not single instances on the tree from which they are picked; some shoots are almost entirely clothed with foliage of this description. The plant is about 10 feet high, and exhibits a most remarkable vigour. I wish to know if others have ever remarked similar varieties equally well developed in this or other species? In the instance I give from my own collection, I recognise the first action of natural causes to produce varieties which, by the maturing action of time, soil, and climate, become the basis of still further modification, and supply a sphere for future examinations into the history of Coniferæ, to which I invite the attention of yourself and your readers. *Pinus Gloucesterensis.*

*Peat Charcoal.*—I have read Mr. Cuthill's remarks on Irish peat charcoal, and its effects on different vegetables, with much interest. I am resident within 10 miles of several hundreds of acres of the peat bog, varying from 3 to 15 feet in depth, and I am desirous of trying to manufacture this valuable fertiliser. If, therefore, you or any of your intelligent correspondents will favour me with the best and most economical manner of manufacturing it from the bog I shall be much obliged. *Tyro.* [You will find some information on this subject at p. 84 of our current year's volume, and also at p. 750, 1849.]

*Bouquet Trade in New York.*—Seeing an account at p. 118, of the New York bouquet trade, and knowing that it is likely to make a false impression on young gardeners, who may be led to believe from it that the nursery trade is in a flourishing condition at New York, I beg to state that there are no nurseries there having any extent of greenhouses, &c., out of which such an amount of flowers as that mentioned by your correspondent could be cut, on any one day through the winter. Being in New York in the months of August and September last, I visited several nurseries there, which are queer things, when compared with our London ones. The great bulk of the plants which I saw in their greenhouses were not the sorts likely to produce flowers fit for bouquet-making on New Year's-day. I am of opinion that the principal work the six gentlemen who were "up all night" had to perform, was keeping the greenhouse fires well supplied with cord wood, in order to keep out the frost, that being at the time many degrees below zero. The sending out on one morning in the winter time 200 dollars' worth of cut flowers (41*l.* 13*s.* 4*d.*), reminds me of the tickets to see Jenny Lind's first performance, which the people here were told, through the press, were sold for from 200 dollars to 600 dollars each. No; the immortal dollar note is loved too well to be parted with, for such trifles. When the New Yorkers possess the refined taste of the people of these countries, I will believe that a New York nursery can send out 200 dollars' worth of cut flowers on a winter's day. At present, as the Yankee would say, "I guess that would be going a-head." *C. B. D.*

*Timber Trees.*—Mr. Bailey has very correctly designated a "Young Gardener's" scheme for obtaining a supply of home-grown timber an "unhappy one." One of the first operations agriculturists have to undertake when about to improve the cultivation in many districts, is to root out the hedgerow timber, because experience has shown that however much trees on farms may improve the beauty of the landscape, they are in a far greater degree injurious to the growing crops; and yet it has been proposed that farmers should be compelled to plant trees in the corners of their fields. I thought it was generally admitted that farmers had just now quite as many burthens to bear as they were able to stand under. Query: would not "young gardeners" be better employed if they devoted their attention to their own business? *Roaldus.* [Certainly.]

*Establishing a Rookery.*—A friend of mine who was anxious to possess a rookery has now a large one, from the following simple method. A magpie came in the spring and built its nest in a clump of trees. When the magpie had laid her eggs, he sent his keeper to a neighbouring rookery and got half-a-dozen eggs. The magpie hatched and reared four rooks out of the six eggs. They lived comfortably together through the autumn and winter, but in the spring a battle took place between the parties—the rooks gained the day, drove away the magpies, and have now established a large colony. *C. W. H.*

*Wireworm.*—A statement is published in your last Number respecting the destruction of the wireworm. I saw the account in the Journal of the Royal Agricultural Society some months ago, and tried an experiment by collecting some wireworms, and putting them into a pot with some lumps of Rape-cake, as directed. I looked at the pot this morning, and they are still alive. I may say that these have been potted several months; so as far as pot plants are concerned, Rape-cake is not a sure remedy. *R. C.*——I read "E. F. K.'s" communication on the destruction of wireworm with interest, as I was preparing some notes of a similar kind. I have noticed the eagerness with which this grub devours Rape-cake, and the fact may account for the usefulness of this manure as a spring dressing when the crop is endangered by the worm; but I must express a doubt whether this, its favourite food, is the death of the eater. I have found wireworms revelling in a heap of Rape-dust, apparently in a high state of enjoyment. May not the exuviæ have been mistaken by Mr. Charnock for the dead bodies of the enemy? *S. S.*

*Mildness of the Season in the North of Scotland.*—I beg to send you flowers of two Magnolias, grandiflora and conspicua, which I have gathered to-day (5th March) from trees growing against a south wall, where no protection has been afforded them during the winter. They are in an excellent healthy condition, and cover a wall about 14 feet high. I send them merely as examples of the mildness of our northern climate, this place lying about 58° North latitude. The winter has been remarkably mild here, as well as in other parts of the country; the flower-buds of grandiflora have been swelling uniformly throughout the winter; and should the weather prove no severer than it has hitherto been, they appear as if they would be fully expanded next month. Apricots have been in bloom for these 10 days past, and Peaches in the open air are also in flower. *John Webster, Gardener to the Duke of Richmond, Gordon Castle.*

*Campanula Vidalii.*—At p. 136 of the *Gardeners' Chronicle*, you have given a notice of this plant, derived, I presume, from Hooker's "Icones Plantarum," in which you state it to be "a straggling shrub, with good-sized cream-coloured flowers, said to grow two or three together at the end of a long stalk." As the figure in the "Icones" was taken from Mr. Watson's specimen, and the description also supplied by Mr. Watson, the following excerpt from a private letter of Mr. Watson's, dated Jan. 16, may not be without interest:—"Campanula Vidalii, he remarks, "was the only species brought by me from the Azores not gathered by myself. But it was brought to me in the dusk of an evening. From recollection I should say it would prove a highly desirable addition to our garden borders, if hardy enough for the ground, and worth house culture if not hardy." In a second note dated January 30, Mr. Watson remarks: "The plant is figured in Hooker's 'Icones' 684, but the figure is taken from a small specimen with *very* few flowers." Hence you will see that though Mr. Watson's materials were sufficient for botanical identification, they could convey no adequate idea of the plants under cultivation; and to condemn a plant for its appearance in a state of nature would be to consign three-fourths of the finest things in cultivation to oblivion. The person who sent the seeds to me, Mr. Peter Wallace (a pupil of Mr. Paxton's) gardener to Jose de Canto, Esq., St. Ann's, Porta Delgado, St. Michael's, thus described it upon the paper which contained the seed, "a soft-wooded spreading shrub, forming a beautiful round head, about two feet high—produces at every point a spike of beautiful white flowers. If hardy a first-rate acquisition to the borders; if not, a beautiful greenhouse shrub." In the letter which accompanied the seed, Mr. Wallace says, "The Campanula is a novelty which you may recommend with confidence." Upon the above statement of facts, which I verify by sending the original, it is unnecessary for me to offer any comment, and am quite willing to allow you and the public to draw your own conclusions. All that I desire is to justify the description I have given upon the seed papers, which I think I have done. Whatever the plant may prove, these facts are established:—first, that it is new; second, that it is distinct in habit; third, that the flowers are large; and fourth, that the plant is a shrub;—all desirable qualities in a genus so extensive as that to which this plant belongs. I have written to the Azores for plants, so that its value will soon be proved, as they will be here before the end of the coming week.—*Wm. P. Ayres, Brooklands, Blackheath* [We have omitted a quotation from Hooker's "Icones," which is immaterial to the question before us. As we have already stated, "what the plant may be worth will be seen hereafter."]

## Societies.

Horticultural, *March* 4.—J. R. Gowen, Esq., Treasurer, in the chair. Perhaps the most interesting, though by no means the most important of the subjects exhibited, were two examples of the new Sikkim Himalayan Rhododendrons, seeds of which have been so plentifully distributed among cultivators in this country. In consequence of the very beautiful representations of some of these Rhododendrons, published by Sir William Hooker, it is anticipated that many magnificent sorts will be discovered among them, and, as there appears to be considerable variety among the seedlings, both in appearance and constitution, this will in all probability be the fact; but that all will not be handsome, nor possibly even desirable, was proved by the plants shown, for the first time, on Tuesday last, by Mr. Wells, gr. to E. Hussey, Esq., Scotney Castle, Lamberhurst. These consisted of a little Alpine species with scurfy leaves, and small pale lemon-coloured flowers, which possessed a scent something like that of the buds of the Balsam Poplar. In general appearance the plants resembled the ferruginous Rhododendron of our gardens; but at present they are inferior in beauty to that species.—Mr. Cole, gr. to H. Collyer, Esq., of Dartford, exhibited a young and very healthy specimen of the pale variety of the charming Rhododendron javanicum, for which a Certificate of Merit was awarded. Mr. Cole finds that the best way of managing this fine species is to grow it quickly in the stove, until it has assumed the form of a good-sized bush; after which he thinks it will succeed in a greenhouse, treated like an Indian Azalea.—Mr. Glendinning, of the Chiswick Nursery, Turnham-green, sent a very promising greenhouse plant, in the shape of a Labichea, from Swan River. It resembled the Willow-leaved Heimia, but the flowers were larger and handsomer than those of that plant. A certificate of merit was awarded it.—Mr. Franklin, gr. to Mrs. Lawrence, produced a nice collection of Orchids, consisting of the charming Trichopilia suavis, the fragrant Burlingtonia, Gibson's Cymbid, and a curious rather than beautiful plant called Ponthieva maculata. A Banksian Medal was awarded for the Sweet Trichopil.—Mr. Loddiges, of Hackney, showed a specimen of the ivory-flowered Cymbid (Cymbidium eburneum), and the dark variety of Dendrobium nobile. A Banksian Medal was awarded for these.—A similar award was also made to Mr. Blake, gr. to J. H. Schröder, Esq., of Stratford, for the large-flowered Phalænopsis, Cœlogyne cristata, Epidendrum odoratissimum, and Skinner's Lycaste, a plant which, in addition to its great beauty, has the merit of keeping long in bloom.—The subjects from the Society's Garden consisted of Lycaste plana, and Dendrobium cucullatum; six kinds of Epacris, three of the smaller growing species of Acacia, Erica picta, the winter-flowering Styphelia tubiflora, Cytisus racemosus, a useful plant at this season, the pretty Polygala Dalmaisiana, Boronia tetrandra, Æschynanthus longiflorus, the handsomest of all the Æschynanths, and a fine bush of the broad-leaved Franciscea, than which, when well flowered, as this was, few plants look gayer.

Linnean, *March* 4.—Dr. Wallich, V.P., in the chair. A collection of specimens of dried Ferns from the north of India, made by M. P. Edgworth, Esq., was presented by the Rev. R. Ewing. Dr. Welwitsch presented the

fruits of the following plants:—Mauritia vinifera, Copernicia cerifera, and Sideroxylon argan. A paper was read on the gum called Bdellium, by B. A. R. Nicholson, Esq., of the Bombay Medical Service, and communicated by John James Bennett, Esq., Secretary of the Society. This gum, which is mentioned in scripture, and sometimes known by the name of false Myrrh, is the produce of a species of Balsamodendron. Dr. Stocks has lately traced the origin of this gum to a species called B. mukul. Specimens of the impure and purified gums were exhibited.

Stoke Newington Chrysanthemum Society, *Feb.* 27—J. Edwards, Esq., President, in the chair. At this meeting the following essays on the cultivation of this improving autumnal flower were delivered by Messrs. James and Taylor. The former described the method adopted by himself for its growth and exhibition in pots; while Mr. Taylor's observations were directed to the mode of producing those superb cut blooms which are annually exhibited at the shows of this Society. After one or two preliminary remarks, Mr. James proceeded thus:—"The cuttings should be clean, strong, and short-jointed; not suckers, but strictly speaking cuttings. As soon as a sufficient quantity can be secured, which should be effected by the middle of March or the beginning of April, proceed with the striking as quickly as possible. When properly rooted, pot them, either singly or three in a pot, as the varieties may respectively require. In my opinion, some kinds succeed best potted singly, and make finer specimens; while on the other hand, others do best three in a pot; the varieties I should advise to plant singly, would be, Pilot, Queen of England, Annie Salter, Defiance, and Vesta; of such sorts as Golden Clustered Yellow, Madame Poggi, Gipsy, Madame Camerson, and Harris's Queen Victoria, I should by all means recommend three plants to be placed in a pot. I use 5-inch pots; when thoroughly established in these, I at once shift them into the pots in which they are intended to bloom, which should either be 11 or 9-inch pots, according to the inclination or convenience of the cultivator; if smaller pots are employed, it will be found extremely difficult to maintain a healthy and vigorous foliage on the plants, and although a good head of bloom may be secured, yet I think it will be admitted that this with bad foliage is unsuitable for an exhibition table; foliage, more especially, is what I aim at, almost at the expense of bloom. The soil I use and prefer is maiden loam and dung, three parts of the former to two of the latter, with the addition of charcoal dust and coarse sand. Be particular as to drainage, or the foliage will be sure to suffer. With respect to watering, I apply water as often as is necessary, whether it be in the heat of the day or in the cool of the evening. I frequently use the syringe from the time they are potted till the time they are in bloom; its application tends much to improve the colour of the foliage, and has the additional advantage of keeping the plants clean and free from insects. I am an advocate for the use of liquid manure, and I give a decided preference to sheep manure water. It may, and I believe it is not so powerful as guano, but I consider it a much safer manure, more especially in the hands of an amateur; I also think that it has the effect of securing a neater and more compact growth, which is of importance in a specimen plant. I would advise the application of manure water from the middle of July up to the time of exhibition. Stopping the plants appears to me to be altogether wrong, although the practice is strongly recommended by many writers on gardening. I have tried it, and can speak confidently as to the result, which has invariably been a decided failure. Be particular in tying out the plants properly in every stage of their growth; you should begin at the beginning, for if the operation is neglected until the plants have attained size, it is extremely difficult to make them assume the desired shape. By tying, in addition to form, you secure the branches from accident by wind or from others causes; and it also ensures a free circulation of air among the foliage and branches. I find three sticks to each pot, placed in the form of a triangle, sufficient; through these sticks I pass three rings of wire, one at the middle, the others near the top and bottom of the plant; the advantage of this mode of tying is that it does away with the necessity of using so many sticks; and in consequence gives the plant a more natural appearance. I would recommend plunging the pots, but be sure you have a dry bottom; in such a situation the roots are kept cool without being wet; plunging has also the advantage of preventing the plants from being blown about by wind; be careful, however, not to plunge in a wet, cold, badly drained soil. The time for housing the specimens depends very much upon circumstances; as for instance the weather, the precise date on which they they may be required, &c. Housing will have the effect of slightly forwarding them; be careful not to shelter them too soon; if you do you will lose in a few days what has been the aim of a whole season to obtain, viz., good healthy foliage. The varieties suitable for specimen plants are the following:—Vesta, Annie Salter, Gipsy, Golden Clustered Yellow, Defiance, Queen of England, Madame Camerson, Pilot, Madame Poggi, The Duke, and Harris's Queen Victoria. I prefer growing two pots of each of the above sorts, which I can with confidence recommend. And now permit me to state, in conclusion, that the grand secret of Chrysanthemum growing (for I would be sorry to keep back any information that is at all calculated to enlighten you upon the subject), is time and attention. These constitute the keystone of success." An interesting and friendly discussion followed the reading of this and the succeeding paper, whose publication want of room compels us to defer until next week.

## Notices of Books.

*Passat-Staub und Blut-Regen ein grosses organisches unsichtbares Wirken und Leben in der Atmosphäre.* Von Dr. C. G. Ehrenberg. Berlin, 1849; folio, pp. 192, tab. 6.

The air we breathe is not that pure and unadulterated medium, even at a distance from the smoke and dust of civilisation, which we might at first sight be disposed to believe. Every inspiration that we make carries into our lungs, together with the proper elements which are to quicken the exhausted blood, a host of more or less gross and palpable matters, which, according to the proportion in which they are present, or their intrinsic nature, are more or less injurious to our frames; and, doubtless, in many cases, hasten their dissolution. This is notoriously the fact with respect to noxious gases, but it is possibly no less true with regard to multitudes of other matters which are carried about, by reason of their bouyancy, often for many miles before they subside. The immense quantity of matter so transported is proved by the various instances of black and coloured rains, arising from smoke or pollen, or other volatile substances, which, in some cases, must have been conveyed from a very considerable distance, and there is no doubt that myriads of the minute spores of fungi and other Cryptogams are thus diffused, to the destruction of any weak and languid organisms on which, under circumstances favourable to vegetation, they may chance to fall.

But these phenomena, though often exhibited on a great scale, are nothing in comparison of the clouds of dust carried hundreds of miles by the Sirocco and trade winds. It is to the composition of this dust, that the author, who has devoted so much time to the microscopic study of minute Algæ and Infusoria, has called attention in the magnificent work before us.

These clouds of dust, sometimes colouring the atmosphere orange or ochre, and whether accompanied by rain or otherwise, covering everything with which they come in contact with a thin red coat of almost impalpable powder, have been observed in various parts of the world. They occur frequently within the course of the trade winds, and have been observed coming in various directions from the coast of Africa, though not always under such circumstances as at Malta, Genoa, Lyons, Silesia, &c. In some instances coloured snow, as in the Tyrol, has fallen, which has evidently been due to the same cause with coloured rains. The dust in all cases is of a very similar composition, consisting of various Diatomaceæ, the flinty spicules of sponges and other zoophytes, pollen grains, fragments, in a more or less comminuted state, of Phænogams, sometimes portions of their intimate tissues, sometimes parts of their external coats, as hairs, scraps of cuticle, crystals, morsels of insects, comminuted vegetable and mineral matter, &c., and in a small porportion, spores of fungi, mostly resembling more or less those of Macrosporium. It does not appear certain that in any case the spores of moulds were present, though in some latitudes they must be wafted about in myriads. It is evident that the full investigation of this subject may throw much light upon the direction of aerial currents, but the proper deductions cannot be made, at least so as to carry full conviction of their justice, until the Diatomaceæ of various parts of the globe have been more carefully compared; the materials, indeed, for anything like a complete comparison scarcely existing at present. That these forms are widely diffused is well known, and that the same species may be capable of existing under very different circumstances is highly probable from the identity of many recent fossil species; but at present certain forms seem to be characteristic of certain districts, though further investigation may show that their geographical distribution is as wide and indefinite as that of many of the lower fungi and lichens. Very shortly before the completion of his work, materials came into the author's hands from the Bonny river, on the western African coast, but they did not agree with the species occurring in the dust from the Atlantic. Perhaps no organisms are so capable of enduring extremes of heat and cold as the Diatomaceæ. Myriads occurred in the Pancake ice and in deep soundings in the highest latitudes reached by the Antarctic expedition, and it has lately been discovered that vast numbers flourish on the branches of trees in the virgin forests of South America.

Every, so called, shower of blood is not, however, due to the presence in the air of these bodies, mixed with mineral colouring matter. It is an old opinion, which has been taken up in modern times with reference to the cholera, that epidemic diseases have been preceded or attended by showers of blood. Such appearances are sometimes due to the well-known Palmella cruenta, which may be found at the base of damp walls at almost all seasons. Stains were shown to us two years ago, as portentous, which were clearly the mycelium of some Epicoccum; and, in Prussia, in the year 1848, bread and other provisions were extensively spotted with little masses, due to the presence of an organism which was named Monas prodigiosa. Specimens of this production were forwarded to us, but we did not succeed in propagating it, though a mould with which it was accompanied (Ascophora floræ) grew with great luxuriance on paste made with ground Rice. It may be interesting also to notice the black rain which fell in the south of Ireland, in April 1849, over a district of 700 square miles. The colour was, in this case, due to portions of decayed plants, probably carried up from the extensive bogs of that country, mixed, like the trade wind and Sirocco dust, with Diatomaceæ and the bodies to which Ehrenberg has given the name of Phytolitharia.

To return, however, to the dust deposited by the trade winds. In general, it may be remarked that land and fresh-water forms are most numerous in this deposit, with which the samples from the southern parts of Europe agree very closely in composition. Forms characteristic of Africa do not occur, the greater part being common to many parts of the world—to Europe, for instance, as well as Africa. Some forms occur which are peculiar to America. The fine deposits of dust in Africa, as far as at present observed, are not red, but white and grey. No red dust has been discovered; and, if it existed, there is no trade wind in the interior of Africa which could carry it out to sea. The existence of American forms, which increase in number with repeated observations, make it probable that they are borne by an upper current, and sinking down through this in the course of their passage into the lower current, are carried back again towards their native American coast. It is, indeed, at present only matter of conjecture that such an upper current exists, except the strong south-western wind which Humboldt experienced at the top of the Peak of Teneriffe, and Glass notices as existing in the most elevated parts of the Canaries, whilst all other portions of the islands are under the sway of the trade wind, be considered decisive as to the point; in confirmation of which is the fact of ashes from the eruption of the volcano in St. Vincent in 1812 being carried to the island of Barbadoes contrary to the direction of the trade winds. The examination of the trade-wind dust assumes a very interesting form when taken in connexion with these curious phenomena; and it is well worthy of observation, that (however imperfect our knowledge of exotic Diatomaceæ may be) no light could have been thrown upon the subject without the minute and extensive researches which have for so many years engaged the attention of Ehrenberg, as the discrimination of individual forms and local species is an absolutely necessary element in the data from which the desired inferences were to be made. The objection of "*cui bono*," often alleged even at the present day against devoting much time to the examination of such minute organisms, is, perhaps, more triumphantly overthrown by the work before us, than by any other collateral and accidental use which has been derived from their study. The investigation even of the meanest works of the Creator can never be without its use, so long as truth is the main object of research. The despised conchologist, for instance, is now recognised as one of the most useful fellow labourers of the geologist, a science which has in our days assumed an importance which places it on a level with the most honoured subjects of investigation. Other points of interest might be mentioned as the connexion of the deposits of dusts with meteoric phenomena, the season in which they are most prevalent, the peculiar character of certain deposits, &c.; but for these and other points we must refer to the work itself, as we have much exceeded our usual limits, and indeed have touched upon the subject quite as far as it is connected with the peculiar objects which we have in view in such notices.

In conclusion, it may be remarked that Ehrenberg has collected with the utmost diligence almost every recorded instance of these phenomena, from the earliest times, up to that of the publication of his book, and a very curious and interesting mass of facts has thus been got together, extending through nearly 70 pages of his work. It is curious that he still adheres to his original notions as to the animal nature of Diatomaceæ, notwithstanding the discoveries of Mr. Thwaites, which have been confirmed by other observers, and which were placed before Ehrenberg at Oxford, though apparently they failed of attracting his attention or interest very deeply. For our own parts, we have never entertained the least doubt as to the vegetable nature of these bodies, and had we done so they would have been completely dispelled by the convincing observations of Mr. Thwaites, even without ocular demonstration.

## Garden Memoranda.

Messrs. Chandler's Nursery, Vauxhall.—Lovers of Camellias will be glad to learn that the extensive collection of this favourite flower, for which this nursery is celebrated, is now in full bloom. When we state that they form a bank, 160 feet in length, and some 8 or 10 feet deep, some idea will be gathered of the kind of entertainment which it may be expected a visit to so large a display will afford. Red kinds this year are abundant and fine; but the white sorts have not succeeded so well, their buds having dropped more plentifully than usual before they expanded. The whole collection is neatly arranged, and in excellent order.

## Miscellaneous.

*The Gardeners' Benevolent Institution.*—We understand that Mr. Paxton has kindly consented to be chairman at the forthcoming anniversary dinner, which will take place on the 9th of June next, in aid of the funds of this Institution. In consequence of the celebrity Mr. Paxton enjoys, and the day being the Monday after the middle Chiswick *fete*, when a large number of the friends of the charity will be in town, we have no doubt that he will be well supported, and that this deserving Institution will derive much benefit from the selection

We learn from an advertisement in to-day's paper that two new pensioners will be elected on the Wednesday after the meeting.

## Calendar of Operations.

*(For the ensuing week.)*

FORCING DEPARTMENT.

As soon as the early forced Grapes are fairly set, the operation of thinning should be commenced, by judiciously removing all the berries that can with certainty be spared, and leaving those which remain for future consideration in such order that the removal of a berry at any time shall relieve the surrounding ones without disfiguring the bunch. The final regulation of the bunch need not take place till the berries are more than half swelled, but no sound reason exists why the first thinning should be postponed, as is often the case, until the berries have attained the size of large Peas, and are appropriating a great portion of the nourishment which ought to have been directed solely to the berries which are to remain. The operation should be performed with a pair of clean, sharp, long-pointed scissors, removing the whole of the footstalk along with the berry, but without injuring the footstalks of the others. Care should be taken not to touch any of the remaining berries with the hand, as this is frequently the cause of what is termed rust. Vapour from the pipes, while very hot, is injurious both to leaves and fruit; and the safest time to fill the vapour pans at this season, is about ten in the morning, by which time the heat of the pipes will generally be sufficiently moderate, and by the time strong fires have to be made the following morning, the pans will be empty. On cold, sunless days, no vapour is required. Vines, except when in flower, should be syringed regularly twice a day, until they have had their first thinning, when it should be entirely discontinued, and the requisite amount of moisture supplied by evaporation. The late Vines will soon be in motion, and on cold lying borders, some leaves and litter laid on so as to produce 60° or 70° of heat, will be of immense service. MELONS.—These will now require attention as regards training, leading out the strongest shoots only, and leaving space for the fruitful laterals which will soon be advancing The shoots should not be so numerous as to cause crowding of the foliage. Maintain a genial heat of 65° by night, and 75° to 85° by day, with a bottom heat of 80°. STRAWBERRIES.—Thin out the weakly blossoms, and give liquid manure to plants which are swelling their fruit. Be careful not to excite too much the recently introduced successions.

FLOWER GARDEN AND SHRUBBERIES.

The pruning of Roses may now be done with safety, and the operation should be brought to a conclusion as soon as possible. A distinction should be made between the autumn-blooming kinds, as Bourbons, Noisettes, Chinese, and Tea-scented Roses, which produce flowers more freely on the strong than on the weak shoots, and the summer-flowering kinds, which do not flower on the strongest shoots of the same season. From the former all the weakest wood which is not likely to flower should be cut away, and the stronger shoots shortened or thinned out, with the view to render the shape of the plant more symmetrical; for this reason, the shortening should be proportioned to the strength of the shoots, reducing the weak wood to a few buds, to induce a stronger growth during the ensuing season, following the opposite practice with the strong shoots, and removing the very gross ones altogether. With regard to the summer-blooming kinds, the production of exuberant wood should be as much as possible prevented. If there are no objections against leaving unpruned the strong shoots of the last year, they will produce an abundance of blossom upon the laterals which proceed from them; but if this is not convenient, they had better be entirely removed, pruning moderately the shoots of moderate growth, and leaving the weakest entirely uncut. The less exuberant varieties may be pruned a little harder, and the very weak-growing varieties harder still. A good deal will depend upon the artificial habit of the plants; if they are trained against a wall or pillar, many useful shoots may be retained, which would be objectionable in a standard, on account of appearances, but in both cases it should be a particular object to prevent anything like crowding amongst the shoots. By this time many buds towards the points of the shoots have commenced growth; and if early flowers are an object, a portion of these should be retained for this purpose, and, by shortening the rest of the shoots, a succession of blossoms may be produced. Avoid pruning too closely in all cases; if any error be committed, let it be on the safe side. It is no uncommon thing to see Noisette, Tea-scented, and China Roses entirely killed by being severely pruned. Standards of Hybrid China and Hybrid Perpetual Roses may safely be allowed to form large heads, when they look much more beautiful, and flower more abundantly than they do if pruned close, as we often see them. Standard Roses, if of kinds with a drooping habit, should be worked on very high stems, and the long shoots allowed to hang down with their own weight. These kinds, along with the Banksian, Scotch, and Sweet Briar family, should not be pruned till they have done flowering. Dahlias, for general flower-garden decoration, should now be placed in a little heat, parted and potted as soon as they have made a few inches of growth. Marvel of Peru, Tigridias, Oxalis Deppei, Anomathecas, and other half-hardy roots, may be started in a frame, and particularly the beautiful Salvia patens. If the stock of the latter is deficient, it may be readily increased at this season by cuttings from the strong young shoots.

HARDY FRUIT GARDEN.

The winter covering should now be removed from Figs and Vines on outside walls, and the trees should be retrained; but, as entire exposure will be too much at first, it will be necessary to cover slightly with evergreens, or let down a canvas in front of the walls during night, especially in cold localities. Where Yew or other branches have been used, it will be well to see that the unfolding blossoms of Apricots are not too much shaded from the rays of the sun. A little labour will be well expended in going over the Apples, Pears, &c., painting them over with a mixture of lime, sulphur, and tobacco liquid, with as much soot added as will take away the glaring colour of the lime. This will destroy lichens and mosses, as well as any insects which may be about the branches; and as the genial spring weather will soon cause these depredators to creep forth, this is an excellent time for the operation.

KITCHEN GARDEN.

This week and next are very important ones in gardening matters, as many of the principal crops of the season now require to be put into the ground; success depending in a great measure upon the condition into which the ground has been brought by winter digging and manuring, and upon its being now in a good state of tilth for the reception of the seeds. Asparagus beds should now be made where new plantations of this excellent vegetable are required. Two-year-old plants should be chosen, as they come soon into use; the proper time for planting them being when the young growths have started several inches. The beds should be set out 4 feet wide, and made good by trenching and manuring to a depth of 2½ feet; the alleys between being about 3 feet wide. Another plan which is followed by many gardeners, and produces very fine Asparagus, is to plant it in rows 3 feet wide over the compartment, and 1 foot apart in the row. The whole or a portion of the old soil should be removed, according to its condition and quality, and replaced with some which is rich, but not retentive; a sandy turfy loam, enriched with well-rooted manure, is the best preparation that can be made in inland situations; but near the sea the Kelp-weed should be procured. Its natural habitat is the sandy shore, or the edges of rivers near their confluence with the ocean, and it is always found to flourish best when it is within the influence of salt-water. After so mild a winter, the Cauliflower plants in frames and under handlights will be getting too large, and many of them will "button" if they are not soon transplanted into good ground in a sheltered situation; they may then be protected from cold cutting winds by fixing some Yew or Spruce branches round them. After planting out all the largest, take up the smaller ones with some soil to them, pressing it into a compact ball between the hands, and replant them in the frame; from whence, in a fortnight or three weeks, they will remove with a mass of fine young fibres, without receiving the slightest check. Cauliflowers to remain under handlights should be thinned out to five plants in each light; the soil about the plants should then be loosened up, and if dry, a good watering of rich water may be given. Let them have free exposure during mild weather, lest they be drawn up weak, and only produce small heads. Asparagus beds should receive their spring dressing as early in the month as possible. Remove some of the protection from Artichokes, which are now pushing fast; as too much covering only blanches and weakens the young shoots. Spring sown Cabbages and Cauliflowers should be pricked out as soon as they are strong enough, and successional sowings made. Brussels Sprouts, Savoys, Curled Greens, &c., should now be sown for the earlier crops. Lettuce and Celery sown in frames some time since, should now be transplanted; the latter into a prepared frame of light soil, and the former into a protected border, for early use; successional sowings should be made of these, along with Radishes and other salads. A succession of Peas and Beans, Parsley, Spinach, and Turnips, should now be sown. Parsnips should be sown immediately, in deeply trenched ground, with an additional small crop of Early Horn Carrots, and a small early crop of Beet. The main crop of Onions should now be sown, and a small bed of the silver-skinned, very thick, to produce small bulbs for pickling. If the ground is rather stiff, the operations of sowing and digging should proceed together, that the soil may be left as loose as possible; but, if light or sandy, it should be made moderately firm and compact, by treading or rolling it after it has been dug. In the latter case, it is most convenient to sow broadcast in beds, and rake the seed in; but in the former description of ground it is better to sow in shallow drills.

State of the Weather near London, for the week ending March 6, 1851, as observed at the Horticultural Garden, Chiswick.

| Feb. and March. | Month's Age. | Barometer. Max. | Barometer. Min | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 28 | 27 | 30.343 | 30.284 | 41 | 26 | 33.5 | 39 | 41 | N E. | .00 |
| Satur. 1 | 28 | 30.233 | 30.135 | 44 | 31 | 37.5 | 38½ | 40½ | N W. | .00 |
| Sunday. 2 | 29 | 30.379 | 30.323 | 43 | 25 | 34.0 | 39 | 40 | N E. | .00 |
| Monday 3 | ♋ | 30.230 | 30. 00 | 44 | 24 | 34.0 | 39 | 40 | W. | .00 |
| Tues. .. 4 | 1 | 30.071 | 29.914 | 51 | 32 | 41.5 | 38 | 39½ | W. | .00 |
| Wed. .. 5 | 2 | 29.770 | 29.613 | 47 | 29 | 38.0 | 40 | 40 | S W. | .10 |
| Thurs... 6 | 3 | 29.857 | 29.727 | 47 | 34 | 40.5 | 40 | 40½ | N.W. | .00 |
| Average . | | 30.125 | 30.004 | 45 3 | 28 7 | 37.0 | 39 1 | 40.1 | | 10 |

Feb. 28—Overcast and cold; cloudy; clear; frosty.
March 1—Clear and frosty; dense dark clouds; few snow flakes.
— 2—Clear; dense clouds; clear and frosty.
— 3—Ove cast and cold throughout; frosty at night.
— 4—Cloudy and fine; overcast.
— 5—Densely overcast; rain; clear at night.
— 6—Very clear; cloudy with cold wind.
Mean temperature of the week 4½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending March 15, 1851.

| March | Average Highest Temp | Average Lowest Temp | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 9 | 50.4 | 32.0 | 41.2 | 6 | 0.47 in. | 3 | 2 | 3 | 2 | 2 | 7 | 3 | 3 |
| Mon 10 | 50.3 | 32.6 | 41.7 | 10 | 0.69 | 3 | 4 | 1 | 2 | 3 | 5 | 3 | 4 |
| Tues. 11 | 50.2 | 33.4 | 41 8 | 10 | 0.20 | 1 | 3 | 4 | 4 | 3 | 9 | 3 | 1 |
| Wed. 12 | 51.2 | 33.0 | 42.1 | 11 | 0.23 | 5 | 2 | 2 | 3 | 1 | 7 | 4 | 1 |
| Thurs. 13 | 50.6 | 35.3 | 43 0 | 11 | 0.30 | 1 | 2 | 3 | 3 | 1 | 6 | 6 | 4 |
| Friday 14 | 51.2 | 36 3 | 43 8 | 9 | 0.48 | 1 | 4 | 3 | 1 | 4 | 8 | 4 | 2 |
| Satur. 15 | 51.1 | 34.5 | 42 8 | 13 | 0.49 | 2 | 6 | 2 | 1 | 3 | 5 | 5 | 2 |

The highest temperature during the above period occurred on the 9th 1826—therm. 68 deg.; and the lowest on the 10th, 1847—therm. 7 deg.

## Notices to Correspondents.

ACHIMENES: *G B N.* Damp is no doubt the cause of your failure. Try the effect of wintering them in dry silver sand.‡

APHIDES: *Fylde.* Enveloping the trees in a parapetticoat (parasol and petticoat united), and fumigating with Tobacco smoke, from Brown's fumigator, is the best remedy.‡

APRICOT: *C C.* It may be kept in a pot in common garden soil till it is convenient for you to plant it out; but you must see that its roots do not become cramped for want of room; when symptoms of that appear it must be shifted into a larger pot. It should be watered whenever the soil is dry.‡

ARBUTUS BERRIES: *G B N* will thank some of our correspondents to inform him how to preserve or pickle these for garnishing.

BACK NUMBERS: Full price will be given for No. 41, 1850.

MELONS: A correspondent who has sent us seeds of the Calabrian Green-fleshed Melon will be glad to know that it is sent to the garden of the Horticultural Society for trial.

BEGONIAS: *F W.* We perceive no merit in the seedling; its tendency to produce buds all over its branches is remarkable, that is all.

CEMENT: *J S.* We have never yet seen cement stand when used as a casing for hot-water tanks; the joints always break by alternate contraction and expansion produced by the varying temperature of the water. Wood is better. If you must have cement, you had better try the "Portland." The soil is almost certain to become too wet if the joints of the tiles are left open.

CHINESE PRIMULA: *J* and *J H.* The finest two blooms of the kind we have ever seen. They measure fully 2 inches across, possess great substance, and have brighter colours than are usually found in such flowers at this season.*

COTYLEDON UMBILICUS: *H M.* This is common in the west of England and in Wales. You may probably procure it of the Bristol nurserymen.

DEODARS: *P.* These require no stakes, and should not have them. If large when they are planted, a triangle of stakes may be useful to keep them upright long enough to make roots: but that is needless if they are properly planted. The young shoot naturally droops, and should not on any account be interfered with; it always straightens itself.

FRENCH GARDENING: *S H.* We cannot help you. "W." is unknown to us; but, as a reader of the *Gardeners' Chronicle*, he would see an advertisement if one was inserted.

GLASS: *J S and H C.* We have reason to believe that Hartley's patent rough plate is suitable for every gardening purpose for which glass is employed.‡

GRAFTING: *An Amateur.* Peg-grafting is not included amongst the modes described by D'Albret. It is mentioned by Thouin in his *Monographie des Greffes*. A stout scion should be selected of one or two years' old wood: its lower end should be made like a peg, removing all the bark and a little of the wood, so as to form a shoulder, and to fit a hole bored in the side of the stock, or tree, to the depth of one or more inches, according to the size. The inner bark at the shoulder of the scion should touch the inner bark of the stock; for all depends on this; here alone a vital union is formed; beyond this the inserted portion will unite no more than would a peg made of old ship-timber. Now is a good time for the operation.||—*Zeta.* We have no present intention of publishing the series of articles on this subject in the form of a pamphlet.‡

HEPATICAS: *Sub.* They may be moved in autumn, when they have done growing; but they are plants which very much dislike moving at all, and it often takes a long time to perfectly recover them after the operation. You may prune back and shift your Rosa Devoniensis now. Fibry loam and leaf-mould will suit it perfectly.‡

HORTICULTURAL SOCIETY: *F M S.* The rules will be sent if you will favour us with your address. They are too long to print. September is better than March for removing your young trees, and so is April.

INSECTS: *Tamworth.* If you will send us a specimen of the insect, we may then be able to answer your question.‡

LAYERS: *F H S.* As your layers are rooted, they may be separated from the stools now ‡

NAMES OF PLANTS: ? ? Stellaria media, or common Chickweed, and the single white variety of Viola odorata.—*Silvio.* Hippeastrum bulbulosum—the variety called pulverulentum. —*R W.* The only Cupressus sp. from California distributed by the Horticultural Society is C. Goveniana. It distributed Cupressus sp. Mexico, which is the same as C. Lindeana.¶

PAWLOVNIA: *J A.* We have not seen such an experiment tried; we certainly would expose a part of the cask to the action of the sun, and that part we would paint black, which, *pace tua*, is a far better garden colour than green.

FIGS: *E F K.* Having spare sashes, you cannot do better than place them over your Fig trees now, but so as the trees may have sufficient air; and keep them on till danger of frost is over. Why Figs ripen better in some places, and not in others, quite as warm on the whole, is not yet understood.||

POST-OFFICE: *M N E.* We presume that flower seeds may go by post to any part of the world, provided the sender disregards the cost of postage. The "Vegetable Kingdom" does not contain any etymology of the names of genera. It has a very complete list of names, as you probably know, but nothing further.

POTATOES: *W K.* The Early Manly is considered the most productive very early variety.||

VINES: *L H, Lancashire.* You should plant in the warmest division of your Vinery, two White Muscats of Alexandria, one Black Hamburgh, one Sweetwater, one White Frontignan, one Black Tripoli. The remainder in your list will succeed in the cooler division.||

WALLFLOWERS: *Dublin.* It is a remarkable form of the common double bloody sort; but we have no name to suggest. No one has yet taken to name the little varieties of Wallflower. We do not know where it is to be purchased.

SEEDLING FLOWERS.

AMARYLLIS: *W W.* No improvement on the kinds we already possess.*

CINERARIAS: *W D.* Not worth cultivating.*—*B.* Considerably bruised and shrivelled when received; but apparently inferior to kinds possessing similar colours already in cultivation.*—*Z Z.* Wanting in brilliancy, and deficient in shape. The large flower is in all respects the best.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

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ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

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TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Night-soil, 45s per ton, sacks included.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

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| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | ...£11 | 0 | 0 |
| Turnip Manure, do. ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per on, in dock. Sulphate of Ammonia, &c.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

SALT for Agricultural Purposes, Asparagus Beds, Garden Walks, &c., &c., price 23s. per Ton, delivered in Sacks to any Railway Station in London. Sacks to be paid for or returned. Apply to JOHN MEREDITH, Salt Merchant, 10 Wharf, City-road Basin, London. N.B. Rock Salt.

PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 150 lbs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5l. per ton. Orders received by Mr. HENRY HILL, Corn Exchange, Mark-lane; Mr. GEORGE BUSH, 22, Abchurch-lane; and Mr. BENNETT, 73, Mark-lane, London.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

TRUE DRUMHEADS for CATTLE, also EARLY BATTERSEA, the large Imperial, Early Vanack, &c., at THOMAS WELLANDS, Surrey Gardens, near Godalming, Surrey, packed and delivered at the Godalming Station, 3s. 6d. per 1000; the large Asiatic Cauliflower Plants, 3s. per 100.

COCHIN CHINA FOWLS' EGGS, for Hatching from the best Birds, 1s. MALAYS, 1s., and SPANISH, 6d. each, warranted genuine. Sebright's Spangled Bantam and Polish Fowls' Eggs in April. Orders sent into the country, securely packed, on receipt of Post-office Order (not Stamps), with 1s. extra for box, booking, &c.—Apply to TIMOTHY MASON, No. 5, Bears'-place, New North-road, Islington.—Cochin China and Spanish Fowls, Almond Tumblers and Carrier Pigeons for sale. Letters requiring reply to enclose Stamps.

COCHIN CHINA EGGS.—As a general answer to various Correspondents and others, HENRY COPLAND will supply the public with Eggs from these fine and prolific Birds at 10s. a setting of 13 Eggs.—Apply to Mr. HENRY COPLAND, Chelmsford, Essex. A few fine young Cock Birds for sale.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street**, Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.

Mixtures for portions of Parks near Mansions.

Mixtures for Garden Lawns and Grass Plots.

Mixtures for renovating Old Pasture Land.

Italian, and other Rye-grasses.

White Belgian and Red Altringham Carrots.

Gibbs' new very large Parsnip.

Orange Globe Mangold Wurzel.

Long Red and other kinds.

Drumhead and Thousand-headed Cabbages.

Swedes, Hybrids, and other Turnips.

Clovers, Kohl Rabi, French and English Furze.

Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street**, Piccadilly, London.

THE SKINLESS CHEVALIER BARLEY.—The valuable malting properties of this Barley, and the handsome appearance of the grain, are as superior to the Peruvian Skinless Barley as the finest Wheat is superior to Rye. Messrs. SUTTON have but a limited quantity; therefore, to prevent disappointment, it is requested that those of their friends who wish to try it will apply early for the Seed. Price 5s. per peck. Samples may be had by post, by enclosing two postage stamps.

*See* Messrs. SUTTON'S *Advertisement in the last page of the last Number of the Gardeners' Chronicle.*

EARLY AND CATTLE CABBAGE.—Stout bedded plants of superior true sorts, 4s. 6d. per 1000, package included, delivered free of carriage to the Edenbridge station, South Eastern Railway.—Address to JOHN CATTELL, Westerham, Kent.

PURCHASERS OF AGRICULTURAL SEEDS are recommended to peruse Messrs. SUTTON'S NEW PRICE LIST, which appeared in the last page of the *Gardeners' Chronicle* of March 1st. The advantages Messrs SUTTON are enabled, by their extensive trade, to afford agriculturists in supplying *genuine home grown Seeds at the low prices therein quoted, and free of carriage*, will doubtless be appreciated in these times of economy and agricultural improvement. The following are a few of the articles therein enumerated:—

| | Per lb.—d. | | Per bushel—s. d. |
|---|---|---|---|
| Mangold Wurzel ... | ... 6 | Giant Saintfoin ... | ... 10 0 |
| White Belgian Carrot | ... 9 | Dickinson's improved Italian Rye-grass | ... 7 6 |
| Fresh imported Lucerne | ... 9 | True Perennial ditto | ... 7 0 |
| Parsnip ... ... | ... 9 | Common ditto ... | ... 5 6 |
| Ashcroft and other Swedes | 9 | Furze (Ulex Europæus) | ... 6 6 |

| | £ s. d. |
|---|---|
| THE BEST SORTS OF PERENNIAL GRASS SEEDS FOR PERMANENT PASTURE, *mixed expressly to suit the soil, with instructions for sowing, per acre* ... | 1 8 0 |
| SUTTON'S RENOVATING MIXTURE, *for improving old Pastures, per lb.* ... ... ... ... ... | 0 0 10 |

Reading Seed Warehouse, Reading, Berks.



# The Agricultural Gazette.

*SATURDAY, MARCH* 8, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 12—Agricultural Society of England.
THURSDAY, — 13—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 19—Agricultural Society of England.
THURSDAY, — 20—Agricultural Imp. Soc. of Ireland.

THE TULLIAN SYSTEM OF AGRICULTURE, as it is called, which is being urged upon the attention of our readers by no mean agricultural authority, has, it must be remembered, its faults as well as its merits. The thorough disintegration and tillage of the soil which it commends, do not diminish the need or the value of the manure heap, which it appears somewhat to despise. Cattle, manure, corn, are a true sequence of results. The last may be the rent paying and profitable member of the series, but we fear that, without the second, and therefore, as a general rule, without the first also, it cannot be attained. Drainage and tillage, the one by the greater efficiency it confers on water, as the solvent of food for plants, and the other, by the greater scope for this solvent, which, under a given extent of soil it affords, may have most fertilising tendencies, but neither of them are fertility itself. Neither of them are increased nourishment itself: they are merely an improved *cuisine:* the family may improve under it in health and vigour, but the larder is all the while only the more rapidly being exhausted; and unless greater attention than ever be paid to replenishment there, the temporary improvement will be succeeded by utter starvation.

No doubt the soil is not only a storehouse, it is in a great measure itself the very substance of food; and so long as a current of water be maintained throughout it by drainage, the rapidity with which it will supply this food in a soluble form depends upon the aggregate surface presented by its particles to the dissolving agent. Let these particles, spheres or cubes, or any other regular figure, be reduced one-half in their linear dimensions, and the whole surface they will present will multiply fourfold. Reduce a soil, therefore, by tillage, and the roots of plants will have a greatly increased pasturage. Make every particle within it smaller, and the field on which their roots may feed will become larger in a rapidly increasing ratio. And this is exactly the phraseology used by TULL. He evidently believed that the very substance of the mineral soil went to build up the substance of the vegetable living upon it. Of course there is a sense in which this mode of putting it is correct enough—but it is not the sense which TULL himself entertained. He believed that attention to tillage greatly diminished the need of manure: and there is still danger of his admiring followers being similarly misled. We believe that the need for manure, so far from being diminished, is increased. When either the power or facility of manufacture is increased, the supply of raw material must be increased also. And as we believe that the vegetable part of the soil, and even much of its mineral part also, will all the more rapidly go for thorough draining and Tullian tillage, we believe also that the manure heap must be increased as well; and that an increased power of manufacture conferred upon the soil, must be accompanied by an increased supply of the raw material for manufacture, if a permanent benefit is to be realised.

It is not unnecessary to insist occasionally on first principles like these, when we find those whom men justly name doctors in agriculture, praising and recommending practice which, however good in itself, is necessarily imperfect. Mr. HEWITT DAVIS not only praises Mr. SMITH'S imitation of TULL—in which we gladly join him—but along with his commendation speaks disparagingly, in which we cannot join him, of the manure heap and its origin in stock-keeping. His experience has taught him, so he says, "to look with distrust at the pains many are taking to impress upon arable farmers the necessity for placing their chief dependance on stock-keeping, to give them the means of profitably growing corn." Our experience has taught us, we confess, to look with distrust not only on statements of extravagant results of all kinds in farming—and we say this without the smallest intention to include the account of Mr. SMITH'S experience among them—but on anything like a one-sided or partial statement of agricultural truth. Tullian agriculture is an excellent thing, just as improvements in machinery are good: both undoubtedly benefit the manufacturer—but they are beneficial, simply by the ability thus given to work up that larger quantity of raw material which they call for, and which must be supplied. No doubt the warehouse may be filled to begin with; and, perhaps, no man knows the wonderful resources of a well tilled soil, of ordinary natural fertility; but it *is* exhaustible, and the period of its exhaustion under such management as TULL recommended, and as his followers somewhat less confidently point out, is approaching, whereas, under a perfect system of management, it ought if anything to be receding.

Free trade may or may not have reduced the value of agricultural produce; at all events it *is* much reduced, and we believe that while the "corn-grower may yet get rich" in the prosecution of his business, when all his circumstances shall have accommodated themselves to the reduced standards of value, it will be not merely by a more energetic and diligent tillage of the soil, but also by a more energetic and diligent supply to the soil of the food on which his plants are to live. The value of Wheat and other grain is greatly reduced, and there is not that we are aware any such reduced value in guano and other purchaseable fertilisers for immediate application to these crops as might have been looked for; but though the value of meat has also been reduced, there *is* a very material reduction in the cost of the raw material—purchaseable cattle food—out of which *it* is made. And, while we willingly second Mr. HEWITT DAVIS in his efforts to impress upon our readers the importance of deep and thorough tillage to a good Wheat crop, we would quite as strongly urge upon them the importance of the meat manufacture, as a necessary and most influential part of farm management over the greater part of this country. We believe that it alone might be a profitable business, even at 5*d.* per lb. for beef; and we believe that, at all events, in the absence of it, the soil will not long continue to grow Wheat at 5*s.* a bushel.

## FARM ACCOUNTS.—No. I.

SPECIFICATION OF THE FARM.

| Acres. | Name of Fields | Last year's Crops. | Intended Crops. | Rental in proportion to value. | Net Rent. £ | s. | d. |
|---|---|---|---|---|---|---|---|
| 12 | Dairy Field | Beans | Wheat | 30s. per acre. | 18 | 0 | 0 |
| 8 | Pond Field | Clover | Wheat | 15 ,, | 6 | 0 | 0 |
| 20 | Stable Field | Wheat | Fallow | 20 ,, | 20 | 0 | 0 |
| 10 | Barn Field | Barley | Beans | 18 ,, | 9 | 0 | 0 |
| 10 | Church Field | Barley | Clover | 20 ,, | 10 | 0 | 0 |
| 12 | Wood Field | Fallow and Turnips | Oats | 20 ,, | 12 | 0 | 0 |
| 8 | Path Field | Fallow | Barley | 25 ,, | 10 | 0 | 0 |
| 6 | Brook Meadow | Mown | ... | 33 ,, | 9 | 18 | 0 |
| 9 | Home Pasture | Fed | ... | 28 ,, | 12 | 12 | 0 |
| 5 | Cuckoo Wood | ... | ... | 10 ,, | 2 | 10 | 0 |
| 100 | | | | | 110 | 0 | 0 |

The farm may be considered 110 to 112 acres, including hedges, ditches, lanes, waste, &c., but only 100 acres under cultivation; consequently the rent 110*l.* is charged on the same, and the rent-charge is made according to the considered good or bad quality of the land, as it is not just, in minute and truthful calculations, to charge all the land, whether good or bad, at the same rate. One of my objects in thus apportioning the rent is to show, that it is to the advantage of the farmer, in taking a farm, to choose the best he can obtain (I had almost said regardless of the rent), as it will be found that GOOD LAND is farmed at less *expense* than BAD; and if producing but a quarter of Wheat per acre more than poor land, it yields a much greater profit, notwithstanding the increase of rent, as a greater produce will be realised in every other species of grain, &c.

INVENTORY OF FARM STOCK, &c.

| | £ | s. | d |
|---|---|---|---|
| 4 Horses (three mares), at 25*l.* each | 100 | 0 | 0 |
| 1 Waggon | 25 | 0 | 0 |
| 2 Carts, at 10*l* each | 20 | 0 | 0 |
| 2 Ploughs, at 2*l.* 10*s.* each | 5 | 0 | 0 |
| 1 Set heavy harrows | 3 | 0 | 0 |
| 1 Set light ditto, at 1*l.* 15*s.* each | 3 | 10 | 0 |
| 1 Heavy roll | 6 | 0 | 0 |
| 1 Light ditto | 3 | 0 | 0 |
| 1 Drill | 20 | 0 | 0 |
| 1 Dressing Machine | 6 | 0 | 0 |
| 3 Sets of horse harness complete } 2 Sets of thick ditto ditto } | 9 | 0 | 0 |
| 2 Pair plough harness complete, and plough lines | 4 | 10 | 0 |
| 3 Cart ropes | 1 | 5 | 0 |
| 2 Cow cribs, at 1*l.* each | 2 | 0 | 0 |
| 8 Sheep troughs, at 10*s.* each | 4 | 0 | 0 |
| 2 Dew rakes, at 10*s.* each | 1 | 0 | 0 |
| 2 Ladders | 2 | 0 | 0 |
| 100 Hurdles | 6 | 0 | 0 |
| 30 Sacks | 2 | 0 | 0 |
| Seed cob, sieves, fan, bushel forks, shovels, spades, rakes, &c. | 3 | 10 | 0 |
| Sundries | 10 | 0 | 0 |
| | £236 | 15 | 0 |
| 2 Cows, at 9*l.* each | 18 | 0 | 0 |
| 2 Sows, at 1*l.* 5*s.* each | 2 | 10 | 0 |
| 10 Pigs, at 10*s.* each | 5 | 0 | 0 |
| Poultry, &c. | 2 | 10 | 0 |
| 150 Loads of manure, at 3*s* per load | 22 | 10 | 0 |
| 6 Tons of Clover-hay, at 3*l.* per load | 18 | 0 | 0 |
| 7 Tons of Grass-hay, at 2*l.* per load | 14 | 0 | 0 |
| 10 Acres of Clover-hay, at 8*s* 6*d.* per acre | 4 | 5 | 0 |
| 20 Acres of Fallow, 6 ploughings, at 7*s.* 6*d.* per acre | 45 | 0 | 0 |
| 2 Harrowings, at 1*s.* per acre | 2 | 0 | 0 |
| 2 Rollings for 12 acres Turnips, at 1*s.* per acre | 1 | 4 | 0 |
| Seed for ditto | 0 | 12 | 0 |
| Sowing, harrowing, hoeing, &c, at 12*s.* per acre | 7 | 4 | 0 |
| Manure, carting, and spreading, &c. | 27 | 10 | 0 |
| Rent on 20 acres | 22 | 0 | 0 |
| Straw from 20 acres Wheat } Ditto 20 ,, soft Corn } Ditto 8 ,, Peas } | 20 | 0 | 0 |
| | £449 | 0 | 0 |

N.B.—The farm stock in the above valuation is not *new*, but in *good condition*.

I think it may be advisable, before I proceed further in the actual working out of my system, to explain the nature of the books I intend making use of. They will be as follows: 1st, Labour Book. I am not aware that any form of my own can be better than several I have examined, so long as they give a clear description of all the work done, and where done. 2d, Day Book—in which must be entered every circumstance as it occurs, whether debtor or creditor; of course, the labour weekly only. 3d, Cash Book—which must contain all money transactions whatsoever, debtor and creditor. 4th, Journal—in which will be arranged *monthly* all transactions under their several heads, for posting into the ledger. Some parties may perhaps think this book unnecessary, and only giving *considerable trouble*, but it will be found to have the effect of placing every transaction in a much clearer manner, and also save the numerous entries in the Ledger, which, without the Journal, must occur, so that in the end the labour is the same, and the Ledger thereby rendered more concise. 5th, Ledger—the nature of which is so thoroughly understood, that it is unnecessary to say a word with reference to it. *W. F., Gay Bowers, Danbury, Essex.*

## ON THE CULTIVATION OF CHICORY.

*Soil.*—Rich dark loam is the most suitable, though it will grow in any good land, but the weight of the crop per acre and quality will depend on the land. A rich soil in good heart and condition, such as is fit for Barley, Wheat, or Turnips, will do, not forced by the application of too much manure. One grower says, "The land cannot be made too rich with manure, but it is best applied the year previous to the Chicory crop. I have sometimes taken a Wheat, and an Oat, and a Potato crop after Chicory, and done very well. The finer the surface of the land the better." Six tons per acre is a moderate crop—seven or eight not uncommon. In good land in Cambridgeshire it is stated that ten tons per acre have been grown.

*Time of Sowing.*—It must be sown within a day or two of the 12th of May, not later or earlier; if later, it will produce runners or woody fibrous roots; if earlier, it will seed, which it should not do.

*Seed.*—Some growers say that 2 lbs. per acre is enough, others state that 3 to 5 lbs. are required. The seed of the large white kind is the best.

*Cultivation.*—The land should be in as clean a condition as possible. It is best sown in ridges about 18 inches apart, and about 1 to 3 inches between the plants. One grower in Lincolnshire says, "1½ lb. of seed per acre, drilled in ridges one foot to 15 inches apart, passing the seed through a barrow drill of two rows. Cleaning with me has been done by a horse-hoe between the rows, when the soil is sufficiently dry, not to run in heaps so as to cover the small Chicory plant." Weed, dress, and furrow up as you would Carrots or any tap root; runners to seed must be pulled up when they appear. Radishes are known to become what is called woody; Turnips are also liable to run to seed; the same is frequently the case with some of the plants of Chicory, notwithstanding it is sown at a proper time. Immediately plants appear in this condition, boys or women must be sent to pull them up, and the roots when dug must be kept by themselves. It is of great importance to keep them out of the crop; they are fatal to a good sample of root, because these woody roots will not roast, and appear when ground with good Chicory (which is like Coffee), as so much ground wood, and make it full of specks. To produce good Chicory, the most important matter to be attended to is, to avoid the roots running to wood. Chicory should be well cleaned. The plants must not be too thick, but properly thinned to allow of good growth.

*Harvesting.*—Chicory is taken by lifting, as Parsnips or Carrots. If the season be fine, digging may begin after the middle of October.

## ESTIMATE: A RAM BREEDING FARM.

A FARM of about 200 acres of good substantial Turnip and Grass land, at, say, 2*l.* per acre, would be of convenient size for our purpose. It should be a good, deep, dry, sharp loam, with an open bottom, and, if possible, a southern exposure—the land gently sloping, and a good climate. On such land the farmer would not be dependent on his grain crops. Supposing it to be farmed under the ten-shift course of husbandry, there should be 10 fields of 20 acres each. Under this course of management, the greater part of the farm would be in Grass, or 140 acres, which would be 20 acres new Grass for the tup hoggs, and 120 acres, of from one to six year old Grass, for the ewes and gimmers. The fallow break of 20 acres would be, say, 18 acres in Turnips, 1 in Potatoes, and 1 of Tares for horses. Calculating the ewe stock at 140, they should produce 180 lambs, allowing 40 to have twins. The stock to be wintered would therefore be 320; and as the Turnips, on such good land, and under such management, should be a full crop, 12 acres will supply the hoggs, five the ewes, and one for three cows, which should be the whole cattle stock on the farm, with one pair of horses, and an odd one. One ploughman and two lads could do all the work, except what is regularly done by women and daily workers. The expense of working the farm would consequently not be great; and if the land be well laid down with perennial Rye-grass, Clovers, and other seeds, it will be fully sufficient to keep the stock. Should there be any surplus Grass, it can be eaten by bought-in stock when required. Allowing 20 for deaths and other casualties, 80 shearling tups and 80 cast ewes and gimmers should be annually sold. The produce of such a flock should stand about thus:—

INCOME.

| | | | |
|---|---|---|---|
| 80 Shearling tups, at 5*l.* each | £400 | 0 | 0 |
| 80 Cast ewes and gimmers, at 2*l.* | 160 | 0 | 0 |
| 300 Fleeces of wool, at 6*s.* | 90 | 0 | 0 |
| | £650 | 0 | 0 |

EXPENDITURE.

| | | | | | |
|---|---|---|---|---|---|
| Rent | £400 | 0 | 0 | | |
| Purchase of high bred tups yearly £20 | 0 | 0 | | | |
| Sell one bought the previous year 8 | 0 | 0 | | | |
| | | | 12 | 0 | 0 |
| Shepherd's wages, besides his allowance of corn, sheep, and cow | | | 10 | 0 | 0 |
| ets and other incidental expenses attending the sheep, say | | | 28 | 0 | 0 |
| | | | 450 | 0 | 0 |
| Profit on sheep, after paying rent, &c. | | | £200 | 0 | 0 |

The next consideration is, will the grain raised on the farm, after keeping house, servants, horses, seed, and tup hoggs, pay the other expenses? Allowing 20 acres to be under Oats, and 20 under Barley, the proceeds will approximate to the following calculation:—

| | Qrs. | Qrs. |
|---|---|---|
| 20 acres of Oats, at, say, 7 qrs. per acre | | 140 |
| Say for tup hoggs | 30 | |
| ,, Seed | 12 | |
| ,, House and servants | 30 | |
| ,, Horses, besides light grain | 18 | |
| | | 90 |
| To sell | | 50 qrs. |
| | Qrs. | |
| Barley, 20 acres, say 6 qrs. per acre | | 120 |
| Seed, say | 10 | |
| Servants, &c. | 10 | |
| | | 20 |
| To sell | | 100 qrs. |

| | | | |
|---|---|---|---|
| 50 Qrs. Oats, at 18*s.* | £45 | 0 | 0 |
| 100 Qrs. Barley, at 21*s.* | 105 | 0 | 0 |
| | £150 | 0 | 0 |

PROBABLE EXPENSES ATTENDING THE TILLAGE LAND.

| | | | |
|---|---|---|---|
| Ploughman, lad, and boy, say | £20 | 0 | 0 |
| Servant girl | 6 | 0 | 0 |
| Cutting crop, and other expenses attending it, say | 20 | 0 | 0 |
| Daily workers, &c. | 10 | 0 | 0 |
| Tear and wear of horses, implements, tradesmen's accounts, &c., say | 20 | 0 | 0 |
| Seeds, say | 10 | 0 | 0 |
| Public burdens, insurance of stock, and other incidental expenses, say | 34 | 0 | 0 |
| Interest of capital | 30 | 0 | 0 |
| | £150 | 0 | 0 |

In addition to the above, the ploughman and shepherd must each have a cow; but there should be sufficient Grass in summer, and abundance of straw in winter, to keep them.

The above calculation, if correct, shows that the grain crop will pay the expenses of the tillage land, and also that the rent and profit are derived solely from the sheep; and in these times, 200*l.* on a 200 acre farm, should satisfy the farmer, and keep him respectably—as he would have from his farm, milk, meal, Potatoes, pork, poultry, and he could also feed his own lamb, mutton, and beef, and have, besides, the produce of his garden. Some farmers may think this a trifling concern, and not enough to occupy their time; but if such a farm produces and brings up annually 80 high-bred shearling tups in fit condition for sale, they should be content. Generally speaking, it would be as well if farmers were to give more attention to one particular branch of farming, and manage it with skill and attention, so as to make it profitable, in place of having too much in hand. *Dickson on Breeding Live Stock.*

## Home Correspondence.

*Open Furrows.*—Mr. Mechi, in his account of a "Trip to the North of Devon," expresses a hope that your correspondents will discuss the question of open furrows on heavy land. In a letter written Dec. 21, 1844, entitled "Conclusions relative to Surface Draining," by Mr. Mechi, I find in capital letters "the deeper the drains, even in the strongest soils, the quicker the water escapes." Is it not to the too rigid adherence to the rule of deep drains, that we may trace the necessity for open furrows in Essex? In proof that deep draining has long engaged my attention, I refer to a statement, illustrated with diagrams, in the Journal of the Royal Agricultural Society, vol. vi. part 2, page 489. It is there shown that "deep drains must be most effective, but to ensure this effectiveness the drains should be filled with some substance through which the water can percolate freely throughout their depth." Mr. Mechi began on this principle, except that he made his drains upside-down, placing the pipe at the top of the stones with which the drain was filled; he afterwards corrected this mistake, and running into the opposite extreme says, "If I had to re-drain my land I should place the pipes in the drains without stones or other matter, merely covering them with the clay itself." Then in a note to an extract from Mr. Parkes, "It would be curious, but probably more curious than useful (he now sees that it is useful) to learn the origin of this remarkable configuration given to land," namely, land cultivated on high ridges. The reason is simply because by this configuration the land is partially drained, and there is an approximation to the truth, that there is a mean in draining really stiff clays, a mean exceeded by 4-foot drains which makes it necessary to return to the open furrow. Close observation has convinced me, that at no time is the water so quickly removed, or nearly so, as when the drains are entirely open; suppose drains cut 30 inches deep, and at 30 feet intervals, in a soil of which the first 12 inches is tilth or broken ground, the remainder clay, increasing in tenacity to the bottom of the drain; it will be found that the first 12 inches of nearly the whole intermediate space is drained in 24 or 36 hours, if, as in the month of January last past, there are three rain falls which supersaturate the soil, the clay below this, 1 foot, will still be surcharged with water, though the tilth has parted with its water three times over; the question then arises how much more water would have been carried off by a 4 foot drain than that at 30 inches? If both were open I believe there would be little difference, if both were filled in I suspect that the 30 inch drain would have the advantage. Does water ever stagnate in a clay soil below a certain depth, so as to make it necessary to remove it? If a soil, such as I have described, be drained to the depth of 30 inches, how much water should we find (except that held in suspension by the soil) below that depth? Can Mr. Mechi or Mr. Parkes answer these questions? I am not speaking of a Hop-ground, the example given by Mr. Parkes, but a clay covered by 1 foot of tilth. Four feet drains filled in with clay would so retard the drainage of the tilth as to make open furrows necessary; let the drains be made at a less depth, or filled in with some substance through which the water may percolate freely, and will not the necessity for these furrows, with all their accompanying evils, be removed? *J. C. C.*

*Feeding on Boards.*—Being very scarce of straw this season, I was induced to try boarded floors for my cattle, which are tied up by the neck. The result has been, on the whole, satisfactory. I have always, however, used a little straw till within the last few days, when I have tried a pair on the boards alone, without a particle of straw, which is the plan, I believe, followed by Mechi and others. I cannot express any opinion how it may answer with me, but the poor animals seem standing so uncomfortably that I cannot fancy they will do well; the sparring, although wide, is so wet and dirty, that I am much inclined to revert to a little straw. Have you any experience yourself? *M. W.*

*Steam Boiler Flues.*—This subject, introduced into your Paper of the 25th ult., by Mr. Mechi, is one of great importance for the saving of fuel, and should be well understood by all who have steam-engines. There has lately been published a small work, costing but 1*s.*—"Armstrong on Boilers;" it gives more and plainer instructions on steam boilers than any work I have met with before; it would well repay any person having boilers to procure a copy. The plainest, safest, and most economical boiler for a fixed engine is a cylindrical one, and if put up on the principle Armstrong describes as the oven plan, will give great satisfaction, and the flues will be easy to clean. Armstrong says all cylindrical boilers of 6 feet diameter, and under, should be put up on the oven plan; and I am acquainted with one belonging to a relative in the South Staffordshire iron works, which is 25 feet long and 8 feet in diameter, put up on that plan with only one bridge, and

that placed at the end of the grate, which did very well, but latterly three other bridges have been put in, one at the end of the boiler, and the other two equi-distant from the one at the end of the grate and the one at the end of the boiler. The one at the end of the grate was 12 inches from the boiler, the next 10 inches, the next 8 inches, and the one at the end of the boiler was 6 inches, after that addition there was a saving of more than 25 per cent. of fuel; between the bridges were holes left to clean out the flues. All that can be said against this plan of a boiler is the quantity of water to be boiled, and, consequently, taking longer time to get up the steam than if there is a flue through the boiler. But if a flue through the boiler is adopted, there should be a door both back and front of boiler in brickwork, to enable the flue to be cleaned, or the evils pointed out by Mr. Mechi would assuredly take place. *R. Nicklin.*

*Hints on laying down Land to Permanent Pasture.*—It is highly important that the land should be cleaned from weeds, and well pulverised by repeated ploughing and harrowing before the seed is sown; and in cases where the soil is particularly loose or sandy, it is desirable that it should be also rolled before sowing; if this is not effected, the seeds (many of which are very minute) will some of them be too deeply imbedded in the soil, while others may not be covered at all. It is also desirable that the seeds should be sown when there is not much wind, and that they should be delivered from the machine or the hand placed rather near to the soil; otherwise, the smallest and most valuable of the seeds may be carried by the wind into the adjoining field or hedgerow. The harrows, which should be very light, must be again drawn over after sowing, and if the soil is very light and dry, the roller also; and if the soil is poor, a dressing of Peruvian guano, or superphosphate may be harrowed in with the seeds, at the rate of two hundredweight per acre. The sorts of seed should, of course, be selected in accordance with the nature of the soil, and the purposes for which the pasture is intended; this and much other useful information may be obtained from Lowe's "Elements of Agriculture," Stephens's "Book of the Farm," Sinclair's "Hortus Gramiensis," and other works; or from seedsmen and agriculturists, who have paid especial attention to this part of botany and agriculture. If corn is sown with the Grass seeds, it should not be more than 1 bushel, or 1½ bushel to the acre of corn, and for this purpose Oats are preferable to Barley. *On improving old Pastures.*—Having as far as possible eradicated the strong growing weeds, and coarse Grasses, and improved the condition of the land, according to its requirements, if any, heavy harrows should be drawn over the old turf early in the spring, to loosen the soil for the admission of seeds of the finest and most nutritive kinds of perennial natural Grasses and Clovers, which, if sown freely, will occupy the numerous small interstices between the plants of Grasses already growing, and thereby prevent the luxuriant growth of coarse Grasses and noxious weeds. It is a good practice to sow these seeds at the same time as the top dressing is applied; but this is by no means necessary. (*From Sutton's Catalogue of Natural and Artificial Grasses.*)

*Draining.*—"Agricola Redivivus" having passed his opinion so inoffensively, and desired me to correct his calculation, if "I can do the work cheaper," I readily respond to his wishes; but first I must distinctly inform him that he misunderstands me. I do not advocate stone draining where pipe-draining can be done more economically. I have put in hundreds of thousands of pipes where stone could be had a few hundred yards off, for digging and carting. What I complain of is that we are not allowed by the Government Inspectors to use the stones which are dug out of the drains in making them, but have to submit to the damages and expenses of carting them off the land, when those very stones might be put into the drains at a trifling cost, and either save the pipes entirely or be put in, in addition to the pipes. If "A. R." will kindly take a trip to Bristol, and thence 6 or 7 miles on the Gloucester road he will see very many acres apparently covered with stones thrown out of the drains, which will have to be carted off at as much expense as "A. R.'s" were carted on, and with an equal degree of damage to the land. Surely it would be economical to bury those stones on the spot, and take the chance of making the soil a little more porous and pervious to the surface water, which there is more mischievous than water from the springs. The stone is of no value for roads or walls. Now as to the calculations. "A. R.'s" calculation is erroneous, 90½ rods per acre will not require 2178 pipes; the quantity of stones per acre is very wide of the mark, and 90½ rods per acre is a curious quantity for an acre of systematic draining; the drains would be rather more than 29 feet apart, an odd width to adopt. The following is the cost per acre which I have paid for years, and the works are executed in a good, substantial and satisfactory manner.

| | £ | s. | d. |
|---|---|---|---|
| 4 feet drains, 30 feet apart, 1452 pipes, at 17*s.* per 1000 | 1 | 4 | 8 |
| Carting pipes 2 miles, at 3*s.* per 1000 ... ... ... | 0 | 4 | 6 |
| Cutting drains, laying pipes and filling 88 rods at 6*d.* per rod ... ... ... ... ... ... ... | 2 | 4 | 0 |
| Sorting stones, breaking and putting in, or collecting them from the land when the farmer had gathered them in o heaps, and putting in 30 yards at 3*d.* No carting ... ... ... ... ... ... ... | 0 | 7 | 6 |
| | £4 | 0 | 8 |

Perhaps you may doubt this expenditure; I shall therefore take the liberty of copying Mr. Scott's statement, printed in the *Devizes and Wiltshire Gazette* of Jan. 23d, 1851, what he is expending per acre on the Grittleton estate, near Chippenham, the property of Joseph Neeld, Esq., M.P.

| | £ | s. | d. |
|---|---|---|---|
| Drains 4 feet deep, 36 feet apart, 1¾ inch pipes, 1210, at 17*s.* 6*d* per 1000 ... ... ... ... ... | 1 | 2 | 2 |
| Digging, breaking, and filling stones, 24 cubic yards, at 9*d* per yard ... ... ... ... ... ... | 0 | 18 | 0 |
| Cutting and laying pipes and stones, and refilling soil, 18.33 chains, at 2*s.* 3*d.* ... ... ... ... ... | 2 | 1 | 3 |
| | £4 | 1 | 5 |

If "A.R." will take the trouble to obtain the paper and read Mr. Scott's lecture, he will see that he is both a scientific and practical man, and will also learn that he is executing 3 miles of draining per day. *Fossa.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday, the 26th of February; present, Mr. Pusey, M.P., Trustee, in the chair; Earl of Essex, Lord Wharncliffe, Hon. R. H. Clive, M.P., Hon. Dudley Pelham, M.P., Rt. Hon. Sir Thomas Frankland Lewis, Bart., Rt. Hon. T. F. Kennedy, Sir Robert Price, Bart, M P., Mr. B. Almack, Mr. Baker (Writtle), Mr. D. Barclay, Mr. T. Raymond Barker, Mr. Hodgson Barrow, M.P., Mr. Bastard, Mr. Bethell, Mr. Beale Browne, Rev. T. C. Browne, Capt. Wentworth Buller, R.N., Mr. Burke, Mr. Burton, jun, Dr. Calvert, Colonel Challoner, Mr. Charlesworth, Mr. Christopher, M.P., Mr. Clavering, Mr. Evelyn Denison, M.P., Mr. Dewing, Mr. Druce (Ensham), Mr. Druce, jun., Mr. Dyer, Mr. Ferrabee, Mr. Fuller, M.P., Mr. Fisher Hobbs, Rev. C. E. Keene, Mr. Lakin, Mr. C. Lawrence, Mr. Loft, Mr. Long, Mr. Maddison, Mr. Majendie (Hedingham Castle), Mr. Neill Malcolm, Mr. Marshall, M.P., Mr. Miles, M.P. (Leigh Court), Mr. Moody, Mr. Ralph Neville, M.P., Mr. Nicoll, Mr. C. E. Overman, Mr. Parkins (Chesfield Lodge), Mr. H. Parish, Mr. T. Paynter, Mr. Pelly, Mr. Pendarves, M.P., Mr. Rice, M.P., Mr. Sanford (Nynehead), Prof. Sewell, Mr. R. N. Shawe, Mr. Slade, Mr. Slaney, M.P., Mr. S. R. Solly, Mr. Stansfield, M.P., Rev. T. Stevens, Mr. Strafford, Prof. Way, Mr. Wight, and Mr. Wilson (Stowlangtoft).

The following new members were elected:—

Macartney, George, Lissanore, Co. Antrim, and Bourton, Warwickshire.

Spooner, Thomas, Abbot's-Bromley, Rugeley, Staffordshire.

Boyer, J., Skeffington Vale, Leicester.

Fowler, Robinson, Preston Hall, Stockton-on-Tees.

The names of nine candidates for election at the next meeting were then read.

### DISCUSSION ON FLAX.

I. Cultivation of the Flax Crop.—Mr. Beale Browne, of Hampen, near Andoversford, Gloucestershire, at the request of the chairman, favoured the Council with the result of his experience in the growth of Flax. He had been one of the first members of the Society to call the attention of farmers to the cultivation of Flax, which he believed to be the paying crop; and having become acquainted with what had been done in Belgium and Ireland, he had for the last 7 years devoted his attention to the conditions under which the growth and management of Flax, in this country, might be carried on in the most economical and successful manner. In Warwickshire, his friend Mr. Gregory Watkins, the High Sheriff of that county, on being informed of the results to be obtained from Flax culture, had called the farmers in his neighbourhood together, and formed them at once into a local association for the purpose of consulting together on the best mode of proceeding in adopting the Flax crop, and of aiding each other by arrangements tending to their common advantage. Mr. Browne then proceeded, at the suggestion of Mr. Miles, M.P., to state, under the following heads, the result of his practical experience in the cultivation of Flax:—

Climate, Locality, Soil.—His land in Gloucestershire was hilly, and as variable in its character as the climate; it consisted of heavy clays, stonebrash, and sandy loams 2 feet thick. He believed that no soil, capable of growing anything was unsuited to Flax, provided it were moist and of fine tilth; in fact, that he would not hesitate to grow it on a common turnpike road, with a moist soil an inch thick; at the same time a depth of 3 feet was found to be most advantageous for the expansion of its roots. Sir Robert Kane had shown that it takes the least from the soil of any plant; and that, deriving, as it did, a large amount of its nutriment from the atmosphere, it was the least exhausting crop that could be put into the ground, provided the manure from the seed and refuse were retained on the land, and only the Flax fibre itself carried off; and Mr. Browne had reason to believe that this opinion was now entertained by all parties connected practically with the cultivation of the Flax crop. It grew best, Mr. Browne had found, on an old ley pasture; it also succeeded well after Wheat, or even Turnips; and the land might be laid down with Clover. In all cases, however, it was necessary to obtain as fine a state of soil as possible previously to sowing. In his own case, he gave the land a slight manuring for this crop.

Sowing, Weeding.—The first great thing, in Mr. Browne's opinion, was to get thoroughly clean seed, and he had been desired by his friend, Mr. A. Marshall, of Leeds, to press this point particularly upon the attention of the Council meeting of that day. Mr. Browne had himself suffered great loss by planting foul seed, from the additional expenses incurred in the consequent weeding, pulling, and after management. He had, however, at length, by great perseverance succeeded in cleaning his crop so effectually as to receive from the parties who had used his seed last year the most favourable account of its purity. Mr. Browne then placed before the meeting two samples of the seed he now employed. A week previous to sowing, or even on the very day of planting, Mr. Browne had been in the habit of employing a scuffler or breast-plough for the purpose of moving the ground and thus cutting up the weeds, a preliminary operation that he had found save much subsequent expense in weeding the after crop. The Flax was not so tender a crop as many persons had imagined, for some Flax seeds having been accidentally wasted and left on his ground after harvest, produced plants which stood well through the whole of the ensuing winter. He had found the first week in April the best time for sowing the Flax seed, and he preferred the broadcast system. He used an old seed wheel that had become too large for Clover, and covered the seed in the lightest way possible, with the finest light harrows had on his farm, taking care to cross the harrowing, so as not to pull it in rows. With regard to quantity of seed, Mr. A. Marshall preferred 3 bushels, but Mr. Browne considered 2½ bushels quite plenty, it being of course understood that the seed employed was of the best quality, and of the greatest purity. In reference to the young plant, he might remark that Flax was so speedy in its growth that nothing could overtake it. In dry seasons the straw would be short, and the seed abundant; in moist weather, the stalk would be longer but the seed scanty. The expense of weeding was trifling, not amounting to 2*s.* per acre.

Pulling, Stacking, Threshing, Produce.—At the end of July, or beginning of August, according to the situation, the Flax would be ripe and ready for pulling. The cost of this operation—of which the great secret was to leave the ends perfectly straight and the roots in a brush—had been variously estimated by different growers, according to circumstances; he thought 7*s.* or 8*s.* per acre too little, and 14*s.* too much. In his own case, he found that 12*s.* or 13*s.* was about the expense. If the land is laid down with Clover, it should be done directly the Flax is pulled; the sheaves should be put in rows, and the land between them rolled. He had found Clover good, except in years of great drought. The sheaves were tied evenly with Flax straw-bands, and were capped by drawing the bands near the roots of the plant, and thus causing the seed ends of the sheaves to spread out as a covering for the stalks; by this plan the rain was prevented from penetrating the sheaf. The Flax, after standing a fortnight or three weeks in the field, was then carted on a dry day to the barn or rick, until convenient to thresh it. In making his ricks, he placed a sack filled with chaff or straw in the middle of the plot on which they were to stand; and each rick being gradually made round this sack as a moveable centre piece, this was gradually pulled up as the work proceeded, an open space or flue within the body of the rick was left, which caused ventilation, and prevented that heating of the Flax so injurious to its quality, and to which it is so very liable, as he had found on one occasion to his great loss. Mr. Browne recommended that the ricks should be thatched as soon as possible. The threshing was performed in Mr. Browne's establishment by beetles; and the sheaves, instead of being untied and spread open, were kept in their bands, and beat first on one side, and then turned over on the other side and beat again. He recommended that the work-people should be particularly instructed to attend to this point, which they are apt to neglect. The expense of threshing with beetles was 7*d.* or 8*d.* per bushel. The produce of seed per acre had been variously estimated at from 16 to 24 bushels; he thought 20 bushels might be considered as a fair average of his own crop; and, as far as he could judge, 4 cwt. might be taken as the amount per acre he obtained of the dressed Flax. With regard to the Flax straw, some had thought that the farmers would be able to get 5*l.* per ton for it; but this estimate, he feared, would only mislead them; he felt quite certain that 3*l.* per ton was as much as they would generally get. On this point, as on all others connected with this important subject, his whole and sole object was to prevent parties who intended to try the cultivation of Flax from being misled in any way in their laudable endeavours to carry it on successfully, either in reference to the investment and improvement of their capital in this new crop, or to its employment among the labourers on their farms.

Mr. Samuel Druce, of Ensham, then favoured the Council with the result of his practical experience in the growth of Flax in Oxfordshire for the last few years. He called the attention of the Council, however, more particularly to the results of his last year's crop, which he had drawn out for the information of the members into a balance-sheet of expenditure in cultivation and realisation by sale of produce. He thought this statement would satisfactorily show to them the value of the Flax-crop, and the attention which under present circumstances it appeared to deserve. His property lay on the Oxford-clay formation; and the piece of ground on which the trial of cultivation to which he referred was made, consisted of a deep red loam, and in extent was 5A. 2R. 36P.

1.—Expenses of Cultivation.

| | £ | s. | d. |
|---|---|---|---|
| One ploughing, at 10*s.* per acre ... ... ... | 2 | 17 | 3 |
| Sowing and harrowing at 1*s.* 6*d.* per acre ... | 0 | 8 | 7 |
| Weeding, at 2*s* per acre ... ... ... ... | 0 | 11 | 5 |
| Flax-seed, 1⅔ bushels, at 9*s.* ... ... ... | 6 | 1 | 6 |
| Rent of land, at 48*s.* per acre ... ... ... | 13 | 14 | 9 |
| Taxes, at 6*s.* per acre ... ... ... ... | 1 | 14 | 4 |
| Pulling Flax, at 14*s.* per acre ... ... ... | 4 | 0 | 1 |
| Carting and stacking, at 4*s.* per acre ... ... | 1 | 2 | 10 |
| Threshing ... ... ... ... ... ... | 5 | 7 | 1 |
| Winnowing ... ... ... ... ... ... | 0 | 12 | 6 |
| | £36 | 10 | 4 |

2.—Sale of Produce.

| | £ | s. | d. |
|---|---|---|---|
| Sale of Flax-seed, 116¾ bushels, at 8*s.* ... ... | 46 | 10 | 0 |
| Sale of Flax-straw, 12 tons 2 cwt. 2 qrs., at 3*l.* per ton ... ... ... ... ... | 36 | 7 | 6 |
| Sale of chaff, at 5*s.* per acre ... ... ... | 1 | 8 | 7 |
| | £84 | 6 | 1 |

Leaving a net profit of 47*l.* 15*s.* 9*d.* on the 5A. 2R. 36P. (or a trifle more than 5⅜ acres) of land employed in this trial of Flax cultivation.

Mr. Druce concluded his statement by expressing his conviction that the Flax crop was not an exhausting crop at all; in fact, that his son had found a piece of Wheat after Flax one of the best Wheat crops he had grown. He thought at all events, that it would be found a good thing for every farmer to grow some Flax on his farm, if only for the purpose of working up his inferior hay, with a paste of Beans and Flax-seed, as food for his cattle. It may perhaps be interesting to add that Arthur Young some 50 years ago refers to the cultivation of Flax in Mr. Druce's neighbourhood, in the following terms: "Eight or nine years past there was a considerable quantity of Flax raised in Oxfordshire, at Watereaton, Hampton, and Yardington, in boggy land; and good Wheat got after it by Mr. Cocks, &c.; but at present there is none. A very singular husbandry, however, in this vicinity has been the culture of this plant for the object of seed, for the sole purpose of fattening bullocks: the high price of linseed-cake occasioned this management, which answered well. The Flax was watered, and dressed, as in the common way; but the object of the cultivation was the seed for live stock."

Mr. Sanford, of Nynehead Court, Somersetshire, then favoured the Council with some valuable remarks in reference to the cultivation of Flax in Somersetshire,

where that crop had been grown as long as he could remember, but its cultivation checked in consequence of prohibitions in the leases granted to the tenantry of that county. These prohibitions having been, and, as he thought, very properly, in many cases disregarded, he decided, when he came into possession of his own property some 30 years ago, that a modification should be made in the conditions of the leases granted to his tenantry, by which, in every 100 acres of land, 5 acres might be under cultivation with Flax, provided the seed were consumed on the land. It had become a standing proverb in Somersetshire, that good Wheat crops always followed Flax. He thought it would much promote the cause of Flax-growing in that part of the kingdom if the farmers could be persuaded to prepare for their own use and satisfaction such a balance-sheet in their respective cases as Mr. Druce had then laid before the meeting; as it was, they contented themselves simply with a knowledge of its value per ton. He attributed much of the discouragement which might arise in its cultivation to the precarious conditions connected with the steeping process. The bundles were laid in ponds of soft water, having neither inlets nor outlets, and were kept submerged by means of heavy weights placed on them; and so ticklish was the watering process, and so nice a point the crisis of the operation, that persons were set to watch the particular moment of completion, as a few hours or even minutes beyond the proper period might entirely prevent its success. The following remarks of Mr. Dyke Acland, on Flax cultivation in Somersetshire, may be interesting in this place. He says (Journal XII., p. 732): "The district is singularly favourable to the growth of Flax and Wheat, while neither the straw of the Wheat nor the seed of the Flax are consumed to any extent in the district as food for cattle, although the population is large—if not redundant, wages low, and the poor-rates high; and yet it is now generally admitted among good farmers that the judicious combination of the use of straw-chaff with linseed, either as jelly or cake, is one of the most economical ways of making large supplies of meat and manure, while at the same time house-feeding and Flax cultivation both increase the demand for labour. It is surely premature to talk of giving up the growth of Flax. Would it not be better to review the whole process of its preparation, and to inquire whether improvements which have been adopted in Belgium, Norfolk, and elsewhere, may not be imported into this district, and combined with the profitable feeding of cattle in addition to the sheep now folded on the land? If some leading proprietor would pick out an intelligent workman, and send him to visit the districts where the preparation of Flax has been most carefully attended to, he would confer a great benefit on his neighbourhood."

Lord Monteagle made an interesting statement of his own case in reference to the introduction of the Flax crop on his home farm, and at his recommendation on the farms of his tenantry in the south of Ireland. His lordship had been induced, however, more to restore the growth of Flax in that part of Ireland than to introduce it, as the cultivation had ceased on account of the want of markets for the produce. But as the progress of information from the north of that kingdom extended itself to the south, he was induced, at the time of the failure of other crops, when there was no longer any retting establishments or large manufacturers left in his neighbourhood, and the consumer and spinner were gone, to endeavour to bring about the restoration of the crop, and to try it then as the farmers were now about to do in England. He therefore set about its cultivation: he obtained the best seed from Mulholland of Belfast, and received printed instructions from the Flax Society; the Flax was grown on his home farm, and on the farm of his bailiff; his tenants, too, were induced to join in the cause, as well as Lord Devon and other influential landowners of the district. They all succeeded, grew good Flax, and the specimens received the favourable notice of the Flax Society, his lordship's sample being valued at 63*l.* only at that time, on account of the lowness of prices, but which would now fetch 100*l.* How, it would be asked, had the crop succeeded for the farmers? The notion of transporting at a great expense the Flax they had grown, in its rough state, offered an insuperable difficulty. If worked by hand, it must be done with all the skill and knowledge within their reach. In his neighbourhood there was no water-power, and he was unwilling to adopt steam-power until assured of a market for his produce. In short, his lordship's tenants sent all their Flax to him, and he had to buy it off their hands; so that he had at that time more stacks of Flax than of Wheat on his farm, and had no means of turning the Flax to account. If, like the English farmers, he could have availed himself of the scientific application within their reach, and been able to introduce economically either hand-power or machinery, he could then have obtained a market for his produce, and the Flax crop would have answered his purpose as a farmer. Some of the land he had planted with Flax had been previously rather exhausted, but by cultivating the Flax well, the land become better than any other on his estate: no meadow, indeed, yielded such capital Grass as that on which the Flax had been grown. The English farmers would enter on the cultivation of Flax with all the knowledge, capital, and established modes in the management of land, for which they are so pre-eminent; and his lordship, in conclusion, heartily wished them every success.

Mr. Fisher Hobbs thought the Council were deeply indebted to Lord Monteagle for his kindness in coming among them that day as one of the members of the Society, and for the candid manner in which he had detailed to them the origin, progress, and result of his attempt to restore the cultivation of Flax in the south of Ireland. That no market could be found for the produce grown on that occasion, was a fact which he thought must serve to instil caution into the proceedings of the English farmers. They had been told that if they lost their capital in corn, they would find plenty of capitalists in Leeds and the manufacturing districts to take the land off their hands. He would undertake to find for those gentlemen hundreds of acres in the eastern counties, for the growth of Flax, if they would ensure the certainty of a market for the fibre at a remunerating price.

M. J. de Cock Kenefecke, from Belgium, then addressed the meeting. It was an experienced fact, he believed, that Flax required a continual light moisture, such as prevails in Ireland and the Low Flanders; and the great part of England being similarly favoured by its surrounding waters, offered a strong presumption, in his opinion, that the Flax crop must succeed throughout the kingdom. The English farmer might thus, he thought, with confidence expect the following advantages, differing in some respects from those of the Flemish farmer:—

1. A valuable crop of Flax.
2. A good cattle food in autumn from the Clover or Carrot crop.
3. A genuine article for cattle food in winter from his linseed meal.
4. A good market for the oil produced from his seed.
5. An excellent soil for winter crops.
6. The satisfaction of affording relief to the labouring classes.

He then advocated the preparation in England of coarse Flax, to be employed in Flanders for Russian duck fabrics, the sowing of Clover with Flax on a brown soil, and the particular manure required for such crops.

II. Preparation for Manufacture.—Mr. Beale Browne thought it would be well for the public generally, as well as for the owners, and tenant-farmers more especially, to come to no hasty conclusion on any of the new systems of Flax management proposed for their adoption, however plausible such systems may on their first presentation appear to them; but in this pursuit, as in that of higher objects, to "prove all things," and only "hold fast that which is good." The separation of the seed capsules from the stalk, the woody part from the Flax-fibre, the Flax-fibre from the glutinous matter, and also the Flax-fibres themselves from each other, were all important practical objects, for the attainment of which various modes had been proposed, differing from each in efficiency, economy, and the circumstance of greater or less injury, or otherwise, to the Flax-fibre for manufacturing purposes. Mr. Browne preferred the hot water system of steeping to any of the former modes, as it was not only the cheapest, but fell in with the regular routine of business, summer and winter, and could be carried on by the same hands. The removal of the woody part from the Flax-fibre, by chemical means, was easy to be accomplished, and had long been effected by Professor Faraday, and other chemical friends of Mr. Browne; but in no case, that Mr. Browne was aware of, in which the Flax-fibre did not suffer injury from such chemical means, and become weak and rotten. Whatever M. Claussen's plan might then be, he feared that he had yet to surmount that difficulty, by employing only such chemical agents as will effect the separation required without injuring the strength of the Flax-fibre, or the yarn into which it is spun. To assure himself of the weakness of M. Claussen's yarns, he had sent for a sample to the mill at Rochdale, where M. Claussen's processes are carried on; and this yarn, which he then exhibited to the members, along with a specimen of cloth woven from it, would be found deficient in the strength required, and inferior to that possessed by the ordinary cotton yarns. Mr. Browne remarked, that in mixing Flax and cotton together, it was necessary to cut the Flax fibre short, and by chemical means nearly to destroy that fibre before it is sufficiently tender to mix with cotton; and then, with the same-sized yarn, there would accordingly be nearly two parts of cotton to one of Flax in any cloth manufactured from Flax-cotton, as the Flax it contained would be about as heavy again as the cotton. He therefore conceived that, as all cloth is sold by weight, the saving would not be so much an object gained by this mixed fabric. He also thought that M. Claussen's manufactured specimen should be examined in cloth, like calico or linen, not in ribbed fabrics, like stockings, which afforded no test of excellence. Mr. Browne, and a friend of his, had succeeded in their attempts to separate the fibres of Flax from each other to such a degree as to confer on the Flax the character and qualities of cotton; but by all the processes they had tried, the Flax-fibre had become weakened and rotten. They found that

No. 16 thread, half foreign cotton with half British cotton, 120 yards long, weighed 83 grains;
No. 16 thread, all foreign cotton, 120 yards long, weighed 56 grains;

and therefore concluded that it would take one-third more of Flax-cotton mixture to make the same surface of cloth, and to make it badly, than of foreign cotton alone. The cloth woven from No. 16 thread, half foreign cotton and half British cotton, had the appearance of the cloth employed for sieves and strainers. He made these remarks in perfect sincerity, and with no other motive than that of obtaining the truth, and of wishing it to prevail; for should M. Claussen's plan, when perfected, prove to be a better one than the hot-water system he had himself adopted, he would not hesitate to lay that system aside, and try to get from M. Claussen a license for the use of his patent, and its introduction into his own establishment at Hampen.

Claussen's Process.—The Chevalier Claussen (attended by Dr. Ryan, Dr. Bright, Mr. M'Dermott, Mr. Graves, and Mr. J. S. Christopher), then presented himself before the Council, agreeably with his engagement on that day fortnight previously, to lay before the members a statement of his process for converting Flax into a substance having similar properties to cotton for manufacturing purposes, and for improvements in the bleaching of vegetable productions, and of textile fabrics composed of such productions. M. Claussen having laid on the table a copy of the "Specification" at length of these patented processes (as contained in the "Mechanics' Magazine," No. 1437, published a few days previously, and to which we refer for the convenience of those of our readers who may wish to consult that document in detail), requested Dr. Ryan to explain for him to the Council the nature and bearing of the processes in question.

Dr. Ryan commenced his address to the meeting by stating that since the subject of the Chevalier's invention had been brought before the Council, he had been down to Bradford, for the purpose of witnessing, on a large scale, the practical operation of M. Claussen's plan, and he should now have much pleasure in detailing the results of his observations. Dr. Ryan begged also to remark that he was not there for the purpose of finding fault with any of the existing processes for preparing Flax fibre, but merely, as the Chevalier's chemical advocate, to point out to the Society the advantages of what he might be allowed to term a most beautiful discovery. Before, however, he proceeded further he would take the liberty of answering at once an objection made by Mr. Beale Browne, that it would be impossible to mix Flax cotton, or fibre, with common cotton, because of the difference in the specific gravity of the two; that Flax would make cotton goods heavier. This was Mr. Browne's objection; but Dr. Ryan could inform him that, although Flax fibre, in its usual state, was specifically heavier than cotton, yet, when prepared by Chevalier Claussen's plan, it became exactly of the same gravity as American cotton. He then proceeded to detail the operations at the works of Messrs. Quitzow and Co., at Apperley-bridge, near Bradford, Yorkshire. He described the process of preparing the straw for scutching as one which only occupied four hours, instead of five days—the shortest period under even the patent of the late Mr. Schenck, the one now patronised by the Royal Flax Society of Ireland. The materials employed by M. Claussen were merely soda and sulphuric acid, and these in such a form and in such quantities as not to injure the most delicate fabric. Thus the proportion of soda was only one part in 200 parts of water. The acid was added after the straw had been boiled with the soda; and the objections to the employment of such a substance would be overcome by remarking that the proportion of the acid was only one to 500 of water, and that the soda present in the straw neutralises the whole of the acid, and forms a neutral salt—sulphate of soda. Dr. Ryan then proceeded to state that means had been adopted to ascertain the strength of fibre thus prepared, in comparison with that prepared by Schenck's process, and the result was highly satisfactory. In the next place Dr. Ryan explained the process of cottonising the Flax, or in other words, of splitting its fibre, and converting it into a material which could scarcely be distinguished from the finest American cotton. This he considered the most beautiful and useful portion of the discovery, opening, as it did, a new market to the flax grower, and enabling the manufacturer to spin it on any machinery hitherto employed for cotton, silk, or wool. Dr. Ryan then detailed the process itself, pointing out the elastic force of the carbonic acid gas liberated in the tubes of the Flax fibre by the action of an acid on the carbonate of soda, or of potash. He also stated that he came prepared to show to the meeting, practically, by experiment, the processes of splitting and of bleaching—experiments which would render the matter intelligible to every one present.

At this moment Dr. Ryan handed to Professor Way, the consulting chemist to the Society, a copy of Chevalier Claussen's specification; and it may be stated that in a few moments the Professor returned to the Council-room, and remarked that he had just himself tried the experiments according to the directions of the inventor, and had perfectly succeeded in splitting and bleaching some Flax fibre. It was therefore suggested to the Chairman by Dr. Ryan, that as Professor Way was a perfectly disinterested party, it would be better for him to operate before the meeting. This Professor Way did most successfully, bleaching and splitting a quantity of Flax in the course of about two minutes.

Although we have long been practically familiar with the expansive effects of aëriform fluids suddenly disengaged chemically from an apparently solid and inert substance like gunpowder, either in fire-arms or the blasting of rocks, and with their elastic recoil when released from the pressure of condensation, as in the air-gun or the liquid gases of Dr. Faraday, we were not prepared for so beautiful an instance of the application of this principle as the one Chevalier Claussen has given us in the splitting of vegetable fibre, by conveying into its interstices the carbonic acid gas concealed in condensation and chemical alliance with soda, and then setting it free by the addition of acid, which breaks off that alliance by its own superior elective affinity for the alkali. Means shown in their result to be so powerful,

and in their operation so gentle yet decisive, gave to the simple experiment made in the presence of the Council by Professor Way, more the air of a new instance of Natural Magic than the sober reality of an ordinary operation of natural laws, of which the application only was novel; and its effect on the meeting was accordingly both singular and striking, occasioning evident marks of their agreeable surprise and admiration at the result obtained. The Flax fibre soaked in the solution of sub-carbonate of soda was no sooner immersed in the vessel containing the acidulated water than its character became at once changed, from that of a damp rigid aggregation of Flax to a light expansive mass of cottony texture, increasing in size like leavening dough, or an expanding sponge. The change was no less striking, when this converted mass in its turn was placed in the next vessel which contained the hypochlorite of magnesia, and became at once bleached, attaining then the colour, as it had just before received the texture, of cotton.

After the performance of this experiment, a very lengthened and interesting conversation ensued between the Chairman and Council on one side, and M. Claussen and the parties connected with Flax culture and management on the other, on various topics, among which were —the point to which farmers, who were inclined to grow Flax, would have to proceed to render their produce in a fit state to be taken off their hands by M. Claussen or his agents; the 10*l.* machine of Mr. Davy, of Crediton, for reducing the bulk of Flax to be worked by hand; the machinery for cutting the Flax into proper lengths; the difference between the flat fibre of cotton and the tubular fibre of Flax; on the relative strength of the two fibres; on mechanical preparation of Flax without steeping, by Mr. Davy; on specimens of Flax grown from prepared seed, and on the treatment of Flax for the stronger purposes of manufacture, without steeping, by Mr. Donlan; Mr. Christopher, M.P.'s report of Mr. Bright's opinion of Flax-cotton, and its probable employment, to a considerable extent, should the price of foreign cotton remain as high as it then was; his reference to experiments carrying on at Manchester, to caution on the subject, and the inconvenience of inequality in length of fibre; M. Claussen's opinion that by mechanical means Flax will never be brought into the state of cotton; on a Flax coat, manufactured at Mr. Browne's establishment, in which the Flax yarn or cordage was so arranged as, by its swelling and torsion, when exposed to rain, to render the cloth compact and impervious to further penetration of wet within its substance.

III. Royal Flax Society of Ireland.—A deputation from the Royal Society for the Promotion and Improvement of the Growth of Flax in Ireland waited upon the Council for the purpose of aiding the Royal Agricultural Society of England in their consideration of the agricultural bearings of Flax culture, by offering to them whatever amount of experience the Flax Society had gained, during the ten years' period of its establishment, in the growth and management of that crop, and preparation of the produce for manufacturing purposes. The deputation consisted of the Earl of Erne, Lord Monteagle, Lord Naas, Sir James Stronge, Bart., Sir R. A. Ferguson, Bart., M.P., Mr. J. G. Marshall, M.P., Mr. Conolly, M.P., Mr. Russell, and Mr. Macadam; and having presented to the Council, for the use of the members, a supply of copies of the seventh and tenth Reports of the Royal Flax Society, they informed the Chairman that their secretary, Mr. Macadam, would, with his permission, read to the Council a statement relative to the culture and preparation of Flax, signed by their President, the Marquis of Downshire.

The Chairman expressed the great pleasure it gave him to receive, on the part of the Council, the deputation who had on that occasion favoured them with their attendance. The valuable labours of the Flax Society were well known and appreciated throughout the United Kingdom; and Mr. Macadam's excellent Prize Essay on Flax, in the Journal of the Royal Agricultural Society of England, did him great honour, and was often referred to by the Chairman, with pleasure and satisfaction.

The Chairman then desired Mr. Macadam to proceed in reading the statement to which reference had been made by the deputation. As this document has already been printed for circulation, it will only be necessary, in this place, to enumerate its leading points:—

1. That although established especially in reference to the cultivation of Flax in Ireland, it has always considered the question a national one, affecting the whole of the British Empire.
2. That the Society feels anxious to make its long experience and practical knowledge available in directing those who have now become aware of the importance of the subject.
3. That it may be useful, at the present time, to refer to a few leading facts connected with the history of the Society and its operations.
4. That the Society had with much surprise observed attempts lately made, by interested parties, to impugn its motives and decry its utility.
5. That the present occasion should be made available to show the injustice of those aspersions, to set agriculturists right upon points where they may have been led astray, and to urge a timely caution on those who may be carried away by plausible but unfounded statements to attach too much weight to speculative projects.
6. That the Flax Society express their hope that M. Claussen's sanguine anticipations may be realised.
7. That a notice should be taken of a few of the most important points on which erroneous information has recently been conveyed.
8. That all members of the Royal Agricultural Society of England disposed to cultivate Flax should be strongly recommended to adopt, in the first place, the most approved method now practised in Ireland, and to prepare their produce for the great and certain market offered by the linen manufacture.

On the motion of Colonel Challoner, seconded by Mr. Parkins, the thanks of the Council were voted to the Royal Flax Society of Ireland, for the favour of the statement they had then communicated to them, and the cordial co-operation they offered to the Royal Agricultural Society of England in promoting the successful cultivation of the Flax crop in England.

Among the visitors present at this meeting were, M. F. Demann, a distinguished cultivator of Flax in Belgium, introduced to the Council by Mr. Marshall, M.P.

Communications on Flax culture were received from Mr. J. Hill Dickson and Mr. Edward Oliver, and reserved for consideration at a future meeting.

The Council then adjourned to their monthly meeting on Wednesday.

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A Monthly Council was held at the Society's House, in Hanover-square, on Wednesday last, the 5th of March; present, his Grace the Duke of Richmond, K.G., President, in the Chair; Lord Southampton, Lord Portman, Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. T. Raymond Baker, Mr. Brandreth (Houghton House), Mr. Burke, Colonel Challoner, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Jonas, Mr. Kinder, Mr. Marshall, M.P., Mr. Milward, Mr. Pendarves, M.P., Mr. Sanford (Nynehead Court), Prof. Sewell, Mr. Shaw (London), Mr. Villiers Shelley, Prof. Simonds, Mr. D. Simpson, Mr. Stansfield, M.P., Prof. Way, Mr. Jonas Webb, and Mr. Wilson (Stowlangtoft).

John Villiers Shelley, Esq., of Maresfield Park, Sussex, was elected a Governor of the Society.

The following new members were elected:—

Savignon, Don Domingo, of Mexico
Pierson, James Alexander, The Guynd, Arbroath, Forfarshire
Hogg, Frederick, 40, St. James's-street, London
Bridson, Henry, West Bank, Bolton-le-Moors, Lancashire
Spencer, T. S., Hinckley, Leicestershire
Elmsall, Mansfeldt de Cardonnel, Woodlands, Doncaster
Hall, Alexander Hall, Watergate, Emsworth, Hampshire
Hopkins, W. H., Fairmile, Henley-on-Thames
Parish, Henry Headly, Chesham-street, Belgrave-square.

The names of nine candidates for election at the next meeting were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, laid before the Council the report on the accounts of the Society to the end of the previous month; from which it appeared, that the current cash-balance in the hands of the bankers, at that time, was 2571*l.* (including 749*l.* received on the life-composition account). The Chairman then laid on the table, for the information of the Council, the quarterly statement of income and expenditure, funded property, and liabilities. This report was adopted and confirmed.

Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, transmitted to the Council a report on the essays sent in to compete for the prize offered by the Society in that department, on the Farming of Northamptonshire, the Diseases of Farm Horses from mismanagement, Diseases of Cows and Sheep after parturition, the Production of Butter, Agricultural Chemistry, and the Agricultural Geology of England and Wales. Many of these essays were of an interesting character and elaborate in their details. The whole were referred, as usual, to the Journal Committee, for adjudication.

Hampton Court Meeting.—Lord Portman reported to the Council the satisfactory progress of the General Middlesex Committee in their consideration and carrying out of the details referred to them by the Council, connected with the preparations for the ensuing Country Meeting of the Society, to be held in Bushy Park, in July next. The last day for receiving entries for the Society's Show of Live Stock for breeding purposes, to be held in that Royal Park, by Her Majesty's Gracious permission, would be Saturday the 17th of May, next.

Veterinary Grant.—On the motion of Lord Portman, seconded by Mr. Shaw, the sum of 200*l.* was voted to the Royal Veterinary College, as a grant for one year; for the purpose of aiding that Institution to carry out one of the original objects of the Society; namely, "The improvement of the veterinary art, as applied to cattle, sheep, and pigs."

Trustee.—On the motion of Mr. Brandreth, seconded by Mr. Villiers Shelley, Colonel Challoner was unanimously elected one of the Trustees of the Society, in the place of Sir Francis Lawley, Bart., deceased.

On the motion of Mr. Raymond Barker, seconded by Mr. Stansfield, M.P., Mr. Pendarves, M.P. was elected to fill the vacancy in the general body of the Council occasioned by the loss of Sir Francis Lawley.

The Council then adjourned to their weekly meeting, on Wednesday next, the 12th of March.

## Calendar of Operations.

### MARCH.

Central Yorkshire: *Kirk Deighton, March* 1.—The farming operations in January and February differ so little, that we have combined the two together in one report. Since the commencement of the new year we have had no pretensions to winter; although the fall of rain has been considerable, still it cannot be called great for the season; the temperature has been mild, and we have scarcely had a frosty night or seen a flake of snow since 1850 bid us adieu. On good land the Grass is beginning to freshen. Wheat also, on dry light lands, is looking well, but not what may be termed winter-proud. With us spring sowing has not yet commenced, but owing to the open weather we have a considerable quantity of land ploughed and in readiness for operation at the proper season. On account of the rain before spoken of, the cattle have played havoc with the straw in the yards, consequently the threshing-machine has not been idle, but has yielded a continual supply of Wheat and Barley straw, which the humidity has rapidly decomposed. The markets for all kinds of grain have been very depressed throughout the season, prime samples of red Wheat selling at 4*s.* 6*d.* per bushel, and Barley as low as 26*s.* per qr. for good malting qualities. Our sheep have, up to the present time, continued to feed off the white Turnips, with an allowance of half a pound of Linseed cake per head per diem. With this our hogs are in a very forward condition, and are only waiting for the season to take off their wool, when they will be quite fit for the butcher, at weights up to 20 lbs. per qr. Throughout the last month the mutton trade has been better than during any of the preceding winter months, choice weights in wool having made 6*d.* per lb. Not so with the beef trade; it has continued to flag ever since the new year commenced. The markets have been heavily supplied with beasts, and the very best cutters have barely made 5*s.* 6*d.* per stone of 14 lbs., while inferior have scarcely reached 4*s.* 6*d.* The lean markets have been glutted with animals of every quality, and at ruinously low prices; good animals are from 15 to 20 per cent. lower than at the same time last year. Our lambing season has not yet commenced, nor do we expect it for a fortnight; the ewes are still on white Turnips, where they will remain till they begin to lamb; at no period do we remember them looking so healthy and full of condition. The pork and bacon trade was never known to be worse, and even at the extremely low price of inferior grain for feeding, porkers have been fed at a loss; consequently we have done very little in that way, but have sold our pigs out as storers, the market for which has been better than for fat ones. We have a dozen sows in the yards, which will commence farrowing the next month, and from which we expect a good stock for the stubbles and latter-end porkers. We have begun to open our stores of Swede Turnips for the use of the cattle in the yards; they have a good many rotten ones among them, not having kept so well as in former years. We are just commencing planting early Potatoes, and find the sets in good preservation; although in some kinds, Irish Cups especially, on opening the stores, we find a little of the disease. The markets are very steady. *J. S.*

## Notices to Correspondents.

"Gratten:" *Mr. Lamb* tells us the word means "stubble." And "Rowen" means "aftermath." What is the origin of these words?

Poultry: *Enquirer.* The circumstance of having five toes is not decisive against the purity of a cock claiming to be of the Cochin China breed. One would hardly decide against a hen whose eggs differed from those usually laid by her breed, from that circumstance alone; still we should not select such eggs for hatching. The early laying of pullets of different breeds can only be fairly compared by running birds against each other that were all hatched on the same day, and treated exactly alike during their growth.

Salt and Soot: *J. L.* They may each be good, and therefore it is probable that they will both be good. But we do not know of any good to be realised by mixing them. The sum of their effects separately will be equal to the amount of effect produced by them in mixture; 2 cwt. of salt, and 30 bushels of soot, may be a good dressing per acre. Apply broadcast in wet weather, after the young plant has appeared.

Small Farms: *E T.* "M. S." will refer to your case again next week. But he would wish to know what are the restrictions under which you labour. It is obviously impossible for us to answer your question about Mr. Mechi publicly. He has correspondence enough without any encouragement by us.

Spanish Fowls: *E E W.* The imported birds are something curious, and perhaps valuable. Will you do us the favour to write privately on the subject? *D.*

## Markets.

COVENT GARDEN, March 8.

Black Grapes have not altered since our last report; but white ones are a trifle dearer. Pine-apples fetch good prices, and the supply of good dessert Pears is limited. English Apples are scarce. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. A few forced Strawberries have made their appearance, but there is little demand for them. Vegetables of all kinds are abundant and good. The trade for French Beans and Cucumbers is improving. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Oranges, per doz., 9d to 2s |
| Grapes, Portugal, p. lb, 8d to 1s | — per 100, 6s to 10s |
| Pears, per doz., 2s to 5s | — Seville. p. 100, 7s to 14s |
| — per half sieve, 6s to 15s | — — p. doz., 1s to 2s 6d |
| Apples, dessert, per bushel, 6s to 10s | Chestnuts, per peck, 2s to 5s |
| — kitchen do., 5s to 8s | — per 100, 9d to 1s 6d |
| Lemons, per doz., 1s to 2s | Nuts, Barcelona, per bush, 20 to 22s |
| Almonds, per peck, 6s | — Brazil, p, bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 70s to 75s |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 8d |
| Cabbages, per doz., 6d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bun., 1s 6d to 2s 6d | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Endive, per score, 1s to 1s 6d |
| Asparagus, per 100, 2s to 8s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 6d to 1s 6d | Horse Radish, p. bundl., 1s to 4s |
| Potatoes, per ton, 60s to 100 | Red Beet, per doz., 6d to 1s |
| — per cwt., 3s to 6s | Mushrooms, p. pot., 6d to 9d |
| — per bush., 1s 6d to 3s | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. doz. bundl., 1s to 2s | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 4s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Carrots, per doz., 2s to 5s | — Roots, p. bundl. 9d to 1s |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, per bunch, 2d to 4d |
| Onions, p. bunch, 3d to 4d | Mint, green, per bunch, 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per doz., 9d to 1s | Corn Salad, p. hf. sieve, 1s to 1s 6d |

POTATOES.—Southwark, March 3.

The Committee report that notwithstanding the cold weather at the end of the past week, we have had no improvement in price, as the fresh arrivals have been more than equal to the demand. The following are the prices:—York Regents, per ton, 70s. to 90s.; Scotch do., 60s. to 70s; ditto Cups, 50s. to 70s.; Cambridgeshire and Lincoln Regents, 50s. to 75s.; French whites, 50s. to 60s.

HAY.—Per Load of 36 Trusses.

Smithfield, March 6.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Clover ... ... ... | 70s to 80s | |
| Inferior ditto ... | 60 | 70 | Second cut ... ... | 63 | 70 |
| Rowen ... ... ... | 60 | 65 | Straw ... ... ... | 24 | 28 |
| New Hay ... ... | — | — | | J. Cooper. | |

The supply short, but quite sufficient for the demand.

Cumberland Market, March 6.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Inferior ... ... ... | 65s to 72s | |
| Inferior ditto ... | 55 | 68 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 26 | 30 |
| Old Clover ... ... | 78 | 84 | | Joshua Baker. | |

Whitechapel, March 6.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 70s to 75s | | New Clover ... ... | —s to —s | |
| Inferior ditto ... | 60 | 65 | Inferior ditto... ... | 63 | 68 |
| New Hay ... ... | — | — | Straw ... ... ... | 24 | 27 |
| Old Clover ... ... | 75 | 84 | | | |

COAL MARKET.—FRIDAY, March 7.

Wallsend Haswell, 15s.; Wall-end Stewarts, 15s.; Wallsend Tees, 15s.; Wallsend Ridd ll, 13s.; Eden Main, 12s. 6d.; Hollywell Main, 14s.; Tanfield Moor, 13s.; West Hartley, 14s. —Ships at market, 307.

HOPS.—FRIDAY, March 7.

Messrs. Pattenden and Smith report that the market continues firm for all kinds of Hops with colour and quality.

SMITHFIELD, MONDAY, March 3.

In consequence of a small supply, the trade for Beasts is cheerful, at an advance of about 2d. per 8 lbs.; in a few instances our top quotation is exceeded. The number of Sheep is also small, and 4s. 8d. is in some cases given for choice Downs, yet too seldom to quote. Calves are plentiful enough, yet on the average we cannot quote higher. From Holland and Germany there are 351 Beasts. 900 Sheep, and 116 Calves; from Norfolk and Suffolk, 2000 Beasts; from Scotland, 300; and 300 from the northern and midland counties.

| Per st. of 8 lbs. | s | d | s | d | Per st of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords &c. | 3 | 6 | to 3 | 8 | Best Long-wools | 3 | 10 | to 4 | 2 |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Shorn | ... | ... | | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | 3 | 2 | — 3 | 8 |
| Best Downs and Half-breds | ... 4 | 4 | — 4 | 6 | Ditto Shorn | ... | ... | | |
| Ditto Shorn | ... | ... | | | Lambs | ... | ... | ... | |
| | | | | | Calves | ... | ... | 3 4 | — 4 6 |
| | | | | | Pigs | ... | ... | 2 10 | — 3 8 |

Beasts, 3317; Sheep and Lambs, 18,780; Calves, 156; Pigs, 350.

FRIDAY, March 7.

The number of Beasts is very small, consequently Monday's quotations are freely given. We have a fair average supply of Sheep; trade is scarcely so active as on Monday, but prices are no lower. Calves and Pigs are plentiful, and it is with difficulty late rates are realised. Our foreign supply is very inconsiderable. From Scotland, we have 40 Beasts; and 75 milch cows from the home counties.

| Per st. of 8 lbs. | s | d | s | d | Per st of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | ... 3 | 6 | to 3 | 8 | Best Long-wools | 3 | 10 | to 4 | 2 |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Shorn | ... | ... | | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | 3 | 2 | — 3 | 8 |
| Best Downs and Half-breds | ... 4 | 4 | — 4 | 6 | Ditto Shorn | ... | ... | | |
| Ditto Shorn | ... | ... | | | Lambs | ... | ... | ... | |
| | | | | | Calves | ... | ... | 3 4 | — 4 6 |
| | | | | | Pigs | ... | ... | 2 10 | — 3 8 |

Beasts, 531; Sheep and Lambs, 3390; Calves, 240; Pigs, 300.

MARK LANE.

MONDAY, MARCH 3.—The supply of English Wheat to this morning's market was small, and disposed of rather more easily on the terms of this day se'nnight. Business in free foreign continues limited at late prices. The arrival of Polish Odessa cargoes on the coast for orders is probably the largest remembered; holders, however, decline at present to submit to an adequate reduction in price.—The value of Barley, Beans, Peas, and Oats remains unaltered, but the sale of the last is somewhat heavy to-day.—The Flour trade is not worse than last week.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | —46 | Red ..... | 36 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —40 |
| — — Talavera ..... | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 3 | —52 | | | |
| Barley, grind. & distil., 17s to 21s...Chev | 26 | —30 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | 17 | —22 | Malting . | 22 | —24 |
| Oats, Essex and Suffolk ..... | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —23 | Feed ..... | 16 | —21 |
| — Irish .....Potato | 17 | —21 | Feed ..... | 16 | —18 |
| — Foreign .....Poland and Brew | 17 | —21 | Feed ..... | 15 | —18 |
| Rye ..... | 22 | —24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20s to 26s .....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... Wind- | 37 | —43 | Longpod | 27 | —33 |
| — Foreign .....Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler | 24 | —26 | Suffolk.. | 26 | —28 |
| — Maple.....26s to 28s .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 16 | —23 | Per sack | 26 | —33 |

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

| | Flour, 15455-ks — 100 brls | Wheat. Qrs. | Barley. Qrs. | Malt. Qrs. | Oats. Qrs. | Beans. Qrs. | Peas. Qrs. |
|---|---|---|---|---|---|---|---|
| English | | 3101 | 3474 | 5475 | 1457 | 1070 | 489 |
| Irish | | — | — | 50 | 3540 | — | — |
| Foreign | | 1170 | 4230 | — | 16713 | 1350 | 150 |

FRIDAY, March 7.—The arrivals of grain, either English or foreign into this port during the week have been small, and having but a thin attendance of millers, business in Wheat was exceedingly limited, and prices must be considered nominally as on Monday.—We observe no alteration in the value of spring corn, with the exception of rather more firmness in Oats. —The prices of Flour remain as last quoted, with a moderate demand.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Jan. 25..... | 38s 5d | 22s 7d | 16s 7d | 28s 2d | 26s 4d | 27s 5d |
| Feb. 1 ..... | 37 10 | 22 9 | 17 7 | 22 7 | 25 11 | 26 6 |
| — 8..... | 38 1 | 22 10 | 16 9 | 23 11 | 25 10 | 26 0 |
| — 15..... | 37 8 | 22 11 | 16 2 | 23 10 | 25 5 | 26 10 |
| — 22 ..... | 37 2 | 22 10 | 15 11 | 23 8 | 25 4 | 27 1 |
| March 1 ..... | 36 11 | 22 7 | 16 0 | 24 4 | 25 3 | 25 8 |
| Aggreg. Aver. | 37 9 | 22 9 | 16 4 | 23 7 | 25 8 | 26 7 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | JAN. 25. | FEB. 1. | FEB. 8. | FEB. 15. | FEB. 22. | MAR. 1. |
|---|---|---|---|---|---|---|
| 38s 5d | — | ... | ... | ... | ... | ... |
| 38 1 | ... | ... | ... | ... | ... | ... |
| 37 10 | ... | ... | ... | ... | ... | ... |
| 37 8 | ... | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | ... | ... | ... |
| 36 11 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, MARCH 4.—The supplies of grain and Flour from Ireland this week are small; those from foreign ports are rather large. No change has occurred in the value of any article during the week, at the same time we have experienced a general languid demand. The corn market this morning was again devoid of animation. The sales of Wheat were limited, and quotations remain precisely as on this day se'nnight. Barrel Flour was neglected, but French sack met a fair demand, without material change in the late value. Oats and Oatmeal were in moderate request, the former at full, but the latter at barely so good prices as on Tuesday last. Barley, Beans, and Peas were very little dealt in. There was a fair inquiry for Indian Corn, but it did not result in any extent of business, and prices stand unchanged. —— FRIDAY, FEB 28.—Supplies of Wheat and Flour still come freely from foreign parts, but principally from France, whence we have received since Tuesday about 3000 quarters of the former, and upwards of 7506 sacks of Flour. The market this morning was again dull, and Wheat and Flour were difficult to move, but there was no change in the prices of Tuesday. Indian Corn supported late rates, with a fair inquiry for shipments to Ireland. Barley, Beans, and Peas were unaltered in value.


GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoys's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

6 by 4 to 6½ by 5 ... 12s. each | 9 by 7 to 10 by 8 ... 15s. each.
6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,,

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 3s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

16 oz. from 2d to 3¼d. per foot.
21 oz. ,, 3¼d. 5d. ,,
26 oz. ,, 3¾d. 7½d. ,,
32 oz. ,, 4d. 9½d. ,,

SHEET SQUARES.

In boxes of 100 feet. £ s d
Under 6 by 4 ... ... 0 8 6
6 by 4 and 6½ by 4½ ... 0 13 0
7 by 5 and 7½ by 5½ ... 0 15 0
8 by 6 and 8½ by 6½ ... 0 17 6
9 by 7 and 10 by 8 ... 1 0 0

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2¾d. per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 12s. 0d. | 8 by 6 and 8½ by 6½ ... 15s. 0d.
7 by 5 ,, 7½ by 5½ ... 13 6 | 9 by 7 ,, 10 by 8 ... 16 6

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6s.; 6 tubes, 8s. 6d. GLASS SHADES.—Estimate, and List of Prices forwarded on application

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90l.; 21 feet long by 13 feet wide, 50l.; 12½ feet long by 10 feet wide, 30l. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3 light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost, Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½d., 1 yard wide, 3d. 2 yards, or 6d., 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1l. per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY,
Incorporated by Act of Parliament, 12 and 13 Vict., c. 91.

*Directors.*

HENRY KER SEYMER, Esq., M.P., Hanford, Dorset—Chairman.
JOHN VILLIERS SHELLEY, Esq., Maresfield Park, Sussex—Deputy-Chairman.

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|---|---|
| John C. Cobbold, Esq., M.P. | Edward J. Hutchins, Esq., M.P. |
| William Cubitt, Esq. | Samuel Morton Peto, Esq., M.P. |
| Henry Currie, Esq., M.P. | Colonel G. A. Reid, M.P. |
| Thomas Edward Dicey, Esq. | William Tite, Esq., F.R.S. |
| William Fisher Hobbs, Esq. | William Wilshere, Esq. |

The Company is empowered to execute—1. All works of Drainage (including Outfalls through adjoining Estates), Irrigation, Reclaiming, Enclosing, and otherwise improving Land.

2. To erect Farm Homesteads, and other Buildings necessary for the cultivation of Land.

3. To execute Improvements, under contract, with Commissioners of Sewers, Local Boards of Health, Corporations, Trustees, and other public bodies.

4. To purchase Lands capable of Improvement, and fettered by restrictions of Entail, and having executed the necessary works, to resell them with a title communicated by the Company's Act.

All owners of Entailed Estates, Trustees, Mortgagees, Corporations, Incumbents, Life Tenants, and other persons having only limited interests may obtain the use of the Company's powers to carry out every kind of permanent Improvement, either by the application of his own or the Company's funds, secured by a yearly charge on the property improved.

Proposals for the execution of Works to be addressed to 52, Parliament-street, London. WILLIAM CLIFFORD, Secretary.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

REGISTERED ROLLER MILL for Crushing Linseed, Oats, Malt, Barley, &c., and Breaking Beans and Peas. Manufactured by E. R. TURNER AND CO., late HURWOOD and TURNER, St. Peter's Foundry, Ipswich.

E. R. TURNER and Co. claim for their registered Roller Mill the particular attention of Agriculturists Housekeepers, and others. Besides accomplishing all the purposes of the well-known Roller Mill for crushing Corn and Seeds, by an entirely novel arrangement it is made to break Beans and Peas most effectually, and without involving any delay in adapting the Mill from one process to the other. They are very simple in construction, and therefore not liable to get out of repair; may be worked with ease by one man, and for efficiency and cheapness are superior to any Implement of the kind yet manufactured. Price complete, 9l. 9s.

E. R. T. and Co. also manufacture a Roller Mill for Crushing only, of the same size as the Registered Roller Mill, and a larger Mill, for which HURWOOD and TURNER were awarded the Royal Agricultural Society's Prize at Norwich in 1849.

Price of Small Roller Mill ... ... ... £7 10s.
,, Norwich Prize Mill, for Horse, Steam, or Hand Power ... ... ... 10 10

Delivered Free to London, Norwich, Bury St. Edmunds, and all intervening Stations. To Hull by water, and all places within 50 miles of Ipswich.

A Discount of Five per cent. allowed for cash payments.

## *SALES BY AUCTION.*

FINAL SALE.—SOUTHAMPTON.
TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to an unreserved sale, by Auction, on the premises, Page's-hill and Sidford and Above-bar Nurseries, Southampton, on TUESDAY, March 11th, and following day, at 11 o'clock, the whole of the remaining NURSERY STOCK, consisting of Evergreens, Ornamental Fruit and Forest Trees, Stove and Greenhouse Plants; together with six 2 and 3-light Boxes, Chaise Harness, Garden Pots, Flower Seeds, &c.—May be viewed, and Catalogues had, one week prior to the sale, on the premises; of Mr. BROOKS, 24, Portland-street, Southampton; at the principal Inns in the neighbourhood; Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction at the Mart, Bartholomew-lane, on THURSDAY, March 13, 1851, at 12 o'clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS; also Standard and Dwarf Roses, Lancashire Gooseberries, Dahlias in dry roots, &c., the property of Mr. Wilmer, of Sunbury. May be viewed the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to offer to public competition by Auction, at the Mart, Bartholomew-lane, on FRIDAY, March 14, at 12 o'clock, about 200 choice DOUBLE CAMELLIAS, ranging from 2 to 5 feet, well set with bloom buds; a selected assortment of Standard and Dwarf Roses and American Plants, comprising fine Hybrid Rhododendrons, Ghent Azaleas, Andromedas, &c., together with a choice collection of Dahlias in dry Roots.—May be viewed the morning of sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON NURSERY.

Household Furniture, a splendid collection of Prints, in Maple Frames, Books, China, and Glass. A capital eight-day Clock, Counting-house Fittings, Iron Safe, &c.

MESSRS. PROTHEROE and MORRIS are instructed by the Administrator of the late Mr. John Smith to submit to public competition, by Auction, on the premises, Dalston Nursery, Middlesex, on TUESDAY, March 18, 1851, at 12 o'clock, the genuine HOUSEHOLD FURNITURE, consisting of Brussels Carpets, sets of Chairs, Spanish Mahogany Four-post and other Bedsteads, Goose Feather-beds, and Bedding, Chests of Drawers, Sofa, Mahogany, Loo and other Tables, Chiffonier, Barometer, &c. The erection of Sheds, a capital Four-wheel covered Van, Tumbrel Cart, and sundry effects.—May be viewed one day prior to the sale, and Catalogues had of the principal Seedsmen in London; on the premises; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FOR EXHIBITION.

Specimen Cape Ericas, Epacris, Camellias, Azaleas, New Holland Plants, First-rate Geraniums, Hot-house Plants, &c.

MESSRS. TAYLOR AND SON, UPHOLSTERERS and AUCTIONEERS, 49 Coney-street, York, have the honour to announce to the Nobility, Ladies, Gentry, and Public generally, that, in consequence of Mr. THOMAS JACKSON going abroad, they have received instructions from Messrs. JACKSON and Co., Nurserymen, Scruton, Bedale, to sell by Auction, at their Nursery, and without reserve, on WEDNESDAY, the 19th day of March, 1851, their immense and magnificent Collections of EXOTICS, rare HARDY CONIFERÆ, and Scarlet HIMALAYAN RHODODENDRONS. The Coniferæ are very handsome specimens (all from Seed, in pots), especially the Cryptomerias, the Deodaras, the Abies Douglassii, and a Californian Pinus, with foliage 11 inches in length. To persons beautifying their Hothouses, Greenhouses, Conservatories, Parks and Pleasure Grounds such an opportunity rarely occurs. Messrs. T. and SON can with confidence state that this is the grandest Collection they have ever had the honour to announce for sale. Catalogues will be ready on the 12th inst., and may be had on application to the Auctioneers, or to Messrs. JACKSON and Co. The whole of the Plants will be on view on Monday and Tuesday prior to the day of sale. The sale to commence precisely at 10 o'clock, A.M., on Wednesday the 19th of March, 1851.

N.B. The Scruton Station, on the Bedale Branch, York, Newcastle, and Berwick Railway, is only five minutes' walk from the Nursery.

Auctioneer's Office, 49, Coney-street, York.

MR. HASLAM begs to inform the public that, in consequence of the non-arrival of the steam-boat, the CAMELLIAS, ROSES, &c., advertised for sale on the 6th and 7th inst., is postponed till TUESDAY and WEDNESDAY, March 11th and 12th, when they will be sold, without reserve, at the Auction Mart. Catalogues may be had at the Mart, and of the Auctioneer, Epping.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

FARM IN HAMPSHIRE.

TO LET, a Good STOCK FARM, of about 484 acres, of which 24 acres are Water Meadow, 55 acres dry Pasture, and the remainder Arable. The Poor Rates are very low, and the Tithe amounts to about 4s. 6d. per acre. The Farm adjoins the Great London Road, and is four miles from the Andover Road Station. No applications will be received unless accompanied with satisfactory references.—For particulars, apply to Mr. HUGH RAYNBIRD, Laverstoke, Andover Road, Hants.

TO NURSERYMEN, FLORISTS, MARKET GARDENERS, AND OTHERS.

TO BE LET, with immediate possession, in Surrey, a capital walled NURSERY, of about four acres, with two Dwelling-houses, eight Greenhouses, about 50 Boxes and Lights, stocked with the most approved Plants for Covent Garden Market.—Further particulars may be had of PROTHEROE and MORRIS, American Nursery, Leytonstone, Essex.

NORTHAW, HERTS.

TO BE LET, from Michaelmas, 1851, NYN FARM, situate at Northaw, comprising an excellent Farm-house, with convenient Outbuildings, and 220 acres of Land, of which about 82 are Arable, and 138 Meadow Pasture and Homestead. The Farm is wholly exempt from tithes or tithe rent-charges, and the parochial rates are very moderate. Northaw is situate near to Potter's Bar, on the line of the Great Northern Railway four miles from Barnet and Hatfield, six from Cheshunt, and nine from Hertford. To view the Farm, apply to Mr. James, Dredge, Northaw, and for particulars and to treat for the same, to Messrs. ATTWOOD and RIGDEN, the Close, Salisbury.

FARMS AT STANTON FITZWARREN, NEAR HIGHWORTH, WILTS,
And within about four miles of the Swindon and Shrivenham Stations, on the Line of the Great Western Railway.

TO BE LET BY TENDER, from MICHAELMAS, 1851,

PARSONAGE FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. |
|---|---|---|---|
| 183 | 1 | 19 | of Arable Land, and |
| 38 | 1 | 12 | of Meadow, Pasture, and Homestead. |
| Total 221 | 2 | 31 | |

AKER'S FARM, comprising a Farm-house and requisite Outbuildings, with

| | A. | R. | P. |
|---|---|---|---|
| 225 | 3 | 32 | of Arable Land, and |
| 75 | 0 | 28 | of Meadow, Pasture, and Homestead. |
| Total 301 | 0 | 20 | |

HUNTER'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. |
|---|---|---|---|
| 50 | 2 | 37 | of Arable Land, and |
| 53 | 1 | 29 | of Meadow, Pasture, and Homestead. |
| Total 104 | 0 | 26 | |

MATTHEW'S FARM, with a Farm-house and Outbuildings, and

| | A. | R. | P. |
|---|---|---|---|
| 18 | 3 | 10 | of Arable, and |
| 57 | 3 | 30 | of Meadow, Pasture, and Homestead. |
| Total 76 | 3 | 0 | |

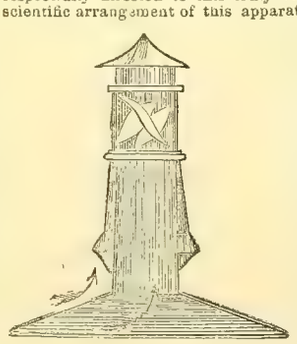
To view the Farms, and for further particulars, apply at Stanton House, near Highworth, Wilts. Sealed Tenders to be sent, addressed to the Rev. J. A. TRENCHARD, at the same place, on or before the 25th March next.

March 8.

EXCELLENT OPENING FOR A NURSERY AND SEEDSMAN.

TO BE LET.—The Nursery Lands of Rosemount, lying within the Burgh of Maxwelltown, contiguous to the town of Dumfries extending to upwards of eight acres, with the large Dwelling-house, Seed Shop, Vinery, Greenhouse, &c. The Lands contain every variety of soil suitable for Garden purposes, were all trenched to the depth of four feet by the late Proprietor, are nearly surrounded by Stone Walls, covered with Fruit Trees, and there is, on one portion of the Grounds, a choice collection of Standard Fruit Trees and Gooseberry Bushes, in full bearing. The Seedlings may be had at valuation and entry immediately. Such an opening for an enterprising tenant seldom occurs, Dumfries being well known as one of the best situations in Scotland for doing a large business in the Nursery and Seed Trade.—Apply early to JAMES MCKIE, Writer, in Dumfries.

PASCAL'S PATENT FUMIVORE AND SELF-ACTING VENTILATOR.—The attention of the public is respectfully directed to this truly valuable invention. The scientific arrangement of this apparatus entirely obviates the inconvenience and annoyance of Smoky Chimneys, arising from any cause whatever. It is also adapted to all purposes of sanitory ventilation, particularly in places of public resort. Schools, Chapels, Barracks, Banks, large retail Shops, Hospitals, Taverns, and Ships' cabins, and such other places where gas is consumed or close stoves are in use. The three vanes or fans, as shown in the section, are set in rapid motion by the ascensive force of the heated air or smoke, causing a powerful exhaustion or withdrawal of the smoke from the chimney or vitiated air generated in close rooms. It obviates the necessity of all chimney stacks or high tubes.



For particulars apply to Mr. SEPTIMUS BRAITHWAITE, 108, Great Russell-street, Bloomsbury, where contracts may be entered into for the warming by improved methods, and ventilating of any building.

SEASONING OF WOOD, &c.—The Patent Desiccating Company's drying process has been most successfully applied to the seasoning of wood as the only sure method of preventing subsequent shrinkage, and increasing its strength; it also improves the colour, and is rendered in a few days perfectly fit for use. Full particulars of the efficiency and economy of the process, with certificates from Builders, Ship-builders, Carriage-builders, Cabinet-makers, Millwrights, Pianoforte-makers, and others, of the proved advantages, forwarded on application to the Secretary, 41, Gracechurch-street, London. This plan has been also adapted to general drying, for agricultural purposes, where clean, uniform, and expeditious drying is required.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, it will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

METCALFE AND Co's NEW PATENT TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

ROYAL POLYTECHNIC INSTITUTION.—In addition to the usual programme, a Lecture on the CULTURE and APPLIANCES of FLAX, by THOMAS BEALE BROWN, Esq., on Wednesday and Saturday, at 2 o'clock; and a Lecture on the PREPARATION and BLEACHING of FLAX, by J. H. PEPPER, Esq., at a Quarter past 3 o'clock, commencing on Wednesday next, especially for Agriculturists.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties, enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, LEA and PERRINS, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "LEA and PERRINS" are upon the label and patent cap of the bottle.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cock-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 33, Virginia-street, Glasgow.

TOOTHACHE PREVENTED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1s. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 59, Fleet-street, London, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Herrmann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine comb unnecessary.

Price 3s. 6d.—7s.—Family Bottles (equal to 4 small), 10s. 6d., and double that size, 21s. per bottle. N.B. Each bottle of the genuine article has the words ROWLANDS' MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton-garden, London; and by Chemists and Perfumers.

A PERFECT SUBSTITUTE FOR SILVER.—The most effective imitation is in the Spoons and Forks, that have a body of real silver plated over the British plate. So accurate and durable are these, that twenty years' wear would not show that they were not real silver, and they do not cost one quarter the price. The fact is, the interest of the money that would be paid for real silver will buy these things oftener than they are wanted. Prices of British Plate covered with real Silver:—Table Spoons per dozen, 44s.: Dessert Spoons, ditto, 34s; Tea Spoons, ditto, 16s.; Table Forks, ditto, 40s.; Dessert Forks, ditto, 30s; Sugar Tongs, per pair, 4s. 6d.; Sauce Ladles, each, 4s. 6d.; Gravy Spoons, each, 8s. 6d.; Soup Ladles, each, 16s. 6d. They are manufactured exclusively for MECHI, 4, LEADENHALL-STREET, near the India House. The money will be returned to any purchaser who disapproves them. A very large assortment of Plated Fruit and Dessert Knives, real Sheffield Plated Goods, Table Cutlery, Small Cutlery, and other matters connected with housekeeping, of which Catalogues may be had gratis.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND,
Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 Physicians and Surgeons of the greatest eminence, as well as from many officers of both Army and Navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

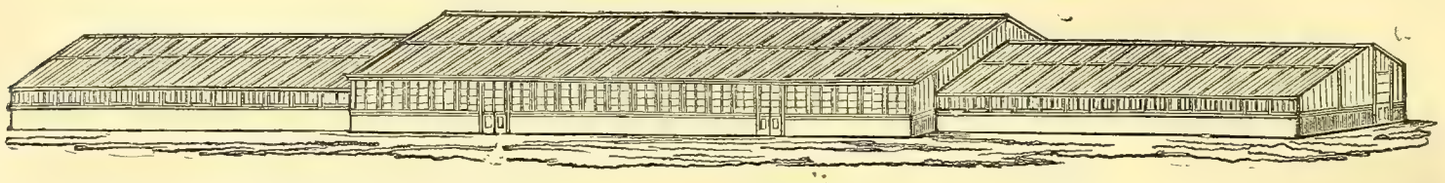
Prepared by John Fox, in boxes, at 1s. 1½d., or three small boxes in one for 2s. 9d.; and to be had, with full directions for use, of all wholesale and retail Medicine Vendors in Town and Country. The genuine has the name of "JOHN FOX" on the Government Stamp. A 2s. 9d. box cures the most obdurate corns. Ask for "Paul's Every Man's Friend."

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newbery, St. Paul's; Sutton, Bow Churchyard; Johnston, 68, Cornhill; Sanger, 150, Oxford-street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 39, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Watts, 106, Edgware-road; and retail by all respectable Chemists and Medicine Vendors in every town in England. Wholesale Agents for Ireland and Scotland, Messrs. J. and R. RAIMES and Co., Druggists, Edinburgh.

# GRAY AND ORMSON,

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Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

Extract of a Letter from Mr. FRASER.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, JOHN SHAW LEIGH, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

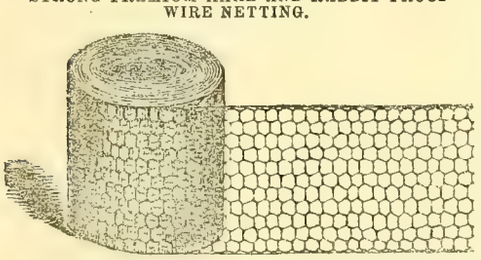
(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

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GARDENERS' CHRONICLE.—To be Sold, a Set, from the commencement of 1841 to the end of 1850 (10 Volumes in all). All well bound, in green cloth, and in perfect and clean condition. Lowest price, 8*l.* 8*s.*—Address, J. L., Office of this Paper.

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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | |
|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | £3 | 15 0 |
| Do. of 100 yards, 24 ins. wide | .. .. | 5 | 0 0 |
| Do. of 100 yards, 30 ins. wide | .. .. | 6 | 5 0 |
| Do. of 100 yards, 36 ins. wide | .. .. | 7 | 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

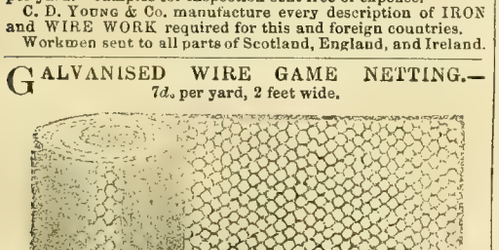
C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

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GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| ¾-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1¼-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1¼-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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PRIZE ESSAYS.—A PRIZE OF FIVE GUINEAS will be given by Mr. WILLIAM E. RENDLE, Plymouth, through the South Devon Botanical and Horticultural Society, for the best ESSAY—

"*On the Cultivation and General Management of a Kitchen Garden; including the Rotation of Cropping, and Description of the best Vegetables.*"

A PRIZE OF FIVE GUINEAS will also be given by Mr. WILLIAM E. RENDLE, through the same Society, for the best ESSAY—

"*On Heating Horticultural Structures, including the best mode of applying Bottom Heat.*"

The above to be competed for by Gentlemen's Gardeners only, and to be sent in to the Secretary not later than the 1st of September next.

Persons wishing to contribute are desired to communicate with the Secretary, JOHN C. HANCOCK, Esq., Stonehouse, Devon, as early as possible, from whom all other particulars can be obtained.

Mr. RENDLE has received a communication from a correspondent signed "Hope," without an address. He is requested to communicate with the Secretary.

---

SMART'S UNRIVALLED, DOUBLE, CRIMSON BRANCHING STOCK.

JAMES SMART, SEEDSMAN, 56, Queen-street, Glasgow, can confidently recommend the above, as the best ever offered to the public for richness of colour and fragrant odour, combined with its graceful habit of growth.—Sold in Packets, at 5*s.* and 2*s.* 6*d.* each.

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JAMES DICKSON AND SONS, NURSERY and SEEDSMEN, Hanover-street, Edinburgh, beg to inform their numerous customers and the Public that the HYACINTH BLOOMS, which took the First Prize this day at the Royal Caledonian Horticultural Society, are now ON VIEW at their Nurseries in Inverleith-row.—March 8.

---

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, March 8.

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NEW, TRUE, AND GENUINE GARDEN SEEDS.

CLARKE AND CO., SEEDSMEN and FLORISTS, 86, High-street, Borough, London, about 30 doors from the London-bridge Railway, beg respectfully to inform the public generally they have a choice and well selected stock of GENUINE KITCHEN GARDEN SEEDS of the growth of 1850, and beg to direct especial attention to the following collection, having supplied the same sorts and varieties for some years past, which have always given great satisfaction to all purchasers who have patronised us. The collection as follows, price 10*s*, sent to any Booking-office, Wharf, or Railway in London, free:—2 qts. Early and Marrow Peas, four best sorts; 2 qts. Early and Late Beans, four best sorts; 2 oz. Onion, four early and keeping sorts; 1 pt. Radish, three sorts of the Long and Turnip; 1 pt. Summer Spinach; 1 oz. Celery, two best Red and White sorts; 2 oz. Carrot, two best sorts; 2 oz. Turnip, two best sorts; 2 oz. Cabbage, four early and late sorts; ½ oz. true Cauliflower; 1 pt. Mustard and Cress; 2 oz. Broccoli, four best early and late sorts; ½ oz. Brussels Sprouts (imported); ½ oz. Crimson Beet; ½ oz. Scotch Curled Kale; ¼ oz Long Prickly Cucumber; 1 packet Windsor Prize Frame Cucumber; ¼ oz. Endive; ½ oz. Flag Leek; 1 oz. Lettuce, four Cos and Cabbage sorts; 1 oz. Myatt's Garnishing Parsley; 1 oz. Jersey Parsnip; 1 packet Tomato; 1 packet choice Melon; 6 packets useful Herbs.

C. and Co. will be happy to forward their New Catalogue of of Seeds anywhere upon application.

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ALEX. ROBERTSON, of Box-hill Nursery, Dorking, (adjoining the Box-hill Station, South-Eastern Railway,) having a Surplus Stock of the under-named articles, will supply them at very moderate prices:—Common Laurels, 2, 3, 4, 5 and 6 feet; Strong Mahonia Aquifolium; Spruce Firs, 2 to 3 feet; Beech, 4 to 6 feet; Ash, 4 feet; Walnuts, 7 to 9 feet; English and Turkey Oaks, Sycamore, Birch, 8, 9, 10, 11 and 12 feet. The whole of the above are unexceptionable, both as regards root and top. All inquiries promptly attended to.

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PINE PLANTS.—WANTED, about 500 PINE PLANTS in one or more lots. Apply by letter, pre-paid, stating particulars, and lowest price, to E. S, 1, Garden-place, Lincoln's-inn-fields, London.

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Second Edition, with 64 Engravings, price 2*s.* 6*d.* cloth, Gilt Edges,

GARDENING FOR CHILDREN.—Edited by the Rev. C. A. JOHNS, Author of "Forest Trees of Britain," &c. Price 6*d.*

GLENNY'S GARDENING FOR COTTAGERS, with a Calendar of Operations for Cottage Gardens, Treatment of Bees, Poultry, Pigs, &c. Price 1*s.*

GLENNY'S PROPERTIES OF FLOWERS AND PLANTS. Price 1*s.*

GLENNY'S GARDEN ALMANAC AND FLORISTS' DIRECTORY for 1851.

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NEW GEOLOGICAL WORK BY SIR HENRY DELABECHE.

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London: LONGMAN, BROWN, GREEN, and LONGMANS.

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"He that tilleth his land shall have plenty of bread."

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CONTENTS OF GARDENING.

The Rise and Progress of Gardening in England—The Soil and Situation Desirable for a Garden—On Enclosing and Laying-out a Garden—On the Preparation of the Soil—Manures—The Growth of a Plant from Seed—Kitchen Garden—Rotation of Crops in the Kitchen Garden—The Fruit Garden—Propagation of Fruit Trees—The Varieties of Fruits and Vegetables—The Flower Garden—Flowering Plants for Windows—On Pruning—On Weeding. APPENDIX.—List of Flowers suited to Pots in Windows—List of Tools Necessary in an Ordinary Garden.

London: GROOMBRIDGE and SONS, Paternoster-row.

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TABLES ON DRAINING, CATTLE, AND HAY.

Recently published, price 2*s.* 6*d.* cloth,

A SERIES OF TABLES ON DRAINING; showing the number of rods and of rods of Drains, in any quantity of Land, from 1 pole to 100 acres, and from 4 to 35 yards apart. Also, the number of Tiles, 12, 14, 15, 16, and 18 inches long, required for from ¼ rood or rod to 20,000 roods or rods. And directions for constructing Tanks and measuring their Contents. By JAMES STRACHAN. Second Edition, carefully revised, with Additions.

By the same Author, Seventh Edition, price 2*s.* 6*d.* cloth, of

A NEW SET OF TABLES for computing the weight of Cattle by measurement, the quantity of Hay in Ricks of different forms, the value of Land, &c., &c. To which is now added, a Concise System of FARM BOOK-KEEPING.

The Book-keeping is also sold separately, price 6*d.*

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ALL LOVERS OF A GARDEN SHOULD BUY

THE MIDLAND FLORIST, a Monthly Horticultural Magazine, price 3*d.* Conducted by J. F. WOOD, F.H.S., the Coppice, near Nottingham.

No. LI., for March, just published—a fair specimen of the work—contains: Part I.—ORIGINAL COMMUNICATIONS—Advice to true Florists—Cultivation of Annuals in Pots—Remarks on Judging Flowers—Fraudulent Showing—To keep Verbenas through the Winter—The Cottage Allotment; No. III.—The Illustrations of our Floral Publications—Perennial Herbaceous Plants; No. I.—Coppiceana; No. XII.—To destroy Scale on Fruit Trees. Part II.: NOTICES OF NEW, RARE, OR GOOD FRUITS, FLOWERS, PLANTS, TREES, AND VEGETABLES—Perennial Herbaceous Plants—Greenhouse Plants—Vegetables. Part III.: EXTRACTS, HINTS, AND RECOLLECTIONS—Mr. Punch, or the London Charivari, to the Managers of Floral Exhibitions—Culture of the Pansy for March—Victoria regia Seed—Queries—Answers to Correspondents—Calendar of Operations for March, and other useful information.

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EVERY MAN HIS OWN GARDENER, with many additions, Original Notes, and Essays on Landscape Gardening, Fountains, Fruits, Flowers, Guano, Heating, Pruning, &c., and the Catalogue of Popular Plants, brought down to the present day. By GEORGE GLENNY, F.H.S., author of "The Properties of Flowers and Plants," &c.

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# THE GARDENERS' CHRONICLE

AND

# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 11—1851.] SATURDAY, MARCH 15. [PRICE 6*d.*


INDEX.


Agricultural Society of England 171 *b*
Amherstia at Frogmore ..... 167 *c*
Ammonia, absorption of ..... 164 *a*
Barley, culture of ..... 169 *c*
Begonia fuchsioides ..... 166 *b*
Birds, British song ..... 165 *c*
Botanical Society of Edinburgh ..... 167 *a*
Calendar, Horticultural ..... 167 *c*
— Agricultural ..... 173 *b*
Capital, insufficient ..... 173 *b*
Cattle, short-horned ..... 173 *b*
Carnations in pots ..... 166 *c*
Cement for tanks ..... 166 *b*
Deodar, the ..... 166 *b*
Drainage Act ..... 170 *c*
Drainage and Turnip crop .... 173 *b*
Entomological Society ..... 167 *b*
Farming, improved ..... 170 *b*
— Scotch ..... 171 *b*
Ferns, hardy ..... 168 *c*
Floricultural Soc., National .. 167 *a*
Gardening, market ..... 165 *a*
Grafting ..... 166 *b*
Grass seeds ..... 173 *c*
Guano, Peruvian ..... 169 *b*
Gypsum, influence of ... 164 *b*—165 *b*
Heating, cement tanks for .... 166 *b*
Horticultural Society ..... 168 *c*
Law relating to Oak ..... 168 *c*
Market gardening ..... 165 *a*
Machines winnowing ..... 171 *a*
Manure, management of ..... 171 *a*
— artificial ..... 164 *a*
Paint, cheap and durable ..... 170 *c*
Poultry ..... 171 *c*
— Richardson on ..... 173 *a*
Rabbits ..... 171 *c*
Rhododendrons, Sikkim ..... 168 *c*
Roses, autumn ..... 168 *c*
Royal Dublin Society ..... 167 *c*
Seeding, thin ..... 171 *a*
Selby Agri. Soc ..... 172 *c*
Sheep, disease in ..... 173 *c*
Soils absorption of ammonia by 164 *a*
Sugar, books on ..... 168 *c*
Trade memoranda ..... 166 *b*
Vegetation, influence of gypsum on ..... 164 *a*—165 *b*
Victoria Regia at Messrs. Veitch's ..... 167 *c*
Vine borders, to cover ..... 165 *a*
Water butts, Conferva in ..... 166 *b*
Water-cresses ..... 165 *a*
Weather, the ..... 173 *b*
— late mild ..... 166 *c*



NATIONAL FLORICULTURAL SOCIETY.—OFFICES, 21, REGENT-STREET, LONDON.

The Printed Rules, &c., of the NATIONAL FLORICULTURAL SOCIETY will be forwarded to all *post-paid* applications.

JOHN EDWARDS, Hon. Sec.

THE LONDON FLORICULTURAL SOCIETY.—The Subscribers and Friends of this Society are respectfully informed, that the Days and Place of Meeting for the current year, for the Exhibition of Flowers, will be fixed in the course of the ensuing week, and will be advertised in next Saturday's *Chronicle*.

J. W. JEWITT, Hon. Sec., 45, Lime-street, London, March 15.

TO FLORISTS, NURSERYMEN, AND GENTLEMEN'S GARDENERS.

A BAZAAR, FLOWER SHOW, AND HORTICULTURAL FETE, on an extensive scale, will be held in the Grounds and Premises of Tarvin Hall, near Chester, the last week in August next. Flowers, Fruits, and Garden Vegetables of every description, then in season, may be shown, and prizes competed for. To give practical usefulness to this Exhibition, it is required that every specimen shall be labelled by the contributor with his own name and address, the name and address of the original grower, the present price of the seed or plant, and the time of planting. By this means the relative merits of the different varieties may be fairly tested, and the visitors will be thereby directed where to apply for the best descriptions. All particulars may be known on application to Dr. Brindley, or to the Gardener, Mr. Vair, Tarvin Hall, Chester. A complete Catalogue of every specimen, with full particulars as above, will be printed at Dr. Brindley's expense, for circulation.—Tarvin Hall, Chester, March 15.

VERY FINE TWICE TRANSPLANTED SPRUCE FIRS AND BRITISH OAKS.

MESSRS. WOOD AND INGRAM beg to offer SPRUCE FIRS as above, 2 to 3 feet, 30*s.*, and 3 to 4 feet, 35*s.* per 1000. These are very fine stuff, well feathered to the ground. British Oaks, 6 to 8 feet high (raised from very fine trees in Brampston Park, the seat of Lady O. B. Sparrow), at 60*s.* per 1000. These are admirably adapted for filling up old plantations, being stout in proportion to the height. If 10,000 are taken a reduction will be made.

Huntingdon Nurseries, March 15.

HOLLYHOCK SEED.

EDWARD TILEY begs to inform the lovers of that beautiful flower that he has been successful in procuring a quantity of good sound SEED of the above from an Amateur Gentleman who has one of the most superb and choice collections in cultivation; the seed having been selected with every care and attention, he can confidently recommend it. Sold at 2*s.* 6*d.* per packet, containing 150 seeds, or 5*s.* for a packet of 400 seeds.

GERMAN ASTER SEED.

Unequalled for the superiority of flower, the shape of which forms that of half a globe, and has been admired by thousands of spectators at numberless exhibitions. There are from 20 to 30 varieties, 1*s.* per packet.

SWEET-WILLIAM SEED.

Saved from 24 superb varieties. The flowers are very large, and of dwarf habit. They were much admired when in bloom, by countless spectators, and the Seed numerously ordered by them; 1*s.* per packet.

ANTIRRHINUM SEED.

E. T. being a most extensive grower of all the choicest sorts known in cultivation, has selected the Seed with great care from the finest varieties, as to colour, shape and habit of plant. There are more than 50 distinct varieties; 1*s* per packet.

DWARF ORANGE AFRICAN MARIGOLD SEED.

Unrivalled for its superior size and darkness of colour, many of the flowers last season measuring 5 inches over, and not more than 1 foot high; 6*d* per packet.

Or, if preferred, a 5*s.* packet of Hollyhock and a packet of each of the above varieties for 7*s.*

Walcheren Cauliflower Broccoli (as imported) 1*s.* 0*d.* p. packet.
Tamworth Broccoli ... ... ... ... 1 0 ,,
Wilcove Broccoli ... ... ... ... 1 0 ,,
Cole's Superb Solid Celery ... ... ... 0 6 ,,
Bath Cos Lettuce, seed true, the best and purest flavoured in cultivation ... ... ... 1 0 ,,

A remittance must accompany the order, either in cash or penny postage stamps for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

HUGH LOW AND CO. have to offer fine large Tubers of the under-named Tropæolums:—

Azureum ... ... 5*s.* 0*d.* | Edule ... ... 7*s.* 6*d.*
Brachyseras ... 1 6 | Tricolorum ... 1 6

Prices to the Trade on application.—Clapton Nursery, London.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the po', consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

ORNAMENTAL PLANTING.

C. LODDIGES AND SONS are still supplying collections of ORNAMENTAL TREES at the same extraordinary low prices for cash in consequence of their Arboretum (the largest in Europe) being broken up.

Fine specimens, 5 to 10 feet, correctly named, of the following genera: Acer, Æsculus, Alnus, Betula, Cornus, Corylus, Cotoneaster, Crataegus, Cytisus, Fraxinus, Populus, Prunus, Pyrus, Ribes, Robinia, Salix Sorbus, Spiræa, Tilia, Ulmus, &c., at 4*s.* per dozen. A selection from the above, unnamed, well adapted for Park planting, 25*s.* per 100, or 10*l.* per 1000.

A COMPLETE ARBORETUM, containing upwards of 1200 distinct species, correctly named, can be supplied for 50*l.*

Post-office orders on Hackney.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1851 *is stamped as a Newspaper, to go free by post, and may be had on application. It will be found to contain the newest and best articles which can be procured, with full description and other useful information.*

SELECT AND CHOICE FLOWER SEEDS.

The following of our best selections supplied free by post, with proper directions for sowing, heights, colours, &c., given in the Catalogue.

| | *s.* | *d.* |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7*s.* 6*d* , 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

BEAUTIFUL HARDY CYPRESS, CUPRESSUS GOVENIANA.

ADAM PAUL AND SON beg to offer handsome Seedling Plants of the above new CALIFORNIAN CYPRESS. Well feathered to the base, 1 to 2 feet, 10*s.* 6*d.* each; 2 to 3 feet, 15*s.* each. Package 1*s.* extra, carriage free to London.

N B. A large stock of Cedar of Lebanon, Cedrus Deodara, Abies morinda, and Pinus excelsa, handsome seedling Plants 1, 2, 3, 4 and 5 feet high, prices moderate, and furnished on application.—Nurseries, Cheshunt, Herts, March 15.

TO POTATO AND CUCUMBER GROWERS.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the Public that he is now ready to send out his Seedling FIFTY-FOLD KIDNEY POTATO, which has been proved and highly recommended by Dr. Lindley, Messrs. Beck and Henderson, Hurst and M'Mullen, and many others. Price 4*s.* per peck.

London Agent: Hurst and M'Mullen, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER successfully for three years, can with confidence recommend it to the Public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s.* each.

WANTED, a Contract for LAYING OUT 15 front and back GARDENS.—Apply to Mr. J. HENDREY, Architect, 4, Pancras-lane, Cheapside, London.

MORGAN'S KING OF THE DAHLIAS.—Owing to the demand for ground roots, the stock will be disposed of as follows:—Ground roots, 5 guineas each; or pot roots, 2 guineas each; Plants first week in May, 10*s.* 6*d.* each. The usual allowance to be made to the trade where a dozen are ordered. The roots are now beautifully broke. This Dahlia was named by Mr. Glenny; and for further particulars see "Glenny's Garden Almanac," page 94; and also "Glenny's Journal," Dec. 14th, 1850. In his answers to Correspondents he says, "We will never give another opinion of a Dahlia publicly, if 'The King of the Dahlias' does not prove the best of all the Crimsons; and we shall be dreadfully disappointed if it be not the best of all the Dahlias, not barring colour. We may be wrong, but if so we will never be wrong any more; and we are quite sure of its being the most extensively grown of any." A remittance will be required from unknown correspondents.

A. MORGAN, Cross-street, Oswestry, Shropshire.

JOHN WILMOT (late WILMOT and SON), begs to inform the Nobility, Gentry, and the Trade, that any orders they may honour him with will be attended to with the same punctuality as during his father's life-time.

Isleworth, March 15.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct, of last year, 10*s* 6*d.* cash. See List containing a great variety of choice new Plants for one stamp.—Nursery, Kennington, London.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited, 1*s.* packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1*s.* per oz. 6*d.* per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1*s.* per oz., 6*d.* per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens; 6*d.* per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3*d.* per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1*s.* per oz., 6*d.* per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing-cross, London.

GEORGE MILLS, 15 years Steward and Gardener to the late Baroness de Rothschild, at Gunnersbury-park, Ealing, Middlesex; 32 years F.H.S. of London; author of a Treatise on the Culture of the Cucumber, Melon, Seakale, and Asparagus; as also of a Treatise on the Culture of the Pine-apple; who has practised Horticulture, Agriculture, and Arboriculture 50 years, on the cold clay soils of Hants and Essex, as also on the light and warm soils of Bucks, Surrey, and Middlesex, begs most respectfully to offer his opinion on all subjects relating thereto, excepting Botany and Chemistry.

G. M. is induced to make the above offer from the advantage he derived in early life from the advice of a friend, his senior in practice. He has long been quite satisfied that the land under cultivation in this country, although great improvements have been made within the last 20 years by drainage, &c. &c., is still capable of greater improvement, and the hope of seeing those improvements carried out, induces him to offer his opinion thereon.

G. M. will give his opinion only where his experience will enable him to give it confidently.

Terms, 2*l.* per day, exclusive of travelling expenses; for less than a day, 1*l.*

GEORGE MILLS, Loraine Cottage, Hammersmith, Middlesex.

NEW DWARF DAHLIAS.—GAINES'S PRINCE ARTHUR; beautiful carmine, very large; 1½ ft.; 10*s.* 6*d.*

Opinion of the Gardeners' and Farmers' Journal: "*N. G., Battersea.* We received your blooms in capital condition. We congratulate you on your success. PRINCE ARTHUR: Outline good, centre fair, shape and substance of florets desirable; depth of do. amply sufficient; colour splendid carmine; size large. Prince Arthur's dwarf habit will prove a great recommendation; its greatest height 1½ ft."

GAINES'S RACHEL; crimson purple, tipped with white, large size; 3 ft.; 10*s* 6*d.*

Opinion of the Gardeners' and Farmers' Journal: "RACHEL: Very attractive outline excellent centre, good shape, substance of florets most desirable, depth amply sufficient; colour, brilliant crimson purple, showing to the greatest advantage the clear wax-like tip of French white; size truly noble."

N. GAINES begs to say he will be able to send out, the 24th March, KINGHORN'S new CALCEOLARIAS, also those raised by himself and others, which obtained Certificates of Merit.

Catalogues of Geraniums, Dahlias, Calceolarias, and other plants, may be obtained by applying to the Nursery, Surrey-lane, Battersea, near London.

N.B. A quantity of large Laurestinus and Box Trees for sale.

DILLISTONES AND CO., of the Nurseries, Sturmer, near Haverhill, Suffolk, have to offer a few hundreds of Polyanthuses, saved from named flowers, 20*s.* per 100, 3*s.* per dozen; double major white Rocket, 20*s.* per 100, 3*s.* per dozen; finest climbing Roses, 6*s* and 9*s.* per dozen; fine hardy Climbing Plants, including some beautiful new Honeysuckles, &c., 9*s.* per dozen; Herbaceous Plants, in fine collections, 30*s.* per 100; Hollyhocks, saved from fine named flowers, 15*s.* per 100, 2*s.* 6*d.* per dozen.

JOHN SCHOFIELD AND SON, KNOSTHORPE, near LEEDS, beg to offer the following NEW CARNATION:—

KNOSTHORPE PET (SCHOFIELD'S), S.B. For description, see *Florist* for September, and *Midland Florist* for October, 1850. Strong plants, per pair, 10*s.* 6*d.*

NEW PICOTEE, LADY HARWOOD (SCHOFIELD'S), purple, of medium width, and white very pure. For description, see *Florist* for September, and *Midland Florist* for October, 1850. Strong plants, per pair, 10*s.* 6*d.*

NEW PANSY, NONPAREIL (SCHOFIELD'S), golden yellow, with broad margin of rich bronze purple, warranted a fine and bold show-flower, 5*s* each.

KNOSTHORPE PET and LADY HARWOOD having been submitted to the Metropolitan judges and pronounced first class, J. S. and SON have much confidence in recommending the same to the notice of their Friends and the general Trade. The Stock is in the highest state of health, as also are the following, which they offer at a low rate: viz., 24 extra fine Show Pansies, 20*s.*; 12 pairs extra fine Show Carnations or Picotees, 12*s.*; 12 pairs extra fine Show Pinks, 10*s.*; a fine collection of Dahlias, Fuchsias, Calceolarias, Verbenas, &c., &c. A full Descriptive Catalogue of the above is now ready, and may be had free. Very select Pansy Seed, 2*s.* 6*d.* per packet.

RIVERS'S STUBBLE SWEDE TURNIP SEED.

J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green-topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker street Cattle Show; also Specimen Roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs. will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2s. per lb., carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5s., and 5 lbs., 10s., by the following agents for England:—Chilwell, near Nottingham, Mr. J. Pearson, Seedsman; Cirencester, Mr. R. F. Darby; Malton, York, N.R., Mr. J. Slater; Reading, Berkshire, Messrs Sutton; Sudbury, Suffolk, Messrs. Bass and Brown; Plymouth, Mr. Pontey; Sheffield, Messrs. Fisher and Holmes; Hull, Messrs. Dickson. For Scotland:—Aberdeen, Mr. J. Roy; Edinburgh, Waterloo-place, Messrs. Dicks n; Glasgow, Messrs. Austin and Aslan. For Ireland:—Clonmel, Mr. Higgins.

THE BLACK AUSTRIAN PINE.—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20s., 40s., to 60s per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, March 15.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... | 42s. to 60s. |
| Extra superior selected Standards ... ... ... | 18s. to 24s. |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10s. to 16s. |
| Superb do. do. (for exhibition) ... | 18s. |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50s.. |
| Good do. do. without names, per 100 | 30s. |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

Rose Nippers, of various sizes, for pruning, 2s. 6d. to 4s each. The Nippers are of an improved shape, being made so as to remove a shoot without bruising the part left; they are highly recommended as a useful addition to the implements of amateurs. Metallic Labels for pot Roses. 2s. per 100.

UNRIVALLED PRIZE ASTER, 24 Varieties mixed.—The superiority of this Aster over the imported Seed is already well known by the numerous Prizes awarded it in England and Wales, viz, 22 first Prizes; and last season has proved it is also adapted to the northern countries, having been grown in the flower-garden of Miss Hamilton, of Bothwell Park, N.B, where it was much admired as a bed among Miss Hamilton's choice collection of Plants, and gained for her gardener, Mr. Greenlees, several Prizes. To prevent disappointment, early orders are solicited, as the stock is small. By inclosing 13 postage stamps to JOHN REID, Nurseryman, &c., Weston-Super-Mare, a packet will be sent free to any part.

HUGH LOW AND CO. beg to offer established Plants of the undernamed:

| | |
|---|---|
| PHLOX, 24 superior sorts, each ... ... ... | 1s. 0d. |
| ,, 24 newer varieties, each ... ... ... | 1 6 |
| ,, 12 best Belgian varieties of last year, each | 2 6 |
| CHRYSANTHEMUMS, in great variety, per doz.... | 9 0 |
| ,, per 100, one plant of each sort ... ... ... | 50 0 |
| ,, newer varieties, per doz.... | 18 0 |

LILIPUTIAN CHRYSANTHEMUMS. — These miniature varieties have, during the past season, established themselves as great favourites, on account of their dwarf habit and profuse blooming.

12 varieties of 1849, 1s. each, or 9s. per dozen.
18 ,, of 1850, 2s. each, or 18s. per dozen.

GLOXINIAS, 6 fine Continental hybrids, 2s. 6d. each.

BLUE MIMULUS (Mimulus ringens), a fine hardy herbaceous plant, 2s. 6d. each.

A few fine round-headed SWEET ORANGE TREES, 2 feet stems, full of fruit, 15s. each.

Post-office orders payable at Hackney.

Clapton Nursery, London.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| Per 1000—s. d. | | Per 1000—s. d. | |
|---|---|---|---|
| York Regents .. .. | 10 6 | New Early Ebrington Kidney .. | 15 0 |
| American Native .. | 10 6 | Do. Ash-leaved .. | 15 0 |
| White-blossomed Kidney .. .. .. | 10 6 | Do. Frame Round .. | 10 6 |
| Soden's Early Oxford .. | 15 0 | Do. Radical .. | 10 6 |
| Early Cockney .. .. | 15 0 | Fox's Seedling .. .. | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1s.—Newington Butts, London, March 15.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15½ per cent. |
| Salesman, No. 1 ... ... ... ,, ,, | 11½ ,, |
| ,, No. 2 ... ... ... ,, ,, | 9½ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

VERY STRONG OAKS, suited for Avenues or Hedge-rows; 10 to 14 feet of fine clean growth and pruned up, to be Sold exceedingly cheap. JOHN BLYTHE, Gardener, Hoole, Chester.

TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam, 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.

Woking Nursery, March 15.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street**, Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian, and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from weeds and coarse Grasses, per bushel, 21s.; or 3s. per gallon (with instructions.)

Also PERMANENT PASTURE GRASSES mixed expressly to suit the soil at 28s. per acre, and all other Agricultural Seeds of home growth at low prices, carriage free.

*As see Messrs. Sutton's Priced List in last Page of the Gardeners' Chronicle of March* 1.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Arruncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.— DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-street, London-bridge.

HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

8 by 6 under 10 by 8.....4½d.; 10 by 8 under 14 by 10.....5d.
14 by 10 under 1½ foot, not above 20 inches long ...5½d.

| | | | | |
|---|---|---|---|---|
| 1½ foot | — | 3 feet | — | 30 — ...6 t. |
| 3 feet | — | 4 feet | — | 30 — .. 6½d. |
| 4 feet | — | 5 feet | — | 35 — ...7d. |

PACKED IN BOXES of 50 feet each.

| | |
|---|---|
| 6 by 4 and 6½ by 4½.....12s. 0d. | 8 by 6 and 8½ by 6½ .....15s. 0d. |
| 7 by 5 and 7½ by 5½ .....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 .....16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1l. per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | | |
|---|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... | 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... | 6½ by 3 |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... | 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | |
|---|---|
| 6 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each. |
| 6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,, |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 33s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

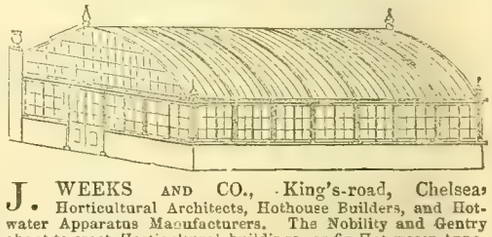
Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90l.; 21 feet long by 13 feet wide, 50l.; 12½ feet long by 10 feet wide, 30l. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost, Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½d., 1 yard wide, 3d. 2 yards, or 6d., 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

PURVEYOR TO HER MAJESTY, AND THE KING OF THE NETHERLANDS.

JOHN BAILEY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of useful and ornamental Poultry, Wild and Tame Pheasants, Domesticated Wild Fowl, Fancy Fowls' eggs for setting. BAILEY'S Registered Poultry and Pheasant Fountain, to ensure a constant supply of clean water for Gallinaceous Birds, especially adapted for Chickens, Pheasants Poults, Pigeons, &c; by its use, many of the diseases to which these birds are subject are avoided, as, although there is an ample supply of water, they cannot get into it. 1l quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 13s. 6d. Particulars, with a drawing, forwarded, per post, on application.

BECK'S SEEDLING PELARGONIUMS AND THE BEST OF OTHER RAISERS' VARIETIES. Fine plants, ready for shifting into large pots; twelve for two guineas, including carriage to London and the packing-case. This is the proper time for purchasers to procure them Catalogues may be had on application to J. Dobson, Wortoncottage, Isleworth, Middlesex. The stock was never finer, and purchasers may rely on the best selection being made for them, if they cannot choose for themselves.

T. JACKSON and SON have still on hand a limited quantity of their Improved KIDNEY POTATO, at 7s. 6d. per bushel, and Golden Dwarfs at 5s. 6d. (an excellent Early Frame Potato); for the particulars of their merits, see *Gardeners' Chronicle* of the 14th or 21st December.

T. J. and Son, having the largest stock in the country of Taxodium sempervirens, are enabled to offer them at the following low rates:—Fine plants, 2 feet high, 2s. 6d.; 3 feet, 2ls.; intermediate sizes at proportionately low prices. Forsythia viridissima, 3 feet high, full of flower-buds, 2s 6d; and all other general Nursery Stock at equally low prices.

Nursery, Kingston, Surrey, March 15.

EARLY AND CATTLE CABBAGE.

STOUT BEDDED PLANTS, of Superior true Sorts, 4s. 6d. per 1000, package included, delivered free of carriage to the Edenbridge Station, South-Eastern Railway; also CAULIFLOWER PLANTS, Early and Late, 4s. per 100; and RED CABBAGE, Stout Bedded, 1s. per 100, or 7s. 6d. per 1000. Address to John Cattell, Westerham, Kent.

SUTTON'S RENOVATING MIXTURE, consisting of Perennial CLOVERS and fine GRASSES, for improving old Pastures.

John Sutton and Sons have the pleasure of intimating that they have this season REDUCED THE PRICE of these Seeds 25 per cent., viz., to 10d. per pound—6 to 8 pounds being sufficient to mend an acre of old Pasture.

Also NATURAL GRASSES and CLOVER for permanent Pasture, mixed expressly to suit the soil, 28s. per acre.

*Goods delivered free of carriage, as see* Messrs. Sutton's *Advertisement in the last page of the* Gardeners' Chronicle *on March* 1.

ESTABLISHED 1786.

WILLIAM E. RENDLE and CO., Seed Merchants by special appointment to the South Devon Agricultural Association, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded *one thousand bushels*; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS *is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, and Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. Kemp, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2*l.* Carriage Free. (See Catalogue.)

Apply to William E. Rendle and Co., Seed Merchants, Plymouth.

WM. HAMILTON, Seedsman and Florist, 156, Cheapside, London, advertises the following for the benefit of those who may not be in possession of his Catalogue. They are really fine, and have for successive years given the highest satisfaction, being superior to the general run of German Seeds.

| | | s. | d. |
|---|---|---|---|
| 25 varieties of | HAMBRO' TEN-WEEK STOCKS | 5 | 6 |
| 12 | " " " | 3 | 6 |
| 12 " | AUTUMN or late-flowering STOCKS | 3 | 0 |
| 12 " | finest double BROMPTON STOCKS | 3 | 0 |
| 12 " | superior GLOBE ASTERS | 2 | 6 |
| 12 " | " pyramidal " | 2 | 6 |
| 16 " | Extra fine double dwarf BALSAMS | 5 | 0 |
| 6 " | double dwarf mottled " | 2 | 6 |
| 12 " | double dwarf Rocket LARKSPUR | 2 | 6 |
| 6 " | double tall " " | 1 | 6 |
| 12 " | ZINNIA ELEGANS (very fine) | 2 | 6 |
| 12 " | extra fine double HOLLYHOCKS | 3 | 6 |
| 11 distinct varieties of | WALLFLOWER | 3 | 6 |
| 10 varieties of | splendid MIMULUS | 5 | 0 |
| 12 " | ornamental GRASSES | 5 | 0 |
| 12 " | beautiful CLIMBERS | 5 | 0 |

Any of the above forwarded post free.

The following may be had in 6*d.* packets, or the whole for 5*s.* 6*d.*

Campanula littoralis
" lepida
Centranthus macrosiphon
Chelone campanulata
Cosmidium filiforme
Nemophila maculata
Nyctarinia capensis
Phlox Drummondii
Platystigma lineare
Portulacca splendens
Venidium calendulaceum
And the now popular Bellis perennis.

VEGETABLE SEEDS of the most approved kinds. Ellet-son's Superb Broccoli, Snow's Early and Late White Broccoli, Walcheren Broccoli, Brussels Sprouts, splendid dark Beet, very fine.

A General PRICED and DESCRIPTIVE CATALOGUE may be had on application.—Address, 156, Cheapside, London.

N.B. Agent for the registered Rose Girdle Label.

NEW AND CHOICE FLOWER SEEDS, GERMAN STOCKS, GERMAN ASTERS, &c.

J. C. WHEELER and SON, Nurserymen and Seedsmen, by Official Appointment, to the Gloucestershire Agricultural Association, 99, Northgate-street, Gloucester, have selected, out of a large collection of Flower Seeds, 20 of the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. Each variety is distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these 20 varieties, care has been taken to exclude all which are shy-bloomers, or have an insignificant appearance; so that the collection will comprise only those which are really showy and handsome, and which, it is believed, would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb.—The 20 Packets are neatly packed up in one paper, and will be sent free by post, to any part of the Kingdom, for 5*s.*

TO NURSERYMEN, FLORISTS, &c.

J. LINDEN, 74, Chaussee de Schaerbeek, Brussels and Luxembourg, begs to inform Amateurs and the Trade that his Catalogue of New Plants for 1851 is now ready, and may be obtained gratis of his Agents, Betham and Blackith, Custom House and General Forwarding Agents, Cox's Quay, Lower Thames-street.

J. L. solicits attention to the new and remarkable Orchideous Plants with which the Catalogue abounds, as also to the following, a description of which will be found on the first and second page:—

| | | |
|---|---|---|
| FUCHSIA VENUSTA, H.B.K. strong plants, | | 5s. to 7s. 6d. |
| FUCHSIA NIGRICANS, Linden | Ditto | 3s. |
| BOMAREA EDULIS | Ditto | 7s. 6d. |

VERBENAS.—A Set of Twelve of the most extraordinary Seedling Verbenas ever offered. As a proof of their excellence, they have been awarded 30 first-class certificates; three of them will be figured in the "Gardener's Magazine of Botany," April 1. G. S. begs to say that they are very distinct, and far surpass any previously raised. The set in strong plants, the third week in April, at 2l., or 5s. per plant. For descriptions, see Catalogue, which will be forwarded on the receipt of one postage stamp, with the description of the beautiful Fuchsia Sedonia, figured in the "Gardener's Magazine of Botany," for March. Also his new Petunias and Heliotropes. Selections, with prices of Verbenas, Fuchsias, Dahlias, Chrysanthemums, Geraniums, &c., at moderate prices.—George Smith, Tollington Nursery, Horn ey-road, Islington, London.

NEW VALUABLE FLOWER SEEDS.—Portulaca nova rosea, new Rose var., very handsome, 1s. per pkt.

| | | |
|---|---|---|
| Ipomœa Quamoclit alba, half-hardy | 1s. | " |
| " Burridgii, splendid hardy | 6d. | " |
| Saponaria Calabrica, var. multiflora | 6d. | " |

No garden should be without this most valuable Annual.

| | | |
|---|---|---|
| Martynia angularis, new and handsome | 6d. | " |
| Gloxinia, hybridised by a first-rate grower | 1s. | " |
| Calendrinia umbellata, new and handsome half hardy Annual | 1s. | " |
| A few packets of Lisianthus Russellianus | 1s. | " |
| Tropæolum speciosum, very handsome | 1s. | " |

Duncan Hairs' object, in selecting the above few Seeds from his collection, is to draw the particular attention of those who are fond of novelty and beauty. Amongst other departments of his business, D. H. prides himself on having some first-rate Seeds of Florist Flowers—viz., Calceolaria, Cineraria, Heartsease, Dahlia, Verbena, Carnations, Pink, Cockscombs, and Balsams, &c., in 6*d.* and 1*s.* packets.

German Stocks and Asters in collections, 2*s.* to 5*s.*

109, St. Martin's-lane, Charing Cross, London.

Catalogues per post free.

SEEDS FOR THE FARM, THE KITCHEN-GARDEN, AND THE FLOWER-GARDEN.

JAMES SALTER having tested the Growing Qualities of the Seeds he is now sending out, can with confidence warrant them to be as good, and as low in price, as at any respectable Seed Establishment in the Kingdom. All the most approved varieties of CUCUMBER and MELON, 1*s.* per packet. Flower Seeds forwarded (free) by post. Descriptive Lists, with instructions for sowing, sent on application.

N.B.—Just imported, a fine collection of CONTINENTAL FLOWER SEEDS; also, fine double ITALIAN TUBEROSES.

Seed Establishment 2, New Bond-street, Bath.

NEW SPRING CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD and SON have now published a New CATALOGUE OF GREENHOUSE AND BEDDING PLANTS, copies of which will be forwarded free on application.

W. W. and Son beg to offer strong plants from their superb collection of Hollyhocks, at 6*s.*, 9*s.*, and 12*s.* per dozen; Cape Heaths, 9*s.*, 12*s.*, and 18*s.* per dozen, strong and bushy; Chinese Azaleas, 9*s.*, 12*s.*, and 18*s.* per dozen, strong and bushy.

Chrysanthemums, best Continental vars, 6*s.*, 9*s.*, 12*s.*; Phloxes, 6*s.*, 9*s.*, 12*s.*

Extra plants will be presented with each order, as compensation for carriage.

CUCUMBER "PHENOMENA," AND "BROMHAM HALL" MELON.

EDWARD TILEY wishes to inform the Nobility, Clergy, Gentry, and Growers in general, that he has still a Stock of good sound Seeds of the above superb CUCUMBER and MELON, and other varieties, as advertised by him in the *Gardeners' Chronicle* Feb. 22d, 1851. Cucumber Phenomena, 2*s.* 6*d.* per packet; Bromham Hall Melon, 1*s.* 6*d.* ditto; Fleming's Trentham Hybrid Melon, 1*s.* ditto; and about 20 other good varieties of Cucumbers and Melons, at the prices mentioned in the former Advertisement.

Any quantity will be sent postage free on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by Edward Tiley, Nurseryman, Seedsman, and Florist, 12, Abbey Churchyard, Bath.

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the Stanwick Nectarine. Upon examining the young plants in Mr. Rivers's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. William Brailsford, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. William Brailsford, who, upon their receipt, will return an order upon Mr. Rivers for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

SMART'S UNRIVALLED, DOUBLE, CRIMSON BRANCHING STOCK.

JAMES SMART, Seedsman, 56, Queen-street, Glasgow, can confidently recommend the above, as the best ever offered to the public for richness of colour and fragrant odour, combined with its graceful habit of growth.—Sold in Packets, at 5*s.* and 2*s.* 6*d.* each.

BLACK BARBAROSSA GRAPE.—Fine flavoured GRAPES may be obtained until April, by growing the above truly magnificent variety, introduced from the Continent by C. T. Ward, Esq. For further particulars, see *Gardeners' Chronicle*, March 8, 1851. Good Plants from Eyes may be obtained of John Butcher, Nurseryman, Stratford-on-Avon, 10*s.* 6*d.* each. London Agent, Mr. F. Warner, Seed Merchant, 28 Cornhill.

GRAPE VINES, strong and well-established in pots, of the following kinds:—Black Hamburgh, Black Prince, Muscadine, Sweetwater, Black Cluster, and Burgundy, at 18*s.* per dozen. Discount to the trade.

Thomas Watts, Camden Nursery, Camberwell, Surrey.

MESSRS. STANDISH and NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, March 15.

The Gardeners' Chronicle.

*SATURDAY, MARCH* 15, 1851.

MEETINGS FOR THE ENSUING WEEK.

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| Monday, | March | 17 | Chemical | 8 P.M. |
| | | | Statistical | 8 P.M. |
| Tuesday, | — | 18 | Horticultural | 3 P.M. |
| | | | Linnean | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| Wednesday, | — | 19 | Microscopical | 8 P.M. |
| | | | Society of Arts | 8 P.M. |
| | | | Ethnological | 8 P.M. |
| Thursday, | — | 20 | Antiquarian | 8 P.M. |
| | | | Royal | 8 P.M. |
| Friday, | — | 21 | Philological | 8 P.M. |
| | | | Royal Institution | 8 P.M. |
| Saturday, | — | 22 | Royal Botanic | 3 P.M. |
| | | | Medical | 8 P.M. |

IT is about two years since we drew attention to the very striking figures, published by Sir Wm. Hooker, of certain species of Rhododendron found in that part of the Himalayas which bears the name of Sikkim. Since that time Dr. Hooker has sent home such ample supplies of their seeds, that the Garden at Kew has been enabled to make liberal distributions, and many species are now in this country; among the rest the glorious sort named after Lord Dalhousie. The seedlings prove, as was to be expected, very different in constitution, and no doubt represent peculiar races, of which the management will be as different as the forms. While *Dalhousieanum* promises to be as cultivable as *javanicum*, others are so miffy, to borrow a gardening term, as to render it probable that they will survive only in the hands of the most experienced cultivators.

People are already being anxious about the names of their seedlings; but they turn in vain to the work above alluded to, which evidently contains a very small portion of those whose seeds have been distributed from Kew. We have, therefore, great pleasure in announcing that a second part of this publication has appeared,* and is to be succeeded by a third. From the second part, which contains 10 exquisite plates, we learn that Dr. Hooker has now acquired no fewer than 43 species in the mountains of Sikkim alone, "many of which exceed, in the size and beauty of their flowers or their foliage, the handsomest of those which had been previously discovered." The work also contains an enumeration of the 43 species referred to. We can only spare room for a few words respecting the 10 kinds actually figured.

The first plate represents *R. Aucklandii*, a species from the lower ranges, at the elevation of 7—9000 feet. It is a bush 4—8 feet high, with large Laurel-like leaves, green beneath, and huge white flowers, remarkable for a large broad red four-cornered calyx. It occurs in dry sunny situations, and above forests of Abies Brunoniana.

Next comes *R. Thomsoni*, with loose bunches of deep blood-red flowers as large as those of *arboreum*, but with the foliage of *R. campanulatum*, except that it is not rusty on the under side. It is found in damp woods, where it straggles to the stature of 15 feet, rooting from its branches.

Third in order is *R. pendulum*, a species with small white flowers, hanging from the branches of tall Pine trees, often covered with the Usnea lichen, at an elevation of 9—11,000 feet. "Growing, as it does, an epiphyte, upon the trunks of trees, in the gloomy and almost impenetrable forests, it is a plant very difficult of detection."

The fourth species is *R. pumilum*, a delightful Alpine species, with the habit of a Pyrola, and small

* *The Rhododendrons of Sikkim-Himalaya*, &c. By Joseph Dalton Hooker, R.N. M.D.; edited by Sir W. J. Hooker, K.H. Part II., Folio. Reeve and Benham.

bell-shaped flowers of the most delicate pink. It is described as "the smallest of the Sikkim Rhododendrons." Dr. HOOKER only gathered it twice, on Alpine slopes among moorland plants, "where its elegant flowers are produced soon after the snow has melted; and there its pretty pink bells are seen peeping above the surrounding short heath-like vegetation, reminding the botanist of those of Linnæa borealis."

Then follows, in No. 5, a striking contrast, in the form of *R. Hodgsoni*—a tree with ample leaves, silvery white beneath, and great rose-coloured flowers containing 18 stamens. This and Abies Webbiana are described as the characteristic underwood and tree at the elevation of 10—12,000 feet in all the valleys of Sikkim. It will probably be found one of the most cultivable of all the species. Cups, spoons, and ladles are made of its wood. "Nor is the foliage without its allotted use. The leaves are employed as platters, and serve for lining baskets for conveying the mashed pulp of *Arisæma* root (a kind of Colocass); and the accustomed present of butter or curd is always made enclosed in this glossy foliage."

*R. lanatum*, the sixth of the plates, again reminds us of *R. campanulatum*, but the wool beneath the leaves is white or tawny, and the flowers are pale sulphur colour. It is found "on the rocky spurs of the humid mountains and gullies, at an elevation of 10—12,000 feet."

*R. glaucum*, No. 7, is a delicate little species, about 2 feet high, with scurfy leaves, and pale pinkish purple flowers. The leaves are remarkably glaucous on the under-side, and the whole plant has a powerful resinous smell. It is from "rocky depressed ridges, at an elevation of 10—12,000 feet."

The eighth kind, *R. Maddeni*, has very large white flowers, and dark green sharp-pointed leaves covered with rusty down on the under-side. It has 18—20 stamens, and a faint perfume. It forms a bush 6—8 feet high, at an elevation of 6000 feet.

Finally, the work closes with *R. triflorum*, a yellow-flowered species, with scurfy leaves, something like the plant exhibited at the last Horticultural meeting, by Mr. HUSSEY's gardener, and *R. setosum*, a Box-leaved bush, looking like a Rhodora. This last inhabits extensive moorland tracts, and rocky slopes, at the height of 13—16,000 feet, and evidently belongs to a drier climate than the preceding. Dr. HOOKER says—"It is the Tsallu of the Sikkim Bhoteas and Thibetians, who attribute the oppression and headaches attending the crossing the loftiest passes of the Eastern Himalaya to the strongly resinous odour of this and of the *R. anthopogon* Wall. (Palu of the natives.) The species certainly abounds to within a few miles of the summits of all the passes, and after hot sunshine fills the atmosphere with its powerful aroma, too heavy by far to be agreeable; and it is, indeed, a sad aggravation to the discomforts of toiling in the rarefied medium it inhabits."

It is by studying details like those we have quoted, that gardeners will learn how to manage the species they have reared; and, we trust, that in the next part of this important work, the learned and indefatigable author, whose return from India is daily expected, will furnish cultivators with an abundance of similar information.

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As we last week gave some account of recent experiments on the direct absorption of nitrogen by plants, and made some remarks on the conclusions which are attempted to be drawn from these experiments, we shall to-day say a few words upon the other side of the question generally, and especially in connection with some LATE INVESTIGATIONS OF M. MÈNE, which will be found at length in another column. Apart from the scientific or purely theoretical interest, the subject is important in its bearings on the preservation and employment of manures.

A few months since, Mr. WAY drew attention to the remarkable power which soils generally have of absorbing ammonia and its salts. It had long been believed that all porous soils possessed the power of absorbing and condensing ammonia from the air; it had likewise been long known that, in addition to this, which might be called a merely mechanical effect, certain soils possess the power of absorbing or fixing ammonia, in consequence of certain chemical agents present in them; and there was still further a number of curious isolated facts, all showing that the subject was not thoroughly investigated—facts, seeming to point to some physical or chemical property belonging to most soils, and in consequence of which they possessed these powers. Mr. WAY's experiments are very interesting, even though they cannot as yet be altogether satisfactorily explained; they show the great absorptive power which the soil has; they give us some evidence of the mode in which this power practically operates on the large scale, and, therefore, lead us to consider the effects in nature to which it must give rise.

It appears, then, that most soils possess the power of absorbing a very large quantity of ammonia, so that if strong liquid manure, or a strong solution of ammonia in water, is filtered through a portion of soil, the ammonia will be absorbed, and the liquid which passes through will be found to contain no ammonia. It is plain, therefore, that the small quantity of carbonate of ammonia which rain-water usually contains, will be absorbed by the surface soil, and that in a very heavy shower of rain, sufficient to render the soil thoroughly wet to a considerable depth, there is no fear that the ammonia thus supplied to the soil will be washed away by the continuance of the rain. It is also evident that, when land is flooded, the ammonia which the water contains will be for the most part arrested by the soil over which it flows. The great fertilising effects produced in Egypt by the waters of the Nile, in its periodical floods, were no doubt partly due to this cause; the benefit resulting not from the small quantity of slimy mud which the water left behind, but from the saline matters which it brought with it, and which were absorbed and retained by the surface of the soil as the water flowed over it. Mr. WAY's experiments show that a good soil (one which contains a reasonable quantity of clay, which is essential to this effect) has the power of thus absorbing or fixing ammonia in whatever state that substance is presented to it; it is the same whether the ammonia is in its free and uncombined form or whether it is united to some acid constituting a neutral salt. In the former case the ammonia is directly absorbed, and the water passes off entirely deprived of it; in the latter case the salt appears to be decomposed under the influence of this peculiar power of absorption, the acid with which the ammonia was previously combined uniting to lime or some other base present in the soil.

Every fact of this sort certainly seems to supply fresh evidence as to the importance of ammonia to plants. We find that it is constantly present in the air, that it is from time to time brought down by rain, and that the soil possesses the very singular property of seizing upon it and fixing it in the most perfect manner. Again, this power does not belong to all soils indifferently; they must contain a portion of clay, or they are not thus able to absorb ammonia; pure sand possesses very little power of absorbing ammonia, and a soil consisting of nothing but pure sand is hardly able to support vegetation.

There is not much novelty in M. MÈNE's experiments, the chief objects of which are, to prove that salts of ammonia act beneficially on plants, and that certain substances have the power of fixing the volatile compounds of ammonia, and of rendering them not volatile at ordinary temperatures. It is well known that gypsum and various other salts do thus fix ammonia, and they are used very largely for that purpose; the chemical principles on which they effect this are pretty well understood, and are fully explained in most treatises on chemistry; but the preceding experiments of Mr. WAY seem to throw new light upon the subject, and though, of course, they do not in any way affect the mere chemical part of the subject, they nevertheless modify the conclusions which may be drawn from such facts to a very considerable degree.

M. MÈNE's experiments merely prove that the fumes which rise from fermenting manure, and which contain carbonate of ammonia, decompose gypsum, and convert a portion of it into carbonate of lime; as we have just observed, this statement is by no means a new one, but when the author proceeds to deduce from it the general conclusion that gypsum does not in any way aid vegetation, except by thus serving to decompose the volatile salts of ammonia, and render them fixed, his statement is not only new, but likewise somewhat illogical. It is one thing to prove that gypsum acts in the way described, but it certainly does not necessarily follow that it cannot act in any other way. A little consideration will satisfy any one that both lime and sulphuric acid are substances of considerable importance to plants; and hence it is hardly probable that they are only benefited by the absorption of ammonia, and not at all by lime or sulphuric acid. It is scarcely saying too much to assert that lime and sulphur are as essential to healthy vegetation as ammonia is; and although it is possible that other salts of lime may be more advantageous than the sulphate as sources of lime, yet there does not appear, generally speaking, to be any more available source of sulphur present in the soil than the sulphuric acid of gypsum. We consider, therefore, not only that M. MÈNE's experiments do not at all bear out his assertion, but further that a great number of known facts render it highly improbable.

In DAUBENY's lectures (1841), after giving some account of LIEBIG's views respecting the action of gypsum on plants, and referring to the mode in which it is decomposed by carbonate of ammonia, he observes, that the fact must always be borne in mind, that even when ammonia is thus fixed, it is not yet brought into a fit state to serve in the nourishment of plants, but that the salt thus formed must be acted on by some substances capable of effecting its decomposition, and of slowly and gradually liberating the ammonia which it contains. He considers that the plant itself cannot possibly effect the decomposition of such a salt; but this in fact is a mere matter of conjecture, as we have no evidence whatever as to what changes may or may not take place in the organs of a living plant; and if, as some chemists believe, the sulphur of plants is derived from the decomposition of sulphuric acid itself, it is hardly too much to suppose that plants are also able to effect the decomposition of salts containing that acid. The oxidation of ammonia, and the formation of nitric acid in the organs of plants, an effect which is very frequently observed, is not in any way a more surprising result.

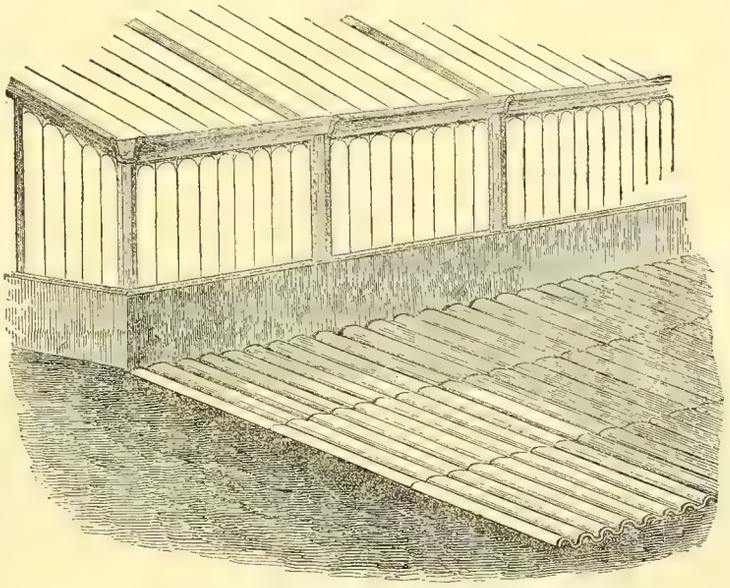
There are a great many chemical transformations constantly going on in the soil, and sometimes in plants themselves, which at first appear to be in direct opposition to all known chemical facts, and therefore to depend on some new or little known interfering cause; some of the most singular of these are observed in connection with the fixing of ammonia. Chemists say that the carbonate of ammonia, which exists in manure, decomposes gypsum or sulphate of lime; a certain interchange of acids takes place between the two salts, to which they give the name of double decomposition, and the result is, that sulphate of ammonia and carbonate of lime are formed. This is perfectly intelligible, and the more so when we are told that it is caused by the fact that ammonia has a more powerful attraction for sulphuric than it has for carbonic acid. It appears, however, that there are certain exceptions to this rule, because in some cases it seems that just the contrary effect is produced; for when sulphate of ammonia and carbonate of lime are mixed together, a partial decomposition occurs, and more or less of the volatile carbonate of ammonia is produced. The fact is, that in many of these cases of double decomposition, the affinity of the several substances for each other is so nicely balanced, and so nearly equal, that it depends almost entirely upon external circumstances whether the salts are decomposed or not; thus, for example, there are many salts which will not decompose each other if they are mixed together dissolved in a quantity of water, but which nevertheless will act on each other if they are merely added to a portion of moist earth, and then left undisturbed in a damp place for some time. BOUSSINGAULT, in his "Rural Economy," has stated several remarkable instances of this sort of action. Thus he observes that when dry chalk and sulphate of ammonia are mixed together, they exert little or no influence upon each other, neither do they decompose each other if a considerable quantity of water is added; but if a quantity of moist sand or soil is added to the mixture of the two salts, they immediately begin to decompose each other, and carbonate of ammonia is given off. Now the practical conclusion which we must draw from these facts is, that mere laboratory results, or those which chemists deduce from small experiments, should be received with considerable caution; and we must always bear in mind, that unless all the conditions and circumstances are exactly the same, it will not do to compare such results with what occurs in nature. The result of Mr. WAY's experiments shows that the soil has not merely the power of absorbing ammonia and its carbonate from water, but also that it is able to arrest ammonia when the latter is already combined with sulphuric acid; and this very remarkable effect was observed, that when a solution containing sulphate of ammonia was filtered through a portion of soil, the ammonia was arrested and retained by the soil, whilst the water which passed through carried away with it the sulphuric acid. The same curious effect was also observed with nitrate and muriate of ammonia, the ammonia being stopped by the soil, whilst the acid in each case passed through dissolved in water and combined with lime. No chemist whatever could have predicted these very curious results, which appear to be in opposition to the usually received views of chemists respecting the nature of chemical affinity; they are illustrations of the manner in which chemical affinity is sometimes overcome or set aside by the mere physical conditions of the soil, and they teach us to hesitate ere we venture to assert that this or that particular thing cannot possibly be true, because it is in direct opposition to known chemical facts. We do not wish for a moment to question the value of sound chemical knowledge, every lover of truth must have a full respect for chemical facts; but we must take care

not to confound the facts of the observer with the conclusions which he may attempt to draw from them. There are few things more fatal to the advance of sound knowledge than hasty but ingenious generalisations founded on isolated or imperfect experiments.

## COVERING VINE BORDERS.

At page 54, some remarks are made on the use of materials (in lieu of concrete) for covering fruit tree borders; and among the articles named, are slate, zinc, and galvanized iron. Zinc, I should say, would be the worst metal that could be used; being so extremely sensible of expansion and contraction. I imagine it would require a covering to protect itself against frost in winter, and the sun in summer. "Galvanized iron," (if we are to have faith in the durability of the "patent process,") I see no objection to; but if used, I should strongly recommend its being "corrugated," the shape forming what in Mr. Paxton's language would be called a series of "ridge and furrow," or, in the language of the carpenter, of "hollows and rounds."

The slight inclination given to all borders would be sufficient to bring the rain-water down the "hollows," while the "rounds" would act as so many funnels, admitting air to the surface of the border. This, I think, would be an improvement upon "drain-pipes, which have been proposed for the admission of air." If it should be considered that this arrangement would admit of evaporation from the border, when such was not wanted, an easy remedy is at hand, which consists in placing iron plates with "tungs" to them, in front of the corrugations; this would at once seal up the whole affair into air-cells, but it will be evident to every one that it might be ventilated at pleasure by raising the plates. This plan, too, would not at all interfere with the "mulching" or covering the border, as the corrugated covering could at all times be removed and replaced with the greatest facility, in short, by any two garden labourers, however inexpert; for the "sheets" could not be put on wrong, and they would hold and fasten each other down "against wind and weather."



Some idea of the effect produced will be gleaned from the accompanying sketch. I imagine its appearance could not be considered offensive; inasmuch as every shower would wash it perfectly clean; and, the season permitting, the whole might be covered with pots; the corrugated iron possessing such resistance, that a plate, 11 feet long, by 2 feet 6 inches wide, and supported only across each end, will carry a ton weight!

If it should be deemed advisable that the proposed corrugated covering should be altogether raised above and clear of the border, the same simple mode of fixing would equally allow of this; and the air above the border might be kept confined, or in circulation, at the pleasure of the gardener. *John Jones, Harper's-hill Cottage, Birmingham.*

## MARKET GARDENING ROUND LONDON.

No. XI. Water-Cresses.—When the late Sir Joseph Banks came home from circumnavigating the globe, among the first things he asked for were Water-Cresses, so highly did he value them as a purifier of the blood, and so important did he consider them in this as well as in other respects, relating to the animal economy, that he presented one of our Water-Cress growers for Covent Garden with a Banksian Medal, in order to encourage him in carrying out their cultivation. I am sorry to state, however, that notwithstanding this, and although the plant is a native of Britain, and therefore easily cultivated, it is not half so extensively grown as it should be, there being only about four or five producers of it for the London markets, the main supplies for which are obtained from Springhead, Gravesend, Kent; Waltham Abbey, Essex; and from two or three places in Hertfordshire. The Gravesend and Waltham Abbey Cress grounds are far the best, more attention being paid in these than in the other places to its cultivation; this is apparent in the robust and healthy appearance of the stem, as well as in the leaf, which is broad, and has a brownish-green aspect. The supply of Cresses to Covent Garden every market morning, according to Mr. Steptoe, an old herbalist there, may be estimated at nearly 500 dozen small bunches. In the height of the growing season every greengrocer buys them for the tables of the rich; but the great consumers of this useful herb are the middle and lower classes, who get them chiefly through the medium of street vendors, who purchase 20 times as much as the greengrocers; and by taking so many they not only obtain them cheaper in the first instance, but when they get them home they make every market bunch into two or three, and in this way pick up a tolerable living. Cheap, however, as Water-Cresses are admitted to be, I consider them much too dear; and there is room for spirited individuals to form new Cress grounds, not the beds of small rivulets, but regular plantations on large slopes, with the land cut into canals, similar to the lamb grounds in many places. There is one of those early Grass producing contrivances at Mistley Hall, nearly two miles in extent, and occupying about 30 acres. This large space is capable of being all flooded at once, and for any length of time. Now this is the kind of Cress ground that I would recommend, and in such a place Cresses should be regularly planted, and as much attention paid to their growth as to that of any other plant. In this way, instead of the Grass and rubbish choked article now sold us, we would have Cress at least as fine again as that we at present receive.

I consider that no gentleman's establishment is perfect without its Water-Cress plantation. There is hardly a park which cannot boast of one of those crystal streams for which our country is famous, and a small piece could easily be enclosed and protected from cattle for Cresses; but there should be the means of shutting the river off, in the case of floods and heavy storms. The artificial canal system mentioned above would however answer best; for floods and heavy waters might then pass on in their natural course without disturbing the Cress beds. If this plan cannot be followed, then plant the bed of some stream, driving down stakes or laying large stones, so as to impede or lessen the force of the current. They would not be so fine produced in this way, but at the same time they would be plentiful enough to answer every purpose of a small family. Of this I am certain that no gentleman would object to have a Water-Cress bed for the use of his table, knowing its produce to be one of the most efficient purifiers of the blood and the very king of salads; and as far as the London markets are concerned, I am sure that if 10,000 bunches more than they already receive were brought every market morning they would be all sold.

In forming plantations, it would be necessary to have strong planks to walk upon, a few inches higher than the plants, so as not to trample on the latter, nor get wet-footed in picking them. In case of frost, it would be necessary to have plenty of water at command, in order to cover the plants well. The latter should always be raised from seeds, as, managed in this way, they do not "run" so soon, and by sowing at different seasons, we might have fine young Cresses all the year round. "But," I hear some one say, "you have provided for the wants of the wealthy, where is the amateur's bed?" Well, few small places are without water, and nothing need be easier than to introduce it into a nicely-formed trench, two or three feet broad, and to plant the Cresses. This trench might be hooped over, and covered with Roses, or some favourite creeper, and I imagine few spots in the garden would be found more useful or ornamental.

Since writing the above, the idea struck me that Water-cresses might be cooked like the tops of Radishes, and that they would make a useful addition to our delicate culinary vegetables. I therefore tried the experiment. The first time I cooked the stems and leaves together. They required but a few minutes' boiling, but the leaves were done long before the stems. The second time I had the leaves only, with a small proportion of the top stem, boiled in a little salt, and the result was a very delicate dish; but, like Spinach, it takes a good basketful to make one. For invalids and impaired constitutions, I am of opinion that it will prove a first rate vegetable. *James Cuthill, Camberwell.*

## INFLUENCE OF GYPSUM ON VEGETATION.

By M. C. Mène.

Ever since Franklin's great experiment, gypsum or sulphate of lime has generally been considered as possessing much fertilising power, and of being of great importance in agriculture. Having paid some attention to this substance, I make known my results, in the hope that they may be found of value to the public.

1. I filled two zinc boxes with pure sulphate of lime obtained from the double decomposition of sulphate of soda and chloride of calcium; in one of these boxes I sowed some Grass seeds, in the other some Wheat. The two boxes were then placed under glass shades, in order that all external influences might be avoided: the seeds were watered every other day. At the end of a few weeks plants had come up green and healthy, as in common soil; but as they developed, their fine appearance diminished, and at the end of a fortnight they looked dried and withered.

2. In boxes similar to the first I placed a mixture of equal quantities of pure sulphate of lime, obtained as before, and clay, and sowed the same seeds as in the last experiment; the plants came up, but not nearly so well as in an unartificial soil, and they did not ripen.

3. In boxes, and under circumstances the same as before, I sowed the same seeds on dung covered over with a layer of sulphate of lime three-tenths of an inch deep. At the end of a fortnight the plants had come up and grown wonderfully; they ripened well and were magnificent specimens.

These facts, though of considerable practical importance, would not have shown in what way sulphate of lime really acts, had it not been for the following accident:

Happening to have a glass of muriatic acid in my hand one day when looking at box No. 3, I accidentally spilled some of the acid on one of the boxes, and to my great surprise the lime effervesced, and on further examination I was satisfied that the sulphate had become changed into carbonate of lime. I concluded from this that the carbonate of ammonia, given off by the decomposition of the dung, being volatilised by the heat of the sun, came in contact with the sulphate of lime, when double decomposition ensued.

To ascertain how far this was true I got some zinc pots, with bottoms pierced like a sieve; in the pots I placed some dung, then some sulphate of lime, and then I sowed some Grass seed.

When the plants had appeared and become tolerably developed, I watered them abundantly for a quarter of an hour, and in the liquid which flowed from the bottom of the pots I found sulphate of ammonia, whilst on the surface of the pots there was evidently carbonate of lime. This confirmed the view I had adopted.

I then made other experiments, which do not however bear upon the last-mentioned facts. For example, I watered Grass seeds sown in manure, in pots with pierced bottoms, with water containing one of the following substances, viz., sulphuric acid, muriatic acid, nitric acid, acetic acid, sulphate of iron, sulphate of potash, chloride of manganese, phosphate of soda, sulphate of magnesia, nitrate of soda.

With all these substances the Grass grew well, and from the bottoms of the pots I obtained salts of ammonia, which are not volatile at the ordinary temperature. From all these facts I think we may conclude—

1. That gypsum has by itself no fertilising power, and is alone useless as a manure.

2. That gypsum is only useful in agriculture when mixed with substances containing ammonia; in which case there is a double decomposition, and the ammonia is stored up for the use of the plants.

3. That for gypsum may be substituted any other salt which will fix ammonia, and render it not volatile at the ordinary temperature.

It is my intention next year to repeat these experiments on a large scale, in order to ascertain their real practical value. *Comptes Rendus.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 5.)

No. XXI. Let us now briefly comment on some of the little ailments of our winged friends. "Prevention being better than cure," we will hope that, by due care, we shall seldom have occasion to call in the aid of a doctor—my aversion always, excepting only *in extremis.**

The *diseases* to which a canary is subject, are but few; and they are, any of them, easily got rid of. The *husk* is a "dry cough," caught from an undue exposure to cold and damp. Sometimes it is brought on by giving your birds Hemp-seed; the husk or shell of which, adhering to the lining of their throat, causes inflammation. Never, therefore, give your canaries any Hemp-seed, without first bruising it. Half a dozen seeds per week, observe, are more than sufficient, under any circumstances. To cure the *husk*, feed your birds on yolk of egg, boiled hard, and diluted with a few drops of cold water. Mix with it a small quantity of sponge-cake, rubbed fine. Instead of spring water to drink, give them, for a couple of days, boiled Linseed-tea, flavoured with liquorice-root; or boiled milk, fresh each morning. By keeping your birds warm, and covering them over to prevent excitement, they will soon rally. The "pip" and other minor maladies, to which all birds are occasionally subject, will be treated of in a separate chapter. I need here only speak of "moulting."

* The accumulating correspondence which I am daily receiving, renders it needful for me to remark, once for all, that I never give advice on subjects with which I am not conversant. '*Ne sutor ultra crepidam!*' The diseases peculiar to *parrots, macaws*, and the whole of that tribe, are to me a "sealed book." The 'principle' of general treatment which I recommend for '*Song* Birds,' applies, however, in *many* points, to all the feathered race in confinement. Half the parrot-tribe are killed by over-kindness, or from an unthinking neglect of their proper and natural requirements. Their food is, for the most part, made too thin; it is seldom varied; and they are tormented into "talking," when tired Nature says "Nay!" Their masters persist in this course; their birds die; *et hinc illæ lachrymæ!*

When a canary "moults,"—which is generally in July or August, according to the heat of the weather—all you need do is, to keep him quiet and free from draughts. Being a cheerful, lively bird, there is no need to have him covered up, but do not let him be unduly excited. Give him a very small quantity of raw beef, scraped, and moistened with cold water, once a week; occasionally, a little yolk of hard boiled egg; and now and then a piece of sponge-cake, and ripe Chickweed in full flower. Nature will do the rest; and present your pet with a handsome new coat, that will keep him "spruce," and last him a full year. Mind and trim his claws, when they are too long. Use sharp scissors always; a knife, never. In handling him, let him lie passive as possible; so that your hand may not press unduly on any part of his little body. After the first operation, he will understand all about it, and cheerfully submit to be so "trimmed."

I already have taken occasion to speak of the docility of the canary, and have given several interesting anecdotes of his aptness to fall into his master or mistress' humour. To go further with our illustrations would occupy much room; and, at the same time, destroy the fond anticipations of pleasure, which no doubt many of my readers feel, at the thought of hereafter experimenting for themselves.

I will now proceed to speak of the various kinds of birds which should be selected for the purposes of breeding; and afterwards pursue the enquiry of rearing, feeding, &c., in all its ramifications; so that "he who runs may read," and he who reads may understand.

I have before noticed the GERMAN Canaries, as songsters; and confirmed the fact of there being *some* well-taught musicians amongst them. Beyond this, nothing can be said. They are *not* long-lived; and soon fall victims to the countless changes in this our variable climate. They are tender in constitution, and seldom live more than from two to three years in England. *These* birds, therefore, will not do for breeding-stock. Some English bird-fanciers (amateurs more particularly) have a great fancy for the Belgian canary. These birds are of gaunt proportions, and have a commanding presence. Their length is remarkable, and their spirits are exuberant. Their song, too, is musical, though excelled by many of our native birds. They are bred pure in Belgium; and the race is there kept up *in perpetuo*, to insure a healthy stock. *Suum cuique*: they are good nursing fathers and nursing mothers; and attend well to the wants of their offspring.

A very old friend of mine, some 10 years since, associated one of these *Jonque* birds (a male) with one of our Norwich mealy hen canaries. They took kindly to each other, and in a few short weeks became the happy parents of five remarkably-healthy children, of an undeniably beautiful plumage. The males turned out first-rate songsters; and being placed from their tender infancy under an eminent "tutor,"—the full meaning of which expressive word I shall have occasion to explain hereafter—they caused the heart of my good friend to rejoice. He was then past "the age of man;" soon afterwards he died, as he lived, surrounded by his pets. His *requiem* was chaunted by nightingales, woodlarks, black-caps, and canaries. Oh, how often have we both been "rapt," while listening to his minstrel choir!

I must not be understood as speaking in praise of the *beauty* of the Belgian canaries. They are not of fair, symmetrical proportions, by any means; but their Colossal size, and Herculean constitutions, impart increased vigour to any young birds proceeding from their family connections.

I have stated the average duration of a canary's life at from 16 to 20 years. This has reference *only* to a state of celibacy. Those birds, on whom devolve the cares inseparable from large and rapidly-increasing families, rarely live half that number of years; and it must be borne in mind, that the song of a canary, in wedded life, degenerates from the day of his espousals. He never afterwards sings so long together, nor so sweetly. In sober truth, his value as a "songster" is altogether lost. Hence the necessity, or rather the prudence, of selecting a male bird for his fair proportions, colour, and health, principally. As for song; never fear his progeny being found deficient in *this* matter. There are infallible methods of making them *all* first-rate, as I shall show.

One very great "vulgar error" that exists among the million, about the rearing of birds, requires removing. I mean their recognition of "February 14," as being the "pairing time" for birds, and the signal for "putting them up" in cages to breed. In such a climate as England, what is the necessary consequence of such a step? Why this: the hens build their nests, lay their eggs, sit their 13 days, hatch their young; and when the latter come forth, the chilliness of the weather either kills them at once, or compels them to be reared, like hothouse plants, in the close vicinity of a blazing fire. This fact fully accounts for the puny "apologies" for birds, which we see from time to time in the families where we visit.

The earliest period that common prudence would sanction for birds being "put up," is—the latter end of April. If perchance the month of May *should* prove fine and warm—we just remember such an occasional treat—why, then, your birds will thrive nobly; and you will not deplore your want of success. Nothing can be more galling to a lover of birds, after all his wariness, watchfulness, and anxiety—than to find his expectations cut off, and the whole process of incubation to have again to be gone through. I want to establish a *rational* mode of proceeding, and I trust my readers will kindly bear with me, while I so earnestly urge its adoption. *William Kidd, New Road, Hammersmith.*

## GRAFTING.

No. XI. SECTION IV.—GENERAL OBSERVATIONS ON BUDDING. (*Greffes en écusson.*)—Previously to commencing the operations connected with this series, it is necessary to examine the stocks, in order to ascertain whether their bark can be easily detached from their alburnum, otherwise we must wait till it will do so. Other considerations, not less important, merit some details, because on them the success of the buds generally depends. Calm weather should always be chosen; and the work should be suspended when the sun raises the thermometer above 78° of Fahrenheit.

We ought also to avoid performing the operation when the sky threatens rain; for this, in falling on the budded plants, filters into the wounds made in them, and mixing with the sap, instantly decomposes it, and the bud consequently perishes in a few days; thus rendering it necessary to recommence the operation, on the return of fine weather, and always on another part of the stock analogous to the first.

Budding is practised exclusively on woody plants, either on their stems or branches, of which the size may vary from the thickness of a quill to that of 3 inches in circumference. We may insert several buds on the same stem, either for making it fork, or for other purposes; or on branches, with the view of uniting upon them various species or varieties. I shall divide the different kinds of budding into two groups; the first comprising those with pushing eyes, *œil poussant*; the second, those with dormant eyes, *œil dormant. Translated from the French of D'Albret.*

## TRADE MEMORANDA.

INFORMATION is requested concerning Mr. John Cotchier, of 20, Carlisle-street, Hulme, near Manchester. Is he related to Mr. John Crane? or is he one of the firm of James Thompson and Co., of Holroyd-place, Pendleton? Probably some of our correspondents who deal in glass can tell.

## Home Correspondence.

*Begonia Fuchsioides.*—Mr. Culverwell says that "This plant rarely flowers well until the second year of its growth." But if Mr. C. will try the following system of managing it, he will both obtain good plants and a mass of bloom the first year. In January take off cuttings, insert them in equal parts of peat and sand, and plunge them in a good bottom-heat, with a bell-glass over them. In about three weeks they will be well rooted. Then pot them off into 5-inch pots, and place them again in a little bottom-heat, where they can have a moist atmosphere. In such a situation they will grow rapidly. Never allow them to become pot bound. The soil I use is three parts strong maiden loam, two parts Mushroom-bed dung, and one part sand, with plenty of rough charcoal intermixed. In this it will grow like a Willow. By July or August we have had plants at Raby Castle 6 feet high, and 3 feet through, covered with scarlet flowers. While in their growing state the shoots should be kept pinched in, which prevents them getting too gross and woody. They push out laterals plentifully, and from August till Christmas, and even after that, they will be one mass of bloom. Up to August they were grown in a stove, and were afterwards moved to the conservatory. Some recommend stunting them in small pots to make them bloom, but that process destroys the beauty of the foliage, and causes them to produce puny flowers. The pot in which they are to flower should be about 20 inches deep by 19 inches wide, and if grown properly they will require all that room. Never allow them to want water, of which they absorb so much in summer, or they will turn yellow. Being a gross feeder, you may water with soot water, or manure water, about in the proportion of 3 quarts to a 4 gallon can. If this is rightly followed out, you will be doubly paid for all your trouble, and that, too, during the first year. After they have done blooming, remove them to the stove, where they will soon begin to grow again; but in order to keep up a stock of fine healthy plants, I would recommend them to be struck cuttings every year, and treated in the manner I have just described. *James F. Roberts, Broomhill Gardens, Tunbridge Wells, Kent, March* 11.

*Conferva in Water-Butts.*—It does not appear to be generally known that by keeping a cover on a tank or vessel holding water, Conferva will not grow. The preventive is doubtless want of light. Be that as it may, however, merely covering has the effect of keeping the water perfectly clear. Of the efficacy of this I have had ample proof. *T. N. Egleton, Holm Hill.*

*Cement for Hot-water Tanks.*—I beg to state that brick-built hot-water tanks, cased with cement, never give way if the work be properly done. I have had tanks cased with the yellow cement, 5 feet wide, 24 feet long, containing a foot deep of water heated to 180°, and they never failed. The bricks of which they were constructed were also laid in cement. *J. Waldron, Woodend, Walsall, Staffordshire.*

*The Deodar.*—About 20 years have elapsed since the introduction of the Deodar into this country, and a number of specimens of it, of about that age, are to be found in our public and private gardens. Could some of your correspondents favour us with accurate measurements of the height and girths of these, together with the length of the lateral branches, where remarkable. Any information of the nature of the soil where they thrive best, if in a high and exposed, or in a low and sheltered situation, and other incidents, would also be acceptable. Some of the older plants, which I have seen, are very healthy and thriving, and evidently suit the climate of this country well, and the tree is worth all the attention which has been bestowed upon it. I am assured, on unquestionable authority, that in its native mountains it attains to the height of from 120 to 150 feet, and one was measured by Dr. Falconer, 36 feet in circumference, without its bark, at 3 feet from the ground. This, however, was the largest he had ever seen *W. L. M.*——I quite agree with you that a Deodar, or any other at first pendulous headed tree, ought not to be staked; the sap will force the leader up, if ever the tree will carry its leader straight. I have, however, a great many plants, now some years planted (the tallest is 12 feet high), which show the greatest disinclination to hold up their heads; the pendulous part is much more than the year's growth, and quite hard and woody, and can only now be forced straight by the application of considerable force. My query is, is it any use to stake such plants? or, rather, ought I not to conclude that there is something in their position, soil, or situation which is inconsistent with their due development? Even if I stake them now, they would soon be beyond the reach of stakes. They are planted in an old garden, with a conglomerate of limestone and red sand subsoil. Large Firs grow on this soil. *J. H.*—[We should cut out such specimens.]

*Mild Winters.*—Within the last 35 years there have been four remarkably mild winters—in the years 1822, 1834, 1846, and 1851—and the mean temperatures of the respective months were as follow:

| 1822. | | 1834. | |
|---|---|---|---|
| 1821. Dec., 44.2° | | 1833. Dec., 44.4° | |
| 1822. Jan., 39.1° | Mean, 42.4°. | 1834. Jan., 44.2° | Mean, 43.7°. |
| „ Feb., 43.6° | | „ Feb., 42.4° | |
| 1846. | | 1851. | |
| 1845. Dec., 39.5° | | 1850. Dec., 39.7° | |
| 1846. Jan., 43.3° | Mean, 42.2°. | 1851. Jan., 42.7° | Mean, 40.6°. |
| „ Feb., 44.0° | | „ Feb., 39.5° | |

In comparing these four winters, that of 1834 is the warmest; innumerable notes were made at the time of the extreme forwardness of vegetation. I quote some of these. "Jan. 20th. Spring flowers, such as Crocuses, Snowdrops, Primroses, Violets, Polyanthuses, Hepaticas, &c., in full flower. There has not been (up to this date), one frosty night." "Jan. 26th. The Almond tree in flower; early shrubs look green; Peach trees ready to burst the buds; and the Blackthorn in bloom. There are many instances of the Apple tree in flower in the west of England." "Feb. 28th. The wall fruit trees in full bloom; Gooseberry bush in leaf and in blossom; hedgerows green." "March 10th. The Pear, Cherry, Plum, and Apricot tree in blossom." The mean temperature of the winter of 1822 and 1846 were nearly alike; but the winter of 1822 was stormy and wet, and very unfavourable to the progress of early vegetation. In 1846, on the contrary, the weather was dry as well as mild, with much sunshine, and was next to 1834 in productiveness. The late winter has not been so extremely mild in comparison. The Crocuses and Snowdrops, and some of the Primula tribe, were not in flower till the middle of February, and as yet there is no appearance of green leaves anywhere. In conclusion, it may be interesting to give the number of actual frosty nights during each of the winter seasons in question. In 1822 there were 13 frosty nights; in 1834, 17 frosty nights; in 1846, 19 frosty nights; and in 1851, 31 frosty nights. Now, the mean numbers of frosty nights for the season, on an average for the last 35 years, is 38; and the mean temperature 38.2°. The past winter is then only 2° and 4-10ths above the mean, and the number of frosty nights fall short by only seven. *J. Henry Belville, 9, Hyde Vale, Greenwich, Kent.*

*Carnations in Pots.*—Independently of the sameness which is observable at most exhibitions of these flowers, by reason of the mechanical arrangement of cut blooms, too close for individual inspection, there is an evil which ought to banish them altogether from general shows; and which is this:—Place a box of flowers where you may, there will be assembled a group of ardent cultivators discussing the merits of some particular flower, to the entire exclusion of those who would be content with the ordinary flower and pass on. This is a nuisance at public shows. I do not say this in disparagement of the florist, far from it; I, personally, feel too much indebted to him for the great improvement he has made to mean any remark disrespectfully. The inconvenience is just as great to him as to others; he cannot stay by his favourite flowers as he would, because he has sense enough to know that he is preventing other people from seeing them; and, however long he may seem to others to be waiting, to him the time is not half long enough;—and what is the chief cause of all this? Simply the cramming or packing of 24 flowers into a box that not more than two persons can get a sight of at a time. Whoever was the author of the new mode of showing Carnations and Picotees in their blooming pots has done an immense service to the florist as well as to visitors in general. Instead of 24 flowers being now packed in a box which occupies 2 feet of table they will even, if placed side by side, be spread along 24 feet of frontage. Instead of being so low that one must stoop to look at them, they can be arranged so that we may see them in an upright posture; and there are advantages as regards effect which can hardly be estimated too highly. Plants may be exhibited, or, rather,

Pots of plants, with three or four blooms to each, and, more than this, if there be an abundance of pots; two ranges, one behind the other, properly elevated, will produce a grandeur of effect which can only be appreciated by those who have seen the collections properly arranged at the gardens of the cultivators. But they must be exhibited as plants, split pods—which there will be when half-a-dozen flowers are shown in a pot-full of plants—must be no disqualification; they must be shown for effect, and not according to the rigid rules of a stand competition. A florist makes the best display he can at home on his own stage, he does not throw away a flower for a trumpery blemish; a split pod, or a mean petal, or one with a crack in it, which not one in a hundred would notice, will never induce him to throw away a flower at home, and why should he at an exhibition? It must be obvious to everybody that what a florist would do at his own garden to produce the greatest appearance, he would like to do in public, where the object must be the same. I hope the judges on the occasion will be men of some mind, not persons of narrow views and notions, circumscribed by the rules of private shows, and that they will judge according to the health of the plants, the freshness, the colour, the size, and general form of the flowers. If I had my will in the matter—and I mean to be among the exhibitors—not one of the strict rules which may properly govern shows strictly and exclusively for those flowers, should be allowed to disqualify a stage of plants on the occasion. I would have no hunting for a run or a split petal, no strict examination to detect a damaged pod, and it is exceedingly desirable that the growers of Carnations and Picotees should know that such would be the case, because whoever attempts to cut away the most effective of his flowers to reduce the number to such only as would meet the critical examination of a florist inclined to put the rules for showing cut specimens in force against growing plants, will assuredly destroy the noble effect of his collection. I have ventured to throw out these hints to the parties concerned, and I hope they will induce others, who think with me, to say all they can in its favour. Florists may say what they like about the discouragement of "florists' flowers," but there never was a greater error committed than admitting them to the public general exhibition upon the conditions imposed on them at private shows. Look at half-a-dozen boxes of Pansies, a favourite flower, I grant, and one which always attracts notice. What lady or gentleman ever had a chance of seeing them long enough to make a memorandum of their names? They are cut and plaistered, as it were, on flat boards, 30 within the space of a yard frontage; and independently of the disguise which the mode of showing effects, and which makes a crumpled worthless flower appear flat, by habit, the confined space shuts out 19 of every 20 from even a transient view, while the stooping posture necessary to obtain a sight of their names, makes the enquiring visitor annoy those behind him as well as others, who feel they have an equal right to make a close examination, and hopelessly wait to obtain it; suppose these were shown in pots, and the names labelled to each so as to be read, there need not be 36 varieties, for that number is always obliged to include a good many that are useless; 12 well-grown plants in pots would be a sight worth looking at, and then florists' flowers would become a feature of importance. The time has arrived when most, if not all the florists' flowers, may be found worthy of a place at public general exhibitions, but they must be shown in pots. What trumpery collections do we see at many exhibitions? Verbenas in unmeaning bunches, which give the buyer no idea of habit, a dozen blooms of consumptive Pinks crammed into a box a foot square, a few weeping spikes of measly Antirrhinums, flat boards stuck all over with blooms of Petunias, or French Marigolds, and other mean and miserable flowers, which just answer the purpose of an exhibitor to get an admission for nothing, and crowd the tables with things unworthy of a stall at market, I rejoice in the changes introduced by the Horticultural Society. I say nothing of the number and amount of prizes, these are matters which do not affect my view of the question. *Argonauta.*

## Societies.

National Floricultural, *March* 11.—A preliminary meeting of this new Society took place to-day, at 21, Regent-street, for the purpose of completing its organisation and settling the days of meeting.

Botanical, of Edinburgh, *Feb.* 13.—The President in the chair. Several donations were announced. Dr. Balfour exhibited a specimen of Polysiphonia subulifera, new to Scotland, gathered at Lamlash, Arran, in August last, by Mrs. Balfour. Dr. B. likewise exhibited, from the Palm House of the Royal Botanic Garden, a flowering specimen of Livistona chinensis, taken from a plant 38 feet high (measuring from the floor, to the extreme point of the centre leaf). The lower portion of this Palm is 5 feet 8 inches in circumference. Above this point, the stem is covered to the extent of 10 feet by the bases of the fallen leaves, above which 54 large palmated fronds are fully expanded, besides numerous in various stages of development, and so arranged as to give the head, which is 20 feet in diameter, a somewhat globular shape. This Palm has three flowering spadices upright, the largest being 3 feet 6 inches long, and more branched than the specimen exhibited. It grows in a box 5 feet square, and 5 feet 3 inches deep, in soil composed of very rough brown loam, leaf mould, and sand. The following papers were read:—

1. *On the Composition of the Ash of Armeria maritima from different localities; with Remarks on the Geographical Distribution of the species, and on the presence of Fluorine (qu. Iodine) in plants in general.* By Dr. Voelcker, of Cirencester.

2. *Remarks on Diatomaceæ found in Peat from Cantyre.* By Dr. Balfour.

3. *Notice of a Lepidodendron found in Craigleith Quarry, and of a species of Dadoxylon discovered in the sandstone of Arthur's Seat.* By Mr. A. Bryson.

4. *Notice of several new Indian Plants.* By Dr. Cleghorn.

5. *Report on the state of Vegetation in the Edinburgh Botanic Garden*, from 13th January to 13th February current. By Mr. J. M'Nab. This communication embraced the following register of the periods of flowering of plants in the open air, as compared with the dates of the first flowering of the same species (in most cases the same individual plants) in the Botanic Garden last year.

| | Date of flowering. 1851. | Date of flowering. 1850. |
|---|---|---|
| Alnus glutinosa | Jan. 13 | |
| Eranthis hyemalis | 15 | February 14 |
| Primula vulgaris | 16 | 14 |
| Corylus avellana | 16 | 16 |
| Erica herbacea | 16 | |
| Galanthus nivalis | 17 | 11 |
| Lamium album | 18 | |
| Helleborus odorus | 20 | 14 |
| Geum pyrenaicum | 20 | March 22 |
| Leucoium vernum | 20 | February 18 |
| Vinca minor | 23 | 23 |
| Symphytum caucasicum | 23 | March 14 |
| Doronicum caucasicum | 25 | 2 |
| Crocus susianus | 26 | February 16 |
| Potentilla fragariastrum | 26 | 25 |
| Vinca major | 26 | March 11 |
| Tussilago alba | 26 | 12 |
| Lamium maculatum | 26 | 19 |
| Galanthus plicatus | 28 | February 14 |
| Daphne Mezereon | 28 | 22 |
| Tussilago nivea | 28 | March 2 |
| Knappia agrostidea | 28 | February 22 |
| Cerastium Biebersteinii | Feb. 1 | |
| Arabis procurrens | 1 | |
| Rhododendron Nobleanum | 2 | |
| Arabis iberica | 3 | |
| Crocus vernus, and varieties | 3 | February 26 |
| Berberis aquifolium | 3 | |
| Kalmia glauca | 3 | |
| Cerasus Lauro-Cerasus | 3 | |
| Symplocarpus fœtidus | 4 | February 18 |
| Symphytum tauricum | 6 | |
| Pulmonaria mollis | 7 | March 11 |
| Asarum europæum | 10 | 7 |
| Iberis sempervirens | 10 | 9 |
| Helleborus lividus | 11 | |
| Aponogeton distachyon (in open-air pond) | 12 | 14 |
| Sisyrinchium grandiflorum (Warriston Lodge) | Jan. 27 | 12 |
| Tussilago hybrida (Canonmills Cottage) | 25 | |
| Orobus cyaneus (Canonmills Cottage) | Feb. 5 | |

Alluding to the mildness of the season, Mr. M'Nab exhibited flowering branches of the Gooseberry and Pear from the open wall; and stalks of Rhubarb from the open border, measuring nine inches in length, exclusive of the leaf, from the gardens at Warriston Lodge. Dr. Balfour mentioned that he had received a letter from Dr. Johnston, of Berwick, in which he states that he is now convinced that the Anacharis alsinastrum found in the Whiteadder is of foreign origin. A letter was read from Mr. Parker, Torquay, noticing various instances which had been observed of the effects of lightning on trees; and mentioning the occurrence of Tilia europæa on a promontory in the sea near to Torquay, where he supposes it to be indigenous. Mr. M'Laren exhibited specimens of Erica hyemalis, Epacris miniata and nivalis, Cactus, Primula, Cydonia japonica, &c., prepared by dipping in wax melted in a steam bath. He found that the colour of the Camellia was destroyed by the operation; but he succeeded with all the other plants he had tried. Mr. Gorrie exhibited specimens of the woods of Quercus pedunculata and sessiliflora, grown in the glen above Crichton. H. Paul, Esq., was elected a Fellow of the Society.

Entomological, *March* 3.—J. O. Westwood, Esq., President, in the chair. A considerable list of donations to the library from the Zoological Society of London, the Royal Society of Brussels, the Entomological Society of Stettin, the Berwickshire Naturalists' Club, &c., was announced, as well as a collection of insects formed at Baltimore, U.S., by Mr. R. H. Spence; presented by W. Spence, Esq., F.R.S. The President announced that a new Part of the Transactions (containing the portrait of the late Rev. W. Kirby) was ready for delivery, as well as the address delivered at the anniversary meeting by the late President. Mr. S. Stevens exhibited a specimen of the Geometra catenaria of Drury, a native of the United States, which had been forwarded to him from Worthing, where it appears to have been taken alive; likewise specimens of a beautiful Longicorn beetle from New Holland, and a Brazilian species of Curculionidæ, from various parts of the body of which small, pointed fungi had grown. Mr. Douglas exhibited a stem of the common Rumex, excavated by an insect which had formed a series of cells in the burrows, each now inhabited by a white grub, most probably the larva of Cemonus unicolor. Specimens of five exotic species of beetles which had been captured alive in a warehouse at Glasgow, were presented by Mr. John Scott. Mr. J. F. Stephens stated that all of them were reputed indigenous species. The President exhibited drawings of a larva found within a cocoon, in the pods of the common Furze, which he considered to be that of a small Hymenopterous insect, parasitic upon Oxystoma ulicis. Also drawings of the larva and pupa of a species of Apion found within the pods of Lathyrus arvensis. He likewise stated that two of the rein-deer in the Zoological collection in the Regent's-park had been attacked by a species of Œstrus, most probably Œ. Tarandi. He also read descriptions of several new exotic beetles and butterflies. A paper by Mr. H.W. Newman, of Stroud, was read upon a hornet's nest constructed within a bee-hive, which, together with the queen-hornet and her young, was presented to the Society by the writer. Mr. Stainton exhibited a remarkable Lepidopterous insect intermediate between the Tineidæ and Crambidæ taken among Rushes at Hammersmith by Mr. S. Stevens, of which he read the description. He also exhibited a new British Tinea from the neighbourhood of Liverpool. The description of another new Microlepidopterous insect, from the neighbourhood of Morpeth, was also read by Mr. Logan.

Royal Dublin, *Feb.* 28.—Mr. Bain, of the College Botanic Gardens, detailed the result of an interesting experiment which he had lately performed, with a view of propagating plants from their leaves. The experiment, which was tried upon the "Dionœa muscipula," or fly-trap, in the first instance, consisted in cutting off several leaves above the situation of the auxiliary bud, and placing them in a pot of damp moss, with a pan of water underneath, and with a bell-glass for a cover. In a few days a considerable number of tiny plants made their appearance, which, as soon as they had grown to about half an inch in length, were potted off in the usual way. Professor Allman remarked, that having watched the progress of the experiment described by Mr. Bain, he was quite satisfied as to the complete success which had attended it. Dr. Mackay, Dr. Scouler, and other gentlemen, then entered upon a discussion of the scientific questions involved in the subject, and Mr. Bain was complimented on the successful issue of his experiments. *Dublin Advocate.*

## Garden Memoranda.

Royal Gardens, Frogmore.—We learn that the beautiful Amherstia nobilis has flowered at Frogmore. The first raceme was taken to Buckingham Palace on the 7th inst., and we anticipate that another will have expanded before this time. In the cultivation of this plant, Mr. Ingram has found it necessary to constantly shade it from the rays of the sun, otherwise the young pendulous leaves are apt to get their edges scorched. It grows luxuriantly in a moist heat of from 65° to 70° Fahr.; it likes a good supply of water, and sometimes a little manure water.

Messrs. Veitch's Nursery, Exeter.—We understand that the Victoria Water Lily has been blooming here for these three weeks past, during which time it has produced 9 blossoms. To Messrs. Veitch, therefore, belongs the credit of having first flowered this interesting plant in a nursery. It occupies a tank 15 feet long by 12 feet broad, and has 7 leaves on it, some of which are reported to have been upwards of 4 feet in diameter. The water in which it grows is kept in continual motion, by means of the revolutions of a small wheel. Flower buds continue to make their appearance, and in all probability there will be a succession of blooms for some time to come.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Plants which have been recently potted should be kept in a somewhat closer atmosphere, with shading during the hottest part of the day in fine weather; but the latter should be very cautiously used, and only when the plants would be liable to flag without such protection. Heat and moisture may be applied more freely to plants which are in progress; and for the sake of economy in furnishing the necessary amount of heat, retain as much as possible of that generated during the day, by closing the house early. Let those plants in the greenhouse which are flowering, or approaching that state, have the most prominent situations, and be liberally supplied with water. Geraniums, Fuchsias, and other soft-wooded plants, whose flowers will not be required for the next two or three months, should be kept in a healthy growing state, by shifting them into larger pots, using a rich compost, in order to obtain fine plants in moderate-sized pots. Let the training of the plants have due attention, as their appearance depends as much upon this matter as upon the colour or shape of the flower. Those which are required for present display, should neither be stopped nor repotted, but nourished with occasional waterings of liquid manure, if they have filled their pots with roots. Attend to the propagation of greenhouse plants, particularly of Fuchsias, for autumn, and Chrysanthemums, for winter display. As Cinerarias go out of bloom, let them have a few weeks' partial repose, to prepare them for commencing their new growth with increased vigour. Seeds of Cinerarias, Calceolarias, Petunias, Humeas, and other soft-wooded greenhouse plants, should now be sown in a gentle heat. As Orchids show that they are about to commence their growth, they should be removed to warmer quarters, and syringed more freely. Those plants which are now growing should be encouraged by a more liberal supply of heat and moisture. Dendrobiums, Stanhopeas, and many of the stronger growing kinds, will make a good growth if suspended in a Vinery, where they will be partially shaded by the Vines; indeed, Dendrobiums generally do as well in a

late Muscat-house, all the year round, as in the Orchid-house. Camellias, which are beginning their growth, may be removed to Vineries or Peach-houses now at work; they will there set their buds early, and may be expected to flower about next November or December, at which period they are generally very acceptable.

FORCING DEPARTMENT.

PINERIES.—Where Pines are grown on the pot system, shift such plants as require it into larger pots, using three-fourths peat for the youngest plants, and increasing the proportion of loam as the plants advance towards the fruiting state. If the bottom heat is supplied by fermenting material, it will require to be frequently examined, to see that the heat does not decline, and thereby check the plants while in an active growing state. Equal caution will be necessary to prevent an excessive or burning heat, which will materially injure the roots, and very probably throw the plants into fruit, whether they are wanted or not. The object should be, to maintain, in all cases, a steady bottom-heat of 80° or 85°. A little air at the back should be left on night and day, excepting in frosty or windy weather, and for an hour or two on fine afternoons, when the pits are closed and syringed. Assist Pine-apples whose fruits are swelling, with clarified liquid manure, but give no water of any kind after they begin to change colour. The manure water should be made in a tank, and clarified by adding some lime or coarse charcoal; as soon as the liquid has become clear, it should be drawn off into a second tank, the top of which is nearly on a level with the bottom of the other one. FIGS.—Let the amount of air to Figs in progress be gradually increased, using the syringe in fine weather to keep the red spider down; but it is necessary to avoid excessive use of this instrument, as too much moisture frequently causes the swelling fruit to turn black and fall off. An equable moderate state of moisture should be maintained about the roots, as the same misfortune not unfrequently results from extremes of drought and moisture. Stop the young growths at the fourth or fifth eye, by breaking (not cutting) the points out, as they do not, if broken, bleed so much. As the stopping of the young shoots goes on, look carefully into the state of the older wood; and where they stand too thickly to admit of the healthy development of the foliage, remove a few at a time of those shoots which seem the least likely to be fruitful. This will be carrying out the principle of summer pruning, or rather thinning, to the fullest extent; and with no tree is it more requisite. It is, however, important that it be done gradually, otherwise it will cause much bleeding. We may remark here, that Figs have generally too much root room. They bear best when on a shallow soil, resting on chalk, or when the roots are confined.

FLOWER GARDEN AND SHRUBBERIES.

Those who do not possess a sufficient extent of glass frames for the propagation of Verbenas, Calceolarias, and other half-hardy bedding plants, may make a splendid display by masses of the more durable annuals, sown in the places in which they are to remain. It is not to be expected that their beauty will be as permanent as that of the plants for which they are substituted, but with proper exercise of taste in arranging them, the result will be much more satisfactory than many suppose. For white beds use Clarkia pulchella alba, Nemophila atomaria, or white Virginian Stock; for pink or rose colour, Clarkia p. rosea, Saponaria calabria, or rose Virginian Stock. For yellow or orange, few things make a more splendid bed than Eschscholtzia for summer and early autumn; but if it be more desirable to make a late autumn display, the different varieties of Marigold are excellently adapted for the purpose; although as their peculiar odour is not in general esteem, they should not be planted too close to walks which are much frequented. If the situation is not too shady, the common Mimulus moschatus is well adapted for a compact dwarf bed of yellow. For blue beds use Nemophila insignis, Lupinus nanus, the late blue Forget-me-not, or the beautiful but rather scarce Centaurea depressa. For dwarf scarlet beds, Verbenas or Geraniums are indispensable, but a taller bed may be made of Pentstemon gentianoides; the different varieties of Antirrhinum majus are also very useful, particularly the dwarf early-flowering double-white variety: the taller and later kinds may easily be made dwarfer by pegging them down. For a purple bed, nothing surpasses the branching Larkspur, if raised from seed on a border planted out 12 inches apart, and pegged down twice during the growing season. The other annuals mentioned above may be sown at once in their places, and thinned out to proper distances. Musk and Forget-me-not are hardy perennial plants, as are also the Antirrhinums and Pentstemons in most parts of the country. The time for sowing annuals must be regulated by the period at which the greatest display will be most useful; and as this will generally vary from the middle of June to the middle of September, the seeds should be sown from the middle of March to the end of June.

FLORISTS' FLOWERS.

Some people will say it is early enough to pot off Carnations and Picotees, "*we say*" if the plants are hardy, and the compost is right, the sooner the better—the amateur must however recollect that there is nothing like planting the layers *fast*; if there is plenty of drainage (which there ought to be) the layers should be well fastened in the pots. This is an essential point, but too often overlooked. Seedlings that have made extravagant growth, should be cut in, leaving one or two good leaders,—we have seen both these and seedling Pinks left "*au naturel*;" the consequence has been that 50 flower stalks have been thrown up, and the strength that ought to have been concentrated in some six or twelve flowers has been disseminated in 50—even more than that; another good result from early cutting in the side shoots is, a large quantity of healthy layers are made, and should the seedling turn out good, they prove a tolerably good harvest to the raiser. TULIPS must be taken care of; we anticipate a move in the right direction with these splendid flowers this season. Continue to give all possible air to Auriculas, and water more frequently than usual.

KITCHEN GARDEN.

The importance of appearances in everything connected with a garden should be particularly borne in mind in the management of this department, as a considerable quantity of the work is of such a nature as to give at times an unsettled and somewhat untidy appearance; and, as the majority of these operations must be performed strictly in season, they do not leave the manager power to wait till his employer's family takes up its quarters elsewhere for a short period; and he must therefore do his best to keep the place neat and orderly, without suspending the work. Much may be done towards keeping things at all times creditable, by a systematic arrangement of the work, and by a steadfast adherence to the simple rule of doing everything well which is taken in hand, and finishing it off in a workmanlike manner before proceeding to another job. This mode of carrying on the work is the most satisfactory, as it allows of concentrated force and greater energy being devoted to that which is still to be done. Let the various quarters, as they receive their crops, be neatly finished off by raking or forking the ground, straightening the edges of the paths, and cleaning and gravelling the principal alleys. After these, the main walks in the immediate vicinity, which will be free from dirty traffic for some time to come, should be cleaned, slightly surfaced with new gravel, and rolled; and at the same time the edges of all the walks should receive any attention which they may require, either by replanting, or thoroughly repairing them. If Thrift is used as an edging, about one-half of it should be taken up, and replanted every season, as it wears a very unsatisfactory appearance, if allowed to remain undivided for more than two years. Forward Cauliflowers should have some good rotten dung forked in about them, and the soil drawn up round their stems; and if the ground is not over moist, they should be watered with liquid manure. Make new plantations of Strawberries where such are required, making the soil good at least 18 inches in depth, by working in some well-rotted manure; if the soil is light, a good dressing of marl will be very beneficial.

State of the Weather near London, for the week ending March 13, 1851, as observed at the Horticultural Garden, Chiswick.

| March. | Mean Dist. from Apr. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air | | | Of the Earth | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 7 | 4 | 29.955 | 29.948 | 44 | 30 | 37.0 | 39½ | 41 | N | .00 |
| Satur.. 8 | 5 | 30.023 | 29.995 | 45 | 24 | 34.5 | 40 | 40½ | N.E. | .00 |
| Sunday. 9 | 6 | 29.955 | 29.662 | 46 | 36 | 41.0 | 40 | 41 | S. | .06 |
| Monday 10 | 7 | 29.783 | 29.550 | 48 | 31 | 39.5 | 40 | 41 | N.W. | .05 |
| Tues. .. 11 | 8 | 29.970 | 29.934 | 48 | 24 | 36 0 | 39 | 41 | N.W. | .00 |
| Wed. .. 12 | 9 | 29.737 | 29.629 | 42 | 29 | 35.5 | 39½ | 40½ | S. | .23 |
| Thurs.. 13 | 10 | 29.754 | 29.709 | 50 | 24 | 37.0 | 40 | 41 | W. | .00 |
| Average .. | | 29.884 | 29.775 | 46.1 | 28 3 | 37.2 | 39.7 | 40.8 | | .34 |

March 7—Overcast; cloudy and fine; overcast.
— 8—Foggy; hazy; overcast; frosty at night.
— 9—Fine; cold wind, and overcast; drizzly.
— 10—Fine; cold rain. cloudy.
— 11—Clear; clouvy; clear and frosty at night.
— 12—Rain; hazy; slight frost.
— 13—Fine throughout; very clear at night; frosty.
Mean temperature of the week, 4½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending March 22, 1851.

| March. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 16 | 51.4 | 35.4 | 43.4 | 9 | 0.26 in. | — | 6 | 4 | — | 4 | 7 | 3 | 1 |
| Mon 17 | 50.6 | 33.9 | 42 2 | 6 | 0.36 | 3 | 4 | 2 | — | 3 | 5 | 5 | 3 |
| Tues. 18 | 50.36 | 33.6 | 42 0 | 5 | 0.05 | 3 | 6 | — | 1 | 2 | 5 | 3 | 2 |
| Wed. 19 | 51.6 | 33.8 | 42.7 | 5 | 0.15 | 2 | 3 | 4 | — | 2 | 7 | 5 | 2 |
| Thurs. 20 | 51.6 | 34.7 | 43.1 | 10 | 0.36 | 1 | 2 | 4 | — | 1 | 10 | 2 | 6 |
| Friday 21 | 51.6 | 35.1 | 43 4 | 11 | 0.21 | 6 | 1 | 1 | 2 | 3 | 5 | 5 | 2 |
| Satur. 22 | 50.7 | 36.3 | 43.5 | 11 | 0.25 | 4 | 1 | 3 | 1 | 5 | 6 | 4 | 1 |

The highest temperature during the above period occurred on the 19th and 20th, 1836—therm. 69 deg.; and the lowest on the 17th, 1850—therm. 17 deg.

## Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post*. We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

AQUILEGIA: *C E A*. Sow your seed in a shallow pan now, in light sandy loam, and place it in a cold frame; or, if you have it, in a very slight bottom heat.‡

BACK NUMBERS: Full price will be given for No. 44, 1850.

BOOKS: *J J*. There is no separate publication concerning the art of cooking vegetables, except a small work by Rogers, which appeared some years since. Brief directions on the subject will be found in Paxton's "Cottager's Calendar."—*Con Amore*. It is impossible that *good* coloured figures should be given in cheap books. You had better trust to uncoloured representations, deriving your knowledge of the colours from the letter-press.—*A Learner*. Endlicher's "Genera Plantarum."

COTYLEDON UMBILICUS: If *H M*, who has inquired for this plant, will communicate with Mrs. Harrison, Springfield, Liscard, Liverpool, that lady is so kind as to say that she will assist him.

FRUIT TREES: *J E M*. The Duchesse d'Angoulême is best from the open ground; therefore your best plan will be to remove your tree from the wall, and train it as an espalier. Although it does not ripen its fruit, trained closely against a south wall in your climate, it may do so as an espalier, provided you do not make the soil too rich. Training the branches 3 or 4 inches from the wall will not improve it.‖

HARDY FERNS: *H*. If you can give them shade, such as would be afforded by good sized lumps of stone, any of the North European or North American species should succeed with you in the west of England. Your situation being dry, you will, however, have the more occasion to shade the roots and crowns of the plants in some such way as we have mentioned. Moisture and shade are the two main elements of Fern culture, and you should secure them to some extent, if you wish success. Plant such kinds as Lastrea oreopteris, Filix-Mas, dilatata, rigida, Goldiana, marginalis, intermedia, noveboracensis; Polystichum acrostichoides, aculeatum, angulare; Cystoperis bulbifera; Woodsia obtusa; Asplenium Adiantum-nigrum; Athyrium Filix-fœmina (as cool and shaded as possible); Scolopendrium vulgare and its varieties; Struthiopteris germanica, pennsylvanica; Onoclea sensibilis; Polypodium vulgare and its variety cambricum, Dryopteris, and calcareum. These will produce some effect. You can add the smaller curiosities afterwards, if you desire them.*m*

HEATING: *J S*. You will find sheet lead to be a much better material than zinc for lining hot-water tanks. See an article on the subject in another column.‡

INSECTS: *C E H N*. The insects which have destroyed your Cucumber leaves are a very minute species of mite, allied to the red spider. Fumigation in air-tight situations would surely kill them; but as it is not easy to prevent the escape of the smoke, we advise you to try whether they may not be decoyed by slices of Turnip laid near the plants. *W.—F A P*. The grubs are the young state of a two-winged fly, Bibio febrilis. We do not think them likely to be injurious, especially as they will turn to perfect flies, as soon as spring commences. *W.—Amator Naturæ*. The small grubs which attack the roots of the Clover are the larvæ of some species of weevil, whose history has not yet been recorded. We shall be glad of more specimens uninjured, to observe their habits. *W.—Mrs D (Holton)*. The insects which have attacked the leaves of your Cucumbers are a species of thrips, which may be destroyed by thorough fumigation, to effect which each plant ought to be inclosed in a separate frame or cover. *W*.

MELONS: *S E*. You must grow your Cassabar Melon like a Persian. But you will probably find it very far below your expectations.

NAMES OF FRUITS: *F H L*. 1, Dumelow's Seedling; 2, Bedfordshire Foundling; 3, Sturmer Pippin; 4, Beauty of Kent; 5, Herefordshire Pearmain; 6, Alexander; 10, Probably Alfreston; 12, Ribston Pippin.‖

NAMES OF PLANTS: *W W*. Some old variety of Azalea nudiflora.—*W L*. Nicotiana glauca.

NEW FRUITS: *W T*. Are not the reports on new fruits and vegetables published from time to time by ourselves, or in the Journal of the Hort. Society, sufficient? Kitley's Goliath Strawberry is reported to be an improvement on the British Queen, inasmuch as the plants are hardier and more productive; and if that allegation should prove to be correct, it will certainly be a most valuable variety. We believe Mr. Myatt, of Deptford, who has tried it, speaks favourably of it. Try the Esperione Grape; it is the best of the large sorts for the open wall.

OAK TIMBER: *Cultor*. It is a rule with us not to give legal opinions. We must therefore beg that what follows may be regarded as a mere memorandum. We are not aware of the existence of any special penalty attached to felling and selling Oak timber in winter with the bark on; such an act, if done by the owner, is not to our knowledge illegal, and if done unlawfully and maliciously by any other person, he would be punishable under the 7th and 8th Geo. IV., c. 30, secs. 19 and 20, which regulate the laws relating to malicious injuries to property, and which may be found in "Burns' Justice," vol. iii. p. 845, 28th ed. We believe this to be an answer to your question; if not, we must advise you to consult your solicitor.

PEAT CHARCOAL: *Y Z*. The best information to be found about it is contained in Mr. Cuthill's reports published in this journal. It is a much better material than wood-ashes, and acts in a different manner.

PRIVILEGES OF FELLOWS OF THE HORTICULTURAL SOCIETY: *S St M*. We do not see how the announcement of privileges can be made more clear. The following, however, is another form of stating the fact:—1. Fellows have free admission to all, including the American exhibitions. 2. Fellows may buy 48 admission tickets to the three exhibitions in May, June, and July, at 3*s*. 6*d*. each, instead of 5*s*. each. 3. Fellows have the *entrée* at half-past 12, and may introduce one friend at that time; if the latter is provided with the usual ticket. 4. If a Fellow cannot personally avail himself of the *entrée*, it may be transferred to a wife, or a sister, provided that wife or sister produces the usual ticket, signed by the Fellow whom she represents. 5. The public is not admitted till *two o'clock*.

ROSES: *W M*. The varieties of Roses best suited for your purpose, viz., to obtain the greatest effect during the months of July, August, September, and October are—Chinese: Belle de Florence, cherry; Belle Emilie, blush; Fabvier, crimson. Bourbon: Armosa, pink; Mrs. Bosanquet, flesh; Queen, salmon buff; Charles Souchet, purplish crimson. Noisette: Le Pactole, yellow; Aimée Vibert, white. This list is given on the supposition that you plant each bed with a distinct Rose. The strongest grower, Aimée Vibert, should be placed in the centre of the group. If the beds are large, it will perhaps be better to plant them with mixed kinds. It is a matter of taste whether dwarf or dwarf standard Roses be used, we prefer them on their own roots. The Lady of the Lake is not so hardy as some kinds. Marquise d'Ivry is a good pillar Rose.‡

ROSE GIRDLES: *Y Z*. We do not think these open to the objections you suggest. You appear not to be aware that it is necessary to pack matting, or hay, or some such material, between them and the stem of the tree.

SALTING ASPARAGUS: *J S C*. You may give as much as 20 lbs. to a rod. Apply it after the plants have begun to grow in spring. The Belleisle Cress is an esculent, but not esteemed, and out of fashion.‡

SUGAR: *G N*. The following are the books to procure on this subject:—"The Art of Manufacturing and Refining Sugar, including the Manufacture and Revivification of Animal Charcoal." Folio. By John A. Leon, Manufacturer and Refiner. Wm S. Orr and Co., 1850. "The Practical Sugar Planter." By Leonard Wray. 8vo. Smith and Elder, 1848. The article "Sugar" in Ure's "Dictionary of Arts and Manufactures," is good as far as it goes. (1845.) N.B. There is also a book which is published, or will be very soon, by Dr. Knap (German), on the chemistry of articles of food. This will be very good.

MISC.: *A Country Lady*. We regret our inability to assist you in your inquiries.

## SEEDLING FLOWERS.

CINERARIAS: *J D*. The two light-coloured ones are the best, but they are all inferior to the varieties cultivated about London. None of them are worth naming.*

LAURESTINUS: *G G*. Your seedling is certainly different from the common kind; but it is not so handsome, inasmuch as the flowers have no red in them.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents. Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application. Agents wanted.

PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 150 lbs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5l. per ton. Orders received by Mr. HENRY HILL, Corn Exchange, Mark-lane; Mr. GEORGE BUSH, 22, Abchurch-lane; and Mr. BENNETT, 73, Mark-lane, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PURCHASERS OF AGRICULTURAL SEEDS are recommended to peruse Messrs. SUTTON'S NEW PRICE LIST, which appeared in the last page of the *Gardeners' Chronicle* of March 1st. The advantages Messrs. SUTTON are enabled, by their extensive trade, to afford agriculturists in supplying *genuine home grown Seeds at the low prices therein quoted, and free of carriage*, will doubtless be appreciated in these times of economy and agricultural improvement. The following are a few of the articles therein enumerated:—

| Per lb.— | d. | Per bushel— | s. | d. |
|---|---|---|---|---|
| Mangold Wurzel ... | 6 | Giant Saintfoin ... ... | 10 | 0 |
| White Belgian Carrot ... | 9 | Dickinson's improved Italian Rye-grass ... | 7 | 6 |
| Fresh imported Lucerne ... | 9 | True Perennial ditto ... | 7 | 0 |
| Parsnip ... ... ... | 9 | Common ditto ... ... | 5 | 6 |
| Ashcroft and other Swedes | 9 | Summer Vetches ... | 6 | 6 |
| Furze (Ulex Europæus) ... | 9 | | | |

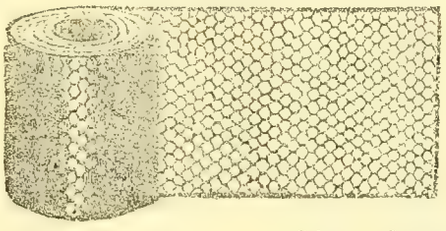
| THE BEST SORTS OF PERENNIAL GRASS SEEDS | £ | s. | d. |
|---|---|---|---|
| FOR PERMANENT PASTURE, *mixed expressly to suit the soil, with instructions for sowing, per acre* ... | 1 | 8 | 0 |
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GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | | 7d. per yd. | 5d. per yd. |
| 2-inch " strong " ... | | 9 " | 6½ " |
| 2-inch " extra strong " ... | | 12 " | 9 " |
| ¾-inch " light " ... | | 8 " | 6 " |
| 1¼-inch " strong " ... | | 10 " | 8 " |
| 1¼-inch " extra strong " ... | | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



# The Agricultural Gazette.

*SATURDAY, MARCH* 15, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 19—Agricultural Society of England.
THURSDAY, — 20—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 26—Agricultural Society of England.
THURSDAY, — 27—Agricultural Imp. Soc. of Ireland.

THE price of an article in the market depends upon the demand existing for it in relation to the quantity offered for sale. Where free competition exists among merchants and traders, and, so, a common understanding among the salesmen cannot be arrived at, then the price will in the long run be just the original cost of the article, *plus* such a profit as on the average satisfies those engaged in the traffic. It will not be more than this, because whoever might be disposed to demand a greater price, knows that he would be immediately undersold; it will not be less, because if the demand should cease, and prices fall below the standard of ordinary profits, the supplies would also cease, and the business be abandoned for others which still gave a reasonable return for the use of capital and industry.

Now even where a monopoly exists, the same terms may be used to express the circumstances of *price*. It is still the relation of demand and supply on which it depends: the only difference between this and the former case arises out of the fact that the salesmen can regulate the whole supply according to their notions of personal interest; and so the price is kept up to that pitch, not at which it can be profitably sold, but at which it can, with the lowest profit, be purchased. A certain number of farmers, for instance, purchase guano, and they find it so nearly a necessary of agriculture that they will pay 10l. a ton for it; that probably is the highest sum which can be given for it. If it were to rise beyond it, in all probability the purchases of guano would cease. We do not know what quantity may exist at present in England, or what is estimated to have been used last year; but probably to the extent of more than 120,000 tons a year, at nearly 10l. per ton, guano has been used by English farmers during the last five or six years. No doubt, the knowledge of its agricultural value has been extending all this time, and a larger number of purchasers than ever before are now willing to buy; but any advantage which holders of guano may derive from this, is certainly balanced by the losses which agriculturists generally have of late experienced in the prosecution of their business—many more may be willing, but far fewer are able; so that the price, 10l. per ton, at which the importers of guano maintain it, may be held to be now, as hitherto, the utmost which they could obtain.

The guano trade is now a monopoly. In 1845, out of 283,000 tons imported, only 14,000 were from the Peruvian coast; and then we had free trade in guano, and all the advantages to consumers of competition among the producers: but in 1848 and 1849, of the 155,000 tons imported in those two years, 138,000 were from the Peruvian coast; and Messrs. GIBBS, BRIGHT, and Co., may thus be said to have had the guano trade entirely in their own hands. The price of guano is what they fix upon for it, so long as they do not exceed the limit imposed by the necessities of farmers. We believe that they will find, during the ensuing year, that the prices they maintain are already beyond this limit.

The price of guano a few years ago may be said to have been the *natural* price, notwithstanding it was as high then as now. There was then undoubtedly a keener demand for it than there is now. The prices of agricultural produce then encouraged this demand, and so the price was kept at 10l. per ton in the face of the large importations of those years. The demand kept pace with the supply. But now farmers are not such keen purchasers: a smaller number will inquire for guano this spring than did so during the spring-time of 1849 and 1850. And if the prices of those years are to be kept up, the sales will probably be less extensive. Now, no man can say that the importation of guano into Great Britain has not largely benefited the agricultural interest, and through them the consumers of agricultural produce. And any diminution in the use of it would, in a similar proportion, be an injury done to both. But the benefit to be experienced from it hereafter, becomes very doubtful for the producers of beef and bread, if the manure is only to be had at the original price, while the manufactured articles, of which it is the raw material, have fallen 25 and even 40 per cent. in market value. We ask, then, whether it may not be the interest of the importers to reduce their prices so far as to extend the sale of an article which, were it in more extensive use, would more than anything else maintain the fortunes of their friends and customers—the farmers. Freights are not at present so high as they were, however onerous may be the terms of the contract with the Peruvian Government; and there is a strong opinion abroad that, under all circumstances, the price might be lowered, to the material advantage of both merchant and farmer. We suspect, too, that a reduction in the price of genuine guano would, more than anything else, check the infamous frauds of which the poorer class of buyers, unable to purchase it at its present price, are the yearly victims.

We would also express our belief that, if present prices are maintained, artificial guanos will become very much more influential competitors for public favour than hitherto they have been.

It is doubtless true that they are very inferior to Peruvian Guano ton for ton; but if they are sold at a proportionately low price, the difference in quality will be disregarded by all that large part of the agricultural community whose necessities leave them without choice.

## ON THE GROWTH OF BARLEY AND OTHER CROPS.

BARLEY is generally considered to succeed best on light soils, well pulverised and free from weeds, and is a crop which will stand dry weather better than any other: it is likewise reckoned the best for laying down with Clover and Grass, as in the Norfolk rotation: the best varieties cultivated, being in the counties of Essex, Norfolk, and Suffolk, in which great quantities are produced for the London market. On light soils Barley is, or should be, grown after sheep-fed Turnips, to consolidate the land by treading and manure. The ploughs should be brought into the Turnip field before the sheep are off, and a shallow ploughing given, as Turnip land is generally left much too long exposed to the weather to the waste of the good effects of the fold. In heavy clay soils, perhaps, a fallow may be necessary (where sheep cannot be admitted for fear of poaching the land on Turnips), as a preparation for Barley sowing.

The oldest rotation known, and which was almost universal in Europe from the time of the Romans, was the three field system; viz., fallow Wheat or Rye, sown in autumn, and Barley or Oats in spring. When properties were much intermixed, and subdivided, the whole of a considerable tract of land was divided into

three fields, so that it was impossible to deviate from the established course, especially as a right frequently existed of pasturing all the sheep of the parish on the fallow in summer, and on all others after harvest. In England this impediment was removed by the legislature passing Acts of Inclosure, but it is still felt in many parts of the Continent. Where a sufficient quantity of manure could be collected, by means of cattle fed on pastures and commons in summer, and in the straw-yard in winter, to give a regular dressing to the fallows every third year, good crops were produced, and the fertility kept up: the labour was very equally divided through the year; and such was the regularity of every operation, that a large quantity of land might be cultivated by the proprietor at a considerable distance, without a bailiff, provided he had honest servants. But when pastures came to be broken up, and converted into arable land, and cattle diminished, the land could not be manured on every fallow, the crops suffered, less straw being grown, the quantity of manure was diminished, and the land became less and less productive, till from necessity a portion was left uncultivated, and returned to natural and inferior pasture; this gave the idea of laying down land regularly to Grass, by sowing seeds; the apparent loss of a third part of the land by the fallows, introduced various crops, which were supposed to enrich the soil; of this kind one was Clover, introduced by the Flemish, and afterwards Turnips; by substituting them for an entire fallow, or rather sowing them early in the regular fallow, the Norfolk rotation was obtained. "In Flanders * the greatest care is paid to manuring and weeding; much more manual labour being bestowed than with us, and the crops seem more certain and abundant, in consequence; that it is not unprofitable, we may conclude from the wealth of the peasants, the comfort of the labourers, and the sleek appearance of the cattle. After ploughing into lands as we do, every intervening furrow is deepened and cleared with the spade, the earth being thrown over the bed sown; liquid manure (which is sadly thrown away in this country) is carefully collected and distributed over poor light soils, by means of water-carts, before sowing, and again when the crop is come up, which enable such lands to yield crops of Rape seed, Clover, Lucerne, and corn, equal in luxuriance to those on the richest soils. Fallows are rendered unnecessary by the careful destruction of weeds; in short, it is a garden culture on an extended scale. All the land is in tillage, except where rivers occasionally overflow, and render the meadows rich and profitable. The cattle are mostly kept in stables, and fed with green food, by which means one acre of Lucerne, or other artificial, will maintain five times as many beasts, as an acre of the best pasture; the great object is to increase manure, especially in a liquid state, to be preserved in tanks till wanted. This system is also followed in Switzerland, which, considering its soil and climate, is one of the best cultivated countries in Europe. In Holstein the following course is adopted:—1, Oats, on newly broken-up Grass-land; 2, fallow; 3, Wheat, manured; 4, Beans or Barley; 5, Wheat, manured, unless done for the Beans the year before; 6, Grass seeds, pastured for three years or more. In Mecklenburgh, a rotation not unlike the Scotch; 1, Beans or Potatoes, manured; 2, Wheat or Oats; 3, Barley; 4, Peas or Tares, manured; 5, Wheat; 6, White Clover, and seeds. Another: 1, Oats; 2, Beans, manured; 3, Wheat; 4, Tares, manured; 5, Barley; 6, Clover and seeds mown; 7 and 8 fed. Another on a rich soil: 1, Rape seed manured; 2, Wheat; 3, Beans or Potatoes, manured and hoed; 4, Barley; 5, Clover; 6, Wheat; 7, Oats sown down with white Clover. The end of this convertible system is to lay down the land in good heart, and as clear of weeds as possible; the Grass will then be abundant, and continue good for some years, and liquid manure carried on it in spring will so enrich it as to admit of making the crop into hay, or cutting it green for the cattle in the stables."

To resume the subject of Barley. Of all grains it is, perhaps, that which comes to perfection in the greatest variety of climates, and is found over most of the habitable world. It bears the heat and drought of tropical regions, and ripens in the short summers of those which verge on the torrid zone. In Egypt, Barbary, and the south of Spain, two crops of Barley may be reaped the same year. One in spring from seed sown the preceding autumn. This explains a passage in Exodus, ix. 31. "The Flax and the Barley were smitten, for the Barley was in the ear, and the Flax was bolled: but the Wheat and the Rye were not smitten, for they were not come up." This event would happen in March; the first crop of Barley was, therefore, nearly ripe, and the Flax ready to pull; but the Wheat and Rye sown in spring were not sufficiently forward to be injured by the plague of hail. Barley is distinguished by its species from the time of sowing it, and from the number of rows of grains in the ears, six rowed; four and two on flat Barley, which is most commonly cultivated in this country. Winter Barley is mostly sown in countries where the winters are mild, as the South of France, Italy, and Spain, and where the snow lies deep in winter, and where the sun is powerful after the melting of the snow in spring, as in parts of Russia, Poland, and North America, in some parts.

In moist climates, where the winter consists of alternate frost and thaws, and the early part of spring is usually wet, as in Great Britain, the young Barley is apt to suffer, and the spring sown Barley gives the most certain prospects of a good crop; but the grain of the latter is seldom so heavy as that which has stood the winter, and being harvested later, it interferes with the Wheat harvest.

In this neighbourhood the old school of farmers often grow their Barley on Wheat stubble, which, though not a plan to be commended, may answer in some cases, where a dry autumn allows the Wheat stubble to be ploughed and well cleaned and several ploughings and harrowings given; but in this case it is not advisable to sow Clover and Grass seeds on the Barley, or not till the Barley stubble is ploughed up. The quantity sown by the acre was formerly 4 or 5 bushels, but now from 2 to 3 are reckoned sufficient by advocates for thin sowing; but this must depend on the land and season. The time for sowing is of course likewise dependent on seasons, the middle of March, as soon as the land is dry, is the best rule; as in very early sowing, cold wet weather prevails, which is injurious to the young plant. The depth of depositing the seed should be about 1½ to 3 inches; after sowing, rolling is useful. In some seasons of wet, the Barley is rather choked up by Clover (when sown on it) particularly when sown late. According to Mr. Rham, in Flanders, Clover is hardly ever sown with Barley, but with Rye, and a kind of White Carrot, sown instead, in the sandy soils—these push out very little of the green top, but shoot their fibres downwards. After harvest, the land is well harrowed, and watered with liquid manure. The Carrots then sown, spring up, and a good crop is secured before winter. Barley is often raked together like hay, after harvest, but it should, as well as Oats, be tied up the same as Wheat. I conclude this article with a result of the analyzation of the ashes of burnt Barley and its straw, grown on a chalky soil (by M. Theodore de Saussure). The grain, reduced to ashes with its skin on, gave, out of 100 parts, 18 of ashes, which contained—

| | |
|---|---|
| Potash | 18·0 |
| Phosphate of Potash | 9·5 |
| Sulphate of Potash | 1·2 |
| Muriate of Potash | 0·25 |
| Earthy Phosphates | 32·5 |
| Earthy Carbonates | 0·0 |
| Silica | 35·5 |
| Metallic Oxides | 0·25 |
| Loss | 2·8 |
| | 100 |

*H. E.*

* According to Rev. W. Rham—"Dictionary of the Farm."

## WHAT MAY BE DONE BY BETTER TILLAGE.

At present, when so much is written in favour of an extended application of manure, some good may be done by bringing in contrast instances of extraordinary fertility gained wholly by improved tillage. It was with this view I, a few weeks back, had something to say upon the farming of the Rev. J. Smith, who is growing 4 qrs. of Wheat per acre year after year, from the same land, at little cost, and without manure, simply by deep and clean cultivation; and it is to confirm what Mr. Smith has said, that I now allude to what Jethro Tull wrote 120 years ago in favour of finer tillage, as opposed to high manuring and ordinary cultivation; and as many of your readers may not have read his work, and it is difficult to procure, and its old style makes it troublesome to peruse, I will begin by stating that Jethro Tull, for many years, farmed several hundred acres, near Hungerford, in Berkshire, and we are indebted to him for the origin of the drill and horse-hoe, which he invented to enable him to clean, and to frequently move and finely pulverise the ground aside his growing crops. His farm was called Prosperous, and such was his success, year after year, in raising more than ordinary crops of Wheat without manure, that he fell into the error of believing land wanted no other assistance to grow grain than finer tillage; and well he might so err, seeing that his crops appear to have gone on improving, after having pursued this system for 16 years, and his returns were greater than his neighbours', notwithstanding that he left sufficient space between the ridges, on which he grew his corn, to admit of ploughing between them, and in this way half his land apparently lay idle; but Jethro Tull tells us that this uncovered space was not unoccupied, but was feeding the roots of the adjoining rows of corn, which permeated it in all directions, and he shows that in this way corn may be fed from distances of 4 feet.

It is singular that 120 years after this was written, we should find a gentleman and a clergyman, convinced by his arguments, adopting his practice, and after six years' trial testifying from his success, to the truth of all that Jethro Tull has stated, and yet that such valuable lessons should have made so little impression, but such is the fact; and one may have doubts, seeing the large assistance that land now receives, and the inability farmers profess to grow corn as cheap as other less civilised countries do, of the correctness of the course that has been taken to advance agriculture. One hundred years back we were exporting corn at a profit, and science has since done much to diminish the cost of cultivation, still we have the instance of Mr. Smith cultivating land with the spade and by hand labour, and growing grain at less cost than the farmer, aided as he is by his modern manures, improved ploughs and horses; and what is even more singular, we find Mr. Smith is doing this without the dressing which is considered so necessary by the modern school, that they make its production and collection the first consideration.

But enough of this. The value of "Trench ploughing and finer comminution of the soil," are subjects well worthy of a paper to themselves. To return to Jethro Tull; there is another experiment of his which is worthy of notice, as illustrating the importance of keeping land clean. He says, "Let three beds of the same soil, equal and equally prepared, be sown with the same sort of corn. Let the first be kept clean of weeds, in the second let a quantity of weeds grow with the corn, and in the third stick up a quantity of dead sticks greater in bulk than the weeds. It will be found that the produce of corn from the first will not exceed the third; but in the second, where the weeds grew, the corn will be diminished in proportion. The sticks having done no injury to the corn, show there was room enough in the bed for company to lodge, would they forbear to eat;" thus proving that the mischief done by weeds is by the abstraction of nutriment from the growing corn, and not by the occupation of space, and that the quantity of straws above-ground is governed by the amount of nutriment within reach of the roots; and in other parts of his work, he says, in the following year he found a considerable difference in the crop on the ground between what had been hoed the previous year and what had not, showing that the good effects of moving the soil between the young corn is not confined to one crop; and he brings other instances to show that land is benefited for years after by hoeing, and the disintegration from one year's good tillage; and although, from the want of modern chemical knowledge, he has not used the arguments which modern information would have afforded him, to prove that by frequent moving and fresh exposure of the soil between the rows of corn, he was, from the decomposition of the mineral matter, continually creating fresh supplies of fertility, and therefore some of his explanations are unsound. Still it is curious to observe how much the discoveries of Liebig and other chemists may now be brought to support the horse hoeing of Jethro Tull; and still more so the greater success of Mr. Smith, from deeper working of his land. They go far to prove, as Liebig teaches, that under ordinary cultivation, corn plants have more occasion for artificial supplies of inorganic than of organic matter—in other words, of the mineral constituents of soils, than of animal or vegetable matter; and that whilst air and moisture abundantly supply the elements of the latter, the disintegration of the soil is too slow in giving the former in a form suited for roots to take up. The practice of Jethro Tull and Mr. Smith confirm this; for whilst they gave no organic matter to the soil, they were, by their deep cultivation, fine division, frequent moving and exposure of the soil, greatly aiding its decomposition, and largely adding to the available amount of inorganic matter. I would suggest to agricultural chemists that they cannot render a more interesting service to farmers than to enlighten them upon the changes that soils undergo from aeration and the alternation of heat and cold, wet and drought, and the value of these changes in producing fertility. That soils are vastly improved by frequent exposure has been understood from the earliest times, but the constant dissolving of mineral matter going on from atmospheric action, and the fertility thence arising, is an open field for inquiry, and likely to yield much valuable information. In farming it would appear that we are far from looking sufficiently to this aid to corn growing, although in gardening the practice is much more conformable. The market gardens round London offer fine practical schools to young farmers. On land paying 8*l.* and 10*l.* an acre rent, Tull's wide intervals and inter-row cultivation has long been adopted, and the fertility gained by aerating the soil is highly appreciated, as is shown by their practice of trenching, and laying their land up to the weather, and of finely pulverising and continuously moving it; indeed I believe the best lessons on farming are to be gained in the humbler but generally more intelligent schools of gardening. *Hewitt Davis, 3, Frederick's-place, Old Jewry, March 7, 1851.*

## Home Correspondence.

*Cheap and Durable Paint.*—In reply to "M. B.'s" inquiry, p. 141, the most durable and effective paint I am acquainted with is the iron paint of the patent alkali company, which stands all weathers, upon wood, iron, slate, or brick, when used with linseed oil, and the surfaces properly dry. It is also one of the cheapest linseed-oil paints, and covers a much greater breadth than white-lead. The colour is not pleasant, being a deep chocolate or purple-red; but this can be obviated by a mixture of white or other light colour, with the last coat. The coal-tar paints, which are less costly, neither lie so even, nor last nearly so long, so far as my experience goes. I do not think it is generally known in the country, but the London agent is, Mr. J. West, 1, New Broad-street. *J. Prideaux.*——"M. B." wishes to know what paint to use on his new buildings. I have much pleasure in being able to recommend C. D. Young and Co.'s patent metallic paint; the price is 5*d.* per lb., and it can be laid on by any farm labourer as well as a painter. I have used a great deal about my farm, and it is by far the best and most durable paint that I have met with; it can be obtained at 22, Parliament-street, Westminster; or 1, Castle-buildings, Derby-square, Liverpool; with oil, turpentine, brushes, &c. *T., Warrington.*

*The Drainage Act.*—The various communications which have appeared from time to time in your columns respecting the Drainage Act and its operations, have afforded me a little information and a good deal of amusement. It is really quite laughable to see how anxious certain gentlemen are to make a handsome income out of the money advanced for the benefit of suffering agriculturists. Of course, they do not give this as their motive. Oh no! it is all for the good of the nation. There has been some allusion to the

expenses incurred in putting the Act in force in different localities, and names have been used with more freedom than discretion. It has been my lot to have to arrange for drainage under the Act with two inspectors on different estates; and I have had no reason to complain about charges or of any desire to force any system of drainage at variance with my own experience. I know, however, that such judicious conduct is not always pursued; take the following as an instance:—Application for a loan under the Act was made in the proper quarter, an inspection was made, and the loan granted. Thus far all was smooth enough, but when the inspector presented his account, judge of the surprise it created when it was found to amount to 120*l.* or 130*l.*, I do not remember which. The commissioners were referred to, and their remark on the charge was quaint and pithy—"It is monstrous." If there have been many similar charges for "inspections," can it be wondered at if proprietors hesitate before they venture to incur them? I think it might be useful if the commissioners were to lay down a few stringent rules for the guidance of their subordinates in the matter of charges; that these latter gentleman want bringing into subjection to their superiors, the recent letters in the *Agricultural Gazette* abundantly show. *Roaldus.*

*Thin Seeding.*—I should like to ask "J. H." two questions—How much land he holds? and how much he sows per acre? for though he puts his rows 2 and 3½ feet apart, perhaps he puts the grain very thick in the rows. Your correspondent says he grows seven quarters of Barley per acre in rows 3½ feet apart; and after 28 years' practice, he finds 2 feet the right distance for grain crops. I thought I was as near as possible of getting hold of the philosopher's-stone, if I had not got it, in reference both to quantity and distance, viz., the rows between 11 and 12 inches apart, and the quantity according to the quality of the land, say good land *one* peck, middling land *two* pecks, and bad land *three* pecks per acre. It seems strange that so many millions of farmers should have been trying their skill in the art of sowing for so many thousands of years, and cannot as yet decide upon a verdict as to the quantity to be sown per acre. If by sowing one bushel less we could grow more corn it would be a greater benefit to the nation than the abolition of all the taxes the public are now seeking. *J. D. Piper, Celne Engaine.*

*Winnowing Machines.*—We have now got various sorts of winnowing machines, which would appear capable of dressing the corn far better than it could have been done formerly with the same labour. But it often occurs that the work is not done in such a manner as we might be led to expect. And there are various reasons given for this. If the maker is told that the implement does not make a good sample, he at once lays the blame on those who have the working of it. It has not been put in proper order for the work. And to provide against this many have printed directions to accompany their machines, which state how everything is to be set. And one would think that they should know well enough how it is to be put. But after all their rules are attended to, we find that the work is in many cases but indifferent. There is one defect that I think applies to some of our best machines, that is, that they are too wide, that the fan is too long in proportion to the machine from head to tail; and the consequence is that the air has not time to rush in for supplying the fan equally from outside to centre, and the consequence is that the currents of air go in a diagonal direction towards the riddle, until they meet, and coming together obliquely their force must be considerably broken, and their course altered, so that the wind may be strong enough to drive corn before it at one part, and so weak that the chaff is left at another. I have seen an old narrow machine perform her work far better than some of our modern highly finished ones, and I have generally noticed that the narrower ones do it best. I believe that if the length is proportioned to the width, this defect will be got over; but then they will require greater power of motion; and perhaps without a corresponding speed. And I do not consider that they would be so convenient for general purposes as if of moderate size, however they may do for being attached to a threshing machine, as in that case they would not have to be moved about. It would be well if our makers, in their anxiety to produce a perfect article, would not overlook this, for we have them now in many respects very efficient, especially in the mechanical parts of riddling and sifting, but too often deficient in the winnowing part. *G. S.*

*Management of Manure.*—On looking over the *Chronicle* of the 18th of January last, I perceived a report of a meeting which took place at Exminster, to hear a lecture from Dr. Bucknill, on the most economical method of using manure; and on reading over that able, eloquent, and admirable address, which every farmer and gardener ought to make their study, I was struck with that part where he speaks of the rain which falls on the sheds being allowed to run into the dung-pits to wash away anything that is soluble in them into the next ditch; and on giving this part of the address all the consideration possible for me to do, I said if this happens in favoured England, what can be expected of this fertile, beautiful, but neglected country, Ireland, where there is rarely any encouragement given to the farmer to be zealous, or to the labourer to be industrious: and yet even here I have occasionally seen all the methods recommended by Dr. Bucknill, for saving manure, well carried out and clearly understood; but certainly I must allow the instances were not as frequent as could be wished. I was led to make the above remarks by observing, that among the many means advised by the learned doctor for saving the urine of cattle, there is one not spoken of which I have carried out for the last three years with very great advantage, and as it is one which is very economising of labour and manure, I will, with your permission, here mention it. I make it a practice, during the spring and summer months, to get the parings of ditches, and any other spare earth or mould to be had on the farm, carted into a heap, as near as possible to the cow-sheds, and made up so as to turn off the rain; and when the cows are bedding down I have a quantity of the same strewn immediately behind the cows, which effectually soaks up every drop of urine that comes from them. In the cleaning out of the sheds this becomes mixed up with the solid manure, and occasionally there is a layer of about 6 inches of the dry earth spread over all; and I have found by this means my manure heaps to accumulate amazingly, and to be greatly improved in texture; and there is seldom any of that coloured matter, which is well known to be the farmer's best friend, to be seen oozing from the sides of a heap made up after the above manner, although I have had them 8 feet high; but then we have gutters to our sheds, and they are not allowed to run into our dung-pits. *E. M. C.*

*Agricultural Improvement.*—It is a common opinion with practical farmers that large farms and numerous ploughs and horses are requisite to enable the farmer to farm profitably. Though in some situations, as on thinly populated tracts of shallow wold land, this may be correct; it will probably be found to be a very erroneous opinion in other cases. In many situations, where the population is great, and labour plentiful and reasonable, it may be far more profitable to cultivate smaller farms, in a more perfect garden-like style, with fewer horses and more manual labour. The spade and the fork have sometimes been advantageously substituted for the plough and the harrows, and that might be the case much more frequently on small, and sometimes on large farms. Thus cultivated, 50 acres will frequently produce as much as 100 or 150, in the common way of cultivation. If this be true, and we have abundant evidence of its truthfulness in allotment ground, it is evident there is a great waste of land, of horse keep, and of unemployed manual labour, which might be advantageously employed, even on poor soils. It is evident, too, that by labour and science, some of our very poor land may be profitably cultivated, even though the price of produce should be low. Since writing the above, I have been much gratified by reading Mr. Mechi's account of Lord Fortescue's farm of 52 acres, published in the *Agricultural Gazette* of the 8th Feb. It greatly confirms my opinions, and illustrates practices which might be advantageously adopted in other places. The public owe a debt of gratitude to Mr. Mechi for his spirited efforts to improve agriculture by new plans. He may be enthusiastic and run into errors. And if he be at times a little severe in censuring our bad old practices, and if he urge us old farmers on at a quicker pace than we are willing to go, it is all for our good; it is a little good tempered raillery which we really need. Let us not then take offence where none is intended; let us rather pity than retaliate; for though he, and such men as he, are public benefactors, I fear, they are too experimental and enterprising, and too fond of trying untried schemes to profit themselves; but the public is greatly benefited by their experiments, and it is our own fault if we do not profit by them. It is evident that there is very great need of new and improved plans to bring agricultural improvement up to the improvement made in other arts and sciences. The most perfect cultivation that can be found comes very far short of the degree of perfection which may be attained; and every effort towards it should be encouraged. If landlords and land-agents would give all the encouragement to agricultural improvement which it is their duty and interest to do, tenants would soon become far more energetic, intelligent, and enterprising than they now are. Let those landlords and agents who complain of bad tenants, consider whether they have done their own part in encouraging good ones. I am glad to find that many landlords and agents are now endeavouring to do their part in encouraging improvement; but this is a new thing, and as yet there has not been time to cultivate those qualifications in tenants which such proceedings will after a while produce. Let every man do his duty, and agriculture will rise from its present state of depression, to a degree of perfection hitherto unknown. *O. F.*

*Mr. Pusey and Scotch Farming.*—The Scotchmen are justly roused by the speech of this gentleman at the meeting of the London Farmers' Club. I believe the English are more to blame for commending the farming of the north than the inhabitants themselves. And why? Does Mr. Pusey know that many sons of English landlords have visited Scotland these 20 years past solely to study agriculture in that country? And who can deny the Scotch the merit of farming well, especially in the counties of Berwick and Roxburgh, and we will add the Lothians, and the neighbourhood of Coldstream. Mr. Pusey, in his travels, went away from such places as had any repute for farming. He did not see them, save afar off, if at all. In England we have many advantages as to climate. Soil, situation, and climate, form the natural basis of good farming; and this is not at the command of every one. We can soil our horses upon Tares a month to six weeks earlier than they can in Scotland. Wheat can be grown with greater advantage by us in the south, but who can surpass them in the growth of roots, Barley, Oats, Beans, &c. Their Clover crops are magnificent. And in ploughing, hoeing, weeding, &c., who can surpass them? In draining also, who value the necessity of it more than our old friends north of Tweed? *X. Y. Z., Hants.*

*Poultry.*—Perhaps you will permit me to state my own mode of managing a small stock. Mine is a small family, and we wish to have both chickens and eggs; for the former purpose I have a Cochin China cock and five hens, and for the latter, the same number of Spanish; and they are thus assorted—the Spanish cock, one Spanish and four Cochin China hens; so also the Cochin China with one of his own and four Spanish hens. The object of this arrangement is to have a sufficient number of pure bred birds for breeding stock, and all the other chickens for table to be half-bred; as I consider the first cross an improvement on either breed for that purpose, but the next cross would degenerate. I take care that all the half-bred are killed off before breeding, as if allowed to continue they would soon spoil the stock. The eggs of the China and Spanish are so different, that there is no danger of any mistake between them. I find this plan to answer very well, and perhaps some of your readers, who rear poultry on a small scale, may be inclined to try it. It is of great importance in keeping up a pure stock, that all the breeding fowls should be thorough-bred, which is easily provided for by this means. May I add, that for table, there is no poultry so well tasted as the Sebright bantam. *T.*

*Rabbits on open-boarded floors.*—My groom having a great fancy for rabbits, was often unfortunate with them, by heating, rotting, &c. Envying my success with young animals on boards, he begged to have a place similarly constructed; and the result for six months has been perfect health amongst the rabbits, which afford every week some fine specimens for the table; and so successful is the operation and increase that we shall be obliged to market some. The boards have intervals of 1 inch, being 3 inches wide. The rabbits are fed on Swedes, or green food, Oats, and cut hay. The warmth is regulated by putting up boards in front of their sheds. I should not have thought of troubling you with this matter, but that so many of my visitors are struck with the advantage and economy of these open-boarded floors for rabbits. It is quite certain for all animals they possess immense advantages in a sanitary and economical point of view. Where I have a few young pigs on straw, I have always cause to regret it, so I must extend my operations. They will be found most convenient for ducks. *J. J. Mechi, Feb* 26.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 12th of March: present, Sir Robert Price, Bart., M.P., in the chair, Baron Mertens, Sir Thomas Dyke Acland, Bart., M.P., Mr. Bastard, Mr. Bosanquet, Mr. Beale Browne, Dr. Calvert, Mr. W. G. Cavendish, M.P., Mr. Dyer, Mr. Fuller, M.P., Mr. Gadesden, Mr. Garrett, Mr. Fisher Hobbs, Mr. Maddison, Mr. Majendie, Mr. C. E. Overman, Mr. Pendarves, M.P., Mr. Rowlandson, Professor Simonds, Mr. Aug. Smith, and Professor Way.

The following new members were elected:

De Grey, the Earl, Wrest House, near Bedford.
Marshall, George Hibbert, 85, Eaton-square, London.
Smith, Henry, New House, Sutton, Shiffnall, Salop.
Verrall, Richard Relfe, New Hall, Henfield, Sussex.
Soames, Daniel W., Pinner, Middlesex.
Briggs, John Atkinson, Bessell's Green, Chevening, Kent.
Page, Thomas, 2, New Scotland-yard, Whitehall.
Towgood, Edward, St Neot's, Huntingdonshire.
Boughton, Andrew K. Rouse, Acton Hall, Salop.

Country Meeting of 1851.—The Duke of Richmond forwarded to the Council a letter addressed to him, as President of the Society, by the Mayor of Kingston-on-Thames, offering to the Society, in the most handsome manner, on the part of the Corporation of that ancient and royal borough, the free use of their Guildhall, Assize Courts, and other public rooms, for the use of the Society during the period of the ensuing country meeting to be held in Bushy Park, "hoping that the Council of the Society would do the Corporation the honour of accepting the offer." This communication was received with the best acknowledgments of the Council, and referred to their next monthly meeting.

A deputation from Windsor, consisting of the Right Hon. John Hatchell, M.P., Attorney-General for Ireland, Colonel Reid, M.P., Mr. Leslie Melville, and Mr. Darvill, was then announced, requesting an interview with the Council, for the purpose of endeavouring to induce the Society to hold its Country Meeting, not in Bushy Park, but in the Home Park at Windsor, in the immediate vicinity of the Castle walls, where superior advantages of every kind would, in the opinion of the deputation, be found for the arrangements of the meeting itself, and the more distinguished promotion of the truly national and patriotic objects of the Society.—The Council expressed their regret that the circumstance of their being then only in weekly session, when by the bye-laws their proceedings were connected only with discussions on points of practical farming, without the power of legislative functions, would not allow them to receive the deputation which had on that occasion honoured the Council by their attendance. Sir Robert Price and Sir Thomas Acland then saw the deputation privately in the library of the Society, and explained to them the nature and extent of the arrangements already made for holding the Country Meeting of the Society at Hampton Court, and the show of live stock in Bushy

Park, on a site of ground within the Royal domain, most graciously accorded by her Majesty for the use of the Society for that purpose. They also stated to the deputation, that the Monthly Council could receive any statement on the subject, which however the Weekly Council had not the power to do; they would, however, report the occasion of their mission to the Duke of Richmond, who had the power, as President of the Society, to call a special Council at his pleasure.

FLAX.—Mr. ROWLANDSON, a member of the Society, well knownto its members by his numerous Prize-Essays in their Journal, favoured the Council with the following communication :—

March 10, 1851.

IN order to contribute my mite of information respecting the Flax crop, I forward this communication ; prior, however, to giving any recommendation which my experience may suggest for the future guidance of the agricultural body generally on this important subject, I wish to say a few words respecting a matter which has of late created much noise, viz , the influence which certain alleged discoveries respecting the conversion of ordinary Flax into Flax Cotton may exercise upon the growth of this crop.

The conversion of fine Flax into cotton is about as sensible as though it were proposed to transmute gold into silver or silver into copper. The difference in cost between articles manufactured from cotton or Flax, does not so much exist in the cost of the raw material as in the more expensive manufacture of one over the other, particularly in the bleaching process ; cotton fabrics can be bleached rapidly and, comparatively speaking, inexpensively, whilst the finer kinds of linen can only be what is termed Grass bleached. If Flax fabrics could be as inexpensively bleached as cotton cnes, the lower price of the raw material of the former would fully compensate for the more expensive spinning process. The following comparative tables of the commercial values of the raw material will show this :

| COTTON. | | | |
|---|---|---|---|
| Surats, 4*d.* per lb. or ... ... | ...£37 | 6*s.* | 8*d.* per ton. |
| Uplands, 6*d.* per lb., or ... | ... 56 | 0 | 0 ,, |
| Sea Islands, 1*s.* per lb , or ... | ... 112 | 0 | 0 ,, |
| Ditto, to 1*s.* 8*d.* per lb., or ... | ... 186 | 13 | 0 ,, |
| JUTE,* HEMP, AND FLAX. | | | |
| Jute, 3*d.* per lb., or ... ... | ...£28 | 0*s.* | 0*d.* per ton. |
| Hemp, 3½*d* per lb , or... ... | ... 32 | 13 | 0 ,, |
| Common Flax, 4½*d.* per lb., or | ... 42 | 0 | 0 ,, |
| Middling Flax, 6*d.* per lb., or | ... 56 | 0 | 0 ,, |
| Fine Flax, 9*d.* per lb., or ... | ... 84 | 0 | 0 ,, |
| Extra fine ditto, 1*s.* per lb., or | ... 112 | 0 | 0 ,, |
| Super extra ditto ... ... | 120 to 150 | 0 | 0 ,, |

It may be laid down as an axiom that it will not pay the British farmer to grow Flax of a quality when dressed worth less than 6*d.* per lb., or 7*s.* per stone of 14 lbs., which at 60 stones per acre would produce 21*l.* This quantity, however, is much more than is usually obtained. A crop of 40 stones of fine Flax, at 9*d.*, would, however, return the same amount of money at less cost in manipulation, less exhausting to the land, and consequently less expensive in the cost of manure, and requiring only an inferior soil for its growth, whilst on the other hand an extraordinary heavy crop on very fertile land, highly manured, could not be expected to yield more than 80 stones per acre, worth only 4½*d.* per pound or 5*s.* 3*d.* per stone, or 21*l.* per acre ; such a crop would be very distressing to the land. Now there is not the slightest prospect of the recently propounded discoveries converting such a coarse Flax as last described, from one worth 4½*d.* per lb. into one worth 6*d.*, in fact the process can only convert fine Flax into a textile capable of making a coarse fabric ; if the process can be applied at all, it can only be profitably done with Jute and Hemp, neither of which can be advantageously grown in England. It is a very erroneous opinion that Flax requires either rich land or high manuring, light lands in fair condition are the soils most suitable ; in England the green sands are *par excellence* Flax soils, but Flax may be grown profitably on the Bagshot Sands. The finest crop of Flax for quality of fibre which I ever saw grown was some sown on poor gravelly moor incumbent on the gritty or conglomerate lower beds of the old red sandstone in Ireland. I see no good reason why this crop might not be cultivated on the thinnest chalk soils, and certainly is well adapted for growth on the red soils which form so large a portion of the Downs of the South of England. For clays and stiff lands generally Flax is wholly unsuitable. The best Flax is grown upon freshly broken-up lea ; as, however, it will be almost too late to prepare lea this year, it may be stated that any light land in good heart may be safely sown with Flax from the present time to the 10th of April, premising that the land should be harrowed very fine previous to sowing.

Riga seed should always be sown at the rate of from 10 to 14 pecks of seed per acre, 10 pecks only if intended to stand for seed ; on weak land the Flax should be sown thicker than on strong land, *very fine Flax* should not grow above 18 inches high, at which height, under favourable circumstances, from 45 to 50 stones per acre will be obtained. American seed is the best of the seed crop, and is most sought by the farmer.

The best course for new Flax growers to pursue is to grow a small quantity on land of medium quality, but on which no labour has been spared to get it into a fine tilth ; seed as above, and pull it for the white or virgin Flax, as it is sometimes called, that is, as soon as the most forward of the seed bolls are fully formed—if a wet season, a little later, if a dry one, a little earlier. Another advantage derivable from pulling the Flax for white, is, that it can be off the ground, and a crop of Turnips be safely sown by the middle of July ; by this means the new Flax grower can scarcely suffer any loss by his experiment, whilst to the old grower the crop of Turnips will compensate for a crop of seed. On favourable soils, such as the green sand, Flax and Carrots might be sown as in Belgium. Weeding must be carefully attended to until the Flax has overgrown them.

The process of retting is the one most difficult for the farmer to learn, it will therefore be better for the novice at Flax growing to dew ret and pull for the white. Dew retting is accomplished by laying the Flax on Grass-land exposed to the rains and dew, often for a period of four or five weeks ; this forms a good top-dressing to Grass-land. It is by no means desirable that any process should be discovered that would take away the retting and preparatory processes from the hands of the farmer ; if such is the case, Flax must inevitably become to some extent an exhausting crop, and will also deprive farm-labourers of a source of employment at the most pinching season of winter.

I may conclude this letter by stating, that it is a complete mistake to suppose that our manufacturers are at any inconvenience for a supply of coarse Flax, this can always be obtained from countries where labour and land is cheaper than that employed by the British farmer, and if any invention was discovered to increase that demand, those countries would always amply supply it, and beat the British farmer out of the field ; what is really wanted by the manufacturer, and of which there is an increasing demand, is fine Flax, the deficient supply of which has tasked the ingenuity of our manufacturers to the utmost, in order to make a coarse fibre into a fine fabric.

To those having an opportunity, the following experiment might be made, say on a three acre field ; two acres sown with Flax, one acre with Barley, the whole seeded with Clover, one acre of Flax to be pulled for white or virgin Flax, and dew retted, the other acre to stand for seed ; this would show a fair comparison of the relative advantages and disadvantages of sowing Flax in the place of Barley, after Turnips. On light Turnip lands, I have great confidence of the success of such an experiment. (Signed) THOMAS ROWLANDSON.

* Jute is a coarse kind of hemp from the East Indies.

Mr. FULLER, M P., then laid before the Council the following balance-sheet of his trial of Flax-cultivation on one acre of land :—

| EXPENSES OF CULTIVATION. | £. | *s.* | *d.* |
|---|---|---|---|
| Rent... ... ... | 0 | 12 | 0 |
| Taxes ... ... | 0 | 4 | 0 |
| Ploughing ... ... | 0 | 8 | 0 |
| Sowing and harrowing ... ... | 0 | 6 | 0 |
| Weeding ... ... | 0 | 3 | 0 |
| Pulling ... ... | 0 | 14 | 0 |
| Carting to barn ... | 0 | 2 | 0 |
| 2 bushels of seed, at 10*s.* ... ... | 1 | 0 | 0 |
| Threshing ... ... | 1 | 0 | 0 |
| Cleaning ... ... | 0 | 2 | 0 |
| Balance in favour of cultivation... ... | 8 | 6 | 0 |
| | £12 | 17 | 0 |

| PROCEEDS OF SALE. | £. | *s.* | *d.* |
|---|---|---|---|
| 24 bushels of seed, at 8*s.* ... ... .. | 9 | 12 | 0 |
| Straw ... ... | 3 | 0 | 0 |
| Chaff ... ... | 0 | 5 | 0 |
| | £12 | 17 | 0 |

The field on which this Flax was grown, after Oats, at Rose Hill, in Sussex, in 1849, contained 9 acres, namely, 1 acre Flax, 1 acre Mangold, 6 acres Swedes. The Flax was manured in the April of that year, with 2½ cwt. of guano, the Mangold and Swedes receiving 25 loads of farm-yard manure. In October, the whole field was sown with Australian White Wheat, and the crop was quite as good on the acre where the Flax had been grown as on the other part of the field where the root crops had been grown.

The Hon. R. H. CLIVE, M.P., presented to the Council a sample of Flax grown, and afterwards prepared, by himself. He had for the last 5 years grown about 2 acres of this crop, the produce of the seed, employed by him for feeding his stock, having varied from 16 to 24 bushels.

Mr. DONLAN addressed a letter to the Council, stating that a complete set of the machinery, alluded to by him on a former occasion, and intended to enable farmers to bring their Flax crops into a condition for ready sale in British markets, was at that time open to the inspection of the members, at his temporary premises, at the Canal Basin, Warwick-road, Kensington. Mr. Garrett kindly undertook to inspect this machinery, and report upon it to the Council at their next meeting.

Mr. EDWARD DAVY, of Crediton, also addressed a letter to the Council, informing them, that having read M. Claussen's specifications of patent, he found nothing whatever in them that interfered with the plans he had matured, previously to that gentleman's coming forward with his new processes for an altered and simple mode of preparing Flax, to render it cheaper, more gnerally useful, and an advantageous substitute, to a considerable extent, for foreign cotton. He hoped soon to be in a position to lay before the Society drawings or models of his machinery for the use of farmers, with full particulars of cost of erection and working, quantity of Flax prepared per day, and other details ; in the meantime, his machinery was about to be tried by an intelligent tenant-farmer, on 60 tons of Flax straw on his hands, in the state in which it was pulled from the ground. He hoped to succeed in preparing the Flax suitably, and finding for the farmer a market for it, at a remunerating price ; as he had already, he stated, produced Flax in a state pronounced, by an eminent cotton-spinnner, to be capable of being spun precisely in the same way, and with the same facility as cotton.

Mr. HILL DICKSON also favoured the Council with numerous details connected with his own experience in the cultivation and management of Flax.

The Secretary then called the attention of the Council to the spirited manner in which the Royal Agricultural Improvement Society of Ireland, as it appeared by a report of their proceedings, then laid on the table, were endeavouring, by their premiums and arrangements, to promote inquiry connected with the practical management of Flax; and to the following remarks made by the Editor of the *Irish Farmers' Gazette* in reference to the ensuing Dublin meeting of that Society :—

We look forward to the meeting, therefore, which will be held early in the month of August, with the greatest interest. It will take place at a time when the vast crowd of strangers that will visit London during the spring and summer months will be breaking up, and spreading themselves like a great swarm over all parts of the country ; and we have no doubt, from the central position of this city, and the great facilities of transit to and from, both by steamers and railroads, that it will be found the most eligible spot by far. Exclusive of the large amount of prizes given for the encouragement of stock, the Council have most wisely increased the premiums for machinery and implements of every description, and have allocated a large sum towards investigating the different processes of preparing Flax, which occupy public attention so much at the present. We look forward, therefore, to this meeting as the most fortuitous that could possibly occur for testing the merits of the different rival plans, and deciding impartially between them ; and we hope to have a regular field day between the respective projects known as Schenck's, and Claussen's, and Donlan's, besides several others, on which public opinion is so much divided at present. We shall return to the subject, and in the meantime, we lose no time in calling the attention of all our readers to the time and place for this important meeting, and in impressing on them the necessity of making every preparation for rendering it as effective and as truly national as possible.

An interesting discussion on the use of common salt as a manure for land and crops, and as an adjunct to the food of stock, then took place. In order to give this discussion at length, we reserve the report of it for our next publication.

Dr. Calvert's paper on the direct disposal of agricultural produce from the farmer to the consumer, without the intervention of middlemen, was, at his request, referred to the Journal Committee.

SELBY, *Jan.* 15.—The annual exhibition of stock and poultry, the ploughing matches, and the dinner in connection with the above Society, took place at Selby, and were attended with, if anything, more than wonted success. Lord BEAUMONT presided, and at the dinner proposed the toast of the evening, viz., "Success to the Selby Agricultural Society." He said—There have been lately in the *Times* some rather well-written and clever letters as to the state of agriculture throughout England. As to his observations generally, I must say that I cannot refrain from agreeing with him. So far as I know from recent observation, I think that his description is, in the main, perfectly true ; and there is one particular to which he alludes, and with which I completely agree, viz., that in some districts there is a vast difference between one farm and another, though there may be a similarity of soil. He says truly that in one case the farming is good and in the other bad ; and then he goes on to show that a good farmer, in bad times, is making as much or more profit than the bad farmer was making in good times. The inference is that the bad farmer must "go to the wall ;" there is no chance for him under any circumstances. I think it is shown in these letters, and that the experience of everybody who has paid attention to the circumstances will show the truth of this proposition, viz., that bad farming at the present day has no chance of struggling with the difficulties of the times. It is vain to say merely that landlords must come down with their rents. I feel that I am occupying a peculiar position. I know that I am speaking to those who are tenant-farmers, and I myself am speaking as a landlord. Very well, then, I say, although the observation may not be agreeable to all, that it is absurd to say "the landlord must come down in his rent, and then all will be right." No ; I say you will not get me to do that. But I also say this, viz., that if my farms are let beyond a fair valuation, taking the existing and probable value of corn, I'll have a readjustment. But I will make no return. And, moreover, I will say this, for it is only fair, although I am sorry to say there is cause for it, that if I find I have a farm which, with proper treatment, can pay a fair rent, and the farmer who is upon it does not choose to exert himself up to that point, I shall be ready to give such tenant notice to quit. Now I say that this is speaking plainly. If I were a tenant I should never be alarmed about rent. The rent of land will always adjust itself—the rent of land is always what you can get for it. (Cries of "No, no.") You misunderstand me. I mean to say that you can't get an unfair price for land, because if you do your land gets ruined. I repeat, then, that the land will adjust itself. I know it as the trustee of some property, and also as the holder of other property. A fair and honest tenant will always give what is a just and fair rent, and rent will always adjust itself. If you attempt to overlet your lands, you cut your own throats. (Applause.) If you do so you will not get the right kind of men. There are plenty of men who will scramble at land, but who know nothing of farming, and have no capital. Such men are always ready to bid beyond the market price. But the man who bids the market price is a good farmer. If you do not take him some one else will. He is known to be a good farmer, and every landlord wants to get such a man, and his terms are the fair market price. (Applause.) If a landlord seeks more than that, he will easily find a person to bid more, but when the rent-day comes such a tenant is in arrear, to a dead certainty. The land is neglected, and then what is the case ? Why, the land is in such a state that you are glad to get rid of such a tenant at any rate. You can hardly get a decent man to take it, and for the first year or two God knows what allowances you are obliged to make. This is exactly the position landlords are in. Therefore I say, under all circumstances, rent will adjust itself ; and if the landlord looks to his own interest, as well as to that of the tenant, he will always find that at last he must come to a fair market price. I can give you a very practical instance. When land was valued a certain time ago—certainly when corn was higher—say 7*s.* a bushel, the valuations ruled much higher than that. Now here is a case for re-adjustment. At present the tenant is not likely to get such a price. Therefore, the standard of valuation at that time will not apply to the time present, and I say that the landlord, in such cases, must now come to a re-adjustment. I won't talk of an absurd return of so much, and then you, the tenant, must come up again. No ; I say here is a permanent abatement, and likely to be ; and then we shall not see that nonsense in the newspapers that my lord this or Mr. that has returned so much per cent. out of his rent. (Laughter and applause ) It is a matter of fair barter and bargain. The tenant comes with his capital to convert that capital into profit, by employing it in the land. The first instrument, then, that the farmer wants, is the land. He therefore hires the land just in the same way as in any other trade he would hire the necessary machinery or buildings, or any other matter which is necessary for his profession. He hires it, and it is a mere question of barter between us. (Applause.) There are other relations, I must own, after this, of the most agreeable sort, which arise between the landlord and tenant, and those relations are likely to be better maintained, if there be a fair adjustment of rent, in the first place, and no returns and no boasting in the newspapers afterwards that you have given such returns. This would be much better, for then would be strengthened all those connecting links to which I look with great pleasure, as existing between landlord and tenant. (Applause.) I think that one of the chief pleasures of

such a connection is that of seeing another person profiting and enjoying himself in one's own neighbourhood, or upon one's own property; and also of witnessing those reciprocal attentions which make society agreeable. This is one reason why I should say that of all kinds of property, land is the most enjoyable, because it puts you in a position of being upon good terms with those around you—it affords you the opportunity of doing much good—and also imparts to you the pleasure of receiving a great deal of kindness and attention in return. (Hear, hear.) I quite agree that "property has its duties as well as its rights;" but whilst I endeavour to do my duty, of course I expect that no one will seek to infringe upon my rights. (Applause.) Wishing the greatest success to this institution, I beg to propose "Prosperity to the Selby Agricultural Society."

## Reviews.

*Domestic Fowl and Ornamental Poultry; their Natural History, Origin, and Treatment in Health and Disease.* By H. D. Richardson. A new edition. Much enlarged. London: Wm. S. Orr and Co. (No date.) Pp. 160.

We were glad to hear of a fresh publication of Richardson's "Domestic Fowl." He really seems to have been an amiable man, whose unfortunate destiny it was to take to authorship. His widow and children were left but scantily provided for by the profits of his various hastily-written little treatises. The pamphlet under present consideration at one time appeared to be threatened with "assimilation," after the boa-constrictor fashion, by Mr. Nolan, as a matter of right; Richardson was dead, and Nolan appeared likely to be his Buddha,—absorbing him, body and soul; for he summed up his own and his predecessor's comparative merits in the following modest terms:—"In conclusion I beg to say, it is now nearly half a century since the appearance of the first edition of Mowbray, on Domestic Fowl, and although since that time several new varieties have been introduced, they have been, until a very late period, totally unnoticed—each succeeding book being merely a servile copy of its predecessor, and some professing originality with less than moderate acquaintance with the subject—until Richardson (*an easy writer, whom I induced to commence the subject*, and furnished with materials, and my birds to have drawings and engravings made,) no one treated of the new varieties, and even the old ones were imperfectly described; but Mr. Richardson, not being a practical man, in the way of fowl, has fallen into many errors, when attempting to describe, without the assistance of others; to remedy which I have been induced to lay, in the foregoing pages, my practical experience before an enlightened and discerning public, and hope for their indulgence." (P. 191.)

We therefore expected to see no more editions of "Domestic Fowl;" but a new editor has taken it in hand, and rescued it from oblivion, bringing to his task no little literary skill, as our readers will perceive from its opening paragraph:—

"Poultry-keeping is an amusement in which all classes can and do indulge. The space needed is not great; the cost of food for a few head insignificant, and the luxury of fresh eggs or home-fatted chickens and ducks not to be despised. In a large collection of poultry may be read the geography and progress of the world. The peacock represents India; the golden pheasant, and a tribe of ducks, China; the turkey, pride of our yard and our table, is one of our many debts [which we do not repudiate], to America; the black swan, rival of the snowy monarch of our lakes, reminds us of our Australian discoveries; while Canada and Egypt have each their goose. The large fat white ducks—models of what a duck should be—are triumphs of British breeding, affording a specimen of one of the best productions of Buckinghamshire since John Hampden; while the shining green-black ones at once fly away with us to Buenos Ayres and Dictator Rosas. And when we turn to the fowl varieties, Spain and Hamburgh, Poland and Cochin China, Friesland and Bantam, Java and Negroland, beside our native Surrey, Sussex, Kent, Suffolk, and Lancashire, have each a cock to crow for them."

The most important feature in this reprint, in the eyes of practical amateurs and dealers at least, will be the reformation of the nomenclature, and the rectifying of the former confusion respecting Hamburgh and Polish fowls. Now, the fowls with top-knots are united under the title of Polish, and that of Hamburgh only applied to those with rose combs. The alteration was imperative, as it has for some time been adopted by every intelligent fancier. "In the previous editions of this work, Mr. Richardson was led into error, and described a pair of the spangled varieties of the Polish fowl under the head of spangled Hamburghs." (P. 51.) An authority in whom our readers may place implicit confidence says, in reply to our question:—"Mr. Richardson has evidently made a mistake in the spangled Hamburgh fowl—his engraving represents the Polish; but the spangled Hamburgh he has described under the head of the Dutch every-day layers, &c. We have therefore brought the various named under the present head, transferring the figures named spangled Hamburgh to their proper place under the Polish fowl." (P. 55.) Small thanks, however, are given to the gentleman who first caused the Polish and Hamburgh armies to be marshalled in regular rank and file. "Much confusion seems to exist with regard to the spangled varieties of the domestic fowl. The Rev. Mr. Dixon has attempted to clear up the subject in the *Agricultural Gazette*, and more recently in his working on 'Ornamental Poultry;' taking occasion, *en passant*, to exhibit more of the angry spirit of rivalry, when criticising the present work, than befits the simplicity and earnestness of the inquirer after truth." (P. 54.) We venture to say that there was *no* anger in the matter, and, in Irish idiom, *less* rivalry, though there *was* an earnest inquiry after truth, which has not been unsuccessful. The *angry* passage which called forth the rebuke is this:—"Richardson gives the name of Hamburghs to the gold and silver Polands, a top-knotted variety. Dickson, in his brief, careless, and very loose description, is right in asserting the breeds, both of golden and silver Hamburghs, to be combed." We should call this a case of "drawing it mild."

The editor of this new edition has carefully studied and freely used the second edition of "Ornamental Poultry," with and without acknowledgment. Of this hardly any author will complain, if it be done in a way not likely to affect his pecuniary interest in his works. To be quoted and copied is a compliment, the sincerity of which cannot be doubted; but he may complain, or his friends may for him, if he is made responsible for instructions which he never issued. Thus, at p. 81, we find—"Every district seems to have its own peculiar mode of fattening turkeys. Mr. Dixon recommends a mode of diet that I have never seen tried, and wonder much if it be as efficacious as he seems to imagine. 'No food makes their flesh whiter and more delicate than kitchen stuff, *or the dregs of melted tallow (!)*, more or less of which must be boiled according to the number that is to be fed; and being diluted in a boiling kettle, plants (and especially nettles chopped up), and potherbs are mixed with it,'" &c., &c. Now, we have searched in vain in the "Ornamental Poultry" for this extraordinary recommendation, but on turning to *Walter B. Dickson's* "Poultry," at p. 236, we find the passage word for word. Had poor Richardson been alive, he would have blushed at the discovery of such misquotation, and apologised for it to the author. This is not the only place in which Dickson is confounded with Dixon, to the disadvantage of the latter writer, who ought not thus to be made responsible for the faults of others, besides those which he may himself have committed.

Setting aside these little blemishes, the work is creditable to Messrs. Orr and Co. It is now the best of the cheap poultry books, and the wonder is how it can be sold for a shilling. There are several additional cuts, some, as at p. 56, of considerable merit. A few slips of the pen will be rectified another time, as at p. 43, where the period of incubation of the turkey is made 31 days; at p. 98, where "the bernacle goose is *still smaller* than the brent goose;" and at p. 102, where "there are at present, I understand, only *three* specimens of this interesting variety (*Anser albibrons*, or white-fronted goose), in a state of domestication in the British islands." We think, too, that the publisher of the "Ornamental poultry" has a right to find fault with the adoption of the name of *his* book, even as a second title. He may be inclined to think—

"Who steals my purse, steals trash; 'tis something, nothing;
But he that filches from me my *good name*,"

violates, if not literary etiquette, certainly literary equity by the assumption; and does as he, perhaps, would *not* be done by.

## Miscellaneous.

*Insufficient Capital.*—The best illustration we have seen of the losses arising from insufficient capital, was taken from the experience of the sailor who related it. He had had charge of many vessels on different occasions: when under able and liberal ownership they were well manned and well furnished in every respect; but this was not always the case. The greater economy of such a course was, however, always evident: varying circumstances of weather could then be taken advantage of or guarded against immediately; and no loss, either of time or of property, occurred by those precautions (or the failure of them) which are necessary where a short number of hands are on board; for in that case, they must commence every operation long before it is needed, and, perhaps, fail to complete it in time after all. Just so with the farmer. If he has all the necessities laid upon him which large extent of land imposes, and only the means which a small extent requires, he will be continually behind-hand with his operations, unable to take advantage of favourable circumstances, and unable to guard against those which are adverse: the one will be past before he is prepared to benefit by them, and the other will be on him before he is prepared to meet them. *J. C. M., in Morton's Cyclopedia of Agriculture.*

*Drainage and the Turnip Crop.*—The Turnip has with truth been called "the root of good husbandry." It may be likened to a miner; for it explores the soil, and brings up from it much valuable material, in a state fit to be converted into beef and mutton, while the refuse of that conversion forms food for new tribes of plants. Like a miner, however, it cannot work unless the mine be kept "water free." It cannot be called "the root of good husbandry," when it barely replaces the manure which may have been supplied to it. It is only when it yields fair crops that it is so; and in order to obtain these, the first requisite is to have the land freed from stagnant water. *Morton's Cyclopedia of Agriculture.*

*Short-horn Cattle.*—The North Riding is bounded on the south by the East and West Ridings, on the north by the river Tees, which separates it from Durham, and is traversed by the York and Newcastle Railway from York to the borders of the county near Darlington. The central and northern portions of the riding, situated along the valleys of the rivers, contain the greatest extent of valuable land. To the eastward lie the Yorkshire moors, comprehending an extent of 400,000 acres, and rising from 1000 to 1500 feet above the sea level. On the west the country rises to the highlands on the borders of Westmoreland, with rich valleys of pasture land skirting the streams which drain that limestone country and flow through the picturesque dales of the North Riding. Much of the best land in the lower portion of the district is kept in permanent pasture, and in the neighbourhood of Northallerton, Catterick, and along the southern bank of the Tees, are found the most celebrated herds of short-horn cattle which now exist in England. The opposite bank of the Tees, which gave the name to the breed of Durham cattle, has lost its principal men, the Collings, and the best herds may now be said to be confined to the south side of Teesdale. There are still to be found men who have been bred from their childhood to study the peculiarities of form and symmetry which, combined with early maturity and great weight, have given the improved short-horn its great celebrity. Seldom leaving home, often the first to see their stock in the morning, and the last to visit them at night, making the health of each individual of the herd a study, and with constant attention enabled by particular management to encourage the development of such points as they think requisite, while everything else on the farm is made subordinate to the stock—these men have acquired a fame which is the result of such earnest application, and cannot long be maintained without it. They succeed; and to all parts of the United Kingdom is diffused from the hands of not half a dozen men in the North Riding the blood which has improved, and continues to improve, the native breeds of every district into which it is introduced. Two, three, or four hundred pounds for a bull is no uncommon price, and a cow of rare form and breeding has been bought by a farmer for 300 guineas. Ireland and Lincolnshire borrow for a season the best animals which leave the district, and the Messrs. Booth have at this moment bulls which bring them in 100*l.* a year each, and are let to the same parties at that rate for a succession of years. But these prizes are only to the most successful, for many, tempted by these and similar rates, try the system without counting the cost of patient study, constant application, and liberal outlay, by which such success has been achieved. It is not merely the first outlay, however lavish, that will place the beginner in the rank of a first-class breeder of short-horns. He must be prepared to sacrifice every other consideration on his farm to their welfare, and after he has collected his herd, and fed and watched them with the utmost care, he must stand the risk and uncertainty attending their management. If too fat, they cease to breed, or they produce dead calves; if too lean, they lose caste, and their produce sells at second-rate prices. One of the most experienced men in the district—himself an eminent breeder and first-rate judge—informed us that one season 34 of his high-priced and high-bred cows missed having calves, and so great are the risks attending this business that it is every year narrowing itself into fewer hands.—*Report on the Agriculture of Yorkshire, by the Times Commissioner.*

METEOROLOGICAL REPORT.—Feb.-March.
(*Continued from page* 140.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Feb. 27 | 7.15 a.m. | 30.26 | ... | NNW. Fine, but cold; light winds. |
| " | 5.15 p.m. | ... | 30.23 | 5 p.m., dense clouds in west. |
| 28 | 7.30 a.m. | 30.24 | . | N. and NNE. Bitterly cold; |
| | 2 p.m. | ... | 30.23 | overcast, with moderate breezes. |
| | 10.5 p.m. | 30.24 | ... | Evening, calm. |
| March 1 | 7.30 a.m. | 30.20 | ... | NNW. Gentle breezes, and |
| † | 5.20 p.m. | ... | 30.13 | fine, with heavy clouds p.m. |
| Sun. 2 | 7.50 a.m. | ... | 30.23 | NNW. Brisk breeze; fine |
| ‡ | 10.50 p.m. | 30.30 | ... | a.m.; cloudy p.m., and calm. |

* The continued back current of the storm of preceding days, my opinion of which, as expressed in last week's report, is confirmed by more matured reflection.

† I anticipate a heavy gale, a long way to the westward, from this storm, passing from Newfoundland towards Iceland; the rise of the barometer, which was suspended under its temporary influences, was resumed ‡ on the following day.

Dorchester, March 5th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

MARCH.

Lammermuir Sheep Farm, *March* 1.—February, like every other month of the past winter, has been "uncommonly fine," though the latter half of it, in this district at least, has had the additional recommendation of being "unusually dry." This is of immense importance to hill flocks. A winter may be half over with little frost and no snow storm; but if, instead of these, there has been much rain, sheep may be in rather poor condition—a continual course of raw weather subjecting them to the great discomfort of wet skins, with the additional aggravation of cold damp beds and sodden food. Such a state of matter has, to a considerable extent, characterised the last season, and its effects are now visible, especially on the ewes, which, though far from being poverty-stricken, are scarcely so fresh as we would have expected, and certainly, comparatively leaner than the hogs, whose jackets have been of great service to them. Our crops of Turnips being good, we propose bringing in the shearling Cheviots, and a few of the thinnest ewes on the 31, and the remainder of the old ewes about the middle of the month, to allow, if possible, six weeks' Turnips to the former and four to the latter, before the lambing begins. The work on the arable part of the farm has consisted in ploughing for Oats after Potatoes and Turnips, and in carting out manure

for next year's green crop—a tedious process, owing to the distance of the field, and steepness of the ground—which will serve us for another week. We are getting home a supply of guano, placing it under cover, and spreading a coating of charred peat over it. We propose beginning the sowing of Oats about the middle of the month, weather permitting, and are preparing seed for this purpose. *A Lammermuir Farmer.* [Pray send it always to *Whitfield.*]

## Notices to Correspondents.

DISEASE IN SHEEP: *P O.* The disease is either the foot-rot or what is commonly termed the epidemic, or the foot disease. The former is caused by excess of moisture, which will also greatly increase the latter, though it is referable to another cause, such as infection. Moderate paring and a strong styptic, such as the muriate of antimony, are the best remedies, assisted by a dry place to lie on. The lamb will not take the disease before it is born, but may afterwards from infection, though this is not very likely. *W C S.*

EGGS: *D U.* You will find a fuller answer than we can give here, in Dixon's "Ornamental Poultry," 2d Edit., p. 175; by no means immerse them in water.

GRASS SEEDS: *Novice.* Plough the stubble at once; it ought to have been ploughed in autumn. Let it lie for a month, then fork it over, and thoroughly clean it; then manure it, and cultivate the manure in, or if you use guano harrow it in. Thereafter you may sow the seeds, selecting damp weather, and sow 6 pecks of Barley per acre along with them. For your soil sow Aira cæspitosa lutescens, 1 lb.; Alopecurus pratensis, 1½ lb.; Arrhenatherum avenaceum, 1 lb.; Avena flavescens, ½ lb.; Dactylis glomerata, 2 lbs; Festuca duriuscula, 3 lbs.; F. heterophylla, 1 lb.; F. loliacea, 1 lb.; F. pratensis, 2 lbs.; Lolium italicum 3 lbs.; L perenne, 5 lbs.; Phleum pratense, 1 lb; Poa nemoralis, 3 lbs.; P. trivialis, 1 lb.; Trifolium pratense, 3 lbs.; T. repens, 4 lbs. In all, 33 lbs. per acre.—*Street.* For deep mossy land, intended to be in Grass, Mr. Lawson recommends "with a crop," Agrostis stolonifera, 2 lbs.; Alopecurus pratensis, 1½ lb.; Festuca duriuscula, 2 lbs.; Lolium perenne, 6 lbs.; L. italicum, 3 lbs.; Phleum pratense, 2 lbs.; Poa trivialis, 2 lbs.; Trifolium repense, 5 lbs.; Lotus major, 1 lb. In all, per acre, 24½ lbs.—*An Old Subscriber.* For a stiff soil, the following is a proper list per acre, sown with a crop of Barley:—Aira cæspitosa *lutescens*, 1 lb.; Alopecurus pratensis, 2 lbs.; Arrhenatherum avenaceum, 2 lbs.; Dactylis glomerata, 3 lbs.; Festuca heterophylla, 2 lbs.; F. elatior, 2 lbs.; F. duriuscula, 2 lbs.; F. loliacea, 2 lbs.; F. pratensis, 2 lbs.; Lolium italicum, 3 lbs.; L. perenne, 5 lbs.; Phleum pratense, 2 lbs.; Poa nemoralis, 2 lbs.; P. trivialis, 2 lbs.; Trifolium pratense *perenne*, 3 lbs.; T. repens, 4 lbs. In all, per acre, 39 lbs.

KOHL RABI: *Cottage Farm.* We have no account of experiments with superphosphate on Kohl rabi; and though we should suppose it would be beneficial, yet we are safe in advising you to prefer guano at the rate of 4 or 5 cwt. per acre. Superphosphate is sent in bags. It varies exceedingly in its weight per bushel according to the state of dampness in which it is. About Kohl rabi, we will insert Mr. Towers' remarks as soon as we have published a great accumulation of matter now in type.

SMALL FARM: *S H N.* The value of your farm is to be arrived at by an examination of the soil and the circumstances of the case; not by considering what expenditure you have made on it. The profitableness of that expenditure is to be determined by the value of the land—not the value of the land by the assumed profitableness of the expenditure. Your offer as regards tenant right is the utmost you can make in the absence of an ability to grant leases. The reasonableness of the rent you demand cannot be determined by the data with which you have furnished us.

# Markets.

### COVENT GARDEN, MARCH 15.

Grapes have not altered in price since our last report. Good Pine-apples are somewhat scarce and dear, and the supply of dessert Pears is limited. English Apples are scarce. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. A few forced Strawberries have made their appearance. Vegetables of all kinds are abundant and good. The trade for French Beans and Cucumbers is improving. Carrots and Turnips are good in quality. Potatoes are a trifle dearer. Lettuces and other saladiog are sufficient for the demand. The best Mushrooms fetch 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 8s | Oranges, per doz., 9d to 2s |
| Grapes, Portugal, p. lb., 8d to 1s | — per 100, 6s to 10s |
| Pears, per doz., 2s to 5s | — Seville p. 100, 7s to 14s |
| — per half sieve, 6s to 15s | — — p. doz., 1s to 2s 6d |
| Apples, dessert, per bushel, 6s to 10s | Chestnuts, per peck, 2s to 5s |
| — kitchen do., 5s to 8s | — per 100, 9d to 1s 6d |
| Lemons, per doz., 1s to 2s | Nuts, Barcelona, per bush, 20 to 22s |
| Almonds, per peck, 6s | — Brazil, p, bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 70s to 75s |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 1s |
| Cabbages, per doz., 1s to 1s 6d | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 4s to 6s | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s 6d |
| French Beans, p. 100, 2s 6d to 3s 6d | Endive, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 4s to 10s | Horse Radish, p. bundl., 1s to 4s |
| Rhubarb, p. bundl., 6d to 1s 2d | Red Beet, per doz., 6d to 1s |
| Potatoes, per ton, 60s to 100 | Mushrooms, p. pot., 6d to 9d |
| — per cwt., 3s to 6s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 1s 6d to 3s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Carrots, per doz., 2s to 5s | Marjoram, per bunch, 2d to 4d |
| Spinach, per sieve, 1s to 1s 6d | Mint, green, per bunch, 4d to 6d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per doz., 9d to 1s | |

POTATOES.—SOUTHWARK, March 10.

The Committee report that the market is well supplied coastwise and per rail. Trade is very heavy, and it is with difficulty the following prices are supported:—York Regents, per ton, 70s. to 90s; Scotch do., 60s. to 70s; ditto Cups, 60s. to 70s.; Cambridgeshire and Lincoln Regents, 50s. to 75s.; French whites, 55s. to 60s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 13.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Clover ... ... ... | 70s to 80s |
| Inferior ditto .. ... | 60 70 | Second cut ... ... | 63 70 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 23 28 |
| New Hay ... ... | — — | | J. COOPER. |

The supply short, and trade brisk.

CUMBERLAND MARKET, March 18.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 81s | Inferior ... ... ... | 65s to 72s |
| Inferior ditto... ... | 58 68 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 27 30 |
| Old Clover ... ... | 78 84 | | JOSHUA BAKER. |

WHITECHAPEL, March 13.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 70s to 75s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 60 63 | Inferior ditto... ... | 65 70 |
| New Hay ... ... | — — | Straw ... ... ... | 24 26 |
| Old Clover ... ... | 78 84 | | |

COAL MARKET.—FRIDAY, March 14.

Holywell 14s.; Eden Main, 13s. 6d.; Cowpen Hartley, 14s.; West Hartley, 14s.; Wallsend Haswell, 15s. 3d.; Wallsend Stewarts, 15s. 3d.; Wallsend Trees, 15s. 3d.; Wallsend Hurton, 13s. 3d.—Ships at market, 229.

HOPS.—FRIDAY, March 14.

Messrs. Pattenden and Smith report that colourv samples meet a ready sale; low descriptions hang on hand.

| | | | |
|---|---|---|---|
| Mid & East Kents | 70s to 120s | Sussex ... ... | 60s to 84s |
| Weald Kents ... | 64 — 90 | Yearlings & old Hops | 20 to 40 |

SMITHFIELD, MONDAY, March 10.

We have a larger supply of Beasts, and the weather being unfavourable trade is dull, and 3s. 8d. must be considered an extreme quotation. The number of Sheep is about as of late. Trade on the average is worse, the demand being very limited. Although the number of Calves is not large, it exceeds the demand; prices are reduced about 4d. per 8 lbs. From Holland and Germany there are 414 Beasts, 1250 Sheep, and 85 Calves; from Norfolk and Suffolk, 2400 Beasts; from Scotland, 300; and 200 from the northern counties.

| Per st. of 8 lbs.—s d s d | Per st. of 8 lbs.—s d s d |
|---|---|
| Best Scots, Hereford &c. ... 3 6 to 3 8 | Best Long-wools . 3 8 to 4 0 |
| Best Short-horns 3 2 — 3 6 | Ditto Shorn ... ... |
| 2d quality Beasts 2 6 — 3 0 | Ewes & 2d quality 3 0 — 3 6 |
| Best Downs and Half-breds ... 4 4 — 4 6 | Ditto Shorn ... ... |
| Ditto Shorn ... ... | Lambs ... ... ... |
| | Calves ... ... 3 0 — 4 2 |
| | Pigs ... ... 3 0 — 3 8 |

Beasts, 3779; Sheep and Lambs, 19,170; Calves, 131; Pigs, 350.

FRIDAY, March 14.

The supply of Beasts is small—equal, however, to the demand; indeed, it is so difficult to obtain Monday's top quotations for anything, we cannot retain them. The number of Sheep is very inconsiderable; trade is flat at Monday's prices. There are several remarkably fine Lambs on offer, but being so little in request, they make low prices. Trade is dull for Calves, and 4s. 4d. is only obtained in a few instances. From Germany and Holland we have 66 Beasts, 410 Sheep, and 115 Calves; from Scotland, 40 Beasts; from Norfolk and Suffolk, 200; and 70 milch cows from the home counties.

| Best Scots, Hereford, &c. ... 3 4 to 3 6 | Best Long-wools . 3 8 to 4 0 |
|---|---|
| Best Short-horns 3 2 — 3 4 | Ditto Shorn ... ... |
| 2d quality Beasts 2 4 — 3 0 | Ewes & 2d quality 3 0 — 3 6 |
| Best Downs and Half-breds ... 4 2 — 4 6 | Ditto Shorn ... ... |
| Ditto Shorn ... ... | Lambs ... ... ... |
| | Calves ... ... 3 0 — 4 4 |
| | Pigs ... ... 3 0 — 3 8 |

Beasts, 555; Sheep and Lambs, 2720; Calves, 215; Pigs, 375.

MARK LANE.

MONDAY, MARCH 10.—The supply of English Wheat this morning was very small, and disposed of on fully the terms of this day se'nnight. The tone in the foreign trade is slightly improved, and although the business transacted was not extensive, last week's prices were realised.—Fine malting Barley is much wanted, and the turn dearer, grinding qualities are held firmly.—Beans meet a somewhat improved inquiry at our quotations.—Peas remain difficult of disposal.—Oats command the extreme rates of last week.—Flour is in better demand, and for some marks a trifling advance was realised.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42—46 | Red ..... | 38—43 |
| — — fine selected runs...ditto | 42—47 | Red ..... | —40 |
| — — Talavera ..... | 45—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 32—52 | | |
| Barley, grind. & distil., 17s to 21s...Chev. | 26—30 | Malting . | 22—26 |
| — Foreign... grinding and distilling | 17—22 | Malting . | 22—24 |
| Oats, Essex and Suffolk ..... | 17—19 | | |
| — Scotch and Lincolnshire...Potato | 19—23 | Feed ..... | 16—21 |
| — Irish .....Potato | 17—21 | Feed ..... | 16—18 |
| — Foreign .....Poland and Brew | 17—21 | Feed ..... | 15—18 |
| Rye ..... | 22—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..20s to 26s .....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Winds | 37—43 | Longpod | 27—33 |
| — Foreign .....Small | 22—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler | 24—26 | Suffolk... | 26—28 |
| — Maple.....26s to 28s .....Grey | 23—24 | Foreign . | 24—31 |
| Maize ..... | White — | Yellow... | — |
| Flour, best marks delivered ...per sack | 34—40 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 16—22 | Per sack | 26—34 |

FRIDAY, March 17.—With the exception of 34,710 qrs. of foreign Wheat, almost entirely from southern Europe, and 5210 sacks of French Flour, the arrivals this week have been small; a large proportion of the former is going to granary for the owners' account. The attendance at market this morning has been thin. There was no English Wheat offering, and holders not being disposed to give way in the price of foreign, we note no alteration from Monday.—Barley is rather more inquired for, which is also the case with Oats.—Beans or Peas meet very little demand.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Feb. 1..... | 37s 10d | 22s 9d | 17s 7d | 22s 7d | 25s 11d | 26s 6d |
| — 8..... | 38 1 | 22 10 | 16 9 | 23 11 | 25 10 | 26 0 |
| — 15..... | 37 8 | 22 11 | 16 2 | 23 10 | 25 5 | 26 10 |
| — 22..... | 37 2 | 22 10 | 15 11 | 23 8 | 25 4 | 27 1 |
| March 1..... | 36 11 | 22 7 | 16 0 | 24 4 | 25 3 | 25 8 |
| — 8..... | 36 9 | 22 7 | 16 2 | 24 4 | 25 7 | 26 7 |
| Aggreg. Aver. | 37 5 | 22 9 | 16 3 | 23 9 | 25 7 | 26 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | FEB. 1. | FEB. 8. | FEB. 15. | FEB. 22. | MAR. 1. | MAR. 8. |
|---|---|---|---|---|---|---|
| 38s 1d | | | | | | |
| 37 10 | | | | | | |
| 37 8 | | | | | | |
| 37 2 | | | | | | |
| 36 11 | | | | | | |
| 36 9 | | | | | | |

LIVERPOOL, TUESDAY, MARCH 11.—The arrivals from Ireland and coastwise during the past week have been pretty liberal of Oats, Oatmeal, Barley, and Malt, but small of other articles. At this day's market there was a fair attendance of the town and country trade, who at first showed some disposition to do business, but eventually restricted their transactions to a few retail purchases for the supply of their immediate wants. Fine parcels of Wheat and Flour maintained the rates of this day week in the sales made, but inferior was easier to buy. Oats and Oatmeal in limited request, and nominally without alteration in value. Egyptian Beans were in good demand at 21s. per qr., but 21s. 6d. being asked, sales were unimportant. Barley and Peas quite neglected.——FRIDAY, MARCH 7.—The sale of Wheat and Flour at our Corn Exchange this morning was even more limited than of late, but prices stand unchanged. Egyptian Beans declined 6d., and Indian Corn 6d. to 1s. per qr. from Tuesday's prices. There was no variation in the quotation of any other article of the trade, with quite a restricted demand.


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Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

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☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

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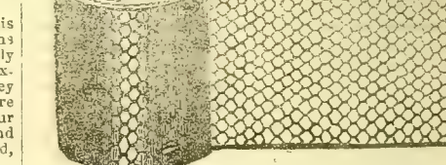
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

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| | | | |
|---|---|---|---|
| 12 inches wide | 3d. per yard. | 30 inches wide | 7½d. per yard. |
| 18 " | " 4½d. " | 36 " | " 9d. " |
| 14 " | " 6d. " | 48 " | " 1s. " |

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each. Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 41, Skinner-street, Snow-hill London.

DEAFNESS.—New Discovery.—THE ORGANIC VIBRATOR; an extraordinary, powerful, small, newly-invented instrument, for deafness, entirely different from all others, to surpass anything of the kind that has been, or probably ever can be produced. It is modelled to the ear, so that it rests within, without projecting. Being of the same colour as the skin, it is not perceptible. Enables deaf persons to enjoy general conversation, to hear distinctly at church and at public assemblies. The unpleasant sensation of singing noises in the ears is entirely removed, and it affords all the assistance that possibly could be desired. Invaluable newly-invented Spectacles, Powerful Telescopes, Opera and Race Glasses; also a curious, very small, powerful, Waistcoat-pocket Glass, only the size of a Walnut, to discern objects at the distance of four or five miles.—S. and B. SOLOMONS, Aurists and Opticians, 39, Albemarle-street, Piccadilly, London.

UNADULTERATED COFFEE.

KNIGHT AND SONS, TEA-DEALERS, GROCERS, &c., 83, Gracechurch-street, next the Spread Eagle. The Analytical Sanitary Commissioners of the *Lancet* Medical Journal, have been and are now engaged in an eminently beneficial inquiry into the system of adulterating various articles of human food which their investigations have proved to be all but universally prevalent. They have recorded that, out of a very large number of shops whose coffees they tested, only two proved to be pure. One of these is KNIGHT and SONS, 83, Gracechurch-street, whose Coffees are declared by the Commissioners to be of excellent quality and high flavour, and at reasonable prices. 1s. 4d., 1s. 8d., and 2s per lb. Every other article of Grocery equally genuine. Country orders, accompanied by a post-office order, or a reference for payment in London, will meet attention.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cork-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 83, Virginia-street, Glasgow.

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MR. WILLIAM KIDD, of the NEW ROAD, HAMMERSMITH, begs to announce to his Friends and the Public, that the *unique* Specimens of his New Invention, now perfected, and which he is about to forward to the "World's Great Fair" in Hyde Park, may be viewed by Ticket, procurable at his Manufactory, as above, until FRIDAY next, the 21st inst.

HER MAJESTY AND H.R.H. PRINCE ALBERT, before whom Mr. KIDD has had the honour, by SPECIAL DESIRE, of submitting and explaining his beautiful and ingenious Process, have been pleased to speak of the Invention in terms of the highest praise.—12, POLAND-STREET, March 15.

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Household Furniture, a splendid collection of Prints, in Maple Frames, Books, China, and Glass. A capital eight-day Clock. Counting-house Fittings, Iron Safe &c.

MESSRS. PROTHEROE AND MORRIS are instructed, by the Administrator of the late Mr. John Smith, to submit to public competition, by Auction, on the premises, Dalston Nursery, Middlesex, on TUESDAY, March 18 1851, at 12 o'clock, the genuine HOUSEHOLD FURNITURE, consisting of Brussels Carpets, sets of Chairs, Spanish Mahogany Four-post and other Bedsteads, Goose Feather-beds, and Bedding, Chests of Drawers, Sofa, Mahogany, Loo and other Tables, Cheffonier, Barometer, &c. The erection of Sheds, a capital Four-wheel covered Van, Tumbrel Cart, and sundry effects.—May be viewed one day prior to the sale, and Catalogues had of the principal Seedsmen in London; on the premises; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, March 19, at 12 o'clock, a first-rate collection of Carnations, Picotees, Pinks, and Auriculas; also Standard and Dwarf Roses, Gooseberries, Dahlias in Roots, &c.; the property of Mr. WILLMER. May be viewed the morning of Sale.—Catalogues had at the Mart, and of the Auctioneers, Leytonstone, Essex

TO GENTLEMEN, FLORISTS, AND OTHERS.

600 Pairs 1st Class Carnations and Picotees for Absolute Sale.

MESSRS. PROTHEROE AND MORRIS have received instructions to Sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, March 20th, the whole of the Genuine Stock of first-rate Carnations and Picotees, of Mr. KEYNES, Nurseryman, Salisbury, who is declining their growth. The Stock is in first-rate order, and fine growth, and contains all the leading Flowers, including Flora's Garland, Admiral Curzon, Cartwright's Rainbow, Rev. J. Bramhill's Lorenzo; Headly's Venus, Green's Queen, Julier, Lord H. Moore, &c. &c. Catalogues may be had on application to JOHN KEYNES, Nurseryman, Salisbury; at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT SALE OF CAMELLIAS, STANDARD AND DWARF ROSES, &c.

MESSRS. PROTHEROE AND MORRIS are directed to sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, March 21, at 12 o'clock, about 200 Double Camellias, beautifully set with bloom buds, from 18in. to 5 feet; also 600 Standard and Dwarf Roses, consisting of Hybrid Perpetuals, Noisettes, Bourbons, &c.; Azalea indica, Cytisus, &c.—May be viewed the morning of Sale. Catalogues had at the Mart; and of the Auctioneers, Leytonstone, Essex.

HACKNEY.—TO GENTLEMEN ENGAGED IN ORNAMENTAL PLANTING, AND THE TRADE.

Unreserved Sale of Evergreen Trees and Shrubs, the Lease expiring of part of Messrs. Loddiges' Nursery.

MR. J. C. STEVENS is directed to sell by Auction, on the premises, at Hackney, on TUESDAY, 25th March, and following day, at 12 for 1 o'clock, a selection of EVERGREEN TREES AND SHRUBS, consisting of Hollies in great variety, of extraordinary fine growth, from 3 to 7 feet; beautiful flowering plants of Andromeda floribunda, and Rhododendron campanulatum; also some large specimens of Æsculus rubicunda (the true Scarlet Horse Chestnut). &c.—May be viewed on the day prior, and mornings of sale, and Catalogues had of Messrs. LODDIGES, Hackney; and of Mr. J. C. STEVENS, 38, King-street, Covent-garden.

FOR EXHIBITION.

Specimen Cape Ericas, Epacris, Camellias, Azaleas, New Holland Plants, First-rate Geraniums, Hot-house Plants, &c.

MESSRS. TAYLOR AND SON, UPHOLSTERERS and AUCTIONEERS, 49 Coney-street, York, have the honour to announce to the Nobility, Ladies, Gentry, and Public generally, that, in consequence of Mr. THOMAS JACKSON going abroad, they have received instructions from Messrs. JACKSON and Co., Nurserymen, Scruton, Bedale, to sell by Auction, at their Nursery, and without reserve, on WEDNESDAY, the 19th day of March, 1851, their immense and magnificent Collections of EXOTICS, rare HARDY CONIFERÆ, and Scarlet HIMALAYAN RHODODENDRONS. The Coniferæ are very handsome specimens (all from Seed, in pots), especially the Cryptomerias, the Deodaras, the Abies Douglassii, and a Californian Pinus, with foliage 11 inches in length. To persons beautifying their Hothouses, Greenhouses, Conservatories, Parks and Pleasure Grounds such an opportunity rarely occurs. Messrs. T. and SON can with confidence state that this is the grandest Collection they have ever had the honour to announce for sale. Catalogues will be ready on the 12th inst., and may be had on application to the Auctioneers, or to Messrs. JACKSON and Co. The whole of the Plants will be on view on Monday and Tuesday prior to the day of sale. The sale to commence precisely at 10 o'clock, A.M., on Wednesday the 19th of March, 1851.

N.B. The Scruton Station, on the Bedale Branch, York, Newcastle, and Berwick Railway, is only five minutes' walk from the Nursery.

Auctioneer's Office, 49, Coney-street, York.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

TO BE LET, and entered on immediately, about 2500 feet of GLASS, well stocked with excellent young Vines, just coming into full bearing, and a choice collection of Orchidaceous, Stove, Greenhouse, and Hardy Plants, fit for immediate sale; with a neat COTTAGE, and 6 or 7 acres of Land, as may be convenient to a person taking the same, situated in a most sheltered and picturesque spot, about three miles from the increasingly populous town of Southampton, which communicates by railway with the metropolis, and all other parts of England. Some of the soil is peculiarly adapted for a Nursery of American Plants. The stock to be taken at a valuation.—For particulars, apply to JAMES TEE, Gardener, Aldermoor, near Shirley, Southampton.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

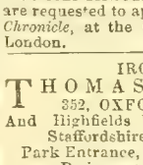
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Chartered by the Canterbury Association, and appointed to Sail from the Port of London on Tuesday, 8th APRIL.



FOR CANTERBURY, NELSON, and NEW PLYMOUTH, NEW ZEALAND, the fine passenger ship LABUAN, A 1, 547 tons register, lying in the East India Docks. Walter Scott, Commander.—Rates of passage to Canterbury, Provisions, Medicine, and Medical Comforts, included:—Each person 14 years old and upwards, Chief cabin, 42*l.*; Second cabin, 25*l.*; Steerage, 16*l.* Children under 14 one-half.—This ship has superior accommodations, and will take out a Clergyman, an Elementary Schoolmaster, and an experienced Surgeon.—For freight, passage, or further information, apply to J. STAYNER, 110, Fenchurch street; or to FILBY and Co., 157, Fenchurch-street. By order of the Committee, FREDERICK YOUNG, manager of shipping.—Shipping office of the Canterbury Association, 74, Cornhill, London.

HOLLOWAY'S OINTMENT AND PILLS, AN INFALLIBLE REMEDY FOR TUMOURS, SWELLINGS, AND CONTRACTED JOINTS.—Ann Carter, housemaid, residing with a family in Burton-crescent, had an immense Tumour on her right knee, which increased to such a size that she could not bend the joint, and was in consequence obliged to leave her situation; her medical attendant informed her that there was no chance of cure, and that it would be necessary to amputate the limb. This opinion not satisfying her, she commenced using HOLLOWAY'S PILLS AND OINTMENT in good earnest, and by God's blessing, they have been the means of effecting a perfect cure, and she has resumed her former situation. Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the teeth. Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designating unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. ROWLANDS' ODONTO, or PEARL DENTRIFICE, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

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## ANNUAL COUNTRY MEETING OF 1851,

TO BE HELD, BY THE GRACIOUS PERMISSION OF HER MAJESTY,

## IN BUSHY PARK, NEAR HAMPTON COURT, MIDDLESEX,

IN THE WEEK COMMENCING MONDAY, THE 14TH OF JULY.

The Society's Show of Live-Stock for Breeding Purposes will be open to the Public on the Monday Evening, (after the Judges have delivered in their awards), and on the Tuesday, Wednesday, and Thursday of that Week, from Six in the Morning until Sunset.

MEMBERS HAVE THE PRIVILEGE OF A FREE ENTRY, AND NON-SUBSCRIBERS ARE ALLOWED TO COMPETE, ON THE PAYMENT OF 10s. ON EACH CERTIFICATE.

*Forms of Certificate to be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates must be returned, filled up, to the Secretary, on or before the* **17th of MAY,** *the Council having decided that in no case whatever shall any Certificate be received after that date.—In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.*

### CATTLE.

| Class | | £ |
|---|---|---|
| | SHORT-HORNS. | |
| 1 | To owner of the best Bull calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in milk or in calf | 20 |
| | To the owner of the second best ditto | 10 |
| | [In the case of the cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto | 10 |
| | To the owner of the third best ditto | 5 |
| | HEREFORDS. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in milk or in calf | 20 |
| | To the owner of the second best ditto | 10 |
| | [In the case of the cow, to which either of these prizes is awarded, being in calf and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto | 10 |
| | To the owner of the third best ditto | 5 |
| | DEVONS. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 20 |
| | To the owner of the second best ditto | 10 |
| | [In the case of the cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto | 10 |
| | To the owner of the third best ditto | 5 |

### OTHER BREEDS:

NOT QUALIFIED TO COMPETE AS SHORT-HORNS, HEREFORDS, OR DEVONS.

*(Cross-bred Animals will be excluded.)*

| | | |
|---|---|---|
| | LONG-HORNS. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | CHANNEL ISLANDS' BREED. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SUSSEX BREED. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SCOTCH HORNED CATTLE. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SCOTCH POLLED CATTLE. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 10 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | WELSH, IRISH, AND OTHER PURE BREEDS. NOT ENUMERATED ABOVE. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in milk, or in calf | 10 |
| | [In the case of the cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best in-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |

### HORSES.

| | | |
|---|---|---|
| 1 | To the owner of the best Stallion for Agricultural purposes, of any age | 30 |
| | To the owner of the second best ditto | 15 |
| 2 | To the owner of the best two years old Stallion for Agricultural purposes | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Stallion for Dray purposes | 20 |
| 4 | To the owner of the best Stallion for getting Hunters | 30 |
| 5 | To the owner of the best Stallion for getting Carriage Horses | 30 |
| 6 | To the owner of the best Stallion for getting Roadsters | 15 |
| 7 | To the owner of the best Mare and Foal for Agricultural purposes | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 8 | To the owner of the best two years old Filly ditto | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 5 |
| | SHEEP.—LEICESTERS. | |
| 1 | To the owner of the best Shearling Ram | 35 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 2 | To the owner of the best Ram of any other age | 30 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| | SOUTH-DOWN, OR OTHER SHORT-WOOLLED SHEEP. | |
| 1 | To the owner of the best Shearling Ram | 35 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 2 | To the owner of the best Ram of any other age | 30 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| | LONG-WOOLLED SHEEP: NOT QUALIFIED TO COMPETE AS LEICESTERS. | |
| 1 | To the owner of the best Shearling Ram | 25 |
| | To the owner of the second best ditto | 15 |
| 2 | To the owner of the best Ram of any other age | 20 |
| | To the owner of the second best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 10 |
| | To the owner of the second best ditto ditto | 5 |
| | SHEEP BEST ADAPTED TO A MOUNTAIN DISTRICT: NOT QUALIFIED TO COMPETE AS SOUTH DOWNS. | |
| 1 | To the owner of the best Ram of any age | 20 |
| | To the owner of the second best ditto | 10 |
| 2 | To the owner of the best Pen of five Shearling Ewes | 10 |
| 3 | To the owner of the best Pen of Ewes of any age | 10 |

### PIGS.

| | | |
|---|---|---|
| 1 | To the owner of the best Boar of a large breed | 15 |
| | To the owner of the second best ditto ditto | 10 |
| | To the owner of the third best ditto ditto | 5 |
| 2 | To the owner of the best Boar of a small breed | 15 |
| | To the owner of the second best ditto ditto | 10 |
| | To the owner of the third best ditto ditto | 5 |
| 3 | To the owner of the best breeding Sow of a large breed | 15 |
| | To the owner of the second best ditto ditto | 5 |
| 4 | To the owner of the best breeding Sow of a small breed | 15 |
| | To the owner of the second best ditto ditto | 5 |
| 5 | To the owner of the best Pen of three Breeding Sow-Pigs of a large breed, of the same litter, above four and under eight months old | 10 |
| | To the owner of the second best ditto ditto | 5 |
| 6 | To the owner of the best Pen of three Breeding Sow-Pigs of a small breed, of the same litter, above four and under eight months old | 10 |
| | To the owner of the second best ditto ditto | 5 |

THE SHOW WILL NOT INCLUDE ANY DEPARTMENT FOR EXTRA-STOCK.

N.B.—Copies of the Prize Sheet, with the Rules and Regulations of Exhibition, may be had by application at the Office of the Society, No. 12, Hanover-square, London.

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The Rise and Progress of Gardening in England—The Soil and Situation Desirable for a Garden—On Enclosing and Laying-out a Garden—On the Preparation of the Soil—Manures—The Growth of a Plant from Seed—Kitchen Garden—Rotation of Crops in the Kitchen Garden—The Fruit Garden—Propagation of Fruit Trees—The Varieties of Fruits and Vegetables—The Flower Garden—Flowering Plants for Windows—On Pruning—On Weeding. APPENDIX.—List of Flowers suited to Pots in Windows—List of Tools necessary in an Ordinary Garden.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 12—1851.] SATURDAY, MARCH 22. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agriculture, Tullian | 186 *b* | Glass houses, to move the air in | 182 *b* |
| Agricultural Society of England | 187 *c* | Grafting | 180 *b* |
| Bees | 182 *b* | Grass by inoculation | 189 *c* |
| Birds, British song | 181 *c* | Hepaticas | 182 *a* |
| Bouquet trade in New York | 182 *a* | Horticultural Society | 181 *a* |
| Bulbs, Cape | 184 *c* | Hudson's (Mr.) farm | 188 *c* |
| Calendar, Horticultural | 184 *a* | Husbandry, Tullian | 186 *b* |
| — Agricultural | 189 *b* | Insect, when is an? | 181 *a* |
| Calico, glaze for | 184 *c* | Ireland, farming in | 187 *b* |
| Cape Bulbs | 184 *c* | Land, open furrowed | 187 *a* |
| Chestnut, Spanish | 182 *b* | Market gardening | 182 *c* |
| Chicory | 187 *c* | Mechi, Mr, and the poor | 189 *a* |
| Chrysanthemum, the | 183 *b* | Narcissus tenuifolius | 182 *a* |
| Clover failures | 185 *b* | Nymphæa cærulea | 182 *b* |
| Cranberries | 184 *c* | Open furrows | 187 *a* |
| Deodar, the | 182 *c* | Paint, durable | 187 *b* |
| Farm, Mr. Hudson's | 188 *c* | Payer on Cryptogams, rev. | 183 *c* |
| Farm buildings, paint for | 187 *b* | Railroads, farm | 186 *a* |
| Farm railroads | 186 *a* | Superphosphate of lime | 180 *a* |
| Farming in Ireland | 187 *b* | Transplanting, theory of | 179 *b* |
| Fir twigs | 182 *b* | Vegetables, to dry | 183 *a* |
| Flowers, to dry | 183 *a* | Ventilation | 184 *c* |
| Fruits, to dry | 183 *a* | Victoria Regia | 182 *b* |
| Furrows, open | 187 *a* | Villafgardening | 180 *c* |
| Glass houses, to erect | 180 *c* | Weather, the | 189 *b* |



HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given, that the EXHIBITIONS OF FLOWERS AND FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following SATURDAYS, viz.: May 3, June 7, and July 19; and that SATURDAY, April 5, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. Each Fellow may, this year, purchase 48 such Tickets, at 3*s.* 6*d.* each, at the Society's Office, 21, Regent-street, London.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—GENERAL EXHIBITIONS — Wednesdays, May 14, June 11, and July 2.
AMERICAN PLANTS—Saturdays, May 31, and June 7.
ROSE GARDEN—Saturday, June 21.
Tickets, which will admit the Bearer to either of the above Exhibitions, or upon ANY ONE DAY in the month of JUNE, except Sundays, are now ready, and may be had at the Gardens, by orders from Fellows of the Society. Price, on or before Saturday, May 3, 4*s.*; after that day, 5*s.*; or on the Exhibition days, 7*s.* 6*d.* each. Fellows of the Society may have, on or before May 3, any number of packets containing Thirty Tickets each, for Five Guineas the packet, being at the rate of 3*s.* 6*d.* each Ticket.

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The Printed Rules, &c., of the NATIONAL FLORICULTURAL SOCIETY will be forwarded to all *post paid* applications.
JOHN EDWARDS, Hon. Sec.

THE LONDON FLORICULTURAL SOCIETY.—The Subscribers and Friends of this Society are respectfully informed that a MEETING of the Society will be held at EXETER HALL, Strand, London, on Tuesday, the 15th April next, at 6 o'clock precisely, for General Business, and the further meetings will take place at the days and times mentioned below, for the Exhibition of Seedlings and Class Showing, and for General Business of the Society.
FOR SEEDLINGS AND CLASS SHOWING.
*Tuesdays, at 12 o'clock.*
22 APRIL.—Auriculas and Polyanthus.
27 MAY.—Cinerarias, Calceolarias, Pelargoniums, Pansies, and Tulips.
24 JUNE.—Antirrhinums, Pelargoniums, Pinks, Ranunculus, and Roses.
22 JULY.—Carnations, Fuchsias, Picotees, Phloxes, Petunias, and Verbenas.
26 AUGUST.—Dahlias, Fuchsias, Hollyhocks, and Verbenas.
23 SEPTEMBER.—Dahlias, Pansies, and Roses.
25 NOVEMBER.—Chrysanthemums.
FOR SEEDLINGS AND GENERAL BUSINESS.
*Tuesdays at 6 o'clock precisely.*
15 April, 13 May, 10 June, 8 July, 12 August, 9 Sept., 14 Oct., 11 Nov., 9 Dec., 13 Jan., 1852, 10 Feb., and 9 March.
On the 22d April next, in addition to the usual prizes awarded by the Society, a SILVER CUP of the value of FIVE GUINEAS will be given for the best Four Plants of Auriculas, one of each class. Also—

| | | |
|---|---|---|
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| 21*s.* | Ditto | Page's Champion. |
| 10*s.* | Ditto | Dickson's Apollo. |
| 10*s.* | Ditto | Clegg's Crucifix. |
| 10*s.* | Ditto | Oliver's Lovely Ann. |
| 10*s.* | Ditto | Dickson's Duke of Wellington. |

45, Lime-street, March 22. J. W. JEWITT, Hon. Sec.

NORMAN'S "LORD NELSON" NEW PICOTEE. The heaviest edged purple raised, quite free from spot or bar, and good pod, with superb white and large petals, 10*s.* 6*d.* per pair, warranted a fine show variety. Catalogues on prepaid application to BENJAMIN NORMAN, Florist, Bull Fields, Woolwich.

GOLIAH STRAWBERRY.
JAMES KITLEY can supply good Plants of his celebrated Strawberry GOLIAH, at the very low price of 7*s.* 6*d.* per 100, or 12 Plants, free by post, for 18 postage stamps. Also fine Plants of Dwarf German HOLLYHOCKS mixed, at 12*s.* per dozen; these have all bloomed, and are very double and beautiful. HOLLYHOCK SEED, saved from a fine collection of double varieties, 18 packets, named, free by post, for 5*s.*; ditto mixed, per packet, 2*s.* 6*d.* SWEET WILLIAM SEED, from a great variety of beautiful brilliant colours, per packet, 1*s.*
Lyncombe Vale Nursery, Bath, March 22.

DILLISTONES AND CO., of the Nurseries, Sturmer, near Haverhill, Suffolk, have to offer a few hundreds of Polyanthuses, saved from named flowers, 20*s.* per 100, 3*s.* per dozen; double major white Rocket, 20*s.* per 100, 3*s.* per dozen; finest climbing Roses, 6*s.* and 9*s.* per dozen; fine hardy Climbing Plants, including some beautiful new Honeysuckles, &c., 9*s.* per dozen; Herbaceous Plants, in fine collections, 30*s.* per 100; Hollyhocks, saved from fine named flowers, 15*s.* per 100, 2*s.* 6*d.* per dozen.

JOHN WILMOT (late WILMOT and SON), begs to inform the Nobility, Gentry, and the Trade, that any orders they may honour him with will be attended to with the same punctuality as during his father's life-time.
Isleworth, March 22.

T. JACKSON and SON have still on hand a limited quantity of their Improved KIDNEY POTATO, at 7*s.* 6*d.* per bushel, and Golden Dwarfs at 5*s.* 6*d.* (an excellent Early Frame Potato); for the particulars of their merits, see *Gardeners' Chronicle* of the 14th or 21st December.
T. J. and SON, having the largest stock in the country of Taxodium sempervirens, are enabled to offer them at the following low rates:—Fine plants, 2 feet high, 2*s.* 6*d.*; 6 feet, 21*s.*; intermediate sizes at proportionately low prices. Forsythia viridissima, 3 feet high, full of flower-buds, 2*s.* 6*d.*; and all other general Nursery Stock at equally low prices.
Nursery, Kingston, Surrey, March 22.

GENUINE SEEDS, DAHLIAS, PLANTS.
THEODORE LOCKHART, SEEDSMAN and FLORIST, 84, Fleet-street, London, warrants the following of first-rate quality:—

| | *s.* | *d.* |
|---|---|---|
| 12 distinct vars. German Aster ... ... ... 3*s.* and | 6 | 0 |
| 12 Ditto Ditto Stocks ... ... ... 3*s.* and | 6 | 0 |
| Glenny's 6 vars. Camellia Balsam ... ... ... ... | 2 | 6 |
| ,, Straw-coloured Ditto ... ... ... ... | 0 | 6 |
| A packet containing 500 Seeds, saved from the finest Show Hollyhocks ... ... ... ... ... ... | 1 | 0 |
| Walcheren Broccoli, per oz. ... ... ... ... ... | 2 | 0 |
| Imported Brussels Sprouts, per oz. ... ... ... ... | 1 | 0 |
| Lockhart's Rosette Colewort, the finest summer and autumn variety yet introduced, with instructions for sowing and growing, by which they will be fit for use in five weeks from the date of planting out, per oz. ... | 4 | 0 |
| All the above in sealed packets. | | |
| The improved Zinc Label, per 100 ... ... ... ... | 2 | 0 |
| Indelible Horticultural Ink, per bottle ... ... 6*d.* and | 1 | 0 |

A Dahlia List, just published, and sent free by post on application; and, in a few days, a second and improved edition will appear of T. LOCKHART'S Seed List.—March 22.

ABRAHAM HARDY AND SON'S HOME-GROWN SEEDS, selected from their general Seed list. Post free.

| | | *s.* | *d.* |
|---|---|---|---|
| | FLOWERS, packets of each:— | | |
| | Heracleum Giganteum ... ... ... ... | 0 | 6 |
| | Root do. do. ... ... ... ... | 1 | 0 |
| 100 vars. | Hardy Annuals ... ... 10*s.* 0*d.* ... 12 vars. | 1 | 0 |
| 20 ,, | Half hardy ... ... ... 3 0 ... 10 ,, | 2 | 0 |
| 20 ,, | Tender ... ... ... 5 0 ... 10 ,, | 3 | 0 |
| 50 ,, | Biennials and Perennials ... 7 0 ... 12 ,, | 1 | 0 |
| | VEGETABLES, packets of each: | | |
| *4 ,, | Beets ... ... ... ... 1 0 ... 2 ,, | 0 | 6 |
| *8 ,, | Broccolies ... ... ... 2 0 ... 4 ,, | 1 | 0 |
| *5 ,, | Cabbages ... ... ... 1 3 ... 2 ,, | 0 | 6 |
| 2 ,, | Cauliflowers ... ... ... 0 6 ... 1 ,, | 0 | 3 |
| *3 ,, | Celery ... ... ... 0 9 ... 1 ,, | 0 | 3 |
| 4 ,, | Frame Cucumber ... ... 2 0 ... 2 ,, | 1 | 0 |
| 2 ,, | Long prickley do. ... ... 0 6 ... 1 ,, | 0 | 3 |
| *2 ,, | Endive ... ... ... 0 6 ... 1 ,, | 0 | 3 |
| *3 ,, | Gourds ... ... ... 0 9 ... 1 ,, | 0 | 3 |
| *9 ,, | Lettuces ... ... ... 2 0 ... 4 ,, | 1 | 0 |
| 3 ,, | Melons ... ... ... 1 6 ... 1 ,, | 0 | 6 |
| *2 ,, | Parsley, extra fine ... ... 0 6 ... 1 ,, | 0 | 3 |
| 3 ,, | Potato, early ... ... 1 6 ... 1 ,, | 0 | 6 |
| *3 ,, | Savoys ... ... ... 0 9 ... 1 ,, | 0 | 3 |
| 3 ,, | Tomatoes ... ... ... 0 9 ... 1 ,, | 0 | 3 |
| 3 ,, | Vegetable Marrow ... ... 0 9 ... 1 ,, | 0 | 3 |
| | * Fine Brussels Sprouts ... ... ... ... | 0 | 3 |
| | * Fine Green Curled Canada Broccoli ... | 0 | 3 |
| | Treatise on Potato Culture ... ... ... | 0 | 6 |
| | Those marked * 8*d.* per oz.; 5 oz., 2*s.* 6*d.* | | |

Agricultural Seeds, &c., carriage free to London above 1*l.* value.—Early Potatoes, 9 varieties, each, 1*s.* per peck, or 3*s.* per bushel; Mangold Wurzels, 6*d.* per lb.; Altringham Carrot, 1*s.* per lb.; White do., 8*d.*; Parsnip, 9*d.*; Turnip and Swedes 1*s.* per quart; Asparagus Plants, 3 years old, 2*s.* per hundred, &c. Packages free. Remittances must accompany orders. This Advertisement will not be repeated.
SEED ESTABLISHMENT, MALDON, ESSEX.

HOLLYHOCK SEED.
EDWARD TILEY begs to inform the lovers of that beautiful flower that he has been successful in procuring a quantity of good sound SEED of the above from an Amateur Gentleman who has one of the most superb and choice collections in cultivation; the seed having been selected with every care and attention, he can confidently recommend it. Sold at 2*s.* 6*d.* per packet, containing 150 seeds, or 5*s.* for a packet of 400 seeds.
GERMAN ASTER SEED.
Unequalled for the superiority of flower, the shape of which forms that of half a globe, and has been admired by thousands of spectators at numberless exhibitions. There are from 20 to 30 varieties, 1*s.* per packet.
SWEET-WILLIAM SEED.
Saved from 24 superb varieties. The flowers are very large, and of dwarf habit. They were much admired when in bloom, by countless spectators, and the Seed numerously ordered by them; 1*s.* per packet.
ANTIRRHINUM SEED.
E. T. being a most extensive grower of all the choicest sorts known in cultivation, has selected the Seed with great care from the finest varieties, as to colour, shape and habit of plant. There are more than 50 distinct varieties; 1*s.* per packet.
DWARF ORANGE AFRICAN MARIGOLD SEED.
Unrivalled for its superior size and darkness of colour, many of the flowers last season measuring 5 inches over, and not more than 1 foot high; 6*d* per packet.
Or, if preferred, a 5*s.* packet of Hollyhock and a packet of each of the above varieties for 7*s.*

| | | | |
|---|---|---|---|
| Walcheren Cauliflower Broccoli (as imported) | 1*s.* | 0*d.* | p. packet. |
| Tamworth Broccoli ... ... ... ... ... | 1 | 0 | ,, |
| Wilcove Broccoli ... ... ... ... ... | 1 | 0 | ,, |
| Cole's Superb Solid Celery ... ... ... | 0 | 6 | ,, |
| Bath Cos Lettuce, seed true, the best and finest flavoured in cultivation ... ... ... | 1 | 0 | ,, |

A remittance must accompany the order, either in cash or penny postage stamps for the amount.
Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

TRUE DRUMHEADS for CATTLE, also EARLY BATTERSEA, the large Imperial, Early Vanack, &c., at THOMAS WELLANDS, Surrey Gardens, near Godalming, Surrey, packed and delivered at the Godalming Station, 3*s.* 6*d.* per 1000; the Large Asiatic Cauliflower Plants, 3*s.* per 100.

NURSERY CATALOGUES.—The following priced Catalogues may be obtained from the Cheshunt Nurseries, free by post, on receipt of one postage stamp.
A. Descriptive Catalogue of Roses.
B. Catalogue of Hardy Ornamental Trees and Shrubs.
C. ,, Fruit Trees.
D. ,, Hardy Herbaceous Plants.
E. ,, Forest Trees.
F. ,, Greenhouse Plants, &c.
G. ,, Agricultural, Garden, and Flower Seeds.
N.B.—The prices are attached to every article. All packages delivered free of carriage to London.
ADAM PAUL and SON, Nurseries, Cheshunt, Herts.

RIVERS'S STUBBLE SWEDE TURNIP SEED.
J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green-topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker street Cattle Show; also Specimen Roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs. will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2*s.* per lb., carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5*s.*, and 5 lbs., 10*s.*, by the following agents:—Aberdeen, Union-street, Mr. J. Roy; Ayr, N. B., Messrs. Imrie and Sons; Belfast, Messrs. Farrell and Co.; Bristol, Messrs. Garaway, Mayes and Co.; Carlisle, Messrs. Little and Ballantyne; Chester, Messrs. F. and J. Dickson; Chilwell, Nottingham, Messrs. J. R. and A. Pearson; Cirencester, Mr. R. F. Darby; Chichester, Mr. H. Silverlock; Clonmel, Ireland, Messrs. Higgins and Sons; Dunse, N. B., Messrs. Hogg and Wood; Dundee, Messrs. Urquhart and Sons; Edinburgh, Leith-walk, Messrs. Dickson and Co.; Exeter, Messrs. Veitch and Son; Folkestone, Mr. James Mickle; Glasgow, Messrs. Austin and M'Aslan; Inverness, Messrs. Howden (Brothers); Hull, Messrs. Dickson; Maresfield, Uckfield, Sussex, Messrs. Wood and Son; Malton, Yorkshire, Mr. John Sloter; Norwich, Exchange-street, Mr. Ewing; Plymouth, Mr. A. Pontey; Perth, Messrs. Dickson and Turnbull; Peterborough, Mr. Plutter; Reading, Messrs Sutton and Sons; Sudbury, Suffolk, Messrs. Bass and Sons; Sheffield, Messrs. Fisher and Holmes; Westerham, Mr. J. Catteil; York, Messrs. Backhouse and Sons.

THE FINEST CARNATIONS, PICOTEES, PINKS, AND OTHER HIGHLY DESIRABLE PLANTS.—We have the pleasure to announce that our Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

| | | | | |
|---|---|---|---|---|
| 25 pairs of finest first-rate show varieties of Carnations and Picotees ... ... ... ... | £5 | 0 | 0 |
| 12 pairs do. do. do ... ... ... | 2 | 10 | 0 |
| 25 pairs of very fine show varieties of do. do. ... | 3 | 0 | 0 |
| 12 pairs do. do. do. 1*l.* 4*s.* to | 1 | 10 | 0 |
| Fine mixed border do.—per dozen pairs ... ... | 0 | 12 | 0 |
| True old Clove—per pair ... ... ... ... ... | 0 | 2 | 0 |

PINKS, finest first-class show flowers, 12*s.* to 18*s.* per dozen pairs.
New Seedling PANSIES, "Commander-in-Chief," and "Prince Arthur."—Two of the best flowers of the season, price 5*s.* each. For particulars of their merits, see advertisement of February 8.
PANSIES.—12 of the finest first-class show flowers, including the above, for 21*s.* 12 fine show flowers, 10*s.*
FUCHSIAS.—All the best and newest varieties worthy of being grown, 9*s.* to 12*s.* per dozen.
VERBENAS do. do. 6*s.* to 10*s.* per dozen.
CINERARIAS do. do. Fine flowering plants, 9*s.* to 18*s.* per dozen.
CHRYSANTHEMUMS do. 6*s.* to 12*s.* per dozen.
,, Liliputian Varieties of 1849, 6*s.* per doz.
,, ,, ,, of 1850, 12*s.* per doz.
ERICAS.—Fine flowering plants of all the new varieties of Ventricosa, and other free-blooming kinds, 12*s.* to 18*s.* per dozen.
EPACRIS.—Fine flowering plants of all the best kinds, 12*s.* per dozen.
CAMELLIAS.—An extensive collection of the most superb varieties, 30*s.* per dozen.
FANCY GERANIUMS.—Strong Plants, in 5-inch pots, 12*s.* to 18*s* per dozen.
Greenhouse Plants, in 25 select kinds, by name, for 20*s.*
Do. 12 do. 12*s.*
ESCALLONIA MACRANTHA, a new and splendid hardy Shrub, bearing spikes of bright pink-coloured flowers, 5*s.* each.
MITRARIA COCCINEA do. do. with large Scarlet flowers, 9*s.* to 18*s.* per dozen.
HARDY CONIFERÆ, in 12 distinct and rare species, for 30*s.*
ROSES, Standards, Half-Standards, and Dwarfs, of all the best kinds, 12*s.* to 15*s.* per dozen.
CLIMBING ROSES, of strong and vigorous growth, 6*s.* to 9*s.* per dozen.
Hardy Flowering CLIMBERS, in 12 fine sorts, for 10*s.*
Herbaceous Plants, of newest and most showy kinds, 6*s.* to 9*s.* per dozen.
LILY OF THE VALLEY, strong, for blooming, 5*s.* per 100.
30 packets of new and very choice Flower Seeds, per post-free, for 6*s.*
ANEMONE Seed, saved from selected sorts, 2*s.* 6*d.* and 5*s.* per packet, per post-free.
YOUELL and Co., Royal Nursery, Great Yarmouth.

## NATIONAL FLORICULTURAL SOCIETY.—

Notice is hereby given, that a GENERAL MEETING will be held on THURSDAY next, the 27th instant, at the SOCIETY'S ROOMS, 21, REGENT-STREET, LONDON, to receive NOMINATIONS; for the ELECTION of MEMBERS; for the choice of OFFICERS; for the confirmation of RULES; and on other business. Chair to be taken at 2 o'clock, P.M., precisely. The first exhibition of Seedlings, &c., will take place on Thursday, April 3, at 2 o'clock.

JOHN EDWARDS, Hon. Secretary.

ADDRESS.—The want of a superior tribunal, to which all seedling Florists' flowers and hybrids should be submitted previously to being sent before the public, has for some time been felt; and it is proposed that the leading Nurserymen and Florists do organise a Society in London, where all Florists' flowers may be sent for the opinion of competent judges. That such an ordeal is absolutely necessary, is continually shown by the number of Florists' flowers that ought not to have been sold out as first-rate varieties; this in a measure is owing to many of the introductions being certified as first-class seedlings by censors who may have but a limited knowledge of the varieties already in cultivation. A Society so constituted, as to lessen or remove so great a tax on the lovers of flowers, should be universally supported by Nurserymen, Florists, and Amateurs; as the fact cannot be doubted that, in affording opportunities for the examination of seedlings before known and acknowledged authorities, the true interests of Floriculture will be permanently promoted. Several eminent Nurserymen, Florists, and Amateurs, both in London and the country, have urged the necessity for such a step, and wish to see a general Society formed, which shall, by its strictness and impartiality, be stamped as a necessary ordeal through which all seedlings should pass, and have promised to give it their support. Various suggestions have been offered. One extract will convey the general tone:—"Let the proposed Society be totally free from all partiality; it must be independent and honest; and to be useful, it must have the confidence of the public. Censors should be fixed, and their names published; in short, let it be that which *we all desire*, a tribunal to test new Florists' flowers and hybrids. Such will be liberally supported." To those parties engaged in the pleasurable pursuit of raising seedlings, the Society must prove invaluable. To the dealer such a tribunal will be of the utmost importance, relieving him of much responsibility and constant anxiety. To the purchasers of new Plants such a test will not only prove beneficial in a pecuniary view, but afford some security that the novelties annually offered possess at least claim to merit.

21, Regent-street, London, March 1st, 1851.

The following Gentlemen are among the early promoters of the NATIONAL FLORICULTURAL SOCIETY, of whom the printed Rules, &c., may be obtained.

Mr. Arthur Henderson, Pine-Apple Place, Edgeware-road, London
Mr. Charles Turner, Royal Nursery, Slough
Mr. John Salter, Versailles Nursery, Hammersmith
Richard Srams, Esq., New-road, London
G. W. Hoyle, Esq., Reading
Mr. Andrew Henderson, Wellington-road, St. John's-wood, London
Mr. John Edwards, Wace Cottage, Holloway
Mr. James Veitch, jun., Exeter
Mr. W. P. Ayres, Brooklands Nursery, Blackheath; Editor of "Magazine of Botany"
Edmund Foster, Esq., Clewer Manor, near Windsor
Mr. Edward Beck, Worton Cottage, Isleworth; Superintendent of the "Florist"
E. S. Dodwell, Esq., Derby; Sec. Midland Horticultural Society
Morgan May, Esq., Sonning, Berkshire
Thomas Adams, Esq., Derby
C. P. Lochner, Esq., Warwick House, Paddington; Hon. Sec. of Highgate Society
Rev. C. Fellows, Shotesham Rectory, near Norwich
Messrs. Backhouse and Son, Fishergate, York
Messrs. J. and J. Fraser, Lea Bridge, Essex
Mr. John Keynes, Nurseryman, Salisbury
Mr. C. Lidgard, Hammersmith
Messrs. Widnall and Davis, Granchester
Mr. T. Barnes, Danecroft Nursery, Stowmarket
Mr. Thomas Rivers, Sawbridgeworth
Messrs. Bass and Brown, Sudbury, Suffolk
Mr. John Dobson, Worton Cottage, Isleworth
Mr. T. Appleby, Pine-Apple Nursery, Edgeware-road, London
J. T. Neville, Esq., Ebenezer House, Peckham; Secretary to the Royal South London Floricultural Society
J. H. Brown, Esq., Tulse-hill, Surrey
Mr. J. F. Wood, The Coppice, Nottingham; Editor of "Midland Florist"
J. W. Newhall, Esq., Woolwich, Kent
Mr. J. Robinson, Pimlico, London
Mr. N. Norman, Woolwich, Kent
Mr. W. Paul, Rose Nurseries, Cheshunt, Hertfordshire
Mr. J. Cole, Gardener to J. Wilmore, Esq., Oldford, near Birmingham; Superintendent of "Midland Magazine"
J. Wilmore, Esq., Oldford, near Birmingham
Mr. G. Wyness, Gardener to her Majesty, Buckingham Palace
Mr. A Ambrose, Nurseryman, Battersea, Surrey
Mr. Black, Clewer Manor, near Windsor
Mr. W. J. Epps, Bower Nurseries, Maidstone, Kent
Mr. J. Good, Nurseryman, Derby
Mr. Glendinning, Nurseryman, Chiswick, Middlesex
Mr. Gaines, Nurseryman, Surrey-lane, Battersea
Mr. J. Harrison, Nurseryman, Richmond, Surrey; Editor of "Floricultural Cabinet"
Mr. W. Ivery, Nurseryman, Rye-lane, Peckham, Surrey
Mr. A. Lane, Rose Nurseries, Berkhampstead
Mr. Pontey, Nurseryman, Plymouth
C. J. Perry, Esq., Handsworth, near Birmingham; Hon. Sec. to the Handsworth and Lozell's Society, and Editor of "Midland Magazine"
Mr. Pope, Kempes-row, Pimlico
Messrs. W. Rendle and Co., Nurserymen, Plymouth
W. H. Story, Esq., White Hill, Newton Abbott, Devon
Mr. Wm. Jeffrey, Hedgerly Park, Bucks
Mr John Liddiard, Salt Hill, Bucks
G. W. Johnson, Esq., Winchester, Hants; Editor of the "Cottage Gardener, &c."

EXHIBITION AND MEETING-DAYS.*

1851.—Thursdays, March 27, at 2 o'clock P.M.; April 3 and 24, at 2; May 8 and 22, at 3; June 12 and 26, at 3; July 10 and 31, at 3; August 7 and 21, at 3; September 4 and 18, at 2; October 9, at 2; November 13, at 2; December 4, at 2.

1852.—Four days, January 8, at 2; February 5, at 2; March 5 (Anniversary), at 1.

* RULE 15.—That subjects for examination be at the Office at least two clear hours before the time fixed for such meeting, and be delivered carriage free; but in cases where it is impossible to pay the carriage through, the sender must refund any payment made by the officers of the Society, nor will any plant, flower, or package be acknowledged that has not the sender's name and address marked thereon, or otherwise made known by previous advice to the Secretary at the Office.

NEW SPRING CATALOGUE.
WOODLANDS NURSERY, MARKSFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON have now published a New CATALOGUE OF GREENHOUSE AND BEDDING PLANTS, copies of which will be forwarded free on application.

W. W. and S. N. beg to offer strong plants from their superb collection of Hollyhocks, at 6s., 9s., and 12s. per dozen; Cape Heaths, 9s, 12s., and 18s per dozen, strong and bushy; Chinese Azaleas, 9s., 12s., and 18s. per dozen, strong and bushy.

Chrysanthemums, best Continental vars, 6s., 9s., 12s.; Phloxes, 6s., 9s., 12s.

Extra plants will be presented with each order, as compensation for carriage.

TO NURSERYMEN, FLORISTS, &c.

J. LINDEN, 74, Chaussee de Schaerbeek, Brussels and Luxembourg, begs to inform Amateurs and the Trade that his Catalogue of New Plants for 1851 is now ready, and may be obtained gratis of his Agents, BETHAM and BLACKITH, Custom House and General Forwarding Agents, Cox's Quay, Lower Thames-street.

J. L. solicits attention to the new and remarkable Orchideous Plants with which the Catalogue abounds, as also to the following, a description of which will be found on the first and second page:—

| | | |
|---|---|---|
| FUCHSIA VENUSTA, H.B.K. strong plants, | 5s. to | 7s. 6d. |
| FUCHSIA NIGRICANS, LINDEN | Ditto | 3s. |
| BOMAREA EDULIS | Ditto | 7s. 6d. |

## NEW VALUABLE FLOWER SEEDS.—Portulaca

nova rosea, new Rose var., very handsome, 1s. per pkt.

| | | |
|---|---|---|
| Ipomœa Quamoclit alba, half-hardy | 1s. | ,, |
| ,, Burridgii, splendid hardy | 6d. | ,, |
| Saponaria Calabrica, var. multiflora | 6d. | ,, |

No garden should be without this most valuable Annual.

| | | |
|---|---|---|
| Martynia angularis, new and handsome | 6d. | ,, |
| Gloxinia, hybridised by a first-rate grower | 1s. | ,, |
| Calendrinia umbellata, new and handsome half-hardy Annual | 1s. | ,, |
| A few packets of Lisianthus Russellianus | 1s. | ,, |
| Tropæolum speciosum, very handsome | 1s. | ,, |

DUNCAN HAIRS' object, in selecting the above few Seeds from his collection, is to draw the particular attention of those who are fond of novelty and beauty. Amongst other departments of his business, D. H. prides himself on having some first-rate Seeds of Florist Flowers—viz., Calceolaria, Cineraria, Hearts-ease, Dahlia, Verbena, Carnations, Pink, Cockscombs, and Balsams, &c., in 6d and 1s. packets.

German Stocks and Asters in collections, 2s. to 5s.

109, St. Martin's-lane, Charing Cross, London.

Catalogues per post free.

## GEORGE MILLS, 15 years Steward and Gardener

to the late Baroness de Rothschild, at Gunnersbury-park, Ealing, Middlesex; 32 years F.H.S. of London; autnor of a Treatise on the Culture of the Cucumber, Melon, Seakale, and Asparagus; as also of a Treatise on the Culture of the Pine-apple; who has practised Horticulture, Agriculture, and Arboriculture 50 years, on the cold clay soils of Hants and Essex, as also on the light and warm soils of Bucks, Surrey, and Middlesex, begs most respectfully to offer his opinion on all subjects relating thereto, excepting Botany and Chemistry.

G. M. is induced to make the above offer from the advantage he derived in early life from the advice of a friend, his senior in practice. He has long been quite satisfied that the land under cultivation in this country, although great improvements have been made within the last 20 years by drainage, &c. &c., is still capable of greater improvement, and the hope of seeing those improvements carried out, induces him to offer his opinion thereon.

G. M. will give his opinion only where his experience will enable him to give it confidently.

Terms, 2l. per day, exclusive of travelling expenses; for less than a day, 1l.

GEORGE MILLS, Loraine Cottage, Hammersmith, Middlesex.

ESTABLISHED 1786.

## WILLIAM E. RENDLE AND CO., SEED MERCHANTS

by special appointment to the SOUTH DEVON AGRICULTURAL ASSOCIATION, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded *one thousand bushels*; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

## OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS

*is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, and Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. KEMP, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2l. Carriage Free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

## STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

CABBAGE PLANTS.

SUPERIOR EARLY TRUE SORTS, Stout Bedded, 4s. 6d. per 1000, package included, delivered free of carriage to the Edenbridge Station, South-Eastern Railway; also CAULIFLOWER PLANTS, Early and Late, 4s. per 100; and RED CABBAGE, Stout Bedded, 1s. per 100, or 7s. 6d. per 1000. Address to JOHN CATTELL, Westerham, Kent.

LAYERTHORPE NURSERY, YORK.

HANNAH EDWARD, Widow of the late JAMES EDWARD, begs to return her sincere thanks to the friends and supporters of her late Husband, and to inform them that the Business of a NURSERYMAN, SEEDSMAN, and FLORIST, as heretofore conducted, will be continued for the benefit of herself and family under the superintendence of Mr. GEORGE EDWARD and the Executors; and Mr. GEORGE EDWARD begs to assure those friends by whom his Sister-in-law may be favoured with support, that every exertion will be used by him to execute their orders in such manner, and on such terms, as cannot fail to merit a continuance of the patronage so liberally conferred on his deceased Brother.

GEORGE EDWARD, in offering the following SEEDLING DAHLIAS and GERANIUMS, begs to state that they are faithfully described; and from their constancy in producing good Flowers, cannot fail to give the utmost satisfaction.

### SEEDLING DAHLIAS.

BEAUTY OF LAYERTHORPE—One of the most constant flowers ever raised; colour beautiful pink, tipped with bronze, petals well arranged, of good substance, size medium. Every flower fit for exhibition. Height 4 feet; price 10s. 6d.

QUEEN OF SCOTLAND—Creamy white ground with violet purple edge, first-rate form, of good substance, petals beautifully cupped and well arranged, very constant. Height, 4 feet; price 10s. 6d.

### FANCY DAHLIAS.

JETTY TREFFZ—Bright crimson, with clear white tip, good outline, and well up in the centre, large size, one of the best fancy Dahlias yet raised. Height, 4 feet; price 10s. 6d.

LOLA MONTES—Dark purple, distinctly edged with white, size large, a first-rate fancy variety. Height, 4 feet; price 10s. 6d.

### SEEDLING GERANIUMS.

| | £ | s. | d. |
|---|---|---|---|
| NORTHERN BEAUTY (EDWARD), bright crimson cloud, shading off to bright ruby, with clear blush margin, lower petals blush, of good substance, size large, form good, bold trusses, with superior habit | 1 | 1 | 0 |
| EBORACUM (EDWARD), bright crimson cloud, with brilliant rosy purple margin, beautifully mottled, blush ground colour, with white throat, good form and substance | 1 | 1 | 0 |
| LADY OF THE LAKE (EDWARD), maroon cloud, with distinct blush margin, lower petals rosy blush, large flower, good form and substance | 0 | 10 | 6 |
| SURPRISE (EDWARD), crimson cloud, with beautiful purple margin, lower petals purple, shaded with blush, habit good | 0 | 10 | 6 |
| INDISPENSABLE (EDWARD), maroon cloud, with rosy blush margin, lower petals rosy purple, very beautiful variety | 0 | 10 | 6 |
| BEAUTY (EDWARD), maroon cloud, with distinct crimson margin, lower petals blush, good substance and very fine, size medium | 0 | 15 | 0 |
| EXQUISITE (EDWARD), rosy crimson cloud, with blush margin, lower petals rosy pink, large size and good form | 0 | 7 | 6 |
| BRIDE (EDWARD), in the way of Beck's Bridesmaid, but much superior | 0 | 5 | 0 |

Layerthorpe Nursery, York, March 22.

## THE PRESENT IS THE PROPER SEASON FOR SOWING THE "ORACHE," SUPERIOR IN EVERY RESPECT TO SPINACH.—

The leading article of the *Gardeners' Chronicle* of January 25, 1851, fully bears out the above assertion, that this is one of the very best summer vegetables, superior to Spinach in its flavour, and possesses the advantage of affording a constant and permanent supply (without going to seed) of large luxuriant leaves throughout the summer months. It was most successfully grown last season at the seat of Joseph Hume, Esq., M.P., Burnley Hall, in this county, and much preferred to Spinach. Sealed packets 2s. 6d. and 5s. each, per post free, containing a sufficient supply for a large or small family.

Also may be had, Seeds of the "True Custard Gourd," a most delicious Vegetable Marrow. Packets containing 6 seeds, 1s., per post free. Payments by postage stamps or Post-office order—YOUELL and Co., Royal Nursery, Great Yarmouth.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

## BASS AND BROWN'S SEED AND PLANT LIST FOR 1851

*is stamped as a Newspaper, to go free by post, and may be had on application. It will be found to contain the newest and best articles which can be procured, with full description and other useful information.*

SELECT AND CHOICE FLOWER SEEDS.

The following of our best selections supplied free by post, with proper directions for sowing, heights, colours, &c., given in the Catalogue.

| | s. | d. |
|---|---|---|
| 100 varieties best and newest Annuals | 15 | 0 |
| 50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds or lawns, 7s. 6d., or 12 do. for | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7s. 6d., 12 for | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | | |
|---|---|---|---|
| 20 varieties splendid double Stocks, 3s. 6d.; 12 ditto | 2 | 6 |
| 12 vars. splendid China Asters | 2 | 6 |
| 12 vars. fine globular Asters | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs | 2 | 0 |
| 9 vars. Tall ditto | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2l. and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

## VIOLETS.—The month of April is the season for

planting the different varieties of this flower. They will not display any degree of bloom without a full summer's growth; they ought to be planted in a good sunny situation, in rich soil; and they will then amply repay the culture, by yielding flowers when they are the only floral attraction. For economy in culture, the best part of a garden may be used, as Tripoli Onions, Horn Carrots, or any dwarf vegetable in maturity at Midsummer, may be grown with them. I grow VIOLETS very extensively and successfully, and never allow them to occupy the ground without such interplanting. One dozen plants of the Russian Superb Violet will, by such culture, yield, from the 1st of September to the end of April, a bouquet daily.

The Russian Superb, blue, 6s. per dozen; the white Russian, same price; with seven other varieties, 3s. per dozen. All free by post. Tripoli Onion Plants, 8d. per 100; free by post. This is a valuable plant; sown in September, they are sure not to run to seed, and they come to perfection early in June, producing abundantly in good soil.—Address, ROBERT SHACKELL, Locksbrook Nursery, Bath.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct, of last year, 10*s.* 6*d.* cash. See List containing a great variety of choice new Plants for one stamp.—Nursery, Kennington, London.

ROSES.

ADAM PAUL AND SON beg to inform their friends and the public in general that they have still a good stock of most of the leading kinds of ROSES, which, when the selection is left to them, they offer on the following advantageous terms:

| | | |
|---|---|---|
| Standard Roses, in 12 superior vars., | 18*s.* to 24*s.* | per doz. |
| Dwarf Standard do. do. | 12*s.* to 18*s.* | ,, |
| Climbing Roses do. | 9*s.* to 12*s.* | ,, |

A priced descriptive Catalogue forwarded on receipt of one postage stamp.

All packages delivered free of carriage to London.

Nurseries, Cheshunt, Herts, March 22.

THE PLANTING SEASON.—WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON having still on hand a very extensive and superior stock of ROSES, will be happy to supply collections as under (the selection of sorts being left to themselves). The plants are remarkably strong and healthy, and none but first-rate kinds will be sent.

| ROSES. | Per dozen. |
|---|---|
| Extra tall Standards, budded with from 3 to 6 best varieties on a stem ... ... ... ... ... | 42*s.* to 60*s.* |
| Extra superior selected Standards ... ... ... | 18*s.* to 24*s.* |
| Fine Dwarfs and Dwarf Standards ... ... ... | 10*s.* to 16*s.* |
| Superb do. do. (for exhibition) ... | 18*s.* |
| Fine Dwarfs, on own roots, in 50 varieties, per 100 ... | 50*s.* |
| Good do. do. without names, per 100 | 30*s.* |

N.B. A liberal quantity of plants will be given over with each order. Catalogues free on application.

Rose Nippers, of various sizes, for pruning, 2*s.* 6*d.* to 4*s.* each. The Nippers are of an improved shape, being made so as to remove a shoot without bruising the part left; they are highly recommended as a useful addition to the implements of amateurs. Metallic Labels for pot Roses, 2*s.* per 100.

THE BLACK AUSTRIAN PINE,—"PINUS AUSTRIACA."

LUCOMBE, PINCE, AND Co. have a large and healthy stock of this most desirable Pine, exceeding 300,000, from 9 inches to 3 feet high, which having been frequently transplanted, are well rooted and safe to remove; they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s.* per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils; growing rapidly and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds.

Exeter Nursery, March 22.

TO GENTLEMEN ENGAGED IN PLANTING.

GEORGE JACKMAN has to offer a large and well-grown Stock of the following at very low prices, which can be had on application.—Beech, 4 to 5 ft.; Chestnut, Spanish, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Elms, English, 4 to 5 ft.; Fir, Larch, 2 to 3 ft.; Ditto ditto, 3 to 4 ft.; Ditto, Spruce, 2 to 3 ft.; Ditto ditto, quartered, 4 to 7 ft.; Ditto, Silver, 1 to 3 ft.; Hazel, 2 to 3 ft.; Ditto, 4 to 5 ft.; Hornbeam, 4 to 5 ft.; Oaks, English, 4 to 5 ft.; Ditto, Scarlet, 2 to 3 ft.; Quicks, strong bedded.

Woking Nursery, March 22.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents

AMERICAN PLANTS.

C. LODDIGES AND SONS, in consequence of part of their Nursery being given up for building, are enabled to offer for cash—

Finest Ghent Azaleas, strong bushy plants named, and being well set with buds, are peculiarly adapted for forcing, 18*s.* per doz.

Azalea pontica, large, 12*s.* per doz.
Andromeda floribunda, 3 to 4 feet across, 10*s.* each.
Vaccinium, 30 species, 12*s.* per doz.
Andromeda Ditto 24*s.* per doz.

Post-office Orders to be made payable at Hackney, near London.

CUCUMBER "PHENOMENA," AND "BROMHAM HALL" MELON.

EDWARD TILEY wishes to inform the Nobility, Clergy, Gentry, and Growers in general, that he has still a Stock of good sound Seeds of the above superb CUCUMBER and MELON, and other varieties, as advertised by him in the *Gardeners' Chronicle*, Feb. 22d, 1851. Cucumber Phenomena, 2*s.* 6*d.* per packet; Bromham Hall Melon, 1*s.* 6*d.* ditto; Fleming's Trentham Hybrid Melon, 1*s.* ditto; and about 20 other good varieties of Cucumbers and Melons, at the prices mentioned in the former Advertisement.

Any quantity will be sent postage free on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

VERBENAS.—A Set of Twelve of the most extraordinary Seedling Verbenas ever offered. As a proof of their excellence, they have been awarded 30 first-class certificates; three of them will be figured in the "Gardener's Magazine of Botany," April 1. G. S. begs to say that they are very distinct, and far surpass any previously raised. The set in strong plants, the third week in April, at 2*l.*, or 5*s.* per plant. For descriptions, see Catalogue, which will be forwarded on the receipt of one postage stamp, with the description of the beautiful Fuchsia Sedonia, figured in the "Gardener's Magazine of Botany," for March. Also his new Petunias and Heliotropes. Selections, with prices of Verbenas, Fuchsias, Dahlias, Chrysanthemums, Geraniums, &c., at moderate prices.—GEORGE SMITH, Tollington Nursery, Hornsey-road, Islington, London.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, March 22.

PLANTS! PLANTS! PLANTS! NEW AND CHEAP.

H. WALTON begs to offer the following at the very low prices named. DAHLIAS of 1850, 9*s.* and 12*s.* per dozen; older varieties, 4*s.* 6*d.* to 6*s.* per dozen. FUCHSIAS, new varieties, 20 for 18*s.*, 12 for 12*s.*, 6 for 7*s.*; older varieties, 5*s.* per dozen. VERBENAS of 1850, 1*s.* each, or 6*s.* per dozen; older varieties, 3*s.* to 4*s.* 6*d.* per dozen. PETUNIAS of 1850, 9*s.* to 12*s.* per dozen; older varieties, 6*s.* per dozen. 12 of the choicest PANSIES of 1850, 16*s.*, or 24 for 1*l.*; older varieties, 6*s.* to 9*s.* per dozen. CINERARIAS, sent out last spring, 9*s.* to 12*s.* per dozen. GERANIUMS, 7*s.* 6*d.* to 12*s.* per dozen. 12 first-rate Show CARNATIONS, 9*s.* to 12*s.*; 12 first-rate Show PICOTEES, 9*s.* to 12*s.*; 12 first-rate Show PINKS, 4*s.* to 6*s.* Named CHRYSANTHEMUMS, 6*s.* per dozen.

For particulars of the above see Catalogues, which may be had by enclosing one stamp. Strong, healthy, well rooted plants, may be depended on; securely packed, so as to ensure the safe delivery of all orders at the least possible expense.

It is respectfully requested that all orders be accompanied with a post-office order, made payable at Marsden, in Lancashire.

HENRY WALTON, Florist, Edge End, Marsden, near Burnley, Lancashire.

HUGH LOW AND CO. beg to offer established Plants of the undernamed:

| | |
|---|---|
| PHLOX, 24 superior sorts, each ... ... ... | 1*s.* 0*d.* |
| ,, 24 newer varieties, each ... ... ... | 1 6 |
| ,, 12 best Belgian varieties of last year, each | 2 6 |
| CHRYSANTHEMUMS, in great variety, per doz.... | 9 0 |
| ,, per 100, one plant of each sort ... ... ... | 50 0 |
| ,, newer varieties, per doz.... | 18 0 |

LILIPUTIAN CHRYSANTHEMUMS.—These miniature varieties have, during the past season, established themselves as great favourites, on account of their dwarf habit and profuse blooming.

12 varieties of 1849, 1*s.* each, or 9*s.* per dozen.
18 ,, of 1850, 2*s.* each, or 18*s.* per dozen.
GLOXINIAS, 6 fine Continental hybrids, 2*s.* 6*d.* each.
BLUE MIMULUS (Mimulus ringens), a fine hardy herbaceous plant, 2*s.* 6*d.* each.

A few fine round-headed SWEET ORANGE TREES, 2 feet stems, full of fruit, 15*s.* each.

Post-office orders payable at Hackney.

Clapton Nursery, London.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited, 1*s.* packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1*s.* per oz., 6*d.* per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1*s.* per oz., 6*d.* per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens; 6*d.* per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3*d.* per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1*s.* per oz., 6*d.* per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIES, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing-cross, London.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s.* | *d.* | | Per 1000—*s.* | *d.* |
|---|---|---|---|---|---|
| York Regents .. .. | 10 | 6 | New Early Ebrington Kidney .. .. | 15 | 0 |
| American Native .. | 10 | 6 | Do. Ash-leaved .. .. | 15 | 0 |
| White-blossomed Kidney .. .. .. | 10 | 6 | Do. Frame Round .. | 10 | 6 |
| Soden's Early Oxford .. | 15 | 0 | Do. Radical .. .. | 10 | 6 |
| Early Cockney .. .. | 15 | 0 | Fox's Seedling .. .. | 10 | 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, March 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15½ per cent. |
| Salesman, No. 1 ... ... ... ,, ,, | 11¾ ,, |
| ,, No. 2 ... ... ... ,, ,, | 9½ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

**The Gardeners' Chronicle.**

*SATURDAY, MARCH 22, 1851.*

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | March 24 | British Architects | 8 P.M. |
| | | Geographical | 8½P.M. |
| TUESDAY, | — 25 | Civil Engineers | 8 P.M. |
| | | Medical and Chirurgical | 8½P.M. |
| | | Zoological | 9 P.M. |
| WEDNESDAY, | — 26 | Society of Arts | 8 P.M. |
| | | Geological | 8½P.M. |
| THURSDAY, | — 27 | Royal Soc. of Literature | 4 P.M. |
| | | Antiquarian | 8 P.M. |
| | | Royal | 8½P.M. |
| FRIDAY, | — 28 | Royal Institution | 8½P.M. |
| SATURDAY, | — 29 | Medical | 8 P.M. |

IT is quite remarkable to observe, how much has been written, and yet how little is really known, respecting the THEORY OF TRANSPLANTING, a subject of the first importance to the working gardener; in some cases, a good deal of sound knowledge, and good practical experience, is so overlaid with fine words and absurd affectation of science, that the seeker after instruction has no easy task to separate the sense of the author from his nonsense. In other cases, that which is altogether false, and without any real value whatever, is stated as unquestioned facts, and is told with such an air of decision and authority, that it may easily deceive those who are not aware of the true weight to be attached to such authority, and the real value of such facts. It is to be regretted that there is hardly any really good book especially devoted to this subject; it is probable that if there were, we should not so frequently observe the evil effects of ignorant and careless planting in plantations and woods, as we do at present.

There are many hundred thousands of acres of land in various parts of England perfectly barren and useless, and, consequently, of little or no real value to their possessors, but which, if judiciously planted, might, in time, be rendered profitable in various ways. We have sometimes suggested to the possessors of such tracts of land, the advantage of planting with suitable trees some of these waste lands, and have not unfrequently been told, in reply, that it was quite useless to do so, because nothing would grow there; the place was too exposed, too high or too low, too wet or too dry; and in support of this, the failure of some attempt to plant a neighbouring piece of ground was adduced. Now, in nine cases out of ten of this sort, it will be found, on closely inquiring into the matter, that the failure of the neighbouring plantation has arisen from the miserable and careless mode in which the planting has been effected. The work was, perhaps, done by contract, the trees were bought as cheap as possible, fetched from a distance, and badly packed, so that they received as much injury as possible on the road, short of absolute destruction. In planting, it is probable that nothing more was done than to make holes in the ground, or rather slits, with a single cut of a spade or pick, the trees thrust in, and rammed hard, to prevent them from being blown away, generally being buried a few inches deeper than they ought to be. Of such planting we can only say, that if the roots of the plant chance to be put into the ground—in fact, if the tree is planted with the right end upwards, it may possibly grow. No one need wonder if the greater number die, whilst those which do grow look starved and miserable, and at last, if they live long enough, form something between a bush and a stunted tree; in short, it is more wonderful that any of the trees thus planted grow at all. Let it not be thought that we are too severe in making these remarks; we are unfortunately not speaking of one case, but of many, as any one may learn, if he sets out on a journey to discover badly managed plantations.

We doubt very much whether there is any great quantity of land in England on which trees of one sort or other might not be profitably cultivated. Of course there are situations, as, for example, on the sea-coast, and exposed to the influence of high tides; and again, in certain rocky districts, where there is, perhaps, no true soil, in which plants could not grow, but, with the exception of these and similar cases, there are but few instances of barren land which, by a little care and attention, might not be in a few years covered with healthy trees. As, on the one hand, we could point to numerous instances of the failure of bad planting in barren or exposed situations; so, on the other hand, we might mention many cases in which, by the expenditure of a little more care and money, the most successful results have been obtained. In planting barren land, the various conditions of situation, exposure, and soil, must be considered; and if there is any thing which is evidently wanting, or unfit, it must, if possible, be remedied at once. The depth of the soil, and the nature of the subsoil, must be inquired into. The superabundance of water must be guarded against; and at the same time it must be borne in mind, that it is quite possible to over-drain land; especially that which is very light and porous, and which, therefore, soon becomes dry and scorched in a hot summer. Above all things, some pains must be taken in planting the trees themselves; they must be selected according to the situation to be planted, and they must be carefully planted in the soil when it has been properly prepared, and not merely stuck in holes and the earth rammed hard round them, as if they were so many hedge-stakes.

In exposed situations, as in bleak downs by the sea shore, it is often found that nothing but some hardy Pine, or similar tree, is able to withstand the wind; but even in these cases, by planting in belts, and by making use of the shelter which the more hardy trees afford, it is easy in a few years to have thriving plantations of most of the ordinary forest trees. The value of shelter is strongly insisted on by all who have had the management of plantations by the sea shore, and it may be readily seen, by observing the outer trees of exposed woods, and comparing them with similar trees which have

grown up in less exposed situations. It is not enough in planting waste ground, to break up the surface once, and leave the young trees to struggle up through a dense mass of tangled weeds. Young trees are often thus absolutely smothered; yet the cost of once or twice going over the ground again is in all cases amply repaid, by the increased growth and vigour which the young trees derive from that operation. When weeds are permitted to grow thickly round young trees, they prevent the latter from growing, and absorb those matters which would otherwise form the food of the young trees.

There are no doubt places in which all the skill of the planter will at first fail in getting trees to grow, but even in such cases he need not despair; the cause of his failure usually is, not that the soil is absolutely unfit to support vegetation of any kind, but that the circumstances being highly unfavourable, the plants are not able to get over that shock to their systems which they always suffer in ordinary transplanting. It is evident that plants which are moved with bare roots, as young trees are, must receive a far greater check than those which are moved with a ball of earth; and it is very often found that a little extra care in the planting is well repaid, because if the tree survive this check, and form fresh roots, it will generally get such a hold upon the soil, that it is then able to grow up, and form a healthy tree. In planting the most barren and exposed situations then, particular care must be taken, and it appears in such cases to be well worth while to add some "improver" to the soil, thrown into the holes in which the trees are planted. The quantity required is small, its cost need not be great, and the labour of using it is a trifle, compared with the good effect produced by its application.

The effect which it is desired to produce is the formation of fresh roots, and any substance which will cause the plant to throw out a quantity of fibrous rootlets, will enable it to overcome the evil effects of its being transplanted. It appears that phosphoric acid possesses a very great and remarkable influence on the development of roots, causing plants to throw them out with unusual vigour; we do not know of any very satisfactory explanation of this phenomenon, either chemical or physiological, but of the fact itself there seems to be no doubt. The most convenient mode of employing this substance is in the form of superphosphate of lime, as it is called, that is to say, a mixture of oil of vitriol and burnt bones. This compound, which is rich in phosphoric acid in a soluble state, may be readily mixed with a little dry mould, and it then forms a most valuable aid to the planter; a little of the mixture being thrown in round the roots of the transplanted tree, aids greatly in the formation of root fibres, and consequently assists very much in establishing the plant in its new situation. Or, if scattered over the soil next the roots, before it is finally watered after planting, it is well distributed to the places where it is most required.

When a young tree has its roots thrust into such a hole as is made by a single cut of a spade, or even by two cross cuts, the roots are crowded together, and crushed into a small space; they are unfitted therefore to collect and absorb nourishment, at a time when the plant stands peculiarly in need of it. Not only is the freshly-planted tree able to obtain little food by means of its roots, in consequence of the mode in which it is planted, but the supply of nourishment is at the same time also diminished in consequence of the change of soil. In all cases the soil of the nursery or seed plantations, having been repeatedly dug over, and more or less manured, is better suited to the growth of the young plants than the soil into which they are transplanted can possibly be. When a plant is moved from one soil to another its growth is always checked, and the first step which it makes towards repairing the evil thus caused, is the formation of fresh roots; by bad planting this is made as difficult as possible to the plant.

It is hardly fair to compare together the growth of trees with that of the ordinary vegetables which are cultivated in our kitchen gardens; of course the conditions necessary to the growth of an annual, differ from those proper to the healthy development of a slow growing tree, which requires a long series of years to arrive at maturity; but even in the case of common garden crops, the same general effects to which we have just referred, may be observed. In almost every case where it is desirable to increase the development of roots, phosphoric acid is of the greatest value. When we wish to force young plants, to push them forward as fast as possible, so that their roots may get some hold upon the soil, the superphosphate of lime is one of the best manures we can employ. The mode in which that substance brings forward a crop of Turnips is an illustration of this, and the remarkable way in which it assists the growth of the young plants, getting them rapidly into the rough leaf, and producing a more marked influence on their growth then, than it does at any subsequent period, appears to depend chiefly on the fact that it aids them in the formation and development of roots.

Superphosphate of lime is, therefore, a very valuable fertiliser in the hands of the planter, but in using it he must always remember, that as his plants must necessarily absorb the whole or the greater part of the soluble manure which he gives them, he must take care not to give them too much. He must not suppose that if one handful will do good, therefore ten handfuls will do more: it is very easy to give too much, and plants, like animals, may equally be injured by over feeding or by starvation.

## GRAFTING.

No. XII. BUDDING WITH PUSHING EYES: figs. 15, 16, 17, and 18. (*Greffe en écusson à œil poussant.*)—In temperate and cold countries, this operation ought to be performed during the first rise of the sap; for by deferring much longer the shoots springing from the inserted buds will be in danger of not being sufficiently matured for withstanding the frost: besides, this practice has the effect of weakening the stocks, by depriving them of a large quantity of foliage which they will then have acquired, it being necessary to cut back the stocks an inch or so above the bud, in order that it may be induced to push immediately after its insertion, and care must always be taken that the portion of stock left above be furnished with one or two shoots or leaves. The object of leaving this small piece of stem is to attract and concentrate the sap for the benefit of the bud. For the better fulfilling this, and for preventing the inconveniences above pointed out, they now do not immediately cut off the shoots from the stock; instead of doing so they bend them into the form of a huntsman's horn, and keep them in that state till the buds have fairly commenced to push, and then they cut them back to within about one-eighth of an inch of the bud. This operation, although less injurious than the preceding, causes the privation of a great quantity of foliage at the time when the trees are most in want of it, for protection against the excessive heat and drought, which is almost certain to occur, at that period of the season; and the consequence is that the vigour of the tree is suddenly checked; and nothing but abundant waterings can possibly re-establish it. This mode of budding is only used for a few kinds of trees and shrubs; among the latter, Roses are more especially included, the species or varieties called Hybrid Perpetuals (Remontantes), and Bengals being worked in this way; but those amateurs who find themselves under the necessity of practising it, and who wish to maintain the vigour of their stocks, make a point of preserving as many leaves as possible, and bud only the strong shoots and branches; and with regard to the weak, they only cut them back when the inserted buds are in a good state of vegetation.

Fig. 18 Fig. 17. Fig. 15.

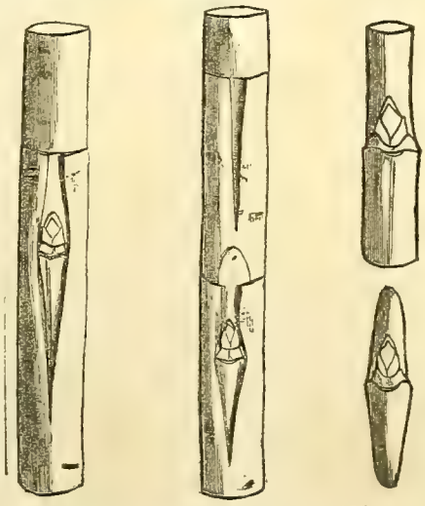


Fig. 16.

There are also some fruit trees which we cannot bud by this mode before the leaves make their appearance, such as the Mulberry, Walnut, Chestnut, &c.; but in order to succeed well with these, it is necessary to take buds from the two-year-old wood; and in this case the branches had better be cut off in March, and preserved as has been directed for the shoots intended for cleft grafting. When the vegetation of the stocks destined for the reception of these buds shall have become decidedly active, the branches should be taken from their entrenchment, washed without much rubbing, then wrapped in a damp cloth and placed from 30 to 40 hours in a moist atmosphere of between 60° and 77° F., in order to expand their latent sap, so as to render it possible to detach their bark from the alburnum without laceration.

This state of the sap, almost indispensable for the proper raising of the buds, is also necessary for the budding performed later; but whatever may be the season, the buds are removed as follows:—With the blade of the grafting knife, we cut the shoot obliquely (see Fig. 15); then we place the blade about three-quarters of an inch above the eye, for the purpose of raising it, accompanied with a large slice of bark; in order to facilitate this operation we make the blade descend, sloping towards the eye, cutting through the bark, and a small portion of the alburnum. The blade should preserve the same slope for passing under the eye, and continuing its course till it meets the first cut. This eye, furnished with its two appendages, should be keenly examined when turned up; and for this examination, as well as for everything else requiring to be done before placing it in the stock, we take it lightly between the fingers of the left hand, and with one of these we gently bend down the portion of bark placed above the *corculum*;* then by means of the thumb of the right hand, and the blade of the grafting knife, placed in the same hand, we can take hold of the alburnum above the point, and remove it; but this removal should not extend beyond the *corculum*, which ought to be preserved entire. If in consequence of not being well habituated in raising the eye, the patch of alburnum is too thick (and this we shall always know to be the case when it brings the eye along with it), we must thin the whole, in order that it may separate without tearing out that essential part. Then, in front of the stock, with reference to the place where it is to be planted, proceed as follows: With the blade of the grafting knife make a horizontal incision, which shall embrace almost one-third of the stock, cutting through the bark as far as the alburnum; another incision to the same depth should be made downwards and perpendicular to the first, the two representing the letter T; then slightly raise the bark at the circular cut, taking care that in doing so the handle of the budding knife does not bruise the *cambium*.†

Thus prepared, as seen at fig. 17, the bud should be introduced under the two lips of the cut, then only partially opened, for it is generally by the bud being pushed and gently pressed in by the thin part of the handle of the budding knife, and in conjunction with it, that the opening is sufficiently effected. When the bud is perfectly fitted at the base, and placed as is represented, the portion of bark which extends above the transverse line is cut off. This operation is represented by fig. 18. The two lips are then brought towards each other, and fixed over the bark appertaining to the bud, by means of a ligature, generally of woollen or thick cotton thread; the length of this thread being proportioned to the thickness of the stock; two-thirds of the length should be kept in reserve in the right hand, the rest at the disposal of the left. Thus divided, we place it opposite the bud, and draw the two ends with a moderate force, crossing them above the bud, and as close to it as possible, without covering it. Two or three other turns should be made in the same manner. With regard to the finishing of the ligature, of which the object is to cover the rest of the wound, it will be sufficient to wind the thread continuously in the same direction, nd finally secure it by a half-knot. When the stocks are extremely vigorous, it is prudent to inspect the ligatures soon after their application, and to loosen them occasionally, in order to preserve the buds from being strangled. When the bud shall have completely taken, the ligature may be removed; and we then take care to cut off all shoots springing from the stock below the bud, in order that the latter may appropriate the whole of the sap.

*Translated from the French of D'Albret.*

## VILLA AND SUBURBAN GARDENING.

PLANTS under glass, whether in houses or hand-glasses, require a constant supply of fresh air. Although the importance of this has been often pointed out, the practice is frequently neglected, cultivators of Pelargoniums for market excite the temperature considerably by night, but during the day, in mild weather, their houses are thrown open as much as they possibly can be. Those who grow early Cauliflowers for market, never neglect on all favourable occasions to tilt or totally remove the gland-glasses which cover them. If this were not done, the plants, although excited by no artificial means, would become drawn and feeble. Amateur gardeners always complain that their plants become lanky, and that they are unlike those to be seen, even on the heads of hawkers about town. They therefore consider that there must be some secret in the mode of cultivating them, which they have not yet discovered. Since the introduction of sheet glass, larger panes are used, and hence the necessity of providing for the admission of a corresponding amount of air, which would, under the system of small pane glazing, have found its way through the laps. It therefore becomes a matter worth consideration in the erection of houses for plants, to provide ample ventilation. It can be used or not, according as it may be required. The heating apparatus is generally the subject of most attention, the ventilation rarely receives much consideration, but the former may, in many cases, be entirely dispensed with, while we cannot do without the latter; so essential to success do some of our best gardeners consider fresh air, that during summer and winter, both night and day, a constant stream is admitted to plants even requiring a tropical temperature. Contrivances have also been adopted for supplying the roots of Grape Vines and other plants with air. In modern gardening structures, the means of obtaining light have been chiefly aimed at.

* A scientific name, for which I am inclined to substitute that of root, seeing that this small fleshy body, already fibrous and half-woody, is attached to the germ, eye, or vital point, which cannot, without its assistance, implant itself in the stock.

† A gummy semi-crystallised substance, which exists under the bark, and remains attached to the alburnum.

This is exemplified in numerous large iron stoves and greenhouses, which have proved useless for the well-being of plants, on account of the limited amount of ventilation usually provided in such buildings. In consequence of the reduction of price in all the materials employed in erections for the growth of plants, it cannot be out of place here to draw the attention of amateurs to this matter; for understanding as they do very little about the subject, they should insist on abundant means of admitting air being provided; unless provision for this is made when the buildings are first erected, considerable difficulty is often experienced in their working, and much extra expense is frequently incurred, which might, with a little forethought, have been obviated. Any mode adopted in ventilating hothouses incurs expense, beyond the mere glass frame work. I would, therefore, caution amateurs against being seduced by cheap greenhouses. *Pharo.*

## WHAT IS AN INSECT?

We must now confine our attention to those animals which are destitute of an internal back-bone, and have the body divided into a series of joints, with a nervous system consisting of a double thread united at certain distances by knots or ganglions.

Amongst these animals a first division consists of such species as are, throughout their whole lives, destitute of jointed legs, with the body, in the majority, soft, more or less elongated, and always divided into a great number of rings (whence the division is named Annelida, from the latin *annellus*, a little ring). The first segment of the body, or the head, scarcely differs from the rest, except in bearing the parts of the mouth and other organs of the senses, and the blood is generally of a red colour. Nearly all these Annelidans live in water, some burrowing in the sand or other matters at the bottom, or else constructing a tubular calcareous case within which they reside, and of which the material is emitted from their own bodies. The earth-worm and the leech are two of the best known examples of this great division, of which the number of marine species is considerable; of the latter, the sea-mouse (Aphrodita aculeata), is remarkable for the numerous bundles of sharp-pointed bristles and soft silken hairs on its back, exhibiting the most brilliant metallic tints. Although, however, it is the chief character of this division to be destitute of jointed legs, it does not, therefore, follow that all legless articulated animals are Annelidans; the nut-grub, the cheese-hopper, the bee-maggot, and very many other real insects are destitute of legs in their young state, although these organs are subsequently fully developed. So also there are a few insects which even in the perfect state are destitute of legs, but in their young state they possessed those organs. Such are the females of the scale insects and the female stylops; the males, however, of these insects are furnished with fully developed legs. Hence it is not easy at first to distinguish between a real Annelidan and the worm-like young states of some insects; and, indeed, one of the latter has been mistaken by one of our best British naturalists for an Annelidan, and described as a new genus belonging to that division. Had the examination of such an animal been continued, it would have been ascertained that it subsequently underwent a series of transformations, by which not only legs but wings also were produced.

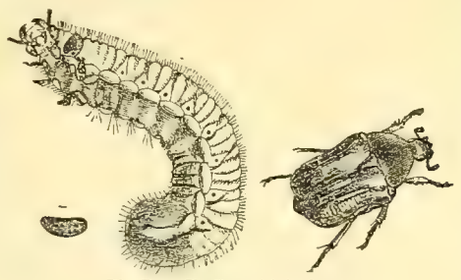
We have now, therefore, found that the presence of jointed legs at some period of its existence forms a further limitation to our inquiry—What is an insect?

The animals which possess this character of articulated legs have indeed been considered by some writers, including Linnæus himself, as constituting a distinct class, to the whole of which he applied the name insecta, but although a lobster or a centipede is as truly insected, that is, divided into segments, as the wasp or the beetle, the ordinary idea of the word insect rejects them from this class. Let us then endeavour to discover what is the popular idea of an insect.

In the "New World of English Words," a scientific dictionary published in 1658, we find "insect" defined as "the smallest sort of animal, as a fly, bee, or ant; some think them to be so called, because they have a kind of division or section between the head and the belly." Dr. Johnson, in his Dictionary, gives two quotations in illustration of the word insect; one from Thomson, namely, "anything small or contemptible;" and the other from Locke—"Insects are so called from a separation in the middle of their bodies, whereby they are cut into two parts, which are joined together by a small ligature, as we see in the wasps and common flies." It is quite evident from these definitions that no precise idea attaches itself to the word in a popular point of view, for as to the small size of insects, many species are larger than some birds or even quadrupeds; and as to the separation in the middle of the body there are thousands of real insects, and indeed entire orders, which have the body continuous; besides, the term implies not only an animal with a deep incision in the middle, but also a series of notches along the whole length of its body. We must therefore fall back upon the scientific characters of the different groups of articulated animals provided with jointed legs, in order to determine the precise divisions to which the term insect belongs, as well as its limits.

Now every one admits the bee, fly, beetle, and butterfly to be insects, all of which agree in possessing the following characters.

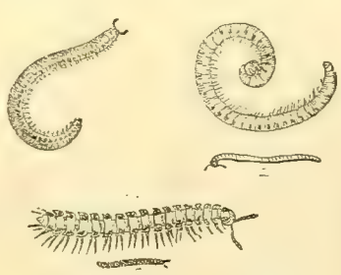
Articulated animals breathing by means of a series of breathing pores along each side of the body, running into longitudinal tubes, having the head distinct, bearing two jointed appendages called antennæ; furnished in the perfect, and generally in the early states, with six jointed legs, and subject to a series of moultings, previously to arriving at perfection, whereby wings are ordinarily developed.



The Rose Chaffer, with its larva.

These characters (making due allowance for the few exceptions which are found against one or other of them) define an immense group of animals which are at once distinguished from all the rest of the Invertebrates by possessing organs of flight, and in which, as Professor Owen observes, "the highest problem of animal mechanics is solved, and the entire body and its appendages can be lifted from the ground, and be propelled through the air." It will, however, be observed that I have purposely modified the last character, in order to include amongst the true insects two groups of small extent which do not acquire wings, namely, the six-legged spring-tailed insects (Thysanura) and the lice (Anoplura), which are rejected by those authors who consider the possession of wings as the grand characteristic of insects.

The articulated animals which possess more than six jointed legs in the perfect state, but which are destitute of wings, are very varied in their structure; and instead of forming, with the spring-tails and lice, a single order, Aptera, as in the arrangement of Linnæus, it has been found necessary, now that their internal anatomy has been more thoroughly investigated, to divide them into three different classes, the first of which (and occasionally a portion of the second) have been regarded by some authors as properly referable to the same group as the winged insects, on account of the similarity in their respiratory apparatus. If, however, we do not restrict the term insect to the winged, or at all events to the six-legged species, I consider that we ought to follow Linnæus, and extend it to the whole of the Invertebrates with jointed legs. These three wingless classes are:



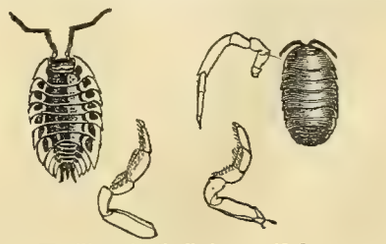
Various species of Snake Millepedes.

1. Myriapoda; comprising the centipedes and millipedes, distinguished by an elongated body formed of a great number of segments, a distinct head bearing two antennæ, a great number of jointed legs, extending the whole length of the body, respiring by two principal tracheæ or lateral air-tubes, and numerous breathing pores, and with the eyes composed of a number of small separate globules.



Garden Mites, natural size, and magnified.

2. Arachnida; consisting of spiders, scorpions, mites, &c., all of which possess in the perfect state four pairs of legs, the head not distinct from the body, and not provided with antennæ, or compound eyes, respiring by air sacs or lungs; the mouth generally furnished with a pair of leg-like instruments, varying considerably in size, and forming a large pair of claws in the scorpions.



Woodlice, with the limbs magnified.

3. Crustacea; composed of the crabs, lobsters, shrimps, &c., characterised by having the head generally confounded with the thorax, furnished with antennæ, respiring by gills, placed at the sides of the body, furnished with five pairs of legs in the more conspicuous species, the fore pair forming large claws; the mouth, consisting of a number of pairs of lateral jaws, two pairs of which, in the shore-fleas (Amphipoda) and wood and fish-lice (Isopoda) are so much enlarged as to act as two additional pairs of legs. The common wood-lice are instances of this seven-legged division, which approach the nearest to our ordinary notions of real insects.

The characters which we have laid down above, refer in general to the perfect state of the different animals; but the winged insects undergo a most remarkable series of transformations, and in the earlier stages it is not easy at once to determine whether some of them are insects or not. Our next paper will therefore be devoted to the subject of insect transformations. *J. O. W.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 6.*)

No. XXII. As many inexperienced persons meet with repeated vexations, either in losing their young birds when hatched, or in having the eggs forsaken by the parent birds, during the process of incubation, I will very plainly show the reason, and provide the remedy.

Any person who will take the trouble of thinking, and reasoning on the subject, must be struck with the folly generally exhibited in putting up birds to breed from, themselves only a year old! That the hens do lay, and that their eggs are sometimes fruitful, I grant; but the giddiness of the parents, their inattention to their young, and want of experience generally,—are constant causes of their first and second broods dying in their infancy.

No birds should be paired until they are at least two years old. From that period they may be said to be in full vigour, and instinctively qualified for the perpetuation of their race. You will find the hens, at this age, less fickle in their attachments, and more devotedly affectionate to the husband of their choice. There will be but one common feeling between them; they will share jointly the solicitude attendant on the hatching and rearing of a family, and the male will be constant in feeding his partner as she sits on the nest. All these points are essentially to be regarded.

The next consideration will be, how to breed your birds perfectly pure. Having once procured a good "stock," your anxiety for the future will be removed. If you wish to have birds of a brilliant or "gay" plumage, let both parents be of a clear and uniform yellow, free from all foul feathers. If any be visible, the breed will be *im*pure. If you select a Belgian canary, let it be a Jonque *male* bird only, and associate with him a Norwich or a Yorkshire hen. The Belgian hens, although good mothers, are yet of so large and so long a body, that they sit awkwardly upon the nest, and find great difficulty in hatching their eggs. This remark applies, however, more particularly to a breeding-cage. If the birds are in a room, and build in a tree, the objection I make will be over-ruled.

Such persons as are not particular with regard to colour, will find that the grey canaries breed as well, or perhaps better than most others. They are assuredly the best nurses. But whatever colour you choose, take special care to select birds of the largest and longest feathers you can get, and let them be in robust health. A sickly parent, father or mother, will produce a puny, degenerate offspring. In selecting a pair of English canaries, let the hen be the larger of the two, so that her eggs may be the better covered. The heat imparted from the body of the mother, is twice as great as that from the father.

When a pair of canaries have the misfortune to "addle" their first nest of eggs, which, notwithstanding great attention on their part, will sometimes be the case, you will find it will teach them a practical lesson. They will speedily go to nest a second time, and most probably hatch every egg, and rear every one of their offspring. *Some* males are steady, and good to breed from, when a year old; but the hens should *never* be put up until in their second or third year.

The late Sir John Sebright, in a pamphlet on the "Instinct of Animals," maintains that "acquired habits in animals become hereditary." I incline strongly to the same opinion. Long experience goes far to confirm its truth. If this be the case—and why not?—when you observe any bird of a particularly quiet and amiable disposition, set him aside; and provide him a mate in whom are observable equally good qualities. I can call to mind several instances, in which I have witnessed good results from this course of action. I cannot go so far as to say, that I think a bird's *vocal* powers are hereditary. That is purely apocryphal. In all other points, the doctrine holds good. It is a great object gained, to have lively, healthy, good-tempered, well-formed, and handsomely-feathered birds; and I advise that, under no circumstances, should canaries be put up

* I am urgently entreated, to let the *soft-billed* birds follow next in order, after the "Canary;" reserving my remarks on the rest of the family of *hard-billed* birds until the former shall have been fully disposed of. The request is reasonable; and it arises from the fact of the migratory birds being about to revisit us in a few weeks, as well as from a generally-entertained wish to know their habits, and proper mode of treatment on their arrival. Be it so. That king of song, that harbinger of spring—*the Nightingale*, shall herald in "No. 12," to appear *May 3rd.*

for breeding that are melancholy, heavy, or mopish. Sprightliness, vivacity, and joyous energy, should be the prevailing characteristics in every *good* bird.

Fancy birds, so called, are attended with much trouble in rearing, and also much disappointment. I will briefly indicate the intrinsic merits of a prize-bird, many of which are exhibited at private "clubs" in London, and the provinces, once or more yearly. I would observe, that the *plumage* of these birds is the grand desideratum, their song being a minor consideration.

A good fancy bird must have a clean cap; that is, the crown of his head, defined by a horizontal line at the level of his eyes and beak, must be of a clean yellow or white,—in no respect broken or spotted with foul feathers. One single foul feather renders him imperfect; though it is right to acknowledge, that such extreme purity is rarely met with. His back, wings, and tail, must also be equally free from yellow or white feathers. To make his beauty remarkable, he should be finely mottled on the back, and of a fine clear yellow all below the breast.

These requirements are as essential in a hen as in the male bird. There are two names given, to distinguish the colour by. The one are called "mealy;" the others Jonque birds. The former have their crowns, and all below their breasts, of a clean white or *pale* yellow; the latter, of a *deep* yellow. No good breeder ever pairs two mealy and two Jonque birds together. A skilful eye would immediately detect any offspring resulting from such a union.

Male birds, finely spangled, as those I allude to, should be paired with a "mealy" hen,—for this reason; the young of all birds mostly take after the father in their feathers. Many of my readers will smile, when I tell them that it is a practice to have a pattern bird, drawn on card-board and highly coloured, which is regarded as a specimen to breed by. Any failure in coming up to the "standard," causes a breeder infinite chagrin!

Before quitting this subject, I would remark that, however first-rate fancy birds may be, no entire dependence can be placed on their offspring being equally perfect. Blemishes, of some kind, frequently appear. On the other hand, two birds, of little comparative value, often produce a very fine breed. It is amusing to watch the proprietors of these prize birds, after the "public annual exhibition" of them is over. Every bird has his cage enclosed in an air-tight bag, and is carried away with as much mystery as was formerly attached to the Delphic Oracle. Their mistresses appear to have more to do with them even than their masters; and convey them away with the most solemn pomp of circumstance.

I have already remarked, that these forced birds are valuable for their "beauty" *only*. They are the sport of every breath of air; and, like hothouse plants, must be vigilantly tended or they die. Nature shakes her head at such doings, and approveth them not. So do I, being a humble follower in her ladyship's train. In the matter of a cage bird,—give ME *Vox—si præterea nihil! William Kidd, New Road, Hammersmith.*

[P.S. May I, without offence, give my "private" correspondents a gentle hint? Although, when their birds are ill, I am at all times most willing to furnish "advice gratis,"—yet the "*fee* simple" of *a postage stamp* should always accompany every question asked. This, on the principle of what the lawyers call receiving "costs out of pocket." Homœopathic though a penny be, yet is my weekly correspondence, in the aggregate, something more palpable to the touch. I again repeat—EVERY *song* bird will have ample justice done it, in the columns of the *Gardeners' Chronicle*; but "*Patience* must have her perfect work." *W. K.*]

## Home Correspondence.

*Spring Flowers.*—I observe that the attention of your correspondents is attracted to the culture of that delightful little spring flower the Hepatica. I would ask you to say whether you do not consider that failure in the growth of this plant is not often occasioned by the crown of the plant being buried in the soil. Whilst on this subject I would take the liberty of calling the attention of your readers to a bulb which does not seem to be much known, viz., Corbularia (Narcissus) tenuifolius, and which I think decidedly superior to C. bulbocodium, from its earlier period of bloom and hardiness. I have had it in flower in the open border for nearly a month past, and the bed is now quite a picture; it is a fit companion for the charming Trichonema bulbocodium, a perfectly hardy bulb, now finely in bloom in a bed adjoining the Corbularia. *Rusticus.*

*The Bouquet Trade in New York* (*see p.* 150).—Your correspondent "C. B. D." has called in question the correctness of my friend's statement respecting the bouquet trade in New York. Never having been there myself, I cannot, of course, speak as to the number or capabilities of the nurseries and greenhouses in that city. It is not stated, however, that the flowers used on New-year's morning were all from one greenhouse, or from one establishment; indeed, in a former communication, my friend mentions that the inhabitants of New York spend annually a very considerable sum in the purchase of cut flowers. People seldom tell untruths gratuitously, and, as my correspondent could have no object whatever in deceiving me as to the amount of business done by his employer, I can have no doubt of the correctness of what he states. The letter was a private one, and my young friend could not have the most remote idea that any part of it would appear in print. My object in sending an extract to the *Gardeners' Chronicle* was partly to show the growing taste for flowers—the somewhat primitive New Year's-day customs of our friends in the good city of New York—and the novel application of an air-tight metallic case, which, if it fulfils the expectations of the inventor, will enable us to obtain a bouquet from the Himalayas, or New Zealand, as fresh as if gathered from our own garden only yesterday. *J. Little, Langholm.*

*Out-door Treatment of Nymphæa cærulea.*—During the summer of 1849 my plant, a seedling, was planted in a tub, and placed about 10 inches beneath the surface of the water in an uncovered tank. It withstood the severity of the following winter, and made fresh leaves next May. Last year it grew luxuriantly, but did not flower. It lost its leaves from frost last October. I examined it yesterday; the caudex is quite plump and healthy, and I expect it to flower this season. It must be borne in mind, however, that the tank in which it grows occupies a semicircular recess, and is screened from the north, east, and west by a wall 12 feet in height. A terrace walk passes the front of the recess which is open to the south. It will be seen, therefore, that the plant has a favourable situation. In the same tank I have also Limnocharis Humboldtii, Agapanthus umbellatus, Villarsia nymphæoides, Aponogeton distachyon, Calla æthiopica, Mimulus rivularis, Acorus Calamus, and the white and yellow Water Lilies. All these flourish satisfactorily. A thermometer whose bulb rested on the tub indicated 38° when ice an inch thick covered the surface. I placed it in the same situation this morning, and it registered 41°. My supply of water is by no means constant, the crown of the plant being sometimes no more than 3 inches below the surface; but the depth at which such plants should be placed is best regulated by the length of the leaf-stalks. I consider 10 inches a very good depth. I should like to try many of our stove aquatics out of doors, more especially Victoria Regia. I imagine that they are in reality not half so tender as people expect. An aquatic is not subjected to extreme heats and colds, like a common plant; the temperature of the water being more uniform than that of the air. *Edward Morse, Albury Park, March* 8.

*The Spanish Chestnut.*—I am desirous of inquiring of those who have had any experience in the quality of Spanish Chestnut timber, what may be its real character; a writer in your Paper, about a year ago, having pronounced it (in opposition to older writers) to be worthless. Considering it to be, upon the whole, perhaps the most beautiful tree (of the larger class) that will thrive in Britain, I should certainly much regret hearing that it had been proved to have little other value than as an ornament. May we hope that the quick-growing foreign Oaks (Turkey, Italian, American) will possess any other recommendation to the planter's notice? *W. H.* [We trust that, in answering this question, our correspondents will be kind enough to limit their reply to what is within their own knowledge, and to instances in which they are *certain* that Spanish Chestnut was used.]

*What has become of the Bees this year?*—I get a month's earlier amusement from my little garden than most of my neighbours by growing the varieties of Crocus in abundance. Now, generally speaking, the enjoyment of this flower (beautiful as it is) is much increased by its attracting the honey bees, and so giving life to the garden. This year, however, though my flowers are going off, and have bloomed abundantly, I have not seen a single bee upon them; nor, indeed, upon any other flower. Can any of your correspondents account for this, or confirm the lazy habit of the insect this year? *An Original Subscriber, Bath.* [Our bees are as active as usual.]

*Twigs of Spruce Fir.*—The ground around the trees is strewed with these, especially after a breeze of wind. I have not seen the Spruce Fir affected in this way until within two or three months past. Scotch Firs, in this neighbourhood (Forfarshire) have suffered very much of late years from the Hylurgus piniperda. *P. C.* [There is nothing in the twigs with which we have been favoured to indicate the cause of the circumstance alluded to. They look as if they might be growths beyond the gallery of the Hylurgus; but we find no evidence of it. Can squirrels be at the bottom of the mischief?]

*Importance of agitating the Air of Glass-houses.*—The account of the culture of the Victoria regia, in your Paper, has suggested the idea that the same principles may be employed to the advantage of all plants requiring close shelter at times; so that, instead of suffering as they do now, from the imperfect and ill-understood modes of ventilation in use, they may be as happy and comfortable as the Victoria, which refuses to live unless the water is in a state of constant motion. I have little doubt that all exotic plants would be much more healthy, if their atmosphere were similarly gently agitated, without a renewal of the air, which though, no doubt, beneficial, if not essential to plants, as well as to animals, under proper conditions, is as dangerous for weeks together to the former, as it would be to leave off a flannel waistcoat to the latter. I trust some ingenious person will be able to contrive, by a simple and inexpensive piece of mechanism, to keep the air in a state of circulation, when fires are necessary, and all apertures closed. A small agent would have a wide effect, but the action should be incessant night as well as day; and should it be accomplished, the inventor will, no doubt, publish it in your columns, *pro bono publico*, and deserve the thanks of multitudes, besides rescuing many hundred plants from stagnation or starvation. *An Amateur Subscriber.*

*Victoria regia.*—Perhaps it is not sufficiently known that the old specimens of this plant have died out, during the winter, at Kew, Syon, Chatsworth, and other places; and that it, therefore, appears to be little more than an annual. Those who cultivate it should, consequently, secure a succession plant or two, from seed, each autumn. *E. K.*——As you despair of seeing the Royal Water Lily cultivated in this country with success, without artificial heat being applied, perhaps you will excuse the liberty I take in offering an opinion. There are hot springs in various countries; and having seen at Bath, some years since, one in constant use, with a running stream about the temperature of 110° when first issuing from the ground, where would be the difficulty of conveying this water into a tank (of course with a covered roof) of any size that might be required for this noble plant? About 20 miles from the above city are coal mines, which could not be worked without the constant employment of a steam-engine to clear them from the water, which I saw running to waste, by the side of the road, smoking hot. Might not this be conveyed into a reservoir for the same purpose? Perhaps the same idea may have engaged the attention of some of your scientific readers; and, if so, will occasion a more profitable dissertation than many subjects of less interest (at least, in the opinion of gardeners) which occupy the attention of the public. *P., March* 17. [We have formerly pressed the value of their waste water upon the attention of its owners; but, we fear, with little success.]

*Market Gardening round London.*—I observe under this heading, at p. 149, the following sentence with reference to the conveyance of Strawberries to the London market: "The supply to the shops is conveyed to them by Welsh or Irishwomen, who carry them on their heads; these women being paid for every journey they make, earn a good deal of money at this occupation, in which they often walk 48 miles a day." Surely there must be a wonderful mistake here. Being myself somewhat fond of walking, I frequently travel in this way 20 miles a day, which I find quite sufficient for a continuance of some days, without carrying a basket on my head. The ladies, however, alluded to by your correspondent, if they walked fast would have to walk 12 hours' daily, which would allow no time for food or resting. I have looked through your last Paper, expecting to find that your correspondent would have corrected what I supposed to be a mistake; but I find no notice of the circumstance. Having read with much pleasure the articles hitherto published under this head, I trust that the public may have some explanation on this point; for feeling, as I am sure many others also do, that they are exceedingly useful and interesting papers, I should be sorry that an error of this sort should be the cause of the losing that attention which has hitherto been paid to them. *Pedes.*

*The Deodar.*—Your correspondent's inquiries concerning this Conifer have induced me to measure one that was planted in my flower-garden 11 years ago, and I find that it is 19 feet to the end of the last year's shoot (but of that about a foot is still hanging down), and the length of its longest boughs is 8 feet; at 3 feet from the ground it girths 19 inches. For some years it was supported by stakes, but a perfect straightness of stem has by no means been in consequence obtained; nor do I think that the somewhat unsightly twists that are to be seen in more than one part of it will for many years, if ever, cease to be apparent. I have another Deodar planted, five years ago, by the side of a walk in a wood. This is already 10 feet high; from the greater protection it enjoys, it will probably acquire a straighter growth. The soil of this country is little favourable for the growth of trees — stone brash, clay, and rock, constituting the substrata. *W. H.*——Your correspondent "J. H." says—"I have a great many plants of the Deodar, some 12 feet high, which show the greatest disinclination to hold up their heads," and you remark, "we should cut out such plants." May I suggest that a Deodar 12 feet high is much more easily cut out than replaced, and that it would be worth while at least to try what can be done towards straightening it before cutting it down? I should like to know whether the plants in question are crowded, or have plenty of room. Judging from the description, I should imagine that they have no tree or shrub within 8 or 10 feet of them, but that they have many tall trees in their neighbourhood. In this case the Deodar will throw out long lateral shoots close to the ground, which thicken the stem at that part, but the leader runs up very fast to a great height, with few lateral shoots, and, consequently, is weak. I am aware that the course I would suggest is contrary to custom; but observe that I only suggest it in lieu of cutting down the tree. Cut off the head where it begins to bend; choose the best side branch for a leader, and shorten the neighbouring side branches. You may also, for a winter, tie the new leader to an upright stick, just to help it in straightening. Then cut off close to the stem at least one-half of the thick mass of lower branches, in order that the tree may be driven to throw out shoots from above, which will thicken and strengthen the upper portion of the stem, and probably in a year or two (during which time you may gradually lessen the remaining lower branches), you will find that the tree has thrown out strong lateral branches higher up, weeping to the ground, and is making rapid headway. I am aware that the use of the knife is condemned as unnatural; and I am told that glorious Deodars have grown unpruned in the free forest. But remember what has been their youth. Reared amongst a whole jungle of competitors, the tree we now admire was, in its youth, crowded and drawn up without air for a single side shoot near the ground. Struggling for breathing-room, and racing upwards, he won the race, headed his contemporaries, and then was able to throw out side shoots, which overshadowed and killed his neighbours. Growing stronger and stronger, his lateral

branches spread, and soon the ends turned downwards and drooped towards the ground, and then he became (after and by the means of his struggles) that magnificent object, a tree with a clear stem, 20 or 40 feet high, and wide-spreading lateral branches drooping to the ground from that height. Now, what Nature does by lavish profusion of seed, I propose in some degree to imitate by the knife, though I would rather do it by planting Larch round the Deodar when commencing to plant. *H. C.*

## Societies.

Horticultural, *March* 18.—J. R. Gowen, Esq., Treasurer, in the chair. H. Bentley, Esq., W. F. Hobbs, Esq., G. Peabody, Esq., J. Butler, Esq., Professor Wheatstone, Mrs. Knox, Mr. Stevens, and Mr. Ferguson, were elected Fellows; and Mr. M'Intosh, gardener to the Duke of Buccleuch, at Dalkeith Palace, a corresponding member. Among subjects of exhibition was an example of the beautiful Jasmine-flowered Rhododendron (R. jasminiflorum), an evergreen greenhouse shrub, which was shown for the first time at Chiswick on the 18th of May last year. This came from the nursery of Messrs. Veitch, and was awarded a Banksian medal. A nice collection of Orchids, which received a Knightian medal, was exhibited by Mr. Mylam, gardener to S. Rucker, Esq., of Wandsworth. It consisted of a charming mass of the Cambridge Dendrobe (D. Cambridgeanum), the fragrant Burlingtonia, the long-tailed Lady's Slipper (Cypripedium caudatum), one of the best sorts of Skinner's Lycaste, together with the ivory-flowered Cymbid (Cymbidium eburneum), a variety of it slightly tinged with pink, and the beautiful Dendrobium anosmum, which is closely allied to the Rhubarb-scented D. macrophyllum. A Moscow Queen Pine Apple, scarcely ripe, and on that account unrewarded, was produced by Mr. Jones, gardener to Sir J. Guest, Bart. It weighed 3 lbs. 6 oz., a good weight for a Pine at this season of the year. Mr. Butcher, gardener to W. Leaf, Esq., showed a dish of Muscat of Alexandria Grapes, for which a Certificate of Merit was awarded. As might be expected, they were somewhat shrivelled, but they were, nevertheless, good eatable Grapes.—Similar awards were also made to Mr. Bennett, gr. to J. Smith, Esq., and to Mr. Higgs, gr to J. H. Barchard, Esq., for exhibitions of Keens' Seedling Strawberries. Mr. Bennett's fruits were perhaps the largest; but Mr. Higgs' were the best coloured.—Examples of ornamental rustic baskets, for placing flowering plants in, were furnished by Mr. Howlette, of St. Osyth, Colchester. They were of different shapes, so as to fit them for hanging up against the walls of entrance halls, or in conservatories, and were formed of wood encased in Larch cones, whose tops pointed outwards. The chains by which they were suspended consisted of the same kind of cones, fixed lengthwise in wire, and, being attached to the baskets by hooks, they could be separated from them at pleasure, thus facilitating the introduction of the plants.—Various dried vegetables, such as Peas, Haricot Beans, Brussels Sprouts, Carrots, and Turnips, &c., were exhibited from Peyrusset, Möller, and Co., of Paris. These were stated to have been dried by a process peculiar to M. Gannal, the celebrated embalmer of animal substances. This process is understood briefly to consist in dividing the larger vegetables into pieces, and placing them in an apparatus into which dried air is driven, until they have parted with all their water, and have become perfectly dry. In this condition they may be preserved for any length of time and it is said that their flavour is not at all interfered with, inasmuch as nothing is taken from them, except the water they contained, and that, after they are cooked, they are just as good as when fresh gathered. If these facts, therefore, are borne out by experience, the discovery is a very important one, even as regards vegetables, more especially to ship-owners, for they can be furnished in this state in quantity, and at a very cheap rate; but, in addition to vegetables, fruits, as Apples, Pears, Apricots, &c., and even flowers, may be dried and preserved by the same process, and, owing to the rapidity with which the drying is conducted, the latter retain their natural colours almost as brightly as when first obtained from the garden. In confirmation of this, several dried specimens were shown to the meeting; and it was stated that others would be present at the great Exhibition in Hyde-park, when it is to be hoped that additional information will be furnished on the subject. From the garden of the Society came a beautiful specimen of the Orange-flowered Epidendrum (E. aurantiacum), Mr. Blandy's variety of Dendrobium nobile, Lycaste cruenta, and a dull rose-coloured variety of the Guatemala species called candida, Eriostemon cuspidatum, Forsythia viridissima, a valuable hardy shrub, on account of its producing a considerable amount of gaiety either in or out of doors at this season; Azalea obtusa, and another Chinese sort unnamed, the former a very hardy, the latter a very early kind; together with Cytisus racemosus, and one or two other plants. Cuttings of the following Pears were distributed to such Fellows as wished to receive them. Glout Morceau de Cambron, an excellent variety, little known and very different from the common Glout Morceau; Beurré d'Amanlis, a melting Pear, richer than the Brown Beurré; Beurré St. Bernard, and Fourcroy, or Merveille de la Nature. The latter two are reported to be good; but they have not yet been proved in the garden.

Botanical of London, *March* 7.—A. Henfrey, Esq. in the chair. Several donations were announced, and the continuation of Mr. Stock's paper "On the Botany of Bungay, Suffolk," was read.

Stoke Newington Chrysanthemum, *February* 29.—J. Edwards, Esq., President, in the chair. The following is Mr. Taylor's lecture on the Chrysanthemum, referred to at p. 151 of a late Number. Mr. T. said, "I shall confine my remarks to the practice I have pursued in producing the beautiful blooms of this flower, for which our annual exhibition is distinguished. That perseverance and watchfulness are the only means by which we can hope to obtain success in our labours, is evident to all engaged in the cultivation of flowers; without assiduity on the part of the gardener, or amateur, nothing beyond ordinary results need be expected, and this is pre-eminently the case with the Chrysanthemum. I stated last year, that the cut blooms produced by me, at the exhibition of 1849, were from cuttings struck on a hot-bed, mostly as late as March, and afterwards gradually hardened off; but further experience has led me to prefer propagating as soon after the blooming season as I can get cuttings; as by striking early it enables the plant to store up sufficient matter in its young state to meet the demands made on in the growing season, for in my opinion the plant cannot be too strong, if the production of large and perfect blooms is the object in view. In selecting cuttings, I prefer the strongest suckers, with a portion of root attached to them. I then fill some 3-inch pots with sandy loam, and in each of these I insert three cuttings: they are then placed in a cold frame and kept rather close for a short time. I am opposed to striking in heat, as it deprives them of that robust habit in the early stage of their growth, which is necessary to ensure superb blooms. In April most of them will require potting: I then prepare a compost, consisting of one-third yellow loam, one-third rotten turf, and one-third rotten manure, mixing all well together, and adding sufficient rough sand, or grit, to make the whole porous. I shift them out of the three-inch pots into six-inch ones, care being taken not to disturb the young roots. After potting, I place them in the open air, in a situation sheltered from easterly winds, and sufficiently distant from each other to prevent their growing up weakly. During their growth, I frequently alter their position, in order to rightly balance their shapes, and to prevent their rooting through the pots into the ground. In the end of June, or the beginning of July, if all goes on well, they will be ready for receiving their final shift. This effected, by providing some large pots, in which there is plenty of drainage, and using the compost mentioned above, but in a much coarser state, I then place them in a situation fully exposed to the influence of the sun, adopting the same practice as before, and into each pot I fix stakes for tying the plants as they may want it; requiring, as the Chrysanthemums do, a liberal supply of water during the growing season, they should not, under any pretence, be permitted to suffer from drought; if this is the case, deformed blooms will often be the result; but, on the other hand, the soil should not be so drenched as to become soddened, for that would also prove injurious to a fine bloom, as well as to the health of the plant. If they are well established in their pots by the end of August, I commence supplying them with liquid manure at least once a week, beginning with it rather weak at first, but increasing its strength in proportion to the growth of the plant. I discontinue the manure-water when the blooms expand, previously diminishing its strength gradually until the supply is cut off. Constant attention is essential in the early stage of the growth of the plant. Without it the blooms will be indifferent. As laterals are produced I pinch them off, but I never stop the main stem. As soon as the blooming stems become visible, I remove all but three or four, according to the strength of the plant. When the flower-buds can be discerned I thin them, leaving one bud on each stem. I prefer leaving the centre bud, if it be round and perfect, but if at any time afterwards the buds show signs of being deformed I remove them at once. At this stage of the plants' growth the earwig will commence the work of destruction by eating the buds. My traps consist of Bean-stalks placed among the branches; they creep into these at night, and in the morning I blow them into a bottle of warm water, which kills them, and replace the stalk. As the blooming season draws near I remove the plants into the greenhouse. My object being to obtain large flowers they are not checked in their growth by stopping, they are therefore tall, and, to some, might appear unsightly; but to remedy this defect I intermix Camellias with them, the beautiful leaves of which afford an agreeable screen to their tall stems. By having the flowers on a level with the tops of the Camellias, a pleasing contrast is created, which is very effectual. I have cut some of my finest blooms froom plants grown under a south wall, where they were treated exactly as under pot culture; as soon as the blooms begin to expand they must be protected from wind, rain, and all kinds of inclement weather. Some of the varieties, which flower early, require shading from the sun; the later flowers should have a glass fixed over them, in order to enable them to fully develope themselves by the time fixed for exhibition. I need not say that a little attention should be paid to tilting the glasses, so as to allow the condensed moisture in them to escape, or it will destroy the under petals before the upper ones are in perfection. The following list contains the varieties which I consider most suitable for cut blooms. I have divided them into the two classes of cupped (or curved) and reflexed flowers. Cupped—King, Queen of England, Princess Marie, Duke, Goliath, Two-coloured Incurved, Dupont de l'Eure, Vesta, Beauty, Campestroni, Defiance, Pilot, Warden, Sydenham, Lucidum, Formosum, Golden Clustered; Reflexed—Salter's Annie, Jenny Lind, Phidias (new), Rabelais, Rebecca, Cloth of Gold. In regard to the properties which constitute a perfect bloom, I consider that each petal should be broad, thick, smooth at the end, and a little cupped, or curved, but not so as to show the under part too much; the centre should be good, the whole flower forming little more than half a ball. Vesta, in my opinion, nearest approaches these properties. As we cannot do without reflexed flowers at present, they should have broad, thick, smooth petals, lying regularly one over the other, and the centre of the flower should be good, as, for example, Salter's Annie; all loose flowers, and those that have notched petals, should be disqualified, as, for instance, such varieties as Zoe, General Marceau, Perfection, &c. The Anemone, or Aster-flowering varieties, should either be distinctly classed at exhibitions, or entirely discarded." After a short discussion, in which many eminent cultivators of the Chrysanthemum took part, a vote of thanks was awarded to Mr. James and Mr. Taylor for their respective lectures, and the meeting closed.

## Notices of Books.

*Botanique Cryptogamique ou Histoire des Familles Naturelles des Plantes Inférieures.* Par J. Payer. 8vo, Paris, 1850. Pp. vi. and 223, fig. 1105.

Though the work before us can scarcely be considered as much more than a clever compilation, from various sources, of interesting facts relative to the extensive division of vegetables known under the name of Cryptogams, it may very justly be recognised as a most useful contribution to the botanist in general. The facts themselves are scattered up and down through a thousand volumes, and the student who was desirous of any general information had no easily accessible source to which he could refer, till the appearance of the present volume and that of Körber, nearly of the same date, which we have already noticed. The numerous figures are in general very clear and well chosen, and the information just what is wanted. French authorities, as is natural, have been most referred to, but not to the exclusion of others, though it does not appear to us that the author is really always quite *au courant*.

Cryptogams are divided by M. Payer into five classes, Algæ, Fungi, Mosses, Ferns, and Rhizocarps, and these are again divided into numerous orders, families, and tribes; but we think him far from happy in his divisions, whether principal or subordinate. Lichens, for instance, are made a mere family of one of the orders of Fungi, and when it is stated that *Mucor*, with its allied genera, forms a division of precisely the same value in the same order, the incorrectness of such a partition is at once apparent. It is easy to understand the principle on which all the Ascophorous fungi and Lichens should be placed in one great class, though difficulties enough will arise by the way; but to make them near allies of the Sporophorous fungi, is not only against nature, but has not even the excuse of identity of structure in their reproductive organs. We believe the old Linnæan notion of their affinity to Algæ, to which some names of great authority are even now inclined, is much more tenable; not only however are Lichens included in Fungi, but a portion of them, such as *Opegrapha*, *Endocarpon*, &c., are separated from the rest, together with a portion of the fungi, consisting of such genera as *Hysterium*, *Sphæria*, &c., under a distinct family, broken up again into a number of tribes. We believe this association to be altogether wrong, and that the constant presence of Gonidia in Lichens is a good and permanent character, which will at once distinguish cases in which the analogy is the strongest, as in certain species of *Hysterium* and *Opegrapha*, provided the specimens of the latter be in a state of vegetation. In old weather-worn specimens, where the crust has vanished, it may be perhaps impossible to distinguish very accurately. As regards the genus *Verrucaria*, the same observations may be made, except where true fungi have been described as belonging to that genus or the contrary, of both which cases several instances might be brought forward.

After a careful analysis of Collemals and of certain Lichens, Mr. Thwaites discovered the closest resemblance between the structure of the frond and that of some of the lower Algæ, and quite at variance with that of fungi, the Palmelloid structure prevailing in some, and the Nostochoid in others. In cases of Anamorphoses of Lichens, it is very rare indeed that they assume a filamentous form, as is constantly the case with fungi under such circumstances. *Dictyonema* and *Cora*, which might be supposed the most favourable instances, have evidently, now that their mode of fructification is known, a fungoid structure, belonging in fact to the higher group of Hymenomycetous fungi under the guise of Lichens, to the fruit of which their hymenium bears no real resemblance, nor is the resemblance of their frond more than superficial. Indeed both genera have been placed by authors amongst Algæ. Even in those Sphæriæ, which really seem the least like fungi, and where the whole plant seems to consist of perithecium without any mycelium, a careful examination will generally prove the existence of myceloid threads; and if the genus *Capnodium* or its abortive forms, together with those of *Antennaria*, be traced in their different

stages of growth, it will be seen that the filamentous structure passes with the greatest ease into the cellular, till the hardest and most compact perithecia are formed. And, after all, the author is obliged to leave such genera as *Tympanis* and *Patellaria* amongst fungi, which are at least as truly Lichens as *Hysterium*, their analogy not being with those genera referred to *Hypoxylons*, but to *Lecanora* and *Lecidea*. It should seem, too, that Lichens may possibly be higher in point of organisation than fungi, inasmuch as they produce, in some genera at least, real Spermatozoids, which there is not the least reason to suppose existent in fungi, though in one or two genera, such as *Pilobolus* and *Endodromia*, not to mention a doubtful plant examined by Unger, motion independent of external influences has been observed.

Having pointed out a case in which we differ from the author, it is but right to indicate another in which he has deviated from the usual course with our complete approval. As regards the curious tribe of Truffles, he has not been led aside by their great external resemblance and general similarity of habit. The different groups are widely separated, in accordance with their true affinities, a point in which Fries has failed, in the closing part of his view of Scandinavian vegetation.

In conclusion, notwithstanding some points in which we think the author wrong, we have much pleasure in recommending this work to our readers, who, if the subject is new to them, can scarcely fail to derive much pleasure from its perusal; and, if they have been students of the varied objects it comprises, except they have had access to good botanical libraries, we doubt not that they will find much that is novel and useful.

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

IT is most important at this season, when vegetation is in progress, that sufficient room be afforded to every plant; and that air be made to circulate freely among them. A collection of plants too large for the extent of glass is the common evil of nearly all gardens; and, in consequence of this, they are crammed together during winter, to preserve them from frost. Injurious as this is to their health during the dull months, the evil is ten times greater when they commence their spring growth, and for this reason they must be placed at proper distances asunder without further delay, even if the operation should involve a reduction in the collection; for it is far more satisfactory to all parties concerned to have a few well grown specimens, than several times the number of lanky etiolated plants, not one of which will stand the scrutiny of individual examination. As the spring is so far advanced, much may be done by removing many half-hardy or frame plants, to favourable situations in the open air, where they can be slightly protected, in case of very severe weather, by mats, canvas, or other contrivances; this will make room for some of the hardier greenhouse plants in the frames, where they will be much improved by their close proximity to the glass. The forcing houses, also, as they gradually come into work, will afford room for plants which require a stove temperature. If a sufficient quantity of young stove plants has not yet been propagated, no time should be lost, as cuttings will root with greater facility now than a month or two hence.

### FORCING DEPARTMENT.

As Vines are so often troubled with thrips, and as they do such serious injury if allowed to increase, which they soon do to an alarming extent, energetic measures should be taken for their extermination. Fumigation with tobacco is the best method of destroying them; but to render this mode effectual, the following points should be attended to:—A quiet evening should be selected for the operation, when the leaves of the plants are quite dry; the house, if convenient, should be covered with canvas, or something similar, to prevent the escape of the smoke through the laps; during the whole of the next day it should be kept close, and the shading should be kept on, to prevent the necessity of giving air, and also the more completely to retain the fumes of the tobacco within the house. This course checks the revival of some of the insects which were merely sickened by the previous evening's smoking; but to make sure of destroying all, the house should be fumigated again on the second evening. On the second morning the plants should be syringed, and receive air as usual; but if the day prove very hot, a slight shading will be necessary. If pure tobacco be used, it will kill all the insects in existence at the time; but it will be necessary to repeat the process three times, with an interval of eight or ten days between each fumigation, to destroy those which proceed from the eggs laid by the old insects before their destruction. In fumigating houses in general, a board should be fixed over the top of the smoking pot, about 6 inches above the rim, to diffuse the smoke, that it may not injure the leaves by coming directly in contact with them before it has been sufficiently cooled by diffusion through the atmosphere. This plan has completely destroyed the thrips, and we are happy to recommend it to others, as so many are complaining of the ravages of these miniature locusts. Though individually minute, they soon commit fearful havoc, not only upon Vines, but also amongst our choicest stove and greenhouse plants. Even the fruit of Pines is often attacked by these insects, and completely disfigured by them. STRAWBERRIES.—As the sun is now becoming powerful, the Strawberry pots upon the Vinery or Peach-house shelves will require frequent waterings. Pans should be kept under them, filled with manure for the roots to run in; or rough sand will assist to maintain a humidity about the bottom of the pot, and will often prevent the plants from flagging, although the soil in the upper portion of the pot becomes dry.

### FLOWER GARDEN AND SHRUBBERIES.

Herbaceous plants, which are now appearing above ground, will require a little attention to guard them against the ravages of snails. A timely dressing of soot and lime, sprinkled over the crowns of the plants, will not only prevent their depredations on the surface, but, being washed in by the rain, will preserve the bases of the young growths from their attacks also. Box edgings are notorious as a harbour for these plagues; and where beds containing choice plants are thus surrounded, it will be useful to lay a line of the above mixture along the inside, in order to insulate the plants. It will also be useful to hoe and rake the beds, both for neatness sake, and to disturb the underground retreats of our slimy friends, so as to expose them to the weather, and to the bills of their natural enemies. Biennials (as Wallflowers, Sweetwilliams, and Scabiosas), should be brought from the nursery-beds, and arranged in their summer quarters; beds of Pinks, Picotees, and Carnations should also be made; they are invaluable for supplying flowers for glasses, bouquets, &c. All dressed turf should now be well swept, rolled, and, if necessary, mown; it is a great drawback in the present appearance of the pleasure-ground, and a disadvantage in the after-keeping, to allow Grass to grow too long before it is first cut in spring. Where there is a large extent of open lawn to be kept in first-rate order, the horse mowing-machine is an invaluable assistant, as by it the Grass can be cut once in ten days or a fortnight at much less cost than it can be done once a month by the scythe. For firm, well-drained ground, the 42-inch machine will be found most economical; but for softer ground the medium-sized machine is preferable, as the latter may be worked with a lighter horse, and consequently less damage is done to the turf in damp weather. It is necessary to mention, that not more than a fortnight should elapse between the different cuttings, or the work will be more difficult to do, and unsightly when done. In order to have the full advantage of these machines, the turf should be levelled. This is what we have done, and the results are so satisfactory, that we feel pleasure and confidence in mentioning it in the Calendar.

### FLORISTS' FLOWERS.

Take care, as the stems of Auriculas rise, that they receive no check, whatever air they may get during the day; it is, comparatively speaking, under the amateur's control. It often happens, however, at this time of the year, after midnight, and when least expected, a sharp frost may take place, and should there be any flowers partly expanded, the effect will be prejudicial, inasmuch as the opening flower will become "set," or stationary; for this reason, the careful florist will cover his frames down well, with mats, &c., in order to preserve an equable temperature, or water them with soft or rain water, when they require it; should a strong plant, with an offset, throw two trusses of blooms, remove the weakest. If there is one thing more than another that requires the florists' care, it is the Tulip; a sudden frost is equally prejudicial to them as to the Auricula; hoops, nets, and mats are essential requisites; but even these must be judiciously applied. Hail-storms may be expected, and those who are unprepared, will, when too late, bitterly regret the want of care they have evinced in preparing the necessary protection. Dahlias, &c., as last week.

### HARDY FRUIT GARDEN.

Let all training and pruning be assiduously proceeded with, that it may as soon as possible be brought to a conclusion, particularly where the advice given in an early Calendar has been followed, by leaving unpruned those fruit trees of which the buds are liable to be injured by the bulfinches. Any trees which are furnished with a tolerable quantity of blossom-buds, and are not yet protected, should be immediately attended to. If canvas or netting is not available, evergreen branches must serve as a substitute. In applying them, use as many as will protect the blossoms, without depriving them of light, and let great care be taken that the buds are not broken or injured, in fixing the branches; and also that the latter are fastened so securely, that the wind may not be able to move them, and rub against the buds. All Pear and other fruit trees, except those too far advanced in bud, which are infested with scale, or insects of any kind, should now have the wash recommended in former Calendars, applied to their branches. This will be very effectual now, as the insects will be getting more active, with the increasing warmth of the season.

### KITCHEN GARDEN.

Let young plants of Celery, Cauliflowers, Cabbages, &c., raised in frames, be carefully pricked out as soon as they will bear handling. A spare frame placed upon a slight hot-bed, will answer best for the Celery; and a border at the foot of a south wall for Cauliflowers, Cabbages, &c. Watch carefully the crops now coming through the ground; and whenever slugs are found to be destroying them, let the ground be frequently dusted over with soot and lime; or let them be picked by hand, which is the surest plan. The planting of Potatoes, Jerusalem Artichokes, and Horse-radish should be finished without delay.

State of the Weather near London, for the week ending March 20, 1851, as observed at the Horticultural Garden, Chiswick.

| March. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 14 | 11 | 29.813 | 29.776 | 53 | 34 | 43.5 | 40 | 41 | S.W. | .70 |
| Satur. .. 15 | 12 | 29.748 | 29.657 | 46 | 29 | 37.5 | 41 | 41 | N. | .37 |
| Sunday . 16 | 13 | 29.848 | 29.832 | 52 | 26 | 39.0 | 40 | 41 | N.W. | .00 |
| Monday 17 | 0 | 29.739 | 29.556 | 44 | 35 | 39.5 | 40 | 41 | E. | .30 |
| Tues. .. 18 | 15 | 29.802 | 29.648 | 51 | 36 | 43.5 | 41 | 41 | S. | .10 |
| Wed. .. 19 | 16 | 29.857 | 29.344 | 51 | 43 | 47.0 | 41 | 41 | S.W. | .33 |
| Thurs.. 20 | 17 | 29.345 | 29.340 | 58 | 37 | 47.5 | 42 | 42 | S.W. | .00 |
| Average ... | | 29.707 | 29.599 | 50.7 | 34.3 | 42.5 | 40.7 | 41.1 | | 1.80 |

March 14—Fine: heavy clouds; hazy; heavy rain at night.
— 15—Constant rain; overcast; frosty.
— 16—Clear; fine; slightly clouded; frosty at night.
— 17—Foggy; rain throughout.
— 18—Hazy and damp; rain; clear at night.
— 19—Overcast; rain.
— 20—Fine; very fine; clear at night.
Mean temperature of the week, 5 deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending March 29, 1851.

| March. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 23 | 50.3 | 35.5 | 42.9 | 12 | 0.60 in. | 5 | 3 | 2 | 1 | 4 | 6 | 3 | 1 |
| Mon. 24 | 49.7 | 32.1 | 40.9 | 8 | 0.11 | 3 | 4 | 2 | 1 | 4 | 2 | 4 | 6 |
| Tues. 25 | 50.9 | 32.8 | 41.8 | 10 | 0.50 | 3 | 5 | 4 | 1 | 3 | 1 | 6 | 3 |
| Wed. 26 | 52.1 | 33.5 | 42.8 | 10 | 0.12 | — | 3 | 4 | 3 | 4 | 3 | 3 | 5 |
| Thurs. 27 | 53.9 | 34.8 | 44.4 | 9 | 0.37 | 1 | 5 | 4 | 3 | 1 | 4 | 7 | — |
| Friday 28 | 53.4 | 33.8 | 43.6 | 10 | 0.68 | 2 | 5 | 4 | 2 | 3 | 3 | 5 | 1 |
| Satur. 29 | 53.6 | 33.6 | 43.6 | 6 | 0.12 | 1 | 3 | 5 | 3 | 1 | 5 | 3 | 4 |

The highest temperature during the above period occurred on the 27th 1830—therm. 75 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

## Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

AMMONIA: *R V.* We will consider what further remarks this subject calls for.

ANNUALS: *H E.* Many plants that are annuals in cold countries live for several years in hotter ones. The common Ricinus makes a small tree, and Mignonette a bush. Some plants deciduous with us, become evergreens in better climates, as the China Rose, &c.; but in the hottest parts of the world some trees are periodically deciduous, such, for instance, as Erythrinas.

AQUATICS: *H A.* It will be better to act according to the evidence before you. We generally find that in these things organisation adapts itself to circumstances; and that what is naturally ⌣ becomes — if any unusual submersion requires it.

BOOKS: *W G.* "Cuthill on the Potato, Asparagus, Seakale, Rhubarb," &c., &c. Any bookseller can procure it for you, if he chooses.‡

CAPE BULBS: *J S.* The bulbs are of very pretty sorts. Pot them in fibrous loam, and grow them in a greenhouse like Hyacinths. That plan will produce you better flowers than turning them out into even a warm border.

CRANBERRIES: *M B.* There is no difficulty in cultivating the common Cranberry among peat earth and lumps of stone, provided *running* water will pass over and among it. Stagnant water will not do. But the American Cranberry may be grown in any garden in the same way as other American plants, only it should have a bed to itself.

GALVANISED IRON GREENHOUSES: *B.* will be obliged by some of our correspondents who have had these erected, informing him how they have answered.

GLAZE FOR CALICO: *J K C.* Three pints of old pale linseed-oil, 1 oz. of sugar of lead, and 4 oz. white resin. The sugar of lead must be ground with a small quantity of the oil, and added to the remainder, incorporated with the resin by means of gentle heat. Lay it on the calico with a brush. One coat annually is sufficient. ‡

INSECTS: *Miles.* Your Azaleas are attacked by the common Thrips. Repeated fumigation in as confined a situation as possible, with subsequent syringing with clear water, and ventilation, are the best remedy. *W.*— *W W.* The Acarus hatched from the small white speck-like eggs upon stones is a well-known species. It is the Trobidium (or Penthaleus) lapidum of De Geer and Hermann. Pray continue your observations, and communicate the result to us, with a more finished drawing both of the young and full-grown Acarus. *W.*

KIDNEY BEANS: *Constant Reader.* They are shanking off; why, we cannot say. *Perhaps* you have grown them in too much heat, and then watered them with cold water.

NAMES OF FRUITS: *D Thomas.* The Pear is not the true Knight's Monarch. The Apple is certainly like Pearson's Plate; but it may be found to be different, on comparing the wood and leaves.‖—*J P M.* Your Apple is the Dumelow's Seedling. ‖

NAMES OF PLANTS: *J P.* It is Aponogeton distachyum.—*J Weeks and Co.* It is not possible to name such a specimen; it may be a species of Puya.—*Poole.* Hibbertia dentata.—*F B.* Bignonia picta.—*J F W.* Crassula spathulata.—*A H.* Cassia tomentosa, a rare plant.—*J White.* Brasavola Perrinii.—*R D.* 3, Coronilla varia; 5, Bryonia dioica; 6, Delphinium consolida; 1, Alyssum argenteum; 2, very like a morsel of Lepidium ruderale; 7, Ervum Lens; 4, Onobrychis sativa.—*J A.* 1, apparently Epiphyllum truncatum; 2, indeterminable.—*W J E.* We are not sufficiently acquainted with the Camellia in question to be able to say whether that sent is the same sort or not.*

OAK BARK: *W F.* will thank some of our correspondents to say what is likely to be the price of Oak bark this season, and also the price of Oak, Elm, and Ash timber, per load, in different parts of the country.

ORCHARD HOUSES: *C A A Lloyd.* See a Leading Article on the subject, at p. 35 of the current year's volume. ‡

PRIMULA SINENSIS: *Old Gardener.* In show Polyanthuses if the pistil protrudes it is considered a defect. But we should not say that the flowers of Primula sinensis were worthless because that part was seen beyond the anthers.*

VENTILATION: *Novice.* Ventilation by top sashes is more effective than that by back ventilators. Having both, you certainly can command enough without opening sashes in front. But it would be better to give a little front air, and of course less at top will then be necessary. The necessary amount of ventilation is better admitted by many than by few openings.‖

VINES: *Sussex.* Your Vines will probably become less exuberant as they grow older. The roots ought not to go more than 2 feet deep into the soil, and probably will not, if the surface is in good condition. But they may *extend* a hundred yards or more in time, if they like the soil, and meet with no impediment. This will, however, be your gain, and must produce you very large and fine crops of Grapes. As a rule, Vine roots will keep to warm and open ground. We conceive that your fine rubble chalk is sufficient.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | |
|---|---|
| Clover Manure, per ton ... ... ... | ...£11 0 0 |
| Turnip Manure, do. ... ... ... | ... 7 0 0 |
| Superphosphate of Lime ... ... | ... 7 0 0 |
| Sulphuric Acid and Coprolites ... | ... 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents. Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application. Agents wanted.

PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 150 lbs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5l. per ton. Orders received by Mr. HENRY HILL, Corn Exchange, Mark-lane; Mr. GEORGE BUSH, 22, Abchurch-lane; and Mr. BENNETT, 73, Mark-lane, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

STEPHENSON AND Co., 61, Gracechurch-street London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PURCHASERS OF AGRICULTURAL SEEDS are recommended to peruse Messrs. SUTTON'S NEW PRICE LIST, which appeared in the last page of the *Gardeners' Chronicle* of March 1st. The advantages Messrs. SUTTON are enabled, by their extensive trade, to afford agriculturists in supplying *genuine home grown Seeds at the low prices therein quoted, and free of carriage*, will doubtless be appreciated in these times of economy and agricultural improvement. The following are a few of the articles therein enumerated:—

| Per lb.—d. | | Per bushel—s. d. | |
|---|---|---|---|
| Mangold Wurzel ... | ... 6 | Giant Saintfoin ... | ... 10 0 |
| White Belgian Carrot | ... 9 | Dickinson's improved | |
| Fresh imported Lucerne | ... 9 | Italian Rye-grass | ... 7 6 |
| Parsnip ... ... | ... 9 | True Perennial ditto | ... 7 0 |
| Ashcroft and other Swedes | 9 | Common ditto ... | ... 5 6 |
| Furze (Ulex Europæus) | ... 9 | Summer Vetches | ... 6 6 |

THE BEST SORTS OF PERENNIAL GRASS SEEDS £ s.d.

FOR PERMANENT PASTURE, *mixed expressly to suit the soil, with instructions for sowing, per acre* ... 1 8 0

SUTTON'S RENOVATING MIXTURE, *for improving old Pastures, per lb.* ... ... ... ... ... ... 0 0 10

Reading Seed Warehouse, Reading, Berks.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.

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The Company is empowered to execute—1. All works of Drainage (including Outfalls through adjoining Estates), Irrigation, Reclaiming, Enclosing, and otherwise improving Land.

2. To erect Farm Homesteads, and other Buildings necessary for the cultivation of Land.

3. To execute Improvements, under contract, with Commissioners of Sewers, Local Boards of Health, Corporations, Trustees, and other public bodies.

4. To purchase Lands capable of Improvement, and fettered by restrictions of Entail, and having executed the necessary works, to resell them with a title communicated by the Company's Act.

All owners of Entailed Estates, Trustees, Mortgagees, Corporations, Incumbents, Life Tenants, and other persons having only limited interests may obtain the use of the Company's powers to carry out every kind of permanent Improvement, either by the application of his own or the Company's funds secured by a yearly charge on the property improved.

Proposals for the execution of Works to be addressed to 52, Parliament-street, London. WILLIAM CLIFFORD, Secretary.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

The Agricultural Gazette.

*SATURDAY, MARCH* 22, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 26—Agricultural Society of England.
THURSDAY, — 27—Agricultural Imp. Soc. of Ire.and.
WEDNESDAY, April 2—Agricultural Society of England.
THURSDAY, — 3—Agricultural Imp. Soc. of Ireland.

We promised to remind our readers, at the proper season, of the desirableness of Professor HENSLOW's experiment for the determination of the cause of CLOVER FAILURES. There are now three theories on this subject. One of them asserts the failure to be a mere case of starvation—want of sufficient "board" for the plant; a second that it is owing to a faulty texture of soil—want of suitable "lodging" for the plant; and the third that it is the result of disease arising from an improper treatment of the plant. It is to determine the soundness of the third of these suggestions that Professor HENSLOW suggests the following experiment. Let any farmer, whose land has proved liable to this disease, leave a single "ridge" of his Barley field unsown, except with the Clover seed. The idea is that the unnatural condition in which the Clover is commonly placed during so long a period of its growth, and the abrupt change of its circumstances at harvest time, weakens, or injures the plant, so that it cannot contend with the difficulties of the ensuing winter. If the disease attacking any Clover field should not extend to the experimental ridge, this suggestion will be corroborated. Should it prove a sound one, the value of the knowledge thus attained of it will, of course, far outweigh the loss of the Barley. Professor HENSLOW says:—"I have heard farmers say they cannot afford to lose the Barley, for the sake of keeping the Clover healthy; and they immediately arrive at the conclusion, that the experiment I have suggested would be useless. Now, I need not tell you, that even if the Barley turns out the primary cause of these failures, there would be no need of entirely abandoning its culture, in order to secure the Clover. Let us understand the merits and demerits of the case, and then your chemical experiments may furnish data for so far modifying present practices, as may enable farmers to raise their invalid crops of Clover over the difficulties to which they have subjected them."

Besides; a number of the details of Barley culture, on which opinion is still divided, might then be usefully decided in such a way as shall be most beneficial to the undergrowth of Clover—such are, the quantity of seed used per acre, the width of intervals between the drills, and the length of stubble to be left at harvest time. We hope, then, that some of our readers will not forget Prof. HENSLOW's experimental ridge at Barley seed time.

Of the other theories of CLOVER FAILURES—for the result may be owing to many causes—the more probable is that which attributes it to the mechanical condition of the soil. The best advocacy of this theory which we have seen is by the Rev. W. THORP, in the third volume of the "English Agricultural Society's Journal." The exemption of headlands, and other parts hardened by treading, from failures which have destroyed the rest of the field—the effect of "rest" in restoring the utility of land which has become "tired" of the crop—the similar effect of marling light soils—the failure of Trifolium incarnatum when the corn stubble is ploughed and cultivated for its reception, and its success when merely harrowed in upon the hard unstirred land—all seem to indicate a too loose condition of the soil, as in many cases the cause of the Clover failure.

The chemical theory of its cause seems by common consent to be abandoned. Dr. ANDERSON, at the last of the Highland Society's monthly meetings, said as much. He had not ascertained differences in the composition of specimens of soil sufficient to account for the success of the plant upon one and its failure on the other; and that it is not the want of suitable food for the plant that causes its death, seems clear from the following experiments published by Mr. MAIN, of Lasswade, in a recent Number of the *North British Agriculturist:*

He says, regarding his experimental field:—"Intending it for Barley in 1849, I was anxious to plough it as early in the year as possible; and with this end in view, I began the ploughing in February. Bad weather succeeded after I had got the field exactly one-half ploughed, and from various causes I was prevented getting the other half ploughed till the last week in April. When the Barley was sown with the Grass seeds in the first week of May, the early ploughed division wrought very fine, finishing almost like an Onion bed. The late ploughed division, on the contrary, wrought raw and stiff, and the Grass seeds were sown on a cloddy surface. The whole field was sown with the same Barley and seeds. The braird, both of Barley and Grass, came away first on the early ploughed division, and for some time looked better, but at harvest little difference was observable: as I have already stated, the Clover, and especially the red Clover, was abundant. When the substances for experiment came to be applied on the 28th of May, 1850, the appearance of the red Clover was entirely changed. On the first ploughed half very few plants, or clumps of plants, could be seen; on the late ploughed half there were plants in plenty; a complete line of demarcation, formed by the red Clover, marked the spot reached by the early spring ploughing." Mr. MAIN argues from this, that the loose condition of the well cultivated half was the cause of the Clover failure. And in order to ascertain whether it could have originated in the absence from the soil of some substances required by the plant, he applied a variety of manures to the land. He says, "I took advantage of the division of the field by the early and late ploughings, and measured one quarter of an imperial acre on each division for each substance. The substances were thus sown in duplicate, first on the early, and secondly on the late ploughed division of the field; I also measured 'nothing' lots in each division, in the proportion of one 'nothing' lot to two top-dressed lots, the 'nothing' lot being in the centre, and the top-dressed lots on each side compared with it. The experiment is as follows:—

| No. | Substances employed. | Applied per imperial acre. | Cost of application. | Produce per imperial acre. | Duplicates. | Produce per imperial acre. |
|---|---|---|---|---|---|---|
| | | lbs. | s. d. | stone. | No. | stone. |
| 1 | Sul. of ammonia | 132 | 20 0 | 356 | 1 | 345 |
| 2 | Nothing ... ... | ... | ... | 244 | 2 | 223 |
| 3 | Gypsum ... ... | 172 | 3 10 | 244 | 3 | 211 |
| 4 | Sul. of magnesia | 246 | 16 6 | 254 | 4 | 200 |
| 5 | Nothing ... ... | ... | ... | 277 | 5 | 189 |
| 6 | Common salt ... | 107 | 2 10½ | 268 | 6 | 200 |
| 7 | Nit. of potash ... | 202 | 59 6 | 378 | 7 | 334 |
| 8 | Nothing ... ... | ... | ... | 277 | 8 | 211 |
| 9 | Sul. of ammonia / Gypsum ... ... | 66 / 86 | 12 11 | 312 | 9 | 244 |
| 10 | Mur. of ammonia | 132 | 27 1 | 397 | 10 | 312 |
| 11 | Nothing ... ... | ... | ... | 277 | 11 | 223 |
| | Average per acre | ... | ... | 297 | ... | 244 |

"I may mention that the *whole crop* on each lot was weighed, and the amount simply quadrupled, to

give the result per acre. An examination will show that the division of the field last ploughed gave the largest returns on all the lots, 'nothing' included. *These results are wholly to be placed to the credit of red Clover.* The Rye-grass on both divisions was equal, and if a difference existed, I am inclined to give it in favour of the Rye-grass on the early ploughed division. I attribute the superior results of the late ploughed division to the greater abundance of red Clover. On the whole eleven lots, the late ploughed division gives an average increase of 53 stones per imperial acre—*in other words* 53 *stones of red Clover.*

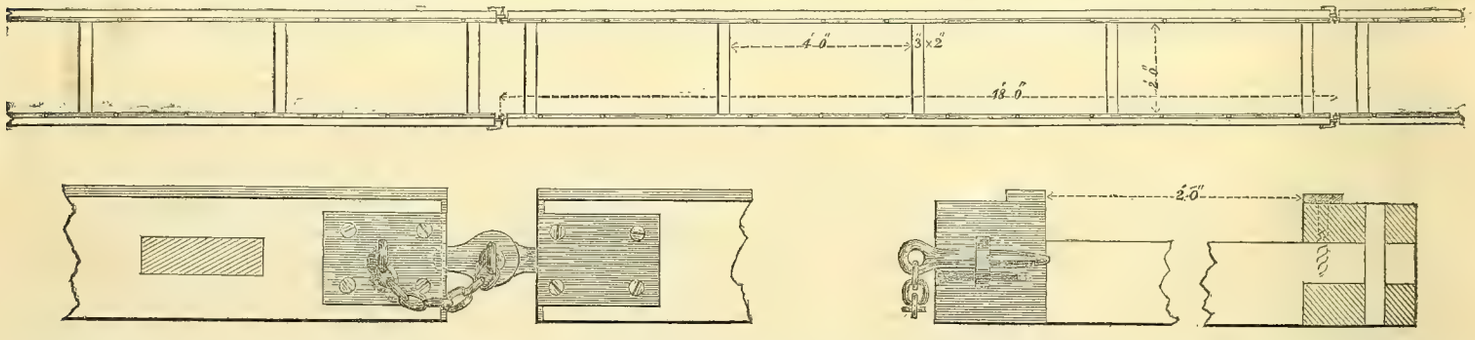
"My observations on the experiment during the growth of the crop are all against the idea, that the food theory has anything to do with the failure of Clover. None of the substances applied seemed to have any particular influence on the Clover plant, other than was exerted on the Rye-grass. Perhaps I should except the mixture of sul. of ammonia and gypsum. This application certainly produced a luxuriant growth of Clover. But whether luxuriant or the reverse, not one of the substances had the effect of producing a larger amount of Clover plants than the appearance of the crop warranted previous to the application; and certainly none of the substances not affecting the Rye-grass had any effect on the Clover. The substances having no effect may be stated as gypsum, sulphate of magnesia, common salt."

This, then, is one more proof, if any were needed, of the untenableness of the "food" theory of the Clover failure. There remain the suggestion of Mr. Thorp regarding the texture of the soil, and that of Professor Henslow regarding the treatment of the plant to choose between; and we hope that some of our readers may interest themselves in the matter, so far as to try the experiment we have named, and report its result next spring.

## MR. NEILSON'S FARM RAILROADS.

In reply to your enquiries, I beg to say that the following circumstance led me to invent and adopt the plan of portable railways, of which the "*Times* Commissioner" took such favourable notice in his report on South Lancashire. My farm consists of heavy clay land; and when I first took it, was entirely undrained, and composed of many small fields, averaging about 2 acres each, separated by large crooked fences, with wide ditches and abounding in pits, from which, according to the ancient custom from time immemorial, the land had been dressed with marl, as the only means of procuring a succession of Wheat and grain crops, by which the soil had been exhausted. I of course commenced my operations by draining, but on a piece of this land not yet drained, where I had levelled the fences and filled some ditches and pits, I sowed some Turnips, having previously well manured and deeply ploughed it; and the novelty of this proceeding having excited its gratitude, it grew me a fair crop. The price being high in the Liverpool market, (7 miles distant) I loaded two carts one afternoon, in order to send them off early the nex morning, leaving them in the field during the night. Unfortunately, it rained heavily, and the carts having been left beyond the filled up ground, the result was, that the united efforts of 4 horses brought away the shafts, but left the loads up to the axles in the mud. I had not then heard of Prince Albert's ingenious mode of uncropping a similar field by passing the Turnips from hand to hand, like so many cricket-balls. So I invented a rude sort of railway of wood, by which I removed the whole of the crop in time to realise a good price. I have since improved it considerably, until it has resulted in the subjoined sketch, of which Mr. Crosskill, of Beverley, took the pattern, and now makes it for sale.

I have used it for the last nine or ten years always in taking off my root crop, and frequently in putting on manure. In the latter, at the request of the Duke of Richmond, I made an experiment which proved it to be far more economical than horse-labour. Lord Derby used it extensively to convey tiles to drain an extensive piece of moss land, and afterwards to cover it with marl, when neither horse nor cart could have gone a yard without sinking up to the girths or axletree; and many parties, both in England and on the continent, to whom I have sent the description, have used it with unvaried satisfaction. I may perhaps mention, that I am now excavating three liquid manure tanks of the following dimensions, to follow the spirited example set by Mr. Kennedy and Mr. Telfer, of Ayrshire, viz., 100 feet long by 12 feet wide and 15 feet deep, each. The excavation is through stiff clay and marl, and I find the greatest possible advantage from the use of this railway, laid on a very steep incline and pulled upon a frame under which the cart is backed and the waggon at once discharged into it. Each waggon holds a single horse load. The form of the rail is as follows:—The sides are of the common deal, 18 feet long, or shorter if thought more desirable, nearly 3 inches deep, and 2½ thick. A balk of timber, 18 feet long and 12 inches by 13 square will cut up into 20 of them. They are connected by means of wooden sleepers of tougher material (slabs or thinnings of Oak, Ash, Beech, &c.) 2 feet 5 long, 3 inches broad by 2 inches thick, and mortiсed through the side pieces about every 4 feet; the tennant is left on the upper side of the cross piece, and the mortice is cut in the side piece so as to allow the bottom of it and the cross piece to be on a level, so that the flange of the wheel will travel above. The tennants are fastened by a half-inch wooden pin, driven through the side piece ⅜ of an inch from the outer edge; on the upper and inner edge of the side piece is laid a strip of iron from ¼ to ½ an inch thick, and from ¾ to 1 inch broad (according to the weight of work required over it) screwed down at every 15 or 18 inches with 2-inch screws, the heads being countersunk in the iron rim. Thus the iron strip is clear of the wooden pin that fastens the cross pieces, and need not be removed if any of the latter break and require renewing. The ends of the iron strip are bent over the ends of the side rails and let in flush, and are secured by a band of hoop iron covering the mortice hole outside, passing round the end, and for 6 inches along the inside of the side rail, and through this plate is fastened the joint for attaching to the next rail. After many contrivances I have found the following the best and most convenient mode of connecting two consecutive rails together: a pin 3 inches long, of half-inch square iron, turned with a half-inch eye at one end and driven nearly home in each end of each side piece. Care must be taken that these pins are fixed half an inch on the inside the centre on one end, and half an inch on the outside of the centre on the other end of the same rail, so that when two rails are brought together the two pins of the one rail are both inside or both outside the two pins of the other rail, which prevents them separating sideways, and the eyes being level are fastened by a half inch pin or plug put through them, and which, forming a joint, enables the railway to be laid more easily over undulating ground. These pins or plugs are secured to the side pieces by a small piece of light jack chain. Though this description is but an imperfect one, I trust that with the accompanying sketch it may be sufficiently understood to be tried; and where the surface is suitable and not too hilly, I'll answer for it that on heavy land it will not readily be discontinued. Of the waggons and turntables I presume no description is needed; the latter is very simple, adapted to the length of the former, and costs about 10*l.* The former will hold about 10 or 12 cwt. of Turnips, and discharges sideways over the wheel, which is about 18 inches high. Cost, about 2*l.* 15*s.* or 3*l.* My arrangement for getting off my Turnips is to deliver the rails, waggons, and turn-tables in proper working order to the labourers, who contract to deliver the Turnips at the field gate at so much per acre, and to restore the rails, &c., in good order, or pay for breakage and damage. I fear I have trespassed too much on your valuable space, but presuming your motive to be to impart information, and mine to give others the benefit of what I know to be practically useful, it will, I hope, plead my apology. *R. Neilson, Halewood.*




## TULL'S HUSBANDRY.

The high commendation in the *Gazette* of Feb. 15th, of Mr. Smith's method of applying Tull's system, by so competent an authority as Mr Hewitt Davis, makes a further inquiry into the matter of some moment. The same method was related in last year's *Gazette*, in a review of Mr. Smith's pamphlet. Being a practiser of Tull's system I perused the pamphlet, and came to the conclusion that Mr. Smith had not made out a case justifying anything beyond mere small experiments. But Mr. Davis's endorsement has caused me to doubt, and the best proceeding appears to be to publish an analysis of the statement, and call for further explanation on the part of its author. As further inducement to this investigation, let me add, that I can say feelingly with Mr. Davis, "my own experience in farming has taught me," that dependence on stock-keeping is carried to a most imprudent extent—an extent involving all the fallacy and loss consequent on any excessive investment of capital in a particular product, whether corn, cattle, cotton, shoes or hats. Now, the first and principal point, on which very much further information is wanted, is the item, "one double-digging of the fallow ground, being 2 feet of every 5 feet." The cost of this is stated to be 1*l.* 10*s.* for an acre; but in the pamphlet it is stated to be 2*l.*, for the first year. The former is at the rate of 3*l.* 15*s.*, the latter at the rate of 5*l.* per acre, if instead of two-fifths only, an entire acre were similarly dug over. Now I want to know what sort of land this is, and what is the money earned by the labourer, for double-digging, to be done at this exceedingly low price. Partly in consequence of this pamphlet, I had a piece of land trenched last October. The man was a very able person, well used to the work, thoroughly desirous of doing his best, well knowing my wishes, that if I could see my way, I would quickly enough employ him and a dozen more at the work, and I had perfect leisure to watch him the whole time he was at it. I paid him 13*s.* a-week of 9½ working hours per day, he finding his tools, pickaxe, and spade. The land was a stiff flinty loam, such as is common on the chalk districts. The ground was certainly very hard and dry last October, but I am certain it could never be done without a pickaxe, except in very wet weather, when it would turn up too cloddy; nor could it be done deeper than 8 inches then without a pickaxe, on account of the large flints which occur at that depth, at about the rate of 12 one-horse cart-loads per acre. It was done in this way: first the pick-axe went along the breadth of the piece, then the spade threw out what was loosened, then the pick-axe again, then the spade, and, lastly, the pickaxe merely raised up or loosened 4 or 5 inches of earth. The whole depth turned out was from 10 to 12 inches, and the bed of mould when finished was about 20 inches deep, judging by thrusting a walking-stick through it. It certainly was a beautiful piece of work, the dry weather bringing it up fine, and the large stones got out. Now the man did not, and, I am satisfied, could not do more than two poles a-day, making the cost somewhere about 9*l.* per acre. It was decidedly hard work, requiring a man to live well, and entitling him to a good remuneration. Mr. Davis says Mr. Smith's land is trenched 2 feet deep. This means, I presume, that the dry and finished bed of mould was 2 feet deep. But even this astonishes me that it could be done at the price; for here is another important consideration—it must be much easier to trench a piece of land of considerable length and breadth, than to trench 2 feet wide between rows of Wheat, and to keep 6 inches clear of the rows. My trenching 12 inches deep raised the ground 8 inches. Had this been between rows of Wheat, the greatest caution would have been required to keep the earth from slipping down and burying the Wheat, which must have proportionately increased the time and expense. These remarks, I trust, justify me in asking for further and exact particulars of the soil, the mode of double-digging, the depth, and the rate of wages, with the working hours in a day. And I shall rejoice if the answer should be to show that my mode of trenching has been so effectual, that ever after it will never require to be repeated, but may be kept in easy digging order, provided it be not trampled on by horses, except at harvest. For it is the trampling of horses in ploughing, harrowing, and rolling, that seems to me so speedily to undo our work of stirring. My trenched ground does not seem to have sunk an inch, though it has been done four months and had the winter rains. The above further information on this first item of double-digging will probably render unnecessary anything further on the next two single forkings.

I come now to the third item, "pressing, sowing, hoeing, carrying, threshing, and rates, which are put at 2*l.* 1*s.* If my memory does not deceive me, this was stated in the pamphlet as the probable average cost of the whole together over most localities, rather than the actual sums paid in the particular case. These latter would be more satisfactory, as, how many boys following the presser, how many hoeings, how much per quarter for threshing, and how much for rates. Tull's husbandry so lets up the weeds, that hitherto I have found two hoeings insufficient. My rates are 5*s.* an acre, and with this I cannot bring the entire item within 41*s.* But reaping appears to have been altogether forgotten. Now, from the enormous weight of straw, I judge the reaping to be extremely close to the ground. There is not much saved in reaping Tullian Wheat. The stoutness of the straw and the width of the rows renders the task

not much less than more rows of slenderer straw close together. This reaping would be 10*s.* an acre with me. Again, the following items are omitted—thatching, taking in rick, and marketing, which together I should put at 9*s.* an acre. There is still another item of cost. The straw is stated to be 1 ton 12 cwt., and worth 3*l.* 4*s.*, which is 40*s.* a ton. Mr. Smith, if I remember right, stated in his pamphlet that it was worth that to him for his stock. I can only say that I live in a district where there is a very good sale for straw, and where I frequently sell a few trusses at 8*d.* a truss, but I could not get more than 6*d.* a truss upon the premises, if I were to sell a ton or more, and sometimes not more than 5*d.* And if straw is to be sold, there is a charge of 2*s.* 6*d.* per ton for trussing. Scaring birds too at the rate of 3*s.* an acre is an item which ought at all events to be calculated on, to be on the safe side.

Now let us see what these additional items come to. First, there is trenching at 9*l.* an acre. Say it would never require to be done again. But if one were to sell one's land, who would pay for it? One must, therefore, get this principal returned in a few years. Say a guinea a year would be prudent expectation to return capital sunk, and 9*s.* a year more for interest in the meantime, making 30*s.* more for annual outlay. We must say another pound at least for reaping, thatching, taking in rick, and marketing. Then there are probable expenses, for trussing straw and bird-keeping. To the statement of cost then given by Mr. Davis, I am compelled to add 50*s.* per acre. I cannot hope for more than 30*s.* a ton for my straw. This reduces the return by 16*s.*, and adding to 50*s.* increased cost, the "net profit of 3*l.* 0*s.* 6*d.* per acre," estimated by Mr. Davis, will be changed into a net loss of 5*s.* 6*d.* per acre. Mr. Davis, however, arrived at his profit by allowing "40*s.* an acre to cover rent and interest of capital, and 40*s.* an acre more for provision for contingencies and dressing;" allowances so ample, that I am not satisfied to dismiss the case, especially as, on Tullian principles, I do not think there would be a cost of above 5*s.* an acre for dress; and that principally consisting of phosphates, being more and more convinced that stirring while the crop is growing, renders unnecessary the application of ammonia in such quantity as is required by an unstirred crop. One question more, as a Tullian farmer, I should like to have answered. How did the crop succeed this year? Mine was so excessively blighted that I had but 10 bushels per acre; whereas my crop, by the usual husbandry, I estimate at 30 bushels, and the Tullian fetched but 32*s.* a quarter the same week that some of the other fetched 38*s.* And again, is not Mr. Smith's land fresh broken up within the last five years? The great weight of straw would seem to indicate this, as well as the produce of Wheat. But this only shows the propriety of a fuller description of the soil. I have assumed the 9*l.* for trenching done at one before the commencement of sowing. Mr. Smith's plan is, however, to do two-fifths only the first year of the growing crop, and two-fifths the next year. For the reasons above stated, this appears to me impossible, except at a very great expense in doing it carefully, and preventing the raised earth from burying the Wheat. But the great objection to Tull's plan is the bad quality of the Wheat. I have this year some Beans on the same plan, which, perhaps, will not hurt in quality, to be followed by thicker planting of Wheat, and then Beans as before, the trenching to be done only or mainly during the Bean crops. If, however, it is possible to describe by words the process of digging between the rows, and so render an actual inspection unnecessary, Mr. Hewitt Davis and Mr. Smith will confer a great obligation on the distressed and overstrained British farmer. *Amicus Tull.*

## Home Correspondence.

*Open Furrows on Well-drained Land.*—I maintain the necessity for open furrows. We have had heavy floods to-day. The drains have discharged most abundantly, but on the heavy land quite as much water has passed from the surface as from the under drains whilst it continued raining. This remark applies to land drained 32 inches deep, at only 4 yards apart, and filled 10 inches deep with pipes and stones, as described in my first pamphlet; also to land drained 4 feet deep, with pipes at intervals of 28 feet. The drains had the capacity to discharge more water than they did, could it have reached them, but the continuous rain supplied water faster than the physical character of the soil permitted it to permeate or filtrate. These remarks apply to 100 acres, which I closely examined to-day during a continued heavy rain. Let me not be misunderstood. The stetches and furrows are not the absurd mounds and tortuous valleys of our midland counties. The stetches are flat, the small narrow furrows being about 6 inches deep, and not perceptible on a good Wheat crop at harvest. The water sighs into them invisibly, but the aggregate of these weepings in long distances forms a flood of tears of very awful proportions. Water or cross furrows intercept and convey them away, ere they acquire on hill sides too great a momentum. In our undrained heavy Essex lands it is no uncommon thing to see cart-loads of fine earth thus washed into the ditches. How strange—is it not?—that I cannot persuade our heavy land Essex friends, that it would be useful and profitable to drain their strong clays. They will not even try it, so they suffer smartly for their obstinacy in wet seasons. I hope your correspondents will continue to discuss this open furrow question, especially our north country friends. I find practically that deep cultivation, by subsoiling, trenching, &c., greatly facilitates the passage of water. I have a strong conviction that our agricultural pie-crust does not exceed, as an average, 4 inches on the solid or land side. I have seen much ploughing not 3 inches, or about the diameter of the mouth of a wine-glass. If some of our supposed deep ploughers will carry, as I sometimes do, a wine-glass in their hand, and place it in the track of the plough, they will be surprised to see so much of it above the earth; and after all it is only 5 inches high! Allow me to say, that the first 30 acres I drained with pipes and stones at 12 feet apart is perfectly drained; the crops being ripe evenly over the whole field. I am almost inclined to revert to my old theory, that the area of porosity in drains has something to do with increased facilities for drying land. *J. J. Mechi, Tiptree-hall, March* 15.

*A good way of Painting Farm-buildings.*—Having, some years ago, to superintend the erection of a great number of farm-buildings, and it being the particular wish of the nobleman, on whose estate they were built, that they should be rendered as durable as the material employed would admit, viz., timber in all parts, with the exception of the roof and foundation, I had all the body of the buildings done over with a mixture of gas-tar, two parts; pitch, one part; the other part half quick-lime and common rosin, put on quite hot; it requires two coats at least, three is better, the first to be perfectly dry and hard before the second application; while the last coat was still soft I had dashed on it, with a trowel, well washed sharp sand, or more properly minute flint stones, which remained after several washings; this we managed by the assistance of a fine wire sieve, and a stream of water with a good fall; this forms a perfect stone face to the timber; and from the appearance of them when I last saw them, they were likely to last many years longer. The sand should contain no stone more than three lines in diameter, in fact, if all the earth is washed out, the smaller the better. The window frames and doors were done over with the commonest paint I could get in London, a stone-colour, three coats, besides the priming; the paint mixed thick, and darted over in the same manner as the rest of the building, with a still finer sand; this also appeared to stand well; the sand must be made perfectly dry before it is used. The expense I cannot exactly state, as I cannot lay my hand on the book just now, but I know it was not much, and has given great satisfaction. It is right to state that the wood-work must be perfectly dry and well seasoned before this mixture should be applied; it is better to wait a year to effect this end than put it on green wood. *E. X., near Braintree, Essex.*

*The present state of Irish Agriculture.*—In my former letter I succinctly showed that the cause of Ireland's wretched husbandry was to be traced to the apathy of landlords as to the improvement of their tenantry. It is only now that proprietors are awakening from their lethargy to a full sense of their neglected duties, which has been the means of consigning many a happy family to irretrievable ruin. The progress of the people has aroused our dormant landlords to a direful contemplation of their darkened future; they see their tenants destroyed from the mere want of attention and encouragement to their interests—for landlords have ransacked, where they could come at, the available effects of their tenantry, to satisfy the pressing demands of threatening creditors. Eviction is sure to follow a penniless tenant, aye, eviction from a dismal, yet to the suffering tenant, a home; either subsequently to live at the mercy of a relieving officer, or die, between the struggles of famine and misfortune. The few who have withstood the crushing demands of a bankrupt landlord, too proud to brook a diminution of those pleasures to which he clings, and that style of living for which he is unable to pay, are yet verging onwards to the vortex of ruin, because they are not able, from the want of education and economy, to pass into that transition state from imperfect husbandry to successful farming. The time has passed when Potatoes could be used as a "guardian angel" to appease the rack-rent landlord, and meet other personal engagements: the time has passed when prejudice and custom dictated at the cost of common sense, for society is now throwing off the chains which fettered its progress, and emerging into the light of science, reason, and truth. Farming must now be based upon the practical application of scientific principles and a skilful employment of labour, so that an increased quantity of food may be produced both for individual emolument and adding to the material comforts of the nation. How are Irish farmers to keep pace with the go-a-head tendency of the age? Will their slovenly tillage warrant their onward progress, and be the stability for the nation's weal? Will a reckless abandonment of every established principle of improvement—a wilful disregard to recognised facts—where a studied exhaustion of the soil's expiring fertility is thought of, and no more—be permitted as a *succedaneum* for a system of cultivation whose pseudo-routine has been disorganised by the wholesale destruction of a single crop? Can Irish farmers practise husbandry where green-crop culture is but an experiment?—where it is doubtingly received, because it requires a little extra attention to be successfully pursued?—where the management of manure is heedlessly attended to, and the drainings of the manure-heap kindly invited along a prepared channel, to empty into the nearest stream? Does this not drain the purse? Irish farmers are strangers to the advantages of house-feeding cattle—to the economic breeding, feeding, and rearing of cattle—in fact, there is no harmony in their systems of management; a repelling power predominates, which frustrates all attempts at reform—which produces a kind of culture that deteriorates instead of improving, and destroys every effort for permanent good. And what is this to be all attributed to? Assuredly to the farmer's ignorance—to his want to discriminate between that which is solid and practical and that which is speculative and unproved. This leads me to notice some of the means for improving the agricultural class in Ireland. The first of which, as being first established for giving an impulse to the improvement of Irish agriculture, stands the Royal Dublin Society, established in 1737, with a Parliamentary grant. The objects of this society, which partly bear upon rural industry, consists in holding an annual cattle show in spring, open to all Ireland for competition. As the show is ever held in Dublin, its benefits are naturally availed, with a few exceptions, by Dublin and its adjoining counties. If the exhibition was held alternately in the different provinces, it would excite more attention towards rural improvement in those backward districts, far removed from the vicinity of its workings. *Libra, Feb.* 12.

*Chicory.*—In the volume of the "Agricultural Survey" of Arthur Young, published in 1808, giving an account of the state of agriculture in the county of Sussex, there is the following passage respecting the cultivation of Chicory, p. 145:—"This plant, by the experimental improvement of the age, has recently been introduced to the knowledge of the farmer. For rapidity of growth, luxuriance of burthen, nutritious qualities of the food and duration, it stands unrivalled; all sorts of cattle and sheep feed upon it with avidity. Where it has been cultivated, it is usually sown with Lent corn, mixed in a certain proportion of other artificial Grass seeds. The Earl of Egremont having ascertained the merit of it, spread the cultivation over several acres, and finds it a most useful and profitable plant. In 1798 and 1799, he had above 100 acres of it, and the use it was of to him in the support of an immense stock of cattle and sheep, exceeded everything that could have been expected from the soil; and the benefit would have been still greater, had that stock been still larger, for much of it ran to seed." In the account of this plant, by the Rev. W. L. Rham, in his valuable work, "The Dictionary of the Farm," it is stated that "the result of some accurate experiments on a large scale, made in France, has been unfavourable to Chicory, as compared with Lucerne, and other green food, in consequence of its giving a disagreeable taste to milk and butter, when cows are kept upon it." But he adds, that "for sheep it is very good, and a small portion mixed with other food may probably be a preservative against the rot." A very favourable account is given of this plant by Arthur Young in the "Farmers' Calendar," published in 1815, who says that "whenever it is the farmer's wish to lay a field of Grass by way of resting the land, or of increasing the food of sheep, he cannot hesitate. There is no plant to rival it." These writers are directly at issue as to the character of the soils upon which Chicory may be grown with the greatest advantage. Mr. Rham says that "the land should be rich, deep, and high." Mr. Young says that "on poor, barren, blowing sands, such as many districts abound with, especially in Norfolk and Suffolk, it will yield a greater quantity of sheep food than any other Grass in cultivation;" and that "on fen and bog lands and peat soils it thrives to much profit." If any of your correspondents can communicate the result of their experience, with respect to the cultivation of Chicory, as an article of food for cattle and sheep, they will much oblige *R. W. B.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Weekly Council; March 12: Sir Robert Price, Bart., M.P., in the chair.—*(Continued from page* 172*).*

Salt in Agriculture.—The Baron Mertens, a life-member of the Society, residing in Belgium, attended the Council for the purpose of calling the attention of the members to the great interest felt at this moment by the Government and farmers of that country in reference to the value of common salt as an application to the land and crops, and as an adjunct to the food of animals on a farm. As opinions on these points varied so much, according to the circumstances under which the experience had been gained, he was anxious to ascertain, if possible, the best information on this subject, which he thought important to all cultivators of the soil, and feeders of cattle. The abuse of salt in Belgium had become, he stated, a real ruin in some cases to the tenant-farmer, as well as to the landed proprietor; and he had been given to understand, by some of his friends in England, that it had not answered well with them. Salt he believed to be, to a certain extent, useful to fattening stock, if not forced upon them, but placed in their way, in order that they might take as much of it, and at such times as they felt disposed. In France it had been thought very advantagious to live stock, by M. Barral, M. de Beague, and others; but the experiments, in his opinion, were not at all satisfactory. It had lately been found in Belgium that ordinary doses of common salt had proved to be the cause of abortion among the farmers' breeding stock; in one case 22 cows out of 30, and in another 38 out of 40, slipping their calves, in consequence of their having had salt administered to them; some animals, too, in the same house, experiencing similar effects, on having salt given them, while the rest, to which no salt had been given, proceeded to maturity in their gestation, without injury or

mishap. Baron Mertens was also desirous of ascertaining whether the reduced price of salt in England had led to a greater consumption of it for agricultural purposes generally. There was one point, also, to which he wished to call the attention of the meeting, namely, whether animals of vigorous constitution, and in high condition from being supplied with a great variety of nutritious food, are affected either favourably or unfavourably by the use of salt when already submitted to a heating or exciting alimentation?—Professor WAY referred to the Commissions of the French and Prussian Governments for inquiring into results obtained in this country from the agricultural employment of common salt. He had not himself seen their respective reports, but he had believed they were unfavourable to fiscal measures for a cheaper importation of that article of commerce into their respective countries. The salt companies had also directed much attention to the application of this article of their manufacture to the uses of the farmer, with a view to increase its consumption. The evidence adduced in all these cases had been of a very conflicting character; but he thought local circumstances had much to do with the results, in reference to atmosphere, soil, and the character of vegetation. Inland districts might receive benefit from an application of salt, which would be superfluous, and even injurious, to those situate near the coast and within range of the saline vapours of the sea. He considered the counties, for instance, of Gloucestershire and Somersetshire within such influence. He believed salt did good on chalk; not indeed as common salt, but in consequence of the decomposition effected in it by the chalk, and the two new compounds which resulted from that double chemical action; namely, muriate of lime, a deliquescent salt, retaining moisture on the chalky soil imbued with it, and carbonate of soda, a salt useful in many cases in promoting the growth of plants or the decomposition of animal matter. The fishery salt employed with so much success by Mr. Fisher Hobbs, contained not mere salt, but also animal matter, on the advantage of which no doubt existed, and oily matter, on the action and advantage of which there was much difference of opinion, although Dr. Hunter, of York, regarded it as the great principle of the pabulum of plants, when united with alkalies into a soapy compound, soluble in water, and capable of being taken up by their organs of nutrition. Turnips, Beet, and other roots contained a large amount of salt in their natural composition, which was accordingly taken in at the rate of something like half-a-pound a day by the animals feeding upon them; while the Grasses were almost entirely free from that saline ingredient. He thought the subject of the agricultural use of salt an important one for special discussion on some future occasion; and should it be the wish of the Council for him to deliver a lecture before the Society in the month of May next, he would willingly make this topic a leading one in such lecture, if such introduction should meet with the approval of the Council.—Sir THOMAS ACLAND remarked that it was an acknowledged fact in the west of England that corn grown on the north coast of Cornwall, and several miles inland from it, not only fetched the best prices, but made better and lighter bread than the corn grown in other parts of that district. That effect had been attributed to the briny matter brought on that coast and its neighbouring county by the heavy gales from the Atlantic Ocean, to which that portion of the west of England was most exposed. In proof of the extent to which the briny exhalations from the sea could be carried by the wind under such circumstances, he adduced the instance of Lord Clinton's residence, which, though situate 20 miles from that element, had sometimes its windows covered with saline incrustations after a storm from the west.—Mr. Karkeek, in his prize essay on the agriculture of Cornwall (*Journal*, vi., 439), makes the following reference to this saline impregnation and deposition, which elucidates the remarks of both Sir Thomas Acland and Prof. Way—"The salt of the ocean can be detected by the taste on the blades of Grass in the northern parts of the county, full 10 miles from the sea-shore. The application of sea salt is found to act beneficially on soils in some inland counties, but it is seldom found of any service on those of Cornwall. This seeming anomaly is thus accounted for. There cannot be a doubt that most of our plants in Cornwall get quite enough of this substance, without applying it in the shape of a manure; for when the ocean dashes with violence against the rocks, and the crests of the waves are white with foam, the winds carry away the spray, drifting it along in clouds, and sprinkling it over the surface of the land."—Mr. DYER could confirm Prof. Way's remark on the value of salt on chalk soils. He had also found great benefit to his sheep from allowing them to have lumps of salt to lick.—Mr. BEALE BROWN had used equal quantities of salt and lime with advantage as a manure.—Mr. FISHER HOBBS had employed the refuse salt of the pilchard fisheries with much success. Some years ago it had attracted the attention of Dr. Paris (now President of the Royal College of Physicians), on account of its valuable properties in preventing rust in corn, a disease generally attributed to the varying changes of the atmosphere. It had been, Dr. Paris stated, the practice of many farmers in Cornwall to spread about 30 bushels of salt, the refuse of the pilchard fishery, weighing 56 lbs. each, per statute acre upon their land, a fortnight previous to the sowing of Turnips; and they all agreed that they never had any rust on the following crop of Wheat where this was adopted, though before they were greatly affected by it; a statement to which Mr. French Burke adds, that in the course of a very minute inquiry into the causes of rust, undertaken some years ago in this country, and afterwards continued at different periods on the Continent, it also appeared that it was never experienced in the immediate vicinity of the sea, unless when the ground was greatly over-manured; and also, that when sea-ooze or sand was employed as a manure, rust was prevented. Mr. Fisher Hobbs believes he was himself the first to introduce this fishery salt into the eastern counties, his attention having been drawn to it about four years ago by his friends, the Messrs. Bolitho, merchants, of Penzance, who informed him that this salt contained 10 per cent. of oil, and from 10 to 20 per cent. of scales and other fishy remains, and was greatly superior to common salt for agricultural purposes generally, but more especially for stiffening the straw of Barley. Mr. Hobbs being satisfied with the nature of the salt in question, and the oils and animal matter which it contained, that it must be superior to common salt, although not of higher price, at once ordered a cargo of it to Colchester, consisting of from 80 to 100 tons, and he had since that time had several similar cargoes for himself and his friends, through Mr. Purser, of New Bridge-street, Blackfriars, the manager of the London Manure Company. Mr. Fisher Hobbs had applied this salt to all his Wheat lands before sowing the grain, at the rate of 2 cwt. per acre, but at different times, namely, 1 cwt. before ploughing, and 1 cwt. after ploughing, but before depositing the seed. He had found this plan better than that of applying all the salt at once, as the salt became thus more intimately intermixed with the soil. He had tried 2 cwt. of guano per acre, mixed with the same quantity of the salt, as a dressing for Wheat, and found it very beneficial. He had also applied 2 cwt. per acre of the fishery salt, with farm-yard dung, for root crops—especially for Mangold-Wurzel and Cabbages—and found the mixture very effective. He knew an instance where 2 cwt. of the salt was last year used for Wheat, not far from the eastern coast of Essex, and the increase of produce obtained was 3 bushels per acre. Mr. Hobbs considered salt very beneficial for agricultural purposes, when judiciously applied, but injurious when used in excess. He gave an instance of such abuse in the case of his own bailiff, who, having on one occasion incautiously applied 5 cwt. per acre to his Turnips, entirely destroyed the crop. In reference to the use of salt in the case of animals, he remarked that while he preferred the fishy refuse for application to land, he used rock salt for all the live stock on his farm excepting pigs, for which he employed common household salt, boiled up with meal and Potatoes for their food. For his horses, cattle, and sheep, he invariably used rock salt with success; the two former had always free access to it in their mangers, and the sheep in their troughs. In wet weather the sheep would take a larger quantity of it than in dry weather. In a flock of 200, one-half of which had access to salt, while the other half were debarred from it, the losses among those which had no salt were found to be from 3 to 5 per cent. greater than among those which had salt, when feeding on green crops, or food of too succulent a nature. From some cases, however, which had occurred in his own experience, he was inclined to agree with Baron Mertens in believing that in the case of horses and cattle, as well as of sheep, the free use of salt had probably a tendency to produce abortion. He regarded salt generally as a stimulant and deobstruent, which purified the blood. In conclusion, he considered this subject well worthy of a distinct appointment for discussion at some future time; he should then be prepared to show the superior power of fish salt in destroying insects, compared with that of common salt.—Professor SIMONDS could bear testimony to the legitimate use of salt. He thought all the objections he had heard generally lay against the abuse of it, and in its being given in too large quantities to animals, or applied too freely to the land. On the contrary, while many plants were benefited by small quantities, others had so natural an appetite for such saline application, that it could not be given to them in excess. He instanced Seakale and Asparagus as plants of this kind. Salt in the animal economy had a great influence in promoting digestion and assimilation of the food. He agreed with Mr. Hobbs, that sheep fed on too luxuriant Grasses, without being at the same time supplied with salt, did badly. The salt corrected the injurious effect of the food, and promoted the secretion of bile. Salt marshes, he believed, never rotted sheep; while wet pastures and their coarse food invariably were found to do so. In the Royal Veterinary College the horses were constantly allowed to have a lump of salt by them; and when he was himself in country practice, he had salt sprinkled over the hay in the ricks, and found it very valuable for horses, sheep, and cows. He thought it a very important question for the consideration of the Council.—Mr. OVERMAN, as far as his experience had gone, could not agree with Professor Simonds in regarding the salting of hay a good practice; he had himself found it a bad one. He had found great advantage in allowing the horses to have it by them, to take it or not as they felt inclined, but not to force them to eat it with their hay. He thought it good as manure for land when applied in moderation. Farms in salt marshes had the heaviest crops of corn, and never, he believed, any mildew on them.—Dr. CALVERT considered salt in moderation as beneficial; it rendered herbage savoury to cattle, and prevented the decomposition of root crops. As long as the salt was not forced on the animals, but only laid in their way, instinct would direct them at what times to take it, and in what amount. Dr. Calvert referred to the avidity with which salt was sought for and relished by the natives of arid regions; and he especially alluded to the remarks of Mungo Park on this subject, in his "Travels in the Interior of Africa," where salt was highly prized, and when a lump of it was obtained it was sucked by the children of the torrid zone with as much eagerness as sugar-candy would be by the children of more genial and temperate climates. We may be allowed perhaps to quote two passages from the pages of that devoted traveller and ardent promoter of African civilization, in illustration of Dr. Calvert's reference to the point in question. In the second chapter of his narrative Mr. Park, in allusion to the articles of merchandise supplied by negro slave-merchants, and to the system of barter between them and the natives, remarks:—"In payment of these articles the maritime states supply the interior countries with salt—a scarce and valuable commodity, as I have frequently and painfully experienced in the course of my journey. Considerable quantities of this article, however, are also supplied to the inland natives by the Moors, who obtain it from the salt-pits in the Great Desert, and receive in return corn, cotton-cloth, and slaves." In his 24th chapter he further alludes to this scarcity and value of salt, in the following passage:—"In the interior countries the greatest of all luxuries is salt. It would appear strange to a European to see a child suck a piece of rock-salt as if it were sugar. This, however, I have frequently seen; although in the inland parts the poorer class of inhabitants are so very rarely indulged with this precious article, that to say, 'a man eats salt with his victuals' is the same as saying 'he is a rich man.' I have myself suffered great inconvenience from the scarcity of this article. The long use of vegetable food creates so painful a longing for salt that no words can sufficiently describe it." He thought the abuse of salt no argument against its legitimate use. It was a stimulant, and, as such, would promote digestion in animals.—The Chairman concurred with the members who had favoured the Council with the results of their experience, that a future discussion on this subject might prove of much importance.

The Council then adjourned to Wednesday, the 19th of March.

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A WEEKLY COUNCIL was held at the Society's House in Hanover-square on Wednesday last, the 19th of March; present, Mr. RAYMOND BARKER, Vice-President, in the Chair; Lord Ashburton, Hon. R. H. Clive, M.P., Sir Charles Lemon, Bart., M.P., Don Domingo Savignon, Mr. Hodgson Barrow, M.P., Mr. Bastard, Rev. E. R. Benyon, Mr. Bosanquet, Mr. W. G. Cavendish, M.P., Mr. Dyer, Mr. Fisher Hobbs, Mr. Majendie, Mr. Marshall, M.P., Mr. Parish, Mr. Pendarves, M.P., Mr. Rowlandson, Mr. Sanford, Mr. Serjeantson, Prof. Sewell, Mr. Shelley, Prof. Simonds, Mr. A. Smith, Mr. Crompton Stansfield, M.P., Dr. Thomson, Mr. W. H. Walker, and Prof. Way.

The following new Members were elected:

Davy, Edward, the Park, Crediton, Devon
Alison, Henry, Park Hall, Chorley, Lancashire
Jones, Harvey Bowen, 49, Montagu-square, London.

The names of nine candidates for election at the next meeting were then read.

The Council having instructed the Secretary in what manner to acknowledge the communications then laid before them, and to what department respectively to refer them, adjourned, after a short sitting, to Wednesday next, the 26th of March.

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## Farm Memoranda.

MR. HUDSON'S FARM AT CASTLEACRE.—I went some time since to Castleacre, to visit my friend Mr. Hudson, whose name and writings are well known in the agricultural world; and I need not say I met with a most kind, liberal, and unostentatious reception. It is 28 years since Mr. Hudson took the Castleacre farm, under Lord Leicester (then Mr. Coke), after having cancelled five years of the old lease, by which he lost 500*l*. His rent was then 1500*l*. per annum for 1400 acres. Seven years ago the lease was renewed for 21 years, at 1600*l*. per annum—a fair rent at that time; but when we consider that the saleable value of the estate has been increased by Mr. Hudson's industry and outlay to the extent of not less than 10,000*l*., it is to be presumed that he would get a renewal of his lease on liberal terms; or otherwise that he may, during the next seven years, endeavour to withdraw from the land some reasonable portion of the capital he has invested in it. Mr. Hudson referred to his books to show that during his tenancy he has laid out in oil-cake and artificial manures 55,000*l*. The oil-cake is laid on the land after passing through his cattle in the act of feeding them, but still it is money laid out in manure. This year his outlay is for 200 tons of Linseed-cake, at 6*l*. 10*s*. per ton, 1250*l*.; 56 tons of Peruvian guano, 560*l*.; nitrate of soda, sulphuretted bones, &c., about 400*l*. more; besides Egyptian Lentils, Indian corn, &c., &c., for feeding purposes. He is now feeding cattle as the quack advertisers would feed us, namely, on Revalenta arabica, which is said to be ground Egyptian Lentils, to the number of 160 beasts, besides 100 of lean stock and cows, all of which will be turned into cash by May-day. They are lodged in 11 straw-yards, with sheds all round the quadrangle, and all abundantly supplied with food and water. With the cattle associate a good many growing pigs, which are quick enough to pick up a living amongst their betters. Mr. Hudson is preparing three beautiful Devon oxen for the Smithfield show. They appear small animals, but of excellent form and quality, and the fattest one is estimated to weigh 90 score, which at 6*d*. per lb.

is 45*l.*; and if he obtained a 20*l.* prize the ox will pay well. The mangers these animals feed from have slate bottoms, which are both clean and very durable. Mr. Hudson has 2700 sheep, 2500 of which, after their fleeces are off, will be sold in Smithfield before Midsummer, the breeding ewes being retained. The wool will all be sold before Christmas, 1851, Mr. Hudson making it a point to adopt the commercial maxim of selling all he makes, whether it be beef, mutton, pork, corn, or wool, before his annual stock-taking. From about the end of November he sends about 150 quarters of grain to market weekly, until all is sold. His land sown and sowing with Wheat this year is 500 acres, in fields of 35, 40, and 50 acres each, and in each field the crop is stacked on circular bottoms and iron posts two feet high and three feet apart. His circular stacks are 27 feet in diameter at the bottom; of symmetrical form, and beautifully trimmed. His Barley stacks are oblong, 60 feet long by 20 feet wide, and not on raised bottoms; so that the rats, poor things! are kept on Barley instead of Wheat. Mr. Hudson paid 2950*l.* in wages in 1849, and 2700*l.* in 1850, and usually receives from 8000*l* to 10,000*l.* per annum from Smithfield market, according to the price of meat, now considerably less, the price of meat being too low to pay. He has put on his Turnip land this year 3000 tons of yard manure, and on his Wheat land 2000 tons; besides guano, bones, and other things. When I visited him, they were ploughing a little field of 35 acres with four pairs of oxen; and as they finished a ridge, six or eight feet wide, and while the mould was fresh and moist, the seed-drill followed; and after the drill came the harrow to finish with—the three operations all going on together. I asked "What crop had you on this last?" "Turnips." "When did they come off?" "Yesterday. We hauled off half, and fed off the other half with sheep, and they finished their feed yesterday. We never let the land lie—we plough and sow directly we get the Turnips away." "Well, but where are the weeds?" "There are none, the Turnips are kept perfectly clean. The same principle is adopted in Turnip sowing, we put in the seed instantly the plough has passed over it." Mr. Hudson uses Howard's (of Bedford) patent plough. He bought a dozen of them four years ago at 4*l.* 15*s.* each. His dibbling machines cost 60*l.* each. He has six road waggons, 18 Gloucestershire harvest waggons, 12 two-horse tumbrils with iron bottoms; four light Gloucestershire waggons for hay and light work, and a few one-horse carts—all made on the premises. His saddlery and harness are all required on the premises. All his blacksmith's work and carpentry is done on the premises. And one of his steam-engines was made at home. This is all so different from the extent and routine of an ordinary Cumberland farm, that you may think I am romancing, but you must come and see, and then you will believe. Mr. Hudson has two stationary steam engines, of 12 horse power each, on different parts of the farm; and he finds they are not sufficient for his work, and is building a third. The castings are made in the village; and his engineer and blacksmith, with their forges and lathes, put them together. One of the engines was at work threshing Barley, two men were on the stacks, two loading the waggons, and two pitching from the waggons to the engine, another receiving the grain in swills, from which he returned it into another whirligig to have the beards broken off. The straw came out at another place, and was pitched away; and a cloud of chaff and dust showed where the winnowing was going on. The same engine was, at the same time, pumping water, grinding Revalenta arabica, and breaking oil-cake. The same machine also presses linseed for extracting the oil, which is put into large wine pipes and sent to America for sale, and the cake goes to feed the cattle. There is also attached a flour mill, as well as a Barley-flour mill, for grinding the refuse corn, Beans, &c., for feeding purposes; a saw mill, and other conveniences. The cart-wheel felloes are cut out in segments by the machinery of the engine, and much other work done by steam agency. Mr. Hudson has 40 work horses and 18 working bullocks. The latter work double (? half) shifts, viz., two oxen in a plough—he keeps four ploughs at work 10 hours a day, and they plough from one and a quarter to one and a half acres daily each plough. The straw is cut into chaff; the Turnips are sliced, and other roots are cut by the steam machinery. Mr. Hudson has two suits of clothes, one fine and the other coarse, and his wife has a beautiful shawl, all of their own wool. As for a Thistle growing on the farm, you might safely offer a guinea for it; and the land is, for 1400 acres, like a garden. Women and boys are constantly employed picking up every stray weed, and sometimes they contract for it by the acre. Altogether, the farm, the farmer, and the style of farming, is such as few Cumberland farmers can have any idea of. *A Farmer in the Cumberland Pacquet.*

## Miscellaneous.

*Mr. Mechi and the Poor.*—Mr. Mechi, with those feelings of philanthropy which characterise him, and a liberality we wish every other farmer was in a condition to imitate, has been showing himself thoughtful of the poor, not by acts of indiscriminate charity, but the true benevolence of furnishing those who would otherwise have stood unwillingly idle, with a winter's employment, feeling that it is thus the security of property, of which he boasted at his gathering, and the singular exemption which the once notorious Tiptree Heath now enjoys from criminal commitments can be best maintained. Ordinarily Mr. M. employs 19 men and boys regularly upon his farm, and he has now set on 55 additional men, consisting of the unemployed of the neighbouring parishes, and has engaged them in digging and breaking up with the fork and pickaxe, to the depth of about 20 inches, the rocky iron-bound and macadamised subsoil of his light land. The price paid is 9*d.* per rod, or 6*l.* per acre. Whether the operation will stand the test of the balance sheet remains to be proved; certainly no manure could cause crops to be maturely developed on those soils in a dry season. *From the Chelmsford Chronicle.*

METEOROLOGICAL REPORT.—March.
(*Continued from page* 173.)

| | Date. | Time. | Max. | Min. | Wind,—Weather. |
|---|---|---|---|---|---|
| | March 3 | 7.30 a.m. | 30.18 | ... | WNW. a.m. Almost calm, and overcast all day. |
| | | 6 p.m. | ... | 30.05 | WSW. p.m. |
| * | 4 | 7.40 a.m. | ... | 30.00 | NNW. Light; white frost. |
| | | Noon. | 29.98 | ... | Light breeze WSW. and SW.; |
| | | 11.5 p.m. | ... | 29.85 | warm cloudy day; barometer falling steadily. |
| | 5 | 7 45 a.m. | 29.68 | ... | S. Brisk; drizzling. |
| † | | 3.30 p.m. | ... | 29.58 | SSW. p.m. Light; overcast. |
| | | 10.45 p.m | 29.59 | ... | Night, W. Blowing hard. |
| | 6 | 7.30 a.m. | ... | 29.71 | NNW. by smoke. Brisk, cloudless; towards noon, blowing hard. |
| | | 10.15 p.m. | 29.82 | ... | Evening, more moderate. |
| | 7 | 7.30 a.m | ... | 29.84 | NNE. Gentle; frost, bright. |
| | | 11 a.m. | 29.86 | ... | N. Gentle; fine and sunny. |
| | | 2 p.m | 29.84 | ... | SSW. Light; overcast. |
| ‡ | | 10.20 p.m. | ... | 29.83 | Very dark night. |
| | 8 | 7 40 a.m. | .. | 29.85 | NNE. to ENE. Gentle. |
| | | 8.15 p.m. | 29 90 | ... | E. Dark clouds; fine sunset. |
| | | 10.40 p.m | 29.90 | ... | S. Almost calm; starlight. |
| | Sun. 9 | 8 a.m. | 29.79 | ... | Strong breeze S.; increasing. |
| § | | 10.10 p.m. | ... | 29.43 | Rainy evening, and very rough wet night. |
| | 10 | 7.30 a.m. | ... | 29.51 | NW. Blowing hard, and fine. |
| | | 10.20 p.m. | 29.78 | ... | Evening, NNW. Calm night. |
| | 11 | 7 a.m | ... | 29.87 | N. to NW. Brisk; frost; |
| | | 2 p.m. | 29.94 | ... | fine and sunny day. |
| | | 8 p.m | 29.88 | ... | SW. Gentle breeze; heavy |
| | | 11 p.m | ... | 29.81 | bank of clouds to S. of W. |
| | 12 | 6 a.m. | 29.57 | ... | SE. a.m. Brisk; drizzling. |
| ‖ | | 12.30 p.m. | ... | 29.49 | NW. noon. Heavy clouds and fine. |
| | | 3 p.m. | ... | 29.50 | Fine and sunny afternoon. |
| | | 10.20 p.m | 29.56 | ... | Bright starlight night. |
| | 13 | 7.10 a.m. | ... | 29.61 | NW. Gentle breeze, and fine |
| | | 7 p.m. | 29.67 | ... | warm day. |
| | 14 | 6 a.m. | 29.67 | ... | WNW. Calm, frost; dark bank of clouds in the eastern horizon. |
| | | 6.20 p.m. | 29.66 | ... | SE. afternoon. Close and overcast. |
| ¶ | 15 | 6.20 a.m. | ... | 29.62 | NNW. all day and gentle |
| | | 10. p.m. | 29.69 | ... | breezes; fine morning, and showery afternoon. |
| | Sun. 16 | 7.40 a.m. | 29.75 | ... | NNW. Almost calm; fine day. |
| | | 10.30 p.m | 29.73 | ... | WSW. and W. Bright moonlight, but overcast. |
| | 17 | 7 a.m. | 29.56 | ... | S. Brisk; raining fast. |
| ** | | 11.30 a.m | ... | 29.39 | W. Clearing up. |
| | | 2 p.m | ... | 29.44 | NW. Stiff breeze; fine afternoon. |
| | | 10.45 p.m. | 29 59 | ... | NNW. Rainy evening. |
| | 18 | 6.53 a.m. | 29.67 | ... | Barometer steady; wind S., with every appearance of a very wet day. |

* A storm crossing England from west to east, but probably lying a long way off to the northward.

† A storm coming from the south and westward, and curving across England and Scotland, to the eastward; probably passing by Copenhagen, up the Baltic.

‡ This storm crossed southern England, and, as I conjecture, went over France; but it was probably of small diameter, and at a very considerable altitude, being an upper current, and the precursor of the succeeding storm.

§ This storm came from south, probably up the Irish Channel, and crossed England to the eastward; on Monday afternoon I travelled through the centre of it from London to Dorchester, being most palpably in the storm's eye, with a bright sky over and around us, with a continuous low dark horizon on every side, of clouds slowly wheeling round us as on a pivot.

‖ At 5 p.m. of the 11th, whilst the upper scud was still travelling from north-west, the wind changed, and a heavy bank crept along from south of west. This was a storm's-eye crossing the south of England, and going away to the eastward.

¶ A storm coming from the Bay of Biscay, passing over Normandy and the British Channel.

** A storm coming from the westward, and crossing England to the eastward.

Dorchester, March 19th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

MARCH.

Dorset Farm.—We have now finished Barley sowing, under the most favourable circumstances; for the weather has hitherto been all that could be wished. We had a great quantity of rain during the winter, but it cleared away so moderately that the land did not suffer at all, as it sometimes does from succeeding drought; and every description of work is well advanced. We have still a piece of Rape to eat off, and are to sow Oats after it, which we will have done this month. The Rape was sown last season, before the Turnips were put in, and is now being fed off a second time by the chilver hogs (year-old ewes), as it is very strong; and to prevent a tendency which it had to scour, we have it cut off two or three days before it is eaten, and the effect is very good, as the sheep eat it better; and being cut off close to the ground, the ploughing can be much better done, while the sheep thrive very well. I believe, that like most other vegetables, when it is a little withered, it is deprived of its acrid taste, and rendered more palatable to the animals. We are now getting out our dung, so that it may lie in heaps in the fields, and get a little rotted before the Turnip season commences; as, at that time, we like to get over the work as quickly as possible; for it is too often the case, that Turnips are a poor crop, from not being put in in the proper time; and often for the sake of a few Vetches, which might be done without. We should never, under ordinary circumstances, delay the last sowing longer than the end of June. We shall now be putting in our Grass seeds, which we shall harrow in, but the Clover will not be put in for some time, as we only roll it; and if sown early, it has a chance of being destroyed by frost. *G. S.*

## Notices to Correspondents.

Beans: *J S.* Soot and salt or soot and wood-ashes—30 bushels of the soot with 2 cwt. of salt or 10 cwt. of wood-ashes will be a good dressing.

Chicory: *Constant Reader.* You will see some information on this subject at page 154.

Grass by Inoculation: *Stocktoniensis.* You will, if the sward is good, find your plan the best and easiest way of laying the land down. You should cut the field in strips by a roller armed for the purpose, about 6 inches wide, and then pare it the other way. After the arable field is properly prepared, get the bits of Grass gathered in carts and spread over it. Employ children to *place* them right side up, and tread on them. Then roll the field, spread a compost, sow some Grass seeds, bush-harrow, and roll again.

Grass Lands: *Festuca Elatior.* You may scarify and harrow the field and sow Grass seeds, and bush-harrow and roll, with every probability of getting a better covering.

Liquid Manure: *Sub.* If you intend adding 1 cwt. of guano per acre in a liquid form after every cutting of Italian Rye-grass, then just see, in the first place, what quantity of water your machine distributes per acre, and mix the cwt. with that quantity. Probably 300 or 400 gallons will be the quantity to mix the dressing of guano, whatever you may fix on per acre.

Manure: *Owen Glendower.* We should put all our manure on the green crop and none to the grain. The bones and superphosphate with the manure should all go to the green crop. Lime is best added on the corn or Clover stubble before the winter's furrow. The Clover stubble is probably the better of the two.

Mr. Moody's Turnip-crusher: *Cirencester.* Mr. E. J. Moody, jun., Maiden Bradley, near Mere, Wilts.

Paint: *Y Z* begs to acquaint "M. B.," who makes the inquiry in the last Paper, as to a thorough good paint for out-door work, that from the experience of many years, none comes up to Carson's; and recommends the sending to 9, Great Winchester-street, Old Broad-street, London, for the testimonials.

Peat Compression: *W W B.* You will probably obtain information on this subject by applying to Mr. Clyburn, Ratcliffe Iron Works, 55, St. George's-street East, London.

Poultry Books: *Argo.* You must consult our review column in past numbers. Mr. Dixon's work on ornamental poultry contains information on the subject you name.

Spanish Fowls: *W H.* The hen of thorough-bred birds is not expected to have a white *face*, though it is now the fashion to make it a *sine qua non* with the cocks.

Sundries: *A B.* Rape-cake is, we doubt not, imported both into London and Hull. You should apply to any corn factor. Barley may be given whole to sheep. Rape must not be sown with Oats, however late; you will be in a mess at harvest-time if you do. Sow it in a seed bed, and transplant it on to the stubble as soon as it has been worked over; you will then have a good bite next spring.

The Hydatid: ?. The specimen sent appears, as far as we can judge, the membranous investment of an hydatid, the contents of which might have escaped. The cause of the symptoms is no doubt hydatids on the brain. If so near the surface as to cause the skull to appear soft, it may be pierced with a small awl, or the skull may be trephined; and then, if there is no other, the animal will recover. If situated deep in the brain, there is no remedy. The best advice is to confine the animal, and force it on for the butcher by nutritious food. *W. C. S.*

## Markets.

COVENT GARDEN, March 22.

Good Pine-apples are somewhat scarce, and dessert Pears are nearly over for this season. Apples are also scarce. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. A few forced Strawberries have made their appearance. Vegetables of all kinds are abundant and good. French Beans and Cucumbers are now plentifully supplied. Carrots and Turnips are good in quality. Potatoes are a trifle dearer. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 10s | Oranges, per doz., 9d to 2s |
| Grapes, Portugal, p.lb., 1sto2s6d | — per 100, 6s to 10s |
| Strawberries, per oz., 2s | — Seville, p. 100, 7s to 14s |
| Pears, per doz., 2s to 5s | — — p. doz., 1s to 2s 6d |
| — per half sieve, 6s to 15s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p.bush., 6s to10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, per bush, 20 to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p. bsh., 12s to 14s |
| Almonds, per peck, 6s | Cobs, per 100 lbs., 70s to 75s |
| — sweet, per lb., 2s to 3s | |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 1s |
| Cabbages, per doz., 1s to 1s 6d | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 4s to 6s | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s6d |
| French Beans, p.100, 1s6dto2s6d | Endive, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 4s to 10s | Horse Radish, p.bundl., 1s to 4s |
| Rhubarb, p. bundl., 6d to 1s 2d | Red Beet, per doz., 6d to 1s |
| Potatoes, per ton, 60s to 100 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 3s to 6s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 1s to 3s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Carrots, per doz., 2s to 5s | Marjoram, per bunch, 2d to 4d |
| Spinach, per sieve, 1s to 1s 6d | Mint, green, per bunch, 4d to 6d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12bunch., 6d to 9d |
| — Spanish, p. doz., 1s6d to 4s | Corn Salad, p.hf. sieve, 1s to1s6d |
| Leeks, per doz., 9d to 1s | |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 20.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Clover ... ... ... | 70s to 80s | |
| Inferior ditto ... | ... | 63 70 | Second cut ... ... | 63 | 72 |
| Rowen ... ... | ... | 60 65 | Straw ... ... ... | 23 | 28 |
| New Hay ... | ... | — — | | J. Cooper. | |

A short supply.

WHITECHAPEL, March 20.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | ... | 70s to 75s | New Clover ... ... | —s to —s | |
| Inferior ditto | ... | 60 65 | Inferior ditto... ... | 60 | 65 |
| New Hay ... | ... | — — | Straw ... ... ... | 24 | 26 |
| Old Clover ... | ... | 78 84 | | | |

COAL MARKET.—Friday, March 21.

Wallsend Riddell 13s.; Wallsend Braddyll's 15s.; Wallsend Haswell, 15s. 6d.; Wallsend Hetton, 15s. 3d.; Wallsend Lambton, 15s.; Wallsend Stewarts, 15s. 3d.; Wallsend Adelaide Tees, 14s. 6d.; Wallsend Tees, 15s. 3d.—Ships at market, 101.

SMITHFIELD, MONDAY, March 17.

The supply of Beasts is smaller; in consequence prices are rather better; trade, however, is not brisk, and the advance is not freely given. The number of Sheep is about the same as of late. We cannot quote higher, although for a few choice Downs rather more money is given. Trade is very heavy for Calves at lower prices. From Holland and Germany there are 429 Beasts, 1110 Sheep, and 71 Calves; from Norfolk and Suffolk, 2400 Beasts; and from Scotland, 260.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 | Best Long-wools | 3 | 10 | to 4 | 2 |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| Best Downs and Half-breds | ... 4 | 4 | — 4 | 6 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | | ... | |
| | | | | | Calves | ... | 2 | 8 — 4 | 0 |
| | | | | | Pigs | ... | 2 | 8 — 3 | 6 |

Beasts, 3594; Sheep and Lambs, 18,820; Calves, 120; Pigs, 280.

FRIDAY, March 21.

The number of Beasts is small, but quite sufficient. Monday's top quotations are realised only for choice qualities, which are not plentiful. The supply of Sheep is tolerably good for the time of year; choice kinds make as much as of late, but other kinds are rather lower. Trade is dull for Calves, and only in a few instances higher prices are made. From Germany and Holland we have 44 Beasts, 290 Sheep, and 131 Calves; from Scotland, 40 Beasts; and 80 milch cows from the home counties.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | ... 3 | 4 | to 3 | 8 | Best Long-wools | 3 | 10 | to 4 | 0 |
| Best Short-horns | 3 | 2 | — 3 | 6 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| Best Downs and Half-breds | ... 4 | 4 | — 4 | 6 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | | ... | |
| | | | | | Calves | ... | 3 | 0 — 4 | 2 |
| | | | | | Pigs | ... | 2 | 6 — 3 | 6 |

Beasts, 657; Sheep and Lambs, 3000; Calves, 208; Pigs, 350.

MARK LANE.

MONDAY, MARCH 17.—The supply of English Wheat to this morning's market was small; the fine dry qualities were disposed of at an advance of 1s. per qr., but no improvement could be established on the out-of-conditioned parcels. There was some inquiry for foreign, but buyers being influenced by the large arrivals, were only inclined to purchase at a reduction, which not being acceded to by the sellers, little business was transacted.—Barley of all descriptions is held firmly.—Beans are unaltered in value.—White Peas are quite unsaleable, but we cannot vary our quotations.—Oats meet a fair inquiry, and in some instances command a slight advance.—We observe no alteration in Flour.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | —46 | Red ..... | 36 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —40 |
| — — Talavera ..... | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | | — |
| — Foreign ..... | 32 | —52 | | | |
| Barley, grind. & distil., 17s to 21s...Chev. | 26 | —3 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | 17 | —22 | Malting . | 22 | —24 |
| Oats, Essex and Suffolk ..... | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —23 | Feed..... | 16 | —21 |
| — Irish .....Potato | 17 | —21 | Feed..... | 16 | —18 |
| — Foreign .....Poland and Brew. | 17 | —2 | Feed..... | 15 | —18 |
| Rye ..... | 22 | —24 | Foreign . | | — |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20s to 26s.....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.... .....25 — 31... Winds | 37 | —42 | Longpod | 27 | —33 |
| — Foreign ..... Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler | 24 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26s to 28s .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize ..... White | — | | Yellow ... | | — |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 16 | —23 | Per sack | 26 | —34 |

FRIDAY, March 21.—The arrivals of English grain this week have been small, of foreign moderate; to-day's market was not largely attended, and the inquiry for Wheat less active than on Wednesday, but it is held firmly.—Barley and Oats command our extreme quotations.—The value of Beans and Peas is unaltered.—Flour meets an improved demand without leading to an increase in business.—Polish Odessa Wheat afloat is scarce, and held for an advance of 1s. to 2s. per qr.; say 35s. to 36s. per qr., cost freight, and insurance.—Since the 14th the tone of the Wheat trade has decidedly improved, and in many instances a slight advance upon the previous low rates was realised in markets on the coast, as well as agricultural.—Spring Corn has also commanded more attention; fine malting Barley is sought after.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Feb. 8..... | 38s 1d | 22s 10d | 16s 9d | 23s 11d | 25s 10d | 26s 0d |
| — 15..... | 37 8 | 22 11 | 16 2 | 23 10 | 25 5 | 26 10 |
| — 22..... | 37 2 | 22 10 | 15 11 | 23 8 | 25 4 | 27 1 |
| March 1..... | 36 11 | 22 7 | 16 0 | 24 4 | 25 3 | 25 8 |
| — 8..... | 36 9 | 22 7 | 16 2 | 24 4 | 25 7 | 26 7 |
| — 15..... | 37 2 | 23 1 | 16 6 | 23 3 | 25 6 | 25 8 |
| Aggreg. Aver. | 37 3 | 22 10 | 16 3 | 23 11 | 25 6 | 26 4 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | FEB. 8. | FEB. 15. | FEB. 22. | MAR. 1. | MAR. 8. | MAR. 15. |
|---|---|---|---|---|---|---|
| 38s 1d | — | ... | ... | ... | ... | ... |
| 37 8 | ... | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | ... | ... | — |
| 36 11 | ... | ... | ... | ... | — | ... |
| 36 9 | ... | ... | ... | — | ... | ... |

SEEDS.—March 17.

| | | | |
|---|---|---|---|
| Canary, per qr. | 36s to 42s | Coriander, p. cwt. | 14s to 21s |
| Caraway, per cwt. | 29 — 33 | Mustard, white, p. bush. | 4 — 6 |
| Hempseed, per qr. | 34 — 35 | — brown, do. | 7 — 10 |
| Linseed, foreign, do. | — | Rape, per last | 24l.—26l. |
| Clover, red, p. cwt. | 40 — 58 | Cakes, Linseed, p. 1000 | 9l. 5s. |
| — foreign, do. | 42 — 54 | — foreign, p. ton, | 6l. 15s. |
| — white, do. | 42 — 52 | — Rape, foreign, do., | 4l. 5s |
| — foreign, do. | 32 — 52 | Tares, per bush. | 3s 0d—3s 6d |

LIVERPOOL, TUESDAY, MARCH 18.—The arrivals of grain and Flour this week are upon a much less scale than of late. The foreign Wheat is mostly of the lower description. There has been more buoyancy in our trade during the week. Higher rates generally were required at the beginning of business at our Corn Exchange this morning. The millers and dealers were reluctant to accede to these, but ultimately a fair extent of transactions occurred in Wheat, at an advance of 1d. per bushel, and in some cases 2d. on the price of this day week. The best Oats were also 1d. per bushel higher. In Flour and Oatmeal there was about the usual amount of business, at very full prices. English Beans improved 6d. per qr. Indian Corn was also 1d. to 2d. per qr. dearer than last Tuesday, and a fair extent of sales was made for shipment to Ireland. —FRIDAY, March 14.—The supplies of Wheat, Flour, Beans, and Oatmeal since Tuesday have been liberal, and at the same time we have to remark a retrograde feeling in the trade generally. At this morning's market Wheat and Flour were in moderate request, at full prices. Oats and Oatmeal supported late rates. Barley, Beans, and Peas were without change. Indian Corn was in fair request for shipment to Ireland, and purchases not so easy to make as on Tuesday, but there was no quotable change in prices.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from Weeds and coarse Grasses, 21s. per bushel, 3s. per gallon, or 1s. 3d. per pound, with instructions.

To insure a pure Turf of finest Dwarf Grasses, Messrs. SUTTON strongly recommend the sowing the above Seeds, whereby the great expense of cutting, carting, and laying Turves may be avoided.

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre, viz.:*

| | £ | s. | d. |
|---|---|---|---|
| BEST MIXTURES for laying down Land to permanent Meadow or Upland Pasture, per acre ... | 1 | 8 | 0 |
| DITTO, for laying down Reclaimed Marshes and Common Inclosures, per acre ... ... ... ... | 1 | 2 | 6 |
| DITTO, for fine Park Lands near Mansions, per acre | 1 | 15 | 0 |
| DITTO for Irrigation or Water Meadow, per acre ... | 1 | 6 | 0 |

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS having reduced the price of these Seeds 25 per cent., viz., to 10d. per lb., or 1s. 6d. per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of 6 or 8 lbs. per acre, sown immediately upon the old Turf.

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following:—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

*From the Land Steward at a large Estate in Hampshire.*

"All the kinds of Grasses sown separately grew admirably; and the 20 acres of Park laid down with *your Mixture* last spring is most excellent. We are anticipating a large crop of Hay, and I can see by the various habits and successional growths of the several kinds, that we shall always have a fresh growing bite for the cattle after the Hay is cut. The Clovers too I see are plentiful."

*From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

Another Clergyman writes us—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for Sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, March 22.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND CO., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street**, Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian, and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street**, Piccadilly, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS SEEDS FOR LAYING DOWN PERMANENT PASTURE.

W. DRUMMOND AND SONS, SEEDSMEN, Stirling, N.B., having been among the first to recommend the use of the NATURAL GRASSES in the formation of PERMANENT PASTURE, the subject has occupied a large share of their attention. They have carefully noted the species composing the best Natural Pastures, and the results of combinations in culture under varied circumstances of soil and situation; and, as the result of their observation, as well as from the great satisfaction their selections have given, they feel warranted in recommending, in addition to the Grasses usually sown, a variety of such species as are known, not only to yield the greatest bulk of herbage, but the largest amount of milking and feeding properties, varying those species, and the proportions of each, according to the nature of the land to be laid down; and from the low price of their Seeds this season, the expense is not materially increased. The very best Mixture they can give for PERMANENT PASTURE or MEADOW will not exceed 28s. to 22s. per statute acre. The quantity of each variety comprising the Mixture is given in detail with each parcel.

| | s. | d. |
|---|---|---|
| Mixture for Renovating old Pasture Lands, per lb. ... | 0 | 6 |
| Ditto for Lawns, to be kept short with the scythe, per lb. | 0 | 10 |

Selected Ayrshire Perennial Rye Grass, per bush. 4s. 6d. to 5 6

| | | | | |
|---|---|---|---|---|
| ,, | Pacey's | ditto | ditto | 5s. 6d. to 6 6 |
| ,, | Stickney's | ditto | ditto | ... ... 5 0 |
| ,, | Italian | ditto | ditto home saved | 5s. 6d. to 6 0 |
| ,, | Ditto, | *imported from Italy* | ... | per lb. 0 6 |
| ,, | East Lothian Purple-top Swede Turnip | | | ,, 0 8 |
| ,, | Skirving's | ditto | ditto | ,, 0 8 |
| ,, | Large hardy Green-top | | ditto | ,, 0 8 |
| ,, | Green-top Yellow Aberdeen | | ditto | ,, 0 8 |
| ,, | Purple-top | ditto | ditto *improved* | ,, 0 9 |

With every other description of FARM SEEDS, priced Lists of which may be had free on application.

N.B.—Seeds are delivered, *carriage paid*, to most of the principal Shipping Ports and Railway Stations throughout the Kingdom.—Agricultural Museum, Stirling, N.B.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the Public that his mixtures of the Natural Grasses and small Clovers—excluding no sort which is proper to form a PERMANENT PASTURE, as the soil &c. may direct—are now ready; delivered on the railway free of charge, at 1l. per acre, allowing 3 bushels as seed for an acre; also Lawn Mixtures, and the sorts separate. They are gathered under his immediate superintendence, and are quite new; this unprecedented low price last year, and the prospects of agriculture, having created an unlooked-for demand.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | |
|---|---|
| 6 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each. |
| 6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,, |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 33s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for cash.

| CUT TO SIZE. | | SHEET SQUARES. | |
|---|---|---|---|
| 16 oz. from 2d. to 3½d. per foot. | | In boxes of 100 feet. | £. s. d. |
| 21 oz. ,, 3¼d. 5d. ,, | | Under 6 by 4 ... ... | 0 8 6 |
| 26 oz. ,, 3¾d. 7½d. ,, | | 6 by 4 and 6½ by 4½ ... | 0 13 0 |
| 32 oz. ,, 4d. 9½d. ,, | | 7 by 5 and 7½ by 5½ ... | 0 15 0 |
| | | 8 by 6 and 8½ by 6½ ... | 0 17 6 |
| | | 9 by 7 and 10 by 8 ... | 1 0 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2½d. per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ... 12s. 0d. | 8 by 6 and 8½ by 6½ ... 15s. 0d. |
| 7 by 5 ,, 7½ by 5; ... 13 6 | 9 by 7 ,, 10 by 8 ... 16 6 |

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6s.; 6 tubes, 8s. 6d. GLASS SHADES.—Estimate, and List of Prices forwarded on application

GLASS FOR PIT FRAMES, HOTHOUSES, &c.

in Boxes of 100 feet, 8s. 6d. each.

| | | |
|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... 6½ by 3 |
| 4½ by 3¼ ... | 5½ by 3 ... | 6½ by 3 ... 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 45, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90l.; 21 feet long by 13 feet wide, 50l.; 12½ feet long by 10 feet wide, 30l. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovelers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

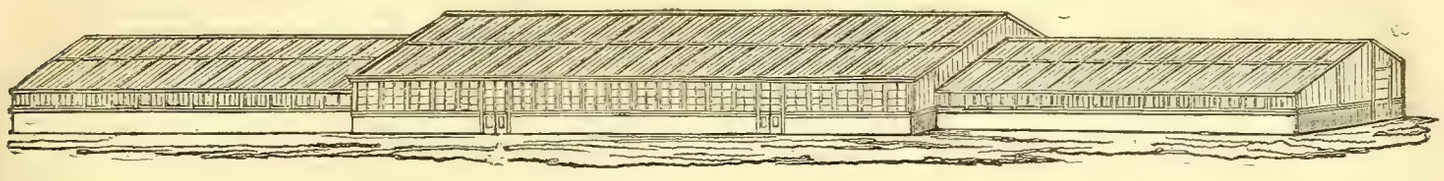
LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

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*SALES BY AUCTION.*

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are directed to Sell by Public Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, March 26th, a first-rate Collection of Carnations and Picotees, Pinks, Auriculas, &c. Fine Standard and Dwarf Roses; Dahlias in dry roots, &c.

May be view d the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, March 27th, at 12 o'clock, about 100 double Camellias, well set with bloom buds, fine Azalea indica, standard and dwarf Roses, American plants, well furnished with bloom buds; Dahlias, in dry roots, &c. May be viewed the morning of sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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CARNATIONS AND PICOTEES.

MESSRS. PROTHEROE and MORRIS will Sell the Surplus Stock belonging to Mr. Newball, of Woolwich, by public Auction, at the Mart, Bartholomew-lane, on TUESDAY, April 8th.—Catalogues will be forwarded, on pre-paid application, and further particulars duly announced.

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HACKNEY.—TO GENTLEMEN ENGAGED IN ORNAMENTAL PLANTING, AND THE TRADE.

Unreserved Sale of Evergreen Trees and Shrubs, the Lease expiring of part of Messrs. Loddiges' Nursery.

MR. J. C. STEVENS is directed to sell by Auction, on the premises, at Hackney, on TUESDAY, 25th March, and following day, at 12 for 1 o'clock, a selection of EVERGREEN TREES AND SHRUBS, consisting of Hollies in great variety, of extraordinary fine growth, from 3 to 7 feet; beautiful flowering plants of Andromeda floribunda, and Rhododendron campanulatum; also some large specimens of Æsculus rubicunda (the true Scarlet Horse Chestnut), &c.—May be viewed on the day prior, and mornings of sale, and Catalogues had of Messrs. Loddiges, Hackney; and of Mr. J. C. Stevens, 38, King-street, Covent-garden.

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SALE OF NURSERY STOCK. EVERGREENS, AMERICAN PLANTS, &c.

MR. D. A. RAMSAY will submit to public competition, at the Brompton Auction Ground, Fulham-road, Brompton (one mile from Hyde-park Corner), on TUESDAY, March 25th, at 12 o'clock, without the least reserve, to clear the Auction ground, large Rhododendrons, Azalea, Andromeda, Hardy Heaths, &c. Choice Evergreens in varieties, Standard and Dwarf Roses, Ornamental Trees and Shrubs, dwarf trained Fruit Trees of the best varieties, Grape Vines, Fig Trees; a choice collection of Pinks, Carnations, and Picotees, warranted correct; Rhubarb Roots, Mushroom Spawn, Potatoes, &c. May be viewed prior to Sale.—Catalogues had at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

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WARWICKSHIRE.

SALE BY AUCTION AT THE HILL-FIELD FARM, COMBE, On MONDAY, the 31st of March, and TUESDAY, the 1st of April, 1851 (instead of the 2d and 3d of April, as before announced).

MESSRS. BROWN and CLARKE are honoured with instructions from the Right Hon. the Earl of Craven, to submit to SALE BY AUCTION, at the time and place above named, his entire herd of thorough-bred short-horned Beast, of all ages. Dairy and other Beasts, not thorough-bred; near 600 Sheep, 15 Draught Horses, Implements, &c., as follows, viz.: First Day, March 31, 1851.—319 Leicester Ewes and Theaves, in Lamb or with Lambs. 175 Ewe, Wether, and Tup Tegs. 79 Fat Shearhogs. 22 Shearhogs and 2 Shear Tups. Implements, consisting of, in part, Seven Waggons, Six Carts, Six Ploughs, Seven Sets of Harrow Scuffles, Four Wood and Iron Field Rolls, Three Chaff Machines, Two Winnowing Machines, Horse Hoes, Turnip Drills, and the usual Implements for an Arable Farm; Timber Waggon and Wheels, Timber Ropes and Pulleys, Ditto Chains, Dairy Utensils. Also 5 large ricks of well-harvested Wheat and Beans. Second Day's Sale, April 1, 1851.—26 thorough-bred Short-horned Cows, Heifers, Sticks, Yearlings, and Calves; 6 ditto bull Calves; 1 ditto Bull, 20 months old; 1 ditto ditto, rising 4 years old; 17 Dairy Cows and Calves, not thorough-bred; 21 fresh three-year-old Shropshire Steers; 17 Sturck-Steers, and Heifers; 15 powerful and handsome Waggon Horses, and Gears; 26 Pigs, some of which are of Mr. Fisher Hobbs' celebrated breed. And, by permission, will be offered a handsome Bay Mare, a good Nag and perfect Gigster; a Grey ditto; a four-wheeled Phaeton, and a Gig and Harness, the property of Mr. Large. Catalogues, with pedigree and particulars, are ready, and can be had of Mr. Large, at the farm; of the Auctioneers, Coventry; or forwarded by post, on application. Luncheon at half-past 10 o'clock, and the Sale to commence punctually at half-past 11.—The Hill Field Farm is situate 4 miles from Coventry, 3 miles from Brandon, on the North-Western Railway, and 3 miles from the Shelton station, on the Trent Valley Railway.

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NORTHAW, HERTS.

TO BE LET, from Michaelmas, 1851, NYN FARM, situate at Northaw, comprising an excellent Farm-house, with convenient Outbuildings, and 220 acres of Land of which about 82 are Arable, and 138 Meadow Pasture and Homestead. The Farm is wholly exempt from tithes or tithe rent-charges, and the parochial rates are very moderate. Northaw is situate near to Potter's Bar, on the line of the Great Northern Railway, four miles from Barnet and Hatfield, six from Cheshunt, and nine from Hertford. To view the Farm, apply to Mr. James Dredge, Northaw; and for particulars, and to treat for the same, to Messrs. Attwood and Rigden, the Close, Salisbury.

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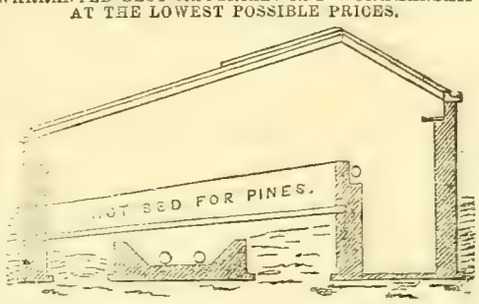
FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.




J. WEEKS and CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

---

TANNED NETTING for the Protection of Fruit Trees, and for the security of fresh-sown Seed from Birds, at unprecedented low prices; viz., 1*d.* per square yard, 200 yards for 14*s.*, 600 yards for 30*s.*, or 1000 yards for 50*s.*; Bunting and Scrim Canvass for Wall Fruit—at Thomas Edgington and Co.'s. Marquees, Tents, and temporary Ball Rooms fitted up in a superb style, in town or country, on sale or hire. Marquees for Emigrants. Rout Seats and Dancing Hollands for evening parties, on hire; Flags, Banners, Tulip Covers, Sun Blinds, and improved Waggon and Rick Cloths. Tarpaulings for houses under repair, on hire, at Thomas Edgington and Co.'s Warehouse, 17, Smithfield-bars, City, and Manufactory, nearly opposite the Bricklayers' Arms, Old Kent-road.

Orders per post punctually attended to.

---

NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from John King Farlow's Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½*d.*, 1 yard wide, 3*d.* 2 yards, or 6*d.*, 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

---

HALL'S GARDEN NETS, of superior lightness and strength.—These Nets are found to be a good protection against Frost, Hail, and Wind; also from Wasps and Insects. They are of great width, and very durable. Also valuable as outside shades to Greenhouses, &c.

Nos. 1 and 2, 56 inches wide ... ... 6*d.* per yard.
No. 3, 56 inches wide, close shelter ... 8*d.* „
No. 4, „ „ thread leno ... 8*d.* „

P.S.—It will be observed that No. 1 Net, of which there is the largest consumption, is only 4*d.* the square yard, or rather less. All the Nets are 56 inches wide, and so made that two breadths can easily be joined.

AGENTS FOR SALE.—LONDON.

Benjamin Edgington, 2, Duke-street, Southwark.
Messrs. Charlwood and Cumings, 12, Tavistock-row, Covent-garden.
Messrs. Minier, Nash, and Nash, 60, Strand.
J. Carter, 238 Holborn.
W. Clark, 25, Bishopsgate-street, Within.
Messrs. Hurst and M'Mullen, Leadenhall-street.
Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street.

P. Lawson & Son, Edinburgh.
T. D. Watkinson, Market-place, Manchester.
H. Bigland & Co., Do., Do.
F. & J. Dickson & Co., 106, Deansgate, Do.
John Shaw, 19, Oxford-street, Manchester.
F. & J. Dickson, Chester.
H. J. Oldroyd, High-street, Shrewsbury.
Fisher, Holmes, & Co., Sheffield.

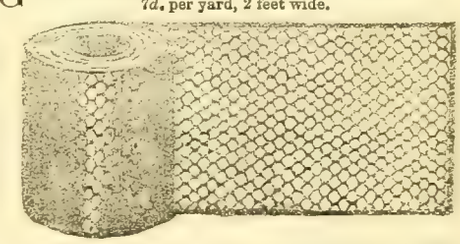
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THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

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GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



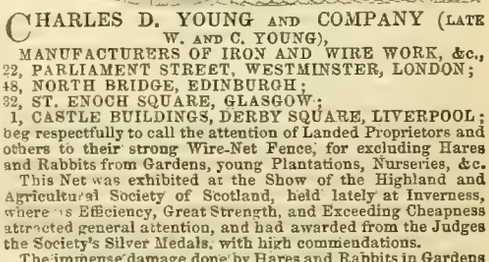
| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch „ strong „ | ... | 9 „ | 6½ „ |
| 2-inch „ extra strong „ | ... | 12 „ | 9 „ |
| ¾-inch „ light „ | ... | 8 „ | 6 „ |
| 1½-inch „ strong „ | ... | 10 „ | 8 „ |
| 1½-inch „ extra strong „ | ... | 14 „ | 11 „ |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | |
|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | £3 | 15 0 |
| Do. of 100 yards, 24 ins. wide | .. .. | 5 | 0 0 |
| Do. of 100 yards, 30 ins. wide | .. .. | 6 | 5 0 |
| Do. of 100 yards, 36 ins. wide | .. .. | 7 | 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

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AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 13—1851.] SATURDAY, MARCH 29. [PRICE 6*d.*


INDEX.


Agricultural Society of England 205 *a*
Ammonia, absorption of..... 195 *b*
Aquatics, stove..... 197 *c*
Berberry wine..... 197 *a*
Birds, British song..... 196 *c*
Botanical Society of Edinburgh ..... 199 *b*
Calceolaria, bedding ..... 200 *a*
Caledonian Hort. Society..... 199 *a*
Calendar, Horticultural ..... 200 *a*
Carrot, culture of ..... 202 *c*
Cells, plant ..... 199 *c*
Chestnut, Spanish ..... 198 *a*
Corn, prices of ..... 204 *c*
Cows, produce of..... 204 *b*
— to feed ..... 204 *c*
Cropping, extraordinary ..... 203 *b*
Deodars ..... 198 *c*
Drainage Act..... 203 *b*
Drain, water..... 205 *a*
Education, Irish..... 203 *a*
Farmers, advice to small..... 201 *b*
Farming in Ireland..... 204 *c*
Firs eaten by squirrels ..... 198 *b*
Flax ..... 204 *a*
Flax cotton ..... 204 *a*
Flax pamphlets ..... 205 *b*
Garden gleanings ..... 197 *a*
Gardening, market ..... 198 *a*
Gleanings, garden ..... 197 *a*
Grafting ..... 196 *a*
Grass, to lay down.....204 *a*—205 *c*
Greenhouses, galvanised iron... 198 *a*
Hooker (Dr.), news from .... 195 *b*
Ireland, farming in..... 204 *c*
Kohl Rabi ..... 204 *b*
Leaves, grafted..... 198 *b*
Manures, adulteration of ..... 204 *b*
— shale..... 205 *a*
Market gardening ..... 195 *a*
National Floricultural Soc. .. 199 *a*
Parsnips ..... 198 *b*
Plants, spring flowering ..... 199 *b*
— spurring hard-wooded .... 197 *b*
Plant cells..... 199 *c*
Rain ..... 198 *b*
Rats..... 204 *c*
Rhododendrons, hybrid ..... 197 *c*
Sheep on Wheat ..... 204 *b*
— warmth for..... 204 *b*
Soil, absorption of ammonia by 195 *b*
Solomon's (Mr.), garden..... 199 *c*
Spade husbandry ..... 201 *c*—202 *c*
Steam power..... 204 *a*
Squirrels and Firs ..... 198 *b*
Timber, Spanish Chestnut..... 198 *a*
Trade memoranda ..... 197 *b*
Victoria Regia at Messrs. Weeks' ..... 199 *b*
Wall, east, trees for ..... 200 *c*
Water plants.....197 *c*—199 *b*
Weather, the..... 205 *b*
Wheat, sheep on ..... 204 *b*
Wine, Berberry ..... 197 *a*


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| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

GEORGE MILLS, 15 years Steward and Gardener to the late Baroness de Rothschild, at Gunnersbury-park, Ealing, Middlesex; 32 years F.H.S. of London; author of a Treatise on the Culture of the Cucumber, Melon, Seakale, and Asparagus; as also of a Treatise on the Culture of the Pine-apple; who has practised Horticulture, Agriculture, and Arboriculture 50 years, on the cold clay soils of Hants and Essex, as also on the light and warm soils of Bucks, Surrey, and Middlesex, begs most respectfully to offer his opinion on all subjects relating thereto, excepting Botany and Chemistry.

G. M. is induced to make the above offer from the advantage he derived in early life from the advice of a friend, his senior in practice. He has long been quite satisfied that the land under cultivation in this country, although great improvements have been made within the last 20 years by drainage, &c. &c., is still capable of greater improvement, and the hope of seeing those improvements carried out, induces him to offer his opinion thereon.

G. M. will give his opinion only where his experience will enable him to give it confidently.

Terms, 2*l.* per day, exclusive of travelling expenses; for less than a day, 1*l.*

GEORGE MILLS, Loraine Cottage, Hammersmith, Middlesex.

NATIONAL FLORICULTURAL SOCIETY.—OFFICES, 21, REGENT-STREET, LONDON.

The Printed Rules, &c., of the NATIONAL FLORICULTURAL SOCIETY will be forwarded to all *post paid* applications.

JOHN EDWARDS, Hon. Sec.

NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET, LONDON.—The following Gentlemen are among the early promoters of the NATIONAL FLORICULTURAL SOCIETY, of whom the printed Rules, &c., may be obtained:

Mr. Arthur Henderson, Pine-Apple Place, Edgeware-road, London
Mr. Charles Turner, Royal Nursery, Slough
Mr. John Salter, Versailles Nursery, Hammersmith
Richard Stains, Esq., Newroad, London
G. W. Hoyle, Esq., Reading
Mr. Andrew Henderson, Wellington-road, St. John's-wood, London
Mr. John Edwards, Wace Cottage, Holloway
Mr. James Veitch, jun., Exeter
Mr. W. P. Ayres, Brooklands Nursery, Blackheath; Editor of "Magazine of Botany"
Edmund Foster, Esq., Clewer Manor, near Windsor
Mr. Edward Beck, Worton Cottage, Isleworth; Superintendent of the "Florist"
E. S. Dodwell, Esq., Derby; Sec. Midland Horticultural Society
Morgan May, Esq., Sonning, Berkshire
Thomas Adams, Esq., Derby
C. P. Lochner, Esq., Warwick House, Paddington; Hon. Sec. of Highgate Society
Rev. C. Fellows, Shotesham Rectory, near Norwich
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Messrs. J. and J. Frazer, Lea Bridge, Essex
Mr. John Keynes, Nurseryman, Salisbury
Mr. C. Lidgard, Hammersmith
Messrs. Widnall and Davies, Granchester
Mr. T. Barnes, Danecroft Nursery, Stowmarket
Mr. Thomas Rivers, Sawbridgeworth
Messrs. Bass and Brown, Sudbury, Suffolk
Mr. John Dobson, Worton Cottage, Isleworth
Mr. T. Appleby, Pine-Apple Nursery, Edgeware-road, London
J. T. Neville, Esq., Ebenezer House, Peckham; Secretary to the Royal South London Floricultural Society
J. H. Brown, Esq., Tulse-hill, Surrey.
Mr. J. F. Wood, The Coppice, Nottingham; Editor of "Midland Florist"
J. W. Newhall, Esq., Woolwich, Kent
Mr. J. Robinson, Pimlico, London
Mr. N. Norman, Woolwich, Kent
Mr. W. Paul, Rose Nurseries, Cheshunt, Hertfordshire
Mr. J. Cole, Gardener to J. Wilmore, Esq., Oldford, near Birmingham; Superintendent of "Midland Magazine"
J. Wilmore, Esq., Oldford, near Birmingham
Mr. G. Wyness, Gardener to her Majesty, Buckingham Palace
Mr. A. Ambrose, Nurseryman, Battersea, Surrey
Mr. Black, Clewer Manor, near Windsor
Mr. W. J. Epps, Bower Nurseries, Maidstone, Kent
Mr. J. Good, Nurseryman, Derby
Mr. Glendinning, Nurseryman, Chiswick, Middlesex
Mr. Gaines, Nurseryman, Surrey-Lane, Battersea
Mr. J. Harrison, Nurseryman, Richmond, Surrey; Editor of "Floricultural Cabinet"
Mr. W. Ivery, Nurseryman, Rye-lane, Peckham, Surrey
Mr. J. B. Lane, Rose Nurseries, Berkhampstead
Mr. Pontey, Nurseryman, Plymouth
C. J. Perry, Esq., Handsworth, near Birmingham; Hon. Sec. to the Handsworth and Lozell's Society, and Editor of "Midland Magazine"
Mr. Pope, Kempes-row, Pimlico
Messrs. W. Rendle and Co., Nurserymen, Plymouth
W. H. Story, Esq., White Hill, Newton Abbott, Devon
Mr. Wm. Jeffery, Hedgerly Park, Bucks
Mr. John Liddiard, Salt Hill, Bucks
G. W. Johnson, Esq., Winchester, Hants; Editor of the "Cottage Gardener, &c."

Additional support received during the week:—

Dr. Lindley, 21, Regent-street, London
Robert Marnock, Esq., Royal Botanic Gardens, Regent's-park, editor of *Gardener's Journal* (Horticultural Department)
Mr. J. Creed, Wace Cottage, Holloway
Messrs. J. Moore and Son, Perry Bar Nursery, Birmingham
Mr. J. Coudrey, Edgbaston Nursery, Birmingham
Messrs. J. Pope and Sons, Handsworth Nursery, Birmingham
Mr. C. Sharp, Aston-lane Nursery, Birmingham
Messrs. Mayle and Co., Monument-lane Nursery, Birmingham
Mr. H. Pope, Gib Heath Nursery, Birmingham
Mr. A. Parsons, Ponder's End, Middlesex
Joseph Hunt, Esq., Cressex, High Wycombe, Bucks
Mr. W. R. Bragg, Star Nursery, Slough
Mr. R. Smith, Wood Green, Witney, Oxon
R. Headly, Esq., Stapleford, Cambridge
Mr. W. Chater, Nurseries, Saffron Walden
Rev. J. Burroughes, Lingwood Lodge, Norwich
Mr. John Long, Watford
Mr. G. Smith, Tollington Nursery, Hornsey-road, Islington
Mr. F. Masters, Exotic Nursery, Canterbury
Mr. W. Hamilton, Seedsman, 156, Cheapside
Messrs. Garraway and Mayes, Bristol
Mr. David Ferguson, Stowe, Buckingham
Mr. Richard Costar, Benson, Oxon
Mr. R. B. Bircham, Hedenham Rosary, Bungay, Suffolk
Mr. W. Anderson, Nurseryman, Dundee
H. W. Collison, jun., Esq., 1, Belle Vue-place, Bath
James Davidson, Esq., Camden Grove, Peckham
Mr. R. J. Lawrence, Hampton, Middlesex
Mr. W. Holmes, Wells-street, Hackney
Mr. John Bayley, Derwent Banks, Derby
Messrs. J. and C. Lee, Hammersmith
Mr. W. Cock, Chiswick
Mr. J. Foster, Maida Hill
W. A. Coombe, Esq., Northfleet, Kent.
Mr. D. Hairs, Seedsman, St. Martin's-lane
The Proprietors of the "Gardeners' Magazine of Botany."
Mr. Soden, Middle Barton, Oxon
Mr. Pearson, Hampstead-road
Mr. H. Groom, Clapham Rise, Surrey
Messrs. J. and J. Fairbairn, Clapham, Surrey
Mr. E. G. Henderson, Wellington-road Nursery
Mr. Topping, Exeter
Mr. Laxton, Florist, Hammersmith.
James Firth, Esq., Barnes Common
Mr. J. A. Henderson, Pine-Apple Nursery
Mr. Parker, St. John's Wood Terrace.

JOHN EDWARDS, Hon. Sec.

BLACK BARBAROSSA GRAPE.—Fine flavoured GRAPES may be obtained until April, by growing the above truly magnificent variety, introduced from the Continent by C. T. WARD, Esq. For further particulars, see *Gardeners' Chronicle*, March 8, 1851. Good Plants from Eyes may be obtained of JOHN BUTCHER, Nurseryman, Stratford-on-Avon, 10*s.* 6*d.* each. London Agent, Mr. F. WARNER, Seed Merchant, 28, Cornhill.

RYE-GRASS AND TURNIP SEEDS.

J. MORRISON AND SON are now prepared to execute orders for their RYE-GRASS and TURNIP SEEDS, and will be happy to forward by RAIL, free of charge, from ABERDEEN to any station on the lines southward, as may be agreed on, Samples and Seed. Catalogues on application. Seed Farm, Montcoffer; Seed Warehouse, Banff, N. B.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct, of last year, 10*s.* 6*d.* cash. See List containing a great variety of choice new Plants for one stamp.—Nursery, Kennington, London.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from Weeds and coarse Grasses, 21*s.* per bushel, 3*s.* per gallon, or 1*s.* 3*d.* per pound, with instructions.

To insure a pure Turf of finest Dwarf Grasses, Messrs. SUTTON strongly recommend the sowing the above Seeds, whereby the great expense of cutting, carting, and laying Turves may be avoided.

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced prices of* 22*s.* 6*d.* *to* 28*s. per acre, viz.*:

| | *£* | *s.* | *d.* |
|---|---|---|---|
| BEST MIXTURES for laying down Land to permanent Meadow or Upland Pasture, per acre ... | 1 | 8 | 0 |
| DITTO, for laying down Reclaimed Marshes and Common Inclosures, per acre ... ... ... ... ... | 1 | 2 | 6 |
| DITTO, for fine Park Lands near Mansions, per acre | 1 | 15 | 0 |
| DITTO, for Irrigation or Water Meadow, per acre ... | 1 | 6 | 0 |

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS *having reduced the price of these Seeds* 25 *per cent., viz., to* 10*d. per lb., or* 1*s.* 6*d. per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of* 6 *or* 8 *lbs. per acre, sown immediately upon the old Turf.*

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following:—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

*From the Land Steward at a large Estate in Hampshire.*

"All the kinds of Grasses sown separately grew admirably; and the 20 acres of Park laid down with *your Mixture* last spring is most excellent. We are anticipating a large crop of Hay, and I can see by the various habits and successional growths of the several kinds, that we shall always have a fresh growing bite for the cattle after the Hay is cut. The Clovers too I see are plentiful."

*From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

Another Clergyman writes us—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for Sowing accompany every Parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, March 22.

ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS by special appointment to the SOUTH DEVON AGRICULTURAL ASSOCIATION, and several influential Members of the Royal Agricultural Society, Union Road, Plymouth.

We have this season a choice and well assorted Stock of all the best FARM SEEDS. They have been grown and selected with the greatest care, and can be highly recommended as being of the most genuine quality. Our sale of Turnip Seeds alone last season exceeded *one thousand bushels*; our extensive dealings therefore enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.

OUR DESCRIPTIVE CATALOGUE OF FARM SEEDS *is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, and Mangold Wurzel, with prices affixed to every article. The list of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the sowing of Grass Seeds for permanent pasture, concerning which* Mr. KEMP, *of Birkenhead Park, in a letter to us says:—"I am glad that you repudiate the practice of sowing Corn with Grass Seeds, a custom I have often had to combat."*

All Orders above 2*l.* Carriage Free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

GOLIAH STRAWBERRY.

JAMES KITLEY can supply good Plants of his celebrated Strawberry GOLIAH, at the very low price of 7*s.* 6*d* per 100, or 12 Plants, free by post, for 18 postage stamps. Also fine Plants of Dwarf German HOLLYHOCKS mixed, at 12*s.* per dozen; these have all bloomed, and are very double and beautiful. HOLLYHOCK SEED, saved from a fine collection of double varieties, 18 packets, named, free by post, for 5*s.*; ditto mixed, per packet, 2*s* 6*d*. SWEET WILLIAM SEED, from a great variety of beautiful brilliant colours, per packet, 1*s.*

Lyncombe Vale Nursery, Bath. March 29.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited, 1*s.* packet.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1*s.* per oz., 6*d.* per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1*s.* per oz., 6*d.* per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens; 6*d.* per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3*d.* per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1*s.* per oz., 6*d.* per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing-cross, London.

PLANTS! PLANTS! PLANTS! NEW AND CHEAP.

H. WALTON begs to offer the following at the very low prices named. DAHLIAS of 1850, 9*s.* and 12*s.* per dozen; older varieties, 4*s.* 6*d* to 6*s.* per dozen. FUCHSIAS, new varieties, 20 for 18*s.*, 12 for 12*s.*, 6 for 7*s.*; older varieties, 5*s.* per dozen. VERBENAS of 1850, 1*s.* each, or 6*s.* per dozen; older varieties, 3*s.* to 4*s.* 6*d.* per dozen. PETUNIAS of 1850, 9*s.* to 12*s.* per dozen; older varieties, 6*s.* per dozen. 12 of the choicest PANSIES of 1850, 16*s.*, or 24 for 1*l.*; older varieties, 6*s.* to 9*s.* per dozen. CINERARIAS, sent out last spring, 9*s.* to 12*s.* per dozen. GERANIUMS, 7*s.* 6*d.* to 12*s.* per dozen. 12 first-rate Show CARNATIONS, 9*s.* to 12*s.*; 12 first-rate Show PICOTEES, 9*s.* to 12*s.*; 12 first-rate Show PINKS, 4*s.* to 6*s.* Named CHRYSANTHEMUMS, 6*s.* per dozen.

For particulars of the above see Catalogues, which may be had by enclosing one stamp. Strong, healthy, well rooted plants, may be depended on; securely packed, so as to ensure the safe delivery of all orders at the least possible expense.

It is respectfully requested that all orders be accompanied with a post-office order, made payable at Marsden, in Lancashire.

HENRY WALTON, Florist, Edge End, Marsden, near Burnley, Lancashire.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s.* *d.* | | Per 1000—*s.* *d.* |
|---|---|---|---|
| York Regents .. .. | 10 6 | New Early Ebrington Kidney .. .. | 15 0 |
| American Native .. | 10 6 | Do. Ash-leaved .. | 15 0 |
| White-blossomed Kidney .. .. | 10 6 | Do. Frame Round .. | 10 6 |
| Soden's Early Oxford .. | 15 0 | Do. Radical .. .. | 10 6 |
| Early Cockney .. .. | 15 0 | Fox's Seedling .. .. | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, March 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15½ per cent. |
| Salesman, No. 1 ... ... ... ,, ,, | 11¼ ,, |
| ,, No. 2 ... ... ... ,, ,, | 9¾ ,, |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

STANWICK NECTARINE—SALE OF, IN AID OF THE FUNDS OF THE GARDENERS' BENEVOLENT SOCIETY.

Circumstances have rendered it necessary to modify the intentions expressed at p. 676 of the *Gardeners' Chronicle*, respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these five guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of Northumberland, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway, where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. WILLIAM BRAILSFORD, who, upon their receipt, will return an order upon Mr. RIVERS for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope, that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use, yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

PRICED CATALOGUES OF

LOUIS VAN HOUTTE, NURSERYMAN, Ghent, (*Belgium*), to be had of Mr. GEO. RAHN, 52, Mark-lane, London.

Nos. 40 and 41.—BULBOUS PLANTS. HARDY PERENNIALS, GREENHOUSE AND STOVE PLANTS. (*October*, 1850.)

No. 42.—ORNAMENTAL AND CULINARY SEEDS. (*January*, 1851.)

No. 43.—ROSES. (*February*, 1851.)

No. 44.—CAMELLIAS. (*March*, 1851.)

*** The usual discount to the trade.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents

THE BLACK AUSTRIAN PINE (PINUS AUSTRIACA).

LUCOMBE, PINCE, AND CO., have a large and healthy stock of this most desirable Pine, from 9 inches to 3 feet high, which having been frequently transplanted, are well-rooted and safe to remove: they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s.* per 1000. This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils, growing rapidly, and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds. N.B. The present is a very fine time for planting.

Exeter Nursery, March, 29.

VERBENAS.—A Set of Twelve of the most extraordinary Seedling Verbenas ever offered. As a proof of their excellence, they have been awarded 30 first-class certificates; three of them will be figured in the "Gardener's Magazine of Botany," April 1. G. S. begs to say that they are very distinct, and far surpass any previously raised. The set in strong plants, the third week in April, at 2*l.*, or 5*s.* per plant. For descriptions, see Catalogue, which will be forwarded on the receipt of one postage stamp, with the description of the beautiful Fuchsia Sedonia, figured in the "Gardener's Magazine of Botany," for March. Also his new Petunias and Heliotropes. Selections, with prices of Verbenas, Fuchsias, Dahlias, Chrysanthemums, Geraniums, &c., at moderate prices.—GEORGE SMITH, Tollington Nursery, Hornsey-road, Islington, London.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, March 29.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish-pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21*s* each.—Nursery and Seed Establishment, Hammersmith, near London.—March 29th.

T. JACKSON and SON have still on hand a limited quantity of their Improved KIDNEY POTATO, at 7*s.* 6*d.* per bushel, and Golden Dwarfs at 5*s.* 6*d.* (an excellent Early Frame Potato); for the particulars of their merits, see *Gardeners' Chronicle* of the 14th or 21st December.

T. J. and SON, having the largest stock in the country of Taxodium sempervirens, are enabled to offer them at the following low rates:—Fine plants, 2 feet high, 2*s.* 6*d.*; 6 feet, 21*s.*; intermediate sizes at proportionately low prices. Forsythia viridissima, 3 feet high, full of flower-buds, 2*s.* 6*d.*; and all other general Nursery Stock at equally low prices.

Nursery, Kingston, Surrey, March 29.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youth's Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-street, London-bridge.

TO FLORISTS.

PRINCE OF WALES' BAZAAR, REGENT-STREET.—The CONSERVATORY in this elegant and unique Building TO BE LET, on the usual terms. Apply to the Manager, at the office, 207 and 209, Regent-street, between the hours of 10 and 5 o'clock daily, where a printed form of the rules and regulations can be obtained. All letters must be pre-paid.

UNIVERSITY COLLEGE, LONDON.

ELEMENTARY COURSE OF BOTANY.

PROFESSOR LINDLEY will commence a course of Lectures on Botany, to a Junior Class, on Monday, April 7, at 8 o'clock, A.M. *Subject*.—The Distinctions between the principal Natural Classes and Orders of Plants belonging to the Flora of Europe. The Lectures will be delivered, with the exception of the Easter Vacation, daily, at 8 A.M., until May 1; afterwards on Tuesdays, Wednesdays, Thursdays, and Saturdays, from 10¼ to 11¼. The course is adapted to persons commencing the study of Botany. Fee 2*l.* The course to the Senior Class will commence on the 1st of May.

THOMAS GRAHAM, Dean of the Faculty of Medicine.

HENRY MALDEN, A.M., Dean of the Faculty of Arts and Laws.

CHARLES C. ATKINSON, Secretary to the Council.

March 29.

HALL'S GARDEN NETS, of superior lightness and strength.—These Nets are found to be a good protection against Frost, Hail, and Wind; also from Wasps and Insects. They are of great width, and very durable. Also valuable as outside shades to Greenhouses, &c.

Nos. 1 and 2, 56 inches wide ... ... 6*d.* per yard.
No. 3, 56 inches wide, close shelter ... 8*d.* ,,
No. 4, ,, ,, thread leno ... 8*d.* ,,

P.S.—It will be observed that No. 1 Net, of which there is the largest consumption, is only 4*d.* the square yard, or rather less. All the Nets are 56 inches wide, and so made that two breadths can easily be joined.

AGENTS FOR SALE.—LONDON.

| | |
|---|---|
| Benjamin Edgington, 2, Duke-street, Southwark. | J. Carter, 238 Holborn. |
| Messrs. Charlwood and Cummins, 14, Tavistock-row, Covent-garden. | W. Clark, 25, Bishopsgate-street, Within. |
| Messrs. Minier, Nash, and Nash, 60, Strand. | Messrs. Hurst and M'Mullen, Leadenhall-street. |
| | Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street. |
| P. Lawson & Son, Edinburgh. | John Shaw, 19, Oxford-street, Manchester. |
| T. D. Watkinson, Market-place, Manchester. | F. & J. Dickson, Chester. |
| H. Bigland & Co., Do., Do. | H. J. Oldroyd, High-street, Shrewsbury. |
| F. & J. Dickson & Co., 106, Deansgate, Do. | Fisher, Holmes, & Co., Sheffield. |

NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost, Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½*d.*, 1 yard wide, 3*d.* 2 yards, or 6*d.*, 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PELARGONIUMS AND NEW PLANTS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS and NEW PLANTS is ready, and will be forwarded by post on application.

BEAUTIFUL FLOWERS.—FLOWER SEEDS, hardy, half-hardy, and perennials, forwarded free by post, at the following low prices, all warranted :—100 packets, 5s. ; 70, 4s. ; 50, 3s. ; 30, 2s. 6d. ; or 12 for 1s. ; tender annuals at 2s. 6d. per dozen packets ; garden seeds in packages, at 5s., 10s., and 20s. each, containing nearly double the usual quantities, sent out, and all of the best kinds in cultivation. A few packets of extra fine Balsam seeds at 1s. ; Cucumber and Melon seed, 6d. a packet. List, with sample packet, for two stamps. Address JOSEPH GOLDING, Seedsman, Hastings.

THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet, in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10s. 6d. each. Small plants for bedding on the 1st of June, 6s. per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

SEEDS FOR THE FARM, THE KITCHEN-GARDEN, AND THE FLOWER-GARDEN.

JAMES SALTER having tested the Growing Qualities of the Seeds he is now sending out, can with confidence warrant them to be as good, and as low in price, as at any respectable Seed Establishment in the Kingdom. All the most approved varieties of CUCUMBER and MELON, 1s. per packet. Flower Seeds forwarded (free) by post. Descriptive Lists, with instructions for sowing, sent on application.

N. B.—Just imported, a fine collection of CONTINENTAL FLOWER SEEDS ; also, fine double ITALIAN TUBEROSES.

SEED ESTABLISHMENT, 2, New Bond-street, Bath.

CHOICE VEGETABLE AND FLOWER SEEDS.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, begs to offer to the Public a few very superior SEEDS, selected from his collection, which may be had at the annexed prices, free by post.

VEGETABLE SEEDS.—Beet : Cattell's dwarf purple top. Broccoli : Mammoth White, Wilcove White, and Jones's Cauliflower, White. Cabbage : Cattell's Green Colewort, Dwarf Barnes and Nonpareil. Savoy : Dwarf Drumhead, Scotch Kale, fine feathered and Dwarf Curled. Celery : Cole's Superb Red, Seymour's Champion White, and Seymour's Superb White. Lettuce : fine Black Seed, Brown Bath Cos, and fine Black Seed Green Cos. Parsley : fine Curled, garnishing. Vegetable Marrow : true White. Leek : fine Broad-leaved. Parsnip : Guernsey. The above at 6d. per packet.

Cauliflower : fine Early and Dwarf Late Walcheren, and Cattell's Reliance Cabbage, at 1s. per packet. Cucumber : Manchester Prize, Sion House, Early and Improved ; Cuthill's Black Spine, Man of Kent, Kerryson's Prize, Carpenter's Wonder, Walker's fine Long, and Green Emperor, 1s. per dozen Seeds.

FLOWER SEEDS.

| | Per packet—s. d. | | Per packet—s. d. |
|---|---|---|---|
| Convolvulus major, new Red | 0 6 | Larkspur, dwarf double Rocket, extra fine mixed | 0 6 |
| ,, new Purple | 0 6 | Stock, Red, Intermediate, extra fine ... ... ... | 0 6 |
| ,, rubra cœrulea | 1 0 | Coreopsis nigra speciosa | 0 6 |
| Geranium, from newest florist varieties ... ... | 2 6 | Calceolaria, from first-rate sorts, impregnated ... ... ... ... | 2 6 |
| Geranium, from newest fancy varieties ... ... | 2 6 | Schizanthus retusus alba | 1 0 |
| Geranium, scented do. ... | 0 6 | Loomopsis elegans ... ... | 1 0 |
| Nemophila maculata ... | 1 0 | Pentstemon speciosum ... | 1 0 |
| Jacobœa, extra fine double Purple ... ... ... ... | 0 6 | Rhodanthe Manglesii ... | 1 0 |

J. C.'s Descriptive Priced Catalogues of Vegetable and Flower Seeds, may be had on application, or if by post, by enclosing two penny stamps.

HUGH LOW AND CO. beg to offer established Plants of the undernamed :

PHLOX, 24 superior sorts, each ... ... ... 1s. 0d.
,, 24 newer varieties, each ... ... ... 1 6
,, 12 best Belgian varieties of last year, each 2 6
CHRYSANTHEMUMS, in great variety, per doz.... 9 0
,, per 100, one plant of each sort ... ... ... 50 0
,, newer varieties, per doz.... 18 0
LILIPUTIAN CHRYSANTHEMUMS. — These miniature varieties have, during the past season, established themselves as great favourites, on account of their dwarf habit and profuse blooming.
12 varieties of 1849, 1s. each, or 9s. per dozen.
18 ,, of 1850, 2s. each, or 18s. per dozen.
GLOXINIAS, 6 fine Continental hybrids, 2s. 6d. each.
BLUE MIMULUS (Mimulus ringens), a fine hardy herbaceous plant, 2s. 6d. each.
A few fine round-headed SWEET ORANGE TREES, 2 feet stems, full of fruit, 15s. each.
Post-office orders payable at Hackney.
Clapton Nursery, London.

NEW VALUABLE FLOWER SEEDS.—Portulaca nova rosea, new Rose var., very handsome, 1s. per pkt.
Ipomœa Quamoclit alba, half-hardy ... ... 1s. ,,
,, Burridgii, splendid hardy ... ... 6d. ,,
Saponaria Calabrica, var. multiflora ... ... 6d. ,,
No garden should be without this most valuable Annual.
Martynia angularis, new and handsome ... 6d. ,,
Gloxinia, hybridised by a first-rate grower ... 1s. ,,
Calendrinia umbellata, new and handsome half-hardy Annual ... ... ... ... 1s. ,,
A few packets of Lisianthus Russellianus ... 1s. ,,
Tropæolum speciosum, very handsome ... 1s. ,,
DUNCAN HAIRS' object, in selecting the above few Seeds from his collection, is to draw the particular attention of those who are fond of novelty and beauty. Amongst other departments of his business, D. H. prides himself on having some first-rate Seeds of Florist Flowers—viz., Calceolaria, Cineraria, Heartsease, Dahlia, Verbena, Carnations, Pink, Cockscombs, and Balsams, &c., in 6d and 1s. packets.
German Stocks and Asters in collections, 2s. to 5s.
109, St. Martin's-lane, Charing Cross, London.
Catalogues per post free.

CARNATIONS, 25 Show Varieties, 1 pair of each, named ... ... ... ... ... ... £1 0s. 0d.
PICOTEES, 25 do. do. ... ... ... ... 1 0 0
PINKS, 25 do. do. ... ... ... ... 0 8 0
PANSIES, 25 varieties, extra fine show flowers, named ... ... ... ... 0 12 0
This being the best time for planting out the above beautiful flowers, JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, begs to inform Gentlemen, Florists, &c., &c., that having a large Stock, he offers them at the above *low* prices, hamper included.—Post-office orders to be made payable at Middleton, near Manchester. Auriculas, Alpines, Polyanthuses, &c. Catalogues on application.

R. M. STARK begs to intimate that his Spring Catalogue of FLORISTS' FLOWERS, BEDDING, GREENHOUSE and other plants, containing many interesting novelties, is now ready, and may be had on application. Garden, Farm, and Flower Seeds of fine quality, and from the most approved Stocks.
Edgehill Nursery, Edinburgh, March 29.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz. :—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition ; 21s. Shacklewell Open Shows, &c , fourteen first class certificates ; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season ; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domever. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD ; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good ; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

HOLLYHOCK SEED.

EDWARD TILEY begs to inform the lovers of that beautiful flower that he has been successful in procuring a quantity of good sound SEED of the above from an Amateur Gentleman who has one of the most superb and choice collections in cultivation ; the seed having been selected with every care and attention, he can confidently recommend it. Sold at 2s. 6d. per packet, containing 150 seeds, or 5s. for a packet of 400 seeds.

GERMAN ASTER SEED.

Unequalled for the superiority of flower, the shape of which forms that of half a globe, and has been admired by thousands of spectators at numberless exhibitions. There are from 20 to 30 varieties, 1s. per packet.

SWEET-WILLIAM SEED.

Saved from 24 superb varieties. The flowers are very large, and of dwarf habit. They were much admired when in bloom, by countless spectators, and the Seed numerously ordered by them ; 1s. per packet.

ANTIRRHINUM SEED.

E. T. being a most extensive grower of all the choicest sorts known in cultivation, has selected the Seed with great care from the finest varieties, as to colour, shape and habit of plant. There are more than 50 distinct varieties ; 1s. per packet.

DWARF ORANGE AFRICAN MARIGOLD SEED.

Unrivalled for its superior size and darkness of colour, many of the flowers last season measuring 5 inches over, and not more than 1 foot high ; 6d per packet.

Or, if preferred, a 5s. packet of Hollyhock and a packet of each of the above varieties for 7s.

Walcheren Cauliflower Broccoli (as imported) 1s. 0d. p. packet.
Tamworth Broccoli ... ... ... ... 1 0 ,,
Wilcove Broccoli ... ... ... ... 1 0 ,,
Cole's Superb Solid Celery ... ... ... 0 6 ,,
Bath Cos Lettuce, seed true, the best and finest flavoured in cultivation ... ... ... 1 0 ,,

A remittance must accompany the order, either in cash or penny postage stamps for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

**The Gardeners' Chronicle.**

*SATURDAY, MARCH* 29, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | March | 31 | Chemical (Anniversary) | 8 P.M. |
| TUESDAY, | April | 1 | Horticultural | 3 P.M. |
| | | | Linnean | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| THURSDAY, | — | 3 | National Floricultural | 2 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8 P.M. |
| FRIDAY, | — | 4 | Botanical | 8 P.M. |
| | | | Royal Institution | 8 P.M. |
| SATURDAY, | — | 5 | Asiatic | 2 P.M. |
| | | | Medical | 8 P.M. |

WE are happy to announce that by the last Indian Mail, Dr. HOOKER, and his friend, Dr. THOMSON, arrived safely from Chittagong. We have had frequent occasion to speak of the important and dangerous travels of the former of these gentlemen, from which the most valuable contributions to physical geography and natural science are to be expected. We understand that Dr. HOOKER's collections, which are on their way home by the Cape of Good Hope, are equally remarkable for their interest and great extent.

THE power of absorbing and retaining ammonia, which most experiments have shown the soil to possess, probably will explain the reasons why in certain cases, on particular soils, and applied to particular plants, the salts of ammonia sometimes appear to produce little benefit. Several observers have at different times stated, that to their great surprise, they had found many of the salts of ammonia, not only without any beneficial influence on vegetation, but even absolutely hurtful to plants. It was this which some years since led BOUSSINGAULT to the conclusion, that salts of ammonia were only useful to plants when the ammonia was either combined with carbonic acid or some easily destructible organic acid. Plants fed with water alone, or planted in pure siliceous sand, and watered with solutions of various salts of ammonia, in place of being benefited, were killed ; although the same plants, when grown in common soil, and watered with the same ammoniacal solutions, were certainly rendered more healthy and vigorous. The conclusion to which BOUSSINGAULT was at last led, was, that the only salt of ammonia really useful to plants was the carbonate, and, therefore, that in all cases where the other salts of this alkali were used as manure, the acid must, by some process of chemical decomposition, be removed, and replaced by the carbonic. A key to some of the difficulties which these observers could not explain is now given to us, in the fact that an ordinary fertile soil possesses the power of decomposing the salts of ammonia, and by the acid of lime displacing the acid with which the ammonia is combined. It has often been stated by careful observers that they could find no difference in the relative value of the various salts of ammonia as manure, and that they all acted perfectly alike on plants ; this is not what might reasonably be expected, but it would, of course, follow as a necessary consequence from the power of the soil which has lately been brought to light.

There is, however, still another question which must be satisfactorily explained, before we can have any very accurate idea of the precise mode in which these changes are effected ; and that is, the subsequent process whereby the ammonia which the soil has absorbed is given off again, and taken up by plants. All that is now shown is, that the soil is able to fix a considerable quantity of ammonia, which is retained by it with a good deal of force, so that mere subsequent washing will not remove it. By whatever means it is that the soil is able to do this, it is tolerably certain that there exists some means whereby plants are able to avail themselves of the ammonia thus arrested, and stored up by the soil. Whether these means are simply chemical ; whether they depend in any way on the influence of light, or whether they are to be traced to the vital powers of the plant and the peculiar structure of the roots, is not yet ascertained ; but two things are plain ; firstly, that the soil takes up from rain-water all the ammonia which the latter contains ; and, secondly, that the soil again parts with some of this ammonia to plants growing in it.

The power of any soil thus to absorb ammonia is unquestionably limited ; and if we continue to filter a weak solution of ammonia through a portion of any soil, though the water which comes through at first will not contain any ammonia, yet after a short time, and when the soil has taken up as much as it is able to absorb, then the water which passes through will be found to contain as much ammonia as it did before it was thus filtered. The quantity which the soil is able to retain is not great, but it is abundantly sufficient for the wants of plants. Until we know the mode in which clay subsequently parts with the ammonia which it has absorbed, we shall not be able to devise the best means of preventing the loss of that substance, or of making the most of the power in question. There is, however, every probability that by continued exposure to the air alone, much of the ammonia which has been absorbed during a summer shower, for example, is again slowly given off ; an effect which the mere gradual evaporation of the surface water would greatly tend to accelerate. Hence it is not to be expected that any soil, however constituted, could, by mere exposure to the air, ever become very rich in ammonia, or indeed contain more than a minute trace of it ; because the entire quantity which it could possibly receive in any one day could only be very minute ; and though it is true that the constant repetition of such additions to the soil would in time amount to a considerable quantity ; yet, as it would take a long time, and as, during the whole of this time, the soil would be necessarily exposed to the influence of evaporation, and the other causes, whatever they may be, which tend to remove ammonia again from the soil ; so it is not to be expected that, even under the most favourable circumstances, any large accumulation could take place.

It will be an important subject of inquiry, to ascertain how much ammonia a good clay soil is able to absorb under the most favourable circumstances ; for if the quantity is sufficiently large, it would unquestionably be worth while to form large filter beds in the reservoir of drainage water from towns ; not as has often been proposed, merely for the purpose of purifying it from all the solid matters mechanically suspended in it, but also to arrest the ammonia and other valuable soluble elements of manure which it contains. Some of Mr. WAY's experiments on this subject are very curious. He not only found that by filtering a portion of putrid drainage water through a few inches of soil, it had lost all bad odour, and contained no longer any ammonia ; but he also found that on filtering fresh liquids of this sort, which had not yet begun to putrefy, through such a layer of soil, they even lost

all tendency to putrefy, and might then be kept weeks exposed to the air without their showing any indication of putrefaction. Although the chief agent in producing these remarkable effects is clay, yet it is evident that such filtering beds, if worth making at all, could not be made of clay alone, because, from its close tenacious nature, and the extreme slowness with which it allows the percolation of water, it would be evidently unfit for any kind of filter; and a mixture of clay and sand, such as we find in a good moderately stiff soil, would no doubt be far better. Mr. WAY's experiments prove that the soil has a power of absorbing potash, soda, magnesia, and phosphoric acid, as well as ammonia; and if we add to these one more substance, namely, lime, we have most of the chief elements of manure.

As we said a fortnight since, when adverting to these very curious and important experiments, the subject is not yet half investigated, and there appears to be many chemical points not satisfactorily explained; some of these, as we then suggested, probably depend on mechanical rather than on chemical causes. Pure white clay, which had been boiled for two hours in strong muriatic acid, and which therefore evidently did not contain any free carbonate of lime, was nevertheless found to decompose a solution of muriate of ammonia which was filtered through it; a portion of the ammonia was absorbed, while the acid passed through in combination with lime; though, as may be supposed, far less ammonia was absorbed than when a clay containing free carbonate of lime was used as the filter. From this result we learn that such clay, which always contains a small quantity of lime, though it does not give up that lime to the action of a strong chemical solvent (such as boiling muriatic acid), nevertheless, does part with it readily under the influence of the much weaker solvent powers of a solution of muriate of ammonia. Another, and an equally surprising result, was obtained on endeavouring to ascertain whether a given soil would absorb the same relative proportion of ammonia from solutions containing different salts of that substance. An equal weight of soil was employed in each case, and it was found that when a weak solution of pure caustic ammonia was used, and there was therefore no chemical affinity to be neutralised or overcome, every thousand grains of the soil took up about a grain and a half of ammonia; on the other hand, when a solution of muriate of ammonia was used, in which case the salt had to be decomposed by lime under the influence of the soil, then nearly one-third more, or two grains of ammonia, was absorbed by every thousand grains of the soil.

We have mentioned the influence of mere mechanical conditions in modifying, or even for the time setting aside, the ordinary laws of chemical action; and we quoted, as an illustration, the action of sulphate of ammonia on chalk. Another and a very curious example of the same sort of effect is shown in the mutual action of common salt and chalk. It is a well-known fact that a solution of common salt has no chemical action on chalk; indeed, when solutions of muriate of lime and carbonate of soda are mixed together, the salts are both decomposed, a mixture of common salt and chalk is the result, and, however long these two substances are left together, no further change takes place. If, however, a quantity of sand is added, and the mixture exposed to the air, but protected from rain, it will be found in a short time that the two substances react on each other, and give rise to the reproduction of those very substances, by the mutual action of which they have themselves been formed. A dry mixture of salt and chalk remains wholly unchanged, and so also does one which is thoroughly wetted; but if it is divided by the addition of soil or sand, and kept moist, both substances are partially decomposed, and the decomposition which then takes place is directly opposed to the ordinary known laws of chemical combination. It is plain, then, that the action of salt on any soil must, in great part, depend upon the mechanical condition of the latter; and whether the circumstances are such as to favour the decomposition of the salt, and the consequent formation of carbonate of soda. A little more or less rain may make all the difference, by preventing or assisting in the decomposition of the salt. This fact, which has been known some time, derives additional interest from Mr. WAY's experiments.

## GRAFTING.

No. XIII. BUDDING WITH DORMANT EYES. (*Greffe en écusson à œil dormant.*)—Some time previous to performing this operation, we ought to select the place on each stock which the bud should occupy, and remove all shoots likely to deprive the latter of the free contact of air. If this proceeding has been so far neglected as to be put in execution only a few days before budding, it is likely to occasion an interruption of the sap, and consequent adherence of the bark to the alburnum. If there has been such negligence, then the removal of the shoots should only take place at the moment when the bud is to be inserted; and even with this precaution, there is a chance of bad success.

It has long been known that this mode of budding has immense advantages over all others, seeing that, if the buds do not succeed, the stocks are but little deteriorated by the proceeding; there is frequently an opportunity of making a second operation 10 or 12 days after the first; and, as a last resource, these stocks may be budded in the following season by the same mode, or by any other which their size may determine.

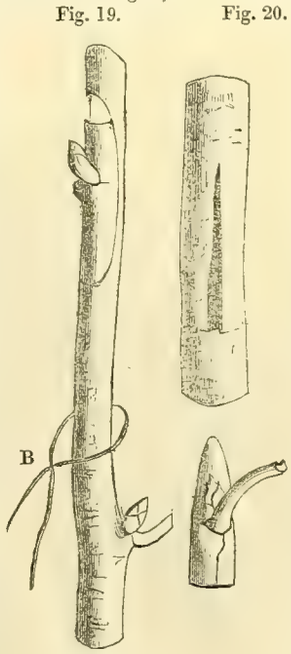
The various kinds of plants which may be budded, by dormant eyes, differ very much as regards the period of the flow of sap, and the length of time it continues; it is therefore of great importance to watch attentively the growth of each species, in order to seize the most favourable moment for budding with chance of success. I confess that that this requires some practice. Our experienced budders judge that it is time to perform the operation when three-fourths at least of the shoots of each stock have ceased to push; in this state the bark of every tree is mature, and yet can be easily detached from the woody substance which it covers, and the sap being more stationary, we no longer dread its impetuous superabundance, which always proves detrimental to the success of the buds, frequently causing many of them to perish from plethora; in this case we say the sap has drowned them. If, however, circumstances render it necessary to bud before this excessive flow of sap is over, which will be indicated by the great number of shoots still forming, it will be necessary to cut back all their herbaceous tops as soon as the bud is inserted.

All that relates to the operation of this mode of budding is referable to that which has been stated concerning the preceding. With regard to the ligature, it is best to remove it at the fall of the leaf, in order to avoid the stagnant moisture which it retains about the bud, and which is prejudicial to the latter during winter. The heads of the stocks thus budded should be cut back in the following spring; for we must not be in too great haste to perform this operation, more especially on some delicate species having gummy sap.

Where propagation is carried on in a small but careful way, they cut back the stock to within ¼ of an inch above the bud. The principles of this operation ought to be based on those detailed in treating of pruning near a terminal bud [sloping behind the bud, more or less, according to the thickness of the stock]. In extensive operations, the cutting back is done roughly at 3 or 4 inches above the bud, in order that the stump may serve as a support to the shoot produced by the bud, which is temporarily fastened to it; and then the stump is not cut back till May or later, when many of the shoots require taller supports.

BUDDING WITH THE SHIELD REMOVED WITHOUT ALBURNUM: fig. 19. (*Greffe en écusson dénuée de bois.*)—This mode, somewhat more complicated than the preceding, is employed for propagating delicate trees and shrubs with slender wood, and thin, tender bark. The shield is usually raised as follows: we trace its form with the blade of the grafting knife, cutting completely through the bark, and having removed a portion of that adjoining, fig. 19, we then press the shield between the fingers, and wrench it, in order to detach it from its position, accompanied with the small fleshy body under the eye; for, if by mischance it be found bruised, or if it remain attached to the alburnum, the shield must be destroyed, and another substituted. The frequent occurrence of this inconvenience has given rise to an infallible means of avoiding it.

Fig. 19. Fig. 20.




It consists in employing a fine wire, as indicated at B, and maintaining it in that position, whilst pulling the two ends; it is made to glide along the alburnum, easily detaching the shield with the eye adhering to it. The bud is placed in the same way as directed for those in the preceding modes.

BUDDING WITH THE SHIELD PLACED IN AN OPENING MADE IN THE FORM OF A T REVERSED (⊥); fig. 20. (*Greffe en écusson placée dans une plaie faité en forme de T renverse,* ⊥)

*Operation.*—Cut a shield of which the point shall be above the eye; see A. Raise this shield by means of a wire, as above explained; make in the stock an opening by the cuts indicated in the figure, and there insert the shield by introducing its point at the base of the opening; unite the parts, and secure the whole by a ligature, which should commence below the eye.

This mode of budding is preferable to all others for propagating the good species and varieties of Oranges and Olives, and all other tender trees with gummy sap. *Translated from the French of D'Albret.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 7.)

No. XXIII.—Never put up a pair of turned-crown, or tufted birds, to breed from. The offspring of such a pair would most probably be born bald; or, at all events, partially so; besides being in other respects deformed.

Also, be careful *never* to buy your birds of men and boys in the streets. I will tell you why. These individuals—a large number—are, one and all, in the pay of the London bird-dealers, who sell them, for a *bagatelle*, their refuse stock. They never, by any chance, are possessed of a bird of the slightest value; the whole lot consisting of old hens, and other unsaleable fry. A song bird they know nothing about; they never had in their possession such a rarity. If my readers be wise, they will treasure up this knowledge. I vouch for the truth of my remark.

Another caution I must here put forth. The London bird-dealers are aware, that the public have a morbid fancy for what are *called* "German canaries." These latter, be it known, are imported in very small wicker cribs, allowing the birds scarce space sufficient to turn round. They are then permitted to see each other in every possible direction. The excitement produced thereby, naturally makes them, *for a season*, stout in song. The German canaries—the *real* ones I mean—being expensive, loads of these "German" wicker cribs, like loads of our "fine crusted Old Port," are manufactured here—in London. Norwich and Yorkshire canaries are then put into them; and when *labelled* "German canaries in full song, just imported," John Bull, "hearing them sing," swallows the bait; buys them; and innocently believes them—German! There are, be it observed, *very* few London dealers in first-rate German canaries; and to deal with *these*, you had need "rise early!" '*Cavendo tutus*' must be your watchword, the moment you enter their doors.

All birds of a uniform colour, when paired together, produce their exact counterpart. In order, however, to secure an infinite variety of colours, to which, in the canary, there can be no objection—if a male grey is united to a mealy hen, or *vice versâ*, the issue will be more handsomely marked than their parents. By carrying out this principle, which I cordially recommend to all who can give their time to it, results may be produced of a truly interesting character. Birds of every shade, and every tint, may be reared; in fact, such combinations are inexhaustible.

The *lizard* canary is a beautifully-marked bird, and forms a striking variety amongst others. It resembles the fancy birds; inasmuch as it has a clean yellow cap, with the back and breast richly spangled with black and green. It is called "lizard," from its closely resembling the colour, and having the marks of that reptile. They may be reared from a pair of very strong fancy birds, put up in a breeding cage.

We will now proceed to the subject of "breeding" canaries; and speak, first, of those bred in a *room*; the treatment of these, and those bred in a *cage*, will be found somewhat different.

As it would hardly be worth while to rear canaries a pair or two at a time, it will be desirable to select a good sized room, as nearly square as possible. In fitting it up, many hints may be taken from my earlier directions for the arrangement of an aviary.

It is indispensable that the aspect be suitable, and that the morning sun be freely admitted through the windows. This is a comfort, which canaries, in particular, highly prize. It keeps them lively, cheerful, and in good health. The windows should be made to open; so as to admit the air, and keep the apartment sweet. To prevent the birds escaping, galvanised wire-work, closely meshed, should be fastened over each window. Let the floor be kept thoroughly clean, and nicely gravelled. This is at all times desirable; but, in a breeding-room, it is more particularly so—for many obvious reasons.

In arranging your nest-boxes, which should be of mahogany, place them—some moderately low, and others in a more elevated position. Many birds are shy, and cautious, when building, and like to be free from observation. Those which are more familiar, prefer making their nest nearer the centre of the wall.

The materials for building are sold, by the dealers, in nest-bags; but they are not fit for use until they have been thoroughly scalded in clean, boiling water. Previously to their being submitted to this operation, they should be well shaken, to rid them of dry dust and dirt. The main object of the boiling water is, to destroy the hosts of vermin which inhabit these nest-bags, as if by a prescriptive right.* No other process will annihilate them. As birds, like the human race, are subject to occasional vagaries, whims, and fancies, let the number of your nest-boxes be just double the number of your birds; and place them in all corners of the room, so as to afford a "choice." Some, like a dark situation; others, one opposite to the light.

* My fair, but anonymous correspondent, on whose letter is impressed the post-mark of "Overton, Hants," will do well in forwarding me her name and address. I will then gladly respond to her enquiries, one by one, and propose an immediate remedy for her grievance. I understand the case thoroughly; and I sympathise with her most sincerely. These insatiate *Thugs* must be exterminated, and without an instant's delay.

Instead of giving your birds "hoppers," or seed boxes, on the wall, use those which in form resemble an inverted Lucca-oil bottle. The mouth is turned downwards, the shoulder resting on a green earthenware cylindrical stand, about 4 inches deep, with holes in the sides to admit the birds' heads. This arrangement confines the seed in a small compass; and as it is consumed, more descends to supply its place. Birds, when breeding, are dainty, and are apt to waste a great deal of their food. This is a kind of check upon such wanton extravagance.

The apartment should contain at least two windows, so as to admit plenty of light and air—those essentials to health. A tree also, or even two trees, one at either end of the room, would be most acceptable. When the birds build in the trees, however, you must see that the nests are firmly and securely constructed, or the young will be liable to fall out. 'Tis a pretty sight, to see eight or ten pairs of gay-coloured birds, busily occupied in rearing their tender offspring! Their anxiety, affection, forbearance, and patience, teach us, moreover, a great moral lesson, well worth the learning. *William Kidd, New-road, Hammersmith.*

## WINE FROM THE FRUIT OF THE HOLLY-LEAVED BERBERRY.

I am not aware that the fruit of the Berberis Aquifolium has been previously turned to any useful purpose. I beg, therefore, to send you the result of an experiment with it, on a small scale, which may prove interesting. This very pretty evergreen may not be known to all. I may, therefore, observe that it is a native of North America, that it has compound leaves, somewhat like those of the common Ash, except that they are evergreen and prickly, like the Holly, from whence they take their name. The flowers are produced early in summer, and are succeeded by bunches of berries like black Currants, except that they are covered with a beautiful glaucous bloom.

In my nurseries I had a quantity of bushes which were covered with a profusion of fruit. On tasting it, though its acidity was intense, it struck me that it would make good wine, and the juice staining the fingers like the Claret Grape, made me certain that it would be of a fine colour. I gathered two gallons of these berries, and when picked clean from the stalks, they were bruised, and two gallons of cold spring water added. After that six pounds of lump sugar were put into it, and being covered up it soon fermented, when it was put into a cask, adding 2 lbs. of chopped raisins, and stopping the cask down.

After six months it was bottled off. The result has been a most beautiful home-made wine, rich in colour, similar to the best old port; every one who has tasted it pronounces it *first-rate*, and I am convinced that with age it would well merit that eulogium.

I am also of opinion that this kind of fruit would make an excellent preserve, tying three or four of the bunches together, and boiling them in sugar; they would prove extremely grateful in cases of fevers, &c.

The juice also would make jelly, similar to that of black Currants; and very probably, from the medicinal qualities of the Berberry, it might be highly useful.

I really think that as this shrub is so hardy, and at the same time so cheap, it would be desirable to grow it extensively for wine making. It will succeed in shady places, mixed up in shrubberies, under trees in plantations, where it makes an excellent undergrowth, and would always be worth as much as black Currants, thus adding utility to beauty. I imagine I have not said too much about it, for I think you will agree with me that it is one of the most handsome hardy evergreens we possess. *J. F. Wood, F. H. S., the Coppice, and St. Ann's Well Nurseries, near Nottingham.*

## FOREIGN GARDEN GLEANINGS.

Taurida [Garden, St. Petersburgh.—This garden is not public; it is a piece of ground about 500 yards square, surrounded by walls, and situate at the extremity of the town, near the arsenal. It was designed in 1780 by Wm. Goold for Prince Potemkin. It consists of a pleasure garden, a small park, a school for botany, a kitchen garden, and a large square surrounded and divided by high hedges, which favour the cultivation of early vegetables in wooden pits.

The most remarkable objects in this garden are the hothouses, of which there are 20 of different sizes, all together occupying a length of about a mile and a quarter. The lowest contain Pine-apples, which are cultivated in an artificial soil composed of peat, common mould, horn shavings, and ground bones. This mixture yields a large number of luxuriantly growing plants; 800 Pine-apples are yearly sent to the royal table from these houses. Next in importance to the Pine-apples are the Strawberries; at least 14,000 pots of the two varieties Myatt and Roseberry supply dessert to the Emperor.

There is a house set apart for Cucumbers, which are in great demand in Russia. The English variety, which requires less light, and yields very fine fruit, is preferred; its cultivation is begun in January; its fruit is gathered from February to July.

The houses which contain fruit trees differ much from each other in both height and form. Fig trees, Vines, Gooseberry and Raspberry bushes are in the lowest; Cherry, Plum, and Pear trees occupy the houses of middling height; and the highest contain some Peach trees more than 30 years old, and the stems of which, themselves about 35 feet high, do not branch lower than 15 feet from the ground. The trees bear abundantly, and the upper branches amply compensate for the absence of those usually found nearer the roots; I have myself seen them in the middle of June covered with fruit, and have looked with admiration at the extremity of the wooden walls which support it covered with Peaches of as fine a colour as any we have at Montreuil.

If Peaches are cultivated in lower houses than those I have just mentioned, the trees, in order that there may be a sufficient access of light, must be trained to the roof of the houses. In this way are obtained beautiful arcades of Peach trees, similar to those which are in our country made with the Vine and Honeysuckle.

With respect to Russian pruning, we may say with perfect truth that the art of pruning is very little understood by the Russians; they cut and hack without in the least regarding the laws of vegetable physiology. It is consequently only at a great expense of money consumed in producing an artificial climate and at waste of ground, that they obtain results arrived at by our own clever gardeners in a space not a tenth part so large as theirs. Another considerable object of cultivation in this garden are forced shrubs, with which the Emperor's apartments are decorated in winter. Those most in demand are the four-season and other Roses.

I cannot finish this article without noticing the 40 beautiful Orange trees which the present Emperor himself bought at Palermo a few years since; 20 of these trees are in the Tauride Garden. These trees were taken up with the earth attached to them; the strongest branches and roots were cut away. As soon as they arrived at St. Petersburgh Mr. Gray, the head-gardener, immediately placed them in some earth obtained from Mount Etna, in a house perfectly heated. All grew well, and produced remarkable branches; their stems are now 8 to 9 feet high, and 6 inches in diameter. *Masson's Report.*

## TRADE MEMORANDA.

Who are Thomas Warburton and James Barnes, of 14, Horse Market-street, Warrington? Perhaps some of our friends in "the trade" can inform us.

## Home Correspondence.

*Spurring Roses and hard-wooded Plants.*—There may be nothing very novel in my practice of assimilating the treatment of many hard-wooded plants to that of Roses; but I have been to many establishments in which it has not been adopted, and it may, to some at least, be information when they are told that almost all hard-wooded subjects may be brought as completely under the control of the knife as the best habited of the varieties of the Queen of Flowers. I do not propose to notice all the families which flourish under such treatment; but experience has taught me that many plants, inclined to grow rambling and bare at the bottom, can be grown as fine, as shrubby, and as well furnished, for many years, as a young specimen grown up to perfection; and that, too, by simply treating them as we treat Roses. But they must be commenced with as we mean to go on. Let me begin with the Camellia japonica, a splendid Evergreen, generally spoiled at the onset, because all of us like to see the bud or the graft make wood early, and because it grows to a terminal bud, and sets for bloom, we have no heart, as it were, to deprive ourselves of its flower; the upshot of this is, that we have a foot of the new growth, the lower part being sacrificed to great expenditure of vigour, demanded by the flower, and, therefore, naked. Now, the plan I adopt with a plant which has made its first growth, and, it may be, set for bloom, is to cut the ripe wood down to the three lower leaves, before the bloom-bud even swells. Not one plant in 10 fails to make three vigorous shoots, which, the second year, will be as strong as the one worked branch was the first. The second year, I cut the two lower ones down to two leaves or joints, and the top one to three. This operation rewards me in the third season's growth with two shoots each to the lower ones, and three to the centre one. I am not now entering into the shifting that is annually necessary, because it does not affect the question of pruning; but, independently of these seven shoots, there may be laterals, and if they come too close or crowded, the spare ones should be rubbed off before they share any of the strength that may be wanted for the principal branches. The chances are, that I have a bloom-bud at the end of every shoot, and this third year I allow them to bloom; but, if there be two flower-buds close together, I pinch one out. If the shoot by the side of the flower makes an early push, which is the case with many varieties, I take it away; because I do not want to waste in growth the strength required for the blooms. As soon as the flowers decay, I cut all these seven down as before, regulating them to one or two (or occasionally even to three) eyes or joints, according as I see the plant requires, or does not require, branches. Every year I prune my plant as carefully as I would a Rose, cutting away all weakly shoots, and, as the new growth commences, rubbing off all the buds that are growing where I do not want branches. The Fuchsia (which gardeners seem to stake their credit on growing as fast as they can, and producing a large plant from a cutting in a single season) requires the same care as a Camellia or a Rose. We ought to form the plant from the first, only, as it is a rapid grower, we may begin to form it by pinching out the leading shoot as soon as there are three or four pair of leaves; yet I prefer allowing it to have its season of growth, and ripen its wood. It may be that lateral branches have grown out near the bottom, and some varieties are of such fine habit, that we can hardly improve them; but at the end of the season of growth, I let them rest, and before they make their spring start, I spur in all the strong side shoots to two or three eyes, and cut away weakly branches close, pruning down the centre shoot to three or four eyes above the highest spurs that I leave. The only objection that can be urged against this treatment for Fuchsias applies to but few varieties. There are some too succulent, but they will all ripen the greater part of their wood, and many will be found hard and perfectly ripe before they make the spring growth. Once get a Fuchsia to a good-shaped skeleton, as it were, and you may prune every year with the greatest advantage. I have in the Fuchsia mentioned the least favourable plant for my treatment, but I have never found it to fail in producing compact and well-furnished plants, prolific in bloom, and requiring no props. The Weigela rosea, which I have seen exhibited as a large bush, well flowered at the top, but sadly naked at the bottom, ought to be treated precisely as we should treat a Rose. The very first year that it may be called a plant, cut the main stem down within 4 inches or even 3 inches of the pot, and whatever strong side-shoots there may be, should be shortened to even less than this, even to two or three eyes, while any weak ones should be removed altogether very close to the stem. This cut-back plant will throw out numerous shoots, and every shoot will flower. I have bloomed this plant the second season (so cut back) profusely. Let it make all the wood it may after blooming, but you should cut out all the thin shoots and spur back all the strong ones. The only guide you need have will be the form of the specimen, for it is always advisable to prune away whatever is out of shape, without reference to anything else. The Weigela rosea will flower not only to the bottom of the wood, but the very shoots, that will, like suckers from a Rose, break out below the soil, will bloom also; but let the plant grow its own way, and it has far from an ugly habit, and all the lower eyes will, like those of the Rose, remain stagnant, and the flowers be, as they are usually seen, confined to the upper half of the plant. Hovea Celsi is a plant which, above all others, should be spurred; it should, however, be stopped while young within three eyes of the bottom, grown slowly, and when the three shoots have made two joints each, pinch off the third. It may be grown then till it completes the shoots, and shows its bloom-buds, when it may rest; but, before it starts into growth again, cut all the shoots back to two joints, and continue this pruning system after every bloom, and before the plant makes its new wood. All the Epacrises, many of the Acacias, Cytisus, Heaths and Azaleas, Hibiscus, or indeed most plants that are not very succulent, will be improved by more or less of the treatment to which we subject Roses, care being taken to prune before the new growth is made; and in plants which push their new growth before the bloom is over, the shoots should be removed, by pinching off the growing part. With Epacrises this is essential, for they would, if allowed, grow some inches above the flowers before they faded; besides, by pinching off the ends of the shoots early, the flowers are more equally developed. In all pruning look well to the form you desire the plants to assume when their growth is completed, and cut in accordingly. I have found the knife as useful in the stove and greenhouse as it is among fruit trees, and I feel convinced that whoever takes a professional pride in good specimens, irrespective of size, will find the most awkwardly growing subjects very obedient, if they begin in time. Under the free pruning system there will be found little need of props, stakes, and wires, every one of which is a blemish; but so long as size is to beat symmetry, and handsome growing shrubs are allowed to be exhibited in frames, and the blooming wood to be bent and tortured to cover an even surface, there will be little encouragement for those who study the habit of a plant, and produce it as it should be grown without unnatural training. So long as a plant can be grown to support itself, so long ought any specimen unnaturally supported to be rejected; but of this, perhaps, I may at some other time have something to say. *Victoire Jansin, Rue Montmartre.*

*Stove Aquatics.*—Pekin is 40° North, and Astrakan is 46° North. Therefore Nelumbium Caspium or Caspiacum (Caspicum is not Latin) requires 6° less of summer heat. Lat. 46° passes halfway between Lyons and Macon in Burgundy; and its summer heat is that which ripens the standard Grape. La Rochelle nearly coincides with that parallel. And I suspect the Volga is colder than France, under the same parallel. Besides which, this assumes the Nelumbium to exist no higher than Astrakan, whereas very likely it grows a day's journey up the Volga. *A. H.*

*Hybrid Rhododendrons.*—About two years ago we forwarded, along with some Fuchsia seedlings, a few leaves of seedling hybrid Rhododendrons, concerning which you remarked at the time, that if the "flowers proved equal to the foliage they would be grand things indeed." We have succeeded in blooming one of the plants, a poor sickly one, which is probably the reason why it has flowered this season. The following is something near the description of it. The truss is very large, each individual floret measuring 2½ inches across, and in outline it is symmetrical and perfect. We have forwarded a flower and a leaf for your inspection. We would have sent the whole truss, only we have this day engaged an artist to take a drawing of it, with the view of having the same published. This hybrid was raised from R. arboreum album, crossed with R. campanula-

tum; the plant is 15 inches in height, and is perfectly hardy, the whole stock having stood out of doors during the severe winters of 1848 and 1849 without a single leaf being injured. We purpose to call it R. Stanleyanum, in compliment to the Earl of Derby. We possess many thousands of hybrid seedlings, crossed in every possible way, and some curious things appear to be among them. Our ambition is to beat the Himalayan species, and we flatter ourselves that we shall ultimately succeed. *John Smith, Foreman to Thomas Whalley, Fairfield Nursery, Liverpool.* [The flower which accompanied this letter was 2 inches across; white, with the exception of a very few small brown dots in the throat, and well shaped. The leaf was seven inches long, and three inches broad, ferruginous below, bright green above, and stiff and leathery in texture.]

*Galvanised Iron Greenhouses.*—We have had them in use here (the residence of J. B. Faviell, Esq.) for these 18 months past, in the shape of a greenhouse, two Peach-houses, and an early forcing-house for Peaches and Nectarines in pots, of which we have a great many. The range is 78 feet long and 21 feet wide, and has a curvilinear roof; but we have also a span-roofed pit, 56 feet long, for Pines and for forcing Strawberries, &c., in. All are glazed with Hartley's patent rough plate glass, and they have answered perfectly; indeed they have surpassed our expectations. In glazing, the squares must not be put in too tightly. As room must be allowed for expansion and contractionone-eighth of an inch ought to be left on each side of the squares betwixt them and the ribs. Such houses have a neat and clean appearance, and as yet I see no symptoms of corroding about them. The following plants are in bloom in them, and look very healthy, viz., Justicia carnea, Begonia Fuchsioides, B. manicata, Cyrtoceras reflexum, Gardenia florida, G. Stanleyana, Inga pulcherrima, bearing about 30 or 40 bloom-buds, and having at present eight fully expanded heads of flowers; together with the scarlet Tropæolum Lobbianum, two Everlastings, Camellias, Azaleas, &c. I shall be happy to show our houses to your correspondent, should it be convenient for him to call on me, and give him any information on the subject that lies in my power. *J. B., Stockeld Park, Yorkshire.*

*Market Gardening round London.*—I am obliged to "Pedes" for his pointing out an error in these papers which had escaped my notice. I stated that the women who carry Strawberries to market on their heads make three journeys from Isleworth to London during the day, which would be 48 miles, but it should have been only two; for I find the middle journey is performed by different women, and this is what led me inadvertently into error. The same women, however, sometimes walk from 38 to 40 miles a day, not bad work, I consider, for the softer sex. *James Cuthill.*

*The Spanish Chestnut.*—Some years ago, I was extensively engaged in the timber trade, and being a buyer of all kinds of wood, the English Spanish Chestnut was occasionally purchased. This, however, only happened when some originally well planted park or grounds, some "Evelyn's Sylvan" was disrobed to make way for the advances of man. The uses to which the timber was applied were these; it was sawn into boards of various thickness, from three-eighth of an inch to an inch and a half, put up in the racks to dry, and then sold, chiefly to the cabinet or furniture-makers; it was, in fact, considered a "cabinet-makers' wood," and, for these reasons, it is usually very straight-grained, and nice working wood, and when dry, not liable to twist or warp much, which quality to a cabinet-maker is desirable; but it has this very serious objection, viz., it is horribly *shaky* wood, that is, it is very liable to split in drying, and when dry, and this is very mortifying to a workman, who, when he has cut his piece to its proper size, and begins to make his small mortice and dovetail, finds his wood to "fly," as he calls it; the Spanish Chestnut, therefore, was always looked upon rather shyly by the cabinet-makers, and was never purchased except at a low price. I should not pronounce the wood worthless, but the tree is certainly not worth growing in this country and climate for the value of its timber. *J. C. M., Liverpool.*—For Hop-poles, the Spanish Chestnut may be considered about equal to the Larch, as respects durability, and it is extensively cultivated for this purpose in the middle of Kent. In regard to its timber, full three-fourths of the trees which attain a size to yield 30 cubic feet of wood and upwards, are what is called in the trade heart-shaken; and this very serious defect is not indicated by any outward signs, as is the case with certain kinds of Elms, which are affected in a similar way; on the contrary, the bark is often smooth and unbroken, and even in the butt end there is often nothing to denote the evils which exist further up the bole. After the saw has been passed a few times up, you will, however, begin to discover its fraudulent character, for you will most likely have more pieces of timber than you expected. Rents in occasional or partial concentric rings, as well as in the shape of others radiating to the centre, will exist to such an extent as quite to disqualify the timber for most of the purposes for which it would otherwise be used. These evils are to be regretted, for the wood in all other respects is equal to Oak, which it resembles. Trees of smaller size are less liable to be heart-shaken, but they are too small for many purposes. It is difficult to account for such defects; it would appear as if the longitudinal fibres forming the trunk were more numerous or more effective (?) than those of a transverse kind; and the fact of the timber rending so easily for laths, palings, shingles, &c., would imply such to be the case. The roof of Westminster Abbey was long supposed to be the Sweet Chestnut, but you have lately told us it is Oak; now, without wishing to re-open the question, if there be no documentary evidence to prove the fact, I can hardly think that any examination of the timbers now can set the matter at rest. Sweet Chestnut much resembles Oak at all times, but the resemblance is increased with age. *An Old Sawyer.*—I have grown Spanish Chestnut for Hop-poles, being the most durable of any wood, and it is planted in Kent solely for that purpose. I have also used it in the place of Oak for posts and ground-sills; and from what I have seen of it I have no doubt it will last as long. The best use I have ever made of it is for floor-boards, for which I believe there is no English timber equal to it; the only fault I have ever found is, that it is very apt to be shaky and cuppy. *H., Watford.*—The contradictory accounts that are current as to the value of Spanish Chestnut timber are easily reconciled. The fact is, I believe, that the timber is of exceellent quality—hard and durable. Unfortunately it is very liable to be (what is called) *cuppy*, that is, there is a singular want of adherence between the annual rings of wood, so that the timber falls to pieces under the saw. This defect is so very prevalent, that among 50 trees you will hardly find one that is free from it. Of course such trees are utterly worthless as timber. *Dorking.*—About the year 1805, I well remember a conversation which passed between my father, a devoted botanist and arborist, and a very intelligent Scotch gardener, named Gregory, who was the manager of the woods and plantations for many years (and, indeed, until his decease), at Milton Abbey, in Dorsetshire, then the seat of George Damer, Earl of Dorchester. The durability, I had almost said the indestructibility, of Spanish Chestnut wood, was instanced by Mr. Gregory in the fact that they had been removing some railing that had been put up with Spanish Chestnut poles, 30 years before, to protect some fences round the plantations in the demesne, and it was with difficulty they could either draw the nails or cut the rails, except with the saw; Mr. Gregory's expression was, that they turned the edge of the axe. Having been a great admirer, as well as a planter of this picturesque and beautiful tree, I remember the more distinctly this account of its properties; and, I believe, it is still a matter of doubt, after much controversy at different times on the subject, whether the magnificent, and yet undecayed roof of Westminster-hall, be not actually of Spanish Chestnut. The extensive woods at Milton Abbey are to a great extent interspersed with Spanish Chestnut, much of which is regularly cut for hurdles and poles, with the Hazle and Oak. The soil is a cold flinty loam, on chalk, and hilly; but the Chestnut thrives all the better in sheltered spots. *K., Dorchester.*

*Malformed Leaves.*—Perhaps the circumstanee of two leaves forming a union (of which I enclose a specimen from a Fuchsia in my possession) may not be rare in the experience of amateur growers of more extended practice than I have had. The question I feel disposed to ask concerning it is, whether this is (as I suspect) an instance of imperfect development owing to insufficient vitality in the plant—or is it a monstrous formation of a merely accidental character? It seems probable that some attention paid to such deviations from the ordinary habit of growth might tend materially to elucidate important facts connected with the laws of vegetation. There are other leaves on the plant in a rudimentary state, which seem also to be growing double. A few words upon the subject would greatly oblige, *K.* [These cases are not at all uncommon; and have been frequently mentioned in our columns. The leaves in question are naturally grafted together by some accidental cause, the history of which is now obliterated.]

*Rain.*—We have had the large quantity of 6.245 inches of rain here in the month of January, 1851, and 30 days on which rain was found in my gauges. The above quantity is the mean between two gauges, one on the top of a tower, 42 feet 6 inches from the ground, which showed 7.201 inches, and the other, 5 feet 6 inches from the ground, 524 feet east of the other, but equally exposed, which had only 5.290 inches. This great difference does not seem to be accountable by any perceptible cause. It may, perhaps, serve to show how very partial rain is sometimes. During the same month, at Bowness, Windermere, 13.283 inches have fallen in fewer wet days, viz., 28. In February, 1848, at Bowness, 13.404 inches fell. *T. S. P., Pembroke Dock-yard, Feb. 5.*

*Parsnips.*—On referring to page 228, for 1850, I find the "Turnip-rooted" and "Le Bâtard Yellow" Parsnips mentioned. I would thank you much if you could inform me whether they are desirable sorts to grow, and I should be likely to get true seed; for I find the expense of trenching for, and taking up, the longer varieties so great that they are hardly worth growing; and, in a wet autumn, there is great injury done to the clay land. *W. T. B.* [The Bâtard or Siam Yellow you will probably not be able to obtain. Any seedsman ought to be able to supply you with the Round or Turnip-rooted, which appears to be the one most suitable for you; it is an early sort, therefore you should have some of the Hollow-crowned for late use.]

*Twigs of Spruce Fir* (see p. 182).—A correspondent complains that his Spruce Firs shed their young branches. I have no hesitation in corroborating your opinion and in stating that squirrels are the cause of the evil, for I have frequently observed the depredators at work; they first gnaw out the young buds when the latter begin to swell, and then they bite off the twig. Perhaps the only way of preventing the mischief is to shoot the marauders whenever you can get at them. *J. P., Stoke Rochford.*

*Conifers, more especially the Deodar.*—I have just read the remarks on Conifers, by "Pinus Gloucesterensis," at page 150; and in reply to his invitation, send some information which may interest him and others, such as "J. H.," who writes to you on Deodars, at page 166. First, as to the variation in the number of leaves in the sheath, I have a Pinus patula with three and four leaves in one sheath on the same branch; though I have not observed this to be the case in any other Pine which I have examined. Situation and soil no doubt influence the habit of any tree; but can these causes go so far as to change the number of leaves in the sheath? I think not: I consider that the variation is rather a freak of Nature. The Deodars mentioned by "J. H." show the influence of soil and situation. I would not go so far as to cut them down; they may yet improve; and I would like to know from "J. H." whether there are any large trees near them; as I have a Deodar about 10 feet high, which is in ground which was a garden about 60 years ago, and which grows much in the way he describes. There being some large trees near it, made me think it was "running away" from them, but now I am rather inclined to attribute its habit to the richness of the soil. The main stem of the Deodar will not run away from the wind, though it may become a little one-sided from the young shoots slashing together to windward, when there is a prevailing wind playing on it, as I have found to be the case here, where the west and south-west winds prevail. As we are speaking of the Deodar, I will put a question, which I am curious to have answered. Is the tree, which is commonly called the Deodar with us, the same tree as the natives of its habitat call the Deodar, or the name answering to it? A gentleman, who was many years resident in the Himalayas, has assured me that there quite another tree is called the Deodar, the timber of which is worthless. The timber of the tree we call the Deodar is much valued there, and plantations are made of it, for the purposes for which we use Larch in this country. In compliance with "J. H's." wish, I send the following dimensions of Deodars, and also of a few other Conifers.

| Name. | Height when Planted. | Date of Planting. | Present Height. | Diameter of Extent. | Circumference of Stem. |
|---|---|---|---|---|---|
| | ft. in. | | ft. in. | ft. in. | |
| Cupressus Thurifera | 1 10 | Oct. 1847 | 7 6 | 8 0* | ... |
| Abies Deodara ..... | 3 6 | Feb. 1846 | 6 0 | 8 0 | At 1 ft. 4 in. from the ground—10 inches.* |
| Pinus excelsa ..... | 1 4 | Feb. 1846 | 7 4 | 5 0 | ... |
| P. patula ..... | 1 7 | Feb. 1846 | 6 8 | 7 6 | 11 inches.† |
| Abies Deodara ..... | 4 6 | Feb. 1846 | 10 0 | 8 6 | ... |
| Pinus insignis..... | 1 10 | Feb. 1846 | 11 0 | 9 0 | 1 ft. 7 ins. at 1 foot from the ground.‡ |

I find that Pinus Austriaca, to which "P. Gloucesterensis" refers, is placed among the "Binæ" "leaves generally two in a sheath," in Knight and Perry's catalogue, which is a very useful little publication. As many will now be putting out Conifers, I hope you will warn them against merely turning out the plants (if in pots) without spreading the roots. Many, I think I may say most growers, are in the habit of leaving the roots of the young tree coiled up in a ball, the shape and size of each pot it is changed from. If the tree is allowed to remain in this state, till the roots become too stiff to be straightened out in some degree, the unhappy amateur, after giving perhaps a pound for the specimen, sees it, after growing luxuriantly for the first summer or so, turned over by the high winds in autumn or spring. Then comes some kind advice: "Put a good strong stake to it;" but the roots, though unable to support the tree, from their being in a wisp about it, nevertheless give a great increase of vigour, having been turned out of the dry pot into the fresh earth, so that the tree goes ahead. The stake does its duty well for some time; that is, it gives the stem an artificial steadiness, so Nature neglects that part, and the tree becomes top heavy. The end soon comes; either the stake rots and breaks short off in some gale, when down comes the petted and protected plant, or else the tree grows till it gets too large and heavy to be supported. The only effectual remedy in such cases is to head down the tree till the part left can support itself, when it soon throws out a new leader. I am glad to see that Mr. H. Waterer professes to move his plants every year; however, people at a distance must get trees in pots, in which case I would advise them to get them young, and turn them out in an enclosed bit of ground till strong enough to plant in their final situation. *Pinus Hibernicus.*—I have planted many Deodars in various situations, some of them have made hardly any growth in two years. Would superphosphate of lime, applied to their roots, be of service to them, and in what proportion should it be used? *Newstede.* [We have no experience in favour or against it with Conifers; it should be tried experimentally.]—Having raised many Deodars from seed, I find that they are invariably pendulous in the leading shoot until the latter is nearly a year old. Thus the last year's shoot is just now beginning to rise, and

* This tree was cut down by frost in the winter of 1848-9.
† Leader cut off by Hylurgus piniperda in 1849.
‡ This had a leader of 5 feet cut off in 1848.

this summer's growth will be pendulous. I find, however, that the stems of my trees are beautifully straight, and the pendulous character of the summer shoot adds very generally to the beauty of the tree. My trees are planted in a poor sandy soil, on an elevated situation. I find they grow, on an average, about 2 feet a year, with a foliage so thick and dense as to be impervious. The colour, a beautiful light green, with a bloom like that of green tea. All the Coniferæ grow well with me, the Douglas Fir growing 4 feet in a year. But no Fir equals the Deodar in beauty. *A Constant Reader, Sussex.*

## Societies.

National Floricultural, *March* 27.—Mr. Arthur Henderson in the chair. At this, the first general meeting, the minutes of the preliminary one were read and confirmed, and such other arrangements as were considered necessary, to commence the business of the Society on April 3d, were completed. In addition to the 54 members already enrolled, the names of 44 new candidates for election were proposed. The first meeting, for the exhibition of seedlings, will take place on Thursday next; and the following censors are specially appointed to attend at 12 o'clock on that day, for the examination of such subjects as may be submitted to their inspection:—Mr. J. T. Neville, Peckham; Mr. C. Lidgard, Hammersmith; Mr. John Fraser, Leabridge; Mr. A. Parsons, Ponder's-end; Mr. J. Cole, Birmingham; and Mr. E. A. Hamp, South Lambeth.

Caledonian Horticultural, *March* 6.—Professor Balfour in the chair. There was a good display of spring-flowering hardy and exotic plants; and the day being fine, the attendance was large. Prizes were awarded as follows:—Nurserymen: 18 Hyacinths, first, Messrs. J. Dickson and Son, with the following varieties: Tubiflora, Lord Anson, Bouquet à Vendre, Mammosa, Voltaire, La Grande Vidette, Orondates, Prince Albert of Prussia, Grand Lilas, La Candeur, Nimrod, Prince of Waterloo, La Patrie, Belline, Pronjuwell, L'Unique, Baron von Thuil, and Emmicus. Second, Messrs. Dickson and Co., with Lord Wellington, Tubiflora, Oscar, Laurens Koster, Charles Dickens, Madame de Stael, Goudbeurs, Bellona, Poniatofski, Amy, Baron von Thuil, Bloksberg, La Grande Vidette, Tullia, Prinz Metternich, Kroonprinz, and Voltaire. Practical gardeners and amateurs: first, Mr. Douglas, gr. to Sir J. D. Lauder, with Lord Wellington, Orondates, Elizabeth de Valour, Prince Albert, Grand Lilas, Voltaire, Tubiflora, and Baron von Thuil; second, Mr. Nicol, gr., Orphan Hospital, with Prince Albert, Nimrod, Emmicus, La Tour d'Auvergne, Baron von Thuil, Grand Vainqueur, and Laurens Koster; third, Mr. Mitchell, gr. to Lady Keith. Camellias: first, Mr. M'Lean, gr. to W. F. Mackenzie, Esq., M.P., with Fimbriata, Carswellianna, Candidissima, Hendersoni, Imbricata, and Double White; second, Mr. Reid, gr. to J. Wauchope, Esq., with Eximia, Imbricata, Fimbriata alba, Restowii, Double White, and Gray's Invincible. The prize for the two best and most distinct varieties of Epacris was assigned to Mr. Reid, gr. to Professor Syme, for two seedlings raised at Millbank, named Christisonii and Thomsonii. For the two finest and most distinct varieties of Cineraria, two prizes were awarded; the first to Mr. Addison, Gosford, for Climax and Lady Prudhoe; and the second to Mr. Mitchell, Ravelston, for Pauline and Cerito. The prize offered for the three finest spring-flowering hardy herbaceous plants, grown in pots, was awarded to Mr. Addison, who produced Narcissus pumilus and Bulbocodium, and Saxifraga oppositifolia grandiflora. For the three best sorts of Pears, fit for the dessert, the prize was gained by Mr. Hamilton, gr. to Sir D. Kinloch, with Glout Morceau, Passe Colmar, and Poire d'Auch. There was a close competition for the prize offered for the heaviest stalks of forced Rhubarb. The first premium was awarded to Mr. Goodall, gr. to the Marquis of Lothian, for six stalks of Victoria, weighing 7 lbs. 9 oz. A second prize was voted to Mr. Henderson, gr. to C. K. Sivewright, Esq., for six stalks of the same variety, weighing 7 lbs. 6 oz., and of excellent quality. There were many excellent productions sent for exhibition only, not for competition, and thanks or honorary awards were voted for them according to circumstances. Messrs. Dicksons and Co. sent a hamper of beautiful Hyacinths, and a finely flowered plant of Daphne Fortuni. Messrs. J. Dickson and Sons likewise sent fine Hyacinths. Mr R. M. Stark produced plants of Acacia lineata and pentadenia, and several other exotics. Mr. Carstairs exhibited a dozen stalks of Prince Albert Rhubarb from the open ground, without protection, weighing 3 lbs., and averaging 9 inches in length. Mr. Handasyde showed fine plants of Helleborus olympicus, Sisyrinchium grandiflorum, Iris persica, new large Russian Violet, &c. There were beautiful plants of Arum triphyllum zebrinum, A. cornutum, Epimedium Muschianum, and other rare Alpines, from the garden of Dr. Neill, Canonmills Cottage; together with a plant of Tussac Grass (Dactylis cæspitosa) in flower. From the garden at Wishaw House, a seedling Camellia, named Lady Belhaven, of a rosy pink colour, well formed, and of good size, having the petals regularly arranged in a spirally imbricated manner. From C. K. Sivewright, Esq., there were eight beautiful Cinerarias, and two specimens of Chinese Primula, showing superior management; and from Professor Dunbar, a peculiar variety of Trillium grandiflorum, with party-coloured flowers of white and green. From the gardens of the Earl of Rosslyn, blooms of promising seedling Cinerarias and several fine Rhododendrons, including the true R. cinnamomeum, and a light coloured seedling of good form raised at Dysart. Prof. Syme sent two beautiful seedling Epacrises; and J. Aitken, Esq., several fine Hyacinths. Mr. Shearer, gr. to the Marquis of Tweeddale, sent four seedling Cinerarias, for two of which, a blue and a purple, a Certificate of Merit was granted. Mr. G. Stirling contributed a fine set of Alpines, including beautiful Scillas, Primula speciosa, and cut flowers of Helleborus olympicus. Mr. A. Forrester also exhibited a collection of Alpines, including the rare Leontice altaica, Primula altaica, and Cochlearia acaulis. Two beautiful bouquets were exhibited by Mr. Jaffrey, foreman at Warriston Lodge. A fine bouquet also came from Mr. Reid, of Edmonston. Several well flowered plants of Cinerarias and Camellias were furnished from the Society's collection. Messrs. R. Thomson and Son sent for exhibition a new portable garden engine; and specimens of Hall's garden netting, for protecting fruit blossoms, were exhibited from the manufacturers. Several new members were elected, and the following communications were read: 1. "On Growing and Preserving Cauliflowers for Winter Use," by Mr. Pender, Moredun. 2. "On the Cultivation of Plants in Sphagnum Moss," by Mr. Shearer, Yester House.

Botanical of Edinburgh, *March* 13.—Professor Balfour in the chair. The following papers were read:

1. *On Lastrea uliginosa*, Newm. By T. Moore, F.L.S. The author endeavoured to show that this Fern cannot be reckoned as a species. He considers it as a variety of *L. cristata*.

2. *Notice of British Hieracia.* By J. Backhouse, junior.

3. *On the Berwickshire Station, for Anacharis Alsinastrum.* By Dr. Johnston.

4. *Report on the state of Vegetation in the Edinburgh Botanic Garden from Feb.* 14 *to March* 13, 1851. By Mr. M'Nab.

| | Date of flowering. 1851. | Date of flowering. 1850. |
|---|---|---|
| Cornus mascula ... ... | Feb. 14 | |
| Anchusa sempervirens ... ... | 14 | |
| Primula denticulata ... ... ... | 15 | February ... 23 |
| Holosteum umbellatum ... ... | 16 | |
| Orobus vernus ... ... ... ... | 17 | ... ... 23 |
| Adonis vernalis ... ... ... | 18 | March ... 16 |
| Tussilago Farfara ... ... ... | 19 | February ... 27 |
| Nordmannia cordifolia ... ... | 20 | ... ... 28 |
| Hyoscyamus Scopolia ... ... | 24 | March ... 1 |
| Arabis præmorsa ... ... ... | 26 | |
| Erythronium Dens-canis ... | March 1 | ... ... 11 |
| Aubrietia grandiflora ... ... | 1 | ... ... 24 |
| Gagea lutea ... ... ... ... | 2 | ... ... 20 |
| Aubrietia deltoidea ... ... ... | 3 | ... ... 21 |
| Kerria japonica ... ... ... | 4 | |
| Saxifraga crassifolia ... ... ... | 4 | ... ... 20 |
| Mercurialis perennis ... ... ... | 4 | |
| Ribes sanguineum (first flower opened) ... ... ... ... | 5 | ... ... 11 |
| Narcissus pumilus ... ... ... | 5 | ... ... 4 |
| Hyacinthus orientalis ... ... | 5 | April ... 8 |
| Narcissus Tazetta ... ... ... | 6 | |
| Scilla bifolia cærulea ... ... | 6 | March ... 13 |
| Scilla bifolia alba ... ... ... | 8 | ... ... 14 |
| Omphalodes verna ... ... ... | 10 | |
| Lamium garganicum ... ... | 10 | |
| Hyacinthus botryoides ... ... | 11 | ... ... 18 |
| Viola suavis ... ... ... ... | 12 | |
| Fritillaria imperialis ... ... ... | 13 | ... ... 20 |
| Scilla præcox (Canonmills Cottage) ... ... ... | Feb. 20 | |

Mr. Evans observed the first flowers of Moorpark Apricot to expand on the open wall in the Experimental Garden on the 21st February. The earliest flower produced on the same tree last year opened on the 1st of March.—Mr. M'Nab exhibited flowers of Camellia pæoniflora from a plant growing on the open wall of the Botanic Garden. The plant is 10 feet in height, and the spread of its branches is in all 14 feet. There are at present 560 flower-buds on it. No other variety has been grafted upon the plant; but some of the flowers exhibited were completely white, others completely pink, others with one half white and the other half pink, and some with shades of white and pink in the same petal.—Messrs. P. Lawson and Son sent for exhibition a collection of wax models showing the appearance of the various cultivated Potatoes, Beans, Peas, Kidney Beans, and Onions; also specimens of woods so cut and arranged as to exhibit at one glance the transverse and longitudinal sections of each tree, both polished and rough. The models and specimens illustrated the mode in which Messrs. Lawson purpose to supply articles for the Exhibition of 1851. Messrs. Lawson also exhibited a large collection of coloured drawings, in which the varieties of cultivated vegetables were accurately delineated. The drawings embraced varieties of Turnip, Carrot, Radish, Mangold Wurzel, Beet, Onion, Cabbage, &c.—Richard Innes, Esq., 9, Roxburgh-street, was elected a Fellow.

## Garden Memoranda.

Messrs. Weeks and Co.'s Nursery, King's Road, Chelsea.—An attempt has been made here to cultivate the Royal Water-Lily in the open air. A circular basin, 21 feet in diameter, has been formed for it, and the Lily has been planted. It is at present covered by a three light frame; but it is intended to remove this as soon as the plant has become perfectly established. Since it has been in its new situation it has made two or three fresh leaves, which are about 2 feet in diameter, and apparently healthy. The root occupies a brick tub in the centre of the tank, containing about two cart-loads of loam and river sand. Round this are led two rows of hot-water pipes, and a raised one passes along the frame, furnishing the latter with a surface heat of about 70°, while that of the water is about 80°. These pipes are warmed by a boiler 14 yards from the basin, and which also supplies heat for a range of houses immediately in connection with it. After the frame is removed, it is proposed to cover it with canvas supported on iron rods in such a manner that it can be opened or closed at pleasure. This has been provided in order to guard against very unfavourable weather; but it is apprehended that its use will not be much needed. The basin was constructed in this manner: After removing the mould to the required depth, the bottom was well puddled with clay about 9 inches thick; over this a layer of loose bricks was placed, commencing in the centre, and carrying them up to the top of the basin. The hot-water pipes are raised one brick above the rest. In this way a tank has been made at a very trifling expense, for the culture of the different low-growing stove aquatics which are intended to be placed in it.

Mr. Solomon's Forcing Grounds, Peckham Rye.—Mr. Solomon, who is a large fruiterer in Covent-garden, has established these grounds with the view of furnishing his shop with good fruit of his own growth, instead of depending entirely for his supply on extraneous sources. The whole place is not much more than half an acre in extent, and is nearly covered with glass. One house, a lean-to, about 100 feet long, was full of Grapes, and presented a fine appearance. The Vines are placed one under each light, with their roots spreading into the outside border; the bunches were (March 24), just beginning to colour. They were very large, and appeared as if they would be excellent Grapes. The straw with which the outside border had been covered had just been removed. Straw, as a covering, is preferred here to old tan, which is said to be objectionable on account of its not allowing heat and air to penetrate it sufficiently. No heating material is employed; the only covering the borders receive is a good thickness of long loose straw. Attached to this Vinery is a Strawberry house, which, when we saw it, was full of blooming plants of Keens' Seedling, and for health and show of blossoms it would be difficult to surpass them. This house was succeeded by a third and a fourth, both full of Vines bearing fruit about the size of Peas. In the fifth house, a long one, Vines are planted on the back wall as well as in the front. Lastly, we entered a Muscat house, containing a very fair crop of this delicious Grape; the bunches were large, and will be very forward. The whole of the houses are heated with hot water in iron pipes, and the fuel used is coke. Small coals are not liked; they do not give out sufficient heat, and they choke up the passages and small flues which surround the boiler with soot. In the Pine pits, of which there are several, there was a promising crop of fruit, and all the plants exhibited excellent health. A pit was filled with Cucumbers upon trellises. The sort was Cuthill's Black Spine, which had been in bearing all the winter Another pit, full of Keens' Seedling Strawberries, in flower, being passed through, we entered a small house full of Vines in pots. These had a fair crop on them. The Vines are all painted over annually with a mixture of lime, soot, sulphur, and soft soap, and the houses are also washed with hot lime, which keeps them sweet and clean.

## Miscellaneous.

*On the Composition of the Walls of the Cells in Plants; with Observations on the Potato Disease By Prof. Mitscherlich.*—The change which cellulose undergoes by the action of a peculiar ferment is of very remarkable interest, and characteristic of the substance. This fermenting agent is obtained when half-putrid Potatoes cut up into pieces are placed in water, with portions of fresh Potatoes, and allowed to stand, in a not too cold place, until the cells of the fresh portions begin to be easily separable; it is also formed, though more slowly, when fresh Potatoes, cut up, are set aside, covered with water. The liquid is filtered, and fresh Potatoes, cut in slices, added to it; when these are decomposed, a portion of the liquid may be treated with water, and more slices of Potato added, which soon become decomposed, and in this manner increase the activity of the liquid. Hence, just as in the fermentation of an infusion of malt, the yeast, the fermentative fungus, becomes augmented, so does the ferment increase. It only acts upon the cellulose, which, without any other admixture, forms the walls of the cells of the Potato, which are filled with starch; first, the cells separate from each other, so that it furnishes us with a more convenient and perfect means of obtaining the cells with their contents separate from each other, and facilitating their examination; the walls of the cells are subsequently also dissolved, and the starch particles fall out; in this manner, in 24 hours, a slice of Potato is rendered so soft, to a depth of 2 lines, that this portion can be removed by a pair of forceps, the hard mass of the Potato lying beneath the softened layer; so that this process takes place successively from the outside towards the interior; not by the whole of the Potato being simultaneously permeated by the ferment to the innermost portion. No trace of a fungus can be found in the active liquid; it is, however, full of Vibrions, which may in this case be the effective agents. The author is in the hopes of discovering the substance into which the cellulose is converted; hitherto he has not succeeded in obtaining it. Exactly the same process as that which we can produce spontaneously, occurs in the Potato disease, which, during late years, has done so much mischief. In this also, the cellulose, and not the starch

is decomposed; and the liquid, which the author had kept for a long time in contact with one of the diseased Potatoes, immediately produced the decomposition of a sound one. This decomposition is, therefore, not the disease itself, but merely the result of it. Its cause undoubtedly depends upon the dying, or the previous death, of the entire plant; and just as it is well known in the case of other plants, that they die when the apices of their roots are too strongly cooled, so may a sudden cold rain, following a long warm winter, produce a similar condition of the Potato plant. There is another solution of cellulose, which is also of peculiar interest in regard to vegetable physiology,—cellulose which has been deposited; and when the walls of the cells consist of it alone, the entire walls of the cells become dissolved and disappear. This may be most distinctly and beautifully traced during the germination and development of plants, when taking place at the expense of substances which have been deposited. Seeds of the cerealia are allowed to germinate in contact with water only, by causing the grains first to germinate between pieces of wet paper, and then to develope themselves in glasses filled with water; a glass plate, furnished with small holes, being placed upon the surface of the water, the roots are placed in these holes, the grain resting upon the plate. In this experiment, the alterations undergone by the starch itself may be observed; in three or four weeks it is seen that the point of the first leaf begins to turn yellow. This is a sign that all the starch is consumed; if the grain be examined, the interior is perfectly empty, not only the starch, but also the cellulose having disappeared; the plant continues to live for a certain time, the young leaves being nourished by the absorption of the constituents of the older ones; the plant, however, soon dies, because it cannot obtain in this manner those constituents derived from the soil, which are necessary to its nutrition; in the Potato disease, the cause of the death of the plant may be the death of all the delicate points of the roots, when they are consequently unable to derive the requisites for the continuance of their existence and their development from the soil. In the parent Potato plant, during the development of a new plant from it, absorption of the cell-wall does not take place; usually a considerable part of the cells is still full of starch, so that for the new plants to be developed, so as to acquire their independence, a portion only of the parent Potato is requisite. The absorption of the cellulose takes place also in pith; the walls of the young cells of the pith of the Elder consist entirely of cellulose in the spring, whilst those of the previous year no longer contain any of it. *Ann. der Chem. und Pharm.*, lxxv. p. 305; *Reports of the Berlin Academy*, March, 1850, p. 102. *Chemical Gazette.*

*Bedding Calceolaria.*—I beg to recommend to your readers Calceolaria Kentish Hero as a bedding-plant. It is one of the very best for the purpose with which I am acquainted. I took up a bed of it on the 15th of last November, which had been in bloom for several months, and it was then quite a blaze of beauty, although there had previously been a smart frost and much rain, so that nearly every other bed had become miserably shabby, except the hybrid Anemone between japonica and vitifolia, which is also a beautiful bedding-plant, and flowers very well in damp situations. The Kentish Hero is of a bronzy colour; it is partly shrubby, and belongs to a section of the genus more prolific, as regards a succession of bloom, than either the true herbaceous varieties, or those from rugosa and integrifolia. I would advise those who have it not, to procure and make the most of it; one good plant bought in now would furnish dozens for bedding against another season. It strikes readily at any time in a very slight bottom heat. One thing requires notice, that the plants should be well supported with sticks when out of doors; otherwise, as the trusses are large, when the flowers get filled with rain, the stems are apt to break down. *Beck's Florist and Garden Miscellany for* 1850.

## Calendar of Operations.

*(For the ensuing week.)*

### FORCING DEPARTMENT.

Vineries.—Attend regularly to stopping and tying the shoots and thinning the berries. In regulating the bunches, it is well to consider whether a few very large ones will or will not be more desirable than a greater number of smaller bunches. Gardeners usually find those of a moderate size, averaging little more than a pound in weight, more generally useful than very large ones, from the greater facility with which they may be set on the dessert dishes. For this reason, the long, diffuse shoulders of very large shows should be removed; and the loss in the weight of individual bunches will be amply compensated for by the greater number of useful ones, and the larger size of the berries. Examine the state of the inside borders as regards moisture; and in this do not be satisfied with the appearance of the surface, which is frequently kept moist by syringing, but examine the soil 10 or 12 inches lower down. If any water is necessary, use manure water at 80°. If the border has become rather dry, the impulse given by this will be immediately visible in the vigorous and rapid expansion of shoots and leaves. Peach-houses.—Take care that the inside borders do not get too dry, but supply them with liquid manure as often as the state of the soil requires it, previously loosening the surface, that the water may penetrate all parts of the border equally. The period between the setting and the stoning of the fruit is a critical one, and during that time they should not be hurried forward by undue excitement, or they are very liable to cast their fruit; but after this stage is securely passed, they will stand almost as much heat as a Pine. They delight in a high, humid atmosphere, if accompanied with abundant ventilation. Cherries and Apricots.—Where fruit is swelling, maintain a night temperature of 55°. Give abundance of air, and on fine afternoons close at 80°, and syringe immediately with clean water. These fruits require to be forced very gradually, and a high night temperature should be carefully avoided. Melons.—Pits or frames heated by linings, will require to be well watched, and some stable-litter and leaves in a warm state should always be in readiness to renew the linings whenever the heat is perceived to be declining. Beds made wholly of dung should be about 4 feet high at the back and 3 feet at front, as, if made lower, they are more difficult to keep warm. The temperature of the pit should be about 68° to 72° by night, with a little ventilation, and 80° to 90° by sun heat during the day, with a freer admission of air, according to the state of the extreme atmosphere, and with a bottom heat of 80° to 87°. The soil, which should consist of fresh loam of medium strength, that has been sweetened by exposure to the atmosphere for two or three months, should not be watered much at this early period of the season; as, when once the soil becomes soured by too much moisture, the health of the plants will soon suffer irremediably. Previous to watering ascertain the state of the soil to some depth, and if, as it will generally be found, the surface only requires moistening, it should be sprinkled with a syringe or fine-rosed pot at shutting up time; but when the entire bed of soil becomes too dry, it should then be thoroughly watered. Attend to the thinning and regulating of the shoots of those which are now advancing, keeping the leading shoots a considerable distance apart, so that the fruitful laterals may not be too much confined. After a sufficient number of fruit has been set upon each plant, and they seem to be quite safe, let the laterals spread freely, so as to cover the space allotted to them; as a large surface of foliage exposed to the full action of the sun, without being crowded, will give greater size and better flavour to the fruit. Our own plan is to put the plants in close to the front of the pit, and train the leading shoots under the centre of each light, until they reach the top of their trellis, when they are stopped, and the laterals allowed to fill up the remaining spaces, taking care that no leaf overshadows its neighbour.

### FLOWER GARDEN AND SHRUBBERIES.

Finish planting out biennials and perennials from the reserve garden, and dividing large batches of herbaceous plants. Plants of these kinds, including Hollyhocks, Delphiniums, &c., must be carefully guarded against the attacks of snails, by forming a ring of soot and lime round the plants, and scattering a little over the surface of the soil. The decaying remains of last year's stems should also be removed, and the soil neatly levelled round them, to destroy any lurking places which the enemy may have about the crowns of the plants. The Hollyhock is now becoming a general favourite in the flower garden, owing to the pains which florists have lately taken to improve upon the old common varieties. To grow them in perfection a deep rich soil is necessary; and if the ground about the old plants does not answer to this description, let it be improved by forking in some well-rotted dung; and during the growing season, let the plants have frequent waterings of liquid manure. Borders of mixed herbaceous plants are very appropriate and beautiful in certain situations, if tastefully arranged as regards height and habit of growth, colour, and season of flowering; but owing to a want of attention to these particulars, beds of this kind are generally considered dull and uninteresting. It is impossible to effect a proper arrangement of the plants, unless some means be adopted of distinguishing them when they are in a dormant state, by correctly naming them as they come into flower, and taking memoranda of their height, colour, season of flowering, and other peculiarities.

### FLORISTS' FLOWERS.

Dahlias.—These should now be in active operation. Start the main roots in a hot-bed, and remove the shoots when two or three inches long, placing them round small pots in sand, and plunging them in the bed. Keep close, and they will soon be sufficiently rooted to pot off. Tulips.—Showers, accompanied with hail, and sometimes frost, may be expected; therefore, take particular heed as to the state of the weather. It is an easy matter to put over a few mats, should there be frosty indications; and as the buds are rising in the foliage, they would be seriously injured, and perhaps the hopes of the season be blasted, for want of the necessary precaution. Auriculas.—Nothing better than abundance of air at all favourable opportunities. Do not forget some liquid manure, made from sheep droppings; it is efficacious and safe. We do not recommend at this season moving the surface soil with a "peg;" it is sadly detrimental to the fibres.

### KITCHEN GARDEN.

Young seeds of the Brassica family should be carefully guarded against the depredations of birds, by covering them with netting, and from the attacks of slugs, by sprinkling a little lime and soot among them. Tomatoes and Capsicums should be sown in heat, and potted off, three plants in a four-inch pot, in a rich loamy soil, as soon as the young plants will bear handling. Seakale should now be sown; or the strong roots of old plants that have been forced may be cut into pieces about two inches in length, and put into pans or boxes in a gentle heat, until the young shoots appear, when they may be gradually hardened. They should be planted in rows two feet wide, and one foot apart in the row; having first rubbed off all the shoots but the strongest. It is advisable always to save the roots of forced plants, until the seeds, if any have been sown, have proved good. While the ground is so wet, it will be well not to do much upon it in the kitchen garden, especially where the soil is of a strong retentive nature. The renewing of box and other edgings, and cutting hedges, &c., may now be proceeded with, as this work can be done without going much off the walks. Damp days are also favourable for a general brushing up of the turf previous to rolling and mowing, and for examining the drains from the walks, to see that there are no obstructions to the water passing freely off. There are a great number of little matters to get done during days that are too damp to work upon the ground, which, were it always fine, would be deferred; so that, even at this busy season, a wet day is often the cause of much good being done in a garden.

State of the Weather near London, for the week ending March 27, 1851, as observed at the Horticultural Garden, Chiswick.

| March. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 21 | 18 | 29.310 | 29.232 | 56 | 40 | 48.0 | 44 | 43 | S.W. | .02 |
| Satur.. 22 | 19 | 29.108 | 28.753 | 56 | 41 | 48.5 | 44 | 43½ | S.W. | .44 |
| Sunday.. 23 | 20 | 29.278 | 28.995 | 51 | 39 | 45.0 | 44 | 43½ | S.W. | .13 |
| Monday 24 | 21 | 29.589 | 29.281 | 50 | 34 | 42.0 | 44 | 44 | S.W. | .02 |
| Tues.. 25 | 22 | 29.732 | 29.452 | 51 | 45 | 48.0 | 44 | 44 | S.W. | .14 |
| Wed.. 26 | 23 | 29.495 | 29.391 | 54 | 35 | 44.5 | 44½ | 44 | S.W. | .17 |
| Thurs.. 27 | 24 | 29.540 | 29.516 | 56 | 44 | 50.0 | 44 | 44½ | S.W. | .02 |
| Average.... | | 29.436 | 29.231 | 53.4 | 39 7 | 46.5 | 44.1 | 43.8 | | .94 |

March 21—Low hazy clouds; fine; clear and fine at night.
— 22—Rain; heavy rain; in showers at night; boisterous.
— 23—Densely clouded; rain at night.
— 24—Overcast; densely clouded.
— 25—Overcast; densely clouded; rain at night.
— 26—Rain; constant rain; cloudy.
— 27—Low dusky white clouds; showers; clear.
Mean temperature of the week, 3½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending April 5, 1851.

| March and April. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 30 | 53.6 | 31.8 | 44.2 | 7 | 0.11 in. | 3 | 4 | 2 | 1 | 4 | 2 | 4 | 5 |
| Mon. 31 | 55.2 | 33.7 | 45.5 | 11 | 0.20 | 2 | 6 | 2 | 3 | 4 | 2 | 4 | 2 |
| Tues. 1 | 54.5 | 35.5 | 45.0 | 14 | 0.76 | 3 | 3 | 3 | 3 | 3 | 5 | 1 | 4 |
| Wed. 2 | 54.7 | 36.7 | 45.7 | 11 | 1.19 | 4 | 2 | 3 | 2 | 3 | 6 | 2 | 3 |
| Thurs. 3 | 56.6 | 34.6 | 45.6 | 5 | 0.30 | 4 | 3 | 2 | 1 | 1 | 6 | 5 | 3 |
| Friday 4 | 56.1 | 37.2 | 46.7 | 11 | 0.46 | 3 | 5 | 2 | 1 | 6 | 3 | 2 | 3 |
| Satur. 5 | 56.4 | 36.6 | 46.5 | 12 | 0.65 | — | 3 | 3 | 1 | 2 | 5 | 9 | 2 |

The highest temperature during the above period occurred on the 3d, 1848—therm. 78 deg.; and the lowest on the 1st, 1838—therm. 16 deg.

## Notices to Correspondents.

Aphides: *M C W.* Cannot you destroy them by means of tobacco smoke? We would try the experiment by enveloping at least a portion of the bed in canvas, and filling the space with smoke from one of Brown's fumigators.‡

Back Numbers. Full price will be given for No. 1, 1843, and Nos. 1, 2, 3, 1846.

Books: *T H.* Begin with "School Botany," by all means. There is a fresh issue of the work, the large and long-continued sale of which proves that it answers its purpose.

Camellia: *R D.* You will find a full account of its culture at p. 21 of the present year.‡

Evergreens: *W C.* You may prune them back about the middle of next month.‡

Fruit-tree Dressing: If an *Old Showman* will mix a little oil with soft soap, he may perhaps find that oil will cease to be oil, but will mix freely with water. Experiments should precede criticism. At the same time we are not defenders of all the opinions which writers and talkers indulge in. Heaven forbid! We give them as we find them, and the public has to judge of their merit.

Fruit Trees: *G S.* Against an east wall you may plant the Moorpark Apricot; Royale Hative and Green-gage Plums; Elton Cherry; Marie Louise, Beurré Diel, and Winter Nelis Pears. Your lately planted Plum tree should not be cut back till next autumn.

Insects: *Anon.* The grubs in your Geranium pots, and in the Grass in the flower garden, are the larvæ of a two-winged fly (Delophus febrilis) which appears in the winged state early in the spring; so that all or nearly all the mischief is now done—that is, if they do any, which we doubt, believing that they feed upon decaying vegetable matter, and not on living plants, in the larva state. *W.*—*A B C.* We are unable to name the cynips, unless you inform us of the tree upon which the gall was found. *W.*

Names of Plants: *Will with a Wisp* sends for examination a part of his own family. The wisp of broad green leaves and white stems belongs to Arum maculatum; the wisp of Parsley-like leaves to some Umbelliferous plant, perhaps Æthusa Cynapium; the wisp of dirt and rubbish to anything you please.—*A Sub.* Solanum pseudo-capsicum, Pittosporum Tobira.—*New Sub.* Ruscus aculeatus, Arabis alpina.—*J G.* Lasiopetalum quercifolium.—*Erzeroum.* The packet arrived lately, and was very interesting. If it was not acknowledged, we must beg you to forgive the omission. We hope you receive Paxton through your friend in Fenchurch-street.—*E P.* The common grey Opium Poppy.

Seeds: *G S H.* You had better send to New South Wales seeds rather than plants. The latter are uncertain of success and expensive; the former are cheap, and, if in loose bags, suspended in a cabin, will arrive with scarcely any loss. If you must send plants, then you must trust to what are called Ward's cases (portable greenhouses), described in our volume for 1844, p. 3.

Silkworms: *T U.* They may be purchased in Covent-garden market.

Transplanting: *J P.* Both Gorse and Fern may be successfully transplanted, provided the operation is performed with the necessary care, and young plants are selected for the purpose.‡

Woodlice: *Reader.* A toad or two placed in your frame will be found to thin them.‡

Misc: *J W.* Public papers have no right to mix themselves with private disputes. Your letter is sent to Mr. F.—*Mrs. M.* The common Borage will suit your purpose best. Cosmanthus fimbriatus is a hardy plant. It succeeds best in a damp situation. ‡—*B.* We cannot perceive any kind of relation between your question and the subjects admitted into this Paper.

### SEEDLING FLOWERS.

Amaryllis: *R B.* A pretty variety of A. vittata.*

Coronilla: *W J S.* Your seedling does not appear to be different from C. glauca. *

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | | |
|---|---|---|---|---|
| Clover Manure, per ton ... ... ... | ...£11 | 0 | 0 |
| Turnip Manure, do. ... ... ... | ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... | ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... | ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

IRISH PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

MESSRS. ODAMS AND PICKFORD, 35, Leadenhall-street, having been appointed by the IRISH AMELIORATION SOCIETY sole Agents, for London, for the sale of their PEAT CHARCOAL, beg to say full particulars of prices, &c., may be obtained on application to them.

ODAMS and PICKFORD, 35, Leadenhall-street, City.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co., 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents. Price 7l. per ton.—Copies of Analysis and Testimonials forwarded post free on application. Agents wanted.

PATENT CREOSOTED FISH FOR MANURE.—This manure is composed entirely of animal matter. The analysis of an eminent chemist states that one ton of the prepared fish contains 263 lbs. of ammonia, 150 lbs. of phosphate of lime, and 39 lbs. of potash. It will be seen that they contain all the manuring properties of the best guano, and as they cannot be adulterated, they will be found to be a most useful manure for Potatoes, Wheat, Oats, Carrots, and all root crops. They also have the property of preventing the Potato disease. All the Potatoes planted with them last year, produced good crops, and were entirely preserved from the disease, although the neighbouring fields greatly suffered. See Report of the Royal Agricultural Society of Dec. 11, 1850. Price 5l. per ton. Orders received by Mr. HENRY HILL, Corn Exchange, Mark-lane; Mr. GEORGE BUSH, 22, Abchurch-lane; and Mr. BENNETT, 73, Mark-lane, London.

SUPERPHOSPHATE of LIME, Manufactured from Bone and Animal Matter, is superior to Guano for Turnip and other Green Crops, whilst *the cost is much less.* The reputation of this Manure is, however, likely to be injured from the fact of some makers using Coprolites, which is only one-third the price of Bone; yet they try to persuade their customers it is as good as Bone, but it is a delusion—the cheapness of the Coprolites being their only inducement. There are many hundreds of tons of this ground stone now being used annually, therefore the agriculturists should be upon their guard, and only purchase where it is manufactured from Bone, as in these days of cheapness the farmers should purchase only the best Manures.

Those Farmers who have convenience for making their own Superphosphate can be supplied with Crushed Bone and Sulphuric Acid at the lowest market price. H. J. HUNT & Co.

Bone Mills and Manure Works, Broad-street, Lambeth.

Established, 1816.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, April 7, 1851, at 2 o'clock precisely, by order of Messrs. ANTONY GIBBS and SONS, the Importers, about 600 TONS DAMAGED PERUVIAN GUANO. Catalogues and further particulars in due time, from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street,** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian, and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street,** Piccadilly, London.

**The Agricultural Gazette.**

*SATURDAY, MARCH 29, 1851.*

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, April 2—Agricultural Society of England.
THURSDAY, — 3—Agricultural Imp. Soc. of Ireland.

A CORRESPONDENT asks us, what small farmers are to do to meet the times—"how those who occupy 50 acres of plough land, and 10 or 12 of Grass, of whom there are hundreds in his neighbourhood, cultivating very carelessly, paying a high rent, and, therefore, grudging to lay out 1s. more than absolutely necessary for labour, are to withstand low prices?" Now, this is a landlord's, as well as a tenant's question. The latter, certainly, where small farms are the rule, have hardly an alternative; they must remain; for if they leave their land, no other means of livelihood seems open for them, unless, indeed, they should resolve to emigrate, which, by the way, is probably the best thing that many of them could do; but we may suppose that both the parties to this case are men of business, and able to resolve on what may, on the whole, be best for both; the tenant has the escape of emigration, and his landlord, that of a personal occupation of the land, from the loss to both of non-cultivation—and to neither is his choice a very tempting one. Let them then accommodate their relations to the circumstances of the case; let the "high rents" of their farms be lowered as their produce is in value. Let them be converted into corn-rents; and supposing them in former times to have been converted into grain at the prices then obtainable, let the tenant pay a rent the value of those bushels now. This would be the first step needed. He would be encouraged to exert himself when he had the prospect of success which this would offer.

Our further observations must be directed to the two very different classes under which small farmers may be arranged—the one with scanty means, depending almost wholly on the labour of themselves and families, the other having ample means and employing labour. To both, however, we may safely say, farming is a retail business: your profits, after that large margin is deducted, which skill in marketing allows, will hinge almost entirely upon attention to details—upon the use you make of the *minutes* of the time at your control, upon the mode in which the *pennies* of your outlay are invested; and this remark applies to agriculture on a larger scale as well. If the farmer is to make a livelihood, the longer his experience the surer will he be to bear us out in saying that it must be by constant superintendence of the labour he employs, and the means at his command. Both classes then of farmers on the smaller scale may benefit by this kind of economy. For those who have to fight with straitened means, the "Essay on Small Farms," by the late Mr. BLACKER, of Armagh, and the "Tract on Agricultural Economy, as the Remedy for Agricultural Distress," by Mr. OWEN ROBERTS, are the proper text books. Let them study and adopt the plans there recommended; and, in stall-feeding, in the growth of winter food for their stock, in the proper selection of crops, Rape and Rye and Cabbages, and Mangold Wurzel and Italian Rye-grass, as food for sheep and cattle; and Flax, a crop especially suited for farming on a garden scale, as an addition to the crops they grow for sale; in the adoption of a right rotation of their crops; in a strict attention to the maxims of universal application in agriculture; the destruction of weeds, the drainage of the land, the levelling of useless hedgerows and divisions; and, above all, the saving and the careful use of everything that will increase the dung-heap—they will find their only chance of profit. There is no dexterous mode of extrication possible; it is by careful and attentive plodding in the path which has long enough been known to all good farmers, that their only chance of safety is attainable. They are said to cultivate their land "carelessly;" well, on the substitution of carefulness and energy and industry for this, their only prospect of a livelihood depends. And if any one objects that we are offering them the veriest A B C of agricultural advice, our reply must be, that not the alphabet alone but all of what is useful in the whole literature of agriculture is included in the substitution of intelligence and energy for careless listlessness in farm management. Let no one think that scientific men, or enthusiastic agriculturists, will ever teach him how to make his farming *pay*—they will teach him well how to make his farming yield abundantly of food—they will teach him also to economise his means, and use them economically—and they will benefit him by the excitement, whether of his hope or jealousy—but any benefit they confer upon the art just fans the competition of its practitioners among themselves for the labour and the land on which the prosecution of the art depends; and profits, after all that they have taught us, will then, as always hitherto, hinge upon the personal industry and energy of each. We believe, then, that small farmers of the class referred to would be benefited, if they could be induced to receive the lessons of Messrs. BLACKER and ROBERTS, and apply the rules there given to their ordinary and daily practice.

For those whose means enable them to carry on a still more vigorous style of farming—the use of artificial manures, and the purchase of cattle food—now cheaper than it was, seem to be the likeliest helps. This deep tillage, thorough drainage, and the right selection of crops for cultivation, are the four great points on which the success of high farming depends. We recommend all such to read Mr. CUTHILL's statements in the *Gardeners' Chronicle*, of what these points enable market gardeners, near London, to accomplish.

## A WORD TO THE FARMER ABOUT GROWING WHEAT.

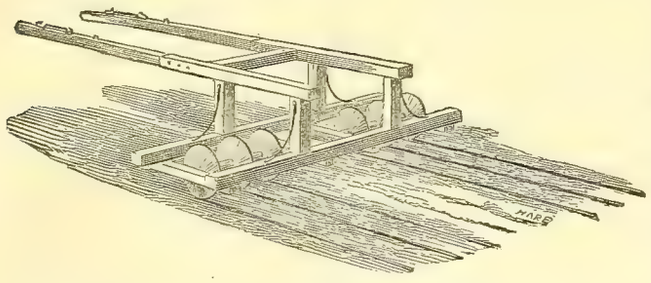
FARMERS, it is said, so far from making a profit from their land, are farming at a loss, and sinking their capital to pay their men. Assuming this, or something like this, to be the fact, I have ventured to publish the results of my practice in growing Wheat. With no earthly object in view, but the fulfilment of what I conceived to be a duty, I have shown that, acting on some of the principles of Jethro Tull, while I differ wholly from him in practice, I am making, as droprietor, a profit of 7l.; hoping to increase that profit to 8l. an acre.

This is so startling a result; so much at variance with common experience; of such infinite importance at the present moment, that I have not thought it unbecoming in me to press it on the attention of all earnest men. I ask them fearlessly to prove the system I follow, to the bottom. If it be found healthy, long life to it—if unsound, let it die without pity.

With reference to the call made upon me for further information, I meet it most willingly by the following statement, which replies, I believe, to every question of importance proposed by "Amicus Tull." For other details, if they are required, I refer to the pamphlet itself, which contains them all.

In the first edition of the "Word in Season," published November, 1849, I commenced by stating, "My Wheat is coming up well." In the sixth edition, published November, 1850, I was enabled to say, "The plant of Wheat, which just twelve months ago I described as coming up well, fulfilled its promise. In spite of the midge, the mildew, and the frost, the produce was upwards of 33 bushels to the acre." Seeing this result, after so untoward a season, I took in hand another field of several acres, in order to prove that with suitable implements on Wheat land, the system I followed might be carried out with ease, economy, and expedition, to any extent. The field I speak of had just been in Wheat, and the stubble was standing. It is good useful land, but light; and so far not so suited to my purpose as the strongest clay field on my farm of 400 acres. In other respects nothing could be better. It is very accessible, adjoins the public road, and so is open to constant inspection; and, to make it complete, it has not, I believe, known a bare fallow in the memory of man. Having adopted a set of implements to the cultivation of this field, year after year, for Wheat, I entered upon my work at once. It was now October. Another year I shall be earlier in getting in my seed; the latter end of August, or the beginning of September; that being a security, 5 years out of 6, against the blight. I first ploughed the short stubble an inch deeper than the used staple. After harrowing and cleaning and levelling the whole, I marked out the channels for the seed with my presser implement, which is drawn with one horse, and presses two lands at once. The following sketch gives the frame of the implement, with the presser wheels at work; the channels for the Wheat being one foot apart, and the intervals three feet.

My scheme of implements, to be complete, embraced a drill, which was to act immediately behind the presser wheels, and to drop seed by seed into the hard channels. The spindle of the presser was to turn the drill wheels, and the boxes were to be made removable. Being unable to accomplish this in time for the first year's sowing,



I had the seed, as heretofore, dropped by hand, and covered over and heavily compressed by rough roller-wheels, or crushers. I will not repeat here my published description of these rollers, or of the implement for hoeing and stirring between the rows of Wheat, or of the scarifiers and harrows for moving the intervals, and levelling them for seed time. It will be enough to state that each of these implements is applicable to the frame which contains the presser wheels, and is made removable to make way for the others in their proper season.

In all the various operations performed by these implements, the sown lands, and lands about to be made ready for sowing, are untouched by the foot of man or horse. The horse walks in the alley or interval. While the implement is pressing or rolling the lands, the driver is seated on the frame. When it is hoeing or scarifying, the driver walks, with reins, behind, and by means of moveable handles lifts it at the turnings. It is easy to calculate from the space covered by the implement frame, the time occupied in these labours. I found that I heavily pressed an acre within 40 minutes, and went through the other operations in about 20 or 25.

It is clear, then, that, so far, the scheme I advocate and adopt, might be carried out easily, economically, and expeditiously, to any extent. But, there is one important process, unconnected with these implements, and necessary to my plan, which requires comment. The seed having been sown and covered over, and springing up, the fallow was prepared for the following crop. The 3 feet intervals were tilled. And to do this effectually there is no implement but the spade. The process with this is very simple; and, after a little practice, very easy and safe. The spadesman first throws out on the edge of his headland a certain number of spits, say to the length of 3 feet. Having finished his first interval, the same length of 3 feet will be left open at the end. Beginning a fresh interval at that end of the field, he casts the first spits of this second interval into that open space; and so continues to deal with the ends of each interval all through. Before commencing a spit, he makes a cut about 4 or 5 inches from the outer rows of Wheat, the back of his spade being towards the rows, and then proceeds with his digging. And it was a pleasant sight to see my gang of six men working cheerfully side by side, and throwing up the soil into loose ridges 8 or 10 inches higher than the tender Wheat, as if for the sole purpose of protecting it. Nothing but the spade could do this. Nothing but the spade, within the limited space of 28 or 30 inches, can turn up the subsoil from the required depth, and place it uppermost in such a form as to receive the full benefit of the frosts of winter, and the rains and dews of summer. That exposure of the subsoil is indispensable. It is to that I look as the cheapest and best means of providing, what would otherwise be inert and useless in the bowels of the earth, the inorganic manure for my Wheat, and of supplying a fresh and inexhaustible store of mineral food. With every inch of subsoil which I thus bring to the surface I am adding 100 tons of virgin soil to the staple of each acre; and I should think it little, therefore, were I forced to linger in this operation, and so pay dearly for this acquisition. Let us look closely, however, and see whether this plan of trenching for Wheat be, in reality, less economical and less expeditious than the plough. I will suppose that, as in the ordinary cases of good farming, there are three ploughings for Wheat. That, at 7 inches deep and 12*s.* the acre, will be 36*s.*; and the time occupied will be three days. What is the difference, then, in point of time and expense, between the plough and the spade? "It will take a good labourer 30 days to trench an acre, and 16 to dig it well." So says one high authority. "With proper instruments, and some experience, a labourer can dig an acre of light land 18 inches deep in 25 days, and even 2 feet deep in 35 days;" says another. "At the large establishment of 150 acres of garden ground at Fulham, the price given for piece-work, two spits deep, is 2½*d.* per rod" (being 16*s.* 8*d.* the half acre). Such is the report of Mr. Cuthill. Now, at the commencement of my trenching a field, I bring up only so much of the subsoil (say 4, 5, or 6 inches, according to the nature of the soil), as can be acted on by atmosphere, and prepared for use by the one year's fallow; increasing the quantity year after year till the staple has become two good spits deep, as is the case with much of my clay land at this moment. And when all has once been loosened in this way, and become light, the calculations I have quoted may be considered correct; with the cheering prospect before us of a diminution of expence hereafter to nearly one-half. Taking, then, the average of these calculations, and commencing with 12 or 13 inches deep, inclusive of the ploughing, the first year, and allowing for obstructions in the variety of soils to be acted on, I reckon that one man at the outset will dig two shallow spits deep, and in after years, by degrees, will deeply double dig an acre in 30 days. Employing, as I do, six men for my work, they would thus accomplish a whole acre in five days; which, at 2*s.* a day each man, would amount to 60*s.* But only the half portion of the acre is to be dug for one year's crop; and this will reduce the time to two days and a half, and the expense to 30*s.* Say, however, that the time and the expense are here underrated, that the time will be three days, and the expense 36*s.*; and even then, in point of economy and expedition, the ploughing and the trenching will just be on a par!

I come now to my fresh balance-sheet; only premising, in reference to one of its details, that I have no peculiar advantage over others, beyond, what is not very peculiar in these days, the use of a machine for threshing.

| | £ | *s* | *d.* |
|---|---|---|---|
| One double digging in autumn ... ... ... ... | 1 | 10 | 0 |
| Three stirrings with scarifier at spring, 1*s.* ... ... | 0 | 3 | 0 |
| One ditto with scarifier and harrow implement before sowing ... ... ... ... ... ... | 0 | 1 | 0 |
| Two pecks of seed, at 5*s.* per bushel ... ... ... | 0 | 2 | 6 |
| Pressing and drilling ... ... ... ... ... | 0 | 1 | 0 |
| Rough rolling ... ... ... ... ... ... | 0 | 0 | 6 |
| Four hoeings between Wheat with new implement, 6*d.* | 0 | 2 | 0 |
| Bird keeping ... ... ... ... ... ... | 0 | 2 | 0 |
| All the operations from reaping to marketing, being for reaping two-fifths of an acre, 7*s.*; harvesting, 4*s.*; taking in for threshing and marketing, 5*s.*; threshing 34 bushels at 2*d.* per bushel, 5*s.* 8*d.* ... | 1 | 1 | 8 |
| Rates, taxes, and interest ... ... ... ... | 0 | 10 | 0 |
| Total outlay ... ... ... ... | 3 | 13 | 8 |
| 34 bushels of Wheat ... ... ... 8 10 0 | | | |
| 1 ton 12 cwt. of straw, at 2*l.* ... ... 3 4 0 | | | |
| Total produce ... ... ... ... | 11 | 14 | 0 |
| Deduct outlay ... ... ... ... | 3 | 13 | 8 |
| Total amount of profit ... ... ... | £8 | 0 | 4 |

Some may demur to the item of 2*l.* a ton for my straw. It is nothing to say I purchase it myself, as I do, at that price; for others may, as they do, procure it for less. I speak of its intrinsic worth, as fodder, litter, and manure to the prudent farmer, who will never part with his straw at all. He has too great a regard for the bulk of his root crops. For myself, I am quite sure I do not reach the just and intrinsic value of good Wheat straw when I place it at 2*l.* a ton.

Many may think I am wrong about manure. Let them hold their opinion still. What then? If they do not believe the atmosphere to be a great reservoir, containing every organic constituent of plants, as nitrogen and oxygen, carbon and hydrogen; if they see nothing in my whole year's fallow, and discredit the fact that every shower and every descent of dew brings down these constituents on the soil, which, on my plan, is ever open to receive them, and so deep as to fix and retain them; if they will forget that this ammonia, and carbon, and aqueous vapour, are still, for another year, finding their way through the well-stirred surface to the roots of the growing plant; if, moreover, they have no thought for the chemical composition of the subsoil, or of the fact that in most cases it is chemically the same with the staple; if they cannot conceive that a gradual exposure of this subsoil to the solvents of the atmosphere is a gradual gain of mineral manure, or that by increasing depth and constant disintegration, this supply of inorganic food is practically inexhaustible;—if, further, they waive the importance of an equable distribution over all the land of food for my plants;—a distribution, which in the one case, by the hand of Providence, is perfect, and in the other, by the hand of man, impossible;—why, let them insist on manure for my Wheat. Manure, ye incredulous, by all means. What then? The success of the system does not hang upon that. Manure; and charge for it. An abundant supply for the half acre could be purchased and applied for 20*s.* Deduct, then, 20*s.* from the balance-sheet; and what remains?—A clear profit still of 6*l.*; and probably, 7*l.*, the acre!

Let me sum up, then, the principal advantages of my scheme for growing Wheat. First, while one crop of Wheat is growing, the unsown intervals of the acre are being fallowed and prepared for another. Next, upon this half portion of the acre, tilled as I describe, there is a yield equal to average crops on a whole acre. Then, for the half portion of an acre there is, of course, only half the labour and half the expense of an entire acre required for cultivation; and, lastly, the hand-labour required finds constant employment for the poor. And if the stout yeoman still objects, that the system from first to last is so much out of his usual course as to be to him impracticable, requiring such unwonted application of head-work as well as handiwork to carry it out, I bid him look to the results, and ask him, or rather bid him ask himself and his own shrewd sense, Is it not worth while? *The Author of the "Word in Season to the Farmer."*

## A WORD IN SEASON,

IN REPLY TO "AMICUS TULL."

My own experience of the permanent improvement given to land from trench ploughing is so decided, and I have seen such striking instances of lasting success, attributable to the uncommon depth the soil has been broken up, that I am prepared to go a great way in supporting Mr. Smith's statements, especially as to the assistance that deep cultivation affords to vegetation in place of manure; and with respect to his figures, I see nothing in all "Amicus Tull" says to invalidate them. It may be true that the first cost of trenching land two feet deep will be from 5*l.* to 9*l.* an acre, according to the obstacles in the soil; and in this way, the annual charges on the land may be taken to be permanently increased 5*s.* to 9*s.* an acre. "Amicus Tull" has evidently had a singular soil to deepen, and his expenditure has been far greater than would be generally called for; but the cost of the after trenchings must not be charged at the rate of the first. Mr. Smith, in giving his annual expenditure, puts the cost of double digging at 30*s.* per two-fifths of an acre, which is nearly 6*d.* per rod; but as the land has previously been made friable to this depth, I consider the labourers using the Norfolk fork can at this rate earn 1*s.* 6*d.* per day, per acre; and this view is at once confirmed by what Mr. Mechi is reported to be doing: "He is employing the poor in digging and trenching up with the fork and pickaxe, to the depth of about 20 inches, the rocky, iron-bound, and macadamised subsoil of his light land, and the price he pays is 9*d.* per rod," or 6*l.* per acre.

Mr. Smith's land is a strong loam, or mixture of clay and gravel, with a considerable quantity of large chalk stones underneath.

With respect to the difficulty of trenching a space of two feet in five, practically there is none, there being a distance of three feet between the adjoining rows of Wheat; and when the whole of the ground has previously been trenched, there will be little increase in the height of the soil from the fresh trenching; and the six inches, from the rows of Wheat to the two feet of trenching, is ample space to protect the rows of Wheat from all mischief.

I must leave to Mr. Smith to furnish the details of his expenditure when called for; I confess I think his estimate too low; and, for this reason, have added 30*s.* an acre, in deduction from Mr. Smith's profit; but "Amicus Tull," on the other side, is evidently too high; he would make the cost of harvesting, threshing, &c., out of all bounds. Taking Mr. Smith's crop last year to have been 33 bushels per acre, and to have realised 40*s.* per quarter, and his straw to be worth 8*d.* per truss, or 40*s.* per ton, I have no doubt that the crop may have been grown to pay a profit of 3*l.* an acre. The quality of the Wheat I understood to be superior, and so I should expect it to be. High manuring often causes blight, and the crop to lodge, and so destroys the quality of the corn; but fine tillage is not attended with the same hazard; on the contrary, very much diminishes it. The last year's crop is stated to be the sixth of Wheat in succession; the land, therefore, cannot be called fresh broken up; on the contrary, it must be looked at as having undergone a most scourging course of cropping.

I cannot enter further into detail, and I have no wish to render a personal inspection of Mr. Smith's practice unnecessary. On the contrary, I would have a practice I think so well of, closely examined; and then I expect others would find, as I did, that the doubts that arise in reading a statement so extraordinary, are at once answered by observation of the practice. I believe a more valuable lesson to the present race of farmers is hardly to be found.

Since I saw Mr. Smith's land, I have had a very great treat in inspecting the farm of Sir John Conroy, at Arborfield, near Reading, where I again find remarkable success in growing extraordinary crops on singularly bad land, based upon two-feet trenching. Space and time are now wanting to me, to enter into details of the skilful direction which is here visible in every part of the arrangements and management. My object, in this paper, is simply to show the advantage arising from deeply trenching of land. I will, therefore, close this letter, by saying, that I am informed Sir John Conroy commenced by expending 1600*l.* in trenching and draining 180 acres of his land; the cost of the trenching could not have been less than 5*l.* an acre, probably it was more; but of this I am certain, that with any amount of dressing without the trenching, this land could not have been made to return near the amount of produce it now returns; and the cost of the trenching must have been paid back again and again by the additions to its returns it has given in the seven years since it was done.

I am satisfied my friend, Mr. Mechi, in trenching his land, is making a permanent improvement, that will go far to change some of his views, especially if he turns the soil completely over; and I have little doubt he has taken this from what he saw at Sir John Conroy's. I hope he will go and see Mr. Smith's practice; he should give the improved Kentish turn-rise plough a trial. *Hewitt Davis, 3, Frederick's-place, Old Jewry, 24th March.*

## THE CULTURE OF THE CARROT.

All deep Turnip soils, of a mechanically light and sandy texture, are adapted for growing a clean-rooted crop of Carrots; thin, light, or heavy soils, with a chalky or rocky subsoil, are not so suitable, as the roots become stringy, and the soil being more adhesive, the expense of harvesting the crop is increased. However, the White

Belgian Carrot produces heavy crops upon the best descriptions of stiff loams; yet the difficulty of securing a plant, with the additional expense of cultivation, causes the preference to be given to land of a lighter texture.

A clean Wheat stubble may be treated in a similar manner as for the Turnip, with the addition of a deep subsoiling; and that the tillage should have earlier attention, both in the autumn and spring, so that a deep and fine tilth is insured by the month of April, which is the usual time of sowing; or, if necessary, this can be deferred until May, particularly on land known to be subject to annual weeds, which will overgrow the young Carrots before they can be distinguished.

If farm-yard manure is used, from 12 to 15 tons may be ploughed in before Christmas, that it may decompose and mix with the soil; raw manure applied in the spring, being found to make the roots grow stringy, and otherwise injure the quality of the crop. If artificial manure is employed (and we use it in preference to farm-yard dung), we can recommend animalised carbon; salt mixed with soot, guano and superphosphate, and these may be mixed with a larger proportion of peat charcoal or turf ashes; and if a portion of the latter has been saturated with liquid manure, it makes the manure more valuable; but we do not recommend any one manure as a specific, but would as nearly as possible supply those ingredients in a soluble form, which are found to exist in the plant, or which are essential for the full development of its growth. To prevent the seed clogging in the drill, it is well rubbed, to remove the bushy particles, and then mixed in the proportion of 4 or 5 lbs. of seed to 2 bushels of powdered charcoal or dry ashes, which is the quantity drilled per acre. Charcoal, from its known property of absorbing moisture, will be found to promote the vegetation of the seed. The width between the drills may vary from 10 to 15 inches. A small quantity of Oats or Mustard, or any other seed that vegetates more rapidly than the Carrot, may be drilled with it, to show the rows, upon land that is much infested with weeds.

The plants are hoed out to a distance of about 8 or 9 inches, and the land is kept clean by repeated horse and hand hoeings, as required. The crop is ready to harvest in November; the roots are forked up by men and women, the tops cut off by a gang of boys and girls, and the roots are then stored by being placed in long heaps, about 2½ feet high and 3 feet wide, which, to protect the roots from frost, are covered with straw, and then with a layer of earth. The produce varies from 500 to 1300 bushels, or from 10 to 26 tons per acre, exclusive of tops. The great art in the cultivation is the obtaining a plant, and the subsequent cleaning from weeds. A thin plant should be ploughed up, for the expenses are nearly as great upon a crop of 5 tons as upon one of 25.

Mr. Hugh Raynbird, in the Transactions of the Highland and Agricultural Society of Scotland for 1850, estimates the cost of cultivation per acre of the Carrot crop as under, upon good sandy and light loamy soils.

| | £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Cleaning stubble, 3 scarifyings, 4 horses | 0 | 4 | 6 | to | 0 | 6 | 0 |
| 4 Harrowings ... ... ... ... | 0 | 2 | 0 | ... | 0 | 2 | 0 |
| 2 Rollings (2 horse) ... ... ... | 0 | 1 | 6 | ... | 0 | 2 | 0 |
| Picking and burning weeds ... ... | 0 | 2 | 0 | ... | 0 | 2 | 6 |
| 1 Ploughing ... ... ... ... | 0 | 7 | 0 | ... | 0 | 7 | 6 |
| 15 Tons of manure, valued at 3s., or artificial manure to the same value ... | 2 | 5 | 0 | ... | 2 | 5 | 0 |
| Filling and spreading ditto ... ... | 0 | 2 | 6 | ... | 0 | 2 | 6 |
| Hauling according to distance ... ... | 0 | 4 | 0 | ... | 0 | 6 | 0 |
| Ploughing ... ... ... ... | 0 | 7 | 0 | ... | 0 | 7 | 6 |
| Subsoiling (3 horses) ... ... ... | 0 | 10 | 0 | ... | 0 | 11 | 0 |
| 4 Harrowings ... ... ... ... | 0 | 2 | 0 | ... | 0 | 2 | 0 |
| 1 Rolling (2 horse) ... ... ... ... | 0 | 0 | 9 | ... | 0 | 1 | 0 |
| 1 Do. (1 horse) ... ... ... ... | 0 | 0 | 4 | ... | 0 | 0 | 6 |
| Drilling ... ... ... ... | 0 | 1 | 0 | ... | 0 | 1 | 0 |
| Seed, 4 or 5 lbs. at 1s. 6d. ... ... ... | 0 | 6 | 0 | ... | 0 | 7 | 6 |
| 2 Bushels of ashes, or peat charcoal ... | 0 | 1 | 0 | ... | 0 | 1 | 0 |
| Hoeing between drills ... ... ... | 0 | 1 | 6 | ... | 0 | 2 | 0 |
| Singling out ... ... ... ... ... | 0 | 8 | 0 | ... | 0 | 12 | 0 |
| Second hoeing ... ... ... ... | 0 | 3 | 0 | ... | 0 | 5 | 0 |
| Third hoeing ... ... ... ... ... | 0 | 2 | 0 | ... | 0 | 3 | 0 |
| Two horse hoeings ... ... ... ... | 0 | 2 | 0 | ... | 0 | 2 | 0 |
| Taking up and storing ... ... ... | 0 | 15 | 0 | ... | 1 | 0 | 0 |
| Hauling roots ... ... ... ... | 0 | 2 | 0 | ... | 0 | 3 | 0 |
| Rent, tithe, and taxes ... ... ... | 2 | 0 | 0 | ... | 2 | 10 | 0 |
| Total expense per acre ... | £3 | 10 | 7 | to | 10 | 2 | 6 |

Carrots are frequently sold off the land at 5*d.* or 6*d.* per bushel, which will give a good return to the grower. When consumed upon the farm they are very valuable as a winter and early spring food for milch cows, colts, and horses, and for fatting cattle; for these purposes they are superior to most other roots. Independently of the importance of the crop itself, the extended cultivation of Carrots may be advocated, because, the more various the crops upon a farm, the greater is the regularity of the labour required, and the more independent does the farmer become of failures caused by the vicissitudes of this variable climate; the weather which retards one crop may hasten the growth of another; one is attacked by insects or blight, another escapes; while, if dependance be placed solely upon one class of plants, the whole of the year's growth may be visited with destruction at one and the same time. Carrots will assist in giving a more extended and varied character to the rotation of the farmer, which of itself is a matter worthy of attention. A system of cultivation suitable for poor sandy soils will be detailed in a future paper. *H. R.*

## Home Correspondence.

*Industrial Education in Ireland.*—Aware of your desire to advance the agricultural interest, through the medium of the *Gazette*, permit me to notice a scheme of industrial education, steadily ingrafting itself upon the Irish character, and supplanting those fixed habits and prejudices which beget the defective husbandry of the country. Many of your readers are not unaware, that the commissioners of education in Ireland have for some time past combined agricultural instruction with the ordinary routine of literary studies in their schools, and that the lessons inculcated in the school-room are practically borne out in many cases, on small farms varying from 2 to 20 acres, attached to the school. This is the plan, organised, to combat the evils of Irish agriculture, by bringing home to the doors of a benighted peasantry the practical truths of a refined husbandry. It is in such schools where youth can be impressed with the folly of trusting to old and slovenly systems of farming for future comforts, and where the young mind will be indelibly stamped with improved principles and practices of farming. Such a scheme is obviously a radical cure. From the different small agricultural schools throughout the country, the most deserving pupils are drafted to fill the vacancies at the model farm of 130 acres, belonging to the commissioners at Glasnevin, near Dublin—an institution which has been very favourably noticed in Caird's "Plantation Scheme," and Osborne's "Gleanings in the West of Ireland." At this institution the pupils are boarded, lodged, and receive the benefits of agricultural lectures, and literary instruction for one or more years gratis, after which they are prepared to fill situations as landstewards, agriculturists, or agricultural teachers. In this way the commissioners annually train a number of young men, who, when dispersed over the country, become the pioneers of a more healthful system of cultivation. Surely the training of youth to habits of early industry, to science and sense, must favourably react upon the rural ignorance of the land! Surely the teaching of the child the nature of the soil, and its mode of improvement, the nature of crops, and the judicious method of their culture; the nature of manures, their relative values, and different circumstances under which they are applied, are as powerful adjuncts towards the melioration of the country as his acquisition of literary information? The business habits of the after-man must be formed in his youth, and it is by educating thus the rural youth of the country, by establishing in every village an agricultural school and model farm, that we can reach the seat of Ireland's misery—the ignorance of her agricultural population. Agriculture is a nation's sheet-anchor, its prosperity is the standard of a nation's greatness. We, therefore, see how governments are turning their attention to the establishing of agricultural colleges for imparting agricultural information. We see, in Holland, agriculture, scientific and practical, taught in her colleges, as a primary pursuit. Germany, the seat of learning, has long since set the example. American States now raise a cry for agricultural education and model farms, to be extended throughout the length and breadth of the country. York, Durham, Edinburgh, and Glasgow, acknowledge the intrinsic value of agricultural information. The new Irish colleges are provided for means of communicating the same knowledge. And while the example of imparting such useful and daily-required information is set in the higher seats of learning, let us feel thankful that the lonely cotters and small farmers of Ireland have not been forgotten, in having placed within their reach the means of acquiring, both by precept and example, improved notions of husbandry. Among the many philanthropic measures for improving Ireland, we must heartily wish God speed to the steady and unobtrusive progress of agricultural instruction under the Irish National Board of Education. *Well-wisher, March 19.*

*How to produce Five Crops off the same Piece of Ground within Thirteen Months.*—In October plant winter Beans in rows, 30 inches row from row, and at the same time interline two rows of early York Cabbages, which should be sown in June; let the Cabbages be planted 10 inches from the Beans, and 10 inches row from row. The Cabbages to be drawn as Coleworts during the winter, and early in spring. As soon as the Cabbages are off, which should not be later than March, immediately plant a row of Ash-leaved Kidney Potatoes between the rows of Beans. The Potatoes will be ready to harvest in July; as soon as they are taken up fork in a little rotten manure, and transplant a row of Swedes, taken from a bed, which should be previously sown for that purpose. As soon as the Beans are harvested, remove them as soon as possible, and after manuring and well stirring the soil, immediately sow a row of Early Six-weeks, or Stone Turnip. The Swedes and Turnips will be ready to betaken up in November. Thus five crops can be procured, from the same piece of ground, within the space of 13 months. *W. G. E.*

*Drainage under the Acts.*—I can hardly believe that "Fossa," of January 5th, p. 58, of the *Agricultural Gazette* for the current year, is the "Fossa" of your Number of March 8th, p. 155. The first is for drains, 20 feet apart; the last never hints at a narrower interval than 30 feet. The first is for stones on the top of the pipes. "I have adopted it," he says, "and found it answer admirably, and am not aware that any valid reason has been assigned for the objection which is made to the use of stones on the top of pipes." The last says, "I do not advocate stone draining where pipe draining can be done more economically. I have put in hundreds of thousands of pipes where stone could be had a few hundred yards off for digging and carting." My letter of February 8th, p. 91, was solely directed to the preventing the evil effects of "Fossa's" recommendations, to use stones on the top of the pipes. I am not vain enough to suppose that my few hasty lines have had the effect of converting such a veteran practitioner as "Fossa;" but somehow or other he has been converted, not only from the use of stones on the top of the pipes, in so far as it improves the work, but also to "wide intervals"—30 feet draining, which he formerly objected to "having always been disappointed with wide interval draining on stiff clays." He is now content to rest the use of stones on the tops of pipes upon the simple ground of convenience, and then only in those cases where they are dug out of the land. "Surely," says he, "it would be economical to bury those stones on the spot, and take the chance of making the soil a little more porous and pervious to the surface water. I am pretty extensively connected with three counties, and have good opportunity of knowing what is the practice in several others, and in each and all the stones amply pay for carting off, as the road and highway surveyors willingly give 1*s.* a yard for them. "Fossa" says they are of no value with him. This I am quite ready to take upon his word; but I would recommend those who are disposed to try the burying system to look out for another grave than the drains afford, as they may chance to break pipes, or make a channel for the passage of silt into them. I am sorry to find that "Fossa" has had so much trouble, and has gone into such inglorious researches to discover the data upon which my calculations were founded, in consequence of the printer having put "rods" for "roods," meaning thereby roods of 8 yards—the common measure here; but which I am ready to admit I should have converted into imperial measure. The data which I founded on were precisely those which "Fossa" supplied himself in the successful experiment made "to test the absurdity of a whim of our own." In describing this, he says, "We decided on using those stones in the drains by placing them from 20 inches to 2 feet thick on the top of the pipes. The drains were cut 3½ to 4 feet deep, and 20 feet apart." Now 90½ roods of 8 yards are equal to 132 rods in round numbers—that is, the number of rods in an acre, at 20 feet apart; and most people will think 1½*d.* per yard (especially if the ground be stony), not a great deal too much for cutting, laying pipes, and filling in drains of 3½ and 4 feet in depth, which is equal to 6½*d.* per rod. Now, as to the quantity of stones required; suppose the drain is cut to fit the pipe with the utmost precision, we shall have above the pipe a cutting 4 inches wide, and at 2 feet above it, 10 inches will generally be rather over than under the width in a 4 feet drain. These figures give an area of vertical section of 168 inches, which will give 93 yards and a fraction for the quantity of stone required for an acre of drains, instead of 30 yards, as stated by "Fossa" in his last letter. It will not do for "Fossa" to tell us that his drains are cut out narrow; it is impossible to do so where he finds enough of stones to cover the pipes 2 feet deep, and the dimensions I have given are under what would occur in actual practice; and in my former letter I did not proceed to extreme nicety of calculation in regard to the stones. I think I have now shown that my calculations were substantially correct as to quantities, as given by "Fossa" himself; and your readers will be best able to judge whether they can get stones picked, sorted, broken, and put into drains for 3*d.* a yard. I now take my leave of this subject, with the satisfaction that I have given "Fossa" the opportunity of admitting that he in fact had no very clear ideas of the value of stones; and that he by no means "advocates their use where pipe draining can be done more economically." It will puzzle even "Fossa" to show that stones, on the top of pipes, will be more economical than pipes without them. *Agricola Redivivus.*

*British Song Birds: a source of Mischief as well as Entertainment.*—I have read with much pleasure, though no bird fancier, the many articles published in the *Gardeners' Chronicle*, from the able pen of Mr. Kidd; but with much more interest have I read the various statements on "thick and thin seed sowing," put forward from time to time in the *Agricultural Gazette*, and have been, for a long time, a disciple of the thin seeding school, and always, till this season, permanently successful in this species of domestic economy. As I am doomed, I fear, with many others, to pay dear for the whistle of skylarks, who are destroying the young corn in the germ, as we Irish say, "out of a face;" and so full of effrontery are they, they will not yield an inch to the bird watcher's rattle or creak, pebbles from his sling, blank cartridge, nor even well-loaded and primed musketry shots, till actually slain, which, in my case, would require a man on every rood of land, of which I have now sown over 300 acres, and expect to have 500 more sown still before the 1st of May. I have sown spring Wheats with from 42 lbs. to 70 lbs. per acre; Oats, with from 70 lbs. to 84 lbs. per acre, and Barley I hope to sow in the same proportion as Oats, and would be certain of success, as far as an abundance of plants would ensure success, but for the ravages of the larks. I have had a double object in view in this species of thin seeding; first, a saving of seed, being mostly all imported, and of the best kinds, and in the greatest variety; secondly, a gain, by an improvement in the quality of grain, compared to our Irish grain generally; and, finally, as an inducement to the working farmers in my locality to change their system of thick seeding, and a change in their seed; but if a failure will take place, such as I apprehend from the depredations of the larks, and that I can devise no means of arresting these depredations, henceforward I must, as in duty bound, advise a discontinuance of spring corn sowing, lay some hundreds of acres down under Grass for sheep and cattle feeding, and throw on the poor-rates for support some thousands of able-bodied and willing labourers now employed cultivating these crops, all by spade husbandry. To

avert this evil, would it be too much for me to expect from Mr. Kidd, or any other of your excellent correspondents, such instructions as will enable me, by reasonable means, to defeat the deadly efforts of these desperate larks, to render our plagues in this respect worse by far than those produced by the Potato disease. *A Shilmalier, March 20th.*

*Steam Engines.*—I have derived much advantage by the use of a cast-iron pan occupying the ash-pit, and filled with water. The falling embers and intense heat under the ash pit converts the water into steam, which cools the under surface of the furnace bars, and prevents their forming the coal into slag or clinkers. It also prevents the warping and burning of the bars, and economises fuel and labour, besides facilitating the rapid generation of steam. When the coals fuse or run together, they form a solid mass over the vacancies between the bars, adhere to them, and stop the draught. It is then impossible to keep up the steam. Some idea of the coolness thus gained may be formed by the fact that from 100 to 200 gallons are thus evaporated daily, a pipe being always at hand to supply water when required. The abstraction of caloric thus permits a much denser volume of air in the ash-pit, and with it of course a much larger supply of oxygen to keep up combustion. In fact, without this arrangement, we cannot do the proper amount of work. It does away with much of the stoking or stirring, the reflection of the furnace in the water showing the brilliant and unobstructed state of the fire between the bars. The admission of cold air at the back of the furnace, and the facility of iron doors to clean out the flue boiler, gives us an ample supply of steam, without smoke, and with a considerable diminution in the consumption of coal. A 6 horse steam engine, working up to 8 horse-power, with 90 revolutions per minute, requires a quick and ample generation of steam. We thresh and dress four quarters of mowed, long-strawed Wheat per hour. *J. J. Mechi, March 18.*

*On the propriety of laying Land down to permanent Pasture.*—As an Englishman I feel it my duty in these free trade times, to make a few comments on a practice which is now, I cannot help considering, so very necessary; namely, the laying down of arable land to pasture, with the view of meeting, the measures of our present legislators. It is generally admitted that land in this country cannot be cultivated to advantage in the raising of corn for the prices now obtained; the question then naturally arises, what other resource have the agriculturists to enable them to pay the usual outgoings of rent, &c.? I humbly make answer, the laying of their land down to permanent pasture; and I do recommend the system, because, in the first place, the soil will be materially improved by the change, as every experienced man knows; and in the second, the price of wool and meat, being so much higher in proportion than corn, that the latter may be purchased and applied to advantage in the feeding of sheep on the new made pastures; which will not only promote both the increase of wool and carcase, but the improvement of the pasture likewise, and together, return a fair remunerating interest upon the capital embarked, which, under present circumstances, as before observed, it is impossible to obtain from the land when growing corn. Moreover, should, at any future period, the price of corn become sufficiently encouraging as to induce the application of the plough, the land, from the change, the rest, and the enrichment consequent on high feeding, will yield a two-fold produce over the crops it bore at the time when laid down. If what I have advanced be correct, surely it is the interest of the occupiers of land, whether tenant or landlord, to adopt the suggestions here set forth, and devote at once a portion of each farm to pasture, increasing the quantity yearly, as circumstances may dictate; that the change from corn to pasture may occasion the least possible inconvenience and outlay. *Henry Roger Smithe, Eastling, March 20.*

*Flax.*—I was not quite correctly reported in part of my address to the Royal Agricultural Society on Flax culture, and as it may mislead I shall be obliged to you to insert the following: I was reported to have stated, "Flax would grow on a turnpike road." I was showing that it was not an exhausting crop, and less dependent upon soil than any other, but more dependent upon moist atmosphere; and in corroboration, I stated that I could grow Flax on a turnpike road, with an inch of soil, if I might water it every day. May I also take this opportunity of again begging people at this time of sowing, to be sure to procure clean seed, as they value the profit of their crop. I find most of the foreign and much of the Irish seed to have from 20 to 25 per cent. of refuse weeds and dirt; this must be got rid of, on account of the after expense in weeding, and the quality of the crop will be greatly injured. *T. Beale Browne, Hampen, Andoversford.*

*Flax Cotton.*—In some of your late Numbers there has been a good deal of discussion relative to Flax-cotton, and the process for its preparation by M. Claussen. As was to be expected, opinions on the subject are much divided. The statement in your columns by Mr. Beale Browne against the utility of Flax-cotton, seemed to me almost conclusive, but as no probable improvement ought to be checked or intercepted without full evidence and due consideration, I would suggest the following experiment as a test of the advantages thought likely to result from M. Claussen's process; viz., to take half-a-dozen yards of average Flax-thread of No. 16—to divide nto six portions of one yard each—to tie a tight knot at he extremity of the cut ends of each portion—to put he knotted end over a peg or pin, and in the opposite or loop end to insert a hook with a scale, or, preferably, a small tin box to hold various small weights—to add or put in, very gradually and cautiously, small shot, until the portion of thread under trial gave way—to weigh very accurately the hook, the tin box, and small shot—to note down the weight; this to be done with the six separate portions of Flax-yarn of No. 16, and by dividing the weight by six you have the average weight required to break each portion of thread. The same process to be gone through with Cotton-thread, No. 16, and the same process with thread, No. 16, of Flax-cotton. Six portions of each kind of thread will give a safer average than one or two portions, and strict attention should be paid that the three kinds of thread be as nearly alike as possible. It occurs to me that the above Baconian mode of proceeding would give results that might be more depended on than the discussions hitherto carried on. *J. G.* [The strength of the article is not the only point to be determined—the strength relatively to the price at which it might be sold would, however, be likely to guide opinion on the subject.]

*Kohl Rabi.*—I transplanted in a piece of ground of considerable size in my garden, the latter end of last May, plants of the purple kind, without manure or dressing of any sort. Frequent hoeing and watering in very dry weather comprised all the attention they received, and they grew amazingly—I may say luxuriantly—some measuring 18 inches in circumference. I had the large lower leaves cut off (not pulled) from time to time for the cows, like as is the case with Mangold Wurzel; and I took particular notice of one important fact, which was, that the Kohl Rabi were much better able to withstand drought than the Mangold Wurzel growing by their side. The ground dark peaty earth, which is the most absorbent of heat. Your correspondent will find still more information in "Farming Essays" of Mr. Hewitt Davis, on the culture of this plant. *E. T.*

*Produce of Cows.*—I am very sorry my letter respecting the treatment of my cows should have been so ambiguously expressed as to have led to misapprehension respecting them. I meant to say that the produce of them, in butter, was 6¼ lbs. each, or thereabouts, per week; and I attribute so large a produce at this time of the year to giving them a boiled mess, such as I described, with Pea-meal twice a day. My cows are of the Ayrshire breed, and small, and averaging only in quantity under 10 quarts of milk daily from each—the butter, as I stated before, has no taste of Turnips. *A Subscriber.*

*Sheep upon Wheat-plant.*—G. Ensor need not be afraid of putting his sheep upon the young Wheats. The latter part of this month, February, has been a most favourable time; besides the early sown Wheat crops look proud, and the sooner the sheep are turned in upon them the better. The sheep may remain till the field looks bare, and in two or three weeks' time, may be again turned in; the advantage to the crop is very great. The plants will tiller out strong and luxuriant. In farming, we must not be nervous, and alarmed at what may appear rough treatment. I have harrowed Oats and Barley, making some lift up their eyes, and vow the crop would be ruined! No such thing. Fear not. *X. Y. Z., Hants.*

*Advantage of Warmth to Sheep.*—One would naturally suppose that, if kept dry, sheep would be always warm enough with their woolly coats; experience has convinced me of the contrary. I have two sheds—one slated and not boarded, the other slated and boarded under the slates. The latter is some feet lower, and closely confined by walling, having only an open window at one end, and an open door at the other. This shed also contains, besides sheep, a good many pigs, all on open boarded floors. We have all been forcibly struck by the superior progression of the animals in this close, warm shed. So warm, in fact, that on approaching the door or window, the warm blast oppresses you with its fulsome heat, and visitors naturally say this must be too hot and unwholesome. Animals are, however, always healthy here. We have occasionally removed sheep from the other shed, and they more rapidly progressed in the close warm one. I speak of Down sheep during the winter months. The comparison is worth making. So healthful are the open boarded floors, that with 500 head of animals—bullocks, sheep, pigs, calves, dogs, and rabbits, not a casualty has occurred for two months. I have a great aversion to slated roofs, if unprotected internally by boards, felt, or thatch. They are terrible conductors of heat, from the animals in winter, to them in summer. I find sheep, calves, and bullocks do extremely well on Beans soaked 48 hours in cold water, until perfectly soft; they will absorb an immense quantity of water. This saves waste and expense of grinding. We give, in addition, oilcake, straw chaff, and some roots. Beans at 22*s.* 6*d.* per quarter must make cheap beef and cheap manure. My horses have no hay, but 15 lbs. of Bean-meal, and ample supply of cut straw chaff, and 2 oz. of salt, daily. The chaff is moistened from a watering-pot, and the meal adheres to it. Cost of each horse 9*d.* per day, or certainly under 10*d.* *J. J. Mechi, Tiptree-hall, Feb. 25th.*

*Adulteration of Manures.*—This is probably becoming an extensive and thriving traffic; the necessities of the farmer, borne down by unequal competition, being taken advantage of by rogues, to enrich themselves out of his poverty. And there is something like a conspiracy against him; the chemist, who should be his protector, joining, not always unconsciously, in the deception; the certificates of analyses being, as is too well known, often very different from the material sold under them. And what else can the farmer expect, when such analyses are done by tender, at the lowest offer? and even chemists of reputation have lent their names to certificates of analyses, executed probably by their pupils. I have now before me a certificate under a well known and distinguished name, the falsity of which is apparent from mere inspection of the material, so that he would appear to have signed it, without even looking at the sample. This is a heartless deception to the suffering farmer; and not much less criminal than the adulteration itself. The great question then is, to what can the farmer trust? If he gets a sample from the bulk analysed before buying, how can he be sure of having the same parcel? It was suggested years ago (I think by others as well as by me) that he should always buy warranted genuine and to certificate of analyses. When safe in his own possession, mix it altogether, or at least a portion from the centre of each bag; and from this draw an attested averege sample. Bottle, cork, and seal it down at once, and let it be kept by one of the witnesses, under lock. And at the same time, a like sample, to examine himself, by the simple means now recommended by Drs. Way and Anderson. If this simple method detects adulteration, which is most likely with the admixtures commonly used, he can immediately demand redress from the seller. But if genuine, or so adulterated as to elude this simple method, he may use it as genuine; and if it fails upon his crops, then have the reserved attested sample analysed, by a competent and authorised chemist; and if found inconsistent with the warrant, sue the dealer for damages. Of course he must buy from a man who has the means of paying the damages awarded. But now that this adulteration has become a regular business, I think it would be the interest of landowners to put it down by prompt punishment and exposure; buying on purpose, under warrant, from all suspected dealers; drawing an average sample as above, and having it authoritatively analysed immediately; then prosecuting for fraud, and publishing the case in the newspapers. This is just the season for drawing out of the market the whole tribe of adulterators and chemical traitors, and delivering their tenant farmers fcom the brood of harpies now thriving upon their decline. *J. Prideaux.*

*Rats.*—In reference to the observation stating that Mr. Hudson's rats are fed upon Barley, instead of Wheat; rats are said to have been kept out of ricks by laying Garlic at the bottom. I suppose they should be raised from the floor, and the Garlic laid in a stratum of straw—not allowed to flavour the grain. *J. P.*

*Feeding of Milch Cows.*—The above is a subject to which my attention has been much turned, and on which I have read all that I could beg, borrow, or buy; but have not yet fallen in with anything very satisfactory upon it. I want a Manual clearly arranged, by which a plain man, incapable of philosophising or experimenting, may be able to know the best and most profitable method of feeding his cows both as to quantity and as to quality. Youatt and Johnson have given a good deal of valuable information, but their books are above the reach and above the understanding of the class who most need information. What I think would be really useful is a Cowkeeper's Calendar, stating the kind of food, the quantity per day, and the mode of preparation (if any) for each month in the year. The first point would, of course, admit of variations which might be arranged in the order of their respective merits. Such a work by Mr. W. C. Johnson, or some skilful and experienced person, if cheap and lucid, would, I believe, find a ready sale, and be of incalculable service to a large class of industrious men in the neighbourhood of large towns, who, with little or no land, are endeavouring to make an honest livelihood by the sale of milk. I submit this matter to your notice, in the hope that some more competent correspondent of your most useful Paper may take it up. *E. B.*

*Statistics of Cheap Prices.*—It has been suggested that much valuable information on the subject of agricultural statistics could be obtained, if competent persons in many or all the farming districts were to communicate trustworthy facts, showing how many farms have changed occupiers since the year 1846, and what has been the effect of the low prices of corn and meat on the working of the farms by those new occupiers. It is quite certain that vast improvements have been made in the science and practice of agriculture since the above date, and also that much remains to be improved under a wise and proper adjustment of covenants, &c., to be effected between landlords and tenants. In the meantime, it would be highly desirable to ascertain how competent and judicious farmers, who have taken to farm since the abrogation of the Corn-laws, have succeeded or otherwise in their attempts to obtain remuneration. *J. T.*

*The present state of Irish Agriculture.*—In concluding my observations on the Royal Dublin Society, I wish to refer to their annual "Root Show" held in November, where specimens of the different green crops are invited for competition. As the prizes are ever awarded in favour of the largest roots, it is evident much deceit is resorted to in their cultivation—unusual attention devoted—manure unsparingly applied, so that in fact the monster roots produced are in a manner "cooked." Cards are appended to each sample of roots, with the estimated produce per acre, calculated I presume from its forced samples. The poor visiting farmer who comes to learn, is quite bewildered both at the sample and the specified produce—and cannot help saying to himself, "It is all very—very fine;" wishing at the same time, for the soil that produces these specimens. Such an exhibition cannot fail to interest the *élite* of Dublin at

viewing what a plant can be brought to, but if the honest cultivator of roots is to be encouraged, if Irish agriculture is to be improved by Irish appliances, let the prize be awarded to the individual, who, throughout his farm, exhibits the best green crops, raised under the greatest difficulties, and not to amateur farmers or hotbed cultivators. Agricultural exhibitions have been instrumental in a great measure in reforming the pernicious systems of Irish farming. The annual exhibition of the different descriptions of stock will ever afford a practical proof of the progress and advantages of rural improvement. For example, the exposition of agricultural machines for diminishing labour and increasing economic habits—the bringing together of such improved breeds of animals possessing an aptitude to arrive at early maturity, or of fattening quickly on little food, cannot but afford a striking and convincing contrast with those implements of rude mechanism, and unknown design, and of those cattle unseemly in their proportions—unkind in their feeding, and contemporaneous with that pseudo-husbandry which patronizes them. Such is the way to strike at the deep-rooted prejudices of uneducated farmers; such the way to provoke their friendly criticisms—the honest conflict of opinion, which must terminate in healthful results. The proceedings of the exhibition are generally closed, by the convivial meeting at dinner of the several interested parties. It is to be regretted that the majority of the speeches delivered at such dinners are marked by the absence of that superior knowledge directly bearing upon the advanced systems of agriculture, either tending to elucidate an improvement or satisfy a recognised principle. It is equally to be regretted, that the farmers only meet annually at the festive board, where friendly connexions can be so easily formed in new acquaintances. Where neighbour describes to neighbour his system of management for the past, and his intentions for the present year—stating them with an important secresy—with an humble ambition of honest pride—the consciousness of successful industry. Now what better means exist for the self-edification of farmers, than the holding of periodical meetings for the discussion of practical matters, calculated not only to rectify error—to advance improvement, but to corroborate and place on a firm basis scientific truths? It is in such associations as these, where the practical and scientific man can best understand each other's motives, where the former cannot exceed the confines of science's laws, or the latter indulge in impracticable speculations. Here is the place for the landlord and agent to meet and instruct their tenants—to familiarise themselves with their habits and dispositions—to found a confidence in the rectitude of their motives—to conciliate and fix their shifting principles, and shape them into profitable action. But as it is—landlords are absentees from the social meetings of their tenantry—agents are represented by private friends, and thus the homely farmers drink to their "next merry meeting"—conscious of the good it is capable of bestowing, and anxious for its more frequent occurrence. The practical instruction of the adult population consists in sending out practical agriculturists to the most distressed districts in the South and West of Ireland, to initiate the farmers into a better system of husbandry. The plan originated with the Earl of Clarendon, and was executed in the autumn of 1847, and excepting certain intervals—occasioned by deficient funds—continued up to the present. *Libra, Feb.* 11.

*Bituminous Shale Manure.*—For the information of your correspondent "W. B. Harvard," I may acquaint you that last year I tried a number of experiments upon the growth of Turnips with various manures, one of which was the bituminous shale manure. I put nearly an equal value of each sort of manure, and those manured with the shale were by far the worst crop of the lot. These were grown upon light land without farm-yard manure, and I put about 30*s.* per acre value upon each, drilled with the seed. I should think the crop with the shale manure was not equal to more than half of any of the others. Its inferiority was so apparent as to satisfy me that no test by actual weight was required. *W. P. J.*

*Quantity of Water running from the Main Drain* of a 20-acre field, drained 3 ft. 6 in. and 4 ft. deep, the distance between the drains varying from 9 to 12 yards, according to the nature of the soil; 50 gallons per minute, 72,000 per day, 26,280,000 per year, equal to about 117,321 tons. Reckoning that 40 inches of rain (about our average in this part of England) is equal to about 4080 tons per acre, 81,600 tons would fall on 20 acres; deduct 81,600 from 117,321, as above, and the difference is 35,721 tons more of water annually running from the drain than falls upon the land in rain; or, in other words, little more than two-thirds of the water running from the drain is contributed by the rain falling on the surface of that field. *T. W. T., Cheshire.* [Do you state the 26,000,000 per annum as a *fact*, or only as a calculation from the ascertained 50 gallons per minute? Is the latter constant?]

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 26th of March. Present: Mr. Raymond Barker, Vice-President, in the chair; Lord Lovaine, Sir Robert Price, Bart., M.P., Mr. H. Barnett, Mr. Burke, Mr. W. G. Cavendish, M.P., Mr. Fuller, M.P., Mr. Gadesden, Mr. Fisher Hobbs, Mr. Maddison, Mr. C. E. Overman, Mr. Parkins, Mr. Pickin, Mr. Rowlandson, Prof. Sewell, Mr. Shelley, Mr. H. A. Smith, and Prof. Way.

The following new members were elected:—

Robinson, Thomas, Burton-on-Trent, Staffordshire.
Mordey, John G., Sunderland, Durham.
Whitford, C., St. Columb, Cornwall.
Pollok, Allan, jun., Broom, Glasgow.
Lloyd, T. D., Bromwydd, Carmarthen.
Gaskell, Charles Thomas, Fulmer House, Gerrard's-cross, Buckinghamshire.
Jones, Edward, Bridgewater, Somerset.
Methley, Willoughby, Heath-court, Blean, Canterbury.
Donovan, Alexander, Framfield, Uckfield, Sussex.

The names of nine candidates for election at the next meeting were then read.

Communications were received from the Marquis of Downshire, the Mayor of Manchester, Mr. Hill Dickson, and Mr. Doulan.

Mr. Key, of Newgate-street, who recently submitted to the inspection of the Council a gutta percha pump for liquid manure, had leave to show to the members, at this meeting, the operation of his new Turnip-cutter, by means of a neat working model, constructed by him for the occasion.

Professor Way kindly consented to deliver a lecture before the members in the Council-room of the Society, on Wednesday, the 14th of May, at 12 o'clock, "On the agricultural employment of common salt."

The Council then adjourned to their monthly meeting, on Wednesday next, the 2d of April.

### METEOROLOGICAL REPORT.—March.

(*Continued from page* 189.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Tues. 18 | 6.53 a.m. | 29.67 | ... | S. a m. Moderate breeze, and raining fast all day. |
| * | 5.5 p.m. | ... | 29.57 | At 5 p.m. WSW.; less wind, and fine. |
| | 8 p.m. | 29.61 | ... | 8 p.m. W. Brisk breeze; fine evening. |
| 19 | 7.20 a.m. | 29.59 | ... | 7.20 SSW. Moderate breeze; at 11, blowing hard at S., and raining fast, with barometer falling steadily, all day. |
| † | 8.40 p.m. | ... | 29.28 | At 8.40 p.m. wind more to E. of S., and barometer apparently rising. |
| | 11.5 p.m. | 29.29 | ... | Night hazy and overcast. |
| 20 | 7.30 a.m. | 29.25 | ... | SSW. a.m. Blowing hard; fine. |
| ‡ | 2.15 p.m. | ... | 29.20 | S. and fine, afternoon. |
| | 8.30 p.m. | ... | 29.20 | S. ditto, evening. |
| | 10.5 p.m. | 29.21 | ... | S. |
| ‖ 21 | 7.30 a.m | ... | 29.16 | SSE. Brisk breeze; showery. |
| | 12.40 p.m. | 29 17 | ... | SSW. Blowing hard; ditto. |
| | 2.30 p.m. | 29.14 | ... | SSW. at 2.30. The wind, which had lulled since noon, recommenced harder than ever, and the barometer had again fallen. |
| | 10.50 p.m. | ... | 29.10 | The wind continued at SSW. all day. |
| 22 | 7.35 a.m. | 28.96 | ... | Blowing hard with heavy rain, SSE., and barometer falling rapidly all day. |
| § | 6 p.m | ... | 28.56 | 6 p.m. ESE. Wind began to veer; ditto weather. |
| | 10.10 p.m. | ... | 28.57 | ESE. Less wind. Densely dark. |
| Sun. 23 | 7.10 a.m. | ... | 28.91 | WNW. Squally. 3 p.m. W. 5.30 SW. Barometer rising steadily all day; stiff breeze, and fine. |
| | 10 p.m | 29.24 | ... | Wind falling light. |
| 24 | 7.10 a.m. | ... | 29.40 | 7.10 NNW. 11.30 NW. Brisk. Fine day; barometer rising steadily. |
| | 10.40 p.m. | 29.64 | ... | Night calm. Barometer still rising. |

* † ‡ All these storms came from the south-west, and from the rapidity with which they succeeded each, must have been of small diameter; crossing Eng and to the eastward.

‖ This storm also came from the south-west, and went off to the north-and-eastward.

§ During the passage of this storm, my barometer fell to a lower point than I have noticed during more than two years; and from the extreme violence of the wind and the opposite quarters from which it blew during the fall and rise of the barometer, I think I may fairly adduce it as an argument (were one needed) of the truth of the conclusions I have arrived at in reference to previous currents, in which a similar change took place, though with less violence of wind, from a southerly quarter, with a falling barometer, to a northerly quarter, rising.

Dorchester, March 26th. *F. P. B. M.*

(*To be continued.*)

## Reviews.

*Flax: its Cultivation and Management; with Instructions in the various Belgian Methods of Growing and Preparing it for Market.* By E. F. Deman, Belgian Agriculturist, and lately Technical Instructor to the Royal Flax Society in Ireland. James Ridgway, 169, Piccadilly, London.

*Considerations for Extending the Cultivation of Flax.* By a Tenant Farmer. Stephen Austin, Fore-street, Hertford.

*Flax versus Cotton,* &c. By John Warnes, Esq. James Ridgway, Piccadilly, London.

We are frequently asked for books on the subject of Flax culture. Now, if any one wishes to know what influence the general cultivation of this crop is expected to have on the national welfare, he may read the last-named pamphlet; if he desires to ascertain whether he may expect any personal advantage by engaging in its cultivation, he had better read the tract placed second on the list; and if he would learn the methods which good cultivators have adopted in Belgium and this country, both of raising the crop and treating it after harvest, he should procure and study the pamphlet by Mr. Deman. Mr. Warnes' argument is, for the most part, levelled, like that of Mr. Ferrand, against the cotton manufacturer, and of course it is, to some extent, inspired by party feeling on the political changes of late years. Had it been written during the present year, which has witnessed M. Claussen's efforts to prepare the Flax for manufacture by the existing machinery of our cotton mills, it would probably have been still more energetic, and rather more practical. The short statement by "A Tenant Farmer" simply directs attention to Flax culture as a profitable opening for the farmer in cases where the cultivation of Wheat and growth of beef may have landed him in loss. And the pamphlet by Mr. E. Deman gives, as we have said, in full detail, the information which is needed to enable any one to cultivate the crop himself, and prepare its produce for the market.

## Notices to Correspondents.

Books: *E D* will feel much obliged if any one will name a good book on the management or diseases of ferrets, as he finds them very delicate animals.

Cows: *D A Cantab.* We should prefer Cabbage to Kohl Rabi per *acre;* Kohl Rabi to Cabbage per *ton.* If you *grow* them at equal expense grow Cabbage; if you *buy* them at equal expense buy Kohl Rabi. Gardner's Turnip-cutter will chop up Carrots; but no cutter will hinder cows from overloading themselves, or even from choking on their food, if they once get into the habit. About horse-stalls next week.

Implements: *Devoniensis.* If you take credit for the value of them at the end of your year, which your inventory on taking stock will give you, then the balance will appear in the loss account of your balance sheet.

Laying down to Grass: *R C.* Your best plan is to till the land, and get it clean, and in good heart, and then sometimes in moist weather, next month, cart on a lot of bits of turf from a good pasture three inches square or so; spread them and tread them in their place right side up, one in every square foot. Roll the land and cart on some compost, and spread it out of the cart, and then sow some Grass seeds, and bush harrow and roll them in; it would sooner be a pasture thus than in any other way, and one acre of good pasture may be made four. If, however, you should resolve to sow and depend on seed alone, you had better use the following mixture for your stiff land, and sow a thin crop of Barley with it:—Aira cæspitosa lutescens, 1 lb.; Alopecurus pratensis, 2; Arrhenatherum avenaceum, 2; Dactylis glomerata, 3; Festuca duriuscula, 2; F. heterophylla, 2; F. elatior, 2; F. loliacea, 2; F. pratensis, 2; Lolium italicum, 3; L. perenne, 5; Phleum pratense, 2; Poa nemoralis, 2; P. trivialis, 2; Trifolium pratense perenne, 3; T. repens, 4; in all, per acre, 39 lbs.

Pigs: *A W.* Mr. Fisher Hobbs, Boxted Lodge, Colchester. The American churn has been advertised in our columns repeatedly. We should suppose any ironmonger could procure it for you.

Tithe Rent Charge: *Anon.* 100*l.* of rent charge is this year worth 96*l.* 11*s.* 4½*d.* Riga Flax seed may be had of any well known seedsman. The cultivation of Flax has nearly been discussed enough in our columns of late.

To Prevent Hens Eating their Eggs: *T W E* says: "I has been found a good plan to suck an egg, and fill it with mustard, of course placing the egg for them to eat, and it will be some time before they will attempt it again."

Why do young Pigs lose their Tails? *Anon.* Your pigs are probably very high bred, and bred much in and in, which causes great delicacy of the skin. A cross with a hairy breed would cure the evil; but perhaps you will exclaim, "The remedy is worse than the disease." *W. C. S.*

## Markets.

### COVENT GARDEN, March 29.

A few Hothouse Grapes, both white and black, have made their appearance since our last report. Good Pine-apples are scarce, and dessert Pears are nearly over for this season. Apples are also scarce. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. A few forced Strawberries may now be obtained. Vegetables of all kinds are abundant and good. French Beans and Cucumbers are plentiful. Carrots and Turnips are good in quality. Potatoes are a trifle dearer. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 3*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

#### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6*s* to 10*s* | Oranges, per doz., 9*d* to 2*s* |
| Grapes, Portugal, p. lb., 1*s* to 2*s* 6*d* | — per 100, 6*s* to 14*s* |
| Strawberries, per oz., 2*s* | — Seville, p. 100, 7*s* to 14*s* |
| Pears, per doz., 2*s* to 5*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| — per half sieve, 6*s* to 15*s* | Chestnuts, per peck, 2*s* to 5*s* |
| Apples, dessert, p. bush., 6*s* to 10*s* | — per 100, 9*d* to 1*s* 6*d* |
| — kitchen do., 5*s* to 8*s* | Nuts, Barcelona, per bush, 20 to 22*s* |
| Lemons, per doz., 1*s* to 2*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| Almonds, per peck, 6*s* | Cobs, per 100 lbs., 70*s* to 75*s* |
| — sweet, per lb., 2*s* to 3*s* | |

#### VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d* | Shallots, per lb., 6*d* to 1*s* |
| Cabbages, per doz., 1*s* to 1*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Greens, p. doz. bunches, 4*s* to 6*s* | Artichokes, Jerusalem, p. half sieve, 1*s* to 1*s* 6*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| French Beans, p. 100, 1*s* 6*d* to 2*s* 6*d* | Endive, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Asparagus, per 100, 4*s* to 10*s* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Rhubarb, p. bundl., 6*d* to 1*s* 2*d* | Red Beet, per doz., 6*d* to 1*s* |
| Potatoes, per ton, 60*s* to 100 | Mushrooms, p. pot., 9*d* to 1*s* 3*d* |
| — per cwt., 3*s* to 6*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| — per bush., 1*s* 6*d* to 3*s* | Fennel, per bunch, 2*d* to 3*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Savory, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* to 3*s* | Thyme, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Carrots, per doz., 2*s* to 5*s* | Marjoram, per bunch, 2*d* to 4*d* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Mint, green, per bunch, 4*d* to 6*d* |
| Onions, p. bunch, 3*d* to 4*d* | Watercress, p. 12 bunch., 6*d* to 9*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d* |
| Leeks, per doz., 9*d* to 1*s* | |

#### HAY.—Per Load of 36 Trusses.

Smithfield, March 2

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 80*s* to 85*s* | | Clover ... ... ... | 70*s* to 84*s* | |
| Inferior ditto .. ... | 65 | 75 | Second cut ... ... | 65 | 75 |
| Rowen ... ... ... | 63 | 66 | Straw ... ... ... | 25 | 30 |
| New Hay ... ... | — | — | | J. Cooper. | |

The supply short and trade brisk.

Whitechapel, March 27

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 72*s* to 78*s* | | New Clover ... ... | —*s* to —*s* | |
| Inferior ditto ... | 60 | 65 | Inferior ditto... ... | 65 | 70 |
| New Hay ... ... | — | — | Straw ... ... ... | 24 | 27 |
| Old Clover ... ... | 84 | 88 | | | |

COAL MARKET.—Friday, March 28.

Holywell, 14s.; Carr's Hartley, 14s. 6d.; Tanfield Moor, 13s. 9d.; Wallsend Haswell, 15s. 9d.; Wallsend Stewarts, 15s. 9d.; Wallsend Tees, 15s. 9d.—Ships at market, 99.

POTATOES.—Southwark, March 24.

The Committee report that the although the arrivals during the last week have been moderate, trade is so very heavy that there is no improvement in prices. The following are this day's quotations:—York Regents, per ton, 70s. to 90s.; Scotch do., 50s. to 70s; ditto Cups, 60s. to 70s.; Cambridgeshire and Lincolnshire Regents, 50s. to 70s.; French whites, 50s. to 60s.

SMITHFIELD, Monday, March 24.

The supply of Beasts is small; unwillingness on the part of buyers to give advanced rates causes a slow trade; however, 3s. 8d. is currently obtained for choice qualities. The number of Sheep is also again small; the demand is good, and prices are on the average better. In a few instances 4s 8d. is rather exceeded for choice Downs. Good Calves are not very plentiful, and are rather dearer. From Holland and Germany there are 385 Beasts, 1110 Sheep, and 61 Calves; from Norfolk and Suffolk, 2400 Beasts; and from Scotland, 220.

| Per st. of 8 lbs.—s | d | s | d | Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. | 3 | 6 to 3 | 8 | Best Long-wools | 4 | 0 to 4 | 4 |
| Best Short-horns | 3 | 4 — 3 | 6 | Ditto Shorn ... ... | | ... | |
| 2d quality Beasts | 2 | 8 — 3 | 2 | Ewes & 2d quality | 3 | 0 — 3 | 8 |
| Best Downs and Half-breds ... | 4 | 6 — 4 | 8 | Ditto Shorn ... ... | | ... | |
| Ditto Shorn ... ... | | | | Lambs ... ... | | ... | |
| | | | | Calves ... ... | 3 | 0 — 4 | 4 |
| | | | | Pigs ... ... | 2 | 8 — 3 | 8 |

Beasts, 3692; Sheep and Lambs, 18,270; Calves, 119; Pigs, 310.

Friday, March 28.

We have but a short supply of Beasts, but the demand is small, and consequently there is difficulty in maintaining Monday's rates. There are more Sheep, and trade is dull; on the average prices are lower. There are a few more Lambs and Shorn Sheep, but it is too early in the season to quote them. As a guide to those desirous to clip, Shorn Sheep may be stated at 6d. per 8 lbs. lower than those in the wool. There is no alteration in the Calf trade. From Germany and Holland we have 110 Sheep, and 119 Calves; from Scotland, 300 Beasts; and 85 milch cows from the home counties.

| Best Scots, Hereford, &c. | ... | 3 | 6 to 3 | 8 | Best Long-wools | 3 | 10 to 4 | 2 |
|---|---|---|---|---|---|---|---|---|
| Best Short-horns | | 3 | 4 — 3 | 6 | Ditto Shorn ... ... | | ... | |
| 2d quality Beasts | | 2 | 8 — 3 | 2 | Ewes & 2d quality | 3 | 0 — 3 | 6 |
| Best Downs and Half-breds | ... | 4 | 4 — 4 | 8 | Ditto Shorn ... ... | | ... | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | | ... | |
| | | | | | Calves ... ... | 3 | 0 — 4 | 4 |
| | | | | | Pigs ... ... | 2 | 8 — 3 | 8 |

Beasts, 642; Sheep and Lambs, 3900; Calves, 226; Pigs, 320.

MARK LANE.

Monday, March 24.—The supply of Wheat from Essex this morning was small, and moderate from Kent; the condition of the whole generally very bad; nevertheless, all was disposed of early, at the extreme prices of last week. Foreign was in better demand, but a general disposition to enhance prices checked business.—Best malting Barley must be written 1s. per qr. higher, but in other descriptions, as well as Beans and Peas, there is no alteration of value.—The Oat trade is firm, and the turn dearer, but we cannot raise our quotations.—With the exception of some sales to arrive, Flour sells less freely than last week.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | —46 | Red ..... | 36 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —40 |
| — — Talavera | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign | 32 | —52 | | | |
| Barley, grind. & distil., 17s to 21s...Chev. | 26 | —31 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | 17 | —22 | Malting . | 22 | —24 |
| Oats, Essex and Suffolk | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —23 | Feed ..... | 16 | —21 |
| — Irish .....Potato | 17 | —21 | Feed ..... | 16 | —18 |
| — Foreign .....Poland and Brew | 17 | —21 | Feed ..... | 15 | —18 |
| Rye | 22 | —24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20s to 26s.....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... Winds | 37 | —42 | Longpod | 27 | —33 |
| — Foreign .....Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler- | 23 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26s to 28s .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize ..... White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 16 | —23 | Per sack | 26 | —34 |

Friday, March 28.—The supplies of grain, both English and foreign, this week are less than of late. The attendance at market on Wednesday and this morning was not large, and in the business transacted Monday's prices were fully supported.—Barley is in improved demaud, at our quotations.—In the value of Beans and Peas there is no alteration.—Oats are generally held for an enhancement, which is, in some instances, realised.—There is more disposition to purchase Flour, and a trifling advance is obtainable.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Feb. 15..... | 37s 8d | 22s 11d | 16s 2d | 23s 10d | 25s 5d | 27s 10d |
| — 22..... | 37 2 | 22 10 | 15 11 | 23 8 | 25 4 | 27 1 |
| March 1..... | 36 11 | 22 7 | 16 0 | 24 4 | 25 3 | 25 8 |
| — 8..... | 36 9 | 22 7 | 16 2 | 24 4 | 25 7 | 26 7 |
| — 15..... | 37 2 | 23 1 | 16 6 | 23 3 | 25 6 | 25 8 |
| — 22..... | 37 5 | 23 3 | 16 9 | 22 8 | 25 8 | 25 9 |
| Aggreg. Aver. | 37 2 | 23 11 | 16 3 | 23 8 | 25 6 | 26 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Feb. 15. | Feb. 22. | Mar. 1. | Mar. 8. | Mar. 15. | Mar. 22. |
|---|---|---|---|---|---|---|
| 37s 8d | — | ... | ... | ... | ... | ... |
| 37 5 | ... | ... | ... | ... | ... | |
| 37 2 | ... | | ... | ... | ... | ... |
| 37 2 | ... | ... | | ... | ... | ... |
| 36 11 | ... | ... | ... | | ... | ... |
| 36 9 | ... | ... | ... | ... | | ... |

Liverpool, Tuesday, March 25.—The arrivals of grain, &c., this week have been small. At our market this day there was a fair demand for Wheat, at the increased prices of Friday, being full 2d. per bushel above the rates of this day week, on the general run of samples, and on Egyptian an advance of 3d. per bushel was paid. The market was bare of Oats, and an advance of ½d. to 1d. per bushel was realised. In Barley there was no change, and not much doing. Peas brought full prices. Egyptian Beans were in fair retail request, and 6d. per qr. dearer. Indian Corn was 6d. to 1s. per qr. dearer than on this day week; the best American yellow brought 31s. 6d. per qr. There was a fair demand for Oatmeal, at an advance of 3d. to 6d. per load upon the rates of this day week. American Flour was 6d. per barrel, and French 6d. to 1s. per sack dearer.——Friday, March 21.—The arrivals from Ireland and coastwise have been quite trifling. At this day's market there was a good attendance of the town and country trade, who showed more disposition to purchase than of late, and a fair business was done in Wheat, at an advance of 1d. to 2d. per 70 lbs. on the most marketable descriptions, such as American, Rhenish, and French. Flour was in good demand, at an advance of 6d. per barrel on American. Oats and Oatmeal were in moderate request, at full prices. The same remark applies to Barley, Beans, and Peas. Indian Corn was inquired for at Tuesday's prices, but a further advance of 6d. to 1s. per qr. being generally demanded, little business resulted.


SKIRVING'S IMPROVED TURNIP SEEDS.

WILLIAM SKIRVING begs to announce to his Friends and the Public, that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW BULLOCK, at 9d. per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the seed of his Improved Turnips, he is this season enabled to offer it at the above reduced price; and he is also induced to take this step, to prevent Agriculturists being imposed upon, by the sale of spurious seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips, as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing.

All other kinds of Turnips, Carrots, Mangolds, and Root Seeds in general, of the best quality, at very moderate prices.

To Agriculturists, and others, laying down land for permanent pasture, W. Skirving begs to offer his selection of the most useful Perennial Grass Seeds; the sorts selected from personal observation of the growth and habits of the different Grasses grown in his experimental Grounds, at Walton. On this system he has supplied, within a few years, Seeds for many thousand acres, which have given every satisfaction.

*Orders, stating quantity and quality of Land to be laid down, will be correctly executed, with a suitable mixture.*

A remittance, or reference, is requested from unknown correspondents.

Queen-square, Liverpool, March, 1851.

PRIZE MANGOLD WURZEL, SWEDE TURNIPS, &c.

JAMES GROVE, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Show for nine years in succession, begs to state that his Seeds grown from selected roots, not plants, may be obtained of him, or of Messrs. Philip Hare and Co., 36, Mark-lane, London. He begs to call attention to the following opinions of the press: "The roots shown by Mr. Jas. Grove stand unrivalled."—Smithfield Club Show, 1848; *Mark Lane Express.* "The roots shown by Mr. J. Grove are allowed to be the best specimens ever shown, some measuring 36 inches in length and weighing 20 lbs."—Smithfield Club Show, 1849; *Ibid.* "The chief merits of these roots are their great length and growing not more than three inches in the ground, with very small tops."—Smithfield Club Show, 1848; *Bell's Weekly Messenger.* "The roots shown by Mr. James Grove were pronounced by many practical judges to be the most perfect specimens they had ever seen."—Smithfield Club Show, 1849; *Ibid.*

AGRICULTURAL SEEDS.

BASS & BROWN'S PRICED and DESCRIPTIVE AGRICULTURAL SEED LIST may be had free by post. The following of best quality delivered free to London, Ipswich, Norwich, or any station on the same line of Railway.

PERMANENT PASTURE GRASSES, to suit various soils.—Mixtures for soils in general, including proper proportions of Clover, per acre, 24s.

Mixtures supplied to suit soils of every description, the nature of the soil being stated; and if intended to be sown either with or without a crop. Any sorts supplied separate, if required, according to order, of which a list of prices of different kinds may be had.

FINE MIXED GRASSES FOR LAWNS, BOWLING GREENS, &c., 40s. per acre, 5s. per peck, or 1s. 3d. per lb.

| | | | |
|---|---|---|---|
| RYE-GRASS, true Italian ... | per bushel | 6s. | 6d. |
| ,, Perennial ... ... | ,, | 4 | 6 |
| ,, Stickney's Improved do. | ,, | 6 | 6 |
| ,, Pacey ... ... | ,, | 6 | 0 |
| CARROT, large white Belgian ... | per lb. | 0 | 8 |
| ,, large Altringham ... | ,, | 1 | 0 |
| MANGOLD WURZEL—Red Globe and Yellow Globe ... ... | ,, | 0 | 6 |
| ,, Long Yellow | ,, | 0 | 9 |
| Drumhead Cattle Cabbage ... | ,, | 2 | 6 |
| Rivers' new Stubble Swede Turnip | ,, | 2 | 0 |

The best Stock of Turnips and all other Agricultural Seeds. See our Catalogue. Prices to the Trade on application.

Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

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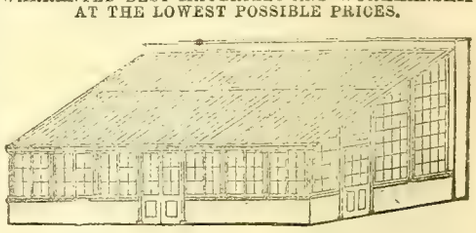
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MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 2d, a first-rate Collection of Carnations and Picotees, Pinks, and Auriculas, also Dahlias in dry roots, Gooseberries, Climbing and other Roses, &c. May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneer, American Nursery, Leytonstone, Essex.

CARNATIONS AND PICOTEES.

MESSRS. PROTHEROE AND MORRIS will Sell the Surplus Stock belonging to Mr. NEWHALL of Woolwich, by public Auction, at the Mart, Bartholomew-lane, on TUESDAY, April 8th.—Catalogues will be forwarded, on pre-paid application, and further particulars duly announced.

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Very Extensive and Important Sale of SHORT-HORNED CATTLE, SUFFOLK and other HORSES, LEICESTER SHEEP, PIGS, &c.

MR. H. STRAFFORD has the honour to announce that he has received instructions from the Executors of the late Marquis of Northampton, to sell by Auction, without reserve, at Castle Ashby, on TUESDAY and WEDNESDAY, the 8th and 9th days of April next (the Farms being Let), the entire Herd of SHORT-HORNED CATTLE, consisting of about 160 head of Bulls, Cows, Heifers, and Steers; Flock of about 750 Sheep, part of which are pure-bred Leicesters, the remainder a cross with the Southdown; valuable Team of 10 Suffolk Cart Horses, two bright Bay Carriage ditto, light Brougham, Pony Chaise and Harness, with the superior stock of 25 Breeding Sows and other Pigs. The Short-horns are descended from the celebrated herds of Earl Spencer, Messrs. Barnett, Beasley, Beauford, Faulkner, Manning, Tibbits, &c.; amongst them are some very prime Steers, which are well adapted for exhibition. The Suffolk Horses are bred from the stock of the late Lord Huntingfield, and Mr. Crisp, of Gedgrave. The Leicester Sheep are from the well-known flocks of Messrs. Beasly, Chapel Brampton; Painter, Burley; Manning, of Orlingbury; W. D. Manning, Rothersthorpe. They combine good size and symmetry with first-rate quality of wool and mutton. The Pigs are white, and of a very superior description. The remainder of the valuable team of 15 cart-horses, with the whole of the Implements and Dead Stock, will be sold on THURSDAY, the 10th of April.—Catalogues, with the pedigrees of the Short-horns, may be had upon application to Mr. STRAFFORD, 3, Camden Villas, Camden-town, London; of Messrs. FREEMAN and SON, Market-square, Northampton; and of Mr. ROBINSON, of Castle Ashby.

RELIEF OF FAMINE IN THE HIGHLANDS.—We, the undersigned Directors of the Royal Patriotic and Industrial Society of Scotland, respectfully request the attention of the friends of the destitute Highlanders to the subjoined STATEMENT.

A very large portion of the Highland population, rendered destitute by the failure of the Potato in 1846, was supported from that period until September last, upon rations of one or one and a-half pounds of meal per day, in return for their whole labour upon roads and similar works. Since the exhaustion of the Highland Relief Fund, many thousand persons, living in remote Highland and Island districts, have been in absolute want of the necessaries of life, and are now reduced to the necessity of begging a subsistence,—of flying from starvation, where they possess the means of transit, or are tempted to the commission of theft in order to sustain life.

In many instances estates are in the hands of trustees, and in others, not only would the rental be inadequate to maintain the destitute able-bodied poor, but in some instances the proprietors have advanced very large sums for the sustenance of the people beyond the whole income derived from their estates since 1846. Emigration has been extensively resorted to, and may still afford a useful outlet, but it is now generally admitted that the most practicable means of administering relief, and of grappling with the destitution, which otherwise is likely to be permanent in the Highlands, is by carrying out the plans of rural industry developed and advocated by the Royal Patriotic and Industrial Society, and already in beneficial operation in several districts. The able-bodied though destitute poor, not being entitled to parochial relief in Scotland, the first and most imperative object is the sustaining of life, which the Directors will seek to effect if provided with the requisite funds.

Possessing an efficient but economically conducted executive, with gratuitous organizations in the Hebrides and other Highland districts, the Society is anxious to administer PRESENT AID, leading to permanent ameliorations, by carrying out its great principle of "helping the poor to help themselves."

The Directors will, therefore, as regards necessitous crofters in possession of land, endeavour to procure for such as will engage to follow a better system of husbandry, the cancelling of arrears of rent, an adequate tenure, and they will advance small loans to be paid as wages for the cultivation and improvement of their crofts; they will also extend similar encouragement to fishermen, and organise, for the benefits of the juvenile population, model school farms, for which land has been gratuitously offered to the Society by several proprietors.

As regards the immediate relief of those able-bodied, but destitute, persons, who possess neither crofts nor employment, the Society will, if duly supported, take certain quantities of waste land on lease, to be cultivated as Industrial Farms, particularly with a view to the raising of green crops, Tussac Grass, flax, or hemp, and by rearing dairy produce and poultry, render the now waste land and labour of the destitute Highland districts as productive as possible.*

The Directors refer to the publications of the Society for further details as regards the operations of the Institution, which may be obtained of the Secretary, 53, Parliament-street, London; and beg to state, that any contributions with which they may be intrusted will be applied, with all possible economy and efficiency, towards the immediate relief, and, at the same time, the permanent amelioration, of the famishing but loyal and peaceful population of various districts of the Islands and West Highlands.

Contributions are requested to be made to any of the Directors of the Society, to its account at the Union Bank of London, to Messrs. Forbes, Forbes, and Co., 9, King William-street; or at Messrs. Hatchard, Seeleys, or Nisbet and Co., London.

As much land has remained uncultivated ever since 1846 for want of seed to crop it, contributions of good sorts of Potatoes, Oats, Barley, garden and other seeds, will be thankfully received at the Society's depots, 53, Parliament-street, London; at the *Agricultural Journal* Office, 8, St. Andrew-street, Edinburgh; and at A. F. Cameron and Co.'s, 33, Virginia-street, Glasgow.

(Signed)

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* Very gratifying reports of the industry of 60 families, recently located at Loch Elford side, in North Uist, by the Perthshire Ladies' Relief Association, have been received, and where the principles advocated by the Royal Patriotic Society have been longer in operation, three times the former amount of food has been raised by the crofters.

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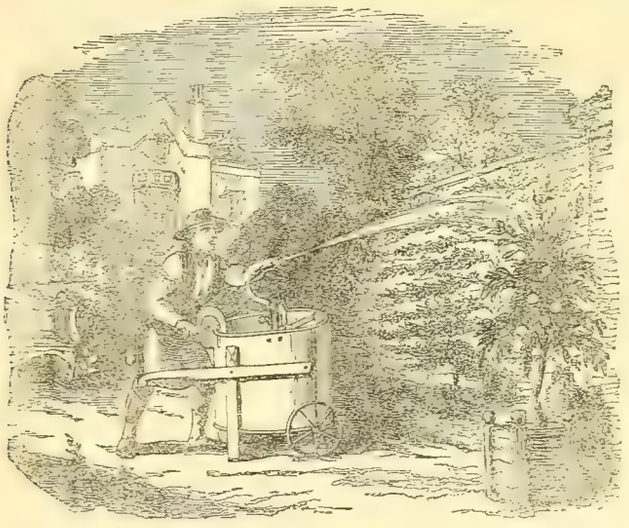
CONTENTS OF COTTAGE FARMING.

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London: GROOMBRIDGE and SONS, Paternoster-row.





# READ'S PATENT GARDEN ENGINES, MACHINES, AND SYRINGES.

R. READ begs to inform Ladies, Amateur and Practical Gardeners, and the Public generally, that he has made considerable improvements in his ENGINES MACHINES, and SYRINGES, by which Water may be dispersed in various densities, from a POWERFUL STREAM to a gentle Shower or Dewfall, and may be applied on the choicest Fruit Trees, Vines, Pines, &c., &c., without the slightest danger of injury. An improved ANGLE BRANCH may be applied to the Syringe for cleansing the UNDER surface of the leaves of Plants, &c., &c. Manufactured only by

RICHARD READ,

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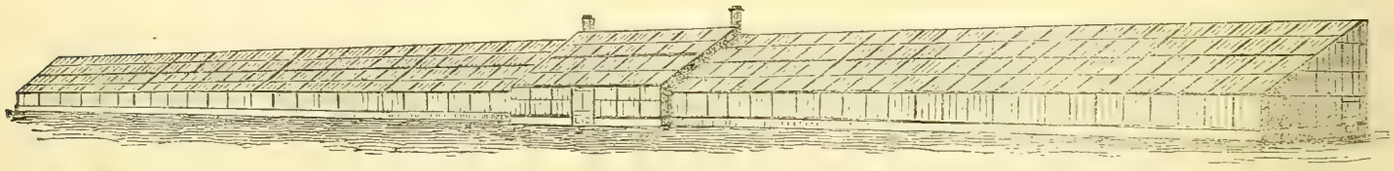
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*** CAUTION.—As Instruments of the commonest description are extensively circulated throughout the Kingdom, and sold *as Read's*, please observe that none are genuine except stamped with the Royal Arms and "READ'S PATENT."

BY HER MAJESTY'S ROYAL LETTERS PATENT.

# PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

## E. DENCH, PATENTEE.



This Range, consisting of Nine Houses, varying from 24 feet to 30 feet long, by 16 feet to 19 feet wide, each, which are all heated by Hot-water, being half the number erected for EDWARD L. BETTS, Esq., Preston Hall, Aylesford, near Maidstone, Kent.

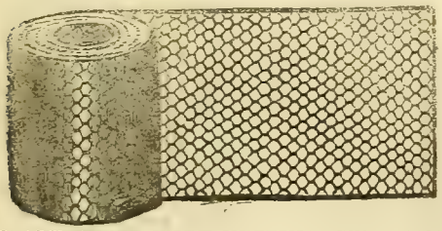
Mr. Thomas Frost, the Head Gardener, has proved the superiority of these Houses for the growth of both Fruits and Plants, and will give every information.

THE PATENT consists of two distinct principles for all Horticultural Erections—on one plan the Roof is formed wholly of Iron and Glass, no wood or putty, &c., and not more than three-quarters of an inch of light being taken up anywhere, and is very light, strong, and elegant, free from drip, and perfectly impossible for the rain to penetrate; the other principle consists of the Roof being formed in Sashes, and the surface of the Roof being Iron, Glass, and Putty, and, the work being hollow, is perfectly free from contraction or expansion. These Houses have been proved in all parts, and are found to excel all others. Heating by Hot-water on most scientific principles.

ONE GOOD SECOND-HAND HOUSE FOR SALE.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 " " | 4½*d.* " | 36 " " | 9*d.* " |
| 14 " " | 6*d.* " | 48 " " | 1*s.* " |

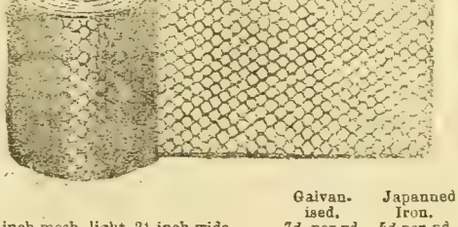
Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each, Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

THE HIPPOPOTAMUS, presented to the ZOOLOGICAL SOCIETY by H.H. the Viceroy of Egypt, is Exhibited daily at their Gardens, in the Regent's Park, from 11 to 4 o'clock. Visitors desirous of seeing the Animal in the water are recommended to go early.

Admission, One Shilling; on Mondays, Sixpence.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| ¾-inch " light " ... | 8 " | 6 " |
| 1½-inch " strong " ... | 10 " | 8 " |
| 1½-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

IRON GATES, HURDLES, &c.

THOMAS PERRY AND SONS, 352, OXFORD-STREET (NEAR HYDE-PARK), And Highfields Wrought and Cast-iron Works, Bilston Staffordshire, Manufacturers of every description of Park Entrance, Carriage and Field Gates, Wickets, &c.; Plain and Ornamental Fencing and Palisading; Ox, Cattle, Sheep, and other Hurdles; Tree Guards, Garden Seats, Hay Racks, Wheelbarrows; Land and Garden Rollers, Stable Fittings, &c. &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and most moderate terms. A great variety of the above articles always kept in Stock at the London Warehouse, and at the Works. Drawings and prices may be obtained on application, or furnished free by post.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

METCALFE AND Co's NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, wher all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 29, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 14—1851.] SATURDAY, APRIL 5. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 220 *a* | Linnean Society | 215 *b* |
| Ammonia, absorption of | 212 *a* | Manure, ammonia as | 212 *a* |
| Aquatics, stove | 214 *a* – 215 *b* | Market gardening | 212 *a* |
| Barley seed time | 219 *c* | Mignonette, bush | 213 *b* |
| Bees | 214 *c* | Oats | 219 *a* |
| Birds, British song | 212 *c* | Plants, hardy | 214 *b* |
| Broccoli, Snow's | 214 *a* | — for "Crystal Palace" | 211 *b* |
| Calendar, Horticultural | 215 *c* | Plough new subsoil | 221 *a* |
| — Agricultural | 221 *b* | Plum, Reine Claude de Bavay | 213 *a* |
| Carrot, culture of | 218 *a* | — trees to train | 2 3 *c* |
| Cherry trees to train | 213 *c* | Poultry, pi ioning | 218 *a* |
| Chestnut, Spanish | 211 *c*—214 *a* | Primula, Chinese | 215 *c* |
| Chrysanthemums, spring | 214 *b* | Rain | 214 *b* |
| Clover seed time | 219 *c* | Rockwork, to colour | 214 *a* |
| Conifers and cattle | 214 *a* | Sea weeds | 214 *a* |
| — size of | 214 *b* | Seeds, steep for | 216 *c* |
| Coffee plant | 213 *b* | Spanish Chestnut | 211 *c*—214 *a* |
| Crystal Palace, plants for | 211 *b* | Stocks | 213 *a* |
| Draining, deep | 218 *b* | Taxanio i | 219 *b* |
| Education | 219 *b* | Timber, Spanish Chestnut | 211 *c* |
| Fir twigs | 213 *c* | Trade memoranda | 213 *b* |
| Gardening, market | 212 *a* | Trees, fruit, for S. aspect | 216 *c* |
| Gardeners' Benevolent Institution | 213 *c* | — sea weeds for | 214 *a* |
| Grafting | 212 *b* | Tropæolum tuberosum | 214 *a* |
| Greenhouse, model of | 215 *b* | Victoria Regia | 215 *b* |
| Highland Society | 220 *b* | Villa gardening | 213 *a* |
| Honeycomb, antiquated | 215 *c* | Weald of Sussex, improvement of | 217 *b* |
| Horticultural Society | 214 *c* | Weather, the | 221 *a* |



ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. Under the Patronage of Her Most Gracious Majesty the QUEEN The First EXHIBITION for the season will take place on WEDNESDAY, APRIL 23, in the Assembly Rooms, at the HORNS TAVERN, KENNINGTON, open to all Exhibitors, when Prizes will be awarded for the following productions, viz., Miscellaneous Plants, Auriculas, Heartsease, Polyanthuses, Cinerarias, Specimen Plants, and Seedlings. Mr. Oakey's Band is engaged for the occasion. Admission to Members and their Friends at 12 o'clock, and to the public from 1 to 6 o'clock, at One Shilling each. The following Exhibitions will also take place at the Royal Surrey Zoological Gardens: On Wednesday, May 21; Wednesday, June 25; Thursday, July 24; and Wednesday, Sept. 3.

Lists of Prizes and the Rules of the Society may be obtained of JOHN TAYLOR NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

PELARGONIUMS AND NEW PLANTS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS and NEW PLANTS is ready, and will be forwarded by post on application.

NEW DAHLIAS; E. FOSTER'S, ESQ., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c, fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d* and 5*s.* packets, post paid, for prepayment.

MESSRS. HAY, SANGSTER, AND CO. will be ready to supply their prepared POTATO CUTTINGS about the middle of April next, the produce of which proved so highly satisfactory last, as well as the experimental trials of the three former years, as to QUALITY, QUANTITY, and SIZE, being more than double the crop this year of those planted in the usual way, and containing a much larger quantity of starch, which is so essentially necessary to the preservation of that valuable root. A report of the analysis will be found below. Our own experiments give about one-third more saccharine matter than the best we could procure grown under the old system. All orders must be to hand on or before the end of the second week in April, as H. S. and Co. are preparing to plant a large breadth, and will only provide for what may be ordered up to that time. Post-office orders to be made payable to JOHN SANGSTER, at the Borough Post-office, Southwark. Printed instructions for planting and management will be sent with the plants ordered.

| | Per 1000—*s. d.* | | Per 1000—*s. d.* |
|---|---|---|---|
| York Regents | 10 6 | New Early Ebrington Kidney | 15 0 |
| American Native | 10 6 | Do. Ash-leaved | 15 0 |
| White-blossomed Kidney | 10 6 | Do. Frame Round | 10 6 |
| Soden's Early Oxford | 15 0 | Do. Radical | 10 6 |
| Early Cockney | 15 0 | Fox's Seedling | 10 6 |

Package and delivering to any Carriers' Office in London, 1000 to 5000, 1*s.*—Newington Butts, London, March 22.

*** We have examined a sample of Potatoes, called York Regents, grown by Messrs. HAY, SANGSTER, and Co., in comparison with two other samples of Potatoes of the same denomination, obtained by ourselves from a highly respectable Potato Salesman, with a view to ascertain the amount of starch contained in each, with the following results—viz.,

| | Starch. |
|---|---|
| Messrs. HAY, SANGSTER, and Co.'s York Regents | 15½ per cent. |
| Salesman, No. 1 | 11¾ " |
| " No. 2 | 9¼ " |

MAURICE SCANLAN, F.C.S., Chemical Works, George-street, Bermondsey; ALFRED ANDERSON, F.C.S., Experimental Chemist, Great Suffolk-street, Southwark.

BECK'S SEEDLING PELARGONIUMS AND THE BEST OF OTHER RAISERS' VARIETIES. Fine plants, ready for shifting into large pots; twelve for two guineas, including carriage to London and the packing-case. This is the proper time for purchasers to procure them. Catalogues may be had on application to J. DOBSON, Wortoncottage, Isleworth, Middlesex. The stock was never finer, and purchasers may rely on the best selection being made for them, if they cannot choose for themselves.

J. FOWLE AND SON have now ready their descriptive Catalogue of Geraniums, Fuchsias, Verbenas, Antirrhinums, Phloxes, Herbaceous and Bedding Plants in general. Dielytra spectabilis, from 18*s.* to 36*s* per doz.; 12 extra first-rate Fuchsias, 18*s*; 12 ditto ditto, 12*s*; 12 extra Antirrhinums, 12*s.*; 12 good border varieties, 9*s.* Holland Nursery, Hollandstreet, Brixton Road, Kennington, Surrey.—April 5

RHODODENDRON JAVANICUM, or new Orange-coloured RHODODENDRON, from JAVA, now in flower at W. ROLLISSON AND SONS' Nursery, Tooting, Surrey.

WILLIAM ROLLISSON and SONS beg most respectfully to inform the Nobility, Gentry, and Public that they have now in flower at their Nursery, the new and beautiful RHODODENDRON JAVANICUM. The plants in flower are Seedlings, raised only three years ago, a proof that it is a remarkably free flowering species.—Fine plants from 10*s.* 6*d.* and upwards.

NEW SEEDLING CALCEOLARIAS.

N. GAINES begs to inform Amateurs, Nurserymen, and others, that he is sending out KINGHORN'S New Seedling CALCEOLARIAS, also those raised by himself. He will have strong Plants of his new Dwarf Seedling DAHLIAS "Prince Arthur" and "Rachel," to send out the first week in May. A descriptive list of Fancy Pelargoniums and Show varieties; also Fuchsias, Verbenas, Cinerarias, &c., can be had by applying at the Nursery, Surrey-lane, Battersea, near London.

MESSRS. J. AND H. BROWN offers to the Nobility and Gentry the following CHOICE PLANTS, &c.:

| | *s. d.* |
|---|---|
| First-rate Carnations and Picotees, per doz. ... 9*s.* to | 12 0 |
| 6 Fine Lilium Carnifolium, of sorts | 12 0 |
| 12 Fine Italian Tuberoses | 6 0 |
| Fine Dwarf Orange Trees, in pots, each | 10 6 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name | 20 0 |
| 25 American Azaleas, ditto ditto | 15 0 |
| 6 Andromedas of sorts, including floribunda | 8 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen | 8 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties | 12 0 |
| New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to | 10 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for | 10 0 |
| 6 Fine Hardy Magnolias, one of a sort | 10 6 |
| Cryptomeria Japonica, 6 choice hardy Pinus, for | 10 0 |
| 50 Dwarf Roses, on their own roots, by name | 16 0 |
| Standard and half-standard Roses, per dozen, 12*s.* and | 15 0 |
| Climbing Roses, choice sorts, per dozen | 6 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots | 9 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each | 3 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 0 |
| 12 Choice Camellias, d tto ditto | 30 0 |
| 12 Orchidea, choice species and good plants, for | 30 6 |
| 50 choice Greenhouse Plants, one of a sort, by name | 45 0 |
| 24 choice Ericas, one of a sort, by name | 16 0 |
| 24 choice Fuchsias, one of a sort, by name | 10 0 |
| 12 Pæonies, new white, pink, and blush, of sorts | 8 0 |
| 6 fine Pæonia Arborea, choice varieties for | 10 0 |
| Verbenas and Petunias, best new sorts, per dozen | 6 0 |
| Best Cinerarias and Calceolarias, strong plants, 9*s.* per dozen to | 12 0 |
| 25 choice Hardy Herbaceous Plants, named | 7 6 |
| New Camellia seed, just imported, sent post free, 50 for | 5 0 |
| Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.*, of the most approved varieties, also their Catalogue of Plants, sent free by post. | |

Albion Nursery, Stoke Newington, London, April 5.

HOLLYHOCK SEED.

EDWARD TILEY begs to inform the lovers of that beautiful flower that he has been successful in procuring a quantity of good sound SEED of the above from an Amateur Gentleman who has one of the most superb and choice collections in cultivation; the seed having been selected with every care and attention, he can confidently recommend it. Sold at 2*s.* 6*d.* per packet, containing 150 seeds, or 5*s.* for a packet of 400 seeds.

GERMAN ASTER SEED.

Unequalled for the superiority of flower, the shape of which forms that of half a globe, and has been admired by thousands of spectators at numberless exhibitions. There are from 20 to 30 varieties, 1*s.* per packet.

SWEET-WILLIAM SEED.

Saved from 24 superb varieties. The flowers are very large, and of dwarf habit. They were much admired when in bloom, by countless spectators, and the Seed numerously ordered by them; 1*s.* per packet.

ANTIRRHINUM SEED.

E. T. being a most extensive grower of all the choicest sorts known in cultivation, has selected the Seed with great care from the finest varieties, as to colour, shape and habit of plant. There are more than 50 distinct varieties; 1*s.* per packet.

DWARF ORANGE AFRICAN MARIGOLD SEED.

Unrivalled for its superior size and darkness of colour, many of the flowers last season measuring 5 inches over, and not more than 1 foot high; 6*d.* per packet.

Or, if preferred, a 5*s.* packet of Hollyhock and a packet of each of the above varieties for 7*s.*

| | |
|---|---|
| Walcheren Cauliflower Broccoli (as imported) | 1*s.* 0*d.* p. packet. |
| Tamworth Broccoli | 1 0 " |
| Wilcove Broccoli | 1 0 " |
| Cole's Superb Solid Celery | 0 6 " |
| Bath Cos Lettuce, seed true, the best and finest flavoured in cultivation | 1 0 " |

A remittance must accompany the order, either in cash or penny postage stamps for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4*s.* per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s* each.

PRICED CATALOGUES OF

LOUIS VAN HOUTTE, NURSERYMAN, Ghent, (*Belgium*), to be had of Mr. GEO. RAHN, 52, Mark-lane, London.

Nos. 40 and 41.—BULBOUS PLANTS, HARDY PERENNIALS, GREENHOUSE AND STOVE PLANTS (*October*, 1850.)—No. 42. ORNAMENTAL AND CULINARY SEEDS. (*January*, 1851.)—No. 43. ROSES. (*February*, 1851.)—No. 44. CAMELLIAS. (*March*, 1851)

*** The usual discount to the trade.

DECIDED BARGAINS. — Dahlias, fine show varieties, 6*s.*; Carnations, competing flowers, 6*s.*; Ditto without names, fine, 4*s.*; Alonsoa grandiflora, 3*s.*; Heliotropes, of sorts, 4*s.*; Fuchsias from 1 to 2½ feet, 6*s.*; Ditto, other named sorts, 6*s.* to 9*s.*; Petunias, named varieties, 4*s.*; Ditto, without names, 2*s.*; Pinks, competing flowers, 4*s.*; Ditto, seedlings from named sorts, 3*s.*; Pansies, show varieties, 6*s.* to 12*s.*; Calceolarias, seedlings—fine, 4*s.*; Phlox Drummondii 3*s.*; Verbenas, named, 4*s.*; Ditto, seedlings, 2*s.*

The above are the prices per dozen. Plants sent to compensate for long carriages. General Catalogues forwarded on application to WM. ANDERSON.—Dundee, April 5.

GIANT SAINTFOIN.—After three years' trial of this article, in various soils and in competition with the common Saintfoin, Messrs. SUTTON can recommend it with increasing confidence for general cultivation It will thrive on almost every kind of soil, and has succeeded in several instances where the common Saintfoin had failed. Its produce is much greater, the first crop is ready several weeks earlier than the old sort, and one or two good cuttings may be had during the summer and autumn.

*In* Messrs. SUTTON's *sample ground, a plot of the* GIANT SAINTFOIN, *sown in March*, 1849, *has had five good crops cut from it, and is now very strong again. Present price of Seed*, 10*s. per bushel, or* 7*2s. per quarter.*

Mangold Wurzel, 6*d.* per lb.; White Belgian Carrot, 9*d.* do.; Skirving's Liverpool Swede, 8*d.* do.; Ashcroft Swede, 9*d.* do., and all other Agricultural Seeds of Home Growth, sent carriage free by rail to London, Bristol, Southampton, &c.

Reading, Berks, April 5.

NEW DAHLIAS.

CHARLES TURNER will be prepared to execute orders on the 1st of May for the following varieties, which are very superior flowers, and should be in every collection grown for exhibition:—

| | |
|---|---|
| BARMAID (HOLMES) white, occasionally tinged, but generally a fine white of unusual substance | 10 6 |
| JULIEN (HALE) rosy purple, neatly cupped, of great depth; took certificates at Slough and Notting Hill | 10 6 |
| NAPOLEON (PARKER) rich vermilion, of a novel and striking shade, flower deep and symmetrical, constant and good habit; certificate at Wycombe | 10 6 |
| NEPAULESE PRINCE (STEIN) crimson, shaded with dark maroon, very superior constant show flower, being an improvement on Richard Cobden; has obtained numerous first prizes in class showing and six first-class certificates | 10 6 |
| NIL DESPERANDUM (STEIN) vivid scarlet, unquestionably the best of its class, the petal good, flower of great depth, and finely developed, one of the leading flowers of the season; has been very successful | 10 6 |
| REGINA (HALE) shaded rose, smooth good petal, well formed, good size; took certificate at Royal South London | 10 6 |
| ROUNDHEAD (HOLMES) salmon buff, deep, full, finely formed flower, good grower, at all times to be depended on; habit particularly good; took certificates at Metropolitan, Royal South London, and Norwich | 10 6 |
| SIR CHARLES NAPIER (HALE) rich scarlet, fine firm flower, finely formed and closely set, handsome close centre; took certificate at Highgate | 10 6 |

FANCY DAHLIA.

MRS. HANSARD (UNION) raised by J. Edwards, Esq.; yellow, with distinct white tips, fine form, and full size; very true and constant in every respect; a noble addition to this class; has been eminently successful at 12 of the principal shows | 10 6

CHOICE NEW FUCHSIAS,

which will be ready with the Dahlias.

| | |
|---|---|
| AJAX (HOCKEN) large dark, fine habit | 5 0 |
| BRILLIANT (BANKS) crimson, purple corolla, good habit, and very free bloomer | 5 0 |
| CONSPICUA (BANKS) white tube and sepals, vermilion corolla, very large and attractive | 7 6 |
| DUCHESS OF KENT (KNIGHT) blush tube, sepals tipped with green, vermilion corolla, exceedingly long handsome flower | 7 6 |
| ELECT (BANKS) crimson tube, rosy purple corolla, of fine habit | 5 0 |
| EXPANSION (BANKS) pure white tube and sepals, bright rose corolla, very stout and abundant bloomer, one of the best light varieties | 7 6 |
| LOVELINESS (BANKS) small pleasing light | 3 6 |
| MADAME SONTAG (BANKS) white tube, bright vermilion corolla | 5 0 |
| PRINCESS (BANKS) white, red corolla, very free bloomer, and good habit | 5 0 |
| VOLTIGEUR (BANKS) crimson tube and sepals, dark purple corolla, the sepals reflex well, and show the rich corolla to great advantage | 7 6 |

General Catalogue can be had on application.

Royal Nursery, Slough, near Windsor.

THE FINEST CARNATIONS, PICOTEES, PINKS, AND OTHER HIGHLY DESIRABLE PLANTS.—We have the pleasure to announce that our Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

| | | | | |
|---|---|---|---|---|
| 25 pairs of finest first-rate show varieties of Carnations and Picotees | ... | ... | ... | £5 0 0 |
| 12 pairs do. do. do | ... | ... | ... | 2 10 0 |
| 25 pairs of very fine show varieties of do. do. | ... | | | 3 0 0 |
| 12 pairs do. do. do. | | | | 1l. 4s. to 1 10 0 |
| Fine mixed border do.—per dozen pairs | .. | ... | | 0 12 0 |
| True old Cove—per pair | ... | ... | ... | 0 2 0 |

PINKS, finest first-class show flowers, 12s. to 18s. per dozen pairs.

New Seedling PANSIES, "Commander-in-Chief," and "Prince Arthur."—Two of the best flowers of the season, price 5s. each. For particulars of their merits, see advertisement of February 8.

PANSIES.—12 of the finest first-class show flowers, including the above, for 21s. 12 fine show flowers, 10s.

FUCHSIAS.—All the best and newest varieties worthy of being grown, 9s. to 12s. per dozen.

VERBENAS do. do. 6s. to 10s. per dozen.

CINERARIAS do. do. Fine flowering plants, 9s. to 18s. per dozen.

CHRYSANTHEMUMS do. 6s. to 12s. per dozen.

" Liliputian Varieties of 1849, 6s. per doz.

" " " of 1850, 12s. per doz

ERICAS.—Fine flowering plants of all the new varieties of Ventricosa, and other free-blooming kinds, 12s. to 18s. per dozen.

EPACRIS.—Fine flowering plants of all the best kinds, 12s. per dozen.

CAMELLIAS.—An extensive collection of the most superb varieties, 30s. per dozen.

FANCY GERANIUMS.—Strong Plants, in 5-inch pots, 12s. to 18s per dozen.

Greenhouse Plants, in 25 select kinds, by name, for 20s.

Do. 12 do. 12s.

ESCALLONIA MACRANTHA, a new and splendid hardy Shrub, bearing spikes of bright pink-coloured flowers, 5s. each.

MITRARIA COCCINEA do. do. with large Scarlet flowers, 9s. to 18s. per dozen.

HARDY CONIFERÆ, in 12 distinct and rare species, for 30s.

ROSES, Standards, Half-Standards, and Dwarfs, of all the best kinds, 12s. to 15s. per dozen.

CLIMBING ROSES, of strong and vigorous growth, 6s. to 9s. per dozen.

Hard Flowering CLIMBERS, in 12 fine sorts, for 10s.

Herbaceous Plants, of newest and most showy kinds, 6s. to 9s. per dozen.

LILY OF THE VALLEY, strong, for blooming, 5s. per 100.

30 packets of new and very choice Flower Seeds, per post-free, for 6s.

ANEMONE Seed, saved from selected sorts, 2s. 6d. and 5s. per packet, per post-free.

"ORACHE," superior in every respect to Spinach, 2s. 6d. and 5s. per packet. "TRUE CUSTARD," 1s. per packet.—For particulars, see advertisement of March 22.

YOCELL and Co., Royal Nursery, Great Yarmouth.

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AGRICULTURAL SEEDS.

WOODLANDS NURSERY, Mayesfield, near Uckfield, Sussex.

WM. WOOD AND SON respectfully solicit attention to their very superior stock of MANGOLD WURZEL, which is warranted of the best description.

| | Per lb.—s. d. |
|---|---|
| Yellow Globe Mangold Wurzel ... ... ... ... | 0 6 |
| Long Red ditto ditto ... ... ... ... | 0 6 |
| White Carrot, fine stock ... ... ... ... ... | 0 9 |
| Long Red Carrot, for field culture ... ... ... | 1 0 |
| Rivers' new Stubble Swede Turnip, very fine ... | 2 0 |

N.B.—Turnip and all other Agricultural Seeds at the most reasonable prices.

---

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from Weeds and coarse Grasses, 21s. per bushel, 3s. per gallon, or 1s. 3d. per pound, with instructions

To insure a pure Turf of finest Dwarf Grasses, Messrs. SUTTON strongly recommend the sowing the above Seeds, whereby the great expense of cutting, carting, and laying Turves may be avoided.

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre, viz.:*

| | |
|---|---|
| BEST MIXTURES for laying down Land to permanent Meadow or Upland Pasture, per acre ... | £ s. d. 1 8 0 |
| DITTO, for laying down Reclaimed Marshes and Common Inclosures, per acre ... ... ... ... ... | 1 2 6 |
| DITTO, for fine Park Lands near Mansions, per acre | 1 15 |
| DITTO, for Irrigation or Water Meadow, per acre ... | 1 6 0 |

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS *having reduced the price of these Seeds 25 per cent., viz., to 10d. per lb., or 1s. 6d. per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of 6 or 8 lbs. per acre, sown immediately upon the old Turf.*

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following:—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

*From the Land Steward at a large Estate in Hampshire.*

"All the kinds of Grasses sown separately grew admirably; and the 20 acres of Park laid down with *your Mixture* last spring is most excellent. We are anticipating a large crop of Hay, and I can see by the various habits and successional growths of the several kinds, that we shall always have a fresh growing bite for the cattle after the Hay is cut. The Clovers too I see are plentiful."

*From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

Another Clergyman writes us—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for Sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

**Reading, Berks, April 5.**

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RIVERS'S STUBBLE SWEDE TURNIP SEED.

J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green-topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker-street Cattle Show; also specimen roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2s per lb, carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5s.; and 5 lbs., 10s., by his agents, a list of whom will be found in the *Gardeners' Chronicle* of 22d March. Messrs. Sutton and Sons, Seedsmen, of Reading, who proved this Turnip with others in their sample ground last summer, state as follows:—"Seed sown on June 30th, July 20th, and August 10th, using the same manure for all, gave the following results—from the first sowing, the roots were fully equal to the *best* of the other sorts; from the second and third sowing, they were far superior in size, weight, and shape, thus showing its peculiar adaptation for late sowing."

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TRUE DRUMHEADS for CATTLE, also EARLY BATTERSEA, the large Imperial, Early Vanack, &c., at THOMAS WELLANDS, Surrey Gardens, near Godalming, Surrey, packed and delivered at the Godalming Station, 3s. 6d. per 1000, the large Asiatic Cauliflower Plants, 3s per 100.

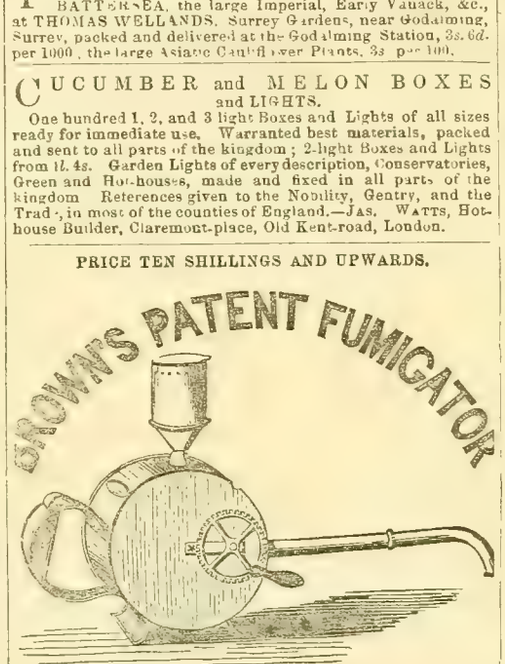
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CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3 light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hot-house Builder, Claremont-place, Old Kent-road, London.

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PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, on Shrubs and Flowers, in the open air, more effectually in conjunction with SANGSTER'S FLORUMBRA, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

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NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost, Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½d., 1 yard wide, 3d. 2 yards, or 6d., 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance. Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

---

HALL'S GARDEN NETS, of superior lightness and strength.—These Nets are found to be a good protection against Frost, Hail, and Wind; also from Wasps and Insects They are of great width, and very durable. Also valuable as outside shades to Greenhouses, &c.

| | |
|---|---|
| Nos. 1 and 2, 56 inches wide | ... 6d. per yard. |
| No. 3, 56 inches wide, close shelter | ... 8d. " |
| No. 4, " " thread leno | ... 8d. " |

P.S.—It will be observed that No. 1 Net, of which there is the largest consumption, is only 4d. the square yard, or rather less. All the Nets are 56 inches wide, and so made that two breadths can easily be joined.

AGENTS FOR SALE.—LONDON.

| | |
|---|---|
| Benjamin Edgington, 2, Duke-street, Southwark. | J. Carter, 283 Holborn. |
| Messrs. Cuarlwood and Cummins, 14, Tavistock-row, Covent-garden. | W. Clark, 25, Bishopsgate-street, Within. |
| Messrs. Minier, Nash, and Nash, 60, Strand. | Messrs. Hurst and M'Mullen, Leadenhall-street. |
| | Messrs. Gordon, Thomson, and Co., 25, Fenchurch-street. |

| | |
|---|---|
| P. Lawson & Son, Edinburgh. | John Shaw, 19, Oxford-street, Manchester. |
| T. D. Watkinson, Market-place, Manchester. | F. & J. Dickson, Chester. |
| H. Bigland & Co., Do., Do. | H. J. Oldroyd, High-street, Shrewsbury. |
| F. & J. Dickson & Co., 103, Deansgate, Do. | Fisher, Holmes, & Co., Sheffield. |

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TANNED NETTING for the Protection of Fruit Trees, and for the security of fresh-sown Seed from Birds, at unprecedented low prices, viz., 1d. per square yard, 200 yards for 14s., 600 yards for 30s., or 1000 yards for 50s.; Running and Scrim Canvass for Wall Fruit—at THOMAS EDGINGTON AND CO.'S. Marquees, Tents, and temporary Ball Rooms fitted up in a superb style, in town or country, on sale or hire. Marquees for Emigrants. Rout Seats and Dancing Hollands for evening parties, on hire; Flags, Banners, Tulip Covers, Sun Blinds, and improved Waggon and Rick Cloths. Tarpaulings for houses under repair, on hire, at THOMAS EDGINGTON and Co.'s Warehouse, 17, Smithfield Bars, City, and Manufactory, nearly opposite the Bricklayers' Arms, Old Kent-road.

**Orders per post punctually attended to.**

---

LONG YELLOW MANGOLD WURZEL.—A superior Stock of this kind, which grows as heavy a crop per acre as the Long Red, and is far superior in quality, containing a much greater per centage of saccharine, at 1s. per lb., or 8½ per cwt.: Long Red and Yellow Globe at 9d.

BRITISH QUEEN POTATOES, as before advertised, at 9s. per bushel; and

ANDSLEY'S EARLY FRAME POTATOES at 6s. per bushel.

NUTTING and SONS, Seedsmen, 46, Cheapside, London.

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BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

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GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for cash.

| CUT TO SIZE. | | SHEET SQUARES. In boxes of 100 feet. | £. s. d. |
|---|---|---|---|
| 16 oz. from 2d. to 3½d. per foot. | | Under 6 by 4 ... ... | 0 8 6 |
| 21 oz. " 3½d. 5d. | " | 6 by 4 and 6½ by 4½ ... | 0 13 0 |
| 26 oz. " 3½d. 7½d. | " | 7 by 5 and 7½ by 5½ ... | 0 15 0 |
| 32 oz. " 4d. 9½d. | " | 8 by 6 and 8½ by 6½ ... | 0 17 6 |
| | | 9 by 7 and 10 by 8 ... | 1 0 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2½d. per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ... 12s. 0d. | 8 by 6 and 8½ by 6½ ... 15s. 0d. |
| 7 by 5 " 7½ by 5½ ... 13 6 | 9 by 7 " 10 by 8 ... 16 6 |

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6s.; 6 tubes, 8s. 6d. GLASS SHADES.—Estimate, and List of Prices forwarded on application.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes. Inches. | | | | | Inches. | | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Under 6 | by 4 | at | 1½d. is | £0 12 6 |
| From 6 | " | 4 | | | 7 | " 5 | " | 2d. " | 0 16 8 |
| 7 | " | 5 | | | 8 | " 6 | " | 2½d. " | 0 18 9 |
| 8 | " | 6 | | | 10 | " 8 | " | 2½d. " | 1 0 10 |
| 10 | " | 8 | | | 12 | " 9 | " | 2¾d. " | 1 2 11 |

Larger sizes, not exceeding 40 inches long.

| | | | | | |
|---|---|---|---|---|---|
| 16 oz. from 3d. to 3½d. per square foot, according to size. | | | | | |
| 21 oz. | " | 3½d. | 5d. | " | " |
| 26 oz. | " | 3½d. | 7½d. | " | " |

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square London.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

| STOCK SIZES. | |
|---|---|
| 6 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each. |
| 6½ by 5½ to 8 by 6 ... 13 " | 11 by 8 to 14 by 10 ... 16 " |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 33s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.

87, BISHOPSGATE-STREET, WITHOUT,

Same Side as Eastern Counties Railway.

---

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | | |
|---|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... | 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... | 6½ by 3 |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... | 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct of last year, 10*s.* 6*d.* cash. See List containing a great variety of choice new Plants for one stamp.—Nursery, Kennington, London.

NEW SPRING CATALOGUE.
WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON have now published a New CATALOGUE OF GREENHOUSE AND BEDDING PLANTS, copies of which will be forwarded free on application.

W. W. and SON beg to offer strong plants from their superb collection of Hollyhocks, at 6*s.*, 9*s.*, and 12*s.* per dozen; Cape Heaths, 9*s*, 12*s.*, and 18*s* per dozen, strong and bushy; Chinese Azaleas, 9*s.*, 12*s.*, and 18*s.* per dozen, strong and bushy.

Chrysanthemums, best Continental vars, 6*s*, 9*s.*, 12*s.*; Phloxes, 6*s.*, 9*s.*, 12*s.*

Extra plants will be presented with each order, as compensation for carriage.

T. JACKSON and SON have still on hand a limited quantity of their Improved KIDNEY POTATO, at 7*s.* 6*d.* per bushel, and Golden Dwarfs at 5*s.* 6*d.* (an excellent Early Frame Potato); for the particulars of their merits, see *Gardeners' Chronicle* of the 14th or 21st December.

T. J. and SON, having the largest stock in the country of Taxodium sempervirens, are enabled to offer them at the following low rates:—Fine plants, 2 feet high, 2*s.* 6*d.*; 6 feet, 21*s.*; intermediate sizes at proportionately low prices. Forsythia viridissima, 3 feet high, full of flower-buds, 2*s.* 6*d.*; and all other general Nursery Stock at equally low prices.

Nursery, Kingston, Surrey, April 5.

GOLIATH STRAWBERRY.

JAMES KITLEY can supply good Plants of his celebrated Strawberry GOLIATH, at the very low price of 7*s.* 6*d.* per 100, or 12 Plants, free by post, for 18 postage stamps. Also fine Plants of Dwarf German HOLLYHOCKS mixed, at 12*s.* per dozen; these have all bloomed, and are very double and beautiful. HOLLYHOCK SEED, saved from a fine collection of double varieties, 18 packets, named, free by post, for 5*s.*; ditto mixed, per packet, 2*s* 6*d.* SWEET WILLIAM SEED, from a great variety of beautiful brilliant colours, per packet, 1*s.*

Lyncombe Vale Nursery, Bath, April 5.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents

THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet, in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10*s.* 6*d.* each. Small plants for bedding on the 1st of June, 6*0s.* per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants:

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.

CRYPTOMERIA JAPONICA SEEDLINGS.

2 years ... ... ... ... 18*s.* per doz., or 105*s.* per 100.
3 years ... ... ... ... 30*s.* ,, 210*s.* ,,
1 foot 6 inches to 2 feet 6 inches high, 60*s.* per dozen.
2 feet 6 inches to 3 feet 6 inches high, 90*s.* ,,
3 feet 6 inches to 4 feet 6 inches high, 126*s.* ,,
And larger plants in proportion.

The whole of the above, with the exception of the two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10*s.* 6*d.* to 21*s.*

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS (North of China.)

6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 21*s.* each.

These plants are from the open border—robust specimens fit for immediate planting.

15 ins. to 24 ins., 31*s.* 6*d.* each; 24 ins. to 30 ins., 42*s.* each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.
15 to 24 inches, 21*s.* each; 2 to 3 feet, 31*s.* 6*d.*

CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet ... ... 1*s.* 6*d.* to 2*s.* 0*d.* each.
2 feet to 3 feet ... ... ... ,, 2*s.* 6*d.* ,,
3 feet to 4 feet ... ... ... 3*s.* 6*d.* ,, 5*s.* 0*d.* ,,

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.
Flowering plants ... ... ... ... 3*s.* 6*d.* ,,

This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s.* each.

QUERCUS INVERSA. (North of China) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Rugs. Dwarfs, 5*s.*; Standards 10*s.* 6*d.* each.

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 6 inches ... ... 2*s.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet 6 inches ... 3*s.* 6*d.* to 5*s.*
3 to 4 feet ... ... ... ... 7*s.* 6*d.* to 10*s.* 6*d.* ,,
Larger in proportion.

Bagshot Nurseries, April 5.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21*s* each.—Nursery and Seed Establishment, Hammersmith, near London.—April 5

THE BLACK AUSTRIAN PINE (PINUS AUSTRIACA).

LUCOMBE, PINCE, AND CO., have a large and healthy stock of this most desirable Pine, from 9 inches to 3 feet high, which having been frequently transplanted, are well-rooted and safe to remove: they can offer them, varying according to age and quality, from 20*s*, 40*s.*, to 60*s.* per 1000 This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils, growing rapidly, and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds. N. B. The present is a very fine time for planting.

Exeter Nursery, April 5.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1851 *is stamped as a Newspaper, to go free by post, and may be had on application. It will be found to contain the newest and best articles which can be procured, with full description and other useful information.*

SELECT AND CHOICE FLOWER SEEDS.

The following of our best selections supplied free by post, with proper directions for sowing, heights, colours, &c., given in the Catalogue.

| | *s.* | *d.* |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8*s* 6*d.*, 30 for 5*s.* 6*d*, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns. 7*s.* 6*d.*, or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials 7*s.* 6*d.*, 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and up wards, articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN.

The Gardeners' Chronicle.
*SATURDAY, APRIL 5*, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | April | 7 | Entomological | 8 P.M. |
| | | | Chemical | 8 P.M. |
| | | | British Architects | 8 P.M. |
| TUESDAY, | — | 8 | Syro Egyptian | 7½ P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8 P.M. |
| | | | Zoological | 9 P.M. |
| | | | Literary Fund | 3 P.M. |
| | | | London Institution | 7 P.M. |
| WEDNESDAY, | — | 9 | Graphic | 8 P.M. |
| | | | Geological | 8½ P.M. |
| | | | Pharmaceutical | 9 P.M. |
| THURSDAY, | — | 10 | Royal Soc of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| FRIDAY, | — | 11 | Astronomical | 8 P.M. |
| | | | Philological | 8 P.M. |
| | | | Royal Institution | 8½ P.M. |
| SATURDAY, | — | 12 | Royal Botanic | 3 P.M. |
| | | | Medical | 8 P.M. |

Now that the most formidable part of the difficulties connected with the arrangements in the CRYSTAL PALACE is at an end, the Executive have turned their attention to minor details, and among other things have arrived at the following decision:

"The Executive Committee are willing to grant spaces in the building to a small number of nurserymen, for the purpose of decorating the building with rare or handsome plants, or for the sale of cut flowers.

"The conditions upon which such spaces will be granted, are the following:

"1. The exhibitor is to fit up his space at his own expense.

"2. He is to keep the space constantly filled during the time the Exhibition is open, commencing from the 1st of May, at his own cost. But as the Executive are aware that considerable difficulty may occur in maintaining the collections in the same excellence in the latter as in the early part of this period, they will be satisfied if the spaces are only filled after July with plants of good foliage.

"3. The plants required to replace such as are removed must be brought into the building, and put in perfect order one clear hour before the admission of the public, in the morning. If any are to be removed, they must be taken away half an hour after the close in the afternoon.

"4. The Executive will supply water without charge; but can incur no other expense.

"5. The exhibitors will be permitted to sell cut flowers in the building, and to distribute cards or lists of the objects they may have for sale on their own premises."

Persons desirous of obtaining space upon the above conditions are requested to make immediate application, in writing, to the Executive Committee, at the building in Hyde-park, stating what kind of plants they are able to exhibit, and how many superficial feet they can undertake to keep filled.

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OUR correspondents having lately been discussing the merits of the wood of the SPANISH CHESTNUT tree, we find it necessary to interpose with some remarks of our own, which may aid in settling a question that would seem to possess some interest.

Some say that the wood is shaky, and of little value. Others that it is invaluable for Hop-poles. A third mentions the case of "a gate, one part of which had been made of Spanish Chestnut, the rest of Oak, both unpainted, in which gate the former was in far better condition than the latter." Allusion is also made to the supposed use of this timber in the construction of the roof of Westminster-hall.

These statements are equally true, except the last. When young, the wood of the Spanish Chestnut is of the same value as Heart of Oak, so far as durability is concerned; hence its great excellence for Hop-poles, as every Kentish landlord well knows. When old its timber becomes dry, appears to decay, rends in the direction of the silver grain, and thus acquires that unsoundness which timber-dealers speak of by the name of shakiness. French, German, and Italian writers all concur in this statement. But there is a point to which neither they, nor, as far as we know, English writers sufficiently advert, namely, the period of life at which this bad quality first occurs. It is admitted that the timber is excellent when young, bad when old. But what is meant by the terms *young* and *old?* It is desirable to reduce them to some precise signification, and our correspondents might render each other real service if they would state, upon their *personal knowledge*, at about what age the fatal shakiness comes on.

In 25 years, on warm light sandy land, the Spanish Chestnut forms a handsome tree with a trunk 6 or 7 inches in diameter. Does it then become shaky? Most certainly not. Does it at the age of 30, or 40, or 50 years? or when? These are most important questions for planters, and deserve an answer. Mr. SELBY, in his beautiful volume on "British Forest Trees," touches upon this point, when he states that in the course of 50 or 60 years the tree frequently attains a height of 60 to 80 feet; its timber, *even at this age*, begins to get shaky. But it is desirable to know whether this is the rule, or the exception; because in the former case it would be the interest of the planter to fell his Spanish Chestnuts as soon as they are 50 years old. We presume that soil and climate will be found to cause in this tree the variations usual in other cases. There must be many country gentlemen, timber-merchants, and foresters, who could throw light upon this interesting point, and we venture to ask them for the communication of any evidence in their possession.

With regard to the assertion that the roof of Westminster-hall, or of any other old English building, was constructed with the timber of the sweet Chestnut, we cannot but express our surprize that well-informed persons should still relate this fable, after the numberless exposures of it made by ourselves and others. It is, we believe, as certain as anything can be that the roof of Westminster Hall consists of Oak, and of Oak only. It is also certain that in part at least, if not wholly, it was made from the *Quercus se siliflora*, which must, at some distant period, have been common in the southern parts of Britain. We say this upon the evidence of a portion of the roof itself now before us, upon the authority of the late Mr. ATKINSON, who designed Sir WALTER SCOTT'S House at Abbotsford, and who had made the subject his especial study, in the prosecution of which his eminence as an architect gave him great facilities; and upon the testimony of all modern writers who have had access to original evidence. How the mistake arose it is difficult to understand; Mr. SELBY has pointed out its existence in France, where it was corrected by BUFFON and DAUBENTON, as well as in England, where it seems to have originated with HARTLIB, a writer of the 16th century, and to have been incautiously adopted by EVELYN. That it is a mistake there can be no manner of doubt.

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SOME people are never satisfied with a fact unless they are also able to explain the cause of it, whilst others care little or nothing for the cause, if they are well satisfied as to the fact itself. Probably the right

course to pursue lies half way between these two; but certainly, if we had to choose between the one or the other, we should prefer the latter. One reader remarks, respecting our late observations on the absorption of ammonia by soils, that it is very unfortunate that we are not able fully to explain the cause of this absorption; and another points out that the statement is by no means new, and that the absorption of manure by soils has been long known, as illustrated by the old custom of making compost heaps. It has unquestionably been known for a long time, that soil which is in contact with decaying manure becomes rich and fertile, but the cause of this has never been in any way investigated; and the fact itself, though known to many, has never been systematically recognised, or even acknowledged as a sound practical deduction. In that very curious old book, Sir Hugh Plat's "Jewel House of Art and Nature," published in 1594 by Alsop, "near the upper pump in Grub-street," there are some most sensible remarks on the management of manure in general; and after pointing out the waste which dung generally suffers from drainage, evaporation, and exposure to the air, he goes on to show that the goodness which drains away is not altogether lost, but is in great part absorbed by the soil below. We shall give this statement in his own words: "And here it shall not be altogether unprofitable to let all those gentlemen and farmers, who are desirous of some special good mold for some smal purposes, to understand that after they have disburthened the ground of this great muckheap of theirs, that if they will yet dig a foot and a half or two foot under the same, that by this means they shall obtain a most fat and rich earth, and very apt for divers plants, as our ordinary gardeners can sufficiently witnesse." We might, if it were worth while, quote a number of similar statements from other old authors, all showing that this effect of the soil has been long half known, and yet never applied or studied in the manner it deserved.

A good deal of mystery used formerly to veil the use of lime; there was no doubt whatever as to its practical value, and the important effects which it produced, but the theory of its action was far from being satisfactory. It was well known that all plants contained a portion of lime, and it was therefore pretty certain that they could not grow well in soils which did not contain any lime; beyond this, there was little or no evidence, and it must be confessed that the remarkable effects which lime generally produces, would hardly be supposed to arise from its absorption by the growing plants alone. Liebig showed that one effect which the addition of quicklime to soil produces, is the liberation of a considerable quantity of fixed alkali, formerly existing in the soil in a state of combination, and set free by the chemical powers of the lime. We now see another effect which lime may produce, in its property of aiding the soil to absorb and retain ammonia. It is probable that lime, like all the best fertilisers and improvers, acts in several ways, and that it is, therefore, impossible to explain its action by reference to any one effect exclusively.

## MARKET GARDENING ROUND LONDON.

No. XII.—Is Market Gardening Profitable?—To this question only an approximate answer can be given, owing to the difficulty of getting at the truth of the matter. An acre of early Cabbages on the best land, 18 inches apart, in rows 20 inches asunder, would contain about 17,000 plants or so, which, if all sold at 1*d.* each (and good early Cabbages fetch more than that), would realise about 70*l.*; but then more or less of them always fetch a much lower sum, and, therefore, we must descend in our scale of prices. The above number at 9*d.* per dozen would fetch about 50*l.*, at 6*d.* per dozen about 35*l.*, and at 3*d.* per dozen about 18*l.*; an acre of early white Cos Lettuces, grown after Celery upon the richest land, a foot apart each way, would realise 1*s.* per score of 22 to the score, and if all sold at the above price, the aggregate sum would be 90*l.*, but, like the Cabbages, many are sold for much lower prices. Then after Cabbage or Lettuce take Celery. Some plant this in rows 4 feet distant, while others place it 5 and 6 feet apart, and if large fine heads are desired the plants ought to be 10 inches asunder in the rows—say 8000 plants to an acre. This number, at 1*d.* each, would fetch about 35*l.*; but like other crops, if early and fine, they fetch 15*d.* and 18*d.* per dozen, and there is always an intermediate crop of Lettuce or Coleworts to come off before the Celery wants moulding up. This intermediate crop will fetch about 5*l.*, so that the average receipts of an acre may be set down at 90*l.*

The expenses involved in the production of Cabbage and Celery crops, which occupy the acre nearly 15 months, are as follows:—Trenching an acre, about 2*l.* 10*s.*; 30 loads of manure, at 7*s.* 6*d.* each, say 12*l.*; dunging the trenches for Celery, say 6*l.*; planting the crops, 1*l.* 5*s.*; seeds of various things, 10*s.*; hoeing several times, 2*l.* 10*s.*; rent 9*l.*; tithes 10*s.*; clearing off the several crops, say 4*l.*; washing and packing of produce, moulding up Celery, &c., 4*l.*; horses, waggons, carts, carters, market fees, &c., about 3*l.* 10*s.* Total, about 45*l.*

I am acquainted with a garden which contains 60 acres of choice fruit trees, whose blossoms were all destroyed by frost during three consecutive years. Now, on these 60 acres, the same expenses are incurred every year, whether they bring forth fruit or not; so that taking this loss, that of Broccoli from frost, and other things, into consideration, the profits of the market gardener are not so large as at first sight they would appear. No doubt, in favourable seasons, they make a considerable sum of money; but owing to the vicissitudes of climate, the introduction of duty free foreign productions, and the fluctuation of prices, this desideratum is, at least, rendered very precarious. We have few instances, indeed, on record, of market gardeners becoming rich. By means of perseverance and great industry, however, they manage to live comfortably, and effect much good in the country, by spending large sums of money in labour; but as I have just shown, the profits of the occupation are small.

I have endeavoured to ascertain the number of acres under cultivation for the supply of the various London markets, and the result of the inquiry is, that about 12,000 acres are occupied by vegetables, and about 5000 by fruit trees. These lie chiefly in the counties of Middlesex, Essex, Hertford, and Bedford, on the north side of the Thames; and Kent, and Surrey, on the south side; and some 35,000 people are employed on them. But this is not taking into account those more distant counties which, by fits and starts, send up the produce of acres of Turnip tops, Cabbages, Peas, and other things; while hundreds of acres in Cornwall and Devonshire are employed in growing early Potatoes, Broccoli, Peas, &c., which reach London by rail.

In writing these papers, I have endeavoured, as far as possible, to steer clear of mentioning names of vegetables, knowing well the labyrinth into which such a subject would lead me; for their aliases are endless. Besides, what will suit one soil will not suit another, and the march of improvement is so rapid that sorts highly valued to-day will be thought less of to-morrow, and will ultimately disappear altogether to make room for more valuable kinds. These then are some of my reasons for not mentioning varieties.

In conclusion, I trust that some benefit may have been derived from what I have written on the subject of market gardening; and although a few errors may have crept in, I hope that on the whole they may have given satisfaction. *James Cuthill, Camberwell.*

## GRAFTING.

No. XIV. Square Stamped out Shield Budding: fig. 21. (*Greffe en écusson, de forme carrée; dite emporte pièce.*) *Operation.*—From a strong tree, cut out a square patch, to be immediately thrown aside; raise from a strong branch another similarly shaped piece, but larger, and furnished with an eye; fit this piece into the place of the first; and it had also better be covered with a piece of paper, pierced with a hole for the eye, the whole being secured by a ligature. This mode, but little used, ought to be employed for trees with very thick bark and large eyes; such as Walnut and Mulberry trees. It may be performed in spring, at the particular time mentioned for budding with the pushing eye; or that for the dormant eye, in August, or later.

Fig 21.



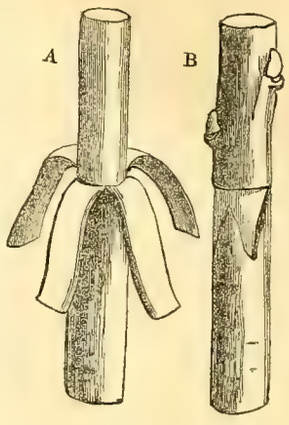
Tubular Budding. (*Greffe en tuyau dite en flûte.*)—For performing the operations of the modes of budding included in this series, we ought to choose the moment when the sap is in most abundant flow, in order that the barks of the two parts may be detached with the least possible effort. This disposition manifests itself at two periods; in the spring, when the ascending sap is in its greatest flow; and in August, when it is governed by a contrary disposition, known under the denomination of the descending sap. A knowledge of the use of these modes is very ancient. At the present day they are only employed for propagating a small number of fruit trees, principally such as Chestnuts, Walnuts, and Mulberries. They may be practised with success on vigorous branches destined to continue the leading shoots of young trees; or on some that are very large, when we would wish to make branches grow similar to those preceding them, for this mode cannot be successfully performed except the woods of both parts are young, or not exceeding one year old.

Although the modes of budding in this series are not numerous, yet they present some slight differences; and each of them has received a number of vulgar names, such as pipe-budding, *en chalumeau;* flute-budding, *en flute ou fluteau;* whistle-budding, *en sifflet;* ring-budding, *en anneau;* horn-budding, *en cornuchet;* cannon-budding, *en canon;* tubular-budding, *en tuyau.* The last name appears to me the most analagous to these modes of budding, inasmuch as they all have this form before being fitted on their stocks.

Of all these I shall only speak of those that are the most in use, and in demonstrating the best of each, I shall mention but two—the first, tubular-budding, with the pushing eye; the second, tubular-budding, with dormant eyes; and, such as they are described, they ought to be preferred for propagating the few plants for which they are suitable.

Tubular Budding with shooting eyes: fig. 22. (*Greffe en tuyau à œil poussant.*) *Operation.*—In spring, when the bark of the stocks, and that of the shoots affording the buds can be easily detached, the branches with the latter are cut off from their parent tree, and immediately wrapped at full length in a moist cloth, and in this they may be kept four days; but it must be better if they are not cut till within a short time before the buds are taken off, and these ought to be very soon put on.

Fig. 22.

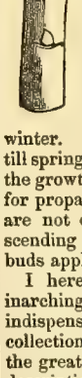



Before attempting to remove the bark with the buds from the branch or shoot, we ought to cut off all angular parts above the place where the removal is intended, and the same as regards the stock; then at the summit of the reserved part of the latter we make three or four longitudinal incisions in the bark, in order to separate it the more easily, as is represented by letter A. Then, from among the shoots or branches bearing buds of the sort intended to be worked, we choose always one a little stronger than the stock, and we trace on it two circles which mark the length of the tube of bark, on which there should be at least one good eye, and two when they are not widely apart; see letter B.

This part should then be held in the hand during one or two minutes, in order to warm and expand the bark, which will consequently be more easily detached from the alburnum by a strong twist. This tube should be immediately transferred to the denuded part of the stock; but this being smaller, we strip down the bark till the tube in descending fits tight, all its interior part being then in contact with the alburnum of the stock. Thus adapted, we sometimes bring up the strips of bark around the tube, to protect it from the too great contact of air. At other times, and more generally, the loose bark is cut off; but in this case it is necessary to pare down the naked part of the stock above the tube into thin strips, so as they may form a fringe to protect the parts operated upon from air and water.

Tubular Budding with Dormant Eyes: fig. 23. (*Greffe en tuyau à œil dormant.*) — This is practised exclusively, during the month of August, with wood produced by the spring sap. The part from which the buds are taken ought to be as thick as possible; and as soon as it is separated from the parent tree, we cut off the leaves, preserving a small portion of their petioles; then we should adopt means to raise the buds. This operation differs not from the preceding, except in slitting the bark longitudinally, laying the tube open through its whole length, and thus giving the facility of extracting it from all obstructing or adherent parts. This done we present it to the stock destined to receive it, and of which we preserve the top; the lower part of it should be of the same thickness as the tube of bark to be applied to it. From this part we remove a tube of bark of the same dimensions as the other, by which it is immediately replaced, and so as the edges may everywhere coincide; then it is kept in its place by a ligature, which had better be removed before winter. We defer cutting off the head of the stock till spring, in order that the budded part may partake of the growth. This mode, difficult to perform, is only used for propagating some delicate trees, of which the barks are not easily raised in spring, and of which the descending sap is absolutely necessary for the success of buds applied to them.

Fig. 23.



I here finish the description of the few modes of inarching, grafting, and budding, which I consider of indispensable utility to amateur proprietors. This small collection will, I trust, supply for all that I have rejected, the greater part of which are minute, and of which the descriptions would be tedious and uninteresting to my readers.—*Translated from the French of D'Albret.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 8.*)

No. XXIV.—If you place a water-fountain in the breeding-room, it should be of zinc, and made precisely similar to, though of a less size than, the one described under my observations on an aviary. As, however, it is objectionable for birds, when sitting, to wash themselves all over, it will be needful to have a circular cover

* I am constantly being asked, by private correspondents, *where* they can obtain cages for canaries, goldfinches, linnets, larks, and nightingales, *made according to my own Model*, and fitted up with suitable baths, &c. I am now prepared to refer all such parties to Mr. Clifford, 24, Great St. Andrew-street, Holborn, who has offered to undertake the speedy execution of any orders entrusted to him, either for cages or for birds. He is one of the "very few" who deal honestly in the matter of a *good* "song bird," and may be safely confided in. I have had dealings with him for many years.

of open wire-work, fitted on the top of the fountain. The holes must be sufficiently large to admit free entrance for the birds' heads. Let the water be always fresh, and clean; and the fountain also.

I have remarked on a former occasion, that good song birds lose much of their song, when put up for breeding purposes in a cage. This remark may be somewhat qualified, when the sexes are associated in a *room*. By having more freedom allowed them, and by being kept in one constant round of cheerful excitement, while looking out of their windows, &c., they sometimes continue to sing throughout the season.

Some people turn a number of canaries indiscriminately into a room, and leave them to pair as they will This is kind—very. But it is not wise. By properly pairing them, or at least *some* of them, in small, separate cages; and when paired, allowing them to come together,—each swain then vows eternal fidelity, and is "true," with some few exceptions, to his lawful spouse. Thus alone can the peculiarity of feather and *caste* be properly preserved. Some few pairs of "odd fellows" may perhaps be allowed to intermarry. It will certainly give every possible variety of colour and plumage to your stock; and is, so far, admissible.

At no time should greater care be taken, than in the breeding season, to give your birds good and proper food. Let the canary-seed be large and glossy, and the rape also large and new. The same remark applies to the Flax. These three seeds well mixed together (the two last in smaller proportions), are the proper food for a canary. Bruised Hemp-seed, in very small quantities, may be occasionally given. As birds, whilst performing the duties of incubation, are very frequently subject to constipation, boiled milk, with crumb of bread soaked in it, should be placed in the room at least twice a week. It will do all the birds good. A saucer is the best vehicle for its introduction.

If ever you perceive any of the male canaries to be of a depraved disposition (as they too often are), abusing and persecuting their "better halves;" and showing other anti-conjugal tendencies—mark such transgressors. The cares and anxieties attendant upon the hatching and rearing of a family, are alone sufficiently heavy, without the hen being in addition subject to cruel treatment. Check, therefore, all these innate bad propensities the moment you perceive them; and get rid of the offender summarily. Other suitors will take his place; and her ladyship will feel herself lawfully divorced, "under the circumstances."

When the nests are made, the hens will speedily commence laying. Do not, as many silly simpletons do, trouble yourself about looking at the eggs, or about removing them—substituting ivory "imitation eggs," &c., until the whole batch of eggs shall have been laid. Nature *abhors* any interference of this kind. It is desirable that the eggs should *not* be hatched all at once. The mother can feed her progeny all the better for their appearing one by one. Besides, more warmth is thereby generated for the next forthcoming stranger. Believe me, all officious solicitude about assisting Nature at such seasons, either with birds or with ourselves, is morbid affectation. Nature wants no such aid. Leave the birds to manage their own affairs, and let common-sense preside in the "sick chamber;" then all will be well. Birds hate to be subject to prying curiosity when breeding; so do *all* animals. Some when thus impertinently watched—the cat, the rabbit, and others—make a point, very frequently, of devouring their offspring the instant they come into the world! This fact speaks with a loud voice.

A canary lays, on the average, from two to five eggs; occasionally as many as seven. The time of sitting is 13 days. The duties are shared, during this period, by both parents; but near the time for hatching the female seldom quits the nest. The male, if a kind, affectionate husband, is most assiduous in feeding his "ladye love," as she sits on the nest; and excepting for water, she seldom quits her post for an instant. If, in her momentary absence, the expectant Papa *should* occupy her place—he will most assuredly "nap" it. On her return, he will, by an action of ejectment, have the shortest possible notice to quit; and woe be to him if he resists! *Madame* will enforce her demands by pecks and blows. Her commands are—"Stand not on the order of thy going—but GO!"

If you carefully noted the time when your birds began to sit, you may very nearly anticipate the due time of hatching. On the thirteenth day, the inmate of the first-laid egg will make its appearance. If, within three days, *any* of the eggs remain *in statu quo*, you had better remove them with a warm hand, and place them gently on some warm water in a basin. By their irregular movement, or otherwise, you may pronounce their contents. If alive, they will give evidence of it; if there be no embryon, the egg will be fresh as when first laid. In the former case, carefully replace the eggs in the nest; in the latter, destroy them at once. *William Kidd, New Road, Hammersmith.*

## VILLA AND SUBURBAN GARDENING.

THERE is scarcely any lover of a garden who is not especially partial to Stocks. They are easily grown from seed, and, consequently, unexpensive. Ten-week Stocks are so soon brought to perfection from the seed, that the name is not inaptly applied; they admit of so much variety likewise, besides the perfume they so abundantly give off in a summer's evening, that few amateurs dispense with them entirely, and others would do well to turn their attention to their cultivation.

Good seed is the first point to secure; little of that which is saved in the open air in this country can really be considered first-rate. It would not pay the English cultivator to appropriate his greenhouses, as is done in Germany, to the saving of Stock seed; and when produced in the open ground, the autumns are scarcely sufficiently long to perfect its maturity. The seeds which are imported from Germany, are all saved from plants cultivated in pots in greenhouses; and this constitutes almost a business of itself. They can, therefore, be obtained genuine from any respectable seedsman, and are to be preferred, because of the care taken in saving them, so as to secure a preponderance of double flowers; and also because of the perfect maturity which the seeds attain, under the circumstances.

Where ample convenience exists for their culture, they may be sown in pots about the end of March or beginning of April, and placed in a pit or greenhouse. When fully up and beginning to exhibit their second leaves, they should be potted into 4-inch pots, placing three plants in a pot. When the plants are sufficiently advanced, and all danger from frost is past, they may be turned out into borders or beds, as may be required. Where no opportunity exists of raising them under glass, they can readily be raised upon a slight hotbed protected with mats, and transplanted on favourable opportunities into the flower garden. Plants so raised are, however, liable to suffer much more from removal than those grown in pots, as the roots of the latter do not sustain so violent a shock as those removed from the bed; consequently, showery weather is to be preferred for the operation of transplanting. If planted in patches in the borders, and bright sunshine should follow immediately afterwards, they can easily be shaded for a few days, while the sun is powerful, by placing an empty pot over each patch. Should they be planted in beds, the latter may be temporarily hooped over, and a screen of mats or canvas employed until they have made fresh roots into the surrounding soil. A circular bed of Stocks looks very attractive, commencing with the lightest colours in the centre, and gradually finishing with the darkest in the outer ring. *Pharo.*

## TRADE MEMORANDA.

A CORRESPONDENT expresses a desire to know something of J. Broad, of Norwood Farm, near Leatherhead.

## Home Correspondence.

*Reine Claude Monstrueuse de Bavay.*—Mention of this Plum has been made several times lately in your Paper. I planted it against an east wall in the autumn of 1846, and it fruited for the first time last autumn It is a very large and fine Plum, nearly, if not quite equal to the Green-gage in flavour, and much larger, ripening about 10 days later. It appears a free bearer, having borne last year more fruit than any other out of 12 different sorts planted at the same time. This spring I noticed a peculiarity which may account for its fruitfulness. Although growing very vigorously, it produces flower buds, not merely on the spurs, but also upon the young wood. Shoots between 2 and 3 feet long have flower buds on them. No other Plum, with which I am acquainted, exhibits this habit. A Reine Claude Violette, planted at the same time, has not yet shown one flower bud, and an old Green-gage has comparatively few. They are in similar soil and situation; I therefore infer the new Green-gage to be a more fruitful kind. It is not quite so rampant as the Purple-gage, but stronger than the Green-gage. *J. R., Sevenoaks.*

*The Coffee Plant.*—Will any of your correspondents oblige me by answering the following question:—Are fruit-bearing plants more likely to bear heavily at a low elevation, above the level of the sea, than at a higher, other circumstances being equal? Take, for example, coffee; and it being established that a certain quality of soil and degree of heat and moisture are necessary for its successful culture, which essentials are only to be obtained near the equator by ascending some 3000 or 4000 feet above the level of the sea; and suppose that the same position can be attained in a higher latitude, at the level of the sea, or near it, would not the quantity of produce, *cæteris paribus*, be greater in the latter case? How far might such an increase be supposed to go? It appears to me, that placing other circumstances out of account, or supposing them alike in both cases, plants which derive so much of their support from the atmosphere must grow more vigorously where that atmosphere is dense, than where it is rarefied. *A. C., Ceylon.*

*Mignonette.*—As the common Mignonette has ever been an especial favourite, on account of its sweetness, perhaps the following method of inducing it to assume the character of a bush, may not be uninteresting Not later than the beginning of April, sow a few seeds in deep pots, filled with rich sandy loam, place them in a Melon frame where there is a good moist heat; when they have made about four leaves, pick out all but one strong plant in each pot; as they grow pinch off all side shoots, taking care to leave a leaf at the bottom of each. When the plants have attained the height of 12 inches, they will show their blossoms. The latter must be nipped off, and at the same time the plants will require tying up to thin sticks, with matting; leave them about a week longer in the Melon frame, taking care to pinch off all side shoots, then remove the plants to the greenhouse, where they will have less water and plenty of air; in a short time they will again begin to put out the top shoots, but only one on each must be retained, which must be led up the sticks, and all side shoots again pinched off. By this time the plants will be about eight inches high, the bloom must be again cut off, and the plants still kept in the greenhouse; in the autumn they will put out plenty of shoots from the top, and will form handsome bushes, which will come into flower in the following March; by cutting off the flowers, occasionally, for bouquets in the spring, they will send forth fresh shoots, and will continue to flower all the summer. *Anon, April* 1.

*The Spruce Fir twigs* that are found strewed over the ground below the trees, are bitten off by squirrels. Of late years I have been very much troubled with them, and the only remedy I can discover is shooting them; I find them very actively at work both morning and evening. As they are bitten off, the twigs lodge in the branches, and the first wind that occurs scatters them in all directions. *A. S.*

*The Gardeners' Benevolent Institution.*—If one of the noblest aspects in which our country can be viewed be in the light of its many and varied institutions for the benefit and relief of our fellow-men, then surely one of the noblest characteristics of men, as individuals, is their willingness to support such institutions, especially those which particularly embrace their own countrymen. And if it lays on a man's heart (as it does on that of every right-minded man), to do something, however small, for the benefit of others, the unfortunate or unsuccessful of his own trade or profession have perhaps the largest claim on his sympathy and relief. Some may aid by money, some by work, some by suggestion. The "Gardeners' Benevolent Institution" might be much more efficient than it is, but more cannot possibly be done than is done, unless additions be made to the funds, and its resources enlarged. I beg therefore to throw out a suggestion on this subject which has occurred to my mind, in order that some one better able than myself may take it up, and reduce it to possibility; and so the seed thus cast into the ground at length may become a tree laden with fruit for the nourishment of perhaps some who aid in its growth. I beg therefore to propose a Monster Floral Exhibition in London, in aid of the funds of the above-named institution. To this exhibition I would request every nurseryman, florist, market-gardener, or gentleman's gardener in the country, or any one else interested in the Society, or has a benevolent heart in him, to contribute something towards the general display. At such a meeting I should like to see all animosities and jealousies between different societies and growers thrown overboard, and each striving, not to vie with each other, but to do all that he can towards the production of a grand, and hitherto unprecedented display, alike worthy the object and the name of a British gardener. I would exclude nothing, however common, if good and showy, from such an exhibition; for numberless gardeners and nurserymen, especially in the unfavourable districts around London, for the growth of what we generally term show plants, could make a brilliant display of the more easily cultivated, though by some considered less worthy subjects. I should propose no entrance fees, and no prizes. The gratification that each exhibitor would experience at the general good he would feel himself an assistant in, would, I believe, be far greater than the value of many of the prizes given by other than first-rate societies. But, in lieu of prizes, I would suggest that certificates might be given, which should entitle the holders to a graduated scale of votes for the next election, or otherwise, as might be determined. I would also propose, that such an exhibition should be open for two days—*i. e.*, that the plants, &c., should be all ready for the censors by 10 o'clock one day, so as to open to the public at 2 o'clock, at, say 5*s.* a head by ticket only, and the next day for "the million," say from 10 o'clock till 5, at 1*s.* a head. Should this suggestion be taken up in earnest by any of the readers of this Paper, and the thing assume a form, I might perhaps add a few more hints; but I think if it find supporters at all, it will also find many far more able to carry out details than the individual who, as he said before, only pretends to drop a seed which he believes to be new, and hopes will prove good and *G. R. O. W.*

*Training Cherry and Plum Trees.*—In 1843 I made some notes in a scrap-book respecting the training of fruit trees; and year after year facts convince me that Cherry and Plum trees cannot be trained horizontally against a wall with so much success as on the fan system. Although the Cherry makes shoots freely, the yearly increase in size is seldom more than a layer of branches and the leader; if more is aimed at, it is often acquired at the expense of some untidy curve, in order to bring the shoot into its proper place, and years are needed to make a fine tree. Before the top is completed, how often do we see one of the under branches gum and die, and sometimes two, if a shoot from a spur does not present itself in a fit place to be laid in? We have a bare place on the wall, because the lower part of the tree is too old to produce a shoot. My first notes relate to some May Duke Cherries, which had lost their under branches in the way I have described, and I have notes of other kinds in a similar condition. The Cherry gums more readily in some situations than in others; and I have also remarked that trees have done well for some time after planting, until the roots have found their way into a cold heavy soil below. This may not be the immediate cause of gumming, but it is often the cause of ill health, and gumming follows; we often find a tree exude sap when a nail comes in contact with the bark; this is sometimes cured by lopping it off, and covering the wound with clay. In gardens where I have found the Cherry planted

in a dry sandy loam, and on a well drained bottom, these evils have not presented themselves, unless by accident. I do not find a single note of failure in regard to fan-training. If a branch gums and dies under this system, a young shoot may be laid in or an old branch made to fill its place, and the space is filled up as if nothing had happened. In summer a few young shoots should be nailed in, in case of accident. This is, however, not the only advantage which fan-training possesses; for when the tree is young, nearly all the shoots may be nailed in, and in a few years we have a fine tree full of neat fruiting spurs; a little care being required to regulate the branches on either side, and to give the extreme points a tendency upwards, so that the sap may divide itself equally. The same rules should be carried out in regard to training the Plum on this system. By this means the tree may be brought into a bearing state much sooner, and a fine head obtained in less time. The old Orleans Plum is, perhaps, one of the best for horizontal training. The Greengage, too, makes a tree readily, but it soon presents unsightly spurs. Many of the new Plums require to have their sap better distributed, or we have a long robust shoot on one side, and a weak one on the other. In some soils and situations they grow more equally; but when the tree begins to establish itself, it then throws out strong useless shoots from and near the stem, especially if the branch is on a curve, as sometimes is the case in such a situation. If the previous rules on fan training are carried out, the sap will be equally diffused over the whole tree. *W. Culverwell, Thorp Perrow.*

*Spanish Chestnut.*—I can state, for the information of your correspondent, that I have felled two Spanish Chestnut trees of apparently 60 or 70 years' growth, and measuring, in round timber, from 30 to 40 feet each. One of these grew in my garden, the other in a coppice near, on the Kentish rag-stone hills. The Spanish Chestnut is well known in Kent, where it is generally planted for Hop-poles, which are of the first quality. The trees in question, though of vigorous growth and apparently sound while standing, proved both of them nearly worthless as timber; not so much as a gate post could be cut from them, the wood coning and splitting throughout. The best of it was at last used as a wall plate to carry the rafters of a stable, it would bear so much shaping. *S. S.*

*Rockwork.*—I want a composition to wash a mass of artificial rock in a plant house, of a good colour to harmonise with foliage, wet or dry, and not to wash off. Portland cement dries too pale, and Roman is too "dirt colour." *Micklewell.* [Mix Portland cement with soot, or fine cinder dust.]

*Effect of Sea-weeds upon Orchard Trees, applied as a Top-dressing round the Root.*—Early in February of last year I put in 150 high standards, including nearly every variety of Apple, Pear, Plum, and Cherry; also Mulberry and Walnut; the trees being generally six or eight years old. In the summer most of them bore a little fruit; they were dressed as above with sea-weed (of which there is abundance on my shore), contrary to the advice of all around me; and, notwithstanding the fruit borne, it is a fair subject of inquiry, whether sea-weed may be beneficial or otherwise to fruit trees. *X. Y.* [There is no doubt about its being useful.]

*Protecting Conifers from Cattle.*—About 10 years ago I planted a Cedar of Lebanon, with other ornamental trees, in a large field in front of my house. It has prospered there to such an extent, that although I have twice moved the railing with which it is surrounded, its boughs are now again within reach of sheep. What must I do with it? I cannot go on extending the fence year after year until a tolerably sized garden is enclosed. Nurserymen advise me to allow the fence to remain as it is, so that the sheep may eat the ends of the lower boughs, and thus, they (the nurserymen) say, more strength will be thrown into the leading shoot. What think you of this advice, or should I shorten the boughs with a knife? Will the lower boughs die in course of time? *J. T. C.* [We think the advice of the nurserymen right.]

*Broccoli.*—As the season for sowing Broccoli seed is now at hand, I take the opportunity of again recommending every gardener who can do so to procure Snow's superb autumn Broccoli, which is by far the best of its season that has come under my notice. To ensure the genuine sort I always obtain my seed direct from Mr. Snow, whose address is West Park, Selsoe, Beds. This sort alone furnished me with a regular supply of compact heads, as white and as sweet as a Cauliflower, from the middle of November to the middle of February; it is therefore no small acquisition to a gentleman's garden. *J. B. Whiting.*

*Stove Aquatics.*—The Nelumbium of the Caspian grows in the waters of the Delta of the Volga, a day's journey at least below Astrakan. The climate is infinitely colder than that of the same latitude in France during the winter, and proportionally hotter in the summer. Which of the blue Water-Lilies is likely to require the least heat, and how are they certainly distinguished? What species is the pink Water-Lily of the West Indies? Is not Caspicum as good Latin as Indicum, Virginicum, &c.? If one winter's experience be sufficient authority, Aspidistra may be added to our hardy aquatics. *S.* [N. cærulea is the hardiest; N. stellata is very tender. Is N. scutifolia still in cultivation?]

*Tropæolum tuberosum.*—I know of nothing more grateful to our feelings than a deliberate experiment proving successful. I had an idea, from observations on other plants, that a dry ripe bulb of Tropæolum tuberosum, if put into a strong bottom heat, would send up a flowering shoot at once, before it had time to think, as it were, of meandering and morphologizing till October as usual, before it chose to organise flower buds. The bulb was potted tricolorum fashion in a little pot, within a larger, and plunged in a bark bed. The first shoot produced four flowers at once, when a foot or two high, after this it rambled and grew wood without flowers, as I anticipated. *Micklewell.*

*Size of Conifers.*—The following is a list of the principal Conifers grown here, some of which have attained a large size:—

| When planted. | Name. | High | Diam. |
|---|---|---|---|
| | | Feet. | Feet. |
| 1832 | Abies Douglasii ... ... ... ... | 45 | 25 |
| 1842 | „ Menziesii ... ... ... ... | 9 | 8 |
| 1836 | „ Smithii ... ... ... ... | 10½ | 6 |
| 1831 | „ Deodara ... ... ... ... | 26½ | 21 |
| 1839 | „ Webbiana ... ... ... ... | 16 | 10 |
| 1843 | „ Fraseri ... ... ... ... | 10½ | 6 |
| 1840 | Pinus insignis ... ... ... ... | 34½ | 28 |
| 1833 | „ Cembra ... ... ... ... | 21½ | 12 |
| 1839 | „ taurica ... ... ... ... | 25½ | 11 |
| 1843 | „ macrocarpa ... ... ... | 24 | 20 |
| 1843 | „ Massoniana ... ... ... | 14½ | 12 |
| 1846 | Cryptomeria japonica ... ... ... | 14 | 11 |
| 1846 | Taxodium sempervirens ... ... | 13 | 10 |
| | Araucaria imbricata ... ... ... | 12 | 7½ |

*Charles Barclay, Bury Hill, near Dorking, Surrey.*

*The Chrysanthemum, a Spring Plant.*—I send you two Chrysanthemums, blooms from one of a couple of plants which I have now coming into strong flower on the young wood of last autumn. If the circumstance is at all unusual, and you think the specimens good, and the time of flowering desirable, I will send you a memorandum of the experiment, which was made with a view of getting the plants to perfect their seeds. *Micklewell.* [The blooms were beautiful, and the experiment is very curious and interesting. Pray send us the account.]

*Rain, &c., at Itchen Abbot (Hants.)*—

| 1850. | Quantity of Rain | Days on which Rain fell. |
|---|---|---|
| March ..... | 0.18 | ... 5 |
| April..... | 5 06 | ... 13 |
| May ..... | 2.55 | ... 17 |
| June..... | 1.85 | ... 8 |
| July ..... | 3.92 | ... 15 |
| August..... | 2.54 | ... 19 |
| Carried over | 16 10 | 77 |

| 1850. | Quantity of Rain. | Days on which Rain fell |
|---|---|---|
| Brought over | 16 10 | ... 77 |
| September ... | 2.52 | ... 9 |
| October ..... | 1.45 | ... 11 |
| November ... | 2.57 | ... 12 |
| December ... | 2.19 | ... 12 |
| Total | 24.83 | ... 121 |

The mean pressure of the atmosphere was ..... 29.48
The mean temperature was ..... 48.72
The mean fall of rain was ..... 2.48
—*W. W. S.*

*Summer Treatment of Vines in Greenhouses.*—In a lean-to greenhouse, which the sun at Midsummer leaves at 3 P.M., for years I never could obtain ripe Grapes; after the half-hardy plants were taken out, there was not, according to ordinary treatment, sufficient length of summer left; the growths were lanky; and in October, when the house was wanted again as a greenhouse, the Grapes were about half ripe, and no fire seemed to hasten them enough. This was under the principle of "plenty of air on all day and close early, to shut in the sun heat." I have not much time to give to gardening, but I thought that a rapid and sturdy growth might be obtained with the same trouble or less than before. The following simple management secured this perfectly:—In the middle of April, all the plants which are required to be kept in form, are removed elsewhere. Alternate lights in the roof are slid down 6 or 7 inches, and not moved again under any circumstances during the whole summer; the door and lower windows always kept closed; and the house and Vines syringed to soaking with soft water every morning, at 8, in hot weather and, on bright days, again at noon. I had the last two years, in September and October, as fine Hamburgh and Chasselas Grapes as ever were seen. The whole advantage of the system seems to arise from the very high temperature obtained during sun-light, as high sometimes as 110° Fahr.; while the great moisture prevents parching, and, on the sun leaving, all excitement ceases, and the effects of a natural evening are in some measure induced. I cannot understand why, to this day, so many experienced gardeners recommend "shutting in plenty of sun heat." Surely the temperature should decline with the light. I believe a little actual frost would do less harm. The late Mr. Andrew Knight tried and approved of syringing overhead with the coldest water as soon as the sun was down, giving all excitement an instantaneous check; and I should adopt this, only I cannot dispense with the moisture at my other times, and syringing three times a day would be too much. *W. T. B., Witham.*

*Hardy Plants.*—Some time since I was in company with a gentleman who had spent several seasons on the Himalaya mountains. He was fond of gardening, and our conversation quickly turned on some of the many topics in connection with the subject. Rhododendrons came in for their share of attention, and I elicited from him, that often the blossoms of thousands on their native hills are cut off by the spring frosts, precisely as the early varieties suffer in the majority of seasons in this country. On the Himalayas the plants on the southern slopes of the ridges are the invariable sufferers, while those on the northern seldom or never sustain any injury. This he justly attributes to the influence of the sun on the frozen plants. Their energies are aroused by the return of spring, mild days often succeed each other; a sharp frost follows accompanied by a bright morning sun, and the result is the death of the tenderer part of all the plants subject to such influence. Now, although many persons have for years profited by such a knowledge, there are many more who have not recognised the lesson the disaster teaches. There can be no question that the failure in certain localities of plants to stand the winter and spring frosts, arises very often from causes which might be removed. In the South of England Camellias can be grown and bloomed in the open air with tolerable success, provided they are planted in such a situation that the morning sun in winter and early spring does not shine upon them. The same with early flowering Rhododendrons. If you can afford an awning the day following a frost, provided it be not too severe—to plants showing colour—you may preserve them; while others, not so protected, perish, or are much mutilated. Any ordinary observer will here remark, how much less damage is experienced by vegetation, if a cloudy or rainy day follow the preceding night's frost. Upon this principle, the gardener waters his French Beans before sunrise, after a sharp frost, with what benefit need not be mentioned. The fact is patent. Now, there are hundreds of plants, the culture of which would be rendered much more satisfactory in the open air, by simply recognising the principle of what I here alluded to. The very beautiful and not sufficiently known Chinese plant, Jasminum nudiflorum, suffers much by the faint suns of January and February, when a bright day succeeds frost. A mass of rich blossoms in the open air in midwinter is not to be lightly mentioned. Yet the claims of this useful plant, which realises such a desideratum, is scarcely recognised. By judicious care, it becomes an invaluable acquisition to our gardens. Some weeks past, I was going through a very pretty garden, accompanied by the proprietor, and as we were passing a flower border with a north aspect, carefully screened from the south by a high wall, I was struck with a large Rhododendron dauricum a mass of blooms. Of course I could not help admiring it. Its owner made the following statement to me:—"I have possessed that plant," said he "for several years. Till the season before last it occupied the warm nook you see yonder; it put forth, year after year, abundance of blossom buds, but I never enjoyed them in their beauty. Ten to one but a sharp frost, followed by a slight rain, rotted the half of them; if a few blossoms did struggle into light, they were poor unsightly things. A friend advised me to give it a northern aspect, and with what success you are a witness." The management of out-door plants is a subject worthy of attention. I shall some day beg to return to the subject. *G. L.*

*Bees.*—I find my bees to be as active this year as usual, perhaps your correspondent's bees are weak or dead. They should be examined, for they may require feeding; or if dead, the hives should be moved. *A. S.*

## Societies.

Horticultural, *April* 1.—Dr. Daniel, Secretary, in the chair. Messrs. Veitch sent a plant in a pot, and a cut specimen, from a bush growing in the open border, of the Darwin Berberry (Berberis Darwinii), a new small-leaved evergreen shrub, from Patagonia. This proves to be a species whose importance it is almost impossible to overrate, inasmuch as it is exceedingly handsome, perfectly hardy, and naturally produces its rich orange blossoms in great profusion during the early months of the year. Indeed for general value we have nothing at present at all to be compared with this fine Berberry. A Large Silver Medal was awarded it. The same nurserymen also furnished a bloom of the pretty light-coloured striped Camellia, named Countess of Orkney.—Messrs. Hayes, of Lower Edmonton, communicated two nicely-managed plants of tree Violets, for which a Certificate of Merit was awarded.—Messrs. Standish and Noble produced a beautiful new Carnation-striped Azalea, named vittata, from China, which promises to be an acquisition. It is quite distinct from any of the striped kinds and very early. A Knightian Medal was awarded it. The same nurserymen likewise contributed a flowering plant of Viburnum macrocephalum, raised from a cutting struck last autumn, and Limonia laureola (Skimmia japonica), a sweet-scented shrub, from the mountains of India, and said to be hardy about Kingsbridge, in Devonshire. It was stated that its natural character is to produce fruit of brilliant scarlet in autumn. A Certificate of Merit was awarded it.—From Messrs. Henderson, of Pine-apple-place came Hebeclinium ianthinum, a promising greenhouse plant, with Ageratum-like flowers, which were reported to last long in perfection; and a charming collection of Hyacinths, of which the following are the names of some of the best:—*Light blue:* Orondates, Robinson, Nimrod, Grand Vidette, Grand Lilac, and Passe tout (double). *Dark blue:* Laurens Koster (double), Prince van Sax Weimar, Emicus, Baron van Thuyll, Prince Oscar, and Mignonaude Dryfhout (double.) *Violet:* Tubal Cain, William I. and Prince Albert; the latter is very dark. *White:* Helen, Grand Vainqueur, Grand Vidette, La Candeur, and A la mode Epuisée, double white, with a pink centre. *Blush:* Grandeur de Meneilles, Anna Maria, (double), Triumph Blandina, ditto, and Tubiflora. *Plum:* L' Unique, a variety much prized for its colour, which is new to Hyacinths. *Yellow or buff:* Anna Paulowna, Heroine (double). *Deep rose:* Amphion. *Red:* Herstelde Vreede, Diebitsch Sabalskansky, Appeluis, Le Francq de Berkhey, and Waterloo (double). *Light red:* La Dame du Laack, and Lord Wellington. The same nurserymen also sent examples of Narcissi, among which the best were, Nannette, yellow, and Radiator, white with a yellow centre. A Certificate of

Merit was awarded for the Hebeclinium, and a Banksian Medal for the Hyacinths.—Mr. E. G. Henderson, of the Wellington-road Nursery, St. John's Wood, sent an Ixora, two seedling Rhododendrons, a crimson and a light kind; and a well grown plant of Dielytra spectabilis, for which a Banksian Medal was awarded.—The same Fumewort, evidently grown in less heat, and more highly coloured, was exhibited by Mr. Clark, nurseryman, Brixton-hill; but by far the finest specimen of this Dielytra was produced by Mr. Edmonds, gr. to the Duke of Devonshire at Chiswick House. The latter was, however, unfortunately disqualified from receiving any prize, on account of its arriving too late, it being especially required that all subjects of exhibition shall be in the room two clear hours before the time of meeting, The same thing happened in regard to a Java Rhododendron from Messrs. Rollisson, which also came too late to fall under the consideration of the judges.—From Messrs. Lane, of Great Berkhampstead, came a single white seedling Camellia, a specimen of the sweet Trichopil (Trichopilia suavis), and four large boxes of cut Roses, fresh and beautiful as just gathered from their Rose house. They consisted of *Hybrid Perpetual:* Baronne Hallez, crimson; Baronne Prevost, blush, large and beautiful; Caroline de Sausal, blush; Chateaubriand, delicate pink; Comte de Montalivet, rosy crimson; Cornet, bright pink; Dr. Arnal, deep crimson; Duchesse de Gallieria, shaded pink; Duchesse de Praslin, blush, with pink centre; Duchess of Sutherland, glossy blush; Edward Jesse, lilac crimson; Gen. Cavaignac, rosy pink; Géant des Batailles, vermilion; General Negrier, rosy blush; George Lecamus, rosy blush; La Belle Amerique, shaded pink; Lady Alice Peel, rosy crimson; Louise Aimée, pink, light edge; Louis Buonaparte, bright rose; Madame Guillot, rosy crimson; Madame Laffay, crimson; Madame Trudeaux, brilliant carmine; Marquise Boccella, pale pink; Miss Pepin, delicate pink; Mrs. Elliot, crimson; Polybe, rosy purple; Princess Beljioso, rose; Queen, brilliant rose; Regulata, pink; Reine des Fleurs, pink; Reine Mathilde, light pink; Robin Hood, lilac rosy pink; Sidonie, bright pink; Standard of Marengo, crimson lake; William Jesse, crimson, tinged with lilac; Comte Robrinsky, beautiful crimson. *Bourbon:* Armosa, rosy blush; Augustine Marget, delicate bright rose; Bernardin de St. Pierre, brilliant carmine; Dupetit Thouars, rich carmine; Emilie Courtier, bright reddish crimson; Le Grenadier, bright lake; Madame Angelina, salmon yellow; Queen, delicate salmon; Speciosa, shaded rose. *China:* Abbé Mioland, fine crimson red; Fabvier, striped crimson; Miellez, lemon white; Mrs. Bosanquet, creamy white. *Tea:* Belle Allemande, cream, shaded blush; Comte de Paris, cream; Devoniensis, creamy white, buff centre; Goubault, salmon-shaded rose; Madame Bravy, creamy white, salmon centre: Niphetos, pale lemon; Smith's Yellow, pale straw; Vicomtesse de Cazes, golden yellow. *Noisette:* A fleur Variable, rosy salmon; Cloth of Gold, yellow; Jeanne d'Arc, lemon white; Mrs. Siddons, fine yellow. A Banksian Medal was awarded for the Roses.—Mrs. Lawrence exhibited a fine specimen of Enkianthus reticulatus, two species of Boronia, the beautiful violet-blossomed Mirbelia floribunda, Phaius Wallichii, Maxillaria Harrisonii, an Oncidium resembling sarcodes, and a new and very curious Epidendrum, bearing a long, drooping, green flower, which terminated in a broad rich orange-coloured fleshy lip, vieing in brilliancy with the E. vitellinum itself. It was stated that it would probably produce flowers in clusters, and if so, it must be considered a great acquisition. A Knightian Medal was awarded for this, and a Banksian Medal for the other plants.—Messrs. Loddiges sent a handsome pale rose-coloured Rhododendron, raised from Nepaul seeds; and Mr. Myatt, of Deptford, showed two nicely-flowered Cyclamens.—A box containing 15 Easter Beurré Pears, packed in tin cases buried in salt, was received from Mr. Daniel Curtis, of Boston, United States. Seven of these cases were opened, in which were found three fruit good, and four spoiled. These Pears were stated to have been ripened by a method peculiar to Mr. Curtis, the nature of which was not explained. They were, for the most part, melting, sweet, and perfectly ripe, a condition which this Pear attains with difficulty with us in England. The mode in which they were packed is new, and when it is considered that the fruit must have been quite ripe when put into the boxes, it may be pronounced to be successful; but as each tin box contained only one fruit, it will be evident that it is too expensive for adoption on a large scale. A Knightian Medal was awarded.—Mr. Rust, gr. to W. Everett, Esq., sent from a Polmaise House B. Hamburgh Grapes, which received a Certificate of Merit, on account of their being the first that have been exhibited to the Society this season.—Mr. Higgs, gr. to J. Barchard, Esq., sent Keens' Seedling Strawberries; and a seedling Strawberry very like the Roseberry, was produced by Mr. Cooper, of Yeovil, Somerset.—A "fruit gatherer" was exhibited by Mr. Nevill, of Crutched Friars, and some very nice ornamental flower stands by Mr. E. G. Henderson, of the Wellington-road Nursery.—From the Garden of the Society came the fine specimen of Epidendrum auranticum, which was exhibited at a previous meeting, Maxillaria Harrisoniæ, Angelonia moschata, Cyrtoceras reflexum, the purple Gesnera, Boronia tetrandra, Eriostemon cuspidatum, three varieties of Epacris, two species of Cytisus, Franciscea Hopeana, Forsythia viridissima (again produced in excellent condition), the Gesneraflowered Sage (Salvia gesneriflora)—a kind very like cardinalis, two varieties of Cineraria, and a panful of the Cochlearia acaulis, a very interesting little plant at this season of the year. The following cuttings were distributed among Fellows: Powis Castle, Forme de Délices, Broom Park, Pears; and the Early Harvest Apple.

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LINNEAN, *April* 1.—Dr. N. WALLICH, Vice-President, in the chair. A collection of 200 species of Ferns from Java was presented by M. de Vriese. A continuation of Dr. Frederic Buchanan's commentary on the Hortus Malabaricus of Van Rhede, was read by the Secretary. The plants which formed the subject of criticism were various species of Leguminosæ, more especially those known as sensitive plants. With reference to the Æschynomene lagenaria of Roxburgh, the author had some difficulty in accounting for the trivial name, unless it was that the plant was sometimes cut up and made into bundles and placed under the arm by fishermen in swimming, in the same way in which the emptied gourds of the Cucumis lagenaria were employed. He objected, also, to the specific name of Crotalaria verrucosa, as no appearance was seen on this plant to justify this appellation. After the reading of the paper, Dr. Lankester enquired if there was any probability of this valuable commentary being published, as it had now been in the hands of the Society above 20 years.—Dr. Wallich pointed out the value of the criticisms of Dr. Buchanan, and referred to the subject of misnaming species. Roxburgh found Thunbergia odorata amongst a number of sweet-swelling plants, and so named it, whilst in reality it had no smell at all.—Mr. H. Cuming defended Roxburgh's name for the Æschynomene, as it probably referred to the fact of the use made of the soft tissue of the plant to cork bottles. It was suggested that probably the Hon. East India Company would assist the Linnean Society to publish Dr. Buchanan's commentary.—Mr. Kennedy exhibited a block of indurated sandstone, from the Cape of Good Hope, with very deep and perfect impressions of a fossil plant, belonging probably to the family of Ferns, and allied to the Lycopodia.

## Garden Memoranda.

MESSRS. KNIGHT AND PERRY'S, KING'S ROAD, CHELSEA.—Since we last visited this establishment the principal entrance has been greatly altered and improved in appearance, as well as rendered in all respects more commodious. A new glass house has been erected in the Nursery for the cultivation of the Royal Water-Lily and other stove aquatics. The roof consists of two wide spans placed on brick walls, and supported in the middle by small iron columns. The tank is 3 feet deep and upwards of 30 feet square. It is made of slate beautifully fitted together, and as yet perfectly water-tight. Indeed, judging from its present appearance, no danger of its ever leaking need be apprehended. The large plant having been lost in removing it from the old aquarium, a young Victoria Regia has been placed in the centre of the tank, and has progressed favourably, considering the time it has been planted. In the same tank the blue Nymphæa (N. cærulea) was growing and flowering most luxuriantly; and when six or seven of its charming blossoms are all open at a time, as was the case in the present instance, few plants are more interesting or striking. Indeed no amateur who has the convenience of an open cistern in his stove, should be without this truly delightful aquatic. But desirable as low-growing water plants are, their beauty is very much enhanced by the skilful introduction of a few Nelumbiums, Caladiums, and other taller growing kinds, whose large and handsome leaves rising out of the water break the uniformity and flatness of appearance which would otherwise prevail, and give the whole much additional interest. These have been planted in the tank in question, and are growing with great vigour, a remark that equally applies to all the plants it contained. This may be attributed to the slight motion which the water receives from the constant overturning of a small pail or bucket, which is filled from a pipe rising about 2 feet above the water, and to other circumstances being favourable to a healthy development. The shelves are fitted up with pans for the growth of the smaller kinds of water plants.

## Miscellaneous.

*Model of a Greenhouse, 4 ft. 2 in. square, on the ridge and furrow, flat-roofed principle.*—On the repeal of the glass duties, Messrs. Hartley and Co. erected several of these, with a view of showing how the materials of glass and iron, or wood, could be best adapted for the economical construction of conservatories. They put up one in the gardens of the Horticultural Society of London, in 1846, and sold several others, among the rest one to W. H. Walker, Esq., Newcastle. Mr. Hartley was the first person to suggest the flat ridge and valley roof for buildings of this kind, thereby doing away with a lap-joint in the glass—a great desideratum—for each ridge is glazed with one single square of glass. He recommended the Royal Commissioners twelve months ago, long before Mr. Paxton came forward with his plan, to adopt the principle for the Crystal Palace, offering, as we have heard, to furnish specimens and estimates for the whole building. A section of a ridge and valley roof was exhibited, the span being ten feet; thus giving in a building such as the Crystal Palace multiples of ten, in place of eight feet, as in that building. This, however, with the high wages paid to Frenchmen, who are employed to blow sheet-glass, would add greatly to the cost, were sheet-glass employed. Messrs. Hartley, foreseeing this in 1846, invented a description of cheap rough plate, with which the section of roof is glazed, the size of the squares being 62 inches long, and 18 inches wide. This glass is one-eighth of an inch thick, or 30 oz. to the foot (the glass in the Crystal Palace is 16 oz. sheet, or one-sixteenth of an inch thick) and, per pound, is the cheapest description of glass manufactured, being sufficiently strong to resist any hailstorm. *Sunderland Herald.*

*An Antiquated Honeycomb.*—We have now on the table before us a substance calculated to excite the curiosity of naturalists. It is a portion of a honeycomb. A large log of Honduras mahogany was cut in the premises of Mr. Vance, of Russell-street; and in it, near the centre, was found this honeycomb. The log was two feet square; no perceptible hole could be found in any part of it, connecting with the place where the comb was imbedded. The honeycomb is very brown, with a smoke-dried look; some of the cells are quite perfect, and we noticed in one part the head and the wing of a small bee. We shall not attempt to speculate on the immense number of years that comb may have lain in the heart of the tree. How it got there we leave naturalists to conjecture. *Northern Whig.*

*The Chinese Primula.*—At a season when all nature appears dull and almost inanimate, this beautiful plant makes our greenhouses lively and attractive; and much as has been said respecting its culture, no mode of treatment which I have seen advocated appears to me to possess advantages like that which I have been in the habit of pursuing. I sow the seed in a gentle heat in the beginning of April. As soon as the plants are up and sufficiently large to handle, I prick them out under handglasses at the bottom of a west wall, and shade them for a few hours during the day while the sun is powerful, giving them now and then a sprinkle with a fine-rosed watering-pot, and keeping them close. When they begin to grow, the glasses are removed at night, as the dew of the morning greatly strengthens them, and it is astonishing how fast they advance in growth. When sufficiently large, I pot them into 4-inch pots, and place them in a close frame until they have become established a little, after which the lights are drawn off every night in fine weather, and air is given in the daytime by tilting the lights at the back, shading the plants lightly during the hottest part of the day. When the pots have become filled with roots, I repot into 6-inch pots, in which they are flowered. When they come into blossom, the most fimbriated and best-coloured ones are carefully selected and marked. After they have done blooming, and rested for a short period, the greater portion of the soil is removed from the roots, which are cut pretty close in; at the same time the stems of the plants are cleared of old leaf-stalks, and everything is made clean and neat. They are then repotted in the following compost; equal parts turfy loam and peat, with a portion of well-decomposed cow-dung, and silver sand in it. The compost is used in a rough state, with broken crocks below it for drainage; and the pots employed vary from six to eight inches in width, according to the strength and size of the plants. After potting they are placed in a close frame and treated exactly as recommended above. In this way I have grown splendid plants; and some have done better the third year than the second, but I have never tried them for a longer period. By following the same plan every year, fine plants and good sorts are secured. *Beck's Florist, Fruitist, and Garden Miscellany for March.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

HEATHS and other hard-wooded greenhouse plants should be potted as they require it. Generally speaking, the most suitable time is after they have done flowering, and commenced a new growth; but the operation may be performed with propriety at any season when the roots are making progress, without being induced thereto by unnatural excitement. Before potting, take care that the old ball is sufficiently moist; for if it is potted in a dry state, it will be impossible afterwards to moisten it properly, without souring and saturating the new soil. The Epacris family is now so numerous, so beautiful, and so valuable for winter flowering, that for country establishments they outrival Heaths. Let them have all possible attention in repotting, and let them be kept rather close and moist, until they have commenced a free growth. At this season we give these plants a slight forcing; and they amply repay us for their more liberal treatment, by a splendid growth, and abundance of early flowers. As soon as the flowering is over, the future shape of the plants should be adjusted, by removing a portion of the old flowering stems; and, that their energy may be devoted solely to the growth of the plant, seeds should never be allowed to come to maturity, unless they are very valuable. Let climbers, both in pots and borders, have due attention with regard to training, and retain no more shoots than the allotted space will afford room for. A succession of Achimenes, intended to flower late in the autumn, should now be placed in heat, and treated according to the directions given in former Calendars. Some of those of former successions may be potted for suspended baskets; for which the A. longiflora and cupreata are particularly adapted. Pans, or broad shallow pots, are preferable for their general cultivation; and, as they require an abundant supply of moisture when they are in flower, let the drainage be very perfect, that they may be freely watered without stagnating

the soil. CONSERVATORY.—Besides the permanent plants in this structure, many choice plants in pots will be required, to keep a succession of gay flowers throughout the summer. Amongst the finest for this purpose are Brugmansias, Erythrina Crista-galli, Thunbergias, Stephanotis, Mandevilla suaveolens, Allamandas, Echites, Achimenes, Ipomœas, with Heaths and Pelargoniums. Let these have all possible attention, and bring them forward in several lots, so that one set may succeed another. Pay particular attention to the Liliums now in pits, by giving them a liberal supply of water, and by neatly staking them. A top-dressing of turfy peat, sand, and well-decomposed cow-manure, will be of great benefit to them; and they will be very useful for conservatory and drawing-room decoration late in the autumn. Let Fuchsias, which are so useful for summer and autumn flowering in the conservatory, be repotted, as they require it, in rich compost, watering them occasionally with liquid manure. Nearly all the varieties have a natural tendency to form conical bushes, and by a very little attention they may be guided into this appropriate form. One strong shoot should be selected to form a leader, and should be trained perfectly upright, the remaining shoots being regulated by stopping any which are growing more luxuriantly than is consistent with the proper shape of the plant. VIOLETS.—These are everybody's flowers, and to have them fine and in abundance, they require and well merit some share of attention, particularly where they do not naturally succeed well. In some situations they grow so strongly, and flower so abundantly, that they merely require at this season to be taken up, parted, and replanted, and if kept free from weeds, all will go well; while in other places they are frequently more trouble than a collection of Auriculas or Polyanthuses. A frame on the north side of a wall is the most likely situation for preventing the attacks of the red spider, to which they are very liable, and which causes them to lose their foliage during the winter. About the beginning of September they should be planted in a frame upon a spent Melon or Cucumber bed, where they will have time to establish well before winter; and if frost is excluded, and plenty of air given at all times during fine weather, perfect success may be expected.

### FORCING DEPARTMENT.

PINERIES.—Keep up a high day temperature to fruit which are now swelling, and admit air freely, so that a circulation may be produced to keep the plants strong and of compact growth. If the latter be not attended to, the plants will grow weakly, and have an unhealthy drawn-up appearance; while, as regards fruiting plants, the crowns will increase in size instead of the fruit itself, which will be watery and deficient in flavour. Take advantage of every fine afternoon to syringe the pits, and close them for two or three hours before sunset. Remove all gills and useless suckers, that the whole energy of the plant may be occupied in perfecting the fruit. VINERIES.—Successional Vines which are just starting may be indulged with a good heat, and particularly Muscats, which were ripened late last year, as the wood of such is not generally so well matured as that of the earlier forced Vines; and unless they are encouraged by a temperature rather higher than usual, until their blossoms are fairly set, the shows for fruit, however strong they may be to all appearance, not unfrequently prove abortive. A somewhat higher temperature for Vines in all stages, than would be safe or prudent two months earlier, is, at this season, not only admissible, but beneficial; accompanied, of course, by a proportionably liberal supply of fresh air, to prevent the scorching which is so much complained of. Attend punctually to the stopping and training of the shoots, and to the thinning of the berries on the Vines in the earlier stages. Maintain a moist atmosphere by evaporation where the berries are swelling, particularly in fine clear weather; but this must be moderated as soon as they begin to change colour, and air must be more freely given. PEACHES.—Let all very vigorous growths be stopped as soon as they have made six or eight leaves, to divert the flow of sap into the weaker growths; this is a much better plan than allowing them to make long Willow-like shoots, to be removed by the knife, a month or six weeks hence, or perhaps at the end of the season. Avoid a high night temperature, or the fruit, though ripened considerably earlier, will be obtained at a sacrifice of size and flavour.

### FLOWER GARDEN AND SHRUBBERIES.

BEDDING PLANTS.—Lose no time in potting off, or pricking out into frames or boxes, young cuttings as soon as they are sufficiently rooted, and seedlings as soon as they will bear handling. As the potted-off plants become established with new roots, they should be gradually inured to the open air. The hardier kinds, if in pots, may be set upon a bed of coal ashes, or plunged in the open air, and protected at night by hoops and mats. If plunged in old tan, ashes, or other light material, much of the labour of watering will be saved, and the plants will be in a better state when planting-out season arrives. But, as we mentioned in a former Calendar, the most economical plan is to plant them out in frames, and at the proper season to remove them to the beds with balls. Patches of some of the more showy of the hardy annuals should now be sown in vacant places, which usually exist in the herbaceous beds, and in the edges of clumps and borders in the shrubbery. Among the many kinds excellently adapted for this purpose, we may mention the following:—Double Poppies of various colours, Lupins, Sunflowers, African and French Marigolds, Godetias, Erysimum, Clarkia, Gilia, Collinsia, Silene, Eschscholtzia, Nemophila, Nolana, Kaulfussia, &c., not forgetting the old-fashioned favourite Mignonette. A sufficient quantity of cuttings and seedlings of half-hardy climbers should now be potted for planting out in May. With such plants as Cobœas, Maurandyas, Lophospermums, Calampelis, Loasas, Tropæolum canariense, &c., many bare places on the walls and trellises may be covered and made ornamental, which would otherwise be unsightly blemishes on the general appearance of the place.

### FLORISTS' FLOWERS.

The continuous wet and mild weather brings every description of plants forward very quickly. Pansies have been more than usually exposed to the attacks of slugs and similar pests; but what with traps, and a little examination in the evening with candle and lantern, the bed may be kept tolerably free; and this is absolutely necessary if the amateur wishes to enjoy his bloom. Cuttings may be taken as they grow, and seed should be sown in pans. TULIPS.—We always stir the surface soil of our beds just a little, but a friend of ours a few years ago seriously injured his bloom, by moving the soil too much; as for moisture, we think the bulbs will have had sufficient to last them over the blooming season. In covering, there is a middle course to steer; it is all very well protecting from hail and frost, but the net, which is the protection in severe weather, is detrimental in very fine; therefore the sides should at all times be raised, otherwise the flower-stems are apt to be drawn, to the serious detriment of the bloom. PINKS.—Top-dress the beds, and fill up vacancies from the reserved; also pot off Carnations and Picotees as speedily as the weather will permit. The sooner the better now.

### KITCHEN GARDEN.

Continue to make periodical sowings of the different culinary vegetables, of which a successional supply is required. Spinach should be sown once a fortnight, and Peas, Beans, and Turnips, once in three weeks; sowings of all Salads should be made with strict regularity; and proper attention should be paid to protectiog all kinds of seeds from the ravages of birds and insects. If the crops of Onions, Leeks, Parsnips, Beet, Salsafy, Scorzonera, and Skirret, are not yet sown, it should be no longer delayed; and the main crop of Carrots should be sown this month, if the ground is in good order. A sowing of tall Kidney Beans may now be made in early localities; the early sowing of this useful vegetable is frequently cut off by late spring frosts; but when this happens, the ground should be left undisturbed, as that part of the plant beneath the surface of the soil generally throws up shoots, from which a crop will be produced nearly as soon as if the leaders had remained uninjured. In sowing Peas, it is the most workmanlike method to put the stakes to them at once; as, by so doing, the barren appearance of the ground is removed, and no more trampling on it is necessary for a long time; besides which, they afford a slight shelter to the young plants on their first appearance above ground. Transplanting of autumn sown Cabbages and Cauliflowers should be finished, and the spring sown ones encouraged. FORCING VEGETABLES: FRENCH BEANS.—Let these have an abundant supply of water at the roots, and use the syringe freely amongst the foliage. No description of plant is more liable to be infested by the red spider; and if other species of plants are grown in the same house or pit, it is scarcely possible to prevent the spread of the disease. When the structure in which they are growing is heated by other contrivances than flues or hot-water pipes, a wash of lime and sulphur should be applied to the walls in the inside, especially on those parts upon which the sun can shine. The fumes arising from this are very efficacious in destroying the red spider. A succession of Seakale should be brought into the Mushroom shed, or into frames, to keep up the supply. Rhubarb will now be coming forward so rapidly out of doors, that the forcing of this useful vegetable will no longer be necessary, particularly where that truly useful kind, "Myatt's Prince Albert" is grown.

State of the Weather near London, for the week ending April 3, 1851, as observed at the Horticultural Garden, Chiswick.

| March and April. | Month's Age | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 28 | 25 | 29.792 | 29.697 | 56 | 40 | 48.0 | 45 | 44½ | W. | .00 |
| Satur.. 29 | 26 | 29.562 | 29.440 | 56 | 35 | 45.5 | 46 | 45 | W. | .33 |
| Sunday . 30 | 27 | 29.750 | 29.558 | 54 | 36 | 45.0 | 45 | 45 | N.W. | .06 |
| Monday 31 | 28 | 30.124 | 30.079 | 54 | 37 | 45.5 | 44 | 45 | N.W. | .00 |
| Tues. .. 1 | 29 | 30.108 | 30.101 | 55 | 38 | 46.5 | 44 | 45 | N.E. | .00 |
| Wed. .. 2 | 1 | 30.085 | 30.021 | 52 | 42 | 47.0 | 45 | 45 | S.W. | .03 |
| Thurs... 3 | 2 | 30.122 | 30.021 | 57 | 38 | 47.5 | 46 | 45½ | N.W. | .08 |
| Average . | | 29.934 | 29.845 | 54.8 | 38 0 | 46 4 | 45 0 | 45.0 | | .50 |

March 28—Fine throughout; clear at night.
— 29—Mock sun 6–7 a.m.; rain commenced at 8; boisterous with heavy showers, and sunny intervals; clear.
— 30—Fine: cloudy.
— 31—Fine; cloudy.
April 1—Fine; very fine; slightly clouded.
— 2—Lightly and uniformly overcast; slight rain.
— 3—Cloudy; fine; rain at night.
Mean temperature of the week, 1½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending April 12 1851.

| April. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 6 | 56.4 | 36.9 | 46.6 | 10 | 0.30 in. | 3 | 6 | 2 | 1 | 4 | 8 | 1 | — |
| Mon 7 | 57.1 | 37.1 | 47.1 | 12 | 0.40 | 2 | 5 | 2 | 2 | 1 | 9 | 4 | — |
| Tues. 8 | 56.2 | 36.2 | 46.7 | 10 | 0.30 | 1 | 5 | 4 | — | 4 | 5 | 5 | 1 |
| Wed. 9 | 54.9 | 36.2 | 45.5 | 11 | 1.26 | 3 | 4 | 5 | — | 3 | 5 | 4 | 1 |
| Thurs. 10 | 55.2 | 34.1 | 44.6 | 10 | 0.26 | 1 | 6 | 4 | 2 | 4 | 3 | 4 | 1 |
| Friday 11 | 55.0 | 35.7 | 45.4 | 13 | 0.51 | 2 | 5 | 2 | 1 | 4 | 7 | — | 2 |
| Satur. 12 | 55.5 | 38.3 | 46.9 | 18 | 0.56 | 1 | 5 | 3 | — | 2 | 8 | 1 | 5 |

The highest temperature during the above period occurred on the 9th, 1848—therm. 73 deg.; and the lowest on the 11th, 1843—therm. 22 deg.

## Notices to Correspondents.

BACK NOS.: Full price will be given for 1, 1846, and 42, 1850.

BIRDS: *Georgius.* How to rear *young* birds will be treated of next week, in "British Song Birds," No. XXV. Yes; "blackcaps" *are* good songsters, the finest of the "warblers." For directions to "preserve birds," see "Taxidermy," a small volume published by Longman and Co. *W. K.*

BOOKS: *Lady M.* You can scarcely do better than purchase Knight's works for your Village Library and Reading Room. "The Land we Live in," "Pictorial Half Hours" and "Half Hours with the Best Authors," are more especially suited to the purpose. If the funds permit, we should add his "National Cyclopædia of Useful Knowledge."—*X Y Z.* We cannot say when the last edition was published; but as the work is stereotyped, the edition is immaterial. You will find "Babington's Manual," 2d edition, better, and more recent.—*T H.* Roberts on the Vine, with the exception of his instructions about carrion, which should not be followed.‡

CALENDAR OF OPERATIONS: *J R.* We do not intend publishing it in a separate form.‡

FRUIT TREES: *A T C.* You may plant the following against a south-west aspect:—1 Moorpark Apricot, 1 Royal do.; 1 Royale Hâtive Plum, 1 Greengage do.; 1 Elton Cherry, 1 Florence do.; and the Glout Morceau, Winter Nelis, and Passe Colmar Pears.‖—*A W, Walton.* The Plum which you describe as being so delicious is probably the Reine Claude Violette. The shoots of the Orleans Plums are downy. You should bud your seedling Apricot towards the end of July.‖

GLAZING: *J B.* By all means let your panes overlap; and take care that there is space enough between the laps to allow the water to run off. If you use wide squares, there is, in that case, no risk from frost.

HEATING: *G L.* One flow and one return pipe, along the front, will be amply sufficient for your purpose. You may save the pipes at the two ends.

INSECTS: *J H E.* Your description of the habits of the Acarus, found partly on the leaves of your Cucumbers and partly on the surface of the bed, and to some extent beneath it, makes us doubtful as to the kind of insect in question. Can you not send us specimens? Fumigation carefully applied would destroy the former, and saturation with quassia or tobacco decoction would probably be a remedy against the latter. *W.—R M J, Broadstairs.* Your lawn is infested with the grubs of the common daddy-long-legs. We can only advise you to turn up the Grass, first driving a lot of ducks on the lawn; and when the flies appear, employ children to catch them. *W.*

IVY: *J Grosvenor.* There is no known process by which your desire could be effected.

NAMES OF PLANTS: *Pinus Hibernicus.* 1 and 2 are both P. insignis. The difference in appearance is owing to the leaves not being, in one case, fully developed.¶—*Medicus.* Melilotus leucantha, no doubt. It is, or was, in the trade, under the name of Bokhara Clover.—*J C.* We cannot undertake to name florist flowers.‡—*Redwood.* Iris tuberosa; Anemone pavonina. As to the Narcissi, we will endeavour to determine what Haworth called them; but it is a sad waste of time. You will not find collections of them in nurseries; Botanic Gardens are the most likely places.—*C A B.* Your question requires some consideration; look for an answer next week.—*C M—l.* Next week.—*Jas. Reith.* Hillia longiflora.—*F M.* We cannot undertake to name microscopical cryptogamic plants. 1 is Leparia viridis, 2 is perhaps Peziza cinerea.

NERIUM: *Young Gardener.* Your heat is sufficient, but it is possible that you do not give it enough of water. It is a plant which likes abundance of water at the root, when it is growing.‡

ORCHARD HOUSES: *Subscriber from the first.* You will find our opinion fully given in a leading article, at p. 35, of this year's volume. No doubt they will answer the purpose. They are rough, but that is of no consequence where appearances are disregarded. You should set your own carpenter to work to make you a place. If you put the work into superior hands, you will find the expense greatly increased. Their cheapness is one of the recommendations of Orchard Houses.

SEEDS: *Simon.* As far as is known, a very weak solution of oxalic acid in water is the best fluid in which to steep seeds whose vitality is languid. The seeds must be watched, and removed as soon as there is any sign of incipient germination.

STUDDING WALLS: *A Lady.* The article is too long to reprint. If you will send us six stamps, we will send you the Paper containing it.‡

SUPERPHOSPHATE OF LIME: *J M C.* This is advertised in our columns, to which we refer you. We have already stated (pp. 791, 1850; and 180, 1851), all that we *can* state about its use in gardening. As to doses—there are no rules, except to administer too little rather than too much. You must experimentalise for yourself. The same may be observed of intervals between doses.

THREAD PLANTS: *W F S* will thank some of our correspondents to recommend him a method of preparing or extracting thread from such plants as Phormium tenax, Yucca filamentosa, &c., Agave americana, or other plants of that nature, of which there are many said to produce a strong fibre. Or describe the way of using, or preparing for use, the leaves or juices of Agave saponaria.

VARIEGATED HOLLIES: *H H H.* Graft them now on the common kind.‡

WAGES: *A Sub.* What a man obtains depends upon what he is worth, and how the market is supplied. A gardener, in a botanic garden, requires to be well acquainted with practical botany and the refinements of horticulture—sober, honest, industrious, and studious. His foreman should be like him, although, of course, of inferior attainments.

WARD'S CASES: *E L B.* Any clever worker in wood or metal, or any dealer in hand-glasses, can supply them. They are too common for us to be justified in recommending one person in preference to another.

WATER LILIES: *Micklewell.* We are not aware of the fact you mention. The seeds of Nelumbium keep very well for years, but it is sometimes found necessary to thin a part of the shell with a file. We doubt the possibility of buying seeds of Nymphæa Lotus.

MISC: *Ignoramus.* We can only spare room for the following memoranda:—Selago distans, greenhouse shrub; Echeveria pulverulenta, ditto; Browallia Jamesonii, ditto; Cestrum auriantiacum, ditto; Candollea tetrandra, ditto; Prostranthera rotundifolia, ditto; Gardenia Fortuniana, stove shrub; Cyrtoceras multiflora, ditto; Henfreya scandens, ditto; Sericographis Ghiesbreghtiana, stove herbaceous plant; Æschynanthus Lobbianus, ditto; *Æ. pulcher*, ditto.

### SEEDLING FLOWERS.

CAMELLIA: *T D* and *C.* Worth cultivating, though at present a little confused in the arrangement of the petals.*

CINERARIAS: *R C.* A very pretty variety, with a good petal; but too loose and too ragged in the centre, we fear, ever to become a great favourite with florists.*

RHODODENDRONS: *Anon.* Baron de Berg is a small deep crimson resembling our English R. Hendersonii. Judging from the bloom sent, it is deficient in shape. Francofurtense, rosy pink, and spotted in the upper petal, appears to be a showy flower, but it also looks as if it were defective in shape.‡—*J L.* 1, rosy pink, with leaves 8 inches long, by 2¾ broad, and slightly ferruginous underneath, partakes more of Arboreum than Campanulatum; 2, evidently belongs to the last-named species; 3, leaves 7 inches long, by 2¾ broad, and ferruginous underneath. Flowers, somewhat small, white, and spotted, with rosy dots, which, in one of the blooms, are disposed in straight lines up the petals. All distinct, and very handsome sorts.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

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| Clover Manure, per ton ... ... ... | £11 0 0 |
| Turnip Manure, do. ... ... ... | 7 0 0 |
| Superphosphate of Lime ... ... ... | 7 0 0 |
| Sulphuric Acid and Coprolites ... ... | 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

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Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

PHOSPHATE NODULES, OR COPROLITES AND FOSSIL BONES (from the Suffolk Crag).—Manufacturers of Superphosphate of Lime can be supplied with the above, either in their natural form or finely pulverised, on the best terms, f. o. b. or delivered in the Thames.

Applications to EDWARD PACKARD, Chemist, Saxmundham, Suffolk, will receive prompt attention.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, April 7, 1851, at 2 o'clock precisely, by order of Messrs. ANTONY GIBBS and SONS, the Importers, about 600 TONS DAMAGED PERUVIAN GUANO. Catalogues and further particulars in due time, from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

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GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

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THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

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Mixtures for portions of Parks near Mansions.

Mixtures for Garden Lawns and Grass Plots.

Mixtures for renovating Old Pasture Land.

Italian, and other Rye-grasses.

White Belgian and Red Altringham Carrots.

Gibbs' new very large Parsnip.

Orange Globe Mangold Wurzel.

Long Red and other kinds.

Drumhead and Thousand-headed Cabbages.

Swedes, Hybrids, and other Turnips.

Clovers, Kohl Rabi, French and English Furze.

Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

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PERMANENT PASTURE GRASSES, to suit various soils.—Mixtures for soils in general, including proper proportions of Clover, per acre, 24s.

Mixtures supplied to suit soils of every description, the nature of the soil being stated; and if intended to be sown either with or without a crop. Any sorts supplied separate, if required, according to order, of which a list of prices of different kinds may be had.

FINE MIXED GRASSES FOR LAWNS, BOWLING GREENS, &c., 40s. per acre, 5s. per peck, or 1s. 3d. per lb.

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| RYE-GRASS, true Italian ... | per bushel | 6s. | 6d. |
| ,, Perennial ... ... | ,, | 4 | 6 |
| ,, Stickney's Improved do. | ,, | 6 | 6 |
| ,, Pacey ... ... | ,, | 6 | 0 |
| CARROT, large white Belgian ... | per lb. | 0 | 8 |
| ,, large Altringham ... | ,, | 1 | 0 |
| MANGOLD WURZEL—Red Globe and Yellow Globe ... ... | ,, | 0 | 6 |
| ,, Long Yellow | ,, | 0 | 9 |
| Drumbead Cattle Cabbage ... | ,, | 2 | 6 |
| Rivers' new Stubble Swede Turnip | ,, | 2 | 0 |

The best Stock of Turnips and all other Agricultural Seeds. See our Catalogue. Prices to the Trade on application.

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GRASS SEEDS FOR LAYING DOWN PERMANENT PASTURE.

W. DRUMMOND AND SONS, SEEDSMEN, Stirling, N.B., having been among the first to recommend the use of the NATURAL GRASSES in the formation of PERMANENT PASTURE, the subject has occupied a large share of their attention. They have carefully noted the species composing the best Natural Pastures, and the results of combinations in culture under varied circumstances of soil and situation; and, as the result of their observation, as well as from the great satisfaction their selections have given, they feel warranted in recommending, in addition to the Grasses usually sown, a variety of such species as are known, not only to yield the greatest bulk of herbage, but the largest amount of milking and feeding properties, varying those species, and the proportions of each, according to the nature of the land to be laid down; and from the low price of their Seeds this season, the expense is not materially increased. The very best Mixture they can give for PERMANENT PASTURE or MEADOW will not exceed 20s. to 22s. per statute acre. The quantity of each variety comprising the Mixture is given in detail with each parcel.

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| ,, East Lothian Purple-top Swede Turnip ,, | 0 | 8 |
| ,, Skirving's ditto ditto ,, | 0 | 8 |
| ,, Large hardy Green-top ditto ,, | 0 | 8 |
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# The Agricultural Gazette.

*SATURDAY, APRIL 5*, 1851.


MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, April 9—Agricultural Society of England.
THURSDAY, — 10—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 16—Agricultural Society of England.
THURSDAY, — 17—Agricultural Imp. Soc. of Ireland.

THERE are probably few districts in England which are more capable of improvement than that known as the Weald of Kent, Sussex, and Surrey; few which would make better returns for the money expended on them; and few where the march of improvement will be more retarded, not only by want of capital, but by local habits and prejudices.

In a geological sense the Weald denudation consists of the triangular area lying between the chalk escarpments of the North and South Downs. It is one of the few large districts of England and Wales in which there are but slight traces of the superficial deposit, and in which the characters of the soil depend chiefly on those of the rock formations. Within this triangular area is another triangular space called the Forest-ridge, consisting of one of the lower divisions of the Wealden group, namely, the Hastings or Iron-sand. From this central ridge the Weald clay dips away in opposite directions under the cretaceous rocks of the North and South Downs, forming a belt of clay soil on each side of the Forest-ridge. It is to this clay district that our remarks apply. The peculiar characters of the Weald clay arise from the minute division of the particles both aluminous and siliceous, of which it is composed. This causes it to run, when wet, into a compact paste, which dries into a mass as hard as brick, and nearly as impenetrable by the roots of plants — a tendency which must be still further increased by the constant use of lime as the sole manure. Such a soil, under arable culture, must be expensive to manage, and far from productive, and in its present state it produces undergrass, but scanty and poor herbage. Its natural application is to woodland. Its Oak is celebrated for its quality, and was formerly celebrated for its size, but the high prices of the war have stripped the Weald of nearly all its large timber. The farms and inclosures are in general small. We know many occupations in which the fields do not average more than five acres, interspersed with woods and coppices, and surmounted with broad coppice, like hedges or shaws, so as to give to the landscape, when viewed from an eminence, the appearance of a forest, which it actually was since the Conquest. In its legal sense the Weald is the district in which woodland is free from tithe. The old and prevalent system of cropping is—1, fallow; 2, Wheat; 3, Oats, Beans, or Clover; and then fallow again. Little stock is kept, little manure of course made, and that of inferior quality, and too generally applied to the Hops, of which the better soils of the Weald produce a great burthen, though of coarse quality. The turn-wrest plough, with its four and even six horses, prevails through that part of the Weald which lies in Kent, but it has not established itself in the adjacent counties. This fact we submit to the consideration of those who contend that in agriculture "whatever is, is right," and that experience has discovered in every district the implement and the system of cultivation best suited to it. The climate of the Weald of Kent cannot differ from that of Sussex and Surrey, and uniformity of soil is one of the characteristics of the district. Why then the difference? Why, but because it is a Kentish implement, has the turn-wrest plough, only adapted to dry soils, established itself on the wet soils of that county, and of that county only? With this ponderous implement it is not uncommon to see at least four horses stirring a fallow, at the rate of about three-fourths of an acre a day; and by the custom of the country, five ploughings are the preparation of a Wheat fallow. The produce which is to repay such costly cultivation is wretched in the extreme, not on the average more than 20 bushels of Wheat, 30 bushels of Oats, and 28 bushels of Beans. Under such a system it is needless to add that with rent at 12s., and tithes and parochial rates amounting to about 5s. more, the tenants cannot pay their way. They demand a reduction to 8s. The large landowners are complying with the demand; and if prices shall continue at their present level, that will be the most that can be obtained without an entire change of system. Enough, however, has been done in the way of improvement to show that the Weald is capable of better things. The quality of its Wheat is excellent. All that is required is to increase the produce, and to diminish the useless costs of cultivation. There are cases in which the average produce has been raised by good farming to 3½ quarters of Wheat, 6½ quarters of Oats, and 4½ quarters of Beans.

The first steps in improvement consist in draining and the grubbing of hedgerows, so as to raise the average size of the fields to 10 or 15 acres. The next is to alter the texture of the soil by the addition of substances which will prevent the particles from running together. These are chalk, burned clay, and organic manures. Chalk for burning into lime, which is nearly the sole dressing which the land receives, is carted, in many cases, nine miles, and burned on the farm. Double the quantity used in this way with each fallow would last, if applied in the raw state, 20 years. The Wealden is crossed by the Brighton railway, and the northern clay district is traversed through its whole length by the Dover railway, each of these affording chalk at their extremities; and chalk and other mineral manures may be carried by railway 30 miles at the same expense as that of carting them five miles.

In those parts of the Weald not accessible to chalk, the abundance of wood, now of little value, offers great facilities for burning clay. Some of the strata of the Weald clay are slightly calcareous, and were formerly applied in their raw state under the name of marl till the large proportion of clay was found injurious added to clay, and recourse was had to chalk lime. By selecting these beds for burning, where practicable, calcareous matter will be added to the soil, and the objectionable properties, when used in a raw state, will not only have disappeared, but they will have assumed a new character as imparters of porosity to the soil.

The next step in the process of improvement is a gradual substitution of green crops for the bare fallows, and to get much of the land laid down in good condition to Grass, to be fed with sheep. Tares and Rape might be grown for summer sheep-feed; and, in time, after draining and subsoiling, Swedes and Wurzel, to be drawn in the autumn while the land is dry, and to be stored for consumption in the yards, might be brought into play, and would ensure a supply of that of which the soil stands so much in need — animal and vegetable manure. There is no reason on earth to prevent the soils of the Weald being ploughed, if taken in proper season, with two horses. On the whole there are probably few districts where a good farmer, not afraid of stiff land, who could command capital enough to purchase his farm, and to cultivate it properly, could lay out his money to better advantage than in the Weald, availing himself of the

facilities of the Government or Private Loan Drainage Act for the permanent improvement of draining. *E. W.*

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Our own case is one of the numerous instances of the folly of boasting. Ever since a self-gratulation was indulged in at the perennial stream of poultry knowledge which flows from the office of the *Agricultural Gazette*, its letter-box has been filled with anxious inquiries; and the consumption of postage stamps has been so great, that, were not Queen's heads like those of the Hydra—cut off ever so many, and they are reproduced somehow—the penny portrait of her Majesty would by this time be found only in the cabinets of *virtuosi*.

It is not every sybilline leaf which reaches us, that need be presented to the perusal of our readers in this place. Only now and then a more suggestive one than usual may advantageously be allowed to escape from the close guardianship of the editorial locker. "A. W."—latitude, longitude, and altitude of residence quite indeterminate—has converted his or her delightful garden into a poultry-walk; but the fowls do not appear so likely to thrive as the flowers did. One of the hens, a pullet, drops every other night, *while at roost*, an egg without a shell! Last Friday an egg (a portion forwarded for inspection) had fallen into ashes placed to receive the droppings; its form was that of an inflated balloon, with the pipe for its inflation attached. And on Sunday, in the same place, another egg, equally defective as regards shell, appeared.

Now so far the case is common enough; and as hens after recovering from the tendency to abortion (for such it is) are very liable to relapse into the same disorder again, we should have been inclined to answer the question, "What shall I do for the hen?" in the words of echo—"*Do for* the hen." She would, ordinarily, be best eaten, or made into soup. But we are further informed "the garden walks are laid with spar and *refuse from lead-works*. I expect the poor birds are suffering from bellund (?). Their eggs are streaked or blotched with blood, and some of the yolks have spots of blood upon them. I observed the fowls, after rain, drinking water by the carriage-drive; this seemed to tell me that they must soon fall victims to such infusions. They feed well, but all are poor."

Enough is here said to suggest the idea that either poultry-keeping must be given up on this unindicated spot, or that the walks, &c., composed of pretty but deleterious materials from lead-works ("from lead-works!"—the very name inspires ghastly terror) must be broken up, and replaced with honest gravel and stone. Other particulars are mentioned by "A. W.," from which it would appear that the fowls are in a chronic state of slow poisoning. The reader knows as much about their homestead as ourselves, but the pit's mouth is a poor substitute for the barn door. We have often wondered whether any poultry are kept, and how, in the flaming, desert region between Wolverhampton and Birmingham. Coal and iron would not act unhealthily; so there may be no danger to be apprehended there. But combinations of copper and lead, with other elements, are some of them so poisonous, that we may conceive a bird, in the mere act of pluming itself, to gather enough noxious matter on its bill to put it out of health, at least. Cats are often poisoned by licking themselves clean after rubbing against paint. The amateur is more liable than the farmer to such accidents amongst his fowls, and it is worth bearing the possibility in mind, when any inexplicable disease makes its appearance.

But the farmer is not entirely safe from these untoward events; poisons are sometimes used upon his premises, and poison, like slander, when once let loose, often spreads over a wider area than was intended. In fact, there is no limiting its effects. A pennyworth of arsenic, successively employed, might be made to destroy a whole nation. We once had a few sheep dipped. The ingredients of their bath were kept secret; one certainly was creosote, others probably were tobacco water, perhaps corrosive sublimate, perhaps arsenic also. The sheep did well, and were freed from their ticks; but a few days afterwards turkeys, fowls, and ducks died in sad succession. There was no grain lying about which could get steeped in that vile broth—the reverse of Medea's youth-renewing soup—and the probability is, that the dropped parasites eaten, or even the worms sent up and killed by the drippings from the sheep, were sufficient to cause a partial blank in our poultry-yard.

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## CULTURE OF CARROTS ON POOR LANDS.

On poor sandy soils, which do not adhere from sheep-treading, I would recommend the Carrot to follow Turnips that have been thoroughly cultivated, and afterwards fed off on the land with fatting sheep to which corn or oilcake is given. The land may be scarified, and then ploughed and subsoiled after the fold, and in a few weeks the natural pulverisation and solidity, resulting from exposure to the elements, will bring the soil into a beautiful state for the reception of the seed. A rolling and two double tines of the harrows will be found necessary to give further solidity and tilth before drilling, the latter to be followed by a light rolling. It may be alleged that this system throws the Carrot in the place of a corn crop, and that consequently a portion of the expense of the cultivation of the previous crop of Turnips must be charged upon the Carrots. But, granting this, the chances are in favour of the Carrots producing a greater profit per acre than the corn crop, and leaving the soil in far better condition for the following crop. It must be understood that I am alluding to the poor siliceous soils, upon which 3 quarters of Wheat, 4 of Barley, and 10 tons of Turnips, are esteemed abundant crop. The after management will be the same as that described in a previous paper; the produce will vary from 400 to 750 bushels per acre, whether of the red or white varieties, or from 8 to 15 tons. This, at 1*l.* per ton, the price at which they are occasionally sold off the land, will amount to from 8*l.* to 15*l.* per acre; and the tops, either fed on the land or ploughed in, are equivalent in value to the fold manure from the previous crop of Turnips. The rest of the crop will be somewhat as follows, taking men's wages at 10*s.*, and women's at 5*s.* per week, and that the crop is cultivated upon a soil that admits of easy tillage. (See Transactions of Highland and Agricultural Society's Journal for 1850.)

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Rent of land, rates, tithes, &c. ... ... | 1 | 0 | 0 to 1 | 10 | 0 | |
| One scarifying ... ... ... ... ... | 0 | 1 | 6 to 0 | 2 | 0 | |
| One ploughing ... ... ... ... ... | 0 | 6 | 6 to 0 | 7 | 6 | |
| One subsoiling with three horses ... ... | 0 | 9 | 0 to 0 | 10 | 0 | |
| One rolling (two horses) ... ... ... | 0 | 0 | 9 to 0 | 1 | 0 | |
| Four harrowings, at 6*d.* ... ... ... | 0 | 2 | 0 to 0 | 2 | 0 | |
| 4 or 5 lbs. Seed, at 1*s.* 6*d.* ... ... ... | 0 | 6 | 0 to 0 | 7 | 6 | |
| Two bushels per acre of wood ashes or charcoal to mix with the seeds in drilling ... | 0 | 1 | 0 to 0 | 1 | 0 | |
| One light rolling (one horse) ... ... ... | 0 | 0 | 3 to 0 | 0 | 4 | |
| Drilling ... ... ... ... ... ... | 0 | 1 | 0 to 0 | 1 | 0 | |
| Artificial Manure ... ... ... ... | 0 | 15 | 0 to 1 | 0 | 0 | |

| Hoeings—Dutch hoeing between drills | *s.* | *d.* | | *s.* | *d.* | |
|---|---|---|---|---|---|---|
| ... ... 1 | 6 | to | 2 | 0 | | |
| Do. do. setting out ... ... 3 | 0 | to | 10 | 0 | | |
| Do. do. second hoeing ... 3 | 0 | to | 4 | 0 | | |
| Do. do. third hoeing ... ... 2 | 0 | to | 3 | 0 | | |
| Do. do. two horse-hoeings with steerage-hoe ... ... 2 | 0 | to | 2 | 0 | | |
| | | | | 0 | 16 | 6 to 1 1 0 |
| Manual labour in taking up and storing ... | | | | 0 | 12 | 0 to 0 15 0 |
| Horse labour do. do. do. ... | | | | 0 | 1 | 0 to 0 2 0 |
| | | | | 4 | 12 | 6 to 6 0 4 |
| Contingencies ... ... ... ... ... | | | | 0 | 10 | 0 to 0 10 0 |
| Total ... ... ... ... ... | | | | £5 | 2 | 6 to 6 10 4 |

The straw used for covering the roots is still available for litter. From 5*d.* to 6*d.* per bushel is the price at which Carrots are frequently sold from the field, where no expense or risk of loss from storing is incurred; and if we put the actual cost at 6*l.* per acre, and the average value of the crop at only 12*l.* 10*s.* per acre, it leaves such a balance that will defy any poor land farmer to obtain from a corn crop, particularly at the present free trade prices, that follows Turnips fed off, and the land will be left in a better condition for corn than if it immediately followed the Turnip crop.

In the neighbourhood of large towns there is a constant demand from cow-keepers and stable-men for Carrots; and we know of no root used for feeding cattle which will yield so large an amount of produce from poor lands, or that may be removed with so little exhaustion to the soil. Professor Way has suggested, that as the long root of the Carrot derives most of its nourishment from and pulverises the subsoil, it is a good preparation for grain and other plants whose roots feed chiefly upon the soluble particles nearer the surface.

Upon a farm where Carrots are annually grown to the extent of from 5 to 10 acres, during 14 years there were only two crops that produced less than 500 bushels per acre, the remaining 12 averaging from 500 to 1400 bushels, or from 10 to 28 tons, and these crops were grown on poor sands and gravels, the gross rental of which could not exceed 25*s.* per acre. The value of Carrots to the farmer depends upon the produce of the Turnip crop: when this is below an average they become of higher value; and it is a convenience to have a root which, being stored, is equally nutritive in all kinds of weather, which admits of general application, and is so nutritious for all kinds of cattle. At the present time of low prices for grain and remunerating prices for stock, this system of growing Carrots is worthy of especial attention, as the taking two green crops in succession will lay a foundation for a more abundant grain crop, which is the only means of compensating for its unremunerating price.

To the labourer, the value of the Carrot, when compared with the Potato, will be found equally great. Carrots may be bought at 6*d.* a bushel; Potatoes are now seldom less than 2*s.* a bushel. A few pence will purchase seed sufficient for a bed of Carrots or Parsnips, whilst the cost of the seed Potatoes becomes an important item when taken from the labourer's pocket. From the Carrots or Parsnips the probability is that he will obtain, with common attention, a root that will furnish him with a good supply of winter vegetable food; while, if he continues to plant the Potato, the chances are in favour of their being taken off from year to year by the prevailing distemper, and the crop will barely exceed the value of the seed.

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## DEEP DRAINING AND OPEN FURROWS.

The high reputation which Mr. Mechi has most deservedly attained as an agricultural reformer, renders an erroneous opinion enunciated by him so much the more dangerous. As he invites criticism on the soundness of his opinion with regard to the necessity of open furrows, where land has been thoroughly drained, I trust he will not think me wanting in courtesy if I thus openly in your columns avow my entire dissent from him in this matter. We both agree as to the necessity of deep draining: by deep I mean 4 feet and upwards. The superior efficiency of deep drains, I believe, will be philosophically explained and experimentally proved by a well-known agriculturist in the next Number of the Journal of the Royal Agricultural Society, so that I am content to leave this part of the subject without further comment.

My dissent from Mr. Mechi's opinion will be very briefly expressed by the statement of a few facts, which I consider to be of more value than any lengthened theoretical refutation. I have drained land of the very stiffest description over a very considerable extent (during the last eight or ten years), and have had no occasion to use any furrows whatever. The land upon which I have operated is the *gault c'ay*, which is by many degrees stiffer and more compact than the London clay (the geological site of Mr. Mechi's land in Essex). Here for acre after acre there is not a single furrow, and I can safely assert that after the late unusually heavy rains of last January upon these fields, when the rain had ceased an hour or two no water whatever could be seen, though it was running away in torrents through the drains. To this statement an objection may be raised, that the land is cultivated as Hop-ground, and therefore is no fair specimen of ordinary agricultural proceedings. I cannot admit the validity of such an objection, though I can afford to put aside the testimony derived from my stiff soils thus employed, as all my stiff common farming lands tell the same tale; for in them the furrows are the same distance apart as in my lightest sands—in other words, as water-conduits they are not needed at all. The explanation I have to give is this: that in these most tenacious clays, thorough draining is employed in the correct sense of the term. Many years ago I experimented on this description of land on a small scale; and I then found that the drains ought not to be more than 15 feet apart in order to be thoroughly efficient. This gave me confidence as to the method to be adopted in my future proceedings, though I must confess I was half deterred by the prospective cost: it was enormous, equal to half the fee simple of the original value of the ground. But I persevered, and I am happy to add that I have had no reason to repent of the outlay, as I have been amply repaid in the subsequently exuberant fertility of the soil thus treated. In this land, the drains are from 4 to 5 feet deep, and from 12 to 15 feet apart. The cost was 16*l.* per acre. And here I again repeat, that, after the heaviest rains or melted snow, the surface of the land is in appearance as dry as if it rested on a sand bed. With these facts continually before my eyes, when I hear of the necessity for open furrows, I cannot but infer that land so requiring them has not been thoroughly drained, deeply enough, probably, as in Mr. Mechi's case, but not thickly enough. This is, of course, extremely disagreeable intelligence to the farmer, yet, if it be correct, it is not the part of wisdom to shut our eyes to the truth. Only a few years ago, what is commonly termed thorough draining was a most unpalatable necessity, obtruded upon landowners, and was for a long time resisted; but it is now almost universally acknowledged to be the foundation of good farming, and they only have acted wisely who have obeyed its requirements. But, on the other hand, it may be stated, for the comfort of the farmer in these disastrous times, that this very stiff land, after drainage, with proper cultivation and manuring, is capable of producing enormous crops, both of corn and roots; this I can testify to from experience.

And, by the way, with regard to root crops, which on this character of soil were formerly almost useless, because they could neither be fed off nor carried away without spoiling the land, we have, thanks to Crosskill, of Beverley, an instrument by which this formerly inaccessible crop is rendered as available as if it were grown on light lands. I allude to his "Portable Farm Railway." I have now about a third of a mile of it employed on my farm, by which root crops have been carried off the most tenacious of my fields, and immense quantities of dung carried out upon my Hop-grounds, during the open weather, without occasioning the slightest injury to the land. It is simple in its construction, and easily managed by common farm labourers; and I find it most useful as a substitute for horses, in a multiplicity of ways. Like his clod-crushing roller, the portable railway is capable of almost universal application, on a large farm.

But to return from this incidental digression to the open furrow question. I will give another instance or two, from farms not in my occupation. The first is a small farm, of about 40 acres, which I drained last year. This land was unusually wet, and although it was thrown up in high narrow furrows, of about 8 feet wide, it was impassible for horses, excepting in the driest weather, when the ground baked up as hard as a brick. The seasons for sowing were frequently lost, as the land could not be got ready in time. Now the drains in this farm were put in at 4 and 4½ feet in depth, and at distances varying from 15 to 30 feet, such as from the character of the soil I deemed sufficient, the surface soil not being of one uniform texture. After the draining was completed I recommended the tenant to throw down all the high ridges, and lay the ground perfectly flat. He followed my

advice, and the land has ever since been thoroughly dry, without indicating the necessity of retaining any furrows. I walked over this farm during the wettest part of January; there was no water at all to be seen on the surface, and the ground under foot had become perfectly sound; though previous to the draining, after similar heavy rains, I have often seen, on the inclined surfaces of the fields, gullies washed out 2 and 3 feet deep, and the flats of the fields were so rotten that a person could not walk on them without sinking over his shoes at every step. The subsoil of this farm is also the gault clay.

I will only mention one more instance, taken from the land of a friend and neighbour of mine. The land he has drained rests upon the London clay. Previously it was a very poor wet pasture ground, producing little besides Rushes and Moss. He could not obtain a tenant for it at 2*s.* 6*d.* per acre. He therefore determined to drain it and occupy it himself. His drains are placed 4 feet deep, and 30 feet apart. The remedy has proved effectual, the land being as good now as the rest of his farm, and he could readily let it for 30*s.* per acre.

Here, again, we have an illustration of the non-necessity for open furrows derived from an experiment over some 50 or 60 acres, the whole of which now lies perfectly flat.

It is obviously impossible to lay down any uniform set of rules as to the proper distances at which drains should be placed so as to make them thoroughly efficient; these must be regulated in each case by the texture and consistency of the soil; but I do most unhesitatingly maintain, if the land be truly under-drained, that is, deeply enough and thickly enough, that open furrows to carry off surface water are more than useless. To the scientific farmer it would be mere waste time to descant upon the advantages accruing from water percolating through the soil instead of running over it; and more particularly since so much light has been thrown upon the *rationale* of the benefits arising from the percolation of water, by the invaluable discoveries resulting from the investigations of Professor Way and Mr. Thompson on the manuring-absorptive power of clay in our agricultural soils.

I ought, perhaps, to add that I invariably trench or subsoil immediately after draining. *J. M. Paine, March* 11.

P.S. On reading Mr. Mechi's paper on "Open Furrows," in the *Gazette* of to-day, I immediately determined this afternoon to walk to my farm and see the effects of a continuous heavy 12 hours' rain upon the land alluded to in my former letter. I considered this a capital opportunity for testing the accuracy of my statement relative to the absence of all *surface water*, upon my thickly and deeply drained land; for before the storm of to-day, during the past week, the rains have been so heavy as to saturate the soil with water, and our low grounds have been constantly flooded; so I thought if ever water was to be seen on the surface, I should find it there to-day. It was pouring with rain when I started from home, but there was a temporary clearing up of the weather about five minutes before I reached this part of my farm, in company with my bailiff. We walked over every part of the *stiffest* gault clay field that I possess, containing about 12 acres; and I can most confidently assert that there was no water whatever on the surface, and there was no symptom of the slightest rill having run upon the surface, during the heaviest period of the rain. In fact, every drop of water *percolated through the soil* into the deep drains below, from whence copious streams were issuing like little rivers. Moreover, it so happened that in this field there were 20 or 30 holes dug about it in different parts, each 2 feet deep, *and they were all free from water*, with the exception of 2 or 3, on a quarter of an acre, in one corner of the field, where the drains were placed 18 feet apart, instead of 12 feet, as in all other parts of the field—here there were about 2 inches of water at the bottom of the holes. This field is in Hops; the ground has not yet been dug, but the Hop hills are cut; thus leaving, at every 6 feet, little circular basins, 6 inches deep, most excellent receptacles, therefore, for the retention of surface water, if there had been any. Afterwards, indeed, on returning home, on lands not drained, I found these little basins filled to the brim with water. I am tempted to send you this statement of a simple fact, with a request that it may be added as a postscript to my letter sent to you some ten days ago. *J. M. Paine, March* 22.

## Home Correspondence.

*On Oats.*—As the time for sowing this grain has now recurred, it may not be unsuitable to pen a few plain remarks on the management of the crop, leaving it open for any corrections or additions that may suggest themselves to your editorial judgment. Oats, then, is a crop which with proper management may be grown on most lands, and after almost anything; although it may be considered an exhausting crop, as drawing much nourishment from the soil; and some farmers prefer buying their Oats, to raising them on their own land. And those who raise them, may often with advantage (especially in low-price times) keep them for home consumption, for the horses, as well as for the sheep, on large farms, to be mixed with their chaff, in their fold; and in lambing time, a few Oats and Cabbages support the ewes uncommonly well. Where land is too poor or stony for Barley, Oats may be, and often are, substituted, after fed off Turnips for instance, in which case Saintfoin (likewise a crop flourishing well on stony soils) may be sown down with them. After Beans may be another mode of culture, taking care to have the land well cleaned; but Oats often succeed best on a Clover or Saintfoin ley stale fallowed, and the seed harrowed broadcast in; under which method I have seen extraordinary crops grown, and the Oats came up thick a second time, so as to stand (with a mild season) mixed with Vetches, winter sown, for feed in May and June. In sowing this crop, more seed seems, by universal consent, to be used than any other grain; from 4 to 6 bushels. Four seems enough, and of course less in dibbling them, as is occasionally practised in Norfolk and Suffolk. Scotland claims the chief celebrity for its Oat raising, which are generally broadcast sown, the Scotch Potato-Oat being their best variety, which I have seen answer very well, grown on some thin stone brash land, in this county (on Mr. Dickenson's estate), the land having been brought into high cultivation by sheep folding and artificial manures; so that in these days of high-farming we may be safely placed on a par with our Northern neighbours, as to Oat growing; and from 10 to 12 qrs. per acre may be reckoned an average growth on a good soil, with good management. In some neighbourhoods it is the fashion to give horses Oats in the straw, but this is a wasteful practice, and it is always better to give it them bruised, with their chaff—the latter steamed, if the premises of the farmer allow of conveniences for it. The following is the rate of feeding per horse, I find on referring to a former report on Mr. Dickenson's farm.—"Each horse is allowed, per week, 1½ bushel of Oats, ½ bushel of split Beans (taken off through the summer, and Vetches or other green food allowed), ¼ cwt. of bran, moistened and mixed with as much steamed straw-chaff as they will eat; this treatment they thrive under. The chaff is cut by an engine of Corne's, worked by a pony, which cuts 1 bushel per minute, for horses, with the smaller wheel, and 2 bushels per minute for sheep and beasts, with the largest. Oats, ground into coarse meal, form much of the food of the Scotch poor. The meal is stirred in boiling water, to a thick consistency, which is then called porridge, and is eaten with milk or treacle. But it is in cakes that it is chiefly used; being made into dough, with water, and baked on an iron plate. In France and Germany they usually bake their Oats, as well as Rye, into loaves for horses' food, which they seem much to relish, and must be, one would imagine, a saving practice. Oats are often apt, when ripe, to shed, by which many are lost; which speaks strongly in favour of their being cut green, by which indeed they make the better sample. They are also often, as well as Barley, raked up loose at harvest, like hay, but why should not they have the same attention paid them as Wheat? and be tied up in neat sheaves. An old practice in the management, if it can be so called, of this crop was to alternately raise Oats and Grass—for example, in Wales, that is in North Wales, amongst the mountains, they will grow Oats, and then leave the land down three or four years for Grass, to take its chance. Occasionally where the altitude of the land allows, that is where it is not too highly situate, sowing as a variation, Wheat and Potatoes. *H. E., Clevedon, Somersetshire.*

*Education.*—Your correspondent "O. F." of last week says he is glad to find that landlords and agents are beginning to cultivate improvement, but that as yet there has not been time to cultivate those qualifications in tenants necessary to such improvement. I think it would be to the advantage of landholders to pay a little more attention to our endowed schools. How many are there which are almost useless? I know a richly-endowed school that is not provided with a single map, where the master's stipend is not equal to the wages of a journeyman tailor, and where the trustees, all of them landlords, will not allow the Government inspector to visit the school, neither will they take an active part in it themselves; and yet in that neighbourhood there is not a single school fit for a farmer to send his son to. If he wishes him to receive a decent education he must send him to a boarding-school at an expense of 15*l.* per year more than it ought to cost him, so that if he has two sons to send to school he must spend 30*l.* per year more for their instruction at a distance than it ought to be supplied to him for at home. Thus the boy not only loses the benefit of that physical training which he would receive at home to fit him for his future occupation, but the knowledge that is imparted to him is often of the most superficial kind: *e.g.*, the other day I met with a lad 14 years of age who had been under the care of a clergyman in Yorkshire upwards of two years, at an expense, all things included, of 40*l.* per year, yet he did not know a noun from a verb; he had never read any history, and as to geography he hardly knew what it meant; but he had taken his cyphering-book every half year to show his progress, in which there were a number of crotchety sums that he knew little about, and his father knew less, and so they were gulled. This may be an extreme case, but there are plenty of others that are little better. *S. J.*

*Taxation.*—The "Farmer's Magazine" for this month contains a report of a discussion at the London Farmers' Club on the subject of "How far taxation enters into the cost of agricultural produce." Notwithstanding the talent displayed, it is not to be wondered at that the conclusion to which the club came was not very definite; but it does seem strange that tenant farmers do not see that the taxation on the land, though occasionally perhaps causing them some inconvenience, as in the case of the malt tax, does not, in fact, fall upon them at all. Rent is diminished by the extent of the burdens, whatever they may be. If the burdens were lighter, the rent would be so much the more. Few landlords calculate how low they can afford to let land; but, on the contrary, how high a rent a good tenant can afford to pay—just as tenants do not take produce to market to sell at the lowest price they can afford to take, but at the highest price at which a purchaser can be found. The parties really affected by taxation on land are the landowner and the labourer; the former, because it keeps down his rents; the latter, because it discourages the culture of inferior soils, and so curtails the demand for his labour. If land is cultivated at all, the tenant, in these days of low profits in every department of trade, must be content to pay over as rent everything beyond a very moderate interest on his capital, and, if a working farmer, he must be satisfied with a very moderate remuneration to himself for superintendence. Protection or free trade will make no difference to him in this respect. It is also very strange to see so many persons introducing into the discussion a comparison between the present price of the public Funds turned into bushels of Wheat, and the price of the Funds in bushels of Wheat at a former distant period. The comparison may be a statistical curiosity, but it has no bearing on the question at issue. Mr. Mechi appears to be the only speaker who perceived this. In truth, beyond the daily influence which the varying value of money in the discount market exerts upon the price of the public Funds, their value mainly depends upon a sort of public opinion as to the solvency and stability of the finances of the country. In the midst of a war, in daily expectation of a foreign invasion, and with an expenditure far exceeding revenue, what was to be expected but a low price of the Funds as compared with every commodity? Now, all these things are changed, and the price of the Funds is changed as a natural consequence. The only way in which the price of corn influences the price of the Funds is, when a large importation, unbalanced by an equal exportation of other commodities in return, creates an unusual demand for bullion for export to restore the balance of trade. Then the Funds, like all other stocks and commodities, tend downwards. But taxation on the land, except so far as favours such a state of things by making the acreage of corn less, has no effect here; and if the acreage of corn were habitually greater, so would also be the number of habitual consumers of the corn of that increased acreage. It is, therefore, scarcely doubtful that the taxation on land has no influence at all in this matter. Unquestionably farmers are in a very difficult position at this moment. But the difficulty arises not from taxation, but from the impossibility of forming a sound opinion of the range of prices under free trade on which to base their calculations. Let not farmers deceive themselves. The landlord may have his rent increased, or the labourer his wages; but no system of taxation will long give the farmer more than the ordinary profit of trade, nor can any system long deprive him of it. *Alexander Hall Hall, Watergate, March* 20.

*Clover and Barley Seed-time.*—In a leading article of the agricultural part of the *Gardeners' Chronicle* of last Saturday, your readers are reminded of an experiment which Professor Henslow wishes to make for the determination of the cause of Clover failures. Some years ago, having had my attention directed to this subject, I thought, that as Clover was usually sown amongst a corn crop, grew as an under-growth for some months, in circumstances most unfavourable to the healthy development of the plant, and was left at harvest entirely exposed, it might, from the manner of its growth, be rendered incapable of enduring the cold of winter, or the trying vicissitudes of spring, and thus its frequent failure be accounted for. It appeared, however, from an experiment which I had speedily an opportunity of making, that this idea is not tenable. A friend of mine in this neighbourhood had a field of 20 acres, from which the red Clover had entirely disappeared in the winter. As it was necessary to plough the field for a crop of some kind or other, I urged him just to re-sow in the spring with Clover and Grass seeds for sheep pasture, in expectation that red Clover could not fail to grow and thrive when sown at such a season, and without a corn crop either to render the Clover plant weak, or to destroy it. The field was in excellent condition, and after being spring ploughed, was sown, as suggested, in the month of April. All the seeds brairded well, the red Clover was abundantly planted, and looked most promising towards the latter half of May, but by the end of June, or beginning of July, before sheep were turned into the field, there was not one plant of it to be found; it had entirely gone off, except on a small spot of reclaimed bog, which had been in tillage but a short time. It was not killed by frost, nor by drought, nor by any atmospheric cause, so far as any one here could judge, nor was it choked or destroyed by other Grasses. I beg to suggest to such of your readers as may be designing to make the wished for experiment, that should their Clovers braird and live for a little, and then die, like that about which I am writing, that it may be desirable to subject the dying or dead plants to the microscope; there may be something in the soil, some parasite which may prove fatal. You speak of making the experiment on the Barley land. In this country, Barley generally comes after Turnips; and in a rotation of four or five years this would leave a long period between the last failure and the present sowing. Why not try it on ground sown with Clover last spring, which has either not grown or died? If any should make the experiment in this way, the Clover, if it braird, will have to be constantly watched, that if it become diseased or die, it may be properly examined. *Tweedside, March* 27.

*Flax Seed.*—It is extraordinary to what lengths prejudice will carry men. In your report of M. Claussen's explanation of his experiments upon Flax a short time since, the Chevalier is stated to have intimated that Flax might be saved for seed in England; and we have had letters from Ireland begging for Riga barrel seed for sowing, and have heard lately of a man's giving 15*s.* per bushel for Riga seed! Why, Sir, for years we have sold only English grown seed for sowing, fearing to trust to foreign; and we have by us now Flax grown from English saved seed in the county of Clare, which beats by a foot Flax grown from Riga seed upon precisely the same land, and under the same circumstances, upon Mr. M. J. J. Donlan's plan. We believe the English grown seed to be far preferable to Riga seed, and trust that you will promote its growth in the United Kingdom, where so many thousands of acres of suitable land lie uncultivated, especially now that by recent discoveries its value is so much increased. *A Seed Merchant.*

*Skylark, a Merciful Plea for the.*—Mr. A. Shilmalier, who, in the last Number of the *Agricultural Gazette*, takes up the cudgels so unmercifully against my good friend, the skylark, for feasting on his young growing Wheat, is yet so courteous, whilst speaking of myself and of my writings, that I cannot but reply to his invocation of my aid with marked civility and attention, at least. To combat his views at any length in a newspaper, with a pen nimble as mine, would be an impracticable matter. My arguments, fairly urged, would occupy half your whole space. However, let your desponding correspondent join me some fine Sunday morning in my walk to church, either to Acton, Ealing, Kew, or Richmond. As we saunter along, with corn fields on our right and left, the "object" of our discourse shall be before us, behind us, on each side of us, and "above" us. His loud, happy, joyous "*Thrr-upp! thrrr-upp!*" shall greet us at every step; and as he rises, poised on air, leisurely to chant *his* hymn of praise to the Creator, in a voice of pure, clear melody, soaring aloft till "Heaven's gate" opens to give entrance to his anthem—THEN will we together plan the readiest means to bring about his destruction; THEN devise how best we can blow him and all his fraternity to pieces—with hollow iron tubes. 'Twere indeed a project worthy of us both; for we are both men, and born, no doubt, with common feelings of humanity. I grant your correspondent has some cause for complaint *; so have all *we* busy mercantile mortals pent up in London, when those gigantic, Mammoth organs "play up" before our doors, in office hours. The hideous, unearthly noises emitted from these "infernal machines," do fearful damage to the human frame; they are indeed *more* than a fair "set off" to the ravages inflicted by the larks. Yet have WE no redress, save to LAUGH "in spite of our teeth." Let Mr. S. do the same, and his sorrows over the "trials of life" will sit lighter. I could with ease propose an efficient remedy for the destruction of the larks, but it would be inconsistent with my duty—irreconcileable with my avowed principles. Let your worthy correspondent wait patiently until Christmas. He will then have full revenge. Two-thirds, perhaps, of the skylarks which now torment him, and, unbidden, share his bounty, will be found slaughtered; lying "cheek by jowl" in the poulterers' window, and awaiting the still further indignity of a wooden skewer, which will most assuredly be run through each one of their individual gizzards. In declining to assist Mr. Shilmalier, I do so—not rudely, but deprecatingly. I seek to make a "convert" of him. What *will* he say, when I come to treat of the *Skylark*, and write his "Natural History" in my weekly "Treatise on British Song Birds?" *W. Kidd, New Road, Hammersmith, April* 3.

* Although I am perfectly aware that his constant *locus in quo* is the corn-fields; yet, this is the very first time I ever heard of a similar complaint touching the *ravages* of the skylark among growing corn. I have always understood that, at this season, his food consisted almost wholly of the wireworm, earth-grub, and the larvæ of insects. May there not be—I ask it with all due submission—some little mistake in the matter? Let us hope so. It is difficult to imagine that the larks in Ireland, and those in England, should differ so *widely* in their habits.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House, Hanover-square, on Wednesday last, the 2d of April; present, his Grace the Duke of RICHMOND, K.G., President, in the chair; Marquis of Downshire, Lord Camoys, Lord Berners, Lord Southampton, Lord Braybrooke, Lord Bridport, Lord Ashburton, Hon. R. H. Clive, M.P., Sir Thomas Dyke Acland, Bart. M.P., Sir Robert Price, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Montague Cholmeley, Bart., M.P., Col. Austin, Mr. Raymond Barker, Mr. C. Barnett, Mr. Beasley, Mr. S. Bennett, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Mr. W. G. Cavendish, M.P., Col. Challoner, Mr. Evelyn Denison, M.P., Mr. S. Druce, Mr. Foley, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Kinder, Mr. Lawes, Mr. Milward, Mr. Pusey, M.P., Mr. Sandford, Prof. Sewell, Mr. Shaw (London), Mr. Shaw (Northampton), Mr. Shelley, Mr. Sillifant, Prof. Simonds, Mr. Simpson, Mr. Slaney, M.P., Mr. Stansfield, M.P., Mr. Thompson, Mr. Turner (Barton), Mr. C. Hampden Turner, Prof. Way, Mr. Jonas Webb, and Mr. Wilson.

The following new members were elected:

Cumming, Lachlan, Munfield, by Inverness.
Turner, C. J., Staplegrove, Taunton, Somerset.
Musgrave, Christopher, Claverdon, Warwick.
Lobb, George, Lawhitton, Launceston, Cornwall.
Hatchard, Rev. John Alton, Lee Priory, Wingham, Kent.
Smythe, Frederick, Tenby, Pembrokeshire.
Hayward, Henry Scott, Folkington, Willingdon, Sussex.
Honywood, William, Chilton Lodge, Hungerford, Berks.
Brett, J., Corfe Lodge, Wimborne, Dorset.

The names of 11 candidates for election at the next meeting were then read.

FINANCES.—Mr. RAYMOND BARKER, Chairman of the Finance Committee, laid before the Council the Report of the Accounts of the Society, to the end of the previous month; from which it appeared that the current cash balance in the hands of the bankers was 2038*l.* (including 319*l.* on account of life-compositions).

CHEMICAL INVESTIGATIONS.—Mr. PUSEY, M.P., Chairman of the Chemical Committee, laid before the Council the following report, which was received and adopted.

REPORT.

Your Committee have to report, that since April 1850, about 120 analyses have been executed, at the request of members, at the Laboratory. Though this number is not unsatisfactory, they observe with regret that, of these, only 20 have been analyses of guano. In the hope that members may avail themselves more largely of this only security against the heavy loss arising from adulteration, the Committee recommend, that Mr. Way's spontaneous offer of reducing the charge for a partial analysis of guano from 7*s.* 6*d.* to 5*s.*, and for a complete analysis from 20*s.* to 10*s.*, be accepted; and they recommend to members of the Society, the adoption of this easy defence against fraud.—Of the subjects adopted for inquiry last year, "The absorptive properties of soils" has been carried on, and the results have appeared in a lecture delivered by Mr. Way, and in the Journal. The Committee recommend that this novel and interesting subject be pursued further, with reference especially to time and to the mode in which ammonia is set free again in soils, for the support of vegetation; on which branch of the inquiry Mr. Way is prepared to deliver a lecture before the Society.—The analysis of marls has been completed, and the Committee recommend as a new subject, "The Torrefaction of Soils," that is to say, the causes of the manuring properties of burnt clay in certain districts; and they hope that members residing in such districts will send immediately to the secretary specimens of such fertilising clays, in the raw and in the burnt state. It would be also very desirable that specimens of clays which have been found to fail as manure, after burning, should be forwarded.—The examination of the nutritive properties of Grasses has been carried on to a considerable extent, and it appears to the Committee desirable that it should be continued in the ensuing year, with a view to a complete examination of the subject.

April 1, 1851. (Signed) PHILIP PUSEY, Chairman.

COUNTRY MEETING OF 1851.—The Council were favoured by the attendance of Deputations from Kingston-on-Thames and Windsor, who kindly explained to the Council the advantages respectively possessed by Bushy Park and the Windsor Home Park, as sites for the Society's Country Meeting to be held in July next. The noble President having thanked these Deputations for their personal attendance, the information they had communicated, and the various plans and other documents they had laid before them; they retired from the Council Room, when the Marquis of Downshire brought forward, and Sir Robert Price, Bart., M.P., seconded, the motion of which his lordship had given notice, that the Home Park at Windsor should be the place of the Country Meeting, instead of Bushy Park, as previously intended. The whole subject received from the Council the maturest consideration, and it was finally carried, on the motion of Sir Thomas Acland, Bart., M.P., seconded by the Hon. R. H. Clive, M.P., and after full discussion of the various points and bearings of the question, that the same Inspection Committee that visited Bushy Park, should be requested to visit the proposed sites and localities at Windsor, offered to the Society by the gracious permission of Her Majesty and Prince Albert; and that the President should be desired to direct a special Council to be summoned for the purpose of receiving their report and rescinding the resolution of the Council, by which Bushy Park was decided upon as the locality of meeting, with a view to the substitution of the Home Park of Windsor in its place. The President at once acceded to this request, and directed such a special Council to be summoned for Wednesday, the 16th instant.

COUNTRY MEETING OF 1852.—Memorials, and the requisite plans of sites connected with the Country Meeting of the Society, were laid before the Council from the authorities of Lewes and Maidstone, in reference to the Country Meeting of 1852, to be held in the South-Eastern District, comprising the counties of Kent, Surrey, and Sussex. Mr. Raymond Barker, Mr. Brandreth, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Jonas, Mr. Milward, and Mr. Shaw, were appointed an Inspection Committee to visit these localities, and to report their respective accommodation and advantages to the Council on the 7th of May, when the decision of the place of meeting would be made.

STEWARD OF CATTLE YARD.—On the motion of Mr. BRANDRETH, Mr. Milward was appointed a Steward of the Cattle Yard at the Country Meetings of the Society, in the place of Mr. Hudson, of Castleacre, who retires this year by rotation.

Communications were received from a public meeting which was held at Slough, the Royal Bucks Agricultural Society, and the Great Western, the South-Western, and the South-Eastern Railway Companies, as well as from various parties making inquiries on points connected with the ensuing Country Meeting of the Society.

The Council then adjourned to the 9th of April.

HIGHLAND AND AGRICULTURAL, OF SCOTLAND, *Jan.* 14.—The half-yearly general meeting of the Highland and Agricultural Society of Scotland was held in the Society's Hall, Albyn-place; his Grace the Duke of ROXBURGH, the President of the Society, presided. *The Glasgow Show and Meeting in* 1852.—The SECRETARY read the following report regarding the Society's Show at Glasgow last year:—The Directors have much pleasure in reporting to the general meeting the highly satisfactory result of the Glasgow Show, which, whether in point of extent or character, may be regarded as the most successful meeting ever held under the auspices of the Society. The exhibition, on the largest scale previously, was that which took place at Glasgow in 1844, when the number of entries was 1489. On the last occasion they amounted to 1845. The quality of the stock afforded gratifying evidence that the valuable pure breeds of the country, both in cattle and sheep, are progressively improving, the exhibition of implements far exceeding anything of the kind previously witnessed in Scotland, and was such as to justify the increased encouragement which the Society has of late given to this important department. The Directors conceive this to be a fitting opportunity for considering the time and place of the next show. The Society is aware that there now exists a rule providing that shows shall be held triennially. This arrangement was rendered necessary at the time by the difficulty and expense of maintaining annual meetings; but, in deference to a desire generally expressed in 1848, it was resolved to anticipate the triennial period, by holding the Glasgow Show in 1850; and, in like manner, the Directors are prepared, if sanctioned by the Society, to respond to the desire so strongly expressed by all parties at Glasgow, by making arrangements for a show in 1852. With this view they propose to publish, in the forthcoming premium book, a list of the classes of stock, &c., for which prizes will be offered, with an intimation that the place of the show and the amount of the different premiums will be announced at the general meeting in June. The Directors have no hesitation in expressing their opinion that Perth is the proper place for the meeting. The Society has not visited that locality since 1836; it is accessible by railway from all parts of the country; and though its immediate neighbourhood may not depend principally on stock, it is the centre of a great breeding and agricultural district. Last year the Directors were memorialised by a number of influential proprietors, in Perthshire to fix a meeting or the present year, but it was considered expedient to defer it, on account of the Great Exhibition in London; many of the memorialists have again expressed their willingness to support a meeting in 1852, and a numerously-signed requisition to that effect has just been received from the western district of the county. If approved of by the Society, the Directors would willingly endeavour, before the next general meeting, to make the necessary arrangements with the counties of Perth, Fife, Clackmannan, and Kinross, which would constitute a compact and convenient district.—The Duke of BUCCLEUCH said it now devolved upon him to allude to the latter part of the report which had been read, and to submit a motion in regard to the proposed show in 1852. It had, at one time, been suggested that a meeting should be held this year at Perth, but after full consideration, it was considered more advisable to postpone the show till 1852, on account of the Great Industrial Exhibition which takes place this year in London. This great exhibition, it was naturally thought, would attract parties to London from all quarters of the country, and consequently materially injure the more humble, but not less useful exhibition of the Society. It was proposed, therefore, to hold the next meeting at Perth, in 1852. It was now many years since an exhibition had taken place in that city; and he had no doubt, when it did take place, that it would be a most successful one, and he did not know a county in Scotland better fitted for such a meeting than Perth. It was now, from the net-work of railways, in all directions, accessible alike to their agricultural friends in the south and north; and being itself, and the districts around it rich in agricultural productions, as well as distinguished for its rearing of stock, he was confident that the show would be an excellent one. (Applause.) The motion which he had to submit was as follows:—"That the Society shall hold a show in 1852; that, in the opinion of the meeting, Perth is the fittest place for the purpose; and that a remit be made to the directors to prepare a list of premiums, and to endeavour to make the necessary arrangements with the county and city of Perth, and with the counties of Fife, Kinross, and Clackmannan." This motion was unanimously adopted. *Monthly Meetings.*—Professor Low said, I am gratified to be able to report, with respect to these monthly meetings instituted by the Society, that they continue to meet with favour, and to receive increasing support. The subjects lately discussed at the monthly meetings, have been—1st, The advantages or disadvantages of subsoil ploughing, and of trench ploughing. 2d, The best and most economical mode of feeding farm-horses. 3d, The best varieties of Oats to sow. 4th, The best varieties of Wheat to sow, quantities of each, and comparative advantages of drilling, dibbling, or sowing broadcast. 5th, The substances which can be most profitably employed as auxiliary to Turnips in fattening cattle and sheep. 6th, The best mode of preparing and applying the different manures produced on the farm. I believe I shall but anticipate the wishes of the meeting, when I propose a vote of thanks to the intelligent gentlemen who have taken part in these discussions, or who have otherwise co-operated with the Society in supporting these meetings.—Mr. MACONOCHIE said he was convinced that more information was derived from the late meetings than from any that had taken place during the last two years; and he could only express a strong wish that such persons in England as had a few weeks ago been depreciating Scotch farming, had had an opportunity of listening to

the addresses that had been delivered at these meetings. He was certain that it was impossible for any man to have heard these addresses and not to have been convinced that the farmers of Scotland were a well-educated class, and anxious to promote every improvement that was of advantage to themselves and the community at large. *The Chemical Department.*—Dr. Anderson said, he had now to report the progress of the chemical department for the past year. During that period a considerable amount of work had been done. They had analysed 200 different specimens, embracing manures, soils, &c., submitted by members of the Society and others. That, however, embraced but a small part of the actual work that had been performed, because the members of the Society were aware that there had been submitted to him various other subjects of agricultural interest, in which great progress had been made. One of the most laborious and complicated of these had been published in the July Number of the *Transactions*—namely, on the Wheat soils of the different districts of Scotland. Another difficult subject of investigation which he expected to have been able to have published before this time, had been postponed by the continuous supply of new material that had been sent in to him. This investigation had reference to Turnips grown in different ways. It had been postponed, as he had said, frequently, and even to-day he had received another lot of Turnips; but he was now glad to say that the investigation was so far advanced that it would not be long now until it was published. He had also recently submitted to him by the committee an investigation regarding the economic uses of peat—a subject which had been exciting considerable interest of late. Part of that investigation was ready, and it would be published in the next number of the *Transactions*. Last year he had got into the new laboratory; and, as he expected, it had tended greatly to facilitate operations. With regard to the general business of the chemical department, his desire had been to make it in all respects accessible and advantageous to the Society. In doing this, he had spared neither trouble nor expense. He was sure that, during the last two years, he had expended on the business of the laboratory more than he had received from the Society. (Hear, hear.) He could assure them that he had entered on his duties two years ago with considerable anxiety, being afraid that the agricultural mind was not favourably disposed to support the efforts of the chemist; but his experience, during the two years that he had held the situation, had shown him that his anxieties were unfounded, and he was now gratified to state that great interest was taken in his labours. He had to thank the members of the Society for supplying him with materials for investigation. (Applause.) After a vote of thanks to the Duke of Roxburgh for his conduct in the chair, the meeting separated.

METEOROLOGICAL REPORT.—March.

(*Continued from page* 205.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Tues. 25 | 7.5 a.m. | 29.64 | ... | S. Incessant rain all day. |
| | 2.30 p.m. | ... | 29 50 | |
| * 26 | 7.15 a.m | ... | 29.29 | NW. to NNW. Blowing hard |
| | 1 p.m. | 29.38 | ... | and raining fast. |
| † | 4.10 p.m. | ... | 29.44 | W. Fine afternoon; at 4.45 a hailstorm lasting a quarter of an hour. |
| | 10.20 p.m. | 29.46 | ... | SW. |
| 27 | 7.30 a.m. | ... | 29.47 | SW. all day, and brisk; dull |
| | 9.40 p.m. | 29.55 | ... | rain y day. |
| 28 | 7.50 a m | | 29.66 | WNW. all d ry, and moderate; |
| | 2.20 p.m. | 29 75 | ... | fine sunny day. |
| | 6 p.m. | 29.72 | ... | SW. afternoon and brisk; |
| | 10.20 p.m. | ... | 29.66 | overcast, dark night. |
| 29 | 7 30 a.m. | 29.49 | ... | SW. Blowing hard, with fre- |
| ‡ | 1 p m | ... | 29.44 | quent heavy showers. |
| | 5.30 p.m. | ... | 29.44 | W. At 8 the barometer began |
| | 10.20 p.m | 29.51 | ... | to rise, and the wind moderated. |
| Sund. 30 | 7 50 a.m | ... | 29.52 | WNW. a.m., NW. p.m. Brisk |
| | 10.30 p.m | 29.79 | ... | breeze and cold blue sky; barometer rising steadily all day. |
| 31 | 7.20 a.m. | ... | 29.97 | N. a.m., NW. p.m. Brisk |
| | 6.20 p.m | 30 08 | ... | breeze, and fine sunny day |
| April 1 | 6 a.m | 30.08 | ... | NW. Moderate breeze, and |
| | 10.40 a.m. | 30 08 | ... | fine. |

* This storm came from the south, from the warmth of the rain which preceded it, and curved across the south of Scotland eastwards, and before it had quitted this island

Storm † arrived from the westward, and to the collision of these two currents * and †, and the consequent electricity, I attribute the hailstorm which came with the change of the wind.

(Any information on the time and duration of the passage of this hailstorm will much oblige the author, from any place in England or Scotland.)

‡ From the coldness of the rain, this storm came from the direction of Newfoundland, and probably from the St. Lawrence and the great lakes of North America. It must have crossed Scotland, or even further to the northward (as it was of large diameter) and went towards Norway.

Dorchester, April 3d. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*New Subsoil Plough.*—A few months ago, Lord James Hay brought out a new subsoil plough, which consists of a beam and a pair of handles of malleable iron. The shank or coulter is so placed as to have the whole of the beam in front, and the handles rising directly behind it. The beam is short, and is supported on an axle connecting two rather high wheels. The shank passes, like a common coulter, through a box in the beam, and is fixed with wedges. Its form is that of a coulter, having the point projecting forward, and inclining downwards at an angle to the horizon; and each side of its projecting point is furnished with a slight feather, to stir the loosened subsoil. That the shank may take a deeper or shallower hold of the subsoil, it is moved higher up or lower down in its seat; and that the depth of furrow may be regulated to the power applied to the implement, the beam can rest either above or below the axle. An ordinary bridle is attached to a slot at the end of the beam. Although exceedingly light—being made of the finest and best iron—it is quite astonishing what rude blows it will stand when coming in contact with the numerous fast stones which are found planted, cause-wayed as it were, in the subsoil of the North of Scotland. Mr. J. I. Boswell, of Kingussie, Kincardineshire, states that he has seen it at work more than once on his lordship's own farm, and that he is convinced it will answer all the purposes required. He says, moreover, that the invention of this light-wheel subsoil by Lord James Hay has achieved a great improvement on the old one. It does away with the necessity of injuriously putting several pairs of horses together on large farms, and it brings the operation within the reach of those who have only four working cattle on small ones. It is, comparatively speaking, a small expense, costing only about 4*l.* 4*s.*, while the old plough was about 15*l.*; and last, although not least, it is much more easy for the ploughman to hold—the wheels equalising the draught to the horses, and keeping the implement steady to the work; while it can be properly regulated to the draught of either horses or oxen by shifting the beam, and working it either above or below the axle of the wheel, as the ploughman finds best. *From the Architect, Feb.* 1.

## Calendar of Operations.

MARCH.

Lammermuir Sheep Farm, *March* 31.—During the last fortnight, the character of the weather has changed for the worse. During that time, we have had more or less rain every day, with two falls of snow to the depth of a couple of inches, which, however, very quickly disappeared. When sheep are subjected to frequent wettings, it is always more or less injurious. They become listless, and unwilling to move about in search of food, what they do get being very unpalatable. The wool also is liable to part along the back, admitting the cold and wet, this being, in our opinion, the fertile source of various diseases to which sheep are subject, such as water in the head, staggers, &c., whose seat are in the brain or spine. We have more than once adverted to the beneficial effects of jacketing young sheep, as observable in the better condition, in increasing the growth and quality of the wool, and especially in the greater exemption from disease. During the last seven months, we find that, out of 570 Cheviot and black-faced ewe hoggs, with no other food but what they pick up on their hill pasture (30 of the worst of the former have been on Turnips for four months), the number of deaths from all causes have only amounted to eight. Even granting that the past has been an unusually favourable winter, this loss is very trifling, and we are inclined to place it, in a great measure, to the credit of their flannel coats. We may also observe, that they are in decidedly better *condition* than those of some of our neighbours which have been getting Turnips. It covers are so beneficial to young sheep, they should be equally so to old, especially *ewes;* and the only reason why they are not more generally used, appears to be the expense, it being a somewhat serious matter when several thousands have to be operated upon. Take for example, a flock of 2000, at 3*d.* per head, the sum will be 25*l.*; but as upon an average the jackets last three years, the annual amount is really not very serious. So convinced are we of the benefits of these covers, that if spared to another autumn, we purpose making the experiment of covering a part of the ewes of each hirsel, and comparing them with the others in spring, as regards condition, growth of wool, and general health. Were the jackets dipped in, or covered with, some substance which would render them waterproof, without greatly adding to the expense, it would be an improvement. Could some of your correspondents suggest anything suitable for this purpose, we would feel greatly obliged. The gimmers—or shearling ewes—were put upon Turnips on the 1st of March, the two older ages, on the 22d. The ground, although drained, was so thoroughly soaked with rain from the 22d to the 28th, as to render it necessary to give them their Turnips upon Grass. Though looking well previously, this long-continued and heavy rain has given them a very draggled appearance. On the 26th, the streams were more flooded than they have been for four years. We need not say that the same causes have greatly retarded the sowing of Oats. Some 10 or 11 acres were sown on the 16th, and we have only resumed operations this morning, and, should it continue dry, we expect to finish all that is ready during this week. Hitherto the rain has also prevented any heather burning, and as "the law enacts" that none shall be burnt after the 10th of April, we fear that—on mossy grounds at least, which are long in drying—little or nothing will be done this spring. This is a more serious loss than many would suppose, but must be submitted to with patience; the destruction of a few grouse eggs being a far more serious matter! The best heather grows upon peat, and upon an average should be burned every six or seven years. That growing upon dry soil is tufty, grows slowly, does not burn readily, and is little relished by sheep. *A Lammermuir Farmer.*

## Notices to Correspondents.

Allotments: *Northwards* asks for a rotation of crops for a cottage plot of land. Any one who has had experience in small farming would do a service by giving our readers some of it.

Blackie's Cyclopedia: *G W P.* It will be completed, probably, some time about Midsummer next year. The last Number (12) was issued just the other day.

Boarded Floors: *B A, Cantab.* A boarded floor is not well suited for such a heavy animal as a horse; when wood, however, is employed, it should be prepared in blocks, similar to the wood pavements sometime since extensively laid down in the metropolis, but now almost abandoned, in consequence of not wearing well and being very slippery. If economy and cleanliness are both required, there is nothing cheaper, or more calculated to prevent unpleasant smell, than a thick layer of simple earth or mould, as dry as possible, which will absorb the urine, fix the ammonia, and render it available for manure. *W. C. S.*

Box-feeding: *An Old Sub.* It is preferable to stall-feeding, where you have room enough and straw enough—9 feet square per head, and 20 lbs. of litter, daily, per head. Swedes may be worth 7*l.* per acre to the grower feeding them on his farm, if he knows how to buy stock, and sells them fairly when "ripe." We should prefer dividing our sheep into lots of 40 or 50, rather than having them 200 in one pen. Sheep are never littered when folded on land. Sheep would do better on Tares with corn, than on good Grass land without corn. They *will* get dirty this weather; and it is against them. It has been a bad season for folded sheep.

Early Spring Food: *J M'C.* Rye sown in September is the earliest spring food; and probably it is the best thing you could sow upon your Oat stubble.

Farm-yard Manure: *An old Subscriber.* The dung heap will, under the careless system, more rapidly diminish in bulk than in value, so that a load of it unrotted is not worth much more than half a load of the well rotted manure: while the whole bulk of the heap after rotting in this way may be worth perhaps two-thirds or three-fourths of the whole bulk in its original state. When carefully prepared the whole heap is worth as much as in its original state, indeed more, the labour spent upon it not being lost; and as the bulk of the heap does diminish somewhat, the value of a given bulk increases in the same proportion.

Flax: *T W.* Deman's pamphlet. See last number.

Modern Cow-keeper: *Anna.* We were unfortunately wrong in the statement of i s price. It is a little book, but we spoke from, as it appears, a mistaken memory.

Italian Rye-grass: *M.* We do not know of any pamphlet, particularly on the Italian Rye-grass.

Oats: *P B F.* We have somewhere seen a statement of the relative value as food of the whole plant before the seed had formed, and after it had ripened, but cannot recollect where. Perhaps some one can help you to information on the value of Oat hay.

Osiers: *H* From your description of the land we should fancy it as fit for Osiers as anything. One of the coarser sorts had better be selected: such as the Brindled Osier, *Salix viminalis.* Plant the sets 3 feet by 2 inches apart immediately.

Portable Railway: *Erratum.* In your account of my Portable Railway last week, I observe an error, which I beg to correct. You state the price of the turn-tables at 10*l.*, which is a misprint, as they are only 10*s.* each. *Robert Neilson, Halewood, March* 29.

Poultry: *Nimis.* No one would think of eating hen-turkeys after they have begun to lay. If in good condition, they might neither be unpalatable nor unwholesome; but it seems both cruel and wasteful to kill them then. The Turkeys reserved for Lent consumption are those which had been hatched very late the previous summer.—*T B.* The particulars given only enable us to advise you to change your cocks, perhaps the whole stock. The ducks ought to have a swimming-place, however small. Bruised Oats and Oatmeal and water is not food good enough for new-hatched chickens; they should have hard-boiled egg and crumbs of Wheat bread.

Sheep: *W E.* Blacklock on sheep, the cheapest; Spooner on the sheep, one of the best.—*Constant Subscriber.* You had better tie some thorns round the stems of the young fruit trees, lest the sheep injure them.

Tank-water: *X Y.* Undiluted by water it must be valuable, and would pay for considerable cost of carriage. If, owing to wet weather, you cannot carry it on the land direct, a heap of burned clay, vegetable mould, &c. would be a good absorbant of its valuable part, and the rest might go to waste.

The Ace of Spades: *M C Salvin.* Thanks. His case has already been given in our columns, though, at the moment, we cannot refer to dates; perhaps we may refer to it again. We should be very glad to have the pamphlet.

Wood-ashes: *R H C* 20 or 30 bushels per acre is a common dressing. Sow broadcast; and don't mix it with the guano. We should subsoil plough, or otherwise stir the subsoil, even though it were a loamy stratum, for Carrots.

Woodland, Broken up: *Herefordshire.* Plough and lime it this summer, and next year you can grow some green crop on it, as Potatoes—the cultivation of which will still further mellow it.

## Markets.

COVENT GARDEN, April 5.

New Hothouse Grapes, both white and black, may be obtained. Good Pine-apples are scarce, as are also dessert Apples. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Strawberries are more plentiful. Vegetables of all kinds are abundant and good. French Beans and Cucumbers are plentiful. Carrots and Turnips are good in quality. Potatoes have not altered since our last report. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 10s | Oranges, per doz., 9d to 2s |
| Grapes, hothouse, p.lb., 12s to 24s | — per 100, 6s to 14s |
| — Portugal, p.lb., 1s to 2s6d | — Seville, p. 100, 7s to 14s |
| Strawberries, per oz., 9d to 2s | — — p. doz., 1s to 2s 6d |
| Pears, per doz., 2s to 5s | Lemons, per doz., 1s to 2s |
| — per half sieve, 6s to 15s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p. bush., 6s to 10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Almonds, per peck, 6s | — Brazil, p. bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 70s to 75s |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1s to 1s 6d | Shallots, per lb., 6d to 1s |
| Cabbages, per doz., 1s to 1s 6d | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 4s to 6s | Artichokes, Jerusalem. p. half sieve, 1s to 1s 6d |
| Cauliflowers, p doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s6d |
| French Beans, p. 100, 1s6d to 2s6d | Endive, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 4s to 10s | Horse Radish, p. bundl., 1s to 4s |
| Rhubarb, p. bundl., 6d to 1s 2d | Red Beet, per doz., 6d to 1s |
| Potatoes, per ton, 60s to 100 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 3s to 6s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 1s to 3s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 1s to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Carrots, per doz., 2s to 5s | Marjoram, per bunch, 2d to 4d |
| Spinach, per sieve, 1s to 1s 6d | Mint, green, per bunch, 4d to 6d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s6d to 4s | Corn Salad, p. hf. sieve, 1s to 1s6d |
| Leeks, per doz., 9d to 1s | |

HAY.—Per Load of 36 Trusses.

| Smithfield, April 3. | | | | |
|---|---|---|---|---|
| Prime Meadow Hay | 80s | to 90s | Clover ... ... ... | 75s to 90s |
| Inferior ditto ... ... | 65 | 75 | Second cut ... ... | 68 75 |
| Rowen ... ... ... | 65 | 70 | Straw ... ... ... | 26 30 |
| New Hay ... ... | — | — | J. Cooper. | |

The supply short and trade brisk.

| Cumberland Market, April 3. | | | | |
|---|---|---|---|---|
| Prime Meadow Hay | 84s | to 88s | Inferior ... ... ... | 68s to 75s |
| Inferior ditto ... ... | 60 | 70 | New Clover ... ... | — — |
| New Hay ... ... | — | — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 80 | 84 | Joshua Baker. | |

| Whitechapel, April 3. | | | | |
|---|---|---|---|---|
| Fine Old Hay ... | 74s | to 78s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 60 | 65 | Inferior ditto ... ... | 65 70 |
| New Hay ... ... | — | — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 | 88 | | |

### COAL MARKET.—Friday, April 4.

Holywell, 14s.; Carr's Hartley, 14s.; Eden Main, 14s. 9d.; Wallsend Riddell, 13s. 6d.; Wallsend Gosforth, 14s; Wallsend Haswell, 15s. 9d.; Wallsend Hetton, 15s. 9d.; Wallsend Lambton, 15s. 6d.; Wallsend Stewarts, 15s. 9d.—Ships at market, 147.

### POTATOES.—Southwark, March 31.

The Committee report that the arrivals during the last week from Yorkshire have been considerable; those from Scotland and the Continent have been limited. Trade heavy, and it was with difficulty the following quotations were realised:—York Regents, per ton, 70s. to 90s.; Scotch do., 50s. to 75s.; ditto Cups, 60s. to 70s.; Cambridgeshire and Lincolnshire Regents, 50s. to 70s.; French whites, 50s. to 60s.

### SMITHFIELD, Monday, March 31.

We have a large supply of Beasts, and of good quality; trade is heavy, and although we retain 3s. 8d. in our quotations, it is only realised for choice descriptions. The number of Sheep is larger; choice Downs are selling quite as dear as of late, but trade is dull for other kinds at a slight reduction. Good Calves are not plentiful, and maintain late rates. From Holland and Germany there are 373 Beasts 1030 Sheep, and 89 Calves; from France, 40 Pigs; from Norfolk and Suffolk, 2700 Beasts; from Scotland, 320; and 100 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 | Best Long-woole | 3 | 10 | to 4 | 2 |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Sborn | ... | ... | | |
| 2d quality Beasts | 2 | 4 | — 3 | 0 | Ewes & 2d quality | 3 | 0 | — 3 | 8 |
| Best Downs and Half-breds | ... 4 | 6 | — 4 | 8 | Ditto Sborn | ... | ... | | |
| Ditto Sborn | ... | ... | | | Lambs | ... | ... | ... | |
| | | | | | Calves | ... | ... 3 | 0 — 4 | 4 |
| | | | | | Pigs | ... | ... 2 | 8 — 3 | 8 |

Beasts, 4017; Sheep and Lambs, 20,060; Calves, 130; Pigs, 340.

Friday, March 28.

We are moderately well supplied with Beasts; trade is dull, notwithstanding we are enabled to return Monday's quotations. Sheep and Lambs are more numerous, especially the latter, for which there is rather a large demand; choice descriptions make about 5s. 8d. Prices for Sheep are about the same as on Monday. There is more cheerful trade for Calves, but it is exceedingly difficult to obtain more money. From Germany and Holland we have 25 Beasts, 480 Sheep, and 136 Calves; from Scotland, 100 Beasts; from Norfolk and Suffolk, 200; and 38 milch cows from the home counties.

| Best Scots, Herefords, &c. | ... 3 | 6 to 3 | 8 | Best Long-wools | 3 | 10 to 4 | 2 |
|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 4 — 3 | 6 | Ditto Sborn | ... | ... | |
| 2d quality Beasts | 2 | 4 — 3 | 0 | Ewes & 2d quality | 3 | 0 — 3 | 8 |
| Best Downs and Half-breds | ... 4 | 6 — 4 | 8 | Ditto Sborn | ... | ... | |
| Ditto Sborn | ... | ... | | Lambs | ... | ... | ... |
| | | | | Calves | ... | ... 3 | 4 — 4 | 4 |
| | | | | Pigs | ... | ... 2 | 8 — 3 | 8 |

Beasts, 560; Sheep and Lambs, 4490; Calves, 219; Pigs, 350.

### MARK LANE.

Monday, March 31.—The supply of Wheat from the home counties this morning was again short; a few picked samples of white Essex realised rather more money; for secondary and out-of-conditioned parcels no improvement could be obtained. Foreign is quire in retail sale, and we do not alter our quotations.—Barley, both malting and grinding qualities, are 6d. per qr. dearer.—Beans and Peas are a fair sale at late rates.—Oats are in demand at an advance of 6d. to 1s. per qr.—In Flour there is no alteration.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | —46 | Red ..... | 38 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —40 |
| — — Talavera ..... | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —52 | | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26 | —31 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | 18 | —23 | Malting . | 23 | —26 |
| Oats, Essex and Suffolk ..... | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —22 | Feed ..... | 16 | —21 |
| — Irish .....Potato | 17 | —21 | Feed ..... | 16 | —18 |
| — Foreign .....Poland and Brew | 17 | —21 | Feed ..... | 15 | —18 |
| Rye ..... | 22 | —24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20s to 26s.....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... Winds | 37 | —42 | Longpod | 27 | —33 |
| — Foreign .....Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler | 23 | —26 | Suffolk . | 26 | —28 |
| — Maple.....26s to 28s .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize ..... White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 16 | —23 | Per sack | 26 | —34 |

Friday, April 4.—The supplies of grain, both English and foreign, are moderate since Monday. This morning's market was thinly attended; there was but very little English Wheat on sale, which realised that day's prices, as did also foreign in the few retail sales effected. The value of spring corn remains unaltered.—Flour moves off slowly.—In floating cargoes of Black Sea and Mediterranean Wheat but little doing. Sales of Indian Corn have been made at 27s. per qr., c. f. and insurance for Tuscan and Salonica, at 29s. to 31s. for Ibraila and Galatz.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Feb. 22..... | 37s 2d | 22s10d | 15s11d | 23s 8d | 25s 5d | 5s 1d |
| March 1 ..... | 36 11 | 22 7 | 16 0 | 24 4 | 25 4 | 5 8 |
| — 8..... | 36 9 | 22 7 | 16 2 | 24 4 | 25 3 | 26 7 |
| — 15..... | 37 2 | 23 1 | 16 6 | 23 3 | 25 7 | 25 8 |
| — 22..... | 37 5 | 23 3 | 16 9 | 22 8 | 25 6 | 25 9 |
| — 29..... | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| Aggreg. Aver. | 37 3 | 23 0 | 16 4 | 24 5 | 25 6 | 25 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 2 0 | 1 0 | 1 0 | 1 0 |

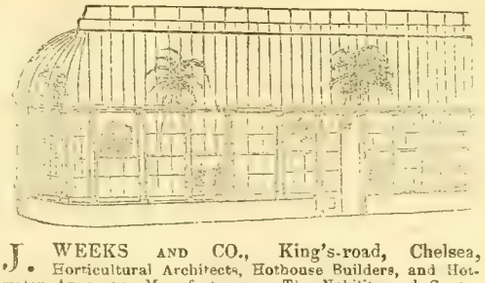
Fluctuations in the last six weeks' Averages.

| Prices. | Feb. 22. | Mar. 1. | Mar. 8. | Mar. 15 | Mar 22. | Mar. 29. |
|---|---|---|---|---|---|---|
| 38s 1d | ... | ... | ... | ... | ... | ... |
| 37 5 | ... | ... | ... | ... | ... | ... |
| 37 2 | | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | | ... | ... |
| 36 11 | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, April 1.—The arrivals since Tuesday from Ireland and coastwise are liberal of Oats, but light of other articles. The trade has been quiet during the week, but in the sales made of Wheat and Flour former prices have been supported. Oats and Oatmeal, with a good demand, advanced 1d. per 45 lbs. At this morning's market there was the usual attendance of town and country dealers, and a fair demand was experienced for Wheat and Flour at the prices of Tuesday last. Oats and Oatmeal were in good request, at an advance of 1d. per 45 lbs., and 6d. per 240 lbs. Beans must be quoted 6d. per qr. dearer. Barley and Peas without change. Indian Corn met with a good demand, at 30s. 6d. for new, and 31s. per 480 lbs. for old yellow American.—Friday, March 28.—Though the wind has been favourable for arrivals the last three days, the supplies of grain and Flour have been trifling, either from our own coast or from abroad. Consumption is going on steadily, and prices are firmly maintained. The business at our market this morning was very moderate. Wheat and Flour fully supported the rates of Tuesday. The principal demand was on Indian Corn, at 6d. per qr. advance, the best American yellow having touched 31s. per 480 lbs. Egyptian Beans were a trifle higher, but there was no change of price in Oats, Barley, or Peas.


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| | | |
|---|---|---|
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| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
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| ,, Rollers | | Turfing Irons |
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| | | Watering Pots |
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| | | Wheelbarrows |
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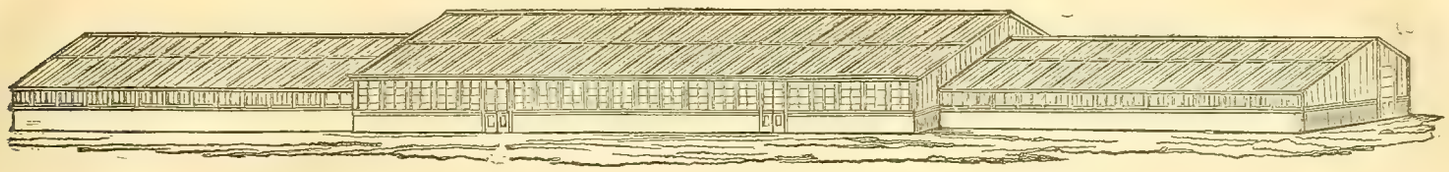
METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

Caution.—Beware of the words "From Metcalfe's," adopted by some houses.

# GRAY AND ORMSON,

## DANVERS STREET, CHELSEA,

**Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.**



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

Extract of a Letter from Mr. FRASER.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, JOHN SHAW LEIGH, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

---

CARNATIONS, &c.

MESSRS. PROTHEROE AND MORRIS will sell the surplus Stock of Mr. NEWHALL, of Woolwich, at the Auction Mart, Bartholomew-lane, on TUESDAY, the 8th inst., at 12 o'clock.

The CARNATIONS include Flora's Garland, Puxley's Prince Albert, Holyoke's Dido, Haines' Defiance Rev. J. Bramball. Brutus, Squire Trow, &c., &c. Among the PICOTEES are Mrs. Barnard, Regina, Gem, Headley's Captivation, Venus, and King James, Holyoke's Viola, &c., &c. May be viewed the morning of sale. Catalogues obtained at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

---

TO GENTLEMEN FLORISTS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, the 9th April, 1851, at 12 o'clock, a first-rate collection of Carnations, Picotees, Pinks, and Auriculas; also, Dahlias in dry roots, Climbing and other Roses, &c., the property of Mr. WILLMER, of Sunbury.—May be viewed the morning of sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

---

EAST INDIAN ORCHIDS, JUST RECEIVED PER OVERLAND ROUTE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on WEDNESDAY, 9th of April, at 12, for 1 o'clock, an IMPORTATION OF VERY CHOICE ORCHIDS, collected in Central India, and just arrived per steamer "Ripon," in first-rate condition; it includes Dendrobiums Farmerii, Devonianum, Paxtonii, Formosum, Transparens, Heterocarpum, Longicornus sulcatum, Gibsonii, Cambridgeanum, Griffithianum, and Dalhousianum; 13 species of Coelogyne, Saccolabium retusum and 5 other species, Aerides affine, and many other favourite varieties.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent Garden, London.

---

CHELSEA.

IMPORTANT FINAL SALES OF NURSERY STOCK.

MR. D. A. RAMSAY will submit to public competition, on the premises, opposite Cremorne Gardens, King's Road, Chelsea, on TUESDAY, April 8th, and following day, at 12 o'clock, without reserve, another portion of the stock, comprising Fine Aucuba, Hollies, Box, and other Evergreens; Roses, Flowering Plants, and Climbers in pots; specimen Rhododendrons, Pinks, Carnations, Picotees, Garden Frames, Lights, &c. The next sale will take place on TUESDAY, May 13, and consist of Flowering Plants, Garden Frames, Lights, &c. Other sales will follow in September, October, and November, and include the remainder of the Nursery Stock, Greenhouses, and other Miscellaneous Stock, of which due notice will be given. May be viewed prior to sale. Catalogues had on the premises, and of the Auctioneer, Brompton Nursery, Fulham Road, Bromp on, near Loudon.

---

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

---

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE LET, on LEASE of 40 years, a compact well-stocked Nursery, of about 2 acres of good land, about 3 miles from the London markets; and containing a Cottage, three good Greenhouses, three Brick Pits, Frames, and Lights complete, with good connexion in the above line. Established 1823. Rent 40*l.* a-year; the Stock to be taken at valuation. For further particulars, apply personally to J. C., Bedford Nursery, Acre Lane, Brixton, Surrey.

---

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand London.

---

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c.. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London G. and J. DEANE, Horticultural Implement Warehouse, 46 King William-street, London Bridge.

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EXHIBITION, 1851.—HOME EVERYWHERE.—TENTS for the MILLION, at BENJAMIN EDGINGTON'S Marquee, Tent, Flag, and Rick Cloth Manufactory, 2, Duke-street, Southwark. A Warehouse, 203, Piccadilly.

The following Second-hand Marquees to be sold reasonably—250 feet by 28, 180 feet by 40, 120 feet by 33, and 150 feet by 20. Netting, Bunting, and Scrims for Fruit Trees.

Emigrant Tents fitted up complete.

---

FISHING AND SHOOTING.—The Advertiser's object (an Officer in the Army, with his Wife and Servant) is to meet with a gentlemanly accommodation, in the midst of first rate Fly-fishing for Trout, and very fair General Shooting, to enjoy which, he would be happy either to board and lodge entirely with a married gentleman, or gentleman farmer's family, and pay 250*l.* per year for the accommodation (a plain but good table being all that is required), or he would take a part of a gentleman's house; but the former, in a gentleman farmer's family, would be by far preferred. Early hours, and near the church, is desirable. Exchange of references, together with an interview, would be best for both parties before any arrangements are entered into; and in order that the Advertiser may be able to judge as to what is offered, the fullest particulars as to locality, &c., are desired.—Address to D. D. D., A. Lawrie, Esq, 10, Charles-street, St. James's-square, London.

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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,

22, PARLIAMENT STREET, WESTMINSTER, LONDON;

18, NORTH BRIDGE, EDINBURGH;

72, ST. ENOCH SQUARE, GLASGOW;

1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | | |
|---|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | .. | £3 | 15 0 |
| Do. of 100 yards, 24 ins. wide | .. | .. | 5 | 0 0 |
| Do. of 100 yards, 30 ins. wide | .. | .. | 6 | 5 0 |
| Do. of 100 yards, 36 ins. wide | .. | .. | 7 | 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 21 yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

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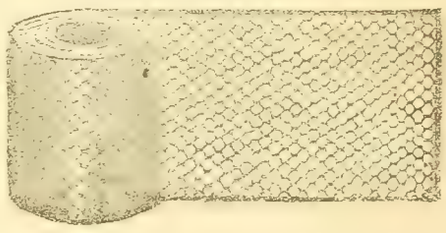
TOOTHACHE PREVENTED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 59 Fleet-street, London, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

---

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " | ... | 9 " | 6½ " |
| 2-inch " extra strong " | ... | 12 " | 9 " |
| 3-inch " light " | ... | 8 " | 6 " |
| 1⅝-inch " strong " | ... | 10 " | 8 " |
| 1⅝-inch " extra strong " | ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

---

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cock-street, Liverpool; High-street, Birmingham; the Exchange, Manchester; and 33, Virginia-street, Glasgow.

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APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties, enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, LEA and PERRINS, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "LEA and PERRINS" are upon the label and patent cap of the bottle

---

HOLLOWAY'S PILLS A CERTAIN CURE FOR BILE, HEADACHES, AND ALSO FOR WEAK AND DERANGED STOMACH.—Incurable diseases affecting the Heart, the Liver, or the Lungs are frequently engendered by inattention to the disordered state of the Stomach, which causes loss of appetite, loss of strength, and loss of energy. To counteract these distressing symptoms, it is only necessary to take a few doses of HOLLOWAY'S inestimable Pills, which will be the means of purifying the blood, and thereby give a healthy action to the vital functions. Their effect on the system is such as to imperceptibly restore to the soundest health even the most weakened constitution.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

---

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND,

Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 Physicians and Surgeons of the greatest eminence, as well as from many officers of both Army and Navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

Prepared by John Fox, in boxes, at 1*s.* 1½*d.*, or three small boxes in one for 2*s.* 9*d.*; and to be had, with full directions for use of all wholesale and retail Medicine Vendors in Town and Country. The genuine has the name of "JOHN FOX" on the Government Stamp. A 2*s.* 9*d.* box cures the most obdurate corns. Ask for "Paul's Every Man's Friend"

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newbery, St. Paul's; Sutton, Bow Churchyard; Johnston, 68, Cornhill; Sanger, 150, Oxford-street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 33, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Watts, 106, Edgware-road; and retail by all respectable Chemists and Medicine Vendors in every town in England. Wholesale Agents for Ireland and Scotland. Messrs. J. and R. RAIMES and Co., Druggists, Edinburgh.

# JOHN KERNAN

4, GREAT RUSSELL STREET, COVENT GARDEN, 1851.

BEGS TO OFFER A SELECT LIST FROM HIS

# GENERAL CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

WHICH MAY BE RELIED ON WITH CONFIDENCE AS THE MOST DESIRABLE FOR CULTIVATION.

## Peas.

| Per qt. | s. | d. |
|---|---|---|
| Prince Albert ... ... | 0 | 9 |
| Early Emperor ... | 1 | 0 |
| Early Warwick ... ... | 0 | 9 |
| Shilling's new early Grotto | 0 | 9 |
| Bishop's new long-podded | 1 | 0 |
| Fairbeard's Surprise ... | 0 | 9 |
| ,, Champion of England ... ... | 1 | 0 |
| British Queen ... ... | 1 | 0 |
| Knight's dwarf green ... | 1 | 0 |
| ,, tall ditto ... | 1 | 0 |
| Ne plus ultra ... ... | 1 | 0 |
| Scimetar ... ... ... | 0 | 9 |
| Woodford or Nonsuch ... | 0 | 9 |
| Victoria Marrow ... ... | 0 | 9 |
| Burbidge's Eclipse ... | 1 | 0 |

With all other varieties worth cultivating.

## Beans.

| Per qt. | | |
|---|---|---|
| Early Mazagan ... ... | 0 | 8 |
| Sword Longpod ... ... | 0 | 8 |
| Hangdown ... ... | 0 | 8 |
| Taylor's Windsor ... | 0 | 8 |
| Johnson's Wonderful ... | 0 | 8 |
| Green Genoa ... ... | 0 | 9 |

All the varieties of dwarf French Beans ... ... 1 0

Painted Lady and Scarlet Runners ... ... 1 0

| Per oz | | |
|---|---|---|
| Beet, fine London Red ... | 0 | 6 |
| ,, Silver, or Seakale | 0 | 6 |
| ,, Castelnaudary ... | 0 | 6 |
| ,, Whyte's black, per packet ... ... | 0 | 6 |
| Borecole, dwarf curled ... | 0 | 6 |
| Borecole new heading, per paper ... ... ... | 0 | 6 |
| Brussels Sprouts (foreign seed, fine), per oz. ... | 1 | 0 |
| Kohl Rabi, per paper ... | 0 | 6 |
| Borecole, red and white, variegated, for garnishing (very beautiful) ... | 0 | 6 |
| Savoy, green curled, per oz. | 0 | 8 |

## Broccoli.

| | | |
|---|---|---|
| Myatt's Early Purple Cape | 1 | 0 |
| Miller's Dwarf ... ... | 1 | 0 |
| Chappell's Cream ... | 1 | 0 |
| Bowles's Sulphur ... | 1 | 0 |
| Somner's Late White ... | 1 | 0 |
| Willcove White, late, per packet ... ... ... | 0 | 6 |
| Grange's Early White,—from the original raiser, per oz. ... ... ... | 1 | 0 |
| Invisible White ... ... | 1 | 0 |
| Purple Sprouting ... | 1 | 0 |
| Walcheren ... ... | 1 | 0 |
| Imperial Winter ... | 1 | 0 |
| Hampton Court ... ... | 1 | 0 |
| Dwarf Siberian ... | 1 | 0 |
| Purple Syrian ... ... | 1 | 0 |

## Cabbage.

| | | |
|---|---|---|
| Nonpareil ... ... | 0 | 9 |
| Shilling's New Queen, fine | 1 | 0 |
| Atkin's Matchless ... | 1 | 0 |
| Early Venus, per packet | 0 | 6 |
| Knight's Early Dwarf, p.oz. | 1 | 0 |
| Early York ... ... | 0 | 6 |
| Early Battersea ... ... | 0 | 6 |
| Peake's Incomparable ... | 1 | 0 |
| Robert's Emperor ... | 1 | 0 |
| True Cornish, per packet | 0 | 6 |
| Perpetual ... ... ... | 1 | 0 |
| Vangirard (Winter) per packet ... ... ... | 0 | 6 |
| Large Drumhead — (for cattle) per lb. ... ... | 2 | 6 |

And all other kinds in cultivation.

## Carrot.

| | | |
|---|---|---|
| Early Scarlet Horn | 0 | 4 |
| Long Orange ... ... | 0 | 4 |
| Fine Surrey ... ... | 0 | 4 |
| Parsnip, Hollow crown | 0 | 3 |
| Altringham, per lb. ... | 1 | 0 |
| White (for Agriculture) per lb. ... ... ... | 1 | 0 |

## Cauliflower.

| | | |
|---|---|---|
| Mercer's fine Early ... | 1 | 0 |
| London Particular ... | 1 | 0 |
| Large Asiatic ... ... | 1 | 0 |
| Walcheren ... ... | 1 | 0 |
| Fine late ... ... | 1 | 0 |

## Cress.

| | | |
|---|---|---|
| Plain, per pint ... ... | 0 | 6 |
| Curled ... ... ... | 1 | 0 |
| American, per oz. ... | 0 | 3 |
| Water, per paper ... | 0 | 6 |
| Mustard, per pint ... | 0 | 6 |

## Parsley.

| | s. | d. |
|---|---|---|
| Plain, for feeding early lambs, per bushel ... | 16 | 0 |
| Extra Curled, per oz. ... | 0 | 3 |

## Celery.

| Per paper. | | |
|---|---|---|
| Cole's Superb Red ... | 1 | 0 |
| Seymour's Superb White | 0 | 6 |
| New Rose, solid ... ... | 0 | 6 |
| Dwarf White Siberian, very solid, per packet | 0 | 6 |
| Seymour's Superb Red, per packet ... ... | 0 | 6 |
| New Giant... ... ... | 0 | 6 |

## Cucumber.

| | | |
|---|---|---|
| Victory of Bath ... ... | 1 | 0 |
| Acme of Perfection ... | 1 | 0 |
| Syon House ... ... | 1 | 0 |
| Weedon's Free bearer ... | 0 | 6 |
| Early Frame ... ... | 0 | 3 |
| Kerrison's ... ... ... | 1 | 0 |
| Walker's Rambler ... | 0 | 6 |
| Windsor Prize ... ... | 0 | 6 |
| Early Handglass ... ... | 0 | 3 |
| Early Ridge ... ... | 0 | 3 |

## Melons.

| | | |
|---|---|---|
| Seymour's Golden Perfection ... ... ... | 0 | 6 |
| True Syon House... ... | 0 | 6 |
| Snow's Hybrid Green flesh, per packet ... ... | 0 | 6 |

And all the better sorts cultivated for this market.

## Endive.

| | | |
|---|---|---|
| New Imperial, per packet | 0 | 6 |
| Batavian ... per oz. | 0 | 6 |
| Green curled ... ... | 0 | 6 |
| White Curled ... ... | 0 | 6 |
| Herbs, all the kinds, per packet ... ... ... | 0 | 6 |

## Lettuce.

| | | |
|---|---|---|
| Brighton Cos, per oz. ... | 1 | 0 |
| Imperial Cos ... ... | 1 | 0 |
| Artichoke-leaved, a fine new hardy sort, per pkt. | 0 | 6 |
| Victoria Cabbage, p. paper | 0 | 6 |
| Green Paris Cos ... ... | 0 | 6 |
| White Summer Cabbage | 0 | 6 |
| Fine London White Cos, per oz. ... ... ... | 0 | 9 |
| Paris Cos ... ... ... | 1 | 0 |
| Ady's Cos ... ... ... | 1 | 0 |
| Drumhead... ... ... | 0 | 9 |
| Bath Cos, & others, p. oz. | 1 | 0 |

## Onion.

| Per oz. | | |
|---|---|---|
| James's Long Keeping ... | 0 | 6 |
| Fine White Spanish ... | 0 | 6 |
| Globe ... ... ... | 0 | 6 |
| Strasburgh ... ... | 0 | 6 |
| Deptford ... ... | 0 | 6 |
| Silver-skin ... ... | 0 | 9 |
| Tripoli ... ... ... | 1 | 0 |
| Blood-red ... ... | 0 | 6 |
| Two-bladed, for pickling | 0 | 8 |

## Radish.

New Scarlet Olive-shaped, a delicious new variety, per packet ... ... 0 6

| | | |
|---|---|---|
| New Rose ... ... ... | 0 | 6 |
| Early Frame, per pint ... | 1 | 0 |
| Long Scarlet ... ... | 1 | 0 |
| Red and White Turnip ... | 1 | 0 |
| Black Spanish, per oz. ... | 0 | 3 |

## Spinach.

| | | |
|---|---|---|
| New Flanders, per pint... | 0 | 6 |
| Round, or Summer ... | 0 | 6 |
| Lettuce-leaved (new), per paper ... ... ... | 0 | 6 |
| New Zealand, per oz. ... | 0 | 6 |

## Turnips.

| per oz. | | |
|---|---|---|
| Early Snowball ... ... | 0 | 3 |
| Red American Stone ... | 0 | 3 |
| Teltow, for stewing ... | 0 | 3 |
| Early Dutch ... ... | 0 | 3 |
| Yellow Maltese ... ... | 0 | 3 |
| ,, Stone ... ... | 0 | 3 |
| Early Snowball, per lb.... | 1 | 6 |
| Early Dutch (earliest), true imported ... | 2 | 0 |

AGRICULTURAL TURNIPS.

| | | |
|---|---|---|
| Yellow Bullock, per lb. | 0 | 9 |
| Skirving's Swede ... | 0 | 9 |
| Laing's ditto ... ... | 0 | 9 |
| Ashcroft ditto ... ... | 0 | 9 |
| Dale's Hybrid ... ... | 0 | 9 |
| Red Round ... ... | 0 | 9 |
| White Round ... ... | 0 | 9 |
| White Globe ... ... | 0 | 9 |
| Oxneare ... ... ... | 0 | |

Furze, per lb., 1s.; Broom, per lb., 1s.
Coarse Grasses for Game Covers, 6s. per bushel.
Long Red and Globe Mangold Wurzel, per lb., 9d.
White Silesian, or Sugar Beet, per lb., 2s.
Chevalier Barley; Hopetown, Tartarian, Sandy, and other Oats.
Flax, from Riga seed, one year grown in this country.
A fine Collection of all the best permanent Grasses (hand picked), separate or mixed; if mixed, per bushel, 8s.
Sweet Vernal, the earliest and most suitable Grass for early Lambs, 1s. 6d. per lb.
White and Red Clover, 8d.; Lucerne, 1s.; and Trefoil, 6d. per lb.
Kohl Rabi, for Agriculture, per lb., 2s.
Italian Rye Grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1s. 6d.
Myatt's fine new Strawberries.

Asparagus plants, according to age, per 100, 2s. 6d. to 5s.
Seakale do. do. do. 5s. to 10s.
Dulley's Early Scarlet Admirable Rhubarb, per root, 1s. 6d.
Myatt's Victoria do. (the largest in cultivation), 1s. 6d.
Mushroom Spawn, per bushel, 5s.
Cornwell's Victoria Raspberry, per dozen, 4s.
All the fine new Raspberries, 2s. 6d. to 3s. per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.

## Potatoes.

per bushel.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Soden's Early Oxford, per bushel ... ... | 7 | 0 | Jackson's Ash-leaved Kidney ... ... | 7 | 0 |
| Barnard's Early Frame | 8 | 0 | Ash-leaved Kidney ... | 8 | 0 |
| Shilling's Early Prolific, per peck ... ... | 2 | 0 | Forty-fold ... ... | 5 | 0 |
| Kirke's True Ash-leaved Kidney, per bushel ... | 8 | 0 | Early Hen's Nest ... | 6 | 0 |
| England's Fair Beauty Kidney ... ... | 6 | 0 | Early Shaw ... ... | 5 | 0 |
| Walnut-leaved Kidney | 8 | 0 | Prince Regent's ... ... | 5 | 0 |
| | | | Kentish Mignon ... ... | 4 | 0 |
| | | | Albany Kidneys ... ... | 5 | 0 |
| | | | Flour-ball ... ... ... | 5 | 0 |

And many other most productive late kinds; also seed saved from the best varieties, 6d. per packet.
Garlic, per lb., 6d. Shalots, per lb., 6d.
Budding and Pruning Knives.
Russia Mats, 1s. 6d. each. Cuba Bass, per lb., 2s. 6d.
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind. Catalogues may be had on application.

## Flower Seeds.

Asters, 20 distinct German varieties, in sealed packets, suitable for exhibition, the collection, 10s.
A mixture, including all the colours of the above, per paper, 6d.
Do. in 12 distinct colours, the collection, 4s.
A mixture of the best varieties of late Asters, 6d.
Superb German and Prussian Stocks, 25 distinct varieties, for exhibition, the collection, 10s.
12 varieties of do., distinct in colours, 4s.
12 autumn flowering do., in distinct colours, 4s.
A mixture of all the finest varieties of Ten-week, per paper, 6d.
A mixture of Brompton do., per packet, 6d.
12 named varieties of Hollyhocks, 3s.

| Per packet— | s. | d. |
|---|---|---|
| Achimenes, seeds & bulbs of all the varieties. | | |
| Anagallis Phillipsii ... | 0 | 6 |
| ,, superba grandiflora ... | 0 | 6 |
| ,, indica ... ... | 0 | 3 |
| ,, carnea ... | 0 | 3 |
| ,, latifolia ... | 0 | 6 |
| Amethystea cæruiea ... | 0 | 6 |
| Anemone, fine mixed ... | 0 | 6 |
| Antirrhinum (all the new kinds) ... ... ... | 0 | 3 |
| Argemone grandiflora ... | 0 | 3 |
| ,, Barclayana ... | 0 | 3 |
| ,, speciosa ... | 0 | 3 |
| Aquilegia glandulosa ... | 1 | 0 |
| ,, Skinnerii ... | 1 | 0 |
| ,, siberica ... | 0 | 3 |
| ,, fine mixed German varieties | 0 | 6 |
| Auricula, from fine named flowers ... | 1 | 0 |
| ,, alpine ... ... | 0 | 6 |
| Brachycome iberidifolia . | 0 | 6 |
| ,, alba, new... | 0 | 6 |
| Balsams, 12 very fine distinct colours, all double ... | 5 | 0 |
| ,, mixture of above | 0 | 6 |
| Bartonia aurea ... ... | 0 | 3 |
| Blumenbachia insignis ... | 0 | 6 |
| Browallia, of sorts ... | 0 | 6 |
| Calceolarias, from a collection of named shrubby kinds ... ... | 1 | 0 |
| Calceolarias, from Herbaceous do. ... ... | 1 | 0 |
| Calceolaria pinnata ... | 0 | 6 |
| Calendrinia discolor ... | 0 | 3 |
| ,, grandiflora... | 0 | 3 |
| ,, umbellata — (new), fine for rockwork ... | 0 | 6 |
| Campanula pulcherrima. | 0 | 6 |
| ,, Loreii, blue... | 0 | 6 |
| ,, ,, white. | 0 | 6 |
| ,, stricta ... | 0 | 6 |
| ,, sylvatica, new | 0 | 6 |
| And many other sorts, fine, as a contrast with bedded out Verbenas, &c. | | |
| Catananche bicolor ... | 0 | 3 |
| Centranthus macrosiphon, new ... ... ... | 1 | 0 |
| Cistus guttatus, very dwf. | 0 | 6 |
| Clintonia pulchella ... | 0 | 6 |
| ,, elegans ... | 0 | 3 |
| Cockscomb, Dwarf Scarlet ... ... ... | 0 | 6 |
| Cuphea viscosissima ... | 0 | 6 |
| ,, silenoides ... | 0 | 6 |
| ,, platycentra, new | 0 | 6 |
| ,, miniata ... ... | 0 | 6 |
| Cineraria, selected from 36 of the latest new kinds ... ... ... | 1 | 0 |
| Commelina cœlestis ... | 0 | 3 |
| Carnation, from named flowers ... ... ... | 1 | 0 |
| Clarkias, all the varieties | 0 | 3 |
| Coreopsis, new marbled . | 0 | 6 |
| ,, tinctoria ... | 0 | 3 |
| ,, Drummondii . | 0 | 3 |
| Candytuft, new crimson . | 0 | 3 |
| ,, purple ... | 0 | 3 |
| ,, white ... | 0 | 3 |
| ,, Sweet scented | 0 | 3 |

| Per packet— | s. | d. |
|---|---|---|
| Convolvulus major ... | 0 | 3 |
| ,, minor ... | 0 | 3 |
| ,, do. new dark | 0 | 3 |
| ,, minor, striped | 0 | 3 |

CLIMBERS.

| | | |
|---|---|---|
| Cobœa scandens ... | 0 | 6 |
| Calampelis scaber ... | 0 | 6 |
| Lophospermum erubescens ... ... ... | 0 | 6 |
| ,, Hendersonii | 0 | 6 |
| Loasa aurantiaca ... | 0 | 6 |
| Maurandya Barclayana . | 0 | 6 |
| ,, new scarlet... | 0 | 6 |
| Tropæolum peregrinum . | 0 | 6 |
| ,, pentaphyllum | 0 | 6 |
| ,, Jarrattii ... | 1 | 0 |
| ,, tricolorum grandiflrm. | 1 | 0 |
| ,, trimaculatum, new ... | 1 | 0 |
| ,, minor coccinea ... | 0 | 6 |
| ,, Brachyseras... | 1 | 0 |
| Ipomœa rubra cærulea... | 0 | 6 |
| ,, punctata ... | 0 | 6 |
| ,, nil ... ... | 0 | 6 |
| ,, rosea ... ... | 0 | 6 |
| ,, striata & others | 0 | 6 |
| Thunbergia alata ... | 0 | 6 |
| ,, ,, alba | 0 | 6 |
| ,, aurantiaca. | 0 | 6 |
| ,, Fryerii ... | 0 | 6 |
| ,, new yellow | 0 | 6 |
| Cleome pentaphylla ... | 0 | 6 |
| ,, rosea ... ... | 0 | 6 |
| Collinsia grandiflora ... | 0 | 3 |
| ,, bicolor... ... | 0 | 3 |
| ,, ,, new dwarf | 0 | 3 |
| Dahlia scabigera (dwarf lilac) ... ... ... | 0 | 6 |
| Datura fastuosa, purple... | 0 | 6 |
| ,, ,, white ... | 0 | 6 |
| Delphinium or Larkspurs, distinct or mixed ... | 0 | 3 |
| Ditto, biennial and perennial varieties ... ... | 0 | 3 |
| Digitalis grandiflora ... | 0 | 3 |
| ,, new spotted ... | 0 | 3 |
| ,, fulgens ... ... | 0 | 3 |
| Dianthus, double white, Indian pink | 0 | 6 |
| ,, Knight's new hybrid ... | 0 | 6 |
| ,, double Indian | 0 | 3 |
| ,, latifolia ... | 0 | 3 |
| ,, Cherii ... | 0 | 6 |
| And others. | | |
| Didiscus cæruleus ... | 0 | 6 |
| Dahlia, fine mixed ... | 0 | 6 |
| Eucharidium grandiflorum | 0 | 3 |
| Eutoca viscida ... ... | 0 | 3 |
| Egg plant, white... ... | 0 | 6 |
| ,, purple ... | 0 | 3 |
| Eschscholtzia, 3 sorts ... | 0 | 3 |
| Erysimum Perofskianum | 0 | 3 |
| Fuchsias, from named sorts ... ... ... | 1 | 0 |
| Gaillardia picta ... | 0 | 6 |
| ,, bicolor ... | 0 | 3 |
| ,, Richardsonii | 0 | 3 |
| ,, aristata ... | 0 | 3 |
| Globe Amaranthus, of sorts ... ... ... | 0 | 3 |
| Gentianas, of sorts ... | 0 | 6 |
| Geum splendens ... | 0 | 6 |
| ,, Wicei ... ... | 0 | 6 |
| Geranium from fine sorts | 1 | 0 |

| Per packet— | s. | d. |
|---|---|---|
| Grahamia aromatica ... | 0 | 6 |
| Grammanthes gentianoides, new ... ... | 1 | 0 |
| Godetia, all the new sorts | 0 | 3 |
| Heartsease, from first-rate prize flowers ... ... | 1 | 0 |
| Humea elegans ... ... | 0 | 6 |
| Helichrysum macranthum | 0 | 6 |
| ,, bracteatum album | 0 | 3 |
| Heliotropium Peruvianum | 0 | 6 |
| ,, Voltaireanum | 0 | 6 |
| Hibiscus Richardsonii ... | 0 | 6 |
| ,, africanus ... | 0 | 3 |
| ,, Humboldtii ... | 0 | 6 |
| Heliophila araboides ... | 0 | 3 |
| Helianthemum (Rock Cistus) ... ... ... | 0 | 3 |
| Hollyhock, Chinese ... | 0 | 6 |
| ,, fine mixed ... | 0 | 3 |
| Hydrolea spinosa ... | 0 | 6 |
| Ipomœa Burridgii ... | 0 | 6 |
| ,, quamoclit ... | 0 | 6 |
| ,, hybrida Kermesina ... ... | 0 | 6 |
| And others ... | 0 | 6 |
| Ipomopsis elegans ... | 0 | 6 |
| Isotoma axillaris ... ... | 0 | 6 |
| Jacobæa, double crimson | 0 | 3 |
| ,, ,, purple . | 0 | 3 |
| ,, new lilac .. | 0 | 3 |
| Kaulfussia amelloides, for edging ... | 0 | 3 |
| ,, tracheliodes... | 0 | 6 |

HANDSOME ORNAMENTAL GRASSES.

| | | |
|---|---|---|
| Lagurus ovatus (Hare's-tail Grass) ... ... | 0 | 6 |
| Agrostis pulchella ... | 0 | 6 |
| Briza gracilis ... ... | 0 | 6 |
| ,, maxima ... ... | 0 | 6 |
| Supa pinnata ... ... | 0 | 6 |
| Larkspurs, 12 distinct German vars.... | 4 | 0 |
| ,, mixed dwarf Rocket ... | 0 | 3 |
| Leptosiphon densiflores . | 0 | 3 |
| ,, androsaceus | 0 | 3 |
| Loasa pentlandica ... | 0 | 6 |
| ,, aurantiaca ... | 0 | 6 |
| Linum monogynum, fine . | 0 | 6 |
| ,, grandiflorum ... | 0 | 3 |
| ,, perenne ... ... | 0 | 6 |
| ,, album ... ... | 0 | 6 |
| Lymnanthus grandiflora . | 0 | 6 |
| ,, Douglasii ... | 0 | 3 |
| Lobelia heterophylla major, nne ... | 0 | 6 |
| ,, bicolor ... ... | 0 | 3 |
| ,, gracilis, for edging | 0 | 3 |
| ,, ramosus ... ... | 0 | 6 |
| ,, ,, rosea ... | 0 | 6 |
| ,, erinoides... ... | 0 | 3 |
| ,, propinqua ... ... | 0 | 6 |
| And many other biennial and perennial varieties. | | |
| Lisianthus Russellianus, in plants (seed does not vegetate well). | | |
| Lupinus Hartwegii ... | 0 | 3 |
| ,, nanus ... ... | 0 | 3 |
| ,, Cruikshankii ... | 0 | 3 |
| ,, affinis, new ... | 0 | 6 |
| ,, hirsutissima ... | 0 | 6 |
| And many others. | | |
| Lychnis speciosa, new ... | 0 | 6 |
| ,, flos Jovis ... | 0 | 3 |
| ,, cœli-rosea ... | 0 | 3 |
| ,, prostrata ... | 0 | 3 |
| ,, scarlet ... ... | 0 | 3 |
| Malope grandiflora ... | 0 | 3 |
| Malow, new zebra ... | 0 | 3 |
| Malva miniata ... ... | 0 | 6 |
| Marvel of Peru, 6 distinct colours, each ... ... | 0 | 3 |
| Marigold, dwarf pigmy French ... ... ... | 0 | 6 |
| Other varieties ... | 0 | 3 |
| Mesembryanthemum tricolor ... ... ... | 0 | 6 |
| Mignonette, per oz. ... | 0 | 6 |
| Mimosa sensitiva (Sensitive plant) per packet | 0 | 6 |
| Mimulus, from 12 distinct named varieties ... | 0 | 6 |
| Mimulus moschatus ... | 0 | 3 |

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara,
Cryptomeria japonica
Taxodium sempervirens,
} 2s. 6d. to 10s. 6d. each.

Named Double Anemones and Ranunculuses; Gladiolus ramosus and floribundus; Tigridia pavonia and conchiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.
All the better named Heartsease from 6s. to 30s. per dozen.
Fine named Dahlias, per dozen, 12s.
,, Chrysanthemums, new kinds, 12s.
Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s. Rivers's Orchard House, 2s. 6d.
Rivers' new edition of the "Rose Amateur's Guide," 6s.
Paxton's "Cottagers' Calendar," 3d., which ladies and gentlemen should distribute to cottagers.
Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s.
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5s.
Seeds selected and carefully packed for North and South America, India, New Zealand, and Australia, in the most secure way to arrive safe at any of the above places.

| Per packet— | s. | d. |
|---|---|---|
| Martynia fragrans ... | 0 | 6 |
| Nasturtiums, all the sorts | 0 | 3 |
| Nemesia floribundus ... | 0 | 6 |
| ,, versicolor ... | 0 | 6 |
| Nemophila insignis major | 0 | 3 |
| ,, insignis alba (new) | 0 | 6 |
| ,, discoidalis ... | 0 | 6 |
| ,, maculata (new) ... | 0 | 6 |
| Neirembergia splendens | 0 | 6 |
| ,, violacea ... | 0 | 3 |
| ,, fine mixed | 0 | 6 |
| Nolana atriplicifolia ... | 0 | 3 |
| ,, paradoxa ... | 0 | 3 |
| Nycterinia selaginoides... | 0 | 6 |
| Œnothera Sellowii ... | 0 | 6 |
| ,, Drummondii ... | 0 | 6 |
| ,, denisflora ... | 0 | 6 |
| ,, macrocarpa ... | 0 | 6 |
| ,, And others ... | 0 | 3 |
| Papaver Marcelli ... | 0 | 3 |
| ,, nudicaulis ... | 0 | 3 |
| Poppy, Carnation, mixed | 0 | 3 |
| Peas, sweet, all the colours separate or mixed ... | 0 | 3 |
| Penstemon, of sorts ... | 0 | 6 |
| Phlox Drummondii, various shades ... | 0 | 6 |
| ,, Drummondii, white | 0 | 6 |
| ,, Leopoldii, new ... | 1 | 0 |
| ,, new, scarlet ... | 0 | 6 |
| Picotee, from named flowers ... ... ... | 1 | 0 |
| Platystemon californica | 0 | 3 |
| Potentilla Garnieriana ... | 0 | 3 |
| ,, Russelliana ... | 0 | 6 |
| ,, insignis, fine new | 0 | 6 |
| Polyanthus, fine mixed ... | 0 | 6 |
| Portulacca splendens ... | 0 | 6 |
| ,, Thellusonii ... | 0 | 6 |
| ,, grandiflora ... | 0 | 6 |
| ,, striata alba ... | 0 | 6 |
| ,, Gilliesii ... | 0 | 6 |
| ,, yellow ... ... | 0 | 6 |
| Primula sinensis (white fringed) ... | 1 | 0 |
| ,, lilac ... ... | 1 | 0 |
| ,, cortusoides ... | 0 | 6 |
| Rhodanthe Manglesii ... | 0 | 6 |
| Salvia patens ... ... | 0 | 6 |
| ,, bicolor ... ... | 0 | 6 |
| Sanvitalia procumbens... | 0 | 6 |
| Schizanthus Hookerii ... | 0 | 6 |
| ,, Grahamii ... | 0 | 6 |
| ,, retusus alba, new ... ... ... | 1 | 0 |
| ,, humilis & others | 0 | 3 |
| ,, Priestii ... | 0 | 3 |
| ,, venustus ... | 0 | 3 |
| Schizopetalon Walkerii, very sweet ... ... | 0 | 6 |
| Sphænogyne speciosa ... | 0 | 3 |
| Streptocarpus Rexii ... | 0 | 6 |
| Silene schafta ... ... | 0 | 6 |
| ,, compacta ... ... | 0 | 6 |
| Stock, white pyramidal... | 0 | 6 |
| ,, Buck's Intermediate, 16 out of 20 will come double ... | 0 | 6 |
| ,, Chapman's Scarlet 10-week ... ... | 0 | 3 |
| ,, Shepherd's White | 0 | 3 |
| ,, ,, Purple | 0 | 3 |
| Sedum cæruleum, for rock-work ... ... | 0 | 6 |
| Sultan, yellow ... ... | 0 | 3 |
| ,, white and purple | 0 | 3 |
| Tagetes signata ... ... | 0 | 6 |
| ,, lucida ... ... | 0 | 6 |
| Thunbergia (*see* Climbers.) | | |
| Tropæolum (*see* Climbers.) | | |
| Viscaria oculata ... ... | 0 | 3 |
| ,, new dwarf ... | 0 | 6 |
| ,, white ... ... | 0 | 6 |
| Violet, Russian (everflowering) ... ... | 0 | 6 |
| Verbena, a mixture of 6 best sorts ... ... | 0 | 6 |
| Wallflower, blood red ... | 0 | 3 |
| ,, Double German, of sorts | 0 | 6 |
| ,, changeable | 0 | 6 |
| Zinnia elegans coccinea | 0 | 6 |
| ,, purpurea ... | 0 | 6 |
| ,, aurea ... ... | 0 | 6 |
| ,, mixed, from 20 separate varieties | 0 | 6 |

Where a Post-office order accompanies an order for any of the above-named Seeds, J. KERNAN will allow, as discount, additional articles to the amount of 2s. in the pound.
Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to the amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.
Although this list is condensed in the present enumeration, all other new and necessary seeds may be ordered. Gentlemen coming to town, having but one day to remain, wishing to take on return plants of any kind, will greatly oblige by giving one day's notice.


Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, APRIL 5, 1851.

# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 15—1851.] SATURDAY, APRIL 12. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Adamia versicolor | 230 *b* | Farming, Irish | 235 *b* |
| Agriculture, Irish | 235 *b* | — Tullian | 236 *a* |
| — Tullian | 236 *a* | — improved | 238 *a* |
| — improved | 238 *a* | Fire Annihilator | 231 *c* |
| Agricultural Society of England | 236 *b* | Flax, culture of | 233 *b* |
| Amherstia nobilis | 231 *c* | Garden gleanings, foreign | 229 *a* |
| Annihilator, fire | 231 *c* | Manures, list of artificial | 234 *a* |
| Apple, Blenheim Orange | 228 *a* | Mildews | 227 *a* |
| Aquatics, stove | 230 *b* | Montreal Bot. Soc | 231 *b* |
| Azalea gardens, Chinese | 228 *c* | National Flori. Soc. | 231 *a* |
| Birds, British song | 228 *b* | Oak, Turkey | 230 *b* |
| Botanical Society of London | 231 *a* | — bark | 230 *b* |
| Bulb garden | 229 *c* | Orchids, sale of | 232 *a* |
| Calendar, Horticultural | 232 *a* | Peat charcoal | 231 *c*—238 *a* |
| — Agricultural | 238 *a* | — fuel | 231 *c* |
| Charcoal, peat | 231 *c*—238 *a* | Plants, cellular tissue of | 227 *c* |
| Chestnut, Spanish | 240 *a* | Poultry | 236 *a* |
| Chrysanthemums, spring | 230 *a* | Poulterer's Companion, rev. | 236 *c* |
| Compton Verney, plants at | 231 *c* | Rhododendron, large | 231 *c* |
| Conifers, size of | 230 *c* | Rhubarb, to protect | 230 *b* |
| Coronilla glauca | 230 *c* | Seakale | 230 *c* |
| Deodars | 230 *b* | Traveller, notes of a | 228 *c* |
| Draining | 235 *a* | Walls, to stud | 230 *b* |
| — deep | 236 *b* | Weather, the | 237 *c* |
| Entomological Society | 231 *a* | Weevil, Pear-shaped | 229 *a* |


NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET.—Additional support since last list. (See *Gardeners' Chronicle*, March 29.)

Charles Warner, Esq., Hoddesden, Herts
C. Robson, Argyle-sq., New-rd.
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D. Wood, Welton Nursery, near Hull
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J. Sealey, Mugland Nursery, near Bristol
Mr. Taylor, at J. Costar's, Esq., Streatham
G. Clark, Streatham Nursery, Brixton
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E. A. Hamp, at J. Thorne's, Esq., Lambeth
Dr. Maclean, Colchester
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S. T. Gray, Esq., Inver Cottage, New-road, Hammersmith
Messrs. John Schofield and Son, Florists, Knowsthorpe, near Leeds
C. K. Sivewright, Cargilfield, Edinburgh

April 12. (By Order.) JOHN EDWARDS. Hon. Sec.

NATIONAL FLORICULTURAL SOCIETY.

EDWARD GEORGE HENDERSON will exhibit, at the above Society's Meeting, at 21, REGENT-STREET, on THURSDAY, the 24th inst., the new VARIEGATED GERANIUMS he intends sending out the end of this month, "The Bridal Bouquet," "Peach Blossom," and "The Golden Admiration."

E. G. H. will send out at the same time with the above beautiful Geraniums the following new plants, for description of which see back No. of this Paper for March 1, and Catalogue which will be published at the end of this month, and will be forwarded post free on application: Fuchsia "Prime Minister," "Resplendent," "Lord of the Isles," and "Madame Sontag." Geranium Beauty of the Parterre; Potentilla Bicolor grandiflora, and Antwerpensis.

E. G. H. having purchased the entire stock of the beautiful fancy Geranium "Delicatum," raised and exhibited by Mr. Ambrose, and which has been so much admired, will be ready to send it out with the above plants this month. In colour it is the clearest white fancy Geranium yet sent out, with a very bright spot in the upper petals, an excellent grower, a profuse bloomer, and retains its flowers for a long period; indeed, it is so durable that the PETALS wither on the plant. 21*s.* each.

Wellington Road, St. John's Wood, London.

NEW DAHLIAS.

THOMAS BARNES begs most respectfully to invite attention to his superb seedling Dahlias, which will be ready in fine healthy plants by the 1st of May, viz.:

| | *s.* | *d.* |
|---|---|---|
| George Glenny, the best yellow ever offered, and the most constant | 10 | 6 |
| Gem of the East, rose-pink, first-rate and constant | 10 | 6 |

FANCY CLASS.

| | | |
|---|---|---|
| Narcissus Canary, yellow and white | 7 | 6 |
| Paragon, deep buff and white | 7 | 6 |
| Queen of the Fancies, crimson and white, fine | 7 | 6 |
| Symmetry, black and white | 7 | 6 |

T. B. has also an excellent stock of last year's varieties, 24*s.* per dozen; those of former years, 12*s.* per dozen; with Verbenas, Petunias, Phloxes, Chrysanthemums, Fuchsias, &c. &c., of the best kinds, and at moderate prices.—Danecroft Nurseries, Stowmarket.

PELARGONIUMS.—The following Pelargoniums, in 48 sized pots, blooming, well grown plants, are offered at 1*s.* 6*d.* each. Carriage paid to London.

| | |
|---|---|
| Bacchus, Beck's. | Gustavus, Beck's. |
| Cassandra, ditto. | Honora, ditto. |
| Centurion, ditto. | Princess, ditto. |
| Emelie, ditto. | Rosalind, ditto. |
| Governor, ditto. | Rosamond, ditto. |
| Gulielma, ditto. | Zenobia, ditto. |

Many other fine varieties, blooming Plants, 9*s.* per dozen.

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

AUGUSTE VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to inform the Amateur, and Trade in general, his new CATALOGUE OF PLANTS FOR 1851, is just published, and may be had on application of Mr. R. SILBERRAD, 5, Harp-lane, Great Tower-street, London.

FORGET-ME-NOT.

MYOSOTIS AZUREA GRANDIFLORA.—This unique variety stands unrivalled for its colour and habit, being very superior to the older sorts of that lovely flower, the Forget-me-not; it also possesses the following good qualities over them: The flowers are much larger, perfectly hardy, and will stand for many years in the same situation; it is a lively blue, and grows about 9 inches high, producing hundreds of blooms on the plant at a time; flowering from June till October, it will be found very useful for planting on rockwork, making a bed, or forming edgings; being a colour much wished for, as there is a great deficiency of dwarf blue flowers for autumn blooming. The Seed of the above is now ready to be sent out, at 2*s.* 6*d* per packet. Also the following varieties of Flower Seeds can still be had: Hollyhock Seed, 2*s.* 6*d.* per packet of 150 seeds; German Aster Seed, 1*s.* per packet; Sweet-William Seed, 1*s.* per packet; Antirrhinum Seed, 1*s.* per packet; and also the other varieties of Seeds named in the former Advertisement in this Paper on the 5th of April. The whole or any part of the above sent postage and package free. A remittance must accompany the order, either in cash or penny postage stamps, for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

NEW AND SUPERB YELLOW DAHLIA, WHITMORE'S VICTORIA REGINA, bright yellow, lightly tipped with rich brown, large size when well grown, exquisite in form and petal; closely shaded, it becomes clear yellow. See *Gardeners' Chronicle* of September 28, 1850.

S. W. has much pleasure in announcing that the above beautiful Dahlia has fully proved itself to be one of the most constant flowers extant, as it was grown for three seasons before being sent for Dr. Lindley's inspection. Strong plants the first week in May, 10*s.* 6*d.* All orders will be executed in strict rotation. The usual discount to the trade. The list of Nurserymen who may consent to be agents will be published shortly.

S. WHITMORE, Ford Nurseries, Newport, Isle of Wight.

CHEAP DAHLIAS.

HENRY LEGGE begs to inform the Floral Public that he intends sending out, in May next, all the leading Flowers of 1850, at 9*s.* to 12*s.* per dozen; all the good old varieties, from 3*s.* to 4*s.* per dozen. Ground Roots cheap of most of the favourites. Catalogues can be had, on application, by inclosing one postage stamp to HENRY LEGGE, Marsh Side, Lower Edmonton, Middlesex.

FIRST-RATE NEW SEEDLING CINERARIAS. Rogers's Lady Vernon, good plants, 10*s.* 6*d.*; Rogers's Handel, 7*s.* 6*d.* The above, having bloomed this spring, so satisfactorily, they are most confidently recommended. Twelve extra fine varieties, 24*s.*; and the above two added, 34*s.*; 12 good kinds, 9*s.* to 12*s.*

FIRST-RATE PANSIES.—Hunt's Helen, Turner's Mrs. Beck, Thomson's Polyphemus, Lane's Emma, Hooper's Lady Franklin, Do. Neptune, Major's Magnificent, Thomson's Caroline, Do. Elegant, Walters' Village Maid, Rogers' Uttoxeter Hero, France Cycole. The above 12 for 18*s.*

Hunt's Helen, Turner's Mrs. Beck, Duke of Norfolk, Polyphemus, Major's Blue-eyed Maid, Blue Perfection, Walters' Village Maid, Lucy Ashton, Hooper's Nassau, Hooper's Bellona, Duchess of Rutland, Lord J. Russell. The above 12 for 12*s.*

Mitraria coccinea, 1*s.* 6*d.* to 2*s.* 6*d.*; Tritonia aurea, 5*s.*; Escallonia macrantha, 5*s.* to 7*s.* 6*d.*; Cantua pyrifolia, 2*s.* 6*d.*; Dielytra spectabilis, 3*s.* 6*d.*; Epiphyllum Russellianum, 2*s.* 6*d.* The six for 18*s.*

Six bulbs of Achimenes, including longiflora alba, 6*s.*

G. R.'s stock of Pansies is large, and he can supply the trade at low prices, in quantity.

The Descriptive List of Cinerarias, Pansies, Dahlias, Verbenas, Fuchsias, &c., is now ready, and may be had on application.—GEO. ROGERS, SEEDSMAN and FLORIST, Uttoxeter, Staffordshire.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited; 1*s.* packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1*s.* per oz, 6*d.* per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1*s.* per oz, 6*d.* per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6*d.* per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3*d.* per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1*s.* per oz., 6*d.* per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

CHOICE AND BEAUTIFUL FLOWER SEEDS.

| | | | |
|---|---|---|---|
| Abronia umbellata, highly-scented | 1*s.* | 0*d.* | per paper. |
| A new and beautiful trailing plant. | | | |
| Coreopsis, marbled, new variety | 0 | 6 | ,, |
| Centranthus macrosiphon, bright pink | 0 | 6 | ,, |
| Salpiglossis grandiflora aurea | 0 | 6 | ,, |
| Schizanthus retusus albus | 0 | 6 | ,, |
| No garden should be without this beautiful Annual. | | | |
| Pansy saved from the best show flowers | 1 | 0 | ,, |
| By Thomson, and other eminent growers. | | | |
| Asters (German), four splendid varieties, bright colours | 2 | 0 | ,, |
| Balsams, 6 beautiful vars., distinct colours | 2 | 0 | ,, |
| Stocks (German), very double, 6 varieties | 2 | 0 | ,, |
| Larkspurs, very double, 8 brightest colours | 2 | 0 | ,, |
| Hollyhock Seed, saved by a celebrated grower, from Chater's best and most brilliant double show flowers | 1 | 0 | ,, |

To be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, near the Spread Eagle, London.

N.B. A Dahlia List, just published, containing all the new and choice varieties, may be had on application.

PELARGONIUMS AND NEW PLANTS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS and NEW PLANTS is ready, and will be forwarded by post on application.

NEW PLANTS.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer to Amateurs and to the trade the following NEW PLANTS:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| 25 New Hardy Ghent Azaleas, the finest varieties of all those yet sent out, the collection | 3 | 0 | 0 |
| (They are nice healthy plants cultivated in pots.) | | | |
| Rhododendron aureum floribundum | 0 | 7 | 6 |
| Ditto carneum versicolor | 1 | 0 | 0 |
| Ditto yellow perfection | 1 | 0 | 0 |
| (These three yellow varieties are the finest of all.) | | | |
| Rhododendron versicolor, double rose and red, quite hardy | 0 | 10 | 6 |
| Azalea indica Alexandria | 0 | 7 | 6 |
| Ditto magnificens | 0 | 5 | 0 |
| Ditto versicolor | 0 | 7 | 6 |
| Camellia Jacksonii, to be sent out on the 1st of July next, plants one foot high | 3 | 0 | 0 |
| Ditto Ditto two feet high | 5 | 0 | 0 |

NOUVELLE ICONOGRAPHIE DES CAMELLIAS; every month, a number, with four plates of the finest new Camellias, with their description. Price 21*s.* a year, free at destination.

The Great General Catalogue of Plants, &c., may be had free at Mr. R. SILBERRAD'S, 5, Harp-lane, Great Tower-street, London.

WIDNALL AND DAVIS respectfully announce that their two first rate FANCY DAHLIAS, will be ready to send out, the first week in May.

ADMIRATION (Widnall and Davis) rich purplish crimson, tipped with pearly white, centre well up, very symmetrical and constant, 3 ft., 7*s.* 6*d.*

APPROBATION (Widnall and Davis) rich mellow orange crimson, tipped with beautiful creamy buff, a very desirable first class flower, 4 ft., 7*s.* 6*d.*

They can also execute the following in good plants:—

FUCHSIA nigricans, } Linden's two magnificent Peruvian
,, venusta } species, figured in the Flore des Serres, in December, 1849, 3*s.* 6*d.* each.

VERONICA ANDERSONII, a superb plant for bedding or Greenhouse culture, with large spikes of white flowers, delicately tinged with blue. Figured in Paxton's and Lindley's Flower Garden, for March, 1*s.* 6*d.* each, or 12*s.* per dozen.

Packets of Chater's superb Hollyhock Seed, by post, at 2*s.* 6*d.* each.

The present is the time for sowing.

WIDNALL and DAVIS's general list of Dahlias, Pelargoniums, Chrysanthemums, and soft-wooded plants, can be had on application.—Grantchester Nurseries, April 12.

NEW SCARLET PELARGONIUMS.—CONWAY'S KING OF NEPAUL, a bright scarlet, with large globe truss, horse-shoe leaf, habit of Tom Thumb, good for either bedding or pot, 7*s.* 6*d.* each.

CONWAY'S PET SUPERB, a bright pink distinct variety, very dwarf, and pretty for bedding or pots, 5*s.* each.

Flower of the Day, 5*s.*; Commander-in-Chief, 2*s.* 6*d.*; Princess Alice (CONWAY'S), 2*s.* 6*d.*; Cerise Unique, 2*s.* 6*d.*; or the set of six for 1*l.* 1*s.*, basket included.

The following have been selected as choice varieties, namely, Excellence, Gem of Scarlets, Cottage Maid, Trentham Scarlet, Mrs. Mayler, Queen of Summer, Princess Royal, Tam o' Shanter, Ibrahim Pacha, Queen Improved, Tom Thumb's Master, Reed's Scarlet, Royalist, and Punch, at 1*s.* each, or the set of 14 for 12*s.*, basket included.

Prize Fighter Improved, Tom Thumb Improved, or Symmetry, are recommended as very excellent sorts for bedding at 6*s.* per dozen.

The following pink varieties are also offered at 1*s.* each, or the set of nine for 8*s.*, basket included:—Jenny Lind, Pet, Judy, Lucia Rosea, Rosy Morn, Pink Nosegay, Cherry Cheek, Captain Darley, and Princess Alice (Ingram's).

NEW PETUNIAS.

CONWAY'S Lady Rokeby, white, with purple throat, a highly desirable variety, 5*s.* each; Captivation, 1*s.* 6*d.*; CONWAY'S Beauté Supreme is confidently recommended as the best Petunia for bedding, 6*s.* to 9*s.* per dozen.

NEW CALCEOLARIAS.

CONWAY'S Floribunda, a dwarf, free, and constant bloomer, bright yellow, large trusses, well recommended for bedding or pot, 3*s.* 6*d.* each; Multiflora, 1*s.* 6*d.*; and numerous other sorts at 6*s.* and 9*s.* per doz.

VERBENAS.

A large Collection at 6*s.* to 9*s.* per doz.

CONWAY'S Coronata Geranium, pink, with white centre, an early, profuse, and perpetual bloomer, 2*s.* 6*d.* each.

N.B. A large assortment of Fancy and other Geraniums, Fuchsias, Heliotropes, Dahlias, &c.

MARY CONWAY, Earl's Court Nursery, Old Brompton, near London

QUEEN OF DAHLIAS, white, distinctly edged with rosy purple, large, fine form, and constant, has taken first prizes in its class where shown (was named by Mr. GLENNY, and he pronounced it the very best of all our cupped edged Dahlias), will be let out in May, 1851, as far as stock will go, at 10*s.* 6*d.* per plant.

KING OF DAHLIAS (MORGAN'S), and others at catalogue price.—Address to W. KELSALL, Wilmslow, near Manchester.

OUR YORK REGENT PREPARED POTATO CUTTINGS are now ready; all the other sorts named in our former Advertisement can be had on and after the 20th inst. We had our largest crop last year from those we planted on the 20 h of May.—Post-office orders to be made payable to JOHN SANGSTER, Borough Post-office, Newington Butts, London.

HAY, SANGSTER, and CO., April 12.

VERBENAS AND SCARLET GERANIUMS.

J. SCOTT, FLORIST, Bathford, near Bath, can supply the following 24 VERBENAS, well established in small pots with plenty of stock on them: Adelie, Anais, Anacreon, Berouze, Buffon, Boule de Niege, Gloire de Paris, Napoleon Buonaparte, Woodcock's Magnificent, Charmont Zoe, Perrier, Phaeton, Laura, Morphie, Reine Hortense, Silene, Macrantha, President, Iphigene, John Salter, Telemaque, Cyporice, Lamello, Satyr—15*s.* the set, hamoer included; or 12 selected, 9*s.*

SCARLET GERANIUMS: Commander-in-Chief, strong plants, 2*s.* each, or 1*l.* per dozen; Trentham Scarlet, 1*s.* each, or 9*s.* per dozen.—Direct as above.

*** A remittance expected from unknown correspondents by Post-office order payable at Post-office, Bath.

THE BLACK AUSTRIAN PINE (PINUS AUSTRIACA.)

LUCOMBE, PINCE, AND CO., have a large and healthy stock of this most desirable Pine, from 9 inches to 3 feet high, which having been frequently transplanted, are well-rooted and safe to remove: they can offer them, varying according to age and quality, from 20*s.*, 40*s.*, to 60*s.* per 1000 This Pine has been proved to thrive in bleak and exposed places, and in the poorest soils, growing rapidly, and producing dense shelter in places where other trees will not grow; it also thrives well close to the sea, resisting the spray and roughest winds. N.B The present is a very fine time for planting.

Exeter Nursery, April 12.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4*s.* per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s.* each.

GOLIAH STRAWBERRY.

JAMES KITLEY can supply good Plants of his celebrated Strawberry GOLIAH, at the very low price of 7*s.* 6*d* per 100, or 12 Plants, free by post, for 18 postage stamps. Also fine Plants of Dwarf German HOLLYHOCKS mixed, at 12*s.* per dozen; these have all bloomed, and are very double and beautiful. HOLLYHOCK SEED, saved from a fine collection of double varieties, 18 packets, named, free by post, for 5*s.*; ditto mixed, per packet, 2*s* 6*d.* SWEET WILLIAM SEED, from a great variety of beautiful brilliant colours, per packet, 1*s.*

Lyncombe Vale Nursery, Bath, April 12.

DECIDED BARGAINS. — Dahlias, fine show varieties, 6*s.*; Carnations, compeing flowers, 6*s.*; Ditto without names, fine, 4*s*; Alonsoa grandiflora, 3*s.*; Heliotropes, of sorts, 4*s.*; Fuchsias from 1 to 2½ feet, 6*s.*; Ditto, other named sorts, 6*s.* to 9*s.*; Petunias, named varieties, 4*s.*; Ditto, without names, 2*s.*; Pinks, competing flowers, 4*s.*; Ditto, seedlings from named sorts, 3*s.*; Pansies, show varieties, 6*s.* to 12*s.*; Calceolarias, seedlings—fine, 4*s.*; Phlox Drummondii 3*s.*; Verbenas, named, 4*s.*; Ditto, seedlings, 2*s.*

The above are the prices per dozen. Plants sent to compensate for long carriages. General Catalogues forwarded on application to WM. ANDERSON.—Dundee, April 12.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1851 *is stamped as a Newspaper, to go free by post, and may be had on application. It will be found to contain the newest and best articles which can be procured, with full description and other useful information.*

SELECT AND CHOICE FLOWER SEEDS.

The following of our best selections supplied free by post, with proper directions for sowing, heights, colours, &c., given in the Catalogue.

| | *s.* | *d.* |
|---|---|---|
| 100 varieties best and newest Annuals ... ... ... | 15 | 0 |
| 50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d*, 20 for ... ... | 4 | 0 |
| 20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ... | 5 | 0 |
| 20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ... | 5 | 0 |
| 20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for | 7 | 6 |
| 20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for | 5 | 0 |

IMPORTED GERMAN SEEDS.

| | | |
|---|---|---|
| 20 varieties splendid double Stocks, 3*s.* 6*d.*; 12 ditto ... | 2 | 6 |
| 12 vars. splendid China Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. fine globular Asters ... ... ... ... ... | 2 | 6 |
| 12 vars. Dwarf Rocket Larkspurs ... ... ... ... ... | 2 | 0 |
| 9 vars. Tall ditto ... ... ... ... ... ... | 1 | 6 |

Remittances with orders are requested from unknown correspondents. Goods Carriage Free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

PORTUGUESE SEEDS.

CURATORS OF BOTANIC GARDENS, and HORTICULTURISTS generally, are respectfully informed that a Collection of Seeds, principally the more interesting and rarer species of the Flora of Portugal, may be obtained of Dr. FRIED WELWITZSCH'S London Agent, Mr. PAMPLIN, 45, Frith-street, Soho. Prepaid applications immediately attended to.

DR WELWITZSCH'S PORTUGUESE COLLECTIONS.

A VERY EXTENSIVE HERBARIUM, collected during the last 10 years in Portugal, is now in course of distribution.—Apply to W. PAMPLIN, Botanical Agent, 45, Frith-street, Soho, London.

CAMELLIA STOCKS FIT FOR IMMEDIATE WORK.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to inform the Public that he has a very extensive stock of the above, fit for immediate grafting, very clean and healthy, well rooted, so as to leave without the pot, consequently much less expense in conveying to any distant place. Price 36*s.*, 40*s.*, and 50*s.* per 100.

The Stock is such as has never before been offered to the Public by any grower.

R. L. has a most extensive collection of Double Camellias at a very moderate rate and reduced price, as will be seen by a Catalogue recently published, in which it is proved that they can stand the climate out-of-doors without protection. The Catalogue can be had of R. L. by inclosing four penny stamps. Remittance or reference from unknown correspondents.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, April 12.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Show, &c, fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower. &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d* and 5*s.* packets, post paid, for prepayment.

AGRICULTURAL SEEDS.

BASS & BROWN'S PRICED AND DESCRIPTIVE AGRICULTURAL SEED LIST may be had free by post. The following of best quality delivered free to London, Ipswich, Norwich, or any station on the same line of Railway.

PERMANENT PASTURE GRASSES, to suit various soils.—Mixtures for soils in general, including proper proportions of Clover, per acre, 24*s.*

Mixtures supplied to suit soils of every description, the nature of the soil being stated; and if intended to be sown either with or without a crop. Any sorts supplied separate, if required, according to order, of which a list of prices of different kinds may be had.

FINE MIXED GRASSES FOR LAWNS, BOWLING GREENS, &c., 40*s.* per acre, 5*s.* per peck, or 1*s.* 3*d.* per lb.

| | | *s.* | *d.* |
|---|---|---|---|
| RYE-GRASS, true Italian ... per bushel | | 6*s* | 6*d.* |
| ,, Perennial ... ... ,, | | 4 | 6 |
| ,, Stickney's Improved do. ,, | | 6 | 6 |
| ,, Pacey ... ... ,, | | 6 | 0 |
| CARROT, large white Belgian ... per lb. | | 0 | 8 |
| ,, large Altringham ... ,, | | 1 | 0 |
| MANGOLD WURZEL—Red Globe and Yellow Globe ... ... ,, | | 0 | 6 |
| ,, Long Yellow ,, | | 0 | 9 |
| Drumhead Cattle Cabbage ... ,, | | 2 | 6 |
| Rivers' new Stubble Swede Turnip ,, | | 2 | 0 |

The best Stock of Turnips and all other Agricultural Seeds. See our Catalogue. Prices to the Trade on application.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND CO., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian, and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and oth r Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30*s.* per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1*s.* 2*d.* per lb.

Fine sorts, for forming Lawns, 1*s.* 3*d.* per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from Weeds and coarse Grasses, 21*s.* per bushel, 3*s* per gallon, or 1*s.* 3*d.* per lb, with instructions.

*To insure a pure turf of finest Dwarf Grasses*, Messrs. SUTTON strongly recommend the sowing the above seeds, whereby the great expense of cutting, carting, and laying Turves may be avoided.

*Quantity of Seed required to form new Lawns*, 40 lbs. per acre (*i. e*, 1 lb. to every 4 poles); or 10 lbs. per acre sown immediately *upon old Lawns* will greatly improve them.

All orders above 10*s.* are sent carriage free to London, Bristol, Southampton, &c.—Address JOHN SUTTON and SONS, Reading, Berks.

AGRICULTURAL SEEDS.

WOODLANDS NURSERY, Maresfield, near Uckfield, Sussex.

WM. WOOD AND SON respectfully solicit attention to their very superior stock of MANGOLD WURZEL, which is warranted of the best description.

| | Per lb.—*s.* | *d.* |
|---|---|---|
| Yellow Globe Mangold Wurzel ... ... ... ... | 0 | 6 |
| Long Red ditto ditto ... ... ... ... | 0 | 6 |
| White Carrot, fine stock ... ... ... ... ... | 0 | 9 |
| Long Red Carrot, for field culture ... ... ... | 1 | 0 |
| Rivers' new Stubble Swede Turnip, very fine ... | 2 | 0 |

N.B.—Turnip and all other Agricultural Seeds at the most reasonable prices.

PERMANENT PASTURE GRASSES, *Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre, viz.:*

| | £ | *s.* | *d.* |
|---|---|---|---|
| BEST MIXTURES for laying down Land to permanent Meadow or Upland Pasture, per acre ... | 1 | 8 | 0 |
| DITTO, for laying down Reclaimed Marshes and Common Inclosures, per acre ... ... ... ... | 1 | 2 | 6 |
| DITTO, for Irrigation or Water Meadow, per acre ... | 1 | 6 | 0 |

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS *having reduced the price of these Seeds 25 per cent., viz., to 10d. per lb., or 1s. 6d. per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of 6 or 8 lbs. per acre, sown immediately upon the old Turf.*

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following:—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

*From the Land Steward at a large Estate in Hampshire.*

"All the kinds of Grasses sown separately grew admirably; and the 20 acres of Park laid down with *your Mixture* last spring is most excellent. We are anticipating a large crop of Hay, and I can see by the various habits and successional growths of the several kinds, that we shall always have a fresh growing bite for the cattle after the Hay is cut. The Clovers too I see are plentiful."

*From a Clergyman in Dorsetshire, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

*Another Clergyman writes us*—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for Sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, April 12.

SKIRVING'S IMPROVED TURNIP SEEDS.

WM. SKIRVING begs to announce to his friends and the public that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW-BULLOCK, at 9*d.* per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the Seed of his Improved Turnips, he is this season enabled to offer it at the above reduced price, and he is also induced to take this step to prevent Agriculturists being imposed upon by the sale of spurious Seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing.

All other Agricultural Seeds, of the best quality, at very moderate prices. A remittance or reference is requested from unknown Correspondents.

N.B. W. SKIRVING has no Agent in town or country.

Queen-square, Liverpool, April, 1851.

PENNY BEDDING OUT PLANTS.

D. FERGUSON'S Lists for 1851, are now ready, and will be sent free on application. He has much pleasure in stating that his new system of preparing and packing Plants, will enable him to send them with safety to any place that can be reached within a fortnight, (carriage paid to all Railway stations in Britain, when 10 dozen and upwards are taken). The plants will be sent out about the 15th of May; and as he still stands alone offering plants at the price, he invites those who differ from him to visit him about the 8th of May.—Near Buckingham, April 10.

TO CARROT AND WURZEL GROWERS.

FINE NEW WHITE BELGIAN CARROT, 5*d.* per lb.

| | | |
|---|---|---|
| FINE NEW LONG RED SURREY CARROT ... | 7*d.* | per lb. |
| ,, ,, ALTRINGHAM ditto ... ... | 8*d.* | ,, |
| ,, ,, LONG RED MANGOLD WURZEL ... | 6*d.* | ,, |
| ,, ,, GLOBE YELLOW ,, ,, ... | 5*d.* | ,, |

Cash prices.

Offered by CLARKE and Company, Seedsmen, 86, High-street, Borough, London

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Duck Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.— DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-street, London-bridge.

ESTABLISHED 1786.

UNDER THE DISTINGUISHED PATRONAGE OF SEVERAL INFLUENTIAL MEMBERS OF THE ROYAL AGRICULTURAL SOCIETY.

WEST OF ENGLAND AGRICULTURAL AND HORTICULTURAL ESTABLISHMENT, for the supply of every requisite for the Farm and the Garden, Union-road, Plymouth (adjoining the Station and Terminus of the South Devon Railway.)

WILLIAM E. RENDLE AND CO., PLYMOUTH, Seedsmen and Manure Merchants, by Special Appointment, to the South Devon Agricultural Association. Warehouses—Corporation Granaries, Sutton Harbour, Great Western Docks, and Union Road. Counting House, Union Road.

*Our Sales of GUANO and LAWES'S PATENT SUPERPHOSPHATE during the last Five Years have exceeded Seven Thousand Tons, and we have made arrangements for Two Thousand Tons to arrive during the present season; our extensive purchases, therefore, enable us to sell at the lowest remunerating prices, and at the same time is the strongest evidence we can offer of the large and increasing patronage bestowed upon us, for which we have to return our most grateful acknowledgments.*

BEST PERUVIAN GUANO.

Warranted to be the direct importation of Messrs. ANTHONY GIBBS and Sons, and to be of the most genuine quality.

LAWES'S PATENT SUPERPHOSPHATE,

Warranted of the best quality, direct from Mr. Lawes's factory.

These are the two leading articles of the day, and can be safely recommended as superior to all other Manures at present known.

WILLIAM E. RENDLE and Co. have been specially appointed by Mr. Lawes to be the Sole Wholesale Representatives for the Sale of his Patent Manures for the counties of Devon, Cornwall, and Somerset; and it cannot be too generally known that they are only to be procured from them, or their accredited Agents, a List of whom can always be obtained.

PRICE CURRENTS ON APPLICATION GRATIS.

*Our Descriptive Catalogue of FARM SEEDS is just published, and can be had in exchange for One Penny Stamp. It contains a description of all the best varieties of Turnips, Carrots, Mangold Wurzel, with prices affixed to every article. The List of Grasses is peculiarly comprehensive, and contains short descriptions of all the leading kinds. There is also some useful advice relative to the Sowing of Grass Seeds for Permanent Pasture, concerning which Mr. Kemp, of Birkenhead Park, in a letter to us, says: "I am glad that you repudiate the practice of sowing corn with Grass Seeds, a custom I have often had to combat."*

All Orders for Seeds above 2*l* carriage free. (See Catalogue.)

Apply to WILLIAM E. RENDLE and Co., SEED MERCHANTS, Plymouth.

*Meeting of the South Devon Agricultural Association, at Modbury, November* 15, 1850.

The following is an extract from the *West of England Conservative* of November 20, 1850:

"In the Show Yard we noticed some splendid specimens of Roots, exhibited by Messrs. William E. Rendle and Co., Seed Merchants, Plymouth. They included some fine bulbs of White, Scotch, and Swedish Turnips, Mangold Wurzel, White Belgian Carrots, Parsnips, &c.; also a collection of Agricultural Seeds, comprising a great many varieties of Grasses, Clover, Turnips, &c.; with samples of all the leading natural and artificial Manures. The roots were exceedingly fine, and would have done credit to the shows of the Royal Agricultural Society, or the Smithfield Club, and for size, weight, and quality, we have never seen them surpassed—some of the bulbs weighing from 18 to 20 lbs. each. We particularly noticed an excellent variety of Swede Turnip, called the Imperial Purple-top, lately introduced by this eminent firm, and is now extensively cultivated by most of the leading agriculturists of the day. It is handsome in form, of superior quality and hardness, and stores longer than any other Swede. Most of the roots were grown with Lawes's Patent Superphosphate, a manure greatly used throughout the country, and acknowledged to stand very high for root crops. The stall attracted much attention, being crowded throughout the day; and great credit is due to W. E. Rendle and Co. for the pains they took in bringing before the Association so fine a collection, thereby adding much to the interest of the show."

*Exeter Meeting of the Royal Agricultural Society, in July* 1850.

We also had an exhibition of Grasses, Seeds, and Manures, at the great meeting of the Royal Agricultural Society, held in Exeter, July 1850. Our stand (No. 111, as described in the Society's Catalogue), was favourably noticed by all the leading newspapers, at the time. The Grasses were all botanically arranged, and attracted much attention.

*** RENDLE'S PURPLE-TOP SWEDE TURNIP won the first prize at the great meeting of the Cornwall Agricultural Association last autumn.

**The Gardeners' Chronicle.**

*SATURDAY, APRIL* 12, 1851.

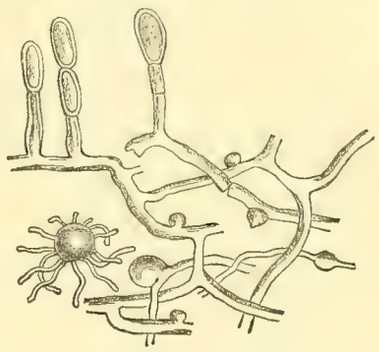
MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | April | 14 | Statistical | 8 P.M. |
| | | | Geographical | 8½P.M. |
| TUESDAY, | — | 15 | Horticultural | 3 P.M. |
| | | | Linnean | 8 P.M. |
| | | | Pathological | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| WEDNESDAY, | — | 16 | Microscopical | 8 P.M. |
| | | | Ethnological | 8 P.M. |
| SATURDAY, | — | 19 | Medical | 8 P.M. |

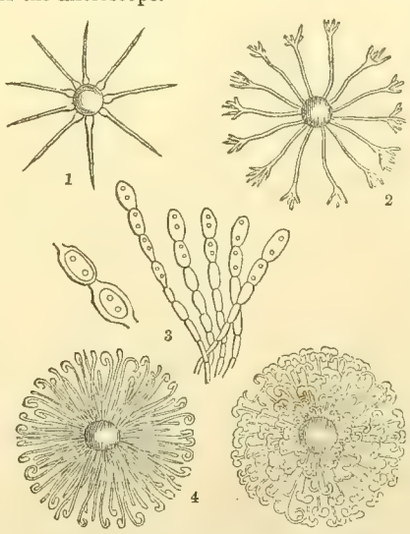
IT is one thing to describe accurately the various organic forms which are presented to us in the natural world, and another to understand the relations which they bear to one another. The outward resemblance is sometimes very close, and the real affinity equally small; as, on the contrary, highly different forms are often very closely allied. Instances of this kind occur sometimes amongst higher plants, in consequence of the curious repetition of the same forms in different orders and genera, or even, as in the case of galls, where there is no question of systematic relation: but they are most especially to be found amongst the lower vegetables. Thus, for instance, the young shoots of Mosses and *Equiseta* present the characters of a *Cladophora*, and the infant fronds of Ferns resemble closely some Liverworts. The same law holds in fungi, an example of which occurs in that most destructive plant to the gardener, the white mildew or Mehlthau (mealy dew) of the Germans.

It has been long remarked that the white mildew of Peas, Hops, Roses, and many other plants, is uniformly succeeded by species of the genus *Erysiphe*. Nothing is more easily verified than the fact of this connection in Pea crops, which are peculiarly liable to be infested by the two parasites. Their intimate connection has been long suspected and even openly expressed, but not without incurring unmeasured blame for such apparently rash assertions.

The mildew consists of short white mould-like



articulated threads springing from the stomata, and sending generally a few creeping, often radiating shoots, over the surface of the leaf; the ultimate articulations of the erect threads at length separating and readily germinating. The *Erysiphe*, on the contrary, consists of a globose perithecium passing through various shades of colour, and at length sending off from the base filaments which in the parasite of the Pea are simple, with a rather obtuse apex, but which in other cases vary much in structure, and make the different species great objects of interest under the microscope.




1. Erysiphe guttata; 2. E. penicillata; 3. E. graminis (junior); 4. E. aduncа; 5. E. bicornis.

It is perhaps inattention to the fact of these filaments being developed after the perithecia that has deceived so many observers. If, however, a young patch of the mildew or *Oidium* be examined, some of the very flocci which give off erect threads, bearing at their tips deciduous reproductive cells, after a time present little knots on their surface, very much after the fashion of the tubercular fruit of *Stigonema*. These gradually increase in size till all trace of the thread from which they originated vanishes, and at length begin to emit from their base new filaments, differing altogether from the parent threads. The knots which were at first colourless soon assume a yellowish tinge, then orange, and ultimately olive or deep black, growing meanwhile larger; the threads at their base increase rapidly in length, and eventually terminate in one or more mostly obtuse processes, by means of which the perithecia are frequently raised above the surface of the leaf, and by which it is probable that they imbibe the juices of the infested plant, which are requisite to bring to perfection the mass of asci and sporidia which is developed within.

It is possible that there may be some true species of Epiphytal *Oidium*, which are never developed into *Erysiphe*. There are some, at least, in which the cognate *Erysiphe* has not been observed, as in the case of the Vine mildew. It may, perhaps, be suggested, that the *Erysiphe* is really a parasite on the *Oidium*; but if our observations are correct, the perithecia spring too immediately from the threads, and form too intimately a part of them without any solution of continuity to admit of such a supposition.

Our observations at present have been confined to the Pea mildew, but the matter is too important to pass unnoticed, till full information may be obtained. A caution should perhaps be given to those who wish to repeat the observation in the ensuing season, that from the extreme delicacy of the threads of the mildew, it is far from an easy matter to extricate them, so as to obtain a clear view, and that it would not be wise, therefore, to form a hasty decision from want of success at the first effort.

In very luxuriant patches of *Oidium*, the vegetative power seems exhausted in producing the fertile threads, and no *Erysiphe* is generated.

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The observations of Professor MITCHERLICH, of Berlin, of which we gave a short account at p. 199, are well deserving of a little consideration. The cellular tissue of plants is not only important, because it answers the same purpose in them as the bones do in the bodies of animals, but the formation and nature of this substance is also of interest, in consequence of its mechanical properties, and the many ways in which it is practically employed in the arts, in the various forms of timber, cordage, linen, cotton, and paper. It is often the case, that a number of different substances, though all more or less related to each other, are classed together under the general name of woody fibre; this, even in common language, frequently leads to mistakes and confusion. There is, in truth, a considerable number of different varieties of woody matter, which may be readily distinguished from each other by their microscopic and chemical properties, but which often occur so closely associated together in the same plant, that it requires some care and attention to separate and recognise them. When a plant is merely crushed, and well washed in water, the soluble substances which it contains, and the greater part of the softer green cellular matter is removed, whilst a portion of fibre is left; but in this way we never obtain pure woody fibre, for it is always contaminated with a quantity of various foreign matters; and on the other hand, if we resort to some chemical process, either employing the solvent power of acid or alkaline solutions; or, as in the manufacture of Flax, allow the plant to undergo a species of fermentation, then in all such cases, the woody fibre is more or less changed and modified by the process to which it has been subjected.

The woody matter, which is formed in a young plant, when examined in the microscope, is found to consist of either cells or tubes, glossy and transparent, but tolerably uniform in structure; after a very short time, however, various other matters are formed and deposited in these cells and tubes, lining and incrusting them throughout in a very curious way. The common woody fibre, therefore, which we obtain by merely macerating and washing any plant is, in fact, a mixture of the pure fibre and these different incrusting substances. From the researches of PAYEN, and other chemists, we learn that there are probably, at least, two distinct varieties of pure woody fibre or lignin, to which the name of cellulose is applied, which differ slightly in their composition, the one being identical in chemical composition with pure starch; and that these two forms of cellulose, when encrusted with three or four peculiar substances which are generated within the cells of the plants, constitute the different varieties of woody fibre. There is very little doubt not only that these two forms of cellulose are convertible into each other, but also that they are formed from starch, and are again convertible into that substance; these conversions, and transformations, are of the highest interest in connection with the theory of vegetation. The experiments of Professor MITCHERLICH show the manner in which pure cellulose may be converted into starch, and dextrine or starch gum, by the action of dilute sulphuric acid, as contrasted with the similar changes which take place naturally in growing plants, and in germinating seeds. Thus solutions of sulphuric acid, and also of certain alkaline salts, convert it into starch and gum, whilst strong nitric acid has no action on it; and though under ordinary circumstances it shows very little tendency to change, yet when exposed to the influence of certain sorts of "ferment," it decomposes with the greatest facility, in fact, far more readily even than starch does; this is shown in a very remarkable manner, in the case of a diseased Potato, in which, owing to the presence of such a ferment, the cellulose softens and is decomposed, whilst the grains of starch, which the cells previously contained, are hardly at all acted on.

There is also another substance, which a good

deal resembles cellulose, and which very often constitutes the walls of vegetable cells, namely cork. The cells of cork, which are sometimes found alone, and sometimes are associated with those of cellulose or true woody fibre, may be readily distinguished from the latter, because the cork cells are not converted into starch by those agents which easily change cellulose into starch; and on the other hand, nitric acid, which has no action on cellulose, acts rapidly and powerfully on cork. In consequence of these properties, there is no difficulty in separating the cork cells from those of true cellulose, as they exist associated together in such plants as the Potato. M. MITCHERLICH also shows that in some cases these two substances are even more intimately connected together, uniting, in fact, to form the walls of the same cell, the corky matter being deposited on the outside of the cellulose; and he imagines that both substances are to be regarded as having a similar origin. From what he says respecting the relation of these two substances, we may fairly be led to ask, is it not possible that cellulose is capable of being converted into cork?

We are not quite satisfied with the experiments which are brought forward to prove that the most delicate vegetable hairs and fibres are all covered with a thin film of cork. It is well known that many fibres, such as cotton for example, imbibe water with great difficulty; but it certainly does not follow that this is caused by a protecting film or varnish of cork; nor is the matter rendered in any way more clear by the further statement that when cotton has been bleached by chlorine, or exposed to the action of some other powerful agent, it then imbibes water with facility, because this process has caused the solution of the thin film of cork, and left the cellulose exposed. As it is acknowledged that these fibres in their natural state always contain more or less of an oily or fatty substance, which would, it is evident, greatly interfere with their being wetted, and as the presence of this oil is certainly quite a sufficient cause for the phenomena in question, they clearly cannot be brought forward without other evidence as any proof of the existence of such a film of cork. It is plain that in many cases cork is formed instead of cellulose, and no doubt for some good purpose; but it also frequently happens that cork is found in large quantities and in parts of plants where its presence appears to do no good. It is probable that in some of these latter cases its formation is the result of disease. We are very glad to see that Professor MITCHERLICH is continuing his experiments on these subjects, and that he is still further investigating the changes which cellulose undergoes when it is acted on by ferments; we hope he will also extend his inquiries on the formation of cork; they cannot fail to lead to interesting and valuable practical results.

## THE ORIGINAL BLENHEIM ORANGE APPLE TREE.

IN a somewhat dilapidated corner of the decaying borough of ancient Woodstock, within 10 yards of the wall of Blenheim-park, stands all that remains of the original stump of that beautiful and justly celebrated Apple, the Blenheim Orange. It is now entirely dead, and rapidly falling to decay, being a mere shell about 10 feet high, loose in the ground, and having a large hole in the centre; till within the last three years it occasionally sent up long, thin, wiry twigs, but this last sign of vitality has ceased, and what remains will soon be the portion of the woodlouse and the worm. Old Grimmett, the basket-maker, against the corner of whose garden-wall the venerable relic is supported, has sat looking on it from his workshop window, and while he wove the pliant ozier, has meditated for more than 50 successive summers on the mutability of all sublunary substances, on juice and core and vegetable, as well as animal and flesh and blood. He can remember the time when, 50 years ago, he was a boy, and the tree a fine full bearing stem, full of bud and blossom and fruit; and thousands thronged from all parts to gaze on its ruddy ripening orange burden: then gardeners came in the spring-tide to select the much-coveted scions; and to hear the tale of his horticultural child and sapling from the lips of the son of the white-haired Kempster.

But nearly a century has elapsed since Kempster fell, like a ripened fruit, and was gathered to his fathers. He lived in a narrow cottage garden, in Old Woodstock, a plain, practical, labouring man; and with his bees and flowers around him, and his "glorious pride," in the midst of his little garden, he realised Virgil's dream of the Old Corycian:—"Et regum equabat opes animis." The provincial name for this Apple is still "Kempster's Pippin;" a lasting monumental tribute and inscription to him who first planted the kernel from whence it sprung.

There are said to be several varieties of this Apple; but the fact is (though contrary to Mr. Knight's opinion), they vary according to the stocks upon which they are worked; those grafted on free stocks are much finer, longer, and narrower than those on Crab stocks, which are more depressed in shape, almost like a skittle-ball, and more orange coloured.

The stone brash and calcareous soil of this part of Oxfordshire, seems to suit the Blenheim Orange, particularly well; and the fruit always appears finer, and more to advantage, in its own native county than elsewhere.

The confectioner's shops and college kitchens in Oxford (not bad judges!) are generally supplied with this handsome and useful fruit, up to Christmas; after which time it loses its flavour, and decays.

This part of Oxfordshire is also celebrated for its Apricots. Every cottage in every village has its Apricot tree, which, in a good season, will pay the rent. All the finest fruit is sent to London, and "Kidlington" Apricots are well known in Covent Garden, and command a higher price than those from other parts of England. *Micklewell Junior.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 9.)

No. XXV.—I HAVE, perhaps, been rather "short," and rather abrupt in my earlier directions for purchasing birds, either males or hens, for the purposes of breeding. I have a great objection in the general way to recommend any particular dealer by name; but I may safely caution people as to where they should *not* deal; and this it is my duty to do.*

Studiously avoid, all ye who go to buy good song birds, such "Babel" shops and wire-workers, such Pantheons and Bazaars, as sell parrots, macaws, monkeys, dogs, &c. The shrieks, hideous outcries, and "unknown tongues" in which these horrible creatures momentarily hold converse, would effectually destroy the value of *any* "song" bird.

I have often remonstrated with the (so-called) bird-dealers, for keeping so heterogeneous a collection of brute beasts; but their answer has been, always, to the effect that—"*ladies* 'cannot live' without dogs, parrots, and such like; they will give *any* price for them." This, alas, *is* too true. We all know it, but too well!

It may be said, that nearly all the bird-dealers in London have these animals on sale. I admit it, and greatly is it to be regretted. All young birds, aye, and even some older ones, *will* copy these strange noises; and the worst of it is, they invariably become stereotyped in their memory. Therefore, let me again raise a warning voice, and caution my gentle readers against *all* dealers in the above monstrosities; urgently recommending the more extensive practice of *private* breeding.

The principal time for the arrival of canaries from Norfolk and Yorkshire, is just before Christmas. They are then sent up in vast quantities, and are, for the most part, lively, healthy, and in good song. With the knowledge of this fact, it will be desirable to call from time to time at the dealers, and purchase your birds *before* their sweet voices shall have been contaminated by foul contact with the wretched parrots, macaws, pugs, poodles, &c., as aforesaid. I often marvel what sort of people those can be, who select *such* animals as these for their constant associates! *Mais chacun à son gout!*

The reason why I have recommended all hens intended for the nursery, to be at least two years old, is this:—It often happens that young, and consequently inexperienced birds, lay their eggs irregularly, and when laid, they will sit for a few hours only, and then incontinently desert them; preferring, naturally enough, the company of their playfellows to the heavier cares inseparable from incubation. All this ends in disappointment, and therefore it is better to run no such risks.

Whenever you observe these acts of neglect and want of motherly feeling, take it for granted that the birds are perfectly unfitted for the purpose of breeding, and remove them at once. You will then introduce others, older and less giddy, in their places. They will speedily find mates after the month of April, especially if a little bruised hemp-seed be scattered on the floor.

To enable you readily to catch any bird you may require, procure a circular hoop-net, of strong string. This should be made deep, and fastened on a circle of stout wire, the whole being affixed to a wooden pole 3 feet 6 inches in length; the bird may then be secured without the slightest fear of any injury to the plumage. A quick eye, and a skilful movement of the hand (to be acquired by practice), will make a prisoner of any one of the inmates in a few seconds.

Canaries have, on the average, three broods a year; some, however, will go to nest four and even five times a year, if permitted. It is unwise to be thus covetous, for the parents are weakened by so much close confinement, and the later offspring are seldom healthy.

When your canaries have laid their eggs, they are subject to constipation, and should have speedy relief. This is best afforded by the introduction of plantain and lettuce seed, for about a couple of days. This, however, should be given sparingly when there are any young birds in the room, as it is quite unsuited to *their* tender stomachs; so also are chick-weed, and other kinds of green meat.

On the 13th day after sitting (in the heat of summer, on the 12th), the hen commences the process of hatching. It is therefore needful *always* to provide in readiness, whether wanted or not, the proper food for the young nestlings. This consists of Rape seed, well scalded, a piece of French roll, dipped in cold water, and afterwards well squeezed; and the yolk of an egg, boiled hard. This must form a paste, neither too solid nor too thin. It must be fresh made, twice daily. If allowed to get sour, the nestlings will assuredly die. The male usually plays "first fiddle" in feeding the young. The mother "assists" only. She feels she has need of repose after her toils, and strives, reasonably enough, to enjoy the *otium cum dignitate*. She is quite to be commended. If the young birds are not affectionately tended by their parents, and it is deemed advisable to feed them by hand, remove them *in the nest*, when eight days old. Dip the end of a short, pointed stick, into the food; and having taken up a small quantity, introduce it into each of the birds' open mouths. Continue this operation every two hours, until the birds feed themselves, which they will soon do. Occasionally, hold the stick quiet; and you will observe that they recognise its use. They will peck at it; and tasting the food, they will be apt scholars in "finding the way to their mouth."

No young birds should ever be removed, when carefully nursed by their parents, until they are at least five weeks old; and their food should be changed gradually. They should then be placed in separate cages, and kept in a warm room, where there is a fine, steady song-bird, ready to act the part of "tutor." At this tender age, their little throats will be found full of music! They begin quite *piano*; their early notes being called "recording." Like the mind of a child, they are open to the earliest impressions; and readily copy, or imitate, whatever they hear. Hence, the great importance of putting them out to a good "preparatory school." Train them up in the way they should go, and you will find that the saying of the "Wise Man," applies even to the feathered race. I am indeed amazed to think, how *very* ignorant we remain in things that ought now to be universally understood! *William Kidd, New Road, Hammersmith.*

* My readers will remember, that in No. XXIII. I cautioned them emphatically against buying birds of *any* kind from people in the street. The necessity for this has just received an additional confirmation. In *Bell's Messenger* of April 5, we read as follows:—"A lady in Liverpool has just purchased, for 5*s.*, *from a man in the street*, 'a sweet little cock canary, with tail feathers radiated like a fan; and of such a deep orange colour!' On examination, however, it proved that the 'cock canary' was a *hen-sparrow*, dyed with saffron, and that its tail feathers were *starched* and *curled!!*"

## NOTES OF A TRAVELLER.—No. XVI.

CHINESE AZALEAS AND AZALEA GARDENS.—Adjoining the Azalea grounds described in my last letter, as being five miles north of Shanghae, is another nursery, which contains a collection of plants very similar to those mentioned at page 5 of the current volume. One plant, however, was in bloom here at the time of my visit, which I must notice. It was a specimen of Glycine sinensis, in a dwarfed state, growing in a pot. The tree was evidently aged, from the size of its stem. It was about 6 feet high, the branches came out from the stem in a regular and symmetrical manner, and it had all the appearance of a tree in miniature. Every one of these branches was now loaded with long racemes of pendulous lilac blossoms. These hung down from the horizontal branches, and gave the whole the appearance of a floral fountain.

There are some more Azalea gardens to the eastward of Shanghae, which I also visited, but as they are much like those just noticed, I shall not describe them here. In all these gardens, the Azalea is propagated readily and extensively. Layering is the common method employed, but grafting and striking from cuttings are also resorted to with success. During the hot summer months, both young and old plants are shaded from the mid-day sun. Most of these new kinds which I have been describing flower early, that is, in March and April; the section to which the A. variegata belongs flowers in May. After the flowering season has passed, the weather is generally moist, owing to a change in the monsoon. It is at this period that the plants grow most luxuriantly, and form their young wood, and this growth is completed and the wood ripened during the fine summer and autumn which follow. These northern Azaleas are exposed to severe colds during the winter. At this season the thermometer (Fahr.) often sinks to within a few degrees of zero, and the weather is not unlike that which we have in England.

The Azalea is indigenous to China, and is found wild on every hill side, like the Heath of our own country. About Hong-Kong and Canton it is only found in a wild state high up on the sides of the mountains, from 1000 to 2000 feet above the level of the sea. In latitude 25° north, in the province of Fokien, it is met with in less elevated situations, that is, from 500 to 1000 feet high; and when we reach Chusan, in latitude 30° north, we find it growing plentifully on the lower sides of all the hills, and never, or at least rarely, at a high elevation. We thus see how plants, which are naturally fitted for the temperature of one part of the globe, can accommodate themselves to another by choosing a higher or lower situation on the hills.

Although this genus is thus found spreading itself over a vast tract of country, yet the northern parts just indicated are evidently those in which it is most at home. All who have been in the island of Chusan, remember how beautiful the hill sides and woods were in the months of April and May, when the Azaleas were in bloom. Every hill was a garden gay with flowers, planted and reared by the hand of Nature herself. Before I saw these hills, I thought nothing could be more magnificent than those gorgeous displays of Azaleas at our flower-shows, and certainly, if we look merely at individual specimens, many of those reared by the skill of English gardeners surpass those which we find in a state of nature. But Nature plants and rears with no sparing hand; her colours are clear and brilliant, and she is not confined to greenhouses and

flower-tents in which to display her productions, but scatters them with wild profusion over the sides of the hills. It is here that she is inimitable, and it is thus she produces effects which, once seen, can never be forgotten. *R. F.*

## FOREIGN GARDEN GLEANINGS.

Imperial Botanic Garden in the Apothecaries' Island.—This garden was founded in 1714, by Peter the Great, and is now under the joint superintendence of MM. Fischer and Naunnenbourg. Some idea may be formed of the large scale on which operations are conducted in this place, when we state that 50 or 60 men are kept in constant employ, and that in his catalogue for 1846 M. Fischer gave a list of no less than 3300 plants, which he proposed for exchange.

The hothouses, constructed on the best principles, cover a surface of 3000 yards in length. Amongst them that containing the Camellias, is worthy of especial notice. The Camellias which are 8 or 10 yards high, are planted in the open ground, and have the appearance of a Japanese forest; other houses contain plants from North America, Nepaul, Japan, all in great variety. Here are the two largest specimens of Rhododendron arboreum in Europe; some large specimens of Tea plants, Proteads, from New Holland and the Cape, and some enormous Leguminous plants.

Another house is full of seeds of Protea, Banksia and Dryandra, from which some interesting varieties may be expected. The Cape Heath house is well worthy of notice for the great number and beauty of the plants it contains. Another house not less beautiful, 50 yards long, and perfectly heated by a thermosiphon with copper tubes, contains a magnificent collection of Orchids; here we find specimens of Cattleya, Dendrobium, Oncidium sanguineum, Stanhopea tigrina, speciosa, and, lastly, of Epidendrum aromaticum (Vanilla planifolia), which fruited in 1847, for the first time, in Russia, since its importation into Europe; its pŏds were, when we saw them, from 4½ to 6 inches in length. The flowers were set by M. Fischer in the way commonly followed in the gardens of western Europe.

After the Orchids comes the compartment reserved for tropical Ferns, amongst which are some fine specimens. On the same level, and in the same temperature, are the South American Cacti, and a good collection of Agaves, some of which are very rare.

The tropical plants of Java, Madagascar, the Indies, China, Japan, and Nepaul, occupy numerous large houses, and are remarkable for their height, vegetation, and abundance of flowers. The botanic garden contains a collection of Conifers, richer and more beautiful than that at Paris, although at St. Petersburgh many which we cultivate in the open air are there of necessity under cover.

It may be as well to state here that there is always in Russia adjoining every hothouse a dark well closed wooden gallery, called the cold house. This gallery serves to shelter many plants with deciduous leaves, such as Italian Poplars, Horse Chestnuts, several species of Oak, Walnuts, Locust trees, Brooms, Jasmines, Maples, some species of Cytisus, and especially Roses and Honeysuckles.

But we must now turn to the finest house in the whole garden. This house or rather glass palace was begun in 1845, and finished in 1847; it is supported by a strong frame-work, which abuts towards the north on an immense wall destined to shelter it from the wind; its interior is supported by 18 columns; its length is 125 yards, its height 25, and its breadth 33. Its roof is curved so as to admit as much solar heat as possible, and all the iron beams are enclosed in wood, in order that they may be protected from moisture. In the inside is first seen the ground crossed by a winding path in the English style; here are the Palms and large exotics, including magnificent specimens of Sapotads, tropical fruit trees, Dracæna, Fan Palm, Elate, Caryota, Astrapæa, Eugenia, Pandanus, Strelitzia augusta, Musa, Carolinea, and Cycas. A wall five yards in height supports a terrace seven yards broad, partly open, and on which are placed the tropical plants of middling height. Two staircases lead from this terrace to a gallery supported by the 18 columns, and 10 yards above the floor of the house. A few yards higher still is another gallery, in which are placed those plants which require most heat, and from which the tops of the lower plants can be got at and taken care of. From this spot the *coup d'œil* is charming, for below are the finest specimens of the whole vegetable kingdom, and the climbers which seem to flee from the feet of the spectator, descend in every variety of form, and enrich with their gorgeous foliage every part of the vast space below. Above this gallery there is yet a third, used for repairing the roof, and from which a fine view of St. Petersburgh can be obtained.

Such is a slight account of this lovely garden, which is used both for study and and amusement, containing as it does, many water-falls and other objects which please the eye and captivate the visitor. *Masson's Report.*

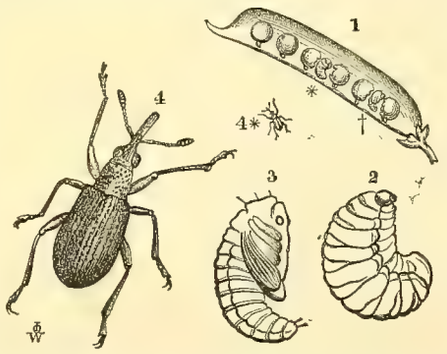
## ENTOMOLOGY.

### The Pear-shaped Weevils.—No. I.

There is probably no family of insects more numerous, not only in species but in individuals of particular species, or more widely dispersed, than the snout-bearing beetles, to which Linnæus gave the generic name of Curculio, but which now constitute a distinct section, Rhynchophora, or as it is rather considered by some authors a great family, Curculionidæ. They are at once distinguished by having the front of the head produced into a horny cylindrical snout, varying in length and thickness in the different genera, with the mouth at its extremity, the antennæ being generally short, clubbed at the tip, and often elbowed in the middle. Of the extent of the family some idea may be obtained when it is stated that M. Schönherr, the Swedish entomologist recently deceased, published a work of upwards 7000 octavo pages, containing descriptions of the various species, European and exotic, and that additional species are constantly being added to our collections. When it is further added that all these insects are plant feeders, it must be evident that they possess much interest for the botanist and horticulturist.

The history of several obnoxious British species of weevils have already been given in our pages; amongst which we may mention the Pea weevils (*Gard. Chron.*, 1844, p. 388); the Spruce-Fir weevil, Hylobius abietis (*Gard. Chron.*, 1845, p. 456); the red-legged garden weevil, Otiorhynchus tenebricosus (*Gard. Chron.*, 1843, p. 316); and the Vine weevils, Otiorhynchus sulcatus and picipes (*Gard. Chron.*, 1841, p. 292), all of which belong to the short-snouted section. And also the nut weevil, Balaninus nucum (*Gard. Chron.*, 1842, p. 108); the Apple-blossom weevil, Anthonomus pomorum (*Gard. Chron.*, 1844, p. 556); and the corn weevil, or *the weevil, par excellence*, Calandra granaria (*Gard. Chron.*, 1843, p. 907); all of which have an elongated snout.

There is one genus of these insects which contains as many as 70 British species, distinguished by their very small size, the Pear-shaped form of their bodies, caused by the gradual narrowing of the thorax and snout (which is stretched forwards and slightly curved), and by the antennæ not being elbowed in the middle. From their resembance to a Pear in miniature, they have been generically termed Apion; and amongst the species of which the genus is composed are several which are obnoxious to the horticulturist, the larvæ or grubs feeding upon the flowers or seeds, and the weevils themselves upon the leaves of different plants.




Apion malvæ, malvarum, rufirostre, radiolum, oxurum, and æneum, are found in the perfect state upon the different kinds of Mallows, the leaves of which they riddle into holes. One of these species, A. radiolum, is very common in my garden at Hammersmith, where it attacks the Hollyhock (thus proving the natural relationship of the Mallows and Hollyhocks), although a field close at hand is covered with the common Malva sylvestris. Here, therefore, we have an indigenous insect preferring an exotic plant, a circumstance of some interest, as several of our British insects have been regarded as exotic introduced species, because they have been found upon exotic introduced plants. A. radiolum, however, not only eats the leaves of the Hollyhock, but undergoes its transformations in considerable numbers in its stem, arriving at the perfect state in October. Of course the burrows formed within the pithy stem of the plant by the larvæ must be injurious to the plant, and prevent it from producing such fine flowers as it would do if not thus attacked.

Apion melanopum, Spartii and immune, attack the Broom; Apion violaceum, hydrolapathi and rumicis, frequent various species of Rumex; Apion sulcifrons and subsulcatum are found on the Vicia sepium; and Apion viciæ and A. craccæ in the flowers and seeds of Vicia cracca. De Geer (Mémoires vol. v., p. 368, pl. 6, figs. 31—36) has given a short account of the transformations of A. craccæ, the larvæ of which he found feeding upon the seeds within the pods of the last-mentioned plant in July. In the following May he found a dead Apion in one of the pods.

The genus, indeed, appears to possess a decided partiality for Papilionaceous plants; thus Apion vicinum and Loti frequent the Lotus corniculatus; Apion Astragali, the Astragalus glycyphyllus; whilst Lathyrus pratensis is attacked by Apion ervi, lathyri, and subulatum. In the month of August last we received from a correspondent, "Chirurgicus," some pods of the last-named plant, almost every one of which contained one or more small white transparent-skinned, thick, fleshy larvæ, having the body curved, with a small dark brown head. Our correspondent observes, that the depredator had eaten a large hole through the testa, to form a snug cavern for itself. In the seeds of this plant he had failed to discover the perfect insect, the larva apparently escaping from the pod previously to its change, as he had opened many pods and found the seeds eaten, and a considerable hole in the ripe shell. On opening one of the pods, however, I detected the larva feeding leisurely on a couple of the seeds, between which it was lodged, while between the two adjacent seeds I found a pupa, so that it is evident that in this latter case, at least, the insect would not have made its escape from the pod until the following spring, after it had arrived at the perfect state. Our woodcut represents the pod opened (fig. 1.), with the position of the larva indicated by a *, and that of the pupa by a †. The larva itself is magnified in figure 2, and the pupa in figure 3. And although I have not succeeded in rearing the perfect insect, and am consequently unable to decide as to which of the three species above-named, these are the preparatory stages, I have given in figure 4 a representation of the Apion Lathyri, in order to afford a general idea of the appearance of the perfect insects of the genus, and which indeed may possibly be the insect which had attacked these plants.

The perfect insect is one-eighth of an inch long (fig. 4 *), of a black colour, slightly clothed with short whitish hairs; the snout is rather short, the antennæ are entirely of a pale reddish colour; the thorax has an impressed dot behind in the male, and a longitudinal impressed line down the back in the female, and the elytra are rather subglobose in form, with punctured furrows. *J. O. W.*

## Home Correspondence.

*A Garden of Bulbs.*— How universally everybody, even persons comparatively indifferent to gardens, admire the flowers of all bulbous-rooted plants; yet how few gardens among those in the highest keeping make them form anything like a conspicuous feature in the general arrangement. How this happens I know not, nor can I imagine, because the temptation is great; for be it known, that from February to July, aye, even to September, there may be kept up a continual succession of the most neat and lovely, as well as the most gorgeous bloom, according to the taste of the gardener; not that I would recommend an entire reliance on bulbs, for there are many perennials of quite another class, that would wonderfully aid the general effect, and they might be so contrived as to supply those colours which may be most efficient at particular seasons. I am an advocate for bulbs upon the same principle that I am for perennials, apart from their great beauty; that is, for the little trouble they give one. For the most part they need only be disturbed once in three years, and then only because the increase is so great that they want thinning, so also does a perennial; indeed so do most perennials, for they spread their roots in three years into large patches, and require to be parted, or they become uncouth. I have a bulb border; I cannot call it a bulb garden, but it completely eclipsed all the rest of my garden, until, with the increase in the third year, I was enabled to make bulbs a very important feature in the general arrangement, but I will confine my remarks to the bulb border; and although I write from memory and far from home, I will endeavour to convey an idea of its plan, arrangement, and effect. In February and March, the principal subjects are the Snowdrop, the early Daffodils, the brilliant Scilla sibirica, and the Crocus, of which there are several varieties; then I have the white of the Snowdrop, the yellow of the Daffodils, the bright blue of the Scilla, and among the Crocuses the dark purple, the white, the striped, and the golden yellow. Here, then, is but one leading colour deficient; but there are dwarf trees of the Pyrus japonica upon the wall, and they, from Christmas to the end of spring, furnish a great abundance of red. But before my favourite bulbs already mentioned decline, I have early Tulips of many colours—the first of which show their colours before the Crocuses depart, and Hyacinths of many shades in blue, red, and an apology for yellow, and after this the late varieties of the so called early Tulips and the later Hyacinths and the Narcissus tribe assisting them, keep up a complete gallery of beauty all the month of April and part of May. The Iris family, which is immensely extensive, begin to help me, and the late Tulips take their full share of decoration until the Iris become numerous and various, when the Lilies render great service, and continue, with some of these species, to enliven the borders to about the end of summer. Now, during all these months very little aid is required to keep up a full bloom, and I have not once contemplated disturbing the ground, except by hoeing carefully, to destroy weeds, nor do bulbs require watering. I do not conceal the fact that I was a considerable time before I could please myself with the arrangement to keep something like a uniform quantity of flowers always on the border, for it was only 4 feet wide, but I derived infinite pleasure from the changes I made from year to year, and I will also confess that now that I have distributed bulbs moderately in the general borders, I am better pleased with the other part of the garden than with the border dependent on bulbs, except so far as it interests me as an experiment; for they are brilliant additions in early spring, and greatly assist the general effect all the year. At times the bulb border is almost too dazzling, yet I am convinced that I shall in time so regulate it as to secure a good bloom nearly the whole year; at the fall, I now have, to succeed everything, the autumnal Crocuses in variety, and the (so called for many years) Amaryllis lutea, so that there is a fair struggle to keep up the flowers up to winter. My greatest trouble is in keeping the border neat as the various bulbs go out of bloom; but as fast as the stems or leaves turn yellow I shorten them to the part that is a good colour, and thus manage pretty well. I would not go so far as to recommend everybody to try a border of bulbs, but I would

seriously advise them to have in all the borders a few patches (for all bulbs look best in patches), of Snowdrops, Crocuses, Scilla sibirica, and the earliest Daffodils in sixes. A few patches of Hyacinths in threes, early Tulips the same; if these several patches were 10 yards apart they would still do wonders in "lighting up" the garden as it were. I have patches of dwarf bulbs, 6 feet apart all along my border, but as I give all of them fair play, the patches of each family are a considerable distance from each other; all these are within six or nine inches of the edging. Half way between them I have patches of taller bulbs, Iris, Lilies, &c., but I only plant these patches 12 feet apart, so that they come in the centre, but further back between every alternate two of the dwarfs. I may be a little particular, but I place the same kind in all cases opposite each other. I have strongly recommended one of the great importers of bulbs to make out his catalogue for next season, with the names of all bulbs flowering in the particular months, so that a tyro may order exactly what he wishes. There are many bulbs of great interest, but little known by their names; and London seedsmen are generally unable to inform us anything about them; but a descriptive list, with the heights, colours, season of planting, season of bloom, would be valuable. The principal points that require attention in the culture of bulbs are—1st, to have the ground well drained; 2d, to have the soil rich and light; 3d, to plant them before they make the least effort to grow; 4th, not to take them up until the leaves have died down; lastly, while they are out of ground, to protect them against heat, frost, and damp. I feel assured that if those who do not make bulbs a feature in the gardens will but try the effects of a few Hyacinths, a few Crocuses, a few Scilla sibirica, and a few early Tulips, they will very soon desire to add to their list of bulbs. *E. Mordan, St. Dunstanford, N.B.*

*The Chrysanthemum a Spring Flower* (see p. 214).—The plants whose blooms you were good enough to approve of last week were treated as follows, in a few words, for nothing could be much more simple than the actual cultivation. Towards the end of their flowering, and when they began to throw up their new wood, instead of turning them out into a cold frame, I quietly put them into the stove and there kept them from that moment to this. This is the only witchcraft I have used. I may remark that the plants were late and ill bloomed. Two plants only were experimented on, but both succeeded, No. 2 being so very ugly I did not send a bloom. There is a peculiar look of hard dry health about them not easily described, but which you do not see in plants bloomed in our damp autumns. There is not a dead leaf from top to bottom, and fresh budblossoms and blooming wood are being thrown up daily, as if the plant never would leave off. It always seemed odd to me that this plant should be 10 months, more or less, preparing to flower. *Micklewell.*

*The Spanish Chestnut.*—You desire more particulars relative to the merits and demerits of this Chestnut, and you enquire at what age the tree first becomes "shaky;" but I am afraid no definite answer can be given to that question, because amongst the class best qualified by practical experience to give the necessary information, size of tree, and not age, is the criterion by which they are guided. Having been practically employed in the cutting up of timber for several years, as well as in the purchase and sale of it, I need hardly mention that the size of the tree, combined with its other properties, regulates its value, and not its age; however much the latter may be interesting to the man of science, the man of axes and saws can form an opinion of more value to the mercantile world than the philosopher, as to the relative qualities of different trees of the same species. But this is the most deceptive subject that he has to deal with, no outward signs being visible of the mischief which lies within. I have seen young healthy looking trees, with a smooth shiny bark, turn out sadly shaken for a considerable length of the bole, not in concentric rings only, but transversely also to those rings; while, on the other hand, I have seen trees of 50 cubic feet and upwards cut up pretty sound, but the latter are exceptions; not one in a hundred attain that size, and retain their form unimpaired. It is impossible to say at what size they become unsound, as, like many other evils, it comes on by degrees; generally, trees containing less than 20 cubic feet of timber, are tolerably sound, but from that size up to 30 feet the mischief increases very much, leaving hardly one tree in ten free from it at that size, while larger trees are still worse; a sheltered or exposed situation does not seem to affect them; the evil is purely constitutional, and to all appearances not likely to yield to any artificial treatment. When a tree of no great size is wanted for a purpose that requires its full dimensions, or nearly so, as a gate-post, for instance, I entertain no doubt that it will be found equally as durable as Oak, and in every respect as efficient; it is when the saw passes up its centre, or cuts it into smaller portions, that its defects become so apparent; splinters of great length rise up or come off, and the whole, when put to any distressing service, is very likely to give way. It is a matter of regret that such should be the case, for I have no doubt that the timber is, in all other respects, equal to Oak, and it may perhaps even exceed that useful tree in durability, but this I leave others to prove, and content myself by remarking, that the defects mentioned above are such as to place it full 30 per cent. below the value of Oak in a mercantile point of view, and that fact ought to have some weight with planters. *An Old Sawyer.*

*Adamia versicolor.*—People complain that this Adamia does not flower freely. Plants of it treated in the following manner will, I have no doubt, prove satisfactory. Put in cuttings in the beginning of February as soon as they are struck; pot them off into 3-inch pots in a compost of equal parts marl, loam, leaf-mould, and peat, mixed with a little silver sand; place the pots in a Cucumber frame, or a similar situation, for a few days, until the plants have become established, and then remove them to an intermediate house, which I find suits them best; shift them into larger pots as they require it, which will be found to be pretty often during summer, and finally place them in their flowering pots about the end of August. If they have been grown well they will require 11-inch pots at this shift, to make the plants bushy. Moreover, the ends of the shoots may be pinched out two or three times in the course of the summer, but not later than the end of August. After they have had their last shift, place them on an airy shelf in the greenhouse for a month or six weeks; then remove them to the intermediate house, keeping them rather short of water for a time, in order to give them a partial rest. When they begin to grow again, water plentifully, sometimes using weak liquid manure. They will flower in the end of March, and will continue in beauty some time. Cuttings are easily struck in heat under a bell-glass. It is a comparatively new plant, which, in my opinion, is its only recommendation. *J. L. M., Bentham Hill, Tonbridge Wells, March* 27.

*Protection of Rhubarb.*—The advantages of covering Rhubarb with straw, not only to render it more tender in the flesh, but to keep the leaf small, were strikingly exemplified last Monday morning, when the frost took no effect whatever on that protected, while many of the stalks that were exposed burst, and were destroyed; and if the sun had shone strongly, the damage done would have been great. The Plum trees in blossom had all their blooms destroyed by the frost, which must have been severe at about five in the morning. Straw is cheap, and serves three excellent purposes; first, it preserves the Rhubarb from frost, &c.; secondly, it may be used afterwards for Strawberries; thirdly, for manure and for clayey soils it is the best material, for every straw makes a drain before and after it rots. *James Cuthill, Camberwell, London.*

*The Turkey Oak.*—The information that my inquiry with reference to the Spanish Chestnut has elicited, will, I presume, discourage the planting it with a view to its timber: but there was another tree that was adverted to in that inquiry, of which it is also I conceive very desirable to ascertain the quality of the timber: I mean that commonly known as the Turkey Oak (Quercus Cerris) which of late years has been extensively planted, as well on account of its beauty, as its quick growth in soils where the common Oak makes slow progress. There must I imagine be trees of that sort in the country of sufficient age for the testing of their qualities, (indeed I have seen such myself), and if any of your correspondents can furnish information on the subject, they would I conceive be rendering service; I had some conversation, long ago, with the late Mr. Atkinson (whose judgment and taste as a planter, as well as an architect was good), respecting the different sorts of Oak, and my impresion is, that he was inclined to think that it was not merely as an ornamental tree that the Turkey variety was likely to prove valuable. *W. H. April 9th.* [Mr. Atkinson's opinion was, that the wood was excellent for in-door work. We rather think some drawing-room doors were made from it at Penshanger.]

*Deodars.*—I send with this a branch cut from one of the Deodars, about which I asked your advice a few weeks ago. You will perceive how very densely covered it is with foliage; this branch is characteristic of the whole tree. There is no want of vigour, but it has not taken the direction I hoped. In answer to your correspondents, "Pinus Hibernicus," and "H. C.," to whom I am much obliged for their opinions, on the treatment my trees require, I beg to say that the trees are planted in an old garden, still under partial cultivation; but there are no trees of any size or sort near the Deodars. I have submitted some of the Deodars to the ordeal "H. C." and you recommend, as I understood you, for I interpreted your advice to be to thin out the branches, not to cut down the trees. Your expression was, "cut out;" my first impression was, that the fault lay in the richness of the soil; but I have not found that other Pinus have disliked it; it may not, however, suit the Deodar. I hope to report next year the result of the very free use which has now been made of the knife. *J. H.* [Our meaning was to cut down; the specimen seemed to be out of condition, but it bore no evidence of what ailed it.]

*Studs.*—If "A Lady" (see page 216), wishes to become acquainted with the system of "studding walls," with a view to its adoption, allow me to acquaint her that I have been informed, upon good authority, that it was done away with in one of the first places in the United Kingdom, in consequence of the "studs" being found difficult to employ without injury to the trees. *J. T., Bedford, April* 8.

*Oak Wood and Bark.*—I read a request a little time ago in your paper, that some correspondent would publish what the price of Oak wood and bark was last year, and what they were likely to fetch this season. From inquiries in this neighbourhood, I find that the average price of Oak timber of a good size was 2*s.* 6*d.* per foot, and bark 3*l.* 10*s.* per ton, and I think the same prices are likely to be got this season. *A., Peterborough.*

*Stove Aquatics* (see p. 214).—In fact, there is Caspius, and rarely Caspiacus, but never Caspicus. The reason I believe is, that the adjective Caspicum is formed on another adjective, not on a substantive. Indicus is from the substantive India. But there is no substantive Caspia, only Mare Caspium. I think Caspicum is as good as Virginicum, which should rather be Virginianum. *A. H.*

*Size of Conifers.*—The following are accurate measurements of a Deodar growing here: Height, 15 feet; girth of stem, at 3 feet from the ground, 13 inches; lateral branches, at 2 feet, 5 feet 9 inches long; at 4 feet, 5 feet 6 inches long; and at 8 feet, 4 feet 3 inches long. The tree is well furnished with branches on all sides. It has been planted eight years, and it was 4 feet high when it was planted. The soil consists of about 8 inches deep of common garden mould on strong clay. The stem is as straight as a walking stick; it has lost its leader twice, through, I believe, some heavy bird perching upon it, and on both occasions it has been replaced by a lateral, which answers as well as the leader, and from which, in a short time, it is undistinguishable. *G. Taber, gardener, Braxted-park, Witham, Essex, April* 9.

*Seakale.*—In reading your "Calendar of Operations," (from which I get many useful hints) of the 5th of April, I was struck with the following advice: "A succession of Seakale should be brought into the Mushroom shed, or frames, to keep up the supply." I have not required any artificial means for forcing Seakale since the middle of February. In May, 1850, I trenched a piece of ground 2 feet deep, marked out the rows, three in number, 3 feet apart, placed in the centre of each row about 2 inches of rotten dung, covered it with fresh mould, 4 inches thick, and sowed Seakale seed immediately, which grew very strongly during the summer. I covered it about 15 inches deep, in January, with turf mould, from the turf house; and since the middle of February, I have cut a great quantity of most excellent Seakale, without any covering whatever, except turf mould; which I have found, ever since I came to Ireland, to be of great service in gardening, especially in covering Seakale, Rhubarb, protecting plants from frost, &c. *A. Matthew, Moore Abbey, Monasterevan, April* 8.

*Coronilla glauca.*—This, although nearly, if not altogether, hardy, well deserves attention as a winter flowering pot plant. It is not very showy, its colour being a somewhat faint yellow, but it flowers abundantly from any time in the autumn at which it may be wanted, until its services are superseded by the ingress of more gaudy subjects in spring. Its pale green foliage, too, contrasts well with the dark broad leaves of the Camellia. Its great recommendation is, however, the long period in which it remains in full floral beauty, and that during a season when flowers are scarce. I know, indeed, of no plant which equals it in this particular; and I think that this alone affords a sufficient reason for our not altogether turning it out of doors. It is very easily managed, requiring merely shelter to flower it abundantly during the dull months. Suppose we begin with small plants now. Shift them into pots two sizes larger than those they occupy. For soil, take one part turfy peat, one part turfy loam, and one decomposed cow-dung, to which add a portion of sharp sand; mix these intimately together, and use the compost in a rough state. Place the plants in the greenhouse, or in a close pit, and protect them from currents of cold air. You will soon find them disposed to grow vigorously; give them then more air, and, in order to induce them to become bushy, stop such shoots as are inclined to outstrip their neighbours. By the latter end of May you will probably find that roots are plentiful on the outside of the ball; and remember that it is a bad practice to allow the roots of anything to become matted before shifting; therefore, as soon as you discover that the plants have filled the soil with fibres, shift them. If tolerably well treated, they will fill 12-inch pots during the season, or they will flower very well in 9-inch pots; therefore regulate the shift by the size of plant you want; but recollect that the length of time during which they will continue in bloom greatly depends upon their having plenty of pot-room. In shifting, drain well, and use rough soil; and return the plants to their former situation for 10 days, in order to prevent the soil from becoming drenched by heavy rains, and to encourage the plants to push fresh roots. Afterwards, remove them to a warm place out of doors, but sheltered from the morning sun; here they may remain until the time for housing the greenhouse plants takes place, merely requiring to be attended to with water, and to have any rambling shoot which may appear pinched back. They will now be in a fit state for flowering, and may be removed to the greenhouse, or sitting-room window, where they will continue to display their little clusters of sweet-smelling Pea-blossoms all the winter. They require plenty of water at the roots, but dislike a damp atmosphere. When you are tired of them, slightly prune them in, and place them in a cool situation, supplying them rather sparingly with water for a time. When they begin to show a disposition to grow, water more liberally, and they will be the better for a shift into a larger-sized pot; but if that is inconvenient, feed them with manure water. When all danger of frost is over, remove them to their last year's station out of doors. You will find that young plants bloom more abundantly and remain longer in flower than old ones; hence it will be advisable to strike a few cuttings every third season. They root freely if placed under a glass, and kept in a rather cool place. *Amateur.*]

## Societies.

Entomological, *April* 7.—J. O. Westwood, Esq., F.L.S., President, in the Chair. Prof. Zetterstedt, of Lund, was elected one of the honorary foreign members of the Society, and four ordinary members were also balloted for, and elected. In addition to various entomological works presented to the library, a number of beautiful Lepidoptera were sent by Mrs. Vines and Mr. Douglas. Mr. Sam. Stevens exhibited a splendid specimen of Cocytia Durvillii, one of the most beautiful of the clear-winged Sphingidæ, from New Guinea; also a specimen of Gymnancyla canella, of which only a single specimen has been previously taken in this country; also specimens of the curious Dryophilus anobioides, which he had succeeded in rearing from the larva state. The President exhibited living specimens of the larvæ of Œstrus Tarandi (as well as of both sexes of the perfect insect), with which the rein-deer in the Zoological Society's Menagerie in the Regent's Park are at present affected, as many as from 50 to 100 individuals infesting a single animal. He also exhibited figures of the remarkable insect parasitic upon Fulgora candelaria, sent from China, by Mr. Bowring, and which, on examination, proves to be Lepidopterous, being the first instance in which an insect of that order has been proved to be parasitic on other insects. Mr. Maysmor sent specimens of the cocoons of Trichiosoma lucorum, found on Whitethorn hedges. Mr. F. Smith read an extract from Dickens' "Household Words," containing a notice of the remarkable habits of a trap-door-making bee, observed on the banks of the river Essequibo, in Guiana, together with a correspondence he had entered into with the author, explanatory of some portions of the history. He likewise read a notice of a remarkable social wasp's nest, recently presented to the British Museum, the covering, as well as the cells of which, instead of being formed of a papyraceous texture, were composed of particles of sandy loam; it contained six combs of cells, none of which, however, appeared to have yet been occupied by the larvæ. He considered it to have been formed by a wasp, allied to the genus Myrapetra. He also described the nest of another social wasp, Polistes Lanio of Fabricius, in some of the cells of which he had found the insect ready to emerge, whilst in another cell he had found a specimen of the singular Trigonalys bipustulata, a genus respecting the relations of which much uncertainty had hitherto prevailed. A note from Mr. Mackintosh was read relative to insects found impaled on Thorns, spines of Ulex, Araucaria, &c., mentioning several instances in which he had observed that the impalement was caused by the insects being driven violently by the wind against the points of the Thorns, and not by birds, as had been generally supposed. Mr. Spence communicated an extract from an American journal ("The Scientific American," vol. vi.), relative to the habits of the Cicada septendecim, a species which appears to have been satisfactorily ascertained to require 17 years previous to arriving at the perfect state.

National Floricultural, *April* 3.—Mr. Veitch, jun., in the Chair. Forty-four members were elected on this occasion; and the names of 48 more were placed on the lists for election. Large collections of seedlings and named varieties of Cinerarias were contributed by Messrs. Dobson, Smith, Lane, Keynes, Copeman, Henderson, Macintosh, Rogers, Layton, Ivery, Robinson, Gaines, and Parr; Pansies were furnished by Messrs. Bragg and Turner, and by the Rev. C. Fellowes, Norwich; Camellias, Geraniums, Polyanthuses, Auriculas, Hyacinths, Epacrises, Gloxinias, by Messrs. Story, Veitch, Turner, and Henderson; Azalea vittata, by Messrs. Standish and Noble; rosea striata by Mr. Wood. Rhododendrons were communicated by Messrs. E. G. Henderson, Nurserymen, St. John's Wood. The following awards were made: Certificate to a Cineraria, "Queen of Beauties," from Mr. Smith, Tollington Nursery, Islington; this was a white self, of great purity, good in habit and shape. Certificate to Cineraria, "Orpheus," from Mr. Ayres, of Blackheath; this was good in habit and general form; colour, lilac purple, with a light disk. Certificate to Rhododendron "Superbissimum album," from Mr. E. G. Henderson; this had a fine truss of blush white flowers, which were deeply spotted with dark crimson. Mr. Turner sent a promising Pansy, named "National," a white-ground variety. Mr. E. G. Henderson, Cineraria, "Loveliness," a good flower, as was likewise "Christabel," from the same establishment. Mr. Rogers, of Uttoxeter, forwarded "Lady of the Lake," Cineraria; promising, but insufficiently in flower. Mr. Story's Camellia, "Exquisite," had fallen entirely to pieces. Many written instructions were destroyed by using the paper on which they were written as the wrapper for tin and other boxes. Contributors should take care to avoid such errors. A Primula and Polyanthus, in a cut state, were contributed by Messrs. Chater. In addition to the group of Seedling Cinerarias, Mr. Ayres sent several named kinds, among which Madame Miellez, Blue Perfection, Electra, and Adela Villiers, were the most remarkable; also a fine specimen of Pelargonium Quercifolium coccineum.

Botanical, of London, *April* 4.—A. Henfrey, Esq., in the chair. Various donations were announced. The Rev. T. G. Carter, Mr. J. T. Syme, Mr. W. Gourlie, and Mr. P. F. Keir, were elected members. The Secretary exhibited specimens of Ranunculus trichophyllus (Chaix), collected by Mr. J. T. Syme at Dunsorpic Loch, Edinburgh, in June last; also specimens of Myosotis palustris, var. strigulosa (Reich.), collected by the same gentleman at Duddington Loch, Edinburgh, in August, 1850. Other interesting plants, which had been received from members and other botanists, for the ensuing distribution of duplicates, were also exhibited. The Secretary announced that the distribution of duplicates would take place this month.

Montreal Botanical.—This Society was formed on the 27th December last, for the purpose of mutual instruction in the science of botany, investigating the plants indigenous to the country, and the classification and examination of the fruits cultivated in Canada, &c. A library is in course of formation, to consist principally of botanical works, and also the best horticultural periodicals of the day. There are already over 40 members. The meetings are intended to be held weekly during the winter, and monthly throughout the summer, in the hall of the Lower Canada Agricultural Society; and from the success which has attended its operations during the few weeks which have elapsed since its formation, it is hoped that this association will do much to extend the knowledge of plants, as well as foster and encourage horticultural pursuits in this part of the world. The following articles have already been exhibited:—By Mr. Holder, from the greenhouse of J. Torrance, Esq., Leschenaultia formosa and Baxteri; Chinese Primrose, and a red variety of it, fine and well grown; Erica gracilis, Abutilon striatum, Ardisia crenulata, Begonia insignis, Corræa alba, Coronilla glauca, Daphne japonica, Cuphea platycentra, Linum trigynum, Salvia fulgens and leucantha, Malvaviscus mollis and Laurustinus, Camellia Donkelaarii, conspicua, Landwrethii, undulata, eximia, Wataught, Eclipse, double striped, and Wilderii, the latter a first-rate flower, but not superior, so far as observed, to undulata, imbricata, and other old sorts; Sparmannia africana, a handsome early-flowering shrub, with pinkish white blossoms; Magnolia grandiflora; Ficus elastica, or India-rubber plant; Habrothamnus elegans, Epacris impressa and Cooperii, Primula florepleno albo, new, and said to be the first specimen introduced into Canada; Acacia falcata, Chorozema nanum, and Polygala grandiflora.—By R. Norris, Esq., Araucaria imbricata, and Aucuba japonica, or Gold-dust Tree.—By Mr. Cooper, a Camellia, Marchioness of Exeter, and an Auricula.—By Mr. W. Smith, Cote-des-Neiges Village, near Montreal, a specimen, in full flower, of that fine shrub the Nerium oleander splendens, and two Waterloo Hyacinths, all grown in the windows of his house.—By Mr. Allan, from the greenhouse of the Hon. James Ferrier, nine varieties of Mesembryanthemum, including speciosum, candidum, coccineum, and blandum; Cotyledon orbiculata, Sempervivum arboreum; Crassula coccinea; Abutilon striatum and venosum; and Rochea falcata.—By Mr. Carroll, from the greenhouse of G. Desbarats, Esq., Cyclamen persicum odoratum, in full flower.—By the President, a collection of dried plants, including, amongst others, Acacia verticillata, nigricans, longifolia, pulchella, and decipiens; and Dais cotinifolia.—By Mr. Wilson, gr. to P. Holland, Esq., a fine collection of dried Cape Heaths, numbering 103 distinct varieties, all carefully named.—By Mr. Sprigings, from the grounds of H. Corse, Esq., Montreal, Apples; 1, Downton Pippin, winter; 2, White Spanish Rennet, fall; 3, Alfriston, winter, cooking; 4, Fameuse, fall; 5, Winter majetan, cooking; 6, Yellow Bellfleur, fine winter; 7, Ribston Pippin, fine winter, but inferior in flavour, as usual, to those raised in Britain; 8, Sam Young or Irish Russett, most excellent flavour, from November to February; 9, Pack Horse, large and beautiful, but a shy bearer, and scarcely worth cultivation here; 10, Kirk's Lord Nelson, inferior, soon grows mealy; 11, a new Seedling raised by Mr. Corse, winter, a good bearer; 12, Minshall's Crab, fall, very acid; 13, Flower of Kent, large and fine; 14, Nonpareil Russet, flavour first rate; 15, Cornish Aromatic, first quality; 16, Carroll's Seedling, an English Apple, large, a first-rate fruit in all respects, and a good bearer; 17, Hick's Fancy, a small Apple, with a sprightly sub-acid flavour; 18, Beauty of Kent, one of the best; 19, Orange Russeting, worthless; 20 and 21, two new Seedlings, about second-rate. Of the preceding, the Yellow Bellfleur was of excellent flavour, very little inferior to the Fameuse, and worthy of general cultivation. The Nonpareil Russet and Carroll's Seedling were considered two of the best. Mr. Sprigings also showed the following Pears:—1, Duchess de Mars, first-rate flavour, very prolific, and quite hardy (therefore valuable in this severe climate), tree small, slender, and branching, fruit keeps till new year; 2, Josephine, a small hardy Pear, but only second-rate; 3, an old winter French Pear from the Seminary Gardens, Montreal, large, and esteemed for cooking.—By Mr. Holder, from the garden of John Torrance, Esq., Fameuse, Pomme Gris, and two seedling Apples, one of them a fine-looking fruit, large and firm, of a dark red colour, with a high polish, said to be a heavy bearer, and a long keeper. The original tree is standing in the grounds of Mr. Torrance, and has been partly broken down by its abundant crops. The fruit was tasted, and found to be of good flavour; and from the account given of its cooking qualities, it will no doubt rank as a first-class kitchen Apple. The President, with the approbation of Mr. Torrance, named it after that gentleman's residence, "St. Antoine Hall." The Pomme Gris, shown by Mr. Holder, were compared with specimens brought forward by the President, and found to be very different, both in appearance and flavour; and it was stated by Mr. Steele, as his opinion, in which most of the members concurred, that there were two distinct varieties of this Apple, as he had seen them of quite a different character, on the same soil, in the grounds of W. Rodden, Esq. The Secretary exhibited specimens of the wood and foliage of the Balsam Spruce (Abies balsamifera); White Spruce (A. alba); Black Spruce (A. nigra); and the Pitch Pine (Pinus resinosa), formerly called P. rubra, and also sometimes known as the Red Pine. An interesting conversation ensued on the different species of Coniferæ. The President mentioned that the Red Spruce is rare, and is to be found in marshy ground at Three Rivers; that the Black Spruce was originally more common than it is now, having, on account of its value, been much cut down, and that the Pinus resinosa grows almost in pure sand. Whilst I write, the snow is still between 3 and 4 feet deep, and the present has been a most severe winter. Still, the large quantity of snow will prove a valuable covering for many of the tender plants.

## Garden Memoranda.

Ealing Park.—It may be interesting to the lovers of flowers to know that the Amherstia nobilis here has been in blossom ever since Christmas day, bearing a constant succession of beautiful inflorescence, and this day it has 43 flower-spikes upon it, the finest and most beautiful in colour it has yet produced. The foliage is nearly perfect, containing scarcely a burnt leaf; the plant has just had fresh soil put to the roots, and the enormous slate tub has been surrounded by fresh tan. The tree is nearly 14 feet high, and almost 90 feet in circumference round the branches. It is a mistake that it does not burn in its native country. Gentlemen who have known it in India state that they have seen its foliage nearly dried and shrivelled up at Calcutta, while the plant at the same time was covered with flowers. *April* 8.

Compton Verney, the Seat of Lord Willoughby de Broke.—A fine specimen of Dendrobium nobile is reported to be in flower here. It measures from the top of the plant to that of the basket in which it grows, 3 feet 6 inches; it is 12 feet in circumference, and has 37 flower stems, furnishing collectively nearly 1000 blossoms. The same gardens also contain a Begonia manicata, bearing 70 flower spikes. The plant is 5 feet 6 inches high, exclusive of the pot, and 12 feet in circumference. It was in blossom in the drawing-room (where it is now) last year from the first week in February until the first week in May. A Begonia hydrocotylefolia in the same collection is likewise stated to measure 12 feet in circumference, and to have 85 flower spikes on it, together with many more still coming up. *April* 5.

Tetton-house, Taunton.—There is now (April 7), in the garden here a scarlet Rhododendron with 1216 trusses of flowers on it. Each of the trusses consists of from 12 to 18 blossoms. The height of the tree is 9 feet, and the circumference 49 feet.

## Miscellaneous.

*Mr. Phillips' Fire Annihilator.*—A demonstration of the practical utility of this invention in extinguishing fire, took place at Mr. Johnson's Stone Wharf, Millbank, on the afternoon of Thursday last, when its efficiency was tested in three different ways; 1st. On a small wooden house filled with tarred shavings, and other inflammable materials; 2d. On a tank of tar 20 feet long, by 9 feet wide, containing 500 gallons; and lastly, in putting out fire in the hold of a vessel, after the combustible matters, with which it had been furnished, had caused the flames to ascend above the deck. The result of these several trials proved perfectly successful. In each case two No. 3 hand annhihilators were put in action, and the flames were almost instantaneously subdued, so that the efficacy of the contrivance in extinguishing flame, especially on the first outbreak of a fire, may be considered to be established.

*Peat Fuel and Charcoal.*—The following is a copy of Mr. Jasper Rogers' patent for making these. Mr. Rogers remarks, that the mode hitherto employed in preparing and drying peat, causes considerable loss of material from the cutters being obliged to pare off and lay aside the first spongy stratum, in order to obtain the succeeding strata, which are rich in organic matters, and of a consistency which allows of their being dried and formed into blocks; and also, from the friable nature of the peat when dried, which causes the edges, ends, and surfaces to powder away, and from what is termed "mull." To prevent this loss, it is proposed to partially dry the top stratum, by placing the pieces in pyramids on the ground, and mix it with "mull;" afterwards, to complete the drying, and to manufacture the compound into fuel or charcoal, as may be required. The compound is filled into a hopper, which supplies it to a horizontal pipe containing a screw-shaft. This pipe is placed in a hot-air chamber, and is heated by the products of combustion coming from a double furnace situate at the further end of the chamber, which is provided with a chimney about the centre of its length. The end of the pipe, opposite to the hopper, is contracted into the form of a cone, and made to take into a moveable gudgeon, which also sustains on the other side the contracted end of a second pipe, provided with a screw-shaft inside. The other end of the second pipe is also contracted. The two screw-shafts in both pipes are made to revolve by connection with some prime mover. The second pipe is partially immersed in cold water, but not deep enough to admit of water flowing in by the contracted openings at

the ends; and several minutely-divided streams of cold water are caused to fall on the top of this pipe, through perforations in a supply pipe. The effect of this arrangement is, that the compound is forced round and through (by the revolution of the screw-shaft) the first pipe, whereby it will be dried. It is next forced through the second pipe, and thereby cooled, without exposure to the atmosphere, which prevents all chance of its being oxidized. The double furnace is made with two sets of moveable fire-bars, one on each side, in order that the carbonised peat may be discharged into a wheelbarrow, and a fresh supply of peat substituted in one furnace, while the fire is still burning in the other. The carbonising chambers are made in the form of pyramids, mounted on wheels, to run in a tank underneath the flue. They are filled with peat, which is ignited and allowed to burn until carbonised, when water is admitted into the tank, and allowed to rise a short way up the sides of the chamber, sufficient to prevent the passage of air through the fire-bars, at bottom, to their contents. When the carbonisation is completed, the water is withdrawn, the chambers run out, the tank emptied, re-filled with peat, wheeled back into position, and the same process repeated. The drying apparatus and chambers are placed in a shed for protection from the weather. *The Architect.*

*Sale of Orchids.*—A small collection, just imported, was sold the other day, by Mr. Stevens, at the following prices:—The Paxton Dendrobe, from 1*l.* to 1*l.* 16*s.*; the Griffith ditto, from 13*s.* to 1*l.* 10*s.*; the Devonshire ditto, from 13*s.* to 1*l.* 16*s.*; the Cambridge ditto, from 1*l.* to 2*l.* 2*s.*; the Farmer ditto, from 10*s.* to 2*l.* 8*s.*; the Gibson, Dalhousie, and other sorts, from 10*s.* to 3*l.* 3*s.* A few fine plants of Saccolabium retusum, fetched from 3*l.* 3*s.* to 7*l.* 5*s.*—the highest price realised on the occasion. Other kinds of Orchids, consisting of Cœlogynes, Cymbidiums, Aerides, Acanthophippium, Camarotis, Phaius, a "yellow" Vanda, &c., fetched from 5*s.* to 30*s.* per lot, of which there were in all 213.

## Calendar of Operations.

*(For the ensuing week.)*

FORCING DEPARTMENT.

PINERIES.—As the season advances, the night temperature may be increased to from 60° to 65°; taking advantage of fine weather to close with a sun heat of from 90° to 95°, and syringing freely all except those plants which are in blossom, or on which the fruit is ripening. Let the state of the soil be frequently examined, to see that it is sufficiently moist beneath the surface, as the repeated syringings will cause a damp appearance, without penetrating sufficiently deep to moisten the whole. VINERIES.—Attend to disbudding, and the thinning of bunches and berries in the successional houses; and make use of the syringe no longer than it can be done with propriety. After the fruit is set, we seldom give more than one good syringing to remove the remains of the blossom, as it is liable to injure the bloom, if used after the berries have attained any size. PEACH-HOUSE.—Maintain a moderate temperature during dull weather, with a rather dry atmosphere. In damp weather it will be necessary to keep up the day temperature with fire heat; giving ample ventilation, to allow of the free egress of evaporated moisture. Keep the green fly in check by fumigating, if the ordinary syringing of the house prove insufficient. FIG-HOUSE.—Figs require an abundance of air, with free exposure to the light; and without these, a plentiful crop of good fruit need not be hoped for. A moist atmosphere, and a liberal supply of water to the roots, are also essential; and if the roots are confined within reasonable limits, every alternate watering during the swelling of the fruit should be of liquid manure. As the fruit begins to ripen, however, the atmosphere should be kept rather drier; and, in damp, dull weather, sufficient fire-heat should be used, to permit the superabundant vapour to escape. Let the later successions be brought on gradually at first, in a temperature by night of from 50° to 55°. MELON PITS.—Excessive moisture, during the setting of the fruit, must be carefully avoided; and, as it is an easy matter to thin them after all danger of damping is over, it is a good plan to allow more to set than will be ultimately wanted. Remove the blossoms as soon as they fade, and do not allow more males to expand than are required, as they tend to weaken the energies of the plants. Seeds of some of the best preserving varieties should now be sown. The adaptability of any kind for this purpose depends upon the colour of the flesh; the "Old Scarlet-fleshed Rock" and the "Dampsha" are those most generally approved of. The flesh of the latter is of a very deep green, and, besides answering for preserving purposes, it is very useful for dessert, more particularly so, as it is one of the latest and best keeping Melons we have seen. It keeps till Christmas.

FLOWER GARDEN AND SHRUBBERIES.

It is a good plan to sow Convolvulus major, Tropæolum canariense, and some other half-hardy climbing annuals, in a frame, in such a manner that they can be easily removed to their permanent situations, at the usual season. The best method is to lay some turves into a frame, with the grassy side downwards. After beating them till quite flat, the seeds should be pressed into the smooth surface 2 to 4 inches apart, and then covered with a little light soil. When ready for moving to the borders, cut the turves with an edging iron into small squares, containing one, two, or more plants in each. In this way they will experience little or no check, and will start into the new soil with much greater freedom than if they had been confined in pots. Sunflowers may be treated in the same way, as they do not like transplanting; and it is desirable to get them into flower as early as possible. As soon as the Primroses and others of the Polyanthus family have done blooming they should be removed from the beds of which they have lately been the ornament, that the ground may be prepared for the summer beauties. The plants which are taken up should be parted and planted in some nice loamy soil in the reserve garden, watered and shaded with evergreen branches till their roots are re-established. In this situation they will prepare themselves for a repetition of their duties next spring. Those who do not possess a stock of these useful plants cannot commence at a better time. Seeds should be sown in the reserve garden of Hollyhock, Dianthus, and other biennials; and also of perennials, especially of those kinds which flower the first season; some of the latter may be sown at once in favourable situations, where they may remain.

FLORISTS' FLOWERS.

No time should be lost with Carnations and Picotees. They ought all to be in their blooming-pots by the latter part of the week. Let the large pots be well drained; we generally place a small quantity of moss over the broken bricks, bones, or whatever we may use for drainage, with good effect; this prevents the soil from running down. If the compost has not been well looked to, as a precautionary measure we would advise a small piece of Potato inserted just below the soil for a few days; should there be a solitary wireworm, which has escaped the previous search, most likely it will eat its way into the Potato, in preference to the pith of the layer—in which case it will be a lucky escape for the amateur. Auriculas, in the south, will soon be in full bloom, and should be carefully shaded from the sun; be careful that they get no check at this critical period, give a tolerable supply of soft water, with plenty of air, to prevent their being drawn. Look well to the soil where Dahlias are to be grown; enrich it well with manure, and prepare everything for the plants when ready.

KITCHEN GARDEN.

Cardoon seeds should now be sown in 3-inch pots, two seeds in each, and plunged near the glass in a close cool frame; the advantages of this method of raising them, over sowing the seeds in the open air, is in the facility which the former affords at planting season; inasmuch as the plants can be arranged according to their sizes, and at the same time all blanks can be avoided. The old method involved considerable difficulty in earthing up, as it frequently happened that a very strong plant grew by the side of a very weak one, and to make the best of the former, the latter was inevitably buried. Parsley should be sown in drills about 12 inches apart, into which a few seeds should be dropped at intervals of 6 inches; the object in view being to remove all excepting the best plants in each patch, as soon as the curl is distinguishable. As those which are left increase in size, every alternate plant should be removed as they are wanted for use, and the ground forked between the remaining plants, to encourage their growth, and so to prevent their running to seed. Soot is a suitable manure for this herb, and is particularly useful in preventing or destroying the maggots, by which this plant is so liable to be attacked. Where there is a large quantity of the spring crop of Broccoli still unused, the late heads should be selected and laid in under the shade of a north wall; and to shorten the interval between the last of them and the earliest Cauliflowers, the latter should be stimulated by frequent applications of liquid manure.

HARDY FRUIT GARDEN.

After removing the superfluous shoots of Apricots, the remaining ones should be carefully examined, in search of the green caterpillar, which not only injures the leaves, but, by eating holes in the young fruit, causes it to gum and grow deformed, or to drop off before it is stoned. When the fruit is set, more is to be feared from their ravages than from either frosts or storms. The surest method of destroying these pests, is by gently pressing the leaves in which they are lodged between the thumb and finger, and afterwards washing the trees with clean water from the engine. It is an old adage, that prevention is better than cure, and to few things does it more truly apply than to the destruction of wasps. At this season, every existing wasp is about forming a nest; and if they are now destroyed, before they have had time to rear the first of their young ones, as a matter of course their innumerable progeny are destroyed along with them. Much loss of fruit will be prevented by offering a penny a head for every wasp caught before a certain date, from the 20th of May to the 1st of June, according to the locality. The distance must of course be limited; but as a large fruit garden is so great an attraction, a two mile circuit will not be too much, in a general way. The disbudding of Peach and Nectarine trees against flued walls should now be proceeded with, removing only a few at a time, and going over them at intervals of a week or 10 days, until all have been removed that are not required for laying in as bearing wood for next year, or for extending and maintaining the tree.

By some unaccountable mistake in last week's Calendar, "*Mitchell's* Prince Albert Rhubarb," was called "*Myatt's* Prince Albert."

State of the Weather near London, for the week ending April 10, 1851, as observed at the Horticultural Garden, Chiswick.

| April. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 4 | 3 | 30.100 | 30.025 | 53 | 26 | 39.5 | 46 | 45½ | N. | .00 |
| Satur.. 5 | 4 | 30.028 | 29.974 | 51 | 26 | 38.5 | 45 | 46 | N.E. | .01 |
| Sunday . 6 | 5 | 30.065 | 29.991 | 47 | 21 | 34.0 | 45 | 45½ | N.E. | .00 |
| Monday 7 | 6 | 30.055 | 30.002 | 45 | 37 | 43.0 | 44 | 45 | N.E. | .00 |
| Tues. .. 8 | 7 | 29.988 | 29.889 | 50 | 36 | 43.0 | 43 | 44½ | N.E. | .05 |
| Wed. .. 9 | 8 | 29.911 | 29.750 | 49 | 28 | 38.5 | 43½ | 44 | N. | .03 |
| Thurs.. 10 | 9 | 29.954 | 29.949 | 48 | 35 | 41.5 | 43 | 44 | N. | .02 |
| Average ... | | 30.014 | 29.941 | 49.6 | 29.8 | 39.7 | 44.2 | 44.9 | | .11 |

April 4—Fine; cloudy; clear; frosty.
— 5—Clear; fine; hazy; frosty.
— 6—Clear; cloudy; clear, with sharp frost at night.
— 7—Clear; cloudy and cold; overcast at night.
— 8—Cloudy and cold; showery; cloudy.
— 9—Cold rain; clear, with slight frost at night.
— 10—Fine; densely clouded; slight showers.
Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending April 18, 1851.

| April. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 12 | 55.5 | 35.5 | 46.9 | 11 | 0.12 in. | 7 | 4 | 1 | 1 | 1 | 5 | 6 | 1 |
| Mon 13 | 53.8 | 35.8 | 45 8 | 10 | 0.31 | 2 | 5 | — | 2 | 2 | 6 | 1 | 7 |
| Tues. 14 | 38.0 | 57.3 | 47 6 | 15 | 0.47 | 2 | 4 | 3 | 1 | 4 | 6 | 1 | 4 |
| Wed. 15 | 39.4 | 57.8 | 48.6 | 12 | 0.03 | 6 | 5 | 3 | 1 | 2 | 4 | 2 | 2 |
| Thurs. 16 | 36.9 | 56.3 | 46.6 | 12 | 0.32 | 6 | 5 | 3 | 2 | 2 | 4 | 1 | 5 |
| Friday 17 | 36.0 | 56.8 | 46.4 | 7 | 0.49 | 3 | 5 | 2 | 1 | 3 | 3 | 5 | 3 |
| Satur. 18 | 37.4 | 57.0 | 47.2 | 5 | 0.28 | 6 | 6 | 2 | 1 | 1 | 3 | 6 | 1 |

The highest temperature during the above period occurred on the 17th, 1844—therm. 71 deg.; and the lowest on the 16th, 1847—therm. 20 deg.

## Notices to Correspondents.

BACK NUMBERS: Full price will be given for No. 1, 1848; and No 1, 1848.

BOOKS: *T W G.* Beck's "Florist, Fruitist, and Garden Miscellany."—*P F L C.* M'Intosh's "Greenhouse, Hothouse, and Stove."‡

CALCEOLARIAS: *Mrs. M.* Kentish Hero, Sultan, and Atrofusca, are good kinds for bedding out.‡

COLUMBINE: *Sub.* Mr. Grigor, Nurseryman, Forres, N.B.

CLUB: *Old Sub.* We are not aware that liquid manure tends to increase the evil. The best remedy is to put wood-ashes in the holes along with the Cabbages, &c., at planting time.‡

CYRTOCERAS: *Sub.* You keep them too warm; that is the cause of their buds dropping.‡

FABIANA IMBRICATA: *Mrs. H.* It is hardy about London; but you had perhaps best treat it like a Heath. It may be propagated by cuttings.‡

GARDEN NETS: *B F.* Steep them in a tan-pit; that will give them a "darkish colour, as well as render them more durable."‡

GLASS: *Cartmel.* We should use rough plate. The other question next week ‡

HORTICULTURAL SOCIETY: *A Lady.* Each Fellow of this Society is able to introduce personally one friend, provided with the usual ticket, at half past 12 o'clock; or he may be represented by his wife or sister, provided she is furnished with an Admission Ticket, signed by the Fellow whom she represents. These are the only conditions under which the *entrée* can be gained.

LINUM FLAVUM: *James Charles.* This is an undershrub, and not a herbaceous plant, strictly speaking. But rules are drawn very tight when it is excluded from herbaceous plants if cultivated in this country. It is not a shrub—but, like all undershrubs, half-way between a herb and a bush. What will the committee call Mignonette? an annual? a perennial? a shrub? or what?

NAMES OF PLANTS: *E G* Some Acacia; we will tell you the specific name next week, if the plant has one.—We are still obliged, though most unwillingly, to beg *Redwood* and others to have patience till another week.—*H L.* Mormodes striatum. —*W B.* Akebia quinata.—*T P U.* The Moss called Bryum ligulatum—*Gallicus.* We do not recognise the variety. It looks like a morsel of the Irish Yew, starved in bad soil.—*Sub.* Cytisus canariensis; 2, C. microphyllus. Compare these with Genista tinctoria, and you will see the difference.

OLD PEAR TREES: *Surrey Clay.* You should give them some half rotten stable manure; loosen the border carefully; see that it is well drained; and then begin to renovate them by gradually removing the old shoots and spurs, and replacing them with young wood. It is too late to begin now. Get the border in order in the autumn, and then ask for further advice.

POTATOES: *R W.* Received, and will be noticed at the proper time.

SEAKALE: *A J B.* From what you state we should imagine that the roots are too old. You had better take them up, divide them, and replant them now, or procure fresh plants. Salt is a good manure for Seakale. Apply it after the plants have fairly started into growth.‡

SMYRNA CUCUMBER: *J S.* Al considerable seedsmen keep it.‡

STRAWBERRIES: *A B.* Next week.

TANNER'S BARK: *A Sub.* This is a stubborn, bad material. The best thing you can do is to char it, and then mix it with liquid manure.

TULIP BED: *J P.* We know of no catalogue that will yield you any assistance. You should read that part of our "Calendar of Operations" which relates to Tulips.‡

VERBENAS: *Warner.* Next week.

WALKS: *H B.* We never yet found anything effectual in removing weeds except manual labour. We, however, understand that a process has been discovered concerning which we are making inquiries, the result of which will be communicated in due time.

MISC: *White Rose.* Zinc coming in close contact with the roots of plants will be injurious to them, if it oxidises. The thread-like moss in your pond will not disappear so long as the water is stagnant, unless you cover it with a roof which will exclude light.—*A Lady.* Cold and damp have no doubt caused your Tom Thumb Geraniums to die off in the way you mention. You may divide your double Violets now. ‡

SEEDLING FLOWERS.

AMARYLLIS: *J G, Bath.* A noble dark red flower, with a stripe of white up the centre of each petal.*

AZALEA: *J G.* Apparently a nice variety.*

CINERARIAS: *S W.* Worthless.*—*J and H H, Cork.* Not equal to the kinds now in cultivation about London: 4 is the best.*—*W and D.* 7 is uncommon in colour, but much too small. Of the other three sorts, 13 is, perhaps, the best.*—*E J O J.* All worthless as show flowers.*—*A Kendall.* 1, white, edged with lilac; centre dark; petals broad, obtuse, of good substance, and well arranged; a large bold flower, and a good trusser. 2, purplish crimson self, with a somewhat pale centre; petals broad, and slightly cupped; a nice medium-sized flower. 3, violet purple, with a narrow ring of white surrounding a dark centre; striking and novel in appearance.*—*A V, Mid-Lothian.* White, edged with purple; centre dark; a large and very desirable variety. The mode of packing is excellent.*—*Peto.* All common, and, with the exception of 5, 6, and 9, scarcely worth cultivating.*

PRIMULA: *J C N.* Apparently an improvement on P. nivalis.*

RHODODENDRONS: *W B.* A very handsome truss forming a cone 5 inches wide at the base, and 5 inches in height. Colour white, tinged with pink, and spotted on the upper petals.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co, 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Houndsditch, London; and of all Agents. Price 6l. 10s. per ton, including bags delivered on the rail in Manchester.—Copies of Analysis and Testimonials forwarded post free on application. Agents wanted.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

TRUE YELLOW GLOBE MANGOLD WURZEL SEED, FROM SELECTED BULBS, in quantities of 20 lbs. and upwards, at 6d. per lb.; WHITE BELGIAN CARROT, 9d. per lb.; FRESH IMPORTED LUCERNE, 9d. per lb.; ASHCROFT SWEDE, 9d. per lb.; SKIRVING'S LIVERPOOL SWEDE, 8d. per lb.; DICKINSON'S IMPROVED ITALIAN RYE-GRASS, 7s. 6d. per bushel.

Carriage free to London, Bristol, Southampton, &c.

Address—JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

**The Agricultural Gazette.**

*SATURDAY, APRIL* 12, 1851.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, April 16—Agricultural Society of England.
THURSDAY, — 17—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 23—Agricultural Society of England.
THURSDAY, — 24—Agricultural Imp. Soc. of Ireland.

IT is generally admitted that Great Britain is peculiarly adapted for GREEN or FALLOW CROPS, yet their conversion to a profitable account is found to be the main difficulty under our system of large farms. In many districts Wheat, at one period, was only grown, when bare-fallowing was practised, but the tables are now turned and the index is almost pointing in the opposite direction; the circumstances which rendered cultivation under that system remunerative have passed away, and without some change in the management an alteration in contracts will take place. On the best descriptions of land, the actual rise or maintenance of rents, in spite of a decline in the prices of produce, has had more to do with the profitable disposal of the fallow crops, than with the greatly increased production of the grain crops. Whatever may be the number of bushels of Wheat on an acre that we may aim at, or be satisfied and contented with, its economic production will be closely connected with the profitable disposal of such crops as precede it. A maximum crop of Wheat may soon be reached, which in our climate may not be very safe to push beyond, but as the concentration of cultivation progresses, a wide and boundless field is held out to the husbandman in the variety of fallow crops which can be introduced into the rotation, and where he will find ample scope for skill and enterprise.

The interest and anxiety which are manifested at the present moment, in endeavours to extend the cultivation of Flax, are founded on the belief that this crop might, to a small extent, be introduced with advantage in our rotations, not to supersede grain crops, but only to intervene and assist in their successful culture. We are directed to look to Ireland, where, under its shade, *low* farming has flourished to an unparalleled condition; had it not been for the Potato and the Flax crops Irish farmers never had been able to pay such high rents with such a small produce of grain. These crops of themselves are by no means unsuited to the best systems of farming; but when either has been too much relied upon, great hindrance has arisen to the advancement of agriculture. The linen trade has occupied a very prominent branch in the industrial occupations of the inhabitants of the green isle, from time immemorial. At one period it was much more generally diffused over its surface than at the present day. In most districts the weavers were (and are so still) scattered over the country — when trade was dull they betook themselves to the labours of the field to gain a livelihood, but when it was brisk, more was gained at the loom, and, consequently, agriculture was then altogether neglected; a small plot of Flax was grown, and the manufacturing of the produce served to keep a man and his family employed throughout the year. The linen trade in Ireland has been subjected to many ups and downs, which totally overthrew it in some counties, but from which others recovered, and again pushed forward its cultivation under very different auspices. Previous to 1829, Flax was grown over the greater part of Ireland for domestic use, but Ulster and Connaught were the two provinces where the largest export trade was carried on. It is now almost extinct in the latter, and confined to the north of Ireland at the present day.

In 1829 mill-spun yarns were introduced into the Irish markets, and the same quantity and quality of some yarns for which the home spinners had been formerly getting 1s., was sold by the mill spinners for 5d.; under such fearful odds, in a trade where wages were already reduced to the lowest point possible, the spinning-wheel was at once doomed to oblivion, and this revolution in the manufacture completely paralysed the linen trade in Ireland. The introduction of large spinning factories in Belfast in 1830 had the effect of saving the cultivation of Flax in the north, as a market was got for the fibre, and the yarns were again distributed over the country amongst the weavers, to be converted into cloth. By-and-bye it was discovered that much of the fibre produced in Ireland was of a very superior description, and it soon found its way into the English towns, which were in possession of the spinning of fine yarns, and thus a good field was opened up for skill in the cultivation of Flax and its manufacture into fibre.

The Flax is principally cultivated by the small farmers in Ireland, who in many districts are well skilled in its growth and subsequent handling, and in this consists the whole profitableness of the crop. There is no other grown which varies so much in the value of the produce, and holds out more temptingly a premium for careful and intelligent management. Any one may satisfy himself of the enormous difference in the prices which the growers realize, by paying a visit to any of the weekly markets in the north of Ireland, such as Monaghan, Armagh, or Londonderry. One farmer will be selling his produce at 80l. per ton and upwards—he will talk of the times in hopeful terms, and he will without doubt be in a better position to sell his Wheat at present prices, than another who is only getting 28l. per ton; things are sure to be going hard with the latter—thus in the same market you will find very different statements from the growers concerning the utility and advantages of Flax culture, altogether depending on the management of the crop. The introduction of many of the proposed new methods for preparing Flax fibre will be of little service to the small farmers. It is their interest to keep the preparation of the Flax in their own hands.

The mill spinners have had much difficulty in obtaining a regular and liberal supply of Flax of the better qualities. Hitherto the finest Flax has been spun in England, while the coarser kinds have been wrought up in Scotland and Ireland. The two are quite different trades, and the machinery which will do for the one will not answer for the other. The medium price of the Baltic Flax that is at present spinning at Dundee, is only 35l. per ton, the very highest 45l. per ton—but the average price of Irish Flax in the country markets is about 56l. per ton, and some of it brings a very high figure. From this it is very evident that if Flax is to be raised in Britain, fine qualities must be the aim of the growers, as the same amount of labour will be expended whether the produce is good or bad. There is a pretty prevalent opinion at present, that inferior land might be very profitably turned to the cultivation of Flax; in fact, where cereal crops cannot be grown with advantage, it is still believed to be fit for Flax; it is no doubt a crop that will extract nourishment out of a soil, that has been exhausted by others—but it is not under such circumstances that any good results are to be looked for; on the contrary, quantity and quality of fibre (which are not inconsistent with each other) must be the aim and great object of growers; and this will only be obtained by sowing it on sound land and in good condition. In Ireland the best crops are got by sowing on a properly prepared stubble, which has been preceded by lea or a well manured green crop. The manure should not be applied in a moist climate to the crop, as the straw never obtains that rich mellow appearance which is a pretty good test of the quality of the fibre. In Belgium it is often liberally manured, but the greater amount of heat and light counteracts all tendency to a coarse and dull-coloured straw. In fine seasons, a fair quality of Flax may be got on improved bogs, but it is very uncertain, and much of the moorland in Ireland will be capable of growing only the coarsest qualities, until immense improvements are effected on the land. The same conditions of soil are required for Flax as to grow a fine quality of Oat straw; by early sowing on land in proper tilth, which is sound, and not over-rich with manure.

Flax might easily be *grown* to a considerable extent on large farms, but the difficulty is its management and conversion into fibre. Companies are already formed to prepare the straw for the farmers, upon what is known as SCHENCK'S process, which is a mere hastening of the old method, by slightly raising the temperature of the water, and promoting a rapid fermentation, which separates the fibre from the woody stem. The quality of the Flax produced is giving every satisfaction. This holds out some prospect of Flax cultivation being easily engrafted on our present systems; the only difficulty which will be encountered in the outset will be to apportion the value of the crop between the growers and the manufacturers of the fibre, which competition will only secure. Before this can be done, however, the grower would be much better to bargain for the crop before it is sown, than run the risk of not getting a fair price for it after it is grown, or a certain price might be fixed upon for dressing, at so much per stone.

But there is no doubt that it should be the business of the farmer to grow and prepare the Flax himself; the machinery for scutching and dressing might be easily attached to the steam or water power on many a farm. An increased amount of manual labour might be employed on the farm at seasons when it is difficult to find work for labourers, and this would be a valuable reserve to turn out to other operations which demanded despatch. If we were inclined to hazard an opinion, we would say that it is very probable that SCHENCK'S process will come into use where the crops are to be prepared on large farms. The process is exceedingly simple, and the skill would be as easily acquired to manage it, as under the old plan of steeping in pools. Mr. WARNES, of Norfolk, has shown the advantages of Flax culture on an extended scale, and the happy results which flow from it when skilfully carried out; he has demonstrated its successful cultivation in conjunction with all the improved practices of modern husbandry; it has not superseded any of the crops in the rotation, but only been the means of turning the others to a better account; some may do well, in the meantime, to raise a crop for others to prepare the fibre; but until it is manufactured on the farm, and the waste all carefully husbanded for manure, we question much if it will ever lead to such results as many imagine. Mr. WARNES has long been preaching to the nation in earnest strains as to the advantages of Flax culture, but he seems to have only recently got such an audience as are fully determined to sift the matter to the bottom. *R.*

# LIST OF ARTIFICIAL MANURES.

## PART I.—SUGGESTED ARTIFICIAL MANURES FOR SPECIAL CROPS.

| Crop to which the Manure is applied. | Name of Author. | Composition and Cost of the Manure, per acre. | Remarks. |
|---|---|---|---|
| Turnips. | Mr. Huxtable, Sutton Waldron, Shaftesbury, Wiltshire. | 30 bushels wood ashes ..... £0 15 0<br>2 cwt. Ichaboe guano ..... 0 15 0<br>50 lbs. of burnt bones, in 25 lbs. of sulphuric acid } 0 7 0<br>30 bushels sawdust ..... 0 2 6<br>10 lbs. sul. acid over ashes ... 0 1 3<br>£2 0 9 | By the help of this manure Mr. Huxtable raised 23¼ tons of clean roots (Swedes) "upon the most barren and unlikely land in Cranbourne Chase, and almost covered with white rubble, forming a portion of the upper chalk."—*Journ. Roy. Ag. Soc.*, vol. vi., p. 357. See also our *Table* 3. |
| Do. | Mr. Way, Chemist to the English Agricultural Chemistry Association. | 2 cwt. bones, and 1 cwt. sul. acid..... } £0 12 0<br>1 cwt. pearl ashes ..... 0 5 0<br>½ cwt. Epsom salts ..... 0 4 6<br>3 cwt. salt ..... 0 6 0<br>£2 2 6 | This manure has not been tried. It should be used on soil in pretty good condition, as it is deficient in the organic food of plants—the only substances of this sort being the oil and gelatine in the bones. |
| Do. | Mr. J. Hannam, North Deighton, Wetherby, Yorkshire. | 20 bushels of sawdust saturated with gas liquor or urine, and made into compost for 6 months ... £0 5 0<br>2 cwt. bone-dust, in ..... 0 12 0<br>¾ cwt. sulphuric acid ..... 0 10 6<br>½ cwt. sulphate of ammonia 0 8 0<br>£1 15 6<br>N.B. Gypsum or ashes to be added so as to form a drill compost. | This mixture is adapted for common Turnips that are to be consumed on the soil. If they are to be pulled off, 2 cwt. of guano should be added.<br>For Swedish Turnips also, 2 or 3 cwt. of guano, according to quality, should be added to this prescription.<br>The mixture as given has, however, succeeded well on the white Turnip crop, and is extremely economical. |
| Do. | Mr. Gardner, Agent to W. Fleming, Esq., of Barrochan, Renfrewshire. | 5 cwt. Peruvian guano..... £2 10 0<br>3 cwt. animal charcoal ..... 0 12 0<br>1 cwt. sulphuric acid ..... 0 9 4<br>½ cwt. nitrate of soda ..... 0 8 0<br>1 cwt. sulphate of ammonia 0 16 0<br>1 cwt. carbonate of magnesia 0 5 0<br>2 cwt. common salt ..... 0 2 0<br>½ cwt. potash ... 0 6 6<br>¼ cwt. horn-dust 0 8 0<br>(A.) £5 16 10 | In a trial against 30 tons of farm manure, at a cost of 10l. 10s., this mixture gave an increase of 7 tons 9 cwt. of yellow Turnips—the produce of which being as follows:—<br>Tons. cwt. lb.<br>Farm manure, 30 tons..... 31 0 0<br>Mixture A 38 9 0 |
| Do. | Do. | 5 cwt. Peruvian guano..... £2 10 0<br>2 cwt. sulphate of soda..... 0 10 0<br>1½ cwt. sulphate of magnesia 0 7 6<br>2 cwt. animal charcoal ..... 0 8 0<br>¼ cwt. horn-dust 0 8 0<br>2 cwt. common salt ..... 0 2 0<br>3 cwt. kelp ..... 0 15 0<br>(B.) £5 0 6 | In a trial upon Swedish Turnips:—<br>Tons. cwt. lb.<br>30 tons of dung gave 34 5 80<br>Mixture B 42 11 48<br>30 tons of dung cost £10 10 0<br>Mixture B cost ..... 5 0 0<br>—See *Table* 3. |
| Potatoes, No. I. | Mr. Fleming Barrochan, Paisley, Renfrewshire. | 1½ cwt. Rape-dust.....£0 7 6<br>½ cwt. bones in muriatic acid 0 3 0<br>20 lbs. sulphate of magnesia 0 1 6<br>½ cwt. carbonate of lime..... 0 0 4½<br>14 lbs. nitrate of soda..... 0 2 6<br>3 stones of salt 0 0 6¾<br>3 stones of sulphate of soda 0 2 3<br>1 stone sulphate of ammonia 0 2 6<br>½ lb. sulphur ... 0 0 3<br>1½ cwt. dry moss earth<br>£1 0 5¼ | No. 1.—This mixture produced a fair crop of Potatoes, of remarkably fine quality, 43 bolls per acre of imperial Renfrewshire measure, weighing 5 cwt. each, upon a poor, light, although new soil, not worth more than 25s. per acre.—See *Sup. to Professor Johnston's Lectures on Agri Chem.*, p. 64.<br>The mixture is too poor in organic and azotised matter to depend upon for a crop of Potatoes. |
| Potatoes, No. II. | Mr. Fleming Barrochan, Paisley, Renfrewshire. | 40 bushels sawdust ..... £0 0 0<br>10 bushels potash and lime, 14 months old 0 7 6<br>1½ cwt. salt..... 0 2 3<br>1 cwt. sulphate ammonia..... 1 0 0<br>½ cwt. sulphate soda ..... 0 3 6<br>½ cwt. sulphate magnesia ... 0 4 0<br>20 gallons coal tar..... 0 10 0<br>£2 7 3 | This is a better mixture than No. 1, and gave a better crop. See *Table* 3.<br>The Potatoes were "very luxuriant in foliage," says Mr. Fleming (Johnston's Lectures, Appendix, p. 64); they yielded, (he adds) 56 bolls per acre of very fine Potatoes, many of which weighed from 2¼ to 30 oz. each. |
| Potatoes, No. II. | Mr. Gardner, Agent to W. Fleming, Esq., of Barrochan, Paisley, Renfrewshire. | 6 cwt. guano...£3 0 0<br>2 cwt. animal charcoal ..... 0 8 0<br>1 cwt. sulphuric acid ..... 0 9 4<br>3 cwt. horn dust 0 6 0<br>2 cwt. muriate ammonia..... 1 10 0<br>1 cwt. sulphate of soda ..... 0 5 0<br>1 cwt. carbonate magnesia..... 0 5 0<br>2 cwt. common salt ..... 0 2 0<br>£6 5 4 | This mixture is very similar to Mr. Gardner's Turnip mixture. The quantity of each ingredient is, however, larger than for Turnips. The saline matters are also a little varied.<br>The animal charcoal used by Mr. Gardner, in nearly all his mixtures, is the remains of bones charred in close iron vessels; the animal matter is, therefore, nearly all destroyed. A small portion of nitrogen, however, is retained; and the earthy part of the bone, of course, still remains. |
| Wheat. | Mr. Way, Chemist to the English Agricultural Chemistry Association. | 2 cwt. silicate soda,<br>1 cwt. bones,<br>½ cwt. sulphuric acid,<br>40 lbs. sulphate of magnesia,<br>35 lbs. carbonate potash. | For the 35 lbs. carbonate of potash Mr. Way says 50 lbs. nitrate of potash may be used, it is to be preferred. This will supply the potash equally well; and at the same time yield nitrogen to the crop. |
| Do. | Mr. Huxtable, Sutton Waldron, Shaftesbury, Wiltshire. | 5 cwt. bones,<br>1 cwt. sulphuric acid,<br>5 cwt. shoddy,<br>3 cwt. salt. | As shoddy is rich in nitrogen, it is a good manure. It may be used as a top dressing, or ploughed in with the seed. If it be partially decomposed before it be mixed, the result will be better. |
| Do. | Mr. Lawes, Rothamsted, St. Alban's, Hertfordshire. | 1. Saline Mixture.<br>106 lbs. phosphate magnesia,<br>80 lbs. phosphate soda,<br>110 lbs. silicate potash,<br>80 lbs. sulphate ammonia,<br>350 lbs. superphosphate lime. | This mixture, upon soil deficient in azotised manure, produced 10 bushels more grain than an application of phosphate of magnesia and superphosphate of lime, which have no nitrogen. |
| Do. | Do. | 2. for Exhausted Land.<br>2 cwt. calcined bones, in hydrochloric acid,<br>2 cwt. ammoniacal salts,<br>¼ cwt. rape cake. | In an experiment with many mixtures (see Table 3, this compound produced the most effect. By substituting Liebig's Wheat manure for the dissolved bones, the effect was nearly equal Liebig's manure, without the rape cake and ammoniacal salts was, however, much inferior to it. |
| Do. | Do. | Muriatic or hydrochloric acid is better as a solvent of bones than sulphuric, both on account of a less quantity, in the proportion of three to four, having equal effect, and because the muriate of lime, one of the results of its action, being so much more soluble than the sulphate formed when sulphuric acid is used. | Mr. Lawes informs us that his practice teaches that, as a general rule, with grain and Grass crops, mineral matter is in excess, and cannot be taken up, because ammonia is deficient; and of any manures for such crops, that which yields ammonia at the lowest price should have preference. So far as a manure for grain, on ordinary or poor soils is concerned, this is a proper rule. |
| Wheat, Barley, or Oats. | Mr. J. Hannam, North Deighton, Wetherby, Yorkshire. | For Poor Soils.<br>¾ cwt. bones...£0 4 0<br>3 stones sulph. acid ..... 0 3 6<br>8 bushels soot 0 4 0<br>1 qr. rape-dust 0 18 0<br>1 cwt. nitrate of soda or sulphate of ammonia ..... 0 16 0<br>1 cwt. common salt ..... 0 2 0<br>For a winter sown crop, the two last ingredients to be applied in spring. The compost should be mixed with ashes. | Where Wheat or Oats are after pastured seeds, or Barley after Turnips consumed on the land, the nitrate of soda may be omitted. Potash, an important constituent of the cereal crops, is not contained in this manure, but may be added to a soil deficient in it. In ordinary cases, however, the ashes supply enough of it.<br>The soluble silicates which the cereal crops require are also absent; but excepting on peary soils, where any assistance towards the formation of a stiff straw is particularly valuable, these substances are unnecessary additions; ordinary soils contain enough of them naturally. |
| Oats. | Mr. Gardner, Agent to W. Fleming, Esq., Barrochan, Paisley, Renfrewshire. | 1 cwt. guano...£0 10 0<br>1 cwt. animal charcoal ..... 0 4 0<br>½ sulphuric acid 0 4 8<br>1 cwt. salt ..... 0 1 0<br>1 cwt. silicate of soda ..... 0 12 0<br>1 cwt. horn-dust 0 2 0<br>(E.) £1 13 8<br>2 cwt. animal charcoal ...£0 8 0<br>1 cwt. sulphuric acid ..... 0 9 4<br>½ cwt. muriate ammonia..... 0 7 6<br>¼ cwt. carbonate magnesia ... 0 1 3<br>½ cwt. sulphate magnesia ... 0 2 6<br>1½ cwt. salt..... 0 1 6<br>2 cwt. horn-dust 0 4 0<br>(F.) £1 14 1 | The great success of both these mixtures will be seen on reference to our *Table* 3; in Experiment VIII., on grain crops, each application produced an increase of nearly 3 quarters per acre. Of many mixtures, these answered best. See also Transactions of Highland and Agricultural Society of Scotland, for July, 1847, p. 34.<br>The animal charcoal is a very valuable constituent of these manures; it is charred bone-dust, containing all the mineral ingredients of ordinary bone-dust, and thus capable of benefiting by the addition of the acid; and charcoal, also in the condition most likely to be beneficial to the crop. |
| Barley. | Mr. Main, Whitehill, Lasswade, near Edinburgh. | ½ cwt. prepared night soil ..... } £0 12 9<br>½ sulph. soda } £0 12 9<br>½ cwt. saltpetre refuse } £0 12 9<br>1 cwt. animal charcoal ..... } £0 12 9 | This application answered well in Mr. Main's experiments (see *Table* 3.) An addition of sulphate of magnesia to the night-soil is especially useful for Barley. |
| Oats (upon moss). | Mr. Fleming Barrochan, Renfrewshire. | 1 cwt. bones dissolved in muriatic acid £0 9 4<br>1 cwt. sulphate of soda..... 0 9 4<br>1 cwt. silicate of potash ..... 0 16 0<br>¼ cwt. sulphate ammonia..... 0 10 8<br>£2 5 4 | The experiment (see *Table* 3) with this mixture upon moss has been noticed by many writers. It is recorded in Professor Johnston's Lectures, Appendix, p. 68. The mixture was remarkable for its effect upon the quantity and *quality* of the grain and straw. |
| Clover. | Mr. Huxtable, Sutton Waldron, Shaftesbury, Wiltshire. | 1 ton of strawless cow-dung dissolved in water, and poured over 30 bushels coal ashes, dried with 2 or 3 cwt. gypsum | Mr. Huxtable recommends this mixture, because the cow-dung is rich in the salts of potash, which Clover requires, and the coal ashes contain gypsum. If it can be afforded, 2 cwt. of super-phosphate of lime, he states, would improve the mixture. |
| Do. | Mr. Lawes, Rothamsted, St. Alban's, Hertfordshire. | 2 parts superphosphate of lime<br>1 sulphate of ammonia, or<br>1 muriate of ammonia. | This mixture, Mr. Lawes states, he has used with great success on his own farm. [In this manure, however, the necessary fixed alkalies are wanting.—L. P.] |
| Sown Grasses for Hay. | Mr. Gardner, Agent to W. Fleming, Esq., Barrochan, Renfrewshire. | 1 cwt. animal charcoal ....£0 4 0<br>½ cwt. sulphuric acid ..... 0 4 8<br>1½ cwt. horn-dust ..... 0 3 0<br>½ cwt. carbonate magnesia 0 0 7½<br>½ cwt. sulphate of soda..... 0 1 3<br>½ cwt. salt ..... 0 0 6<br>½ cwt. sulphate of ammonia . 0 4 0<br>½ cwt. potash... 0 6 0<br>½ cwt. carbonate of soda ... 0 2 0<br>£1 6 0½ | This application increased the produce nearly threefold (*Table* 3), and was tried against seventeen other applications.—(See *Trans. High. Ag. Soc.*, March, 1847.)<br>[The quantity of phosphates in this manure would not be sufficient for many kinds of crops. The quantity of lime present is scarcely sufficient for the grasses. Gypsum might be added advantageously.—L. P.] |
| Peas. | Mr. Huxtable, Sutton Waldron, Shaftesbury, Wiltshire. | 2 cwt. superphosphate of lime.<br>10 bushels lime,<br>5 bushels salt,<br>blended with ashes. | The injurious tendency of recent dung upon this crop is well known. "My own trials and others," Mr. Huxtable says, "prove how saline dressings increase the podding of the plant." |

LIST OF ARTIFICIAL MANURES—*continued.*

| Crop to which the Manure is applied. | Name of Author. | Composition and Cost of the Manure, per acre. | Remarks. |
|---|---|---|---|
| Hops. | Mr. Nesbitt, Kennington-lane, Lambeth. | 3 cwt. guano . £1 4 0<br>1 cwt. common salt ..... 0 1 0<br>½ cwt. saltpetre, or 1½ cwt. silicate of potash... } 1 19 9<br>½ cwt. of gypsum ..... 0 0 9<br>£3 5 6 | This mixture Mr Nesbitt proposes on trial. There can be little doubt, as it contains nitrogen in abundance, that it will be successful Woollen rags, the manure *par excellence* for hops, excels in nitrogen. We should mix with ashes. |
| Flax. | Prof. Johnston, of Durham. | 25 lbs. bone-dust, or bones dissolved in sulphuric acid.<br>10 lbs. gypsum.<br>20 lbs. pearl ashes.<br>20 lbs. soda ashes.<br>25 lbs. slaked magnesian lime, or<br>20 lbs. sulph. magnesia and 5 lbs. quicklime, mixed and substituted for last ingredient. | This manure, we do not hesitate to say, for practical reasons mentioned in the sequel, has its several ingredients much too small, even if we consider only the mineral constituents of the crop. It is also totally inadequate to afford the requisite organic food the crop requires. It is very rare to find alkaline carbonates in plants—although they are produced during their incineration. In all cases they should be used with caution. |

## PART II.—SUGGESTED ARTIFICIAL MANURES FOR GENERAL PURPOSES.

| Name of Manure. | Author. | Composition, per cwt. | Remarks. |
|---|---|---|---|
| Artificial Guano. | Prof. Johnston, of Durham. | 66 lbs. of bone dust,<br>23 lbs. sulphate ammonia<br>1¼ lbs. pearl ashes,<br>20 lbs. common salt,<br>3¼ lbs. sulphate soda.<br>Cost about 9*s*. | For cases in which this has been employed, see *Table* 3.<br>From 3 to 4 cwt. per acre of this mixture should be used. |
| Barrochan Guano. | Mr. Fleming Barrochan, Paisley, Renfrewshire. | 18 lbs. of bones dissolved in sulphuric acid,<br>18 lbs. of charcoal powder,<br>10 lbs. sulph. ammonia,<br>10 lbs. of common salt,<br>10 lbs. of gypsum,<br>41 lbs. of wood-ashes,<br>3 lb . of nitrate soda,<br>1 lb. of sulphate soda,<br>1 lb. of sulph. magnesia.<br>Cost about 10*s*. | This has frequently been used with success. See *Tables* 3 and 4.<br>Not less than 5 cwt. per acre of this composition should be employed. |

## PART III.—SUGGESTED ARTIFICIAL MANURES, FOR USE AS AUXILIARIES TO FARM MANURE.

| Name of Author. | Use of Mixture—Special or General. | Composition of the Manure, per acre. | Remarks. |
|---|---|---|---|
| Mr. Gardner, Agent to W. Fleming, Esq., Barrochan, Paisley. | Special—for Turnips & GreenCrop. | 3 cwt. Peruvian guano..... £1 10 0<br>2 cwt. animal charcoal ..... 0 8 0<br>1 cwt. sulphuric acid ..... 0 9 4<br>1 cwt. carbonate magnesia ... 0 5 0<br>1 cwt. sulph. of soda ..... 0 5 0<br>1 cwt. muriate ammonia..... 0 15 0<br>1 cwt. common salt ..... 0 1 0<br>3 cwt. horn-dust 0 4 0<br>½ cwt. carbonate potash ..... 0 6 6<br>£4 3 10 | See *Table* 4. Upon Turnips this mixture gave an increase of 12 tons over 15 tons of extra dung. It increased the crop of Potatoes also 50 per cent. [The error in this compound manure is the small quantity of potash, which is the main constituent of Turnips. A small quantity is indeed contained in the guano as well, but this is not sufficient.—L. P.] |
| Mr. Dalton, York. | General Purposes. | 1 cwt. sulphate ammonia..... £0 16 0<br>80 lbs. nitrate of soda ..... 0 15 0<br>4 cwt. gypsum... 0 4 0<br>(A.) £1 15 0 | In our trials, see *Table* 4, both this and the subjoined mixture was useful as an auxiliary. It is adapted for a spring dressing for grain crops. [This cannot properly be called a manure, as it is deficient in many necessary ingredients.—L. P.] |
| Do. | General Purposes. | 40 lbs. nitrate of soda..... £0 7 0<br>60 lbs. sulphate ammonia ..... 0 8 6<br>4 cwt. gypsum... 0 4 0<br>Animal oil..... 0 5 0<br>(B.) £1 4 6 | With the addition of 2 cwt. of superphosphate, this might be in reality what it is called "a bone substitute." As it is, it can only be depended on as an auxiliary. |
| Mr. John Hannam. | Special—for Turnips & GreenCrop. | ½ cwt. of ½-inch bones ..... 0 2 8<br>dissolved in<br>¼ cwt. of sul. acid 0 2 4<br>and mixed with<br>½ cwt. fine bone-dust..... 0 2 8<br>1 cwt. of guano 0 10 0<br>1 cwt. of salt ... 0 2 6<br>2 cwt. of gypsum 0 2 0<br>(A.) £1 2 2 | This mixture is equally well adapted for use as a substitute for farm-yard manure. In such cases, on very poor soils, the quantity of bones may be doubled.<br>During the present season, 1848, it has produced most striking results on the Turnip crop. Our mode of pre- |
| Mr. J. Hannam, North Deighton Wetherby, Yorkshire. | Special—for Turnips & GreenCrop. | Enough ashes to be added, after the mixture has been made about three months, to form a compost for drilling.<br>1½ cwt. of bones, and 1 qr. of ashes, and soil saturated with liquid manure from the tank 0 8 0<br>1 cwt. of guano 0 10 0<br>1 cwt. of salt ... 0 2 6<br>2 cwt. of gypsum 0 2 0<br>(B.) £1 2 6 | paration is to mix the acid and rough bones together in the manner that masons make up mortar—the walls of the basin being made of the fine bone-dust. In this state they are left for several days; after which, the fine dust is mixed with the dissolved bones and thrown into a heap, upon which the other ingredients are spread in alternate layers. In a month the heap should be opened and the whole of the substances thoroughly mingled, after which the heap may be slightly covered with earth and remain till spring, when it will be fit for use. The manure should be made in quantities sufficient for several acres at one time.<br>Mixture B should be made into a heap and allowed to lie for three or four months before it is used. When used without farm manure upon poor soils it may be applied in a larger quantity than that specified. |
| Do. | Potatoes. | 1 qr. of rape-dust..... 0 18 0<br>2 cwt. of guano 1 0 0<br>1 cwt. sulphate soda ..... 0 6 0<br>1 cwt. common salt ..... 0 2 0<br>£2 6 0<br>For mixture with 10 or 12 cubic yards ordinarily good farm manure. | When no farm-yard manure can be had, this mixture will act as a substitute. In such cases double the above quantity of compound must be applied. The quantity specified here is about the proper quantity to use as an auxiliary to 10 or 12 cubic yards of farm-yard manure. We have witnessed the good effects of this mixture on many occasions. |

—*Mr. Hannam, in Blackie's Cyclopedia of Agriculture.*

## Home Correspondence.

*Experience in Land Draining.*—The powerful expansive pressure that soils, particularly clays, exercise on hollow bodies, to crush or to fill them up, has to be seriously considered in the selecting of forms for pipes or tiles to be used in draining. I have lately had to take up a long length of drain that has been laid only six or seven years, formed of half-circle 6-inch tiles, placed together, so as to form a cylinder; and notwithstanding these tiles are ⅔ of an inch thick, they were found for many yards together split along the back, and driven into the drain. The soil is the Wealden clay. In this and other situations, I also have found 3-inch pipes having for their transverse section a circle with a very narrow opening at bottom, resting on feet, perfectly plugged up. The clay having evidently been pressed in, until it had become as hard inside as the exterior; and in like manner I have seen drains made with slabs of chalk, choked up, and useless, in a few years. This plugging up of the drains, I have little doubt, is done by the pressure of the soil, partly by its weight, and partly by its alternate expansion and contraction, under the alternate influence of wet and drought. The soil round the pipe becoming charged in the winter season with water, expanded and pressed into the pipe; and on the water leaving it, shrinking back, and so much of the soil as had been pressed in, and would not return, would be left behind; and in this way, the drain, by additions, year after year, gradually fills, and eventually, from the external pressure, is plugged up. I was once present at the examination of a leaden coffin that had been dug up, after having been buried many ages. It was squeezed out of all form; and on opening was found to be full of earth, which, I have no doubt, had been gradually worked into it, by the expansive force alluded to; and so great had this been, that the bones of the skeleton had indented their form into the bottom of the coffin. I am pleased to find that this force of soils has not escaped the notice of the clever writer of the Essay in the "Quarterly Review," No. CLXXI., and which has since been published in a separate form ("Agricultural Drainage," John Murray); for it shows me the very close and practical attention he has given to the subject, and I quote, with pleasure, his words:—"We shall shock and surprise many of our readers, when we state confidently that in average soils, and still more particularly in those which are inclined to be tender, horse-shoe tiles form the weakest and most failing conduit which has ever been used for a deep drain. Tiles of this sort were used in 1760, at Grandesbury Hall, in Suffolk, constant failures resulted from their use, and many of the tiles were found to be choked up with clay, and many to be broken longitudinally through the crown. For the first evil, two remedies were adopted; a sole of slate or wood, or of its own material, was sometimes placed under the tile, but the more usual practice was to form them with club feet. To meet the case of longitudinal fracture, the tiles were reduced in size, and very much thickened, in proportion to their area. The first of these remedies was founded on an entirely mistaken, and the second on no conception at all, of the cause of the evil to which they were respectively applied. The idea was that this tile, standing on narrow feet, and pressed by the weight of the re-filled soil, sunk into the floor of the drain; whereas, in fact the floor of the drain rose into the tile. Any one at all conversant with collieries is aware, that when a straight work is driven in coal, which is a small subterranean tunnel 6 feet high, and 4 feet wide, the rising of the floor is a more usual and far more inconvenient occurrence than the falling of the roof; the weight of the two sides squeezes up the floor." *Hewitt Davis, 3, Frederick's-place, Old Jewry, April* 4.

*The Present State of Irish Agriculture.*—In following up my remarks on the practical instruction of the adult population, as promulgated by Lord Clarendon, I am not prepared to say how far such a scheme has proved successful. I cannot believe so sanguinely of the extensive benefits conferred as others do. 1. Because I reside in one of the most wretched localities of Ireland, where agriculture is very backward, and where practical instructors have been successively appointed, the efficacy of whose labours appears to me, and many others, very questionable indeed. I know of no instance of individual improvement effected through their agency. 2. The extensive districts allotted to each instructor, in some cases exceeding a circuit of 20 miles, must render his efforts exceedingly superficial. 3. As practical instructors are not permanently employed, it is not unreasonable to ask, what amount of interest they have at stake in the success of their duties? Of course it is hoped every instructor is interested. How far is it to be expected that a practical instructor, a stranger, visiting a small farmer deficient in capital, industry, and without the means of providing the morrow's support, can produce a healthful, a permanent change in his affairs, who knows, and apparently desires to know no more than the mere growth of the Potato crop? What magic influence does such an instructor's words possess? What the power of his persuasive eloquence, that could in a casual visit soften the prejudices of years, the rigidity of confirmed ignorance, and well nursed antipathies against all innovation upon established rights? He may tell a farmer what to do; but how to do it, how to accomplish an end when the means are absent is a serious proposition. That class of farmers, in the last agonising struggles to support a shattered frame, in the tillage of a worn-out soil, with an empty pocket, a pauperised mind, and the dreadful prospective of a gloomy workhouse, and an early grave, cannot attend to the lessons of an instructor. Let the instructor visit a "strong farmer," and he will find it difficult to convince him, who is so dilatory to be reformed by improved practice. Uneducated Irishmen are of strong prejudices, fixed habits, and of indomitable attachment to their own ways of thinking and acting; they have a peculiar reluctance to change any long-practised custom for any reason; and is it natural if the small farmer, the struggler between complex hopes and impending ruin, views with distrust the dictates of a stranger—the precepts that come unrecommended by example? Hence, I say, this mode of instruction is uncertain. Estate agriculturists approximate more to the real wants of practically educating the adult population, than that set on foot by my Lord Clarendon. These agriculturists, when under a sensible proprietor, can accomplish infinite good, supported by a proprietor who will act upon reasonable suggestions; the agriculturist can forward the interests of an improving tenant, and check the negligence of an indifferent one. It would be well in every case to grant the agriculturist a patch of land for a model farm, to practically explain what he teaches. Attention to these matters formed the road to that successful career of local and general good which characterised the late Mr. Blacker, of Armagh. Landlords are not to console themselves with the idea that having employed the services of an agriculturist, they have done their duty to their tenantry. They have but performed an important step towards a great improvement, which to be accomplished must be supported by subsequent legitimate means on their part, continued. Agricultural publications, like other means of improving Irish farming, are few and feeble. The press is a powerful engine, when properly directed, for the moral, social, and industrial instruction of the people. But in Ireland I may safely say we have no such means. We depend upon the English press for developing agricultural im-

provement; we look up to it for superior agricultural intelligence; the confirmed rules of practised experiment, and the successful investigations of science-directed skill. What periodicals have we in Ireland; or what do they record? Glance at their meagre sheets, and read the wretchedness of Irish cultivation. We seek in vain in their columns for original writings, the results of well-planned experiment and sound experience. It is true we find columns of multiplied quotations from magazines, journals, and pamphlets, all very good in their nature, but lamentably indicative of the want of that support which gives dignity to a publication, and makes it useful and interesting. *Libra, March* 31.

*The Tullian System.*—It is very natural that "Amicus Tull," and others who feel interested in the Tullian system, should desire the fullest information on the expenditure it involves. Having applied the system to Wheat growing, both on very stiff clay and on light lands on the chalk, I can give an account of the actual cost incurred in the primary operations. In October last, I applied a six-acre field of very stiff clay to this purpose. It not having been previously drained, I had it drained throughout, at 3 feet deep. The field was ploughed, and then marked out, and sown at the rate of two pecks per acre—strictly as directed by Mr. Smith, in the "Word in Season." As soon as the Wheat was above ground, the intervals were dug—not with the spade, but with the graft, used in draining—about one foot deep. This was done by contract, at 2*s.* 3*d.* per score of running rods, and cost 14*l.* 1*s.* 9*d.* The men being strange at the work, and the clay so stiff as to make it desirable to have buckets of water by their side to dip their tools in, would not undertake the work at a less price. Hereafter I shall be able, I believe, to get it done at 2*s.* per score. "Amicus Tull" seems to suppose that this digging is only two-fifths of the acre, but it is fully one-half. The Wheat, just above ground, could be approached on either side within 3 inches, and therefore 2 feet 6 inches wide were dug. As this digging cost, for the half of the six acres, 14*l.* 1*s.* 9*d.*, it follows that were the whole dug, the cost per acre would be 4*l.* 14*s.* Mr. Smith reckons the cost, for the first year, 4*l* per acre. Considering that the wages paid in Northamptonshire are 9*s.*, whilst in this part of Surrey they are 12*s.* per week, I find my expenses tally very well with Mr. Smith's estimate. The men earned 2*s.* per day at the digging. And I may here remark that, by this spade labour, 6 inches of subsoil below the plough had never disturbed, were brought to the surface. The Wheat is luxuriant, and the intervals singularly clean. Now, on the light land, in a different part of my estate, about a mile and a half from the field I have mentioned, the whole was dug one spit deep, after taking off a good crop of Potatoes. For this digging 2½*d.* per rod was paid. In November, when the Wheat had come up, we trenched the intervals. For this trenching we paid 6*d.* per rod, which is equal to 4*l.* per acre. On this light land we have run Dr. Newington's Cultivator through the intervals, prior to the late rainy weather. Nothing can look better than this Wheat—of a fine dark colour—close to the ground, and tillering well, it gives promise of a good return. Although so thinly sown (2 pecks per acre), every one remarks that it is now "much too thick." I shall be happy to show these fields to any one taking a real interest in the question, and who may feel inclined to try the system. I can answer for the thorough truthfulness of the statements my excellent friend, the author of the "Word in Season" has put before the public. He is too experienced a judge to be easily misled, and far too upright intentionally to mislead others. I believe the whole subject to be deeply deserving of the attention of agriculturists and landed proprietors, as one means of alleviating the pressure of the times, and our best thanks are certainly due to Mr. Smith, for his earnest and patriotic pursuit of this enquiry. *James Gadesden, Ewell Castle, Surrey.*

*Poultry.*—About six weeks ago one of my hens became ill, and lost the use of one of its legs. I was told over-laying was the cause of the malady, and was recommended to give her a few peppercorns, and a little bread soaked in ale, which was forced down her throat. In a few hours the bird was walking about the yard; however, in a couple of days she had a relapse, when the same dose was administered, and she was separated from her companions for 48 hours, when she quite recovered, and has had no return of her complaint, and produces her fair number of eggs per week. This may be a useful hint to amateurs, as I was informed by a poultry fancier of some experience that my hen would die. *Falcon.*

*Tullian Agriculture.*—It is cheering to perceive that minute tillage, or the Tullian system, is coming into practice. The value of frequently moving the soil between growing crops has been most satisfactorily proved, both as a means of increasing the produce and destroying weeds. However beneficial it may be to stir the earth at intervals, in order to make it more productive, yet it appears rather a dangerous plan to advocate the use of the fork and hoe as substitutes for manure. Under such management, in all probability, after a time, the land would become exhausted, and require a number of years to regain its fertility for general purposes. A good dressing every third year, assisted by a liberal allowance of manual labour, will keep most descriptions of land in bearing condition, provided suitable manure is applied. The great enemies to cultivation are a superabundance of moisture, Nettles, Thistles, Docks, Charlock, Dandelions, Buttercups, &c., which are too often permitted to flourish in luxuriance, and dug in, under the idea of keeping the soil cool during the summer. Having plundered the soil of a vast amount of nourishment, many of them again spring up to torment the farmer, and reduce his profits. Weeds ought to be considered of some use, from the multitudes that are permitted to show themselves amongst growing crops. The late mild winter will tell a tale, this year, on imperfectly cleaned land, which, as the warm weather advances, will be covered with vegetable and insect intruders. Where Potatoes were planted last year on clay soil, it has been found impracticable to either fork or dig in manure for spring sowing, instead of which the land has been breast-ploughed about four inches deep, so as to bury the muck, and promises, when the weather holds up, to be in famous order for the land-drill. It is difficult to lay down precise rules for cultivation to meet the wants of agriculturists. What answers one season fails another. A man must be guided very much by the material he has to work upon. In stiff soil, deep trenching once in three or four years is found sufficient, and better than doing it every season. After this operation, about four inches of the soil should be kept moved, so that the air may penetrate and prevent the earth massing and becoming hard. Annually turning over clayey soil 12 inches does not give it time to become separated, before it is again excluded from the influence of the atmosphere, and reduced to a damp consistency, resembling dough. After the deep digging, if from four to six inches are made intimately acquainted with the agricultural tools, and well incorporated with lime siftings from an old wall, road dirt, soot, and ashes, well saturated with liquid from the yard tank, it will become fitted in due course to be returned to its original position, without any fear of its again running together. The lower six inches may be treated in the same manner, thus affording in about eight years a description of soil that will be most valuable, and capable of being tilled with comparatively little trouble, having lost in a great degree its tenacity during the process. Draining is, of course, indispensable. Perhaps some of your more experienced correspondents will favour your readers with their opinions on this subject, in reference to stiff clayey soils. Light land may be worked deeply with advantage, but manure should seldom be covered with more than four inches of earth, to guard against the rain washing it below the reach of the roots, in a filtering description of land. The writer has no wish to speak positively as a rule for others to direct their course; although his manner of writing may be somewhat concise, he is only too glad to obtain hints from all quarters, and has gained much information from labourers, who often state facts without being able in any way to account for them, which, when analysed, are of much value. We may learn something every day if we keep our eyes and ears open. Well-made farm manure cannot be dispensed with. *Falcon.*

*Deep Draining.*—It is some time since I have read anything more practically useful than the communication from Mr. Paine in the last *Agricultural Gazette*, and it so far falls in with the opinion I have long entertained, that I am induced to trouble you with a few observations. This gentleman has, I think, to use a common expression, "hit the right nail on the head," in pointing out, and indeed proving the importance of draining at narrow intervals. There had been a great deal of discussion on the depth of draining, which, without undervaluing it, is, in my opinion, of no greater importance, than the proper intervals between the drains. What a difference there is in the dryness of the land, in the immediate vicinity of a drain, and that at some distance from it, particularly in the spring! The situation of the drains on my own land (the London clay), can now be distinguished at a considerable distance, by the lighter colour of the land, for the space of several feet on each side of the drain. Now, why should this be the case? If the water can escape so fast as is desirable from the land, midway between the drains, this portion of the ground ought to be dry first, and that near the drains last, seeing that the latter has not only its own superfluous water to get rid of, but that which it receives from the adjoining land, in its passage to the drain. No doubt the field alluded to by Mr. Paine is a specimen of perfect draining, assisted as it is by subsoiling; but then the expence, which seems enormous. Mr. Paine says that it has paid in his case; I doubt much that it would on some of our thin soils, on the London clay; and until such perfect draining can be profitably practised, the surface water furrows, and eight feet ridges, as recommended by Mr. Mechi, are, I think, desirable. I should be very sorry to dispense with them in my own case, and indeed I have seen much mischief occasioned by making the attempt. It is not one or two days' rain, that injures retentive land, but a succession of wet weather, for a week or a fortnight together. When the land is thus saturated, who is there that would not if he could dispense with a continuance of rain, until the drains had got rid of much of that which has fallen; but as we cannot do this, the next best thing to be done, is, in my opinion, to let it run off the surface as fast as it can. *W. C. Spooner.*

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's house in Hanover-square, on Wednesday last, the 9th of April. Present, The Earl of Ducie, Vice-President, in the chair, Lord Bridport, Sir Robert Price, Bart, M.P., Sir John V. B. Johnstone, Bart, M.P., Don Domingo Savignon, Mr. Hodgson Barrow, M.P., Mr. Bosanquet, Mr. Burke, Mr. T. T. Clarke, Mr. Capel Cure, Mr. Dyer, Mr. Gadesden, Colonel Hall, M.P., Mr. R. Jennings, Mr. Maddison, Mr. Marshall, M.P., Mr. C. E. Overman, Mr. Parkins, Mr. Rowlandson, Mr. Sanford, Mr. Serjeantson, Prof. Sewell, Mr. H. A. Smith, Mr. Robert Smith, Mr. S. R. Solly, Mr. C. Hampden Turner, Prof. Way, and Mr. George Wilbraham.

The following members were elected:

Francklin, John (High Sheriff, Notts.), Gonalston, Notts.
Wilbraham, Hugh, Westport, Co. Mayo, Ireland.
Cartwright, William S., Stow House, Newport, Monmouth.
Brooks, Samuel, The Bank, Manchester.
Walker, George Richard, Heathfield House, Oxford.
Caines, James, Cheselborne, Blandford, Dorset.
Esdaile, Wm. C. Drake, 10, Gloucester-square, London.
Locke, Wadham, Stourcliffe, Christchurch, Hants.
Montgomerie, Fred. Molyneux, Garboldisham, Norfolk.
Nurcombe, John, Hopcott, Minehead, Somerset.
Tottenham, Rev. Rt. Loftus, Vicardale, Carrickmacross, Ir.

The names of three candidates for election at the next meeting were then read.

Communications were received by the Council from Viscount Palmerston (through Mr. Addington), transmitting a copy of a work from Vienna, "containing an account of an insect called the Gollubatz-fly, which has been very destructive to cattle on the Lower Danube." From Chev. Claussen, copies of a pamphlet published by him on the Flax question, and an expression of his thanks for the kindness with which the Council had received him at two of their weekly meetings. From Mr. Wheble, of Bullmershe-court, near Reading, reporting favourably of Mr. Donlan's machinery, which he had inspected, for the preliminary operations of the farmer on the Flax grown by him, and rendering it at once, in his opinion, adapted for M. Claussen's purposes, without much trouble or expense: Mr. Wheble also transmitted specimens of Flax prepared in his presence by Mr. Donlan, in the course of five minutes; and, he expressed his opinion, that with this mechanical facility offered to them, many farmers would grow Flax, which he thought neither an expensive nor an exhausting crop. From Mr. Bethell, of 8, Parliament-street, samples of fibre from Rye-grass, which the spinners at Manchester stated they could easily work into fine cloths. From Sig. Londriani, of Milan, offering to instruct the dairy-farmers of England in the method of making, from skimmed milk, a cheese equal to the "Parmesan" cheese of Lombardy, possessing the same qualities for keeping which rendered that cheese so well adapted for provision purposes in the navy. From Mr. M. C. Salvin, a copy of a Farming Essay on the Management of Clay-land under green crop. From Mr. C. Whytell, results of his experience in the use of manures, and the destruction of wire-worm.

The Council having ordered their thanks for the favour of these communications, interesting discussions ensued among the members present, on the destruction of the wire-worm, and on the action of charcoal in depurating fecal matter.—Colonel Hall, M.P., reported the great advantage he had derived from a drill-roller, or presser, supplied to him by Messrs. Barrett and Co., of Reading. It was particularly adapted for light lands, and was well known and estimated in the East Riding of Yorkshire. It was drawn by four horses; the pressers were about three or four inches apart, and they cut about half an inch deep into the soil. When the Turnips were about six inches out of the ground, he passed this roller over them; and in every case of his own trial, or that of others he had heard of, the wireworm was entirely destroyed. On Coleseed or Barley it had the same effect. He considered that it consolidated the land more than Crosskill's clod-crusher.—Sir John Johnstone called the attention of Professor Way to the action of charcoal as a deodoriser and secerner of manuring matter.—Professor Way related some interesting researches in which he had been engaged on this subject. He had found that although charcoal in fine powder, when used as a filter, would intercept all manuring matter held in mechanical suspension, and would transmit the water through it perfectly clear and colourless, it had not the power to arrest the valuable element ammonia, which passed through along with the water; also that the manuring matter which it did arrest was only brought by the charcoal into a condition to become more rapidly decomposed, and to escape in the gaseous form into the atmosphere, so that the charcoal so employed was of comparatively very little increased value as a manuring substance, than simple charcoal which had not been employed as the bed of the filter. Professor Way then proceeded to answer the various enquiries made of him on points connected with this important subject, and received the thanks of the Council for the interesting details he had given them. Sir Robert Price, Sir John Johnstone, Mr. Marshall, Mr. Robert Smith, Mr. Rowlandson, Mr. Sanford, and other members present, also furnished interesting practical details on this subject. The Council then adjourned to the following Wednesday.

## Reviews.

*The American Poulterer's Companion: a Practical Treatise, with illustrations and portraits of Fowls taken from life.* By C. N. Bement. Fifth edition. New York, 1850. Pp. 379.

On first hearing of the existence of this publication, we were anxious to procure it, to ascertain whether it were an original work, founded on observations in the New World, or a rehashed farrago of the European poultry books. "The author of the work is the popular landlord of the American Hotel, Albany. From long experience as a public caterer, Mr. Bement is fully qualified to judge of the qualities of poultry; and from his earliest youth, he says, he has taken great interest in

rearing it as a matter of profitable investment. The subject is one which comes home to the bosoms and stomachs of every one, particularly about Thanksgiving time." It is now about five years since the first edition of this work was published. Four editions have been taken off. We hoped for something fresh and good; but, on opening the book, down came disappointment, like a drizzling rain, and the cloud was not quite dispersed by the sundry curiosities that are to be found within its pages. American literature may be believed to be as yet merely embryotic; the New World Poultry-book is at present unwritten.

The cuts are numerous; few are novel, none are artistical. The frontispiece is the Royal poultry-house at Windsor. This we had all seen well drawn in "Farming for Ladies," ill drawn in Mr. Nolan's book; still it might be welcome to the American reader: but further on, we have Mr. England's poultry-house at pp. 90-1; the bantam's nesting places, p. 99; the poultry-feeding fountain, p. 117; the domestic turkey, p. 219; Reaumur's hatching apparatus, p. 324; Reaumur's artificial mother, p. 337; and the progress of the egg during incubation, at p. 313; all which had been engraved on the wood on this side of the Atlantic, long before they were traced by the pencil of any artist in the United States. That ever-standing dish, Lord Penrhyn's poultry-house, is once more served up again. The narrative cannot move without long quotations from Moubray, Boswell, Cobbett, Main, Walter B. Dickson, Parmentier, Reaumur, and Olivier de Serres. We hoped that America had brought forth from her vast storehouse some relishing and substantial viand; we fall to with appetite, but alas!

—"the funeral baked meats
Do coldly furnish forth the marriage tables."

We should not take the trouble of sending to New York for the information that "in December, 1793, the number of turkeys sent to London, by the stage coaches from Norwich alone, amounted to upwards of 2500, weighing nearly 14 tons." (p. 15.) From America, however, we do look for something good about the turkey, and the preface to the fifth edition announces that "A few hints on the subject of rearing turkeys, furnished by a friend, on page 239, will no doubt be found very useful to the breeders of that valuable domestic fowl." We turn to the place, and find from Col. Wade Hampton, of South Carolina, as follows:

"On the subject of rearing turkeys, I venture to make you a suggestion or two. As soon as they are removed from the nest, immerse them in a strong decoction of tobacco, taking care to prevent the fluid from entering the mouth or eye of the chick, and repeat the operation whenever they appear to droop. Corn bread soaked in pepper tea, is the best diet for them, after they are two or three days old, that I have ever tried. They are particularly liable to chills, which nothing so effectually cures as the pepper. A table spoonful of cayenne pepper to a quart of boiling water is about the rate at which it is used."

We refrain from any comment on the tobacco bath. Should any poulterer see fit to try it this season, perhaps he will be so obliging as to communicate the result. But more really valuable hints than this are given respecting the turkey in America. Mr. Bement quotes Mr. Peter Boswell's statement that when first discovered in America, it was seen both in a wild and a domestic state. Neither writer gives his authority, and we have not time to hunt for it, but might probably find it either in Buffon or in Dr. Latham; but there is a curious statement in Gosse's "Birds of Jamaica," to the same effect, *i. e.*, that this bird was already found in a domestic state by the Spaniards among the natives of Hispaniola! This unexpected fact would throw back the domestication of the turkey to quite an indefinitely remote era. And there seems to be almost the same ill-luck and difficulty attending the endeavour to obtain a tame race of turkeys from the wild birds of America, that there is in rearing farm-yard ducks and drakes from the British Mallard, or *Anas boschas*. Mr. Bement quotes a letter from the 10th vol. of "The Cultivator."

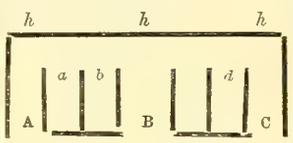
"Ever since General Lafayette was in this country, and expressed a wish to obtain some wild turkeys to take with him to France, I have felt an interest in this kind of poultry. When I came to this state (Illinois) in 1835, I made up my mind that I would endeavour to obtain and domesticate some of them as soon as I could. Upon inquiry, I learned that occasionally a nest of eggs was found and put under hens to be hatched out, and the young ones killed in the following winter, under an apprehension that they would run off in the spring. In 1837, a nest of 8 eggs was found, which I purchased. These I set under a hen, and all were hatched out. A difficulty now occurred—the young turkeys paid no attention to the hen's cluck, were disposed to wander about, and make the hen follow them, instead of their following the hen. In this way some of them were lost, in consequence of going further from the house than the hen was disposed to follow. Of the eight I succeeded in raising but one; though I believe some of them died a natural death. This one kept company with the hens, and roosted with them, till, by repeated alarms from vermin, he forsook the hen-house, and took the roof of a stable for a roosting-place. This proved to be a cock but it was not till he was more than 18 months old that he began to strut and gobble [*i. e.*, he was three times as long in attaining the adult state as birds of the domestic race. The discrepancy is very remarkable. Elsewhere (p. 213) Mr. Bement informs us that, "the wild turkeys are described as being much larger than the tame ones. Far from being improved by care and abundance of food, contrary to most other wild animals, this species has degenerated. Wild turkeys, it is said, often weigh from 40 to 60 lbs." Can there possibly be an original specific distinction between the two races?] In a very windy time he would leave his roosting-place, and go into the hazel bushes which were near by, to lodge. On one of these occasions he was killed, probably by a prairie wolf, as there were plenty in the neighbourhood. This turkey was so thoroughly domesticated that he would eat corn out of my hand, and showed no more disposition to wander off than my hens." (P. 215.) Another equally disappointing attempt follows. Mr. Bement gives similar ones from his own observations amongst his acquaintance.

"A family in a small grove, had a pair of wild turkeys; the hen, when a year old, laid a nest of eggs, but none of them hatched; a season after this, she raised a litter of young ones, which, after getting their growth, with the old ones in company, left the grove, and never returned. [Exactly as our wild ducks would do.] Another family had a pair; the hen got accidentally killed when about a year old, and the male kept company and roosted with the fowls. The next spring the owner procured two tame hen turkeys, and succeeded in raising 28 half-bloods. A neighbour had a wild male domesticated, one year old, and two tame hen turkeys. That season not one egg hatched; the next season, from one of the hens, the other having died, he raised 14 or 15 half-bloods. The cocks (unlike the tame in that respect), it seems, do not come to maturity till they are two years old. The half-blooded turkeys bear a greater resemblance to the wild than they do to the tame, and will breed equally well." This informant sums up, "Although my attempts at rearing wild turkeys have been so unsuccessful, I am not discouraged, but intend to persevere in the effort a while longer; I believe it will be some little object to raise the full and half-bloods here, but much more of an object in your neighbourhood, for the city market. The reason why they would have a preference over the tame turkey is: 1st. That they are larger; one was killed about 10 miles from me which weighed 24 lbs.; and I have heard of their being killed in Ohio, one at least, which weighed rising of 30 lbs. 2dly. They are more robust, will bear the rain and wet Grass, and therefore more easily raised than the common turkey. 3dly. They are hunters of flies, bugs, and other insects; and eat much less corn or meal than other poultry, and are of course more profitable. They are a more profitable fowl than the tame turkey; their colour is brown or snuff, with feathers having a lustre or brilliancy upon them in some degree like the peacock."

These are the sort of particulars that make an American poultry-book interesting to Europeans, and which are requisite to give it a permanent value even in its own country. So few travellers are competent to make trusty observations on the *domesticated* animals of foreign lands, that any technically correct account of them is eagerly perused, for the sake of the information to be gained from it. Botanists and nurserymen *send* educated discoverers to traverse the face of the earth, and pounce upon any novelty the moment it is detected by their sharp glances. Natural history, as far as wild creatures are concerned, has agents stationed in every province, who secure for anxious and liberal employers at home every suspected addition to the world's Fauna—living or dead, in the skin, in the feather, or in the flesh; but with 99 tourists out of 100, a cow is a cow, a sheep is a sheep, and a hen is a hen. Unknown breeds of cattle and of poultry might pass unobserved, and remain unimported. Domestic races are too often not made a study by those who ought to study them, till the opportunity of observing them abroad is lost for ever. We would give anything in reason now to see what we might once have seen of domestic birds and beasts, in our range between John O'Groat's house and the south of Italy.

The Midland Counties will be pleased to hear from Mr. Bement, that one of their favourites, "the Bolton Greys, or Creole Fowl," maintain, under the very different climate of America, exactly the same character as they do at home." Dr. Rufus Kettridge, of Portsmouth, N. E., who seems quite a connoisseur in the poultry business, says, in a letter to the author, "the first account I ever saw of the Creole fowl (which led me to procure them), was in the "New England Farmer," vol. xviii., Nos. 39 and 43. The Creole is a small fowl, about the size of our common hen; the greatest layers I ever saw. I received my two from Philadelphia; on the 5th of May they both laid. In 22 days I had 41 eggs, and in 54 days I had 95 eggs. They are never inclined to sit. Their colour is a white ground, with black spots on their bodies; their neck white. They are a very hardy fowl, and I value them the most of any I have." Pp. 159-60, with a woodcut evidently copied from Mowbray's copper plate.

About the best part of Mr. Bement's book is his description of the poultry-houses, contrived to suit the different parts of the United States. The bowery laying places once adopted at Windsor have been imitated in America. From the above (cut in the *Illustrated News*) we took a hint, and procured some Hemlock boughs and tacked to our box nests, nearly obscuring the entrances, giving the hen an opportunity of gratifying her propensity of secretiveness. This arrangement seemed to be very satisfactory to the hens, and added much to the appearance of the room." (P. 99.) An admirable arrangement for fowls that are exposed to the rigours of a severe winter (about which we, who are frightened if the mercury approaches to zero, know nothing), is the New York poultry-house. A plan, section, and elevation ar given. Its principle lies in its consisting of two apart ments; an inner one all bricks and roof, and an outer one partially glazed in front and above (which may be made the "walk" in hard frosts); to this a flue or stove might be advantageously added. A few cents.-worth of firing a day would make it quite a go-ahead affair. A "poor man's poultry-house" with a central citadel having a thatched roof—"mind, I say *straw thatch* for roof, as it is far the best thing; and, if properly done, it will last 20 years"—and a circumscribing fortification of faggots—"go to the swamp for brush-wood, and cut a good parcel of it, leaves, small twigs, and burrs, all just as it stands"—is the very thing for Cobbett to have fallen over head and years in love with, and to have bored everyone to death till they made one like it. But the climax of all is the "plan for nest," at p. 125. A woodcut is given, but the ground-plan may be sufficient for our purpose. "The hen is a prude, and likes to steal away in some sly place to deposit her eggs. To gratify their organ of secretiveness, the following ingenious plan for fixed nests we take from the American poultry book [How long will poultry-books continue to indulge their cannibal propensities, and live by sucking each others' blood?] which has been lately contrived in Connecticut, and I have tried with complete success. Hens are well known to be anxious to deposit their eggs in secluded places. The secret nests here alluded to are well adapted to satisfy this propensity. They are made thus: Place a platform of boards, two feet wide, and, say 10 feet long, (though it may be made of any length), against a building, or a close board fence, about three feet from the ground. Along the outer edge of this platform, nail a board lengthwise and upright, about one foot high, cutting a space in the middle and at each end, as at A, B, and C, eight or nine inches wide, and divide the remaining space inside into nests a foot square, as at *a, b, c, d*, thus leaving a passage nearly a foot wide behind the nests. The top must slope from the wall, and open either in parts or entirely, with hinges, as at *h, h, h*. These nests are easily examined, and give the fowls all the secresy they seem to require." P. 125. The simple hen walks in at A, is charmed with the clear obscure, the "dim, religious light" of the passage, turns in cunningly at *a*, day by day deposits her produce, feeling as safe as if she were in the labyrinth of Crete, or in Fair Rosamond's Bower, and is one morning surprised by the uplifting of the lid, sudden daylight, and the consciousness that she has all her work to do over again! We only wonder whether the American hens have not become so 'cute as to refrain from cackling!




## METEOROLOGICAL REPORT.—April.

(*Continued from page* 221.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| April 1 | 10.40 a.m. | 30.08 | ... | SW. noon. SSW. p.m. |
| | 7.30 p.m. | ... | 30.03 | Bright and sunny day. |
| 2 | 3 40 a.m. | 30.00 | ... | SSW. Brisk breeze; over- |
| * | 2.20 p.m | ... | 29 97 | cast all day. Evening, |
| | 8 p.m. | ... | 29.97 | SW.; less wind. |
| | 11 p.m | 29.98 | ... | |
| 3 | 8.10 a.m. | ... | 30.00 | a.m. WNW., brisk breeze. noon, NW.; evening, N.; less wind. |
| | 11 p.m | 30.06 | ... | Bright sunny day. |
| 4 | 7.25 a.m. | 30.04 | ... | N. all day. Brisk breeze; |
| | 10 p.m. | ... | 29.94 | bright sunny day. |
| † 5 | 7 40 a.m. | ... | 29.86 | a.m. ENE.; noon, ESE.; |
| | 5 p.m. | ... | 29.86 | p.m. SSW. Overcast and |
| | 10.30 p.m. | 29.90 | ... | very cold; gentle breezes. |
| Sund. 6 | 7.50 a.m. | 29.95 | ... | a.m. N.; noon, NNE.; even- |
| | 10 p.m. | 29.95 | ... | ing, NE. Gentle breezes; bright sunny day, with large masses of white clouds. |
| 7 | 6.40 a.m. | 29.97 | ... | a.m. N. Light breezes; hard white frost; very heavy clouds on the edge of southern horizon, as of heavy storm gathering in that quarter. |
| | 5.35 p.m. | ... | 29.91 | Noon and p.m. NE. Brisk breeze and cloudy all day. |
| 8 | 7.20 a.m. | 29.87 | ... | a.m. NE. Stiff breeze, cloudy. |
| | 2.50 p.m. | ... | 29.83 | p.m. N. Less wind, cloudy. |
| 9 | 8.10 a.m | 29.79 | ... | N., and moderate all day. |
| ‡ | 2.30 p.m | ... | 29.77 | Light clouds and sunny. |
| | 10 p.m. | ... | 29.77 | |
| 10 | 7 a.m. | ... | 29.83 | N. Gentle breeze; warm |
| | 7.40 a.m | 29.85 | ... | plessant day. |
| | 6 p.m. | 29.85 | ... | |

* A storm coming from the west, and passing away to the eastward.

† Notwithstanding the wind continued steady at north, though light, the barometer fell slowly all the 4th (a very unusual occurrence), but on the 5th it veered to ENE. and ESE., and on the afternoon to SSW., and became very cold, with the barometer rising at night, and on the 6th was again north. We were, therefore, in the front and right-hand semicircle of this storm, which must have been at a high elevation on the 4th, coming from the westward, and passing away to the eastward, and having its central track at a considerable distance to the northward.

‡ This should be a storm travelling northward, over central Germany, from its warmth and dryness. A sirocco probably blew at Rome, the earlier part of this week.

Dorchester, April 10th. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Peat Charcoal.*—I beg to hand you the result of the peat charcoal manure you sent me last June. The 30 acre field in which it was used was Wheat in 1849, sown with Rye for spring feed as soon as the crop of Wheat was harvested; the Rye was fed off with ewes and lambs from the last week in March until the 22d of May, when it was ploughed up, and on the 24th of June was drilled with Swedes; 10 three-horse cartloads of farm-yard manure per acre were put into the ridges, and 30 ridges drilled with the peat manure marked U, 24 ridges drilled with that marked N (this worked quicker in the drill, consequently did not go so far as that marked U), three ridges drilled with rapecake at the rate of 5 cwt. per acre, and the remainder of the field drilled with 5 bushels per acre of Lawes' manure. I do not know the price of the peat manure, but the rape-cake cost 22*s.* per acre, and Lawes' manure 25*s.* per acre. These Swedes were the last sown: my early sown (viz., the first 10 days in June) were a much heavier crop. The land was measured, and the Swedes weighed, after being topped and tailed in the presence of two practical farmers, as well as myself.

WEIGHT OF SINGLE RODS OF SWEDES, TOPPED AND TAILED.

| | No. of Turnips. | st. lbs. |
|---|---|---|
| Peat charcoal, urate, 23 tons 11 cwt. per acre. | 44 | 8 0 |
| | 43 | 8 0 |
| | 40 | 7 0 |
| | 129 | 23 9 |
| Rapecake, 20 tons per acre. | 54 | 8 0 |
| | 52 | 8 0 |
| | 33 | 4 0 |
| | 139 | 20 0 |
| Peat charcoal, night-soil, 21 tons per acre. | 51 | 8 0 |
| | 51 | 8 0 |
| | 33 | 5 0 |
| | 135 | 21 0 |
| Lawes' Manure, 23 tons 11 cwt. per acre. | 48 | 8 0 |
| | 45 | 8 0 |
| | 47 | 7 9 |
| | 140 | 23 9 |

COST OF MANURE PER ACRE.

| | |
|---|---|
| Lawes' Manure ... ... ... ... ... | 25*s.* |
| Rapecake ... ... ... ... ... | 22*s.* |
| Peat charcoal, urate ... ... ... ... | 12*s.* |

*Mr. Hudson, Castle Acre; in the Mark Lane Express.*

*Improved Agriculture.*—A necessary supplement to the substitution of green crops for bare fallow is increased house accommodation, as Turnips cannot be eaten on the ground on these strong lands. The house accommodation at present is inferior and inadequate. Where so much has to be done, it is very important that some economical mode of construction be adopted, for the expenditure recommended by most of our book authorities would swamp a landlord altogether. Whilst we certainly should desire something of a more permanent character, we subjoin the particulars of an estimate and specification drawn up by Mr. Gibson, which may be useful to landlords, as exhibiting a cheap method of affording increased accommodation to their tenants. With care this may last a considerable number of years, until a landlord is gradually able to get over his whole estate with buildings of a more permanent and substantial description. The system of stall-feeding is adopted as the most economical in first cost, and believed to be at least equally profitable as compared with any other in the progress of the stock. Close wooden sheds are proposed to be erected, 15 feet wide inside, with a feeding passage in front, and a cleaning passage behind the cattle. The sheds are to be made of home sawn wood, and roofed with the same, coated with coal tar. Inside they are to be fitted in the usual manner, with stalls, mangers, doors, &c. The whole may be so erected at a cost of 10*s.* per head, where the timber is got free of expense on the estate. If the value of the timber is added the cost will be 30*s.* per head. A shed 70 feet long, by 15 feet wide inside, affording accommodation for 20 cattle in stalls, 7 feet to each pair, will cost as follows:

| | £ | *s.* | *d.* |
|---|---|---|---|
| 34,000 superficial feet 1 inch deal, at 12*s.* per 1000 | 20 | 8 | 0 |
| 50 Larch posts, at 8*d.* ... ... ... ... | 1 | 13 | 4 |
| 40 couple sides, at 8*d.* ... ... ... ... | 1 | 6 | 8 |
| 20 baulks, at 10*d.* ... ... ... ... ... | 0 | 16 | 8 |
| 170 feet wall plate, at 1*d.* ... ... ... ... | 0 | 14 | 2 |
| 170 feet runners, at ½*d.* ... ... ... ... | 0 | 7 | 1 |
| 2 barrels coal tar, at 5*s.* in Durham ... ... | 0 | 10 | 0 |
| Nails ... ... ... ... ... ... ... | 1 | 10 | 0 |
| Workmanship ... ... ... ... ... ... | 2 | 14 | 1 |
| | £30 | 0 | 0 |

*Times Commissioners, from Durham.*

## Calendar of Operations.

APRIL.

WEST SOMERSET FARM, *April 6.*—After the unusually wet season we have experienced, the present fine dry weather, with wind from the north, is very acceptable, enabling us to proceed with the sowing of Oats and Barley, which work has been hitherto, from the above-mentioned cause, rather retarded; but we think they will stand as good a chance as the crops put in earlier, in the wet state which the land was left, which many farmers are apt to do for the sake of getting the work over, because the time for sowing has arrived, on the same principle on which some people take to wearing (chiefly amongst the middle classes), white trousers or other light clothing in April or May, or dispense with fires because spring has come, whatever the weather may be. The Wheats in this neighbourhood are forward, and farmers have been keeping them down with the sheep. The west of England is, as has been proved by meteorological tables, subject to most moisture the generality of years during winter. The cause must partly arise from the nearness of the Atlantic Ocean. On the other hand, on the East coast, there is only the German Ocean; this side of our island is consequently less forward in its pastures than the other. In Devonshire, for example, the forwardness and mildness of the district is well known; and whilst many of our aristocracy go abroad to France or Italy for the sake of a mild winter, they would find it warmer by making Devonshire or parts of Ireland their retreat. The late moist season has been very serviceable to our pastures, at all times pretty forward; and we shall buy in our yearly stock of young sheep shortly. The land is a hill farm, of a sandy loam, easy to work in unfavourable weather; but having been taken from a tenant who did not use folding, but led Turnips off the land, and left many weeds, wants sheep husbandry and good management to fetch it up. We have sown Saintfoin with the Oats, on a rather stony part of the land, on which soil it seldom fails to answer; indeed, as to Saintfoin, if she p have once been fed on it, they will in general prefer it to Clover; and it is an excellent substitute on land Clover sick, it being best to throw in a portion of Hop Clover with the Saintfoin—the quantity of seed per acre 4 bushels. Our labourers have had great assistance this winter in the place, road-making, &c., on this estate, and are receiving generally 10*s.* per week. *H. E.*

## Notices to Correspondents.

BARLEY: *Constant Reader.* 2 or 3 cwt. of Peruvian guano per acre sown broadcast in wet weather and harrowed in.

DEEP DRAINS: *Tyro.* The water does get down, for if you dig there you will find that the clay is wet—not dry. If it gets there a channel at that depth will remove it. To put broken stones over the pipes is a useless expenditure. To ram the clay down over the pipe is not advisable; the object should be to restore the clay *over* the tiles to the same consistency as that of the undisturbed clay *around* the tiles. If your drain acts only by the porosity of the moved earth about it, it will be a failure.

MILK: *E. Hulme* says:—"I have a cow slipped calf one month before her time; her milk has not come, could I give her anything to excite its secretion?" Better let Nature alone. *W. C. S.*

OPEN FURROWS: *Erratum.* On looking again at Mr. Mechi's remarks on open furrows, I find that in my former communication I misstated the width between a portion of his drains. It is 28 feet instead of 36 feet. This makes a material difference, but even the former width will most likely prove too great for his soil, whatever may be the depth adopted. *James Donald.*

PRINCE OF WALES POTATO: *Messrs. Wheeler of Gloucester.* We can speak from personal experience to the excellent quality, productiveness, and *earliness* of this variety.

RACING: *A Novice.* It is *not* customary in racing to weight horses according to their height, although this custom is sometimes observed in pony racing, the conditions however being specified. *W. C. S.*

ROT IN SHEEP: *K.K.* There is certainly some danger to be feared from turning sheep on watered meadows at this time of the year. *W. C. S.*

TRENCHING: *Northwood.* We would not bury Couch Grass; and we would not trench now till the autumn. If the Potatoes are well cultivated, the Couch Grass will be got rid of before them; and the cleanliness of the land, and the coming of a winter's frost before the trenched land is cropped, will all be in favour of the operation.

## Markets.

COVENT GARDEN, APRIL 12.

Hothouse Grapes, both white and black, are becoming more plentiful, and, considering the little sunshine we have had, they are exceedingly well flavoured. Good Pine-apples are scarce, as are also dessert Apples. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Strawberries are more plentiful. Vegetables of all kinds are abundant and good. French Beans and Cucumbers are plentiful. Carrots and Turnips are good in quality. New Cornish Potatoes may be obtained at from 1*s.* to 2*s.* per pound. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 3*d.* per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6*s* to 10*s* | Oranges, per doz., 9*d* to 2*s* |
| Grapes, hothouse, p. lb., 12*s* to 24*s* | — per 100, 6*s* to 14*s* |
| — Portugal, p. lb., 1*s* to 2*s* 6*d* | — Seville. p. 100, 7*s* to 14*s* |
| Strawberries, per oz., 9*d* to 2*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Pears, per doz., 2*s* to 5*s* | Lemons, per doz., 1*s* to 2*s* |
| — per half sieve, 6*s* to 15*s* | Chestnuts, per peck, 2*s* to 5*s* |
| Apples, dessert, p. bush., 6*s* to 10*s* | — per 100, 9*d* to 1*s* 6*d* |
| — kitchen do., 5*s* to 8*s* | Nuts, Barcelona, p. bsh., 20*s* to 22*s* |
| Almonds, per peck, 6*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| — sweet, per lb., 2*s* to 3*s* | Cobs, per 100 lbs., 70*s* to 75*s* |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d* | Shallots, per lb., 6*d* to 1*s* |
| Cabbages, per doz., 1*s* to 1*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Greens, p. doz. bunches, 4*s* to 6*s* | Artichokes, Jerusalem, p. half sieve, 1*s* to 1*s* 6*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| French Beans, p. 100, 1*s* 6*d* to 2*s* 6*d* | Endive, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Asparagus, per 100, 4*s* to 10*s* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Rhubarb, p. bundl., 6*d* to 1*s* 2*d* | Red Beet, per doz., 6*d* to 1*s* |
| Potatoes, per ton, 60*s* to 100 | Mushrooms, p. pot., 9*d* to 1*s* 3*d* |
| — per cwt., 3*s* to 6*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| — per bush., 1*s* 6*d* to 3*s* | Fennel, per bunch, 2*d* to 3*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Savory, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* to 3*s* | Thyme, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Carrots, per doz., 2*s* to 5*s* | Marjoram, per bunch, 2*d* to 4*d* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Mint, green, per bunch, 4*d* to 6*d* |
| Onions, p. bunch, 3*d* to 4*d* | Watercress, p. 12 bunch., 6*d* to 9*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d* |
| Leeks, per doz., 9*d* to 1*s* | |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, April 10.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 80*s* to 90*s* | Clover ... ... ... | 70*s* to 90*s* |
| Inferior ditto... ... | 65 75 | Second cut ... ... | 70 80 |
| Rowen ... ... ... | 65 70 | Straw ... ... ... | 27 30 |
| New Hay ... ... | — — | | J. COOPER. |

A short supply.

CUMBERLAND MARKET, April 10.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78*s* to 88*s* | Inferior ... ... ... | 65*s* to 70*s* |
| Inferior ditto... ... | 65 68 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 84 90 | | JOSHUA BAKER. |

WHITECHAPEL, April 10.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 70*s* to 80*s* | New Clover ... ... | —*s* to —*s* |
| Inferior ditto ... | 65 68 | Inferior ditto... ... | 65 70 |
| New Hay ... ... | — — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 84 90 | | |

COAL MARKET.—FRIDAY, April 11.

Holywell, 14*s.*; Eden Main, 14*s.* 9*d.*; Wallsend Riddell, 13*s.* 6*d.*; Wallsend Haswell, 15*s.*; Wallsend Hetton, 15*s.* 9*d.*; Wallsend Lambton, 15*s.* 6*d.*; Wallsend Stewarts, 15*s.* 9*d.*; Wallsend Tees, 14*s.* 9*d.*—Ships at market, 147.

POTATOES.—SOUTHWARK, April 7.

The Committee report that there have been several fresh arrivals from Scotland since our last report. Trade is exceedingly heavy, and it is only with the very best samples our highest quotations are realised:—York Regents, per ton, 70*s.* to 90*s.*; Scotch do., 60*s.* to 75*s*; ditto Cups, 60*s.* to 70*s.*; Cambridgeshire and Lincolnshire Regents, 50*s.* to 75*s.*; French whites, 50*s.* to 60*s.*

SMITHFIELD, MONDAY, April 7.

We have a large number of good Beasts on sale to-day. The fine cold morning is in favour of the trade, still it is dull, and our top quotations are realised with difficulty. The supply of Sheep is also larger; the demand, however, is adequate, and prices are not much lower. Lambs do not meet with so ready a sale as on Friday last. No alteration in the Calf trade. From Holland and Germany there are 421 Beasts, 69 Calves, and 153 Pigs; from Norfolk and Suffolk, 2500 Beasts; from Scotland, 500; and 120 from midland counties.

| Per st. of 8 lbs.—*s* | *d* | *s* | *d* | Per st. of 8 lbs.—*s* | *d* | *s* | *d* |
|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 6 | to 3 | 8 | Best Long-wools | 3 10 | to 4 | 2 |
| Best Short-horns | 3 4 | — 3 | 6 | Ditto Shorn ... | ... | | |
| 2d quality Beasts | 2 6 | — 3 | 0 | Ewes & 2d quality | 3 4 | — 3 | 6 |
| Best Downs and Half-breds ... | 4 6 | — 4 | 8 | Ditto Shorn ... | ... | | |
| Ditto Shorn ... ... | | | | Lambs ... ... | ... | | |
| | | | | Calves ... ... | 3 0 | — 4 | 4 |
| | | | | Pigs ... ... | 2½ | 8 — 3 | 8 |

Beasts, 4100; Sheep and Lambs, 23,110; Calves, 135; Pigs, 460.

FRIDAY, April 11.

We have a larger number of Beasts than the trade requires; several remain unsold, although there is a disposition to take lower prices. There is a good supply of Sheep, trade is very dull, at lower rates. Choice Lamb is in demand, but 6*s.* is an extreme quotation. There is a large number of middling Calves on offer; a choice one is not much lower. From Germany and Holland we have 25 Beasts, 390 Sheep, and 201 Calves; from Scotland, 40 Beasts; from Norfolk and Suffolk, 400; and 82 milch cows from the home counties.

| Per st. of 8 lbs.—*s* | *d* | *s* | *d* | Per st. of 8 lbs.—*s* | *d* | *s* | *d* |
|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 6 | to 3 | 8 | Best Long-wools | 3 8 | to 4 | 2 |
| Best Short-horns | 3 2 | — 3 | 4 | Ditto Shorn ... | ... | | |
| 2d quality Beasts | 2 4 | — 2 | 10 | Ewes & 2d quality | 3 2 | — 3 | 6 |
| Best Downs and Half-breds ... | 4 4 | — 4 | 6 | Ditto Shorn ... | ... | | |
| Ditto Shorn ... ... | | | | Lambs ... ... | ... | | |
| | | | | Calves ... ... | 2 8 | — 4 | 2 |
| | | | | Pigs ... ... | 2 8 | — 3 | 8 |

Beasts, 616; Sheep and Lambs, 4880; Calves, 336; Pigs, 380.

MARK LANE.

MONDAY, April 7.—The supply of Wheat from Essex and Kent to this morning's market was small, and was taken off at the prices of this day se'nnight; the demand for foreign slow, and without alteration.—Barley, Beans, and Peas, sell freely at last week's rates.—Oats are held firmly at the late advance, without leading to much business.

| PER IMPERIAL QUARTER. | *s.* | *s.* | | *s.* | *s.* |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 42 | —46 | Red ..... | 36 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —40 |
| — — Talavera ..... | 45 | —52 | | | |
| — Norfolk, Lincoln, & York... White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —52 | | | |
| Barley, grind. & distil., 17*s* to 22*s*...Chev | 26 | —31 | Malting . | 22 | —26 |
| — Foreign... grinding and distilling | 18 | —23 | Malting . | 23 | —26 |
| Oats, Essex and Suffolk ..... ..... | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —23 | Feed..... | 16 | —21 |
| — Irish .....Potato | 17 | —21 | Feed..... | 16 | —18 |
| — Foreign .....Poland and Brew | 17 | —2[illegible] | Feed..... | 15 | —18 |
| Rye ..... | 22 | —24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..20*s* to 26*s*.....Tick | 23 | —27 | Harrow . | 23 | —27 |
| — Pigeon.....25 — 31... Wind- | 37 | —43 | Longpod | 27 | —33 |
| — Foreign .....Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent.....Boiler | 23 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26*s* to 28*s* .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —40 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 16 | —23 | Per sack | 26 | —34 |

FRIDAY, April 11.—With the exception of 6100 sacks of Flour and 17,030 qrs. of Oats the arrivals of all articles since Monday are small. The market this morning was again thinly attended, and although there was no disposition to purchase either English or foreign Wheat, holders showed no inclination to give way in price.—Barley, Beans, and Peas remain without alteration.—There is a fair sale for Oats at barely the prices of Monday.—In Black Sea Wheat and Indian Corn there is little doing: a cargo of Egyptian Wheat has been sold at 23*s.* 6*d.*, cost, freight, and insurance.—Flour meets a dull sale at late rates.—We notice but little variation in the Corn trade since our remarks of the 4th inst; the markets throughout the country have been characterised by a general dulness, and the prices of Flour continue to have a downward tendency. The weather, which has been very unsettled, retards spring sowing, and is very unfavourable for the Barley that was committed to the ground the early part of March.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| March 1..... | 36*s* 11*d* | 22*s* 7*d* | 16*s* 0*d* | 24*s* 4*d* | 25*s* 3*d* | 25*s* 8*d* |
| — 8..... | 36 9 | 22 7 | 16 2 | 24 4 | 25 7 | 26 7 |
| — 15..... | 37 2 | 23 1 | 16 6 | 23 3 | 25 6 | 25 8 |
| — 22..... | 37 5 | 23 3 | 16 9 | 22 8 | 25 8 | 25 9 |
| — 29..... | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| April 5..... | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| Aggreg. Aver. | 37 5 | 23 2 | 16 6 | 24 6 | 25 7 | 25 9 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | MAR. 1. | MAR. 8. | MAR. 15. | MAR 22. | MAR. 29. | April 5. |
|---|---|---|---|---|---|---|
| 38*s* 4*d* | ... | ... | ... | ... | ... | |
| 38 1½ | ... | ... | ... | ... | | ... |
| 37 5 | ... | ... | ... | | ... | ... |
| 37 2 | ... | ... | | ... | ... | ... |
| 36 11 | | ... | ... | ... | ... | ... |
| 36 9 | ... | | ... | ... | ... | ... |

SEEDS.—April 7.

| | | | |
|---|---|---|---|
| Canary, per qr. .....38*s* to 42*s* | Coriander, p. cwt. ...14*s* to 21*s* | | |
| Caraway, per cwt. .. 29 — 33 | Mustard, white, p. bush. 4 — 6 | | |
| Hempseed, per qr....34 — 35 | — brown, do..... 7 — 10 | | |
| Linseed, foreign, do. — | Rape, per last ..... 24*l.*—26*l.* | | |
| Clover, red, p. cwt... 40 — 58 | Cakes, Linseed, p. 1000...9*l.* 5*s.* | | |
| — — foreign, do. 42 — 54 | — — foreign, p. ton, 6*l.* 15*s.* | | |
| — white, do. .....42 — 52 | — Rape, foreign, do., 4*l.* 5*s.* | | |
| — — foreign, do. 42 — 52 | Tares, per bush,... 3*s* 0*d*—3*s* 6*d* | | |

LIVERPOOL, TUESDAY, April 8.—The arrivals of grain and Flour this week have been moderate, both from our own coast and from foreign ports. The business transacted at our Corn Exchange this morning was very moderate. As regards Wheat and Flour, the value of any description was barely supported; but, from scarcity, there was an improvement on last Tuesday's price of 1*s.* per qr. on Indian Corn, 6*d.* per qr. on Egyptian Beans, and 1*d.* per bushel on mealing Oats. The best American yellow Indian Corn brought 32*s.* per 480 lbs. Barley, Beans, and Peas were unchanged in value.——FRIDAY, April 4.—The arrivals since Tuesday from Ireland and coastwise are very light of every article. The trade during the week has been quiet, but in the sales made of Wheat and Flour former prices have been supported. At this morning's market there were but few dealers, who purchased sparingly of Wheat and Flour at Tuesday's prices. Oats of good quality being scarce, advanced ½*d.* per 45 lbs., and Oatmeal fully supported late rates. Barley and Peas without change in value, but Beans must be quoted 6*d.* per qr. dearer. Indian Corn was held for rather higher prices, but the sale was slow, at 30*s.* 9*d.* to 31*s.* for new, and 31*s.* 6*d.* per 480 lbs. for old yellow American.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on TUESDAY, April 15th, WEDNESDAY, 16th, and THURSDAY, 17th, 1851, at 12 o'clock each day, a first class collection of Carnations, Picotees, Pinks, and Auriculas; also Dahlias in Roots, Fancy and other Geraniums, Chrysanthemums, Fuchsias, Verbenas, Camellias, Roses, &c. May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

EAST INDIAN AND AFRICAN ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY next, 15th inst., at 12 for 1 o'clock punctually, A CONSIGNMENT OF ORCHIDS, made by a gentleman residing in Sylhet, the grand feature of which is Vanda cærula (the Blue Vanda), recently figured and so much admired; there are several fine plants of this charming species. Also, a few specimens of an Aerides, collected by Mr. R. W. PLANT, in Africa, near Natal.—May be viewed on the morning of sale, and Catalogues had.

MR. HASLAM will Sell, at the Auction Mart, London, on TUESDAY, April 15, 1851, a collection of Standard and Climbing Roses, Tea and other Roses, in bloom; Dutch Peach, Apricot, and Nectarine Trees, Herbaceous Plants, &c.—Catalogues to be had at the Mart, and of the Auctioneer, Epping, Essex.

BEDFORDSHIRE.—Great Barford, near Bedford, Biggleswade and Sandy valuable Freehold Estate, Tithe free, and Land Tax redeemed, giving Votes for the County.

MR. EDWARD PALMER will Sell by Auction, by order of the Mortgagee, at the Golden Cross Inn, Great Barford, near Sandy, Bedfordshire, on TUESDAY, 13th of MAY next, at 1 o'clock, in 11 Lots of about 3 Acres each, an important Freehold Estate, consisting of about 34 Acres of land, all adjoining and delightfully situated on an eminence facing the south, at the entrance of the village of Great Barford, from Bedford, near the Wesleyan Chapel, having an extensive frontage to the road, and commanding a beautiful prospect. The land is of excellent quality, and suitable for building cottages with garden ground attached, the cultivation of which in this neighbourhood has been found so exceedingly profitable from the easy transit of vegetables by rail to the London markets.—N.B. Two-thirds of the purchase money may remain on mortgage if required, or the whole, if satisfactory security is given. Particulars, with plan and conditions of Sale, may be had 14 days prior to the Sale, of Mr. Benjamin Chandler, jun., Solicitor, Sherborne, Dorset; and Messrs. Poole and Gamlen, Solicitors, 3, Gray's-inn-square, London; Mr. W. Wallen, jun., Architect and Surveyor, 14, Basinghall-street, City, and Greenwich, Kent; at the Law Property Assurance and Trust Society's Offices, 30, Essex-street, Strand; at the Golden Cross Inn, Great Barford; Swan Inn, Bedford; White Swan, Biggleswade; and at the Auctioneer's Offices, 20, Change-alley, Cornhill, London.

THE MOST SUPERB BED OF TULIPS IN EUROPE.

MR. R. LAWRENCE, of Hampton, will sell his unrivalled bed of TULIPS, of the splendour of which some idea may be formed by the number of fine varieties: viz., 30 Louis XVI., 16 Musidora, 12 Pompe Funebre, 12 Fabius, from 4 to 10 each of Bysantium, Pandora, Parmigiano, Brown's Polyphemus, ditto Ulysses, Dicken's Duke of Devonshire, Marcellus, Rose Arlette, Lyde's Queen of Hearts, Brown's Magnificent, Strong's King, Nora Criena, Thalia, Vivid. Besides several each of Lac, Coronation, Iago, Apelles, Salvator Rosa, Lord Collingwood, Marshal Soult, Selim, Groom's Queen Adelaide, Lady Exeter, Laura Lawrence, Hepworth's Queen of the North, Dutch Ponceau, Goldham's Maria, Brown's Sylvia, Jeffrey's Elizabeth, La Belle, Nanette, Lawrence's Lady Sale, and nearly every flower that has been raised worth cultivation, by Lawrence, Clarke, Lyde, Dixon, Strong, Walker, Glenny, Goldham, Brown, Groom, &c. Persons desirous of receiving Catalogues, may send their addresses to Mr. R. LAWRENCE, Red Lion, Hampton (where the bed may be seen, from the 1st of May to the day of sale); Mr. LOCKHART, 84, Fleet-street; and Mr. GLENNY, Strand. Catalogues will also be forwarded to the principal Seedshops.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE DISPOSED OF.—A Lady, in the neighbourhood of St. John's Wood, is desirous of disposing of an Ornamental Wood SUMMER HOUSE, ditto Table to match, and Garden Seat, made by Prior, of Cricklewood.—Apply to JOHN ANDREW HENDERSON and Co, Nurserymen, Pine Apple-place, Edgeware-road, London.

TO GARDENERS, FLORISTS, AND OTHERS.

TO BE LET, for a term of years, a very compact and desirable NURSERY BUSINESS within four miles of London, in an improving Neighbourhood. The above contains a Cottage, four Greenhouses, with Pits, Frames, a good supply of Water, and every other convenience in trade.—For further particulars, Direct to A. B., Messrs. Neal and Co., Cavendish House, Wandsworth-road, South Lambeth, Surrey.

HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

8 by 6 under 10 by 8.....4½*d.*; 10 by 8 under 14 by 10.....5*d.*
14 by 10 under 1½ foot, not above 20 inches long ...5½*d.*
1½ foot — 3 feet — 30 — ...6*d.*
3 feet — 4 feet — 30 — ...6½*d.*
4 feet — 5 feet — 35 — ...7*d.*

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½ .....12*s.* 0*d.* | 8 by 6 and 8½ by 6½ .....15*s.* 0*d.*
7 by 5 and 7½ by 5½ .....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 .....16 6

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5*s.*, 6 Tubes, 7*s.* 6*d.*

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pasty Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

6 by 4 to 6½ by 5 ... 12*s.* each. | 9 by 7 to 10 by 8 ... 15*s.* each.
6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,,

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38*s.* per case; if 5 cases are taken, 40*s.* per case; or if a single case, 42*s.*

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

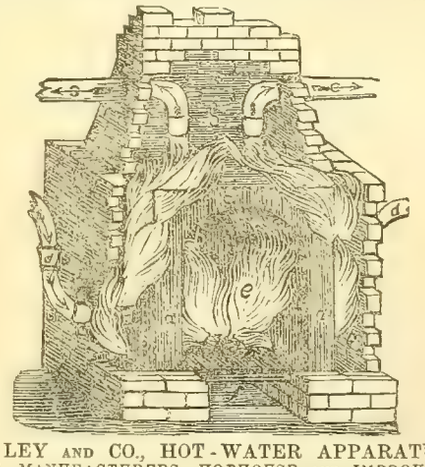
Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

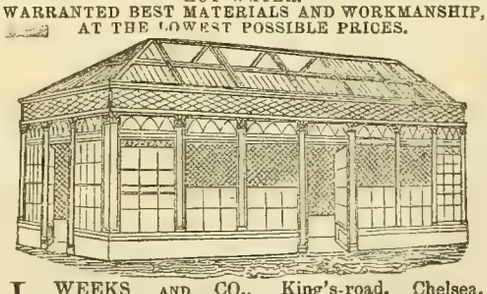
See the *Gardeners' Chronicle* first Saturday in each month.



ELEY AND CO., HOT-WATER APPARATUS MANUFACTURERS, HOTHOUSE AND IMPROVED PIT BUILDERS, beg to inform the Nobility and Gentry, they, being practical and working men, defy competition, and are enabled to supply their IMPROVED PORTABLE CAST-IRON BOILERS, requiring no Brick-work, being more durable than Copper or Wrought-Iron, and surpass all others. Building and Hot-water Apparatus arranged so that any gentleman's tradesman can fix them, or their own services can be had at a trifling expense. Can be highly recommended by the nobility and gentry, for whom the most complete works have been erected.—The Trade supplied. Estimates free. Boilers of every description supplied. Conservatories in Metal, Iron, or Wood on the most ornamental designs.—Address, City-road, near the Toll-gate, London.

Buildings or Sashes supplied glazed or unglazed. Price of Boilers from 2*l.* 10*s.* to 6*l.*, equal to those charged 15*l.*

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

EXHIBITION, 1851.—HOME EVERYWHERE.—TENTS for the MILLION, at BENJAMIN EDGINGTON'S Marquee, Tent, Flag, and Rick Cloth Manufactory, 2, Duke-street, Southwark. A Warehouse, 203, Piccadilly.

The following Second-hand Marquees to be sold reasonably—250 feet by 28, 180 feet by 40, 120 feet by 33, and 150 feet by 20. Netting, Bunting, and Scrims for Fruit Trees.

Emigrant Tents fitted up complete.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

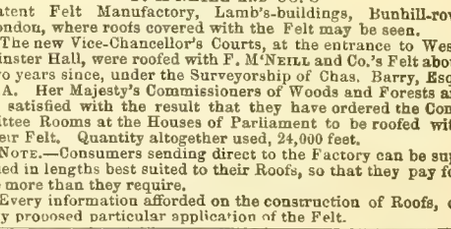
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

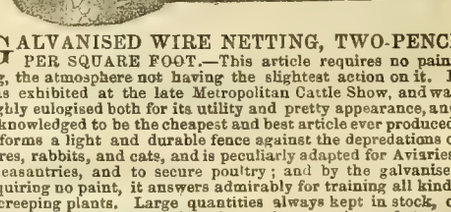


| | | Galvanised, | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| ¾-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3*d.* per yard. | 30 inches wide 7½*d.* per yard.
18 ,, ,, 4½*d.* ,, | 36 ,, ,, 9*d.* ,,
14 ,, ,, 6*d.* ,, | 48 ,, ,, 1*s.* ,,

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

DO YOU BRUISE YOUR OATS?

HORSE KEEP.—Oat Bruisers, Chaff Cutters, Ploughs, 42s., Shares, 5s. per dozen; Rollers, Wheat Mills, Bean Mills, Steam Engines, Scarifiers, Turnip Cutters, Dressing Machines, Drills, Threshing Machines, Wood and Iron Harrows, Steaming Apparatus, Scotch Carts, Hay-making Machines, Horse Hay Rakes, and Drag Mills. First class goods warranted. Mary Wedlake and Co., 118, Fenchurch-street. Most liberal discount for cash. Goods delivered free. On receiving six postage-stamps a list, with 107 engravings, will be sent free.

IRON GATES, HURDLES, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfields Wrought and Cast-iron Works, Bilston, Staffordshire, Manufacturers of every description of Park Entrance, Carriage and Field Gates, Wickets, &c.; Plain and Ornamental Fencing and Palisading; Ox, Cattle, Sheep and other Hurdles; Tree Guards, Garden Seats, Hay Racks, Wheelbarrows; Land and Garden Rollers, Stable Fittings, &c. &c.

The works being situated in the centre of the Staffordshire Iron district, Thomas Perry and Sons are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and most moderate terms. A great variety of the above articles always kept in Stock at the London Warehouse, and at the Works. Drawings and prices may be obtained on application, or furnished free by post.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: Wm Drury, Castle-street, Liverpool; Hall and Wilson, 50, King-street, Manchester; Austin and M'Aslin, 168, Trongate, Glasgow.

NETTING, FLAGS, AND BUNTING.—Tanned Garden Netting, for protecting Fruit Trees from Frost, Blight or Birds; or as a Fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from John King Farlow's Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½d., 1 yard wide, 3d. 2 yards, or 6d., 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealers in all sorts of USEFUL and ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

Baily's registered PHEASANT and POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 18s. 6d. Drawing and particulars forwarded by post on application.

Baily's "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

THE EDINBURGH REVIEW, No. CXC. will be published on TUESDAY next.

CONTENTS.

I. ENGLAND AS IT IS.
II. SALMON FISHERIES.
III. SOUTHEY'S LIFE AND CORRESPONDENCE.
IV. LAMANISM IN TARTARY AND THIBET.
V. VICTOR COUSIN.
VI. SPAIN AND SPANISH POLITICS.
VII. SHALL WE RETAIN OUR COLONIES?
VIII. THE DEFEAT OF ITALY.
IX. ULTRAMONTANE DOUBTS.

London: Longman and Co. Edinburgh: A. and C. Black.

Lately published,

SPECIES FILICUM; or, A Synopsis of all known Ferns. By Sir William Jackson Hooker, K.H.D.C.L., Oxon, L.L.D., F.R.S., &c. &c.,; Vice-President of the Linnæan Society, and Director of the Royal Botanic Gardens at Kew. Vol. I. complete, in extra cloth boards, price 38s.

or, Part the first, 12s., Part the second, 10s.,
" third, 10s, " fourth, 6s.,
Part the fifth, just ready.

☞ A Prospectus, with Specimen of the Work gratis, on sending two penny stamps.

London: William Pamplin, 45, Frith-street, Soho.

NEW MONTHLY PERIODICAL

BY THE

AUTHOR OF THE "COMIC HISTORY OF ENGLAND," ILLUSTRATED BY JOHN LEECH.

*On the 1st of May will be published, price 1s., with coloured Engravings and numerous Woodcuts by* John Leech,

THE FIRST NUMBER OF

THE COMIC HISTORY OF ROME,

FOR THE

Use and Amusement of Schools and Families.

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EASTER HOLIDAYS.

THE ZOOLOGICAL GARDENS, in the Regent's-park, are open to Visitors every day in EASTER WEEK, except Saturday, on payment of SIXPENCE each person.

Price 1*l.* 11*s.* 6*d.*, imperial 8vo.

THE ROSE GARDEN. By William Paul.

The work is embellished with 15 highly-finished Coloured Drawings by Andrews, Maubert, and Wakeling; and numerous Wood Engravings.

"Any amateur who will procure Paul's 'ROSE GARDEN' will make his course clear for the successful cultivation of this beautiful Flower, and soon have all that it costs him in the certainty of his operations."—*Gardeners' Chronicle.*

"The important subject of pruning is handled in a masterly manner ..A book full of most useful information"—*Beck's Florist.*

"Given in so plain and understandable a manner that the merest tyro, by following the directions, may count on success."—*Florist's Journal.*

London: W. and T. Piper, 23, Paternoster-row; and all Booksellers.

OFFICIAL EXHIBITION CATALOGUES.—ADVERTISEMENTS will continue to be received for insertion in the Official Catalogues during the whole time the Exhibition remains open; but as the Contractors are bound to pay a penalty of 50*l.* a day if they do not deliver the first edition to the Royal Commission by the 18th of April, those Advertisements intended for the first five series of 20,000 each of the small Catalogue, and for the first editions of the Illustrated and French and German Catalogues, must be sent to the Contractors by the 15th of April.

Spicer Brothers, Wholesale Stationers, W. Clowes and Sons, Printers, } Joint Contractors to the Royal Commission.

Official Catalogue Office, 29, New Bridge-Street, Blackfriars.

FERNS.

NOTICE.—The new Part (Part V.; or Volume the Second, Part I.) of Sir William Hooker's SPECIES FILICUM will be ready on April 28.

London: William Pamplin, 45, Frith-street, Soho.

SPLENDID WORKS ON NATURAL HISTORY.

EDWARDS'S BOTANICAL REGISTER, consisting of Coloured Figures of Plants and Shrubs cultivated in British Gardens, with their History, Treatment, &c. New Series Edited by Dr. Lindley, with 750 *beautiful coloured plates*, 10 large vols. royal 8vo, new cloth, 5*l.* 15*s.* (pub. at 22*l.*) 1838-47.

This is the new and complete series of this beautiful and esteemed work. As the number for sale is very limited, early application is desirable.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 16—1851.] SATURDAY, APRIL 19. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 251 *c* | Manures, adulteration of | 251 *b* |
| — prize list of | 251 *b* | March, wet | 245 *c* |
| Asparagus | 245 *c* | Oak, Turkey | 246 *c* |
| Birds, British song | 244 *c* | Pelargonium growers | 244 *b* |
| Calendar, Horticultural | 247 *c* | Plants, roots of | 243 *c* |
| Cauliflowers, culture of | 247 *b* | — rock | 248 *c* |
| Chicory | 251 *b* | Poultry breeding | 250 *b* |
| Conifers at Holker | 246 *b* | Probus Farmers' Club | 252 *a* |
| — at Dropmore | 246 *c* | Rent, payment of | 252 *b* |
| Deodars | 245 *c* | Rock plants | 248 *c* |
| Filter, new | 247 *c* | Roots of plants | 243 *c* |
| Food, early spring | 253 *c* | Sainfoin | 249 *b* |
| Furrows, open | 251 *a* | Salvia splendens | 246 *a* |
| Gaines's (Mr.) nursery | 247 *a* | South Devon Bot. Soc. | 247 *a* |
| Game | 252 *c* | Steam engines | 249 *c* |
| Garden gleanings | 244 *c* | Temperature | 246 *c* |
| — walks | 245 *a* | Thatch, incombustible | 253 *c* |
| Gleanings, garden | 244 *c* | Trade memoranda | 245 *b* |
| Grass land | 252 *b* | Transplanting | 246 *a* |
| Guano, Norwood | 246 *a* | Verbenas, select | 248 *c* |
| — trade | 243 *b* | Vines for succession | 248 *c* |
| Horticultural Society | 246 *c* | Walks | 245 *a* |
| Kew Gardens | 243 *c* | Walls, to stud | 246 *a* |
| Land, Grass | 252 *b* | Water filter | 247 *c* |
| Leases | 252 *a* | — pipe | 247 *c* |
| Linnean Society | 247 *a* | Weather, the | 245 *c*—253 *b* |


HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the First EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, May 3d.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5*s.* each; or, on the day of the meeting, at Turnham-green, price 7*s.* 6*d.* each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4 in the Duke of Devonshire's road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an admission ticket to which his signature is inscribed.

21, Regent-street, London.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—GENERAL EXHIBITIONS, WEDNESDAYS, May 14, June 11, and July 2; AMERICAN PLANTS, SATURDAYS, May 31 and June 7; ROSE GARDEN, June 21. Tickets, which will admit the bearer to either of the above Exhibitions, or upon ANY one DAY in the month of JUNE, except Sunday, may be obtained at the Gardens, by orders from Fellows of the Society; price, on or before Saturday, May 3, 4*s.*; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each. Fellows of the Society can have, on or before May 3, any number of packets, containing 30 tickets each, for 5*l.* 5*s.* the packet.

NATIONAL FLORICULTURAL SOCIETY, 21, Regent-street, London.

NOTICE.—Mr. T. Barnes, Stowmarket; Mr. Kinghorn, Twickenham; Mr. E. A. Hamp, South Lambeth; Mr. A. Parsons, Enfield; Mr. C. Lidgard, Hammersmith; Mr. John Frazer, Lea Bridge; Mr. J. T. Neville, Peckham; and Mr. J. Holland, Middleton, near Manchester, are the Censors specially appointed for the examination of Seedlings at the Society's offices, 21, Regent-street, on THURSDAY next, the 24th inst., at 12 o'clock precisely; and all plants, flowers, &c., must be entered, named, labelled, and staged by that time.

A ballot will take place for 48 new members. The nomination of Candidates will be proceeded with. The awards and certificates of the last exhibition announced, and subscriptions received. By order, JOHN EDWARDS, Hon. Sec.

THE LONDON FLORICULTURAL SOCIETY.—A meeting of this Society, for the exhibition of Auriculas and Polyanthuses, by class showing, and for the production of Seedling Florists' Flowers, will take place at Exeter Hall, Strand, London, on TUESDAY next, the 22d inst., at 12 o'clock; all Flowers to be ready for the Censors by 1 o'clock, after which hour none will be admitted. In addition to the ordinary prizes of the Society, a Silver Cup, of the value of Five Guineas, will be given for the best four Auriculas, one of each class (the winner of last year's Cup not to compete); also for the best plant of each of the following flowers; viz., 21*s.* for Dickson's Duke of Wellington, 21*s.* for Page's Champion, 10*s.* for Dickson's Apollo, 10*s.* for Clegg's Crucifix, 10*s.* for Oliver's Lovely Ann, and 10*s.*, for Dickson's Duke of Wellington.

45, Lime-street, April 19. J. W. JEWITT, Hon. Sec.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. Under the Patronage of Her Most Gracious Majesty the QUEEN. The First EXHIBITION for the season will take place on WEDNESDAY, APRIL 23, in the Assembly Rooms, at the HORNS TAVERN, KENNINGTON, open to all Exhibitors, when Prizes will be awarded for the following productions, viz., Miscellaneous Plants, Auriculas, Heartsease, Polyanthuses, Cinerarias, Specimen Plants, and Seedlings. Mr. Oakey's Band is engaged for the occasion. Admission to Members and their Friends at 12 o'clock, and to the public from 1 to 6 o'clock, at One Shilling each. The following Exhibitions will also take place at the Royal Surrey Zoological Gardens: On Wednesday, May 28; Wednesday, June 25; Thursday, July 24; and Wednesday, Sept. 3.

Lists of Prizes and the Rules of the Society may be obtained of JOHN TAYLOR NEVILLE, Secretary.

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HAY, SANGSTER, and Co., April 19.

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| Ditto yellow perfection (These three yellow varieties are the finest of all.) | 1 | 0 | 0 |
| Rhododendron versicolor, double rose and red, quite hardy | 0 | 10 | 6 |
| Azalea indica Alexandria | 0 | 7 | 6 |
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| Ditto versicolor | 0 | 7 | 6 |
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MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his 12 new and much-admired SHRUBBY CALCEOLARIAS are now ready to send out. The set of 12 for 3*l.*, or half the set for 30*s.*, provided the selection be left to H. M. Most of these Seedlings were submitted to the Censors at the Worton Cottage Meetings last season, and highly spoken of. Four of them are figured in the *Florist* for December. Twelve very good CALCEOLARIAS, including four or five Seedlings not yet out, price 20*s.* Very choice CALCEOLARIA SEED, at 2*s.* 6*d.* and 5*s.* per packet.

NEW SEEDLING PANSIES.

H. M.'s three very distinct and beautiful Seedling Pansies, viz, "Captivation," "Novelty," and "Sambo" are now ready to send out. They are a valuable acquisition to this lovely family. Healthy Plants, 5*s.* each, or the three for 10*s.* 6*d.*, post free. For opinion upon them, see *Florist* for August and October, 1850. Twenty of the best Show Pansies (including "Sambo,") for 25*s.*, post free. For names, see descriptive list. Very select Pansy Seed, at 2*s.* 6*d.* and 5*s.* per packet. The 5*s.* packets are equal to three packets at 2*s.* 6*d.* A Descriptive List of the Calceolarias and Pansies may be had on prepaid application.—Orders from unknown correspondents, enclosing Post-office order, payable at Leeds Post-office, will be duly attended to.

DAHLIAS.—MR. GEORGE GLENNY says, "Yours is the *very best* Dahlia out; 2000 plants would be sold if kept back and exhibited this year," also, "it would be fooled away to let it out now." This, however, is unavoidable. The bloom is absolute perfection, and perfectly constant; named by Mr. Glenny, Morgan's King of the Dahlias, and pronounced by him "best of all the crimsons," and "best of all the Dahlias." Height, 4 feet. Plants, first week in May, 10*s.* 6*d* each. The usual allowance to the trade, where a dozen are ordered.—Unknown correspondents are requested to remit to ABRAHAM MORGAN, Cross-street, Oswestry, Shropshire.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4*s.* per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s.* each.

NEW DAHLIAS.

CHARLES TURNER will be prepared to execute orders on the 1st of May for the following varieties, which are very superior flowers, and should be in every collection grown for exhibition:—

NEPAULESE PRINCE (STEIN) crimson, shaded with dark maroon, very superior constant show flower, being an improvement on Richard Cobden; has obtained numerous first prizes in class showing and six first-class certificates ... ... ... ... ... 10 6
NIL DESPERANDUM (STEIN) vivid scarlet, unquestionably the best of its class, the petal good, flower of great depth, and finely developed, one of the leading flowers of the season; has been very successful ... ... ... 10 6
BARMAID (HOLMES) white, occasionally tinged, but generally a fine white of unusual substance ... ... 10 6
ROUNDHEAD (HOLMES) salmon buff, deep, full, finely formed flower, good grower, at all times to be depended on; habit particularly good; took certificates at Metropolitan, Royal South London, and Norwich ... ... 10 6
NAPOLEON (PARKER) rich vermilion, of a novel and striking shade, flower deep and symmetrical, constant and good habit; certificate at Wycombe ... ... 10 6
REGINA (HALE) shaded rose, smooth good petal, well formed, good size; took certificate at Royal South London ... ... ... ... ... ... ... 10 6
SIR CHARLES NAPIER (HALE) rich scarlet, fine firm flower, finely formed and closely set, handsome close centre; took certificate at Highgate ... ... ... 10 6
JULIEN (HALE) rosy purple, nearly cupped, of great depth; took certificates at Slough and Notting Hill ... 10 6

FANCY DAHLIA.

MRS. HANSARD (UNION) raised by J. Edwards, Esq.; yellow, with distinct white tips, fine form, and full size; very true and constant in every respect; a noble addition to this class; has been eminently successful at 12 of the principal shows ... ... ... ... ... 10 6

CHOICE NEW FUCHSIAS,

WHICH WILL BE READY WITH THE DAHLIAS.

EXPANSION (BANKS) pure white tube and sepals, bright rose corolla, very stout and abundant bloomer, one of the best light varieties ... ... ... ... ... 7 6
VOLTIGEUR (BANKS) crimson tube and sepals, dark purple corolla, the sepals reflex well, and show the rich corolla to great advantage ... ... ... ... 7 6
CONSPICUA (BANKS) white tube and sepals, vermilion corolla, very large and attractive ... ... ... ... 7 6
PRINCESS (BANKS) white, red corolla, very free bloomer, and good habit ... ... ... ... ... ... 5 0
DUCHESS OF KENT (KNIGHT) blush tube, sepals tipped with green, vermilion corolla, exceedingly long handsome flower ... ... ... ... ... ... ... 7 6
ELECT (BANKS) crimson tube, rosy purple corolla, of fine habit ... ... ... ... ... ... ... 5 0
MADAME SONTAG (BANKS) white tube, bright vermilion corolla ... ... ... ... ... ... ... 5 0
AJAX (HOCKEN) large dark, fine habit ... ... ... 5 0
BRILLIANT (BANKS) crimson, purple corolla, good habit, and very free bloomer ... ... ... ... 5 0
LOVELINESS (BANKS) small pleasing light ... ... 3 6

General Catalogue can be had on application.

Royal Nursery, Slough, near Windsor.

SELECT PLANTS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE, with the newspaper stamp, to go free by post, supplied on application. The following selections are now ready to send out:—

| | | *s.* | *d.* |
|---|---|---|---|
| | GERANIUMS. | | |
| 12 | splendid new varieties sent out last season ... ... | 50 | 0 |
| 25 | superb show varieties, 40*s.*, 12 for ... ... ... | 21 | 0 |
| 25 | fine ditto ditto 22*s.*, 12 for ... ... ... | 12 | 0 |
| 12 | splendid fancy varieties, 15*s.*, 6 for ... ... ... | 9 | 0 |
| | Scarlet and good bedding varieties, per doz., 6*s.* to ... | 9 | 0 |
| | FUCHSIAS.* | | |
| 12 | splendid new varieties sent out last season (Story's, Mayle's, Smith's, Rumley's, and others) ... ... | 15 | 0 |
| 25 | superb show varieties, 17*s.* 6*d.*, 12 for ... ... ... | 9 | 0 |
| 25 | fine older ditto 10*s.* 6*d.*, 12 for ... ... ... | 5 | 0 |
| 50 | varieties in choice assortment ... ... ... ... | 25 | 0 |
| | GREENHOUSE PLANTS. | | |
| 12 | select showy varieties ... ... ... ... ... | 15 | 0 |
| 25 | ditto ditto ... ... ... ... ... | 28 | 0 |
| 50 | fine varieties ... ... ... ... ... | 50 | 0 |
| 12 | new and choice ditto ... ... ... ... | 25 | 0 |
| 12 | vars. GREENHOUSE CLIMBING PLANTS, select | 12 | 0 |
| 12 | do. STOVE PLANTS, new and choice ... ... | 18 | 0 |
| * 12 | do. ACHIMENES, 6*s.*, 6 beautiful new vars. ... | 5 | 0 |
| * 12 | do. GLOXINIAS, 12*s.*, 6 beautiful new vars. ... | 7 | 6 |
| 12 | do. CINERARIAS, showy, *strong blooming plants* | 10 | 0 |
| 12 | do. AZALEA INDICA, choice, 15*s.*, 6 for ... | 7 | 6 |
| 12 | do. ERICAS, free bloomers, 12*s.*, 6 for ... ... | 7 | 6 |
| | HARDY PLANTS. | | |
| 100 | do. HERBACEOUS PLANTS, 30*s.*, 50 for ... | 17 | 6 |
| 100 | do. ditto, superior and new, 50*s.*, 50 for ... ... | 30 | 0 |
| 25 | do. ditto ditto 17*s.* 6*d.*, 12 for ... | 9 | 0 |
| 25 | do. ROCK PLANTS, select, 12*s.*, 12 for ... ... | 7 | 6 |
| 12 | do. ANTIRRHINUMS, new and choice, 10*s.*, 12 fine vars. ... ... ... ... ... | 6 | 0 |
| 25 | do. PHLOX, showy, 10*s* 6*d.*, 12 for ... ... ... | 6 | 0 |
| 12 | do. PENTSTEMONS, new and choice, 7*s.* 6*d.*, 6 for | 5 | 0 |

Those marked thus * can be sent by post if desired, without extra charge. Goods sent carriage free to London; and for long carriage of goods of 40*s.* and upwards extra plants sent gratis. Particular attention is paid to secure packing, and strong packages provided for plants sent to long distances.—Post-office orders are payable either to BASS and BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TO CARROT AND WURZEL GROWERS.

FINE New White BELGIAN CARROT, 5*d.* per lb.
FINE NEW LONG RED SURREY CARROT 7*d.* ,,
,, ,, ALTRINGHAM ditto ... 8*d.* ,,
,, ,, LONG RED MANGOLD WURZEL 6*d.* ,,
,, ,, GLOBE YELLOW ,, ,, 5*d.* ,,

Cash prices.—Offered by CLARKE and Company, Seedsmen, 86, High-street, Borough, London.

A MOST DESIRABLE OPPORTUNITY IS NOW OFFERED TO THOSE ABOUT DECORATING "THE FLOWER GARDEN."

By inspecting YOUELL AND CO.'S New and Descriptive Price List for the present season. It contains all the new as well as the most ornamental plants for bedding, with colours attached. Also a descriptive list of the best Verbenas, Fuchsias, Fancy and Scarlet Geraniums, Pansies, Heliotropes, new Liliputian and large flowering Chrysanthemums, Antirrhinums, Hollyhocks, Camellias, Cinerarias, Gloxinias, as well as a select collection of Stove and Greenhouse Plants.

Catalogues will be forwarded on receipt of two postage stamps.

Owing to the numerous letters of inquiry respecting their new and magnificent Gloxinia "Petoiana," they take the present opportunity of announcing that it will not be ready for sending out until June next, of which due notice will be given.

YOUELL and Co., Royal Nursery, Great Yarmouth.

BATH NURSERY.

JAMES GRIFFIN begs to announce that his Annual Spring CATALOGUE is now ready, and may be had on application. It contains a Descriptive List of all the newest and best Dahlias, Fuchsias, Verbenas, Phloxes, &c.; also a Select List of the most useful plants adapted for decorating the Flower Garden. The prices will be found exceedingly low. Weston-road, Bath.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loo's | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-street, London-bridge.

TANNED NETTING for the Protection of Fruit Trees, and for the security of fresh-sown Seed from Birds, at unprecedented low prices, viz., 1*d.* per square yard, 200 yards for 14*s.*, 600 yards for 30*s.*, or 1000 yards for 50*s*; Bunting and Scrim Canvass for Wall Fruit—at THOMAS EDGINGTON AND CO.'S. Marquees, Tents, and temporary Ball Rooms fitted up in a superb style, in town or country, on sale or hire. Marquees for Emigrants. Rout Seats and Dancing Hollands for evening parties, on hire; Flags, Banners, Tulip Covers, Sun blinds, and improved Waggon and Rick Cloths. Tarpaulings for houses under repair, on hire, at THOMAS EDGINGTON and Co's Warehouse, 17, Smithfield Bars, City, and Manufactory, nearly opposite the Bricklayers' Arms, Old Kent-road.

Orders per post punctually attended to.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
FLEXIBLE INDIA RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES for TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

| Size. | ½ in. | ⅝ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. | 2½ in. | 3 in. |
|---|---|---|---|---|---|---|---|---|---|
| 1 ply ... | 0*s.* 5*d.* | 0*s.* 6*d.* | 0*s.* 8*d* | 0*s* 10*d.* | 1*s.* 0*d* | 1*s.* 2*d.* | 1*s.* 4*d* | 1*s.* 6*d.* | |
| 2 ply .. | 0 8 | 0 9 | 1 0 | 1 2 | 1 5 | 1 8 | 2 0 | 2 8 | |
| 3 ply .. | 0 11 | 1 0 | 1 3 | 1 6 | 1 10 | 2 2 | 2 9 | 3 3 | |

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Carnarvon-place, Old Kent-road, London.

GREENHOUSE.—Wanted, to purchase, a SMALL SECOND-HAND GREENHOUSE, in good condition, and complete. Size, about 14 feet by 8. Any person having such a Greenhouse to dispose of, is requested to apply by letter, post paid, stating price and dimensions, to A. B. C., 345, Strand, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealers in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawing and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for cash.

| CUT TO SIZE. | | | SHEET SQUARES. | | | |
|---|---|---|---|---|---|---|
| 16 oz. from 2*d.* to 3½*d.* per foot. | | | In boxes of 100 feet. | *£* | *s.* | *d.* |
| 21 oz. ,, 3½*d.* 5*d.* ,, | | | Under 6 by 4 ... ... | 0 | 8 | 6 |
| 26 oz. ,, 3½*d.* 7½*d.* ,, | | | 6 by 4 and 6½ by 4½ ... | 0 | 13 | 0 |
| 32 oz. ,, 4*d.* 9½*d.* ,, | | | 7 by 5 and 7½ by 5½ ... | 0 | 15 | 0 |
| | | | 8 by 6 and 8½ by 6½ ... | 0 | 17 | 6 |
| | | | 9 by 7 and 10 by 8 ... | 1 | 0 | 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2¾*d.* per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.* |
| 7 by 5 ,, 7½ by 5½ ... 13 6 | 9 by 7 ,, 10 by 8 ... 16 6 |

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6*s.*; 6 tubes, 8*s.* 6*d.* GLASS SHADES.—Estimates and List of Prices forwarded on application

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 85, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | |
|---|---|
| 16 by 4 to 6½ by 5 ... 12*s.* each. | 9 by 7 to 10 by 8 ... 15*s.* each. |
| 6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,, |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38*s.* per case; if 5 cases are taken, 40*s.* per case; or if a single case, 42*s.*

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.

87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

GLASS FOR PIT FRAMES, HOTHOUSES, &c.
in Boxes of 100 feet, 8*s.* 6*d.* each.

| | | |
|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6½ by 3 ... 6½ by 3 |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphone, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

| Lean-to. | | | Unglazed | | | Span-roofed, glass all round. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Glazed. | | | Unglazed. | | | |
| ft. | ft. | *£* | *s.* | *d.* | *£* | *s.* | *d.* | *£* | *s.* | *d.* | *£* | *s.* | *d.* |
| 12 by | 8 | 15 | 10 | 0 | 10 | 0 | 0 | 18 | 6 | 0 | 11 | 15 | 0 |
| 15 — | 10 | 22 | 10 | 0 | 14 | 5 | 0 | 25 | 10 | 0 | 16 | 9 | 0 |
| 18 — | 12 | 28 | 10 | 0 | 18 | 0 | 0 | 32 | 14 | 0 | 20 | 12 | 6 |
| 21 — | 12 | 32 | 10 | 0 | 20 | 0 | 0 | 37 | 8 | 0 | 23 | 2 | 0 |
| 24 — | 13 | 44 | 0 | 0 | 25 | 12 | 6 | 49 | 12 | 0 | 29 | 2 | 0 |
| 27 — | 14 | 51 | 4 | 0 | 29 | 17 | 0 | 58 | 5 | 0 | 38 | 15 | 0 |
| 30 — | 15 | 61 | 17 | 0 | 36 | 2 | 0 | 69 | 14 | 0 | 40 | 9 | 0 |
| 35 — | 16 | 73 | 4 | 0 | 42 | 14 | 0 | 82 | 7 | 0 | 47 | 15 | 0 |
| 40 — | 17 | 85 | 7 | 0 | 49 | 15 | 9 | 95 | 17 | 0 | 55 | 12 | 0 |
| 45 — | 17 | 93 | 15 | 0 | 54 | 13 | 9 | 105 | 10 | 0 | 61 | 12 | 0 |
| 50 — | 18 | 108 | 10 | 0 | 63 | 6 | 0 | 121 | 18 | 0 | 70 | 19 | 0 |
| 55 — | 18 | 115 | 16 | 0 | 67 | 11 | 0 | 130 | 4 | 0 | 75 | 19 | 0 |
| 60 — | 18 | 124 | 13 | 0 | 72 | 14 | 3 | 140 | 8 | 0 | 82 | 8 | 0 |

Height in front, 3 feet 6 ins. wood and glass; 3 feet 6 ins. brickwork.

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sashes, Doors, &c., post free, on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, April 19.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21s. each.—Nursery and Seed Establishment, Hammersmith, near London.—April 19.

NEW DAHLIAS; E. FOSTER'S, ESQ., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition; 21s. Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. MRS. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

AUGUSTE VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to inform the Amateur, and Trade in general, his new CATALOGUE OF PLANTS FOR 1851, is just published, and may be had on application of Mr. R. SILBERRAD, 5, Harp-lane, Great Tower-street, London.

WIDNALL AND DAVIS respectfully announce that their two first rate FANCY DAHLIAS, will be ready to send out, the first week in May.

ADMIRATION (Widnall and Davis) rich purplish crimson, tipped with pearly white, centre well up, very symmetrical and constant, 3 ft., 7s. 6d.

APPROBATION (Widnall and Davis) rich mellow orange crimson, tipped with beautiful creamy buff, a very desirable first class flower, 4 ft., 7s. 6d.

They can also execute the following in good plants:—

FUCHSIA nigricans, } Linden's two magnificent Peruvian
" venusta } species, figured in the Flore des Serres, in Dec., 1849, 3s. 6d. each.

VERONICA ANDERSONII, a superb plant for bedding or Greenhouse culture, with large spikes of white flowers, delicately tinged with blue. Figured in Paxton's and Lindley's Flower Garden, for March, 1s. 6d. each, or 12s. per dozen.

Packets of Chater's superb Hollyhock Seed, by post, at 2s. 6d. each.

The present is the time for sowing.

WIDNALL and DAVIS's general list of Dahlias, Pelargoniums, Chrysanthemums, and soft-wooded plants, can be had on application.—Grantchester Nurseries, April 12.

FORGET-ME-NOT.

MYOSOTIS AZUREA GRANDIFLORA.—This unique variety stands unrivalled for its colour and habit, being very superior to the older sorts of that lovely flower, the Forget-me-not; it also possesses the following good qualities over them: The flowers are much larger, perfectly hardy, and will stand for many years in the same situation; it is a lively blue, and grows about 9 inches high, producing hundreds of blooms on the plant at a time; flowering from June till October, it will be found very useful for planting on rockwork, making a bed, or forming edgings; being a colour much wished for, as there is a great deficiency of dwarf blue flowers for autumn blooming. The Seed of the above is now ready to be sent out, at 2s. 6d per packet. Also the following varieties of Flower Seeds can still be had: Hollyhock Seed, 2s. 6d. per packet of 150 seeds; German Aster Seed, 1s. per packet; Sweet-William Seed, 1s. per packet; Antirrhinum Seed, 1s. per packet; and also the other varieties of Seeds named in the former Advertisement in this Paper on the 5th of April. The whole or any part of the above sent postage and package free. A remittance must accompany the order, either in cash or penny postage stamps, for the amount.

Sold by EDWARD FILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited, 1s. packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1s. per oz, 6d. per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1s. per oz, 6d. per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6d. per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3d. per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1s. per oz., 6d. per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10s. 6d each. Small plants for bedding on the 1st of June, 6s. per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct, of last year, 10s. 6d. cash. See List containing a great variety of choice new Plants for one stamp.

SELECTED NEW SCARLET GERANIUMS.

Flower of the Day, 3s. 6d. each; the following, at 12s. per dozen, purchaser's selection; if left to R. W., good sorts, 6s to 9s.; Brompton Hero, Cornet, Cottage Maid, Compacta, Cerise Unique, Eclipse, Exquisite, Frogmore improved, Fireball, Globe superb, Gem of Scarlets, Honeymoon, Huntsman, Hydrangæflora, Ibraham Pacha, Ivery's scarlet, Jenny Lind Lord Bacon, Lady Agnes Byng, Mrs. Maylor, Magnum Bonum, Prince of Wales, Priz-fighter, Pink Nosegay, Phenomenon, Pink Pet, Punch, Perpetual, Queen, Queen of Summer, Royalist, Shrubland Superb, Symmetry, Smith's Scarlet, Tom Thumb, Ditto Master, Ditto improved, Tam O'Shanter, Trentham Scarlet.—The Trade supplied.—Nursery, Kennington, London.


# The Gardeners' Chronicle.

*SATURDAY, APRIL* 19, 1851.


MEETINGS FOR THE ENSUING WEEK.

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| MONDAY, | April | 21 | Chemical | 8 P.M. |
| TUESDAY, | — | 22 | Syro Egyptian (Anniversary) | 7½ P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 23 | Antiquarian (Anniversary) | 2 P.M. |
| | | | Royal South London | 1 P.M. |
| THURSDAY, | — | 24 | London Institution (Anniversary) | 11 A.M. |
| | | | National Floricultural | 2 P.M. |
| SATURDAY, | — | 26 | Royal Botanic | 3½ P.M. |
| | | | Medical | 8 P.M. |

INTO the agricultural division of this Paper, at p. 169 of the present year, an article found its way from the pen of an occasional contributor, to which a moment's leisure enables us now to advert.

The object of the writer was to show that the price of GUANO is higher than the public can afford to pay, and that this price is wholly owing to the operations of the importers. In order to support this view, the writer has fallen into some errors, unintentional no doubt, but such as he might have easily avoided. He first asserts that the price charged by the importers is 10*l.* a ton; but a glance at the weekly advertisements in our columns would have shown him that the importers' price is 9*l.* 5*s.*, subject to a discount of 2½ per cent, which brings the real charge to 9*l.* 0*s.* 6*d.* He then names Messrs. GIBBS, BRIGHT, and Co. as the importers, in which he is wrong again; the advertisements would have informed him that the sole agents of the Peruvian Government are Messrs. ANTONY GIBBS and SONS, of London.

The allegation that the price is higher than the consumer can afford to pay is neither confirmed by the sale, nor by a comparison of the value of guano with that of other forms of manure. The sale during the last year has, we understand, exceeded that of any previous year by about 18,000 tons; and Mr. WAY has demonstrated in the Journal of the Agricultural Society that the money value of a ton of good Peruvian guano was, in 1849, 12*l.* 2*s.* 5*d.*; the ammonia being worth 9*l.* 14*s.*, the phosphate of lime 1*l.* 13*s.* 9*d.*, and the potash 14*s.* 8*d.* According to this calculation, the buyer of a ton of Peruvian guano at 9*l.* 0*s.* 6*d.* actually pays 3*l.* 1*s.* 11*d.* less than he would have to pay for the raw materials of which it is composed.

That it would be much better for the consumer if pure Peruvian guano could be sold cheaper, nobody will deny. So it would be better if ammonia were cheaper, and phosphates and salts of potash, and farm-yard manure, and wine, sugar, tea, and broad cloth. But the price at which the vendor can sell these articles depends upon the price he pays for them, adding a fair mercantile profit. If he adds more his trade disappears. The guano trade would disappear if the consumer could obtain the ingredients of which the substance consists at a lower price than that of guano; and he undoubtedly would procure them at a lower price if the manufacturers could afford it; for all these articles are made in a free market, open to the utmost possible competition.

The truth is, that the selling price of guano does not depend, as is assumed, upon the will of the English importer, but upon that of the Peruvian Government, which, perhaps, would be consulting its own interest by fixing a still lower price, and thus increasing the consumption of the article and augmenting its revenue. We must bear in mind, however, that there can scarcely be room for any considerable reduction; for if we deduct from the 9*l.* 0*s.* 6*d.*, 3*l.* 10*s.* to 4*l.*, which, we understand, the importers are now paying for freight, and 1*l.* 10*s.*, which, we suppose, may be calculated for shipping charges, commissions, and other expenses, on both sides of the water, there will only remain to the Peruvian Government a net proceeds of about 4*l.*, of which it is understood that they apply half to the payment of their English bondholders. We would at the same time remind our agricultural friends, that to secure constant supplies of guano the price must be sufficient to leave something as a present revenue to the country which has the good fortune to possess this invaluable manure.

THE utmost editorial vigilance is insufficient to prevent the circulation of misrepresentation; and therefore, in calling attention to the following letter, inserted in the *Times* of April 10, we impute no blame or want of caution to the conductors of that great newspaper.

A person signing himself "Kewensis," and dating his letter from Kew, obtained admission into the columns of the *Times* for the following letter.

"For nine months of the year Kew Gardens are not accessible to the public. At the present season, when admission would be particularly acceptable, it is denied, and if the gardens be not opened prior to 24th of June (this being the practice), many foreigners will lose the opportunity of visiting one of the most beautiful spots in the neighbourhood of the metropolis. If the gardens were opened this year simultaneously with the Great Exhibition, viz., the 1st of May, and opened at 10 or 11 o'clock in the morning every day in the week (not as hitherto, from 1 o'clock till sunset on Sundays and Thursdays only), a great advantage would result to the public."

If the signature to this letter means anything, it means that the writer lives at Kew; and in that case, his statements are wholly inexcusable; for he must have known that they are misrepresentations from first to last. Kew Gardens inaccessible to the public for nine months of the year! why they are open every day, from 1 o'clock to dark in winter, and nominally till 6 in summer, but really to a later hour, for visitors are not turned out. As to opening the gardens at 10 or 11 in the morning to crowds of idlers, we should like to hear from this writer how, or when, under such circumstances, he imagines the business of the garden, and the indispensable attention to the plants, is to be secured; to say nothing of the workmen obtaining their meals.

But perhaps "Kewensis," not knowing what he writes about, may not mean what he says; and under the name of Kew Gardens, he may possibly intend to designate the old game cover and park, commonly called the Pleasure-ground, adjoining Kew Gardens. This place, consisting of 175 acres, has just been converted into an arboretum planted with young trees, and is not, as yet, the kind of place where all the wanderers from London should be permitted to spend their leisure. Some 20 years hence, when the young plants have grown into trees, and are beyond the reach of mischief, the space might be thrown open unreservedly; but no prudent man would recommend it to be done at present.

Lord SEYMOUR has on no occasion shown himself unwilling to consult the public convenience; and we entertain no doubt that he will, without the assistance of "Kewensis," take whatever measures the peculiar circumstances of the present year may render advisable. But officers of the Crown have to consult something more than the grumbling or caprice of gentlemen who think that free access of the public daily to the finest garden in Europe, containing the best English Museum of its kind, and occupying an area of 76 acres, is insufficient; they have to resist ignorant impatience, and to see that public interests are not sacrificed to the private objects of those whose horizon does not extend beyond the limits of their own convenience. And we shall be much surprised if either the Commissioners of Woods and Forests, or Sir W. HOOKER, sanction the measures recommended by the writer of the letter in question.

THAT the ROOTS of PLANTS have a certain power of selection is now well known; it was most distinctly proved by the old experiments of SAUSSURE; he immersed the roots of growing plants in water containing an equal weight of two different saline substances, and when the plants had sucked up and absorbed half the water, he took them out, evaporated the remaining water, and ascertained how much of the two salts remained; this, of course, indicated the quantity which the plants had absorbed. It was quite plain that, if the roots merely absorbed the different saline solutions thus presented to them indifferently, an equal quantity of each salt would be absorbed, when two were dissolved together; and consequently an equal quantity of each would be left on evaporating the remainder of the solution. This, however, was not the case, for it was found that the quantity of salt absorbed varied in a most remarkable manner; not only did similar plants absorb very different quantities of various salts, in absorbing equal bulks of solution of the same strength; but, when a solution containing two different salts were employed, the plant took up very variable pro-

portions of the two salts. These experiments are certainly very interesting, and deserve to be carefully repeated and extended; because from the small number of salts which were employed, it is difficult to attempt to draw any general conclusion from them. As far, however, as they go, they serve to indicate that the salts of the alkalies are more readily absorbed than those of the earths, such as lime; and also that the compounds containing muriatic acid are more freely taken up than those containing other acids.

In experiments of this sort it is necessary to select such salts as cannot in any way react chemically on each other, giving rise to what is termed double decomposition, as in that case the results of necessity become complicated, and of comparatively little value. In some of the cases described by SAUSSURE, this cannot possibly take place; thus, for example, he found that when a solution containing equal parts of muriate of soda and sulphate of soda was used, the plant, in the time that it absorbed seven grains of the sulphate, had taken up 20 grains (or nearly three times as much) of the muriate. This is a remarkable fact; because neither whilst in the state of solution, nor yet after they had been absorbed by the roots, could these two salts in any way act on each other; it is plain, therefore, that the difference, which is considerable enough, must be chiefly traced to the muriatic acid. The same general result was also obtained on comparing together the muriate and sulphate of potash; whilst the roots absorbed 10 grains of the latter salt, they took up 17 of the former; in this case also, therefore, the effect of the muriatic acid was that of causing the plant to take up more of the alkaline base. The interest of these experiments is still further increased by the fact that when the points of the roots were cut off, the effect in question ceased altogether, the distinction between the two salts no longer existed, and they were then both absorbed in precisely the same proportion. These facts have been attempted to be explained in the supposition that the various saline substances render the water more or less viscid, or at least to a slight degree impair its fluidity; an explanation certainly not altogether satisfactory, because if such were the case, the same effect would be observed on filtering saline solutions through ordinary filters, made of fine blotting paper, whilst, in reality, no such differences can be discovered.

The absorption of saline substances by plants varies considerably even between individual plants of the same species, evidently depending on some special condition, not indicated by the circumstances of the experiment; but it likewise varies very greatly between plants belonging to different species. The observations of SAUSSURE, and also the more recent experiments of DAUBENY, seem to show pretty clearly that this power of absorption is quite independent of the vegetation of the plant, and that it does not follow, either that the substance most easily absorbed is that which is most beneficial to the plant, so that the latter will retain in its system that substance which it most freely absorbs. In fact it comes to this, that though plants absorb various substances with very different degrees of facility, yet it does not appear that they do so in any relation to the value of those substances as nutriment, or in proportion to the benefit which they are able to derive from them. The experiments of MACAIRE on the so-called excretions of plants, were considered to prove that plants have a power of rejection, or the means of throwing off by the roots, hurtful and unnecessary substances; but this effect is evidently quite distinct from the mere power of absorption.

The true nature of the conditions most favourable to absorption, and the exact principles which regulate that absorption, are in fact still to be investigated. Practically, however, though under ordinary circumstances the roots of a plant seem to absorb the substances presented to them in proportion to their chemical and physical properties, rather than in the ratio of their value as food; yet, as Mr. KNIGHT has well shown, there is another matter to be taken into consideration as bearing importantly on the absorption of useful or hurtful matters by plants, namely, the development and growth of the roots. That excellent observer found that when seeds were sown so that the young roots might either develop in rich or in poor soil, they were always most healthy and abundant in the former, and that when roots were put forth in a poor soil, but in the immediate neighbourhood of a fertile one, they always grew in the direction of the good soil, and increased rapidly as soon as they entered it. It is hardly necessary to remark that there are limits to this power, and that the roots of plants continue to grow and develop, even though by so doing they pass from a good soil into one which is absolutely poisonous. Every one must have often seen instances of plants growing in a good superficial soil, which flourished so long as their roots were in the good soil, but which when they had increased to a certain size, and had therefore pushed their roots beyond the limits of that soil, immediately became unhealthy, and soon died. Direct experiments, also, in which various poisonous matters have been imbedded in the soil, in the immediate course of the roots, have proved the same fact; the roots continued to grow, just as though the poisons were not placed before them, and did not cease growing until they absolutely came in contact with the deleterious matter.

The consideration of these facts, aided by further experiments, might probably lead to valuable information respecting the use of certain manures, and the effects of particular substances, such as the superphosphate of lime, on the formation of roots. If plants absorb the various substances presented to them, whether hurtful or beneficial to their growth, with such different degrees of facility, and if particular substances in the first instance act by causing an increased development of roots, it becomes a question of some interest to determine what relation exists between the absorption of different forms of the same substance, all of which are more or less favourable to the growth of plants, and the effects produced on the formation of roots. Whether, for example, that salt of phosphoric acid which is most soluble in water is also the one most abundantly absorbed by plants; and further, whether the compound of that acid most freely taken up, produces the greatest effects in increasing the formation of roots. The facts recently brought to light with regard to the absorption of ammonia, and the decomposition of the various salts of that substance by the soil, seem to explain why those salts for the most part act in so uniform a manner on growing plants, very little more benefit being produced by the use of the phosphate or nitrate as manure, than by that of the sulphate or muriate. We have long been convinced, from the results of a great number of experiments on the use of saline manures, that the salts employed in many cases undergo important chemical changes, either in the soil or in the organs of the plants themselves, after the absorption of the salts.

The presence of alkaline nitrates in plants will serve as an illustration of the matter to which we refer. It is well known that under certain circumstances, a considerable number of plants contain a notable quantity of nitre, which may not only be detected in them by chemical tests, but likewise is plainly evident on burning the dry leaves; they hiss and sparkle like touch-paper. This is the case with a great number of plants, but Tobacco, Lettuce, Sunflowers, Borage, Carrot, and Potato are generally referred to; they do not, however, always contain nitre, and the exact kind of soil, or other conditions requisite, are not well known. Even in the same soil, and growing side by side, two similar plants may be gathered, the one containing nitre, the other none. Even stronger cases still are on record, for it has been found that plants purposely manured with nitre contained none of that salt, though there is little doubt that they must have absorbed a portion of it from the surrounding soil; whilst other plants which were manured with some salt containing no nitric acid, such as common salt, or sulphate of soda, did contain nitric acid. Perhaps the most curious case of all, is the presence of nitrates in plants which have been manured with sulphate or muriate of ammonia; in such instances, the nitric acid must be derived from the oxidation of the ammonia, probably in the soil previous to its absorption by the plants, but possibly after it has been so absorbed. Whether or not this may be the case, it is pretty certain that the salt of ammonia must have been previously decomposed, either by the action of lime or some other powerful base, which took from it the sulphuric or muriatic acid.

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WE understand that some of the growers of PELARGONIUMS complain that the prizes offered by the Horticultural Society are not sufficient to defray their expenses. Upon this we may remark that the prizes this year are the same as were offered last year; and but one person then complained of the amount. The only difference is that the number of plants to be shown this year in A and B is 12 and 9 instead of 6.

We should not have imagined that this would have made any material addition to the cost of transport, and the small addition would, we should have supposed, have been more than compensated for by the new regulation, under which nurserymen and private growers exhibit independently of each other. At all events the Committee did not intend to place the growers in a worse position. Quite the contrary. We have therefore no difficulty in stating that the winners of prizes will, in addition to the medals they may gain, be paid any reasonable expense to which they may be put beyond what was incurred in former years.

## FOREIGN GARDEN GLEANINGS.

IMPERIAL PLEASURE GARDENS.—The imperial palaces or pleasure gardens which are for the most part at some distance from St. Petersburgh, are by no means less magnificent or worthy of attention than those in the capital itself. Two of these residences, viz., those of Tsarskoe-Sélo and Pawlowski, deserve especial notice. A railroad, one of the oldest in Europe, and for which the public are indebted to Count Alexis Bobrinski, connects these palaces with the capital. The first, called by a name signifying the *czar's village*, is situate eight miles from St. Petersburgh, on the road to Moscow. On the way there is a small gothic palace, noted for its fine collection of portraits of the families who reigned in Europe, in the year 1775.

Tsarskoe-Sélo can be seen from afar, in consequence of its magnificent golden dome. The palace was built by Catharine, embellished by Elizabeth, and is remarkable for its immense size and the richness of its architecture; the most precious substances, and gold in particular, have been lavishly employed in its decoration; in the interior, a magnificent marble staircase leads to three halls, ornamented respectively with mother of pearl, amber, and Chincse lac.

The park and gardens, which were replanted in the English style, by the celebrated John Bush, in 1775 to 1789, are of vast extent, and exceedingly picturesque. The visitor is continually surprised with something new; bridges of wood and of marble, artificial lakes, surrounding Russian mountains, Turkish mosques, ruins, pyramids, obelisks, a Chinese village, a Swiss farm, with a fine collection of horned animals from the Tyrol, and other objects of a similar sort, are scattered throughout the grounds, with a profusion that is truly imperial; and, as if to render the place still more complete, there is a little town to commemorate the conquest of Taurida, and a charming temple filled with invaluable statues.

The houses in the kitchen garden occupy about 3000 yards of ground covered with fruit trees, which are fine, but not yet thoroughly acclimatised; these trees are all covered over in the bad season.

The flower garden, separated from the pleasure grounds by the walk which leads to the palace is irregular in form; it is under the care of M. Markevark, a pupil of M. Silvin, a French gardener, celebrated for his Roses. At the time of our visit, the collection of flowers was fine and beautiful.

The houses are lined with *Fuchsias* and *Plumbago capensis*; the latter plant, with its numerous and beautiful blue flowers, has a remarkably fine effect; M. Markevark uses it for decorating the palace; before the flowers are expanded, 10 or 12 stems are cut and placed in a pot, where they take root, and in less than a fortnight there is a beautiful head of flowers.

The largest plants in the greenhouses are the *Laurus nobilis*, the stem and crown of which will well bear comparison with the best Orange trees at Versailles; *Ixora*, the rival of *Hydrangea*, for its brilliant scarlet colour, and *Gardenia*, which is grown in the open earth; all these plants attain a considerable size.

Lastly, we may remark, as deserving notice, the collection of old Roses, *en quenouille*, four or five yards in height, and worked for the most part by cleft grafting, close to the ground, and on stocks a little softer than our wild stocks. *Masson's Report.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 10.)

No. XXVI.—When you remove your nestlings, for the purpose of bringing them up by hand, mind and take the nest with them. They are used to it; and for the short time they will remain in it (being eight days old when you take them away), it will answer well enough for your purpose. Remember and be kind to your young charge; for you stand towards these innocents *in loco parentis*.

Wherever there are birds, *there* most assuredly will be mice. It is next to an impossibility to keep these pests out, and they poison all they touch. Examine, therefore, very narrowly, every corner of the room; and whenever you see a hole, nail over it a piece of tin or zinc. So cunning are these vermin that they conceal themselves in the most unsuspected situations. I have actually found them secreted in the food "hoppers." They have raised the lid and artfully ensconced themselves behind the seed until my back was turned! I hardly need tell my readers *what* was their fate when so discovered. Suffice it to say that they were "tried," and that I myself personated the witnesses, judge, jury, and—executioner.

We will now turn our attention to the "breeding" of canaries in *Cages*. This is a study, not only "amusing," so to speak, but very instructive,—for young ladies who are in their teens in particular. From birds as from the "ant," we may learn many practical lessons of wisdom; indeed the minutest insect, as well as the smallest animal, affords much cause for admiration, and teaches us, if we be apt scholars, much worth the knowing. Full many a time and oft has an attentive consideration of the domestic economy of animals, *forced* me to "think;" and such thoughts have never failed to prove profitable.

In a pair of canaries, well matched, you will find much to admire, from the very time of their nuptials. There will be between them only one heart, one mind, one voice. No pulling two ways, no dissentions, no quarrels; at all events there will be no sulkiness, or bearing of malice. The sun never goes down upon their wrath. A dark cloud one moment, is followed by a

streak of cœrulean blue the next; and so on till the advent of their infant progeny. And let me here remark, to the honour of the "Papa apparent," that he will be found fairly and affectionately to have shared with his *cara sposa* all the onerous duties inseparable from incubation.

Then again must we carefully remark the tenderness and anxiety of the parents, and the obedience of their children. Not one note is uttered by the former without having some "meaning" in it; and this "meaning" is instinctively recognised by the nestlings, who never once venture to quit their cradles until called forth to see the world. Then are they carefully fed, protected, and warned, until they "come of age." *Here* Nature halts. It is now time that they should see about getting *their own* livelihood. Another lesson for us!

In choosing your birds an appropriate dwelling, study their happiness in every possible respect; and be sure their cages are manufactured of Mahogany; they not only last longer than any others, but they let their inmates live in comfort and cleanliness. Vermin are, comparatively speaking, seldom found in Mahogany cages.

The proper dimensions for a breeding cage are as follows:—Length, 2 feet 4 inches; depth, 12 inches; height, 20 inches. The top and sides should be of wood, the front of strong tin wire. Three or four perches should run across the cage, and a little chamber, or rather one large chamber divided into two, should be made immediately under the top of the cage, to hold the nest boxes. In the front of these compartments should be circular holes, sufficiently large to give the birds ingress and egress to their nests. In these divisions they will build, and also rear their young. To enable you, when occasion requires, to get access to these nest boxes, have square doors made in the side of the cage, opening outward. You can then quietly make your observations, and avoid disturbing your birds. In the front of the cage, there should be two large tin pans inserted, one on either side, to hold the seed; also a circular hole in the centre, to admit the birds' heads while drinking. A receptacle of tin should be provided to hold the water, suspended by bent wires. To enable your birds to get at their food the more readily, a long narrow perch should run immediately behind these tins, from one end of the cage to the other. Let the inside be painted thrice in oil, white.

Some people assist their birds in the construction of their nests; and I see no objection to it. Let the two nest boxes be half filled with the building material; their labours will then be considerably lightened. The hen will soon model a nest to her mind. The nest bags must be well scalded previous to use, as I have before remarked, in order to kill the indwelling vermin. Hang them in front of the cage, outside; and carefully collect any building material that may be found dropped inside the cage. Extreme cleanliness must be observed, and in the tray there must be kept an abundant supply of small, red gravel, mixed with a little powdered chalk.

Before turning your birds into a breeding cage, see that they be well "paired." When you have selected such colours as you approve, put the male into one cage, and the hen into another. Hang them up *dos à dos;* just so as the eye of each can come into contact, through the hole made to admit the nail. This, while it effectually works out the intended purpose, will keep you in a constant state of merriment. The antics of the birds, and the vain schemes they concoct to break out of prison, are exceedingly diverting. You will often perceive their heads, or one-half of their heads, protruded through the hole; their one, unceasing aim, being that of "casting sheeps'-eyes" at each other. Then, listen to their voices! What persuasive eloquence falls from the oily tongue of the male! What affectionate tenderness lies in the languishing responsive l-i-s-t-h-p of the bride elect! Thus are reciprocated vows of eternal fidelity; which it gives us pleasure to record, are, for the most part, preserved inviolate. A week's dalliance brings matters to a crisis. An explanation is asked, and given. The question is popped; the lover accepted; romantic sentimentality gives way to the sterner realities of every-day life; and the "sublime" sinks at once into the "ridiculous." It is said to be but "one step." In sober truth—may I say it?—it is a STEEP ONE! *William Kidd, New Road, Hammersmith.*

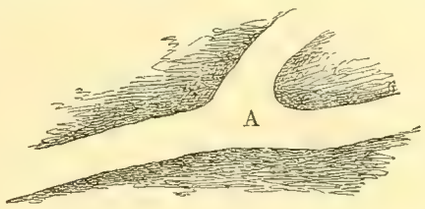
## FLOWER-GARDEN WALKS.

In no part of the arrangement of ordinary flower-gardens is there greater violation of good taste than in the disposition and formation of the walks. Graceless and unmeaning curves, fine lawns spoiled with strips of fiery gravel,* and unsightly junctures, and surfaces inconveniently convex, are amongst the incongruities one constantly meets with, especially in the gardens of villa residences.

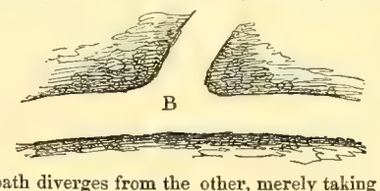
If a good lawn is the pride of an English garden, a tastefully disposed and well-formed walk is only second in importance. The beauty of the one only exhibits more glaringly the defects of the other. In the majority of instances walks are too narrow. If you have a walk, let it be at once convenient and in keeping with the other parts of the garden. However well arranged the lawn and shrubberies may be, a narrow, paltry walk gives an air of meanness to the whole garden.

Every deviation in a line of walk should result from some *visible* cause. The contortions so often seen are in the worst possible taste, or rather in no taste at all. They speak as plainly as possible to the fact that the designer executed the stereotyped curve from imitation only, and not from an appreciation of the principle of arrangement. To avoid some disagreeable prospects, to gain an interesting view, to reach some pleasing object in the grounds, are some of the reasons for curves in a line of walk. Curve after curve of walk on an open space of lawn, without purpose or object, cannot be too severely deprecated.

The junction of walks should be at as great an angle as possible. Thin strips of Grass between diverging walks, like narrow points in a shrubbery, are highly objectionable, and should ever be obviated, if practicable. To avoid the narrow strip of Grass, in the case of walks, an expedient, as represented in the sketch A, is often



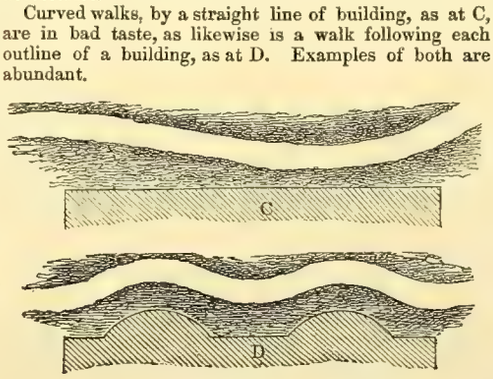

resorted to; but from the amount of gravel thus rendered visible, the practice is not to be recommended. Large surfaces of gravel thus made prominent are offensive to the eye, and tend to curtail in appearance the extent of a garden; and besides, each walk should be definite in its direction, which in such arrangements as that sketched is not the case. One is as much a main walk as the other. Rather, as at B, indicate that



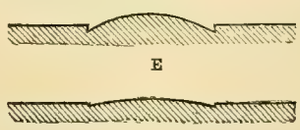

one path diverges from the other, merely taking off the angles of the turf formed by the juncture. The effect of the first example is bad on paper, but infinitely worse on a garden lawn. Of course in a carriage drive or other road more relative scope for turning must be allowed than is permitted in a garden walk.

More than one curve should not be seen from the same point, looking in the same direction, as such an arrangement is not pleasing, and you see too much of the garden at once. It detracts from the interest. Of course, as a general rule, no pleasure-ground walk should be perfectly straight, but exceptions will sometimes occur. Supposing them unavoidable or necessary, good taste will furnish the necessary and appropriate accessories.

Curved walks, by a straight line of building, as at C, are in bad taste, as likewise is a walk following each outline of a building, as at D. Examples of both are abundant.




The surface of walks should be only slightly elevated, and not, as is often seen, perfectly convex—so much so, as to render them inconvenient for walking on; *merely* raised in the centre is all that is necessary. The depression below the Grass margin should be but slight, and the elevation only in a corresponding ratio. A couple of inches of bare earth at the sides of a walk, constantly kept bare with the edging-iron, cannot be said to add to its beauty. I would banish the edging-iron from the flower-garden walk, and never allow a "raw"-edge to be seen. The beauty of a walk so treated is not to be compared with one otherwise dealt with. At the sketch E is represented the section of a walk to be avoided; at




F, one to retain. The effect of the two in reality will not bear comparison, to say nothing of the comfort in walking on the flatter surface, the primary object in the formation of a walk. *G. L.*

## TRADE MEMORANDA.

Mr. George Boden, of Peel-place, Hulme, near Manchester, orders two tons of bone-dust, &c., to be sent from Plymouth to Manchester. As the bankers to whom he refers have not the honour of his acquaintance, perhaps some correspondent may know the gentleman.

## Home Correspondence.

*Forcing Asparagus.*—The increased demand for forced Asparagus, that has taken place of late years, has rendered it necessary on the part of gardeners to provide means for the production of the additional supply; and this can only be accomplished, either by having a large stock of plants, to take up for forcing, or by making permanent beds, with means of heating them. Now, conceiving it to be the duty of every gardener to produce his crops at the smallest cost, I think it worth inquiry which of the methods usually practised is most economical, and produces the largest quantity at the least possible expense and labour. With this object in view I adopted the taking-up system at Stoke Rochford, my calculation being that I would have to take up about 80 superficial yards annually, and that the beds would have to stand 10 or 12 years, from the time of making to that of taking them up for forcing; therefore I made, four years ago, an extra quantity of beds to enable me to have a sufficiency of plants each succeeding year for the purpose of forcing, and I have now only to make good the quantity of ground that is taken up each year. I am not aware that my system of forcing differs much from that employed by other gardeners, but I will venture to describe it, together with the quantity and quality of the produce obtained, which will enable your readers, who are Asparagus growers, to judge of the merits and utility of the taking-up system, by comparing it with the results obtained by other methods. My forcing pit is similar to that of M'Phail's—pigeon holed, and heated entirely with dung linings. I do not put any fermenting material in the interior of the pit, but chamber it over with any old boards, so as to form a vault underneath. The pit is 20 feet long by 5 feet wide, inside measure, and it is divided into five lights. About 2 inches of soil are laid on the boards, on which the Asparagus roots are closely set, and a little soil is thrown amongst them as the work proceeds, and finally the crowns are covered with about 3 inches more of soil, which is all they receive. I plant at different times, in order to regulate the supply required. The first cutting this season was on the 16th Dec., 1850, and I have been cutting regularly since that time. Three of the lights that were first cut have been replanted, and from these I am cutting at the present time. The first five lights produced 2500 heads of Asparagus, or 500 per light, weighing 2 lbs. per 100, which is the average quantity and weight per light I have had during the last four years. The weight does not appear unusual, but it must be remembered that the stalks are all green, as we never cut any white Asparagus, either forced or from the open ground. I generally cut just under the surface, when the shoots are about 5 or 6 inches in length, believing it to be a better practice than cutting deep in the ground, by which a long, white, useless stalk is obtained, very frequently to the injury of the remaining buds, and of no use whatever at table. *J. P., Stoke Rochford.*

*The late Wet March.*—There is no record of so great a quantity of rain as that which fell during the month of March last. At Hyde Vale, Greenwich, 4.02 ins. in depth fell; at the Observatory, above 4 inches; at Lewisham, in Kent, 4¼ inches; at Epping, above 5 inches; and it has been equally great in proportion throughout England. The average quantity for the month of March, nearly the driest month in the year, is 1.71 inches; the quantity, then, has been 2¼ inches in some places in excess. The number of days on which it rained was 18; and on Saturday, the 15th, nearly 1½ inch fell in 15 hours—a circumstance quite unprecedented at this season of the year. March of 1818 was next in wetness, when 3.45 inches in depth fell; the spring altogether was cold, stormy, and very late, and was followed by a very hot, dry summer, which was, however, on the whole very unproductive. *J. Henry Belville, Hyde Vale, Greenwich, April* 14.

*The Deodar.*—Although it is a duty more befitting the vegetable physiologist than the uncultivated sawyer, yet I venture to suggest a reason different from that already given as to the cause of deformity in so many specimens of this otherwise graceful tree. Your complainant's case of an obstinately crooked growth is not a solitary one; I have seen a great many trees in that condition, and at the place from which I write there are several of that distorted class—10 or 12 feet high, with gnarled crooked parts in their stems, where they have been apparently urged into an upright position against their will; while, at the same time, we have some as beautifully formed as it is possible for them to be, with stems clean and straight, with the exception of the graceful bend at the top, like that of a waggoner's whip. Now I am convinced by experience, that neither soil, situation, nor treatment has made this difference, these being all alike here; my theory of the cause is this, (and I offer it but as a theory) that the trees complained of, and which have given rise to so much disappointment, are cuttings, or have been grafts from others, or have in some way been produced under different circumstances from their more upright growing and better shaped brethren. With me the form is altogether different in what I call the true seedling, from what it is in the spuriously produced specimen. The disposition of the branches is not nearly so uniform in the latter as in the former, and instead of the conical outline which the most upright trees usually assume, with a base so close and thick as to hide the ground nearly as far as it stretches; the grafted plant, or that from a cutting, generally bears its branches in a

* Why do so many persons deem a *red* gravel walk an ornament?

desultory undefined manner—and has almost invariably a naked base, and portions of the stem on one side also bare; if the suggestion that I have thrown out be not the cause, then there must be varieties of the tree, as I cannot conceive how the difference can be otherwise accounted for; the case is worth investigating, as it is a matter of great disappointment to find, after a lapse of years, that a tree planted in a conspicuous place is never likely to become anything but a distorted specimen of its kind; and I fear the advice given by your correspondent, of cutting out the present leader and tying in another, would be attended with little success. When a seedling Fir tree loses its leader by accident, it usually produces another, which takes its place, and in a few years, the loss it sustained is made up, and all goes on well; but I hold that there must be some constitutional difference between a seedling plant and a cutting, for producing a leader. The one only restores what by accident it had lost. The other can be hardly expected to create what it never was in possession of. I think much might be said on this subject, but I leave it to your more learned friends to explain the physiology of the matter; in the mean time, I should be glad to know if plants from cuttings have ever been sent out by the trade [no doubt]; the price this tree at first realised gave every encouragement for doing so. It may perhaps strengthen my opinion with those who may be sceptical on the subject when I tell them that of hundreds of Elm trees raised from layers and planted out, not one in ten ever assumed the proper shape of a seedling plant, and some are now 30 years old, deformed and ugly, bearing exactly the same disproportionate resemblance to the true tree that the complained-of Deodars do to the proper ones. With the latter my experience does not carry me back to their origin, but in the case of the Elms I assisted in the manipulation. *An Old Sawyer.*

*Annual Growth of Conifers at Holker, near Ulverston.*—Several statements of the growth of Conifers having lately appeared in your columns, the following table may perhaps be interesting. The height of the different species has been accurately taken every year, usually about the middle of November.

| | 1842. | 1843. | 1844. | 1845. | 1846. | 1847. | 1848. | 1849. | 1850. |
|---|---|---|---|---|---|---|---|---|---|
| | feet ins. | feet ins. | feet ins. | feet ins. | feet ins. | feet ins. | feet ins. | feet ins. | feet ins. |
| Araucaria imbricata ... ... | 3 3 | 4 2 | 5 0 | 5 11 | 7 3 | 8 6 | 9 10 | 11 2 | 12 9 |
| ,, ,, ... ... | 1 2 | 2 0 | 2 8 | 3 4 | 4 8 | 6 1 | 7 6 | 9 1 | 10 4 |
| ,, ,, ... ... | 0 8 | 1 1 | 1 4 | 1 10 | 2 10 | 4 3 | 5 1 | 6 2 | 7 9 |
| Pinus insignis ... ... ... | ... | 3 5 | 5 4 | 7 1 | 8 11 | 12 0 | 14 0 | 14 10 | 16 3 |
| ,, macrocarpa... ... .. | 4 8 | 6 2 | 8 0 | 9 9 | 12 0 | 13 9 | 15 3 | 16 11 | 18 3 |
| ,, Pallasiana ... ... .. | 5 11 | 8 5 | 10 8 | 13 1 | 14 0 | 16 0 | 17 8 | 19 5 | 20 4 |
| ,, taurica ... ... ... | 5 1 | 7 1 | 8 6 | 9 11 | 11 3 | 13 3 | 14 6 | 16 2 | 17 15 |
| ,, macrophylla (*a*) ... ... | ... | 1 9 | 3 10 | 5 1 | 6 5 | 8 7 | 10 3 | 12 9 | 13 9 |
| ,, apulcensis ... ... ... | ... | 1 11 | 3 4 | 5 0 | 6 5 | 8 6 | 9 1 | 10 5 | 11 10 |
| ,, Russelliana... ... ... | ... | 1 0 | 2 6 | 3 7 | 4 5 | 7 0 | 8 10 | 9 10 | 10 8 |
| ,, Montezumæ ... ... ... | ... | ... | 1 2 | 2 3 | 3 10 | 5 7 | 6 11 | 7 8 | 8 6 |
| ,, Hartwegii ... ... ... | ... | ... | 0 11 | 1 4 | 2 1 | 3 1 | 4 0 | 4 6 | 5 6 |
| ,, Cembra ... ... .. | 5 5 | 6 1 | 7 1 | 8 4 | 8 11 | 9 9 | 10 7 | 11 0 | 11 9 |
| ,, Sabiniana ... ... ... | 5 4 | 6 9 | 8 2 | 9 0 | 10 0 | 11 11 | 13 2 | 14 2 | 15 0 |
| ,, austriaca ... ... ... | ... | 12 5 | 14 2 | 15 5 | 16 10 | 18 6 | 20 0 | 20 8 | 21 9 |
| Abies Webbiana (*b* 1) ... .. | 5 11 | 8 0 | 9 1 | 11 2 | 13 10 | 16 3 | 18 3 | 20 2 | 23 2 |
| ,, ,, (*b* 2) ... .. | ... | 1 9 | 2 0 | 2 7 | 3 5 | 4 11 | 6 3 | 7 10 | 9 8 |
| ,, Douglasii ... ... ... | ... | 7 1 | 8 8 | 10 6 | 12 7 | 15 10 | 19 0 | 22 1 | 23 5 |
| ,, Menziesii ... ... .. | 6 7 | 7 9 | 8 11 | 9 8 | 10 11 | 13 1 | 13 10 | 14 3 | 15 6 |
| ,, ,, ... ... .. | 2 11 | 4 5 | 6 0 | 8 0 | 8 11 | 10 0 | 11 7 | 12 9 | 14 6 |
| ,, Pichta ... ... ... | ... | 2 7 | 3 2 | 4 2 | 4 11 | 5 9 | 6 2 | 7 3 | 8 0 |
| ,, Menziesii ... ... ... | ... | 2 5 | 3 0 | 5 2 | 6 3 | 8 10 | 10 11 | 13 2 | 15 6 |
| ,, ,, ... ... ... | ... | ... | ... | ... | 5 0 | 6 5 | 8 2 | 10 2 | 11 7 |
| ,, Pinsapo ... ... ... | ... | ... | 0 10 | 1 0 | 1 3 | 1 11 | 2 7 | 3 4 | 4 4 |
| ,, cephalonica ... ... | ... | ... | 0 9 | 0 11 | ... | 1 9 | 2 3 | 3 4 | 4 3 |
| ,, Deodara ... ... .. | ... | 1 4 | ... | ... | ... | ... | ... | 10 10 | 12 8 |
| Juniperus excelsa ... ... .. | 5 5 | 6 1 | 6 11 | 7 6 | 8 4 | 8 11 | 9 5 | 9 8 | 9 11 |
| ,, recurva... ... ... | 5 7 | 6 7 | 7 7 | 9 0 | 9 8 | 10 2 | 11 1 | 11 11 | 12 3 |
| ,, Bedfordiana (*c*) ... | ... | ... | ... | ... | ... | 2 10 | 3 6 | 3 11 | 4 4 |
| Cupressus macrocarpa (*d*) ... | ... | ... | ... | 4 0 | 6 0 | 7 8 | 10 5 | 12 0 | 13 6 |
| ,, thurifera (*e*) ... ... | ... | 4 6 | 5 6 | 6 1 | 8 2 | 7 2 | 9 9 | 10 6 | 10 8 |
| ,, Undeana ... ... | ... | ... | ... | ... | ... | ... | 4 8 | 6 5 | 7 8 |
| Taxodium sempervirens... ... | ... | ... | ... | 2 7 | 5 2 | 7 11 | 10 6 | 11 6 | 12 7 |
| Cryptomeria japonica ... .. | ... | ... | ... | ... | ... | ... | 4 6 | 5 6 | 7 10 |

(*a*). Pinus macrophylla and the other long-leaved Mexican species are very liable to injury from high wind. Pinus Russelliana is here much the handsomest. (*b*). Of these two specimens of Abies Webbiana (1) is a seedling, (2) is grafted. The former it will be seen has grown much more rapidly than the latter. It produces annually a number of cones. (*c*). In the catalogue of the Horticultural Society's Journal, Juniperus Bedfordiana, as well as J. Gossainthania, are spoken of as doubtful species, very like J. Virginiana. Here they appear to differ decidedly from it, and from each other. J. Bedfordiana is very hardy. J. Gossainthania rather tender. (*d*). Cupressus macrocarpa seems likely to be one of the finest of the Conifers. There appear to be two varieties of it. The above specimen has its branches spreading horizontally, while in some smaller specimens they are nearly upright. The former is probably the most desirable tree. (*e*). Cupressus thurifera makes very vigorous growth in the summer, but is cut back more or less every winter by frost.*

*Studding Walls.* (See p. 230.)—Perhaps "J. T." will oblige me by stating in what way trees are injured by studs. I have seen them adopted in various parts of the United Kingdom, with success; and, instead of their getting out of use, I am of opinion that they will be universally adopted. I intend, next season, to stud the walls at this place, as I believe the plan to be both economical and efficient. *David.*

*Transplanting in Autumn.*—Having occasion to transplant a good many trees and shrubs, I commenced work last year, in October, and finished in the second week in November. They consisted of Plums, Cherries, Peaches, Apples, Laurels, Elms, Rhododendrons, and many other things. On examining them the other day, I found, without one exception, that they had made roots, varying from 1 to 3 inches in length, and that the buds looked as promising as if the trees had never been disturbed; proving that autumn is the best season for transplanting. *J. Rust, Enfield.*

*Norwood Loam Guano.*—Through the influence of the *Gardeners' Chronicle*, Norwood loam is at a discount. The waggon and three horses are no longer to be seen; they have not been at Norwood for months past. I was told by persons residing there, that the Dutch did not want any more loam; that they did not find it suitable for bulb growing. This was the kind of delusion disseminated about Norwood by the owner of the golden hill; 3*s*. 6*d*. per ton is very different from 30*s*., which was the price charged for the dried loam for mixing with guano. *Dulwich, April* 14.

*Salvia splendens.*—This brilliant member of a beautiful genus was introduced into this country from Mexico some 30 years ago. It is well known, and frequently met with, but more commonly in a neglected state, than receiving that attention which its easy culture, its free flowering at a season when flowers are generally scarce, and its dazzling scarlet colour demand for it. It has occasionally been recommended for out-door flowering; but for this purpose I have not found it worth its room. My attention was first directed to it as a valuable winter plant, from a paper by Mr. Wood, which appeared in a previous volume; but, instead of growing it in winter, as Mr. Wood directed, I imagined that the better plan would be to grow it during summer and autumn, and to try the effect of retarding the blooming; this plan I have found to answer perfectly; and, in my estimation, it is to the conservatory or greenhouse, during the dull months of winter, what scarlet Geraniums are to the parterre in summer—the most attractive of the whole; and I have no hesitation in stating, that attention could not be turned to any neglected plant which would better repay the trouble required in its cultivation than Salvia splendens. I am much pleased with the cheerful effect of its brilliant flower-spikes; they serve, in an eminent degree, to brighten up the dulness which too commonly prevails at the period of the year in which it blooms. Its easy culture points it out as a plant well suited to the circumstances of the amateur; for, although it grows to a size far beyond the convenience of the amateur of small means, when treated as gardeners do who admire it, and who can command room for its full development, yet it may be treated so as to cause it to adapt its size to a very limited space. For this purpose I have found the following treatment suitable. About this time let cuttings of rather firm wood be obtained, and treated like those of the Verbena. If favoured with a gentle bottom-heat, they will soon emit roots, and will commence growing vigorously; they may be stopped once or twice previous to being potted off. Pot into 5-inch pots, and place the plants somewhere near the glass, where they can be kept close and moist. Here they will soon grow rapidly, and must be frequently stopped, so as to make bushy plants. I never allow them to make more than one new joint, until I have obtained as many shoots as I think necessary for the formation of the future bush. As soon as the plants are well established in their pots, shift them into a size larger; 9-inch pots will be sufficient, if large plants are not desired. Towards the end of May, or as soon after that period as your dread of frosts and cold nights has left you, prepare the plants for a place out of doors; if they can be plunged into a sheltered border, exposed to the sun, they will require little further attention except staking, and turning round the pots, to prevent their roots from getting into the soil in which they are plunged. Stopping must, however, be attended to, in order to make dwarf, handsome plants; but this must not be practised after the middle of August, except flowering can be assisted by placing the plants in a close house. About the middle, or latter end of September, remove them to the warm end of a greenhouse or pit, in which they will soon be clothed in the richest scarlet, and will prove well worth the little trouble they have cost you. If they are supplied with manure-water during their flowering season, the latter will be considerably prolonged. I have said nothing about securing a succession of bloom; nevertheless, this ought to be attended to. For this purpose it is necessary to select a portion of the plants, and to pinch out the ends of the shoots just as they are showing flower, which, with the treatment I have recommended, will be early in September. Another portion may be stopped a month, or even two, later; but this must depend upon the treatment which it will then be possible to give them. By means of dividing my plants into three lots, I secure a succession of bloom from October to March; but my second and third lots of plants have the assistance of a close greenhouse during the summer and autumn; or even something warmer, if it is found necessary to bring them into flower at a certain time. The amateur will find a season's practice the best guide in this part of his management. When they done flowering, save one plant, and keep it without water until it shows symptoms of dryness; it may then be cut back, and kept in any spare corner until the time for making cuttings draws near. If it can be placed in a rather warm atmosphere, it will soon furnish abundance of young wood, which must be treated as stated above. In a comfortable place under glass, and with plenty of pot-room, &c., this plant attains the size of five feet high, and as much through; and in November is covered with scarlet from the edge of the pot upwards; but, of course, such large plants would not suit an amateur. This plant would doubtless produce its flowers in the window of a comfortable sitting-room; but for this purpose I do not recommend it, as it is apt to become drawn in the absence of direct solar light. I have said nothing about soil; but it will be found not to be particular in this respect. I use sandy loam and thoroughly decomposed cow-dung, in about equal portions; but if small plants are wanted, use light, poor soil. *J. S.*

*The Turkey Oak.*—My predecessor in the place where I now live cut down many Turkey Oaks, probably of 60 years' growth. He found the timber to be of bad quality, very subject to split in the sun, and to warp or wind. In fact he cut up a good deal of it for firewood. The tanner asserted that the bark was of very inferior quality. In Hampshire I hear that the timber is not reckoned durable. *K. K.*

*In-door versus out-door Temperature.*—The following is a comparison of the heat out of doors, and that under glass, warmed only by the sun; and I hope it may be acceptable at this time, when Mr. Rivers has called attention to the subject of growing fruit trees under glass without fire-heat, in his pamphlet, called "The Orchard House."

| April, 1851. | Temperature. Out-door, in the shade. Lowest. | Out-door, in the shade. Highest. | Lowest under Glass. | Highest under Glass without Fire-heat. |
|---|---|---|---|---|
| 1 | 37 | 53 | 46 | 60 |
| 2 | 42 | 54 | 47 | 59 |
| 3 | 43 | 56 | 47 | 90 |
| 4 | 39 | 53 | 45 | 88 |
| 5 | 33 | 53 | 43 | 82 |
| 6 | 34 | 52 | 44 | 70 |
| 7 | 36 | 52 | 45 | 92 |
| 8 | 29 | 53 | 46 | 73 |
| 9 | 35½ | 54 | 43 | 84 |
| 10 | 28½ | 53 | 43 | 97 |
| 11 | 34 | 50 | 46 | 72 |
| 12 | 33 | — | 42 | — |

Under glass, Vines are in blossom; out of doors the buds are swelled but not broken into leaf. Keens' Seedling Strawberry is in full blossom under glass; no appearance approaching to it out of doors. Peach trees are in fruit under glass, while they are only in blossom out of doors.—*C. A. A. Lloyd, Whittington, near Oswestry, 310 feet above the level of the sea.*

*Conifers at Dropmore.*—As I have been often asked what sizes some of the rarer Conifers have attained here, I now forward the heights of a few, together with a list of some of the kinds which are making specimens from grafts and cuttings, equal in appearance to seedling plants. We have the Douglas Fir, Abies Menziesii and Smithiana, Araucaria imbricata, Abies grandis, and the Deodar, from cuttings; and the Deodar, Pinus Lambertiana, and Taxodium sempervirens, grafted. These have all good leaders, and are very handsome. The following are the sizes alluded to:—

| | Height when planted. | Present height. | Girth, 3 feet from the ground. | Extent of branches. | When planted. |
|---|---|---|---|---|---|
| | ft. ins. | ft. ins. | ft. ins. | ft. ins. | |
| Abies Douglasii ... ... | ... | 62 6 | 5 0 | 53 0 | 1829 |
| ,, Smithiana ... ... | ... | 12 0 | 1 6 | 8 0 | 1836 |
| ,, Deodara ... ... | ... | 31 0 | 2 9 | 20 0 | 1831 |
| ,, Menziesii (cutting) ... | 0 7 | 12 0 | 0 9 | 7 0 | 1841 |
| Araucaria imbricata ... | ... | 31 0 | 3 6 | 18 0 | 1830? |
| Cunninghamia sinensis ... | ... | 18 0 | 2 5 | 12 0 | |
| Pinus insignis (cutting) ... | 1 10 | 32 6 | 3 5 | 22 0 | 1839 |
| ,, excelsa ... ... ... | ... | 42 6 | 3 5 | 26 6 | 1829 |
| ,, monticola ... ... | 0 9 | 24 0 | 1 11 | 14 0 | 1835 |
| ,, macrocarpa ... ... | 0 10 | 28 0 | 2 2 | 16 0 | 1835 |
| ,, ponderosa ... ... | ... | 32 0 | 3 6 | 21 6 | 1829 |
| ,, Lambertiana (graf.ed) | 0 10 | 9 0 | 0 10 | 5 0 | 1841 |
| ,, Sabiniana ... ... | ... | 20 3 | 2 6 | 15 0 | 1831 |
| Taxodium sempervirens (grafted) ... ... | ... | 18 0 | 1 3 | 12 0 | 1845 |
| Abies nobilis ... ... ... | 0 7 | 10 3 | 1 0 | 8 0 | 1835 |
| ,, grandis ... ... ... | 0 4 | 13 3 | 1 3 | 8 0 | 1835 |
| ,, Nordmanniana ... | 0 9 | 2 5 | ... | 2 6 | 1846 |
| ,, Pinsapo ... ... ... | 0 10 | 8 0 | ... | 4 6 | 1843 |
| ,, cephalonica ... ... | 1 0 | 13 6 | 1 2 | 6 0 | 1836 |
| ,, Webbiana ... ... | ... | 26 0 | 2 6 | 15 0? | |
| ,, amabilis ... ... | 1 0 | 18 0 | 1 6 | 10 0 | 1835 |
| ,, Pichta ... ... ... | 1 2 | 8 0 | 0 6 | 4 6 | 1838 |

—*P. Frost, Dropmore.*

## Societies.

Horticultural, *April* 15.—J. R. Gowen, Esq., Treasurer, in the chair. Lady C. Wellesley, Mrs.

Howard, Mrs. Cuff, T. H. Plasket, Esq., H. Cook Esq., R. Sutton, Esq., Capt. Lumley, Mr. Brown, and Mr. Nash, were elected Fellows. Messrs. Veitch produced a great acquisition in the shape of Cantua dependens, a free flowering half-hardy shrub, from Peru, whose introduction into this country has long been a desideratum. Owing to the accounts which had been published of the great beauty of this plant in its native country, much has been expected from it, and it is satisfactory to be able to state that the highest expectations formed of it are likely to be fully realised; for it promises to be not only one of the most charming, but also one of the most useful shrubs that has been introduced to our gardens for years. When it is stated that the flowers are more than twice the size, and far more brilliantly coloured than those of the two-coloured Cantua, some idea of the beauty of a well-bloomed specimen will be obtained; and then it possesses this value, that it is not only a plant suited for the gardens of the wealthy, but also for those of the cottager, where it will be just as much at home as the Fuchsia, requiring, as it does, about the same kind of treatment. A Large Silver Medal was awarded it. The same nurserymen also again sent a cut branch of the Darwin Berberry, in order to show that the flowers keep long in perfection; and along with it a piece of a reported hardy evergreen shrub from Australia.—Mr. G. E. Henderson, of the Wellington-road Nursery, showed seven handsome Gloxinias, and a worthless Besleria named umbrosa.—Messrs. Henderson, of Pine-apple-place, sent two kinds of Grevillea and a Pultenæa, all raised from seeds sent by Mr. Drummond from Swan River, and an example of Oncidium hastatum.—Mrs. Lawrence again produced beautiful cut spikes of the Amherstia nobilis, which has been in flower at Ealing Park for several months past, and which promises to ripen seeds there. It flowers profusely and continuously, and the blossoms appeared to be brighter coloured than those last exhibited.—Three nice heads of Rhododendrons, raised from Kamoon seeds, were shown from the nursery of Messrs. Jackson, of Kingston. One was white, a second blush, and the third, delicate rosy pink.—Mr. Jones, gr. to Sir J. Guest, Bart., received a Certificate of Merit for two Enville Pine-apples, weighing respectively 4 lbs. 4 oz. and 3 lbs. 14 oz.—A dish of Black Hamburgh Grapes were shown from the garden of Sir H. Fleetwood, Bart., of Hill-house, Windsor Forest.—Mr. Higgs, gr. to J. Barchard, Esq., again sent beautiful specimens of Keens' Seedling Strawberry, ripened under rough plate glass, whose value for gardening purposes is now beginning to be generally recognised.—From the Garden of the Society came the charming hardy Heath-like Bryanthus erectus, Lycaste plana, Aspasia Epidendroides, a plant having usually a yellow sickly aspect, but in this instance exhibiting a good green colour, caused, it is presumed, by throwing carbonate of ammonia into the atmosphere of the house in which it grows; also the sweet-scented Trymalium odoratissimum, Boronia tetrandra, the useful spring-flowering Cytisus racemosus, the brilliant Gesnera-flowered Sage, three well cultivated Cinerarias, the new Californian Ceanothus rigidus, which is hardy about London, provided it is not in a situation where it will be thawed and frozen alternately; the white Epacris paludosa, and some other plants, together with cuttings of the following fruit trees: Summer Golden Pippin, a larger Apple than the old Golden Pippin; Eldon Pippin, a middle-sized roundish Apple of good quality, and Beurré Van Mons and Eyewood Pears. The former is a middle-sized pyramidal russeted fruit ripe in November; and the latter is a hardy sort, producing good fruit even in unfavourable seasons. It also ripens in November.

LINNEAN, *Tuesday, April* 15.—ROBERT BROWN, Esq., in the chair. A letter was read from Mr. Kennedy, jun., describing the rock in which vegetable remains had been found at the Cape of Good Hope, and which were exhibited at the last meeting of the Society. Mr. Matchwick exhibited flowering specimens of the Tussack Grass (*Dactylis cæspitosa*) of the Falkland Islands, which had been grown in the Orkney Islands from seed, by Messrs. Lawson, of Edinburgh. The President exhibited three species of Rafflesia, for the purpose of showing that the Rafflesia Patma of Blume, considered by that author as hermaphrodite, is in reality diœcious.

SOUTH DEVON BOTANICAL AND HORTICULTURAL.—We are requested to state that the first exhibition of this newly-formed society will take place on Tuesday, the 20th May, in Rendle's Royal Botanical and Horticultural Gardens, and preparations on an extended and liberal scale are now being made to give every possible *éclat* to the opening day. The gardens will be tastefully decorated during the day, and in the evening will be illuminated with variegated lamps, &c., and the bands will be retained. The Directors of the South Devon Company have determined to run special trains from Exeter, Torquay, and the other principal stations on the line, on this day, at a cheap rate, so as to give the public an opportunity of having a trip to Plymouth to witness the Exhibition, &c.; and in order to give the party ample time to see all the three towns, the return train is not to leave Plymouth till 10 o'clock in the evening.

## Garden Memoranda.

MR. GAINES'S NURSERY, BATTERSEA.—A new span-roofed show house has lately been erected here, and a gayer or a nicer house of plants, at this season of the year, it would be difficult to find. It is 42 feet long, 20 feet wide, and 14 feet high; heated with hot water in 4-inch iron pipes, and fitted round the sides with convenient slate shelves; while in the centre there is a raised bed for Azaleas, Rododendrons, Kalmias, and similar ornamental shrubs. But it is the shelves which more particularly attract the attention of the visitor, exhibiting as they do a dense mass of the most lovely flowering plants, such as could only be furnished by an establishment possessing large resources as this does. Among other things we remarked Cerise Unique Geranium, a bright cherry-coloured favourite kind; Surpasse Napier, Album multiflorum, and Rollisson's Unique, all good forcing Geraniums, and the latter much coveted for its beauty in the flower garden. Roses consisted of Goubault, the common China, and Madame Fabvier; the latter being, according to Mr. Gaines, better suited for early forcing than the crimson China. Empress and Madame Taglioni Cinerarias were present in the shape of specimens at least 2½ feet high and as much through; and grown to this size, and well bloomed, they are both effective and striking. Epacrises contained a deep red variety of coccinea; Azaleas were of the Ghent and Indian kinds, and there was a variety of Tulips, Hyacinths, and other forced bulbs. Among Correæas were the fine variety called Brilliant, which is figured in Beck's "Florist and Garden Miscellany" for 1848, and a straw-coloured sort, named Magnifica, which was stated to have been in flower ever since last September. The centre bed was chiefly filled with Azaleas and Rhododendrons; among the latter were Delicatum, Victoria Regina, Princess Royal, and a pale pink kind, spotted and striped with crimson, called Marie Taglioni. In the least showy end of this house was a beautiful specimen, in a pot, of the handsome Cupressus Goveniana. It was rather more than 5 feet high, and finely formed. The glass with which the house is glazed is 21-oz. sheet, in panes 18 inches long and 9 inches wide; and, on account of the great amount of ventilation which has been provided, both in the roof and at the sides, it is anticipated that no burning will take place. In the "Calceolaria house," were many nice growing examples of Mitraria coccinea, a plant whose brilliant scarlet blossoms will recommend it to every collection, whether it proves hardy or not. The same house also contained the Funereal Cypress (C. Funebris), nearly 3 feet high, forming a handsome pale-green pyramid, whose lateral branches just indicated a slight inclination to droop. A lean-to house, 80 feet in length, contained a stage full of Madame Fabvier, Goubault, Cramoisie superieure, and common China Roses just coming into blossom. As soon as they are forward enough these are sent to Covent Garden market, where they meet with a ready sale; but before they leave the nursery, cuttings are taken off them, struck and "grown on," for the next spring's supply, and in this way a succession of neat flowering plants is constantly kept up. Pelargonium odoratum variegatum is well worthy of notice, on account of its strongly-scented foliage; and in one of the houses we found a stage full of fancy Geraniums, while the centre was occupied by nice small plants of the ordinary kinds. This house was stated to contain nearly 400 varieties. One side of a low span-roofed pit, contiguous to this Geranium house, was full of Cytisus racemosus, a general spring favourite, and the other side contained Cinerarias, than which a more useful market plant hardly exists; for a pinch of seed will produce a houseful of them almost at any time, with very little trouble, and they will all sell, even the poorest of them; but the bright-coloured kinds are sure to go first, though they may not have another good property to recommend them. The Geraniums intended for exhibition are all promising, and some of them are very handsome plants. One of the best of the fancy sorts measured at least 4 feet across. A house of G. album multiflorum, 40 feet long, was just coming beautifully into blossom, and a collection of second early sorts will soon succeed it. A long Azalea house was filled with beautiful examples, which will soon be a mass of flowers, and pits were occupied with this showy plant, as well as with Heliotropes, Pinks, Kalmias, Myrtles, Kalosanths, Geraniums, and other plants, of which large supplies are wanted for the market. Mr. Gaines stated that "few pieces of glass paid him better than his pit of Myrtles," which are continually being cut from to supply "sprigs" for bouquets. Calla æthiopica is also cultivated here for its cut flowers, which are placed in the centre of table bouquets. A variety of Narcissus, called Sol d' Or, raised by Mr. Gaines, is extensively planted in the open ground, where 30 rods of it are kept for cutting from. Some of the hardier kinds of plants are just being turned out into cradles, which are much in request here in the summer time; and hooped over, they form excellent receptacles for the tenderer Conifers in winter, as well as for many other things. Pinuses, especially insignis, Cypresses, Cryptomerias, and other Conifers, may be found here, where we saw some Cryptomerias from cuttings that were undistinguishable, as far as form went, from seedling plants. At one end of the grounds stands a remarkably large Aucuba. It could not be less than 12 feet high, and as much through.

## Miscellaneous.

*Method of Cultivating and Preserving Cauliflower.* By Mr. Pender, Moredun. Read before the Caledonian Horticultural Society, March 6, 1851.—The following is an account of my mode of growing and preserving Cauliflower for winter use. I sow in the first week of May. After the plants are sufficiently strong, I prick them out into a rich bed made up for them, to allow them to make good roots before they are removed to the open ground, which should be done in the first week of July. The ground must be very rich for this planting. After the plants are established, I give them two or three waterings with liquid manure, to stimulate their growth as much as possible; for the stronger they are grown, the finer the heads are. They will begin to show flower in September, and by the middle of October some of them will be fit for use. If the weather at that time be frosty, I go over the plants, gather up the leaves, and tie them together with a bit of bast-matting. I find, by so doing, that the Cauliflower will stand eight or ten degrees of frost without being injured; for when the leaves are closely tied up, the sun's rays do not act upon the flower; but if not covered from the sun, the flower becomes like black soap. I would strongly recommend this mode of tying, particularly to those who may not have accommodation for lifting the plants. I have found the greatest advantage by so doing. I shall now describe my mode of preserving Cauliflower in pits or frames. First I go over the plants which are to be lifted, and remove most of the large outside leaves, allowing, however, as many to remain on as will cover the flower. I then select all the plants that have formed good and compact heads, and lift them, with as much earth at their roots as possible, and have them carefully conveyed to the pits or frames, as the case may be. They are laid in very close together, allowing the flower to be two or three inches above the earth, and as near the glass as possible. The earth which I use is perfectly dry. I do not use water, for I find if the earth be damp the plants soon spoil. If the weather be dry, I never allow the sashes to be on them; but on the approach of rain the sashes are laid on, raised three inches back and front, to give a free circulation of air, which is always kept up unless the frost be very severe. The three Cauliflowers sent by me for exhibition on the 5th of December last, were treated as above. I have now an excellent supply of beautiful Cauliflower every day, and will have for some weeks to come (the date being 16th December). By treating the Cauliflower as above, I find that I can dispense with the earlier sorts of Broccoli, and hence a saving of ground for other purposes. After I have removed the plants which are likely to keep best, I lift those which are more advanced. I cut the roots of these and store them up in a shed, pushing the stems down into damp sand. They keep in this way for a few weeks. The mode of suspending them in sheds by the roots is, in my opinion, a bad one, for it induces the flower to turn black, which looks very bad. I find it to answer the purpose better to suspend them by the leaves, although I can neither recommend the one nor the other mode, for the flower gets dry and loses much of its flavour. *North British Agriculturist.*

*Price and Whitehead's Filter.*—This invention, which is patented, consists of a tube, composed of filter fabrics, drawn up within itself, or of two tubes drawn one within the other, or of a bag drawn up within itself, so as to cause a portion of the syrup, or fluid to be filtered, to pass from the exterior to the interior surface of the inside part of the tube or bag, and the remaining portion of the syrup to pass from the interior to the external surface of the outside part of the filter tube or bag. The filter may be composed of cotton and woollen yarn, carded together, or of cotton warp and woollen weft, or of woollen warp and cotton weft, and is to be woven in a circular loom, and in the same way as quilted goods. *The Architect.*

*Gutta Percha Water-pipe.*—A gutta percha pipe of 2½ inches calibre, and 1000 feet in length, has been laid down for conveying the Croton water to Blackwell's Island, New York. The line extends from the foot of Seventyninth-street to the island, the depth of the water varying from 30 to 7 feet. The engineer first arranged his pipe in one length upon the island, and formed a line of 30 boats, well-manned, across the river. He then gave his order at the commencement of slack water, and the end of the pipe was drawn across the river by men upon the opposite shore, and was taken up by the men in the boats, and 110 anchors, each weighing 32 lbs., were attached to the pipe, being 10 feet apart. By word of command the men in the boats lowered at each point to suit the inequalities in the bed of the river, as ascertained by previous survey. This was all accomplished in 7½ minutes, without accident. *New York Paper.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

ORCHIDS.—All those species which are commencing a new growth should be carefully examined and repotted or surfaced, according to their respective requirements. Let the old stuff be picked away as far as possible without injuring the roots. The most suitable material, in the shape of soil for these plants, is half decomposed leaf-mould, which has been sufficiently baked or sweated to destroy everything pertaining to animal life; this should be mixed with one-third its bulk of pure sand, and interspersed and packed with small blocks of turfy peat and sphagnum. Many Orchids do best fastened upon blocks of wood, as the beautiful Phalænopsis, Lælias, Cattleyas, &c. Any wood that is durable will suit them. Perfect drainage is unquestionably of the greatest importance in the cultivation of Orchids; and to secure this, a portion of potsherds should be mixed up with the soil, except in that for Stanhopeas, as the latter protrude their flower stems through the bottoms

of the baskets, which for this genus should be considerably shallower than the hemispherical ones recommended for general purposes, and for these nothing is better than some fibry peat and sphagnum. A liberal supply of water must be given to those plants which are in an active growing state, and a warm moist atmosphere must be retained during the day, in fine weather, especially amongst Vandas and their congeners from the hottest localities, and Dendrobes, which are in a growing state. Shading in bright strong sunshine is indispensable, but the abuse of this is as common as the use of it. The canvas should be so arranged that it can be removed or applied in a few moments; as the difficulties of covering or uncovering, in many instances, prevent the necessary attention to this matter. CONSERVATORY.—Climbers should now have a portion of their shoots pruned hard, to produce growths for late autumn flowering. The training of the young shoots should have regular attention, that they may at all times look neat; on the other hand, carefully avoiding the stiff formal appearance which is produced by tying in the shoots to their extremities. If the house is sufficiently lofty, climbers look most graceful when they are allowed to hang down from the rafters in natural festoons. Plants in conservatory borders (whether climbers or otherwise), which have been planted in former years, should have as much of the old exhausted soil removed as can be done without materially injuring the roots, and the space filled up again with fresh compost; and, at the same time, if any alteration in their arrangement is desirable, it should be made. On a careful scrutiny of the plants, many will present themselves to notice, which will form greater objects of attraction, if planted out, than they will if confined in pots. In making a selection for this purpose, those sorts should be chosen which are remarkable either for the beauty of their flowers, for continuing a long time in bloom, or for their elegant and ornamental appearance in habit or foliage. Let the soil for these plants consist of roughly-chopped turves of loam or peat, with an admixture of richer materials, according to their special requirements; but let the surface be covered with finer soil, for neatness sake. Camellias planted out in conservatory borders are much improved by having a portion of the old soil removed, and new supplied every spring, after the flowering is over. Abundance of water should also be given them while they are growing. As the season advances, heat and moisture may be more liberally supplied to tropical plants, increasing gradually in proportion to the growing power of the sun's rays, but in all cases avoiding a high night temperature; 60° being quite sufficient for those which are growing most actively. The necessary night temperature must be principally obtained by closing early, and so retaining the heat derived from the sun; and when fires are required, they must not be so strong as to render it necessary to admit currents of cold air. This must be used with more care than when the plants were in a dormant state, for the admission of a current of cold air during the development of the young growth will frequently give it a check, and so injure the tender foliage as to spoil the future appearance of the plant; a cold current of this description is very different from the moderate circulation of the air which is necessary in all plant-houses. Select some of the strongest young plants of Carnations and Picotees, and pot them in soil consisting of three-fourths loam which has been charred for the purpose of destroying wireworms and other insects, and one-fourth thoroughly decomposed cow manure. During the summer, the plants should be plunged in a bed of coal-ashes, and watered occasionally with clear liquid manure, and all flowering stems should be picked out. After the end of August, the stems should be carefully tied up as they make their appearance; and towards the end of October, the plants should be placed near the glass in a frame or on the front of a greenhouse stage, where they will continue to flower a long time, and be much admired. Seedlings grown in pots and very liberally treated, will rarely fail to flower through the winter.

### FORCING DEPARTMENT.

PINERIES.—A steady heat, especially among fruiting plants, is very essential, as they should all now be making a rapid progress. Where the bottom-heat is supplied by fermenting material, it should be carefully examined; and, on the first indication of a decline, the old tan should be loosened up, and surfaced with a few inches of fresh. The sun being now so powerful an auxiliary in keeping up the heat, it will not so frequently be necessary to renew the entire bed; but if the latter course seems likely to be required soon, it should be done the first time any of the plants are removed for potting, or other purposes, that they may be disturbed as little as possible during the summer. As the season advances, it will be necessary to shade with thin bunting during strong sunshine; but, at present, it should be used very cautiously. VINERIES.—In the early houses, when the fruit is fully ripe, let the temperature fall to 55° by night, and give plenty of air during the day. Endeavour to keep the foliage green and healthy as long as possible; if proper attention has been paid to preventing the establishment of insects on the Vines, this will be an easy matter, and the additional strength thus secured to the future crop, will be an ample recompense for any extra exertion. PEACH-HOUSES.—The Peaches started early in November will now be approaching maturity, and will, consequently, require more air and less moisture; but in all cases avoid sudden changes. Let the young growths be tied neatly in, retaining no more shoots than will be required at the winter training; otherwise, a crowded and sickly foliage will be the consequence. CHERRIES AND APRICOTS.—Let these be frequently examined, and caterpillars or other plagues carefully destroyed.

### FLOWER GARDEN AND SHRUBBERIES.

We must again call attention to the hardening of the young stock of plants, preparatory to bedding out, the season for which is now so fast approaching. Young plants which were potted in small pots early in the spring, should be temporarily planted in frames of soil; but if this is inconvenient, it will be an advantage to give them an occasional watering with liquid manure, or guano-water, to keep them in a healthy state till the season will admit of their being planted in the open ground. Many of the kinds, if permitted to become stunted in their growth, are not easily induced to start again, especially if much dry weather occurs at planting-out time. The future occupants of the beds will be much benefited if the interim be employed in turning the soil over again, and exposing a new surface to the influence of the sun and air. In moderately warm localities, Chrysanthemums are very ornamental, as late autumn flowering plants, if planted now against a south wall. Half-hardy annuals sown in frames, &c., should be pricked out at greater distances apart, that they may be strengthened a little before they are removed to the flower beds. The sowing of hardy annuals, unless already done, should be immediately attended to, if they are required for early flowering. Of those kinds which come quickly to maturity, it is a good plan to sow a few patches once in three weeks to the end of June, by which a succession of gaiety will be produced, throughout the summer and autumn.

### FLORISTS' FLOWERS.

This most singular season appears to puzzle most Tulip growers, and the late cold dry weather has retarded the beds so much, that it is most probable, though early blooms were anticipated, that the flowering season will be about the usual period. A good way of supporting blooms is to place a neat stick, about 2 feet high, at regular distances between the bulbs, so that by attaching four short metallic wires, about the thickness of common skewers, at right angles, they are enabled (by making a hook or loop at the other end which surrounds the Tulip stem), to hold four blooms perfectly erect, preventing them from being swayed about by the wind, or damaging each other. The light net must be kept over, to prevent injury from sudden hail storms, though not so closely as to draw the stems. AURICULAS are blooming strongly this season, and are now rapidly progressing. A piece of thin calico should be thrown over the frame, and as much air as possible be given from below through the slides in the frame, or by other contrivances. RANUNCULUSES.—As the foliage breaks through the soil, they must be carefully gone over, and the soil which has been displaced put gently round the neck of the plant. In other departments as last week.

### KITCHEN GARDEN.

Crops which have been some time on the ground, and especially those amongst which the soil has been much trodden in gathering the produce, as Parsley, Spinach, &c., and the various spring-sown crops as they appear above ground, should have the soil about them loosened with a fork, to allow their roots to penetrate more easily, and at the same time to admit the sun and air more freely. The same operation destroys the young seed weeds which spring up abundantly at this season. After the young plants have gained a little strength they should be thinned if necessary, weeding the rows with the hand. At this period of their growth they should be carefully guarded against the ravages of snails or other insects, which are particularly liable to trouble them in their young and tender state. Proceed with the formation and manuring of Celery trenches as soon as possible, and complete all such work, which is liable to make much mess upon the walks, that the latter may be put in respectable order. Sow Celery on a warm border for late crop, and prick out into frames the young plants of earlier sowings. Make a sowing of dwarf French Beans in a cool frame, to be transplanted into the open air as soon as the weather will permit. Sow Vegetable Marrows and Gourds in 4-inch pots, two seeds in each, and place them in a warm frame. Another sowing should now be made of Cauliflower, Broccoli, Borecole, Cabbages, and Savoys; and dust some quicklime over the young plants of former sowings, to preserve them from slugs. Encourage the growth of Tomatoes in a warm frame, and repot them as soon as they require it, to obtain strong forward plants for turning out as soon as the season will permit. Our short summers render it necessary to be very early with these plants, and this is particularly felt in late cold localities. Where the quantity required is considerable, and the spare spaces upon the walls very limited, a quantity may be grown in 10 or 12-inch pots, taking care that the soil be sufficiently rich to compensate for the restriction in point of quantity. When the season is far enough advanced to admit of the plants being exposed to the open air, they may be placed along a walk-side near a wall, or in any other warm part of the garden. We adopted this plan last year with great success. Repot Capsicums, but do not allow them to flower till they are strong and well established. Prick out Basil, Savory, &c., from the seed-pans into boxes or frames, preparatory to their being planted out next month. Water freely all salads that are now advancing, likewise small seeds just coming through the ground.

State of the Weather near London, for the week ending April 17, 1851, as observed at the Horticultural Garden, Chiswick.

| April. | Moon's Age. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air. | | | Of the Earth. | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 11 | 10 | 29.931 | 29.874 | 49 | 32 | 40.5 | 43 | 44 | N.E. | .04 |
| Satur. .. 12 | 11 | 29.904 | 29.885 | 52 | 28 | 40.0 | 43 | 44 | N.E. | .00 |
| Sunday . 13 | 12 | 29.957 | 29.939 | 51 | 30 | 40.5 | 43 | 44½ | S.E. | .00 |
| Monday 14 | 13 | 29.951 | 29.882 | 48 | 38 | 43.0 | 43 | 44½ | E. | .00 |
| Tues. .. 15 | 14 | 29.830 | 29.800 | 49 | 40 | 44.5 | 43 | 44 | N.E. | .01 |
| Wed. .. 16 | 15 | 29.856 | 29.793 | 57 | 43 | 50.0 | 43 | 44 | E. | .46 |
| Thurs... 17 | 16 | 29.857 | 29.761 | 63 | 39 | 51.0 | 46 | 45 | S.W. | .01 |
| Average ... | | 29.895 | 29.847 | 52.7 | 35.7 | 44.2 | 43.4 | 44.3 | | 52 |

April 11—Heavy clouds; cold north-east wind; rain.
— 12—Fine; cloudy; frosty at night.
— 13—Fine; cloudy; clear, with slight frost at night.
— 14—Cold dry haze; cloudy.
— 15—Cold easterly haze; uniformly overcast; slight rain.
— 16—Hazy; constant heavy rain, commenced at half-past 8 p.m.
— 17—Cloudy and mild throughout; showers at night.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending April 26, 1851.

| April. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 20 | 59.0 | 36.4 | 47.7 | 12 | 0.45 in. | 2 | 2 | 6 | 3 | — | 7 | 5 | 1 |
| Mon. 21 | 57.7 | 36.9 | 43.3 | 10 | 0.20 | 2 | 5 | 4 | 1 | 1 | 3 | 8 | 1 |
| Tues. 22 | 58.8 | 39.2 | 49.0 | 13 | 0.32 | 3 | 6 | 3 | 1 | 1 | 4 | 5 | 2 |
| Wed. 23 | 58.5 | 38.8 | 48.7 | 14 | 0.52 | 1 | 4 | 3 | — | 4 | 3 | 4 | 6 |
| Thurs. 24 | 58.7 | 36.2 | 47.4 | 10 | 0.55 | 4 | 2 | 4 | 4 | 1 | 6 | 2 | 2 |
| Friday 25 | 59.6 | 39.2 | 49.4 | 11 | 0.40 | 4 | 3 | 2 | 3 | 6 | 3 | 2 | 2 |
| Satur. 26 | 59 3 | 37.5 | 48.4 | 12 | 0.12 | 3 | 4 | 2 | 3 | 1 | 7 | 2 | 3 |

The highest temperature during the above period occurred on the 25th, 1840—therm. 80 deg.; and the lowest on the 25th, 1827—therm. 25 deg.

## Notices to Correspondents.

CONIFERS: *Ballandyne.* Prune them when they have left off growing in the autumn. They bear it very well.

CONSERVATORY: *M M D.* A letter dated April 10th will not reach us in time to be *considered* and answered by 10 o'clock on the 11th, at which time the *Gardeners' Chronicle* is prepared for publication. Let your reserve greenhouse be span-roofed, glazed with Hartley's rough plate glass, and heated with hot-water. At one end construct a boiler-house and potting shed, so that the gardener may pass with his plants from the shed into the house in all weathers. Construct inside a tank into which all water may be conducted which falls upon the roofs. Your pits might be backed against the sides of your greenhouse. Let there be a walk down the middle of the house. You might run a rod of Vines under the ridge of the roof, clear of the head of passers, but you must not do more. Let the sashes move up and down, so that you may, if you please, leave the roof uncovered when it is necessary to do so. These are general hints. We cannot give plans, for which consult some garden architect.

DEYING HEATHS: *J P.* Dip them into boiling water before you dry them. That will prevent their shedding their leaves.

FANCY GERANIUMS: *Warner.* You will find a descriptive catalogue at p. 72 of the current year's volume.

NAMES OF FRUITS: *X G.* Your Apple is not so acid as the Hunt House. It appears to be the Holland Pippin.

NAMES OF PLANTS: *A Sub.* Daphne collina and Arnica montana.—*W Walker.* 1, Primula villosa with white flowers; 2, Thuja occidentalis; 3, Rites sanguineum. If you would study botany a little you would learn to know such things without assistance.—*E G.* Acacia diptera.—*Redwood.* We believe the Narcissi are these—1, Ajax pumilus, *Salisbury;* 2, a variety called Ajax præcox; 3, Queltia calathina, one of the many varieties of Narcissus odorus of *Linnæus.* It is almost as impossible to determine these things as to name florists' flowers, among which they really ought to be classed. The best account of them is in Dean Herbert's "Amaryllidaceæ."—*C M—l.* Apparently a handsome variety of Oncidium longipes.—*J R M.* Tussilago Farfara.—*A B.* Omphalodes verna. It is *not* Forget-me-Not.—*Reader.* Populus nigra. It is worthless for out-door purposes.—*H F P.* Clianthus puniceus.—*Cymro.* Aubrietia deltoidea, Rhododendron dauricum. There is a white Periwinkle; but we have not seen a double white.—*S D.* Hyoscyamus scopolia.—*F R S.* Dryandra Baxteri.—*Ch Smith.* Dendrobium Paxtoni.—*H.* The Gooseberry leaves are attacked by Erysiphe communis; the white fibres are the mycelium; the dark brown spherical centre is the peridium.

PEAS: *A Gardener.* You have lost your Peas by your own mismanagement, and not by following the directions in the Calendar, which is written by one of the most experienced gardeners in England. Are you really simple enough to believe that your Pea-sticks have produced "the most miserablest plants" you ever saw? It is time to thin your Apricots, if they are what you describe. There is no reason why you should not disbud now, *if you know how.*

ROCK PLANTS: *H S.* Aubrietia, Arabis alpina, Alyssums, Musk, Saxifrages, Soldanella alpina, Sedums, Erinus hispanicus, Saponaria ocymoides, Aquilegia Skinneri and perhaps glandulosa, Primula altaica and other sorts, Verbenas, Petunias, Violets, and hardy Ferns.

STRAWBERRIES: *A B.* Your temperature at the commencement was at least 10° too high. If you do not begin with little heat, and force gradually, they are sure to go "blind."

VERBENAS: *Warner.* Bride, white, large truss; Briseis, rosy purple, distinct and striking; Defiance, scarlet, large truss, strong habit; Heloise, blueish purple; Princess Alice, white, with cherry centre, large truss; Royal purple, deep purple; St. Margaret, crimson, with a violet centre; Tomy, dark maroon, striking; Valentine de Saveuse, blueish lilac; Eclipse, blush, with pink stripes; Vulcan Superb, bright crimson, very large; and Psyche, rosy purple, with crimson centre.*

VINES: *J A, Limerick.* For a succession in a bothouse, 16 feet long:—Royal Muscadine, Black Hamburgh, White Muscat of Alexandria, and Oldaker's St. Peter's; four will be sufficient. Vines, of course, must be kept very thin, if you introduce them into a greenhouse. They are not, generally speaking, advantageous to greenhouse plants, but rather the contrary.

WATER TANKS: *E F L.* A 14-inch wall will support a tank of the size you mention. Make the tank of wood lined with lead or gutta percha. Asphalte won't answer.

MISC. *Holloway.* Cerfeuil is Chervil, and Scarole is Batavian Endive; the variety you have received is probably that generally grown for the Paris market.—*A J B.* Guatemala Tobacco is a very fine *white*-flowered kind, and requires precisely the same treatment as common Virginian Tobacco; to be raised in heat, and planted out singly about 2 feet apart, in rows 3 feet asunder, when the frost is gone.—*Ravenswood.* Your Maurandya has probably suffered from too much wet at the root. You had better defer the removal of your Copper Beech and Arbor-vitæ till next September.

### SEEDLING FLOWERS.

CINERARIAS: *D D.* All well worth cultivating except the blue one, which is worthless.—*A V, Mid-Lothian.* 1, Pure white, flower medium sized, round and flat, and of good substance. One of the best of its class. 2, White, edged with lavender, and having a centre of the same colour; a clean-looking good flower. 3, Dark chocolate centre surrounded by a belt of white, and edged with purple. A pretty flower, but both this and No. 2 are rather too starry.—*J W.* All inferior to kinds now in cultivation.

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AS THE

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EDWARD PURSER, Secretary.

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Queen-square, Liverpool, April, 1851.

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# The Agricultural Gazette.

*SATURDAY, APRIL* 19, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, April 24—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 30—Agricultural Society of England.
THURSDAY, May 1—Agricultural Imp. Soc. of Ireland.

THERE are certain crops whose agricultural merits demand for them a more extensive cultivation than they have hitherto obtained, which deserve, on that account, special notice in this section of our Journal; among them is SAINFOIN, which is almost as much unknown in some districts as it is universally cultivated in others. Plants of the same botanical character, such as Clovers, Tares, &c., are much more general in their distribution over land of varied nature; but they are not of more importance than Sainfoin to the farmer who has land suitable for its growth. On the limestone soils of the Cotswold Hills, and upon the sheep farms of the chalk formation of Wiltshire, Hampshire, and Berkshire, it was, until the more extended introduction of the system of Turnip farming, almost the mainstay of the stock keeper; and even now it is acknowledged to be of so much importance that there is a clause in many leases that a certain quantity of land shall be left in Sainfoin at the expiration of the term, and that this shall be valued to the incoming tenant according to its age and quality. Sainfoin is also grown upon the chalky and gravelly soils of Herts, Cambridgeshire, Suffolk, and Norfolk. In the two latter counties its cultivation is extending rapidly and beneficially to the farmer, as it is found to be one of the best preparatory crops for Wheat, and its produce of hay or sheep feed is well known to be of the most healthy, nutritious, and fattening description. In the southern counties, and upon the Cotswold Hills, the land remains in Sainfoin for a term of years varying from four to seven, and sometimes even more. The first year's growth is inferior to the second; but, after a certain time, the Grasses natural to the land, and the growth of seeds from the hay upon which the sheep are partly fed during winter when upon Turnips, quite smother the Sainfoin, and the produce deteriorates in value; but still the rest the land has from corn cropping imparts a freshness to it, which is shown in the following crop, whether of grain or roots. The small return from the Sainfoin itself, when the land becomes covered with Grass, and the expense of cleaning, are objections to this system, that tell against its being practised upon any other than poor, light, calcareous soils, which are the natural habitat of the plant; and where a moiety of the farmer's returns are made from sheep breeding. In this instance it would be quite impossible to impart and retain fertility by a more economical method. It is a part of the system of those districts to have the old Sainfoin lea dunged and once ploughed, and the Wheat sown broadcast after the wheel-presser; and repeated rollings, harrowings, and treading with sheep, are the means adopted to give the solidity to the soil absolutely requisite to prevent the crop losing plant from wire-worm or frost.

And again, these old Sainfoin leas assist the farmer in another most excellent system of tillage; they are pared and burnt as a preparation for Turnips, to be fed off upon the land and followed by Wheat. However, upon land highly cultivated upon the alternate system, we should by no means advocate the growth of Sainfoin for a term of years, as the reasons given above show that it would be very unprofitable. But for a year, or perhaps for two years, it is likely to make a good return, and to leave the land in a capital condition for Wheat. At the present moment we have a letter before us from a Norfolk farmer, who says the appearance of the Wheat crop this spring, grown after Sainfoin, has induced many to sow it this season more extensively.

The varieties of Sainfoin cultivated in this country are by no means numerous; the common English Sainfoin, which is natural to the chalk and limestone soils, being by far the most extensively grown, and preference is given to this variety where the land is required to be in Sainfoin for several years.

Most extraordinary prices were given a few years since for seed of the Giant Sainfoin, said to have been discovered by Mr. HART, of Ashwell, Herts, and introduced into notice by Mr. THOMAS HINE of Newnham in that county, who describes it as being more rapid in its growth in the spring, and after the first cutting—it will produce in one season two crops of hay, or one of hay and afterwards a crop of seed may be taken.

The French double-cut Sainfoin, as it is termed by dealers in seeds, is very generally cultivated in the central provinces of France, and a considerable quantity of the seed has been imported into this country, and sold at prices very little higher than seed of English growth, during the last few seasons. It is very similar to the Giant Sainfoin, growing quite as quickly, but producing a smaller quantity of leaf.

A gentleman who has grown it two years in Norfolk writes, "I find it early and quick in growing, both in the spring and after mowing, but I do not get heavier hay crops." Another of our correspondents from Suffolk, who farms an extensive tract of light and mixed-soil land in that county, and to whom we are much obliged for his information, says, "I planted part of a field with the French double-cut Sainfoin seed, and the other part with common English—the same quantity of seed per acre, drilled at the same time; so marked was the difference in favour of the French, the first and only year I have tried it, both in thickness of plant and quickness of growth, that I let the *first cut* stand *for seed*, for fear I should *lose the stock*, but I got little or no seed from it. So rapid, however, was the growth after the first crop was cut, that it soon passed in length the common sort, cut long before for hay, and produced a *nice crop of seed the second cut*. The Sainfoins here, in a general way, do not lie more than one or two years. Mine lie two, and then Wheat, for which purpose I very much prefer the French; indeed, if it succeed with me as well in future as it did last year, I should not think of sowing any other." From the above evidence, and from experience of their culture, the last two varieties, from their quicker growth, and from their coming sooner to maturity, may be recommended upon all highly cultivated soils having a calcareous subsoil, the object of the agriculturist being to obtain a large produce the first and second years, and to keep the land clean and in good heart for the Wheat crop.

For aught we know, the French double-cut seed may owe its quicker growth and earlier maturity to the seed being the produce of a warmer climate, more than to its being a distinct variety, as we hear of its degenerating when grown from seed the produce of this country. If it is so it adds another argument, so often advocated, of the importance of a judicious change and selection of seeds. And at the same time it shows that some good to the farmer may come of the proposed repeal of the duty on foreign seeds, as the duty on French Sainfoin is now a very considerable item in its cost.

We shall, in another part of the Paper, enter more minutely into the details of the culture of this crop: our present object being merely to introduce it, as an admirable source of excellent summer food for stock, to the notice of any of our readers situated on calcareous or rocky soils, who may not hitherto have attempted its culture.

## MANAGEMENT OF STEAM ENGINES.

So much value is justly attached to Mr. Mechi's practical observations, that I fear some of his friendly admirers may be led into error, were the advice which he gives in reference to the steam engine to be followed out without a little previous consideration. I quite admit the value of an ash-pan containing water, for a

boiler on a farm, as it may prevent the chances of fire from ashes or clinkers coming in contact with straw or other substances left, too often, lying about. But I beg to question the advantages he claims for this practice, which he so strongly recommends in his paper of the 18th of March (See *Agricultural Gazette* for March 29.)

Now, it is well known that under the most advantageous conditions, it requires 1 lb. of the best coals to raise 10 lbs. of water from 60° to 212°; and as he states that from 100 to 200 gallons (equal to 1000 lbs. to 2000 lbs. weight), are evaporated from his ash-pan by the radiant heat in the course of the working day, it follows that an amount of heat has been abstracted equal to from 100 lbs. to 200 lbs. weight of coals; under the ordinary conditions of engine work, probably nearly double these weights would be required. Then, again, suppose that this immense amount of vapour (at 212°) is carried up through the bars into the fire, and it will not be very difficult to calculate the additional amount of caloric which would then be required to raise its temperature sufficiently to enable it to pass off by the flues and the chimney; a temperature of at least 600° to 800°, all this power being expended outside the boiler, and therefore of no use. In order to ensure perfect combustion, and thus economy of fuel, it is desirable, also, that we should check the admission of more air than is required by the fire, and more particularly of any large quantity of vapour, both of which must appropriate heat, which ought to be all transferred to the boiler. These points can be kept in view, and yet all the advantages claimed by Mr. M. may be obtained by other arrangements less costly, and certainly more philosophical than those which I venture to object to. We must recollect that heat radiates equally in all directions—the natural tendency of heated air to ascend, and the usual mode of applying the draught, cause the greater part to be brought in contact with the lower surface of the boiler; but the remainder is lost either by lateral or vertical radiation. (This effect is seen by Mr. Mechi's report.) Now, by having a boiler so constructed that the fire may be placed in its centre, and thus be surrounded by the water, we are in a condition to avail ourselves of the entire heating power of the fuel, and effectively appropriate the portion which would be lost by the ordinary arrangements. This description of boiler is known by the name of "Cornish boiler," and is particularly adapted to districts where coals are dear.

Some little judgment is required in the selection of coals for the engine—they should be of a free-burning, and not of a coking, character: those best suited for household purposes are generally best suited for the engine: with attention to this point and careful stoking, caking and clinkering are avoided, the draught is unimpeded, and the bars are not burnt. In all cases, however, a simple arrangement of the fire or dead-plate will be found advantageous in regulating the combustion of the fuel. The fires should be kept flat, and 2 to 4 inches thick all over the bars; all fresh coals should be thrown on this plate, where they become partially coked, and the gases, produced by the decomposition of their bituminous matter, passing over the heated surface of the fire, are burnt, instead of being driven up the chimney in the shape of a dense smoke. When the fire requires more fuel, that on the dead-plate should be shovelled forward, and another fresh supply thrown on to it. If this plan is attended to, no smoke will be seen from the stalk, except on lighting up—a plentiful and regular supply of steam will be generated, and a great saving effected, both in fuel and in the wear and tear of the boiler. *W.*

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Mr. Mechi's plan, as described in your Paper of the 29th ultimo, of using a cast-iron pan filled with water under the grate of his steam boiler, will materially assist the fuel to generate steam, but as his is one on the high-pressure principle, the same advantages may be obtained by having a gas-pipe three-quarters or an inch in diameter, from the waste or exhaust pipe to the space under the grate. There should be a stop-cock in the pipe to regulate the quantity of steam to go through the grate. The pipe may be single or branched off in two or more, to more equally spread the steam; but each pipe should be stopped at the extreme ends, and to have small perforations on the sides or bottom; for if on the top of the pipes, the ashes falling from the grate upon them might stop them up; and there should be some in the bottom of the pipes for the condensed water to escape.

In the same paper there is a new principle of cultivating land, as described by Mr. Smith, in his little work, styled a "Word in Season," which principle is advocated by Mr. Hewitt Davis, whose knowledge and experience stamp the method as one of practical utility. I have one of the first editions, which is only adapted for the spade; and one of the last editions, which is for large holdings. From the first reading of the book I was desirous of working part of my land upon the described method. It only mentions the growth of Wheat; but from the elevation of my land, and its being on the clay slate rock, Oats are a much better paying crop than Wheat.

Now if I should adopt the plan—consume all my Oats with feeding, and in every space between the growing grain to have the manure ploughed or dug in, and either by sowing seed or transplanting to have one row of green crop which, when off, to trench the space, would it be an improvement? *Richard Nicklin, Isle of Man, April 9.*

## THE BREEDING AND REARING OF POULTRY.

Fowls.—The first point of consideration is the breed; this is of much importance when you want to make the most of them; by this I mean both by eggs and the fowls for market. I am inclined to think that a cross between the Spanish and Dorking will answer both purposes best; but as yet it has not been sufficiently tried on this farm, because the eggs of either sort are 1*s.* each; this would involve much expense where the number of hens and cocks kept from one to four years old is over 400; but we are gradually getting this breed; the majority of the present stock are the common dunghill crossed with the male game. This is a hardy breed; but is not much liked by the London poulterers. The true Spanish do not come to maturity soon enough; they are at least eight months before they are fully fledged; but they are most excellent layers, and if you get them early they will begin to lay before Christmas. This is generally a time that eggs sell well. We have this season sold them in November and December at 1*s.* 8*d.* per score; they are now, January, 10*d.*; this price will suggest the importance of having early pullets, though it is a great temptation to sell in May and June, as the price then is more than if you keep them two or three months longer; but we have, the last few years, made it a rule to keep most of the early pullets, selling only the early cocks, being well satisfied that the hens pay best if kept over till the following spring, the eggs they lay generally amounting to more than they were worth themselves; and some of them will want to sit at Christmas or before, and it is impossible to have them too early, though they require more attention at this early period, yet they are invariably the healthiest and largest birds. We have now, January 21st, over 50 strong chickens, and have not lost one as yet.

I will state now the detail of the management of them on this farm, as stated above. We endeavour to have chickens as early in the year as possible, and continue to set all the hens that show any disposition to set during the entire year, except such as have been proved bad mothers or unsteady sitters, and there are many that are good layers, yet are the worst mothers in the world. This requires, like everything relating to poultry (and in fact everything else) the constant eye of the master, not once or twice a week, but unremitting attention every day, for however fortunate you may be in getting a person to attend to them, they will grow twice as fast under the close inspection of the master. We have here a middle-aged man, who from bodily infirmity has been prevented doing any hard work, but has been odd man and boy on this farm all his life; from being all his life amongst poultry, he has acquired a tolerable share of practical knowledge, and what is of still more importance, a liking for them; and it is useless to have a person with poultry who has not this feeling added to a large share of patience and good temper.

I will state here the means pursued to engender this feeling. I believe it is well understood that if you wish any person to study your interest you must show them that theirs is combined with it. This man has a direct interest in both the eggs and poultry when sold; he has 1*d.* per score eggs for all he may collect out of the poultry-houses, and 1*d.* for every fowl sold; 2*d.* for each turkey and goose; this added to a small weekly regular wage makes his place quite as good as any man on the farm, and this he deserves, for he is required to be stirring by day-break, and when there are a large quantity of young he cannot leave them till dark.

I have found that baskets, or common hampers are the best for the hens' nests, from their being so easily washed; this is best done by taking a few at a time and either putting them into cold water, and letting them soak all night; or, what is still better, putting them into a large tub and pouring boiling water over them, letting them soak for an hour or two, when all the dirt may be easily removed with a hard scrubbing-brush. This plan ensures the destruction of the numerous insects lodging in the crevices of the basket, and apt to escape if only cold water is used. The basket must be thoroughly dried before it is returned to its place; it is a good plan to dust the basket inside and out with lime powdered and put into a coarse piece of linen. After washing, a little straw is put at the bottom of the basket, or I think the hens generally prefer hay, but I believe that it encourages the insects more than straw; and I would recommend a quantity of dry ashes to be put at the bottom, under the hay or straw, and packed all round the outside, this keeps out the cold wind, and I have no doubt that it contributes to keep an equal temperature, resembling, in some measure, the natural nest the hen will often choose for herself at the bottom of an old hedge or bank; this is not required after April.

The hens ought to be disturbed as little as possible during the time they are sitting; yet they require to have food, and more particularly CLEAN water, put within their reach; and, if they do not come off the nest every day, or at any rate every other, they should be gently removed from the nest and kept off for 10 or 15 minutes, and a good sitter will almost starve herself before she will leave the nest. I always mark the eggs with the day of the month when set; this is very convenient where you have many setting at the same time, as sometimes the chick requires a little assistance to effect its escape. But never be in a hurry. Sometimes the weak chicks will be 24 hours after their stronger brethren, and it often happens that the weak ones are glued to the shell of the egg; when so, the egg ought to be immediately broken and removed as gently as possible; the part sticking to the chick must be softened with a little warm water, and great care used to get it off, for, if the skin of the chick is ever so slightly injured, it will die. The chicks do not require any food for 24 hours after being hatched; after that they will begin to eat: try them with a little bread soaked in milk and a little Wheat; they will pick up Wheat before any other grain. It is of much importance to get them to pick up their own food as soon as possible, as they do much better when they do so, yet they ought not to be allowed to go longer than 24 hours after leaving the shell; they ought to be fed by hand with bread soaked in milk; a woman does this best, as her fingers are smaller, yet you may manage it pretty well with a small piece of stick, shaped something like a marrow spoon, only much smaller, of course; and by placing the hand round the neck of the chick, the thumb on one side of the bill, the forefinger on the other, you will find no difficulty in opening the mouth and introducing any food necessary. I forgot to mention, in speaking of the chicks that did not find their way out of the shell soon after the egg was chipped, that it is necessary to enlarge the opening, as it must be done very gently, and a little at a time, by breaking off a small portion of the shell all round the chipped part, say an eighth of an inch at a time. It is best in the early part of the season to keep them in-doors (except it is very fine and dry, like this season has been hitherto) for at least a fortnight, giving them plenty of room; a barn is a famous place, and I regret to say that we have plenty of them unoccupied at this early season. Our barns are built entirely of timber, and afford plenty of ventilation, without which no animal can exist for any length of time in health, and for poultry it is indispensable. To this point, and the keeping them and everything relating to them scrupulously clean, I lay the success that has attended the rearing of poultry on this farm, and without this I am satisfied any one who may try to bring up any quantity of poultry will meet with much disappointment. The chicks have now reached say a month or six weeks of age; this is rather a trying time with them—getting their first pen feathers; but if they are well attended to they will soon get over it. They are, whenever the weather is suitable, carried out into a pasture; every day the hen is confined in a coop, the chicks having the liberty of running about. If the hen is not thus confined, she is apt to roam too far with her young. We endeavour to keep each brood as far from one another as possible, as many diseases that they are subject to are very contagious. This farm has many advantages that a smaller one has not. There are eight off-hand places, five of them with cottages attached, and at all of them are a large quantity, both of chickens and turkeys, raised every year. I do not think that any person can do as well when they are all together, but I have no doubt that every farmer may raise five chickens and the same quantity of turkeys to each acre.

We have found that the best time to send chickens to London is from October to Christmas for the cocks of the current year, and from Christmas to June for the pullets of last year. They are allowed to lay till they show a disposition to sit, or till the middle or latter end of May, when they are immediately put into the fatting coop and fed upon Barley-meal, and either Carrots or Swede Turnips, made warm every time they are fed (three times a day); this has been found to answer equally well with Barley-meal alone, and of course at a much less expense. The roots require to be steamed till they will mash easily, and mixed in the proportion of one of roots to three of meal.

Of course you will get rid of all the early chickens (except those pullets kept for stock, and a few to begin to lay early), that are of any size in May and June, the two best months in the year; we sold them little larger than pigeons in May, 1850, at 3*s.* 4*d.* each, and this is the best price for many years, with the exception of one year, I believe, when the scarcity was previous to the passing of the free-trade measure. This is an important fact, as showing that the demand must have increased, or they could not have kept up the price. The chickens, if well kept, do not require to be in the fatting coop more than a week or 10 days; if shut up longer, they are apt to get a bad colour and lose weight, instead of gaining, as they are close packed in the coop, and kept with scarcely any light. I may add, the system is pursued at all the off-hand places, with regard to remunerating the labourers' wives for rearing the chickens and collecting the eggs, as I mentioned regarding the poultryman at the home-farm.

About the profit of rearing poultry there are great difficulties, as every one who has thought about it well knows. There are always, or nearly so, one or two flails going in each of the yards belonging to this farm, and of course there are many grains unavoidably thrown out, which the fowls employ themselves in picking up as the straw is thrown out from the barn; and as there is a large number of pigs fatted here on steamed food, of which the fowls partake with the greatest avidity, it is still more difficult in this place. Their fondness for this food has led to its being regularly given to them, more particularly during the winter months, and as it is always given warm, it no doubt induces them to begin to lay earlier than they otherwise would; we have found it beneficial to give them a small quantity of greaves (the refuse from tallow melters) during November, December, and January, as then they have more difficulty in getting worms, their natural animal food. The greaves should be put into a little warm water a few hours before required, then broke into minute pieces, and intimately mixed with the

steamed food, which may consist of half Swede Turnips, (the best root for them) or Mangold Wurzel, or Carrots; the other half either Barley, or Oatmeal, not dressed too much, with a handful or two of greaves, during the three months mentioned; this proportion will do well till you put them up to fatten; but they require a tolerably good feed of dry corn once a day (say mid-day); this will, of course, consist of the tail corn, Wheat, Barley, and Oats; they require this more, as the flails are laid up as the spring advances; they require good living, without making them fat.

I believe that the tail corn cannot be better employed than in feeding poultry, though it is always spoken of with such contempt; in fact it has afforded me much amusement to hear the remarks made upon a former communication of mine to your Paper, and copied into the *County Chronicle* on this subject. I can say it is not looked upon with indifference here—quite the reverse. It has been found most convenient here every week that they have been sent to London; and this, on a holding of little under 1000 acres, shows that it is considered no trifling matter. I do not say anything upon the diseases of fowls, as there are many good books on this subject by persons better qualified to speak on this subject than any common farmer can be expected to be. *E. X.*

## Home Correspondence.

*Adulteration of Manures.*—The attention of the agricultural public has recently been directed very properly to the extensive adulteration carried on with guano and other manures. Allow me to observe that agriculturists have themselves to blame very much for the extent of this mischief, by their incessant craving after cheapness, and their encouragement to anybody, and everybody, who, will minister to their depraved appetite, for depraved it undoubtedly is, when indulged in with almost total disregard to the real merits of the articles purchased. It is sufficient for a manure to be offered in the market, under the name of some recognized manure, at a less price than that at which the genuine article can be purchased for, from some respectable manufacturer, and some farmer will be found silly enough to purchase it, provided always, that it smells good. For the accuracy of the following cases, the writer can vouch, and they are all of recent occurence. Case I.—A respectable farmer, a few weeks since, purchased a certain quantity of top dressing for Wheat, from a total stranger, so much so, that he absolutely forgot the name and abode of the party; having taken no memorandum of the transaction, and was therefore unable to complain of the non-arrival of the manure at the time appointed. He knew nothing of the party previously, and was not recommended to him, but was induced to purchase solely because the manure appeared cheap, and had a strong smell. Case II.—Some time since, a quantity of Peruvian guano, stated to be of the finest quality, was purchased by some gentlemen of a London dealer, at 12*s.* per ton under the price that would have been charged them in the regular course of business. A week since, a sample of the article was sent to the writer for examination, and on submitting it to a few analytical experiments, I readily found that it possessed double the water, and double the ash contained in genuine Peruvian, and that in fact it was damaged Peruvian extensively adulterated with earthen admixtures. Case III.—A quantity of inferior Chilian guano has lately been extensively sold by corn dealers as genuine Peruvian, at 20*s.* under the market price, the guano being mostly taken in exchange for corn. This system of barter is very injurious to farmers, and they stand in their own light, when they encourage it. Case IV.—A quantity of inferior Wheat was offered to a manure manufacturer for a given quantity of superphosphate of lime, who made a calculation, allowing the full value the Wheat would realise, and offering the utmost quantity of genuine superphosphate that could be sold for the amount in exchange; but this would not suit the farmer, who went to a corn merchant not quite so scrupulous in the quality of his manures, who at once accepted the bargain. I have mentioned these facts to show the very loose manner in which the farmers spend their money in the purchase of manures, and the encouragement they are thereby giving to dishonesty and fraud; and, I venture to assert, that amongst the various suggested methods of remedying the evil complained of, none will be found more effectual than that of paying some regard to the standing and respectability of the party from whom manures are purchased, and enabling, by giving him a fair price, to retain the genuineness and quality of his manures. *W. C. Spooner.*

*Open Furrows on Drained Land.*—Mr. Mechi, in the *Agricultural Gazette* of February 8th and March 22d, has given his opinion that draining in stiff clay soils will not enable open furrows to be dispensed with. This is a point of much importance, and well worthy of the discussion which he invites, especially as he is not singular in his views. It involves, to a considerable extent, the question, whether clay soils can be gradually made friable by draining, followed by a proper system of cropping and tillage; for if the rain falling upon such soils can be made to sink readily through them, and pass off by the drains below, air will also be freely admitted, and the soil to the required depth must be gradually improved, even without the aid of deep tillage; but if the drains do not draw down the water readily and perfectly, the soil neither is sufficiently open, nor can it well be kept so to the proper depth, either by subsoiling or other means. Any accumulation of water re-cements its particles more or less, and may render subsoiling or even the more expensive operations of digging or liberal manuring, of little avail. It is very desirable, therefore, that the whole of the surplus water should sink equally and quickly down to the drains, acting upon all the particles of earth in its descent; and I think we should not be too ready to conclude that this object cannot be attained, seeing that this would almost be to abandon the hope of managing clay soils to advantage either at present or prospectively. We should rather try the effect of drains at narrow intervals and of a suitable depth, their bottoms accurately cut, and laid with tiles of considerable size, so as to maintain a clear circulation of air throughout, taking care also to fill them above the tiles with porous material, rejecting the whole of the stiff subsoil if necessary. How far Mr. Mechi's draining comes up to these conditions is not for me to say, farther than by commenting on the information furnished by him; but it is evident that the neglect of any one of them may materially influence the result. His width of only four yards ought to answer, especially in a dry climate such as that of Essex; but the 10 inches of stones with pipes laid above them may perhaps never prove effectual. Stone drains without a proper opening below are by no means so efficient as some suppose. I know a stiff field, half of which was drained 10 years ago with stones, and the other half the succeeding year with tiles; the subsoil was tolerably equal; the draining in both cases was carefully conducted, and the drains were all at the same depth and distance. The tile draining is efficient. The stone draining now is not so. The tile drains may act a long time, but not being constructed according to the improved methods now known, they will eventually fail. The stone drains will become less effectual every year, and must soon be replaced. As regards the width of 36 feet, Mr. Mechi cannot reasonably expect drains so placed to answer his purpose; that is, if his soil is really a stiff clay. The distance is much too great, except for porous soil. It is a great error to drain imperfectly, merely for the sake of saving a few drains in a field. The success of other costly operations so much depends upon perfect drainage, that when these operations are undertaken, a loss may be sustained every year, equal to the saving in the number of drains. The form of the surface also materially affects the filtration of water. An open furrow glazed over with the plough and trampled by horses, when harrowing, naturally bears up the water, and conveys it along until it forms a considerable stream, and some farmers to prevent this lay the land flat, or avoid clearing out the furrows after harrowing, believing that the water then sinks down without causing injury. Mr. Mechi himself says that the quantity of water entering the furrows at any one place is small, but being carried forward it soon accumulates, and a stone drain, or even a carelessly laid tile drain, with an opening at any place ready to absorb it, would not be very safe. The permanent improvement of heavy soils is a most important matter, and every day's experience shows that it can be done with certainty, but the means taken to attain this desirable result are very various. In some places deep tillage, thorough pulverization, liberal manuring, and a good system of green and white crops, all founded upon thorough drainage, are the rule; and the land so managed, not only yields abundantly at the time, but is always under improvements; whilst in other places, shallow ploughing, with all the other features of mismanagement usually attendant thereon, are still common. The crops are consequently poor and precarious, and the soil is deteriorated rather than improved. I have seen several patches of originally stiff land, which were at one time cultivated as garden ground. The buildings and gardens have long since been removed, but these patches always maintain a great superiority over the surrounding land, producing much better crops, with less labour and manure. There is little doubt that the same management would have produced a similar result on all the land in the neighbourhood, and the plough, harrows, and grubber, if properly used, would make a good substitute for the spade. It is to be hoped, therefore, that the correspondents of the *Agricultural Gazette* will continue to discuss this subject until the whole truth has been elicited and made known. *James Donald, March* 25.

*Premium List of the English Agricultural Society.*—On looking over the different premiums to be awarded at the approaching meeting in July, I am very much amused at the selection made between the "Welch, Irish, and other pure breeds;" because, I do consider that there is as much difference between the Welch cattle and the Irish, as between the Short-horns and Herefords if they were to be classed with any other breed of cattle; why not class them with the Devons, which are so much alike in every point except colour, and as unlike any "Irish" as a Hottentot and white man. *A Bortoeth Farmer, March 27th.*

*Chicory.*—In an article on the cultivation of Chicory, which appeared in the *Agricultural Gazette* of March 8th, the following passage occurs: "*Time for Sowing.*—It must be sown within a day or two of the 12th of May, not later or earlier; if later, it will produce runners or woody fibrous roots; if earlier, it will seed, which it should not do." Such a direction appears to me to be suitable only for an invariable climate. In Britain the seasons differ from each other considerably as regards earliness, and such a precise rule is surely, therefore, of doubtful propriety. On an average of seasons, the 12th of May may be the best time for sowing in a certain latitude, that of Cambridgeshire, for instance; but, if such be the case, is it not advisable to sow a few days earlier in the north of England, or in Scotland? A little more information on this point will be interesting to many of your readers who, like myself, know little about the proper culture of the plant. Are the roots liable to injury from frost before they are taken up? If they incur much risk of this kind, will they be of less value in any other respect than as regards bulk by being pulled before the middle of October? I understand that the growth of Chicory will be attempted this year in several parts of the country in which there is more reason to be apprehensive of early frosts than in those districts where it has hitherto been chiefly cultivated. *J. D. H.* [The information referred to is true of the south of England. We have no information regarding the growth of the crop in Scotland.]

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's house in Hanover-square on Wednesday last, the 16th of April; present, Mr. Raymond Barker, Vice-President, in the chair; Lord Berners, Sir Robert Price, Bart, M.P., Sir John V. B. Johnstone, Bart., M.P., Don Domingo Savignon, Mr. Burke, Col. Challoner, Mr. Clarke, Mr. C. Cure, Mr. Dyer, Mr. Gadesden, Mr. Brandreth Gibbs, Col. Hall, M.P., Mr. Fisher Hobbs, Mr. Kinder, Mr. W. Long, Mr. Parkins, Mr. Pocock, Mr. Rowlandson, Prof. Sewell, Mr. Sheridan, M.P., Mr. R. Thompson, Prof. Way, and Mr. G. Wood.

The following new members were elected:

Burbury, John Jackson, Ibstock Grange, Leicestershire.
Nicholetts, John Toller, South Petherton, Somerset.
Parrott, Geo. Lewis, Parsonage, Aveley, Romford, Essex.

The names of six candidates for election at the next meeting were then read.

Communications were received from Mr. Lister Maw, on the desirableness of establishing principles on which judgment is given in the award of prizes to breeding stock at the country meetings of the Society; and from Col. Hall, M.P., correcting a misapprehension of his meaning at the last Council, in reference to the height of the Turnip plant, when he employed the press-roller, and the exact address of the firm who supplied him with that implement: "The Turnips were from 2 to 3 inches in height, instead of 6 inches, when the press-roller was applied for the destruction of the wire-worm; and the makers of the implement were Barrett and Ashton, of Hull, instead of Barrett and Co., of Reading."

Among the presents made to the Society, were the Bombay Magnetical and Meteorological observations for 1846-7, from the East India Company; series of reports on Flax cultivation and management, by the Royal Flax Society at Belfast; Treatise on the Cultivation and Management of Flax, with instructions in the various Belgian methods of growing and preparing it for market, from Mr. E. F. Deman; Lecture on the Blights of the British Farm, arising from Parasitic Fungi, from Dr. Plomley, of Maidstone; and a Treatise on Land Drainage, Embankment, and Irrigation, from Mr. Donald, C. E.

Thanks having been ordered for these communications and presents, an interesting discussion ensued on the mode of treating the fibre of Rye-grass and Flax for the manufacturer; in the course of which Mr. Rowlandson, Lord Berners, Colonel Challoner, Mr. Parkins, Sir Robert Price, and Professor Way furnished valuable hints, suggestions, and results of personal experience.

A Special Council was held on the same day, the Earl of Ducie, Vice-President, in the chair. The following members of the Council and Governors were present:—Lord Berners, Sir Matthew White Ridley, Bart., Sir Robert Price, Bart., M.P., Sir John V. B. Johnstone, Bart., M. P., Mr. Raymond Barker, Mr. Burke, Colonel Challoner, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Kinder, Professor Sewell, Mr. Shelley, Mr. Sheridan, M.P., and Professor Way.

The Marquis of Downshire, Colonel Challoner, Mr. Fisher Hobbs, Mr. Brandreth Gibbs, Mr. Raymond Barker, Mr. Jonas, and Mr. Shaw, accompanied by Mr. Hudson, the Secretary of the Society, having visited Windsor on Monday last, for the purpose of inspecting the sites for the Country Meeting, Colonel Challoner presented the following Report of that Inspection Committee, which was read and adopted.

"The Inspection Committee, in pursuance of the instructions of the Council, at their last monthly meeting, proceeded on Monday the 14th instant, to visit the site in Windsor Park, so graciously placed at the disposal of the Society by Her Majesty, for the purposes of its country meeting to be held this year in the month of July. The Committee made a careful survey of the site proposed for the show-yard and pavilion; and having received from the gentlemen by whom they were accompanied every reply to their enquiries, they took into their mature deliberation and discussion the several points on which they had been called upon by the Council to make their report, and finally agreed unanimously to the following recommendations:—

"I. That the site proposed by the authorities of Windsor is in every respect most eligible for the purposes of the country meeting; being a firm level mead, on a dry gravelly soil, 19 acres in extent, lying immediately beneath the slopes and terraces of Windsor Castle, and nearly contiguous to the railway stations and the public road leading from the Home-park into the town.

"II. That on this site a show-yard should be erected, covering an area of 10 acres; capable, however, from the usual mode of its construction, of being enlarged or

contracted in its dimensions, to the size actually required, at the time of the meeting, for the accommodation of such a number of animals as may be entered for competition by the 17th of May, the latest day for receiving certificates. The Committee are of opinion that it will be desirable to have the show-yard so constructed that its intersecting lines may be either parallel with, or at right angles to the north front of the castle, all the exhibition-sheds being placed at right angles to it, and their middle avenue in a direct line with its centre: an arrangement by which both the symmetry and perspective of the whole will be preserved; and they recommend that Mr. Brandreth Gibbs should be requested to favour the Society with his plan of the yard, as usual.

"III. That the pavilion for the great dinner of the Society should be erected in the Home-park, on a site further removed to the north, between the show-yard and the line of railway; and that Mr. Manning be desired to prepare the requisite plan for it, embodying the suggestions of Mr. Shaw, one of the stewards of that department, as well as the suggestions of other members of the Committee, in reference to the convenient adaptation of the building to the special purposes of the meeting.

"IV. That the Guildhall and other official rooms kindly placed at the disposal of the Society by the authorities of Windsor, appear to the Committee to be well adapted to the purposes for which they have been severally offered."

The Council then rescinded their resolution of the 20th of February last, by which they had arranged with the Commissioners of Woods and Forests to hold the Country Meeting of this year in Bushy Park, and substituted the Windsor Home Park in its place, the Secretary being authorised to communicate this decision to the Mayor of Windsor, and to inform him that it was made under the usual condition, that by that day week the requisite memorandum of agreement should be entered into by him, on the part of the authorities of Windsor, with the Secretary, on the part of the Society, under the seals of their respective corporate bodies.

The meetings of the Council stand adjourned over Easter-week, to Wednesday the 30th of April.

## Farmers' Clubs.

Probus, *Jan.* 17: *Farm Leases.*—Mr. Henry Tresawna, the secretary of the club, read the report of the committee. This document gave a satisfactory account of the progress and present position of the club. It stated that the present was the 13th anniversary of the club, which, it was believed, was the second Farmers' club established in England (the Harleston being the first). Other farmers' clubs had been established in Cornwall and other counties, the mode of conducting which was so much akin to that of the Probus Club that this might, without impropriety, be regarded as the parent club of the West of England. The report referred with pride to the prize essays which had been written by the members of the club, and stated that since the anniversary meeting in January, 1849, the following lectures had been delivered at the monthly meetings:

1849: March.—Mr. Bassett, on waste lands and the best method of cultivating them.
" April.—Mr. Brewer, on the cultivation of the Carrot.
" May.—Mr. James Davis, on the cultivation of Mangold Wurzel.
" June.—Mr. Peter Davis, on the cultivation of Clover.
" July.—Mr. R. Doble, on the harvesting of corn.
" Sept.—Mr. Downing, on the secretions and excretions of plants, in connection with the proper rotation of crops.

In November and December some miscellaneous subjects were discussed, having reference to experiments conducted by several of the members with various manures on different crops. During the past year, other useful subjects had been brought forward; amongst which might be mentioned, with approval, Mr. James's lecture on the growth and consumption of Turnips, Mr. Kendall's on the rotation of crops, and Mr. Charles Whitford's on the history of agriculture. The report concluded as follows:—"We trust we shall continue to prosper as we have hitherto done. We have endeavoured to exclude everything like party politics from our meetings; and, whilst deeply sensible of the great wrong that has been committed on the agricultural community, we can discuss with coolness and impartiality every social question with which our well-being is mixed up, and hope to dispassionately weigh every remedial measure which now or hereafter may be brought forward for our supposed benefit."—Mr. Olver, of Trescow, in St. Mabyn, then proceeded to the reading of his paper on the subject of leases. He said: Leases are of great antiquity; they were granted by ancient Britons (who possessed more land then they could cultivate or manage profitably) to their slaves, and subsequently to free British subjects. And I believe that many in the nineteenth century contain them entire as transmitted from their earliest history, and fresh clauses have, from time to time, been added, which are very prejudicial to the prosperity and progress of agriculture. Leases are made for the purpose of protecting landlords; but the protection they afford them, is such as that afforded by an aged Oak to shrubs beneath its branches—while it shelters them from an occasional storm, its baneful effects are very perceptible; every plant within its pernicious influence dwindles. And I would ask, what is the state of agriculture in this county, when compared with that of the merchant, the manufacturer, or the mariner? Why, dwindling; and its condition would have been worse, had not some farmers had moral courage enough to let their leases remain unheeded on the "shelf." Instead of leases encouraging good farming, they compel persons to farm badly. But when we consider by whom they are made, this is no wonder. Leases generally are made by persons quite ignorant of the principles of agriculture. Can there be anything more ridiculous than a landlord, probably his steward, and a solicitor (neither of them knowing how to raise the rent of a farm one year), sitting in an office and drawing a plan how a tenant is to manage a farm to enable him to pay his rent for 14 years? Surely practical agriculturists would be the fit persons to be consulted in making leases. But there is no class of persons capable of laying down rules how a farm can be managed for 14 years, so that the landlord and tenant may each derive the greatest amount of profit. And it must be remembered that their interests are identified. This brings me to the first remarks I would make on the ill effects of our existing leases. Leases are invariably made to extend over a certain period, generally from 7 to 14 years. Now any fixed period is a bane to the progress of agriculture, because it takes the first half of the tenant's term to get his land in order. During that time he rarely ever derives any profit from its cultivation; for, in addition to the extra expense he is at in cultivating and manuring the land, his crops are frequently very deficient, in consequence of the land being too much worked for the purpose of cleaning it, so that there becomes a want of solidity so essential to the growth and perfecting of most of our cultivated crops; and particularly in light soils, which are most adapted to the growth of weeds. The latter part of the term is a period when the tenant's efforts begin to slacken. In order to reimburse himself in the short remaining time, he finds it necessary to discharge some of his labourers, and to employ a less number of working cattle; hence the farm soon falls back to its original state of foulness. But the tenant has another object in letting the farm return again to its former state: viz., that of taking it for another term for some 20 or 30 per cent. less than he would probably have to pay for it had he kept up its fertility—so the land does not increase in its intrinsic value. Neither has the owner any right to expect it would—and the tenant is labouring one half his time in vain. Under our existing leases there should be an understanding between landlord and tenant for a fresh term, at least three years prior to the expiration of the first. Then, if the tenant were certain of leaving, he would not have that inducement for racking the land which I have before stated.

*Payment of Rent.*—Leases invariably give landlords the power to distrain for rent, and to pay themselves before all other creditors. This clause is not only unjust, but is prejudicial to the agricultural interest. In the first place it is unjust, because, in consequence of that clause, landlords are often induced to take tenants who offer the highest rent, without inquiring into their circumstances. When a stranger comes into a neighbourhood, it is reasonable that tradesmen should solicit his favours; and since he is a chosen tenant before others whom they know to be responsible men, they feel themselves justified in supplying him with goods. In case this tenant should become insolvent, in consequence of paying too high a rent for his farm, or for want of sufficient capital to manage it, certainly it would be but just that the landlord should participate in the loss, at least in common with his other creditors. Further, this clause is prejudicial to the agricultural interest by depriving it of more capital. "Men of straw," by offering exorbitant rents for farms, and by complying with absurd leases, have been the means of driving capitalists out of agriculture. And why? because they cannot realize nearly the amount of interest there that they can in any other business; and their energies and independence are fettered.—I am acquainted with but few farmers who commenced business with competency to manage a good farm and educate their family, who are bringing their sons up as farmers; and for this reason—they find that other men who set out in life about the same time, with the same amount of capital, either professionally or in business of any other kind, have done much better than themselves; and at the same time have enjoyed more of the good things of this life. Surely, then, it may be said this clause is prejudicial to the agricultural interest, since it deprives it of two things so essential to its prosperity—intelligence and capital; and, by the joint application of these, land would rapidly increase in value—that which is now dear would become cheap, a greater number of labourers would be employed, and this country would feed its inhabitants.

*Grass land not to be broken.*—Much land that is laid down for permanent pasture becomes quite unprofitable, which, if cultivated, would produce more beef and mutton than it does at present, and in addition good crops of corn; besides, it would afford employment for the husbandman in his native country, instead of being compelled, as he now is, to seek employment in a foreign clime. Land, cultivated to produce good crops of corn, should not be laid down for permanent pasture, except under peculiar circumstances, such as pleasure-grounds overshadowed by timber, or in the neighbourhood of large towns. Most leases that have come under my notice bind tenants to let their arable land remain a certain number of years in Grass after taking a corn crop, and this clause has also a very prejudicial effect. The best farmers may sometimes fail in producing good crops of Grass, especially Clover, in consequence of dry seasons and various other causes; and it is impossible in some unfavourable seasons to clean land. Yet the tenant is bound to let it remain a certain time out of tillage, irrespective of its condition, and during that time the land is frequently unprofitable in every sense of the word; for if land is not left out clean with a good floor of Grass, it is sure to become full of weeds, which will materially injure the succeeding corn crop. Besides, it will not produce much pasture, or keep much cattle, from whence profit should arise; and the decomposition of plants with the excrements of cattle are the life and soul of corn crops. Hence the absurdity of this clause. Tenants should be at liberty to till their farms as they think proper; then, under such unfavourable circumstances, they would immediately break up their foul, unproductive land; and let that which is clean remain a longer time in Grass. It is a mistake to fancy that tenants would take advantage of this and rack the land. Look to Norfolk and other districts where the arable land is always kept in tillage, for example, and I am persuaded that the principal part of the arable land in this county ought always to be kept in tillage, because it will not produce Grass; yet, by the application of artificial manure, it would yield abundant crops of Turnips, Rape, &c.

*Manure, when land is broken up from Grass.*—Leases generally in this county bind tenants to lay on every acre of land indiscriminately a certain quantity of lime or sand. It matters not what are the principal constituents of the soil, or in what condition it is found. Lime is undoubtedly of great service to some land; nay, indispensable to its profitable cultivation; but vast quantities are annually wasted by applying it to land where, instead of increasing its fertility, it has a contrary effect. It is a mistake to fancy lime is a landlords' manure; that it enriches the soil, or that tenants can enrich themselves, without well manuring the land. Since tenants generally are not capable of analysing the soil, they should be at liberty to use what manure they think proper; if that was the case, we should not hear them saying (as we now frequently do), that they have never applied any foreign manure but lime or sand; and that they have never proved whether they are of any service or not, because they are bound by their lease to apply that, therefore they cannot afford to purchase any more; but every one would prove what manure was best adapted to his respective soil. Then he would soon discover that the more he applied of it, the greater profit he would derive from its cultivation.

*Game.*—Leases generally reserve for landlords a right to stock their land with game to any extent, and liberty to destroy it in any way they think proper, without making the tenant any compensation for the damage; while, at the same time, they bind the tenant to pay the rent, tithe, rates, and taxes. Though the landlord has the power to destroy all his crops with game, the tenant dares not touch one of them. I have often thought farmers are the only class of persons that could be induced to submit to such absurdities. If landlords wish to preserve game, there is nothing to prevent them, but certainly they should be answerable to tenants for the damage done to their crops; and if they were to pay only a reasonable amount of damages, they would soon discover game was too costly to preserve to any extent. It is repugnant to common sense for tenants to lay out their money to improve land under such circumstances; and in this country there are thousands of acres of good land left uncultivated for the sake of game, and as much more that is not half cultivated, because they would destroy its crop; and landlords lose many spirited, enterprising farmers (for such persons will not take farms near game preserves at any price), feeling satisfied that disputes would arise between their landlords and themselves, when they must bid adieu to prosperity. The neighbourhood is thereby deprived of good examples, and labourers of good employers; rates and taxes are considerably increased by the Game-laws, and the means of defraying them curtailed; for be it remembered that while the burdens on an improving farm become light, on one that remains unimproved they become more burthensome, and that these unimproved farms increase the general amount of rates, because they do not employ a sufficient number of labourers. I have explained a few of the evils arising from the preservation of game; but what a dark catalogue remains untold of the innocent blood it has shed, the murders committed, of the distress and anguish of the fatherless and widows, which is frequently increased by being sent from their once happy home to some union house, of the separation of those who have been long united in the bonds of affection, of the jails filled with innocent victims (and notice that in Spalding jail at this time nearly half the prisoners have been committed for offences against the Game-laws), of the thousands of felons and paupers produced by means of contamination; and last, though not least, the expenses of maintaining them in idleness and unprofitable employment, which is a very great hardship on the industrious classes.

I will now submit for your consideration the outlines of a lease of my own construction, which I believe to be calculated to promote agricultural improvements to a very great extent, far beyond any one's conception at first sight. If such leases were generally adopted, they would decide that important question which has so long engaged the public mind, namely, tenant right; and I cannot conceive what objection landlords can have to the granting of leases, since their interests, and that of their tenantry in that respect, are identified. I believe it is impossible for the legislature to frame a bill that

would administer justice generally, either to landlords or tenants—the situations of farms, and circumstances connected with them, being so diverse. Land should be let on progressive principles, with corn rents, which would justify and encourage tenants to improve the land, and give landlords an opportunity of participating in the improvement. On letting a farm the average price of Wheat for the last seven years should be ascertained. It should first be let for 21 years, at a rent then to be agreed on for the first seven years; the rent of every successive seven years to be governed by the price of Wheat during the seven preceding years. At the expiration of every seven years, if landlord and tenant agree, a fresh valuation should be made of the farm, and another seven years added to the term; but should not that addition be made, the tenant would then have 14 years' notice to quit, when, of course, he would discontinue his improvements; but he should not be allowed to rack, or reduce the land from its improved condition because he has 14 years' interest therein, sufficient time to reimburse himself. Now I will suppose a farm of 100 acres to be let as before mentioned for a term of 21 years. It is ascertained that the average price of Wheat the preceding seven years has been 20*s.* the Cornish bushel, therefore the tenant agrees to pay 100*l.* per annum for the first seven years of the term. If the price of Wheat the first seven years should prove to be 21*s.* the bushel, then for the second seven years the tenant would have to pay 110*l.* per annum; or should it prove to have been but 19*s.*, the tenant would have to pay 90*l.*, and so on, for the increase or decrease of every shilling on the Cornish bushel of Wheat, the rent should increase or decrease 10*l.* per cent. per annum. I think it right to extend the average over seven years, in order to prevent great fluctuations, which would be very inconvenient to landlords and tenants. This farm of 100 acres is let for 21 years at the rate of 100*l.* per annum for the first seven years. If at the end of the first seven years the landlord and tenant cannot agree on the rent for a fresh seven years to be added to the term, arbitrators and their umpire shall be chosen in the usual way, and they shall fix the rent, being governed in fixing the rent by the price of Wheat the previous seven years; indeed, all matters that cannot be agreed on by landlord and tenant, shall be decided by arbitration in the usual way. The landlord to lay out all money necessary for permanent improvements; to take the green crops and hay grown on the farm the last year of the term; to be at liberty to work mines and quarries by paying the tenant for damage done; to pay the tenant for damage done by game; to pay the tenant 1*s.* per annum for every tree growing on the hedges after it becomes 10 years old. Here I would remark, if the tree is not worth to the landlord more than 1*s.* per annum it should not stand, because it will do the tenant more than that amount of damage; and further, if landlords wish to gratify their eye with timber, there is nothing to prevent them, but it must not be grown at the tenant's expense. The landlord or his agent shall at all times be at liberty to view the farm, and if at any time they consider that the tenant, from mismanagement or neglect, is injuring it, they shall be at liberty to call in arbitrators; and should they agree that the farm is injured, they shall fix the amount of damage, which amount shall be immediately paid by the tenant with all expenses attending the said arbitration; but should they fail to prove damages, then the landlord shall pay all expenses attending the said arbitration. In case of the death of the tenant, the landlord shall take possession of the farm, and pay his heir or executors his interest therein. The tenant shall keep the premises in good repair, it first being put in that state by the landlord; shall insure the buildings against fire; shall pay his rent half yearly; and all tithe, rates, and taxes, when they are demanded; shall be at liberty to manure and manage the farm during the term in any way he thinks proper, provided he does not injure it; and should he at any time from neglect cause the renting value of the farm to diminish, he shall pay the landlord the full amount of damage. The tenant shall pay the landlord 1*l.* per cent. per annum more for all money expended by him in permanent improvements, than it could be borrowed for on land security.

This, Sir, is a rough sketch of a lease of my construction, which, according to custom, is very lengthy, too much so to occupy our time this evening; though, I believe, it might be condensed into very few words. In conclusion, I will explain some of the advantages likely to accrue from this lease, and contrast them with our existing leases, and I do not know any better way of explaining it than by stating how I stand affected at present; and how I should act, if under such a lease as I have just given you a sketch of. I would first remark with regard to my lease, it lies unnoticed on "the shelf;" but this I know, that my term extends to 15 years only. I manage the farm in every respect as I think proper, and I do not complain of game, or timber, or any interference; but what I complain of is that I am not justified in continuing my improvements. I have occupied Trescow Farm eight years, and in that time have greatly improved it; and in making these improvements I have felt great pleasure, though as yet they have proved unprofitable. But now, having seven years only remaining of my term, I do not feel justified in continuing my improvements, from the uncertainty of my tenure. If I were to continue them to the end of my term, the probability is that the steward would be sent to value the farm, and it would be his duty to state what he considers it would let at, if offered to the public; and if I took it again, I should have immediately to pay for my improvements; and if I should leave it, I must of necessity leave much capital locked up in the soil—therefore I find it necessary henceforth to cease my improvements. Consequently I shall be doing "penance" for the next seven years, whether Popery prevails in England or not; because farming is my hobby, and agricultural improvements afford me the greatest pleasure and satisfaction; and to improvements we must look for profits: and, further, I am not justified in continuing to improve the farm; for, in the absence of a corn rent, if present prices of agricultural produce continue, I shall not long be able to hold possession of the farm. But what would be my position at present, if holding the farm under my proposed lease? I should have improved it considerably more than I have at present; should have applied to my landlord, and have had great improvements made in the farm buildings; should also have had much land drained; and these improvements, in connection with others made by myself in the general condition of the farm, would have assisted me to stem the present difficulties; and, though my rent for the next seven years would not be reduced more than about 10*l.* per cent., still I should be justified and encouraged to continue my improvements, knowing that if the present prices for agricultural produce continue, my rent, for the following seven years, must be reduced considerably; and it is well known to every practical agriculturist how much more profitable it is to cultivate land in high condition than in low; it being attended with less expense, while its produce is generally one-third greater. Now what effect would my lease have on landlords? Why in 14 years their land would increase in value 25 per cent. They would, in addition, receive 1 per cent. profit, on all money expended on their land; nay, I believe, 2 per cent. more than if laid out in purchasing land, afterwards to remain unimproved, as is too often the case. They would have power to dispossess all bad tenants—those that would not improve their land—which is their duty. No person should be allowed to occupy land in this country, which is so thickly populated, who does not endeavour to make it produce the greatest possible amount of food and labour; and I am satisfied if landowners generally could see as clearly as I do, the tendency this lease has to foster that, and the improvement of their land, they would immediately adopt it. There is one objection I have heard raised by some landlords and tenants; they consider the variation of 10 per cent. on the rent, for every one shilling fluctuation on the bushel of Wheat, to be too great; but that objection might be removed by varying half the amount, which would be equal to the Scotch principle of corn-rent. But I contend that the landlord is the proper person to take the consequence of the fluctuation in the price of agricultural produce. Then the variation of rent should be 10*l.* per cent. If landlords were to take the responsibility on themselves, I am persuaded they would receive the highest rent for their land. It is frequently said land should be let on mercantile principles; and what is meant by that? I consider mercantile principles to be the realisation of a certain profit after paying expenses, and land should be let on those principles. Then tenants would be able to make their calculations on taking a farm with corn at a certain price, what rent they could pay and realise a profit. They would then be justified and encouraged to improve the farm, since their extra profit would depend on their skill.

METEOROLOGICAL REPORT.—April.

(*Continued from page* 237.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| ‡Apr. 10 | 10.20 p.m. | 29.86 | ... | Calm night; overcast. |
| 11 | 7.15 a.m. | 29.84 | ... | N. all day; stiff breeze and overcast. |
| * | 6.5 p.m. | ... | 29.77 | Evening. Less wind and clear above. |
| | 10.30 p.m. | ... | 29.77 | Cloudy in NE. horizon. |
| 12 | 7.20 a.m. | ... | 29.77 | Fresh northerly breeze a.m, and overcast. |
| | 6.5 p.m. | ... | 29.77 | Moderate NE. breeze p.m. and sunny. |
| | 10.30 p.m. | 29.78 | ... | Night calm and bright. |
| 13 | 7.35 a.m. | ... | 29.81 | Brisk east-north-easterly |
| | 10.50 a.m. | 29.83 | ... | breeze, and bright sunny morning. |
| | 1.10 p.m. | 29.80 | ... | Brisk breeze, but working up very thick and hazy in horizon to N. E. and S. |
| | 10.20 p.m. | ... | 29.80 | Evening, gentle; moonlight night. |
| 14 | 7.20 a.m. | 29.79 | ... | Brisk north-east breeze and fine a.m. |
| | 10.20 p.m. | ... | 29.74 | Brisk north-east breeze and hazy p.m. |
| 15 | 7.35 a.m. | 29.69 | ... | Moderate breeze NE., and overcast all day. |
| † | 3.40 p.m. | ... | 29.65 | ENE. p.m., inclining to SE. |
| | 10.10 p.m | 29.66 | ... | |
| 16 | 7.50 a.m. | 29.68 | ... | |

‡ Continuation of preceding storm.
* This is also a storm travelling northward over central Europe, and passing away over Russia.
† Another storm of the same description as the preceding one.

These three storms ‡ * † would probably cause strong northerly and westerly winds to vessels in the latitude of Madeira, but along the coast of France and the entrance of the Channel, a succession of baffling easterly winds.

Dorchester, April 16th. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Early Spring Food.*—There is at present being cut for house feeding, a field of Italian Rye-grass, on Mr. Camon's farm, at Kirronrae, in Wigtownshire. It was sown after Vetches last season, and is already (7th April) 27 inches in length, a heavy and abundant crop. The earliness of this crop is the more remarkable, as the farm, though favourably situated for climate, has none of those appliances which have rendered Myre-mill so celebrated. It is highly creditable to the skill and good management of the tenant, and though grown in a latitude of 55°, it may probably challenge comparison with any crop of the same kind in the warmer south.

*Incombustible Thatch.*—Straw saturated with a solution of lime or common whitewash has, it is said, been repeatedly proved to be not only fireproof, but more durable than the ordinary thatch. *Builder, April 5.*

## Notices to Correspondents.

To Correspondents. The delay of some answers will perhaps be excused by the illness of the Editor.

Cake: *A B.* If the sheep have been accustomed to it they will readily take it when on Grass, which their manure will improve. The ewes and lambs may be folded on poor Clover without injury, provided, by other means, you give them food enough.

Essex Breed of Pigs: *F.* Excepting the gentleman already named, we are not acquainted with any breeder of Essex pigs. An advertisement will find what you want.

Greenstones: *Lammerlaw.* Nos. 10 and 11 appear to be granite and gneiss respectively; the others appear to be greenstone.

Heavy Land just ploughed out of Grass: *J E G.* On the part liable to be flooded you want some strongly-growing plant. Try Rape plants, transplanted in June.

Pigeons: *T C W.* We must in the meantime refer inquirers on this subject to a work by the Rev. E. S. Dixon, about to be published by Mr. Murray.

To Purify Water: *J E G.* Throw in a cart load or two of freshly-burned charcoal. That might be a remedy.

Turnips. If your land is in good tilth, set a couple of men, walking backwards, each to his own bed of ground, to hoe holes at intervals of 18 inches all over the land. Let them be followed by women with baskets of superphosphate, who shall throw a handful into each hole, and then by women with rakes, who cover the holes up, making, however, an indentation on the top of each with the back of the rake, sufficient to guide a child, who follows with a canister of seed, and shakes a little into each, covering it up with his foot. An old tin powder-canister, with a quill inserted in the cork, is as good a thing as can be used, and put just a little whiting in with the seed. They will be whitened, and the boy will *see* what he is about. For your vegetable soil we should prefer superphosphate to guano.

Work of Reference: *A S.* Some of the Cyclopedias; and, as being the latest and most original of the series, Blackie's ought to be the best.

Errata.—Osiers: *J E G.* Thanks. For "3 feet by 2 inches," in page 221, col. *c*, read 3 feet by 2 *feet*.—In the Durham letter of the *Times* correspondent, part of which was published at page 238, *for* "34,000 superficial feet of 1-inch deal at 12*s.* per 1000," *read* "3400 at 12*s.* per 100."

## Markets.

COVENT GARDEN, April 19.

Hothouse Grapes, both white and black, are becoming more plentiful, and, considering the little sunshine we have had they are exceedingly well flavoured. Good Pine-apples are scarce, as are also dessert Apples. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Forced Strawberries are more plentiful. Vegetables of all kinds are abundant and good. French Beans and Cucumbers are plentiful. Carrots and Turnips are good in quality. New Cornish Potatoes may be obtained at from 1*s.* to 2*s.* per pound. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 3*d.* per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses, and the different kinds of spring bulbs.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6*s* to 10*s* | Oranges, per doz., 9*d* to 2*s* |
| Grapes, hothouse, p.lb., 12*s* to 24*s* | — per 100, 6*s* to 14*s* |
| — Portugal, p.lb., 1*s* to 2*s*6*d* | — Seville. p. 100, 7*s* to 14*s* |
| Strawberries, per oz., 9*d* to 2*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Pears, per doz., 2*s* to 5*s* | Lemons, per doz., 1*s* to 2*s* |
| — per half sieve, 6*s* to 15*s* | Chestnuts, per peck, 2*s* to 5*s* |
| Apples, dessert, p.bush., 6*s* to 10*s* | — per 100, 9*d* to 1*s* 6*d* |
| — kitchen do., 5*s* to 8*s* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Almonds, per peck, 6*s* | — Brazil, p, bsh., 12*s* to 14*s* |
| — sweet, per lb., 2*s* to 3*s* | Cobs, per 100 lbs., 70*s* to 75*s* |

VEGETABLES.

| | |
|---|---|
| Brussels Sprouts, p. hf. sieve, 1*s* to 1*s* 6*d* | Shallots, per lb., 6*d* to 1*s* |
| Cabbages, per doz., 1*s* to 1*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Greens, p. doz. bunches, 4*s* to 6*s* | Artichokes, Jerusalem. p. half sieve, 1*s* to 1*s* 6*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | — Cos, per score, 1*s* to 1*s*6*d* |
| French Beans, p.100, 1*s*6*d* to 2*s*6*d* | Endive, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Asparagus, per 100, 4*s* to 10*s* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Rhubarb, p. bundl., 6*d* to 1*s* 2*d* | Red Beet, per doz., 6*d* to 1*s* |
| Potatoes, per ton, 60*s* to 100 | Mushrooms, p. pot., 9*d* to 1*s* 3*d* |
| — per cwt., 3*s* to 6*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| — per bush., 1*s* 6*d* to 3*s* | Fennel, per bunch, 2*d* to 3*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Savory, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 1*s* to 3*s* | Thyme, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 1*s* to 1*s* 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Carrots, per doz., 2*s* to 5*s* | Marjoram, per bunch, 2*d* to 4*d* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Mint, green, per bunch, 4*d* to 6*d* |
| Onions, p. bunch, 3*d* to 4*d* | Watercress, p.12 bunch., 6*d* to 9*d* |
| — Spanish, p. doz., 1*s*6*d* to 4*s* | Corn Salad, p.hf. sieve, 1*s* to 1*s*6*d* |
| Leeks, per doz., 9*d* to 1*s* | |

HAY.—Per Load of 36 Trusses.

Smithfield, April 17.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 80*s* | to 90*s* | Clover ... ... ... | 80*s* | to 90*s* |
| Inferior ditto... ... | 70 | 75 | Second cut ... ... | 70 | 80 |
| Rowen ... ... ... | 65 | 70 | Straw ... ... ... | 27 | 30 |
| New Hay ... ... — | | — | J. Cooper. | | |

Cumberland Market, April 17.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 84*s* | to 92*s* | Inferior ... ... ... | 70*s* | to 76*s* |
| Inferior ditto... ... | 60 | 75 | New Clover ... ... | — | — |
| New Hay ... ... — | | — | Straw ... ... ... | 26 | 30 |
| Old Clover ... ... | 84 | 92 | Joshua Baker. | | |

COAL MARKET.—Wednesday, April 16.

Carr's Hartley, 14*s.* 3*d.*; Eden Main, 15*s.*; Tanfield Moor, 13*s.* 6*d.*; Wallsend Riddell, 14*s.*; Wallsend Haswell, 16*s.*; Wallsend Hetton, 15*s.* 9*d.*; Wallsend Lambton, 15*s.* 6*d.*; Wallsend Stewarts, 15*s.* 9*d.*; Wallsend Adelaide Tees, 15*s.* 3*d.*; Wallsend Tees, 15*s.* 9*d.*—Ships at market, 150.

POTATOES.—Southwark, April 14.

The Committee report that the fresh arrivals have been limited, but quite equal to the demand, which is very dull.

The following are the quotations:—York Regents, per ton, 80s. to 90s.; Scotch do., 70s. to 80s; ditto Cups, 60s. to 70s.; Cambridgeshire and Lincolnshire Regents, 60s. to 80s., French whites, 50s. to 60s.

SMITHFIELD, Monday, April 14.

There are not quite so many Beasts as of late; however, the supply is fully adequate to the demand, and prices are no better. We have a larger number of Sheep; trade is exceedingly dull at lower prices. There is a demand for choice Lambs; in a few instances rather over 6s. is obtained. Good Calves are still in request, but for other kinds trade is very bad. From Holland and Germany there are 333 Beasts, 630 Sheep, 60 Calves, and 70 Pigs; from Norfolk and Suffolk, 2300 Beasts; from Scotland, 300; and 100 from the northern and midland counties.

| Per st. of 8 lbs.—s | d | s | d | Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. | 3 6 | to 3 | 8 | Best Long-wools | 3 8 | to 4 | 0 |
| Best Short-horns | 3 4 | — 3 | 6 | Ditto Shorn | 3 4 | — 3 | 8 |
| 2d quality Beasts | 2 6 | — 3 | 0 | Ewes & 2d quality | 3 4 | — 3 | 8 |
| Best Downs and Half-breds | 4 4 | — 4 | 6 | Ditto Shorn | ... | | ... |
| Ditto Shorn | 3 10 | — 4 | 0 | Lambs | 5 0 | — 6 | 0 |
| | | | | Calves | 3 0 | — 4 | 4 |
| | | | | Pigs | 2 8 | — 3 | 8 |

Beasts, 3753; Sheep and Lambs, 23,770; Calves, 158; Pigs, 410.

Friday, April 18.

Although the number of Beasts is not very large, several remain unsold; notwithstanding there is a disposition to take lower prices. The number of Sheep is moderate, but the trade is so depressed that they cannot all be disposed of. This being Good Friday, Lamb is the principal article in demand. There are not so many as on former occasions; however, trade is excessively dull, prices are lower, and many remain unsold. From Germany and Holland we have 93 Beasts, 270 Sheep, and 266 Calves; from Scotland, 50 Beasts; from Norfolk and Suffolk, 260; and 80 milch cows from the home counties.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. | 3 | 4 to 3 | 6 | Best Long-wools | 3 | 8 to 4 | 0 |
| Best Short-horns | 3 | 2 — 3 | 4 | Ditto Shorn | 3 | 4 — 3 | 8 |
| 2d quality Beasts | 2 | 4 — 2 | 10 | Ewes & 2d quality | 3 | 4 — 3 | 8 |
| Best Downs and Half-breds | 4 | 4 — 4 | 6 | Ditto Shorn | ... | | ... |
| Ditto Shorn | 3 | 10 — 4 | 0 | Lambs | 5 | 0 — 5 | 10 |
| | | | | Calves | 3 | 0 — 4 | 6 |
| | | | | Pigs | 2 | 8 — 3 | 8 |

Beasts, 585; Sheep and Lambs, 8380; Calves, 451; Pigs, 200.

MARK LANE.

Monday, April 14.—The supply of English Wheat at market this morning was only moderate, and the offers from the coast were likewise to a limited extent; the trade, nevertheless ruled dull, and the rates of Monday last were maintained with difficulty. Transactions in foreign were of a retail character, at late rates. Barley was in short supply, and the quotations of this day se'nnight were supported. The arrivals of foreign Oats during the past week exceeded 30,200 qrs. The market having previously been rather bare of supply, factors succeeded in maintaining previous rates. The large dealers, however, refrained from purchasing, in the expectation of being able to buy on easier terms towards the expiration of the vessels' lay-days. Beans and Peas were quite as dear. Clover seed was rather more inquired for, and last week's prices were in some cases rather exceeded.

| Per Imperial Quarter— | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | 46 | Red | 36 | 43 |
| — — fine selected runs...ditto | 42 | 47 | Red | | 40 |
| — — Talavera | 45 | 52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red | — | |
| — Foreign | 32 | 59 | | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26 | 31 | Malting | 22 | 26 |
| — Foreign...grinding and distilling | 18 | 23 | Malting | 23 | 26 |
| Oats, Essex and Suffolk | 17 | 19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | 23 | Feed | 16 | 21 |
| — Irish ...Potato | 17 | 21 | Feed | 16 | 18 |
| Foreign ...Poland and Brew | 17 | 21 | Feed | 15 | 18 |
| Rye | 22 | 24 | Foreign | — | |
| Rye-meal, foreign...per ton | — | | | | |
| Beans, Mazagan ...20s to 26s...Tick | 23 | 27 | Harrow | 23 | 27 |
| — Pigeon...25 — 31...Winds | 37 | 42 | Longpod | 27 | 33 |
| — Foreign ...Small | 22 | 28 | Egyptian | 20 | 22 |
| Peas, white, Essex and Kent...Boiler | 23 | 26 | Suffolk | 26 | 28 |
| — Maple...26s to 28s ...Grey | 23 | 24 | Foreign | 24 | 31 |
| Maize ...White | — | | Yellow | — | |
| Flour, best marks delivered ...per sack | 34 | 40 | | | |
| — Suffolk ...ditto | 27 | 34 | Norfolk | 27 | 34 |
| — Foreign ...per barrel | 16 | 23 | Per sack | 26 | 34 |

Wednesday, April 16. — There was scarcely any English Wheat fresh up for this morning's market, and the few parcels left over from Monday were disposed of at about that day's quotations. The transactions in foreign Wheat were unimportant, and its value was unchanged. French Flour sold in retail at former prices. Barley was in short supply, and fully as dear. There was a steady sale for Oats, and the dealers were unable to purchase on any easier terms than before. Beans and Peas in limited request at late rates.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| March 1 | 38s 11d | 22s 7d | 16s 0d | 24s 4d | 25s 3d | 25s 8d |
| — 8 | 36 9 | 22 7 | 16 2 | 24 4 | 25 7 | 26 7 |
| — 15 | 37 2 | 23 1 | 16 6 | 23 3 | 25 6 | 25 8 |
| — 22 | 37 5 | 23 3 | 16 9 | 22 8 | 25 8 | 25 9 |
| — 29 | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| April 5 | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| Aggreg. Aver. | 37 5 | 23 2 | 16 6 | 24 6 | 25 7 | 25 9 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Mar. 1. | Mar. 8. | Mar. 15. | Mar 22. | Mar. 29. | April 5. |
|---|---|---|---|---|---|---|
| 38s 4d | ... | ... | ... | ... | ... | |
| 38 1 | ... | ... | ... | ... | | ... |
| 37 5 | ... | ... | ... | | ... | ... |
| 37 2 | ... | ... | | ... | ... | ... |
| 36 11 | | ... | ... | ... | ... | ... |
| 36 9 | ... | | ... | ... | ... | ... |

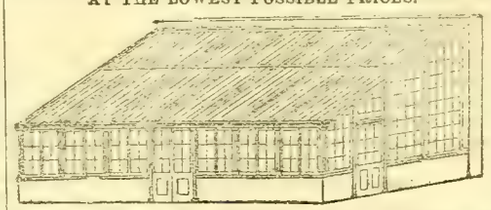
SEEDS.—April 14.

| | | | |
|---|---|---|---|
| Canary, per qr. | 38s to 42s | Coriander, p. cwt. | 14s to 21s |
| Caraway, per cwt. | 29 — 33 | Mustard, white, p bush. | 4 — 6 |
| Hempseed, per qr. | 34 — 35 | — brown, do. | 7 — 10 |
| Linseed, foreign, do. | — | Rape, per last | 24l.—26l. |
| Clover, red, p. cwt. | 40 — 58 | Cakes, Linseed, p. 1000 | 9l. 5s. |
| — — foreign, do. | 42 — 54 | — — foreign, p. ton | 6l. 15s. |
| — white, do. | 42 — 52 | — Rape, foreign, do. | 4l. 5s. |
| — — foreign, do. | 42 — 52 | Tares, per bush. | 3s 0d—3s 6d |

Liverpool, Tuesday, April 15.—The arrivals here since last Tuesday from Ireland and coastwise are moderate of Oats, Oatmeal and Malt, but light of other articles. From foreign ports we have received a large supply of Flour, but the imports are trifling of other articles. At this day's market there was a fair attendance of dealers, who purchased to a moderate extent of Wheat and Flour, at a decline of 1d. to 2d. per 70 lbs., and 6d. to 1s. per sack and barrel. Oats and Oatmeal met a slow sale, at last week's prices. Barley, Beans, and Peas without change in value. Indian Corn met a fair inquiry, but holders demanding extreme prices, little business resulted.

——Friday, April 11.—The arrivals since Tuesday of French Flour are large, and of other articles moderate. At this morning's market the demand for Wheat and Flour was slow, and Tuesday's quotations gave way 1d. per bushel on the former, and 6d. per sack and barrel on Flour. There was not much doing in Indian Corn, but it was firmly held. Mealing Oats were scarce, and improved 3d. per bushel. Egyptian Beans likewise advanced 3d. to 6d. per qr. Barley and Peas supported late rates.


HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.

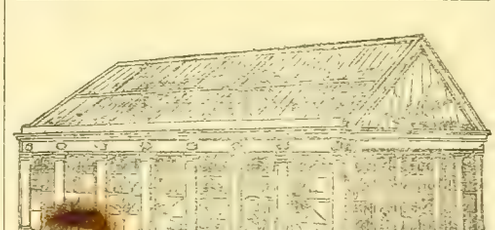


J. WEEKS and CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.



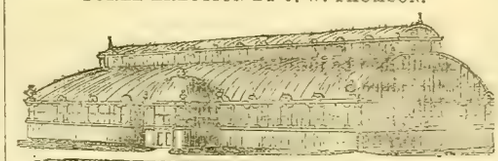
GRAY and ORMSON, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any inquiries. They beg also to say the Building only is referred to, as the Heating Apparatus was not erected by them.

Gray and Ormson have also the honour of referring to many of the nobility and gentry in the country, and to several of the London nurseries.

N.B. Plans and Estimates furnished free.

DESIGNS FOR EVERY DESCRIPTION OF HORTICULTURAL ERECTION BY J. W. THOMSON.



EVERY KIND OF HORTICULTURAL STRUCTURE Designed, Erected, and Heated by Hot Water common Flues, and other modes, on the most economical and improved modern principles. Testimonials and references from Noblemen and Gentlemen who have kindly patronised, for more than 15 years past, J. W. THOMSON'S modern and simple mode of Constructing, Building, Warming, and Ventilating Garden Structures.



J. W. Thomson having had full 25 years' experience as a practical Horticulturist, Landscape Gardener, and Garden Architect, in her Majesty's Royal Gardens at Windsor, Kew, and other places, most respectfully solicits the favours and patronage of Noblemen and Gentlemen about to form new or to alter and embellish their present Parks, Gardens, &c.

Plans and Estimates for remodelling Parks and Gardens, or for Building and Heating Hothouses, and other Garden improvements, furnished on application. Melon and Cucumber Boxes and Lights, Rustic Summer-houses, Chairs, Vases, and similar Garden Ornaments made on the shortest notice.

15,000 FLOWERING PLANTS OF CRASSULA COCCINEA MAJOR for Sale, well set with spikes of Flowers, in pots from 4 to 18 inches in diameter, and with flowering heads varying in number from one to one hundred on a plant. This is a very desirable plant for bedding, and flowering plants can be supplied from 4s. per dozen to four guineas per plant, on application to J. W. Thomson, Nurseryman and Hothouse Builder, Exotic Nursery, Hammersmith, Middlesex.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The Public is respectfully informed, that these favourite Ales may be had genuine, in casks of 18 gallons and upwards, at their respective stores, as under, where also a list of the bottlers may be obtained.

The Brewery, Burton-on-Trent; Stores, 61, King-William-street, City, London; Cook-street, Liverpool; High-street, Birmingham. The Exchange, Manchester, 23, Virginia-street, Glasgow.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

THE LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Incorporated by Act of Parliament.

At the HALF YEARLY GENERAL MEETING, held the 10th of April, 1851, at the Company's Office, Bedford Circus, William Porter, Esq., in the chair, the following Report of the Directors was read, viz.:

"Your Directors have much pleasure in reporting,

"That the operations of the Company are now greatly enlarging.

"That the Acreage drained within the last six months has been increased by more than two-thirds beyond that of the corresponding period last year, and far exceeding that of any previous year.

"The Acreage now in course of Drainage, and for which surveys and proposals have been made, amounts to about 40,000 acres.

"These very favourable results, arising from the means adopted by your Directors for the progression of the Company and the establishment of the London Office, are highly satisfactory.

"From the Auditors' Report of the affairs of the Company, your Directors are enabled to recommend a payment to the Shareholders, on account of Dividend, at the rate of Five per cent. per annum, for the Half Year ending 28th February last, carrying off a considerable balance to the reserve Fund.

Resolved—

"That a payment at the rate of Five per cent. per annum be made to the Shareholders, free of Income-tax, on the 10th of May next. And the Surplus Profit reserved for the Annual Meeting in October." (Signed) Thomas May, Secretary.

ANTHONY'S PATENT AMERICAN CHURN.—In addition to the numerous testimonials already published, the following one has just been received:

"Huntingdon, April 14th, 1851.

"Gentlemen,—About a year ago I purchased of you one of Anthony's Double-Acting American Churns. My small dairy was then managed by a very obstinate servant, who hated novelties, and you are well aware that I was at first much disappointed with it; but I have now great pleasure, after some experience of the merits of the Churn, in adding my testimony to its great value.

"Instead of my servant being put out of temper as heretofore by turning the old-fashioned barrel churn from half an hour at least to sometimes an hour and a half, and being surprised with bad butter as the result of all her labour, I now can depend upon obtaining first-rate butter in 10 or 12 minutes. No dairyman ought to be without such a churn, and you are quite at liberty to make what use you please of this letter.

"I am, Gentlemen, yours obedient y, Chas. Margetts.

"To Messrs. Key and Co."

For prices and further testimonials, apply to the Depôt, 103, Newgate-street, London.

FIRE ANNIHILATOR, PHILLIPS'S PATENT.

Copy of a letter addressed by W. Bates, jun., Esq., to Mr. Phillips, the Patentee and Superintendent of the Fire Annihilator Company:—

"Zara-street Mills, Manchester, 2d April, 1851.

"Sir,—We have much pleasure in adding our testimony to the great value of your invention—the Fire Annihilator. Owing to the great heat required in the manufacture of our goods, and the consequent liability of the materials to ignite, the insurance offices have always refused to insure our premises, even at the rates paid for the most hazardous trades; now, however, we consider ourselves perfectly safe, for in addition to your apparatus, we have both steam and water conveyed in pipes to all parts of the building; but we consider the Annihilator will be able to put out any fire that may hereafter occur. One that took place in January last was put out in about five minutes, by three charges (although it spread, with the rapidity of gunpowder, a distance of 150 feet), and the men were enabled to resume work in an hour afterwards. Two other very great advantages the Annihilator possesses: the vapour enables persons to breathe in the room where the fire is, and the apparatus can be used without causing the least damage to the machinery, as is the case with both steam and water. From the experience we have had of the invention, we have no hesitation in saying that even the Portable Machines will be found sufficient to extinguish any fire, if applied immediately on its outbreak.

"We are, sir, yours respectfully,

"Per pro the Imperial Patent Wadding Company,
(Signed) "William Bates, Jun., Manager.

"W. H. Phillips, Esq., London.

"P.S. You are at liberty to make what use you please of this letter."

*** The Portable Machines used were three of size No. 4.

Prices of machines, 2l. 2s., 3l. 4l., 7l., 6l., and larger hand machines, and street and stationary engines (machines of continuous power) to order. A demonstration will take place at the London Gas Works, Vauxhall, on Friday, the 25th inst., at 4 o'clock, P.M. precisely. Orders of admission, prospectuses, testimonials, and every further information may be obtained of the Secretary, at the office of the Company, 105, Leadenhall-street, City.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron fences, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Aberthaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 28l. per ton.—Offices of the Company, 1, New Broad-street, London.—John A. West, Secretary.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders Flower-pots, &c., in boxes of 1:0, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

*SALES BY AUCTION.*

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 23, and THURSDAY, 24th, at 12 o'clock each day, a first class collection of Carnations and Picotees, Pinks, and Auriculas; also Dahlias in dry roots, Geraniums, Chrysanthemums, Fuchsias, Verbenas, Climbing and other Roses, in pots, &c. May be viewed morning of sale.—Catalogues had at the Mart; and of the Auctioneers, Leytonstone, Essex.

FURNITURE.—REMOVED FOR CONVENIENCE OF SALE TO THE "RED COW," DALSTON.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at 12 o'clock on TUESDAY, April 22d, an extensive variety of Bed-room Furniture, Winged and Plain Wardrobes, Drawing-room Furniture, 6½ Octave Cottage Pianoforte, Dining, Loo, and other Tables, Chairs of varied character, Sporting and other Prints, and an assemblage of useful and ornamental articles, a small cellar of Wines, and numerous effects.—May be viewed the day previous to the sale, and Catalogues had at the "Red Cow," Dalston; and of the Auctioneers, Leytonstone, Essex.

THE MOST SUPERB BED OF TULIPS IN EUROPE.

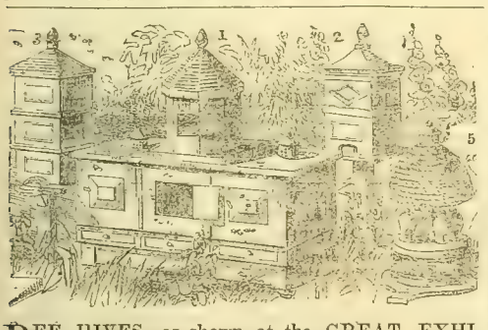
MR. R. LAWRENCE, of Hampton, will sell his unrivalled bed of TULIPS, of the splendour of which some idea may be formed by the number of fine varieties: viz. 30 Louis XVI., 16 Musidora, 12 Pompe Funebre, 12 Fabius, from 4 to 10 each of Bysantium, Pandora, Parmigiano, Brown's Polyphemus, ditto Ulysses, Dicken's Duke of Devonshire, Marcellus, Rose Arlette, Lyde's Queen of Hearts, Brown's Magnificent, Strong's King, Nora Criena, Thalia, Vivid. Besides several each of Leo, Coronation, Iago, Apelles, Salvator Rosa, Lord Collingwood, Marshal Soult, Selim, Groom's Queen Adelaide, Lady Exeter, Laura Lawrence, Hepworth's Queen of the North, Dutch Ponceau, Goldham's Maria, Brown's Sylvia, Jeffrey's Elizabeth, La Belle, Nanette, Lawrence's Lady Sale, and nearly every flower that has been raised worth cultivation, by Lawrence, Clarke, Lyde, Dixon, Strong, Walker, Glenny, Goldham, Brown, Groom, &c. Persons desirous of receiving Catalogues, may send their addresses to Mr. R. LAWRENCE, Red Lion, Hampton (where the bed may be seen, from the 1st of May to the day of sale); Mr. LOCKHART, 84, Fleet-street; and Mr. GLENNY, Strand. Catalogues will also be forwarded to the principal Seedshops.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, 28th April, at 2 o'clock precisely, about 350 Tons GUANO, imported from Valparaiso.—Catalogues and further particulars in due time from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET, on moderate terms, a NURSERY GARDEN, with a comfortable House, Green and Hothouses, and about an acre of land, with a very improving business, and good neighbourhood, situated close to a market town, and within a few miles of other good market towns. Tenancy to commence at Michaelmas next; or, if required, arrangements could be made for immediate possession.—For further particulars, apply to A. Z., Office of this Paper.

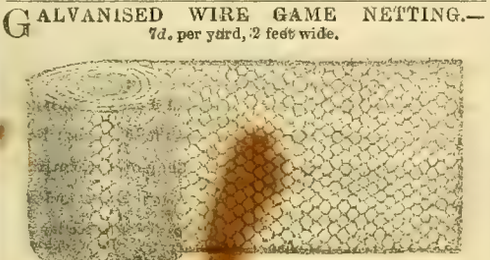


BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR's Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS.—Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street. Glasgow: Austin and M'Aslin, 168, Trongate.

GALVANISED WIRE GAME NETTING.—*7d.* per yard, 2 feet wide.

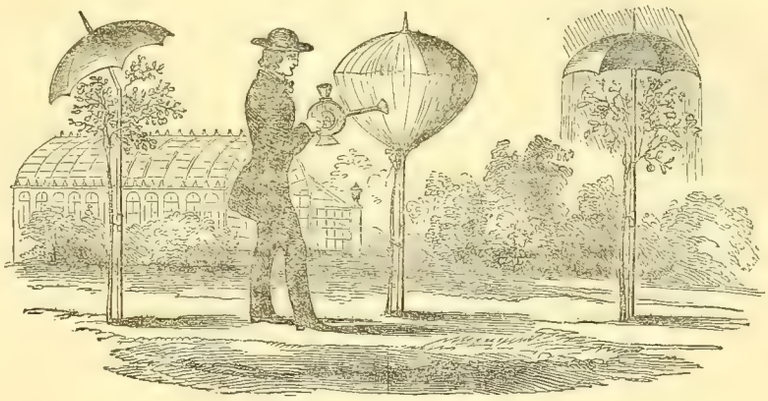


| | | | Galvanised. | Japanned Iron. |
|---|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch | ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch | ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| 1½-inch | ,, light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch | ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch | ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

# SANGSTER'S "FLORUMBRA."



REGISTERED FEBRUARY 8TH, 1851.

THIS simple apparatus, besides forming a Flower Shade, is intended to render BROWN'S Patent Fumigator (which is now generally used for smoking Greenhouses and Frames), applicable to Standard Roses, and other plants growing in the open ground. The Florist will thus be enabled to preserve them from the attacks of the Aphis, Worm, and other insects, so destructive to them in the spring, besides promoting their growth, by the application of Tobacco Smoke.

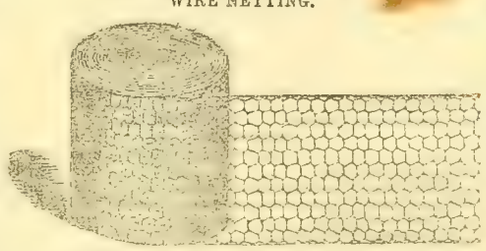
By removing the Bag, the "FLORUMBRA" (as shown in the above drawing), forms a Shade, when the Flowers are in bloom, against the mid-day sun, as well as a protection from the heavy showers which frequently destroy, in a few minutes, the hopes of the Florist for the season, or at least prevent his competing at an approaching exhibition of Flowers.

SANGSTER'S "FLORUMBRA," as well as Brown's Fumigator, may be had wholesale of Messrs. BABBER and GROOM, Holborn-hill, and retail of most Seedsmen and Ironmongers in the Kingdom, and of W. and J. SANGSTER, at their Manufactory, 75, Cheapside. Price of the Florumbra, from 7*s.* 6*d.*, according to size; or as Shades, without the Bag, from 4*s.* each.

TO NURSERYMEN.

TO BE LET, at Camberwell, a NURSERY GROUND, of about three acres, well stocked, with a Dwelling and Shop. It is in a populous neighbourhood, and there is every prospect of a profitable trade.—Apply to Messrs. ELLIS and SON, Estate Agents, 36, Fenchurch-street, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
22, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | | | |
|---|---|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | .. | £3 | 15 | 0 |
| Do. of 100 yards, 24 ins. wide | .. .. | 5 | 0 | 0 |
| Do. of 100 yards, 30 ins. wide | .. .. | 6 | 5 | 0 |
| Do. of 100 yards, 36 ins. wide | .. .. | 7 | 10 | 0 |

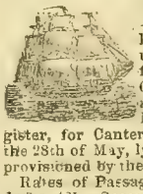
If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.



FOR PORT LYTTELTON, CANTERBURY SETTLEMENT, with liberty to land passengers and goods at the under-mentioned Ports in New Zealand, the first-class Passenger Ships, LADY NUGENT, 668 tons Register, for Canterbury, Nelson, and New Plymouth, to sail on the 28th of May; DUKE OF PORTLAND, 533 tons Register, for Canterbury, Wellington, and Auckland, to sail on the 28th of May, lying in the East India Docks, chartered and provisioned by the Canterbury Association.

Rates of Passage:—Chief Cabin, a whole Cabin between decks, 42*l.*; Second Cabin, 25*l.*; Steerage, 16*l.*; Children under 14, one-half. Each ship carries an experienced Surgeon.—For Freight, Passage, or further information, apply to J. STAYNER, 110, Fenchurch-street; FILBY and Co., 157, Fenchurch-street; or to FREDERICK YOUNG, Manager of Shipping for the Canterbury Association, 71, Cornhill.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.



EMIGRATION TO CANTERBURY, IN NEW ZEALAND.—A LIMITED NUMBER OF ASSISTED PASSAGES in the Steerage of the first-class ships DOMINION, 584 tons Register, and BANGALORE, 877 tons Register, to sail from London on the 8th and 28th of May, will be granted to persons of the Working Classes, being Gardeners, Shepherds, Farm Servants, Labourers, and Country Mechanics, for which application should be made at the Emigration Office of the Canterbury Association, 9, Adelphi-terrace, Strand, London. By order of the Committee of Management,

H. F ALSTON, Secretary.

EASTER HOLIDAYS.

THE ZOOLOGICAL GARDENS, in the Regent's-park, are open to Visitors every day in EASTER WEEK, except Saturday, on payment of SIXPENCE each person.

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Herrmann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine comb unnecessary.

Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle. N.B. Each bottle of the genuine article has the words ROWLANDS' MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton-garden, London; and by Chemists and Perfumers.

SOYER'S UNIVERSAL SYMPOSIUM, GORE HOUSE, Kensington, the residence of the late Countess of Blessington.—This magnificent and unique establishment is rapidly progressing towards completion, and will be opened to the public at the latter end of the month. A description of the interior and exterior, and a comprehensive scale of prices, will shortly be issued. Season tickets for admission to view Soyer's Universal Symposium will be issued in a few days. Single Season Ticket, 1 guinea; Double Ticket, 1½ guinea; Family Ticket, admitting four, 3 guineas. None of which are transferable. The season tickets will be procurable at Mr. MITCHELL'S, Bond-street; Mr. SAM'S, Pall-mall; and at all the principal libraries and music-warehouses.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties, enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, LEA and PERRINS, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "LEA and PERRINS" are upon the label and patent cap of the bottle.

# ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

## ANNUAL COUNTRY MEETING OF 1851,

To be Held, by the Gracious Permission of Her Majesty and Prince Albert,

## IN THE HOME PARK, WINDSOR,

IN THE WEEK COMMENCING MONDAY, THE 14TH OF JULY.

**The Society's Show of Live Stock for Breeding Purposes will be open to the Public on the Monday Evening (after the Judges have delivered in their awards), and on the Tuesday, Wednesday, and Thursday of that Week, from Six o'clock in the Morning until Sunset.**

MEMBERS HAVE THE PRIVILEGE OF A FREE ENTRY; AND NON-SUBSCRIBERS ARE ALLOWED TO COMPETE, ON THE PAYMENT OF 10s. ON EACH CERTIFICATE.

*Forms of Certificate to be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates must be returned, filled up, to the Secretary, on or before the* **17th of May,** *the Council having decided, that in no case whatever shall any Certificate be received after that date.—In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.*

### CATTLE.

| Class | | £ |
|---|---|---|
| | SHORT-HORNS. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in Milk, or in Calf | 20 |
| | To the owner of the second best ditto ditto | 10 |
| | [In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto ditto | 10 |
| | To the owner of the third best ditto | 5 |
| | HEREFORDS. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in Milk or in Calf | 20 |
| | To the owner of the second best ditto ditto | 10 |
| | [In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto | 10 |
| | To the owner of the third best ditto | 5 |
| | DEVONS. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 40 |
| | To the owner of the second best ditto ditto | 20 |
| 2 | To the owner of the best Bull calved since the 1st of January, 1849, and more than one year old | 25 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Cow in Milk, or in Calf | 20 |
| | To the owner of the second best ditto ditto | 10 |
| | [In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 5 | To the owner of the best Yearling Heifer | 15 |
| | To the owner of the second best ditto | 10 |
| | To the owner of the third best ditto | 5 |
| | OTHER BREEDS. | |
| | NOT QUALIFIED TO COMPETE AS SHORT-HORNS, HEREFORDS, OR DEVONS. | |
| | (*Cross-bred Animals will be excluded.*) | |
| | LONG-HORNS. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow in Milk, or in Calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | CHANNEL ISLANDS' BREED. | |
| 1 | To the owner of the best Bull, calved previously to the 1st January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow, in milk or in calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SUSSEX BREED. | |
| 1 | To the owner of the best Bull calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow, in milk or in calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SCOTCH HORNED CATTLE. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow, in milk or in calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | SCOTCH POLLED CATTLE. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow, in milk or in calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 10 |
| 5 | To the owner of the best Yearling Heifer | 5 |
| | WELSH, IRISH, AND OTHER PURE BREEDS. | |
| | NOT ENUMERATED ABOVE. | |
| 1 | To the owner of the best Bull, calved previously to the 1st of January, 1849 | 10 |
| 2 | To the owner of the best Bull, calved since the 1st of January, 1849, and more than one year old | 10 |
| 3 | To the owner of the best Cow, in milk or in calf | 10 |
| | [In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.] | |
| 4 | To the owner of the best In-calf Heifer, not exceeding three years old | 5 |
| 5 | To the owner of the best Yearling Heifer | 5 |

### HORSES.

| | | |
|---|---|---|
| 1 | To the owner of the best Stallion for Agricultural purposes, of any age | 30 |
| | To the owner of the second best ditto ditto | 15 |
| 2 | To the owner of the best two years old Stallion for Agricultural purposes | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 3 | To the owner of the best Stallion for Dray purposes | 20 |
| 4 | To the owner of the best Stallion for getting Hunters | 30 |
| 5 | To the owner of the best Stallion for getting Carriage Horses | 30 |
| 6 | To the owner of the best Stallion for getting Roadsters | 15 |
| 7 | To the owner of the best Mare and Foal for Agricultural purposes | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| 8 | To the owner of the best two years old Filly ditto | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 5 |
| | SHEEP.—LEICESTERS. | |
| 1 | To the owner of the best Shearling Ram | 35 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 2 | To the owner of the best Ram of any other age | 30 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| | SOUTHDOWN OR OTHER SHORT-WOOLLED SHEEP. | |
| 1 | To the owner of the best Shearling Ram | 35 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 2 | To the owner of the best Ram of any other age | 30 |
| | To the owner of the second best ditto | 20 |
| | To the owner of the third best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 20 |
| | To the owner of the second best ditto ditto | 15 |
| | To the owner of the third best ditto ditto | 10 |
| | LONG-WOOLLED SHEEP. | |
| | NOT QUALIFIED TO COMPETE AS LEICESTERS. | |
| 1 | To the owner of the best Shearling Ram | 25 |
| | To the owner of the second best ditto | 15 |
| 2 | To the owner of the best Ram of any other age | 20 |
| | To the owner of the second best ditto | 10 |
| 3 | To the owner of the best pen of five Shearling Ewes of the same flock | 10 |
| | To the owner of the second best ditto | 5 |
| | SHEEP BEST ADAPTED TO A MOUNTAIN DISTRICT. | |
| | NOT QUALIFIED TO COMPETE AS SOUTH DOWNS. | |
| 1 | To the owner of the best Ram of any age | 20 |
| | To the owner of the second best ditto | 10 |
| 2 | To the owner of the best Pen of Five Shearling Ewes | 10 |
| 3 | To the owner of the best Pen of Ewes of any age | 10 |
| | PIGS. | |
| 1 | To the owner of the best Boar of a large breed | 15 |
| | To the owner of the second best ditto ditto | 10 |
| | To the owner of the third best ditto ditto | 5 |
| 2 | To the owner of the best Boar of a small breed | 15 |
| | To the owner of the second best ditto ditto | 10 |
| | To the owner of the third best ditto ditto | 5 |
| 3 | To the owner of the best Breeding Sow of a large breed | 15 |
| | To the owner of the second best ditto ditto | 5 |
| 4 | To the owner of the best Breeding Sow of a small breed | 15 |
| | To the owner of the second best ditto ditto | 5 |
| 5 | To the owner of the best Pen of Three Breeding Sow Pigs of a large breed, of the same litter, above four and under eight months old | 10 |
| | To the owner of the second best ditto ditto | 5 |
| 5 | To the owner of the best Pen of Three Breeding Sow Pigs of a small breed, of the same litter, above four and under eight months old | 10 |
| | To the owner of the second best ditto ditto | 5 |

THE SHOW WILL NOT INCLUDE ANY DEPARTMENT FOR EXTRA STOCK.

N.B.—Copies of the Prize Sheet, with the Rules and Regulations of Exhibition, may be had by application at the Office of the Society, No. 12, Hanover-square, London.—April 19. By Order of the Council. JAMES HUDSON, Secretary.


Lately published, with Plates and Woodcuts, 4th Edition, 8vo, 5s. cloth, lettered.

AN ANALYSIS OF THE BRITISH FERNS, and their Allies. By G. W. FRANCIS, F.L.S., Author of "The Little English Flora," "Grammar of Botany," &c.

"We highly recommend it to all desirous of becoming acquainted with this very interesting race of plants."—*Floricultural Cabinet.*

London: SIMPKIN, MARSHALL, & Co.

NEW WORK ON BEES.

In small octavo, price 4s. 6d.,

THE ENGLISH BEE-KEEPER; or, Suggestions for the Practical Management of AMATEUR and COTTAGE APIARIES, on Scientific Principles. With Illustrative Notes. By a COUNTRY CURATE. Author of a Series of Papers on Bees in "The Cottage Gardener."

London: RIVINGTONS, St. Paul's Churchyard, and Waterloo-place.

A NEW AND ENLARGED EDITION.

This day is published, price 21s. Second Edition, in one large vol. 8vo, illustrated with 109 Engravings on Wood,

THE FORESTER. A Practical Treatise on the Formation, Draining, and Fencing of Plantations; the Planting, Rearing, and Management of Forest Trees; the Cutting and Preparation of Wood for Sale; with an improved process for the Transplantation of Trees of large size. By JAMES BROWN, Forester, Arniston.

WILLIAM BLACKWOOD and SONS, Edinburgh and London.

TO AGRICULTURISTS AND MANUFACTURERS.

This day, Second Edition, price 1s., or post free, on receipt of 14 Queen's Heads,

THE FLAX MOVEMENT; its National Importance and Advantages, with Directions for the Preparation of Flax-Cotton, and the Cultivation of Flax. By the CHEVALIER CLAUSSEN.

London: EFFINGHAM WILSON, 11, Royal Exchange; JAMES RIDGWAY, Piccadilly.

Now ready, the Second Thousand of

CUTHILL'S PAMPHLET. It contains the Belgian Prize Essay on the Potato; also Asparagus, Seakale, Rhubarb, Vegetable Marrow, Strawberry, Melon, Cucumber, Chicory as a Salad, the Lisianthus Russellianus, Tree Mignonette, destruction of Woodlice, Peat Charcoal as a Manure, &c.

To be had of the Author, and of HAMILTON and ADAMS, Paternoster-row, and RIDGWAY, Piccadilly. Price 2s., or by post 2s. 4d. JAMES CUTHILL, Camberwell, London.

TWO GIANT PLATES—150 SUMMER FASHIONS—VIEW OF THE EXHIBITION—PAPER MODELS OF THE EXHIBITION MANTELET.

THE LADIES' GAZETTE OF FASHION FOR MAY, price 1s., contains extraordinary Novelties given in no other Work: all the Paris Fashions; two Giant Plates; Paper Models; 20 Cloaks; 30 Walking Dresses; 50 Bonnets; several Ball and Children's Dresses, &c.; with Descriptions; large Steel View of the Exhibition; Guide to London, &c. Post free, six stamps extra.—London: G. BERGER, Holywell-street, Strand; and all Booksellers.

Just published, price 6d.,

GLENNY'S GOLDEN RULES FOR GARDENERS, Professional and Amateur.

GLENNY'S GARDEN ALMANACK, for 1851. Price 1s.

GLENNY'S GARDENING FOR COTTAGERS. Price 6d.

GLENNY'S PROPERTIES OF FLOWERS AND PLANTS. Price 1s.

GLENNY'S CATECHISM OF GARDENING. Price 9d. Either of the above sent, post free, on receipt of six extra stamps.

C. COX, 12, King William-street, Strand.

NEW WORK ON CRICKETING.

On Monday, April 28, will be published, in One small Volume, fcp. 8vo, with Two Engravings on Steel, and Illustrations on Wood, uniform with "Harry Hieover's Hunting Field," price 5s. half bound,

THE CRICKET FIELD; or, the Science and History of the Game of Cricket: illustrated with Diagrams and enlivened with Anecdotes. By the Author of "Principles of Scientific Batting," "The Collegian's Guide," &c.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

THE TRAVELLER'S LIBRARY.

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The Second Number will be issued on the 3d of May, and will be continued Weekly.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 17—1851.] SATURDAY, APRIL 26. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Acre, the | 265 c | Guano, trade | 267 c |
| Agriculture, Tullian | 267 a | Horticultural Society's Garden | 263 a |
| — Irish | 268 a | Humea elegans | 260 b |
| Allotment culture | 269 a | Isinglass, adulteration of | 262 c |
| Birds, British song | 260 c | Java, memoranda from | 261 c |
| Buds, growth of | 2-9 b | Labourers' cottages | 266 a |
| Calceolaria, the | 262 b | Larks | 268 c |
| Calendar, Horticultural | 264 a | Leafing local | 2-9 b |
| — Agricultural | 269 b | Mistletoe | 264 c |
| Charcoal, peat | 268 a | National Flor cultural Soc. | 262 c |
| Cherry, Morello | 259 b | Nicholl, testimonial | 262 c |
| Chestnut, Spanish | 262 c | Orchids sale of | 263 b |
| Chrysanthemum, the | 261 c–262 b | Pea charcoal | 2-8 a |
| Cirencester College | 265 a | Pineries, span-roofed | 262 a |
| College, Cirencester | 265 a | Plants, microscopic examinations of | 260 b |
| Conifers | 262 a | Potatoes, baked | 263 b |
| Cork, nature of | 263 b | Royal South London Society | 264 a |
| Cottages, labourers' | 266 a | Spade labour | 269 a |
| Crops, to interline | 265 c | Trees, timber | 261 c |
| Draining | 268 a | — old to renovate | 2-2 a |
| — by Donald, rev. | 269 b | Tullian system | 267 a |
| Education, agricultural | 265 a–268 b | Wahlenberg, death of | 263 b |
| Farming, Tullian | 267 a | Water London | 259 c |
| — Irish | 268 a | Weather, the | 269 b |
| Franciscea confertiflora | 262 a | Weevils, Pear-shaped | 261 a |
| Glass, rough plate | 263 b | | |



HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the First EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, May 3d.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5*s.* each; or, on the day of the meeting, at Turnham green, price 7*s.* 6*d.* each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4 in the Duke of Devonshire's road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an admission ticket to which his signature is attached.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulat.

21, Regent-street, London.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The Fellows and Members are reminded, that Saturday next, May 3, is the LAST DAY upon which tickets can be obtained at 4*s.* each; or in packets of 30, for 5*l.* 5*s.* per packet.—GENERAL EXHIBITIONS, WEDNESDAYS, May 14, June 11, and July 2; AMERICAN PLANTS, SATURDAYS, May 31 and June 7; ROSE GARDEN, SATURDAY, June 21. Tickets will admit the bearer to either of the above Exhibitions, or upon ANY one DAY in the month of JUNE, except Sunday.

CHELTENHAM HORTICULTURAL AND FLORAL SOCIETY, under the patronage of the Lord Lieut. the Right Hon. Earl FITZHARDINGE, the Right Hon. Lords NORTHWICK, DE SAUMAREZ, and DUNALLY, the High Sheriff WILLIAM DENT, Esq., and other resident Nobility and Gentry.—The days of Exhibition appointed for the year 1851 are THURSDAYS, MAY 8th, JUNE 12th, and SEPTEMBER 11th. The First Exhibition will be held on THURSDAY, MAY 8th, open to all exhibitors, when prizes will be awarded for the following collections of Stove and Greenhouse Plants (12 and 6), Exotic Orchids, Cape Heaths, Azaleas, Pelargoniums, Cinerarias, Anemones, Pansies, Specimen Plants, best New Plants in and out of bloom, and for the best Ornamental Baskets of Plants, Fruit, and Vegetables.—Admission Tickets to non-members (if purchased previous to the day), 2*s.*; on the day of Exhibition, 2*s.* 6*d.* Lists of Prizes, and the Rules of the Society, may be procured from the Hon. Secretary, Mr. J. D. TAGART. The Band of the 1st Regt. of Life Guards is engaged, and will perform throughout the day.

P.S. The following gentlemen have kindly consented to act as censors at the First Exhibition:—Mr. CHARLES TURNER, Royal Nursery, Slough; Mr. JAMES DICKSON, Acre-lane, Brixton; Mr. GEORGE FLEMING, Trentham Gardens, Staffordshire. It is requested that three clear days' notice be given of the space required by intending Exhibitors.

389, High-street, Cheltenham, April 26.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, April 26.

CHEAP DAHLIAS.

HENRY LEGGE begs to inform the Floral Public that he intends sending out, in May next, all the leading Flowers of 1850, at 9*s.* to 12*s.* per dozen; all the good old varieties, from 3*s* to 4*s.* per dozen. Ground Roots cheap of most of the favourites. Catalogues can be had, on application, by inclosing one postage stamp to HENRY LEGGE, Marsh Side, Lower Edmonton, Middlesex.

OUR YORK REGENT PREPARED POTATO CUTTINGS are now ready; all the other sorts named in our former Advertisement can be had on and after the 20th inst. We had our largest crop last year from those we planted on the 20 h of May.—Post-office orders to be made payable to JOHN SANGSTER, Borough Post-office, Newington Butts, London.

HAY, SANGSTER, and Co., April 26.

THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet, in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10*s.* 6*d* each. Small plants for bedding on the 1st of June, 6*s.* per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

GRASS SEEDS.

FINEST LAWN GRASS SEEDS, perfectly free from Weeds and coarse Grasses, 21*s.* per bushel, 3*s* per gallon, or 1*s.* 3*d* per lb., with instructions.

*To ensure a pure turf of finest Dwarf Grasses*, Messrs. SUTTON strongly recommend the sowing the above Seeds, whereby the great expence of cutting, carting, and laying Turves may be avoided.

*Quantity of Seed required to form new Lawns* 40 lbs. per acre (*i. e.* 1 lb. to every 4 poles); or 10 lbs. per acre sown immediately *upon old Lawns* will greatly improve them.

All orders above 10*s.* are sent carriage free to London, Bristol, Southampton, &c.—Address JOHN SUTTON and SONS, Reading, Berks.

THE following PELARGONIUMS, well-grown blooming plants, are offered at 1*s.* 6*d.*

| | |
|---|---|
| Beck's Symmetry. | Beck's Princess. |
| ,, Gigantic. | ,, Gulielma. |
| ,, Hebe's Lip. | ,, Marc Antony. |
| ,, Emily. | ,, Cassandra. |
| ,, Mustee. | Hoyle's Mount Etna. |
| ,, Zenobia. | ,, Orion. |
| ,, Rosy Circle. | Story's Mont Blanc No. 2. |

The following at 9*d.*

| | |
|---|---|
| White Perfection. | Marchioness of Waterford. |
| Beauty of Clapham. | Regulator. |
| Nestor. | Dido. |
| Beauty of Walthamstow. | Duke of Cornwall. |
| Sarah June. | Margaret. |
| Duchess of Leinster. | Unique. |

THOMAS RIVERS, Sawbridgeworth, Herts.

FORGET-ME-NOT.

MYOSOTIS AZUREA GRANDIFLORA.—This unique variety stands unrivalled for its colour and habit, being very superior to the older sorts of that lovely flower, the Forget-me-not; it also possesses the following good qualities over them: The flowers are much larger, perfectly hardy, and will stand for many years in the same situation; it is a lively blue, and grows about 9 inches high, producing hundreds of blooms on the plant at a time; flowering from June till October, it will be found very useful for planting on rockwork, making a bed or forming edgings; being a colour much wished for, as there is a great deficiency of dwarf blue flowers for autumn blooming. The Seed of the above is now ready to be sent out, at 2*s.* 6*d* per packet. Also the following varieties of Flower Seeds can still be had; Hollyhock Seed, 2*s.* 6*d.* per packet of 150 seeds; German Aster Seed, 1*s.* per packet; Sweet-William Seed, 1*s* per packet; Antirrhinum Seed, 1*s* per packet; and also the other varieties of Seeds named in the former Advertisement in this Paper on the 5th of April. The whole or any part of the above sent postage and package free. A remittance must accompany the order, either in cash or penny postage stamps, for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

NEW DAHLIAS.

CHARLES TURNER will be prepared to execute orders on the 1st of May for the following varieties, which are very superior flowers, and should be in every collection grown for exhibition:—

NEPAULESE PRINCE (STEIN) crimson, shaded with dark maroon, very superior constant show flower, being an improvement on Richard Cobden; has obtained numerous first prizes in class showing and six first-class certificates ... ... ... ... ... 10 6

NIL DESPERANDUM (STEIN) vivid scarlet, unquestionably the best of its class, the petal good, flower of great depth, and finely developed, one of the leading flowers of the season; has been very successful ... ... ... 10 6

BARMAID (HOLMES) white, occasionally tinged, but generally a fine white of unusual substance ... ... 10 6

ROUNDHEAD (HOLMES) salmon buff, deep, full, finely formed flower, good grower, at all times to be depended on; habit particularly good; took certificates at Metropolitan, Royal South London, and Norwich ... ... 10 6

NAPOLEON (PARKER) rich vermilion, of a novel and striking shade, flower deep and symmetrical, constant and good habit; certificate at Wycombe ... ... 10 6

REGINA (HALE) shaded rose, smooth good petal, well formed, good size; took certificate at Royal South London ... ... ... ... ... ... ...10 6

SIR CHARLES NAPIER (HALE) rich scarlet, fine firm flower, finely formed and closely set, handsome close centre; took certificate at Highgate ... ... ... 10 6

JULIEN (HALE) rosy purple, nearly cupped, of great depth; took certificates at Slough and Notting Hill ... 10 6

FANCY DAHLIA.

MRS. HANSARD (UNION) raised by J. Edwards, Esq.; yellow, with distinct white tips, fine form, and full size; very true and constant in every respect; a noble addition to this class; has been eminently successful at 12 of the principal shows ... ... ... ... ... 10 6

CHOICE NEW FUCHSIAS,

WHICH WILL BE READY WITH THE DAHLIAS.

EXPANSION (BANKS) pure white tube and sepals, bright rose corolla, very stout and abundant bloomer, one of the best light varieties ... ... ... ... ... 7 6

VOLTIGEUR (BANKS) crimson tube and sepals, dark purple corolla, the sepals reflex well, and show the rich corolla to great advantage ... ... ... ... 7 6

CONSPICUA (BANKS) white tube and sepals, vermilion corolla, very large and attractive ... ... ... ... 7 6

PRINCESS (BANKS) white, red corolla, very free bloomer, and good habit ... ... ... ... ... ... ... 5 0

DUCHESS OF KENT (KNIGHT) blush tube, sepals tipped with green, vermilion corolla, exceedingly long handsome flower ... ... ... ... ... ... ... 7 6

ELECT (BANKS) crimson tube, rosy purple corolla, of fine habit ... ... ... ... ... ... ... 5 0

MADAME SONTAG (BANKS) white tube, bright vermilion corolla ... ... ... ... ... ... ... 5 0

AJAX (HOCKEN) large dark, fine habit ... ... ... 5 0

BRILLIANT (BANKS) crimson, purple corolla, good habit, and very free bloomer ... ... ... ... 5 0

LOVELINESS (BANKS) small pleasing light ... ... ... 3 6

General Catalogue can be had on application.

Royal Nursery, Slough, near Windsor.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited; 1*s.* packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1*s.* per oz., 6*d.* per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1*s.* per oz., 6*d.* per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6*d.* per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3*d.* per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1*s.* per oz., 6*d.* per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

SEEDLING PETUNIAS.

ISAAC DAVIES begs to announce that he will be prepared to execute orders for the following SEEDLING PETUNIAS early in May:—

1. ALBA PURPUREA, white, with a broad edging of deep purple.
4. EXQUISITE, white, with purple edge, very round and pretty.
5. POURPRE ROYALE, crimson purple, very stout, and good form, at 3*s.* 6*d.* each. Discount to the trade when more than one of each are taken.

Flowers of the above were sent to Mr. E. G. Henderson, St. John's Wood, London, on the 18th of September last, and his opinion was as follows:—

"The Petunia flowers reached me in good order. No. 5 is, in my opinion, the best; it certainly is a fine rich-looking flower, of good shape, and distinct from any out. Nos. 1 and 4 I also admire for their markings on the edge, but as they were not fully expanded, have my doubts whether they would retain the marking as distinct when in full bloom."

I. D. begs to state that Nos. 1 and 4 retain their beautiful purple edge almost as distinct until the flowers fade. I. D. has also a fine stock of Seedling Calceolarias in great variety; large plants, in bloom, at 8*s.* per dozen. Story's Fuchsias, Ignea, Multiplex, South Devon, Striata, Mirabilis, and Unique, at 1*s.* 6*d.* each.—Larkfield Nursery, Wavertree, near Liverpool.

NEW PLANTS.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer to Amateurs and to the trade the following NEW PLANTS:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| 25 New Hardy Ghent Azaleas, the finest varieties of all those yet sent out, the collection ... ... ... | 3 | 0 | 0 |
| (They are nice healthy plants cultivated in pots.) | | | |
| Rhododendron aureum floribundum ... ... ... | 0 | 7 | 6 |
| Ditto caractacum versicolor ... ... ... | 1 | 0 | 0 |
| Ditto yellow perfection ... ... ... ... | 1 | 0 | 0 |
| (These three yellow varieties are the finest of all.) | | | |
| Rhododendron versicolor, double rose and red, quite hardy ... ... ... ... ... ... ... ... | 0 | 10 | 6 |
| Azalea indica Alexandria ... ... ... ... ... | 0 | 7 | 6 |
| Ditto magnificens ... ... ... ... ... | 0 | 5 | 0 |
| Ditto versicolor ... ... ... ... ... | 0 | 7 | 6 |
| Camellia Jacksonii, to be sent out on the 1st of July next, plants one foot high ... ... ... ... | 3 | 0 | 0 |
| Ditto Ditto two feet high ... ... ... | 5 | 0 | 0 |

NOUVELLE ICONOGRAPHIE DES CAMELLIAS; every month, a number, with four plates of the finest new Camellias, with their description. Price 21*s* a year, free at destination.

The Great General Catalogue of Plants, &c., may be had free at Mr. R. SILBERRAD'S, 5 Hare-lane, Great Towers-street, London.

MESSRS. J. AND H. BROWN offer the following very desirable PLANTS, which they will forward to any part of the Kingdom or the Continent.

| | *s.* | *d.* |
|---|---|---|
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... | 20 | 0 |
| 25 American Azaleas, ditto ditto ... ... | 15 | 0 |
| 6 Andromedas of sorts, including floribunda ... ... | 8 | 0 |
| Kalmias, Ledums, and Hardy Heaths, per dozen ... | 8 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... | 12 | 0 |
| New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to ... | 10 | 6 |
| 6 Fine Hardy Scarlet, ditto, 2 to 3 feet, for ... ... | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort ... ... ... | 10 | 6 |
| Cryptomeria Japonica, 6 choice hardy Pinus, for ... | 10 | 0 |
| Climbing Roses, choice sorts, per dozen, in pots ... | 6 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots ... | 9 | 0 |
| Glycine sinensis, extra fine plants, in pots, 15 to 30 feet, each ... ... ... ... ... ... ... ... | 3 | 6 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, ditto ditto ... ... ... | 30 | 0 |
| 12 Orchidea, choice species and good plants, for ... | 30 | 6 |
| 50 choice Greenhouse Plants, one of a sort, by name ... | 45 | 0 |
| 24 choice Ericas, one of a sort, by name ... ... ... | 16 | 0 |
| 24 choice Fuchsias, one of a sort, by name ... ... | 10 | 0 |
| 12 Pæonies, new white, pink, and blush, of sorts ... | 8 | 0 |
| 6 fine Pæonia Arborea, choice varieties for ... ... | 10 | 0 |
| Verbenas and Petunias, best new sorts, per dozen 4*s.* to | 6 | 0 |
| First-rate Carnations, Picotees, and Pinks, per doz. 6*s.* to | 10 | 0 |
| First-class Dahlias, show varieties, per doz., 9*s.*, 12*s.*, and | 18 | 0 |
| 12 first-class Chrysanthemums ... ... ... ... | 8 | 0 |
| 12 new dwarf Chrysanthemums ... ... ... ... | 10 | 0 |
| 12 of the best new double Daisies, one of a sort ... ... | 10 | 0 |
| 25 choice Pansies one of a sort ... ... ... ... | 10 | 0 |
| 12 best new Pentstemons, one of a sort ... ... ... | 6 | 0 |
| 8 best new Potentillas, one of a sort ... ... ... | 6 | 0 |
| Salvias, Shrubby Calceolarias, and Cupheas, 6 sorts of each, per dozen ... ... ... ... ... ... | 4 | 0 |
| Mitraria coccinea and Dielytra spectabilis, each ... | 1 | 6 |
| Geraniums, Scarlets, Flower of the Day and all other new vars, | | | |
| Best Cinerarias and Calceolarias, strong plants, 9*s.* per dozen to ... ... ... ... ... | 12 | 0 |
| 25 choice Hardy Herbaceous Plants, named ... ... | 7 | 6 |
| Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.* of the most approved varieties, also their Spring list of New Dahlias, bedding out plants, &c.—Albion Nursery, Stoke Newington, London. | | | |

HUGH LOW AND CO.'s NEW CATALOGUE OF PLANTS is just published, and will be sent free on prepaid application.—Clapton Nursery, London.

CHOICE BEDDING PLANTS.

HENRY WALTON, FLORIST, &c., Edge-end, Marsden, near Burnley, Lancashire, begs to offer the following at the extremely low prices attached, viz., 100 fine named Dahlias, including several of 1850, for 50*s.*; 50 for 30*s.*; 25 for 9*s* to 18*s.*; 12 for 4*s.* 6*d.* to 9*s.*; Pansies, 25 fine named varieties, 10*s.*; 12 do., 4*s.* 6*d* to 6*s.*; 12 fine named Pinks, 4*s.*; 12 Verbenas, 3*s* 6*d.*; 12 fine named scarlet Geraniums, 4*s.* 6*d.* to 6*s.*; 12 Ivy-leaved do., 4*s.*; 12 common Geraniums, fine strong plants, 4*s* 6*d* to 6*s.*; 12 Cupheas, 3*s.* 6*d.*; 12 Heliotropiums, of sorts, 4*s.*; 12 fine named Petunias, 4*s.*; 12 Mimulus, 4*s.*; 12 Lobelia erinus, of sorts, 6*s.*; or 12 of each of the above lots for 2*l.* The above may be had the second week in May, in strong healthy plants, securely packed, so as to ensure safe delivery of all orders.

Achimenes Tugwelliana, longiflora alba, fimbriata, Ghiesbreghtii, Bodmeri, Escherii, rosea superb, eximia rosea, cordata, Knightii, Skinneri grandiflora, patens major. The above 12, free by post, for 10*s.*; or 6 for 7*s.* 6*d.* Gloxinias, 12 fine named varieties for 9*s.* to 16*s.*; or 6 for 5*s.* to 10*s.*

Catalogues may be had by inclosing one stamp. Strong well-rooted plants may be depended upon. It is respectfully requested all orders be accompanied with a Post-office order, made payable at Marsden, near Burnley, Lancashire.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4*s.* per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1*s.* each.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Showe, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. MRS. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d* and 5*s.* packets, post paid, for prepayment.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish-pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE, having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21*s.* each.—Nursery and Seed Establishment, Hammersmith, near London.—April 26.

J. COLE begs to announce that he has a fine healthy Stock of PANSIES to part with, at 6*s.* per dozen. They are all beautiful show varieties, and J. C. has no doubt that they would give every satisfaction, should any lady or gentleman favour him with their orders.

Rugby, Warwickshire, April 26.

EXTENSIVE SALE OF PINE-APPLE PLANTS.

TO NOBLEMEN AND GENTLEMEN requiring PINE PLANTS, an excellent opportunity is offered for supplying themselves with clean healthy plants. The stock consists of several hundred fruiting and succession plants, of the following sorts:—Providence, Black Jamaica, Black Antigua, Montserrat, Enville, Globe, Queens, Ripley Queen, Antigua Queen, Moscow Queen, St. Vincent, Blood, smooth and prickly Cayenne, Trinidad.—For particulars apply to J. and C. LEE, Nursery, Hammersmith; to Mr. MARNOCK, Royal Botanic Gardens, Regent's Park; or to Mr. MOFFATT, Chamber Gardens, Worksop, Notts.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to offer choice collections of the following plants:—

| | Per dozen—*s.* | *d.* | *s.* | *d.* |
|---|---|---|---|---|
| Azalea indica, fine collection, strong bushy plants | 9 | 0 | to 18 | 0 |
| Ericas, fine and bushy | 9 | 0 | „ 18 | 0 |
| Epacrises | 12 | 0 | „ 18 | 0 |
| Corræas | | | 9 | 0 |
| Geraniums, fine show varieties, strong bushy plants | 6 | 0 | „ 18 | 0 |
| Do., scarlet and rose colour | 6 | 0 | „ 12 | 0 |
| Chrysanthemums, best French varieties | 6 | 0 | „ 12 | 0 |
| Do., miniature do. do. | 9 | 0 | „ 12 | 0 |
| Phloxes, all the best new kinds | 6 | 0 | „ 12 | 0 |
| Petunias | 6 | 0 | „ 12 | 0 |
| Verbenas, very strong | 4 | 0 | „ 12 | 0 |
| Antirrhinums | | | 6 | 0 |
| Fuchsias | 6 | 0 | „ 12 | 0 |
| Hollyhocks, fine sorts, unnamed | | | 6 | 0 |
| Anemone japonica | | | 6 | 0 |
| Escallonia macrantha | each | | 3 | 6 |
| Lycopodium cæsium arboreum | „ | | 3 | 6 |

Extra plants presented to compensate for carriage.

Rose Nippers from 2*s.* 6*d* to 4*s.* per pair; Metallic Labels for pot Roses 2*s.* per 100; Scotch prepared Tobacco Paper, highly recommended as the best sort for all horticultural purposes, 2*s.* per lb.

NEW DWARF DAHLIAS, to be sent out the first week in May.

GAINES'S PRINCE ARTHUR, beautiful carmine; height, 18 inches. 10*s.* 6*d.* The above is the greatest novelty of the season; good for bedding or showing.

GAINES'S RACHAEL, crimson purple, tipped with white; 3 feet. 10*s* 6*d.* This is one of the best fancy Dahlias ever offered to the public.

Descriptive Catalogues may be had by applying at the Nursery, Surrey-lane, Battersea, near London.

TULIPS.

MR. DAVIDSON, Camden Grove, Peckham, will submit a portion of his BULBS for Sale, during the bloom, by private contract.—Applications for Catalogues (with a price to each row) will please address, free, inclosing a postage stamp.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by Post, from his select Collection of FUCHSIAS. Twelve Varieties, new and distinct, of last year, 10*s.* 6*d.* cash. See List containing a great variety of choice new plants for one stamp.—Nursery, Kennington, London.

BATH NURSERY.

JAMES GRIFFIN begs to announce that his Annual Spring CATALOGUE is now ready, and may be had on application. It contains a Descriptive List of all the newest and best Dahlias, Fuchsias, Verbenas, Phloxes, &c.; also a Select List of the most useful plants adapted for decorating the Flower Garden. The prices will be found exceedingly low. Weston-road, Bath.

TO AMATEUR DAHLIA GROWERS, AND OTHERS.

DAHLIAS.—New light tipped Dahlia "Sylph," raised by Mr. Servey, Chingford, Essex, and certified first-class, at the Royal South London Floricultural Society's Show, Surrey Gardens. "Sylph" is of fine free habit, blooms well out of the foliage, smooth cupped petal, circular outline, and very high centre; indispensable to exhibitors.

JOSEPH COURCHA having purchased the above, will be prepared to send out strong plants the first week in May. Price 10*s.* 6*d.* per plant. The usual allowance to the trade. J. C.'s Annual Catalogue may be had, on application, to JOSEPH COURCHA, Florist, Wellington-row, Hart's-lane, Bethnal Green-road, London.

SCARCE AND BEAUTIFUL SEEDS.—SWEET WILLIAM SEED, in 100 varieties, 1*s.* per large paper.

SNAKE CUCUMBER, grows 6 to 8 feet long, 1*s.* per paper.

CINERARIA, from the most superb varieties, 1*s.* per paper.

EMPEROR STOCK, flowers from July to November, and the same plants year after year, 1*s.* per paper.

CHINA ASTER.—Flowers of this sort have taken first prizes wherever exhibited, 6*d.* per paper.

CALCEOLARIA, from a most superb collection, 1*s.* per paper.

CALENDRINIA UMBELLATA, a brilliant and beautiful hardy perennial, 1*s.* per paper.

The above may be had of Messrs. JEYES and Co., Nurserymen, Northampton.

Payment can be made with postage stamps.

NEW HELIOTROPE "GEM."

JOHN SALTER, F.H.S., will send out this beautiful variety on the 1st of May, at 5*s.* per plant. It was pronounced by all who saw it in bloom last season to be the most distinct yet raised. The colour is blue purple, with large white centre; it is a free bloomer, compact trusser, very odorous, dwarf habit, and well adapted for bedding; was awarded a First-class Certificate at the grand Metropolitan Show in September, and is figured in the "Magazine of Botany." Coloured prints may be had by sending four postage stamps. His new Dahlias Gracilis, Uranus, Mr. Chouveau, Phaeton, Pompey, and Princess Charlotte, with many other fine new varieties (see Catalogue); together with new Phlox, Chrysanthemums, &c., will be ready in May.

The stock of Pentstemon Salterii not being sufficient to complete orders, cannot be sent out until the summer; it will then be exhibited. This variety is quite distinct from any other, and must be seen to be appreciated. The tube and sepals are white, edged with bright pink; the throat finely pencilled carmine. 7*s.* 6*d.* per plant.

Versailles Nursery, near Hammersmith-turnpike, London.

NEW PLANTS.

BASS AND BROWN have to offer the following, in well-established plants. Prices to the Trade on application.

| | Each.—*s.* | *d.* | | Each.—*s.* | *d.* |
|---|---|---|---|---|---|
| Anguria Warsewiczii | 7 | 6 | Gloxinia M. Van Houtte | 3 | 6 |
| Bouvardia leiantha | 1 | 6 | „ General Baudeaud | 3 | 6 |
| Capanea grandiflora | 5 | 0 | „ Godiroid de Bouillon | 2 | 6 |
| Calceolaria grandis | 2 | 6 | Hoya bella, 2*s.* 6*d.* to | 3 | 6 |
| Centradenia floribunda | 2 | 6 | Ixora salicifolia, 3*s.* 6*d.* to | 5 | 0 |
| Chiria Moonii | 2 | 6 | Justicia magnifica | 2 | 6 |
| Dielytra spectabile | 1 | 6 | Lobelia thapsoidea | 2 | 6 |
| Escallonia macrantha, 3*s.* 6*d.* to | 5 | 0 | Luculia Pinciana, 1*s.* 6*d* to | 2 | 6 |
| Fuchsia spectabile | 1 | 6 | Rondeletia speciosa major | 1 | 6 |
| Geranium Magnificent | 7 | 6 | Siphocampylus microrubra | 2 | 6 |
| „ Prince of Orange | 7 | 6 | Tritonia aurea, 3*s.* 6*d.* to | 5 | 0 |
| „ Flying Dutchman | 7 | 6 | Tropæolum Smithii | 1 | 6 |

ACHIMENES Escheriana, Bodneri, Baumanni, Longiflora alba or Jauregia, Rosea superba and Tugwelliana, 2*s.* 6*d.* each, or the set for 12*s.*

Descriptive Catalogues forwarded on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SEEDLING CINERARIAS AND ANTIRRHINUMS.

WM. IVERY begs to offer to his friends and the public the superb Seedling Cineraria HAMMERSMITH BEAUTY, blue, with a white centre, the most showy and distinct ever offered; good plants 7*s.* 6*d.* each. W. I. can supply a few good strong plants of the approved seedling variety sent out last autumn.

CINERARIA "ELECTRA" (IVERY).—Violet purple, petals broad, habit beautiful, colour new, bright yellow disc, and flowers abundant; 7*s.* 6*d.*

CINERARIA "MADAME MIELLEZ" (IVERY).—Pure white ground, black eye, blue edge, petals broad, bloom abundant, habit good; 7*s* 6*d.*

CINERARIA "FEARLESS" (IVERY).—Light blue, fiery, centre, and white disc; form good; 5*s.*

CINERARIA "LITTLE WONDER" (IVERY'S).—White, tipped with rosy crimson, fine habit, and attractive variety; 5*s.* Good named varieties—12*s.*, 20*s* to 30*s.* per dozen.

ANTIRRHINUM "ALBA LUTEA."—White ground and yellow front, distinct; 5*s* each.

ANTIRRHINUM "DELICATISSIMA" (IVERY'S).—Mixed light and pink, beautiful veined. Shape very fine, and bold in front; 5*s.*

W. I.'s Spring Select Catalogue of Geraniums, Fuchsias, Verbenas, Cinerarias, Petunias, Antirrhinums, Phloxes, Chrysanthemums, Choice and select Plants, and Hardy Herbaceous Plants, can be had on application.

Hanover Nursery, Peckham, near London.

"ROYAL CHANCELLOR" GERANIUM.

W. TURNER, FLORIST, &c., begs to announce that he is prepared to send out his new beautiful Scarlet Geranium, the ROYAL CHANCELLOR, an exceedingly free grower and bloomer, of dwarf habit, &c. It has been pronounced by competent judges to be the brightest scarlet of first-rate form yet out. Plants 5*s.* each, packages included. Discount to the trade when three are taken. A remittance must accompany all orders.

Richmond Garden, Madingly-road, Cambridge.

JOHN SEALEY, FLORIST, &c., Mugland Nursery, St. George's, Bristol, will be prepared with extra strong plants (ready to send out the 1st of May, 1851) of his superb WHITE DAHLIA, the QUEEN OF THE WEST, and a general Catalogue of the leading varieties of the day may be had on application.—April 26.

THE following useful description of NURSERY STOCK may be procured from the extensive Nursery ground of W. ROGERS, SEN., NURSERYMAN and CONTRACTING PLANTER, Red Lodge, near Southampton, delivered free at any of the Stations on the South-Western Railway, this being now the best season for transplanting them:—

Rhododendron ponticum, 2 to 4 inches, 40*s.* per 1000; 4 to 6 inches, 80*s.* per 1000; 12 to 15 inches, fit for working or for planting our for cover, 10*s.* per 100; 2 to 2½ feet, 20*s.* to 40*s.* per 100; Standard, 5 to 6 feet, fit for working, the scarlet, or fine new varieties, 40*s.* per 100, or 6*s.* per dozen; Roseum, 3 feet, 9*s.* per dozen; Hybrida, in many fine mixed varieties, 1 foot, 50*s* per 100; white Arboreum, 18*s.* per dozen; white Ponticum, 12*s.* per dozen.

Kalmia latifolia, fine plants, 2 feet, 12*s.* per dozen, 75*s.* per 100.

Azalea pontica, 1 foot, 25*s.* per 100.

Arbutus, 1 foot, 12*s.* 6*d.* per 100.

Laurestine, 1 foot, 3 sorts, 12*s.* 6*d.* per 100.

Double Camellias, 1 foot, 12*s.* per dozen, in 8 or 10 fine varieties.

Single Ditto, strong, and fit for working, 6*s.* per dozen, 40*s.* per 100, small, 25*s* per 100.

Abies Douglasii, from seed, handsome plants, 1½ to 2 feet, in pots, or from open ground, 30*s.* per dozen.

Scotch Fir, 2 years' seedling, fine, 2*s.* per 1000.

Stone Pine, 1 foot, 12*s.* 6*d.* per 100.

Caultheria procumbens, strong plants, 25*s.* per 100.

Mahonia aquifolia, for cover, 8*s.* per 100.

Furze, for cover, 10*s* per 1000.

TRUE YELLOW GLOBE MANGOLD WURZEL SEED, FROM SELECTED BULBS, in quantities of 10 lbs. and upwards, at 6*d.* per lb.; WHITE BELGIAN CARROT, 9*d.* per lb.; FRESH IMPORTED LUCERNE, 9*d.* per lb.; ASHCROFT SWEDE, 9*d.* per lb.; SKIRVING'S LIVERPOOL SWEDE, 8*d.* per lb.; DICKINSON'S IMPROVED ITALIAN RYE-GRASS, 7*s.* 6*d.* per bushel.

Carriage free to London, Bristol, Southampton, &c.

Address—JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

RIVERS'S STUBBLE SWEDE TURNIP SEED.

J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green-topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker-street Cattle Show; also specimen roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs. will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2*s.* per lb., carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5*s.*; and 5 lbs., 10*s.*, by his agents, a list of whom will be found in the *Gardeners' Chronicle* of 22d March. Messrs. Sutton and Sons, Seedsmen, of Reading, who proved this Turnip with others in their sample ground last summer, state as follows:—"Seed sown on June 30th, July 20th, and August 10th, using the same manure for all, gave the following results—from the first sowing, the roots were fully equal to the *best* of the other sorts; from the second and third sowing, they were far superior in size, weight, and shape, thus showing its peculiar adaptation for late sowing."

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | „ Knives, various |
| Borders, various patterns | Hammers | „ Saws |
| Botanical Boxes | Hand-glass Frames | „ Scissors |
| Cases of Pruning Instruments | Hay Knives | „ Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| „ Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| „ Loops | Mowing Machine | Trowels |
| „ Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-street, London-bridge.

CHINA PIGS FOR SALE.—A Boar and two Sows, six months old. Price, 10*l.*—Apply to Messrs. JESSOP, BROTHERS, The Aviaries, Cheltenham, Gloucestershire.

INDUSTRY AND HUMANITY *versus* MURDER AND PLUNDER.—Thousands of valuable lives saved by using Marriott's new BEE-HIVE for the humane management of Honey Bees; its real practical utility is at once apparent. Nutt's Collateral, Taylor's Bar and new Box and other Hives for obtaining the fruit of industry without destroying the bees; a descriptive engraving with priced catalogue of apiarian utensils forwarded on receipt of two penny stamps.—MARRIOTT, Bee-hive and Honey Warehouse, 74, Gracechurch-street, London.

SUTTON'S GRASS SEEDS.

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced price of 22s. 6d. to 28s. per acre.*

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS *having reduced the price of these Seeds 25 per cent., viz., to 10d. per lb., or 1s. 6d. per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of 6 or 8 lbs. per acre, sown immediately upon the old Turf.*

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following:—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

*From a Clergyman, an eminent Agriculturist, and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

*Another Clergyman writes us—*

"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, April 26.

E. G. HENDERSON is now prepared to send out the following New Plants:—

| | s. | d. |
|---|---|---|
| FANCY GERANIUM, Delicatum (Ambrose's) ... each | 21 | 0 |
| SCARLET GERANIUM, Beauty of the Parterre ... ,, | 10 | 6 |
| Ditto Ditto Peach Blossom ... ... ,, | 10 | 6 |
| Ditto Ditto Bridal Bouquet ... ... ,, | 10 | 6 |
| Ditto Ditto Golden Admiration ... ... ,, | 15 | 0 |
| POTENTILLA ANTWERPENSIS ... ... ... ,, | 7 | 6 |
| Ditto bicolor grandiflora ... ... ... ,, | 5 | 0 |
| FUCHSIA, Prime Minister (Henderson's) ... ... ,, | 7 | 6 |
| Ditto Resplendent Do. ... ... ,, | 7 | 6 |
| Ditto Lord of the Isles Do. ... ... ,, | 7 | 6 |
| Ditto Madame Sontag Do. ... ... ,, | 7 | 6 |
| CALCEOLARIA MONARCH Do. ... ... ,, | 7 | 6 |
| Ditto Queen of England, Do. ... ... ,, | 7 | 6 |
| Ditto Flora M'Ivor Do. ... ... ,, | 7 | 6 |
| Ditto Golden Knight Do. ... ... ,, | 7 | 6 |
| Ditto Marchioness of Douro, Do. ... ,, | 7 | 6 |
| Ditto Conspicuum Do. ... ... ,, | 7 | 6 |

For descriptions of the above, see Spring Catalogues for 1851, which will be ready for delivery early in May, and will be sent post free on application.

E. G. H. also calls attention to the following new Strawberries:

| | s. | d. |
|---|---|---|
| PREMISSES DE BAGNOLET, very late, good plants in pots ... ... ... ... ... ... each | 1 | 0 |
| CREMONT'S PERPETUAL, a double bearing variety of superior quality, good plants in pots ... ... each | 2 | 6 |

Wellington Road Nursery, St. John's Wood, April 26.

SELECT PLANTS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE, with the newspaper stamp, to go free by post, supplied on application. The following selections are now ready to send out:—

| | s. | d. |
|---|---|---|
| GERANIUMS. | | |
| 12 splendid new varieties sent out last season ... ... | 50 | 0 |
| 25 superb show varieties, 40s., 12 for ... ... ... | 21 | 0 |
| 25 fine ditto ditto 22s., 12 for ... ... ... | 12 | 0 |
| 12 splendid fancy varieties, 15s., 6 for ... ... ... | 9 | 0 |
| Scarlet and good bedding varieties, per doz., 6s. to ... | 9 | 0 |
| FUCHSIAS.* | | |
| 12 splendid new varieties sent out last season (Story's, Mayle's, Smith's, Rumley's, and others) ... ... | 15 | 0 |
| 25 superb show varieties, 17s. 6d., 12 for ... ... ... | 9 | 0 |
| 25 fine older ditto 10s. 6d., 12 for ... ... ... | 5 | 0 |
| 50 varieties in choice assortment ... ... ... ... | 25 | 0 |
| GREENHOUSE PLANTS. | | |
| 12 select showy varieties ... ... ... ... ... | 15 | 0 |
| 25 ditto ditto ... ... ... ... ... | 28 | 0 |
| 50 fine varieties ... ... ... ... ... ... | 50 | 0 |
| 12 new and choice ditto ... ... ... ... ... | 25 | 0 |
| 12 vars. GREENHOUSE CLIMBING PLANTS, select | 12 | 0 |
| 12 do. STOVE PLANTS, new and choice ... ... | 18 | 0 |
| * 12 do. ACHIMENES, 6s., 6 beautiful new vars. ... | 5 | 0 |
| * 12 do. GLOXINIAS, 12s., 6 beautiful new vars. ... | 7 | 6 |
| 12 do. CINERARIAS, showy, *strong blooming plants* | 10 | 0 |
| 12 do. AZALEA INDICA, choice, 15s., 6 for ... | 7 | 6 |
| 12 do. ERICAS, free bloomers, 12s., 6 for ... ... | 7 | 6 |
| HARDY PLANTS. | | |
| 100 do. HERBACEOUS PLANTS, 30s., 50 for ... | 17 | 6 |
| 100 do. ditto, superior and new, 50s., 50 for ... ... | 30 | 0 |
| 25 do. ditto ditto 17s. 6d., 12 for ... | 9 | 0 |
| 25 do. ROCK PLANTS, select, 12s., 12 for ... ... | 7 | 6 |
| 12 do. ANTIRRHINUMS, new and choice, 10s., 12 fine vars. ... ... ... ... ... | 6 | 0 |
| 25 do. PHLOX, showy, 10s. 6d., 12 for ... ... ... | 6 | 0 |
| 12 do. PENTSTEMONS, new and choice, 7s. 6d., 6 for | 5 | 0 |

These marked thus * can be sent by post if desired, without extra charge. Goods sent carriage free to London; and for long carriage of goods of 40s. and upwards extra plants sent gratis. Particular attention is paid to secure packing, and strong packages provided for plants sent to long distances.—Post-office orders are payable either to BASS and BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SKIRVING'S IMPROVED TURNIP SEEDS.

WM. SKIRVING begs to announce to his friends and the public that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW-BULLOCK, at 9d. per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the Seed of his Improved Turnips, he is this season enabled to offer it at the above reduced price, and he is also induced to take this step to prevent Agriculturists being imposed upon by the sale of spurious Seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing.

All other Agricultural Seeds, of the best quality, at very moderate prices. A remittance or reference is requested from unknown Correspondents.

N.B. W. SKIRVING has no Agent in town or country.

Queen-square, Liverpool, April, 1851.

QUEEN OF DAHLIAS, white, distinctly edged with rosy purple, large, fine form, and constant, has taken first prizes in its class where shown (was named by Mr. GLENNY, and he pronounced it the very best of all our cupped edged Dahlias), will be let out in May, 1851, as far as stock will go, at 10s. 6d. per plant.

KING OF DAHLIAS (MORGAN'S), and others at catalogue price.—Address to W. KELSALL, Wilmslow, near Manchester.

The Gardeners' Chronicle.

*SATURDAY, APRIL 26, 1851.*

MEETINGS FOR THE ENSUING WEEK.

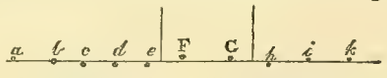
| | | | | |
|---|---|---|---|---|
| MONDAY, | April | 28 | British Architects | 8 P.M. |
| | | | Geographical | 8½P.M. |
| TUESDAY, | — | 29 | Zoological (Anniversary) | 1 P.M. |
| | | | Civil Engineers | 8 P.M. |
| WEDNESDAY, | — | 30 | Geological | 8½P.M. |
| THURSDAY, | May | 1 | Horticultural (Anniversary) | 1 P.M. |
| | | | Royal Institution (Anniversary) | 2 P.M. |
| | | | Royal Soc. of Literature (ditto) | 3 P.M. |
| | | | Zoological | 3 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½P.M. |
| FRIDAY, | — | 2 | Botanical | 8 P.M. |
| | | | Royal Institution | 8½P.M. |
| | | | Horticultural Gardens | 2 P.M. |
| SATURDAY, | — | 3 | Asiatic | 2 P.M. |
| | | | Medical | 8 P.M. |

COUNTRY SHOWS.—Wednesday, April 30: Newcastle-on-Tyne Botanical and Horticultural, and Handsworth and Lozells Horticultural.

A CORRESPONDENT expresses his surprise at a very common occurrence. "I have sent," he says, "a small piece of a Morello Cherry, with fruit as large as a bird's egg. This was produced on a branch 11 feet from the stem. The flowers opened in February. Nine inches, near the extremity of the branch where the fruit grew, were nailed across a chimney, where there is always a little warmth. Now, it has often been stated that there must be a circulation between root and branch before the latter can produce fruit. When this was in bloom, and setting the fruit, the tree appeared to be quite dormant in every part, except the 9 inches in question. The situation faces North, and is quite exposed."

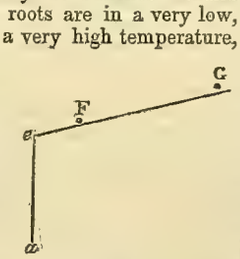
The occurrence of a local leafing, when a part of a plant is exposed to a high temperature, while all the rest of it is in a low temperature, is familiar to gardeners. If you leave the branch of a Vine out of doors, while the other branches are warmed in a forcing house, the latter will be in leaf and flower before the former moves; or, if there is a warm passage through which the branch of a Vine is made to pass in the winter, the roots and branches being otherwise unprotected, the branch in the warm passage will be in leaf and flower long before the other parts move.

The reason is, that in trees each bud grows by itself, and for itself, possessing an independent vitality, and feeding upon what the branch contains as long as there is anything in the branch capable of being consumed, that is to say, as long as the internal circulation of the remainder of the tree can replace what disappears where the parts are growing. Thus let the following diagram represent a horizontal branch, the letters standing for buds; if F G are heated and stimulated into growth




by any local action, they will feed upon the matter included in the branch *e h*, and as that matter disappears, its place will be gradually taken by similar matter supplied by *a e* and *h k*. When that supply ceases F G perishes, but not till then. In our correspondent's case F G was warmed by the chimney.

One of the commonest of all accidents in forcing belongs to this class of facts. A gardener forces his Vines early, they grow vigorously and promise an abundant crop: suddenly the bunches "shank off." In such a case the roots are in a very low, while the branches are in a very high temperature, and the action is of this nature. F G grows fast in the damp warm air of the forcing house; and as long as the branch F G contains the food which the young leaves and fruit require all goes well; but at last F G is exhausted, and *a e*, surrounded with cold wet earth, torpid and powerless, is unable to replace, or replaces very imperfectly, what F G has lost. The supply of food is thus cut off, and F G is literally starved; but if *a e* is warmed, it pours upwards the food it contains, continually sucks more from the earth, and thus maintains F G in health and vigour.




If all gardeners would, as many do, always look for these analogies, and trace them to their first cause, they would find themselves wonderfully relieved from the embarrassments into which they are thrown by the sudden occurrence of an event which they might have fore-known must occur.

THERE are some important subjects which appear to be brought before the attention of Government, from time to time, and about which a great deal is said, though nothing is done; one of these, certainly, is the SUPPLY OF WATER to London. During the last 30 years, a number of Parliamentary commissions have sat, and inquired into the alleged impurity of the water with which we are supplied; they have listened patiently to a great amount of so-called "evidence," have made reports, and published voluminous blue books; all of which, as far as the public are concerned, have, in fact, led to nothing. The evils, inconveniences, and defects, of the existing state of things, stand unaltered, just as they did before the appointment of the first commission; the only difference being, that as London has considerably increased during the last 30 years, so the evil has become one of greater magnitude. The last report on the subject was published only a few months since, and though it no longer appears in the dreary and formidable shape of an old-fashioned Parliamentary blue book, yet it is, nevertheless, a sufficiently heavy affair, consisting of five octavo volumes; the first containing the report itself, and the remaining volumes constituting appendixes, including a most miscellaneous mass of evidence, facts, conjectures, suggestions, and absurdities, to wade through which is, in truth, a very serious and unprofitable labour. It is melancholy to see how much trouble is often taken to prove what no one for a moment doubts; and, on the other hand, how much ingenuity is expended in trying to establish self-evident falsehoods! Getting up evidence for a Parliamentary committee is, in fact, a peculiar art, and the general tendency of the evidence depends mainly on the cleverness of the persons who get it up. Every one knows that a shrewd lawyer will often extract from a witness evidence which seems to prove the very opposite of what he knows to be true, and in the same way the evidence brought out before a committee, depends on the knowledge or bias of those who may chance to be on it; sometimes the evidence to be received is all ready "cut and dry," before any questions are asked; and often the committee are wholly incompetent to decide whether the witness speaks sober truth, or talks absolute nonsense! The report on water, of which we are now speaking, though it is not a parliamentary one, but is, in fact, one emanating from the General Board of Health; nevertheless, in many respects, partakes of the nature and defects of the old blue book.

The question of supplying London with water is theoretically simple enough, but it is practically one of the most difficult problems any one can investigate. Practically, the question resolves itself into two great heads, namely, is the present supply satisfactory either as regards quantity or quality? and, secondly, how can it be extended and improved? In carrying out any such extension, however, we are met on all sides by difficulties; rival water companies are up in arms, vested rights are endangered, corporations are indignant, every one is displeased, and of course the result is, nothing is done. As far as the more scientific part of the subject is concerned, there are several fundamental points which no one questions, excepting, perhaps, those whose private interests are concerned; and in such cases it unfortunately often happens, that the arguments of the pocket far outweigh the convictions of the mind. It certainly ought to be quite unnecessary to write books and take evidence to prove that an abundant supply of fresh and pure water is conducive to health. Those who require printed evidence on this point are hardly likely to be convinced by the results collected by any committee, however learned its members may be.

As the enormous quantity of water at present collected for the daily supply of London, and which is evidently not sufficient for the increasing wants of the inhabitants, is, in fact, the drainage water from a large surface of land, all plans for increasing the supply are, to a certain extent, interesting to those whose land is thus drained, as well as to those for whose especial benefit the water is to be collected. The valuable inquiries into the absorbent power of soils, to which we have on several occasions lately drawn attention, show that though there is little fear that the drainage water which has passed through even a thin layer of soil, can possibly carry off any ammonia, phosphoric acid, or other valuable component of manure, yet that it is pretty certain to hold more or less lime in solution. In comparing together the respective merits of different sources of water, much is said as to the proportion of lime which they contain, and as to the effects due to the presence of that substance. Now common sense tells us that hard water, which contains much chalk or gypsum in solution, is not so fit for domestic use as that which contains only a little. Every one knows the difference between the two in washing, the cook finds the difference of hard and soft water in all her operations; the gardener soon finds the disadvantage of excess of lime in water when he

syringes his plants with it; and in fact every one is more or less practically aware of the superiority of soft over hard water.

We do not see any use in taking the trouble to prove such a self-evident fact, and the less so if, in the inquiry, errors are stated as well as truths; for, in this way, the value of all evidence becomes proportionably weakened. It is better to state a practical and well known fact plainly and simply, than to attempt to prove it by questionable theoretical data. It is certain that in washing with hard water a good deal of soap is wasted, and a good deal of useless labour is expended, somewhat to the detriment of the things which are washed; but when a calculation is made as to the whole quantity of soap which is annually wasted in London, in consequence of the hardness of the water, the calculation being based on the supposition that all the soap which is destroyed by the salts of lime is entirely lost and useless; and further, that the soap itself can produce no cleansing effect until all the lime which the water contained is thus separated at the cost of the soap, it is plain that the calculation is formed on very questionable data, and is of little real practical value. In the same way most persons are willing to allow that the presence of much lime in water unfits it for a number of culinary purposes; but this is in no way strengthened by the strange and unfounded assertion that hard water takes much longer to heat than soft water does; and that soft water evaporates one-third more rapidly than such as contains a few grains more of lime in the gallon! The superiority of soft water over hard water in tea making is also pretty well acknowledged, and would be denied by few; but it surely does not at all support the statement to refer to experiments in which the chalk has been precipitated from water by the addition of oxalate of ammonia! When this is done of course the chalk is removed, and in so far the water is purified; but it must not be forgotten that all the ammonia thus added remains in the water in the state of a carbonate, and to the presence of this the increased solvent powers of the water are chiefly due.

This subject is, as we have already said, a very extensive one, and its consideration would soon lead us into matters which are foreign to our objects. Into the supply of water for domestic or culinary purposes we therefore shall not enter further; but, there are one or two points relating to its horticultural uses, which are deserving a little attention. If, as it is stated in the Report, hard water evaporates so much more slowly than pure water, it is plain that it cannot be so effective in keeping the air of houses in a uniform state of mosture. We believe, however, that this statement is wholly incorrect; when hard water is boiled, it gradually deposits a fur or earthy incrustation, which in time, as it becomes thicker and thicker, at last greatly interferes with the action of the fire; setting this aside, we doubt whether the presence of lime at all interferes with the evaporation of water, and it certainly does not at all effect its volatility at the common temperature of any hothouse.

Attention has of late years been directed to the corrosion of tanks, and hot-water pipes, by particular kinds of water; these effects are sometimes very remarkable, and the cause of them is not always quite evident. When very pure water is kept in leaden tanks, or allowed to remain in leaden pipes, it invariably corrodes them, the lead in time becoming honey-combed and useless, whilst the water acquires a slight impregnation of lead, sufficient to render it decidedly unwholesome, if not absolutely poisonous. On the other hand, when water contains a considerable quantity of saline or earthy impurity, though it then does not act upon lead, it often corrodes iron pipes with great rapidity; this sometimes is traced to the presence of a large quantity of carbonic acid and air dissolved in the water, and sometimes is caused by the salts themselves; it is also frequently caused by the presence of two metals, as where iron pipes are joined by lead, in which case a galvanic action is established, which increases the corrosion of the one metal. The inconvenience experienced in syringing plants with hard water, is for the most part caused by the presence of chalk, held in solution by carbonic acid; but such water is also often rendered hard by gypsum. Whenever it is possible, water of this sort should be altogether discarded, and pure soft water only employed; but when this cannot be procured, it may sometimes be worth while to try and soften it artificially. A little carbonate of ammonia will throw down the whole of the gypsum, and the chalk may be readily separated by boiling the water. The operation of syringing is analogous in its influence to a shower of rain, and the rain which falls in the open country is nearly pure water; the more closely the artificial process resembles nature the better.

Water, which becomes green when exposed to the air and light, is generally excellent water for most gardening purposes; it usually contains a minute quantity of phosphoric acid, and the luxuriant growth of Confervæ, on which its property of turning green depends, is chiefly to be attributed to the presence of that substance; and it is probable that the growth of water plants, and all such as are cultivated in ponds or tanks, might be improved by the occasional addition of a small quantity of some soluble salt of phosphoric acid to the water in which they grow.

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One of the greatest obstacles in the study of plants—in cases, at least, where the aid of the microscope is indispensable—is the difficulty of preserving the minute parts and sections which have formed the materials of observation, and which require to be compared again and again, before complete conviction as to the certainty of any particular facts can be obtained. Every one who has attempted to dive into the intimate structure of vegetables, knows how hard it is to make useful sections, and that it is often practically impossible to obtain a second of equal excellence with one which a happy direction of the knife has once achieved. An easy method, therefore, of preserving such preparations would be invaluable. It is true that the plan adopted by Mr. Thwaites and others with such success, is available for a very large class of objects, but there is much difficulty in preparing both the cells and fluid in which they are to be preserved; and after all, not only is the expence considerable, and the necessity of keeping a large quantity of very brittle objects in a separate cabinet, with a very strict system of labelling, if the collection is to be of any real value, an unavoidable waste of much time, but after all, even in the best hands, the varnish is apt, after some months, to get into the cells and destroy the delicate specimens. Besides which, objects so mounted are, in consequence of the thickness of the cells, of no use for the microscopes called doublets.

A very easy and compendious method of preserving all such preparations as readily imbibe water has lately been proposed by C. Müller, which bids fair to be of great value. Slices of the very best and most translucent talc are cut of any convenient size, and made so thin that they will admit of being easily divided with a fine pointed penknife. The lamina is then to be slit to the middle, and the object inserted in the fissure with a little water. It will be found convenient if possible to make the fissure nearer to one surface than the other, and to mark the divided end by cutting off the corners. With a little practice it will be found that the division will always be effected in such a way as to secure the cohesion of the two laminæ, and the retention of the object. When the objects are wanted for the microscope it will be necessary merely to dip the marked end of the talc in water, with a pair of pincers; and by means of capillary attraction, the object will at once be properly moistened. A slip of paper neatly gummed upon the undivided end, will at once answer the purpose of a label, and will point out the upper surface of the talc, a matter of some importance where deep doublets are used, supposing the lower division of the plate to be thicker than the upper. It is clear that objects so preserved may be kept between the same sheets as the specimens from which they are taken, and will therefore be immediately accessible without any loss of time. In a collection of Mosses, for instance, and Jungermanniæ, especially where the specimens are small and unique, and where in consequence it is often impossible to examine the peristome more than once, unless the preparation can be preserved, we have an admirable method of making even the rarest individuals available for future observation.

The same method will apply to the greater part of fungi and other Cryptogams, and to a host of minute analyses of higher vegetables. It is inapplicable only where, as in Algæ, the tissues alter so much in drying as to retain few of their characters, and where the application of moisture does not make the tissues swell out to their original size. It is, however, possible that this method may be modified, so as to comprise even this important class of microscopic objects.

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## ON THE HUMEA ELEGANS AS ADAPTED FOR OUT-DOOR DECORATION.

The Humea elegans for planting round or near fountains placed in the centre of a flower-garden, stands unrivalled. Its graceful drooping tresses of silky brownish orange-coloured flowers, which glitter in the sun, when moved by the breeze, give it a charm beyond description, and it is now becoming a general favourite. Although introduced from New South Wales in the year 1800, it is only of late years that this fine biennial plant has been used to any extent for out-door decoration, and it may be truly said that no plant gives more grace to the *tout ensemble* of the garden than it does. Whether as a back line to a long border of flowers, as a single specimen to let into the lawn or for the centre of a bed or vase, to form avenues on a small scale, it is most charming; and as its culture is easy, and its period of beauty extends from May till November, I think that a brief notice of it, and the best mode of cultivation, will be acceptable to your readers.

In the month of June, sow the seeds in a pan of light soil, and place it in a warm frame until the plants are in rough leaf, and then remove them into a cool frame, where they can receive plenty of air, and slight shading during hot sunshine for a fortnight, when they will be ready to pot off singly in thumb pots, using light rich soil, and plunging the pots to the rim in sand or sawdust in a cool frame. Keep them close and shaded until sufficiently strong to stand, when they must be gradually exposed to the sun and air; after which they will only require to be covered with the glass sash during cold or wet weather. Shift into larger pots throughout the autumn and following spring, as they require it, taking care never to let them become pot-bound, as their beauty is much lessened by being in any way stinted, either in pot room, moisture, or richness of soil. By liberal treatment they will retain all their foliage in a healthy green state until finally destroyed by frost. During winter, a low temperature, plenty of air, and being kept near the glass, suits those intended for planting out better than heat and a close atmosphere. Give plenty of water before turning them out of the pots, and also for a week or two after planting, until they are fairly established in the soil, which should be composed of turfy loam and well decayed manure or leaf-soil.

When kept under glass to flower in pots for in-door decoration, they are not half so beautiful as when exposed to the open air; their colour in-doors being a kind of greenish pink, which gives the plants a sickly appearance. Slightly fumigating them during the spring months will keep them free from insects, which are apt to infest the under surface of their foliage. *The Writer of the Calendar.*

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## BRITISH SONG BIRDS.

(Cage Birds, No. II. *)

No. XXVII.—You will find that the sight of a nest-bag, and a peep at the two nest boxes, will soon inoculate the "happy pair" with a desire to enter upon the duties of an active life. The chances are, that the very first day they enter a breeding cage will see the nest-bag pulled to pieces, and the nest itself progressing far towards completion—the *hen*, be it observed, is the most alert in this matter.

Whilst cosily seated on the building material, and busily arranging it for the reception of her eggs (the average number of which is from two to five), the hen will keep on giving utterance to a constant succession of very peculiar, but expressive, conjugal notes. It is quite easy to see that each one of these notes is full of the "dear"-est meaning, and thoroughly comprehended by the male. His lordship, like a good husband, will be observed thoroughly attentive, tenderly affectionate, and ready, at a moment's notice, to do her ladyship's bidding. Thus, at one time, we find him feeding her, while sitting on the nest; at another time, arranging her moss, hair, and wool; and, at all times, lavishing on her the most "delicate attentions," anticipating, indeed, her every wish. So passes the honeymoon.

The mutual affection evinced by these delicate little creatures is most extraordinary. Nor do their tender endearments cease until the young ones are hatched. Then come on the cares of state. The great responsibility from henceforward devolves on the male, to whose care the hen mainly entrusts her infant brood. He has to feed them, tend them, and watch over them; while the mother flies leisurely about, and exercises herself, resolutely bent upon recruiting herself, and recovering her lost strength. If she interferes in the feeding of the young, it is by courtesy more than by an assumption of right; but there are, let me add, many exceptions to this general rule.

As the young will, generally, be hatched on the 13th day, have in readiness some soft victuals in a saucer, for their parents to feed them with—such as the yolk of fresh, hard-boiled egg, sponge biscuit, and scalded Rape seed; the whole moistened in the first instance with boiling water, but not made too thin. This should be given fresh, twice daily. A little well-seeded Chickweed, quite ripe, should also be given to the old birds at this time, twice or thrice a week at least.

When I gave a strict caution that your birds should be left unmolested and quite private whilst breeding, this had reference more particularly to the early part of the process. When the young are hatched, it will be *needful* every now and then to look at them quietly. If they appear as young birds should do, red and healthy, with their crops distended, all is well. If, on the contrary, they are of a pale sickly hue, and their crops are empty, then at once construct them, as neatly as may be, a new nest (after first scalding and drying the materials), and change the one for the other; change also the nest box. This done, carefully remove the

* Our "Treatise on the Canary" is this day completed. It is highly gratifying for me to be enabled to state, that its originality and utility, as well as fidelity and perspicuity, have been universally commended. The copious extracts from it, which have appeared, week by week, in all our principal Papers, are, moreover, confirmatory of the fact.

The Nightingale is now amongst us, waking the grove with his voice of melody. *His* praises we shall *attempt* to sing, next week—a glorious task, indeed, and worthy "of a poet's pen." I must, however, take the "lower flight;" yet need I not be altogether *prosey*.

nestlings with a warm hand, and place them in their new abode. On examining the old nest, you will find it full of minute vermin. Subject one of them to pressure under a pin's head; the blood emitted once ran in the veins of your innocent nestlings, who, from their very birth till this moment, have sustained these vermin in life! ! *Never* neglect this act of duty. You will thereby save the lives of many a parent and many an offspring. The old birds will thoroughly understand what you are about, and will show themselves well pleased when the change has been effected. I shall speak more of these vermin by-and-bye.

Before your first brood can well feed themselves, it is more than likely that their Papa and Mamma will be anxious to extend the branches of their family tree. This is why I recommended your cage being furnished with *two* nest boxes, in two separate divisions. Keep the cage, therefore, well cleaned, and the bottom well covered with bruised mortar and chalk.

When the nestlings are about a month old, their parents have an odd way of getting rid of them—viz., by pecking at them, and hunting them about all over the cage. They look at them as if they were interlopers, and quite able to get their own living. This is, therefore, the proper time for removing them into separate habitations. Place them in mahogany cages, made precisely as I have already recommended (See "British Cage Birds," No. 3), and hang them up in a warm situation. In a few days the males will freely "record" their song, and give full evidence of the pleasure they feel in being possessed of "a house of their own." As young canaries are very imitative, and copy all they hear, let me again advise their being made the associates of none but first-rate songsters, from their very infancy. It is more difficult to *un*learn than it is to teach. As for the hen birds, unless you retain a few of the strongest for the purpose of breeding from them at a future time, they should be got rid of with all convenient haste. They are perfectly useless.

With respect to hybrids—I have taken no notice of these, under this head. Goldfinch-mules and linnet-mules, being bred in a different manner, will receive full notice under the respective *Treatises* on the "Goldfinch" and the "Linnet." These birds may be reared to immense advantage; and if well taught in their infancy, their value can hardly be stated. They will live to a "green old age."

I should here remark, perhaps, that the change of diet, from soft to hard food, should not be too sudden. Place some of each kind in the cages of the young birds, and withdraw the "nursery diet" by degrees. Be sparing with your green meat, and also any little luxuries that may act too violently on the internal machinery of your pets. Avoid both sugar and hemp-seed; giving them occasionally a little maw-seed, German paste, sponge-biscuit, and stale sweet bun. Thus instructed, you have it in your own power to rear some of the finest song birds that were ever known. You may, moreover, live perfectly independent of the whole tribe of bird-dealers, with whom, *entre nous*, the fewer dealings you have the better. *William Kidd, New Road, Hammersmith.*

## ENTOMOLOGY.

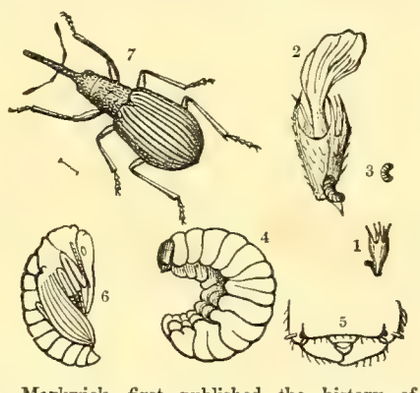
### The Pear-shaped Weevils.—No. II.

The Ulex nanus is occasionally attacked in France by one of the small Pear-shaped weevils, which deposits its eggs in the thin twigs, thereby causing the formation of galls, somewhat like beads strung on a string, at greater or less distances apart. We are indebted to M. Perris for the discovery of this curious economy in an insect of this group, no other species having been observed to form galls, which do not, however, appear to prevent the growth of the plant. If one be opened soon after it is formed, the interior is found to consist of a green tissue, more succulent towards the centre, where a small yellowish egg is to be seen; soon afterwards this egg produces a larva or yellowish grub, which by gnawing away the substance of the gall (which serves it for food) forms a more or less spacious cavity, within which it resides. During this period the substance of the gall becomes more dry and compact, the outer coating forming a crust or shell having nearly the consistence of wood. The caterpillar is of a very long oval form, yellowish in colour, smooth, and destitute of legs; the head small, of a reddish brown colour; the jaws strong, horny, and bifid. The body consists of 12 segments, each of which, except the 2d, 3d, and 12th, are provided with a pair of breathing pores. The pupa is naked (that is, not inclosed in a cocoon), of a yellowish tint, the parts and limbs of the perfect insect being easily perceivable; the legs folded on the breast and belly, the elytra applied to the sides and striated, with the wing-cases extending beyond them. The perfect insect, to which M. Perris has applied the name of *Apion Ulicicola*, measures about one-sixth of an inch in length; it is entirely of a deadish black, covered with short grey pile; the snout is glossy, the thorax roughish, and the elytra striated.

This insect passes the winter state in the form of a larva, which changes to a pupa in the spring, the final transformation to the perfect state taking place in May and June. The larva of this beetle is occasionally attacked by a beautiful little hymenopterous parasite (Eulophus Ulicis, Perris), which deposits sometimes as many as five or six eggs in the gall when the larva has attained a considerable size, thus dooming the unlucky inhabitant to the cannibal attacks of such a number of these voracious parasites. (Annales Soc. Ent. de France, 1840, p. 90, Pl. 6, I.)

At the beginning of last February I received from H. T. Stanton, Esq., several pods of the common Furze, each of which contained several specimens of Apion (Oxystoma) Ulicis, alive and in the beetle state, remaining within the pod until it should burst and allow them to escape, they appearing to make no attempt to do so by gnawing holes through the skin of the pod. It was thence evident that they had been reared within the pod, the larvæ having fed upon the seeds, which were much gnawed. In one of the pods I found a small white footless grub enclosed in a slender cottony cocoon, the front of the body of this grub being much more attenuated, the segments of the body more constricted, and the mouth without well developed jaws, under jaws, &c. These characters, together with the circumstance its of being found so late and at a time when the real inhabitants of the pod had assumed the perfect state, is sufficient to prove that the small grub in question is not the larva of Oxystoma Ulicis, but of a hymenopterous parasite, which keeps it in check. The perfect Oxystoma is found almost throughout the year, and is very common where the Ulex europæus abounds.

The various species of Clover and Trefoil are subject to the attacks of several species of Apion. Thus Apion assimile devours the leaves and heads of Trifolium ochroleucum; Apion meliloti is found on Trifolium melilotum. The larva of Apion flavipes devours the heads of Trifolium repens, and Apion flavifemoratum (alias A. Trifolii and A. africans), does much mischief to corps of Clover, Trifolium pratense.




Mr. Markwick first published the history of this species in the sixth volume of the Linnean Transactions. On examining the state of a crop of Clover, in the month of August, he found in many of the heads several small white grubs, invariably placed on the outside of the base, beneath the individual calyx of each floret, eating through the bottom, and thereby destroying the germen or rudiment of the future seed. These larvæ were like the nut grub in miniature, having a white body, black head, and three small prominences or tubercles on each side of the breast, supplying the place of legs. Having placed a number of the blighted heads of Clover in a box, he found, 10 days afterwards, a number of the Apions running about, as well as many of their "chrysalids sticking to the stem at the base of the individual floret, exactly in the same position as I had found the larvæ; nay, I even saw one or two of these weevils crawl out from their chrysalids. Under these circumstances, there can be no doubt that the before-mentioned larva changes to a small white chrysalis, which differs but little from it, except in being egg-shaped and motionless, and this produces a small blackish weevil with a long beak, whitish belly, and yellow legs." Mr. Markwick adds, that, in 1798, 4½ acres produced 16¾ bushels of Clover seed, worth 41*l.* 17*s.* 6*d.*; whereas in 1800, when the field was attacked by the weevil, the same quantity of ground produced only 7½ bushels, worth 18*l.* 15*s.*, the deficiency of 9¼ bushels, worth 23*l.* 2*s.* 6*d.*, being attributable to the devastations of the Apion flavifemoratum.

Mr. Markwick's account of the pupa state of this insect is not very clear, since he speaks of it as an egg-shaped chrysalis, very like the larva; and adds that he saw the Apion creep out of the chrysalis—statements which seem to imply that the pupa state was inclosed in an egg-shaped covering or cocoon, which is, in fact, the character given by Mr. Kirby in his subsequently published monograph on the genus. M. Perris, however, expressly says that the pupa is naked, and such was the state of the pupa which I found in the pods of Lathyrus arvensis, described in my former paper. Mr. Lehmann also, in his additional observations on the Clover Apion, says, "that having consumed three or four of the seeds, it remains in the place of the last, where it is sufficiently sheltered, and changes like other weevils into the pupa or chrysalis state, through the transparent skin of which an experienced eye may trace the different limbs of the future animal;" thus fully proving that the chrysalis of Mr. Markwick, and the pupa folliculata of Mr. Kirby, is a naked pupa, not enclosed in a cocoon.

A still more precise account of the transformations of this insect has been published by M. Guérin Méneville in the Annales of the French Entomological Society (1843, p. 65). Our figures 1 to 6 are copied from M. Guérin's illustrations; those given by Mr. Markwick being so small as to be quite unintelligible. M. Guérin adds the interesting fact that the larva of this Apion is kept in check by two small hymenopterous parasites, namely, the Calyptus macrocephalus of Nees, and the Pteromalus Pione of Walker. Our figures 3 and 4 represent the larva of the Apion Trifolii or apricanus of the natural size and magnified; figure 5, the front of its head more strongly magnified; figure 6, the pupa magnified; figures 1 and 2, a floret of Clover, pierced by the larva, of the natural size and magnified; and figure 7, the perfect insect magnified, the natural size indicated by the line below the figure. *J. O. W.*

## Home Correspondence.

*The Chrysanthemum, a spring-flowering Plant.*—The following plan of culture was practised by me in 1836 and 1837, and on the 10th of May, 1837, I gained a Banksian Medal at Chiswick for a Chrysanthemum, having 60 blossoms on it, all open at one time. The sort was the Paper-white, and it was perhaps the only Chrysanthemum ever seen in flower at so late a period. In the month of April I took as many suckers as were wanted, and planted them out in well prepared ground, about 2 feet apart. As soon as they began to grow I topped them, and continued doing so with each succeeding growth, until the plants began to get shrubby, in which condition they needed no stakes. If a succession of plants was wanted to blossom late, or in the commencement of the next year, I kept topping a few for the purpose; and in dry weather I watered them with weak manure water. I potted my plants on the 1st of September in 8 and 10-inch pots, and started them by putting them into a close house, or pit, for seven or eight days, until they had made young roots, excluding all direct sunshine, and syringing them twice a day. My Chrysanthemums that season were very fine; plants in front of a conservatory had scarcely lost a leaf on the 5th of December, and about 40 of them had not opened all their flowers; several of those which did not show bloom were put into the stove, and one of them gained the Banksian Medal in question. Now what was done then can be effected now, and during the season of growth the stem can be made to grow either long or short at the will of the cultivator. I see no reason why a Chrysanthemum should be trained up a stick, with half the stem naked, detracting from the beauty of the plant. Great improvement has been made in the blooms, but none in training, while by proper management a long succession of those beautiful winter flowers may be obtained. *James Cuthill Camberwell, London.*

*Management of Timber Trees.*—Having lately made a tour through some parts of Essex, Herts, and Cambridgeshire, I had an opportunity of observing the way in which forest timber is managed in these districts, but in no instance could I see the smallest approach to scientific culture, so as to produce useful timber. It may truly be said that in England there is no science less practically understood, or one that meets with less encouragement, than the management of forest timber. At the formation of the Royal Agricultural Society of England, it was stated that one of the objects that Society had in view was to encourage a better method of cultivating timber plantations; but where is there an instance of any improvement having taken place? In 19 out of every 20 cases the whole management of forest timber is left to persons who never received any instructions in the art. Under such circumstances no improvement can possibly be expected. In walking through a young plantation of 10 or 12 years' growth, that had just undergone a course of thinning and pruning, the axe had been used very lavishly, and without any regard to the future growth of the permanent trees, or the value of the nurse plants, two-thirds more of the latter being removed than ought to have been cut out at any one thinning. In the pruning, every branch and twig from the ground to three parts up the trunk, had been hacked off, some of them close to the stem, others 3 or 4 inches from it, and in some cases the pruner, by his awkwardness in missing his aim, had cut the tree half asunder, leaving the greater number of the deciduous trees like a mop stuck on the top of a pole, with six or more competing shoots. By such injudicious management, if the trees are left in their present condition, as in all probability they will be, there being no person on the estate that can point out the proper method of repairing the injury, such trees will, when cut up into planks, exhibit the effects of the treatment they received in their youth. *J. D.*

*Memoranda from Java.*—This is one of the finest and most fruitful of the Sunda Islands. Its form is nearly that of an oblong square, which is traversed from east to west by a chain of large mountains; these exhibit the remains of ancient volcanos, which are now clothed with the vegetation of many ages. The fine new species of Rhododendron lately introduced into England are inhabitants of such situations. The mountains, in most instances, are covered with almost impenetrable forests, and with a few exceptions, the soil on them is fertile. Between those of the first or grand, and those of the second series, are immense plains, some of which are much elevated above the level of the sea, and on these the cold is sensibly felt. They are the most densely inhabited and best cultivated portions of the island. In some parts the heat is oppressive, rising occasionally above 107° Fahr., with from 20° to 25° variation in 24 hours. Notwithstanding this, however, taking it altogether, the climate away from the swamps is healthful and pleasant, the perpendicular sun-beams being considerably cooled by the sea and land breezes. On the tops of some of the mountains it is not uncommon to find the temperature in the months of May, June, and July below 29°, and occasionally even lower, and ice ¼ inch thick may often be discovered on the ponds. The two monsoons, the dry and the wet, are latterly not at all regular. The

former, during which easterly and south-east winds prevail, generally commenced towards the middle of April and continues until November, and sometimes as late as December. The rainy season is accompanied by westerly winds, and both monsoons by severe thunderstorms; but more especially the wet one. The land is richest near rivers and in valleys, and even near towns, where it is employed in the production of vegetables; it requires very little manure or labour to cause it to yield heavy crops. Java produces Rice in large quantities, Coffee, Sugar, Pepper, Indigo, Cochineal, Nutmegs, Cinnamon, Maize, &c. The latter is grown on the hilly parts, where it is too cold for Rice. Maize does not suffer from cold until the temperature falls below 45°, and on the other hand no degree of heat is injurious to it. It supplies the natives with the greater portion of their food. *John Henshall.*

*Franciscea confertiflora.*—This fine species is well worth a place in every stove, on account of its handsome trusses of deep lilac flowers, and excellent habit. I have one now under my care, 2 feet high, and 2 feet 5 inches in diameter; it has 20 shoots, 7 of the strongest of which are bearing trusses of about 30 flowers, each blossom being an inch and a half across, while the smaller shoots bear trusses, consisting of from 6 to 25 flowers; when these fade, more succeed them; the shoots grow erect, and the blossoms stand well up, and are slightly scented. My plant has been in blossom these three weeks; the colours of the blooms do not change to so light a tint as in the case of the broad-leaved Franciscea, and the species is of much better habit, and grows more freely; the foliage also is much handsomer; it has not at the present time dropped a leaf from the lower branches, the loss of which is so detrimental to the appearance of the Franciscea latifolia, when it attains a considerable size; the leaves of the Franciscea confertiflora are a handsome fleshy dark green waved, and rather larger than those of Franciscea latifolia; it has been grown in three parts turfy peat, and one part burnt loam and silver sand. *W. K., Knowsley Hall, Lancashire.*

*Conifers.*—With regard to the notice on the growth of Conifers at Dropmore, I would add my opinion that the common notion of the quasi-identity of Juniperus Bedfordiana, Gossainthania, and Virginiana is erroneous; knowing the two former as yet only in the state of bushes, they certainly appear very distinct from any of the varieties of the red Cedar that I have seen. Jun. Gossainthania rather approaches the character of Jun. Bermudiana, of which I have a young tree nearly 18 feet high. *S.*

*Span-roofed Pineries.*—Has any person tried a span-roofed house running north and south (passing east and west) glazed with rough plate glass, for fruiting Pines in the winter? If not, will such a form of house answer better with sheet glass? And is there any objection to such a situated house? It is submitted that there would be plenty of light at all times, and no necessity for shading in summer. *W. W.*

*Stoke Newington Chrysanthemum Society.* — Mr. Nicholls having been compelled through visual infirmity to relinquish the office of Secretary to this Society; the members, with a view of testifying their appreciation of his past services, met at the Rochester Castle, on Thursday, the 17th, to present him with an elegantly chased silver drinking cup, bearing the following inscription:—"Presented to Mr. John Nicholls by the members of the Stoke Newington Chrysanthemum Society, as a token of their esteem and regard:" Mr. Croxford presided, faced by Mr. E. Sanderson. The former, after adverting to the services Mr. N. had rendered the Society, and regretting the cause of his retirement, presented him with the cup, which was then filled with wine and passed round the company. Mr. Nicholls returned thanks in an appropriate speech. *E. Sanderson, Hon. Sec.*

*Renovating Old Trees.*—The advice which the late Sir Henry Stewart communicated in a letter to Admiral Sir T. Livingstone, Bart., on the renovation of decayed trees, may be also useful to your correspondent "Nemus," if applied to his Beech trees. Sir Henry says, "Agreeably to my promise I shall now give you an idea of my method of reviving or resuscitating old trees, which has often succeeded with myself, and which I here recommend to others; but there is no account given of it in the notes in my treatise on the 'Application of the Science of Physiology to Practical Tree-culture,' and particularly in removing large trees for ornament. The decay of old trees, both in England and Scotland, has been a subject of general complaint, during at least a century, and it is observed with regret that their place does not promise to be very speedily supplied by existing woods and plantations. The general cause of the decay of trees are twofold, the first proceeds from diseases to which all woody plants are subject, the second from extreme old age, but more frequently from their having exhausted the pabulum within their reach. The pathology of the vegetable tribe in this respect differs materially from that of the human species. Among the sons of the forest there are no vicious efforts made by individuals, as among us, by means of disease, to shorten life; there are no gourmands nor sensualists, by fatal indulgence and artificial luxuries, to bring on a premature old age; the laws of Nature in trees are allowed freely to operate, and their existence therefore may be reckoned on, and even prolonged by art to an indefinite period. It has been said that the roots of trees in a favourable soil will go abroad in search of their food to a distance from the stem equal to the entire height of the tree taken from the ground; and wherever this is found to hold good, trees will live to a very great age, especially in a deep and calcareous soil. Of your two fine old trees at West Quarter in Stirlingshire, which I lately examined, a Holly and a double-flowering Thorn, I must say that they appear to me to have declined chiefly from the latter of the two causes above-mentioned, namely, their having exhausted the food or pabulum in their immediate neighbourhood; and in the case of the Thorn, in some measure, from the ground being overstocked with other plants that greatly crowd upon it, even to the exclusion of light and air, without which no plant can flourish. As to the Holly, it seems stunted, and hide bound, and sends out no free shoots at top, such as a tree in health, in so fine a soil and climate, ought to do. The terminal growths of the Thorn also have begun to decay, and if some salutary remedy be not speedily adopted to excite the roots to fresh action, it is plain that the evil will ere long extend to the greater branches, and as a necessary consequence to the trunk itself." He then recommends the clearing away of the Ivy from the stem of the Thorn, and to clear the ground for a considerable space of overshading shrubs and bushes; secondly, to dig a trench round the tree not exceeding three and a half or four feet out from the stem, the trench to be five feet broad, and deep enough to penetrate the soil and subsoil; in doing this, the workmen may fearlessly cut through all the roots they meet with, leaving only three or four great ones on the south and south-west sides, to act as cables in resisting the severe winds that usually blow from those quarters in every part of the island. The good earth from the trench is to be saved, and [the bad wheeled away, the trench is to be filled with well prepared earth and dung, so as that a proper chemical action may be excited throughout the mass, and the whole rendered fit for the food of plants; all dead wood is to be removed carefully with a saw, all moss in the spring is to be taken from the bark, and the stem well marked two or three times during the summer season, with soap and water, and a soft brush. By following the above method, which, however elaborate it may appear in the description, will be very easily reduced to practice, I feel confident that many fine old trees in gentlemen's parks, that are now allowed to decay, might have another century added to their existence. In a tree of considerable age, it is to be observed, that much figure cannot be expected to be made the first year in the elongation of its terminal shoot; and for this plain reason, that effects must necessarily be preceded by their causes, whether they lie on the surface or otherwise; but the leaves will speedily become larger, and of a deeper green colour than for some years past; and by the autumn of the second year, it will be admitted that the tree is in some sort about to renew its growth. In conclusion, he adds, the month of February, or beginning of March, according to the season, before the ascending sap begins to stir, would, of course, be the best time to carry into effect the method of resuscitation above detailed. *P. Mackenzie.*

*The Calceolaria.*—This is so lasting and beautiful a plant that a few words respecting its cultivation may not be unacceptable. It may be propagated either by cuttings or seed. The latter is undoubtedly the best plan. The seeds should be sown about the beginning of August, and placed in a shady situation—in a Vinery, for instance. If properly treated, the seedlings will be fit to transplant into small pots on the 1st of October. They should be placed in heat for a few days, and afterwards removed to a cold frame or pit, which can be kept free of frost without the use of fire-heat. When they have become established in small pots, shift them, about the 1st of January, into the pots they are to flower in—8-inch pots are the best. They succeed well in a soil consisting of five-eighths charred loam, one-fourth rotten leaf-mould, and one-eighth peat, to which should be added a little silver sand. When they receive their final shift they should be placed in a cold frame on a good bed of coal-ashes, in order to keep slugs and worms away from them. At the same time air should be given on all favourable occasions, and as the spring advances they should be liberally supplied with water, syringing them occasionally, to keep down green fly. The plants should remain here until the blossoms begin to expand, when they should be removed to the house in which they are to flower, where they should have plenty of air, and they should be shaded in sunny weather. *M. P.*

*Culture of the Chrysanthemum.*—I read with interest the lecture on this subject, delivered by Mr. James, before the Stoke Newington Chrysanthemum Society, and it is not my intention to find fault with that essay, because I have never seen Mr. James's plants; at the same time I cannot think that his system will produce such good Chrysanthemums as I have been in the habit of seeing during these last three years in a neighbour's garden. I will describe them as near as I can. The plants are about 18 inches high from the pots, with from 12 to 18 shoots, each of which produces a bloom as large as a Dahlia. Some of the blossoms have measured 6 or 7 inches in diameter. All who have seen them have expressed their admiration of them, and have said they never saw anything of the kind to equal them. I have been growing my Chrysanthemums on the same plan for these last two years, and I am confident that they can be grown and flowered every year with as much certainty as any other florists' flower. I am of opinion that if the proper culture of this plant was generally known we should soon hear of Chrysanthemum shows all over the kingdom. I am anxious to see this take place, and I trust that my neighbour, who is Mr. Ivory, gardener to G. Grout, Esq., Tring Park, Herts, will give the public the benefit of his mode of cultivation, in the shape of a small pamphlet, say at a shilling, and it would be honestly worth 5s. to any gardener who wanted to grow dwarf plants. The old system of management is altogether wrong. *Henry Coombs, Gardener to T. P. Halsey, Esq., M.P., Great Berkhampstead Hall, Herts.*

*The Sweet Chestnut as Timber.*—In turning over the pages of some of the early volumes of the "Transactions of the Horticultural Society," a few days since, I met with the following passage in a paper, read before the Society, by W. Atkinson, Esq., Jan. 15, 1833, which may possibly be of service in elucidating points relating to the durability of the Spanish Chestnut as timber:—"The Quercus sessiliflora contains so small a portion of the silver grain or flower (?), that wood of that kind from old buildings has frequently been mistaken for sweet Chestnut. During the last 30 years I have taken every opportunity of procuring specimens of wood from old buildings, and particularly what the carpenters called Chestnut; but I have never, in a single instance, seen a piece of Chestnut from an old building. What has been taken for that wood I have always found to be Quercus sessiliflora, mistaken for Chestnut." The author then alludes to the roof of Westminster Abbey, about which so much has been said. He tells us that during some repairs he procured portions of the wood, and that it was Quercus sessiliflora, beyond doubt. While this note has lain upon my desk, I have asked an old carpenter, who is working within a few yards of me, what his experience will allow him to speak in favour of the wood of the sweet Chestnut, for durability; his answer was to the effect that it was second only to Oak. *G. L.*

*Adulteration of Condiments.*—It appears that pepper, mustard, arrowroot &c., are not the only articles deteriorated by dishonest tradesmen and dealers. A report issued by the Pharmaceutical Society, describes an ingenious, but unwarrantable system of adulterating isinglass, an article extensively used for fining purposes, and for preparing the luxuries of the wealthy classes. Russian isinglass is the air bladder of the sturgeon dried, rolled into thin sheets, and cut into very fine shreds. The system of adulteration detected, consists in rolling out common gelatine in a similar manner, and placing one sheet of the spurious matter between two of isinglass. After cutting the deception is very difficult of detection, but it may be marked by a comparison with the really genuine specimen, or by the disagreeable gluey flavour of the adulterated article when dissolved in boiling water, and tasted without sweetening. The prepared gelatine alluded to is about 15*d.* per lb., while the value of isinglass averages 17 or 18 shillings. *Thomas H. Collins, 2, College-place, Chelsea, April 15.*

## Societies.

National Floricultural, *April* 24.—R. Stains, Esq., in the chair. Fifty new members were added to the lists, and 28 more were proposed for election at the next meeting, making the total number of members 175. As regards subjects of exhibition, there was a goodly display of Cinerarias, a few Pelargoniums, some Rhododendrons, Auriculas, and Pansies. Messrs. Henderson, of Pine-apple-place, sent a collection of Cinerarias, in which the best were Pauline, Lettice Arnold, Madame Sontag, and Lady Gertrude. Mr. Ivery, of Peckham, had, among others, Ormsby Beauty, Electra, and Blue Perfection. Mr. E. G. Henderson, Wellington-road, Pauline, Brilliant, Charles Kean, Formosa, Effie Deans, Lady Hume Campbell, Georgiana, Amy Robsart, and Enchanter. Pansies, in the shape of cut blooms, were furnished by Messrs. Edwards, Turner, and Bragg; and Mr. Turner also showed six Auriculas in pots. Mr. Henderson had some variegated Pelargoniums. Mr. Ayres again showed his crimson-flowered Oak-leaved Pelargonium, and the fancy kind, named Lady Rivers. A Rhododendron, called Jacksoni, came from Messrs. Jackson, of Kingston. In appearance it was somewhat striking, being deep blush, striped on the outside with rosy pink. Among seedlings a Certificate was awarded to Mr. Hoyle, of Reading, for Pelargonium "Chieftain," a variety having a good habit and well formed flowers, whose upper petals exhibited a dark crimson blotch margined with scarlet, while the lower petals were vermilion. Mr. Turner had a Pelargonium named First of May, which was commended for form of flower and habit. The upper petals consisted of a dark crimson blotch edged with rose, the lower ones being rose blotched with crimson. A fancy Geranium called Formosissimum, from Mr. Ayres, was good in form, truss, and habit, while in colour it was an improvement on Anais. The same grower had also a promising variety named Gypsy Queen. Among Cinerarias a certificate was awarded to Mr. Smith, of Hornsey, for Alba Magna, a good white with a dark disk. Ditto to Mr. E. G. Henderson, for Marianne, a medium-sized white-ground flower, with a lilac edging; habit fair. First class ditto to the same, for Marguerite d'Anjou, whose habit and general symmetry were good. Flowers bold, rich crimson, surrounding a dark disk. Model of Perfection from Mr. Ayres, was commended, for fine form and novelty of colour, which was shaded purple. Beauty, from Mr. Ivery, was also commended for its habit and white flowers faintly margined with lilac. Lady of the Lake, from Mr. E. G. Henderson, was good; but it was not sufficiently distinct from Cerito. An Auricula from Mr. Griffin, named Beauty of Bath, received a first class certificate. It was a grey

edged flower, of good substance and outline, and well proportioned. We noticed among other things some seedling Heaths on the table; but though very pretty they were not sufficiently distinct from aristata to deserve distinction.

Royal South London Floricultural, *April* 23.—This exhibition, the first of the season, was held at the Horns Tavern, Kennington. Few stove and greenhouse plants were produced, and as a florist show, it was certainly inferior to former years. For the best pair of Auriculas in the amateur's class, the first prize was awarded to W. S. Ginger, Esq., for Litton's Imperator, and Oliver's Lovely Anne; 2, to Mr. Moseley; 3, Mr. Chapman. Nurserymen: 1st, Mr. Turner of Slough, for Ringleader, Squire Chilman, Prince of Wales, and Conqueror of Europe. 2, Mr. Dickson, of Acre-lane, Brixton, for Ringleader, Oliver's Lovely Anne, Hedge's Britannia, and Taylor's Glory. Several collections of Auriculas were shown, and some Polyanthuses, among which we remarked Pearson's Alexander, King, Princess Royal, and Buck's Geo. IV. Pansies: Amateurs: 1st, J. Edwards, Esq., Holloway; 2, Mr. Parsons, Enfield. Nurserymen: 1, Mr. C. Turner, Slough; 2, Mr. Bragg, ditto; 3, Messrs. Hart and Co., Guildford. The leading flowers shown were—Hales' Sir R. Peel, Duke of Norfolk, Ophio, Rubens, Bertha, Mr. Beck, Leader, Almanzor, Juventa, Disraeli, Mrs. Hamilton, Addison, Supreme, Queen of England, Mrs. Beck, Robert Burns, Miss Edwards, Privateer, Climax, Ibrahim Pacha, Thisbe, Zabdi, Elegant, and Sir John Franklin. Dora and Euphemia are two large showy seedlings, which will make fine varieties for exhibition, and must be constant, from the number of blooms shown. A nice collection of Cinerarias was exhibited by Mr. Robinson, and there were also a few seedlings, for which a first-class certificate was awarded to Mr. Smith, of Hornsey, for Queen of Beauties, a small white flower with a dark centre.

## Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The large mass of Phalænopsis amabilis, which Mr. Fortune obtained from Manilla, is now, as it nearly always is, beautifully in flower in the Orchid-house; as are also the Skinner Cattleya, (bearing 10 spikes of highly coloured purple blossoms), several Oncids, and a few Dendrobes. In the adjoining greenhouse, we remarked, among other things, the great-headed Gueldres Rose (Viburnum macrocephalum), and the double white flowered Chinese Peach—introductions whose value in the arboretum has not yet been tested; but from both of which much may reasonably be expected. Forsythia viridissima was also in flower in this house, as well as against the open wall, on which it requires about the same treatment as a Peach tree, and for a south aspect, in a somewhat sheltered situation, few wall plants are more effective. In the new house, which has lately been erected for the more speedy and abundant production of plants for distribution, were nice young examples of Sikkim Himalaya Rhododendrons, raised from seeds presented to the Society by Sir William Hooker. The two-coloured Cantua was in flower here, as were also the white-blossomed Eranthemum, than which a better winter flowering plant hardly exists; the scarlet Scutellaria, Tetranema mexicanum, Manettia cordifolia, the ever-flowering Achimenes picta, and the useful Turnera elegans. In regard to the plunging material employed in this house, it has been found that sawdust by itself does not answer near so well as when it is mixed with coal ashes or cinders. Managed in this way it is rendered more porous, and permits the heat to permeate it more readily. The Camellias planted against the north side of the wall, which divides the small flower garden in front of the glass houses from the experimental ground, have bloomed beautifully this year, and at present one of them is quite loaded with flowers. A spreading bush of C. reticulata, planted out in a wooden box in this garden, where it can be covered with a glazed sash at night, and, in the event of unfavourable weather, is quite a mass of rosy pink; and this has been the case with it for weeks past. Where Camellia blooms, in a cut state, are wanted in quantity, a better plan than this could hardly be adopted for their production. The Camellias in the large conservatory have likewise flowered well this year, as have also some of the fine leguminous plants and Rhododendrons which the house contains. In order to slightly increase the vigour of the Luculia gratissima, planted out in the bed here, where it has blossomed profusely and beautifully, every winter for years, a trench has been taken out round it, and new soil added to its roots. Its top was also at the same time pruned in, and it is now beginning to make young wood freely. The appearance of the arboretum has been much improved by the removal, where they had become too thick, of some of the less important kinds of trees; the walks have been all newly gravelled and rolled, and the Grass on the lawn closely cut. The small walk running along the bottom of the conservative wall has been widened and straightened by the removal of a short cross wall, against which the large Arbutus procera grew; the latter has been formed into a standard, the conservative border has been made narrower, so that the plants on the wall can be conveniently examined from the walk, and, in addition to the advantage, the effect of all this has been to materially improve this part of the garden. Following the broad boundary walk which has been completely gravelled, and furnished at short intervals with seats, the borders at the same time being entirely re-arranged, and planted copiously with Berberis aquifolium for ornamental under growth, we arrive at the new flower-garden. This is now completed, and in June it will be the scene of an exhibition of American plants, by Mr. Hosea Waterer, of Knap-hill. The Rhododendrons are already nearly all planted, and, judging from their size and appearance, as well as from the varied surface—the miniature hill and dale—supplied by the formation of the ground, a display may be anticipated such as has never before been presented by an exhibition of the kind. But this is not the only purpose for which this ornamental ground has been formed. It is intended to be a "garden of flowers" all the year round, and to this end it has been, and will still be, furnished, as opportunity offers, with such plants as will best carry out that object. In preparing an eligible site for an American show, however, improvements in the conduct of the ordinary exhibitions have not been lost sight of; for 150 feet of new tent have been added for the better accommodation of plants. The iron tent will be altered so as to suit Geraniums, and for the large collections which used to be shown there, two stations, which advance from the general line of tables, have been formed in one of the long tents. By this arrangement it may be expected that a more effective exhibition will be produced. In the orchard little alteration has taken place since our last report. The buds of the different kinds of fruit-trees have been thinned considerably by the sharp frost which occurred on the night of the 6th and morning of the 7th inst., when the thermometers registered 11° of frost; but we are glad to state that sufficient yet remains for a crop.

## Miscellaneous.

*Hartley's Rough Plate Glass.*—The importation of glass into France is at present prohibited. Special permission has, however, been granted by the French Government for the introduction of a quantity of Hartley's Patent Rough Plate, for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country. *Sunderland Herald.*

*Baked Potatoes.*—It is computed that there are 60 tons of baked Potatoes sold in the streets of London every week during the season, viz., from September till the beginning of April. The average takings of each vendor is 6*s.* a day, and the receipts of the whole number throughout the season are supposed to be 14,000*l.* *Cornwall Gazette.*

*Sale of Orchids.*—A small collection, just imported, consisting chiefly of Dendrobes, and the magnificent blue Vanda (V. cærulea), was sold last week by Mr. Stevens. The Vandas fetched from 2*l.* to 10*l.* 10*s.* per plant, and the Dendrobes from 10*s.* to 5*l.* 5*s.* A few Aerides, Cœlogynes, Saccolabiums, and Cymbidiums, were also sold at the same sale, at prices varying from 10*s.* to 3*l.* 15*s.* per lot.

*Death of M. Wahlenberg.*—From Stockholm is announced the death, at the age of 71, of the distinguished botanist and geologist, M. Goeran-Wahlenberg, Professor at the University of Upsal, and director of the botanical garden in the same institution. M. Wahlenberg is stated to have spent 30 out of his 71 years in scientific journeys throughout the different countries of Europe; and the results of these travels he has recorded in a variety of learned works. M. Wahlenberg has left his rich collection and numerous library to the University of Upsal, in which he was a student—and to which he has been attached in various capacities during upwards of 43 years. *Athenæum.*

*On the Nature of Cork. By Professor Mit cherlich.*—Cork, which is next to cellulose, the most important constituent of the cell-wall, is so difficult to obtain in a state of purity, that the author does not venture at present to express any opinion upon its composition; when obtained in a pure state, another name must be given to it. It sometimes forms a thin, shapeless continuous coating of the entire plant; sometimes it constitutes the outermost cellular layer of the stem; very often it forms several cellular layers, as in the Potato. In the latter it forms a row of cells, readily distinguishable both by their structure and chemical reactions from the subjacent cells containing starch; the number of superimposed layers is different in different varieties of the Potato. This layer is easily separable from boiled Potatoes, and from the cells consisting of cellulose, which are filled with starch. This substance is very readily distinguishable from cellulose by its reactions with nitric and sulphuric acids. Concentrated sulphuric acid, which immediately dissolves cellulose, does not act upon this substance until the lapse of a very considerable time; thick cell-walls resist its action longer than thin ones; at last, especially on the application of heat, brown products are formed. Nitric acid of 1·2 spec. grav. oxidises it, even below the boiling point of water; the cells first swell, and the product is then soluble in potash; the cells soon separate from each other, and by the continued action of nitric acid a series of acids are formed, the final members of which are suberic and succinic acids. The first products are red, the colour becoming more intense when combined with alkalies; they are fusible at the boiling point of nitric acid, and soluble in alcohol. The same products are obtained, but in different quantities, when cork, the peel of Potatoes, or even the cuticle of Aloe lingua, which resists the action of sulphuric acid for several days, is boiled with nitric acid of 1.2 spec. grav. In the water-bath the corky matter is so readily oxidised by nitric acid that when cells of cellulose are mixed with its cells, the latter remain unaltered, on filtering the residue and exhausting with alcohol as soon as nitrous vapours cease to be perceptible. We sometimes meet with thick-walled cells of cellulose, which exactly resemble those of the stone of stone-fruits, but which also occur frequently in the bark of many trees and in the cork layer of the Oak. After deducting the cellulose, the ash and the substances soluble in alcohol, the corky layer of Potatoes was found to consist per cent. of—

| | |
|---|---|
| Carbon | 62.3 |
| Hydrogen | 7.15 |
| Oxygen | 27.57 |
| Nitrogen | 3.03 |

With nitric acid, 100 parts gave 6.2 parts of a fatty acid soluble in alcohol. Cork from the Cork Oak, carefully separated by excision from the brown matter running transversely across it, yielded per cent.—

| | |
|---|---|
| Carbon | 65.73 |
| Hydrogen | 8.33 |
| Oxygen | 24 54 |
| Nitrogen | 1.50 |

Another quantity of the same piece, treated in the same way with nitric acid, yielded 39.67 per cent. of a fatty acid and 2.55 per cent. of cellulose. Alcohol extracted from 100 parts of the same cork 1·15 part of a fatty matter difficultly soluble, and 5.4 of a fatty substance readily soluble in this menstruum. The cork was used for analysis without any previous treatment, and in a perfectly dried state. The composition given by Mulder for the cuticle of Agave Americana nearly agrees with the above, as does also that of cork given by Döpping. Exuberant growth of cork cells is common. In Cornus alba, and most trees, it is seen on the young branches; we either meet with a mere tumid state of the bark, or the exuberant growth increases to such an extent that rupture of the uppermost layers of cells takes place; hence as the exuberant growth proceeds to a greater extent in few plants only, lenticular glands are formed. In the Cork-Maple this exuberance is greatest on the lower branches, which are surrounded by moist air, so that a copious formation of Cork occurs upon them; it does not however form a connected layer, as in the Cork Oak. Exactly the same exuberant growth occurs in the Potato. The tuber is the end of an underground stem, which has become thickened; the stem is usually furnished with only a single layer of cork cells; the tuber itself has five or six such layers, frequently still more. Both on the stem, and especially at the tuber, small swellings are perceptible, even while both are quite young. A transverse section of these shows that they are formed by an increase of the cork cells; when coloured with iodine, they are not rendered blue by sulphuric acid; they are not altered by it, whilst the adjacent cells, which consist of cellulose, are immediately dissolved. On the further development of the tubers, the number of cells at these spots rapidly increases, and in much greater proportion than that of the other cells, so that the outermost become separated from each other. In the full-grown tubers, deep cavities or pits originate in this manner; these are covered with cork cells, but are not closely connected, so that the moisture of the soil is able to penetrate in an unchanged state to the more deeply-situated starch-cells. A process of decomposition commences at these spots, by which the agriculturist, on keeping them through the winter, frequently loses half his crop of Potatoes. The corky layer is difficultly permeated by water; it thus protects the plants, not only from liquid, which might penetrate from without, but it also prevents their drying. Potatoes, the surface of which is uninjured, may be kept for months without becoming the least flaccid, and losing scarcely anything in weight. The author has kept Potatoes in a drying chamber at a temperature slightly above 86° F. for months. Uninjured Potatoes lost about 3 per cent. in weight; the pitted ones almost twice as much. Potatoes which had been cut through the middle shrunk up in a few days, and when cut in slices they were almost perfectly dried in the same time. Even below 212° F. the cork of the Oak parts with all its water in a drying apparatus; and the small extent to which it transmits water and liquids is best shown by its common application to the closure of bottles filled with liquids. A layer of corky substance, in fact, prevents the penetration of moisture. Conviction may readily be obtained by means of iodine and sulphuric acid, that the most delicate vegetable hairs are covered by a thin layer of corky substance (cuticle). Fresh cotton-wool imbibes water with difficulty. If the corky layer be removed by chlorine, or some other oxidising agent, the wool may be moistened as readily with water as any other substance which consists only of cellulose. Before treatment with chlorine, cotton wool can hardly be impregnated with mordants; unbleached cloth becomes coloured in spots only, perhaps only between the fibres (hairs); whilst, as any one may readily convince himself by the examination of sections under the microscope, the cotton-wool fibre is coloured to the middle when it has been previously bleached. The author considers it as not improbable, that cellulose and the corky substance, with the fatty matters covering them, are secreted by the same cell; and when the cellulose has been absorbed, the corky substance alone remains; moreover that the corky substance forms the outermost part of the cell-wall, and connects (cements) the cells with each other, just as the walls of the cork cells are so thick, and so closely packed together, and so intimately connected with each other, that the wall belonging to each cell cannot be distinguished. This circumstance may also yield an explanation of the reason why the

cells of wood, the stones of stone-fruits, &c., are so readily separated from each other, which can be so beautifully effected by ebullition with nitric acid, especially when a little chlorate of potash is added to it according to Schultze's direction. *Ann. der Chem. und Pharm.* lxxv., p. 305; *Reports of the Berlin Academy*, March 1850, p. 102; *in the Chemical Gazette.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT

Stoves.—The increased amount of heat and moisture in these structures, aided by longer days and more powerful sunlight, is of course, inducing a development of new growth, and it is the province of the gardener to take care that this should be so directed as to make each individual plant approximate as nearly as possible to a perfect specimen. To this end they should be carefully and constantly watched, as every piece of neglect or mismanagement, however trifling in itself, tends in a proportionate degree to defeat the object in view. To lay down more than general rules is impossible; but it is necessary to urge three things upon every cultivator of plants; these are, observation, reflection and action—indispensable at all times, but at no season more so than at present. Premising that the plants have been carefully potted in suitable soils, the next point is situation, the temperature of which should be in proportion to that of the localities to which the plants are indigenous. Theory points out the advantage of a moderate bottom heat, as the earth is invariably some degrees warmer than the atmosphere; practice proves this, and proves also that an excess of heat is as injurious to the roots as to the tops. Ample space for every plant is indispensable, and it is impossible, if the plants are at all crowded, to make handsome specimens of them, however well they may be attended to in other respects. After securing the largest possible amount of light, as much heat and moisture may be supplied as the plants will bear without producing weak or spindling growths; taking this as the criterion, any individual plant which seems to require a warmer, or cooler, a moister, or drier situation, should be accommodated accordingly. Plants of a shrubby habit will require, besides the general direction of the shoots, the occasional stopping of any young growths which are unduly taking the lead; and climbers on trellises will require daily attention, to prevent their twining about the wires, and reaching the top of the trellis before the bottom is properly furnished. On the other hand it is not a good plan to keep the tender young growths tied in to their extreme points, as the practice has the effect of crippling them and preventing their progress; and the plants, especially of delicate species, soon acquire a stunted appearance. We prefer allowing the shoots of strong growing kinds to keep from 12 to 18 inches in advance of the tied-in portion, taking care, however, to prevent entanglement. Mealy bug, scale, and other insects which torment stove plants, increase with frightful rapidity at this season, and it is necessary to make great exertions to keep them even in check. Great care is necessary in watering newly potted plants to prevent the fresh soil from becoming soddened and soured. When any plant is observed to be in this state, it should be shaken out, repotted in sweet soil, and more carefully watered for the future. But if this operation is to be of any service, it must be performed without delay, as the roots of plants are speedily injured and destroyed if allowed to remain in contact with unwholesome soil. Thunbergias, Clitorias, and other climbing tender annuals, should be transferred at once from 4-inch pots to those in which they are intended to flower, in order that they may at once be furnished with a suitable trellis; the soil for Thunbergias can scarcely be too rich. Ipomœas of the annual kinds should occasionally be stopped, to induce the formation of laterals, and to equalise the strength of the plants. Abundance of light is necessary, to prevent weak long-jointed shoots, and when their growth is nearly completed, and the plants begin to produce flower-buds, the amount of air should be considerably increased, in order to prepare them for the cooler atmosphere of the conservatory. Ipomœa Learii and I. ficifolia are excellently adapted for the autumn decoration of the conservatory; for this purpose they should be potted in 10 or 12 inch pots, grown in stove heat till the end of May, and then removed to cooler quarters. The plants will flower more freely if they are kept in their pots than they will if planted in the soil; but there is an advantage in setting the pots on the surface of the soil, and allowing the plants to root through, as they are thereby enabled to guard themselves against accidental drought, and the nutriment they derive by the same means contributes to maintain a healthy appearance to a later period without interfering with the profusion of their blooms.

FORCING DEPARTMENT.

Vineries.—In the earlier houses, use the utmost diligence to keep down insects, especially the red spider; this attention will be particularly required in houses where the ripening of fruit renders it necessary to maintain a drier atmosphere. Where proper care has been taken to keep the enemy in check, little difficulty will be experienced; but if this is or has been neglected, the gardener will stand a chance of seeing the leaves ripen as soon as the fruit, and, of course, he must expect only a limited quantity of elaborated sap for the benifit of the future crop. Applying a wash of sulphur to the hot water pipes or to the surface of the flues, is the easiest and quickest method of destroying these insects. Melons.—In determining the number of fruit to be matured on each plant, exercise as much caution as you would in regulating a crop of Grapes; the proper medium of size, and perfection of flavour, depend on the plants being neither overstimulated nor over-cropped; the latter fault should be carefully avoided, as by it, not only are the fruits of the first crop inferior, but the chance of a second crop is rendered hopeless. Admit air freely during warm sunshine, and maintain a moist atmosphere by means of evaporating pans, and by sprinkling the paths and soil with water. Strawberries.—Continue to forward successions of this useful fruit, and by fumigating or syringing destroy aphides on the leaves and fruit of those which are in progress; this demands particular attention, as these little pests suck the juices out of the fruit while in its young state, which of course spoils its appearance, and prevents its swelling. With proper attention Strawberries should now be obtained as good as at any season; and every means which will contribute to produce fine well-flavoured fruit should be put in practice. Placing the plants near the glass, where they can have a free circulation of air, but at the same time be guarded against cold currents, is very important. The small weakly berries should be thinned out, leaving from six to ten of the most promising upon each plant. Up to the time when the fruit begins to change colour, manure water may be applied with advantage once a week, but after that it should be entirely withheld, and even clear water should be given more moderately. The flavour of the fruit very much depends upon careful attention to these points.

FLOWER GARDEN AND SHRUBBERIES.

The evergreens which were placed in the flower-beds during the winter should now be removed to the reserve garden, in order that the ground may be prepared for its summer occupants. The beds which have been filled with Crocuses, or other winter and spring flowering bulbs, are generally prepared for this purpose by taking up the bulbs about this time; such a practice, however, is very objectionable, on account of the foliage not being sufficiently ripened; and even if the bulbs are left in the ground until properly matured, and then taken up, the flowers are not nearly so fine or so strong as when left undisturbed. Every objection may be removed, and much unnecessary labour prevented, by laying a few inches of fresh soil on the beds for the summer flowers, without disturbing the bulbs. When this operation is being performed, the leaves of the Crocuses should be tied together in knots, that they may have time to mature themselves, without interfering with their successors. In removing the latter in autumn, they should be drawn out of the ground, in order to prevent injury to the bulbs beneath; at the same time, a portion of the spring top-dressing should be removed, sufficient to leave about 2 or 3 inches from the surface. By this method, gorgeous masses of flowers are displayed, both summer and winter, without the plants of one season interfering with those of another.

KITCHEN GARDEN.

Those who have sown their Leeks in a frame (according to former directions), with the intention of transplanting, should now get the ground ready for them. To produce this excellent vegetable in perfection, it should be grown as large and as quickly as possible, as the flavour is thereby rendered much milder. As the Leek is fond of moisture, its roots have a natural tendency downwards, deriving their nourishment principally from below the reach of the scorching sun of summer. The ground for this crop should be dug 18 or 20 inches deep, and the manure laid into the bottom of the trench, which should be previously loosened up with a fork. Of the planting we will speak in a future number. After this time it is better to sow Lettuce where it is to remain. The drills should be drawn 10 or 12 inches apart, and a few seeds dropped in at intervals of 8 inches; these patches, as soon as they are fairly up, should be thinned to one plant. It is better to avoid transplanting Lettuces in summer, as the tap root is liable to get broken in the operation, and the plants have to depend for their support on the surface soil, which for this crop is too much exposed to the drying influence of sun and wind. The plants are thus rendered deficient of that crispness and succulence which is so indispensable in this salad, and are much more liable to run to seed. In hot summers, transplanting will only succeed in such ground as that of a London market gardener, where the soil is very rich and moist.

HARDY FRUIT GARDEN.

Wall trees on which the fruit is set, should have their covering of Spruce or Yew branches gradually thinned; particularly where the latter is used, as the leaves continue there much longer than they do upon the Spruce. Commence the disbudding of Peaches and Nectarines by removing the foreright and back buds now; but defer the final arrangement for 10 days or a fortnight longer. After the blossoms are fairly set, advantage should be taken of a fine morning to wash the trees with the engine, for the double purpose of removing decayed blossoms, and destroying the green fly. Be careful not to get the trees too thick of wood; but if they are plentifully furnished with blossoms, thin out some of last year's shoots, wherever there is a superabundance of them; taking care to remove side shoots only, and in cutting them, to leave the lowest bud on each to produce a new shoot. In this manner, young wood may be obtained in parts of the tree which would be otherwise barren. Let particular attention be paid to hand-picking, and destroying caterpillars.

State of the Weather near London, for the week ending April 21, 1851, as observed at the Horticultural Garden, Chiswick.

| April. | Month & Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth | | Wind | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean. | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 18 17 | 29.891 | 29.865 | 64 | 31 | 47.· | 48 | 46 | S.W. | .00 |
| satur. .. | 19 18 | 30.031 | 29.749 | 65 | 34 | 49.5 | 48 | 46½ | S.W. | .00 |
| Sunday .. | 20 19 | 29.864 | 29.462 | 63 | 48 | 55.5 | 48½ | 47½ | S.E. | .20 |
| Monday .. | 21 20 | 29.549 | 29.319 | 65 | 48 | 56.5 | 49½ | 48 | S.W. | .56 |
| Tues. .. | 22 21 | 29.4·0 | 29.373 | 57 | 35 | 46 0 | 50 | 48½ | N.E. | .56 |
| Wed. .. | 23 22 | 29.726 | 29.082 | 64 | 28 | 51.0 | 48 | 49 | S.W. | .00 |
| Thurs... | 24 23 | 29.786 | 29.7·2 | 63 | 39 | 51.0 | 50 | 49 | W. | 00 |
| Average .. | | 29.758 | 29.629 | 63.0 | 39 0 | 51 0 | 48 8 | 47.8 | | .72 |

April 18—Cloudy and fine; mild; heavy dark clouds.
— 19—Fine; very fine; clear at night.
— 20—Very fine, hazy; rain commenced 5 p.m.
— 21—Cloudy and fine; rain at night.
— 22—Rain throughout.
— 23—Fine, very fine; cloudy.
— 24—Slight haze; very fine throughout; clear at night.
Mean temperature of the week, 3½ deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 3, 1851.

| April and May. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 27 | 60.2 | 37.5 | 48.8 | 13 | 0.12 in. | 6 | 1 | 4 | 2 | 5 | 4 | 3 | 1 |
| Mon 28 | 61.5 | 37.1 | 49.3 | 10 | 0.28 | 1 | 4 | 5 | 4 | 4 | 4 | 1 | 2 |
| Tues. 29 | 62.0 | 39.3 | 50.6 | 7 | 0.75 | 2 | 3 | 5 | 2 | 4 | 3 | 1 | 4 |
| Wed. 30 | 63.0 | 42.0 | 52.5 | 9 | 0.41 | 3 | 3 | 6 | 1 | 3 | 4 | 1 | 3 |
| Thurs. 1 | 62.6 | 41.6 | 52.1 | 9 | 0.51 | 1 | 3 | 5 | 2 | 5 | 4 | 1 | — |
| Friday 2 | 64.2 | 42.2 | 53.2 | 8 | 0.72 | 1 | 4 | 6 | — | 5 | 5 | 1 | 2 |
| Satur. 3 | 63.0 | 42.5 | 52.7 | 12 | 0.30 | 3 | 4 | 7 | — | 5 | 3 | 1 | 1 |

The highest temperature during the above period occurred on the 28th, 1841—therm. 81 deg.; and the lowest on the 27th, 1835, 29th, 1836, 28th, 1846, and 1848—therm 27 deg.

## Notices to Correspondents.

Asphalte: *E Y L.* We object to this, because of the bad taste and smell it communicates to water long after it is applied. Gutta percha is much cheaper than lead; but we cannot say their relative price. You will learn by applying to any one of the thousand dealers in the former. We have no objection to it.

Aquatics: *P W A.* Water Lilies do not produce scum upon ponds. It is produced by the presence of minute Confervæ, and can only be cured by putting the water in rapid motion, or by keeping ducks and such birds to eat it.

Bees: *Anna.* The last named hive by all means, and that sold by Milton is the best we have seen. The others are toys, very costly, and they rarely answer. *Y.—P T O.* If the hive is a wooden one, take out all the old comb, and it may be used again; but if it is a straw one, it is better to put it aside and use a new one. *Y.*

Books: *J H S.* Dr. Lindley's "School Botany"‡

Cinerarias: *Oxon.* The colour you name is by no means a scarce one among Cinerarias. We have them now of all shades of blue.

Clematis: *Anon.* What is C. odoratissima? If by that name you mean Cl. montana, then we presume that its roots are too much confined; it is a very rank grower, and wants a great deal of food at the root.

Fancy Dahlias: *E H.* You will find a list of the best of these at p. 72 of the current year's volume.‡

Gardeners out of Place: *G Kelly.* It is unreasonable of you to expect such letters to be answered. The absence of a reply is in fact an answer—in the negative. You can have little knowledge of the world not to know that time in England is too precious to waste in needless letter writing. As to putting a penny stamp in your letter, that is wholly unnecessary: nobody expects you to do so.

Horse Chesnuts: *J N V.* The deformities are caused by the young branches having been injured last year on one side; probably about midsummer. In attempting to repair the injury by rapid growth, the wounded side has lengthened more than the sound side, and hence the curves. What may have produced the injury we have no means of judging. Has any one been firing shot among the branches?

Insects: *J N C.* The insects in your Cucumber frame are a very minute species of mite (Acarus), which have, most probably, been reared in the vegetable manure. It would be well to take up the plants, and saturate the earth well with boiling water; and each plant might then be very closely covered with a small frame, and well fumigated. *W.—H W.* The Peas sown are sadly infested with a species of millepedes, or thousand legs (Julus pulchellus). The ground must have been very foul; it would be well to serve it as recommended in the last answer, and then re-sow it with Peas for a later crop. You may also entrap the millepedes in great quantities, by laying slices of Turnip on or under the surface of the ground. *W.—W S.* The minute specks on the under-side of the Camellia leaf may possibly arise from the punctures of some insect (none of which are now visible), but, we apprehend, rather from atmospheric causes. There was no insect in the quill, from the Cucumber frame, one of the corks having got loose; but see the two preceding replies. *W.*

Mistletoe: *P T O.* It will take and grow freely on the Apple or the Thorn. Slit the bark and insert a seed or two here and there, where you wish it to establish itself, which should be on the under side of the branches, or the birds will eat the seeds.‡

Names of Plants: *G W.* Gongora truncata and Oncidium pubes.—*Erzeroum*, 939, Cakile maritima; 934, Setaria italica; 922, Vitex Agnus Castus; 931, Phytolacca decandra; 923, Plantago Psyllium; 918, Siegesbeckia orientalis; 921, Pancratium illyricum; 794, Hypecoum erectum; 902, Xanthium strumarium; 894, Linaria dalmatica; 895, Bidens tripartita; 860, Prunella vulgaris; 843, Serapias lingua; 845, Mespilus germanica; 853, Berberis vulgaris; 839, Erythræa Centaurium; 838, Tilia europæa; 835, Polypodium vulgare; 833, Polytrichum commune; 830, Ruscus Hypoglossum; 831, Aristolochia Clematitis.

Salvias: *Tyro.* It is doubtful whether the blue Salvia would succeed treated in the manner mentioned at p. 246. It might, however, be worth while to try the experiment.‡

Vines: *A Constant Reader.* You state that so long as dung beds were made on the border, the Vines bore well, although the surface was as hard as if concreted; and that since the border was broken up and renewed at top, there has been a great falling off in produce. It is evident from the bunches curling up and proving blind, like the specimen received, that there must be a fault somewhere. It is not in the management of the house, for according to your statement that is proper enough; nor is it in the breaking up and top-dressing of the hardened border, for this process is often beneficial. But your Vines were formerly accustomed to warmth at root from dung-beds—these you have discontinued; and no improvement, in other respects, can possibly make up for the loss of heat. With regard to the shoots not bleeding when you tried to ascertain the flow of sap by cutting after the buds had broken, that is no criterion of their being in bad health, for the expanding leaves generally appropriate all the sap, even when the roots are in full action, which cannot be the case whilst the border is very much colder than the house. This condition, the sole cause of your complaint, you will doubtless remedy in future.‖

Weigela rosea: *Notts.* Cuttings of the young wood inserted in silver sand now, and covered with a bell-glass, will be found to strike root freely.‡

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Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

DESICCATED ANIMAL MANURE.—This Manure, which has proved so eminently successful in the culture of both Cereal and Green Crops, can now be had of the Manufacturers, J. M'CALL and Co, 60, Spring Gardens, Manchester; RITCHIE and M'CALL, 137, Hounds-ditch, London; and of all Agents. Price 6l. 10s. per ton, including bags delivered on the rail in Manchester.—Copies of Analysis and Testimonials forwarded post free on application. Agents wanted.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ANNUAL COUNTRY MEETING of 1851 will be held, by the gracious permission of Her Majesty and Prince Albert, in the HOME PARK, WINDSOR, in the week commencing MONDAY, the 14th of JULY.

Copies of the Prize Sheet, containing the terms, conditions, and amount of the respective Prizes, and the Rules of Exhibition, and also copies of the requisite printed Forms of Certificate, may be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates must be returned, filled up, to the Secretary, on or before the **17th of May**, the Council having decided that in no case whatever shall any Certificate be received after that date.

In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

By order of the Council,

JAMES HUDSON, Secretary.

12, Hanover-square, London, April 26.

# The Agricultural Gazette.

*SATURDAY, APRIL* 26, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, May 1—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 7—Agricultural Society of England.
THURSDAY, — 8—Agricultural Imp. Soc. of Ireland.

THERE can be no person, whether actually engaged in any profession or merely proposing to join it, but must acknowledge the need of some education, in order to its successful prosecution. This may safely be said, notwithstanding the outcry which is being raised by many against the cultivators of the soil in connection with this subject. We are persuaded that there is not a tenant farmer in the country but will insist as heartily as any agricultural chemist of the day on the necessity of AGRICULTURAL EDUCATION. The difference between the two relates not to the need, but to the nature of the education required. In our own country, the Royal Agricultural College at Cirencester has by no means prospered as it has deserved; and, in the State of New York, Professor JOHNSTON tells us* the establishment of an agricultural college, at the expense of the State, receives its strongest opposition from among the farmers of the National Assembly; but in neither ought the feeling thus indicated to be regarded as altogether hostile to the cause of agricultural education. Professor JOHNSTON seems to attribute it to a personal feeling of pride or jealousy on the part of the agricultural body. "To provide more instruction for my son in the business I myself follow is to acknowledge my own want of information;" and this, he says, is a degree of humility which the mass of the people cannot bring themselves to exhibit. We hardly think that the indifference of the agricultural body to those facts in chemistry and other sciences which bear upon their own professional practice, is to be attributed to anything so paltry and childish as this. It is rather due to the lessons which, whether accurately or not, they have gathered out of long experience as to the real source of profit in farming. And there is, as we believe, so much truth on both sides of the controversy between farmers and philosophers relating to this subject, that, if it were to be treated controversially, we believe either side of the dispute might be safely espoused: so that while addressing farmers on the subject, who already hold whatever is true on their side of the question firmly enough, one might be content to insist almost exclusively on the advantages of a scientific education for the agricultural apprentice; on the other hand, in addressing the Professors of an Agricultural College, who are already far more sensitive on the subject of these advantages than ourselves, we should be inclined to follow the example of their opponents, and insist, almost exclusively, on the necessity for an education of the body as well as of the mind. We have however, to treat the matter not controversially but positively, and the whole truth, therefore, needs to be stated. And so the advantages not only of the skill to be acquired by habit and practice in the field, but of the abstract truths which may be learned in the class-room, have to be insisted on.

We must, however, be satisfied to accomplish one half of our task at a time; and if for the present we join the practical farmer in an address to the teachers and professors of our agricultural colleges and schools, we shall probably give expression to his feelings on agricultural education, or at least to so much of them as we ourselves concur in, somewhat as follows: "Money making is a distinct art and profession, not necessarily incompatible with farming, nor indeed with any other of the numerous occupations in which our neighbours are succeeding or failing around us—but distinct from them, depending for its success on rules and habits of its own. We do not say that the annual balance-sheet, whether of a farmer or a manufacturer, is dependent wholly on his knowledge of this art; it is, no doubt, dependent on the plan and details of his year's proceedings; its losses may have arisen from a plan of operations opposed to natural laws, of which he was ignorant, or from faulty details, by which he has been involved in a wasteful expenditure—we do not say that a knowledge of natural laws, as they are arranged under the different sciences, might not have increased his gains; nor that a little acquaintance with the ordinary practice of his profession might not have diminished his losses—but we do say, that men with the widest general knowledge, and the most accurate acquaintance with farm practice, may nevertheless fail of attaining the chief end of farming; and we do say, that the most accomplished student ever sent out by an agricultural college has yet to learn what professors cannot teach him before he can be sure of realising that test of agricultural perfection—farm profit. This is a point on which students should be informed. You can, we will admit, teach them both the right plan and the correct details of an agricultural year—but they must also be taught that the annual result may be bad, notwithstanding a plan and details, and even good in spite of them, according to the *business habits* which they bring to bear on their superintendence: for farm profits depend upon the personal supervision by the master of every minute and penny spent, far more than upon anything else. And skill in marketing, and patient industry in the daily superintendence of the details of an annual routine, cannot be communicated at agricultural colleges."

This expresses, we believe, pretty nearly the feeling of the practical farmer; and there is nothing stated in which we do not fully agree with him: the error consists not in the opinions themselves, but in the idea that they are either opposed to, or opposed by, the advocates of a scientific agricultural education. Their reply must be reserved for another occasion.

* Notes on North American Agriculture, Economical and Social. By J. F. W. JOHNSTON, M.A., &c. Wm. BLACKWOOD, and SON, Edinburgh and London.

## ON THE INTERLINING OF CROPS.

BISHOP OF ELY.—"The Strawberry grows underneath the Nettle and wholesome berries thrive and ripen best neighboured by fruit of baser quality."—*Henry 5th.*

LIEBIG says, "It is evident that two plants growing beside each other will mutually injure one another, if they withdraw the same food from the soil;" and he adds, "Plants will, on the contrary, thrive beside each other, either when the substances necessary for their growth, which they extract from the soil, are of different kinds, or when they themselves are not both in the same stages of development at the same time."

The interlining of Beans with Cabbages or Turnips has been practised for a long time with success in the island of Jersey and in England by the Earl of Lovelace, Mr. Hewitt Davis, and Lord St. John of Melchbourne, and it is also a common practice to interline in our gardens. But this is so done, not always on the conditions that Liebig supposes requisite for the full perfection of their growth. In the island of Jersey, and in our gardens, two crops are grown together, and at the same time; and this is also the practice of Lord Lovelace, but they appear rather to have been so grown as being the intermixture of a tall and a low growing plant, than of having been adopted as possessing the conditions of extracting from the soil different kinds of substances. Mr. Hewitt Davis and Lord St. John seem to have adopted the intermixture upon the same principle of tall and low-growing plants; but these, I must think fortuitously, under the second condition of Liebig, of both not being in the same stages of development at the same time; they come indeed rather under our denomination of stolen crops, and perfect their growth, and occupy the ground after the removal of the plant of prior development. Had a scientific view been entertained by these intermixtures, there does not appear to me any reason why two low-growing or two tall-growing crops should not have been interlined on the first condition of Liebig, that of drawing different elementary matters from the soil. I do not wish to say that the plants so grown do not use up different kinds of, or various proportions of the same elementary matters, for possibly no two plants of different families draw the same matters from the soil. I am, I believe, drawn into a false term; I should say use up or assimilate, for it is highly probable that plants have no power of choosing what they shall draw from the soil; they must receive what the water they do draw up by their roots contains in solution, be it nutritious or injurious. We know if poisons are so offered to them they cannot refuse them; they, however, possess the power of separating the nutritious from other matters which they so receive, and which I should think is purely a chemical affinity, derived from the parent plant, and first implanted in it by Him who willed its being.

It is under the two conditions stated by Liebig that I propose to submit to the consideration of the readers of the *Agricultural Gazette* the subject of interlining crops of the most distinct families; that is, those the advocates of an alternate husbandry consider, in the practice they recommend, as such, and which opinion is borne out by their chemical analyses. I mean those of our Cereal and culmiferous families, and I do hope that in instituting the inquiry it will be taken up by some one better qualified to discuss the subject.

The successful interlining system must depend on those two conditions of Liebig, and upon the same principle on which is founded our rotary system as regards the first condition, the power of assimilating either different elementary food, or different proportions of the same food; the same condition, indeed, holds (and there is then in truth but one condition in two parts) with plants not in the same stages of development at the same time; for it has been found that the same plant, at different stages of its growth, does assimilate various proportions of elementary matter.

It cannot be questioned that those matters a plant does not appropriate must be returned either to the air through its leaves, or to the soil through its roots, we cannot attribute either to the leaves or to the roots a discriminating power of choice; if they are returned by the roots, agreeable to the experiments of Macaire, they may be retained in the soil for future crops, and thus become available in our alternate husbandry; if, on the contrary, the leaves discharge them into the air, they are, except in so far as they may fall to the earth and be absorbed by the soil, lost to the future crops under the alternate system; but they become immediately available in the interlining system, for there are plants sufficiently near to lay hold of them and appropriate them.

It is admitted that there are certain matters that the plants get rid of through their leaves; the interlining has then this advantage over the alternate one of giving to its vegetation the matters thrown off into the air, and it enjoys equally with the alternate husbandry the advantages it derives from the change of crop in its vegetation, taking up those matters which, according to Macaire, are discharged by the roots; for the interlining system is also an alternate system.

I think the experiments of Macaire require confirmation. I do not see that the roots of plants are supplied with excretory organs, but we know that the leaves are; we know that they thus get rid of certain gases; we know that they thus part with the water of perspiration, and we have no reason to doubt that they may also so discharge even such inorganic matters as do not enter into their system. Liebig says that fluids in a state of evaporation carry with them bodies which are not of themselves capable of volatilisation; his words are—"A liquid during evaporation communicates the power

of assuming the same state in a greater or less degree to all substances dissolved in it, although they do not of themselves possess that property." And it has been adduced as a proof of the circulation of the sap that they do so get rid of the colouring matters they have been artificially made to imbibe by their roots. It is stated that the coloured ascending fluid has been observed to the leaves, that it has there lost its colour and been seen to descend from the leaves colourless or as a milky fluid. Poisons appear also to be discharged by the leaves.

My experiments have tended to confirm the views I submitted in the *Agricultural Gazette* of 1844, on this subject; I can alone attribute the greater products under peculiar circumstances of certain garden experimental crops to their receiving a greater supply of nutriment from the air through their leaves, this nutriment having its origin in the soil, the air being the medium through which it is conveyed to the leaves; and its escape from the earth, as well as its composition in the earth, being facilitated by the stirring of the soil about the plants. Although the opinion of the roots having the power to refuse matters that do not enter into the composition of plants has been exploded; yet if we admit the immediate action of leaves on the matters offered to them, we cannot, I think, deny them a power of discrimination and of choice in what they imbibe.

But whether they have this discriminating choice, or whether they must take in all that is offered to them, and then throw off those matters which the plants do not assimilate, the matters so discharged or so refused will be found floating in the atmosphere surrounding them, disengaged and ready to be taken up by any contiguous plants of different elementary constitutions.

By these considerations, by observation, by the success that has attended the interlining of green crops of others, and by small experiments of my own, I have sufficiently satisfied myself of the probable profitable return from the interlining of cereals and vegetables, if in the practice insuperable difficulties do not occur; and I have therefore this year placed under this cultivation nearly five acres of land. My expectations are that I shall derive one-half more return than had each crop been grown separately; at the same time, however, more labour will be expended. The crops interlined are Cabbages and Wheat.

In a future paper I propose to give a detailed account of my operations and of the expenditure on them, and also those attending a wide-rowed tillage of Oats, extending, I expect, to about eight acres. In this, in answer to a question put by "J. H.," I will say I do not use one-half the quantity of seed Oats usually sown broad-cast in this country. *J. M. Goodiff, Granard, March 25.*

## THE COTTAGE OF THE AGRICULTURAL LABOURER.

The slow and gradual upward progress of the social system renders it very probable, if not absolutely certain, that any considerable amelioration of the lowest class of society must apply to a generation yet unborn, and consequently the comfort and social happiness of the present existing race must chiefly depend on the humanity and kindness of their employers, whether strictly immediate, or not. It is most proper and just, that wealth be used in providing for the maintenance and comfort of the labour by which it is produced; and surely no employment of it can be so pleasing to humanity, or more agreeable to the feelings of a just benevolence.

The social system of the agricultural employment renders it more variable, and consequently less comfortable than other sources of labour. The occupier of a farm, even under a lease, has only a present interest in the holding, and he pays no attention to permanent objects, further than they serve his temporary interests. The buildings on the farm are only used to serve a certain purpose, which is often far removed from any idea of comfort to the inmates, and it is certainly not his province to produce objects that would remain for the benefit of others, after his removal from the occupation. He gets no yearly income from the hovel of the labourer, nor from any expenditure he may make upon it, and therefore it occupies neither time nor attention from him. And no blame can be attached to the farmer, the system is in fault, which leaves permanent objects to be cared for, by a temporary interest, and gratifies a sordid purpose at the expense of justice and humanity. This neglect on the part of the landowners, has been very instrumental in producing the wretched hovels or sheds in which the agricultural labourers are lodged, and which form a blot of no small magnitude on the farm practice of some of the farming districts of Northumberland, and the South of Scotland, where the genius of agriculture may be truly said to have fixed its chosen residence. Here the land of the very best quality, the most complete Turnip farming, the highest rents, and the richest and most enterprising tenantry in Britain, exhibit the most wretched specimens in the kingdom, of the accommodation that is given to the labourer, who is the moving power, the sinew and strength of every active operation. The houses are of one apartment, about 20 feet by 16 feet in size, where a family is huddled together, as in a pinfold, without any comfort of separation, or the means of preserving the common decencies of life. Immorality becomes a part of the system, and is thus engendered and fostered from the very first entrance into life. The house of one apartment is nothing better than the stall of a stable, where the animal eats and sleeps in the same enclosure. Rational creatures are in this way nothing removed beyond the beasts that perish; they labour and exhaust their power, and derive the rewards of toil in one respect on an equality with the dumb brutes.

It is the bounden duty of the landowner to provide the proper accommodation of the labourer, as it forms a part of the permanent furniture of the farm, for the use of which the occupier pays a stipulated yearly rent. And as the landowner has both the means and the power of making the proper and necessary arrangements that are consistent with humanity and congenial with benevolence, remarks on this subject may be applied to their own individual sense of social propriety. Bad accommodation forms a very large part of the illiberal treatment which alienates the affections of the lower orders, begets carelessness, and produces the evil feelings of dislike and revenge. The contentment that is produced by the comfort and convenience of a dwelling, goes a long way in removing other irksome circumstances of labour. The garden affords occupation and amusement, and a food in vegetables, which is of all others the most innocent and agreeable to the animal functions. A neat, clean cottage, which is provided with the requisites to yield that appearance, forms a very pleasing attraction to the weariness of toil, and confirms the natural attachment to family and home. Such an appearance begets the idea of being somewhat raised in the scale of society, which exerts a very powerful and lasting effect in producing the habits and feelings of independence, in raising the notions of respectability, and in assuming and sustaining the form of character which is equally useful in the fear of its instability and in the dread of its loss. This comfort of the dwelling, along with the healthy employment and beneficial produce of the garden, will banish the depression of spirits that attends the sight of misery and the want of comfort after the toil of the day is over, and will employ the vacant mind apart from the sources of wickedness and the haunts of dissipation. Those pests of society, in the form of ale-houses and beer-shops, are supported by the want of just attraction being afforded in the proper place, where the attention may be fixed and the occupation riveted.

The first step towards the comfort of civilisation is the decent separation of age and sex, or the providing of separate apartments. And the first step in making this division consists in separating the sitting and sleeping apartments, or in having apartments for both purposes; and it is most agreeable with convenience and comfort that the sleeping apartments be removed from the ground floor, and that they are most airy, dry, and comfortable, in the second story of a building. The business of cooking creates a disagreeableness to the persons who are not employed in the operations, and is incompatible with the cleanliness that is essential to the comforts of life. A bed in the sitting apartments always emits a stale odour, that is both offensive and unhealthy, and creates much additional labour in the frequent alterations of the furniture, and the sweepings of the apartment. One single apartment for the whole family is utterly incompatible with the maintenance of the decencies of life, than which nothing more strongly contributes to the prevention of immorality, and the consequent commission of crime. One apartment for general purposes demands another room, for the purpose of some little degree of retirement.

Another most essential requisite to the comfort of any human dwelling, is the having some back apartments where the scullery-work is performed, and where the utensils are kept from view. No part of provision is more necessary than this back accommodation, without which the kitchen or common apartment will be always dirty and encumbered. And these apartments must be in number sufficient to yield the amount of accommodation that is required, or the purpose will be left undone, and the object will not be promoted.

It must be conceded to be a very beneficial arrangement by which the keep or use of a cow in milk forms an item in the wages of the labourer. No substance in common use can be compared with milk for the rearing of a family of children; and, where it is not required in the original form, the use of it in butter and cheese is always available. But in order not to raise a large village of back buildings attached to the cottages, we think it is preferable that the labourers' cows be housed at the farmery, and have the common food of the farm. And in case of the agreement being for the use of a cow, it may be inferred that when one animal goes dry, another giving milk will be afforded, which will continue the supply of the article to the labourers without interruption. The keeping of a pig is most absolutely necessary to every labourer; and when a quantity of Potato-ground in the farmer's field forms a part of the wages by valuation, the refuse of the produce, joined with the garden stuffs, may be arranged to bring forward two pigs yearly, and will require some Beans and Barley-meal to finish the process of fattening. This article is of a vast advantage to a family, and should never be neglected. The late William Cobbett very pithily observed, that some flitches of bacon being prepared for the winter's use, prevents stealing and poaching much more effectually than whole volumes of penal statutes. It is socialism of the right sort; it softens the temper, restrains the desires, and promotes the domestic harmony. A sty for the pig is a provision of the first importance in arranging the back premises. Poultry can also be kept in a small number, and one apartment will accommodate both ducks and fowls.

Poultry require much warmth, and when duly provided to them, eggs and young chickens can be got almost throughout the whole year. In this case, the poultry-house is placed in the centre of the cottage and between the fire-places, in order to enjoy the warmth that will arise from the fires. The door opens from the back area, and the house may be used for poultry only, and be fitted for hatching and laying eggs. The fuel, either wood or coals, must be under a roof and within a lock and key, and requires a small apartment. The process of washing the clothes of the family and the necessary utensils require a wash-house of tolerable dimensions, where all dirty work will be performed. The ashes must be carefully preserved for manure, and require a house for that purpose.

We hold that a piece of garden ground for the purpose of raising some fruits and vegetables, is not only useful, but indeed necessary, to every rural occupancy. Without it, the country is changed into a solitude, and the enjoyments of it are shut against the very persons who are the chief instruments in producing its pleasures. The average extent of a labourer's garden may be fixed at one-sixth part of an acre. This small expense falls on the landlord, and, certainly, no outlay can be better expended. The front of the cottage may range from east to west, in the front of the garden, and at a small distance from a road. The position should be dry, and the situation airy; but as these advantages cannot be got at pleasure, it is proposed to place the entire area of the cottage building on a terrace, or to raise the interior of the cottage above the outside level, and to ascend by steps. It is essential that a dry foundation be obtained, and the floors may be raised by a mass of broken stones to the height of the flooring, from the depth of the excavation. It has been frequently recommended as an absolute rule, that the diagonal line of all cottages run north and south, in order that the sun may shine on every side of the house, between the rising and setting, for the purpose of promoting warmth and evaporation. Such an advantage is certainly very desirable; but circumstances will very much impede its general adoption. It will be most convenient when the front of the cottage runs parallel with the road, unless the point of exposure should be insurmountably objectionable. A few trees round the cottage, or a clump on the most exposed side, will be very ornamental.

A porch is a very useful appendage to a cottage dwelling, as it breaks the dull uniformity of a bare wall, and it shelters the door from stormy quarters, and also affords some little inside room. If possible, the garden should surround the cottage; but if the situation prevent that object, it should at least be close to the house. An isolated garden is not so attractive, and is never so well managed, as when it surrounds or closely adjoins the cottage. A spring of water may be found or sought near to the cottage, and may be brought to it in a rill, or in a pipe; if not, a well must be sunk, and a pump erected, and then two cottages may be joined together, and the well can supply both habitations, by distribution, in the back yard. The provision of water is the most indispensable of all requisites to human life.

Every cottage should contain two apartments on the ground floor, and three bed-rooms in the second story, which may be wholly in the side walls, or half in the roof. It will be advantageous that there be fixed in each bed-room a bed of four posts with boarded bottom, and remain as the furniture of the cottage, which will very much assist the labourer, and add very little to the original cost of the building. The back premises are a pig-sty, fuel-house, wash-house, house for ashes, poultry-house, and privy. They are built as lean-to's, on the posterior wall of 10 feet in height, and slope to 6 feet in front. The water from the roof of all the houses is collected into a tank, from which it is used to assist the drainage of the house.

The cottage must have a door in front and behind to promote ventilation, and secure cleanliness: the doors must not be placed directly opposite each other, so as to cause a straight current of wind.

Two cottages are very economically joined together sideways. Squares, circles, and polygons, have been devised to contain a number of dwellings—but such congregations are most generally productive of rudeness and immorality, and are destructive of the simplicity which flows from a rural education. Much idle gossiping is occasioned, and tale-telling gives rise to perpetual heats and strifes; except on very large farms, more than two cottages joined together is not eligible.

Such an important subject as the comfort of the labouring population, which is the source and support of every kind of wealth and prosperity, cannot be let go without an earnest recommendation that the cottages be made the proprietors' concern, and not left to the mercenary care of gain in the charge of the temporary occupier of the land.

No furniture or landed property can be more valuable to the possession of it, or add more to the beauty of the landscape, or afford a greater degree of satisfaction to a benevolent mind, than a number of comfortable and economical cottagers' dwellings erected in the required positions, and inhabited by families of health and prosperity, warmed with gratitude and chained by affection to the soil of their birth. And these chains are by no means of difficult fabrication, nor are the materials costly, or the workmanship laborious. An adequate provision and comfort to enjoy the use of it constitute the whole sum of the amount—the latter item giving a relish which a greater quantity of the former would not impart. The father of children looks more to their comfort than he regards his own, and he feels more for his wife's labour and inconvenience in the awkwardness of the dwelling,

than he does for his own daily toil. The pleasures of a neat home naturally console him for the labours of a dreary day, and the joys of a cheerful fireside commit the cares and toils of life to a drowsy forgetfulness. On the other hand, the sight of misery, after a hard day's toil, depresses the spirits, and impresses the idea, that do what he will, the labourer must be comfortless, and too often drives him to the beer-shop, where the artificial exhilaration leaves only a greater despondency. But when he sees the intention of making him comfortable evinced in the erection of a convenient dwelling, he will immediately add to it his own industry, as far as he is able, and will avail himself of the means that are offered of making himself more respectable by his own exertions. The beginning has only to be made: and if our observations shall in any way lead to the very desirable consummation, the labour will be cheerfully rendered. *J. D.*

## ON THE TULLIAN SYSTEM OF CULTIVATION.

No. II.—Satisfactorily assured, from repeated experiments, that the grain crop in rows, at sufficient distances to admit of working the ground through the whole period of its growth, will be more productive than if sown in any other way;—convinced that it is as capable of becoming a fallow crop as any green crop, and that it will be found as superior to the broadcast crop as the Turnip has been proved to be; and decidedly of opinion that an increased fertility of the soil will be a certain consequence of a continuous fallowing,—I was right well pleased to find the able pen of Mr. Rawstorne again employed in recommending the practice of Tull. He will, I feel assured, be pleased to find that he does not stand alone, although sustained by one so little worthy of being his comrade, and that an old soldier in the cause is again in the field; and not on the broad sheet alone, but on the still broader bosom of our mother earth, and on a scale, though humble, yet sufficient to prove the principle. As pertinent to my purpose, and as his observations may have escaped from the memory of the older, and may not have been seen by the later readers of the *Agricultural Gazette*, I will take leave to give two extracts from a notice of this system by Mr. Rawstorne, in the *Agricultural Gazette* of the 10th of March, 1849; he says, referring to the "New Husbandry:"

"Mr. Evelyn tells us that, take of the most barren earth you can find, pulverise it well, and expose it abroad for a year, incessantly agitated (that is, stirred often), it will become so fertile as to receive an exotic plant from the furthest Indies, and to cause all vegetables to prosper in the most exalted degree, and to bear their fruit as kindly with us as in their natural climates." And he asks, "What effect did Mr. Tull produce by this stirring of the land? Merely this, that he grew on the same land in succession, for 12 years, excellent crops of Wheat, without an atom of manure."

Listen to this, ye farmers of limited capitals, and learn how to meet a fallen market and drive the foreign corn-grower from our coasts. But you will not credit it; you will not believe chemists that, in admitting the atmospheric air to your soils, and which can only be done by keeping them open to receive it, the organic matters floating in the atmosphere enter it, and are laid hold of by the clayey particles of the soil, and retained by them until, by superior attraction, or by some other more powerful property of vegetable life, they are deprived of it by your growing plants, while this same admission of air at the same time disengages and renders soluble the inorganic matters which have been shut up in bonds of iron since the creation, that the whole act together to supply your crops with the elements of their formation. You may not credit the chemist, but you must have confidence in your own practice; you know that in diligently fallowing, by repeatedly stirring for twelve months, a clay soil, you render it capable of doing what it would not have done before, of producing a good crop of Wheat. This has been done to get rid of weeds, no doubt a necessary object, and it has long been thought that this was the only object it accomplished; and I have known some of our older writers express astonishment that such fertility should be caused by turning such minute vegetable matters into the ground. We now know better, and ascribe not the fertility to the weeds, but to a never failing and abundant source of fertility, the atmospheric air, with what it holds suspended in it. If then, by allowing a free inflow of atmospheric air for one twelve months, we induce a fertility that gives us a crop where we would not else have had it, why should not the same means employed a second year give us a second crop, and so on in succeeding years, till we had exhausted the whole of the inorganic matters of the soil within reach of our spades or ploughs; and Liebig says, thousands of years have been required to break down the soil, and thousands of years will be required to exhaust its alkalies. And he adds, "A single cubic foot of felspar is sufficient to supply a wood, covering a surface of 26,910 square feet, with the potash required for five years." But can they ever be exhausted? they must continue to exist in the earth, in the air, or in the water, for they cannot be annihilated. According to Liebig, those that have become soluble will be exhausted by injudicious cropping, and the land rendered sterile; but by a year's fallowing, that is, the land placed in a favourable position, by continual exposure to the atmosphere, to be acted upon by its air with the matters it contains, it has its crude alkalies rendered soluble and gives them up in sufficient quantities for a crop: he says, "The fallow time, as we have already shown, is that period of culture during which land is exposed to a progressive disintegration by means of the influence of the atmosphere, for the purpose of rendering a certain quantity of alkalies capable of being appropriated by plants."

We can attribute the neglect of fallowing, which Mr. Rawstorne complains of, to nothing but the want of a due appreciation of its effects, and to an ignorance of its manner of operation; in pressing on the agricultural world then the importance of a continual fallow, I must endeavour to show its *modus operandi*, although I am aware in doing so that many of the readers of this Paper are better acquainted with the subject than I am, but they may pass it over. I write for those who are not.

Whatever may be the age of this world we inhabit, it is unquestionable that before the time of the creation of the present races the earth had taken on much of its present appearance, that the fertile lands had been formed by the gradual mouldering down of rocks. We cannot doubt this, for we see the same operations of Nature going on before our eyes every day; naked rocks rise from their ocean bed, naked as the new-born babe, hard, and apparently impenetrable, but by the varying actions of the air, of the rain, of heat and of cold, their indurated surfaces soften, scale off, and moulder down; washed by the falling rain and their own gravity, they sink into the hollows, and vegetation commences; by the same actions continuing on the fresh exposed surfaces, in conjunction with, and aided by, the decaying vegetables, the quantity and depth of soil in these hollows is increased; the lofty trees now tower in their height, and the bare and naked rock has become an isle of beauty fit for the residence of man. The same effects of the same causes are to be seen in the crumbling ruins of a feudal age. Time walks triumphant, with his all-subduing agencies, over the finest forms of sculptured art; their fair proportions still remain, but they are all that do remain, their sharp outlines are all rounded off, their whole form deeply corroded, roughed, and pitted by those atmospheric influences which Heaven has given to man, that by his labour he may enable them to operate in that soil which is to give him his daily bread. Yielding to such all-powerful agencies, rocks and stones split asunder, surface after surface scale off and give up the substances, the alkalies, the oxides, they held imprisoned "as fast bound in iron," that are required for the support and very being of vegetable life. That these substances are so necessary is justly inferred by their being found in all vegetables, in the parts of them that are not volatilised by the action of fire; that is, they are found in their ashes.

This slow process of Nature formed, then, our arable lands, as in the words of the celebrated Liebig, "Thousands of years have been necessary to convert stones and rocks into the soil of arable land, and thousands of years more will be requisite for their perfect reduction; that is, for the complete exhaustion of their alkalies." This natural process the farmers of Ireland, of Italy, and of other countries, avail themselves of, though in utter ignorance of its laws, to restore fertility to their soils by leaving them for some years in unworked fallow, or, as it is significantly called in Ireland, "waste." "The fallow time," adds the same authority (I again quote the passage, for it is one to be recalled), "is that period of culture during which the land is exposed to a progressive disintegration, by means of the influence of the atmosphere, for the purpose of rendering a certain quantity of alkalies capable of being appropriated by plants. Now it is evident that the careful tilling of fallow land must increase and accelerate this disintegration."

A very powerful agent in this disintegration appears to be carbonic acid. "The interesting experiments of Struve," observes the same great Liebig, "have proved that water impregnated with carbonic acid decomposes rocks which contain alkalies, and then dissolves a part of the alkaline carbonates." Now as the substances which constitute the principal mass of every vegetable are compounds of carbon, it follows that carbon makes up a very large part of the matters we give to the soil as manures, and it is evident, that by fitting the soil to receive the carbon of the air, we may diminish the mass we give to the soil in the form of manure.

But the beneficial effects of working a fallow are not limited to inorganic nature, they extend to the decaying animal and vegetable matters we have deposited in the soil, as manures, to increase its productiveness; by exposing these matters to the same natural actions to which the alkalies of the soil are thus submitted, they are thus more minutely divided, and more intimately brought into contact with these alkalies. Various compounds are thus rapidly formed in a fit state to be taken up by plants, and an immense and incalculable fertility is induced in the soil.

We know that these atmospheric influences are necessary for the decay of our manures; for when they are excluded from our dung-heaps, by these latter being closely packed and tramped, they do not ferment, but the matters of which they are composed remain in the same state in which they were heaped together; so in a great measure do they remain in an unmoved soil. "In a soil," says Liebig, "in which the air has no access, or at most but very little, the remains of animals and vegetables do not decay, for they can only do so when freely supplied with oxygen, but they undergo putrefaction, for which air is present in sufficient quantity. . . . The frequent renewal of air by ploughing, and the preparation of the soil, especially its contact with alkaline metallic oxides, the ashes of brown coal, burnt lime, or limestone, change the putrefaction of its organic (animal and vegetable) constituents into a pure process of oxidation; and from the moment at which all the organic matter existing in a soil enters into a state of oxidation or decay, its fertility is increased."

Now animal and vegetable bodies in a state of putrefaction are not in a state to afford nutrition to plants; on the contrary they are injurious, their strong attraction for oxygen, which they require to enable them to enter into a state of decay, "depriving everything in contact with them, even the roots and plants themselves," of a portion of their oxygen. It is not, indeed, till, by a free admission of air, they have been enabled, by the absorption of its oxygen, to enter into decay, that they are able to give out nutritious compounds to plants.

I have thus found salt, in a dry season, deprive the soil of the little moisture in it, so as to prevent the vegetation of Barley for several weeks, until rain fell; whereas where the salt was not used, the Barley came up in reasonable time.

It has been objected to fallowing, that the frequent stirring of the ground assists and promotes the escape of much nutritious matter, in the form of gases, from the soil; and that great chemist, Sir Humphry Davy, was of this opinion; but since the discovery of Way, that the aluminous particles of the soil have so strong an affinity to ammonia that water will not wash it from them until they are saturated, this objection is in a great measure removed; yet admitting that there be an escape of nutritious gases from the soil in fallowing, yet it would not exist in the case of a cropped fallow, for the growing plants would take up by their leaves probably all those matters which escape from the soil in gases, and for which purpose Nature has evidently furnished them with the orifices on their lower sides; and, again, supposing there to be a loss in naked fallows, it furnishes us with a still stronger proof in favour of fallowing, as evidence of its powerful effects in bringing into action the inherent nutritious powers of the soil; for if the land can afford to sustain this loss, and yet, after a year's fallowing and exposure, is made to produce a crop which it would not have done before, how great must be the fertility called forth by this operation.
*J. M. Goodiff, Granard, Feb. 8.*

## Home Correspondence.

*The Guano Trade.*—The great importance of guano to the interests of British agriculture induces me to ask a little space for a remark or two on your Leader of the 19th inst. You mention some errors which had been fallen into by a previous correspondent, for the purpose of throwing discredit on his statement, and which, as I quite agree with him in the spirit of that statement, I will shortly explain before proceeding further. First, you say he erroneously states the price at 10*l.* a ton, the importers' price being really 9*l.* 5*s.* Very few farmers, indeed, can take the guano at the importers' price, as they do not sell in quantities less than 30 tons; and as, in almost all cases, it must be either reshipped or sent by land into the interior of the country, it very seldom costs the farmer at his own place less than 10*l.* a ton. Next, you say he is "wrong again" in naming Messrs. Gibbs, Bright, and Co. as the importers, Messrs. Antony Gibbs and Sons being the sole importers. Surely, this is a very venial error, Messrs. Gibbs, Bright, and Co. being, in so far as the public are concerned, the Liverpool branch of Messrs. Antony Gibbs and Sons, of London, and the importers into Liverpool, and wholesale agents for the article. On these two points, therefore, your correspondent has not greatly misled your readers. Another, which he does not seem to have urged, and which admits of no dispute, is this, that whereas guano is now being brought from the guano islands at about 3*l.* a ton of freight, which last year cost 4*l.*, and previous to that 5*l.*, it is quite clear that, whatever the farmer can afford to pay for it, the importers can afford to sell it from 1*l.* to 2*l.* a ton cheaper, with the same margin as formerly for the Peruvian Government. If they could afford to sell it at 9*l.* 5*s.* when they paid 5*l.* a ton for freight, they can equally afford to sell it at 7*l.* 5*s.* when they pay only 3*l.* It is needless to tell us about payment to English bondholders, shipping charges, commissions, &c. These were all paid before, and the fall in the rates of freight is clear profit to the Peruvian Government or the importers, if they decline to share it with their customers. Now, if this was an open trade, I agree with you, that the importers are entitled to sell the article at the highest price they can obtain for it, and take all the usual fair advantages that the current of events may favour them with. But as it is a monopoly, we are entitled to inquire whether, when the privilege becomes greatly abused, it is not possible to adopt a remedy. The discovery of Ichaboe caused an instant fall in the price of Peruvian guano of one-half. We know that the guano islands of Peru are nearly inexhaustible, and there can be no doubt that the discovery of another source of supply would at once defeat this monopoly. But the farmers of England, who have so important an interest in this question, are entitled to ask at the present moment the sympathy of their own Government, and to hint to the Foreign Secretary the propriety of his making some arrangement with the Peruvian Government by which the guano trade may be thrown open with equal advantage to that Government, and their bondholders, and manifest gain to the landlord and shipping interests of this country. Instead of the 140,000 tons doled out to us by the "only" importers in 1850, we should soon see at least the 280,000 tons which the unfettered enter-

prise of our merchants found for us in 1845. *James Caird, Baldoon, N. B.* [There is no one for whose opinion we entertain more sincere respect than Mr. Caird. Nevertheless, he must permit us to remark, that in all things exactness is important, and in nothing more so than in such a question as has been raised upon the guano trade. Inaccuracies in an ascertained point, lead to suspicion of inaccuracy in other matters out of sight; and, we own that until we have some evidence that freights have been reduced from 5*l.* to 3*l.* we must doubt that fact. What we want to show is, that the importers are not the persons to blame for the price of guano; and that they are not monopolists. The monopoly is in the hands of the Peruvian Government: and their agents, who sell it on their account, have nothing to do with it. If Lord Palmerston can succeed in inducing the Peruvian Government to direct the price to be reduced, no one will rejoice more than ourselves.]

*Preparation of Peat Charcoal.*—Having observed an inquiry in a late Number of your Paper, respecting the best method of preparing this manure, I have great pleasure in informing you, that some years ago I had several hundred loads prepared by an Irish family, at 9*d.* per square yard. The plan followed was simple enough. Sods were cut out of the bog early in spring, and set on edge to dry; after remaining for several weeks a cart load of brush-wood and a few coals were put down, and the dried sods carefully built over them, in a conical shape, holes being left at top and bottom to facilitate the draught of air. The fire was drawn out at the bottom holes, and a fresh layer of sods piled all round and over the top of the first mound. In this way the work proceeded, until I had sometimes as much as 700 square yards in a heap. The men earned 18*s.* a week, but I do not consider them over paid, as the work required great attention, especially in windy weather, when there was a danger of the fire burning too fast. The peat should only be charred, and it made an excellent manure when applied at the rate of 25 to 30 carts to the acre. *C. E. L. T.*

*Experience in Land Draining.*—So little has the right draining of clay land been understood, that at the present day we find land drainers disputing as to the depths, distances, directions, and materials for the drains. We cannot, therefore, be surprised to find conflicting opinions given, based on experience, as to the results of draining. I must confess, with very few exceptions, I cannot recal instances of draining done four years ago that I would point to as having been sufficiently well done to be effectual; and even of the draining doing at the present day, by far the greater part is being badly done, and will be found to be but partially effective. Were the views of the land drainers rightly limited to the mere prevention of mischief, from standing water (and I fear much of the draining that has been done has been laid out with none other), then the question of assisting the draining by ridging would be unimportant. But the prevention of mischief is by far too narrow a boundary to limit the utility of draining to. The descent of rain has been clearly shown to carry both warmth and nutriment into the soil, whilst its passage over the surface takes both away. The extent to which land is fertilised by the passage of rain through the ground, has, I conceive, as yet been far too little considered. The action of rain in its descent is to dissolve and carry both organic and inorganic matter into the soil, and I imagine the earth owes its continuous power of supporting vegetation mainly to the supplies of nutriment which are thus brought to the roots of vegetation, and which, but for this solving and carrying action of rain, would soon be exhausted. It is from a want of understanding this use of rain that the practice of laying up of wet ground into high ridges, so that the rain shall rapidly pass into the furrows and away, has prevailed; and farmers, in their anxiety to preserve their crops from injury from standing water, have been guarding their land from rain, as if it were poison, and they have been discharging it into their ditches, unmindful of the loss of manure, and of the good its descent would do their land. This being so, we should not readily trust to any one's experience as to the occasion for continuing the old 8 feet ridges, after the land has been *well* drained. I can only say that mine leads me to believe that the strongest clays may be laid sufficiently dry by drains of 4 feet depth, and at 25 feet distance, and without the assistance of ridging, which, for reasons I have given, I think very objectionable. *Hewitt Davis, 3, Frederick's place, Old Jewry.*

*The Present State of Irish Agriculture.*—A nation whose agriculture is feeble and imperfect, cannot be really prosperous, no matter how advanced its progress be in the other arts. Agricultural education becomes, therefore, a subject of paramount importance in Ireland, where agriculture not only constitutes the chief employment of the people, but an occupation pursued with a total disregard to every scientific fact, and a reckless abandonment of all order and routine. The effects of such indifference may be clearly found in the periodical calamities which have overspread the country. This indifference must be resolutely grappled with, and made to surrender to a more enlightened exposition of husbandry. The prepossessions of centuries require to be treated with a gentle hand, by consolidating a sound wholesome system of education, which time aided by reflection will show the errors into which our people are plunged. Agricultural education is daily becoming more immediately required as an elementary branch of instruction, towards the accomplishment of a useful member of society. Agricultural literature is taught in the elementary schools of Switzerland, Prussia, Germany; and the Russian capital acknowledges the value of such information. The people of the United States are loud in demanding State agricultural schools. English and Scotch Universities, the Queen's Colleges, all communicate the same kind of knowledge. Would that some of our landlords had graduated in agricultural science, then we might have been spared the recital of those unhappy differences between landlord and tenant, and had a more exalted adjustment of a tenant's rights. In Ireland the humbler classes have not been forgotten in sharing in the advantages of industrial knowledge. The National Board have wisely considered the agricultural education of the people a primary concomitant to the success of their system. They have established an extensive Model Farm, at Glasnevin, near Dublin, where instruction in the theory and improved practice of agriculture is given by a highly qualified master. They have annexed small farms to many of the village national schools dispersed over the country, from which the most deserving pupils are drafted to the Glasnevin Model Farm, and there, by a higher course of instruction, and a more extensive field of practice, are fitted for the various situations as agriculturists, land-stewards, &c. Thus a number of young men are interspersed over the country—they settle down and become agents in the march of industrial happiness—disseminating the seeds of practical intelligence by the steadiness of their own examples. What system of education so cheap—so practically useful, can elevate the lower and middle classes of the community from that moral, social, and rural ignorance to which they are enslaved? How are we to attack the strong-holds of prejudice and error in husbandry except by thus practically elucidating solid and material improvements on model farms, however small: for a farmer who knows how to farm, will have his farm in good condition and productive, be it large or small; a farmer who is idle and ignorant will farm badly were he to have a county in his holding. To raise the depressed condition of Ireland, I see no means so surely, so safely, or so permanently calculated to effect the purpose as education—literary and agricultural combined; to impart intelligence with industry—to create a prosperous and a happy people. The desire of knowledge well directed and wisely applied is likely to produce healthful impressions. *Libra.*

*Agricultural Education.*—In your Paper of the 29th of March you made some judicious remarks on the management of small farms; and as the subject is important, I beg to call still more attention to it. Some people regret that the free admission of foreign corn must of necessity sweep away our small occupiers, and drive them into the labourer's ranks, or compel them to emigrate. This would indeed be a deplorable alternative, but I conceive there is no necessity for it. And as the safety, happiness, and prosperity of a nation depends more on the comfortable condition of the industrious classes than on the wealth of the affluent, I will try to point out means by which the labourers and little farmers, aye, and great ones too, may be benefited. There is more need of improvement in small farms than large ones, though it is greatly needed on both. The occupiers of both may take many valuable hints from labourer's allotments and market gardens. If they were rightly trained from youth, those small occupiers and allotment labourers would be able to thrive better with low prices than the great farmers, the small cultivators being consumers of a considerable portion of their produce, for which they have always a certain ready home market in their own family. Since many old people will not abandon their old prejudices and old practices, we must attend particularly to the training of the young. Let us begin with the education of the labourer's children, who ought to become good cultivators of their own gardens, and some of them ought to be able to rise by their own industry, skill, and economy, to the rank of little farmers, and from their offspring others ought, by similar means, to have a chance of becoming farmers on a larger scale. To effect this, let the excellent plan adopted by the Commissioners of Education in Ireland be extended throughout the kingdom, but more especially in Ireland, Wales, and the Highlands of Scotland; *vide Agricultural Gazette*, page 203. Let us have a good agricultural school with a small school farm established in every agricultural parish, and two or three model farms in each county, together with a few agricultural colleges dispersed throughout the length and breadth of the land. And, in addition to the model farms, let the principal schools hire a field, or a portion of one, of a neighbouring farmer, for experimental ground. This should be a separate concern from the model farm, which ought to be conducted on more regularly fixed principles. It would be desirable that the experimental field should be of an equal quality, and that the field should be changed as often as requisite. For this purpose some neighbouring farmer might be induced, by a liberal tempting offer, to part with a suitable adjacent field, with the concert of the landlord or agent, who would hardly object, since the plan is calculated to improve the cultivation of his estate, even if it should be injurious to that individual field. Such proceedings would tend greatly to improve the condition not only of the labourers and small farmers, but of the great ones too, and the community at large. Present difficulties powerfully call the attention of landowners and agents to these matters; and it is to be hoped they will zealously promote such means of improvement, and that in benefiting others they will actually promote their own interest, for we can hardly do good to others without sharing more or less in the benefit. This remark applies to the Government, which, with a paternal care that would secure its stability, should ever hold out a fostering hand for the encouragement of industry and enterprise, but without meddling too much, so as to cramp the efforts of those who should be left as free as possible. And what more agreeable and generally beneficial subjects can engage the attention of our rural and other legislators than such as tend to promote the productiveness of our own land, and the comfort and well being of its inhabitants, particularly its industrious classes. Mr. Davis and Mr. Smith's plan for trench-digging the wide intervals between growing crops is much to be recommended. Let science guide the hand of industry, and success will crown their efforts. *O. F.*

*The Acre.*—Permit me to offer, for the guidance of several of your inquiring correspondents and the public in general, the difference of an English and Irish acre of land. The difference is 300 square yards:

| | English Square Measure. | Irish Square Measure. |
|---|---|---|
| 30¼ yards are 1 pole or perch.... | 49 yards are 1 pole or perch. | |
| 1210 ,, are 40 poles or 1 rood.... | 1960 ,, are 40 poles or 1 rood. | |
| 4840 ,, are 160 ,, or 1 acre.... | 7840 ,, are 160 ,, or 1 acre. | |

English statute measure is reckoned by Gunter's chain of 100 links, of which 10 square chains constitute one acre. *Hardy and Son, Maldon, Essex.* [Can you give us the Cunningham and plantation acre, the Cornish, Cheshire, Scotch, and others, to complete the table.]

*Skylarks.*—The skylarks were destroying and continue to destroy my spring crops of Wheat, Rye, Barley, Oats, Beans, Peas, and Vetches, and the fact of their so doing will produce another fact, that I must discontinue such spring sowings if I can devise no means of arresting their deadly depredations. And another fact will be the result, that very many able-bodied labourers and their families will be denied that employment which would keep them out of the poor-houses here, or perhaps swamping your labour market in England, or your pauper markets, if I may use the expression, towards the large cities and towns throughout "happy" England, where "unhappy" Irishmen are wont to congregate. How on earth could Mr. Kidd, even with his "nimble pen," fertile brain, facetious turn, and elegant style, combat all these whilst he, with a humanity which all must admire, denies me the reasonable advice which I respectfully sought of him. I look forward with much interest to the letter which will contain the natural history of the lark, and am glad, for the sake of natural history itself, that I have broached this subject. Few people outside of this county, nor did I whilst in my early days in this my native county, think the dear lark to be so deadly a depredator on such crops as I have enumerated; so that if Mr. Kidd cannot on principle, a principle which I admire, assist me, I will presume to assist him in the natural history of the lark, whose principal food in this corn-growing county, at least, is the pulpy part of the germinated grain, discovered and ferreted out on seeing the young shoot over ground. No other bird that I am aware of seeks the grain in this stage so voraciously, except the rooks, whose depredations are nothing compared to those of the larks. The larks will occasionally extract from the husk or bran the Wheat, Barley, or Oats before vegetation sets in; but it is only in the stage which I have attempted to describe they do the irreparable mischief a thousand fold worse than that done by crows, who can be scared or shot, without any extraordinary cost; but I verily believe, a man, on every rood of land, with a deadly "Shilmalier," or "Queen Anne," in his hand, could not save the crops last March, at least, from the larks; and what makes the matter worse, if possible, the finer the tilth, the more readily they effect their purpose. I take leave to inclose a card for Mr. Kidd, that he may know my whereabouts, should he be disposed to favour me with a visit. I will certainly, if I can visit the World's Great Fair next summer, avail myself of the pleasure of waiting on him. In the meantime, I must remain grateful for his polite attention, in admiration of his beautifully written and highly interesting letters, as well as in devotion to his humane principles. *A Shilmalier.*

*Larks.*—I see by a note appended to Mr. Kidd's letter in reference to the lark question, that he doubts whether larks eat grain at all. I can assure him that the larks here are similar to their Irish brethren in this respect. I once had complete faith in their innocence, but growing suspicious I observed them more closely, and even committed the sacrilegious act of shooting four or five. A *post mortem* examination compels me to pronounce them guilty of eating Wheat, Barley, and Oats when sown, and even after the plant has sprung up through the ground, the latter, particularly with Wheat. I am astonished that Mr. Kidd, possessing so much ornithological lore, should be ignorant of this fact. Probably, the wide difference which he imagines to exist between his Richmond larks and the Irish ones, would be considerably narrowed if on some bright morning in the seed-time, he would take a walk in the corn fields, armed not with a murderous gun (I would not hurt his feelings by such a request), but with a good telescope. He would then perhaps see that his favourites charge a very handsome per centage for their musical services, fully more at this season in the shape of grain, than of wire-worms and insects I fear. The song of the lark

> "Soft is his lay and loud,
> Far in the downy cloud"—

is no doubt very beautiful, and comes in spring with additional relish, after a winter of London fogs, but it is a question, on both sides of which a great deal may may be said—whether after all the farmer does not pay too much for his whistle. *J. Foreman, Kinnaber, Montrose, N. B.*

*Spade Labour.*—I have read with much pleasure in your *Gazette* of the 29th March an article from the talented pen of the author of "The Word in Season to Farmers," and which I consider is one well deserving the attention of all parties interested in the present improving state of agriculture, and calculated to convince all incredulous speakers and thinkers that will not yield to anything but the plain alphabet of undeniable proof in such matters as seem from their complicated experience to be impossible. If farmers in general would practise the system adopted by Mr. Smith, what an immense good it would produce to the farmer, to the landlord, and particularly to the labouring classes, our humble brethren, by whose industrial labours the whole machinery of Society is kept in continual working: and all of such who are now inmates of the poor-houses, where they are supported at the expense of the farmer, in indolence and ease, might issue forth from the murky walls of their gloomy habitations, breathe a purer atmosphere, and become useful instead of burdensome to the farmer. Let 8 or 10 hearty labourers be set on an acre of ground with spades, and when these men are trained to the use of those tools, I have no doubt whatever but they will earn a moderate rate of wages and accomplish the work for the price quoted by Mr. Smith. The spade used should be one of proper construction, and to this point particular attention should be paid, not by the mere theorist, but by the practical spadesman—the man of head and hands. If the spade is too short it will cause unnecessary strain and fatigue of the body. On the other hand, if it be too long, the fault is even worse, as it will keep the workman at too great a distance from his work, in which position he will not be able to accomplish more than half the quantity of work which he would with one of a medium length, which cannot better be described than thus: the spade standing close by his side, the box-handle should fit under the armpit of the man who works with it; one of this description, 18 inches to be occupied by the handle, will suit the capacity and convenience of every workman according to his dimensions. If any person doubt the truth of these peculiar remarks, let him practise and advise others to practise, and I warrant he will experience the truth of them. By spade labour can the fresh subsoil be brought up (and which no horse-power could accomplish to such perfection) to do the duty for which Nature provided it, and when exposed to the action of the various chemical agents which the atmosphere eternally supplies, will tend to a considerable saving of manure, and with the Tullian system of cropping will enrich the farmer with an abundant harvest, the landlord by enhancing the intrinsic value of the land, and the labourers, as I have said before, by affording so much employment. By spade-labour, in deepening the soil, we shall find the rich treasures which our forefathers allowed to remain, where the two sons of the dying man, related in the parable, found the treasures which he bequeathed to them between 18 inches and the top; and if we go a little deeper, we shall find more; and if the system should be once generally adopted, in a few years we should find the fertile soils of the sister isle to equal in worth the golden soil of California. Objections may be raised to some of the items in the balance sheet of Mr. Smith, but I think if the man who would make them would set about the experiment economically, and on a fair stratum of land, he will, in course of time, have reason to credit and coincide with Mr. S. in his statements. I think the experiment of "Amicus Tull" could not be looked on as a fair trial, his land being so extremely hard and difficult to trench, having to be worked with a pickaxe, while that of Mr. Smith was, and could be, worked with the spade; and even that, admitting it might have been an average of his own farm, on which he tried the experiment, the first trenching was the hardest to be done, and therefore the dearest, and will save him the same trouble at least for seven years to come, during which time annual diggings from 10 to 14 inches in depth will be found sufficient. Neither is it essential for proprietors to employ no other than a man of such major dimensions as that described by "Amicus Tull," for I think it is more by the heart and will of a man than by the bulk of his body that the work is done. The only objection to all Mr. Smith's statements is, that though he will admit of manuring, yet he is far from being an advocate of that valuable stimulant to vegetation, the intrinsic value of which, with any method of tillage, is too well known to need any superfluous comment. Hoping he will add to his valuable work the use of manures, and hoping it may succeed in its objects, the system may still be adopted and theorised, I conclude with the Irish phrase of "God speed the spade." *E. F., Phœnix Park, Dublin, April* 10, 1851.

*Allotment Culture.*—I have for several years cultivated a plot of land to advantage, having grown some very superior crops of Wheat, Beans, Barley, and roots. I have grown Wheat at the rate of 6 quarters 5 bushels and 6 gallons per acre, from a crop dibbled at the rate of a bushel per acre; but I have since grown crops equally as good from a half bushel per acre, dibbled by Dr. Newington's hand-dibble, which is by far the best implement I have yet seen, by which small holders can deposit their seed. A half bushel of seed is amply sufficient when dibbled early in September in a good and well-cultivated soil. I have this season a very superior crop of dibbled Wheat on a plot of ground dibbled at the rate of a half bushel per acre; if there be any fault in it, it is too thick. I generally hoe my Wheat four times, which I consider to be greatly advantageous to the growth of the plant. I have grown surprising crops of Barley, cultivated in the same manner as the Wheat. I generally plant my Long-pod Beans in double rows, at 3 feet apart, and interline a row of roots or Cabbages. I have hitherto found the interlining system to answer very well indeed. I intend next October to commence getting five crops from the same piece of ground, which can be easily done within the space of 13 months, a plan of which is given in the *Agricultural Gazette* of the 29th March, at page 203. Stirring frequently between the rows of all kinds of root crops greatly improves their growth; the best instrument for that purpose is that very excellent implement of Dr. Newington, which he calls his hand row-hoe or cultivator; it is equally adapted for hoeing Wheat or any kind of crops sown in rows. I have this season used the three-pronged fork instead of the spade, and like it much better. It can be worked with greater ease, and does its work more effectually. Those with whom it is not convenient to trench their land should dig it with a fork to the depth of 14 inches, as does John Sillet, of Kelsale, near Saxmundham, Suffolk, who gets his living off 2 acres of land. I would strongly recommend his pamphlet on "Spade Husbandry" to the notice of all small holders. I have just prepared a piece of ground for Swedes, and as I do not want to bury the manure deep in the soil, I am at a loss how to cover it; but it has just occurred to me how this difficulty might be overcome. After the manure is spread, a man with a breast plough could easily turn it over to the depth of 2 or 3 inches, but it would take a long time in doing. If Dr. Newington would attach a kind of plough-share and shell-board to his cultivator, I think it would cover the manure famously at almost any depth you please, and this kind of plough would be also famous for ploughing and stirring the soil after being dug with the fork. This addition would, in my opinion, be a great improvement, and make the implement complete, and prove very beneficial to all small holders. *W. Griffin, Eydon, near Daventry.*

## Review.

*Land Draining, Embankment, and Irrigation.* By James Donald, C.E. W. S. Orr and Co., London.

This is one of a shilling series of rural hand-books, commenced by the late H. D. Richardson, of Dublin, to some of the numbers of which we have already referred as they appeared. The present is by a gentleman who has occasionally contributed to our own columns, and whose practical skill and well informed mind are both well illustrated in the volume before us. It is a plain statement and description of the details of its subject which all can understand, and by which, no doubt, many will benefit.

METEOROLOGICAL REPORT.—April.

(*Continued from page* 253.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Apr. 16 | 11.10 a.m. | 29.68 | ... | E. Very heavy rain and stiff breeze all day. |
| * | 11 p.m. | ... | 29.55 | ENE. evening. Do. weather. |
| 17 | 5 a.m | ... | 29.56 | SSW. Brisk breeze, and warm pleasant day. |
| | 11 p.m. | 29.73 | ... | |
| 18 | 8 30 a.m | ... | 29.74 | Southerly. Moderate breeze, and pleasant day. |
| | 11 p.m. | 29 81 | ... | |
| 19 | 6..30 a.m | 29.88 | ... | White frost. Beautiful calm fine day, and very little wind. |
| | 6.40 p.m. | 29.87 | ... | Calm afternoon, and bright starlight evening. |
| | 9.45 p.m. | ... | 29.86 | |
| Sun. 20 | 8.20 a.m. | 29.60 | ... | a.m. northerly. Heavy appearance on edge of horizon at W. to NW., but nearly calm. Noon, easterly. Light breeze, and overcast. |
| † | 10 p.m. | ... | 29.38 | Evening, S., light. Damp mist. Night, very heavy rain. |
| 21 | 6.45 a.m. | ... | 29.43 | S., moderate. Overcast, but dry. Towards noon, began a heavy driving rain, which lasted till 6 p.m.; a very warm genial day. |
| | 11.15 a.m. | 29.45 | ... | |

* This would be a storm coming from the south, over France and Holland, and curving to westward of north, on overtaking the preceding storm.

† A storm coming from the westward, and passing over France to the south of east, being deflected from its proper course by the preceding storm.

Dorchester, April 24th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

APRIL.

Essex Farm.—Since my last we have been doing nothing worth reporting; from the continued wet weather it has been impossible to get upon the land till within the last fortnight; we have finished sowing the Barley after Turnips, it being impossible to keep the sheep upon them to feed them off sooner; this is not the way we like, as it has always been found that early sown Barley yields best, sometimes as much as three quarters per acre difference, but it should never be put in till the land is in a fit state, if the weather will allow it. We have finished dibbing Carrots; this is the second year we have put them in this way, and though not so expeditious as drilling them, it saves much labour when they are fit to single out, as well as allowing us to put into the hole, after the seed is dropped, a small handful of a mixture of guano and burnt earth saturated with urine; this helps the young plant on rapidly in the spring months. The way we dib them in is with a dib with five points set in a frame six inches apart, having a double handle, the man setting his foot upon the frame, making the holes 2½ inches deep. The land is well "menued" in the autumn with farm-yard dung, and ploughed twice before Christmas, if possible; it cannot be too fine. It is left the last time ploughed before dibbing on bouts, the holes being made along the top of the bout, this leaves a space of about 18 inches between the rows, which is a good distance to get between with a horse hoe. Carrots are so well liked by all cattle that we grow more every year; we have also put in the Mangold, both the long red and orange globe; the latter I think the best, but the red keeps longest, and it makes a change to the cattle; we dib them in with the same dib as I mentioned for Carrots. They are dibbed on yard ridges; they are ploughed between two or three times during the summer, as well as horse hoed; they have been found most valuable his spring; as the Clover and Grass has not as yet started at all, there cannot be anything except for sheep these three weeks or a month; there are many farmers round who have had to buy already: the hay is almost all gone, and as the sheep have had to be kept on the pastures so late, I doubt much whether there will be a heavy crop of Grass. The ewes and lambs have been for these few last days on a field of red Clover, a little forwarder than the rest, but it does not stand before them any time, though they have Mangold Wurzel thrown down to them. The Wheat looks here most beautiful, a rich green, and tillering well, and lying close to the ground. The early sown Barley also looks well. *E. X., near Braintree.*

### Notices to Correspondents.

Books: *Filius Æsculapii.* Low's "Elements of Practical Agriculture" is as good a guide as you can have.

Dairy: *P T O.* Milk and cream will churn, although they be not sour enough to curdle.

Hotbed: *P T O.* Cow litter and dung will make one: which will maintain a lower heat a longer time than horse-dung.

Italian Rye-grass: *Tyro* It will not answer to let it remain another year; at least it has not generally answered, but you will be able to judge better a few months hence.

Mangold Wurzel: *F. C.* Your dairy experiences are attributable to the diet of the cows. Mangold Wurzel is apt to make the butter white, hard, and difficult to get.

Manure: *Burbage.* The following answer is, we are sorry, too late for your purpose. It is given from a practical judgment of the subject and not after consultation of chemical authorities. If 10 tons of soiled litter and manure just thrown out of feeding stall and stable be worth 30s, the same manure allowed to rot in a heap for 8 months may perhaps be 5 or 6 tons, worth 4s. a ton; but made into compost with earth and rotted, then it will be worth all its original cost, *plus* what value of labour may have been expended upon it.

Meat Produce: *Examiner.* We have to apologise for the delay. 20 tons of Swedes 26 cwt. of Clover hay, 40 bushels of Barley, 1 ton of oilcake, with a quantity of straw not specified, ought to have produced 9 or 10 cwt. of beef.

Potatoes: *A B.* They will, most likely, be the later for strong ammoniacal manuring; it will tend to the growth of leaf, though no doubt, if unchecked by disease, to that of tuber also. You may fold sheep and lambs on Pares towards the end of May. If they are very young, cut for them 24 hours in advance. Beans or Peas are better than oilcake as a corrective of looseness.

Poultry: *Lady M.* It is difficult, on the information given, to assign a cause for the mortality among the Dorking chickens. *With us*, the weather alone would be a sufficient cause, the last few weeks; but where Lady M resides, it may have been warm and genial. The answers to anonymous and undated inquiries cannot be so precise as they ought. Perhaps part of the stock wants changing.—*Mrs. M* Cooice Bantams are apt to suffer from being too carefully guarded. Good Barley would not give them the cramp. They require green food, worms and insects, broken egg-shells or burnt oyster-shells, and perhaps more air, sunshine, liberty, and dusting holes.

Southdowns: *T S.* Southdown breeders always advertise their annual sales. As to the cross between the southdown and blackfaced heath breeds, your question has been handed to a good authority.

Erratum. In the article published last week on the "Management of Steam Engines," there is an erratum, which should be corrected thus: "the coals *best* suited for household purposes are generally least suited for the engine" The one requiring coals that swell and cohere in the grate; the other working best with coals that open readily, and thus extend the surface for oxydation.

## Markets.

COVENT GARDE , April 26.

Hothouse Grapes are becoming very plentiful, and, considering the season, they fetch but indifferent prices. The same remark applies to Strawberries. Good Pine-apples are scarce, as are also dessert Apples. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good. French Beans are very plentiful. Carrots and Turnips are dearer. New Cornish Potatoes may be obtained at from 1s. to 2s. per pound; old kinds realise better prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 10s | Oranges, per doz., 9d to 2s |
| Grapes, hothouse, p.lb., 6s to 12s | — per 100, 6s to 14s |
| — Portugal, p.lb., 1s to 2s6d | — Seville p. 100, 7s to 14s |
| Strawberries, per oz., 6d to 1s | — — p. doz., 1s to 2s 6d |
| Pears, per doz., 2s to 5s | Lemons, per doz., 1s to 2s |
| — per half sieve, 6s to 15s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p. bush., 6s to10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, p. bsh, 20s to22s |
| Almonds, per peck, 6s | — Brazil, p. bsh , 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 70s to 75s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 1s to 1s 6d | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 4s to 6s | Artichokes, Jerusalem. p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 4s | Lettuce, Cab., p. score, 6d to 9d |
| Broccoli, p. doz. bundl., 7s to 12s | — Cos, per score, 1s to 1s6d |
| French Beans, p. 100, 9d to 2s | Endive, per score, 1s to 1s 6d |
| Seakale, per punnet, 6d to 2s | Small Salads, p. punn , 2d to 3d. |
| Asparagus, per 100, 4s to 10s | Horse Radish, p. bundl., 1s to 4s |
| Rhubarb, p. bundl., 6d to 1s 2d | Red Beet, per doz., 6d to 1s |
| Potatoes, per ton, 90s to 150 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 4s to 7s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 1s to 3s | Thyme, per bunch 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Carrots, per doz., 4d to 7d | Marjoram, per bunch. 2d to 4d |
| Spinach, per sieve, 1s to 1s 6d | Mint, green, per bunch, 4d to 6d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Corn Salad, p. hf. sieve, 1s to1s6d |
| Leeks, per doz., 9d to 1s | |
| Shallots, per lb., 6d to 1s | |

HAY.—Per Load of 36 Trusses.

Smithfield, April 24.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 78s | to 90s | Clover ... ... ... | 70s | to 85s |
| Inferior ditto... ... | 65 | 72 | Second cut ... ... | 70 | 80 |
| Rowen ... ... ... | 65 | 70 | Straw ... ... ... | 25 | 30 |
| New Hay ... ... | — | — | | J. Cooper. | |

Trade heavy.

Cumberland Market, April 24.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 88s | to 92s | Inferior ... ... ... | 75s | to 80s |
| Inferior ditto... ... | 60 | 76 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 28 | 32 |
| Old Clover ... ... | 88 | 92 | | Joshua Baker. | |

Coal Market.—Friday, April 25.

Holl well, 13s. 6d.; Eden Main, 14s. 3d.; Wallsend Hartop, 15s. 9d.; Wallsend Haswell, 15s. 6d.; Wallsend Stewarts

15s. 3d.; Wallsend Adelaide Tees, 15s. 3d.; Wallsend Tees, 15s. 3d.—Ships at market, 104.

HOPS.—FRIDAY, April 25.

Messrs. Pattenden and Smith report that the market is steady and firm at late prices for all Hops with colour and quality.

POTATOES.—SOUTHWARK, April 21.

The Committee report that the market continues to be moderately supplied, but quite equal to the demand, which is limited. The following are the quotations:—York Regents, per ton, 80s. to 100s.; Scotch do., 70s. to 80s.; ditto Cups, 60s. to 70s.; Cambridgeshire and Lincolnshire Regents, 60s. to 80s.; French whites, 60s. to 70s.

SMITHFIELD, MONDAY, April 21.

We have a shorter supply of Beasts, but there are more than can be sold, even at reduced prices. Being Easter week there is a small attendance of buyers. The number of Sheep is considerable for the day, the demand excessively small; a large proportion remain unsold. Lambs and Calves meet with a dull sale at lower rates. From Holland and Germany there are 222 Beasts, 900 Sheep, 139 Calves, and 87 Pigs; from Norfolk and Suffolk, 2000 Beasts; from Scotland, 500; and 100 from the northern and midland counties.

| Per st. of 8 lbs.—s | d | s | d | Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|---|---|---|---|
| Best Scots, Here- | | | | Best Long-wools . 3 | | 8 to 4 | 0 |
| fords, &c. . 3 | 4 to 3 | 6 | | Ditto Shorn ... 3 | | 4 — 3 | 6 |
| Best Short-horns 3 | 0 — 3 | 4 | | Ewes & 2d quality 2 | | 8 — 3 | 4 |
| 2d quality Beasts 2 | 4 — 2 | 10 | | Ditto Shorn ... | | ... | |
| Best Downs and | | | | Lambs ... ... 5 | | 0 — 5 | 10 |
| Half-breds ... 4 | 0 — 4 | 4 | | Calves ... ... 2 | | 8 — 4 | 0 |
| Ditto Shorn ... 3 | 6 — 3 | 10 | | Pigs ... ... 2 | | 8 — 3 | 6 |

Beasts, 3254; Sheep and Lambs, 22,560; Calves, 194; Pigs, 400.

FRIDAY, April 25.

The number of Beasts is not very large, but more than adequate to the demand. The small amount of business that is transacted may be quoted as on Monday. The supply of fresh Sheep is small; some of those left from Monday are on offer today, and a few lots of foreigners. Trade is still very bad, and prices remain about the same, although there is more disposition to purchase. Lambs are more in demand. Trade is very heavy for Calves, and prices are with difficulty maintained. From Germany and Holland we have 52 Beasts, 330 Sheep, and 198 Calves; from Scotland, 100 Beasts; from Norfolk and Suffolk, 300; and 85 milch cows from the home counties.

| Best Scots, Here- | | | | Best Long-wools . 3 | | 8 to 4 | 0 |
|---|---|---|---|---|---|---|---|
| fords, &c. ... 3 | 4 to 3 | 6 | | Ditto Shorn ... 3 | | 4 — 3 | 6 |
| Best Short-horns 3 | 0 — 3 | 4 | | Ewes & 2d quality 2 | | 8 — 3 | 4 |
| 2d quality Beasts 2 | 4 — 2 | 10 | | Ditto Shorn ... | | ... | |
| Best Downs and | | | | Lambs ... ... 5 | | 0 — 5 | 10 |
| Half-breds ... 4 | 0 — 4 | 4 | | Calves ... ... 2 | | 8 — 4 | 0 |
| Ditto Shorn ... 3 | 6 — 3 | 10 | | Pigs ... ... 2 | | 8 — 3 | 6 |

Beasts, 645; Sheep and Lambs, 6000; Calves, 326; Pigs, 410.

MARK LANE.

MONDAY, April 21.—The supply of English Wheat was again short this morning; the best samples realised about the prices of this day se'nnight, but out of condition parcels, of which it principally consisted, were a heavy sale at a decline of 1s. to 2s. per qr. for Essex, while that from Kent remained unsold at a late hour, although offered at a reduction of 2s. to 3s. per qr. Foreign Wheat is in limited demand, and its value is nominally unaltered.—There is very little Barley offering, which brings fully late rates.—Beans and Peas meet a fair sale at former prices.—Oats are taken at the quotations of this day week.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40—45 | Red ..... | 36—43 |
| — — fine selected runs...ditto | 42—47 | Red ..... | —40 |
| — — Talavera ..... | 45—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 32—52 | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26—31 | Malting . | 22—26 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 23—26 |
| Oats, Essex and Suffolk ..... | 17—19 | | |
| — Scotch and Lincolnshire...Potato | 19—23 | Feed ..... | 16—21 |
| — Irish .....Potato | 17—21 | Feed ..... | 16—18 |
| — Foreign .....Poland and Brew | 18—21 | Feed ..... | 16—19 |
| Rye ..... | 22—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..20s to 26s.....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 — 31... Winds | 37—43 | Longpod | 27—33 |
| — Foreign ..... Small | 22—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler- | 23—26 | Suffolk.. | 26—28 |
| — Maple.....26s to 28s .....Grey | 23—24 | Foreign . | 24—31 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—39 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 16—23 | Per sack | 26—34 |

FRIDAY, April 25.—The arrivals of grain this week have been moderate. The attendance at market on Wednesday and this morning was thin, and the English Wheat left over from Monday is still undisposed of. The demand for foreign is of such a retail character that we cannot alter our quotations.—Barley, Beans, and Peas are unaltered in value.—Oats are in good inquiry, and rather more money was realised.—In Flour there is scarcely anything doing.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| March 8..... | 36s 9d | 22s 7d | 16s 2d | 24s 4d | 25s 7d | 26s 7d |
| — 15..... | 37 2 | 23 1 | 16 6 | 23 3 | 25 6 | 25 8 |
| — 22..... | 37 5 | 23 3 | 16 9 | 22 8 | 25 8 | 25 9 |
| — 29..... | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| April 5..... | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| — 19..... | 39 5 | 24 5 | 17 5 | 24 7 | 26 10 | 25 9 |
| Aggreg. Aver. | 38 3 | 23 9 | 16 11 | 24 7 | 26 0 | 25 4 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | MAR. 8. | MAR. 15. | MAR. 22. | MAR. 29. | April 5. | APR. 19. |
|---|---|---|---|---|---|---|
| 39s 5d | ... | ... | ... | ... | ... | |
| 38 4 | ... | ... | ... | ... | | |
| 38 1 | ... | ... | ... | | | ... |
| 37 5 | ... | ... | | ... | ... | ... |
| 37 2 | ... | | ... | ... | ... | ... |
| 36 9 | | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, April 22.—The arrivals from Ireland and coastwise during the week have been insignificant, but from foreign ports supplies have been pretty liberal. Owing to the intervention of the Easter Holidays, the trade since Tuesday last has been very quiet, without perceptible alteration in the value of any article. At this day's market there was a fair attendance of buyers, who, however, acted with much caution, and only a small business resulted. Fine fresh Wheats were in fair request at late rates, but inferior sorts were easier to buy. Flour must be noted 6d. per sack and barrel lower. Fine mealing Oats were saleable at full prices, but inferior qualities difficult to move, except at a decline of ½d. per 45 lbs. There were several buyers of Barley for Wales in attendance, and, being scarce, realised an advance of 1d. per 60 lbs. Beans and Peas without change. Indian Corn meta little more attention at last Tuesday's prices.——THURSDAY, April 17.—The supplies of grain and Flour have been moderate for the last two days, with the exception of about 7000 sacks of French Flour. The weather has broken, and we have had cold easterly winds with rain. The grain market has been without activity since Tuesday, and no material change has occurred in the value of Wheat, Flour, Indian Corn, or any other article. The usual holiday season has much interfered with business.


GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of Half Moon-street Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of Half Moon-street Piccadilly, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by MESSRS. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

| | | | | | |
|---|---|---|---|---|---|
| 8 by 6 under 10 by 8 | ....4½d. | 10 by 8 under 14 by 10 | ....5d. | | |
| 14 by 10 under 1½ foot, not above 20 inches long | | | | | ...5½d. |
| 1½ foot | — 3 feet | — 30 | — | ...6d. | |
| 3 feet | — 4 feet | — 30 | — | ...6½d. | |
| 4 feet | — 5 feet | — 35 | — | ...7d. | |

PACKED IN BOXES of 50 feet each.

| | | | |
|---|---|---|---|
| 6 by 4 and 6½ by 4½ | ....12s. 0d. | 8 by 6 and 8½ by 6½ | ....15s. 0d. |
| 7 by 5 and 7½ by 5½ | ....13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 | ....16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 | ... 5 by 2½ | ... 6 by 2½ | ... 6 by 3½ inches. | | |
| 4½ by 3 | ... 5 by 3 | ... 6 by 3 | ... 6½ by 3 | | |
| 4½ by 3½ | ... 5½ by 3 | ... 6½ by 3 | ... 6½ by 3½ | | |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | | | |
|---|---|---|---|
| 16 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each. | | |
| 6½ by 5½ to 8 by 6 ... 13 " | 11 by 8 to 14 by 10 ... 16 " | | |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

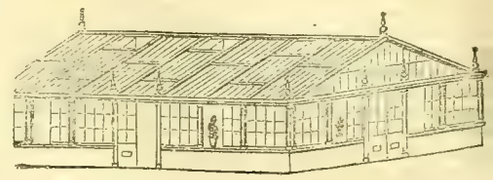
See the *Gardeners' Chronicle* first Saturday in each month.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealers in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 13s. 6d. Drawing and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

BELFAST.

THE IMPROVED FLAX MACHINERY.—Persons wishing to erect Mills for preparing FLAX from the Straw can be supplied with the IMPROVED MACHINERY, recommended by the Royal Flax Society, on application to the Makers, M'ADAM, BROTHERS, and CO., Engineers, Soho Foundry, Belfast.—April, 1851.

DRAINING.—A Country Land Agent and Surveyor, having several extensive contracts for Draining Land near London, will give practical instruction on Draining, Tile-making, and Levelling (and Land Surveying, if required).—Address, by letter, to A. B., 2, Montague-street, Portman-square, London.

TO AGRICULTURISTS.

THE SUBSCRIBERS, in returning their sincere thanks to their numerous Customers for the liberal patronage which they have so long enjoyed, beg earnestly to solicit the attention of Agriculturists and their friends in England to their improved Light GRUBBER, combining both cheapness and efficiency. The Implement was strongly recommended by the East of Berwickshire Farmers' Club, at their meeting in December last; and the numerous parties who have since honoured us with their orders have expressed their high satisfaction with it as a most efficient Implement. The price, with travelling wheel, complete, is only 65s., delivered free to any station on the North British Line.

As the Turnip season is now approaching, the Subscribers take this opportunity of calling attention to their improved Turnip-sowing Machines, which they feel confident will give entire satisfaction to those who may favour them with their commands. The price is Six Guineas, and every attention will be given to the speedy execution of orders by

SCOULAR AND CO.,
Haddington, N.B. Agricultural Implement Makers.

ANTHONY'S PATENT AMERICAN CHURN.—In addition to the numerous testimonials already published, the following one has just been received:

"Huntingdon, April 14th, 1851.

"Gentlemen,—About a year ago I purchased of you one of Anthony's Double-Acting American Churns. My small dairy was then managed by a very obstinate servant, who hated novelties, and you are well aware that I was at first much disappointed with it; but I have now great pleasure, after some experience of the merits of the Churn, in adding my testimony to its great value.

"Instead of my servant being put out of temper as heretofore by turning the old-fashioned barrel churn from half an hour at least to sometimes an hour and a half, and being surprised with bad butter as the result of all her labour, I now can depend upon obtaining first-rate butter in 10 or 12 minutes. No dairyman ought to be without such a churn, and you are quite at liberty to make what use you please of this letter.

"I am, Gentlemen, yours obediently, CHAS. MARGETTS.

"To Messrs. KEY and Co."

For prices and further testimonials, apply to the Depôt, 103, Newgate-street, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES for TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATER-PROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

Testimonials and Prices may be had on application to the Manufactory.

Waterproof FISHING BOOTS and STOCKINGS, PORTABLE INDIA-RUBBER BOATS and BATHS, made to order.

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

## SALES BY AUCTION.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 30th, and FRIDAY, May 2d, a fine collection of CARNATIONS AND PICOTEES, AURICULAS, AND HEARTSEASE; also Climbing Roses in pots, Dahlias in dry Roots, Geraniums, Fuchsias, Verbenas, and other plants in bloom.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

EAST INDIAN ORCHIDS, AND A FEW FROM AFRICA.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on FRIDAY, the 2d of May, at 12 for 1 o'clock, an importation of Choice ORCHIDS, from the East Indies. They have arrived in splendid condition per overland route, and comprise several new kinds, particularly a beautiful Dendrobium, a new Vanda, and fine plants of Saccolabium Blumeii major (true); Dendrobiums Dalhousianum, formosum, Chrysatoxum aggregatum major, tortile, and others. In the sale will be included some plants of the finest of all terrestrial Orchids, "Disa grandiflora," and some specimens of Angræcum caudatum from Africa.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

ORCHIDS.

THE PROPERTY OF THE LATE GEORGE WALKER, Esq

MR. J. C. STEVENS is favoured with instructions from the Executors to submit to sale, by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, 6th May, at 12 for 1 o'clock, the collection of ORCHIDS, removed from Eastwood-hall, Notts. It consists of a general selection of the most popular varieties, many of which are fine specimens, and well established plants.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

ISLEWORTH, MIDDLESEX.
TO FLORISTS AND OTHERS.

MR. WATERER will sell by Auction, on WEDNESDAY, April the 30th, at 11 o'clock, Three GREENHOUSES, BOXES and LIGHTS, and 3000 GREENHOUSE PLANTS, Roses, Pinuses, &c.; by order of Mr. Stedman, declining that part of the business, which comprises the erection of three Greenhouses, with Cisterns, Flues, and Flower Stages, 2000 Greenhouse Plants, including a choice collection of Geraniums, Fuchsias, Mimulus, Verbenas, Heliotropiums, Cacti, Hoya imperialis, Lilium lancifoliums, Camellias, and other plants: 1000 potted Roses of the most choice sorts; Cedrus Deodaras, Araucarias, Pinus grandis, and a great variety of other choice plants. May be viewed the day previous and morning of sale.—Catalogues had upon the premises, and of Mr. WATERER, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey, who will forward catalogues on application by letter.

BEDFORDSHIRE.—Great Barford, near Bedford, Biggleswade, and Sandy.—Valuable Freehold Estate, tithe free and land-tax redeemed, giving votes for the county.

MR. EDWARD PALMER will sell by AUCTION, by order of the Mortgagee, at the Golden Cross Inn, Great Barford, near Sandy, Bedfordshire, on TUESDAY, 13th of MAY next, at One, in 11 lots, of about 3 acres each, an important FREEHOLD ESTATE, consisting of about 34 acres of land, all adjoining, and delightfully situate on an eminence facing the south, at the entrance of the village of Great Barford from Bedford, near the Wesleyan Chapel, having an extensive frontage to the road, and commanding a beautiful prospect. The land is of excellent quality, and suitable for building cottages, with garden ground attached, the cultivation of which in this neighbourhood has been found so exceedingly profitable, from the easy transit of vegetables by rail to the London markets.—N.B. Two-thirds of the purchase-money may remain on mortgage if required, or the whole, if satisfactory security is given.—Particulars, with plan and conditions of sale, may be had 14 days prior to the sale, of Mr. BENJ. CHANDLER, Jun., Solicitor, Sherborne, Dorset; Messrs. POOLE and GAMLEN, Solicitors, 3, Gray's-inn-square, London; Mr. W. WALLEN, Jun., Architect and Surveyor, 14, Basinghall-street, city, and Greenwich, Kent; at the Law Property Assurance and Trust Society's offices, 30, Essex-street, Strand; at the Golden Cross Inn, Great Barford; Swan Inn, Bedford; White Swan, Biggleswade; and at the Auctioneer's Offices, 20, Change-alley, Cornhill, London.

THE MOST SUPERB BED OF TULIPS IN EUROPE.

MR. R. LAWRENCE, of Hampton, will sell his unrivalled bed of TULIPS, of the splendour of which some idea may be formed by the number of fine varieties: viz. 30 Louis XVI., 16 Musidora, 12 Pompe Funebre, 12 Fabius, from 4 to 10 each of Bysantium, Pandora, Parmigiano, Brown's Polyphemus, ditto Ulysses, Dicken's Duke of Devonshire, Marcellus, Rose Arlette, Lyde's Queen of Hearts, Brown's Magnificent, Strong's King, Nora Criena, Thalia, Vivid. Besides several each of Lac, Coronation, Iago, Apelles, Salvator Rosa, Lord Collingwood, Marshal Soult, Selim, Groom's Queen Adelaide, Lady Exeter, Laura Lawrence, Hepworth's Queen of the North, Dutch Ponceau, Goldham's Maria, Brown's Sylvia, Jeffrey's Elizabeth, La Belle, Nanette, Lawrence's Lady Sale, and nearly every flower that has been raised worth cultivation, by Lawrence, Clarke, Lyde, Dixon, Strong, Walker, Glenny, Goldham, Brown, Groom, &c. Persons desirous of receiving Catalogues, may send their addresses to Mr. R. LAWRENCE, Red Lion, Hampton (where the bed may be seen, from the 1st of May to the day of sale); Mr. LOCKHART, 84, Fleet-street; and Mr. GLENNY, Strand. Catalogues will also be forwarded to the principal Seedshops.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, 28th April, at 2 o'clock precisely, about 350 Tons GUANO, imported from Valparaiso.—Catalogues and further particulars in due time from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

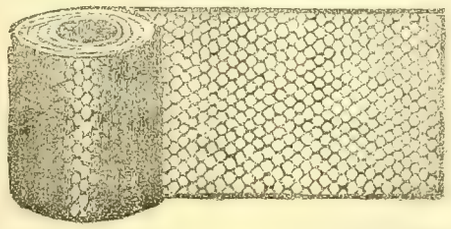
FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET, a HOUSE, with Four Acres of LAND, on the Brighton Railway—Rent, 20*l.*; pleasantly situated, facing the clump of trees adjoining the Horley Station, one hour's distance from London-bridge. An excellent opening for a Market Gardener. The two best rooms, which have French casement windows, would let furnished during the season to pay the rent.—Enquire of the Station Clerk at Horley, who will point out the premises and give the Landlord's address.

TO BE LET, on moderate terms, a NURSERY GARDEN, with a comfortable House, Green and Hothouses, and about an acre of land, with a very improving business, and good neighbourhood, situated close to a market town, and within a few miles of other good market towns. Tenancy to commence at Michaelmas next; or, if required, arrangements could be made for immediate possession.—For further particulars, apply to A. Z., Office of this Paper.

GALVANISED WIRE GAME NETTING.—
*7d.* per yard, 2 feet wide.

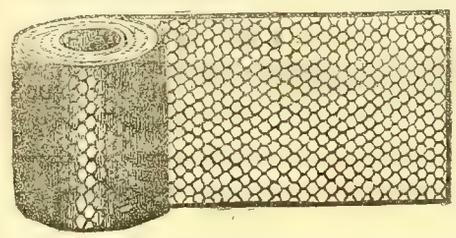


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| 1½-inch " light " ... | 8 " | 6 " |
| 1½-inch " strong " ... | 10 " | 8 " |
| 1½-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | | | |
|---|---|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | | 30 inches wide | 7½*d.* per yard. | |
| 18 " | " 4½*d.* | " | 36 " | " 9*d.* | " |
| 14 " | " 6*d.* | " | 48 " | " 1*s.* | " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

IRON GATES, HURDLES, WIRE WORK, &c.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE-PARK),
And Highfield Works, Bilston, MANUFACTURE all kinds of Park Entrance, Carriage and Field Gates, Wickets, Wrought and Cast Iron Gate Pillars, Plain and Ornamental Fencing, Palisading, and Balconies.

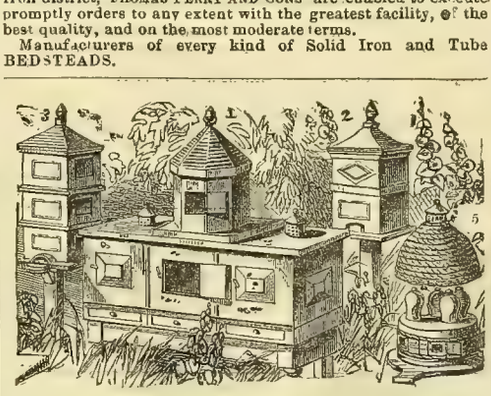
Ox, Cattle, Sheep and other Hurdles;

Tree Guards, Garden Seats, Garden Rollers, Wheelbarrows.

Hay Racks, and Stable Fittings, &c., and Wrought and Cast Iron Work of every description. Wire Work in great variety, comprising Gothic and other Fencing, Flower Stands, Trainers, Arches, Pheasantries, &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and on the most moderate terms.

Manufacturers of every kind of Solid Iron and Tube BEDSTEADS.



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS.—Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street, Glasgow: Austin and M'Aslin, 168, Trongate.

THE BIRMINGHAM CATTLE SHOW, 1851.

THE PRIZE LISTS FOR CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and Copies may be obtained from the Honorary Secretary.

T. B. WRIGHT, Hon. Sec.
Union-street, Birmingham, April 26, 1851

EXHIBITION, 1851.—HOME EVERYWHERE.
TENTS for the MILLION.

At BENJAMIN EDGINGTON'S Marquee, Tent, Flag, and Rick Cloth Manufactory, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

The following Second-hand Marquees to be sold reasonably—250 feet by 28, 180 feet by 40, 120 feet by 33, and 150 feet by 20. Emigrants' Tents fitted up complete.

A number of Second-hand Rick Cloths in good condition, with poles, &c., complete.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

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NOTICE.—The new Part (Part V.; or Volume the Second, Part I.) of Sir WILLIAM HOOKER'S SPECIES FILICUM will be ready on April 28

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 18—1851.] SATURDAY, MAY 3. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agriculture, Tullian | 282 *b* | Garden gleanings, foreign | 277 *b* |
| Agricultural Society of England | 284 *b* | Guano trade | 284 *a* |
| Asparagus, to force | 277 *c* | Horticultural Society—Anniversary | 278 *c* |
| Aquatics | 280 *c* | Kew gardens | 277 *c* |
| Banks, penny | 278 *c* | Lane's (Messrs.), nursery | 279 *a* |
| Birds, British song | 275 *c* | Lilies, Japan | 280 *c* |
| — migratory | 277 *c* | Low's (Mr.), Nursery | 279 *b* |
| — Canary | 280 *c* | Plants for shade | 280 *c* |
| Botanical Society of Edinburgh | 278 *c* | Plums | 277 *c* |
| Calceolaria | 278 *b* | Rhododendron at Upton House | 279 *c* |
| Calendar, Horticultural | 283 *a* | Roses, for forcing | 279 *a* |
| Cattle Show, Birmingham | 285 *b* | Royal Hort. Soc of Ireland | 278 *c* |
| County census | 284 *b* | St. German's Farmers' Club | 284 *b* |
| Crystal palace | 275 *a*—281 *c* | Sheep on Grass | 283 *a* |
| Curiosity, a | 278 *c* | Skylarks | 283 *b* |
| Dahlia, culture of | 279 *c* | Steam engines | 283 *b* |
| Deodars | 278 *a* | Sutton's (Messrs.) nursery | 279 *c* |
| Draining tiles | 284 *a* | Trees, hedgerow, to prune | 284 *a* |
| Education, village | 278 *c* | Tullian agriculture | 282 *b* |
| — agricultural | 281 *b* | Vegetation, action of fine earthy matter on | 282 *c* |
| Eucalyptus globulus | 276 *b* | Village instruction | 278 *a* |
| Farm buildings | 284 *b*—285 *b* | Walks, to clear of weeds | 275 *b* |
| Farming, Tullian | 282 *b* | Walls, to stud | 278 *b* |
| Fleming's (Mr.) machine for killing weeds | 275 *b* | Weather, the | 285 *b* |
| Fowls, Dorking | 284 *c* | Weeds, machine for killing | 275 *b* |
| Game | 283 *c* | Woodlice, to kill | 277 *c* |



NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET, LONDON.

NOTICE TO EXHIBITORS.—Mr. H. Groom, Clapham; Mr. C. P. Lochner, Paddington; Mr. H. Neville, Peckham; Mr. R. Stains, New Road; Mr. W. Barnes, Ware; Mr. T. Moore, Chelsea; Mr. F. R. Kinghorn, Twickenham; Mr. Appleby, Edgeware-road; Mr. W. Cock, Chiswick; Mr. W. Holmes, Hackney; Mr. Robinson, Pimlico; Mr. J. Davidson, Peckham; Mr. Parsons, Ponders End; Mr. Paul, Cheshunt; and Mr. J. Frazer, Lea-bridge, are the Censors specially appointed for the examination of Seedlings at the Society's Offices, 21, Regent-street, on Thursday next, the 8th inst., at One o'clock precisely, and all Plants, Flowers, &c., must be entered, labelled, and staged by that time. A ballot will take place for 28 new members. The nomination of Candidates will be proceeded with; the awards and certificates of the last exhibition announced, and subscriptions received.

By order, JOHN EDWARDS, Hon. Sec.

The rooms will be thrown open to members and their friends, by members' privilege tickets, at 3 o'clock, when the Chair will be taken, and the awards announced.

MONSTER NATIONAL FLORAL EXHIBITION, to be held in Cheltenham, on THURSDAY, JUNE 19, 200*l.* in prizes, and open to all England. Full particulars in the schedules, which will be forwarded on application, by post, to HAMLET W. MILLETT, Esq., Regent-street, Cheltenham. No entrance fee charged to exhibitors.

TUNBRIDGE WELLS.

A GRAND HORTICULTURAL FETE, under the distinguished patronage of H. R. H. the DUCHESS OF KENT, the EARL OF ABERGAVENNY, and the Nobility and Gentry of the neighbourhood, will take place in Calverley Park, Tunbridge Wells, on FRIDAY, the 27th of JUNE, 1851. Two Military Bands will be in attendance. Parties intending to Exhibit are requested to communicate with the Secretary, Parade, Tunbridge Wells, previous to the 10th of June, in order that the requisite space may be secured to them.

May 3. ISAAC CLIFFORD, Hon. Sec.

WARRANTED UNEQUALLED.

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Royal Nursery, Slough.

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| ,, Bella, TRUE, strong flowering plants ... ... ,, | 7 | 6 |
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Exeter, May 3.

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| Queen of Summer | Queen Improved |
| Princess Royal | Royalist |
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STOCK, Gigantic Pyramidal, bright crimson, very large, and double distinct variety ... ... ... 1 0
BROCCOLI, Walcheren, the earliest sort grown ... 0 6
Ditto Purple Cape improved ... ... ... 0 6
Ditto Chappell's Cream, saved from a very superior stock ... ... ... ... 0 6
Ditto Willcove, the largest Broccoli grown ... 0 6

The above are confidently recommended as being of superior quality, and may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

N.B.—A Dahlia List just published, containing all the new and choice varieties, may be had on application.

OUR YORK REGENT PREPARED POTATO CUTTINGS are now ready; all the other sorts named in our former Advertisement can be had on and after the 20th inst. We had our largest crop last year from those we planted on the 20th of May.—Post-office orders to be made payable to JOHN SANGSTER, Borough Post-office, Newington Butts, London.

HAY, SANGSTER, and Co., May 3.

SUPERB NEW DAHLIAS.

THOMAS BARNES is now sending out, in strong plants, his superb SEEDLING DAHLIAS, viz.:

GEORGE GLENNY, the best yellow ... ... 10*s.* 6*d.*
(Which no collection can be complete without.)
GEM OF THE EAST, rose pink ... ... 10*s.* 6*d.*
DR. SANDFORD (Abbett's), puce ... ... 10 6

FANCIES.—Narcissus, yellow and white; Paragon, buff and white; Queen of Fancies, crimson and white; Symmetry, black and white.

T. B.'s stock of Dahlias, which embraces every known good variety, is unrivalled for health or quantity in Europe. Catalogues on application.

Danecroft Nurseries, Stowmarket, May 3.

NEW PLANTS.

BASS AND BROWN have to offer the following, in well-established plants. Prices to the Trade on application.

| | Each.—s. | d. | | Each.—s. | d. |
|---|---|---|---|---|---|
| Anguria Warsewiczii ... | 7 | 6 | Gloxinia M. Van Houtte | 3 | 6 |
| Bouvardia leiantha ... | 1 | 6 | ,, General Baudeaud | 3 | 6 |
| Capanea grandiflora ... | 5 | 0 | ,, Godtroid de Bouillon | 2 | 6 |
| Calceolaria grandis ... | 2 | 6 | Hoya bella, 2*s.* 6*d.* to ... | 3 | 6 |
| Centradenia floribunda | 2 | 6 | Ixora salicifolia, 3*s.* 6*d.* to | 5 | 0 |
| Chirita Moonii ... ... | 2 | 6 | Justicia magnifica ... | 2 | 6 |
| Dielytra spectabile ... | 1 | 6 | Lobelia thapsoidea ... | 2 | 6 |
| Escallonia macrantha, 3*s.* 6*d.* to ... ... | 5 | 0 | Luculia Pinciana, 1*s.* 6*d.* to | 2 | 6 |
| Fuchsia spectabile ... | 1 | 6 | Rondeletia speciosa major | 1 | 6 |
| Geranium Magnificent . | 7 | 6 | Siphocampylus microrubra ... ... ... | 2 | 6 |
| ,, Prince of Orange . | 7 | 6 | Tritonia aurea, 3*s.* 6*d.* to | 5 | 0 |
| ,, Flying Dutchman | 7 | 6 | Tropæolum Smithii ... | 1 | 6 |

ACHIMENES Escheriana, Bodneri, Baumanni, Longiflora alba or Jauregia, Rosea superba and Tugwelliana, 2*s.* 6*d.* each, or the set for 12*s.*

Descriptive Catalogues forwarded on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE FINEST CARNATIONS, PICOTEES, PINKS, AND OTHER HIGHLY DESIRABLE PLANTS.—We have the pleasure to announce that our Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

| | |
|---|---|
| 25 pairs of finest first-rate show varieties of Carnations and Picotees ... ... ... ... | £5 0 0 |
| 12 pairs do. do. do ... ... | 2 10 0 |
| 25 pairs of very fine show varieties of do. do. ... | 3 0 0 |
| 12 pairs do. do. do. | 1*l.* 4*s.* to 1 10 0 |
| Fine mixed border do.—per dozen pairs ... ... | 0 12 0 |
| True old Clove—per pair ... ... ... ... ... | 0 2 0 |

PINKS, finest first-class show flowers, 12*s.* to 18*s.* per dozen pairs.

Further particulars of new and desirable plants will be found in their advertisement of the 5th of April.

YOUELL and Co., Royal Nursery, Great Yarmouth.

E. G. HENDERSON is now prepared to send out the following New Plants:—

| | s. | d. |
|---|---|---|
| FANCY GERANIUM, Delicatum (Ambrose's) ... each | 21 | 0 |
| SCARLET GERANIUM, Beauty of the Parterre ... ,, | 10 | 6 |
| Ditto Ditto Peach Blossom ... ... ,, | 10 | 6 |
| Ditto Ditto Bridal Bouquet ... ... ,, | 10 | 6 |
| Ditto Ditto Golden Admiration ... ,, | 15 | 0 |
| POTENTILLA ANTWERPENSIS ... ... ... ,, | 7 | 6 |
| Ditto bicolor grandiflora ... ... ... ,, | 5 | 0 |
| FUCHSIA, Prime Minister (Henderson's) ... ... ,, | 7 | 6 |
| Ditto Resplendent Do. ... ... ,, | 7 | 6 |
| Ditto Lord of the Isles Do. ... ... ,, | 7 | 6 |
| Ditto Madame Sontag Do. ... ... ,, | 7 | 6 |
| CALCEOLARIA MONARCH Do. ... ... ,, | 7 | 6 |
| Ditto Queen of England, Do. ... ... ,, | 7 | 6 |
| Ditto Flora M'Ivor Do. ... ... ,, | 7 | 6 |
| Ditto Golden Knight Do. ... ... ,, | 7 | 6 |
| Ditto Marchioness of Douro, Do. ... ,, | 7 | 6 |
| Ditto Conspicuum Do. ... ... ,, | 7 | 6 |

For descriptions of the above, see Spring Catalogues for 1851, which will be ready for delivery early in May, and will be sent post free on application.

E. G. H. also calls attention to the following new Strawberries:

| | s. | d. |
|---|---|---|
| PREMISSES DE BAGNOLET, very late, good plants in pots ... ... ... ... ... ... each | 1 | 0 |
| CREMONT'S PERPETUAL, a double bearing variety of superior quality, good plants in pots ... ... each | 2 | 6 |

Wellington Road Nursery, St. John's Wood, May 3.

SCARCE AND BEAUTIFUL SEEDS.—SWEET WILLIAM SEED, in 100 varieties, 1s. per large paper.

SNAKE CUCUMBER, grows 6 to 8 feet long, 1s. per paper.

CINERARIA, from the most superb varieties, 1s. per paper.

EMPEROR STOCK, flowers from July to November, and the same plants year after year, 1s. per paper.

CHINA ASTER.—Flowers of this sort have taken first prizes wherever exhibited, 6d. per paper.

CALCEOLARIA, from a most superb collection, 1s. per paper.

CALENDRINIA UMBELLATA, a brilliant and beautiful hardy perennial, 1s. per paper.

The above may be had of Messrs. JEYES and Co., Nurserymen, Northampton.

Payment can be made with postage stamps.

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A MOST DESIRABLE OPPORTUNITY IS NOW OFFERED TO THOSE ABOUT DECORATING "THE FLOWER GARDEN."

By inspecting YOUELL AND CO.'S New and Descriptive Price List for the present season. It contains all the new as well as the most ornamental plants for bedding, with colours attached. Also a descriptive list of the best Verbenas, Fuchsias, Fancy and Scarlet Geraniums, Pansies, Heliotropes, new Liliputian and large flowering Chrysanthemums, Antirrhinums, Hollyhocks, Camellias, Cinerarias, Gloxinias, as well as a select collection of Stove and Greenhouse Plants.

Catalogues will be forwarded on receipt of two postage stamps.

Owing to the numerous letters of inquiry respecting their new and magnificent Gloxinia "Petoiana," they take the present opportunity of announcing that it will not be ready for sending out until June next., of which due notice will be given.

YOUELL and Co., Royal Nursery, Great Yarmouth.

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THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet, in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10s. 6d. each. Small plants for bedding on the 1st of June, 60s. per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

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WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to offer choice collections of the following plants:—

| | Per dozen—s. d. | s. d. |
|---|---|---|
| Azalea indica, fine collection, strong bushy plants | 9 0 | to 18 0 |
| Ericas, fine and bushy | 9 0 | „ 18 0 |
| Epacrises | 12 0 | „ 18 0 |
| Corræas | | 9 0 |
| Geraniums, fine show varieties, strong bushy plants | 6 0 | „ 18 0 |
| Do., scarlet and rose colour | 6 0 | „ 12 0 |
| Chrysanthemums, best French varieties | 6 0 | „ 12 0 |
| Do., miniature do. do. | 9 0 | „ 12 0 |
| Phloxes, all the best new kinds | 6 0 | „ 12 0 |
| Petunias | 6 0 | „ 12 0 |
| Verbenas, very strong | 4 0 | „ 12 0 |
| Antirrhinums | | 6 0 |
| Fuchsias | 6 0 | „ 12 0 |
| Hollyhocks, fine sorts, unnamed | | 6 0 |
| Anemone japonica | | 6 0 |
| Escallonia macrantha | each | 3 6 |
| Lycopodium cœsium arboreum | „ | 3 6 |

Extra plants presented to compensate for carriage.

Rose Nippers from 2s. 6d. to 4s. per pair; Metallic Labels for pot Roses 2s. per 100; Scotch prepared Tobacco Paper, highly recommended as the best sort for all horticultural purposes, 2s. per lb.

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VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited; 1s. packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1s. per oz, 6d. per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1s. per oz, 6d. per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6d. per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3d. per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1s. per oz., 6d. per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

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NEW CONTINENTAL VERBENAS.

THOMAS BARNES begs to inform the admirers of the VERBENA that he has a fine healthy stock of the following, which he can supply at the reduced price of 2s. 6d. each, or 24s. the set, viz.—André, Alfred, Augusta, Dorothée, Eloïte de Beyer, Esteve, Jules, Gen. Brea, Mdlle. Gardie, Madame J. Henderson, Montoni, Ne Plus Ultra, and Marianne. With a large collection of the best in cultivation, from 4s. to 12s. per doz.

Catalogues may be had on application.

Danecroft Nurseries, Stowmarket, May 3.

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THE following useful description of NURSERY STOCK may be procured from the extensive Nursery ground of W. ROGERS, SEN., NURSERYMAN and CONTRACTING PLANTER, Red Lodge, near Southampton, delivered free at any of the Stations on the South-Western Railway, this being now the best season for transplanting them:—

Rhododendron ponticum, 2 to 4 inches, 40s. per 1000; 4 to 6 inches, 80s. per 1000; 12 to 15 inches, fit for working or for planting out for cover, 10s. per 100; 2 to 2½ feet, 20s. to 40s. per 100; Standard, 5 to 6 feet, fit for working, the scarlet, or fine new varieties, 40s. per 100, or 6s. per dozen; Roseum, 3 feet, 9s. per dozen; Hybrida, in many fine mixed varieties, 1 foot, 50s. per 100; white Arboreum, 18s. per dozen; white Ponticum, 12s. per dozen.

Kalmia latifolia, fine plants, 2 feet, 12s. per dozen, 75s. per 100.

Azalea pontica, 1 foot, 25s. per 100.

Arbutus, 1 foot, 12s. 6d. per 100.

Laurestine, 1 foot, 3 sorts, 12s. 6d. per 100.

Double Camellias, 1 foot, 12s. per dozen, in 8 or 10 fine varieties.

Single Ditto, strong, and fit for working, 6s. per dozen, 40s. per 100, small, 25s. per 100.

Abies Douglasii, from seed, handsome plants, 1½ to 2 feet, in pots, or from open ground, 30s. per dozen.

Scotch Fir, 2 years' seedling, fine, 2s. per 1000.

Stone Pine, 1 foot, 12s. 6d. per 100.

Gaultheria procumbens, strong plants, 25s. per 100.

Mahonia aquifolia, for cover, 8s. per 100.

Furze, for cover, 10s. per 1000.

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NEW DAHLIAS.

CHARLES TURNER is now sending out strong plants of the following beautiful kinds:—

| | |
|---|---|
| Barmaid | Nil Desperandum |
| California | Regina |
| Duke of Rothesay | Roundhead |
| Gem of the Grove | Sulphurea pallida |
| Grandis | Sir C. Napier |
| Jullien | FANCIES. |
| Lady E. Cathcart | Kingfisher |
| Leda | Miss Weyland |
| Model | Mrs. Hansard |
| Mr. Palmer | Mrs. Willis |
| Napoleon | Nonsuch |
| Nepaulese Prince | Pretty Polly |

C. TURNER can supply plants of other raisers' new varieties.

Royal Nursery, Slough.

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FORGET-ME-NOT.

MYOSOTIS AZUREA GRANDIFLORA.—This unique variety stands unrivalled for its colour and habit, being very superior to the older sorts of that lovely flower, the Forget-me-not; it also possesses the following good qualities over them: The flowers are much larger, perfectly hardy, and will stand for many years in the same situation; it is a lively blue, and grows about 9 inches high, producing hundreds of blooms on the plant at a time; flowering from June till October, it will be found very useful for planting on rockwork, making a bed, or forming edgings; being a colour much wished for, as there is a great deficiency of dwarf blue flowers for autumn blooming. The Seed of the above is now ready to be sent out, at 2s. 6d. per packet. Also the following varieties of Flower Seeds can still be had: Hollyhock Seed, 2s. 6d. per packet of 150 seeds; German Aster Seed, 1s. per packet; Sweet-William Seed, 1s. per packet; Antirrhinum Seed, 1s. per packet; and also the other varieties of Seeds named in the former Advertisement in this Paper on the 5th of April. The whole or any part of the above sent postage and package free. A remittance must accompany the order, either in cash or penny postage stamps, for the amount.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

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FINE NEW HYBRID STATICE, "STATICE HALFORDII."

MESSRS. VEITCH AND SON have much pleasure in offering this beautiful hybrid Statice, which was raised by Mr. Blackmore, gardener to Mrs. Halford, of Newcourt, near Exeter, from the seed of S. macrophylla crossed with S. frutescens. The plant is of fine habit, intermediate between its two parents. It is a most abundant bloomer and altogether a very great acquisition to this lovely tribe of plants. It is named in compliment to the lady in whose beautiful gardens it was raised.

Well-established Seedling Plants ... ... 5s. each.
Do. Do., to the Trade, 42s. per doz.

N.B.—A few fine strong Plants of the new STATICE MACROPHYLLA, in 32-sized pots, 7s. 6d. each.—Exeter, May 3.

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STORY'S SUPERB SEEDLING FUCHSIAS.—FUCHSIA PRINCE ARTHUR (STORY'S).—This is the finest of all the double corolla flowers yet raised and offered by Mr. Story. The corolla is of intense purple and well formed; the tube and sepals are a fine scarlet, smooth and without excrescence, the sepals being sufficiently reflexed to show the corolla to advantage. It is a free bloomer, of good habit and a great novelty. Strong plants, 10s. 6d.

FUCHSIA ATTRACTION (STORY'S).—This is a very attractive flower, of extra large size and brilliant colours. The tube and sepals are vermilion, the corolla a fine purple, and rendered very conspicuous by the sepals reflexing. A free-flowering and saleable variety. Strong plants, 7s. 6d.

FUCHSIA DEVONIENSIS (STORY'S).—This is a fine variety, of excellent habit, with a short scarlet tube, and sepals of fine texture; corolla beautiful, light violet, and well formed. It is an abundant bloomer, and will be an acquisition to every collection. Strong plants, 7s. 6d.

The set of three, taken together, package included, for 21s., for cash (prepayment). The usual discount to the Trade.

Messrs. VEITCH and SON have much pleasure in offering the above beautiful Fuchsias. They are seedlings raised in 1849, and proved in 1850 by W. H. Story, Esq., of Whitehill, Newton Bushell, and were selected from a vast number of seedlings. They are all perfectly distinct, and worthy of general cultivation. Mr. Story's well-known character as a raiser of seedlings will be a sufficient guarantee that he would permit nothing to be sent out, with his name attached, that was not of first-rate character, and calculated to give satisfaction.

N.B.—A remittance or reference from unknown correspondents required; this will be strictly adhered to.

Exeter, May 3.

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SELECT PLANTS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE, with the newspaper stamp, to go free by post, supplied on application. The following selections are now ready to send out:—

| | | s. d. |
|---|---|---|
| | GERANIUMS. | |
| 12 | splendid new varieties sent out last season ... | ... 50 0 |
| 25 | superb show varieties, 40s. 12 for ... | ... 21 0 |
| 25 | fine ditto ditto 22s., 12 for ... | ... 12 0 |
| 12 | splendid fancy varieties, 15s., 6 for ... | ... 9 0 |
| | Scarlet and good bedding varieties, per doz., 6s. to ... | 9 0 |
| | FUCHSIAS.* | |
| 12 | splendid new varieties sent out last season (Story's, Mayle's, Smith's, Rumley's, and others) ... | ... 15 0 |
| 25 | superb show varieties, 17s. 6d., 12 for ... | ... 9 0 |
| 25 | fine older ditto 10s. 6d., 12 for ... | ... 5 0 |
| 50 | varieties in choice assortment ... | ... 25 0 |
| | GREENHOUSE PLANTS. | |
| 12 | select showy varieties ... | ... 15 0 |
| 25 | ditto ditto ... | ... 28 0 |
| 50 | fine varieties ... | ... 50 0 |
| 12 | new and choice ditto ... | ... 25 0 |
| 12 | vars. GREENHOUSE CLIMBING PLANTS, select | 12 0 |
| 12 | do. STOVE PLANTS, new and choice ... | ... 18 0 |
| * 12 | do. ACHIMENES, 6s. 6 beautiful new vars. | ... 5 0 |
| * 12 | do. GLOXINIAS, 12s., 6 beautiful new vars. | ... 7 6 |
| 12 | do. CINERARIAS, showy, *strong blooming plants* | 10 0 |
| 12 | do. AZALEA INDICA, choice, 15s., 6 for | ... 7 6 |
| 12 | do. ERICAS, free bloomers, 12s., 6 for ... | ... 7 6 |
| | HARDY PLANTS. | |
| 100 | do. HERBACEOUS PLANTS, 30s., 50 for | ... 17 6 |
| 100 | do. ditto, superior and new, 50s., 50 for ... | ... 30 0 |
| 25 | do. ditto ditto 17s. 6d., 12 for | ... 9 0 |
| 25 | do. ROCK PLANTS, select, 12s., 12 for ... | ... 7 6 |
| 12 | do. ANTIRRHINUMS, new and choice, 10s., 12 fine vars. ... ... ... | ... 6 0 |
| 25 | do. PHLOX, showy, 10s 6d., 12 for ... ... | ... 6 0 |
| 12 | do. PENTSTEMONS, new and choice, 7s. 6d., 6 for | 5 0 |

Those marked thus * can be sent by post if desired, without extra charge. Goods sent carriage free to London; and for long carriage of goods of 40s. and upwards extra plants sent gratis. Particular attention is paid to secure packing, and strong packages provided for plants sent to long distances.—Post-office orders are payable either to BASS and BROWN, or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

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WIDNALL AND DAVIS can supply good plants, selected from the following first-rate Show DAHLIAS, at 24s. per dozen, or 35s. the collection.

| | |
|---|---|
| Anticipation | Miss Newman |
| Champion | Mrs. Seldon |
| Duchess | Mr. Seldon |
| Dukis | Purple Standard |
| Duke of Wellington | Queen of the Isles |
| Elizabeth (Daniels's) | Seraph |
| Frederick Jerome | Sir F. Bathurst |
| Magnificent (Keynes's) | Snowflake |
| Yellow Standard | Thames Bank Hero. |

| | | |
|---|---|---|
| Also, fine Show varieties, per doz. | ... ... ... | 12s. 0d. |
| Good Border varieties, in colours, per doz. | ... | 6 0 |
| First-rate Fancy Dahlias, per doz. | ... ... ... | 18 0 |
| Good Border varieties, per doz. | ... ... ... | 6 0 |
| Shrubby Calceolarias, in 12 varieties, per doz. | ... | 9 0 |
| Ditto ditto per 100 | ... ... ... | 42 0 |
| Chrysanthemums, first-rate Show varieties, per dozen, from | ... ... ... ... ... | 9s. to 12 0 |

W. and D.'s Catalogue, containing full descriptions of Dahlias, Chrysanthemums, Pelargoniums, Fuchsias, Verbenas, Phlox, Cinerarias, Calceolarias, Pentstemons, Violets, Bedding Plants, &c., can be had on application.

Grantchester Nurseries, Cambridge, May 3.

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CARTER'S CATALOGUE OF FLOWER SEEDS.—A Revised Edition of CARTER'S SYSTEMATIC CATALOGUE OF FLOWER SEEDS is now published, and can be had, gratis, on application. J. CARTER also begs leave to submit an extract of such Flower Seeds as are proper for present sowing.

| | ANNUALS. | s. d. | | PERENNIALS. | s. d. |
|---|---|---|---|---|---|
| 12 | fine hardy varieties | 2 0 | 12 | hardy varieties ... | 2 6 |
| 25 | do. do. | 4 0 | 25 | do. do. ... | 5 0 |
| 50 | do. do. | 8 0 | 50 | do. do. ... | 10 0 |
| 100 | do. do. | 16 0 | 100 | do. do. ... | 17 6 |
| 12 | half-hardy do. | 3 0 | 12 | frame do. ... | 3 0 |
| 25 | do. do. | 6 0 | 25 | do. do. ... | 5 0 |
| 50 | do. do. | 12 0 | 12 | greenhouse shrubs, &c. | 3 6 |
| 100 | do. do. | 20 0 | 25 | do. do. ... | 7 0 |

| | VARIOUS ANNUALS. | s. d. | | PERENNIALS. | s. d. |
|---|---|---|---|---|---|
| 12 | Aster, German, separate, h. h. ... | 1 6 | 6 | Campanula ... | 1 6 |
| 12 | „ new Globe, separate, h. h. | 1 6 | 4 | Canterbury Bell ... | 1 0 |
| 12 | „ new pyramidal, h. h. | 1 6 | 6 | Delphinium ... | 1 6 |
| 12 | Balsam, doub. h. h. or g. | 2 6 | 6 | Dianthus ... | 1 6 |
| 12 | „ new Camellia, h. h. or g. ... ... | 2 6 | 6 | Digitalis ... | 1 0 |
| 6 | Calliopsis, h. h. | 1 6 | 4 | Gentiana ... | 1 0 |
| 4 | Clarkia pulchella | 1 0 | 3 | Geranium, g. ... | 2 6 |
| 4 | „ elegans ... | 1 0 | 3 | Geum ... | 1 0 |
| 4 | Collinsia ... | 1 0 | 4 | Hibiscus, g. ... | 1 6 |
| 10 | Convolvulus major | 2 6 | 8 | Hollyhock ... | 1 6 |
| 4 | „ minor, new | 1 0 | 4 | Ipomœa, g. ... | 1 6 |
| 4 | Cuphea, h. h. ... | 1 6 | 3 | Ipomopsis, f. ... | 1 0 |
| 4 | Elichrysum ... | 1 0 | 4 | Kennedya, g. ... | 1 6 |
| 4 | Gaillardia, h. h. | 1 0 | 4 | Lupinus ... | 1 0 |
| 6 | Godetia (Œnothera) | 1 0 | 6 | Marvel of Peru, f. | 1 0 |
| 4 | Gourd, extra fine, h. h. | 1 6 | 4 | Mimulus, f. ... | 1 0 |
| 12 | Larkspurs, German ... | 2 0 | 4 | Papaver ... | 1 0 |
| 8 | „ new branching | 2 0 | 8 | Pentstemons ... | 1 6 |
| 6 | Marigold, Fr. & Af., h. h. | 1 0 | 6 | Petunia, f. ... | 1 6 |
| 4 | Mesembryanthemum | 1 6 | 4 | Potentilla ... | 1 0 |
| 4 | Nemophila ... ... | 1 0 | 4 | Scabious ... | 1 0 |
| 4 | Phlox Drummondii, h. h. ... ... ... | 1 6 | 4 | Stock, Brompton, f. | 1 0 |
| 4 | Portulaca, finest, h. h. | 1 6 | 4 | „ Imperial, f. | 1 6 |
| 4 | Salpiglossis, h. h. ... | 1 0 | 3 | Sweet William | 1 0 |
| 12 | Stock, dwarf German, h. h. ... ... | 2 0 | 4 | Thunbergia, g. | 1 6 |
| 12 | „ German 10 week | 2 0 | 3 | Verbena, f. ... | 1 0 |
| 12 | „ Prussian „ | 2 0 | 12 | Wallflower, German | 2 6 |
| 8 | Zinnia elegans, h. h. ... | 1 6 | 6 | „ „ ... | 1 3 |

EXPL.—*The above selections comprise the finest varieties; those marked f. require protection in winter; g. greenhouse plants; h. h. half-hardy annuals; they succeed best sown on a hot-bed, but will do without artificial heat at this season. Mixed packets may be had of all the above sorts, from Aster to Wallflower, at 6d. each; also of the following:—Acacia, 20 sp. g., 1s.; Achimenes, g., 1s.; Anemone, 6d.; Bellis perennis, 40 vars., 1s.; Calceolaria, new spotted, g., 1s.; Cineraria, g., 1s.; Doryanthes excelsa, Gigantic Australian Lily, 1s.; Elichrysum, g., 1s.; Nemophila maculata, beautiful for greenhouse, 6d.; Pansy or Heartsease, 1s.; Primula sinensis, mixed, 1s.; Saponaria calabrica, 6d.* All the above seeds sent prepaid at the prices affixed.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

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SUTTON'S SELECTED TURNIP SEEDS AND NATURAL GRASSES.

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre.*

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures, 10d. per pound.

Ashcroft Swedes; Skirving's Liverpool Swede Seed; Sutton's fine sort of purple-topped Swede; Sutton's purple-topped Yellow Hybrid Turnip; the New Lincolnshire Red Globe Turnip; Sutton's early six weeks Turnip; also, Yellow Globe and other Mangold Wurzel, of superior quality, at low prices, as per catalogue, which may be had gratis.

JOHN SUTTON and SONS *are exhibiting, in Class III., at the great Exhibition, their skinless Chevalier Barley, and their purple-topped Hybrid and Lincolnshire Red Turnips.*

*From a Clergyman, an eminent Agriculturist, and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

*Another Clergyman writes us—*

"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, May 3.

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MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

TULIPS.

MR. DAVIDSON, Camden Grove, Peckham, will submit a portion of his BULBS for Sale, during the bloom, by private contract.—Applications for Catalogues (with a price to each row) will please address, free, inclosing a postage stamp.

HUGH LOW AND CO.'S NEW CATALOGUE OF PLANTS is just published, and will be sent free on prepaid application.—Clapton Nursery, London.

EXTENSIVE SALE OF PINE-APPLE PLANTS.

TO NOBLEMEN AND GENTLEMEN requiring PINE PLANTS, an excellent opportunity is offered for supplying themselves with clean healthy plants. The stock consists of several hundred fruiting and succession plants, of the following sorts:—Providence, Black Jamaica, Black Antigua, Montserrat, Elville, Globe, Queens, Ripley Queen, Antigua Queen, Moscow Queen, St. Vincent, Blood, smooth and prickly Cayenne, Trinidad.—For particulars apply to J. and C. LEE, Nursery, Hammersmith; to Mr. MARNOCK, Royal Botanic Gardens, Regent's Park; or to Mr. MOFFATT, Chamber Gardens, Worksop, Notts.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, will be prepared with extra strong plants ready to send out the 1st of May, 1851, of the following New and First class DAHLIAS:—

| | |
|---|---|
| Yellow Superb. | Baltic. |
| Hon. Mr. Herbert. | Antoinette. |
| Beauty of Kent. | Miss Pope. |
| Summit of Perfection. | One-in-the-Ring. |
| Nepaulese Chief. | Miss Herbert. |

The whole stock of these are in the possession of JOHN KEYNES, and Prizes for the best Six Blooms from the above will be given at three of the leading Exhibition of the season. Orders for Dahlias from other growers faithfully executed in conjunction with his own.—Salisbury, May 3.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4s. per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1s. each.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21s. each.—Nursery and Seed Establishment, Hammersmith, near London.—May 3.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition; 21s. Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first-class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

BATH NURSERY.

JAMES GRIFFIN begs to announce that his Annual Spring CATALOGUE is now ready, and may be had on application. It contains a Descriptive List of all the newest and best Dahlias, Fuchsias, Verbenas, Phloxes, &c.; also a Select List of the most useful plants adapted for decorating the Flower Garden. The prices will be found exceedingly low. Weston-road, Bath.

**The Gardeners' Chronicle.**

*SATURDAY, MAY* 3, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | May | 5 | Entomological | 8 P.M. |
| | | | Chemical | 8 P.M. |
| | | | British Architects (Anniversary) | 8 P.M. |
| TUESDAY, | — | 6 | Linnean | 8 P.M. |
| | | | Pathological | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| WEDNESDAY, | — | 7 | Royal Botanic | 3½P.M. |
| THURSDAY, | — | 8 | National Floricultural | 3 P.M. |
| | | | Royal Soc. of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½P.M. |
| FRIDAY, | — | 9 | Philological | 8 P.M. |
| | | | Astronomical | 8 P.M. |
| | | | Royal Institution | 8½P.M. |
| SATURDAY, | — | 10 | Medical | 8 P.M. |

COUNTRY SHOWS.—Wednesday, May 7: Hammersmith Pansy.—Thursday, May 8: Cheltenham Horticultural and Floral.

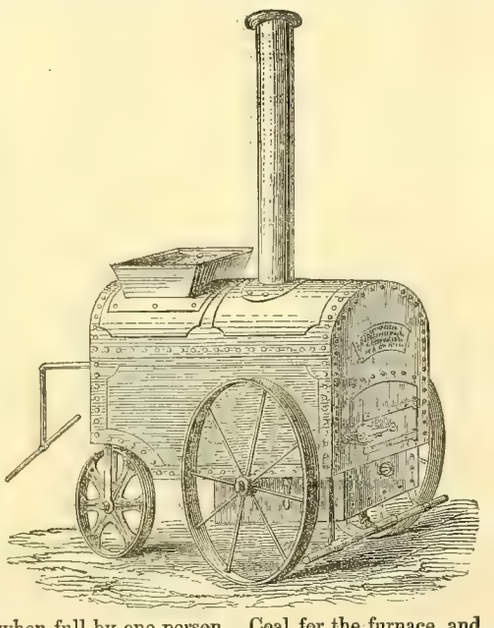
AT length the Crystal Palace is accessible to all the world. The anticipations of its friends are more than realised; the predictions of its enemies and slanderers are more than falsified. Few men ever saw, on English ground, a scene like that of Thursday, when Her Gracious MAJESTY declared the EXHIBITION TO BE OPENED; none have seen, here or elsewhere, such an assemblage of the results of human industry as the vast building now contains. To the general press belongs the task of chronicling the endless examples of human ingenuity brought from all corners of the globe; our charge is far more humble. The raw materials with which the cultivator has to deal; or the instruments contrived to aid him in this task, form the greater part of what our readers will expect in the *Gardeners' Chronicle* and *Agricultural Gazette*. Grain, timber, textile plants, and other vegetable products, animal substances, and animal preparations, implements of husbandry, and the decorations which good taste and bad taste have contributed, in the form of vases, glass work, fountains, and the like, will amply fill such space as our columns may afford from time to time. For to-day, we limit ourselves to an account of Mr. FLEMING'S contrivance for distributing boiling salt and water over ground walks; and to an account of some singular timber, sent from Van Diemen's Land, by Sir WILLIAM DENISON.

ABOUT six years ago the extensive improvements in the grounds at Trentham were brought to a state of completion; and the walks, many of which had been made at great cost, and for which gravel that was reported to prevent the growth of weeds had been brought a considerable distance, were already becoming covered with a thick carpet of Moss, which rendered them not only unsightly, but in damp weather very slippery and dangerous to walk upon. Weeds, too, came up in millions, and much anxiety was caused by this unexpected state of things. To turn the gravel, as is usually done, was objectionable on account of the cost, and the operation would only temporarily remove the Moss and weeds; while the walks, which were perfect as regards form and solidity, would be rendered for a time unfit for use. Hand-picking had been going on for three years, at an annual cost of from 80*l.* to 100*l.*, but only the larger weeds could then be kept down, and the Moss was still extending. Things were in that desperate state which gardeners often find it difficult to get out of, when the idea occurred to Mr. FLEMING that a hot solution of water and common salt would destroy the Moss and weeds, and thus save the expense of turning so vast an extent of gravel. Accordingly in April 1849 he set to work in earnest, determined to extirpate the evil in a wholesale manner. An ironmonger in the neighbourhood was applied to to make a boiler, with furnace, chimney, valve, &c., and to move upon wheels as shown in the cut; the object being to scald the weeds with water boiled on the spot, and to poison the surface of the walks with salt in a state of solution with the hot water, and so to destroy the present crop of weeds, and prevent any more from growing for at least six or eight months to come. All things being ready, the walks perfectly dry and close, and smooth by rolling, the apparatus was set to work. A boy filled it with water, lighted the fire, and put two pounds of salt to every gallon of water. In three quarters of an hour the water was boiling, and a man working not many yards off was applied to, to pull the machine along, which was more than the boy could do, but it was easily managed by the two. At the moment of moving the machine, the valve is opened and the boiling hot solution is dispersed over a certain breadth of the walk, and everything upon it having life is destroyed. At each time about 30 gallons of the liquid are applied to the walk, which is a sufficient quantity to go over from 80 to 85 square yards. After the apparatus is heated, the water may be made to boil in about 20 minutes.

When the gravel is firm and smooth, so as not to let the solution pass too quickly through, it leaves when dry a distinct crust of salt upon the surface, that lasts a fortnight or three weeks in dry warm weather; and when this is the case, the operation has to a certainty been successful; for however well the Moss may be established, it will turn black, and curl up in flakes towards the sun, and will be washed by heavy rain to the sides of the walk, where it may easily be swept up; and in three months the gravel will look as though it had been scoured with soap and a brush. The weeds may be so numerous as to form a turf, and their fate will be that of the Moss, except that their roots being deeper in the gravel, are not so soon washed away by rain; but this is of little consequence, as their bleached and withered leaves are after a few weeks scarcely visible. As soon as the walks will bear it, the roller should be passed over them, in order to solidify the surface, and to prevent the escape so readily of the saline poison during rain; the great point being to make one application effectual, in destroying not only existing weeds and Moss, but also seeds of weeds already in the gravel, or that may be blown upon it.

Mr. FLEMING'S first trial happened to be made during hot weather, and so thoroughly was the work done, with the assistance of the sun's heat and continued dry weather, that walks which looked black and green with the different kinds of Moss, from the windows of the mansion in April, became beautifully clean by June, and they required to have nothing more done to them until May last year, when a few luxuriant plants of Dandelion and Poa annua intimated that a repetition of the previous year's process would be the means of preventing further labour for at least another year. At the present moment, there is not a weed to be seen on these walks; but as a preventive is better than cure, it is intended, if the weather be suitable, to go over them again next month.

The only thing that requires to be guarded against is, that the Grass or Box edgings are not killed by the boiling salt water coming in contact with them. At Trentham, the machine is kept far enough off them, and whatever weeds are missed along the side of the edgings, are soon removed by hand. A small ridge of sand might be laid along the edges to keep off the water; and this could soon be swept up and used again further on. The apparatus which Mr. FLEMING had first made was too heavy; but it has since been much improved upon, and the one which has been sent to the Great Exhibition can be moved



when full by one person. Coal for the furnace, and salt, is conveyed along in a barrow, and water is brought in a water-barrow, ready for filling up the apparatus when required. One person can bring water, move along the barrow with the salt, and have time to pick some of the weeds from the edges, while the water is boiling, and thus no time is lost. The surface of gravel cleaned in this way in one day is about a quarter of an acre; and if this space was very foul, and had to be hand-weeded, it would cost from ten to twelve shillings each time, or from 2*l.* to 3*l.* annually, while with the apparatus it will cost only six shillings. As the action of the salt causes rapid corrosion, care is taken to have the machine thoroughly cleaned and painted, and the valve well oiled before it is put by for the season.

A drive, court-yard, or walk, may be green with moss and weeds, but the expence of cleaning by these means will not be increased; and it will keep clean much longer than by any other method. One of the greatest advantages is that when a walk is once well made (which all walks to be comfortable should be), it need never be disturbed by weeding-irons, turning, or, as in Scotland, by hoeing and raking. Where walks are not smooth and comfortable, the gardener has seldom much peace until he has rendered them so; and all the plans which we have hitherto seen for destroying weeds are not merely expensive but only partially successful.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 12.)

No. XXVIII.—Turn we now, for a short season, and with the kindest of motives, from our good little friends the *seed*-birds, to give a thrice hearty welcome to their amiable summer associates. I mean those sleek, trim, lovely, lively, delicate "Warblers," whose advent here, at this season, is so anxiously looked for by their expectant admirers; and some one of whom is now arriving, daily, to take up his summer quarters on our hospitable shores.

Who would think, to look at that tiny little whitethroat, and that glossy black-cap, that only a few days since both were braving the elements at sea, and winging their flight across the troubled waters of the Mediterranean? Yet such is the fact. From Africa do they start; and little repose do they know, until they reach England. I am, I believe, about the first, in our parts,

to hear of the landing of any of these our visitors. Knowing the time they are "due," I daily keep a close look-out; and, as I walk abroad, I am not slow to herald their approach:

"Some well-known voice salutes *my* ear,"

when others are strangers to its sound.

The last week has been productive of many interesting "arrivals." I have, already, recognised a variety of harmonious foreign voices, and seen whence they have proceeded.* Perched among the overhanging branches of trees, and half-secreted amongst shrubs—there sat the choristers in the full enjoyment of their native liberty; giving utterance to their feelings in gushes of exuberant joy. Nor are these little fellows soon disquieted. They seem instinctively to know that they are "welcome;" and unsuspectingly do they keep on singing, as if anxious to claim an acquaintanceship with the passing traveller. Hard-hearted monster must he be, who seeks to destroy such pure enjoyment, and such innocent mirth! And yet, this very instant, lieth he in wait to ensnare his unsuspecting victim! See, he is lurking beyond yon hedge! I shall have a word or two to say about him, anon. But to return.

Even now, while I write, with my casement open, I am listening to the hero of this day's article—the Nightingale. Ravenscourt Park, which impinges immediately on my flower-garden, is ringing with his song; though the stars alone are shining, and the waning moon is not yet visible. I can hear many responsive echoes through the neighbouring trees, which tell me we shall have a treat this season.

That magic strain, now borne upon the breeze, comes from the lover's mate. She has been drinking in large draughts of her swain's passionate avowals of constant love and affection, and is now returning him the most impassioned and pathetic outpourings of a grateful and fond heart. Every note she breathes is redolent of sincerity, ardour, fervency, and adoration. All are unmistakeable tokens of the depth of her attachment. Sweet Philomel! How worthy art thou of being loved; and what a pattern of virtue dost thou not hold out for imitation! I could sing thy praises until doomsday.

From this time forward our hedgerows, coppices, brakes, fields, gardens, lanes, and shrubberies, will be heard to echo with the choicest melody,—not the melody of the new comers *only*, but a grand chorus from a union of voices, native as well as foreign. The thrush, the blackbird, the woodlark, and the robin,—all love to commingle their notes with those of the "warblers." No discord have we here—all is "concerted" music.

How pleasant is it, in this festive, "merrie" month, to rise with the early lark, and listen to the music of the grove! From 4 A.M., until half-past 4, the birds are at full "Matins." Have my readers ever attended any of these performances? If not, let such of them as reside in the country make a single trial. If they be lovers of Nature, and also lovers of the feathered choir, how they will thank me for my suggestion!

Then, again—how delightful to wander out at eventide by the side of a rivulet or running brook,—or to saunter through a mead, a meadow, or a secluded lane! The birds may then be heard chanting their choral "Vespers." Many such happy walks have fallen to my happy lot, in days gone by; and as my love for such enjoyment seems to gain strength by time, let me hope the day is far distant when I shall seek pleasure in more hurtful pursuits. But a truce to reflection. We will now at once plunge *in medias res*.

The Nightingale is looked for about the 14th of April; and he is generally here to his time—he was *this* year—unless violent gusts of wind prevail, and so prevent him breasting the Channel. It is worthy of note, that the males always arrive some 10 days *before* the females. Hence, all that are trapped early, are sure to prove "birds of song," though, of course, not all equally inspired with the true *poetry* of song; for with these birds, as with us,—Poeta *nascitur, non fit*.

Nightingales are, of all birds, the most easy to be snared. The villainous bird-catchers, in whose callous breasts pity was never yet found, know this well; and remarking, with the astute cunning of a fox, where the finest birds are located, they lie in wait all night for their prey. At early dawn, they set to work and turn up some mould. The innocent birds at once unsuspectingly descend to seek for a worm in the fresh earth, and seeing the bait (a lively mealworm) in the trap,—they greedily seize it, and find their liberty gone for ever! In this manner are the tribe caught by dozens.

The birds, when secured, are placed in a store cage, and quickly conveyed to the bird dealers in the Seven Dials. These worthies then proceed at once to "meat them off." This is accomplished thus:—Some fresh, raw beef is scraped; and being divested of all fibrous substance, it is mixed into a soft paste, with cold water, and hard boiled yolk of egg. This is put into a large tin bird pan. In the middle of this food is placed a very small inverted liqueur glass, with the stem broken off. Under this glass are introduced three or four lively mealworms, whose oft repeated endeavours to break out of prison attract the attention of the nightingale. Not understanding *how* these worms are placed beyond his reach, he continues to peck at them, until by degrees he tastes the beef and egg, which is artfully rubbed over the sides of the glass. This being palateable, he satiates his appetite with it, and soon feels a zest for it—particularly as his attempts to get at the meal-worms always prove abortive. He now eats regularly—he is meated off.

When first imprisoned, the front of the cage is covered over with tissue paper, to prevent his majesty from being frightened by too great a glare of light. When he becomes reconciled, or rather, resigned to his fate—in a few days, perhaps—this covering is gradually removed, by tearing off small sections of the paper. He must then be suspended, not at too great a height, and be disturbed as little as possible. He will sing almost immediately; but do not imagine therefrom that he is "happy"—a bit of conceit on your part; pardonable, perhaps, but far from the fact. Torn, remorselessly torn, from all he holds dear in the world, dragged from his shady bowers, and pent up between walls of mahogany—there he sits, an object of real pity! His lovely voice is indeed heard—he is lovely even in his tears—but his soul is consuming away in the very bitterness of his spirit. His faith has been plighted long 'ere he reached our country, and he preceded his ladye-love only for the purpose of welcoming her on her arrival.

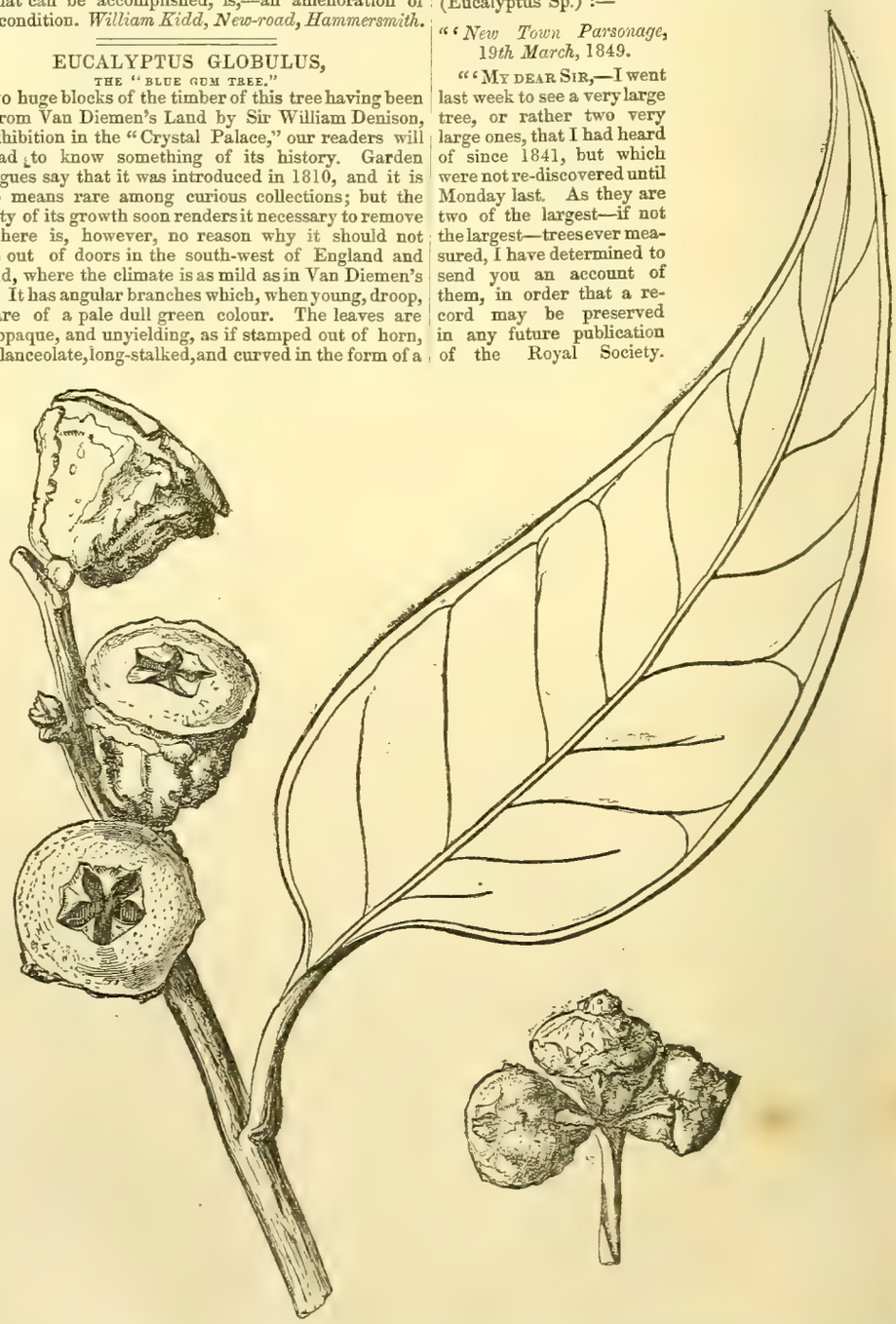
In the face of all these naked facts, we still persist, year by year, in making fresh prisoners. This being so, I shall perform the very pleasing duty of showing the best way to bring some good out of much evil. What the late worthy Mrs. Fry was to the prisoners in Newgate—*that* will *I* try to be to Nightingales in a cage. She could not indeed give *them* liberty; nor can I, *these*. All that can be accomplished, is,—an amelioration of their condition. *William Kidd, New-road, Hammersmith.*

* If any of my readers happen by good chance to be located within a reasonable walking distance of the Duke of Devonshire's grounds at Chiswick, let them pay a very early visit to this picturesque neighbourhood, and let them make a complete tour of the garden walls. In their walk, they will hear the voices of nearly every one of the "warblers." This is a very favourite spot of mine.

## EUCALYPTUS GLOBULUS,

THE "BLUE GUM TREE."

Two huge blocks of the timber of this tree having been sent from Van Diemen's Land by Sir William Denison, for exhibition in the "Crystal Palace," our readers will be glad to know something of its history. Garden catalogues say that it was introduced in 1810, and it is by no means rare among curious collections; but the rapidity of its growth soon renders it necessary to remove it. There is, however, no reason why it should not thrive out of doors in the south-west of England and Ireland, where the climate is as mild as in Van Diemen's Land. It has angular branches which, when young, droop, and are of a pale dull green colour. The leaves are firm, opaque, and unyielding, as if stamped out of horn, ovate-lanceolate, long-stalked, and curved in the form of a sickle; sometimes they are wider at the base on one side than on the other, and, by a twist of the stalk, always stand with their edges vertically instead of horizontally. The white flowers are almost two inches across when the stamens are expanded; and are produced singly or in clusters of threes; sometimes as in our figure, when the leaves fall off, the fruits seem as if in spikes. The calyx is singularly knobby and rugged, with an angular tube, and a cover shaped like a depressed cone, or like a convexity with a rude boss in the centre. These flowers are covered before expansion with a thick glaucous bloom. The fruits are hard, woody, angular, rugged, knobby, urn-shaped bodies, with five opening into the cavities of the capsule.



The early discoverers of this tree reported it to attain the height of 150 feet; but they were far within the truth, as is shown by the blocks in the Great Exhibition, one of which near the base is 5 feet 7 inches in diameter; and another, cut 134 feet above the first, is still 2 feet 10 inches in diameter. We learn from the proceedings of the Royal Society of Van Diemen's Land (vol. i., p. 157) that, on the 11th of October, 1848:

"A paper was read by Mr. H. Hull descriptive of a gigantic tree of the Gum tribe, 'occurring in a gorge on the declivity of the Mount Wellington range near Tolosa, about six miles from Hobart Town.' Mr. Hull describes it as a Blue Gum (Eucalyptus globulus), and says 'it stands close to one of the small rivulets that issue from the mountain, and is surrounded with dense forest and underwood. * * * It was measured with a tape, and found to be 28 yards in circumference at the ground (more than 9 yards in diameter), and 26 yards in circumference at the height of 6 feet. The tree appeared sound except at one part, where the bark had opened, and showed a line of decayed wood. The full height of the tree is estimated to be 330 feet.'"

It is not improbable that the following extract from the same work (p. 165) relates to the same species, although it is spoken of by another name:—

"Mr. Milligan read the following note from the Rev. T. J. Ewing, of New Town, on the occurrence of some unprecedentedly large specimens of the Swamp Gum (Eucalyptus Sp.):—

"'*New Town Parsonage, 19th March*, 1849.

"'My dear Sir,—I went last week to see a very large tree, or rather two very large ones, that I had heard of since 1841, but which were not re-discovered until Monday last. As they are two of the largest—if not the largest—trees ever measured, I have determined to send you an account of them, in order that a record may be preserved in any future publication of the Royal Society. They are within three quarters of a mile of each other, on a small stream, tributary to the north-west Bay River, pretty far up on the ridge which separates its waters from those of Brown's River. They are easily reached from the Huon foot-path, and are in a beautiful vale of Sassafras and Tree-Ferns, and not in an inaccessible gully, like most of our gigantic trees. I have never before seen the Tree-Ferns growing in such luxuriance, bending over the stream like enormous cornucopias. The fire has never reached them, as they and the forest around plainly show; and every here and there you are puzzled on seeing a Sassafras tree with a

root on either side—one in particular forming a natural arch, underneath which you can walk. And it was some time before I could tell how it was ever possible for the tree to have grown there, until, on looking further, I perceived that the Sassafras must have originally sprung from seed lodged in the bark of some Swamp Gum that had fallen across the brook; and, as it grew, it gradually sent out roots along the trunk until they met *terra firma*. The trunk having, in the course of ages, decayed, has left the Sassafras tree in the odd position in which we now see it. I say so much before I give you the measurement. I am sure the whole scene would amply repay you for the trouble of a ride; in addition to the giants below, there are, I feel confident, within a mile, at least 100 trees of 40 feet in circumference. One, about 40 yards from the biggest, was 60 feet at 4 feet from the ground, and, at 130, must have been fully 40 feet in circumference; it was without buttresses, but went up one solid massive column, without the least symptom of decay. A Silver Wattle was 120 feet high, and 6 feet round. In fact, we named it the Vale of Giants, for puny indeed did men appear alongside these vegetable wonders. The largest we measured was, at three feet from the ground, 102 feet in circumference, and at the ground 130 feet. We had no means of estimating its height, so dense was the neighbouring forest, above which, however, it towered in majestic grandeur. This noble Swamp Gum is still growing, and shows no signs of decay; it should be held sacred as the largest growing tree. The largest Oak on record is the Cowthorpe, in Yorkshire, which is 48 feet in circumference at 3 feet from the ground. Some hollow pollard Oaks are larger, such as the Winfarthing, in Norfolk, which is 70 feet at the ground. The second tree, also a Swamp Gum, is prostrate. It measures, from the root to the first branch, 220 feet, and the top measures 64—in all 284 feet, without including the small top, decayed and gone, which would carry it much beyond 300 feet. The circumference at the base is 36 feet, and at the first branch 12 feet, giving an average of 24 feet. This would allow for the solid bole, 10,120 feet of timber, without including any of the branches. Altogether as green timber, it must have weighed more than 400 tons. The Oak that gave the most timber was the Gelonos Oak, in Monmouthshire, which, with its branches, turned out 2426 feet, but the body alone only 450 feet. * * Believe me, yours very truly,

"'THOMAS J. EWING.'

"His Excellency the President mentioned his having strongly recommended to the Right Hon. the Secretary of State for the Colonies, and to the Lords Commissioners of the Admiralty, the timber of our Blue Gum (Eucalyptus globulus). Plank can be obtained from it in lengths surpassing those of any other timber tree; and it may be sent home and sold at 8*d*. per foot, while Oak plank (to which it is not inferior in quality), of the largest obtainable lengths, costs 2*s*. 6*d*. per foot."

Similar, although less striking, accounts of these Gum-trees are given by Mr. James Backhouse in his "Journal of a Visit to the Australian Colonies," as will be seen by the following extracts:

"On an old road, called the Lopham-road, a few miles from the Bay, we measured some stringy bark trees (Eucalyptus robusta), taking their circumference at about 5 feet from the ground. One of these, which was rather hollow at the bottom and broken at the top, was 49 feet round; another that was solid, and supposed to be 200 feet high, was 41 feet round; and a third, supposed to be 250 feet high, was 55½ feet round—as this tree spread much at the base, it would be nearly 70 feet in circumference at the surface of the ground. My companions spoke to each other when at the opposite side of this tree to myself, and their voices sounded so distant, that I concluded they had inadvertently left me to see some other object, and immediately called to them. They, in answer, remarked the distant sound of my voice, and inquired if I were behind the tree!" (P. 115.)

"In company with J. Milligan and Henry Stephenson, a servant of the company, from near Richmond in Yorkshire, we visited a place in the forest remarkable for an assemblage of gigantic stringy barks, and not far from the junction of the Emu River with the Loud-water, the latter of which takes its name from three falls over basaltic rock at short intervals, the highest of which is 17 feet. Within half a mile we measured standing trees as follows, at 4 feet from the ground. Several of them had one large excrescence at the base, and one or more far up the trunk: No. 1, 45 feet in circumference, supposed height 180 feet, the top was broken, as is the case with most large-trunked trees; the trunk was a little injured by decay, but not hollow. This tree had an excrescence at the base, 12 feet across, and 6 feet high, protruding about 3 feet. No. 2, 37½ feet in circumference; tubercled. No. 3, 35 feet in circumference; distant from No. 2 about 80 yards. No. 4, 38 feet in circumference; distant from No. 3 about 50 yards. No 5, 28 feet in circumference. No. 6, 30 feet in circumference. No. 7, 32 feet in circumference. No. 8, 55 feet in circumference; supposed to be upwards of 200 feet high; very little injured by decay; it carried up its breadth much better than the large trees on the Lopham-road, and did not spread so much at the base. No. 9, 40½ feet in circumference; sound and tall, No. 10, 48 feet in circumference; tubercled, tall, with some cavities at the base, and much of the top gone.

"A prostrate tree near to No. 1, was 35 feet in circumference at the base, 22 feet at 66 feet up, 19 feet at 110 feet up; there were two large branches at 120 feet; the general head branched off at 150 feet; the elevation of the tree, traceable by the branches on the ground, was 213 feet. We ascended this tree on an inclined plane formed by one of its limbs and walked four abreast with ease upon its trunk! In its fall it had overturned another, 168 feet high, which had brought up with its roots a ball of earth 20 feet across. It was so much imbedded in the earth that I could not get a string round it to measure its girth. This is often the case with fallen trees. On our return, I measured two stringy barks, near the houses at the Hampshire Hills, that had been felled for splitting into rails, each 180 feet long. Near to these, is a tree that has been felled, which is so large that it could not be cut into lengths for splitting, and a shed has been erected against it; the tree serving for the back!" (P. 121.)

As we have already observed, there seems to be no reason why these prodigious trees should not, at some future day, decorate the scenery of Great Britain. Devonshire and Cornwall, or Cork and Kerry, would certainly prove capable of bringing them to maturity. *Paxton's Flower Garden for May.*

## FOREIGN GARDEN GLEANINGS.

(ST. PETERSBURG.)

PAWLOWSKI GARDEN.—This garden, the most beautiful of all those of the English style, was first created in 1780, in the reign of Catherine II. It was designed by Brown, to whom an accurate survey of the ground was sent, by his countryman, Goold. Nothing which could by any possibility have been introduced for the purpose of beautifying the place has been omitted; there are lakes, basins, canals, rivers, elegant bridges thrown across streams of water, farms, and, above all cottages, which, though of a poor and unattractive exterior, contain the most elegant statues, large and costly articles of china—the whole being most skilfully broken by means of patches of flowers, clumps of shrubs, or thickets of Oak, Birch, Scotch Fir, Larch, Poplars, and Aspens. That which most deserves attention is the Rose pavilion; nowhere that we know of, is such a remarkably fine effect produced as in this charming spot.

At a short distance from the theatre, is Catherine's private garden, which is entirely filled with ornamental plants. In form it is semicircular, and bounded on two sides by high walls, against which are two parallel lines of houses; two large open screens permit persons to see at a glance all over the grounds; the larger portion of the garden consists of a thick turf, with here and there a bed of flowers; there are two Italian Poplars in the open ground, but they have been much injured by the severity of the climate. Planted, they say, in the reign of Catherine, they are still only 9 feet high; their base alone is large and healthy, the rest is withered and stunted.

On the south side of the grounds are the greenhouses and stoves, Orange houses and wooden pits, all under the care of M. Weimann. This gentleman pays especial attention to exotic plants, of which he has a fine collection. The Indies, America, China, Japan, and the Cape, are all represented by their peculiar plants. We saw there specimens of Metrosideros glauca, Diplacus aurantiacus, Erica arborea, forming pyramids more than 13 yards high, Palleria Aromatica (?) and a remarkably fine Podocarpus.

Amongst other plants not less worthy of notice were an immense Cyperus papyrus, a Brexia in flower and more than 9 feet in height, an Epiphyllum Hookeri 2 to 3 yards high, Begonias from 5 to 6 yards, some patches of Crinum, a Cecropia peltata 10 yards in height, a large Pandanus odoratissimus in flower, a monstrous Littæa geminiflora, some fine Strelitzias, an Amelia macropetala (?) a large Zamia, a Dracæna arborea, and a Puja coarctata 4 feet high and in flower.

Mammillarias are here too in great abundance; in summer they are merely placed in wooden sheds, which are covered with planks in the very hot weather; this treatment, which is also adopted for many other American plants, is found to answer every purpose.

Like most Germans, M. Weimann is passionately fond of Pinks. Begonia discolor, so beautiful in flower, and so handsome with its foliage, is also especially cared for: it is sometimes eaten instead of Spinach. There is, too, a very fine assortment of Geraniums; several of these form pyramids 3 yards high.

CHATEAU DE PETERHOFF.—A fine canal leads the stranger to the front of this chateau. The first object which meets the eye is the famous Samson, who is represented high upon a rock forcing open the jaws of a lion, of which the head alone is visible; from the dying animal proceeds a large jet of water, which rises far above the gigantic Epiceas which surround the group.

We will not speak of the rich architecture of the palace, or of its charming situation above the Gulf of Finland, or of its cascades. The water-works are something like those of Versailles. At the bottom of the park, near the gulf, is the wooden house from which Peter the Great used to view his fleet, and on the other side the stranger admires Monplaisir, one of the most charming spots in the country.

The principal garden is behind the palace; it is laid out in squares, in the middle of each of which is a basin of water surrounding a pedestal, on which is placed a statue. The borders contain some old Lilacs and other hardy shrubs.

In that part of the garden which lies west of the palace are the gardeners' residences and houses for the propagation of rare plants. The front of the largest of these houses is covered with Rose trees and Belladonna maxima (?) There is a pretty hedge of Fuchsias, and the whole garden is intersected with beautiful avenues of lofty Apple trees trained in espalier.

Half a mile from Peterhoff is another garden, that of Alexandrina. We need only state it is one of the gayest in the summer season. *Masson's Report.*

## Home Correspondence.

*Forcing Asparagus.*—"T. P.'s" plan of forcing this highly esteemed vegetable, although in many respects excellent, has nevertheless one great disadvantage, viz., the destruction of the roots after they have been once forced. The plan I adopt here has a decided advantage over any other I have ever seen or heard of; and it is worthy the attention of all early Asparagus growers. It is this: in the first place, the beds are made in the usual manner, except that they lay east and west, instead of north and south, and are of the width of a common Cucumber frame. The trenches or alleys between them being 2 feet wide and a foot and a half deep from the surface of the bed, a tile drain is laid along the bottom of each trench, to carry off any water that may penetrate the linings during the time of forcing. The bed intended to be forced is covered with hot stable manure a foot in thickness, say, in the beginning of November, or earlier if desired, and the trenches are filled with linings of the same material. When the young heads appear above-ground, which they will do in 10 or 12 days from the time of laying on the manure, the latter is then carefully removed and the bed covered over with a little fine soil. A frame is then put on and the linings renewed, raising them up to the top of the frame and covering the glass with bast mats; or what is still better, framed covers of straw. The young heads will grow faster as the bed becomes more thoroughly heated. The covering is taken off every day, and a little air given. The Asparagus is ready for cutting in four or five weeks from the time of putting the manure on, and it is almost as green as it is in May. A far better succession is obtained by this method than by removing the roots into a forcing pit, and the same beds may be forced for any number of years. Mine have been regularly forced for upwards of 30 years without injury. What we force first we give a season's rest: the second is forced every year; indeed they produce finer Asparagus as the roots grow older, provided a proper dressing of salt or other manure be given after each cropping, and the sides of the beds protected at all times with part of the manure which is left for the purpose. *J. W., Daryhulme Hall, Lancashire.*

*Kew Pleasure Gardens.*—My attention has been drawn to a coarse attack made upon me in your publication of the 19th ult., relative to a letter, written by me, which appeared in the *Times* of the 10th, respecting these gardens. My letter to the editor of the *Times* bore precisely the same heading as the present, but the word "pleasure" was omitted, either by the printer or the editor, and hence the overflow of gall which induced you to write the article to which I allude. It is to be regretted that persons who undertake the management of a public newspaper should be deficient of that degree of courtesy which is common in civilised life, and I would respectfully suggest, that henceforth the snappish writer of the article in question should conform a little more to the axioms of Lord Chesterfield. *Kewensis.* [We are not aware that either courtesy, civility, or any other sort of consideration, is due to persons who avail themselves of the press to propagate misrepresentations. Such persons are a public nuisance, and must be treated as such. The rougher the usage they receive, the nearer it approaches their deserts. Had the person calling himself "Kewensis," merely expressed an opinion, instead of publishing a falsehood, he would then, indeed, have been entitled to the treatment due to a gentleman. If, as he says, the blame lies with the editorial office of the *Times*, he should have had the honesty to cause the editorial error to be corrected; for which he had ample time. Not having done so, "Kewensis" must be taken to have fully acquiesced in the mis-statement of which he was the origin.]

*Woodlice and Bantams.*—My Cucumbers are now in full bearing; in 48 lights of them not a wood-louse is to be seen; my bantams picked up every one of them during winter—making them worth at least 10*l*. a year to me. I have not a toad on the place now. *James Cuthill, Camberwell.*

*Migratory Birds.*—It may interest some of your readers to know that swallows appeared here, for the first time this year, on the 16th ult. (April). The cuckoo on the 19th, and this afternoon I heard the nightingale. *J. R., Bridgewater.*

*A few words about Plums.*—Your correspondent "J. R." deserves our thanks for describing the manner in which Reine Claude de Bavay bears its fruit, for we shall now know how to train it to most advantage. I have just planted two, one on a west wall, the other in the open quarters for a pyramidal. "J. R." will find that Chapman's Prince of Wales, treated as his Claude de Bavay will produce its fruit in precisely the same manner, especially if the shoots of the current year be shortened in August. A pyramidal that I budded in 1846, on a strong stock, at about a foot from the ground, has now some blossom on every shoot of last year's growth. I have just examined the tree, and have not been able to find a single shoot without blossom, from the leader at 10 feet from the ground to the lowest branch; and it is abundantly furnished in the usual manner with fruitful spurs on the two and three years old wood. There is in the village in which I reside, a Green-gage tree the suckers from which make very pro-

ductive trees; and there is no perceptible difference between the fruit which they bear and that of the common Green-gage. The parent tree must, I suppose, have been raised from seed. I have a young tree that I raised from a Green-gage stone, and I perceive that the foliage is more like that of its parent than any other. These facts have induced me to put the question to your correspondents, whether the experience of any of them comfirms the supposition that the Green-gage can sometimes be reproduced by seed? Coe's Golden Drop is another admirable Plum, but I find that more than three-fourths of the fruit fall off when they are about the size of Damsons. How is this to be accounted for? My tree is trained on a west wall. I raised two seedlings from it, but they have all the appearance of the common wild Plum. Reine Claude Violette or Purple-gage, the merits of which were recorded by one of your correspondents some time back, is, as regards flavour, the most delicious Plum I have ever tasted, superior to the old Green-gage, and rather larger. It bears well here as an orchard tree, but it is a little inclined to crack and produce gum. Is this tendency likely to be prevented in the case of young trees of this variety by training them on a wall? One word more. Is there any one who can tell me the name of a Damson answering the following description. The tree is an abundant bearer, ripening its fruit in October. The fruit itself is almost black, of the size and form of the common Muscle Plum, and therefore larger than other Damsons, being from 1 inch to 1¼ inch in diameter. In other respects the tree was like the common Damson; it grew in the garden of Saling Hall, Essex. *C. B., Rutland.*—P.S. In Forsyth's old book upon Gardening there is, under the name of "Shropshire Damson," a description which answers exactly to the Damson I have just described. But that name is now given to the Prune Damson.

*Deodars.*—I believe that an "Old Sawyer" has hit upon the true solution of the imperfect growth of some Deodars. I have planted both cuttings and seedlings. I never could get a cutting to grow upright, or furnish itself well, and I never knew a seedling fail to do so. I have some planted in very exposed situations, and some among trees; all grow equally upright, though the shoot is pendulous when young. Perhaps if a tree raised from a cutting be cut down to the ground, it will afterwards grow symmetrical. Cuttings of Araucaria excelsa will make trees thus, otherwise they are quite one-sided. *J. R.*

*Village Instruction.*—Months have passed, and I have not been able to devote a thought to the fulfilment of a half promise I made you, of saying something on this subject, as an appendage to what I stated about "village excursions." And, after all, I feel myself ill qualified for saying much on the subject of village education, for my experience does not extend beyond the management of an ordinary village school, of about 50 children, all under 14, over which there presides a mistress, not regularly trained to her duties. My friend Dawes, the present Dean of Hereford, has shown us all what may be done for our villages, provided a fair start can be made, with sufficient accommodations for a competent teacher. He has so fully discussed the merits of the case, that it would be idle for me to add my inferior experience, except, perhaps, in a single point, on which I will venture to say a word or two. The plan of questioning children on a variety of topics, and giving them occasional information in the way which the Dean of Hereford has suggested, is probably familiar to many of the clergy, though few may have carried it to the extent which he proposes—one plan leads to another, and the establishment of horticultural shows in connection with an allotment system lately introduced here, gave me the idea of teaching our school children the names of our Hitcham wild flowers, and pointing out the leading distinctions between the several families to which they belong. I began last June by fixing narrow stands across the end of the school-room, in which were placed vials filled with water, and before them the names of all our wild flowers systematically arranged. The children were directed to bring all they could find in flower, and the stands were soon filled. I found they eagerly caught up the plan, and soon became familiar with the chief families, so as to be able to recognise a plant belonging to them when first presented to their notice. This year nothing seems to escape them; and every child who first brings a fresh flower enters it with the date when gathered, and I have already had two added to my hitherto known stock. In order to assist them in this pursuit I have printed our list, of which I enclose you a copy, and I propose drawing up brief descriptions sufficient for the object in view. Some of your correspondents were last year discussing the question of establishing an English nomenclature for Botany, and it seemed to be your conclusion, that it would not be expedient to form one for all plants, in which I perfectly agree. But it seems to me very expedient to establish an English nomenclature for our British plants; and so far as our Hitcham wild flowers are concerned I have attempted this in the list now forwarded. The names of the orders are chosen from your "Vegetable Kingdom," and the genera and species selected chiefly from Hooker's and Arnott's recent edition of the "English Flora." In this work two or more names are given to the same genus, and I have consequently been obliged to select one; and in some cases to deviate from the name given to the species. I could wish to see a committee of botanists established for settling definitively an English nomenclature for all our British plants, so that each might have its English class, order, and genus defined, as well as some merely trivial name, by which it is at present most generally known. No doubt we shall have some objectors to the introduction of village botany, and a few scoffers at teaching children such long-winded words as Dicotyledons and Monocotyledons. But even the last is one syllable short of Plenipotentiary, and a host of others introduced into our spelling-books. I do not see why a child should not be taught the meaning of a long word which is used in the classification of plants, rather than be compelled to learn such a one as is intended to set forth the office of the above-named functionary, whom neither they nor I, and probably not one of your readers ever yet saw, or is ever yet likely to see. Explain the meaning of the terms essential to the classification of plants, and children get them up very readily and learn to apply them very satisfactorily. The habit of discrimination, which a little knowledge of natural history confers, seems to me eminently useful to our village scholars, and I wish I had thought of introducing the subject earlier. In order to assist them in discriminating the plants brought to the school, I have placed there an herbarium of most of those which have been found in the village, and I dare say, before the year is over it will be pretty complete. At our horticultural show last June we had 56 competitors among the children of the village for prizes for wild-flower nosegays. It was an interesting sight to see them all busy preparing their nosegays on the spot, and afterwards to see these ranged on the stands before the more showy flowers of the garden. Some of the farmers complained that the children got among their Wheat to gather Poppies, for which the children were duly lectured, and told they were not to do so again; and the complainants were duly advised not to tempt the children by allowing Poppies to grow among their Wheat. I hope this year to find out who knows the most names, and who can refer most plants to their proper orders, and to reward accordingly. As for teaching matters which do not immediately bear on the occupations of the parties we have to instruct, it would be difficult to object to teaching our villagers a little botany, whilst mathematics is made the staple of a clergyman's education at the University. This or that is taught in order to improve the mental faculties; and if in addition we can superadd a little information that may be either pleasurable or useful through life, we need not care for the strictures of those who condemn what they do not comprehend. That our populations are woefully in need of better education than most of them receive is now become a trite observation, and if your readers will refer to a pamphlet or two, that have lately been written by Mr. Zincke, they will see sufficient reason for wishing that the plan suggested by Mr. Dawes could be carried out in every village in the kingdom. *J. S. Henslow, Hitcham, April* 28.

*Studding Walls.*—I did not see your Paper of the 19th ult. until late last week, or I would have "obliged" "David" earlier, by stating that wall studs, if I understood the information referred to by me at page 230 aright, injure trees by presenting objects against which their branches maim themselves, as they advance in growth and acquire comparatively immovable positions; and further, they were discarded because found to be far from "efficient," particularly in training young trees. I am not aware that I am at liberty to refer publicly to the establishment alluded to at page 246, but if "David" will let me take his name and address at the post-office, Bedford, I will give him privately the name of such establishment. *J. T., Bedford, April* 29.

*The Calceolaria.*—In an article on this flower, at page 262, by "M. P." it is stated, that, the plan of propagating by seed is undoubtedly the best. In this I beg to differ from the writer; I consider that the method of propagating by cuttings possesses a decided superiority over seed; for whatever object the plants are grown, whether for internal or external decoration, it is indispensable that the colours of the flowers should be bright, distinct, and well contrasted. Now it must be evident to every one, who has had much experience in the raising of seedlings, that the majority are worthless, possessing none of the above-mentioned properties; hence I contend that for general adoption, the practice of raising seedlings is not to be commended, as it will only be fraught with disappointment to those who have but limited means at command. Of course, these remarks do not apply to those who have abundant facilities, and who cultivate with a special view to the raising of improved varieties. I consider that an intermediate shift is better than to transfer the plant from small pots into their flowering ones, as the plants are impatient, at the period alluded to, of having too much cold soil brought into contact with the roots, when their absorbing properties are in a comparatively dormant state. There is another point in which I think "M. P.'s" system of culture is behind that of many of the cultivators of the present day; and that is, in the omission of watering with liquid manure well diluted with water; this is one of the most essential features of a system producing a very high degree of floral development. As soon as the roots have reached the sides of the pots, applications of liquid manure should be resorted to once a week, and saucers placed under the pots, kept constantly partially filled with the same; the result of this will be remarkably healthy foliage and noble flowers, far surpassing in beauty those which have had no such assistance, though grown in precisely the same soil. Syringing, though requisite to produce sufficient atmospheric humidity, is of very little utility in preserving the plants from the ravages of the green-fly. A fumigation of tobacco is the only effectual remedy, which should be repeated two evenings in succession, at intervals of every three weeks or a month. *W. Rumley, Chatsworth.*

*Penny Banks.*—Can you answer a question which may benefit gardeners' boys. It is said here that penny banks have been lately established and found very serviceable. A benevolent lady in this neighbourhood is anxious to promote one, but can get no working information on the subject. If you could give any reference to publications on this subject, or any directions to persons capable and willing to give useful hints, you would much oblige. I do not mean anything of a club, but a penny bank. *A Gardener's Boy.*

*A Curiosity.*—We have received this in reply to an answer among Notices to Correspondents, at page 248:

"I Beg leave to inform you as you ask Wheather I am Simple enough to Beleive that your pea sticks have produsedthe most miserablest I ever Saw I heav every reason to Believe it And So will any practicle man quite Absurd to Shut out the Crop from Sun or air I hope you were not affraid to publish the few lines I Sent Concerning the Steaking of peas Before the make there Apperance or immediateley after Sown I only hope he the most experiensed gardener in Eneglandwill not Direct us to Stick peas Before the Ar Sown. I think I Do know how to DisBud for this last 20 years and one of the first who advertised in your paper for A Situation. your Most obliged *J. C., Liverpool.*"

## Societies.

Horticultural Anniversary, *May* 1.—R. Hutton, Esq., in the chair. The annual report of the Council and Auditors was read. It was resolved unanimously that this report be adopted. It was proposed by Mr. Charlwood, and seconded by Mr. Glendinning, that the Council take into consideration, at the earliest possible opportunity, the expediency of allowing Fellows to obtain any number of tickets at 3*s.* 6*d.* each, up to some given period antecedent to the yearly exhibitions. It was also proposed by Mr. Glendinning, and seconded by Mr. Matyear, that the Council likewise take into their consideration the expediency of allowing Fellows personal admission, with friends, into the gardens on Sunday afternoons, subject to such restrictions as might be considered necessary. The ballot for Council and officers then took place, when Sir P. G. Egerton, Bart., M.P., Sir C. Lemon, Bart., M.P., and Dr. Royle, were elected new Members of Council, in the room of Dr. Daniell, J. E. Denison, Esq., M.P., and R. S. Holford, Esq. The Duke of Devonshire was elected President; J. R. Gowen, Esq., Treasurer; and Dr. Royle, Secretary. S. F. Gray, and C. Loddiges, Esqrs., were appointed Auditors for the ensuing year.

Royal Horticultural of Ireland.—[We find in the *Dublin Commercial Journal* and *Family Herald*, the following extraordinary statement. The italics are ours.]—The Spring Show of this Society took place on Tuesday, at the Rotundo. The weather was highly favourably, and the visitors numerous and most fashionably, notwithstanding an unworthy and unfair attempt to prejudice the attendance by in advertisement from the "Royal Horticultural Improvement Society." *The display of greenhouse plants was gorgeous;* in the list of prizes we will particularise. *The horticultural productions were very few indeed,* but *we missed some of the contributions to florists' flowers,* which was a serious drawback indeed. The Hyacinth class was admirably contested. His excellency the Lord Lieutenant and the Countess of Clarendon and suite honoured the Exhibition about 3 o'clock, and were accompanied by Lord Monck, J. R. Weld, Esq., C. P. Croker, Esq., M.P., George Roe, Esq., J. M. Chaytor, Esq., J. W. Lane, Esq., Sir George Hodson, Bart., &c. [Are we to infer from this, that the greenhouse plants consisted of the Lord Lieutenant and his suite?]

Botanical of Edinburgh, *April* 10.—The President in the chair. Several donations were announced. Mr. M'Nab exhibited a stem of Statice arborea, from Prof. Syme's garden at Millbank, nearly 1¾ inch in diameter, together with a specimen of the stem of Caryota urens, which had been cut down last year in the Botanic Garden. The same gentleman also exhibited, from the garden of Dr. Neill, an example of Gentiana verna, in full flower, in a pot. The patch was 8 inches in diameter, and the number of flowers was 106. A flowering plant of what is now generally cultivated in British gardens under the name of Bryanthus erectus was also shown. The original plant was produced, during the year 1841, by Mr. Cunningham, of the Comely Bank Nurseries, from seed of the Phyllodoce (Menziesii) empetriformis fertilised with the pollen of Rhododendron chamæcistus. This mule has therefore been figured under a generic name which it is not entitled to (see Paxton's "Flower Garden," No. VII., Sept., 1850). It is, however, exceedingly beautiful and flowers abundantly in the open border during the months of May and June, and is one of the few instances we have of a hybrid raised between two distinct genera. The following communications were read:—1. On a supposed new species of Rubus. By F. J. A. Hort, Esq., of Cambridge.—2. Notice of Narcissus (Ajax) lobularis, Haw. By J. T. Syme, Esq. Dr. Balfour read a communication from Dr. Duncan, on the supposed poisonous effects of the seeds of Abrus precatorius. This communication had reference to the case of three children in a family, who, after swallowing some of the seeds of Abrus precatorius, well known as the red West Indian Peas, with black specks on them, had been attacked with vomiting, giddiness, and other symptoms of poisoning. The Peas had been swallowed about three in the afternoon, and the symptoms developed themselves about eight in the evening. Under the use of emetics the children all recovered. It was remarked, that considerable difference of opinion exists, as to the qualities of these Peas. Dr. M'Fadyen, in his "Flora of Jamaica," says, that they are merely indigestible, and not poisonous; while Dr. Lindley and others state that they belong to the nar-

cotic division of leguminous plants. The present case confirms the latter view, and points out the necessity of caution, in allowing children to amuse themselves with these seeds. Mr. M'Nab gave the following report on the state of vegetation in the Edinburgh Botanic Garden, from 14th March till 10th April, 1851. He remarked, that about a dozen of the plants noted as in flower before this time last year, have not yet flowered :—

| | Date of Flowering. 1851. | Date of Flowering. 1850. |
|---|---|---|
| Draba aizoides | March 14 | March 15 |
| Puschkinia scilloides | ,, 15 | |
| Leontodon Taraxacum | ,, 16 | |
| Acacia affinis | ,, 16 | |
| Saxifraga oppositifolia | ,, 16 | ,, 15 |
| Silene pendula | ,, 16 | |
| Primula nivalis | ,, 16 | ,, 1 |
| Scilla bifolia rubra | ,, 17 | |
| Corydalis solida | ,, 19 | ,, 16 |
| Vesicaria sinuata | ,, 20 | |
| Corydalis cava | ,, 21 | ,, 16 |
| ,, nobilis | ,, 22 | |
| Anemone nemorosa | ,, 24 | ,, 9 |
| Narcissus moschatus | ,, 26 | ,, 24 |
| Scilla sibirica | ,, 26 | |
| Narcissus pseudo-narcissus | ,, 27 | ,, 24 |
| Valerianella congesta | ,, 27 | |
| Brassica napus | ,, 27 | |
| Orobus vernus | ,, 28 | ,, 24 |
| Hyoscyamus orientalis | ,, 28 | |
| ,, physaloides | ,, 28 | |
| Saxifraga virginica | ,, 28 | |
| Anemone hortensis | ,, 28 | April 6 |
| Narcissus jonquilla | ,, 29 | |
| Alyssum saxatile | ,, 29 | ,, 3 |
| Ficaria ranunculoides | ,, 30 | |
| Narcissus bicolor | ,, 31 | ,, 2 |
| Pulmonaria officinalis | April 1 | ,, 4 |
| Viola palmensis | ,, 1 | ,, 1 |
| Doronicum pardalianches | ,, 2 | ,, 6 |
| Dalibarda geoides | ,, 3 | March 30 |
| Primula ciliata purpurata | ,, 4 | |
| Luzula Forsteri | ,, 4 | |
| ,, pilosa | ,, 5 | |
| Anemone coronaria | ,, 5 | |
| Primula marginata | ,, 5 | March 21 |
| Sesleria cœrulea | ,, 5 | |
| Narcissus incomparabilis | ,, 5 | April 2 |
| Scilla italica | ,, 6 | ,, 8 |
| Hierochloe borealis | ,, 7 | ,, 4 |
| Euphorbia Epithymoides | ,, 7 | ,, 5 |
| Hesperis arabidifolia | ,, 7 | ,, 2 |
| Alopecurus nigricans | ,, 8 | March 24 |
| Saxifraga adscendens | ,, 8 | |
| Corydalis capnoides | ,, 9 | ,, 21 |
| Saxifraga Sternbergii | ,, 9 | |
| Anemone appenina | ,, 9 | April 3 |
| Pulmonaria virginica | ,, 9 | ,, 3 |
| Carex montana | ,, 10 | ,, 9 |

Three new members were elected.

## Garden Memoranda.

Messrs. Lane and Son's Nursery, Great Berkhampstead, Herts.—It will be remembered that at a meeting of the Horticultural Society, held on the 1st of April last, Messrs. Lane contributed an exhibition of cut Roses, fresh and beautiful as in the month of June. So fine a display of the Queen of flowers in such vivid colours at so early a season necessarily attracted much attention, and therefore we have thought it expedient to furnish our readers with some information on the subject, beyond what is stated at page 215. Some time last year Messrs. Lane put up a span-roofed Rose-house, 60 feet long, 20 feet wide, and 9 feet high, and glazed it with good sheet glass in large panes, in order that as much light might be admitted as possible. Having no stage in the centre, the floor of this house was filled last autumn with Roses standard, high in the middle, and gradually sloping off to dwarfs at the outer edges, the surrounding shelves being occupied with the smaller varieties. All were lifted and potted in the spring, previous to their introduction into the house, and when placed there, the only care they required was ordinary treatment and a healthy growing atmosphere. In order to supply the latter requisition, Mr. Lane, considering the principles of Polmaise a step in the right direction, decided on adopting a modification of that system of heating, and the result has proved all that could possibly be desired; for with a very small consumption of fuel, any reasonable degree of warmth may be obtained, and when the apparatus is in full play, the circulation of the air is so rapid as to visibly move the foliage. Under such conditions it need hardly be mentioned that the plants not only exhibit luxuriant health, but a brilliancy of colouring is infused into the blooms which in a sluggish atmosphere they could hardly be expected to have possessed, and all this has been effected by means of a peculiar arrangement of the common flue. On the outside of the house, near one end, is a furnace constructed of Welsh lumps; the flue from this is led along the inside of the house to near the other end, where it terminates in one upright shaft. This flue, during its whole length inside the house, is chambered or encased in another flue, out of which there are openings for the escape of hot air, which, after circulating across the house, is collected on the opposite side by cold air drains that restore it to the hot chamber, in which it is again heated, and dispersed over the atmosphere; and thus the latter is kept in continual motion—a condition found to be not only highly conducive to the health of the plants, but so agreeable to one's feelings, that, although the heat is 75° it does not seem to be above 60°. Indeed so rapid is the circulation, that no scorching can possibly be experienced; in proof of which, tender Rose shoots overhanging the warmest opening above the furnace were unscathed and flourishing. In a house of this kind "the bloom" will continue in good condition for two or three months, provided the temperature is not very warm and the atmosphere dry. But in addition to the benefits which vegetation derives from this plan of heating, it is also an advantage to the proprietors' pocket. This we think will be acknowledged when we mention that the whole cost of erecting Mr. Lane's Polmaise house, which, as we have stated, is 60 feet long, 20 feet wide, and 9 feet high, is just 38*l.* 1*s.* 9½*d.* This is exclusive of rollers and shading, which would be about 5*l.* more. Among the many fine varieties of Roses which this house contained, we saw few better than our old friends Baronne Prevost, Duchess of Sutherland, Géant des Batailles, Lady Alice Peel, Madame de Lamericière, Madame Trudeaux, Marquise Boccella, Miss Pepin, Polybe, Regulata, Sidonie, William Jesse, Souvenir de la Malmaison, Adam, Devoniensis, Goubault, Moire, Souvenir d'un Ami, and Vicomtesse de Cazes. Most of these are budded on the Dog Rose, on which they are stated to withstand sudden changes from heat to cold, better than on their own roots. The other houses here were extremely gay with Cinerarias, and other early flowering plants, and the Camellias were beautifully in blossom. Among the latter, we remarked many, not more than 4 inches high, bearing large and well-shaped flowers. These are obtained by taking off the blooming points, and striking them in a little heat.

Messrs. Low's Nursery, Clapton.—Few nurseries contain a more extensive collection of plants than this does. Fourteen houses are appropriated to their accommodation, besides long ranges of pits, consisting of many hundred lights. For convenience of reference, the houses have been all numbered—a good plan, where such structures are numerous. 1 is a show-house, filled with large Australian plants, such as Banksias, Dryandras, and a few common things in flower. It is 34 feet long by 16 feet wide. 2 contained Australian plants, and young Indian Azaleas. It is 84 feet long by 16 feet wide. 3 is a span-roofed house, 102 feet long by 16 feet broad; it is furnished with a flat platform in the centre, full of Indian Azaleas and Camellias. We also noticed some fine plants here of the Norfolk Island Pine (Araucaria excelsa), about 4 feet high. The slate platforms round this house were occupied by Camellias, the back and ends with Araucarias, Cryptomerias, and Telopea speciosissima. On two shelves under the eaves of the roof were some thousands of young plants of Thuja chilensis, or Libocedrus chilensis, in beautiful health, along with Juniperus Bermudiana, and a large stock of soft-wooded plants, fit for turning out bye-and-bye into the flower garden. In front of this house are 32 lights of pits, mostly filled with small Coniferous plants, seedling Arbutus, and delicate herbaceous plants. 4 consisted of Geraniums, all in small pots, in order to fit them the better for enduring a long journey. It is 46 feet long by 14 feet wide. 5 contained Australian and Cape plants, mostly from 6 to 18 inches in height. In this house, which is 100 feet long, were many new plants, collected in the Swan River settlement, by Mr. Drummond. 6 is a Heath house, 73 feet by 10 feet, a half span, and ventilated by means of moving shutters in the back wall, as well as at the top; the front lights are likewise made to open. All the houses named above are heated by smoke flues. 7, a Camellia house, is 100 feet long by 14 feet wide, and faces the North; here there was a magnificent plant of the old Nepal Rhododendron, covered with brilliant crimson flowers, also many Cryptomerias, Araucarias, Taxodiums, and other Conifers, some of them of considerable size, together with two trees of the old Warratah Camellia, 10 feet high. When grown to a large size, as this was, this neglected sort is one of the finest of all the Anemone-flowered kinds. 8 is a span-roofed stove, 72 feet long by 15 feet wide. It has a footpath up the centre, and a pit on either side, heated with hot water in brick and cement tanks. In one part of this house were placed 8 lights, under which stove and soft-wooded plants are rooted in large numbers, and here there is no steam to injure them as in a hotbed, while they may have the same moist atmosphere. Associated with Pitcher plants, Hoyas, Ixoras, Mandevillas, and other inhabitants of this class, was a quantity of young Camellias, just taken from the grafting pit. These had already made shoots from 6 to 9 inches in length. At the end of the lights above alluded to, there is a collection of new Chrysanthemums, Verbenas, Fuchsias, &c., imported from the Continent this season, with a view of getting cuttings from them. 9 is a propagating house with double lights, to prevent "drip" from falling on the cutting pots. This is filled with cuttings under bell-glasses, principally Heaths, Epacris, and other hard-wooded plants, which are struck on old-fashioned tan-beds. Upwards of 600 glasses are employed here, while in a small pit adjoining, there were nearly the same number of pots full of cuttings, from which the glasses have been removed. This house is heated by hot water, as is also pit No. 10, which was filled with small Palms and soft-wooded plants; 11 contains a few Orchidaceous plants, and on the platform in front were some hundreds of Pyrus japonica struck from roots, after the manner in which the market gardeners propagate Seakale. 12 was occupied by stove plants, mostly Brazilian, and various Begonias, a genus whose value for the winter decoration of stoves can hardly be overrated. 13, a small one-sided house, filled with Ferns in considerable variety, and against the roof was a raised platform, or broad shelf, 2 feet wide, and running the length of the house, on which were many thousands of the new Rhododendrons from the Sikkim-Himalayas. Upon these Mr. Low has bestowed much care and attention, and there is little doubt that they will amply repay it. At the east end of house, No. 5, is a range of pits, 148 feet in length. The first division is filled with Epacris, among which, the finest was a seedling, raised by J. Wilmore, Esq., of Oldford, Birmingham, named "Delicata." It has beautiful pink buds, opening to a fine blush. The spikes are large, and the flowers equal to those of Hyacinthæflora. The next division contained Conifers, and the two following were filled with Heaths in small pots. There were many other pits filled with young stock, all in a very healthy condition. In order to afford shade to the plants, we observed that in some of the houses the glass was washed over with a paint, made of whitening and water, which is said to answer the purpose perfectly. This keeps the house cool, and tends to prevent the appearance of red spider. The potting shed is quite a model of its kind. It is roomy, light, and means are afforded for warming it in cold weather.

Upton House, Dorset.—There is at present in the gardens here a scarlet Rhododendron 10½ feet high, and 33 feet in circumference, which has upwards of 400 expanded blooms on it, and betwixt 400 and 500 more to open.

Messrs. Sutton's Nursery, Reading.—An interesting collection of fruit trees, consisting of Pears on Quince stocks, Apples on Paradise stocks, and Cherries on Mahaleb stocks, only from 4 to 6 feet high, are now in full bloom in this nursery, and are singularly beautiful. We are informed that these diminutive trees were loaded with fruit last summer. In another part of the nursery, called "the sample ground," may be seen upwards of 50 different kinds of Grasses growing separately, with the botanical names affixed to each. As but few nursery grounds in the country contain these interesting collections of plants, we doubt not that the opportunities of inspecting them gratuitously afforded by the proprietors will be duly appreciated. *Reading Mercury.*

## Miscellaneous.

*Culture of the Dahlia for Exhibition.*—The following concise rules, to be observed in the successful culture of the Dahlia for exhibition, are not presented so much for any novelty in the practice recommended, as to point out a few of the most essential things to be done at the proper time. For economy in carriage, the plants are grown and sent out in small pots: therefore, on receiving them from the nursery, place them in a close frame for a day and a night to recover them from their confinement; then repot them into 4-inch pots, using rich soil: the pots should be drained with coarse partly decomposed leaf-mould, so that in planting out there will be nothing to abstract from the ball of earth. A good start is of great importance: therefore care should be taken that the plant is grown to a fair size without drawing during the time it is in the pot; the stouter it is the better, without being tall; and it should not be pot bound at the time of planting out: both the roots and the point of the plant should be in a thriving condition, and free from aphides. It may perhaps be unnecessary to state that the plants must be carefully hardened off before they are turned out. If the soil and plants are in a proper state, the first week in June will be a good time for the general planting, which, with ordinary care and attention, will produce good blooms in time for the earliest exhibition. A short period will suffice to have plants of a good size; but it should be borne in mind that hours lost in repotting them when in a young state will make a difference of days in the time of blooming, and it is important that this should be clearly understood, that no neglect in the matter may be permitted to take place. Examine the plants often, to see if any require water; by no means let them become dry so long as they are in pots. Secure them with proper and strong fastenings at the time of planting; water whenever they require it, and sprinkle the foliage slightly almost every evening with soft water. Tie out the branches, and, as the plant increases in size, secure the side-shoots firmly to extra stakes. Cut away all superfluous small shoots. Some varieties have scarcely any to remove, while others have a considerable number. Fearless is of the class which has but few shoots requiring the use of the knife; but such kinds as Shylock require it freely. Indiscriminate pruning must therefore be avoided. Study the habit of the plant, and consider if the flower will be improved by increased size; all varieties need some thinning and disbudding, which should be effected at different periods. Small flowers require it as soon as the young shoots and buds can be removed, while large flowers, such as Thames Bank Hero, Princess Louisa, and many others, would be rendered coarse and valueless for the purposes of exhibition if a number of buds were not permitted to remain till the plant was coming into bloom. Size in this case would be gained at the expense of quality; besides, there is the advantage of having three blooms where two would be grown. On the other hand, size, in moderation, must not be lost sight of. It was not with small blooms that I have taken first prizes for these last 15 years. I would therefore advise the young grower to avoid the two extremes. In shading blooms for exhibition, as a general rule, they should be one-third blown before they are put under the shade; and take care to secure such as appear to be coming good, and at the time they are required, from injury by friction. Slugs and earwigs are very destructive, and must be perseveringly kept down from the time the plants are put out till the end of the season. If you should be annoyed by a small black insect (which is often the case in July), use every means to encourage

the plants to make rapid growths, by watering and syringing them overhead, and by brushing the depredators from the points of the shoots. Snuff, tobacco-water, and various other remedies are often resorted to; but these, if effectual in killing the pests, generally destroy the points of the shoots: if the plants are in a thriving condition, they will soon recover themselves. If the season proves dry, water freely two or three times a week; but never let it be done by halves; give a good soaking when you do water, if that should not be so often. Employ manure-water once a week as soon as they begin to throw up their buds; but it should be used in a weak state at the commencement. Before concluding these remarks, permit me to bear witness to the increasing interest taken both in the culture of the Dahlia for competition and in the raising of seedlings. The enjoyment and pleasing recreation attending the cultivation of florists' flowers add numbers to the fancy; and I have much satisfaction in stating that no flower is more generous in repaying the enthusiastic florist for his labour than the Dahlia. *Mr. Turner, in Becks' Florist, Fruitist, and Garden Miscellany for May.*

## Calendar of Operations.

*(For the ensuing week)*

### PLANT DEPARTMENT.

Scarcely a day will now pass without some of the plants being observed to require repotting; and nothing tends more to keep up the healthy appearance of a collection than timely shifting. Let due attention, therefore, be paid to this point, and to a proper selection of soils, as a little neglect on these heads is ruinous to the plants, and consequently tends to put their owners quite out of taste with them. Many of the free growing kinds, which were potted early in the season, will require larger pots, with which they should be immediately supplied, unless it is wished to flower them in their present sizes, and somewhat earlier than their usual season. In the latter case occasional waterings of liquid manure of moderate strength will be useful, both to maintain their present vigour and to assist the future development of their flowers. Keep a moist growing atmosphere in the conservatory by frequently sprinkling the paths, curbs, and other evaporating surfaces, in warm weather; and when syringing, sprinkle well the walls of the house, that they may give off, in combination with moisture, the heat which they have received during the day. In fine weather, a little before the sun goes off the Pelargonium-house, the plants that are not in flower should be syringed, the water used being soft, clean, and fully as warm as the atmosphere of the house; for, without this, the object for which it is done will be defeated. In the Orchid-house the moisture should be moderate, unless when the weather is so fine that it may be accompanied with light and heat. In watering and syringing, care must be taken to prevent the moisture lodging in the young growths, as they are liable to damp off in their early stage. The beautiful Phalænopsis and many others will be benefited by a slight dewing several times a day; as, by so doing, their roots will be kept active, one of the great things to be aimed at in Orchid growing. Constant attention will be necessary to keep the plants clean and free from insects, of which all the troublesome kinds breed most rapidly at this season. Encourage specimen plants of the choicer kinds of Fuchsias, Erythrinas, Oleanders, Brugmansias, the red Chinese Hibiscus, &c., for placing in the conservatory, along with the various kinds of Thunbergias, and other tender annuals usually grown for summer and autumn decoration; all of which should be shifted on progressively, using rich loamy soil.

### FORCING DEPARTMENT.

Pineries.—Pines require plenty of room, to enable their leaves to extend themselves in a natural way; as, when planted too thickly, and kept too close and moist, they are as it were compelled to send them up into the air like so many Sedges or Irises. Like Orchids, they require a high temperature and plenty of moisture; but they must at all times have a sufficiency of ventilation. Vineries.—If the outside borders have been kept covered with warm litter, according to previous recommendations, they will not require water, unless in very dry situations. They should however be occasionally examined, and if necessary should be watered with liquid manure or guano water, in the proportion of half an ounce of guano to a gallon of water. Give air early in the morning, commencing with a little, and increasing it gradually till mid-day. The crops for the supply of the family during the late autumn and winter months will now require regulating as regards the number of bunches. Melons.—Those who are anxious to produce Melons in the greatest perfection, should plant about the beginning of May, as they thereby secure the four finest months in the year for growing and maturing them; and as they are also the months in which insects increase with the greatest rapidity, no pains should be spared to keep them in check. To this end, all damaged leaves should be removed, as insects generally effect a lodgment most easily on those parts of the plants which have received some check in their development, and that are on that account rendered sickly.

### FLOWER GARDEN AND SHRUBBERIES.

In all dry warm situations, the planting out of half hardy plants may now be safely proceeded with; but if a very early display is not an object of the first importance, we would not recommend too great precipitation in the matter, unless the situation is particularly favourable; and even in such a case the precariousness of our English climate renders it necessary to have abundant means of protection always at command. In our own case it is necessary, for the reason above mentioned, to plant very early; but to prevent injury to the plants, in case of a sudden change in the weather, as well as to protect them from the rays of the sun, it is our practice to use branches of evergreens, the lower ends of which are sharpened and fixed in a leaning position over and amongst the plants. The Yew branches taken from the wall trees that no longer require covering, also come in useful for this purpose. This is a simple method of preventing, at a small cost, a loss which would be irretrievable. We of course commence wtth the hardiest kinds, as Pentstemons, Antirrhinums, &c., and follow with Calceolarias and Verbenas, selecting the best established of those plants which have been gradually exposed to the open air. Except in very extensive places, very little advantage is gained by commencing too soon, and the meantime may be more usefully employed by performing all preliminary operations, and getting the work forward elsewhere, that a strong force and undivided attention may be devoted to this work as soon as it can be prudently commenced. It will be advisable to cast an eye over the arrangement, and compare the quantity required with the total in stock, that any deficiency may be provided for by apportioning a smaller number to the different beds, or by substituting something else, of which there is a greater abundance. Consideration should at the same time be given to making a provision for filling up the gaps, which are liable to occur under the most careful management that can be applied.

### FLORIST FLOWERS.

Polyanthuses and Auriculas will in many localities be in their zenith. We would now recommend that they be placed on a stage having a northern aspect, with a light awning stretched over head, by this means the bloom will be considerably prolonged; a good supply of soft water should be given. It sometimes happens, that a weak plant produces a truss of flowers, which so exhausts its energies that death is the consequence; we would advise them to be removed, and the plant treated with weak liquid manure, so that it may gather strength before autumn. As Auricula and Polyanthus pips fade, they should be pulled from the calyx, and seed saved from those with good properties. Carefully tend Ranunculuses; when the bed is properly made they do not require much water, for the quantity of cow manure, in its extreme decayed condition, which is incorporated with the soil, keeps them cool in very warm weather. The greatest precaution necessary is to fill up interstices in the soil, which sometimes occur. Pinks will like a little liquid manure and keeping very clean; should all the shoots give evidence of spindling, cut them off except two or three, according to the size and strength of the plant; they will put out again strongly, and in sufficient number for abundant propagation. Keep the net over Tulips, to prevent damage; we would not advise the awning yet, as it would be apt to draw them, and when Tulips have thin weak stems, unable to support their cups, it detracts seriously from their beauty.

### HARDY FRUIT GARDEN.

Keep the Apricot, Plum, and Peach trees free from insects. The first is often infested by small caterpillars, which conceal themselves in the unfolding buds, and do so much injury to the fruit, as to cause it to fall off. The Plum, Peach, and Nectarine are very subject to the green-fly, which may be easily destroyed by an application of Scotch snuff and sulphur to the affected shoots, by means of a puffer; and after allowing the mixture to remain on a few days, it should be well washed off with an engine, the dead insects being of course removed at the same time. Proceed with the thinning of Apricots, where thickly set; and also with the disbudding of Peaches and Nectarines. Pear blossoms should be thinned where they are too numerous; as nothing is more injurious, both to the fruit and to the trees, than to have too many blossoms, or young fruit to support. A very vigorous tree will be benefited by allowing plenty of fruit to remain on it; but a tree of moderate vigour should have some of the blossoms removed, and after the fruit is set, these also should be thinned according to the strength which the tree possesses.

### KITCHEN GARDEN.

Asparagus beds may still be planted, and the established beds should be assisted with liquid manure of moderate strength, containing salt at the rate of a quarter of a pound to two gallons of liquid. The beds from which you are now cutting will merely require an occasional sprinkling of salt to keep them free from weeds, and also to invigorate them until the cutting is over; after which, they should receive a liberal supply of rich water. Where a portion of the Asparagus beds is yearly required for forcing, cutting should be discontinued, with a quantity sufficient to meet the demand, at least a fortnight earlier than from the general beds. Seakale pots, and the materials with which they have been surrounded, should now be cleared away, the remaining etiolated foliage should be cut off, and the ground should be sprinkled with common salt, and forked over, always taking care not to injure the crowns.

State of the Weather near London, for the week ending May 1, 185', as observed at the Horticultural Garden, Chiswick.

| April and May. | Month & Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. | 25 24 | 29.848 | 29.541 | 58 | 31 | 44.5 | 51 | 50 | N.E. | .00 |
| Satur. .. | 26 25 | 29.793 | 29.668 | 62 | 25 | 43.5 | 49½ | 49½ | W. | .02 |
| Sunday . | 27 26 | 29.613 | 29.551 | 52 | 25 | 38.5 | 49 | 49 | N. | .00 |
| Monday | 28 27 | 29.659 | 29.603 | 55 | 30 | 42.5 | 49 | 49 | W. | .02 |
| Tues. .. | 29 28 | 29.675 | 29.601 | 53 | 28 | 40.5 | 48 | 48 | S.W. | .11 |
| Wed. .. | 30 29 | 29.643 | 29.601 | 55 | 29 | 42.0 | 47½ | 48 | N.W. | .04 |
| Thurs... | 1 ♋ | 29.760 | 29.672 | 58 | 32 | 45.0 | 47 | 48 | S.W. | .00 |
| Average | ... | 29.713 | 29.648 | 56.1 | 28 5 | 42.3 | 48 8 | 48.8 | | .19 |

April 25—Cold haze; cloudy; clear; slight frost.
— 26—Foggy; very fine; overcast; frosty.
— 27—Fine; cloudy and cold; hail shower between 5 and 6 p.m.; lightning; frosty.
— 28—Fine; very fine; large masses of snow-white clouds: clear.
— 29—Rain; showery, with sunny intervals; thunder in afternoon; fall of large pyriform hail, in substance like compact snow; clear; frosty.
— 30—Fine; hail showers; bright sun occasionally; clear; frosty.
May 1—Fine; slight shower; very fine throughout.
Mean temperature of the week, 9 deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 10, 1851.

| May. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 4 | 64.1 | 62.2 | 53.1 | 9 | 0.70 in. | 3 | 4 | 7 | — | 5 | 3 | 2 | 1 |
| Mon. 5 | 63.2 | 43.1 | 53.2 | 16 | 0.10 | 4 | 4 | 2 | 3 | 7 | 3 | 1 | 1 |
| Tues. 6 | 61.9 | 40.8 | 51.4 | 11 | 0.68 | — | 7 | 3 | 2 | 3 | 8 | 3 | 1 |
| Wed. 7 | 62.4 | 41.8 | 52.1 | 8 | 0.45 | 2 | 6 | 3 | 2 | 4 | 5 | 1 | 2 |
| Thurs. 8 | 63.2 | 41.8 | 52.5 | 8 | 0.57 | — | 5 | 5 | — | 5 | 3 | 5 | 2 |
| Friday 9 | 62.4 | 40.7 | 51.6 | 10 | 0.60 | 2 | 7 | 4 | 1 | 2 | 7 | 2 | — |
| Satur. 10 | 62.3 | 39.8 | 51.1 | 7 | 0.10 | 4 | 4 | 4 | 1 | 1 | 5 | 3 | 1 |

The highest temperature during the above period occurred on the 6th, 1830—therm. 81 deg.; and the lowest on the 5th, 1845—therm. 27 deg.

## Notices to Correspondents.

Aquatics: *Neeton.* Aponogeton distachyon, *Calla æthiopica, Nuphar advena, *Caladium esculentum, Nelumbium caspicum, Butomus umbellatus, and *Nymphæa cærulea will make you gay enough. Those marked * will require to be removed in winter.

Canary Bird: *Wilderness.* Your poor little bird is by no means a curiosity. Her husband, I perceive, is much happier now she has left him; and *she* also begins to revive. Good! Let ti is salutary separation continue. It works well for both, evidently. Now that her mind is easy, her head will recover from its baldness, when next she moults; and her feathers will again be regular. Go on cosseting her, and nature will yet effect a cure. Avoid Hemp-seed altogether, and let her ladyship be supplied with a bath, daily. Your friend says, "she sings sweetly." This, for a *hen* canary, is marvellous, exceedingly. Make much of such a rarity. *W. K.*

Deodar Seed: *B D H.* Sow it in pans in pure yellow loam, and place them in a cold frame.‡

Japan Lilies: *T M.* As soon as the bulbs are sufficiently matured, which will be known by the decay of the leaves and stems, they had better be repotted; not that this is of importance at present, but it will economise space, and prevent the operation being neglected until after they have made fresh roots. The soil in which they have been growing ought to be entirely removed from the bulbs, and the latter divided as may be thought proper, for there will always be found about the crown of the parent some small bulbs, which may be placed in 4-inch pots. If the ripening has been complete, the roots will not be troublesome; but if not, there will be found a quantity of fresh roots remaining. When such is the case, leave them to themselves for some time longer; never pot while it is necessary to cut or break the stronger roots, but strip your fingers through them, in order to remove those that are decayed. The pots should be just sufficiently large to receive the bulb and strong roots adhering to it; give a moderate watering to settle the soil, and place them in a greenhouse or cool pit. They will require no further attention until the season begins to excite vegetation, when they must be regularly attended to. Water as soon as you see signs of growth, but sparingly until they have made leaves, &c., to draw up and give off moisture. ‡

Melons: *J H.* Next week.‡

Names of Plants: *W A.* Helleborus fœtidus.—*A M C.* We do not recognise them, but will say more hereafter.—*K.* 1, Hoya carnosa; 2, Genista canariensis.—*Abies.* 1, Adiantum æthiopicum; 2, Selaginella sp.; 3, Doodia caudata; 4, Cassebeera hastata; 5, Platyloma rotundifolia; 6, Pteris serrulata; 7, Selaginella sp.; 8, S. viticulosa; 9, S. apodum; 10, Asplenium bulbiferum; 11, Adiantum macrophyllum; 12, Asplenium cicutaria.—*T C.* Cyrtopodium punctatum.—*J B and Sons.* Cymbidium pendulum.—*No Botanist.* Saxifraga tridactylites.—*G B E.* 1, Pyrus spectabilis; 2, Phlomis fruticosa; 3, Trollius asiaticus; 4, Doronicum Pardalianches.—*J E.* Grevillea buxifolia.—*A Subscriber.* Weigela rosea.

Peach Trees: *K K.* Probably at the elevation of 500 feet above the level of the sea your Peach trees suffer from cold, although the situation is in a southern county; and yet it seems strange that Figs and Apricots should succeed so well in the same garden where these Peach trees thrive badly. Many Peach trees are ruined by laying in the bearing shoots at full length, or nearly so. Perhaps this is the case with yours. Canvas screens are very good for protecting the blossoms from frost; but the substance ought to be thin.‖

Plants for Shady Situations: *W S.* Nothing will succeed well in such a place except Aucubas, tree Box, Leycesteria formosa, Berberis aquifolium, Privets, Hollies, and Laurels. In front of these might be introduced such plants as great and small Periwinkles, St. John's Wort, Lily of the Valley, Wood Anemone, Winter Aconite, Crocuses, Snowdrops, Squills, and Narcissi.‡

Ranunculus: *W Blood.* It is a very interesting morphological case, analogous to what occurs so often among double Roses.

Seeds: *G L.* Raise them in a hot-bed, and, when strong enough, pot them, and treat them like greenhouse plants.

Superphosphate of Lime: *T M.* Apply it in small quantities, and often, rather than in large doses at long intervals.‡

Vines: *J M.* Your leaves are not mildewed, nor do we know what they ail: not much we suspect. Some local disease is present, but the cause of it can only be ascertained in the Vinery itself.

Misc: *A Z.* Three Shillings. Remittance by Post-office order. —*Amateur.* We have never seen Plumbago capensis employed as a bedding plant. The address in the Advertisement alluded to is correct. ‡—*Albus.* Ivy makes the best covering for a paling; but if you must have flowers there, take some Clematis.‡

### SEEDLING FLOWERS.

Calceolarias: *A S H.* As far as we are able to judge from shrivelled flowers, they are not so good as kinds already out.* —*J M.* The best is 4, which is very promising. The others are more common.*

Cinerarias: *G R, and Young Florist.* No improvement on kinds now in cultivation.*—*J M.* All very pretty, but similar to many others already in the trade.*

Polyanthuses: *W D.* Received in bad condition, but apparently a nice variety.*—*A S H.* Entirely shrivelled up when they reached us.*

Violets: *G T.* Worth cultivating on account of its colour.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

MANURE DEPOT.—PEAT CHARCOAL.

TO FARMERS, AGRICULTURISTS, AND OTHERS.

G. H. FOLEY, Essex Coal Wharf, Lea-bridge, Middlesex, Agent by appointment to the Irish Amelioration Society, for the sale of the above. All needful particulars will be given on application at the above address.

Price of the unmixed Charcoal, 60s. per ton, sacks included. Mixed with Nightsoil, 45s. per ton, sacks included.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

NEW TURNIP MANURE, 50s. a Ton.—Mr. POTTER can strongly recommend the above as a cheap and efficient Manure, and capable of raising heavy crops. Delivered free on rail. The Bags to be returned or paid for.

POTTER'S GUANO, 7l. per ton; SUPERPHOSPHATE OF LIME, 6l. per ton; GYPSUM, 25s. per ton, including bags and delivery on rail.—28, Clapham-road-place, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY, empowered by Act of Parliament to execute all works of Drainage (including outfalls through adjoining estates), to erect Farm Buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money, or to enable the landowner to employ his own capital, and execute the works by his agents, and to secure repayment of the outlay by charge on the property improved spread over a number of years.

Proposals for the execution of works to be addressed to WILLIAM CLIFFORD, Secretary.

Offices, 52, Parliament-street, London.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

RIVERS'S STUBBLE SWEDE TURNIP SEED.

J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green-topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker-street Cattle Show; also specimen roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs. will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2s. per lb., carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5s.; and 5 lbs., 10s., by his agents, a list of whom will be found in the *Gardeners' Chronicle* of 22d March. Messrs. Sutton and Sons, Seedsmen, of Reading, who proved this Turnip with others in their sample ground last summer, state as follows:—"Seed sown on June 30th, July 20th, and August 10th, using the same manure for all, gave the following results—from the first sowing, the roots were fully equal to the *best* of the other sorts; from the second and third sowing, they were far superior in size, weight, and shape, thus showing its peculiar adaptation for late sowing."

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ANNUAL COUNTRY MEETING of 1851 will be held, by the gracious permission of Her Majesty and Prince Albert, in the HOME PARK, WINDSOR, in the week commencing MONDAY, the 14th of JULY.

Copies of the Prize Sheet, containing the terms, conditions, and amount of the respective Prizes, and the Rules of Exhibition, and also copies of the requisite printed Forms of Certificate may be obtained on application to the Secretary, 12, Hanover square, London. All Certificates must be returned, filled up, to the Secretary, on or before the **17th of May**, the Council having decided that in no case whatever shall any Certificate be received after that date.

In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

By order of the Council, JAMES HUDSON, Secretary.

12, Hanover-square, London, May 3.

# The Agricultural Gazette.

*SATURDAY, MAY* 3, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, May 8—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 7—Agricultural Society of England.
WEDNESDAY, — 14—Agricultural Society of England.
THURSDAY, — 15—Agricultural Imp. Soc. of Ireland.

THE success of a campaign certainly depends upon the courage and energy of officers and men as well as on the skill with which its plan has been devised—but both are necessary things. If the plan has been drawn up in defiance of the physical character, or without regard to the nature of the territory in which it is to be carried out, no energy or bravery in detail will compensate for the error; and, on the other hand, the skill of the commanding officer will rarely make amends for the inefficiency of his men. Now the annual routine upon a farm may well be compared to a campaign. Its plan must be skilfully accommodated to all the natural obstacles and advantages of the scene, and the energy and industry of a good soldier must be brought to bear upon its details, and then success may be expected. Attention and industry, however, are not the only things necessary to make a good soldier. Addiscombe is needed for this purpose as well as the drill. Neither are they enough to make a good farmer. Cirencester, or the truth taught there, is necessary for that purpose, as well as practice in the field. The principles of an art, as well as its details, must be acquired by any who would be proficient.

Those who have the charge of agricultural education are perfectly ready to admit the whole of the case put forward in our last week's remarks on this subject. LAVOISIER, the French chemist, it has been a hundred times asserted, was guided by his chemical knowledge to a pretty constant experience of farm profits; they are ready to admit that it is more than probable that he had the additional guidance of a good farm-bailiff; they perfectly admit the need of industry and energy, and practical skill, which colleges alone cannot give, but they do not see how this admission affects the value or necessity of those qualifications which colleges are able to confer. Practical men are mistaken if they think that men of science look down upon their skill and tact as qualifications of inferior value: theories and speculations, things more within their province, are what they criticise severely, and admit with difficulty, and though long experience has proved the difficulty of ascertaining facts correctly, yet facts and truths, once ascertained with certainty—such, indeed, as practical men alone are able to supply—are what they humbly bow before, and gratefully receive. Theirs is the office merely of arrangement or explanation, and certainly they have no wish to quarrel with the men who furnish their materials. Still less ought men of practice to look down on science; it is the cabinet in which their own experience, and that of all antiquity, has been collected and arranged; its truths may be depended on all the more for the multitude of individual facts on which they rest. The doctrines of the chemist, or geologist, or botanist, are based on facts much more numerous and carefully determined than those on which many a practical agriculturist is content to build his confidence. All farm experience is now believed to be arrangeable along with those other facts in geology and botany and chemistry already ascertained so carefully. Taken piecemeal, it is found to illustrate and corroborate the truths which those already taught, and bit by bit it has been arranged under the guidance of these truths, along with one or other of the sciences or classes into which the sum-total of truth divides itself.

What an absurdity to hold the importance of individual facts, and yet despise the truths they help to teach! This, nevertheless, is the conduct of those who contend for the practical part of agricultural education, and yet feel inclined to sneer at agricultural colleges. These institutions teach by the light of all past knowledge, and, therefore, clearly and distinctly, the very truths which, hidden under the disguise of the peculiarities of season, soil, variety, breed, and what not, affecting individual cases, are indistinctly taught by every year's experience on a farm. How important that a knowledge of these truths should be acquired, stripped of this disguise, so that one might know what is independent of all these peculiarities, and thus be able to apply his knowledge in unaccustomed circumstances. Experience is deemed of value: it is so just in the proportion in which the facts that it has witnessed have taught their lesson perfectly. The longer the experience, the greater is its value, just because, the more the facts of which it takes account, the less the chance of the peculiarities of any of them interfering with the lesson taught by all. Now, science is the result of all experience—its doctrines are the truths which the experience of all time has taught: and yet it is despised by many who profess to praise an experience, furnishing, perhaps, two or three only of the thousand foundation-stones on which science rests!

Now the facts of a single year's experience on a farm are the expression of course not only of the *scientific* truth, so to speak, which they illustrate, but also of every little specialty of the season, soil, and every other cause in operation—and the influence of these is to be estimated and provided for only after the actual observation of their influence and effects. On this ground, therefore, as well as on the ground that on the management of men and economy of labour—a matter on which practice is the only teacher—farm profits much depend, personal practice in the field must always be considered an essential part of agricultural education. But the great truths of agriculture which come within the bounds of one or other of the sciences, are of course equally important, and they may be taught in class rooms as well as learned in fields.

The importance of science as the shortest road to an acquaintance with useful truth, and the importance of practice too in any scheme of agricultural education, are what we wish to illustrate: the opportunities presented in this country and in Ireland for the acquisition of such an education, will be referred to in another article.

THE PALACE of GLASS is open. The Queen of England, in her glittering robes, and attended by her plumed and diamonded courtiers in gorgeous array, has been there enthroned, like an Arabian "Fair One," in her "Hall of Light." The multitudes of visitors who have purchased the keys of this temple of enchantment can now witness the industrial productions of "all nations," and learn what all men are able to do. Decoration and ornament are perhaps in greatest profusion; but there is also every variety of the first necessaries of life—food, clothing, and machines of utility occupying large areas in the building. Peculiarities of country and climate are represented, no less than diversity of art and manufacture; vegetable, mineral, and animal substances, the produce of Nature assisted by Art, being present in every form; so that amongst them, the labours of AGRICULTURE which, being of a more homely and vulgar character than those of Art and Science, and effecting less brilliant and beautiful results, are expressed in numerous specimens of the fruits of the field. As the great exposition is one of industrial works, of course the productions of Nature by herself only are mainly excluded; and yet in not admitting these it comes to pass that agricultural industry is only partially represented—by not providing a class for Animals half the farmer's productions are shut out; and we might almost say, by not taking in the native or wild vegetation, &c., of different countries, as well as those cultivated by man, the difficulties overcome by the farmer, in the shape of weeds and insects, are not displayed. The thing of course cannot be other than it is for answering the desired end, but still it should be borne in mind by spectators of the agricultural departments of the exhibition, that raw produce and machinery are only a portion of the farmer's material and productions. They should couple the coming Show of Live Stock in Windsor-park with the display of food,

fibre, and implements now in Hyde-park, in order to obtain a just idea of the Agricultural Show in 1851. But the assemblage of implements is of itself an ample manifestation of our agricultural spirit and industry; and the evident advance that has been made in this branch of mechanical construction, testifies of the recent improvements in cultivation in Great Britain, both by extension of means and methods, into backward districts, and adoption of new appliances where the land is already best tilled, and betokens, also, our future career of progress and prosperity. And though the Great Exhibition has been stigmatised by some of the farming interest as the "inauguration of free trade," it is pleasing to observe that the implement manufacturers, who depend upon the farmer for support, have done their best to grace and enrich the World's Fair. Whoever may disbelieve in the advantageousness of the show, they are fully alive to its value, and to the benefits likely to be derived both by exhibitors and the public. Now of what use is the Exhibition to the farmer? We believe that it is impossible fully to answer this inquiry; the advantages are too various to be at once apprehended, too many to be easily enumerated and described. We may, however, mention a few of the good results that are to be looked for. It will be an important step in the extension and progress of civilisation, if the taste of the great mass of the humbler classes from our rural districts is quickened and beautified by beholding the graceful and grand structure itself, and the eloquent sculptures, superb ornaments, and creations of the arts which are emphatically "Fine," which arrest and fascinate our gaze within it. It will be of service to us, if, when there, a friendly feeling should go out to those of other nations who have contributed to deck the resplendent avenues with these things; and if the old toast be utterly obliterated from our remembrance—"a certain Duke premier, and a red hot war." It will be of incalculable service to agriculturists to compare by aid of their own eyesight, not by the help of party journals, the mechanical resources of English farmers, with those of foreign cultivators; and from the unspeakable superiority of the former, receive an inspiring hope and courage to sustain them in competition with all the world. And, doubtless, many a farmer will this year find out some practice of distant counties in our own land, or of other countries, which may be of use to him at home; and many a one will see implements and instruments with which he was previously unacquainted, and which may comprise just the form or the motion for which he has been long seeking. And this opportunity is the greater, not only from the presence of foreign tools and machines, but also from the circumstance of the collection of those of Britain, embracing the inventions of a wider extent of country than any previous show in either England, Ireland, or Scotland. And many also will notice specimens of cereal produce, roots, seeds, and Grasses, and of fibres, fleeces, skins, &c., which he may introduce with benefit into his own neighbourhood. But, leaving other means of advantage to be suggested by the reader's own reflection, let us proceed to notice, for the information of those who cannot witness them, some of the more worthy objects of the farmer's attention, to be found in the Glass House of Hyde-park—the great conservatory, where all the fruits of human industry have been nourished into ripeness. Entering, perhaps, into the great transept, where a strangely sylvan scene bursts upon the view—tropical trees shooting fan-like under the shade of English Elms—with the high filmy arch over all, the farmer turns at once toward the department which the crimson cloths overhead proclaim "agricultural;" and passing the rich carvings and gorgeous adornments, the fountains and colossal images, and the glitter of glass, gold, and fancy manufactures, threads his way between the slender pillars, till he is lost amidst the more familiar objects of farm machinery. But ploughs in a Palace, carts and chaff-cutters in its crystal colonnades, are they not unsightly and out of taste? By no means; the implements of the field and barn are here tinted, polished, and burnished so as to be worthy of a place beside the workmanship of Fine Art; and instead of the customary red, blue, black, and green paint, the colours vie with those of the nobleman's carriage, and the metal shines bright like silver, and some is even ornate with gold. No farmer dare purchase such at first, except for his drawing-room; they are for ladies and princes to admire. But when the outside gloss and brilliance have worn off, it is certain that the utility of these machines will meet the expectations of the ingenuity which has framed them. On first entering the class, the eye is bewildered by a succession of steam-engine funnels, drilling machines, cutters, carts, ploughs, wheels, and ponderous engines, the nature of which it requires a minute examination to understand. On each side of the main walk through this long department, are raised stands or galleries erected by some of the principal machinists, crowded with implements and wheels, and one surmounted by an emblematic golden sheaf. On a cursory survey also appear spades, forks, &c., and many beautiful models of farmsteads and farm instruments. Turning our attention first to those *implements used in preparing ground for sowing*, we will begin with the PLOUGHS, a description of which shall be given next week. *I. A. C.*

## ON THE TULLIAN SYSTEM OF CULTIVATION.

No. III.—A vulgar conclusion is drawn from the visible connexion of plants with the soil, and from the effects its natural fertility and the manures we apply to it have on their development, that they obtain their nutriment solely through their roots; this error is fast giving way before the inquiries of the age, and the knowledge is rapidly gaining upon us that much of the food of plants—more, perhaps, even than Liebig has shown—is taken in by their leaves; and it is upon this mode of receiving their food that the higher productiveness of our rowed crops, no doubt, in a very great degree depends; and it is upon this opinion I found the theory of a wide-row system of grain tillage, for from examination I have found the roots of our Cereals do not extend laterally to the occupation of the spaces between the rows at the distances of 2 feet; while, from observations I have made, I believe at still much wider distances higher returns may be obtained from the rows, and at least equal, if not superior ones, from the acre. It is not, then, to the abstraction of nutritious matters from the spaces by means of the roots of the plants in the rows that their increased productiveness is due, but through their leaves from the air; and these unoccupied spaces are not therefore deprived of any portion of their fertility by the crops in the rows, but are precisely placed in the same condition as land under the process of a naked fallow, and thus they are qualified to bear a grain crop in the succeeding year. I have on examination found the roots of Cereals sown in wide rows, descend in a columnar form, and not extending above six inches laterally.

It is a property of all projectiles that they are propelled in right (straight) lines; the air is so propelled, and whatever tends to divert its current from a right line tends to diminish its force, following the natural law of projectiles. Repeated checks or divergements at length stop it altogether, and it then stagnates; this is the case more or less with a broadcast crop, the grain promiscuously spread over the surface sends up stems which break and check the currents of air. In a rowed crop these breaks or checks do not occur, the air runs freely along the spaces between the rows. Now, the air is charged with carbonic acid and ammonia, both essential constituents of vegetables, as also with some, perhaps many, of their inorganic elements. It is admitted that for many miles inland the salt of the ocean is carried by the air. Liebig says: "By the continual evaporation of the sea, its salts are spread over the whole surface of the earth; and being subsequently carried down by the rain, furnish to the vegetation those salts necessary to its existence. This is the origin of the salts found in the ashes of plants, in those cases where the soil could not have yielded them." And again. "The experiments instituted under Lavoisier's guidance, by the *Direction des Pondres et Saltpetres*, have proved that during the evaporation of the saltpetre ley, the salt volatilises with the water, and causes a loss which could not before be explained. It is known also that in sea storms leaves of plants in the direction of the wind are covered with crystals of salt, even at the distance of from 20 to 30 miles from the sea. But it does not require a storm to cause the volatilisation of the salt, for the air hanging over the sea always contains enough of the substance to make a solution of nitrate of silver turbid, and every breeze must carry this away. Now, as thousands of tons of sea-water annually evaporate into the atmosphere, a corresponding quantity of the salts dissolved in it, viz., of common salt, chloride of potassium, magnesia, and the remaining constituents of the sea-water, will be conveyed by wind to the land. This volatilisation is a source of loss in salt works, where the proportion of salt in the water is not large."

If, then, the air is so charged with these matters it becomes evident that the more continuous, the less interrupted is the stream of fresh air among plants, the more regularly and abundantly they must be supplied with them. On the contrary, when the air stagnates about them they soon use up these matters and then lack food; they are in the position of animals shut up in a close place, from which the air is excluded—they become surrounded by a noxious atmosphere, one indeed o ftheir excrements.

Every one knows how injurious to grain crops are hedgerows or anything that obstructs the free passage of air and light, yet we are so blinded by the habit of crowding our cereal plants, that few will see in the same light the obstruction which the plants themselves cause, or to admit the beneficial effects that must result from affording plants an abundance of both, by that full access of them which wide rows permit.

Most farmers are now convinced that a drilled crop of Turnips is more yielding than a broadcast one. Why should not a grain crop be so? A drilled crop of Turnips affords facilities for cleaning land. Will not a grain crop afford equal ones? I say it will, and preferable ones, in all except that which the later seed-time of Turnips admit of; for, from its upright growth it will admit of working the land to a later period, indeed to the period of its blossoming, and before its removal the autumnal growth of weeds will not have had the time to reach that strength which they arrive at in a Turnip crop. But the fact is, the perpetual fallow which I suggest would eradicate all weeds from the soil, and even our dunghills would no longer furnish their seeds, and the strength of our soils, and of our manures, would be given to the production of the crops we cultivate.

But I do not propose, with Tull, that a perpetual fallow should wholly supersede the application of manures; for, great as may be the fertility induced, and active as the soil may be rendered, and large as may be the amount of vegetable food derived from the air through our mechanical operations, yet the introduction of foreign matters containing the organic food of plants will further stimulate the soil by promoting changes in its inorganic elements. Their immediate effects will be exerted on the crop to which they are applied, and their more economical use will be to promote the early growth of plants, by placing them near the seeds or roots; and I should therefore prefer an annual application in small dozes to a proportionally heavier one once or twice in the course. The greater abnormal productiveness of our crops depends much on our promoting an extraordinary growth from the earliest periods of their existence: "A maximum of produce in plants is always in proportion to the quantity of nutriment supplied to them in the first stage of their development."—*Liebig*. It is in the early growth that the size and strength of a plant, as of an animal, is ordinarily decided; as well might we expect a noble-sized ox from a starveling calf, as a strong plant from a starved seedling. In thin-seeded ground and on the wide-rowed system this requires to be more strictly attended to than in the broadcast sowings, for we depend on the strength of the plant to compensate for the numerical deficiency. It is also in the earliest stages of their growth that we can most assuredly administer assistance in the immediate application of manure, for all but the lateral fibres of their roots very soon strike down beyond the reach of our recently applied manures; by the time the Turnip has attained its rough leaf, its root has descended a foot or more below the surface; the root of a young Oak a foot high is said to descend 4 feet into the ground; and under favourable circumstances, the roots of our grain crops, M'Arthur says descend farther below the surface than their stems ascend above it. In their after-growth there can be no doubt that plants depend more for their nutriment upon the natural qualities of the land or the state into which the soil has been brought by former manipulations and manurings, and upon the air and the matters floating in it, both, I believe, as they exhale from the earth, and again as they descend to it. The exhalations from the earth are promoted by our mechanical operations; every time we move the soil changes take place, decompositions are effected, and new combinations made; these chemical actions generate heat and gases are evolved, which in their escape must be taken in by the leaves of plants. That gases do so escape from freshly moved earth we all know, for our noses make us acquainted with them; all have remarked the peculiar odour of newly-turned clay. Its health-inspiring perfume has become proverbial.

It is time I should close this subject for the present, and I fear in my anxiety to press on the attention of the farming community a system which, I believe, will enable the man of small capital to meet the present depression in the market I have trespassed too much on the patience of all, and tired out that of many; I will now then only say that what I have pressed upon them I have practised with success in small desultory experiments through a space of 30 years, and that very many untoward circumstances, arising in a great measure from my position in society, have alone prevented my pursuing it extensively. I hope, however, next harvest to lay before the readers of the *Agricultural Gazette* the balance-sheet of some few acres cultivated on this plan; and in the meanwhile I will endeavour to amuse them with details of my proceedings. My means are as humble as most of theirs. I seek to live by my labour, and I am not therefore either a mere amateur or a wealthy speculator. I am but a poor retired Lieutenant of our Peninsular army. What I do, then, any farmer may attempt. *J. M. Goodiff, Granard, Feb.* 14.

## ON THE ACTION OF THE FINER PARTICLES OF EARTHY MATTER ON VEGETATION.

[Translated from the German of the late PROFESSOR SCHUBLER, of the University of Tübingen.]

I. SILICA (or the pure earth of sand, flint, &c.)—We find among the component parts of many plants a certain portion of silica; this is particularly the case in the haulms of several Grasses and the varieties of the Reed; proportionally less in the ashes of wood of various kinds. Saussure and Berthier invariably found, in their investigations into the nature of the ashes of a great number of plants, a certain amount of silica, but in very different proportions; its amount, even in the same plants was ascertained to be very various, according to their different development and their different organs. Saussure found in 100 parts of the ashes of Barley-straw, 57 parts of silica, and in 100 parts of the ashes of Wheat-straw, 61½ parts of the same earth; while the ashes of the ripe grain of the latter plant contained only one-half per cent. of silica. In the ashes of Oak-leaves in May, he found 3 per cent, and in September, 14½ per

cent. of the same earth. In the wood of the Oak, on the contrary, he detected only 2 per cent., while in the sap-wood of the same Oak he obtained 7½ per cent. Similar variations were found in several other plants. It is, therefore, probable, that the presence of silica is not of equal importance for the perfect cultivation of many plants, and that in reality it is more frequently absorbed in its soluble forms by the roots of plants, as has been commonly supposed to be the case. In its insoluble state in water, as it is very frequently found in soils, it contributes much to give the plants a suitable habitat or standing-place in the ground, and thus acts, by means of its physical properties, very beneficially on the soil, giving to it the lightness requisite for vegetation. It obviously follows, from these circumstances, how requisite it is, in the analysis of soils, to distinguish from each other the various forms of the silica under which it occurs in land; as, in the form of sand, it communicates to the soil, both chemically and physically, quite different properties from what it does when occurring in land in its finely divided state, either free or in combination with alumina (or pure earth of clay). Old analyses of soils, even made by distinguished chemists, in which merely the amount of the silica in the soil is given in general terms, without a particular statement of its different forms of occurrence, have often, on this account, very little value in an agricultural point of view.

II. Alumina (or the pure earth of clay).—Alumina appears to pass over into the mixture of the juices of plants much more rarely than silica. Berthier could find no trace of it in the ashes of 28 different kinds of wood that he investigated, although this earth was found to be often contained in large quantities by the soil in which the trees furnishing those specimens of wood had been grown. Saussure also found, in the course of his investigations into the nature of the ashes of several plants, that alumina very seldom occurred in them, and much more rarely than silica, lime, and magnesia: this confirms the correctness of the opinion, that alumina occurs in land but seldom in a state of solution. Notwithstanding this little tendency to solubility, alumina, in consequence of its physical properties, forms one of the more essential ingredients of the soil, and is of great importance to vegetation. In its combination with silica, as clay, it has the property of giving to land the proper consistence; of attracting to itself hydroscopically the moisture of the air in a higher degree than other earths; of absorbing in this moistened state the oxygen of the atmosphere; and of collecting within itself, and combining the particles of humus in greater amount than is effected by other ingredients of the soil.

Clay consists of an intimate combination of alumina and silica, with more or less oxide of iron, and here and there also with a small proportion of the oxide of manganese. The combination of these substances is commonly so intimate that diluted acids have not the power to disturb it; but sulphuric acid, allowed to act on them for a longer time at a boiling heat, dissolves the alumina and the metallic oxides, while the silica remains undissolved. Clay is generally mixed up with several per centages of finely-divided sand and fine silica, which may be separated from it, before its analysis, by repeated boiling with water and careful decantation. Pure clay does not effervesce with acids; diffuses, when breathed upon in a dry state, a strong earthy odour; adheres to the tongue, quickly absorbs water, oils, and fatty substances; it remains for a certain time lightly suspended in water, which it renders muddy, but from which it perfectly separates again, by subsidence, when left at rest. Of this water it retains, in its finer state, from 70 to 71 per cent., without allowing it to drop away from it; in a compact and moderately moistened state water penetrates but slowly into its interstices; it dries up slowly, and in so doing shrinks into a smaller space, leaving many cracks and fissures throughout its substance; it readily takes up humus and humic acid in considerable quantities, which seem to combine with it, partly in a chemical manner, and partly through adhesion in a physical one, in consequence of which it remains for a long time fertile, after it has been once properly penetrated by humus-particles and other earths, which communicate to it the requisite lightness for cultivation. In the wet state it forms land of a very tenacious character, and difficult to work, indicating a great adhesion to the field-implements employed; when dried up, it is hard and can scarcely be penetrated by the implements or the roots of plants; in this purer form, therefore, it is unsuitable for vegetation. By means of frost, and through freezings in the wet state, its consistence is much improved; it becomes in consequence much lighter, the water contained within its interstices becoming crystallised, and rending asunder the particles of the clay by its expansion; but it easily loses this lightness again when worked in a wet state. On exposure to a red-heat it permanently changes its properties, its whole nature becomes altered, it generally obtains, by a higher degree of oxidation of its oxide of iron, a deeper, and often red colour, its power of retaining water being considerably diminished; it can now be retained in suspension by water only to a small amount; it has lost, to a considerable extent, its great adhesion to field-implements, and the properties of a tenacious heavy clay, forming a soil more nearly approaching to a light, dry, sandy soil. The alumina and silica have become changed, by the red-heat, into a half-vitrified state, similar to that of burnt brick. Clay is not always composed of silica, alumina, and oxide of iron in the same proportions: silica, indeed, constantly forms the principal ingredient, but its amount varies several per centages, as the following analyses of several kinds of clay will show.

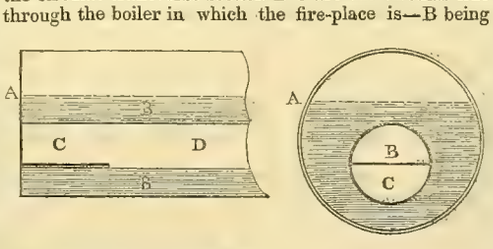
| Kinds of Clay. | Silica. | Alumina. | Oxide of Iron. | Chemists. |
|---|---|---|---|---|
| White pipe-clay ... | 63.0 | 37.0 | ... | Kirwan. |
| Grey potter's-clay ... | 60.0 | 40.0 | ... | Vauquelin. |
| White potter's-clay of Abondant ..... | 58.8 | 41.2 | ... | Berthier. |
| White clay of Reuhausen in the Jura limestone ... | 56.3 | 38.6 | 4.9 | Chr. Gmelin. |
| Brown clay of Arcueil, near Paris | 63.0 | 32.0 | 4.0 | Gazeran. |
| Grey potter's-clay of Tillendorf..... | 68.5 | 30.3 | 1.1 | Klaproth. |
| Dark-grey clay of Hofwyl ..... ... | 58.0 | 36.2 | 5.8 | Schübler. |
| Red clay of the keuper-formation | 62.3 | 27.8 | 7.9 | Schübler. |
| Average of the last five Analyses ... | 61.6 | 32.9 | 4.6 | |

In the three first analyses, the oxide of iron was probably not separated from the alumina. We may therefore assume, on the average, that clay is composed of 62 per cent. of silica and 32 per cent. of alumina, with a few per centages of oxide of iron. In the foregoing analyses no statement is made of the incidental ingredients of clay, which are often contained in it as accidentally mixed particles; these, besides sand, consist often of lime and magnesia, with strongly combined water: the amount of water in clay, which has been merely dried in the open air, amounts to 6, 8, 10, to 14 per cent., and is only driven off by exposure of the clay to a red-heat. The various colours of the varieties of clay deserve mentioning. They are occasioned most frequently by iron in different stages of oxidation, and often also partially by carbonised vegetable remains. The greenish and blueish colours result generally from the hydrated protoxide of iron, the brown ones from protoxide of iron; the red from peroxide of iron; and the yellow from hydrated oxide of iron; the black colour of clay is often occasioned by much carbonised humus-particles, and sometimes also by the admixture of oxide of manganese. The white clays contain commonly the least admixture; they are capable, however, of containing several per centages of hydrated protoxide of iron without its being at once detected by the colour. The varieties of clay are known under different denominations, according as they more nearly approach to the pure rich clay, or contain intermixed with them a variable quantity of fine sand. Crome was the first who proposed definite terms for these varieties, which we here retain. To prevent confusion, as these varieties are not known to the cultivator in every district in Germany, under the same terms, we will define each kind more closely. The rich, or fat clay is that which approaches most nearly to clay in its pure state; we understand by it, a clay, from which, by boiling and decantation, an amount of from 5 to 15, that is, an average of 10 per cent., of sand, may be separated: to this variety belong many of the pottery clays, the colours of which are as various as those of pure clay. It forms a very heavy soil, capable of absorbing about 60 per cent. of water into its interstices; in order to give to it the lightness requisite for agricultural purposes, from 20 to 30 per cent. at least, of coarse sand, are necessary; if the proportion of the coarser sand is raised from 30 to 50 per cent., so that the quantity of the sand is about equal to that of the rich clay itself, a very good mixture of soil is formed, which has neither too strong nor too small a consistence for field operations. When the proportion of the coarse sand, however, amounts to 60 and 70 per cent., the soil assumes the properties of a sandy soil. Clay-lands are very much improved in value when they contain a few per-centages of carbonate of lime, or chalk. Loamy clay differs from pure clay in the greater amount of sand it contains; we understand by this term, a clay, out of which, by boiling and decantation, may be separated from 16 to 30 per cent., or on an average of 24 per cent., of fine sand: it has less tenacity and lubricity, and a smaller amount of cohesion, than rich clay; it takes up about 50 per cent. of water; it shrinks less on drying than rich clay. By proper admixture with sand, humus, and lime, it becomes converted, more easily than rich clay, into a fertile soil. The 24 per cent. of fine sand already contained in it, are, in reference to its influence on the lightness of the soil, at least equivalent to 15 per cent. of coarser sand. By the poor or hungry clays, we understand, in agricultural works, and in many provinces of Germany, the poorest clays, which contain from 30 to 60 per cent., or on an average 45 per cent. of fine sand, mixed with them. Through their great amount of sand and silica, they have little tenacity and cohesion, take up only 40 per cent. of water, and dry in the air without any considerable change of volume. They already possess so much looseness, that no further addition of sand is necessary to render them capable of cultivation; they are often liable to suffer for want of sufficient moisture. In the language of miners, and in common discourse, on the contrary, a loamy clay is often understood to signify a very rich clay, which most nearly approaches to pure clay.

## Home Correspondence.

*Sheep folded on Grass.*—I have lost several ewes within the last two months, they have been in a good pasture field in the day, and folded on a part of the same field at night, and have had a supply of Turnips, and about ½ lb. of Beans each daily. The greatest part of the field was covered well over with farm-yard manure in December, and my man thinks that this is the cause of their dying as they do, suddenly; what is your opinion on this subject? *Oldham.* [We do not consider the cause you suppose as by any means probable. The nature and cause of the disease can be best ascertained by examining the body carefully after death. *W. C. S.*]

*Management of Steam Engines.*—The following cuts should have been published with "W.'s" paper on this subject. They are a transverse and longitudinal section of the Cornish boiler. In both A is the water-line; in the circular transverse section B C are the circular flue through the boiler in which the fire-place is—B being




the fire and C the ash-pit, the line between them occupying the position of the fire bars. In the longitudinal section B is the ash-pit, C D the fire-place, C being the "dead plate" on which the coal is gradually heated for burning at D. Below B the cut should have given the section of that portion of the boiler below the ash-pit.

*Case of "The Skylark;" a Demurrer, and Motion for a New Trial.*—When a man has a friend whom he dearly loves, how natural is it for him to plead earnestly in his friend's behalf when he hears him spoken against—particularly when he is, or is supposed to be, innocent of the crime laid to his charge! In this latter belief, I confess I recently espoused the cause of the hapless skylark, imagining him to be guiltless of chewing the cud of the young germinating Wheat, Peas, &c.,—at all events with so alarming an appetite, clearly indicative of his having what we English call "the wolf" in his stomach. Since, however, "A Shilmalier" returns to the charge with redoubled energy, and with multiplied grievances, and is now moreover backed by another highly respectable "witness," Mr. J. Foreman, of Montrose,—the "trial" assumes some importance. It is now "Ireland and Scotland *v.* England," with heavy odds against the latter. Unfortunately I, who represent in my humble person this "Land of the Brave," am at present unable to "prove my case." I am no farmer; never followed the plough; never detected, never read, never heard of skylarks living in spring-time on salads of delicate, succulent Wheat-grass; never fired at nor shot these "rogues in grain," when so detected; nor disembowelled them afterwards to find "damning proof" concealed within, to tell of such moral guilt. All I can conscientiously do, therefore, is to speak what I know of their general character; of the "high" position they hold in the world at large,—I have already done so; and to throw myself on the mercy of the court. However, *sub judice adhuc lis est. Two* witnesses only have appeared; and they represent Scotland and Ireland. I have advocated, as yet, the cause of the English Lark, believing him honest, and like the rook—the farmer's best of friends. Let but a respectable witness for *England* appear against me, and the verdict, alas! must be for the plaintiffs. I hope, however, it will not be with "immediate execution," but that "judgment may be respited until next term" (the larks,—many of them, I fear, will be spitted, by your two zealously-affected correspondents, before they are respited by the judges.) "A Shilmalier" and Mr. Foreman are both such pleasant gentlemen, and write so well and so good-naturedly withal, that it is impossible to feel otherwise than friendly towards them, or to gainsay what they so clearly assert. They state their grievances very fairly, and, as Mr. Foreman facetiously remarks, pay perhaps rather "dearly for their *whistle*." But what a whistle! Was ever any whistle heard like unto it? Never! And yet surely the voices of the larks which inhabit the corn-fields of Ireland and Scotland cannot equal those we are accustomed to hear in "merrie England!" Surely not; or a few extra bushels of Wheat—now said by the farmers to be worth nothing—would never be a consideration of importance. The dissentients shall soon hear our English lark, and judge for themselves. "A Shilmalier" hints that he will pay a visit, anon, to our "World's Great Fair;" and that while in our gay city he will honour me with a friendly call. Of course he will. I shall fully expect him, and greet him with a hearty welcome on his arrival. Let Mr. Foreman follow suit in this goodly move; and let us all three, over wine and Walnuts, Pine-apples and sherry cobbler, argue once more, deliberately, humanely, and philosophically, the case of the poor skylark—Heaven's special favourite! Not longer ago than Sunday last, as I stretched far away among the Surrey hills, I saw my *protegé*, crest erect,

> "From his moist cabinet, mount up on high;"

and the music he discoursed was so eloquent, that I thought if "A Shilmalier" was by my side, I could have converted him. Indeed I question, if I read his character aright, whether his "spring crops of Wheat, Rye, Barley, Oats, Beans, Peas, and Vetches," would not, at the time I speak of, have been placed at the free disposal of this merry, innocent rogue, and his associates. Mr. Foreman recommends me to use a good telescope in my rambles, and so "take a sight" of the larks' consumptive habits.* He marvels, too, at my want of ornithological lore; and advises me, by ocular demonstration, to convince myself of what larks *really do eat* in the way of grain. As regards the larks of Scotland, I willingly confess my ignorance, and most readily take his word; but, if you please Mr. F., *pendente lite*, we will let the food of the wild English lark remain an "open question."

*William Kidd, New Road, Hammersmith, May* 1.

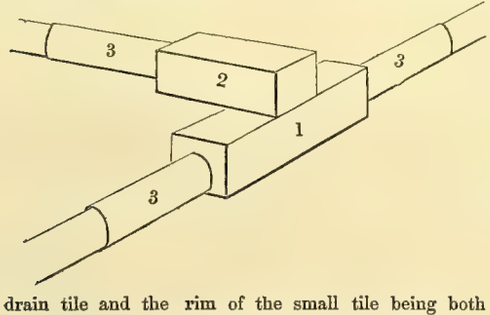
*Game.*—In the last Number of the *Agricultural Gazette*, p. 252, is a long article headed "Game," in which the writer, like too many writers and talkers of the present time, anathematises landlords for keeping game on their own lands. Now, I am no sportsman, but I have passed through a pretty long life, and as far as my experience has gone, and it has been of considerable extent, in nineteen cases out of every twenty, game-preservers have made the best landlords I have known, and tenants have done the best under them. There are, or there may be, I admit, some few exceptions to this general rule; but still I maintain that the rule is a general one. I know that it is a very popular subject to rave against landlords; and equally as unpopular a one to write a word, or speak a word in their defence. But is the game in this country generally injurious or beneficial to the cultivators of the lands of it?—this is the question, and I am aware that I shall be condemned by all the apron-string farmers in this country, and by too many who ought to know better, when I pronounce that game preservers, taking them as a body, are great benefactors to land cultivators; and I go further and add, that were landowners to extirpate the game off their lands, instead of preserving it, they would inflict a sore evil on their country. Not, however, be it understood, that I am referring to the money value of game, or of its forming an article of luxury for the tables of the wealthy; but I am referring to the real benefit that game confers upon the cultivators of the soil, and to that only. With these few remarks, Mr. Editor, I close this subject for the present; but should any of your correspondents like to discuss it further with me, and will

* I am indeed glad that this question has been broached. It will tend to throw a light on a dark subject, not yet fathomed. *Veritas in puteo.* Larks have hitherto been regarded by bird-fanciers and naturalists as *soft*-billed birds,—*not* granivorous; and when caged, have been fed accordingly. Yet have they thriven marvellously! How *is* this?

append their names to what they shall write ; and if you, also, will be so kind as to cause our correspondence to be inserted in your Journal, I will undertake to prove, to the satisfaction of many of the intelligent readers of it, that it would be more repugnant to common sense, or more repugnant to sound wisdom, for landlords to destroy, than it is for them to preserve game on their estates. *Geo. Wilkins, April* 21. [We insert this letter because we think it would be for the advantage of both owners and cultivators of land, if the agricultural aspect of the game question were to be temperately discussed.]

*The Guano Trade.*—Accuracy in matters of fact is, I agree with you, indispensable in this as in any other question in which exactness is obtainable. That I had good grounds for stating the present freight of guano at "about 3*l.* a ton," the following extract from a letter I received in the beginning of this month, from the commander of a first-class English barque, will show. The letter is dated Valparaiso, Jan. 24, 1851. "I have chartered the Malcolm, at 3*l.* 5*s.*, to load at the Chinca Islands, a cargo of guano, and call at Cork for orders. This is the best charter I could obtain. I was recommended to fix the ship, and now find ships of our same class going the same round at 3*l.*, as you will see by the English papers." The definition of the word monopoly, given by Johnson, is "the exclusive privilege of selling any commodity ;" and if that is not what Messrs. Gibbs and Sons claim by their advertisement, I do not understand its meaning. But I did not use the term in an obnoxious sense, nor did I apply it to Messrs. Gibbs, except as the agents of the Peruvian Government. The question for the farmers to consider is, can guano be got on cheaper terms? I am told by several shipmasters who have traded it at the islands, that the supply appeared to them nearly inexhaustible. If this is really the case it would certainly be for the interest of the Peruvian Government to open the trade. The consumption of the article in this country might be greatly increased by lowering the price ; and the Peruvian Government, by selling 200,000 tons in a year, at 3*l.* a ton, would obtain a larger revenue than from 100,000 tons at 4*l.* The two classes in this country, from which all protection has recently been withdrawn, the agricultural and shipping interests, are those which would benefit most by this change ; and it is a matter of sufficient importance, in my opinion, to suggest the Foreign Secretary's interposition. The opening of a trade which would double the employment of our fine ships suitable to the west coast voyages, and at the same time enable our farmers to grow larger crops at less expense, is surely worthy of the consideration of Government. *James Caird, Baldoon, April* 28.

*Suggestion for Draining Tiles, to be used only at the union of the small and main Drains.*—1. The large tile, after passing the machine, will require a circular hole being cut in the centre of it, large enough to receive the rim of the small tile. 2. The smaller square tile will require a circular hole cut near one end, large enough to discharge the quantity of water it can carry, with a rim round the hole, to keep it secure in its place, and that end must be stopped. The opening in the main




drain tile and the rim of the small tile being both circular, it will be immaterial at what angle the drains meet. 3. It is suggested that a sufficient quantity of the tiles should be cut in two by the maker, of various lengths, to avoid the necessity of breaking a tile, so that any length required at the union of the main and small drains may always be ready for use. 4. It will be observed that by this mode of uniting the drains, the small drain deposits its contents into the main drain, the capacity of which is not diminished in its union with the smaller drain. *W. Hewetson, Farnborough.*

*The Pruning of Hedgerow Timber.*—Let me (through the medium of your excellent Paper) call the attention of landlords to a custom which is rapidly gaining ground in several parts of the country, tending to the injury of property and the disfigurement of the country, which is more annoying to me than the wanton manner in which timber is sometimes trimmed, being a mere whip ; it is evident that timber thus served is ruined. A paper read at a farmers' club by a Mr. Oliver, and reported in your last Number, has reminded me of this subject. He suggests that the landlords should pay the tenants rent for the timber grown on the farm ! His next proposition will be that the landlord shall pay the rent of the farm to the tenant. He talks of the antiquity of leases ; I will answer for it the growing of timber is as old as the oldest lease. Was Mr. Oliver wide awake when he took his farm ? Did he not see timber growing on it ? Did he remonstrate ? if not, what right has he to find fault with any one but himself ? I am no advocate for a superabundance of timber, but a clearance would be injurious, even to the tenant. I would urge on landlords the necessity of looking to the subject. I advise their cutting down all ill-growing, useless timber, particularly pollards, and then not allow a stick to be touched, and to introduce a special clause in the lease or agreement to that effect ; this is as much as any reasonable tenant ought to expect. *H. B. M.*

*The County Census of* 1851.—Singularly enough, by the schedules of the new census, landlords or landed proprietors are not asked if they farm their own property ; admirals, colonels, captains, esquires, now-a-days' farm, some their own property, others, as occupiers ; none of these questions are put to them as are put to occupiers of land, *only* who are to *call* themselves "farmers," put their sons and daughters down as "farmer's son," and "farmer's daughter." What would the fine ladies of silks and fur-belows say to such denomination ? or the son M.A., of independent fortune ? Again, no questions are asked if *all* the children are legitimate ? In every parish a certain number are born out of wedlock. But this schedule does not ask the question ! Every lady who is shy of telling her age, and those who say they have the privilege of deducting three years from the sum total of their years of existence, are told if they tell not their age truly, two justices of the peace will make them, and fine them to boot five pounds ! Most courteous legislators ! most polite justices ! It would have been a very interesting fact to have learned by this census the number of gentlemen born who are as a pleasure, recreation, or profit, farming land. I believe at this moment the number so doing, both of members of the church, of the army, and navy, is very great ; and a vulgar prejudice exists against such intelligent men doing so, the argument being, they are driving out and preventing a certain class of men from getting a livelihood as "tenants ;" an absurd complaint. *Q. R. S., Hants.*

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 30th of April: present, Mr. Raymond Barker, V.P., in the chair, Lord Berners, Don D. Savignon, Mr. Brandreth, Mr. Brooks, Mr. Burke, Mr. Burton, Mr. W. G. Cavendish, M.P., Mr. Clavering, Mr. Cobon, Mr. Davy, Mr. Flack, Mr. Gadesden, Mr. Garret, Mr. Gooch, M.P., Mr. Fisher Hobbs, Mr. Majendie, Mr. Milward, Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. Rowlandson, Professor Sewell, Mr. Stansfield, M.P., Mr. Stephens, Mr. Stone, Professor Way, and Mr. Wolryche Whitmore.

The following new members were elected :—
Hollwey, M. de Bethman, Prussian Legation, London.
Bolton, Lord, Hackwood Hale, Basingstoke, Hants.
Lutener, Thomas, Dolerw, Newtown, Montgomeryshire.
York, James, M.D., Wharncliffe-house, St. John's-wood.
Ferard, Charles Cotton, Ascot place, Winkfield, Berkshire.

The names of 12 candidates for election at the next meeting were then read.

The following were among the presents made to the Society : the Transactions of the Yorkshire Agricultural Society, (containing an interesting series of experiments with coprolites, peat charcoal, &c., as manure for Turnips) ; Mr. Tanner Davy's Prize Essay on the Management of Farm-yard Manure ; Proceedings of the Royal Institution of Great Britain ; Transactions of the Horticultural Society, the Statistical Society, the Entomological Society, the Highland and Agricultural Society of Scotland, and the Royal Jersey Society ; the Farmers' Magazine ; Mr. Lee's Report (through Mr. Chadwick) on the application of Sewerage Water to Irrigation and Agriculture ; and M. Desplanques' "Exposé sur l'Industrie de la Laine" : for which the Council ordered their usual acknowledgments to the respective donors for their attention to the Society in offering these donations.

The Council then adjourned to Wednesday, the 7th of May.

## Farmers' Clubs.

St. Germans, *Feb.* 14.—Mr. Peters read the following paper :—*On the importance of a proper arrangement of Farm Buildings, with the application of requisite Machinery for economically carrying on the work of the Farm.*

The investigation of my subject naturally divides itself into two branches—

1st.—The consideration of the loss sustained from old, deficient, and badly arranged buildings, *without proper machinery.*

And 2nd.—The advantages derivable from sufficient accommodation, and proper arrangement, *with requisite machinery.*

There are a few general rules or principles in regard to the arrangement of known necessary integral parts of farm buildings, which may be laid down as axioms.

1. The dwelling-house in my opinion should be at such a distance from the yard and other buildings as to leave a free, clear space for air, and healthful sweetness, around the dwelling of the farmer. I know this view is opposed to that of a noble lord who wrote on this subject (Lord Torrington), who advocated its being placed in the midst of the dung and cattle houses, that a supervision might go on from *the windows.* With all due deference to such high authority, I would say, a fig for your "*from the window*" superintendence. The farmer requires to be on the spot, here, there, and everywhere, (the idea was certainly calculated to bring them as near "*their own oxen*" as possible.)—Another thing is, that I never admired the mingling of house domestics amongst the duties of those properly belonging to the farm yard. In very small holdings, where the occupier or farmers' own family, do most of the work, the case may be something different.

2d. The farm stable and implement shed should be as contiguous as possible, and with free access from the yard, towards the principal thoroughfare to the farm, or public road—without the incumbrance of a gate from the yard (except where a turnpike road happened to pass close by). No loose cattle or pigs to be in the way of either horses or carriage, to interrupt the free ingress or egress, water for the horses to be immediately adjoining the stable.

3. The corn barn and granary should be contiguous, with in-door communication one with the other,—the straw to be thrown into the straw house or straw store, by the threshing machine, and the corn delivered into a room by itself ; indeed everything so arranged, that the moment the threshing is stopped, the grain could be secured by lock and key ; every thing being in its own place, trampling and treading amongst the threshed corn would thus be avoided. The stack-yard or mow-hay, as a matter of course, to be as contiguous to the barn as possible.

4. The houses for feeding bullocks to be situated so that a direct communication can be had from the straw house. This may be said to be a matter of indifference if the system of littering straw were discontinued, according to the present arrangements of Messrs. Huxtable and Mechi ; but so evanescent have their plans been hitherto, that we are not sure whether the boarding, and the foul air, may not give way by another year, to the palace of glass and means of removing the putrefactive mass, beyond the reach of the atmosphere inspired by the animals ; and in regard to straw for bedding, we are well aware that it is a non-conductor of heat, and hence if it should not directly convey heat it does not extract it, and will therefore tend to sustain life, and contribute in no little degree to the fattening and thriving of the animals comfortably bedded with it.

5. The accommodation for dairy cows ought to be as contiguous to the dwelling-house as convenient, and, if, at the same time, access to a Grass meadow or meadows can be obtained so much the better ; access through the same means ought to be had to the apartment devoted to rearing calves ; this again to communicate with a steaming or cooking house for food.

6. Young or store bullocks should be placed in houses, boxes, or sheds accessible to roots and straw, sheltered from the prevailing winds, and especially from draughts or currents.

7. The accommodation for pigs should be contiguous to and accessible from the cooking house, and be placed where the sun can shine as much as possible on them. If this cannot be accomplished without exposure to the prevailing winds of the neighbourhood, I see no reason why one side of the roof should not be glazed. A most important addition to the piggery, would be one or two apartments contiguous to the steaming house for lying-in wards, fitted with an apparatus for heating them with hot water—this may look like one of those schemes of "*farming run mad*" that are so common. When visiting the propagating houses and nursery of my friend Mr. Pontey, in Plymouth, the other day, I could not help in my own mind, contrasting the care, the anxiety, the knowledge brought to bear in the propagation of those beautiful little exotics,—the temperature to a degree requisite for their healthful development, the giving air, &c.,—with the bungling, careless, heedless, nay ignorant treatment of our domestic animals when young and by nature tender ; althoughthey are subject to as immutable laws as these plants, and would no doubt repay the diligent care and study of their natural habits and wants.—I do think if our young farmers would devote a day to the inspection not only of the nursery but of the manner of husbanding up manure by friend Pontey, it would teach them a valuable lesson of attention and perseverance which, if carried to the farm and farm-yard, would be a great acquisition.

8. Poultry, if it could be so arranged, should have a place by themselves apart from the farm-yard in some quiet sheltered corner, where certain other little offices are concentrated, such as hackney stable, gig-house, ash-house, &c., more immediately in connection with family comforts.

Having laid down those general rules, Mr. Peters then referred to and explained his illustrative sketches, in order more clearly to show the disadvantages attendant on bad arrangement of farm buildings ; and stated, concerning the farm to which his illustrations referred, it was in the north of Cornwall—its extent was 207 acres ; rent 206*l.* ; rates and taxes 30*l.* ; and that, in consequence of the inadequacy of its farm buildings there had been incurred a yearly loss equal to 25 per cent. on the rental on threshing alone ; while the total loss was equal to 50 per cent. By an expenditure of 400*l.* for buildings and machinery additional to what was previous on the farm, the accommodation was rendered complete.

## Notices of Books.

1. *The Dorking Fowl : Hints for its Management and Feeding for the Table.* By John Baily, Poulterer. London, pp. 39.
2. *The American Poultry-Book ; being a Practical Treatise on the Management of Domestic Poultry.* By Micaiah R. Cock. New York : Harper and Brothers. 1844, pp. 179.

Those who have enjoyed the privilege of dining at good tables in London—and those who have not are greatly to be condoled with—must have observed (especially if they have had the pleasure of visiting the same families in the country) the immense difference between the poultry set before the same class of people in town and

in the provinces, respectively. As to respective merits, tastes may differ; but the things themselves are extremely unlike. The town birds are mostly too luscious for rustic eaters, and barn-door fowls are always too dry for the Londoners. Still many country people would like to bring their fowls up to the metropolitan standard; and at this crisis, Mr. Baily offers his assistance, in the shape of the very sensible and practical little pamphlet now before us. "I believe," he says, "attention to these trifling details will remedy one of the complaints urged against country poultry, viz., that it is too lean."

It will not be fair to transfer the essential portion of his work to these columns, and therefore give, as a specimen, his instructions on the subject of feeding.

"It is too often presumed that little care is required as to their feeding from the time they leave the coop until the time they are put up for fattening. They are allowed the run of the yard, without considering what a precarious subsistence this affords; there may be abundance of food at some periods, and little or none at others. They should be fed regularly, and care should be taken that each of them (for they are all either to be brought up for the table or for stock) shall have a fair share.

"I advise, from the first, to feed the hen and her chickens well, in the following manner:—Instead of throwing down handsful of whole corn, let it be ground and slaked with lukewarm milk, to such consistence that when a ball of it is thrown on the ground it will break and scatter about in particles; if there be green-meat, such as Onion-tops, chopped fine and mixed with it, so much the better. The chickens should be fed in this manner three or four times per day, and the little extra trouble will be amply repaid by their growth and health. As they get older this may be gradually discontinued, and they may feed with the old fowls on whole corn. But even with old birds a change of food is not only advantageous, but necessary; and I would, therefore, advise that once a fortnight the food be changed for a day or two, and boiled or crushed corn substituted for whole. They must also have constant opportunities of pecking among Grass and other herbs. Fowls in confinement will starve and pine to death, with heaps of Barley around them, unless they have these opportunities."—Pp. 14, 15.

An observance of these rules would save us the task of answering many an inquiry in the "Notices to Correspondents." Mr. Baily's treatise is particularly well-timed, as he has the courage to patronise the Dorkings at the very height of the Cochin China mania. "I propose limiting my observations to one particular breed, and for this reason, that there is none to be compared with it. It is the Dorking, and it unites in itself, more than any other, all the properties requisite for supplying the table."—*Preface.* We should like to say a word for the race of Cochins, which are not exhibition birds, but will gladly second any effort to restore the Dorkings to their rightful position. The public ought to know what is the actual intensity of the cock and hen fever at the *present date.* Good Cochin Chinas, likely to be, or to produce show birds, readily sell for two guineas *each*, and upwards. Four pullets sold to a personage of very high rank, were charged at ten pounds. "Nice birds, *but dear!*" observes a gentleman who had the pleasure of contemplating their beauties. An ambitious friend of ours longingly admires a lot of six hens and a cock, for which he would gladly have given 20*l.*, and taken off his hat to their owner, for accepting the offer. To be sure, one of the hens weighed 9¾ lbs. Of course, the dealers are making money in cart-loads, by the means of this epidemic passion for the Cochins. Anything like one is worth almost its weight in gold. The weedings and thinnings from stocks of good repute, are eagerly bought up, to be re-vended in no time. The Cochin China penny is being turned with amazing rapidity. Hens' eggs at 30*s.* the dozen—'tis a fact, gentle reader—will pay for a liberal supply of Barley at present prices; in one case we have heard that the eggs from a certain wonderful pair of fowls realised five shillings each! *Therefore*, Mr. Baily, or any other gentleman, is to be encouraged in his endeavour to bring us back to Dorkings and common sense.

The American work is really a nice little book, worth the perusal of poultry amateurs. It only professes to have originated in an attempt to collect and embody in a methodical form the notices respecting the treatment of poultry in America, scattered through the various periodical publications of that country. It reveals, too, the unexpected information, that the ladies about New York take but little interest in poultry matters.

"In many parts of Europe, the care of the poultry and the rearing of chickens are intrusted exclusively to women; and this seems, indeed, peculiarly within the province of that sex, who are so pre-eminent for their kindness towards the brute creation, and their solicitude for helpless infancy. The writer would fain hope to induce his countrywomen to assume the charge of this department. Their husbands, fathers, or brothers, would soon be shamed out of their present careless and wasteful practices."—*Introduction*, xiv.

One or two little mistakes require to be corrected, such as that the dove-house pigeon sits *fifteen* days; but there still remains much that is good, and well expressed. Take as follows:—

"We come now to the consideration of *water*, which should be plentifully supplied, and of the best quality. Many persons think, because they see fowls helping themselves to dirty water, and that from the stagnant pools in a barn-yard, that the quality of the water is a matter of indifference to them. This is, however, far from being the case; fowls actually do prefer and thrive best on the purest water. From the well known injurious effects of salt, there is great reason to suspect that many of the obscure and unknown diseases of poultry may be attributed to the saline ingredients contained in the water of a dung-heap. They do not partake of this water unless they have no other; and when there is no watering-trough, it must be brought to them, and the vessel kept constantly full. I have lately adopted a contrivance which I have seen recommended in an agricultural paper, and during the summer I find it to work very well.

"Take a perfectly air-tight barrel, such as has been used for cider or wine, and set it up on end on any suitable platform, or a three-legged stool, about 2½ feet from the ground. A small hole is bored in the bottom just large enough to admit a small wooden or leaden tube; even a long pipe-stem might be employed for this purpose. The tube should ascend 3 or 4 inches through the bottom, in order to prevent its upper aperture from being choked up by any substances accidentally introduced with the water. The tube descends into any shallow basin or bowl, or trough of wood, earthen, or iron ware. At the top of the barrel there is a hole to pour in the water, and it should be large enough to admit a funnel. The lower opening should be closed while filling, and when filled the upper opening should be carefully closed. Then withdraw the plug from the tube, and the water will gradually trickle down, and last as a reservoir for many weeks. This water-tank can only be used in summer; it would probably burst asunder in a severe frost. The same contrivance on a smaller scale may be found more economical, and quite as useful. It will last more than a fortnight. Take a common glass demijohn, and, having stripped off the wicker covering, fill it with water. Let this be suspended on a suitable frame, with its mouth downward, and immersed in a basin of water beneath. To prevent the fowls from scratching up the dirt around it and soiling the water, the basin or trough should rest on a platform of boards. The object in taking off the wicker covering is to enable us to ascertain when the water is nearly exhausted." Pp. 51—3.

This homely contrivance is exceedingly useful for the yard of the mere commercial poulterer; but a more elegant adaptation of the same principle is the fountain advertised by Mr. Baily. It is neat, occupies little room, can hardly get out of order, and affords a considerable supply of fresh water; and therefore is capitally adapted either to the pheasantry, the ladies' *basse-cour*, or to stand in the entrance hall for the use of the pet lap-dog. The best compliment we can pay these two little books is to state the belief that had they appeared some years ago, they would have been largely drawn upon by the compilers of poultry literature. Mr. Baily would probably have been incased, in his full stature, in some section on the Dorkings, and Micaiah R. Cock would have had the pleasure of seeing half his chapters at least stare out from the pages of more than one rival publication.

METEOROLOGICAL REPORT.—APRIL.
(*Continued from page* 269.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| Apr. 21 | 11.15 a.m. | 29.45 | ... | S. Genial day, with warm |
| | 10 45 p.m. | ... | 29.41 | driving rain. |
| 22 | 7.15 a.m. | 29.30 | ... | Between 6 and 10 a.m. the |
| * | 9 a.m. | ... | 29.28 | wind veered rapidly from south to west to north, and to north by east, blowing |
| | 2.10 p.m. | ... | 29.29 | gently all day. |
| | 10.20 p.m. | 29.47 | ... | p.m. WNW. Light; fine day. |
| 23 | 7 30 a.m. | ... | 29.58 | WSW. Gentle breeze and |
| | 10.30 p.m. | 29.64 | ... | beautiful day. |
| † 24 | 7.35 a.m. | ... | 29.64 | SSW. Gentle breeze; raining. |
| | 5.15 p.m. | ... | 29.64 | SSW. Fine afternoon. |
| | 10.20 p.m. | 29.69 | ... | W. Calm fine night. |
| 25 | 7.20 a.m. | ... | 29.75 | Brisk northerly breeze, and |
| | 10.15 p.m. | 29.77 | ... | fine day. |

* This storm came from the west and passed to the eastward.
† This storm came from south-west, and passed away to north and eastward, and I watched its progress during Thursday forenoon, the rise of the barometer being suspended during its passage.

Dorchester, May 1st. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Farm Buildings.*—A bill has been brought in by Mr. Cochrane and Mr. Forbes, to extend the provisions of "The Drainage of Lands Act, 1849," to the advance of private money for the erection and repair of farm buildings on lands in Great Britain and Ireland. It proposes to give landlords the power to borrow money for this purpose, provided the sum borrowed under the Act does not exceed 18 months' value of the land in respect of which it is borrowed. Every rent-charge to be granted in respect of money thus borrowed may be made payable for any period exceeding 22 years, but not exceeding 30 years. All buildings erected or improved under the Act must be insured against fire. *From the Builder, April 19.*

*The Birmingham Cattle Show.*—A meeting of the Committee of the Birmingham Cattle Show was held in the committee room of the Town Hall, on Thursday last, the Earl of Aylesford in the chair. A resolution was passed, expressive of the deep regret of the committee for the death of Sir Francis Lawley, and of the loss which the society and the agricultural body had thereby experienced. Lord Lyttelton was nominated as the president for this year, in the room of the late lamented baronet; and we understand that his lordship has courteously expressed his willingness to accept the office. The Prize Lists, which have again undergone a very careful revision, were adopted, and will be immediately issued. The changes in some departments of these lists are designed to carry out still further the principle of classification adopted with so much advantage in the Birmingham Shows; and at the same time the prizes for cattle and sheep have been considerably increased. *Midland Counties Herald.*

## Notices to Correspondents.

CROSS BRED SHEEP: *L S.* The cross between the southdown ram and black-faced ewe has been repeatedly tried in this district, and given up as a total failure. They are the ugliest animals of the sheep kind I ever saw, and are in every respect inferior to the cross between the Leicester ram and black-faced ewe. This latter cross makes a very valuable sheep, while the other, except in the value of the wool, is not equal to the pure black-faced breed. *A. T. W.*

DRAINING TILES: *An Inquirer.* "The balance of public opinion" *is* decidedly in favour of pipes in preference to tiles and soles. We do not yet know the average duration of "perfect drains laid in the best manner," as none such have yet failed.

LAND AGENCY: *Pupil.* Low on Landed Property is a good work, on the principles of the subject. Layton Cooke's work on land valuing is valuable. The value of fat stock by measurement is stated well in a paper in a periodical work of which only 12 monthly parts appeared, entitled "The Plough" (Longman). Strachan's ready reckoners will probably serve your purpose. The first two works are costly.

PAINT: *Brush* asks for the experience of any of our readers regarding Carson's anti-corrosion paint for inside work.

PARALYSIS: *Northwood.* There is no doubt organic disease, and the poor animal may as well be killed. The flesh will not be unwholesome. *W. C. S.*

PHOSPHATES: *J Jephson Rowley.* The annual sale of 100 sheep and 10 cows is equal to the export of about 1800 or 2000 lbs. of bone-dust.

PIGEONS: *Columbarian.* I imagine you did quite wrong in feeding with Indian corn; nor should you give them Wheat. If the malady continues, and it appears likely to do so, get rid of the old stock altogether, and breed from an entirely new stock. This is the only true way of effecting a radical and speedy cure. *W. K.*

POULTRY: *G B.* The best food for young ducks is boiled Rice, mixed with a little Barley-meal and fine pollard, to such a consistency that it is neither sloppy nor sticky—crumbly, in short. A constant supply of water, and slugs and worms at discretion, with good attention and shelter at night, are matters of course.—*Worcestershire Lady.* Your correspondent is a wag, but there is evidence that hens have occasionally laid two eggs a day. You must use your own discretion in ordering a stock of these double-layers from any dealers; some of them might endeavour to suit you.—BANTAMS: *E F.* We cannot account for the hen's laying soft eggs under the circumstances. The evil will, perhaps, cease of itself. Many farmers' wives say that the laying of soft eggs is caused by the hens' being too fat. It is possible that an over-nourished fowl may have a tendency to inflammation, irritability of system, and consequently to abortion.

WILD ONION: *X YZ.* We had a good many in a field, but they have disappeared under the ordinary tillage, and occasional fallow crop. Turnip husbandry will destroy them.

ERRATUM. For "300" square yards, the difference between the English and Irish acre—in page 268, col. *c*, read "3000.'

## Markets.

COVENT GARDEN, MAY 3.

Hothouse Grapes are plentiful and cheap, considering the season. The same remark applies to Strawberries. Good Pine-apples are scarce, as are also dessert Apples. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good. French Beans are very plentiful. Some good Green Peas have just made their appearance from Cornwall. Carrots and Turnips are dearer. New Potatoes may be obtained at 4d. to 1s. per lb.; old kinds realise better prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 6d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

FRUIT.

Pine-apples, per lb., 8s to 12s
Grapes, hothouse, p.lb., 6s to 12s
— Portugal, p.lb., 1s to 2s6d
Strawberries, per oz., 6d to 1s
Pears, per doz., 2s to 5s
— per half sieve, 6s to 15s
Apples, dessert, p.bush., 6s to10s
— kitchen do., 5s to 8s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Oranges, per doz., 9d to 2s
— per 100, 6s to 14s
— Seville, p. 100, 7s to 14s
— — p. doz., 1s to 2s 6d
Lemons, per doz., 1s to 2s
Chestnuts, per peck, 2s to 5s
— per 100, 9d to 1s 6d
Nuts, Barcelona, p.bsh, 20s to22s
— Brazil, p, bsh., 12s to 14s
Cobs, per 100 lbs., 70s to 75s

VEGETABLES.

Cabbages, per doz., 1s to 1s 6d
Greens, p. doz. bunches, 4s to 6s
Cauliflowers, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 7s to 12s
French Beans, p. 100, 9d to 2s
Seakale, per punnet, 6d to 2s
Asparagus, per 100, 4s to 10s
Rhubarb, p. bundl., 6d to 1s 2d
Potatoes, per ton, 90s to 150
— per cwt., 4s to 7s
— per bush., 1s 6d to 3s
Turnips, p. doz. bundl., 1s to 2s
Cucumbers, each, 1s to 3s
Radishes, per doz., 6d to 9d
Celery, p. bundle, 6d to 1s 6d
Carrots, per doz., 4d to 7d
Spinach, per sieve, 1s to 1s 6d
Onions, p. bunch, 3d to 4d
— Spanish, p. doz., 1s 6d to 4s
Leeks, per doz., 9d to 1s
Shallots, per lb., 6d to 1s
Garlic, per lb., 4d to 8d
Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d
Lettuce, Cab., p. score, 6d to 9d
— Cos, per score, 1s to 1s6d
Endive, per score, 1s to 1s 6d
Small Salads, p. punn., 2d to 3d
Horse Radish, p.bundl., 1s to 4s
Red Beet, per doz., 6d to 1s
Mushrooms, p. pot., 9d to 1s 6d
Sorrel, per hf. sieve, 6d to 9d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, per doz. bun., 2s to 3s
— Roots, p. bundl. 9d to 1s
Marjoram, per bunch, 2d to 4d
Mint, green, per bunch, 4d to 6d
Watercress, p.12bunch., 6d to9d
Corn Salad, p.hf.sieve, 1s to1s6d

ENGLISH TIMBER AND BARK.—MAY 3.

| | Round Timber. Per Load. | Plank. Per Foot Cube. | Inch Board. Per Foot Super. |
|---|---|---|---|
| Oak..... | £5 10 0 to £7 10 0 | 3*s.* 0*d.* to 5*s.* 0*d.* | 0*s.* 4½*d.* to 0*s.* 6*d.* |
| Ash..... | 4 10 0 — 6 0 0 | 2 6 — 3 6 | 0 3 — 0 4 |
| Elm..... | 3 15 0 — 4 15 0 | 1 9 — 2 3 | 0 2 — 0 3½ |
| Beech... | 2 10 0 — 3 5 0 | 1 6 — 2 3 | 0 2 — 0 2½ |
| Lime ... | 3 5 0 — 4 10 0 | 2 0 — 2 6 | 0 3 — 0 4½ |

ENGLISH AND FOREIGN BARK.

The transactions are 183 Flemish tree, at 5*l.* 10*s.* to 5*l.* 15*s.* per ton. In English but little has been done, and prices continue unaltered.

| | £ *s.* | £ *s.* |
|---|---|---|
| English Coppice, p. ld. of 45 cwt. | 13 0 | to 15 10 |
| Do. timber, do. | 13 0 | — 15 0 |
| | per ton. | |
| Antwerp Coppice | 6 0 | — 6 10 |
| — spar ... | 6 0 | — 6 5 |

| | Per ton—£ *s.* | £ *s.* |
|---|---|---|
| Antwerp young tree | 5 10 | — 6 5 |
| — timber ... | 5 0 | — 5 10 |
| Dutch, ... ... | 5 0 | — 6 0 |
| German ... ... | 5 0 | — 6 0 |

### LIVERPOOL BARK MARKET.

| P. ton of 2400 lbs.— | £ s. | £ s. | P. ton of 2400 lbs.— | £ s. | £ s. |
|---|---|---|---|---|---|
| English ... ... | 6 0 | —6 10 | Belgian timber . | 4 10 | —5 0 |
| — coppice ... | 6 10 | —6 15 | — young tree | 5 10 | —6 10 |
| Dutch ... ... | 5 0 | —6 0 | — coppice ... | 6 5 | —6 10 |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 1.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 85s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 63 70 | Second cut ... ... | 70 80 |
| Rowen ... ... ... | 65 70 | Straw ... ... ... | 27 30 |
| New Hay ... ... | — — | | J. COOPER. |

Trade heavy.

CUMBERLAND MARKET, May 1.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 86s to 90s | Inferior ... ... ... | 70s to 78s |
| Inferior ditto... ... | 60 78 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 28 32 |
| Old Clover ... ... | 84 90 | | JOSHUA BAKER. |

### COAL MARKET.—Friday, May 2.

Carr's Hartley 14s. ; Wallsend Riddell, 13s. 3d. ; Wallsend Haswell, 15s. 6d. ; Wallsend Hetton, 15s. 3d. ; Wallsend Adelaide Tees, 14s. 3d. ; Wallsend Tees, 15s.—Ships at market, 86.

### POTATOES.—Southwark, April 28.

The Committee report that there were several fresh arrivals from Yorkshire and Scotland the latter part of last week. Trade is so heavy we cannot quote any improvement in prices. The following are the quotations :—York Regents, per ton, 80s. to 100s. ; Scotch do., 70s. to 80s. ; ditto Cups, 60s. to 70s. ; Cambridgeshire and Lincolnshire Regents, 60s. to 80s. ; French whites, 60s. to 70s.

### SMITHFIELD, Monday, April 28.

There is a large supply of Beasts ; the demand is also larger. Prices are higher, and a fair clearance is effected. The number of Sheep is about the same as on Monday last ; the demand is considerably larger than on that day, and consequently prices have advanced. Trade is better for choice Lambs and Calves. From Holland and Germany there are 197 Beasts, 900 Sheep, 92 Calves, and 8 Pigs ; from Norfolk and Suffolk, 2400 Beasts ; and from Scotland, 500.

| Per st. of 8 lbs.—s d | s d | Per st. of 8 lbs.—s d | s d |
|---|---|---|---|
| Best Scots, Here- | | Best Long-wools . 4 0 | to 4 4 |
| fords, &c. ... 3 6 | to 3 8 | Ditto Shorn ... 3 6 | —3 10 |
| Best Short-horns 3 4 | —3 6 | Ewes & 2d quality 3 4 | —3 8 |
| 2d quality Beasts 2 6 | —3 0 | Ditto Shorn ... ... | |
| Best Downs and | | Lambs ... ... 5 4 | —6 0 |
| Half-breds ... 4 4 | —4 8 | Calves ... ... 3 4 | —4 4 |
| Ditto Shorn ... 3 10 | —4 2 | Pigs ... ... 2 8 | —3 8 |

Beasts, 3772 ; Sheep and Lambs, 23,300 ; Calves, 169 ; Pigs, 380.

FRIDAY, May 2.

The number of Beasts being large, trade is dull ; however, there is a fair demand and not much reduction. We have a considerable increase in supply of Sheep and Lambs ; trade is heavy at lower rates. Calves are plentiful, and it is difficult to maintain late quotations. From Germany and Holland we have 247 Beasts, 160 Sheep, 301 Calves, and 3 Pigs ; from Scotland, 100 Beasts ; from Norfolk and Suffolk, 500 ; and 104 milch cows from the home counties.

| | | | |
|---|---|---|---|
| Best Scots, Here- | | Best Long-wools . 3 10 | to 4 2 |
| fords, &c. ... 3 6 | to 3 8 | Ditto Shorn ... 3 4 | —3 8 |
| Best Short-horns 3 2 | —3 6 | Ewes & 2d quality 3 0 | —3 8 |
| 2d quality Beasts 2 4 | —2 10 | Ditto Shorn ... ... | |
| Best Downs and | | Lambs ... ... 5 0 | —5 10 |
| Half-breds ... 4 4 | —4 6 | Calves ... ... 3 0 | —4 4 |
| Ditto Shorn ... 3 8 | —4 0 | Pigs ... ... 2 6 | —3 6 |

Beasts, 1081 ; Sheep and Lambs, 8730 ; Calves, 484 ; Pigs, 410.

### MARK LANE.

Monday, April 28.—The supply of Wheat to this morning's market from Essex and Kent was in about the same proportion as of late, and pretty well cleared at the prices of this day week, being a decline of about 2s. per qr. on the quotations of this day fortnight. The demand for foreign is limited, and in the sales effected it was necessary to submit to a reduction of 1s. per qr.—Barley and Peas a fair sale at fully late rates.—Beans must be written 1s. per qr. dearer.—Oats are taken readily, at an advance of 6d. per qr.—The Flour trade is heavy, but holders show no disposition to give way in price.

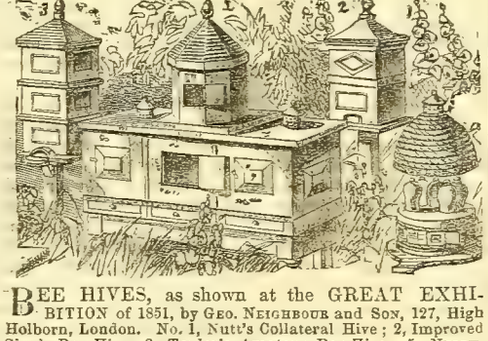
| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40—45 | Red ..... | 36—43 |
| — — fine selected runs...ditto | 42—47 | Red ..... | —40 |
| — — Talavera ..... | 45—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 32—50 | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26—31 | Malting . | 22—26 |
| — Foreign...grinding and distilling | 18—23 | Malting . | 23—26 |
| Oats, Essex and Suffolk ..... | 17—19 | | |
| — Scotch and Lincolnshire...Potato | 19—23 | Feed ..... | 16—21 |
| — Irish ..... Potato | 17—21 | Feed ..... | 16—18 |
| — Foreign .....Poland and Brew | 18—21 | Feed ..... | 17—20 |
| Rye ..... | 22—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..22s to 26s.....Tick | 23—27 | Harrow . | 23—27 |
| — Pigeon.....25 —31... Winds | — | Longpod | — |
| — Foreign .....Small | 22—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler | 23—26 | Suffolk... | 26—28 |
| — Maple.....26s to 28s .....Grey | 23—24 | Foreign . | 22—31 |
| Maize .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—39 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 16—23 | Per sack | 26—34 |

Friday, May 2.—The arrivals of grain this week coastwise are small, those from abroad liberal. The attendance at market was thin, and little disposition shown to transact business ; holders of Wheat, however, evinced no inclination to give way in price from Monday.—Barley is inquired after, and realises fully late rates.—In Beans and Peas there is no alteration.—Oats are in good request at the late advance.—In floating cargoes of Wheat and Maize from the Black Sea or Mediterranean very little doing. Egyptian Wheat on passage finds buyers for Ireland at 23s. 6d. per qr., cost, freight, and insurance.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Mar. 15..... | 37s 2d | 23s 1d | 16s 6d | 23s 3d | 25s 6d | 25s 8d |
| — 22..... | 37 5 | 23 3 | 16 9 | 22 8 | 25 8 | 25 9 |
| — 29..... | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| April 5..... | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| — 19..... | 39 5 | 24 5 | 17 5 | 24 7 | 26 10 | 25 9 |
| — 26..... | 39 3 | 24 4 | 17 10 | 24 2 | 26 9 | 25 5 |
| Aggreg. Aver. | 38 7 | 23 11 | 17 2 | 24 5 | 26 2 | 25 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Liverpool, Tuesday, April 29.—The arrivals from Ireland and coastwise during the week have been insignificant, but from foreign ports supplies have been pretty liberal. The trade has been much depressed, owing to the anxiety of holders of flour to realise before the setting in of hot weather. At this day's market there was the usual attendance of buyers, who, however, showed little disposition to enter into business. Wheat sold slowly at a reduction of 2d. per 70 lbs. on prices of this day week. French flour was offered freely at a further decline of 6d. to 1s. per sack. Oats and Oatmeal were in fair request at an advance of 1d. per 45 lbs., and 3d. to 6d. per load. Barley, Beans, and Peas were without change in value. Indian Corn must be noted 6d. to 1s. per qr. lower.——Friday, April 25.—The corn trade this morning was dull generally. Buyers of Wheat had the turn of price in their favour, and Flour gave way fully 6d per barrel and sack on all second-rate and doubtful quality. Indian Corn also declined 6d. to 1s. per qr., with a small demand.


INDUSTRY and HUMANITY *versus* MURDER and PLUNDER.—Thousands of valuable lives saved by using Marriott's new BEE-HIVE for the humane management of Honey Bees ; its real practical utility is at once apparent Nutt's Collateral, Taylor's Bar and new Box and other Hives for obtaining the fruit of industry without destroying the bees ; a descriptive engraving with priced catalogue of apiarian utensils forwarded on receipt of two penny stamps.—Marriott. Bee-hive and Honey Warehouse, 74, Gracechurch-street, London



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by Geo. Neighbour and Son, 127, High Holborn, London. No. 1, Nutt's Collateral Hive ; 2, Improved Single Box-Hive ; 3, Taylor's Amateur Bar-Hive ; 5, Neighbour's Improved Cottage Hive, working three or five Glasses ; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

Agents. — Liverpool : Wm. Drury, Castle-street. Manchester : Hall and Wilson, 59, King-street. Glasgow : Austin and M'Aslin, 168, Trongate.

BEE HIVES.

MICHAEL HAYS, Apiarian, begs to offer his Improved Hive, as shown at the Great Exhibition, Stand 208 b, which he can confidently recommend as superior to all others. Specimens may be seen in full work at his residence. Also his Single Box and Improved Cottage Hives, working with Glasses, &c., at very moderate prices.—Letters and Orders to be directed, Michael Hays, Beekeeper, Enfield Highway, Middlesex.

M. H. begs to state, that he would have no objection to engage with any Nobleman or Gentleman who may require the services of a Beekeeper and Hive Maker ; and to make himself otherwise useful.

GLASS FOR PIT FRAMES, HOTHOUSES, &c.
in Boxes of 100 feet, 8s. 6d. each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 ... | 5 | by 2½ ... | 6 | by 2½ ... | 6 by 3½ inches. |
| 4½ by 3 ... | 5 | by 3 ... | 6 | by 3 ... | 6½ by 3 |
| 4½ by 3¼ ... | 5½ | by 3 ... | 6½ | by 3 ... | 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. Cogan and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. Cogan and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and Co. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

16 oz. from 2d. to 3¼d. per foot.
21 oz. ,, 3½d. 5d. ,,
26 oz. ,, 3¾d. 7½d. ,,
32 oz. ,, 4d. 9½d. ,,

SHEET SQUARES.

| In boxes of 100 feet. | £. s. d. |
|---|---|
| Under 6 by 4 ... ... | 0 8 6 |
| 6 by 4 and 6½ by 4½ ... | 0 13 0 |
| 7 by 5 and 7½ by 5½ ... | 0 15 0 |
| 8 by 6 and 8½ by 6½ ... | 0 17 6 |
| 9 by 7 and 10 by 8 ... | 1 0 0 |

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2½d. per foot.

HARTLEY'S PATENT ROUGH PLATE,
packed in boxes of 50 feet each :

| | | | |
|---|---|---|---|
| 6 by 4 and 6½ by 4½ ... | 12s. 0d. | 8 by 6 and 8½ by 6½ ... | 15s. 0d. |
| 7 by 5 ,, 7½ by 5½ ... | 13 6 | 9 by 7 ,, 10 by 8 ... | 16 6 |

MILK PANS, from 2s. to 6s. each ; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each ; Grape Glasses ; Cucumber Tubes, 1d. per inch ; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 6s. ; 6 tubes, 8s. 6d. GLASS SHADES.—Estimates and List of Prices forwarded on application.

GLASS FOR CONSERVATORIES,
GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes. Inches. | | | | | Inches. | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|---|
| | Under | 6 | by | 4 | at | 1½d. | is | £0 12 6 |
| From 6 ,, 4 | ,, | 7 | ,, | 5 | ,, | 2d. | ,, | 0 16 8 |
| 7 ,, 5 | ,, | 8 | ,, | 6 | ,, | 2½d. | ,, | 0 18 9 |
| 8 ,, 6 | ,, | 10 | ,, | 8 | ,, | 2½d. | ,, | 1 0 10 |
| 10 ,, 8 | ,, | 12 | ,, | 9 | ,, | 2¾d. | ,, | 1 2 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3½d. 5d. ,, ,, ,,
26 oz. ,, 3¾d. 7½d. ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to James Hetley and Co., 85, Soho-square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES ; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices :

STOCK SIZES.

16 by 4 to 6½ by 5 ... 12s. each. | 9 by 7 to 10 by 8 ... 15s. each.
6½ by 5½ to 8 by 6 ... 13 ,, | 11 by 8 to 14 by 10 ... 16 ,,

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38s. per case ; if 5 cases are taken, 40s. per case ; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

Oils, Colours, Varnishes, Sheet, and White Lead.
87, BISHOPSGATE-STREET, WITHOUT,
Same Side as Eastern Counties Railway.

ENGLISH VERSUS FRENCH GLASS.—The importation of Glass into France is at present prohibited. Special permission has, however, been granted by the French Government for the introduction of a quantity of Hartley's Patent Rough Plate (supplied by Messrs. James Phillips and Co., of 116, Bishopsgate-street Without), for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country.—*Sunderland Herald, April* 18.

DO YOU BRUISE YOUR OATS?

HORSE KEEP.—Oat Bruisers, Chaff Cutters, Ploughs, 42s. ; Shares, 5s. per dozen ; Rollers, Wheat Mills, Bean Mills, Steam Engines, Scarifiers, Turnip Cutters, Dressing Machines, Drills, Threshing Machines, Wood and Iron Harrows, Steaming Apparatus, Scotch Carts, Hay-making Machines, Horse Hay Rakes, and Drag Mills. First class goods warranted. Mary Wedlake and Co., 118, Fenchurch-street. Most liberal discount for cash. Goods delivered free. On receiving six postage-stamps a list, with 107 engravings, will be sent free.



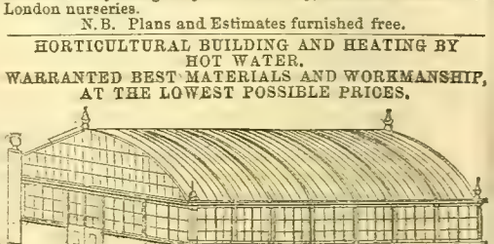
GRAY and ORMSON, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating, every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorley's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any inquiries. They beg also to say the Building only is referred to, as the Heating Apparatus was not erected by them.

Gray and Ormson have also the honour of referring to many of the nobility and gentry in the country, and to several of the London nurseries.

N.B. Plans and Estimates furnished free.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS and CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings ; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
PATENT VULCANISED INDIA RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell-road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them ; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use—are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B. Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Orders or Letters addressed to J. L. Hancock, Goswell-mews, Goswell-road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boots, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

## SALES BY AUCTION.

TO FLORISTS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell at the Auction Mart, Bartholomew-lane, on TUESDAY, May 6, at 12 o'clock, part of the Stock of Mr. NORMAN'S Collection of CARNATIONS and PICOTEES, including many of the best grown.—Catalogues can be had at the Mart.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, May 7th, and THURSDAY, May 8th, at 12 o'clock each day, a fine collection of CARNATIONS AND PICOTEES, AURICULAS AND HEARTSEASE; also Climbing Roses in pots, Dahlias in dry Roots, Geraniums, Fuchsias, Verbenas, and other plants in bloom.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ORCHIDS.

THE PROPERTY OF THE LATE GEORGE WALKER, Esq.

MR. J. C. STEVENS is favoured with instructions from the Executors to submit to sale, by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, 6th May, at 12 for 1 o'clock, the collection of ORCHIDS, removed from Eastwood-hall, Notts. It consists of a general selection of the most popular varieties, many of which are fine specimens, and well established plants.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

TULIPS.

MESSRS. GLENNY AND CO. are instructed to Sell by Auction, on the premises, Hoxton Nursery, New North-road, London, on MONDAY, May 26, at 12 for 1, precisely, 160 Rows of choice TULIPS, being a portion of the superb collection of Mr. Tebbutt. Among others will be found Pandora, Musidora, Louis XVI., Camus des Craix, Fabius, Rose Brilliant, Duke of Devonshire, Violet Alexander, Violet Quarto, Milo, Jackson's Princess Royal, Duc de Bordeaux, &c. May be viewed any time prior to the Sale, and Catalogues had on the premises, at the White Swan, Abbey Mills, West Ham; Cock and Castle, Elizabeth-street, Hackney-road; Victory, Kingsland-road; City of Canton, East-India-road, Poplar; of the Auctioneers, 420, Strand; and at 84, Fleet-street.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET, a HOUSE, with Four Acres of LAND, on the Brighton Railway—Rent, 20*l.*; pleasantly situated, facing the clump of trees adjoining the Horley Station, one hour's distance from London-bridge. An excellent opening for a Market Gardener. The two best rooms, which have French casement windows, would let furnished during the season to pay the rent.—Enquire of the Station Clerk at Horley, who will point out the premises and give the Landlord's address.

FARMS NEAR SUDBURY, SUFFOLK.

TO BE LET, from Michaelmas next, a good Farm of 100 acres, situate in the Stour Valley, at Cornard, within 3 miles of Sudbury. Also another Farm near, of 45 acres, with Cottage, Barn, Stable, &c. Will be let either together or separate. For further particulars apply to Messrs. CHAPMAN, Land Agents, 23, New-street, Spring-gardens, London.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

CUCUMBER and MELON BOXES and LIGHTS.

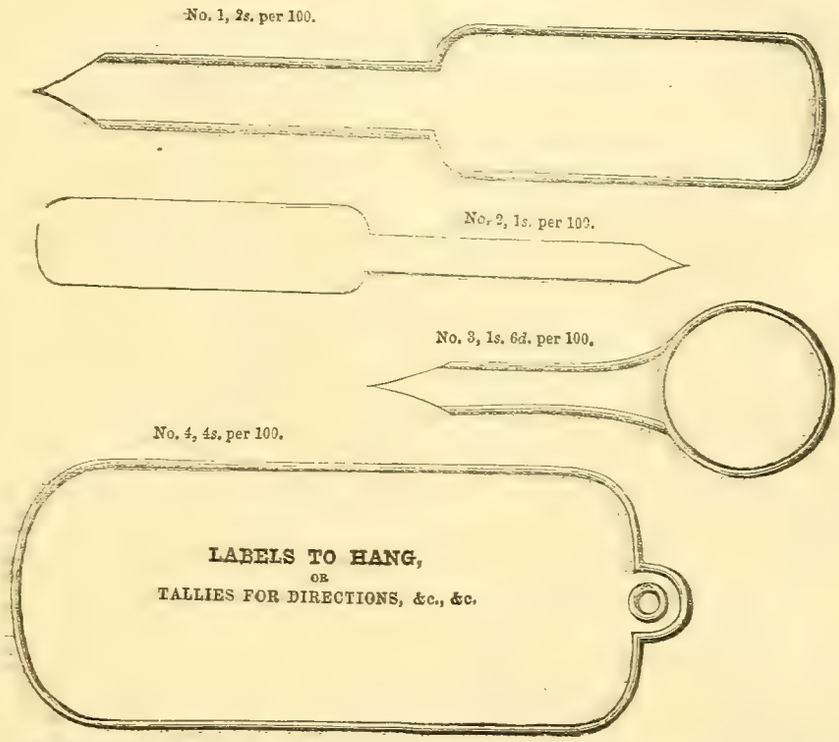
One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hot-house Builder, Claremont-place, Old Kent-road, London.

BELFAST.

THE IMPROVED FLAX MACHINERY.—Persons wishing to erect Mills for preparing FLAX from the Straw can be supplied with the IMPROVED MACHINERY, recommended by the Royal Flax Society, on application to the Makers, M'ADAM, BROTHERS, and CO., Engineers, Soho Foundry, Belfast.—May, 1851.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abothaw, Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

# INDESTRUCTIBLE GARDEN LABELS AND INDELIBLE JET BLACK INK.



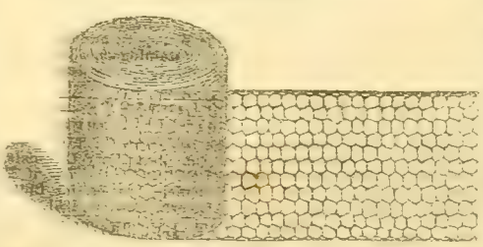

These LABELS can be written upon either with a Lead Pencil, on *wet* paint (same as on wood), or the INDELIBLE INK, which is unaffected by any weather or climate, and can only be removed by rubbing the surface with sand paper, or other rough substance. Many advantages belong to these Labels, in addition to their indestructible qualities and Indelible Ink. They are extremely neat and ornamental; the writing can easily be removed with a little sand paper; they pack in a very small compass; and, unlike the clumsy wood labels, they are not liable to disturb the roots, or rot away in a few months.

*Wherever offered, hitherto, they have been almost invariably adopted.—INK, 6d., 1s., and 2s. per Bottle.*

The Labels and Ink to be had of all Nurserymen, Seedsmen, and Ironmongers in Town and Country; also, Wholesale of the Manufacturer,

**S. ROOKE, Jun., 7, Whittall Street, Birmingham.**

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT-STREET, WESTMINSTER, LONDON;
48, NORTH-BRIDGE, EDINBURGH;
82, ST. ENOCH-SQUARE, GLASGOW;
1, CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

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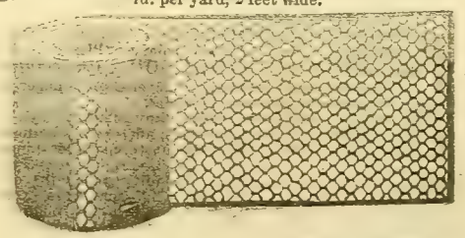
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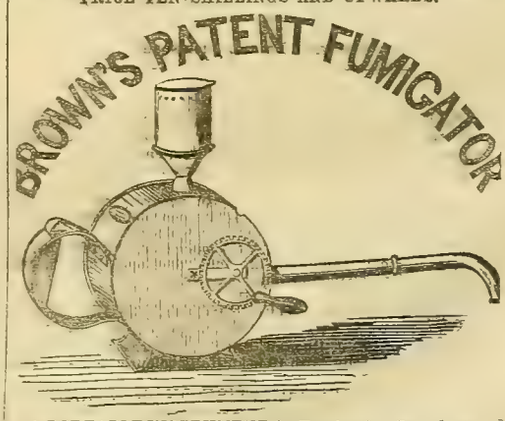


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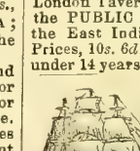
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INDEX.


| | | | |
|---|---|---|---|
| Agriculture, Irish | 300 *a* | Hyacinth glass | 291 *b* |
| Agricultural Society of England | 300 *c* | Larks | 300 *c* |
| Ants | 293 *b* | Manure, liquid | 300 *a* |
| Aponogeton distachyon | 296 *a* | Market gardening | 292 *c* |
| Birds, British song | 292 *b* | National Floricultural Soc. | 295 *b* |
| Calceolarias | 293 *c* | Onions | 293 *c* |
| Calendar, Horticultural | 296 *a* | Plantations, young | 293 *a* |
| — Agricultural | 301 *a* | Ploughs | 297 *c* |
| Cows, produce of | 300 *a* | Rhododendrons, scarlet | 293 *a* |
| Cryptomeria japonica | 293 *b* | Thatch | 291 *c* |
| Crystal Palace....291 *c*, 295 *c*— | 297 *a* | Timber, Van Diemen's Land | 293 *b* |
| Education, agricultural | 297 *b* | Trees, old, to renovate | 295 *b* |
| Farm buildings | 300 *b* | Turner's (Mr.), nursery | 291 *c* |
| Franciscea, culture of | 292 *a* | Van Diemen's Land timber | 300 *a* |
| Guano trade | 300 *c* | Vegetation, action of fine earthy matter on | 293 *c* |
| Hammersmith Pansy Society | 295 *b* | Vines in pots | 301 *b* |
| Horticultural Society | 291 *a* | Weather, the | |
| — report of | 293 *c* | | |


ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The FIRST EXHIBITION this Season, of PLANTS and FLOWERS, will take place on WEDNESDAY next, May 14th.—Tickets to be obtained at the Gardens, Inner Circle, Regent's-park, by orders from Fellows of the Society, or from Foreign Ambassadors, price 5*s.* each; or, on the day of Exhibition, 7*s.* 6*d.*—The Ticket Office closes at 6 o'clock.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN. The SECOND EXHIBITION for the Season will be held at the Royal Surrey Zoological Gardens, on WEDNESDAY, the 28th of May—open to all Exhibitors—when Prizes will be awarded for the following productions, viz.: Miscellaneous, Orchidaceous, and Specimen Plants; Pelargoniums, Cape Heaths, Azaleas, Tulips, Heartsease, Vegetables, &c. In addition to the prizes offered by the Society, Mr. R. J. Lawrence, of Hampton, offers 5*l.* value of Tulips to Amateurs; also, by subscription, Prizes for Seedling Tulips and Heartsease, in addition to Certificates granted by the Society.

The following Exhibitions will also take place at the Royal Surrey Zoological Gardens: on Wednesday, June 25; Thursday, July 24; and Wednesday, Sept. 3.

List of Prizes and the Rules for Exhibition may be obtained from JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

NORTH KENT HORTICULTURAL SOCIETY.—EXHIBITIONS will be held at the ROSHERVILLE GARDENS, GRAVESEND, on the 5TH JULY and 23D AUGUST, when Prizes of upwards of 150*l.* will be distributed.—Particulars may be obtained of W. A. COOMBE, Esq., Honorary Secretary, Northfleet; or 3, Bridge-street, Westminster, London.

GARDENERS' BENEVOLENT INSTITUTION.
PRESIDENT:
HIS GRACE THE DUKE OF DEVONSHIRE, K.G.
The EIGHTH ANNIVERSARY DINNER will be held at the London Coffee House, Ludgate-hill, on MONDAY, June 9, 1851.
JOSEPH PAXTON, Esq., in the chair.

STEWARDS:

| | |
|---|---|
| The Right Hon. Lord Overstone. | William Murray, Esq. |
| Thomas Clarke, Esq. | William Somerville Orr, Esq. |
| George Cunningham, Esq. | George Paul, Esq. |
| Charles D. Dandy, Esq. | William Haseldine Pepys, Esq., F.R.S. |
| Edward Denyer, Esq. | Robert T. Pince, Esq. |
| William James Epps, Esq. | Alexander Pontey, Esq. |
| Frederick M. Evans, Esq. | George Rollisson, Esq. |
| James Garraway, Esq. | John Crace Stevens, Esq. |
| Robert Glendinning, Esq. | James Veitch, Esq., jun. |
| John Lee, Esq. | George Wood, Esq. |
| George Lyall, Esq., jun. | Edmund Tattersall, Esq. |
| Robert Marnock, Esq. | Charles Turner, Esq. |

Dinner on Table at Half-past Five o'clock precisely.
Tickets, 21*s.* each, to be had of the Stewards, at the Tavern, and of the Secretary, 97, Farringdon-street.
EDWARD R. CUTLER, Secretary.

GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given that the Half-yearly General Meeting of the Members of this Society will take place at the London Coffee House, Ludgate-hill, on Wednesday, the 11th of June next, for the purpose of Electing Two Pensioners on the Funds of the Institution. The Chair will be taken at 12 o'clock precisely, when the Ballot will commence, and close at 2 o'clock precisely.
By order, EDWARD R. CUTLER, Secretary.
May 8, 1851. 97, Farringdon-street.

POSTPONEMENT OF EXHIBITION.—The Committee for managing the Grand Annual TULIP EXHIBITION, give Notice, that the Day of Show is postponed to TUESDAY, MAY 27th.
Derby, May 6. By order, E. S. DODWELL, Hon. Sec.

FOR SALE, a choice collection of STOVE AND GREENHOUSE PLANTS, &c.—Enquire of the Gardener, Rectory, Acton, Middlesex.

CHEAP BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to state that he is prepared to send out BEDDING PLANTS from 1*s.* 6*d.* to 3*s.* per doz.
Descriptive Catalogues sent on the receipt of one postage stamp. Prizefighter and Farnham Castle Cucumber, 1*s.* per packet.

BATH NURSERY.

JAMES GRIFFIN begs to announce that his Annual Spring CATALOGUE is now ready, and may be had on application. It contains a Descriptive List of all the newest and best Dahlias, Fuchsias, Verbenas, Phloxes, &c.; also a Select List of the most useful plants adapted for decorating the Flower Garden. The prices will be found exceedingly low.
Weston-road, Bath.

"BERBERIS DARWINII."
(Beautiful Hardy Evergreen Shrub from the Snow Line on the Andes of Patagonia.)

MESSRS. VEITCH AND SON feel the greatest confidence in offering for sale the above valuable BERBERIS, a plant and also a cut specimen of which were exhibited at the Horticultural Society's Rooms in Regent-street, the 1st of April last, and received the "*Large Silver Medal.*" They beg to refer to Dr. Lindley's report in the *Gardeners' Chronicle* of April 5th, as follows:

"This proves to be a species whose importance it is almost impossible to overrate, inasmuch as it is exceedingly handsome, perfectly hardy, and naturally produces its rich orange blossoms in great profusion during the early months of the year. Indeed, for general value, we have nothing at present at all to be compared with this fine Berberry."

Strong plants will be ready for sending out on and after the 12th of June next, at 21*s.* each, with the usual allowance to the trade.—Exeter, May 10.

"MEDINILLA MAGNIFICA."

MESSRS. VEITCH AND SON have much pleasure in offering this splendid and unique Stove Plant, with pendulous bunches of flowers 12 to 18 inches in length, having beautiful large rose-coloured bracteas.

It was exhibited at the Horticultural Society's Room, Regent-street, on the 2d of April, 1850, and was awarded the *Large Silver Medal.* For description, see *Gardeners' Chronicle*, April 6th, 1850.

It was again exhibited at Chiswick, on Saturday last, May 3d, where it received the "*Certificate of Excellence.*"

It is figured in Curtis's "Botanical Magazine" for September, 1850.

It has been so much admired by all who have seen it, and is altogether so first-rate a plant, that Messrs. VEITCH AND SON can recommend it with the most perfect confidence.

Strong plants will be ready for delivery on and after the 12th of June next, at 63*s.* each, with the usual allowance to the trade; and, when six plants are taken, an additional one will be put over.—Exeter, May 10.

CANTUA DEPENDENS, OR BUXIFOLIA.
A BEAUTIFUL NEW HARDY GREENHOUSE PLANT FROM PERU.

MESSRS. VEITCH AND SON have the greatest satisfaction in offering to the Public the above lovely plant, from the Andes of Peru, where the flowers are so much esteemed by the natives that they adorn their chambers with them on feast days.

It was exhibited in Regent-street on the 15th of April last, and received the LARGE SILVER MEDAL (see *Gardeners' Chronicle* of April 19th.)

It was again exhibited at Chiswick on the 3d of this month, and was then awarded the highest prize given for new plants—THE SILVER GILT MEDAL.

It is a plant of neat habit and foliage, blooms freely in a small state, and may be kept in a cold pit or frame through winter, being of about the same hardiness as the Fuchsia, and as easy of cultivation; from its novelty and beauty, it will be an acquisition to every collection, and be cultivated by every florist. It is figured in Curtis's "Botanical Magazine" for this month, and will also shortly appear in Paxton's "Flower Garden." Good established plants will be sent out on and after the 12th of June, at 21*s.* each, with the usual discount to the Trade.

CHOICE BEDDING PLANTS.

HENRY WALTON, FLORIST, &c., Edge-end, Marsden, near Burnley, Lancashire, begs to offer the following at the extremely low prices attached, viz., 100 fine named Dahlias, including several of 1850, for 50*s.*; 50 for 30*s.*; 25 for 19*s.* to 18*s.*; 12 for 4*s.* 6*d.* to 9*s.*; Pansies, 25 fine named varieties, 10*s.*; 12 do., 4*s.* 6*d.* to 6*s.*; 12 fine named Pinks, 4*s.*; 12 Verbenas, 3*s.* 6*d.*; 12 fine named scarlet Geraniums, 4*s.* 6*d.* to 6*s.*; 12 Ivy-leaved do., 4*s.*; 12 common Geraniums, fine strong plants, 4*s.* 6*d.* to 6*s.*; 12 Cupheas, 3*s.* 6*d.*; 12 Heliotropiums, of sorts, 4*s.*; 12 fine named Petunias, 4*s.*; 12 Mimulus, 4*s.*; 12 Lobelia erinus, of sorts, 6*s.*; or 12 of each of the above lots for 2*l.* The above may be had the second week in May, in strong healthy plants, securely packed, so as to ensure safe delivery of all orders.

Achimenes Tugwelliana, longiflora alba, fimbriata, Ghiesbreghtii, Bodmeri, Escherii, rosea superb, eximia rosea, cordata, Knightii, Skinneri grandiflora, patens major. The above 12, free by post, for 10*s.*; or 6 for 7*s.* 6*d.* Gloxinias, 12 fine named varieties for 9*s.* to 16*s.*; or 6 for 5*s.* to 10*s.*

Catalogues may be had by inclosing one stamp. Strong well-rooted plants may be depended upon. It is respectfully requested all orders be accompanied with a Post-office order, made payable at Marsden, near Burnley, Lancashire.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to offer choice collections of the following plants:—

| | Per dozen—*s.* *d.* | *s.* *d.* |
|---|---|---|
| Azalea indica, fine collection, strong bushy plants | 9 0 | to 18 0 |
| Ericas, fine and bushy | 9 0 | „ 18 0 |
| Epacrises | 12 0 | „ 18 0 |
| Corræas | | 9 0 |
| Geraniums, fine show varieties, strong bushy plants | 6 0 | „ 18 0 |
| Do., scarlet and rose colour | 6 0 | „ 12 0 |
| Chrysanthemums, best French varieties | 6 0 | „ 12 0 |
| Do., miniature do. do. | 9 0 | „ 12 0 |
| Phloxes, all the best new kinds | 6 0 | „ 12 0 |
| Petunias | 6 0 | „ 12 0 |
| Verbenas, very strong | 4 0 | „ 12 0 |
| Antirrhinums | | 6 0 |
| Fuchsias | 6 0 | „ 12 0 |
| Hollyhocks, fine sorts, unnamed | | 6 0 |
| Anemone japonica | | 6 0 |
| Escallonia macrantha | each | 3 6 |
| Lycopodium cæsium arboreum | „ | 3 6 |

Extra plants presented to compensate for carriage.
Rose Nippers from 2*s.* 6*d.* to 4*s.* per pair; Metallic Labels for pot Roses 2*s.* per 100; Scotch prepared Tobacco Paper, highly recommended as the best sort for all horticultural purposes, 2*s.* per lb.

CARTER'S CATALOGUE OF FLOWER SEEDS.—A Revised Edition of CARTER'S SYSTEMATIC CATALOGUE OF FLOWER SEEDS is now published, and can be had, gratis, on application. J. CARTER also begs leave to submit an extract of such Flower Seeds as are proper for present sowing.

| ANNUALS. | *s.* *d.* | PERENNIALS. | *s.* *d.* |
|---|---|---|---|
| 12 fine hardy varieties | 2 0 | 12 hardy varieties ... | 2 6 |
| 25 do. do. | 4 0 | 25 do. do. ... | 5 0 |
| 50 do. do. | 8 0 | 50 do. do. ... | 10 0 |
| 100 do. do. | 16 0 | 100 do. do. ... | 17 6 |
| 12 half-hardy do. | 3 0 | 12 frame do. ... | 3 0 |
| 25 do. do. | 6 0 | 25 do. do. ... | 6 0 |
| 50 do. do. | 12 0 | 12 greenhouse shrubs, &c. | 3 6 |
| 100 do. do. | 20 0 | 25 do. do. ... | 7 0 |

| VARIOUS ANNUALS. | *s.* *d.* | PERENNIALS. | *s.* *d.* |
|---|---|---|---|
| 2 Aster, German, separate, h. h. ... | 1 6 | 6 Campanula ... ... | 1 6 |
| 12 „ new Globe, separate, h. h. ... | 1 6 | 4 Canterbury Bell ... | 1 0 |
| 12 „ new pyramidal, h.h. | 1 6 | 6 Delphinium ... ... | 1 6 |
| 12 Balsam, doub. h. h. org. | 2 6 | 6 Dianthus ... ... | 1 6 |
| 12 „ new Camellia, h.h. or g. ... ... | 2 6 | 6 Digitalis ... ... | 1 0 |
| 6 Calliopsis, h. h. ... | 1 6 | 4 Gentiana ... ... | 1 0 |
| 4 Clarkia pulchella ... | 1 0 | 3 Geranium, g. ... ... | 2 6 |
| 4 „ elegans ... ... | 1 0 | 3 Geum ... ... ... | 1 0 |
| 4 Collinsia ... ... | 1 0 | 4 Hibiscus, g. ... ... | 1 6 |
| 10 Convolvulus major ... | 2 6 | 8 Hollyhock ... ... | 1 6 |
| 4 „ minor, new ... | 1 0 | 4 Ipomœa, g. ... ... | 1 6 |
| 4 Cuphea, h. h. ... ... | 1 6 | 3 Ipomopsis, f. ... ... | 1 0 |
| 4 Elichrysum ... ... | 1 0 | 4 Kennedya, g. ... ... | 1 6 |
| 4 Gaillardia, h. h. ... | 1 0 | 4 Lupinus ... ... ... | 1 0 |
| 6 Godetia (Œnothera) ... | 1 0 | 6 Marvel of Peru, f. ... | 1 0 |
| 4 Gourd, extra fine, h. h. | 1 6 | 4 Mimulus, f. ... ... | 1 0 |
| 12 Larkspurs, German ... | 2 0 | 4 Papaver ... ... ... | 1 0 |
| 8 „ new branching | 2 0 | 8 Pentstemons ... ... | 1 6 |
| 6 Marigold, Fr. & Af., h.h. | 1 0 | 6 Petunia, f. ... ... | 1 6 |
| 4 Mesembryanthemum . | 1 6 | 4 Potentilla ... ... | 1 0 |
| 4 Nemophila ... ... | 1 0 | 4 Scabious ... ... | 1 0 |
| 4 Phlox Drummondii, h. h. ... ... ... | 1 6 | 4 Stock, Brompton, f. ... | 1 0 |
| 4 Portulaca, finest, h. h. | 1 6 | 4 „ Imperial, f. ... | 1 6 |
| 4 Salpiglossis, h. h. ... | 1 0 | 3 Sweet William ... | 1 0 |
| 12 Stock, dwarf German, h. h. ... ... ... | 2 0 | 4 Thunbergia, g. ... | 1 6 |
| 12 „ German 10 week | 2 0 | 3 Verbena, f. ... ... | 1 0 |
| 12 „ Prussian „ | 2 0 | 12 Wallflower, German ... | 2 6 |
| 8 Zinnia elegans, h. h. ... | 1 6 | 6 „ „ ... | 1 8 |

EXPL.—*The above selections comprise the finest varieties; those marked f. require protection in winter; g. greenhouse plants; h. h. half-hardy annuals; they succeed best sown on a hot-bed, but will do without artificial heat at this season. Mixed packets may be had of all the above sorts, from Aster to Wallflower, at 6d. each; also of the following:—Acacia,* 20 *sp. g.*, 1*s.*; *Achimenes, g.*, 1*s.*; *Anemone, 6d.; Bellis perennis,* 40 vars., 1*s.*; *Calceolaria,* new spotted, g., 1*s.*; Cineraria, g., 1*s.*; Doryanthes excelsa, Gigantic Australian Lily, 1*s.*; Elichrysum, g., 1*s.*; Nemophila maculata, beautiful for greenhouse, 6*d.*; Pansy or Heartsease, 1*s.*; Primula sinensis, mixed, 1*s.*; Saponaria calabrica, 6*d.* All the above seeds sent prepaid at the prices affixed.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

MESSRS. SANGSTER AND SONS beg to inform the public that they are now sold out of their prepared POTATO CUTTINGS, except a few Regents. More will be ready about the 20th inst.
Newington Butts, London, May 10.

BEDDING AND OTHER PLANTS IN POTS.

SAMUEL FINNEY AND CO. have to offer, this season, a very large stock of BEDDING AND OTHER PLANTS IN POTS, which are strong and healthy, and fit for immediate planting; for particulars of which they beg to refer to their Catalogue, which is now ready, and may be had, free, on application. The following, the selection of S. F. and Co., will be supplied at the low prices attached, package included:—

| | |
|---|---|
| Dahlias, 6*s.* per dozen. | Verbenas, 5*s.* per dozen. |
| Fuchsias, 6*s.* do. | Antirrhinums, 5*s.* do. |
| Geraniums, 7*s.* do. | Petunias, 6*s.* do. |
| Do. fancy sorts, 7*s.* do. | Calceolarias, 9*s.* do. |
| Do. scarlet sorts, 7*s.* do. | Cinerarias, 7*s.* do. |

Gateshead, May 10. Chrysanthemums, 8*s.* per dozen.

CHOICE AND CHEAP.—READ THE FOLLOWING!
(Carriage paid; see below.)
Now ready, and may be had gratis on application,

MAY'S DESCRIPTIVE CATALOGUE OF PLANTS, for ornamenting the Flower Garden, and Greenhouse display.

N.B.—All orders above 2*l.* 10*s.* carriage paid to London, or to any Railway Station within 150 miles of the Nurseries, and plants given over on smaller orders to compensate for carriage. Our central position and great facility of railway communication enables us to execute all orders with punctuality and despatch.

The Catalogue comprises the following favourites, viz.:—Calceolarias of the best sorts, Cinerarias, Fuchsias, Scarlet Geraniums (for bedding), Verbenas—the very choicest varieties, Petunias, fine Chrysanthemums for autumn display, Liliputian Chrysanthemums (these are little gems, growing about a foot high, and flowering profusely), Salvias, Heliotropes, Phloxes, new and fine; Antirrhinums, fine; various Plants adapted for Bedding, Climbers of sorts, and Roses in selection.

| | *s.* |
|---|---|
| ERICAS, 12 fine blooming plants, own selection, per doz., 12 | |
| GREENHOUSE PLANTS, 12 miscellaneous sorts, blooming, our own selection, per doz. ... ... ... ... | 12 |
| HERBACEOUS PLANTS, in pots, purchaser's selection, per 100 ... ... ... ... ... ... ... | 63 |
| Do. do. do., our own selection, per 100, 50 | |

The list throughout is divided into sections of the newest and best in each class, and those in more general cultivation; the selection is left to purchasers or ourselves, in the latter case our customers may rely upon our integrity in furnishing good articles, for which we have received many flattering testimonials. Every information given on application.

Address, JOHN MAY, Hope Nurseries, near Bedale, Yorkshire, to whom all Post-office orders must be made payable.

# HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, MAY 3, 1851.

## AWARD OF THE JUDGES.

### THE LARGE GOLD MEDAL.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids

### THE GOLD KNIGHTIAN MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq , of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 20 species of Exotic Orchids

### THE GOLD BANKSIAN MEDAL.

1 To Messrs. Fraser, of Lea Bridge-road, Essex, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 10 Stove and Greenhouse Plants
4 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of 20 species of Exotic Orchids
5 To Messrs. Veitch and Son, of Exeter, for a collection of 15 species of the same
6 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for a collection of 10 species of the same
7 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for a collection of 10 varieties of Cape Heath
8 To Messrs. Rollisson, of Tooting, for the same
9 To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses, in pots
10 To Mr. Francis, of Hertford, for the same
11 To Mr. Green, for a collection of 12 varieties of Greenhouse Azalea
12 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for a collection of Indian Rhododendrons

### THE LARGE SILVER-GILT MEDAL.

1 To Mr. Speed, of Edmonton, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for six Stove and Greenhouse Plants
3 To Messrs. Rollisson, for 15 species of Exotic Orchids
4 To Mr. Carson, for 10 species of Exotic Orchids
5 To Mr. Kinghorn, for six species of the same
6 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 12 varieties of Greenhouse Azalea
7 To Mr. Carson, for six varieties of the same
8 To Mr. Green, for Tall Cacti in flower
9 To Mr. Cole, for a collection of 10 varieties of Cape Heath.
10 To Mr. Epps, F.H.S., for the same
11 To Mr. Smith, Gardener to W. Quilter, Esq., for 10 varieties of Cape Heath, in 11-inch pots
12 To Messrs. Rollisson, for the same
13 To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 varieties of Roses in pots
14 To Messrs. Paul, of Cheshunt, for the same
15 To Messrs. Veitch and Son, for Cantua dependens

### THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Croxford, Gardener to H. H. Barnes, Esq., of Stamford-hill, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Hamp, Gardener to J. Thorne, Esq., F.H.S., for a collection of six Stove and Greenhouse Plants
3 To Mr. Green, for six species of Exotic Orchids
4 To Mr. Smith, Gardener to W. Quilter, Esq., for six varieties of Epacris
5 To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Helichrysums
6 To Messrs. Fraser, Lea Bridge-road, Essex, for six varieties of Greenhouse Azalea
7 To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in pots
8 To Messrs. Lane, of Great Berkhamstead, for the same
9 To Messrs. Fairbairn, of Clapham, for a collection of 10 varieties of Cape Heath
10 To Mr. Over, Gardener to W. M'Mullen, Esq., of Clapham, for 10 varieties of Cape Heath, in 11-inch pots
11 To Mr. Epps, F.H.S., for the same
12 To Mr. Smith, Gardener to W. Quilter, Esq., for the same, in 8-inch pots
13 To Mr. Roser, Gardener to J. Bradbury, Esq., for a collection of Cape Pelargoniums
14 To Mr. Ayres, of Brooklands, for a collection of Fancy Pelargoniums
15 To M. Baumann, of Ghent, for Deutzia gracilis
16 To Messrs. Veitch and Son, for a single specimen of Medinilla magnifica

### THE LARGE SILVER MEDAL.

1 To Messrs. Pamplin, of Lea Bridge-road, Essex, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of 10 Stove and Greenhouse Plants
3 To Mr. Stuart, Gardener to T. Huggins, Esq., of Norwood, for a collection of six Stove and Greenhouse Plants
4 To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for six species of Exotic Orchids
5 To Mr. Green, for a collection of Helichrysums
6 To Mr. Cole, for 10 varieties of Cape Heaths, in 11-inch pots
7 To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Cape Heaths, in 8-inch pots
8 To Mr. Ambrose, of Battersea, for a collection of Fancy Pelargoniums
9 To Mr. Loddiges, F.H.S., for Aerides sp.
10 To Messrs. Veitch and Son, for a single specimen of Erica elegans
11 To Mr. Bray, Gardener to E. Lousada, Esq., of Peak-house, Sidmouth, for a Queen Pine Apple, weighing 3 lbs. 3 oz.
12 To Mr. Davis, Gardener to Lady Bridport, of Cricket St. Thomas, Crewkerne, for two Black Prince Pine Apples in a pot
13 To Mr. Davis, Gardener to Lord Boston, at Hedsor, Bucks, for a Providence Pine Apple, weighing 8 lbs. 4 oz.
14 To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for Black Hamburgh Grapes
15 To Mr. Davis, of Oak-hill, East Barnet, for the same
16 To Mr. Jackson, Gardener to H. Beaufoy, Esq., of South Lambeth, for Dutch Sweetwater Grapes
17 To Mr. Davis, of Oak-hill, East Barnet, for the same
18 To Mr. Bain, Gardener to B. Bernasconi, Esq., of Harrow-Weald, for White Frontignan Grapes

### THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of six Stove and Greenhouse Plants
3 To Mr. Ivison, for a collection of six species of Exotic Orchids
4 To Mr. Roser, Gardener to J. Bradbury, Esq., for a collection of 10 varieties of Cape Heaths in 11-inch pots
5 To Messrs. Rollisson, for the same, in 8-inch pots
6 To Mr. Robinson, Gardener to J. Simpson, Esq., of Thames Bank, Pimlico, for a collection of Cinerarias in 6-inch pots
7 To Mr. Bragg, of Slough, for a collection of Pansies in pots
8 To Messrs. Henderson, of Pine-apple-place, for Broughtonia violacea
9 To Mr. Cole, for Allamanda neriifolia
10 To T. B. Graham, Esq., of Lavender Sweep, Clapham Common, for a single specimen of Erica Sindryana
11 To Messrs. Veitch and Son, for Nepenthes Rafflesiana
12 To Mr. Barnes, Gardener to Lady Rolle, of Bicton, for a Queen Pine Apple
13 To the same, for a Prickly Cayenne Pine Apple, weighing 4 lbs. 10 oz.
14 To Mr. Jackson, Gardener to H. Beaufoy, Esq., of South Lambeth, for a Providence Pine Apple, weighing 7 lbs. 9 oz.
15 To Mr. Parsons, Gardener to A. George, Esq., of Ponder's End, for Black Hamburgh Grapes
16 To Mr. Davis, of Starch Green, Hammersmith, for the same
17 To Mr. Grant, Gardener to G. H. Simms, Esq., of Borthwick Hill, Bath, for a White Fleshed Melon, named "Victory of Bath"

### THE SILVER BANKSIAN MEDAL.

1 To Mr. Over, Gardener to W. M'Mullen, Esq., for a collection of ten Stove and Greenhouse Plants
2 To Mr. Watson, Gardener to Mrs. Tredwell, of St. John's Lodge, Lower Norwood, for the same
3 To Mr. Fancourt, Foreman to Mr. Cant, of St. John's-street Nursery, Colchester, for a collection of Cinerarias in 6-inch pots
4 To Mr. Carson, for Trichopilia coccinea.
5 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for Pimelea Nieppergiana
6 To Mr. Ivison, for a single specimen of Indigofera decora
7 To Mr. Green, for Ixora Griffithii
8 To Messrs. Veitch and Son, for Nepenthes sanguinea
9 To Mr. Hamp, for a collection of Amaryllids
10 To Mr. Fleming, for a Black Antigua Pine Apple, weighing 3 lbs. 4 oz.
11 To Mr. Bray, for a Providence Pine Apple, weighing 5 lbs. 1 oz.
12 To Mr. Bain, Gardener to B. Bernasconi, Esq., for Black Hamburgh Grapes
13 To Mr. Snow, Gardener to Earl de Grey, Wrest Park, Silcoe, for a collection of Apples and Pears
14 To Mr. Ingram, Gardener to Her Majesty at Frogmore, for May Duke Cherries
15 To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for Keens' Seedling Strawberries
16 To Mr. Smith, of Mogden-lane, Isleworth, for the same
17 To Mr. Robertson, Gardener to Lady Foley, of Stoke Edith Park, Ledbury, for a Persian Hybrid Melon

### THE CERTIFICATE OF MERIT.

1 To Mr. Loddiges, F.H.S., for Lycaste sp.
2 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for Epidendrum sp.
3 To Mr. Turner, of Holloway, for a collection of Alpines in pots
4 To Mr. Wilmer, of Sunbury, for a collection of 24 Auriculas
5 To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for a collection of Lycopods
6 To G. W. Hoyle, Esq., of Reading, for Epiphyllum speciosum Brookii
7 To Mr. Stanly, for a collection of Apples and Pears
8 To Mr. Fleming, for May Duke Cherries
9 To Mr. Elliott, Gardener to Mrs. Boothby, of Twyford Abbey, near Acton, for Keens' Seedling Strawberries.

N.B.—Messrs. Lane, of Great Berkhamstead, would have obtained a Certificate of Merit for a collection of Cinerarias, if they had complied with the regulations in regard to the size of pot in which they should have been shown.


THE FLOWER OF THE DAY—VARIEGATED SCARLET GERANIUM.—This elegant plant is of vigorous habit, the foliage bright green, with a broad silver margin. The flowers light scarlet, in large trusses, like Globe Compactum. JOHN and CHARLES LEE are selling extra strong plants, at 10s. 6d. each. Small plants for bedding on the 1st of June, 60s. per dozen.—Nursery and Seed Establishment, Hammersmith, near London.

FIFTY-FOLD KIDNEY POTATO.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, Somerset, begs to inform the public that he is now sending out his Seedling Fifty-fold Kidney Potato, six tubers of which were sent to Dr. Lindley, April 29th, 1850, and produced 312, quality very good; six tubers also sent to Beck, Henderson, and Co., at the same time, produced 580, although grown in poor ground. Price 4s. per peck.—London Agents: HURST and M'MULLEN, 6, Leadenhall-street.

J. L. having grown from 15 to 20 lights of Aban's Conqueror of the West CUCUMBER, successfully for three years, can with confidence recommend it to the public as being one of the best kinds in cultivation. Packets containing 12 seeds, 1s. each.

VALUABLE VEGETABLES.—CAULIFLOWERS.—Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited; 1s. packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1s. per oz., 6d. per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1s. per oz., 6d. per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6d. per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3d. per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1s. per oz., 6d. per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, respectfully informs the admirers of Roses that his collection of Standard and Dwarf Roses is now in full bloom, in the Rose house. Calceolarias, fine spotted varieties; Geraniums, Fuchsias, Verbenas, &c. A Catalogue sent on application.

E. D. informs his kind patrons that he has no Seedshop in London.

CHEAP DAHLIAS.

HENRY LEGGE is now sending out all the leading Flowers of 1851, at 9s. to 12s. per dozen; the good old, from 3s. to 4s. per dozen.—Catalogues can be had by sending one postage stamp to HENRY LEGGE, Marsh Side, Lower Edmonton, Middlesex.

HUGH LOW AND CO.'s NEW CATALOGUE OF PLANTS is just published, and will be sent free on prepaid application.—Clapton Nursery, London.

CALCEOLARIA "SULTAN."—This very desirable and shrubby CALCEOLARIA for bedding is now on sale, at 5s. each, or two guineas per dozen; habit dwarf, with large dark flowers; it is very hardy, and peculiarly adapted for the flower garden, throwing up a constant succession of its rich ruby-coloured trusses of bloom throughout the season.

Though of a different colour, it is equal for bedding purposes to the well known Calceolaria Kentish Hero, sent out five years since.

JOHN ANDREW HENDERSON and Co., Pine-apple-place, Edgware-road, London.

VERBENAS, SCARLET GERANIUMS, PETUNIAS, DAHLIAS, FUCHSIAS, CHRYSANTHEMUMS, and all the popular varieties of Bedding Plants.

*Many thousands of the most showy and favourite Bedding Plants are now ready for sending out, strong and cheap. Persons preparing to plant are recommended to peruse our Priced Descriptive Spring Catalogue, stamped as a Newspaper, to go free by post, and supplied gratis.*

For HARDY PLANTS, consisting of Antirrhinums, Phlox, Pentstemons, Lobelias, Potentillas, Rock, and other Herbaceous Plants, select Flowering Shrubs, Roses, Climbing Plants, &c. &c., see our Autumn Catalogue, supplied gratis.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

STRAWBERRY BEDS.—To those Ladies and Gentlemen who have changed their residence since the 25th of March, or not having an opportunity of forming beds to bear this season, EDWARD TILEY begs to inform them they may yet do so, he having a large stock of Strawberries grown in pots for the purpose of late planting; they are well set with bloom, such as will insure fruit this year, and double the quantity over those planted in the autumn for the next season. They consist of the following first-rate varieties: Kitley's Goliah, Elton Pine, Alice Maud, Cole's Prolific, and British Queens. Any of which can be forwarded at 4s. 6d. per dozen, hamper and package included. A remittance must accompany the order, either in cash or penny postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

AZALEA INDICA "SYMMETRY" (KINGHORN.)—The celebrity this Flower has gained, and the eulogium that has been bestowed upon it, render it only necessary to mention the opinions of competent judges, the awards it has received, and simply to add that it is superior in shape and substance to any variety hitherto introduced, and equal in colour and habit to the most popular kinds. In May, 1850, a first class certificate was awarded to it by the London Floricultural Society, and it was thus described in the *Gardeners' and Farmers' Journal*. "Azalea indica Symmetry is a magnificently formed flower, of extraordinary substance; colour salmonish-pink, varying to light scarlet, richly spotted in the throat with deep crimson; size large." At the June show, 1850, at Chiswick, it obtained the Silver Banksian Medal, and was recorded in the *Gardeners' Chronicle* as "a considerable improvement on Lateritia." JOHN and CHARLES LEE having purchased the stock of Symmetry, intend sending out healthy Plants on the 1st of June, price 21s. each.—Nursery and Seed Establishment, Hammersmith, near London.—May 10.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition; 21s. Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

E. G. HENDERSON is now prepared to send out the following New Plants:—

| | | | | s. | d. |
|---|---|---|---|---|---|
| FANCY GERANIUM, Delicatum (Ambrose's) | | | ... each | 21 | 0 |
| SCARLET GERANIUM, Beauty of the Parterre | | | ... ,, | 10 | 6 |
| Ditto | Ditto | Peach Blossom | ... ,, | 10 | 6 |
| Ditto | Ditto | Bridal Bouquet | ... ,, | 10 | 6 |
| Ditto | Ditto | Golden Admiration | ... ,, | 15 | 0 |
| POTENTILLA ANTWERPENSIS | | | ... ,, | 7 | 6 |
| Ditto | bicolor grandiflora | | ... ,, | 5 | 0 |
| FUCHSIA, Prime Minister (Henderson's) | | | ... ,, | 7 | 6 |
| Ditto | Resplendent | Do. | ... ,, | 7 | 6 |
| Ditto | Lord of the Isles | Do. | ... ,, | 7 | 6 |
| Ditto | Madame Sontag | Do. | ... ,, | 7 | 6 |
| CALCEOLARIA MONARCH | | Do. | ... ,, | 7 | 6 |
| Ditto | Queen of England, | Do. | ... ,, | 7 | 6 |
| Ditto | Flora M'Ivor | Do. | ... ,, | 7 | 6 |
| Ditto | Golden Knight | Do. | ... ,, | 7 | 6 |
| Ditto | Marchioness of Douro, | Do. | ... ,, | 7 | 6 |
| Ditto | Conspicuum | Do. | ... ,, | 7 | 6 |

For descriptions of the above, see Spring Catalogues for 1851, which will be ready for delivery early in May, and will be sent post free on application.

E. G. H. also calls attention to the following new Strawberries:

| | s. | d. |
|---|---|---|
| PREMISSES DE BAGNOLET, very late, good plants in pots ... ... ... ... ... ... ... each | 1 | 0 |
| CREMONT'S PERPETUAL, a double bearing variety of superior quality, good plants in pots ... ... each | 2 | 6 |

Wellington Road Nursery, St. John's Wood, May 10.

DAHLIAS.—The largest Stock in the Kingdom, of the finest kinds, both Fancies and other varieties. CHARLES TURNER can supply the above at 12*s.*, 18*s.*, and 30*s.* per dozen, fine constant kinds, and good plants, the selection left to C. TURNER. A list of those not desired should be forwarded with the order. Parcels paid to London, and plants given over to compensate for any additional expense.

A TREATISE ON THE CULTURE OF THE DAHLIA will be presented with each order.

Royal Nursery, Slough.

NEW SCARLET PELARGONIUMS, &c.

CONWAY'S "King of Nepaul," a bright scarlet, with large globe truss, horse-shoe leaf, habit of Tom Thumb, good for either bedding or pot, 7*s.* 6*d.* each.

CONWAY'S "Pet Superb," a bright pink, distinct variety, very dwarf, and pretty for bedding or pot, 5*s.* each.

| | | | |
|---|---|---|---|
| Flower of the Day | 5*s.* 0*d.* | Commander-in-Chief | 2*s.* 6*d.* |
| Princess Alice (Conway's) | 2 6 | Cerise Unique | 2 6 |

Or the set of six for 1*l.* 1*s.*, basket included.

The following have been selected as choice varieties, viz.:—

| | |
|---|---|
| Excellence | Ibrahim Pacha |
| Gem of Scarlets | Mrs. Mayler |
| Cottage Maid | Tom Thumb's Master |
| Trentham Scarlet | Reed's Scarlet |
| Queen of Summer | Queen Improved |
| Princess Royal | Royalist |
| Tam O'Shanter | Punch |

At 1*s.* each, the set of 14 for 12*s.*, or with the six first named varieties for 30*s.*, basket included.

The following Pink varieties are also offered at 1*s.* each, or the set for 8*s.*, basket included:—

| | |
|---|---|
| Jenny Lind | Pink Nosegay |
| Judy | Cherry Cheek |
| Lucia Rosea | Captain Darling |
| Princess Alice (Ingram's) | Pet |
| Rosy Morn | |

Prize Fighter improved, Tom Thumb improved, or Symmetry, are recommended as very excellent sorts for bedding, at 6*s.* per doz.

NEW PETUNIAS.

CONWAY'S "Lady Rokeby," white, with purple throat, a highly desirable variety, 5*s.* each; "Captivation," 1*s.* 6*d.* each. "Beauty Supreme" is confidently recommended as one of the best Petunias for bedding, at 6*s.* per doz.

NEW CALCEOLARIAS.

CONWAY'S "Floribunda," a dwarf, free, and constant bloomer, bright yellow, large trusses, recommended for bedding or pot culture, 3*s.* 6*d.* each; "Multiflora," 1*s.* 6*d.* each, and numerous other sorts at 6*s.* to 9*s.* per doz.

VERBENAS.

A large collection of Verbenas at 6*s.* to 9*s.* per doz.

CONWAY'S "Coronata" Geranium, pink, with white centre, an early, profuse, and constant bloomer, 2*s.* 6*d.* each.

N.B.—A large assortment of Fancy and other Geraniums, Fuchsias, Heliotropes, Antirrhinums, Chrysanthemums, Dahlias, &c.

MARY CONWAY, Earl's Court Nursery, Old Brompton, near London.—A Catalogue may be had on application.

NEW DAHLIAS.

CHARLES TURNER is now sending out strong plants of the following beautiful kinds:—

| | |
|---|---|
| Barmaid | Nil Desperandum |
| California | Regina |
| Duke of Rothesay | Roundhead |
| Gem of the Grove | Sulphurea pallida |
| Grandis | Sir C. Napier |
| Jullien | FANCIES. |
| Lady E. Cathcart | Kingfisher |
| Leda | Miss Weyland |
| Model | Mrs. Hansard |
| Mr. Palmer | Mrs. Willis |
| Napoleon | Nonsuch |
| Nepaulese Prince | Pretty Polly |

C. TURNER can supply plants of other raisers' new varieties.

Royal Nursery, Slough.


# The Gardeners' Chronicle.

*SATURDAY, MAY* 10, 1851.


MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | May | 12 | Geographical | 8½ P.M. |
| TUESDAY, | — | 13 | Syro Egyptian | 7½ P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 14 | Royal Botanic Gardens | 2 P.M. |
| | | | Literary Fund | 3 P.M. |
| | | | Graphic | 8 P.M. |
| | | | Geological | 8½ P.M. |
| THURSDAY, | — | 15 | Antiquarian | 8 P.M. |
| FRIDAY, | — | 16 | Royal | 8½ P.M. |
| | | | Royal Institution | 8½ P.M. |
| SATURDAY, | — | 17 | Asiatic (Anniversary) | 2 P.M. |
| | | | Medical | 8 P.M. |

COUNTRY SHOWS.—Wednesday, May 14: Forfar Horticultural.—Thursday, May 15: Stamford Hill Horticultural, Highbury and North London Horticultural, and Ipswich Horticultural.—Friday, May 16: Cornwall Horticultural.

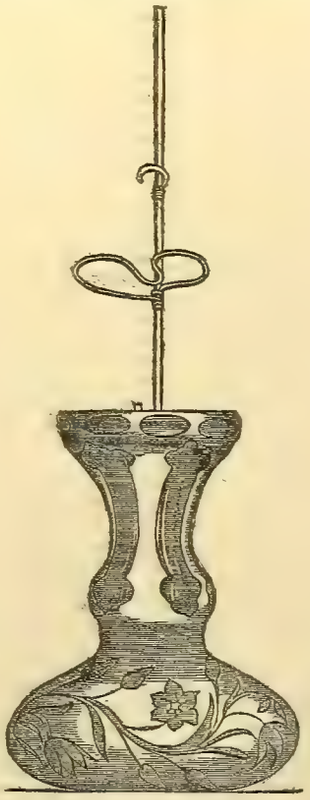
THE Horticultural season has opened magnificently, and it is already abundantly evident that the tide of skilful gardening is still rising with accumulated force. Accustomed as we are to the May glories of the CHISWICK SHOWS, we have never witnessed anything like what the exhibitors produced on Saturday. Azaleas, Orchids, stove and greenhouse plants, Roses, were all displayed in such profusion, that nobody missed the Pelargoniums, of which the growers did not venture to present one; so fickle is fashion, and so steadily is the race of fancy Geraniums—admirably represented by Mr. AYRES and Mr. AMBROSE—supplanting the others in public favour. In what profusion fine plants were supplied, may be judged of from the fact that a new tent, containing 400 feet of additional tables, was pitched, and nevertheless the whole space was filled.

A large part of our columns of to-day is occupied with a detailed account of this first Horticultural Show, which the foreigners present justly regarded as an exhibition as unapproachable in any other country than England as that within the Palace of Glass itself. To the extended remarks of our reporter we have but a word or two to add.

Of novelties there was not much, but some of the plants were of high interest. First came Messrs. VEITCH'S Cantua dependens, the most glorious species that yet has reached us from the west; a shrub, as hardy as a Fuchsia, and far more gay, because of the rich mixture of yellow and purple and violet in its long tubular flowers. Then appeared, among the Orchids, Colonel FEILDING'S famous Fox's Brush, a most charming new species of Aerides, with long gay festoons of rosy blossoms. Hardly inferior in interest was the true Deutzia gracilis, from M. BAUMANN, of Ghent: a brilliant graceful hardy bush, from Japan, with snow-white flowers like those of the Syringa. We also noticed a new Billbergia, from M. DE JONGHE, of Brussels, not well enough grown to show whether it will become, as it promises, a valuable stove plant; a new Lycaste, with pale yellow flowers, from Messrs. LODDIGES; and an Arpophyl, in the collection of Orchids, from Mr. WARNER'S gardener.

Had this meeting taken place on the 1st or 2d of May it would have been a charming scene beyond the tents, for the tender foliage of the trees was far enough advanced to produce the usual effect of vernal beauty, and the entrances to the garden were as gay with flowers as in July. But by noon time, a soft May morning, succeeded by a smart shower, had settled into a day of gloom and rain, accompanied by a cold wind from the north-east; and the enjoyment of the day was gone. A large part of the visitors stopped at the Crystal Palace on the way down; and not more than 1549 persons assembled to witness one of the most beautiful horticultural scenes which even the Chiswick Gardens have presented. These were, however, real enthusiasts, and neither rain nor cold could prevent their lingering over the banks of Roses and Azaleas, or wandering away to the remote parts of the Garden where Mr. HOSEA WATERER'S unrivalled Rhododendrons are to be exhibited at the next meeting, on the 7th of June.

SOME weeks since Mr. FLEMING, of Trentham, sent to the Horticultural Society a specimen of a Hyacinth Glass, contrived by Mr. TYE, of Birmingham, which deserves a better notice than the slight allusion made to it at page 119. In form it is something like an old-fashioned Dutch bottle; but the neck is widened sufficiently to receive the bulb of a Hyacinth at the mouth, and is again swollen near the base, but less than before, so as to destroy the ugly effect of a long narrow column. The peculiar form of the lower part causes the weight to be almost wholly thrown upon the base, by which means the glass is made to stand so firmly that no ordinary accident will upset it. When used for bulbs a stout upright rod is readily attached to the neck by means of a circular



spring acting within and below the rim; and this upright is furnished with loops which steady the flower stems and render it impossible for them to fall out of the perpendicular. When the season for bulbs is over, the rod and its loops are readily removed, and the glass becomes either an ornamental object, or a jar in which cut flowers may be placed. This is by far the most beautiful contrivance of the kind we have yet seen, and will no doubt universally displace the ugly things now in use.

TYE'S Hyacinth glasses are manufactured of various colours and materials, so as to accommodate purchasers. One now before us has a charming topaz yellow transparent pattern, cut upon an opaque white ground, and is probably that which best harmonises with the objects it is intended to support.

FEW things in the CRYSTAL PALACE are, to our minds, more interesting than the specimens of Colonial produce. They tell us of the condition of distant friends, and of the prospects of those from whom we are about to separate; they speak unmistakeably of the relative value of regions concerning which few can have any personal knowledge, and of the future destiny of countries which may one day become our rivals. They point, out, moreover, where our merchants, our manufacturers, our artisans are to look for those raw materials, in the absence of which their intelligence and skill would remain without application. Looking in this way at Canada, and the other British North American Colonies, we perceive signs of a prosperity which nothing but fatuity can destroy; and comparing them with the United States, we see no cause of regret at having lost the one while we retain the other. The corn of Canada is inferior indeed to that of Adelaide, and its minerals may suffer by comparison with those of the Burra Burra, as its timber does with the beautiful cabinet woods of British Guiana, the Bahamas, and Van Diemen's Land; nevertheless, its nearness to our own shores counterbalances such disadvantages, and its richness in all that constitutes the real strength of a country is abundantly manifest.

Viewed in this manner, it is impossible not to see that Van Diemen's Land itself, much as it has suffered, and low as it seems to have sunk in public estimation, is, nevertheless, a mine of inexhaustible wealth. In its timber and fancy woods alone, it yields to no region that is represented in the Exhibition. The beauty of the Huon Pine, for example, excels that of Satin-wood or Bird's-eye Maple; the Black-wood equals Rosewood; what is called Dog-wood, said to be a Bedfordia, is like the finest brown gnarled Oak; and the common Musk bush (*Eurybia argophylla*), which in Van Diemen's Land becomes a tree, produces veneers that are, we think, without a rival. There is a small work-table, No. 12, made of this material, which is not excelled by any similar piece of furniture in the building.

Of these woods, Mr. BACKHOUSE'S account will just now be read with interest:

"The timber from Macquarie Harbour is very fine. Huon Pine, supposed to be a species of *Dacrydium* (Franklinii), which is much valued for ship-building and general purposes, abounds on the eastern side. The wood is closer grained, and more durable than White American Pine, and has an aromatic smell. This tree attains to about 100 feet in height, and 25 in circumference, and is of a pyramidal form; the branches from the trunk are a little below horizontal, and are clothed with numerous slender, pendent, scaly branchlets of lively green, serving the purpose of leaves, as in the Cypress and Arbor-vitæ. Celery-topped Pine, *Thalamia* (Phyllocladus) *asplenifolia*, so called from the resemblance of a branch clothed with its dilated leaves to the leaf of Celery, is well calculated for masts. Myrtle, allied to Beech, but with leaves more like dwarf Birch, is suited for keels. Light wood, *Acacia melanoxylon*, clothed with leaf-like spurious foliage, resembling the leaves of a Willow, is also fine timber, and its roots make beautiful veneering. It derives this name from swimming in water, while the other woods of Van Diemen's Land, except the Pines, generally sink; in some parts of the colony, it is called Black-wood, on account of its dark colour. Other timber-trees are known here by the names of Pink-wood, *Carpodontos lucida*, Hard-wood, a species of *Olea*, Sassafras, *Atherosperma moschatum*, Stink-wood, *Zieria arborescens*, &c. Forest Tea-tree, a species of *Leptospermum*, is valued for fuel; some crooked portions of its trunk are finely veined, and well adapted for fancy work. The black substance forming part of the stems of Tree Ferns, is used for reeding, in inlaying, for which purpose it is superior to Ebony." —*Narrative*, p. 48.

A good many specimens have been sent of the Tasmannian Beech, or, as the colonists call it, Myrtle (the *Fagus Cunninghamii* of botanists), and this tree seems to be one of considerable merit, as well as enormous size. Mr. BACKHOUSE says (p.122), that, on the Hampshire hills, "near the Guide River, he measured two Myrtles, of 32 and 45 feet round; these and many others appeared to be about 150 feet high. Few Myrtles exceed 30 feet in circumference, and they often diminish suddenly at about 10 feet from the ground, losing nearly as much in circumference.

In thus mentioning the timber of Van Diemen's Land we must not omit noticing the Blue Gum Tree (*Eucalyptus globulus*), of which an ample account was given by us last week. It is represented by

Sir WILLIAM DENISON, in the letter which accompanied the specimens now on view, that its timber is equal to Oak for ship building. If so, the Tasmannian dock-yards must become some day of great importance, for the trees are extremely common, and are said to grow 6 feet in length annually while young. Two specimens now in the Exhibition building, are taken from the same trunk, 134 feet apart, and the highest is nearly 3 feet in diameter.

We cannot be mistaken in supposing that the making known the existence of sources of wealth like these, will form one of the great results of the Exhibition of Industry; another may be the introduction to our own shores of some at least of the living timber, which now grows only at the antipodes. How far that is practicable, is a question that we shall probably discuss next week.

## CULTURE OF FRANCISCEAS.

By M. DE JONGHE, OF BRUSSELS.

I HAVE just read an article in the *Gardeners' Chronicle* (p. 262), on the Francisea confertiflora, and, as perhaps the origin and history of this beautiful plant (which, with F. eximia will probably be for some time to come objects of considerable interest) is but imperfectly known to your readers; the following facts relating to it may prove acceptable to them.

The Franciscea confertiflora is a native of the province of St. Paul, in Brazil, and is found on the summit of Mount Cubaton, five leages from Sanctos, where it grows in a heavy soil, shaded and surrounded by virgin forests. It was discovered by my collector, M. Libon, and sent by him to Brussels, where it arrived in November 1847. A plant was sent in May, 1848, to Messrs. Low and Co., and from them it has found its way into the gardens of English amateurs.

I am obliged to your correspondent "W. K.," Knowsley Hall, Lancashire, for the valuable information furnished by him touching the cultivation of this plant. From the statements of M. Libon, and the specimens in my herbarium, it appears that the Franciscea confertiflora, forms in its natural state, a bush, scarcely 3 feet high, but covered with a profusion of violet-blue flowers. Mr. "W. K.," has succeeded in growing the plant in a foreign climate, and showing how it ought to be treated in European houses, and for so doing, he deserves the praise and thanks of all who care for the cultivation of new and beautiful plants. Having myself just finished some remarks on the cultivation of Franciscea eximia, I send them for insertion in the *Gardeners' Chronicle*, in the hope that they may prove interesting to the English gardening world.

*On the cultivation of Franciscea eximia.*—The great difficulty with which every one who attempts to cultivate a tropical plant in a European hothouse has to contend, is ignorance of the habits of the plant—of its period of growth—of its period of rest. In consequence of this ignorance, which can only be dispelled by careful observation, during two or three years after the plant's arrival; and, in consequence of the eagerness of people to attain perfection all at once, and of their tendency to condemn everything that falls short, though for a brief time, of their expectations, many a new plant has been neglected and set aside, which, had a little more time been spent in endeavouring to bring it to perfection, would have proved well worthy of continued favour and increased popularity. It is then, in my opinion, the duty of every one who introduces new plants, to make known everything concerning them which may enable the gardener to bring them as soon as possible into the highest degree of beauty, that they may not be prejudged, and thrown away as unworthy of notice. This, I shall now proceed to do for the Franciscea eximia, which is certainly one of the most beautiful of newly introduced plants, and of any hitherto brought from Brazil, and cultivated in European houses. The botanical description of this plant, which would be out of place in the columns of the *Gardeners' Chronicle*, is to be found in several of the journals more exclusively devoted to botany.

The Franciscea eximia was found by M. Libon in a virgin forest not far from Villa Franca, in the province of St. Paul, in Brazil. It grows naturally in shady places, in small open spaces in the forest, where it forms a bush two or three feet high; the flowers are numerous, richly coloured, and appear as well at the top of the stems as at the extremities of the lateral branches.

Three strong plants of this Franciscea, deprived of their roots, and carefully packed, were carried by mules 180 leagues before they reached Sanctos, whence they were sent to Rio Janeiro, and from that town to Europe, where they arrived, alive, in Novenber, 1847. Immediately after they were unpacked, one of them was placed in leaf-mould, unmixed with other substances; another was placed in a mixture of equal parts of some yellow earth from Brazil, and leaf-mould, with a little charcoal; the third was planted in a still more substantial soil. The last gave no signs of life; the second sent forth with difficulty a few weak shoots; the first, at the end of a month from the time it was planted, showed signs of vigour; and at the end of three months, it had sent out some fine roots, which lined the pot confining them. Guided by my success with this plant, I replanted the other two in pure leaf-mould, but they had suffered so much, that it was with difficulty they were brought round. The first, properly treated at the outset, has maintained its superiority over the other two.

The flowering period of Franciscea eximia is the same in our hothouses as in Brazil, viz., from January to June. In winter the plants, both great and small, but more especially the latter, should be kept in a temperature of from 10° to 12° Réaumur (54° to 59° F.). The period of its normal growth begins in December; the flowers are formed upon the young wood. The earliest appear on the stem and the principal branches, then on the lateral ones, where a succession is kept up for some months. The small plants, which are not more than eight or ten inches in height, have already two or three flowers at the tops of their stems. Perfection is not to be looked for until the plants are two or three years old. The original plant obtained at the exhibition of the Société de Flore, at Brussels, a medal, as the most beautiful new plant there. This same plant, which I have never used for propagation, bore in 1850 more than 300 flowers, from January to June. The flowers, which in form resemble the great Periwinkle, are richly coloured with violet, blue, and white, and contrasting as they do with the glaucous foliage behind them, produce a most beautiful effect.

The plants, if they have rooted well, may in the month of March be placed in a temperate house, in a shady and airy situation; they may be put very well in the midst of Camellias and left there all the summer; their shoots will not become blanched, their growth remains vigorous and short-jointed, their flower buds are well-formed and the flowers are abundant and last a long time. Towards the end of July, when the young wood is well ripened, the plants may be repotted. This is the best time to repot them, for if they are repotted later, they will not flower so early.

In October the plant should be again placed in the coolest place of a hothouse, where it should spend the winter. If these directions be attended to, the Franciscea eximia will be found to be easy of cultivation, and to form a valuable addition to ornamental hothouse plants.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 13.)

No. XXIX.—Having entered my protest against the capture of nightingales, as being an act of wanton cruelty, I will now proceed to my prescribed duty, and show how to atone in the best way we can for our having deprived them of liberty. This will be best evinced in our care to provide them with a suitable domicile, and food adapted to their constitution. But first, a word or two about purchasing them, and selecting them according to their merit.

The principal dealers in these birds reside in the classic region of the "Seven Dials;" and as there is much "trickery" practised here, I will pave the way for plain sailing.

In order to make a great show of business, some of these dealers—one in particular—always collect together a number of nightingales' cages, at least 10 days before the birds arrive amongst us! These are placed on high shelves, after being artfully papered up in front with tissue paper; so as to make people believe that each cage contains a nightingale. When folks express their surprise at the birds coming over "so early," they are told—"the birds are very wild, and must not be looked at, for at least 10 days. At the end of that time they will be quite tame, and in full song." This bait is generally swallowed by *parvenus*, who keep on calling, till at last they *do* hear a nightingale sing! *Perhaps*, there are two "*real*" birds among the whole of the papered-up cages!! A little caution, and a little common prudence after this intelligible "hint," will put a novice on his guard, and enable him to appear a "knowing" one. He cannot speak too little; but he had need be "all eye, and all ear."

As April nightingales, when fresh caught, can never be depended upon for their continuance in song, their rateable value is but trifling. Five shillings is quite ample in any case, unless indeed a bird "comes out" in some remarkable manner, and sings the week through. This however is of rare occurrence. Besides, a nightingale is naturally of a sulky disposition; and if moved from one place to another, will perhaps remain dumb from that very moment. In his second season, *c'est une toute autre chose.* But *this* entirely depends upon yourself, as I shall show.

Newly-caught nightingales are what the bird-dealers call "rank." That is, they are full of snatches of rapturous song; and eager to join their mates directly on their arrival. There is no difficulty in ascertaining this latter. The voice of the lover while paying adoration to his "soul's idol," is heard both far and near. It breaks out in transports of unrestrained melody, and innocent playful joy. Then do they at once commence the arduous duties inseparable from a wedded life. The females build, lay, and go to nest, almost immediately. Hence the males, when caged, sing, not to please themselves, nor their new masters. No; every strain, every note, every inspiration they draw—all are intended for the ear of their betrothed, their first, their only love! Constancy, such as this, is rarely known. Indeed, full many of these lovely warblers fall lifeless from their perches soon after they have been caught. They sing their own "death song," in the hope that its expiring melody may reach the ears of those they so idolise, and from whom they have been so remorselessly torn. Vain hope, truly!

It is well to be deliberate in the purchase of a nightingale. Hear him, if you can, both by daylight and by candlelight. If his song be short and hurried, and given out by "snatches," he is "love-sick." Pass *him* by. If, on the contrary, you can meet with a bird loud and constant in song, and joyous withal, he is not very likely to break *his* heart for love. Buy *him* at once.

Now for the all-important consideration of the proper sort of cage for his reception. These birds, for the most part, court retirement. They come out (except in our snug, private gardens, where they sing all day) when the din and turmoil of the day are over. They seem to despise all mixing with the noisy hum and hideous hubbub of our busy world, and are seldom heard in the neighbourhood of crowded public thoroughfares. Studying his habits, therefore, let his cage be of mahogany (I have already stated where these "model cages" may be had, see "Cage Birds," No. 7). Let its length be 17 inches; height, 14 inches; depth, 11 inches. The sides, back, and top, must all be of mahogany, and the front of strong, lacquered wire, or of cane. In the centre of this, let there be a hole made, sufficiently large to give the bird's head free play when drinking; and let a tin drinking-pan be suspended immediately opposite. Tin must *not* be used for the reception of his food. Nothing is so suitable for this purpose as a *small* white earthenware circular soap-dish, which should be fitted in a mahogany frame, hung on hinges, and made so as to open outwards. Place this at one of the sides towards the back of the cage, and let it be secured by a button outside. Fit up just such a frame-work on the opposite side; and insert in the centre a circular glass-washer. See that the water in this be changed twice, at least, daily.

There must be two perches, one above, and one below. The former should be fixed as high as possible, allowing the bird just sufficient room to stand quite upright, and no more. This should run exactly across the cage, from end to end, and be immediately in the centre, so as to allow ample room for the bird's tail. The lower perch should be similarly fixed from end to end, but placed immediately behind the tin drinking-pan, say at barely two inches distance. To keep your bird quite private, a green silk curtain may be fixed on a spring roller, at the top of the cage, immediately over the wire. This could be drawn down or raised *ad libitum*. It is seldom, however, that a curtain is required.

Now for his Majesty's food. Being an insectivorous bird, the nearest assimilating diet that we can provide him is, raw *rump*-steak, all *lean*, and perfectly sweet. If tainted in the least degree, and he partakes of it, it will be all "*dick*-y" with him.

The trouble necessary to be expended upon these birds is great, yet are they worthy of it. To ensure your beef being fresh, procure it twice, daily, of your butcher. A pennyworth each time will suffice. Now for manipulating with it, and "preparing" it *selon la règle*.

All operations in connection with a nightingale's food must be performed on a circular slab of *marble*, and the naked hand must be kept at a respectful distance. Use a silver fork to hold the beef, and scrape it with a small *sharp* steel case-knife. If the rump-steak be tender and lean, as it ought to be, it will scrape "kindly." Discard from it all the fibrous matter, and place the residue on one corner of the slab. Moisten this gradually with a little cold spring water, and then mix with it some yolk of hard-boiled egg. The consistency of the whole should be moderate, neither too thin nor too solid. Either extreme is to be carefully guarded against.

Such of the above food as remains uneaten, should be thrown away about 1 P.M., and the earthenware dish, after being thoroughly scalded, should be re-filled. Not only does the meat become tainted through the excessive heat of the weather, but it is speedily rendered nauseous by the constant incursion of blow flies, whose pestiferous breath and all-but-living eggs pervade all animal matter within their sight, smell, or reach.

I must now bid adieu, for a short week, to this king of birds. The fair moon has just entered her second quarter; the nights are brilliant and inviting for a ramble; and nightingales, thank God, *are* yet to be found in the woods, the groves, and the copses. *There* I shall seek them, and drink so deeply of their floods of harmony, that I shall sing their further praises with even an increased zest. *William Kidd, New-road, Hammersmith.*

## Home Correspondence.

*Mr. Cuthill's Market Gardening Papers.*—All the world has heard of the fame of the London market men, but not every one bred and located in the country can get an opportunity to be an eye-witness of their excellent modes of cropping, based on long experience, and sought out with an anxiety sharpened by high rentals and the severity of competition. Many of our farmers, who talk so much about land wearing out, would doubtless stare to see men taking first-rate crops from a plot of ground on which, perhaps, the same kind of crop has been repeated, it may be, at least 40 times during the last 50 years. Now as these keen practitioners will not "write a book," but would rather retain a monopoly in the shrine making art for the goddess Diana, it must be admitted that Mr. Cuthill has produced a series of papers which cannot but be of eminent service both to agriculturists and horticulturists; and I can only wish that they may receive the attention they deserve. Only knowing Mr. Cuthill through the medium of his pamphlet on the Potato and other useful matters, I can but infer that he is one of those pithy characters who now and then spring up, to brush away the scum from stagnant surfaces; and to throw hitherto concealed or obscured affairs into that form so much admired by John Bull—a mere rule of three condition. Surely these papers have before this met the eyes of some of our farmers; and if so, they may tempt them to imagine that half-starved soils pay about as well as

half-starved animals; to talk about land wearing out would be a capital joke, if it were not for the fact, that it really does lay in the power of a short-sighted manager to exhaust the very best of soils, simply by bad management. Let it however be remembered, that it also lays in his power to prevent it from wearing out; and that, too, by means with which future prosperity is closely identified. "But it will not pay," says somebody, the answer to which is—"Will the opposite course pay?" If a market gardener can pay some six or eight pounds per acre for his land, and apply six times the manure, and six times the labour to his soils, that the ordinary farmer does, and yet maintain his position, what does this point to? I do not mean to argue that cultural matters can be carried so high in mere corn growing; but surely all this has a bearing on the green and root crops of the farmer at least. However, the thing is pretty obvious to those who will examine it with an impartial eye; and as "one who has whistled at the spade," I would strongly recommend all interested in high culture to run their eye over those useful papers once more, especially men who live not far from thriving towns, or with cheap railway accommodation; for if these things were more generally understood, there can be little doubt that many shrewd farmers would speedily learn to model and work out a system combining good farming and good market gardening. I hope for convenience of reference that Mr. Cuthill will republish the papers in a connected form, at the same time amplifying them, if his experience has added anything new since they last appeared. *Robert Errington, Oulton Park.*

*Scarlet Rhododendrons.*—There are perpetual notices appearing in your paper of scarlet Rhododendrons, with from 300 to 400 flowers expanded upon them at one time in the open air; and one instance in particular I noticed of a plant at Tetton, in Somersetshire, which was said in your Journal to have more than 1200 scarlet flowers out upon it at once; but flowers from this very plant were sent to me, and they were crimson. I believe the original Rhododendron arboreum, from Nepaul, is the only one which produces flowers which are really scarlet; and I also think that that has not been flowered in the open air in any part of England, except in Cornwall, where it flowers well about every other year, but not in the most favourable years in such profusion as those which I think must be erroneously named scarlet in your paper, and which I conjecture to be nothing but crimson hybrid varieties. My only reason for troubling you with this is a wish to be informed whether the Rhododendron arboreum ever flowers in any part of England in the open air, except in Cornwall; and if it does, whether it produces flowers in such profusion as the accounts in your paper would lead one think. *A. B., Cornwall.* [We apprehend that our correspondents are not careful to distinguish crimson from scarlet, not having, perhaps, very good eyes for colour.]

*Young Plantations.*—Assuredly the case of which "J. D." complains so much, at page 261, must be a solitary one; for the majority of young plantations planted during the last 20 years have been tolerably well treated, unless in cases where embarrassed circumstances, or perhaps caprice, induced the proprietor to delay thinning them until it could hardly be performed at all in a satisfactory way; on the other hand, however, I have seen much mischief effected by beginning to thin too soon. I have seen a healthy lot of green Firs, not more than six years planted, almost spoiled for ever by being denuded of their under branches, in order that the ground might undergo a sort of tillage, which certain rules of husbandry are said to require to keep it sweet, pervious, and healthy; and in some favourite plantations I have seen this evil carried to such an extent as to give an unequivocal token of the mischief that was going on. The roots of the Pinus tribe all lie near the surface, and each successive digging destroys what may have been formed since the previous digging, which are, by-the-bye, the most useful roots which the plant has. Well, this root pruning goes on year after year, until the tree, having obtained some size, is forced into a reclining position by the wind, its roots being so far reduced as to offer no impediment to the gale. Now, in this case the evil lies in the commission, and not in the omission of, a worse than useless duty; but the great mass of young plantations are more liable to suffer from neglect than from an over performance of those offices, which we are led to believe assists Nature in her course; but no set of rules or code of laws can be laid down as to the when and where thinning ought to begin and where to end, for so much depends on local circumstances, the purposes for which the timber is required, and the other contingencies, that what may appear to be absurd in one case is both proper and beneficial in another; for instance, I have seen trees planted at the rate of something like 12,000 per acre upon ground that had been in tillage, and in tolerably good condition; now, except hoeing the weeds the first two or three seasons, nothing whatever was done until the 14th year, not a twig was taken off, and not a tree cut out. From this the general reader, knowing no more of the matter than here expressed, would conclude that the plantation was irrecoverably spoiled; nothing of the kind however happened, it is then just ripe for the purposes for which it is wanted, and it usually sells from 40*l.* to 70*l.* per acre. It is then wholly cut down, the stumps are grubbed up, and the land undergoes a course of husbandry previous to planting another time. This plan is only carried out in the case of Larch Firs, for Hop-poles, and few crops pay better; timber certainly never pays so well; in fact, except in those districts where there is great local demand for the common kinds of timber, I fear it can hardly ever again be expected to be planted with a view to profitable investment. The facilities which the last few years have given of obtaining foreign timber at a reasonable rate, and its being more applicable to our wants than our own timber, must tend to drive the latter out of the market, except in those inland districts where a long heavy carriage operates against the foreign article. But to my subject; I have stated that plantations are sometimes spoiled by a too early application of edged tools. This is not, however, always the case; but where young trees have been allowed to draw each other up to an unwieldy height, thinning then must be carefully and very gradually performed, and it is wonderful how the trees are left to appreciate the enlarged breathing room allotted them. One thing in regard to hard-wooded trees, I may mention; prune very little, if any, from the Sycamore, unless it be in August; if in the spring, or, in fact, any time in the winter, that a limb is taken off, the tree will lose an immense deal of sap. No resinous tree that I am acquainted with bleeds more, although it does not leave large lumps of gum hanging round the wound, to denote the cruelty to which it has been subjected. August is likewise the best month to prune any green Firs that necessity (for I will not admit any other reason) compels you to prune; and, in fact, I am unacquainted with any tree likely to take harm from being cut at that season. While on this subject allow me to suggest to those planting Fir timber, for profitable uses, the expediency of planting it alone, and of not being too hasty in thinning it; for most purposes for which this kind of timber is wanted, a clear straight stem, carrying its thickness a good way up, is what is desirable; and if the trees do not stand middling thick, they will not attain this desideratum. Of course, a reasonable degree of thinning must be observed, but do not overdo it; a large plantation of Scotch or Spruce Fir is both interesting and useful. Of the kinds of timber likely hereafter to become scarce, I think Beech will wear out first, being of slow growth, and not used for many purposes where large timber is wanted; and more than that, not selling well, few are inclined to plant it. Yet, for the uses to which it is put, it will be difficult to find a substitute; not easily split, it is useful for many purposes, for which its resistance to cleave makes it desirable. Wheel felloes, and many kinds of millwright work, as well as cart axletrees, &c., create a much greater demand for Beech than I think the supply can hereafter afford; its place, however, may possibly be supplied by some foreign production, as that of British Oak has, in a great measure, been of late, in its duties of farming, the most formidable bulwark of our national defences. *An Old Sawyer.*

*Ants.*—Last year I sought advice as to the best mode of getting rid of ants, which have infested my house for some two or three years past, marching along the outer walls in direct lines to the house, and by the windows and chinks getting into the kitchen and sitting rooms, infecting everything they run upon or into, and destroying one's comfort; sometimes in one's food, and sometimes over the curtains, carpets, &c. I received many kind answers; some to try cloths dipped in spirits of turpentine, others arsenic and cheese or honey, but all to no effect. I have even taken down part of the skirting board of my kitchen, and from the plaster of the walls they issue out of holes like wasps from a bank. What shall I do? Can I puff sulphur in, and stop the holes with cement and paint, or will spirits of turpentine stuffed in and covered over suffocate them? I am afraid the plaster of the house on the walls must be full of them. What advice can you give to eradicate these plagues? *Northwood.* [Ants will not endure the vapour of turpentine; nor will they eat through cement; but if the walls are really full of them, we fear they will never depart until the walls are wholly cased in the same impenetrable substance.]

*Cryptomeria japonica.*—I presume by its present price others have found that this tree will grow from seed ripened in England. One of my plants, which had been kept three or four years in a pot, was planted out two years ago, and last year it ripened about half a pint of cones. The seed from these was sown in the greenhouse, and is now coming up abundantly, though the mice made sad work with it soon after it was sown. It may, doubtless, in a few years be also common as the Larch, if its timber proves of any value. It is quite as quick of growth, if not quicker, to judge from those I have planted. *J. Rogers, Sevenoaks.*

*Renovating old Trees.*—Some years ago, the hollow trunk of an old Oak, at a village in Buckinghamshire, was taken possession of by a swarm of bees. Some of the villagers thought it good to take the honey, and to that end they lighted a fire inside the trunk, for the purpose of smoking out the bees. The trunk was coated within with touchwood; this soon took fire, and the whole tree would probably have been consumed, had it not suddenly occurred to the bystanders, that these proceedings might not be altogether pleasing to the owner. This reflection induced them to put out the fire, which they did, with all speed, by the help of the parish fire-engine. Now, the Oak had long been in a very languishing state, which was no wonder, for the girth of the trunk is fully 20 ft., which large size, on a light gravel, probably implies an age of many centuries. However, old and failing as the tree was, the treatment thus described wholly cured it of sickliness. The leaves became plentiful and well grown, and have been so each year since: the acorns, too, have been very numerous. The fire, I suppose, did good by destroying the touchwood; and the water started the roots into more vigorous action. The account I give is perfectly authentic. I was not an eye-witness of the process that revived the tree—but I can testify that it is now as flourishing as so old a tree, and so completely hollow, well can be. *F. J. Moule, Chenies, Bucks.*

*Onions.*—Cottagers and others desirous of obtaining a good and early crop of Onions next year should immediately begin to prepare for it, by sowing an ounce or two of seed very thickly, on a small bed and good soil. By being sown very thickly they will be very small; and by being very small, they will be all the better for the purpose they are intended. When they are harvested, the largest should be separated from the smallest. The former might be used for pickling, and the latter should be stored away till February, when they should be planted 1 inch deep and 5 inches apart every way, in good soil. Early in summer they will produce an excellent crop of fine large Onions. This plan may be old to some, but it may be new to others. *W. G. Eydon, Daventry.*

*Vines in Pots.*—The Huddersfield Floral and Horticultural Society, with the intention of encouraging the cultivation of Vines in pots, offer prizes for their production. Several gardeners in the neighbourhood, who intend competing for this prize, have put pots to the base of last year's wood (this wood of course showing fruit), and let the roots thrown out from the Vine, root into the pot; so that it is supported not only by its own roots, but also by the old Vine. They will be left attached to the old Vine until the day of exhibition, when they will be cut off, and shown as Vines grown in pots. Should Vines thus grown be allowed to compete with those produced from buds or cuttings? *A Subscriber.* [All Vines thus exhibited should be put aside by the judges, as having been produced contrary to the rules. How can they be said to have been *grown* in pots?]

*The Calceolaria* (see p. 278).—I find that Mr. Rumley has made various objections to my system of propagating and growing the Calceolaria. My intention was simply to show the general utility of this plant, for decorative purposes, and at the same time to point out the facility with which it might be grown for that particular object. Every gardener has "a way of his own," and, of course, others must consider the effect that climate, soil, and other circumstances, may have on the growth and flowering of plants. My way of propagating is by seed, as it is evident that the finest specimens are made of seedlings; while Mr. R. asserts that the flowers produced upon plants raised from cuttings are far superior, and that the majority of plants raised from seed are worthless; if care, however, is taken at the time of hybridising, to select the most distinct varieties, the disappointment will not be met with that he anticipates. To save a considerable degree of trouble and expense, it is far preferable to shift the young plants, when well established in small pots, into those they are to occupy at the time of flowering, without the intermediate shifting which Mr. R. proposes, and which, I think, is unnecessary. In my opinion, Mr. R. is wrong in placing saucers of liquid manure under his pots; he should bear in mind that the Calceolaria is more susceptible of injury from too much watering than most plants in general cultivation. The soil becomes saturated and sour, and the affair generally ends in the destruction of the plants, if immediate precautions are not taken to counteract the evil. I prepare a good porous compost, through which water can percolate freely, so that an abundant supply can always be given without fear of hurting the plants, and this proves more beneficial than placing saucers of liquid manure beneath the pots. Lastly, when you can keep your plants in a good state of health, and constantly syringe them till the development of the flower commences, you will keep them free of insects; but if it happens that they are attacked by green-fly, of course it is unnecessary for me to state that fumigating with tobacco is the best preventive, when cautiously applied. *M. P.*

## Societies.

HORTICULTURAL: GARDEN EXHIBITION, *May* 3.—The leading features of this grand display of horticultural skill being adverted to in another column, we will confine ourselves here to describing the scene in detail.

In collections of 20 STOVE and GREENHOUSE PLANTS, the Large Gold Medal was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing Park. At the back of this group stood an enormous example of the large-flowered Epacris; an Azalea, profusely clothed with double flowers of the richest red; a white blossomed Heath, two varieties of Eriostemon, one forming a cylinder of little white stars at least 7 feet high; two Polygalas, the white variety of Erica vestita, two Chorozemas, the beautiful Boronias pinnata and serrulata, the useful Podolobium staurophyllum; a Pimelea spectabilis, forming a ball of flowers 5 feet in diameter; the Baxter Leschenault, the Java Ixora, most beautifully blossomed; the Cels Hovea, Gompholobium polymorphum, a red Azalea, and Pultenæa stipularis.—Another collection of 20 was contributed by Mr. Cole, gr. to H. Colyer Esq., of Dartford. It comprised a huge example of the imperial Hoya, in finer condition, perhaps, than it has ever before been seen in a pot; the Box and Oleander-leaved Eriostemons; Dillwynia juniperina, two Polygalas, the pretty Cape Heath called

favoides elegans, Clerodendron splendens, unusually well flowered; the Cels Hovea, in charming condition; an Everlasting, Murray's Azalea, the scarlet and saffron Ixoras, Leschenaultia formosa, Franciscea acuminata, loaded with blossoms, which shed a most delicious perfume; a double-red Azalea, Podolobium staurophyllum, Mrs. Lawrence's beautiful variety of Chorozema, and a Cape Heath.—Groups of 20 plants were also contributed by Messrs. Frazer and Pamplin. The former had the Broughton Azalea, Eriostemon myoporoides, the Berberry-leaved Podolobe, Pimelea linifolia, a large variety of the Baxter Leschenault, the Boronias serrulata and pinnata, Eriostemon cuspidatum, three Chorozemas, Polygala acuminata, a badly-flowered example of the blue Leschenault, an Everlasting, the Oleander-leaved Eriostemon, the lovely Erica propendens, the glowing Azalea "Minerva," the showy Adenandra, and two Cape Heaths.—Mr. Pamplin sent four Cape Heaths, three varieties of Azalea, the opposite-leaved Polygala, Pimelea lanata and P. spectabilis, the latter insufficiently in flower; Euphorbia splendens, the Box-leaved Eriostemon, Dillwynia juniperina, the Cels Hovea, a handsome bush of the useful Genista racemosa, and one or two other plants.

There were two collections of 15 STOVE and GREENHOUSE PLANTS. The first was communicated by Mr. Green, gr. to Sir E. Antrobus, Bart. It consisted of a pretty specimen of the large-blossomed Epacris, two Polygalas, the variegated and other Azaleas, two Everlastings, the scarlet and saffron Ixoras, Boronia serrulata, the blue Leschenault, Æschynanthus Boschianus, Boronia pinnata, the dwarf variety of Chorozema varium, and Leschenaultia formosa.—The second group was contributed by Mr. Taylor, gr. to J. Coster, Esq. of Streatham. It comprised the showy Adenandra, three Azaleas, Hoya carnosa, Erica elegans, two Everlastings, Leschenaultia formosa, a large example of the opposite-leaved Polygala, the sweet-smelling Dracophyllum gracile, Boronia pinnata, the charming Erica propendens, Polygala cordifolia, Pimelea spectabilis, and Eriostemon myoporoides.

Seven collections of 10 STOVE and GREENHOUSE PLANTS were exhibited. The first was produced by Mr. Carson, gr. to W. F. G. Farmer, Esq., of Nonesuch Park, Cheam. It contained the scarlet Ixora, two Azaleas, the showy Pimelea, Franciscea augusta and the broad-leaved species, Leschenaultia formosa, the showy Adenandra, Oxylobium Pultenæa, and the Anemone-leaved Boronia.—Mr. Speed, of Edmonton, sent the second best group, which consisted of the charming Erica propendens, Leschenaultia formosa, the Box-leaved Eriostemon, the Henderson Pimelea, Clerodendron fallax, famously flowered; Eutaxia pungens, a white blossomed Heath, the beautiful Tetratheca verticillata, Vinca rosea in admirable condition, and a nice bush of Mrs. Lawrence's Chorozema.—The next collection in point of merit came from Mr. Croxford, gr. to H. H. Barnes, Esq., of Stamford-hill. It contained the Henderson and showy Pimeleas, Chorozema varium, an Everlasting, a neat plant of the Box-leaved Eriostemon, the Lawrence Chorozema, Erica propendens, a large Epacris grandiflora, the Baxter Leschenault, and the showy Adenandra.—Mr. Williams, gr. to C. B. Warner, Esq., had the broad-leaved Cytisus, an Everlasting, a white Azalea, and a vivid red kind, called Prince Albert; the useful winter-flowering Acacia armata, the large blossomed Epacris, the showy and Henderson Pimeleas, Cyrtoceras reflexum, and the Jarrat Tropæolum.—Groups of 10 were also furnished by Messrs. Dods, Over, and Watson, prizes being awarded for them in the order in which the names occur. Among these we remarked the showy Æschynanth, the Oleander-leaved Eriostemon, Epacris pulchella, the Polygala called Dalmaisiana, Zichya longipedunculata, Hoya campanulata, which is reported to be deliciously sweet-scented at night; the pretty Erica Sindryana, and a few more common plants.

There were four collections of 6 STOVE and GREENHOUSE PLANTS. Mr. Kinghorn, gr. to the Earl of Kilmorey, sent the brilliant Azalea optima, forming a pyramid some 5 feet in height; Epacris miniata, which is still the best of the red kinds; the Hartnell Heath, a badly bloomed Leschenaultia formosa, an Everlasting, and Adenandra uniflora.—The next best 6 plants were Oxylobium Pultenæa, an Everlasting, the Box-leaved Eriostemon, Azalea præstantissima, the scarlet Ixora, and the Anemone-leaved Boronia, from Mr. Hamp, gr. to J. Thorne, Esq., of Mawbey-house, South Lambeth.—Mr. Stewart, gr. to T. Huggins, Esq., of Norwood, contributed Polygala acuminata, an Everlasting, Zichya longipedunculata, the reflexed Cyrtoceras, the Intermediate Heath, and Chorozema varium nanum.—Mr. Stanly, gr. to H. Berens, Esq., of Sidcup, Kent, produced Zichya inophylla, the large-flowered Epacris, Cyrtoceras reflexum; the opposite-leaved Polygala, the dwarf variety of Erica perspicua, and the broad-leaved Daviesia.

ORCHIDS.—These were very numerous and fine. Mr. Mylam, gr., to S. Rucker, Esq., received the Large Gold Medal for a collection of 20 plants, among which we remarked the fringed Dendrobe, forming a bush of flowers 4 feet high by 3 feet through; the Noble Dendrobe equally fine; the three-coloured Vanda, with 5 beautiful spikes of blossoms; the showy Oncidium ampliatum, the close-flowered Dendrobe, bearing some dozen racemes of flowers; a well managed Chysis bractescens; the Skinner Cattleya, in beautiful condition; the violet Schomburgkia, the sweet Vanda, the Devonshire Dendrobe, one of the most handsome of the genus; the charming white Butterfly Plant; Lycaste cruenta; the spotted Saccolabe, Vanda cristata, the yellow blossomed Dendrobium aggregatum, the two-coloured Leptotes, Aerides suavissimum, Dendrobium pulchellum, and a famous specimen of Epidendrum inversum, which, when well flowered, as this was, is really much prettier than it is usually considered to be.—The next group in point of merit was produced by Mr. Blake, gr. to J. H. Schröder, Esq., of Stratford, it contained the three-coloured Vanda; a good specimen of Calanthe veratrifolia; the Wallich Phaius, bearing 7 stately flower spikes, the useful Oncidium ampliatum, the Oncidium phymatochilum, the lance-leaved Cymbid, a Schomburgkia, Dendrobium pulchellum, Vanda cristata, Chysis bractescens, the lovely Phalænopsis and its large blossomed variety; the close flowered Dendrobe, Oncidium bifolium, the bearded Lady's Slipper, with some 20 open flowers on it; the spotted Saccolabe, Dendrobium chrysanthum, a small plant of the fragrant Burlingtonia, a very fine specimen of the twisted Trichopil, and an example of the Skinner Cattleya, bearing 9 spikes of brilliant purple flowers.—A third group was produced by Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon. In this we observed an Arpophyl with just sufficient flower-spike to show what a beautiful object a well blossomed specimen would be; Ansellia Africana, from Fernando Po; the slender-leaved Maxillaria; the Devonshire Dendrobe; the larger variety of the spotted Brassia; Dendrobium pulchellum; the large flowered white Butterfly Plant; Wallich's Dendrobe, forming a bush 3 feet high, and as much through; the Skinner and intermediate Cattleyas; Wallich's Phaius, the Rhubarb-scented Dendrobium macrophyllum, Oncidium phymatochilum, and the two-leaved kind; the close flowered and Farmer Dendrobes, Low's Lady's Slipper, the more common bearded kind, and the pretty Epidendium bicornutum.

ORCHIDS, in collections of 15, were shown by Messrs. Veitch and Rollisson. The former had the Devonshire Dendrobe, not tied up, as it sometimes is, but hanging gracefully over the sides of the basket which contained it; the sweet Vanda, bearing two great flower spikes; a variety of Dendrobium Pierardi, quite a fountain of blossoms, falling in continuous streams 5 feet, at least, below the wire basin from which they issued; the best variety of Oncidium ampliatum; the Noble Dendrobe, 4 feet high, and about as much through; two kinds of Aerides; the yellow-blossomed Dendrobium aggregatum; the long-tailed Lady's Slipper, with the different colours better "brought out" than we have ever before seen them; the twisted Dendrobe, the lovely Phalænopsis and its large-blossomed variety, Dendrobium moniliforme, the close-flowered kind, and an example of the bearded Lady's Slipper.—In Messrs. Rollisson's group were Humboldt's Acinete, with two spikes of open flowers, and others still unexpanded; Oncidium pictum; the Noble Dendrobe, in the shape of a bush, some 4 feet high by 4 feet wide; Barker's Acinete, the Paxton and fringed Dendrobes, Lycaste cruenta and Deppei, Oncidium phymatochilum, and the larger variety of O. ampliatum, Brassia brachiata, the close-flowered and Devonshire Dendrobes, and the somewhat scarce Burlingtonia rigida.

Ten ORCHIDS were contributed by Mr. Franklin, gr. to Mrs. Lawrence, and Mr. Carson, gr. to W. F. G. Farmer, Esq. In the former group were the three-coloured Vanda, a well-flowered example of the noble Dendrobe, the lovely Phalænopsis and its large blossomed variety, the two-leaved Oncid, a rosy tinged Aerides affine, Dendrobium cærulescens, the Moss Cattleya, the best variety of the intermediate Cattleya, the Skinner Cattleya charmingly flowered, a small Chysis bractescens, and the Aloe-leaved Epidendrum.

The best collection of six ORCHIDS was shown by Mr. Kinghorn, gr. to the Earl of Kilmorey. It consisted of Calanthe veratrifolia, the large-flowered white Butterfly Plant, Dendrobium macrophyllum, a fine plant of the Bauer Oncid, a stately specimen of the Tankerville Phaius, and a fair example of the noble Dendrobe.—Mr. Green sent the broad-leaved Epidendrum, two well-flowered Oncids, the noble Dendrobe, 3 feet high, and the same in width, Burlingtonia rigida; and Epidendrum macrophyllum.—Mr. Wooley, gr. to H. B. Ker, Esq., of Cheshunt, had Calanthe veratrifolia, Phaius grandifolius, the broad-leaved Epidendrum, a fine Dendrobium cærulescens, the yellow-lipped Cyrtochilum filipes, and the larger variety of the spotted Brassia.—Mr. Ivison, gr. to the Duchess Dowager of Northumberland, sent three Oncids, the noble Dendrobe, the Clowes Anguloa, and the Wray Brassia.

AZALEAS were numerous, large, and fine; and they made, as they always do at the May show, a very striking display. Two excellent collections of 12 plants were produced, one from Mr. Green, gr. to Sir E. Antrobus, Bart., the other from Mrs. Lawrence, of Ealing Park. Mr. Green had huge specimens of Double Red, Gledstanesi, lateritia, præstantissima, vivicans, sinensis, coronata, exquisita, optima, triumphans, variegata, and Rawsoni.—Mrs. Lawrence sent fine bushes of optima, Gledstanesi, præstantissima, coronata, Rawsoni, variegata, speciosissima, rosea superba, Lawrenceana, exquisita, sinensis, and lateritia.—Groups of six plants were furnished by Messrs. Carson and Frazer. Among these we remarked pulchra, Double Red, Gledstanesi, lateritia, variegata, speciosissima, splendens, Fielder's White, violacea superba, Smith's Red, and the Chinese Yellow.

A collection of tall CACTI in flower was exhibited by Mr. Green. It contained Epiphyllum speciosum, E. rubrum cœruleum, Ackermanni, E. aurantiacum, E. Russellianum, and Cereus speciosissimus.

RHODODENDRONS.—A magnificent collection was shown by Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Sion House. It consisted of beautiful light and purple flowered kinds. The best of the former were stated to have been obtained between altaclerense and the white ponticum, the others between altaclerense and the white tree Rhododendron.

ROSES IN POTS surpassed any exhibition of the kind we have hitherto seen. The collections of both dealers and amateurs showed that each had done his utmost, and the result is that the cultivation of the "Queen of Flowers" in pots, has attained a degree of perfection beyond which it can hardly be expected to be carried. Nothwithstanding the little sun we have had, the flowers were beautifully coloured, especially those on Messrs. Lanes' plants, and the foliage was ample and clean. The gems of Mr. Francis's collection, to whom the first prize was awarded, were Paul Perras, with blossoms regularly dispersed over the plant, large and well blown; Coupe d'Hébé, with flowers rich in shape and colour, reminding one of those of the old fashioned Cabbage; Lamarque a good white, and said to be beautifully scented; Armosa, a profuse blooming medium-sized Rose; Chenédolé, and La Reine. We observed in all instances that the buds of the latter did not open kindly. Madame de St. Joseph, in Messrs. Paul's group, which was second, was the admiration of everybody. It is a delicate salmon, with a delicious fragrance, and the plant was covered with blossoms; Vicomtesse des Cazes had been very fine, but its beauty was somewhat on the wane; not so Niphetos, which was just in perfection, and studded with flowers of snowy whiteness; William Jesse and Comte de Paris were also in beautiful condition. Messrs. Lane's plants were insufficiently in bloom; three or four more bright days might have placed them in a different position. Among them were the universal favourites, William Jesse, Duchess of Sutherland, Aubernon, with foliage broad and clean; and the glorious Géant des Batailles. The first of these possessed a surprisingly fine colour for the season. In the collections of Messrs. Terry, Rozer, and Rowland, were Aubernon, Fulgorie, Mrs. Bosanquet, Nina, Marquise Boccella, La Reine, Armosa, Géant des Batailles, Blairii No. 2, Augustine Mouchelet, Duchess of Sutherland, Goubault, William Jesse, and Baronne Prevost, the latter with flowers at least 6 inches in diameter.

CAPE HEATHS were numerous, and generally finely flowered. Excellent plants were furnished by Mr. Smith, Mr. Cole, Mr. Over, Mr. Roser, Mr. Taylor, Mr. Stewart; and in the Nurserymen's class by Messrs. Rollisson, Epps, Fairbairn, and Pamplin. The specimens, both in 11 and 8 inch pots, were famous examples of good Heath growing. In the different collections we remarked the following varieties: tortiliflora, fastigiata lutescens, suaveolens, ampullacea carminbrata and vittata, ventricosa superba, coccinea minor, propendens, favoides elegans, mutabilis, mundula, dilecta, aristata major, Beaumontiana, perspicua nana, M'Nabiana, dentieulata moschata, elegans, vasiflora, Sprengeli, Hartnelli, andromedæflora, triumphans, viridis, Sindryana, primuloides, odora rosæ, florida, campanulata, Cavendishii, mirabilis, Thunbergiana, depressa, and Webbiana.

EPACRISES.—A collection was shown by Mr. Smith, gr. to W. Quilter, Esq., of Norwood. It consisted of miniata, Attleeana, grandiflora, Smith's seedling, and one or two other kinds.

SINGLE SPECIMENS.—The best consisted of two plants of the glorious Medinilla magnifica, and a fine bush of Erica elegans from Messrs. Veitch; a beautiful example of Erica Sindryana from T. B. Graham, Esq., of Lavender Sweep, Clapham Common; the charming Chinese Indigofera decora from Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Sion; and a nice plant of the Griffith Ixora from Mr. Green. In addition to these, Messrs. Veitch furnished the Jasmine-flowered Rhododendron; Mr. Cole, the Cels Hovea; Mr. May, Boronia serrulata; Mr. Stewart, Physolobium gracile; Messrs. Fairbairn, Erica favoides elegans; and Mr. Stanly, E. Hartnelli.

Some interesting novelties were produced. Messrs. Veitch had their lovely Cantua dependens; M. Baumann, of Ghent, Deutzia gracilis, a white-flowered, slender growing hardy shrub, from Japan; Mr. Loddiges, an Aerides, with long racemes of gay rose-coloured blossoms, and a new Lycaste, from Bolivia, with pale yellow flowers; Messrs. Henderson, the Broughtonia violacea; Mr. Franklin, gr. to Mrs. Lawrence, an Epidendrum; Mr. Carson, Trichopilia coccinea, a promising species, with a large dark red coloured lip; Mr. Cole, the Oleander-leaved Allamanda; Mr. May, gr. to Mrs. Lawrence, Pimelea Nieppergiana; and M. de Jonghe, of Brussels, a rather handsome Billbergia. These, together with two or three other plants, either not new or unimportant, constituted all that were exhibited in this class.

Among MISCELLANEOUS SUBJECTS were interesting examples of Nepenthes Rafflesiana and sanguinea from Messrs. Veitch, a collection of seedling Amaryllids from Mr. Hamp, Lycopods from Mr. Wooley, gr. to H. B. Ker, Esq.; a beautiful variety of Epiphyllum speciosum called Brookii, from Mr. Hoyle, of Reading; and

a small collection of Alpines in pots from Mr. Turner, of Holloway.

Pelargoniums were entirely confined to "Fancies" and "Capes," both of which are advancing rapidly in public favour; and, when we consider the variety of colours to be found in the latter, the curious stains and markings of the former, together with their profuse flowering habit, this growing change in their favour is not to be wondered at. Fancies were produced in admirable condition by Mr. Ayres, of Brooklands, Blackheath, and Mr. Ambrose, of Battersea. In the former group, whose flowers were large and fresh, were Queen Superb, Statinski, picturatum, Hero of Surrey, Alboni, and Gipsy Queen.—Mr. Ambrose had picturatum, Defiance, Madame Meillez, Ibraham Pacha, Formosum, and Anais.—Mr. Roser's Cape species were well grown and very attractive.

Cinerarias.—Mr. Robinson, of Pimlico, had a nice collection, consisting of Newington Beauty, Flora M'Ivor, Bessy, Angelique, Annie, and Fairy Ring. — Groups were also produced by Mr. Fancourt, Foreman to Mr. Cant, of Colchester, and Messrs. Lane, of Great Berkhamstead; that from the latter was disqualified on account of its not having been shown according to the regulations.

Pansies in pots were exhibited by Mr. Bragg and Mr. Turner, of Slough; the latter not for competition. It was predicted that this mode of showing Pansies would prove a failure; but so far from that being the case, we imagine that before long, the system must be universally adopted, so tasteful and effective were those exhibited on Saturday last.—Mr. Bragg's varieties were, Ophir, Mr. Beck, Polyphemus, Constellation, Junius, Conspicua, Juventa, Madame Sontag, Eliza Ann, Queen of England, Lady Carrington, and Flying Dutchman.—Mr. Turner's plants were well bloomed, and the flowers were as large and fine as those usually produced in a cut state. The sorts were, Juventa, Polyphemus, Queen of England, Surplice, Mr. Beck, Mrs. Hamilton, Thisbe, Almanzor, Swansdown, Constantine, Leader, Ophir, Goliah, Euphemia, Duke of Norfolk, Disraeli, Constellation, Aurora, Bellona, and Supreme.

Auriculas were furnished (not for competition) by Mr. Turner, of Slough, and Mr. Willmer, of Sunbury. In their respective collections we observed Lovely Ann, Ringleader, Champion, Mary Ann, Conqueror of Europe, True Briton, fine (Hepworth); Countess of Wilton (Cheetham), 'Squire Chilman, Earl Grosvenor, Colonel Taylor, Fair Maid, Lancashire Hero (Cheetham), very fine.

In the tent provided for seedlings Messrs. E. G. Henderson, of the Wellington-road Nursery, had a fine collection of new Cinerarias, containing Lady Hume Campbell, white, edged with blue; Marianne, white, tipped with rosy lilac, good in form; Dora, white with lilac disk, but wanting in substance, and Prince Arthur, bright rosy purple.—Mr. Hoyle sent Pelargoniums; Chieftain, in fine condition, it is a dark crimson blotch, lower petals clear rosy crimson; Magnet, brilliant purple crimson, with dark blotch—a fine, bold, free-flowering variety, possessing great substance.—Mr. Kinghorn had an Epacris, named Conspicua, a free-flowering kind, in the way of grandiflora, but a considerable improvement on that variety.

Everlastings:—The best collections were shown by Mr. Taylor and Mr. Green. In these we remarked Aphelexis macrantha purpurea grandiflora, A. m. rosea, A. humilis, A. spectabilis, and A. sesamoides rosea.

Fruit was scarce—a circumstance to be attributed to the long cold spring which we have experienced. Mr. Bray, gr. to E. Lousada, Esq., sent a beautifully swelled Queen Pine-apple, weighing 3 lbs. 3 ozs.; four Queens, all nice fruit, though not remarkable for great weights, were furnished by Mr. Barnes, gr. to Lady Rolle at Bicton. Mr. Davis, gr. to Lady Bridport, produced two handsome Black Prince Pines on two suckers on a stool in a pot, which also contained a third suckers, bearing a fruit about half swelled. Mr. Barnes sent a Prickly Cayenne, weighing 4 lbs. 10 oz.; and Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, a Black Antigua, 3 lbs. 4 oz. A Providence, 8 lbs. 4 oz., was exhibited by Mr. Davis, gr. to Lord Boston. The same kind of Pine, 7 lbs. 9 oz., was also shown by Mr. Jackson, gr. to H. Beaufoy, Esq., of South Lambeth; and Mr. Bray sent a similar variety, weighing 5 lbs. 1 oz. Exhibitions of Black Hamburgh Grapes were pretty numerous, and, considering the season, they were well coloured and swelled. The best were produced by Mr. Fleming, and Mr. Davis, of Oak Hill, and the second best by Mr. Parsons, of Ponder's End, and Mr. Davis, of Starch Green, Hammersmith, while good examples of the same kind of Grape were contributed by Mr. Bain, gr. to B. Bernasconi, Esq., of Harrow Weald. The same variety of Grape was also communicated by Mr. Robertson, gr. to Lady E. Foley, Stoke Edith Park, Ledbury; Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim; Mr. Munro, gr. to Miss Oddie, Colney-house, St. Alban's; and Mr. M'Kay, gr. at Fairlawn-house, Acton Green; Mr. Jackson, gr. to H. Beaufoy, Esq., produced Dutch Sweetwater, and the same variety was also shown by Mr. Davis, of Oak Hill. Mr. Bain had white Frontignans; Mr. Robertson and Mr. Henderson, Muscadines; and Mr. Munro and Mr. M'Walter, Sweetwaters. Apples and Pears were exhibited in excellent condition by Mr. Snow, gr. to the Earl de Grey, and Mr. Stanly, gr. to H. Berens, Esq. Among Apples in the former exhibition, we remarked the Alfriston, named New England Pippin; Boston Russet, with no russet on it; Ribston Pippin highly coloured; and fine specimens of Blenheim Orange. Among Pears there were good examples of Uvedale's St. Germain and old Colmar, which is still one of the best Pears we have at this season of the year. Among Mr. Stanly's Apples, were very fine looking examples of Blenheim Orange and Ribston Pippin; Mr. Elliott, gardener to Mrs. Boothby, also sent a good collection of Apples and Pears. Fine dishes, for the season, of May Duke Cherries were shown by Mr. Ingram, gr. to Her Majesty at Frogmore, and by Mr. Fleming, of Trentham. Keens' seedling Strawberries were exhibited by Mr. Turnbull, gr. to the Duke of Marlborough; by Mr. Elliott, gr. to Mrs. Boothby; and by Mr. Smith, of Isleworth; British Queen and Alice Maude, by Mr. M'Walter, gr. to Col. Challoner; and the latter also showed British Queens in pots. —Mr. Grant, gr. to J. H. Simms, Esq., received a 1st prize for a Melon named "Victory of Bath." It was an obovate medium-sized cream-coloured white-fleshed sort, said to have been raised between Mr. Fleming's Hybrid Persian and the Bromham Hall, and of most excellent quality.—Mr. Robertson, gr. to Lady Foley, had a Hybrid Persian, to which a second prize was awarded.—Mr. Meredith, gr. to the Duke of Sutherland, at Cleifden, also sent a Hybrid Melon.—Orange trees in fruit were shown by Mr. Stanly and Mr. Watson.

National Floricultural, *May 8.*—Cinerarias formed the chief objects of exhibition to-day. Interesting collections of these were furnished by Messrs. Henderson, of Pine-apple-place, and Mr. E. G. Henderson, of the Wellington-road Nursery. The latter had also the beautiful new sorts Lady Hume Campbell, Marianne, and Mrs. Sidney Herbert. Three blooms of Epiphyllums were shown by Mr. Willison, of Whitby; a flower of a red Azalea, by Mr. Catiel, of Liverpool; cut specimens of three Calceolarias, by Messrs. Schofield, of Leeds; and promising Pansy blooms, from Messrs. Youell, of Yarmouth and the Rev. J. H. Gossett. Messrs. Henderson sent a Pelargonium called White Unique; an Amaryllis, and a pretty Cape Heath named Victoria. Three Cinerarias were produced by Messrs. Widnall and Co., of Granchester, and a similar number by Messrs. Ivery, of Dorking. Eight varieties of this useful flower were also exhibited by Mr. E. G. Henderson, of Wellington-road, and some two dozen kinds by Mr. Jeyes, of Northampton. The latter also sent two sorts of Azalea; A. magnifica, loaded with semi-double purple flowers, was contributed by Messrs. Henderson; and Mr. Reed, gr. to W. A. Coombe, Esq., of Northfleet, sent A. pictura, a white variety, striped with rosy purple. This was worked on a plant of A. refulgens; and both being in flower at the same time, caused one side of the specimen to be red while the other was white. Pansies were communicated by Mr. Bragg, of Slough; two promising fancy Pelargoniums, and a Cineraria by Mr. Ayres; a Cineraria by Mr. Lockner; a variety of Erica tricolor by Mr. Epps, and Pelargonium "Lilac Unique" by Mr. Ivery, of Peckham, who had also two Cinerarias. We omitted to state in our last report that Mr. Ayres received a *first*-class Certificate for his Fancy Pelargonium Formosissimum.

Hammersmith Heartsease, *May 7th.*—1st prize, 36 blooms, Mr. C. Turner, Slough; 2, Mr. Bragg, Slough; 3, Mr. T. Thomson, Iver. Amateurs, 24 blooms.—Equal, 1, Mr. Treacher and Mr. Lane, both of Wycombe; 2, J. Edwards, Esq., Holloway; 3d, M. Brown, Esq., Tulse-hill. We remarked the following in fine condition: Almanzor (Thomson), Ophir (Widnall), Polyphemus (Thomson), Commander-in-Chief (Youell), Constantine (Turner), Bertha (do.), Mrs. M. Hamilton (Nasmyth), Mr. Beck (Turner), Inventa (Hooper), Duke of Norfolk (Bell), Diadem (Fellowes), Dora (Turner), Mrs. Beck (do.), Euphemia (do.), Constance, Masterpiece (Hooper), Duke of Perth (Handasyde), Pompey (Hale), Sambo (do.), Rainbow (Hall), Queen of England (Fellowes), Elegant Thomson), Sir J. Franklin, Penelope, Premier, Ophelia (Fellowes), Rubens, Sir R. Peel, Zabdil (Thomson), Ibrahim Pacha, Addison (Turner), Thisbe, and Supreme. Class Showing.—For White Ground Flowers: 1, Mr. Turner, for Almanzor. Yellow Ground: 1, Mr. Turner, for Diadem (Fellowes). Yellow or Straw (selfs): 1, Mr. Lane, for Ophir. White: 1, Mr. Turner, for Swansdown. Dark: 1, Mr. Bragg, for Sambo. Mulberry: 1, Mr. Treacher, for a Seedling. The prize of 20s., given by M. Brown, Esq., for the best Seedling, was awarded to Mr. Turner, for "Chieftain," a yellow ground flower, with rich bronze red margin, fine eye, shape, and substance. There were some other seedlings possessing considerable merit; altogether the show was much better than we had expected, owing to the lateness of the season.

## Garden Memoranda.

Royal Nursery, Slough.—Since we last visited this nursery, Mr. Turner has put up a large well ventilated lean-to house, 50 feet long by 16 feet in width, for the growth of specimen Pelargoniums. The wood-work of this house is so exceedingly light, that it almost appears as if the rafters were made of iron. The glass used in it is the best double crown, which is reported to answer admirably. The plants were in the most robust health, and very dwarf. The Tulip bed has been lengthened 40 rows, making it now to consist of 180 rows of the leading kinds, including Bijou, Julio Romano, Salvator Rosa, Vivid, Polydorus, Thalia, Musidora, Hamlet, and Duchess of Sutherland, &c. Numbers of them have already opened, and they are large and clean. The majority of them appear to be in good strain; the height of the bloom will however be from the 12th to the 20th inst. Many of the varieties measure 2 feet 8 inches in height, and they will yet be higher; the foliage, too, is correspondingly strong—some leaves that we measured were 8 inches across. This has been effected by planting in pure yellow loam; no leaf-mould or manure has been used. Great pains have been taken to protect them from spring frosts and rough weather, particularly hail-storms. The bulbs were planted on the 8th of November, and they were not permitted to receive heavy rains before the following spring. Pansies, in pots, were in full bloom, having flowers large and fresh. Among them we remarked Commander-in-Chief, Mr. Beck, Duke of Norfolk, Supreme, Almanzor, Ophir, Dora, Euphemia, Rubens, Sambo, Duke of Perth, Constantine, Eustace, Bertha, Sir R. Peel; and several promising seedlings. These plants have been blooming five or six weeks past. They were placed in common boxes, whose lights are drawn off during the day, except in the case of very bad weather, and they have been provided with plenty of air at night; the plants stand within a few inches of the glass. The beds of Heartsease in the open ground were also becoming gay, particularly masses of Mr. Beck, Malvern, Aurora, Queen of England, Masterpiece, and Blue Perfection. We imagine that Pansies will soon occupy a prominent place in every spring flower garden; for we know of nothing in the shape of bedding-plants that would make a grander display during the early months of the year. They are in blossom at Slough from the middle of March until June. Instead of having bare beds, therefore, from October till May, gardeners should turn their attention to the best varieties for bedding, and propagate them largely during summer, to plant out rather thickly, as soon as the usual occupants are removed. Carnations and Picotees, numbering 1600 large pots, besides beds, exhibited the best of health, and a fine bloom may be anticipated. Auriculas were in full beauty. The best varieties were Cheetham's Lancashire Hero, Jubilee, Lovely Ann, Ashton's Prince of Wales, Ringleader, Conqueror of Europe, Page's Champion, Crucifix, Imperator, Favourite, True Briton, Col. Taylor, Freedom, and Sykes' Complete. Pinks, which are also extensively cultivated here, were just beginning to grow. A square conservatory, with a ridge and furrow roof, on Mr. Paxton's principle, was full of spring flowering plants, of the most showy kinds, such as Cinerarias, Pelargoniums, Kalmias, Hybrid Rhododendrons, Azaleas, Tropæolums, Ericas, Epacris, &c., and among them we remarked some prettily-spotted Mimuluses. Young Dahlias are raised here by the thousand. They are very strong and healthy, and in excellent condition for sending out. We trust that the instructions given in our last Number by Mr. Turner, will not be lost sight of by those who receive plants in small pots. A double row of Hollyhocks, 140 yards long, backed by a fine Holly hedge, 12 feet in height, has been planted in the east side of the nursery. These will make a handsome display in August. The grounds altogether were beautifully clean, the fine Yew and Holly hedges which the nursery contains neatly trimmed, and everything in the best of order. A Glycine, which covers the front of Mr. Turner's house and shop, promises to be one mass of bloom, and will add something to the grandeur of the display made by the Tulips, Tree Pæonies, and Pelargoniums about the 18th of the month, than which perhaps a better time could hardly be chosen for seeing this nursery in perfection.

The Crystal Palace.—On the announcement of the Executive Committee that space would be granted to nurserymen and florists for the display of plants in the transept of the building, several at once availed themselves of the offer. The following sketch from notes made during a late visit will give some idea of the groups exhibited. Entering from the south of the transept, the first group that occurs is from Messrs. Knight and Perry, King's-road, Chelsea. Immediately within the very beautiful iron gates are two examples of Araucaria excelsa in ornamental vases, and a little in advance, occupying a portion of the centre of the transept, is the group in question. It comprises a fine large Rhododendron arboreum, Cryptomeria japonica, the Cowrie Pine from New Zealand, two handsome pyramidal Bay trees, Croton pictum, Azaleas, &c. A rustic basket and some vases are introduced to give variety to the mass. Passing the magnificent crystal fountain we arrive at the five groups of Palms, from Messrs. Loddiges, of Hackney. From whatever point they are observed their exotic foliage gives an interesting feature to the view. A few yards in advance are two other fountains, in the neighbourhood of which are several exhibitions of plants belonging to different persons. Mr. Clark, of Streatham, contributes a fine Tropæolum tricolorum, with greenhouse Azaleas, Rhododendrons, Cape Heaths, Cytisus racemosus, &c., and a nice specimen of the charming Dielytra spectabilis. Mr. Ferguson, of Stowe, furnishes Heaths, Cinerarias, Pelargoniums, Kalmias, Deodars, Pinus excelsa, &c., besides a quantity of small plants and cut flowers filling an ornamental stand, composed mainly of Staffordshire tiles. From Mr. Bragg, of Slough, come Cinerarias, Azaleas, Mignonette, Pansies, and Pelargoniums. Several interesting plants, arranged on stages, are from Mr. Weeks, of the King's-road. He has also a neat model of his show-house, besides various specimens of garden vases and seats. Messrs Rendle, of Plymouth, are represented by a couple of stands of various plants, such as Rhododendrons, Azaleas, Pelargoniums, &c. Mr. Dennis, of the King's-road, has a group with a variety of cut flowers, the sale of which, it will be remembered, is sanctioned by the Executive Committee. Messrs. Bragg, Clark, Ferguson, and Dennis also exhibit for sale a quantity of bouquets. Besides the plants and cut flowers furnished by the two last-named exhibitors, they have combined to decorate the floor about one of the fountains in a gardenesque style. Blocks of rustic wood, various plants of the Pine tribe, and the double Furze, form a kind of back ground, in front and around which are some terrestrial Orchids, Anemones, Polyanthuses, and various dwarf plants in flower, the surface of the soil and pots being

covered with Moss. A slightly elevated stand, directly in front of the northern, or Queen's entrance some 15 feet in diameter, is occupied by hardy hybrid Rhododendrons, exhibited by Messrs. Standish and Noble, of Bagshot. Amongst them are many fine varieties. The centre of the group consists of a large plant of Cryptomeria japonica, and on the outsides are some specimens of Cupressus Goveniana and C. funebris. To the left of this, and filling a large corner, is a fine collection of greenhouse plants from Messrs. Lane and Son, of Great Berkhamstead, consisting of Azaleas in many varieties, Rhododendrons of various colours, as arboreum and some of its first hybrids; a yellow variety, and a fine plant of R. Gibsoni. About the front of this group is arranged a quantity of Cinerarias, in fine condition. On the opposite part of the building is a collection of Conifers from Messrs. Paul, of Cheshunt. Conspicuous in this group is a fine variety of Pinus excelsa, also P. Russelliana, a few Cinerarias, and some cut flowers, the latter interspersed amongst the plants. Further down the transept, near some Staffordshire vases, are one or two Wardian cases, filled with various kinds of Cacti, Ferns, and small Palms, and by the group of plants belonging to Messrs. Lane, is another collection of these miniature plant structures. We remarked in the Exhibition of articles in glass in the gallery, from Messrs. Cogan and Co., of Leicester-square, a pretty Fern temple, neatly filled with those interestingplants.

## Miscellaneous.

*The Two-rowed Aponogete (Aponogeton Distachyon).*—We reproduce this plant in the hope of presenting a better figure of it than has yet appeared, and of drawing attention to a hardy aquatic of which too little is known. Several years have now elapsed since it was reported that a handsome sweet scented water-plant from the Cape had been naturalised in the tanks of the Botanic Garden, Edinburgh. It was to the species before us that allusion was made, and it has since found its way here and there southward. It was introduced into Cornwall by Sir Charles Lemon, and there, as well as in Devonshire, it seems to have as completely established itself as if it were a native of the country. The correspondent, who first brought the Devonshire plant under our notice, expressed a doubt whether it was really the two-rowed Aponogete; its flowers being so much larger than they are represented in books. There is, however, no doubt about its name being correct; the differences that have been remarked being the mere result of exuberant luxuriance. The specimens came from an open pond at Woolston, the seat of the Rev. Charles Osmond, in the parish of Loddiswell, near Kingsbridge, S. Devon, where the plants thrive in a surprisingly luxuriant manner, producing thousands of delicious fragrant flowers throughout the summer, and even in January bearing 500 blossoms as fine as those represented. Innumerable seedling plants arise around their parents. To Mr. Osmond we are also indebted for the specimens, and for the following history of his acquisition of the plant: "About three years since a root was given me the size of a shot, which I planted in a small pan and sunk it in the pond; it grew rapidly, and, in a few months, produced flowers; and, unobserved by me, seed also, from which have sprung up to the surface of the water hundreds of plants. The spring which supplies the pond is peculiarly clear, always running, and, in the severest winter, rarely freezes." The species is common at the Cape, where it bears the name of Water Uintjies. Mr. Bunbury mentions it thus:—"The flowering tops of the Aponogeton distachyon, a pretty white-flowered floating plant, frequent in pools of water in various parts of the colony, are sometimes used both as a pickle and as a substitute for Asparagus." *Residence at the Cape*; p. 201. *Paxton's Flower Garden for May.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

Azaleas should be attended to as they go out of bloom, potted if they require it, and placed in a favourable situation for forming their young growths. Many plants, particularly large ones, which received a liberal shift last year, will not have filled their pots so full of roots as to render repotting necessary, and it is better to allow such to make their growth, and set their flower buds, without additional pot room. This growth will, of course, be a moderate one, and when this is properly matured, and the danger of their starting again is past, we give them a slight shift, and place them in a cool house. In the new soil so supplied, they continue to produce roots during the remainder of the autumn and winter, but without making progress in the tops, and the roots being thus in advance of the head, the plants are prepared to meet the flowering season with extra vigour; for in the size and colour of the flowers, Azaleas so treated far surpass those which have been treated in the ordinary way. Though these useful plants succeed very well in common peat, to which a small portion of leaf-mould and sandy loam, with a liberal supply of sand, has been added, yet those who can procure Wimbledon peat, at a moderate expense, will find it answer their purpose to do so, as the high state of perfection to which the Azalea attains in that soil, is ample recompense. Supply abundance of drainage to large specimens, and let the compost be rough in proportion to the size of the plants to be shifted. Hard-wooded plants, recently potted, should be kept rather close till their new roots are in progress; and in fine afternoons they will be considerably benefited by a gentle syringing. During this season, when the greater part of the plants are in active growth, and require more warmth and moisture, those which are in flower should be kept by themselves, where their blossoms can be preserved by shading, free admission of air, and a drier atmosphere. As the cooler pits and frames are set at liberty, they may be made very useful during the summer by filling them with suitable composts, and turning out young greenhouse plants into them, there to make their summer's growth. Treated in this manner they make much greater progress during a season than when grown in pots, and are with less difficulty induced to form handsome plants. Young Azaleas, Camellias, &c., can by this treatment be induced to make double the growth, and thus acquire a vigour which will be maintained for years, and which is not so easily obtained under any other course of management. The principal points requiring attention are, to secure a good drainage, to give each plant sufficient space; and to elevate the surface of the soil as near to the glass as possible, allowing only sufficient height for the plants themselves, and a vigorous summer's growth. The extent to which this plan is adopted should be regulated by the facilities at command for preserving them after they are taken up in the autumn, and potted, as the frames will then be required for other purposes.

### FORCING DEPARTMENT.

Pineries.—The increasing power of the sun's rays will now tend to raise the temperature of the Pine pits considerably higher; but care should be taken not to allow it to get above 90°, as the leaves are very liable to be injured by excess of heat. If it cannot be kept down by a moderate increase of ventilation, recourse must be had to shading with thin bunting, which is preferable to opening the sashes too much, and thus causing excessive evaporation. Success in the cultivation of the Pine depends in a great measure upon the avoiding of sudden changes, which tend either to check their growth or to cause undue excitement, and the consequence of which would be to throw the plants prematurely into fruit, at the expense both of size and quality. Cherries.—Where the fruit is ripening give abundance of air, and maintain a drier atmosphere, but let the trees on which the fruit is swelling have plenty of water, and syringe them freely in fine weather, to keep the foliage and fruit free from insects. Strawberries should now be abundantly supplied with water, or they will change colour before they have attained their full size. Melons.—Keep up the heat in the beds by adding fresh linings as they require it. If plants, on which the fruit is near ripening, are in need of water, give it in the morning, that the vapour arising from the soil may pass off during the day. Keep the shoots thin and regular, allowing not more than three or four fruits to swell on each plant. As it is not necessary that Melons for preserving should be very large, those which are intended for this purpose may be left thicker on the plants than those which are grown for table; for, in the latter case, size is almost as much an object as flavour. Endeavour by all means to preserve the foliage of early plants in a clean and healthy state, that they may produce a second crop. Frames, in which Potatoes have been forced, should now be prepared for late Melons. Let the soil be good, 18 or 24 inches deep; and if the frames are not furnished with hot-water pipes, a bottom heat of 80° should be supplied by means of linings or fermenting material between the beds.

### FLOWER GARDEN AND SHRUBBERIES.

The newly planted beds in the flower garden will require watchful attention, lest any of the plants suffer from drought; and the watering should be done in the morning or rather early in the afternoon; for if done late, and there should happen to be a frost during the night, they would suffer. I would still recommend the use of evergreen prunings as a protection against scorching sun and cold cutting winds. The surface of the ground may be left very rough, to prevent evaporation, until the plants are sufficiently established to admit of the branches being removed; after which, if the ground be dry, it should receive a good watering, and then, for appearance sake, should be made smooth with a small rake; or, if this course be not approved of, it may be made smooth at once; and, to prevent the escape of moisture, it may be covered over with a thin layer of short Grass from the lawn, which the extending foliage will soon conceal. In either case the plants should be well watered immediately. After planting, taking care to moisten the bed thoroughly, as plants, turned out of pots, are liable to suffer much if not well attended to, until they make new roots into the soil. Many late spring propagated plants will be better if they remain a little longer in the frames, as unless fairly established previous to being planted out, they will be a long time before they start into growth, in a satisfactory manner. Where the young plants have been pricked out into frames of soil, attention should be paid to lifting them with a sufficient ball of earth and roots, and also to conveying them to their destination, and planting them as quickly and with as little injury as possible.

### FLORIST FLOWERS.

The side beds, and where breeder Tulips are grown, should be examined, and any promising buds covered, even if with a piece of board, having a hole through it, so that by introducing a Carnation or other stick, it may be kept the requisite height above the flower.—Dahlias in pots should be kept growing, so that robust healthy plants may be insured when the time comes for planting out. See that the manure is well incorporated in the soil where they are to be planted.—Ranunculuses are generally looking well; keep seedlings from too much sun, and quicken their growth by all available means. Shade Auriculas, and as the pips decay extract them from the calyx, so that the seed may have every possible chance of ripening. Stake Carnations and Picotees, and keep the surface of both Pink and Pansy beds loose and friable.

### KITCHEN GARDEN.

Beds should now be prepared for Vegetable Marrows and Ridge Cucumbers, by taking out a trench in one of the quarters, 4 feet wide and 15 inches deep, throwing the soil to the two sides to raise them higher. The trench should be filled to the top with rotten dung, from the surface of the earliest Vine borders, or from any other convenient source; this should be trodden solid, and covered to the depth of 16 inches with part of the soil taken out in forming the trench, mixed with some fresh soil and a little manure. This should be done immediately, that the bed may have time to settle, before the plants are put out. Let old Mushroom beds be examined, by removing the soil as soon as they go out of bearing. If the dung appears decayed or exhausted, the bed should be immediately renovated; but if, as it often happens, the beds are found in good order, solid, and teeming with spawn, they should be watered moderately with tepid water, if they require it, and covered in a day or two afterwards with 2 or 3 inches of fresh loamy soil. In hot weather, the house should be kept as cool as possible, and a moist atmosphere obtained by sprinkling the paths and walls with cold water; allowing excessive evaporation to escape by means of a top ventilator.

State of the Weather near London, for the week ending May 8, 1851, as observed at the Horticultural Garden, Chiswick.

| May. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 2 | 29.835 | 29.659 | 57 | 29 | 43.0 | 48 | 48 | N. | .00 |
| Satur. .. | 3 | 29.826 | 29.732 | 54 | 32 | 43.0 | 47 | 48 | N.W. | .09 |
| Sunday . | 4 | 29.702 | 29.665 | 50 | 30 | 40.0 | 47 | 47½ | N. | .02 |
| Monday | 5 | 29.709 | 29.677 | 54 | 38 | 46.0 | 47 | 47½ | N. | .02 |
| Tues. .. | 6 | 29.846 | 29.775 | 52 | 36 | 44.0 | 47 | 47 | N.W. | .01 |
| Wed. .. | 7 | 29.868 | 29.850 | 58 | 38 | 48.0 | 47 | 47 | W. | .00 |
| Thurs... | 8 | 29.770 | 29.674 | 61 | 38 | 49.5 | 48 | 47 | S. | .00 |
| Average.... | | 29.793 | 29.716 | 44.8 | 34.4 | 44.8 | 47.3 | 47.4 | | .14 |

May 2—Clear; fine; clear and frosty at night.
— 3—Fine; rain commenced at noon; cloudy.
— 4—Cloudy; fine but cold; clear; slight frost.
— 5—Overcast; cloudy and cold; slightly clouded at night.
— 6—Rain; cloudy and cold; overcast.
— 7—Fine; cloudy and cold; overcast.
— 8—Fine throughout.
Mean temperature of the week, 8 deg. below the average.

*Erratum.*—In last week's *Chronicle*, read mean temperature of the week, 9 deg. *below*, instead of *above*, the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 17, 1851.

| May. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 11 | 62.6 | 41.2 | 51.9 | 9 | 0.26 in. | 4 | 5 | 3 | 1 | 5 | 4 | 1 | 2 |
| Mon. 12 | 63.4 | 41.4 | 52.4 | 11 | 0.40 | 2 | 5 | 7 | 1 | 3 | 3 | 1 | 3 |
| Tues. 13 | 64.2 | 39.6 | 51.9 | 11 | 0.22 | 3 | 6 | 4 | — | 3 | 4 | 3 | 2 |
| Wed. 14 | 63.7 | 41.6 | 52.7 | 9 | 0.56 | 3 | 4 | 5 | 1 | 3 | 5 | 3 | 1 |
| Thurs. 15 | 64.7 | 41.3 | 53.0 | 7 | 0.41 | 2 | 6 | 2 | 1 | 8 | 3 | 2 | 1 |
| Friday 16 | 65.3 | 43.6 | 54.7 | 9 | 0.31 | 5 | 4 | 3 | — | 2 | 7 | 1 | 1 |
| Satur. 17 | 65.4 | 42.6 | 54.0 | 9 | 0.58 | 1 | 5 | 4 | — | 3 | 5 | 4 | 3 |

The highest temperature during the above period occurred on the 17th, 1833—therm. 85 deg.; and the lowest on the 15th, 1838—therm. 26 deg.

## Notices to Correspondents.

Back Numbers. Full price will be given for the following Numbers, *with the Newspapers*, or half price for the Newspaper alone: 1845—12, 34, 35; 1846—25, 41, 42, 50; 1848—32, 38, 49, 50; 1849—52.

Books: *C C.* "James's Gardening."‡

Chrysanthemums: *G L F.* We never recommend dealers.‡

Cucumbers: *A Correspondent.* The leaves are mildewed to a very great extent. Cut off the worst, and apply sulphur by means of some of those "sulphurators" which are found so admirably adapted for the purpose.‖—*J C.* A very handsome Black Spine, measuring 26 inches in length ‡

Gutta Percha: *Woglog.* We have no personal experience of pipes made of this substance; but we hear them well spoken of. We do not believe that rats would eat them, but we have no doubt they would gnaw through them, as they will through wood and lead. For stables, nothing is better than good Dutch lumps set on edge.

Heating: *A J B.* No stoves are suitable for greenhouses, unless the dryness they cause is counteracted by water evaporating in sufficient quantities to keep the air damp. If the last is secured, the kind of stove is unimportant.

Horticultural Society: *A Gardener.* All gardeners who present themselves at the garden before half-past 8 in the morning are admitted to see the exhibition and to remain till 10, at which hour the garden is cleared of spectators and others, in order that the final arrangements may be completed.

Insects: *A B.* 1, Eudorea mercurella; 2 and 6, Lophoderus ministranus; 5, Hadena plebeia; 3 and 4 rubbed to pieces by the Noctua, which was loose. *W.—Wissingham.* Your drawing, No. 3, evidently represents Pachygnathus villosus of Duges. We cannot determine No. 4 without seeing it. *W.—F. Kcr.** A male of Sirex Gigas. *W.*

Melons: *J H.* The Cassabar Melon is large, oblong, greenish yellow, tolerably good, but not equal to the Trentham Hybrid and others recently obtained. For a general crop you cannot do better than grow the Bromham Hall.‖

Names of Plants: *A B C D.* We answer all persons, if their inquiries relate to gardening; and you would have received a reply, if your letter had arrived. 1, Jasminum revolutum; 2, Polygala cordifolia; 3, Fritillaria pyrenaica.—*A.* Apparently Sparmannia africana, from the Cape of Good Hope.

Roses: *W C J.* We doubt whether the state of your Rose trees is attributable to mildew only; its effects have been probably aided and abetted by some constitutional defect in the bushes. Are you sure that the stocks agree with them, or that they are well manured? At all events, we would cut them "hard back," when they first began to swell their buds, for the purpose of strengthening them.

Vines: *A B.* Luxuriant growth and a damp atmosphere have caused the small green excrescences, which have alarmed you, to appear on your Vine leaves. They will do no harm.‡

### SEEDLING FLOWERS.

Pansies: *R P.* Promising. Can you let us see it again.*

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CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

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*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

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|---|---|---|---|
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Office, 69, King William-street, City, London.

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HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

TAN, (Gratis) fresh from the pits.—Apply to ESSEX and SONS, 28, Stanhope-street, Clare Market, London, in the immediate neighbourhood of Covent Garden.

TO AGRICULTURISTS.

THE SUBSCRIBERS, in returning their sincere thanks to their numerous Customers for the liberal patronage which they have so long enjoyed, beg earnestly to solicit the attention of Agriculturists and their friends in England to their improved Light GRUBBER, combining both cheapness and efficiency. The Implement was strongly recommended by the East of Berwickshire Farmers' Club, at their meeting in December last; and the numerous parties who have since honoured us with their orders have expressed their high satisfaction with it as a most efficient Implement. The price, with travelling wheel, complete, is only 65s., delivered free to any station on the North British Line.

As the Turnip season is now approaching, the Subscribers take this opportunity of calling attention to their improved Turnip-sowing Machines, which they feel confident will give entire satisfaction to those who may favour them with their commands. The price is Six Guineas, and every attention will be given to the speedy execution of orders by

SCOULAR AND CO.,

Haddington, N.B. Agricultural Implement Makers.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. DEANS, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ANNUAL COUNTRY MEETING of 1851 will be held, by the gracious permission of Her Majesty and Prince Albert, in the HOME PARK, WINDSOR, in the week commencing MONDAY, the 14th of JULY.

Copies of the Prize Sheet, containing the terms, conditions, and amount of the respective Prizes, and the Rules of Exhibition, and also copies of the requisite printed Forms of Certificate, may be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates must be returned, filled up, to the Secretary, on or before the **17th of May**, the Council having decided that in no case whatever shall any Certificate be received after that date.

In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

By order of the Council, JAMES HUDSON, Secretary.

12, Hanover-square, London, May 10.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE MAY GENERAL MEETING of the Society will be held at the Society's House, in Hanover-square, on THURSDAY, the 22d May, at Twelve o'clock.

By order of the Council, JAMES HUDSON, Secretary.

London, May 7th, 1851.

*** Professor WAY'S LECTURE, "On the Agricultural Employment of Common Salt," will be delivered before the Members in the Council Room of the Society on Thursday next, the 14th inst., at Twelve o'clock.

# The Agricultural Gazette.

*SATURDAY, MAY* 10, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

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| WEDNESDAY, May | 14 | Agricultural Society of England. |
| THURSDAY, — | 15 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, — | 21 | Agricultural Society of England. |
| THURSDAY, — | 22 | Agricultural Imp. Soc. of Ireland. |

WE have yet to add a few words on AGRICULTURAL EDUCATION. Its object, we have shown, must be to convey to the student all the truth which bears upon his future profession; and, by practice, to confer upon him the skill that it requires. Now, what are the means at present in existence for giving this education? There is a Professorship of Agriculture in the University of Edinburgh, which has long been ably filled by Mr. LOW, who, by his writings and his lectures, has done perhaps more than any other living man to spread a knowledge of the rules of good practical farming. There is a lectureship on agriculture in connection with the University of Aberdeen. There are many private schools throughout the country which profess to teach the rudiments of sciences connected with the art of cultivation, and among them it is only fair to mention one in the neighbourhood of London conducted by Mr. NESBIT, a gentleman widely known to agriculturists by his lectures and performances in connection with the chemistry of agriculture. There are many schools in Ireland under the superintendance of Dr. KIRKPATRICK, agricultural inspector under the commissioners of national education. There are many farmers, here and there, in every county, who take pupils and profess to teach the methods of successful practice. And there is the Royal Agricultural College at Cirencester.

These are the means—what is the use that is made of them? Of the many thousand farmers annually entering on the first year of their business, how many have attended the lectures of Professor LOW—the agricultural schools in Herts, or Suffolk, Middlesex, or Hampshire? How many even have been for a year or two under the guidance of some successful farmer—how many have been students at Cirencester College? The agricultural education of the present day is received *at home*. It is no doubt often good, and the student or apprentice often does it credit; but we imagine that whether it be for the acquisition of extensive and general knowledge of one's business, or for the acquisition of *business habits*, a thing of highest moment—a *home* education will find few defenders.

Our own opinion is that a lad coming from a school such as that of Mr. NESBIT, where his mind has been directed to some of the facts and sciences of agriculture, subsequently living and *working* for two or three years on a farm cultivated, as in Berwickshire for instance, for the breeding and fattening of live stock, as well as for the growth of corn; and finishing off with attendance on the lectures of Professors Low and GREGORY in Edinburgh College, is as likely to prove an intelligent and successful farmer, as any other plan would make him. This would be an expensive mode of education, but in cases where the pupil is made useful on the farm it would be efficient. Its efficiency is however generally more dependant on the will of the young man himself than on that of the farmer with whom he is situated: and though it may be made, and often has been made most successful, yet there are, no doubt, many instances of failure.

The next best plan of education, and a less expensive one, is offered by those institutions which teach the art of farming, and show its progress in operation, to a number of pupils together. The only institution of the kind in this country exists at Cirencester. It has hitherto been less successful than it ought, owing no doubt to some extent to the fact that the students have not been fitted, generally, by previous education, to receive the instruction that it offered. This defect has been so obvious, that since last Christmas the council of the College have altered their plan of operation. They have added a school for boys to their establishment. Previously to that time they had refused to admit students under 16 years of age, and even those were not admitted unless they passed such an examination as showed them to be qualified to attend the various lectures with advantage. *Now*, the College is open to students of any age. Instruction, general as well as agricultural, is offered. If the student be qualified, and anxious to gain as much instruction as possible in a short time, he is able, under the new system, to attend a full course of lectures on every subject, in the course of a twelvemonth; seeing all the processes of the agricultural year, meanwhile, performed upon the farm around him. If from defective education, or from mere youth, the student be not yet prepared in those branches of knowledge needed to enable him to profit by the scientific lectures, he is no longer refused admission on this account; but ample means are provided for remedying his deficiencies. And if a parent determining on agriculture as his son's profession should wish to give him an education fitting him not only for success in that profession, but for the society of intelligent and well educated men through life, he is now offered exactly what he wants at the Royal Agricultural College. It will, indeed, be a most extraordinary thing if, with an abler staff of officers than ever yet combined their efforts to render agricultural instruction efficient—with the means at its command of teaching and illustrating the sciences and the rules of farming more fully than any single institution ever yet has done—this college should fail of attracting the confidence of the agricultural body. It seems to us at present most fully to deserve their confidence. We hope that its future career may show that it possesses it.

We must add a few words upon the agricultural schools of Ireland. A report, by Dr. KIRKPATRICK, is published in the volume on "National Education in Ireland for 1849," from which we learn that at Glasnevin, near Dublin; Loughash, county Tyrone; Markethill, county Armagh; Dunmanway, county Cork; Rahan, King's county; Belvoir, county Clare; and in other places, there are institutions which, assisted by the Commissioners of National Education, receive agricultural boarders and pupils, teaching them by practice and instruction the details of management on a small farm, along with the usual elements of an ordinary literary education. They are chiefly sons of small farmers. Those who have attained greatest proficiency are admitted into the Glasnevin establishment near Dublin, from which, after a year or two of further instruction, they go to situations as farm managers, or they undertake the cultivation of land on their own account. These schools and model farms are rapidly supplying Ireland with a body of instructors who will doubtless prove, as Dr. KIRKPATRICK anticipates, "one of the most efficient amongst the many agencies now at work for the correction of that sadly defective mode of culture hitherto so prevalent in Ireland, and which has tended so much not only to retard the social progress, but even to peril the very existence of large masses of her population."

There seems no want of pupils in the sister island at her agricultural schools; there seems interest enough taken there in the subject of agricultural education. It will indeed be a shame upon the agriculturists of England if the single institution established among themselves for the education of the rising generation of farmers should be inadequately supported.

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT INDUSTRIAL EXPOSITION OF THE NINETEENTH CENTURY.

No. I.—In entering upon a description of the more interesting objects in the Great Exhibition, arranged in Class 9, "Agricultural and Horticultural Machines and Implements," and Division A. "Implements for Tillage" the first that we notice are the ploughs.

The PLOUGH has passed through many transformations since the days of our Saxon ancestors, when it was ordained that "no one should guide a plough who could not make one;" and must be a very different instrument now from what it was when the legislature were obliged to pass an "act agaynst plowing by the taile." And there is but little more diversity between our ancient and modern ploughs, than between those at present used by various nations. By visiting the Great Exhibition, a person may go from the nearly perfect instruments of our best makers, to the more rude and clumsy of some other countries; and may thus walk, as it were, a century or more back into time, and see things existing

examine the iron beam, head, soles, share, mould-board and handles of an improved English plough, with frame that cannot pant or quiver, which raises and turns the furrow gradually, and which besides having long handles to give the holder a more complete and accurate control over its movements, possesses beautiful, yet simple mechanism, for adjusting coulter, draught, &c., to the American plough of wooden frame with iron share and breast so formed as apparently to root or grub up the soil rather than regularly turn it, with short beam, handles so short as to give but little leverage power over the implement, and it may be with no coulter to cut the slice clean from the unploughed land; to the Belgian plough with but one short upright handle, like that which our forefathers discarded directly the power of double handles was discovered; or to the far more primitive and barbarous wedge, with handle and beam wherewith the Egyptians stir the rich loam of their Nile. And among the "improved iron" ploughs also there is a great difference of form and dimension, according to the varied soils and uses for which they are adapted, and to the fancy of makers or the fashion of particular districts. Some ploughs, especially the Scotch, are almost twice the length of others; there are mould-boards, concave and convex, of steep incline or long sweep, shares of all shapes, and numberless adaptations of the different parts of the frame to the points and lines of pressure and resistance, with a view of securing the greatest strength and steadiness with the least weight and complexity. We cannot give the reader an idea of the forms and proportions of the working parts without drawings and cuts, so that our descriptions will be only of such peculiarities as at once struck our notice in viewing the implements, and may be easily understood; and indeed the merits of a plough depend not upon the "good sweep" of its mould-board, or the apparent rigidity of its parts, but are shown, like those of a road-horse, less by its points than its performances. The eye of the most practised maker can hardly pronounce which of two good ploughs will do its work in the best manner; and for many ploughs even a day's competition is not a sufficient trial, their peculiar property being, perhaps, that of retaining their excellence of form and framing unshaken for a great length of time. Experience only will gradually extend and establish the use of the best ploughs; and our recommendations here will be limited, therefore, to ingenious appliances which are obviously calculated to facilitate the operation for which the implement is intended. The order in which we mention the ploughs of different makers will be very irregular.—The iron ploughs of William Busby, of Newton-le-Willows, Bedale, Yorkshire, are worthy of attention. The mould-turner has a great and gradual sweep, the measure of one plough from the point of the share to the hindermost edge of the mould-board being no less than about 5 feet; and the share can be made to dip more or less, and set more or less "to land," by screwing in different directions the end of the lever upon which it is fixed; this, we believe, was an invention of the Messrs. Ransome. While the leverage power and command over the instrument afforded by long handles are retained in these ploughs, the exactness of the whole operation is not left, as in the swing ploughs, to the hand of the workman upon these long lever handles, and to the traces and backbands of the team; but regularity of depth and width are in a great measure insured by a couple of wheels, one in the preceding furrow, and one upon the unploughed land. The sword coulter is pressed against one side of the flat iron beam by a square link enclosing both, and nipped tight with a screw, the link passing behind the coulter shank below, and before it above the beam,—thus preventing it from altering its slanting posture by moving backward. This fastening, however, does not allow of that universality of movement and position which ploughmen find to be necessary when setting their coulters. Near these is an iron plough by D. Harkes, of Mere, near Knutsford, the coulter of which is set in a mortice-hole, more or less "land" being given by two side screws, and the blade set further forward or otherwise by another screw in front of the coulter shank and above the beam. As many attempts have been made to obviate the use of wooden wedges for this purpose, we shall mention the various contrivances of this kind to be found in the Exhibition. There are also many forms of the plough cock; those being perhaps the most objectionable in which the height or direction of the draught are altered, not by simply hanging a link between different teeth of a rack, or by dropping a bolt through different holes, but by taking a feather or key out of the end of a bolt, withdrawing the bolt, putting it through a fresh hole, and again inserting the feather. Among the iron ploughs of John Wilkie, from near Glasgow, we observed one with a friction wheel. Several attempts have been made to lessen, in this way, the friction of the sliding sole: this wheel is at the heel of the plough; it is in an inclined position, so that while touching the ground close to the unploughed land, or just where the sole would have been, it reaches upward between the "holes" or handles, and can thus be of considerable size. The rim is levelled so as to roll flat upon the ground; but we should fear that the wear of the axle will soon cause it to work untrue, and that the dirt will clog and damage it. There is a turn-wrest plough by the same maker, in which two mould-boards with shares are carried upon opposite brackets on *then*—just as astronomers look through their tubes and lenses, and behold objects in the very act, as we may say, of existing some thousands of years ago. He may a spindle, which lies along above the beam. By turning this with a lever, one turner and share is taken up, and that on the other side let down for work. The plough head carries a chisel point, which serves for each share without being moved. The end of the spindle has a small eccentric stud, or block, which shifts the top of the coulter, so as to have its point always more landward than the share. The requisite alteration of the line of draught from one side of the beam to the other is managed by a long horizontal link on the plough cock: the draught chain to which the whipple-trees are attached slips from end to end, as the horses are turning, and is held there by the curved form of the link. More or less land can be given by means of a semi-circular rack, setting the link in a direction more or less inclined to the line of the beam. The arrangement of the two shares and breasts in this plough appear to be more cumbersome and not so neat as in some others.—The iron ploughs, by Allcock, of Radcliff, near Nottingham, have a pretty good contrivance for setting the coulter. The shank, which being round, allows the cutting-edge to be placed at any angle with the line of draught or progression, is held tight by a staple with screw, nut, &c., between two pairs of studs on an iron disc, the staple-bolt passing sideways through the beam. The disc in turned by an arm and screw so as to set the coulter-point backward or forward, and is inclined by a side screw, in order to give the blade more or less land.—The patent turnwrest plough, of Lowcock, of Thorverston, is perhaps the best of any for the intended purpose. The form is well known: it is like two ploughs set heel to heel, with both of the shares and mould-boards lying the same way, and condensed into a small compass by the mould-boards being divided, and the hinder part of each united back to back in a swinging bracket which adjusts itself to whichever way the plough may be moving. When turning, all the ploughman has to do is to release the handles by pressing a spring and turn them over to the other end of the implement, the whippletrees with their link slipping along a rod from one end of the beam to the other as the horses are turning. There are two coulters, both having the advantage of remaining unmoved during the operation.—A plough by W. Abbot of Bideford, is one of the few in which cheap light iron has not superseded the less durable and more clumsy wood. The chief novelty is a small friction-wheel working vertically beneath the beam, and in the place usually occupied by the heel of the "sole" and "land-side;" a cutter or chisel of a triangular form is carried in front of this wheel, apparently to make a clear and even path for it, and this can be raised or lowered. A cleaner or scraper follows the wheel. A paper on the implement informs us that, "the principal benefit of this plough is, the great reduction of friction; by which, according to the opinion of judges, horse-labour is reduced one-third, as compared with that required for ordinary ploughs. It also lessens the expense of keeping in repair. The principle can be applied to any plough."—A variety of ploughs catch the eye of the visitor as he passes along the department, excellent in workmanship, but having no special peculiarity except that they are nearly all of wrought and cast-iron; the coulter fastenings consisting of either iron or wooden wedges, and of the different devices mentioned in this report. Some ploughs carry a square chisel point, instead of having a pointed share, being apparently adapted for stony land; some have high mould-boards of great length, on purpose for deep ploughing; and in some (as those from Essex), the concave form of mould-board is discarded, and instead of this is convex; the share, instead of having a triangular wing, resembles the circular knife of a small chaff-cutter; this kind of plough suiting the stubborn clay soil of some districts.—The patent ploughs of Howard, of Bedford, are well worth attention; they appear calculated to do their work in a perfect manner. They are double-wheeled ploughs, and the chief peculiarity is the long lever extending from the upright spindle affixed to these wheels to the handles, by means of which the beam is lifted or depressed. The dip of the share can be regulated by a lever held in its place by a toothed nut, screwed to a serrated segment. From the multiplicity of objects we have only room to say one or two words about those which we profess to describe; and as everybody will in turn witness the exhibition for themselves, our readers will doubtless pick out from our notices the contrivances which they deem worthy of a minute examination, and award to the remainder only a cursory view; these reports saving them a great deal of unnecessary time and search. We shall thus furnish them with a guide to the agricultural portion of the Industrial Show, as well as a permanent record of the inventions there contained.—G. Dray and Sons, of Uddington, near Glasgow, exhibit a one-way, turn-over, or turnwrest plough, consisting of two shares, with mould-boards fixed by brackets from opposite sides of a spindle above the beam. The plough carries a fixed chisel-point, above which each share rests when in work, the other share and breast not in work being carried in the air higher than the beam. The difficulty of altering the position of the coulter with accuracy has here been obviated by permanently fixing an upright blade upon each share; but the absolute immovability of a coulter is, we apprehend, a worse fault than its looseness. Lowcock's plough is the only good one in this respect, as the coulters may be set just as the workman finds needful, and are left undisturbed at each end of the field.—The registered turnwrest, by Comins, of South Molton, Devon, is ingenious. There is one share turning over on a spindle; two mould-boards are fixed as on a ridge-plough, and a pinion upon the same axis pushes one of these breasts out while drawing the other in. A lever and connecting rod turn the spindle by a crank, the lever at the same time shifting the top of the coulter, so as to move its point to the required place. Another lever or rod is attached for turning a double skim-coulter at the fore end of the beam. The shape of this plough must necessarily be imperfect, since the mould-turner is but ill adapted for a "land-side," which should be straight. Great defects seem inseparable from this class of ploughs, but our preference is decidedly given to that having both shares, mould-boards, and coulters fastened upon the main frame, as in an ordinary plough—giving thus the greatest stability with the least mechanism to be clogged or deranged.—John Smith, of Uxbridge, exhibits Warren's Patent Ploughs, one peculiarity of which seems to dwell in the broad soles upon which they rest, the flat thin plates, 7 or 8 inches in breadth, filling up most of the furrow bottom. This may give greater steadiness, and equalise the wear by diffusing the friction over a large surface.—The ploughs of E. H. Bentall, Maldon, Essex, have the circular knife share and convex mould-turner of that county, with beam and handles of wood. In one, the iron lever upon which the share is fixed is not shifted by a screw inside the plough, but is curved and brought up to one side of the beam where the set-screw can be easily reached.—R. J. and R. Laycock, of Newcastle-on-Tyne, have a plough, in which the flat shank of the coulter is set in a mortice by five screws. A link passes from the sides of the beam behind the mortice over the top and front oft he coulter; and a screw at its end, by pressing the top backward, moves forward the point of the coulter; two screws beside each other on one side of the beam, hold the coulter edge at any angle with the land to be cut; and two more on the other side, and placed one above the other, give the blade more or less land. This is rather complicated; it seems desirable in contrivances for this purpose to avoid as much as possible a multiplicity of small screws, as the threads quickly wear away when constantly used in the dusty operations of the field.—About midway down the court occupied by implements, the great makers, Garrett and Crosskill, Barrett, and Ransome, have erected galleries or stands, these being situated opposite each other along the main avenue, and decorated with colours and lettering, according to the taste of the builders; that of the name last mentioned is a plain drab, and while wanting the gaudy ornament seen on some of the others, and failing to match them in some descriptions of machinery, is equal to any, we suppose, in its display of ploughs of almost every sort. As the patent case-hardened cast-iron shares of Ransomes and May, their ploughs of wood and iron applicable to all soils and purposes, and the excellence of form and superior workmanship of their implements, have been long known to all agriculturists, we need not stay to point out the good qualities which may be found here. We may say in a word, that long experience has proved the mould-turners, and several parts of these ploughs, to have been constructed upon sound principles; no one dare find fault with the general make and finish of the different parts, and most of the better appliances for adjustment to be found elsewhere are also employed here. Among the minor improvements, we may mention that some of the ploughs have a plate or band a few inches broad attached to the upper edge of the mould-board, and sloping inwards at about right angles with the mould-board so as to prevent loose moulds from pouring over into the furrow.—We must not forget to name the improved ploughs of W. Pearce, Poole, Dorset. The beam consists of two wrought-iron bands, the space between which is filled up by a solid cast-iron arch tapering off at its extremities. Ransomes and May have patented a beam in which firmness and lightness appear to reach a maximum; two iron bands being set out to some distance apart by spells or spindles. But a form of beam like a double bow is awkward for the workman's eye; a straight, narrow beam, on the other hand, like Pearce's, is much easier for drawing ridges and for ploughing straight generally. With this advantage of neatness, this beam is solid, compact, and cannot shiver, and is very little heavier than Ransome's. The improvement which Ransome's effected by substituting cast-iron for wrought-iron shares, has been applied by this maker to the coulter. The shank and blade are in separate pieces; and when the case-hardened cast-iron blade wears out, another is screwed on. This is calculated to diminish still further the blacksmith's bill for laying, &c. The price of the improved plough is extremely low; it was one of the one-wheeled ploughs tried at Pusey, and did its work remarkably well. One of Pearce's ploughs is furnished with about the best attempt at a friction wheel that we have seen. It is a small solid wheel, like the "traveller" of a horse threshing-machine, running close to the unploughed land, having an axle only on one side. Its periphery drops a trifle lower than the plough sole so as to take the weight; and instead of a great portion of the "land-side" being absent, only just enough is cut away to admit a part of the wheel into the plough-heel. The wheel runs flush with the land-side; and as it has no spokes, the dirt cannot get in to impede it. The short axle works in a box, which also covers up the inside face of the wheel, and there is a scraper on the top of the wheel. The whole contrivance is as simple as possible, and the bearing remarkably sheltered from dirt; altogether appearing well calculated for saving horse labour, without impairing the efficiency of the implement. *I. A. C.*

## ON THE ACTION OF THE FINER PARTICLES OF EARTHY MATTER ON VEGETATION.

[Translated from the German of the late Professor Schübler, of the University of Tübingen.]

(*Continued from p.* 283.)

III. Lime (or pure quicklime).—This earth frequently enters into mixture with vegetable juices; it is found, next to silica, most frequently in the ashes of plants, and consequently particular families and species of plants, and even the same plants according to their different periods of development, exhibit remarkable differences. The ash of several species of trees is very rich in carbonate of lime; the ash also of many leguminous seeds is rich in this earth, while, on the contrary, the stalks of many of the Cerealia, so abundant in silica, contain only a small proportion of lime. Plants of the same kind commonly contain less lime in their early growth, but a larger proportion in their advanced stages. Many aquatic plants, several of the Myriophylla, Characeæ, and different Algæ, during their process of vegetation, deposit lime, even in crystalline grains, upon their inner or outer surfaces, although the water in which these plants develope themselves contains only a very little carbonate of lime, which is not deposited on other organic bodies. In the botanical periodical "Flora," I have communicated some more exact observations on the Hydrurus crystallophorus, an indigenous aquatic plant found in Würtemberg. It appears from all these circumstances to be highly probable, that on the perfect cultivation of various plants, lime acts favourably as a virtual means of nourishment; and on the contrary, to be injurious to others: accordingly we observe that Chrysanthemum segetum, Erica vulgaris, and various species of Carex, become more rare when clay lands are improved by lime and marl. Mixed with soil, lime has the property of preventing the formation of the free acids, which in wet clay lands easily result from the decomposition of organic matter or other process of oxidation. It renders acids already present in the soil innoxious, provided they are not in too great an amount. Particles of humus, in an almost insoluble state, have become through its agency soluble, and converted into a beneficial means of nourishment for plants. Heavy clay soils by its means are rendered lighter, lose their too great tenacity, and acquire the property of drying up more easily.

IV. Magnesia.—Various opinions have been formed of the action of magnesia on vegetation. Experiments tried in many districts have shown that magnesia, in combination with carbonic acid, as well as in its union with silica, by no means exerts an unfavourable influence; on the contrary, that it sometimes occurs in the most fertile soils.—Einhof gives an example of a marl containing 20 per cent. of carbonate of magnesia; Sprengel, another instance of a marl, which contained even 28 per cent. of this earth: while both these marls were employed with as good an effect as others in which magnesia was not present. The slaty marls of the keuper formation in Würtemberg, which are frequently employed in vine-cultivation, and often also as an under-dressing for corn crops, almost always containing carbonate of magnesia, the proportion of which sometimes amounts to 30 per cent. Berthier found magnesia in union with silica in the fertile soils around Lille; Burger gives an instance of very fertile soils formed in Carinthia by the disintergration of serpentine and chlorite; Davy also, in his "Agricultural Chemistry," remarks, that the most fertile districts of Cornwall abound in soils containing mild magnesia. It appears, from these results of experience, to be established, that this earth in combination with carbonic acid, or in union with silica, is entirely uninjurious to vegetation; it even further appears to act beneficially on some plants as a means of nourishment, as is the case, according to Sprengel, in the culture of Flax, in the ashes of which plant especially, there is a large portion of magnesia. The ashes of several other plants also contain not unfrequently a certain amount of this earth; its presence however does not appear to be absolutely necessary to any of them, since it occurs in the ashes of the perfectly developed plants, in greater and smaller quantities, or is even absent altogether, according to the composition of the soils in which they have been respectively grown, as has been particularly noticed by Berthier in the ashes of the Oak. In its caustic state magnesia is decidedly injurious to vegetation. Tennant first observed this effect in England, in the case of a marl which contained from 20 to 21 per cent. of lime, and from 29 to 31 per cent. of magnesia, (in union with carbonic acid). He endeavoured to explain its action by the circumstances of the small affinity of magnesia for carbonic acid, and the longer time the magnesia consequently required to become saturated with that acid, than is the case with quicklime; its presence thus, he thought, preventing the lime from becoming so quickly saturated with carbonic acid as in its simple state, without the magnesia, would have been the case. Experiments of my own on this point have likewise confirmed the injurious effect of caustic magnesia. Corn, Peas, and garden-crops, which I sowed partly in calcined magnesia previously moistened with water for 24 hours and exposed to the air; and partly in earth merely mixed with calcined magnesia, either germinated not at all, or with a developed germen which soon became sickly, and the young plants soon died away; while other seeds of the same plants sown at the same time in pure siliceous sand, carbonate of magnesia chrysolite, and other light insoluble powders, were, by similar treatment, under the same external circumstances, well developed. The injurious action of magnesia appeared to me in these experiments to depend especially on a physical cause; I always remarked that the substances which came into contact with it acquired the character of hydraulic mortar; the earthy particles became hardened, even while in a thoroughly wet state (as another series of experiments with this earth had previously shown me); in consequence of which, the germ and young plants could no longer develope themselves freely in the soil; even with a small admixture of calcined magnesia, was this the case. The solubility which magnesia, in its calcined state, possesses to a certain extent, and the weak alkaline properties it consequently exerts, may likewise contribute to this injurious effect. Sprengel endeavoured to explain the injurious qualities of magnesia on vegetation, by the great solubility which this earth exhibits, in combination with humic acid, as humate of magnesia, and the too great amount of nourishment which plants on that account absorbed, becoming injured in such case, as in every other, in which the supply of rich pabulum is superabundant. This may, under certain circumstances, be the case; but from my own experiments, in which neither humus nor humic acid came into play, calcined magnesia alone, and of itself, clearly acted injuriously on young plants. We cannot understand either, on this principle of explanation, why carbonate of magnesia, in fertile soils containing humus, should not also frequently have a similar injurious effect, since, in this case, humate of magnesia must likewise be often formed. An experiment, too, of Davy, is unfavourable to the explanation of Sprengel. He remarks, that a soil containing much organic matter, had a larger proportion of caustic magnesia in its composition than another soil, in which such was not the case; that peat, for instance, is an active and appropriate corrective for soils that have previously suffered from too great an application of magnesian limestone, in order to again improve them, and even to convert them into very fertile land.

Magnesian Limestone (or Dolomite).—"The most considerable fact made known with regard to limestone, within the few last years, is owing to Mr. Tennant. It had long been known that a particular species of limestone, found in different parts of the north of England, when applied in its burnt and slacked state to land in considerable quantities, occasioned sterility, or considerably injured the crops for many years. Mr. Tennant, in 1800, by a chemical examination of this species of limestone, ascertained that it differed from common limestones by containing magnesian earth; and by several experiments he proved that this earth was prejudicial to vegetation, when applied in large quantities in its caustic state. Under common circumstances the lime from the magnesian limestone is, however, used in moderate quantities upon fertile soils, in Leicestershire, Derbyshire, and Yorkshire, with good effect; and it may be applied in greater quantities to soils containing very large proportions of vegetable matter. Magnesia, when combined with carbonic acid gas, seems not to be prejudicial to vegetation, and in soils rich in manure it is speedily supplied with this principle from the decomposition of the manure."—*Sir H. Davy's Introd. Lecture.* "The subject of the application of the magnesian limestone is one of great interest. It had been long known to farmers in the neighbourhood of Doncaster, that lime made from a certain limestone applied to the land, often injured the crops considerably. Mr. Tennant, in making a series of experiments upon this peculiar calcareous substance, found that it contained magnesia; and on mixing some calcined magnesia with soil, in which he sowed different seeds, he found that they either died or vegetated in a very imperfect manner, and the plants were never healthy. And with great justice and ingenuity he referred the bad effects of the peculiar limestone to the magnesian earth it contains. In making some enquiries concerning this subject, I found that there were cases in which this magnesian limestone was used with good effect. Amongst some specimens of limestone which Lord Somerville put into my hands, two marked as peculiarly good proved to be magnesian limestones. And lime made from the Breedon limestone is used in Leicestershire, where it is called 'hot lime;' and I have been informed by farmers in the neighbourhood of the quarry, that they employ it advantageously in small quantities, seldom more than 25 or 30 bushels to the acre. And that they find it may be used with good effect in larger quantities upon rich land. A minute chemical consideration of this question will lead to its solution. Magnesia has a much weaker attraction for carbonic acid than lime, and will remain in the state of caustic, or calcined, magnesia for many months, though exposed to the air. And as long as any caustic lime remains, the magnesia cannot be combined with carbonic acid, for lime instantly attracts carbonic acid from magnesia. When a magnesian limestone is burnt, the magnesia is deprived of carbonic acid much sooner than the lime; and if there is not much vegetable or animal matter in the soil to supply by its decomposition carbonic acid, the magnesia will remain for a long while in the caustic state; and in this state acts as a poison to certain vegetables. And that more magnesian lime may be used upon rich soils seems to be owing to the circumstance, that the decomposition of the manure in them supplies carbonic acid. And magnesia in its mild state (that is, fully combined with carbonic acid) seems to be always an useful constituent of soils. I have thrown carbonate of magnesia (procured by boiling the solution of magnesia in super-carbonate of potash) upon Grass and upon growing Wheat and Barley, so as to render the surface white, but the vegetation was not injured in the slightest degree. And one of the most fertile parts of Cornwall, the Lizard, is a district in which the soil contains mild magnesian earth. The Lizard Downs bear a short and green Grass, which feeds sheep producing excellent mutton; and the cultivated parts are among the best corn-lands in the county. That the theory which I have ventured to give of the operation of magnesian lime is not unfounded, is shown by an experiment I made expressly for the purpose of determining the true nature of the operation of this substance. I took four portions of the same soil; with one I mixed one-twentieth of its weight of caustic magnesia, with another I mixed the same quantity of magnesia and a proportion of a fat decomposing peat equal to one-fourth of the weight of the soil: one portion of soil remained in its natural state, and another was mixed with peat without magnesia. The mixtures were made in December, 1806; and in April, 1807, Barley was sown in all of them. It grew very well in the pure soil, but better in the soil containing the magnesia and peat, and nearly as well in the soil containing peat alone; but in the soil containing the magnesia alone, it rose very feeble, and looked yellow and sickly. I repeated this experiment in the summer of 1810, with similar results, and I found that the magnesia in the soil mixed with peat became strongly effervescent, whilst the portion in the unmixed soil gave carbonic acid in much smaller quantities. In the one case, the magnesia had assisted in the formation of a manure, and had become mild; in the other case, it had acted as a poison. It is obvious, from what has been said, that lime from the magnesian limestone may be applied in large quantities to peats; and that where lands have been injured by the application of too large a quantity of magnesian lime, peat will be a proper and efficient remedy. I mentioned that magnesian limestones effervesced little when plunged into an acid. A simple test of magnesia in a limestone is this circumstance, and its rendering dilute nitric acid, or aquafortis, milky. From the analysis of Mr. Tennant, it appears that the magnesian limestones contain from 20.3 to 22.5 of magnesia, from 29.5 to 31.7 of lime, 47.2 of carbonic acid, and 0.8 of clay and oxide of iron (per cent.). Magnesian limestones are usually coloured brown or pale yellow. They are found in Somersetshire, Leicestershire, Derbyshire, Shropshire, Durham, and Yorkshire, 'I have never met with any in other counties in England; but they abound in many parts of Ireland, particularly near Belfast."—*Sir H. Davy's Seventh Lecture.*

Oxides of Iron.—The peroxide of iron, like other matter insoluble in water, appears frequently to remain as an inert and indifferent ingredient of soil in reference to vegetation, when no strong acids exist in the soil, by which it may be dissolved; a circumstance, indeed, that very seldom occurs. In some experiments which I made on a small scale, plants developed themselves well in rich soils mixed with peroxide of iron, so long as the soil possessed the other physical properties favourable to vegetation. There are even soils on a large scale which not unfrequently are abundantly fraught with this oxide, particularly in countries lying on the keuper and lias-sandstone formations, like many in South Germany, which belong to the most fertile districts for orchards, vineyards, corn-fields, and the growth of almost every kind of fruit. We might, accordingly, be even tempted to ascribe to peroxide of iron, individually, a particularly beneficial agency, which, however, it does not appear to possess, at least not for many of the cultivated plants. There are no less fertile tracts of land on the white Jura limestone, in districts of which the soils contain only inconsiderable traces of that oxide; although, at the same time, it is not to be doubted that soils rich in the peroxide of iron appear to be particularly favourable to certain plants, as, for instance, to the Cinchona ferruginea in the Brazils. The protoxide of iron, on the other hand, appears to be of less value than the peroxide for vegetation, as it more easily forms salts of iron injurious to plants; and also, from its imperfectly oxidised state, is more likely to abstract oxygen from the surrounding soil, and from the roots of plants ramifying themselves throughout it. The marls, which contain much protoxide of iron, often become on this account only beneficial in their action after they have been exposed to the atmosphere for some time previous to their application. Chaptal adduces some observations on lands which, in consequence of the ploughing up of the black protoxide of iron, remained sterile for some years, but which afterwards attained a high degree of fertility on the saturation of the soil with oxygen; a result that in one case was accompanied with a change of colour in the soil from a dingy brown to a deep yellow. The beneficial effect of turf-burning in the cultivation of peat lands appears also, at least in part, to rest on the same cause; as the protoxide of iron, which not unfrequently occurs in such land, is by this operation more speedily converted into the peroxide. The well-known fact, that the Hortensia speciosa, so frequently cultivated as an ornamental plant, developes blue flowers, instead of its ordinary red ones, when it is planted in soils which are rich in protoxide of iron and fine carbonaceous particles, or which contain the latter only, indicates, in a particular manner, that such imperfectly oxidised bodies may even exert deoxidising effects on the plants grown in them. These artificially blue-flowered Hortensias become as ordinarily red when their petals are only touched lightly with a weak acid, a clear proof that this blue colour had not been occasioned solely by absorbed particles of charcoal or protoxide of iron, as had been already assumed. We should, moreover, greatly err in regarding soils which contain protoxide of iron as being generally injurious to vegetation. I found various plants develope themselves well in soils to which I had added several per-centages of pure protoxide of iron. Soils of great extent, too, not unfrequently occur, containing that protoxide, without its being known to exert an injurious influence on vegetation. Such soils appear on the grounds already stated, only to be capable of assuming, under certain external circumstances, more easily than other soils, these properties which are injurious to vegetation.

Oxide of Manganese.—As this metallic oxide does not commonly occur in soils free, but combined with earths and peroxide of iron in an almost insoluble state, it appears frequently to remain as an indifferent and inert ingredient of soil; and I found by artificial mixture of it in large proportions with soil, to be uninjurious. Sprengel found in the Waldeck a marl containing 4 per cent. of oxide of manganese, which was applied with great advantage to the improvement of the Grass-lands. Its amount, moreover, is very various in the ashes of plants; and in the case of the same plant, even at its perfect development, it does not occur constantly in the same proportion. It would appear that it must be classed rather with the accidental ingredients of the soil than with those component parts of it which are essentially necessary for vegetation.

## Home Correspondence.

*Thatch "versus" permanent Shelter.*—When a large stock is kept through the winter, economy in the use of straw is requisite. The quantity required for thatching, first the hay-ricks and then the corn, is considerable; and this at a period at which the stock of straw usually runs short. Again, the annual expense of thatching a large number of ricks is great. Furthermore, several

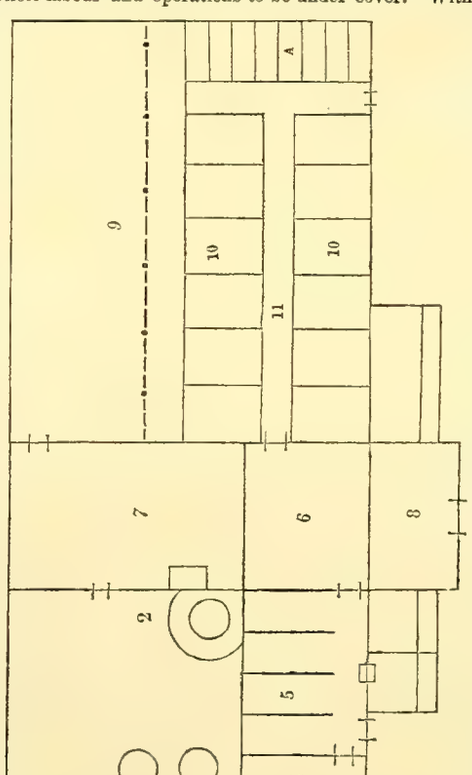
are necessarily left exposed for more or less time to damage from rain, both while making and when finished, unless many hands are engaged in preparing the straw, and in thatching at a period at which they are wanted gathering in in the fields. I have seen, in various parts of the country, permanent sheds in use for storing hay from the field, mere roofs supported on high poles or timber braced together, but open on all sides. Are you or any of your readers aware of any practical objection to this mode of saving hay? Is there any good reason why similar sheds should not be constructed for housing corn? These might be placed on cast-iron standards, capped, to keep out vermin, as staddles now are. The advantages in catching weather, saving the cost and labour attending rick-cloths, the annual preparation and consumption of straw, economy of space (for at least twice the quantity would be protected in a given space as compared with the ordinary plan), are very obvious. The expense, where Larch is grown, would be little more than the laths and slate; and when it is considered this would last 40 years, when well put together, and the other expenses are of annual occurrence, it is conceived there can be no question about the economy of the permanent shed. There may, however, be serious objections which do not occur to me, but which some of your more experienced readers may suggest. It is a subject on which it may be useful to invite discussion. *C. L.*

*The present State of Irish Agriculture.* — Having reviewed the chief measures in operation for the relief of Irish husbandry, they all appear to labour for the furtherance and prosecution of the one common object—the rural instruction of the people. I have succinctly traced the cause of this ignorance, from which results the pauperism of the people—the stagnation of industry and the inertitude of the country's resources. If we admit national ignorance as the national barrier to national prosperity, we must grant education to be the primary means—the true foundation on which to raise the superstructure of that great reformation. We are a people blessed with natural facilities for making up a country's greatness; and we are a nation presenting that anomalous position of a people paralysed from want of knowledge, which is a want of power. We want an education to inspire confidence to begin, and energy to sustain the improvement of Ireland by her sons. The progress of education is slow; its unit of time is a generation; but slowness of progress is essential to permanence of truth. Happily education is not now-a-days confined to a particular class—the progress of all things has broken down the barrier which shut out the light of science and of truth from those of humble means. The schoolboy must have his industrial, his working hours as well as his school hours. The development of the intellect, the formation of character must be supported by the powerful adjuncts of useful inclinations. To combine agriculture with literary studies is evidently a step in the right direction. It is a plan that enhances the liberty of youth from the thraldom of traditional prejudices—of those prejudices so faithfully imparted from sire to son, which mock at reason, enslave truth, and restrict the freedom of honest inquiry. Teach, therefore, the principles of improved agriculture to the scholar in the schoolroom, and such knowledge will aid him in the field. *Libra, April 9.*

*Produce of Cows.*—Seeing, in your valuable paper, of the 29th ult., that "A Subscriber's" cows, are producing 6¼ lbs. of butter each weekly, I am induced to state that I have a cow, five years old, of the Sussex and Devonshire breed, that with a small quantity of hay, and about 6 gallons Mangold Wurzel daily, with the run of 1½ acre of meadow (a large portion of which, owing to the late rains, has been of little use) has for these five weeks produced 12 lbs. of butter of superior quality weekly. *R. Newman, Stedham Hall, near Midhurst, Sussex.*

*Conveyance of Liquid Manure.*—In a former communication I incidentally mentioned some of the advantages accruing from the employment of Crosskill's portable farm railway. Since then I have succeeded in turning it to good account as a means of conveying liquid manure upon the land in wet weather, without injury to the soil. Hitherto I have used the liquid manure cart for this purpose. I need not tell those who have used it, that it is a barbarous apparatus though I confess to its usage, however suspicious I might have been that it occasioned more injury to the land than the manure did good. Still I did use it, because I disliked the idea of waste. However, as soon as I obtained my portable railway, I resolved if possible to apply it to this purpose; I therefore purchased a large cask holding 260 gallons, and fitted it upon one of my railway trucks. From Burgess and Key, of Newgate-street, I bought some 2-inch gutta percha canvas hose, in lengths of 10 yards each, and also a gutta percha tap to fit into the cask. Having thus obtained the requisite apparatus to work with, we laid down the rails from the tank to the field over which we wished to spread the liquid manure, and commenced by watering on each side of the railway to the extent of one length of the hose; after this was finished we lengthened the hose another 10 yards, and thus we continued till the watering of the field was completed. For this work two men are required; and I find that they convey twice as much liquid manure upon the land in a day as I was accustomed to draw out with the cart and a man and two horses. I need scarcely add that the land was not kneaded at all, although the liquid was applied in the wettest of weather, and upon a very tenacious soil. The extreme distance to which the liquid manure was conveyed was about 400 yards. I think it due to the manufacturers who bring their genius and skill to the aid of the agriculturists in these transition times thus to acknowledge our indebtedness to them; and therefore I request the insertion of the above in your valuable Paper. *J. M. Paine, March 22.*

*The subject of Farm Buildings* is deservedly engrossing a considerable share of attention at the present time; and as without convenient buildings farming cannot be made profitable, I venture to give my ideas upon it, in the hope that some of your correspondents, better qualified than myself, may be led to the subject; and, improving on these rough notes, reduce them into a working and practical shape. Considerable disappointment was felt with regard to the plans in No. 25 of the Royal Agricultural Society's Journal, on the construction of farm buildings. Not so much with the arrangement, as at the enormous expense, for it is too costly to sink 1200*l.*, or 1500*l.*, in buildings upon a farm of 300 acres. The Society should have pointed the way, not merely to good, but in these depressed times, to economical buildings, and until it has done this, it cannot be said to have conferred an obligation on the country with respect to this subject. The objects to be kept in view in erecting a "farmery," are first of all adaptation—making each office precisely what the best systems of feeding and working require—and arranging the whole, that the processes may be, so to speak, consecutive. The depôt of food and litter should adjoin the stables, cattle-boxes, and piggeries. No carrying back—no doing and undoing of work—the whole labour and operations to be under cover. With a strict regard to these essentials, we must keep a strict eye on the expense. To give a better idea than I possibly could do by any verbal description, I subjoin a rough ground sketch of buildings for a small farm, say of 100 acres, embracing the advantages of extensibility and economy, both in first cost and of future working. I have not attempted to lay it down on any correct scale; leaving it to individual taste, or to others of greater experience, to fix the dimensions of the respective offices; of course, the barn must be roomy, so as to afford space for an ordinary sized stack of Wheat behind the machine, which should be so placed as to throw the straw into the straw-house, and the corn and chaff into separate chambers: a floor level with the top of the machine will serve for chaff-cutting, corn-crushing, and other operations of a like nature; the chaff may be delivered either into the straw-house or cook-shop. From the straw-house we have doorways and feeding paths leading through the stables, cattle-boxes, and stalls. The cook-shop and root-house to be a lean-to from the straw-barn, and the piggeries from the stables and boxes. If required, a straw-yard may be formed on the south of the boxes; the implement-shed will be near the horses, and the latter close to the hind's cottage; the poultry-house to be also near at hand, and the stack-yard one side of the barn. As I know you could not afford space for a lengthy dissertation, and as after all a plan is worth a volume of description, I subjoin it, and make my bow, with an intimation, that by working up old materials, I think the cost should not exceed 300*l.* *Columella, Stockton.*




*Description of Woodcut.*—1, Stack yard; 2, Horse Walk; 3, Implements; 4, Loose Box; 5, Stable for four horses; 6, Straw; 7, Barn; 8, Cookery and Root room; 9, Fold, or Straw-yard; 10, Cattle Boxes; 11, Feeding Path; A, Stalls for cows or feeding; B, Cottage; C, Road.

*The Lark.*—We cannot, as Mr. Kidd proposes in your Journal, allow the question of the English lark to remain open, for no bird is more destructive to, and more difficult to drive away from, young corn than the lark. I have often been moved to wrath by the very unmistakeable effects of their proceedings, in the young shoots of corn lying on the ground, as if their appearance had given the bird first notice of the existence of the grain. I have driven up flocks of skylarks, and have scolded my bird tenters for their negligence; but they always assure me they cannot keep off the larks; and I believe them, as I have frequently assisted them in their labours with a gun, which merely drives the birds to another remoter part of the field. I should say that no observant farmer could enter the lists on the side of Mr. Kidd; and however agreeable a songster the lark may be, there is no doubt, as Mr. Foreman observes, of the farmer having to pay dear for his whistle. I am ready to produce witnesses of the truth of what I assert. *P. A. Hurt, Etwall, Derbyshire.*

*The Guano Trade.*—The importance of the subject will, I trust, excuse me for again trespassing on your space in this question. Since my first letter, I have been favoured with information volunteered by parties in the trade, substantially confirming my statements; and from more special inquiries since made by me in Liverpool, I have obtained the following particulars, which may be relied on. The comparative prices of guano and average rates of freight, during the months of April and May, from the importers, were as follow:—

| For the three years | 1849, | 1850, and 1851. |
|---|---|---|
| Price of Peruvian Guano | 9*l.* | 9*l.* 5*s.* 9*l.* 5*s.* |
| Average Freights paid | 4*l.* | 3*l.* 15*s.* 3*l.* 7*s.* 6*d.* to 3*l.* 10*s.* |

Some of the large ships arriving this month may be as low as 3*l.* 5*s.*; and by the advices of last mail, vessels were being freighted at 55*s.* to 60*s.* per ton. There can be no doubt, therefore, that the importers for the Peruvian Government are making a clear additional profit, from the fall in freights; and that in the course of the season, as the lower freighted vessels arrive, they may sell their guano at 7*l.* 15*s.* with the same profit which satisfied them in 1849. It is very galling to the farmers, who have been such good customers to the Peruvian Government, to find themselves entirely deprived of the benefit of the present reduced rates of freight. *James Caird, Baldoon, May 7th.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House, in Hanover-square, on Wednesday last, the 7th of May; His Grace the Duke of Richmond, K.G., President, in the chair. The following Members of Council and Governors were present:—Earl of Ducie, Earl of Chichester, Lord Berners, Lord Southampton, Lord Bridport, Lord Portman, Sir Thomas D. Acland, Bart., M.P., Sir M. W. Ridley, Bart., Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Colonel Austen, Mr. Raymond Barker, Mr. Barnett, Mr. S. Bennett, Mr. Bramston, M.P., Mr. Brandreth, Mr. W. G. Cavendish, M.P., Colonel Challoner, Mr. Evelyn Denison, M.P., Mr. Druce, Mr. Foley, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Kinder, Mr. Jonas, Colonel Le Couteur, Mr. Milward, Mr. Pendarves, M.P., Prof. Sewell, Mr. Shaw (London), Mr. Shelley, Mr. Sillifant, Mr. Simpson, Mr. Slaney, M.P., Mr. Spencer Stanhope, Mr. Stansfield, M.P., Mr. C. Hampden Turner, Mr. Turner (Barton), Mr. Jonas Webb, and Mr. Wilson, of Stowlangloft.

Hepburn, George, Chesham, Buckinghamshire.
Gainthorpe, Henry, Norman-road, Rusholme, Manchester.
Denman, Arnold, South Malling, Lewes, Sussex.
Sterriker, John, Driffield, Yorkshire.
Southam, Henry, Uppingham, Rutlandshire.
Barrett, Stephen, Harewood, Leeds.
Taylor, Isaac, Castle-house, Flint.
Parker, Thomas James, Endcliff, Sheffield.
Elmhurst, Rev. E., Shawell Rectory, Lutterworth, Leicester.
Roberts, Frederick Rowland, Aberystwith, Cardiganshire.
Gardiner, Samuel Weare, Coombe Lodge, Reading.
French, Richard Day, St. John's, Bungay, Suffolk.
Faviell, Mark, jun., Syndale-hall, Pontefract, Yorkshire.

The names of 12 candidates for election at the next monthly Council were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the Report on the Accounts of the Society, to end of the previous month; from which it appeared that the current cash-balance in the hands of the bankers was 1668*l.*, (including 850*l.* on account of Life-Compositions). The Chairman also laid on the table the quarterly statements of income and expenditure, funded property and liabilities. This Report was received and adopted.

Country Meeting of 1851. — Lord Portman laid before the Council a report from the General Windsor Committee, which was received and adopted.

Country Meeting of 1852. — The Council was favoured with the attendance of Deputations from the South-Eastern District, including Viscount Torrington,

Hon. Henry Fitzroy, M.P., Hon. Henry Brand, Sir Edward C. Dering, Bart., Sir Henry Shiffner, Bart., Mr. Deedes, M. P., Mr. Dodd, M.P., Mr. Law Hodges, M.P., Mr. Davey (chief constable of the borough of Lewes), Mr. Ellman of Glynde, Mr. Figg, Mr. Laing (chairman of the South-Eastern Railway Company), Mr. Mac-Gregor (chairman of the Brighton and South-Coast Railway), Mr. Mouckton (town-clerk of Maidstone), Mr. Alderman Randall, Mr. Scudamore, Mr. Tanner, Mr. Tootell (Mayor of Maidstone), and Mr. Alderman Whichcord. These gentlemen kindly furnished to the Council the fullest information connected with their respective localities, and the facilities of communication which each of them offered in reference to other localities of the district or to the metropolis; and received, through the President, the best thanks of the Council for the favour of their attendance on that occasion.

Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Brandreth Gibbs, and Mr. Milward, then presented to the Council the Report of their personal inspection of the localities offered in the towns of Lewes and Maidstone, and their respective vicinities, for the purposes of the Society, in reference to its Country Meeting to be held in 1852, in the south-eastern part of England. The report gave a detail of the position and amount of accommodation of each of the proposed sites, and concluded with the expression of an opinion, that either of the places in question fully met the requirements of the Society as a locality for its Country Meeting, and at both of them the members of the Inspection Committee received from the authorities every kind facility to promote the object of their inquiries.

The Council then proceeded to make a selection of the particular place at which the Country Meeting of 1852 should be held, when it was finally carried, on the motion of Mr. Brandreth, seconded by Mr. Shelley, that Lewes should be the place of such meeting. The Lewes Deputation, on again being invited into the Council room, were informed by the President of the decision to which the Council had then come, and informed of the condition under which it was made, namely, that the chief officer of the borough of Lewes should, by that day week, conclude with the Secretary of the Society the usual agreement for the ratification and fulfilment of the stipulated engagements.

Country Meeting of 1855.—The Council having already decided on the South Wales district for the country meeting of 1853, and the North-East Midland district for that of 1854, proceeded, on the motion of Lord Portman, to constitute Lancashire, Westmoreland, Cumberland, and the Isle of Man, as the district of the Country Meeting to be held in 1855.

Judges.—The following committee was appointed for the selection and recommendation to the Council, of judges for the Windsor meeting, namely, the Earl of Ducie, Mr. Barnett, Mr. Brandreth, Col. Challoner, Mr. Druce, Sir John V. B. Johnstone, Bart., M.P., Mr. Jonas, Mr. Milward, Mr. Shaw (London), Mr. Simpson, and Mr. Stokes.

Pavilion Dinner.—Mr. Raymond Barker having called the attention of the Council to the number of persons for which the Dining Pavilion in the Home Park, Windsor, should be constructed, it was carried, on the motion of Mr. Shaw, seconded by Mr. Bennett, that accommodation should be provided for a number not exceeding 2000.

Election of Members.—Mr. Fisher Hobbs having moved, and Sir M. W. Ridley seconded the motion, that, for the purpose of leaving the weekly meetings free for practical discussions, an alteration should be made in the bye-laws, by which the nomination and election of members should be confined (like other official business, as now arranged) to the monthly Councils. This motion was carried, with an amendment made by Lord Portman (who conceived that every facility should be afforded to those friends of agriculture who wished to join the Society, and promote its practical objects), that, while the election should be restricted to the monthly meetings of the Council, the proposition of candidates should take place at every meeting of the Council, whether weekly or monthly, as had hitherto been the rule of the Society.

Captain Pelham.—The President expressed his deep regret, on the loss sustained by the Society in the premature death of the Hon. Captain Pelham, and announced the vacancies which that loss occasioned in the Council, and in the list of stewards of implements.

The Council then decided on the arrangements connected with the ensuing general meeting of the Society on the 22d inst., at 12 o'clock; and adjourned to Wednesday next, when Professor Way would deliver a lecture before the members, on the agricultural employment of common salt.

## Calendar of Operations.

### MAY.

Lammermuir Sheep Farm.—The first week of the lambing commenced about the 15th of last month, under the most favourable circumstances, the ewes, being in good condition, had plenty of milk, and the lambs were healthy and vigorous. For several days the thermometer ranged from 45° to 52°; at the latter it was standing on the evening of the 25th—with a few peals of distant thunder. Next morning the ground was covered with two inches of snow, with a stormy north-east wind. Though the snow had melted during the day, the hills have presented the same appearance since—besides heavy hail-showers during the day. The night of the 28th was excessively boisterous, with a long-continued thick sleet, which is worse even than dry snow for young lambs. Fortunately the shepherds had the afternoon's warning, and had their charges laid into the most sheltered places, otherwise the loss must have been great. As it is, we fear, from what we have heard, that in some places it has been considerable. Our own loss was only 8, which, as nearly 1500 ewes had lambed, is much less than we anticipated. The half of these also did not perish from sheer cold, but were drowned in sheep-drains, which have been, and still are, much flooded. We are glad to say that appearances would now indicate more favourable weather. Upon the whole, our loss, from the usual casualties of the lambing season, have been light, and hitherto we have had a sufficiency of twins to supply the blanks. Twins, in such situations as this, are not desirable, further than to meet such demands—indeed, the supply very rarely exceeds the demand—as they can scarcely be brought through without the assistance of seeds. If a ewe can make one good lamb, and keep herself in fair condition, on our lean pastures, she does very well, and will pay better than two inferior lambs from a ewe with a half—and frequently no—fleece, and so reduced as to be unfit to dispose of with the rest, if necessary, or unable to stand the privations of the coming winter, if kept on. Another week will see the bulk of the lambing over, after which the unlambed ewes will be taken out from the rest and examined; those that are barren being marked and returned to the hill, and such as are in lamb kept by themselves, until all lambed. The reason for this is, that as a large proportion of casualties take place at the end of the season, when the ewes begin to improve in condition, they are thus now under the eye of the shepherd, instead of being scattered up and down over several hundred acres. The earliest lambs will be castrated about the middle, and the youngest about the end of May. We are in the habit of burning our initial letter on the horns of the blackfaces; this was done to the ewe hogs about three weeks ago, at the time their jackets were removed, the horn not being sufficiently grown in autumn for this operation. The sowing of Oats was only completed last week, being much too late; but as Barley does not succeed here, and the last of the Turnips to be eaten by sheep on the ground were only finished a few days previously, there was no help for it. We only wait for favourable weather to sow the Grass seeds. We expected to have had the Potatoes planted this week; this also must be postponed, from the wet state of the ground. Meanwhile the horses are carting out manure for Turnips, and getting foreward with some odd jobs, that there may be as little distraction as possible from the main work of this month—the preparation of the ground for, and the sowing of Turnips. The cattle are still in the byres. We have sufficient Swedes in store to last them a fortnight, after which they will be turned out to Grass. *A Lammermuir Farmer. May* 1.

### METEOROLOGICAL REPORT.—April—May.

(*Continued from page* 285.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Apr. 26 | 6.55 a.m. | 29.73 | ... | About 9 a.m. the wind shifted from NNW. to SW., and at noon to WNW., with a very heavy appearance in NW. horizon, and in the evening to NNW. |
| | 10.20 p.m. | ... | 29.61 | A brisk breeze all day, with occasional showers. |
| Sun. 27 | 7.50 a.m. | 29.56 | ... | Gentle breeze at N., but a very cold day. |
| * | 5.20 p.m. | ... | 29.47 | |
| | 10.30 p.m. | 29.48 | ... | |
| 28 | 7.45 a.m. | ... | 29.50 | N. a.m. Bright fine morning, gentle breeze. |
| | 10.20 a.m. | 29.51 | ... | |
| † | 2 p.m. | ... | 29.51 | At 2 p.m. wind shifted to SSW., veering to WSW. at sunset, blowing gently; thunder about 3 p.m. |
| | 9 p.m. | 29.54 | ... | |
| ‡ 29 | 7 a.m. | ... | 29.50 | At 7 a.m. W., veering at noon to WNW. and NW.; frequent showers during the day. |
| | 7.20 p.m. | 29.54 | ... | |
| § 30 | 7.10 a.m. | ... | 29.54 | WNW. all day; at sunset, NW. Brisk breeze, with frequent hail showers in the forenoon. |
| | 10.15 p.m. | 29.60 | ... | |
| May 1 | 10 a.m. | 29.66 | ... | SW. Heavy and frequent showers. |
| ¶ | 10 p.m. | ... | 29.54 | |
| 2 | 7 a.m. | ... | 29.58 | NNW. Brisk pleasant breeze, with occasional heavy clouds. |
| | 10.40 p.m. | 29.72 | ... | |
| ** 3 | 7.30 a.m. | 29.70 | ... | WNW. to NW. Heavy rain in night; fine sunny day. |
| | 4 p.m. | ... | 29.62 | |
| 4 | 7.50 a.m. | 29.62 | ... | N. Stiff breeze, and bright sunny day; at 2.50 very dark appearance in NW. horizon. |
| | 2.50 p.m | ... | 29.59 | |
| | 9.20 p.m. | 29.63 | ... | |

* A storm travelling from west to east, having its central track considerably to the northward.

† A storm travelling from south; and, on overtaking the preceding storm, curving to the eastward.

‡ A storm coming from westward, and passing away to eastward.

§ A storm coming also from westward, and passing away to eastward.

All these currents followed each other in very quick succession. As the season is approaching in which thunder-storms more peculiarly occur, it will be interesting to watch their effect upon the barometer.

¶ Those of her Majesty's subjects who were present at the inauguration of the Crystal Palace, will long remember what a beautiful day was vouchsafed to the wishes of those who had looked forward with so much anxiety to this interesting ceremony, and they would scarcely suppose that at so short a distance the weather was so unpropitious; but the preceding storm having passed away, London was on the confines of one which was slowly approaching from the westward and going away to the eastward; the central storm's-eye passed over Woolwich on the afternoon of the 2d and about sunset rain began, with the wind at N.

** This storm came from the westward, and passed away to north-east, its track lying a considerable distance to the NW.

Dorchester, May 9th. *F. P. B. M.*

(*To be continued.*)

## Notices to Correspondents.

Charcoal: *J L.* As much as will take up 300 or 400 gallons of urine would be a good dressing for an acre.

Cheese-room: *J M* says, "I have a cheese-room 18 feet by 16½ feet, and 9 feet in height, which I am desirous of having fitted up with a steaming apparatus. Can any of your readers inform me what sized boiler and condensing cistern, and what kind of pipes (material and bore), would be best adapted and cheapest for the purpose, so as to give the room about 75° of heat in winter; and whether should the cistern be placed in the room?"

Chicken Fatting: *Anna.* We advise you to buy Baily's "Dorking Fowl: Hints for its Management and Feeding for the Table." 1*s.* 6*d.* It would not be fair in us to transfer its contents to our "Notices to Correspondents."

Early Dutch Turnips: *A B.* We do not suppose that by themselves they will be a sufficient substitute for Grass with cake. Your sheep will not maintain their ground unless you give them cake or Beans as well.

Farms in the South: *Scotchman.* We cannot take it upon us publicly to invite visitors to the different localities worthy of inspection. But on giving your address, we will privately name two or three where you might apply for permission to inspect.

Gorse: *E G.* Your specimen is the common Whin, which is used in some places for fodder. Another sort is also used which is not so coarse and woody, but does not yield seed, and must therefore be grown from sets and layers.—*Cottage Farmer.* There is no botanical difference that we know between what they call French Gorse and the common Whin. The Ulex stricta, or Irish Whin, is a distinct species, of a more upright and compact growth, softer and more tender, and is more easily prepared for food. We do not know the "Champion" Potato.

Management of Manure: *A Farmer.* It has been frequently detailed in our columns. We will, however, again refer to this subject.

Peat Charcoal: *A B.* It is very suitable for Vine borders See page 132 of the current year's volume.‡

Scientific Knowledge: *Ignoramus.* "How much is necessary?" Enough to enable you thoroughly to see in your farm a geological museum, a nursery, a hospital, a botanical garden, a laboratory, not forgetting all the while that it is a field on which *capital has to be made profitable.* Enough to enable you to see in part the limited extent of your own knowledge—for that is generally a pretty good test of one's attainments. We heard the other day of one who fell most miserably before this test. A single course of lectures had already fully filled him; and he applied to a neighbouring landowner—himself the son of one!—for a vacant farm. "Why do you not take land of your father?" was naturally asked. "Why, Sir, my father would object to the scientific style of farming I should wish to adopt—in short, Sir, he is far from being acquainted with the *Hacids* and the *Halkalies* of the present day."—This conversation really occurred. Poor fellow! What good had "a little knowledge" done for him?

Sugar Beet: *Irishman.* We do not expect the yield of sugar will be found enough to reward the cultivation and the manufacture.

Yellow Clover: *W Jackson.* Medicago lupulina is a wild plant growing in waste ground. It is annual. It may occur in arable fields unsown. Sown in 1841 on land since cultivated, it would not be possible for many plants to survive, so as that having been sown with red Clover in 1844, one half of the plants should turn out Trefoil. The seed professing to be red Clover must have been mixed with the seed of the yellow Clover.

Yew: *W S.* Sheep will eat Yew when it is withered, and it is then *extremely poisonous. W. C. S.*

Yield of Drainage Water: *T W T, Cheshire.* We have to acknowledge, with thanks, the receipt of your reply to our question.

Erratum. I beg to rectify a mistake in the article from me on "Spade Husbandry," which appeared in your *Agricultural Gazette* of April 26th, where it is stated that 18 inches of the length described should occupy the *handle* of the instrument, which measure I intended to be applied to the *blade*, not the handle. *E. T.*

## Markets.

### COVENT GARDEN, May 10.

Hothouse Grapes are plentiful and cheap, and the same remark applies to Strawberries. Pine-apples are more abundant. Dessert Apples chiefly consist of American Newtown Pippins. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good. Large supplies of Asparagus, young Carrots, French Beans, and Green Peas have been received during the week from France, Cucumbers from Holland, and considerable quantities of Potatoes and Asparagus from Cornwall, as well as some good Gooseberries; the latter fetch 2*s.* per pottle. New Potatoes may be obtained at from 4*d.* to 1*s.* per pound; old kinds realise better prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1*s.* 6*d.* per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

#### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 8*s* to 12*s* | Oranges, per doz., 9*d* to 2*s* |
| Grapes, hothouse, p. lb., 5*s* to 10*s* | — per 100, 6*s* to 14*s* |
| — Portugal, p. lb., 1*s* to 2*s* 6*d* | — Seville, p. 100, 7*s* to 14*s* |
| Strawberries, per oz., 6*d* to 1*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Pears, per doz., 2*s* to 5*s* | Lemons, per doz., 1*s* to 2*s* |
| — per half sieve, 6*s* to 15*s* | Chestnuts, per peck, 2*s* to 5*s* |
| Apples, dessert, p. bush., 6*s* to 10*s* | — per 100, 9*d* to 1*s* 6*d* |
| — kitchen do., 5*s* to 8*s* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Almonds, per peck, 6*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| — sweet, per lb., 2*s* to 3*s* | Cobs, per 100 lbs., 70*s* to 75*s* |

#### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 1*s* to 1*s* 6*d* | Garlic, per lb., 4*d* to 8*d* |
| Greens, p. doz. bunches, 4*s* to 6*s* | Artichokes, Jerusalem, p. half sieve, 1*s* to 1*s* 6*d* |
| Cauliflowers, p. doz., 1*s* 6*d* to 4*s* | Lettuce, Cab., p. score, 6*d* to 9*d* |
| Broccoli, p. doz. bundl., 7*s* to 12*s* | — Cos, per score, 1*s* to 1*s* 6*d* |
| French Beans, p. 100, 9*d* to 2*s* | Endive, per score, 1*s* to 1*s* 6*d* |
| Seakale, per punnet, 6*d* to 2*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Asparagus, per 100, 3*s* to 8*s* | Horse Radish, p. bundl., 1*s* to 4*s* |
| Rhubarb, p. bundl., 6*d* to 1*s* | Red Beet, per doz., 6*d* to 1*s* |
| Potatoes, per ton, 90*s* to 200 | Mushrooms, p. pot., 9*d* to 1*s* 6*d* |
| — per cwt., 4*s* to 8*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| — per bush., 1*s* 6*d* to 3*s* | Fennel, per bunch, 2*d* to 3*d* |
| Turnips, p. doz. bundl., 1*s* to 2*s* | Savory, per bunch, 2*d* to 3*d* |
| Cucumbers, each, 6*d* to 2*s* | Thyme, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 6*d* to 9*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Carrots, per doz., 4*d* to 7*d* | Marjoram, per bunch, 2*d* to 4*d* |
| Spinach, per sieve, 1*s* to 1*s* 6*d* | Mint, green, per bunch, 4*d* to 6*d* |
| Onions, p. bunch, 3*d* to 4*d* | Watercress, p. 12 bunch., 6*d* to 9*d* |
| — Spanish, p. doz., 1*s* 6*d* to 4*s* | Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d* |
| Leeks, per doz., 9*d* to 1*s* | |
| Shallots, per lb., 6*d* to 1*s* | |

### HOPS.—Friday, May 9.

Messrs. Pattenden and Smith report that the demand for fine coloured Hops continues to increase, and prices to advance, particularly for new Sussex Hops, the quality of which is considered superior to many past years. The late ungenial weather has greatly retarded the progress of the coming crop, and the land being in a wet unkind state, the probability is the crop will not be a heavy one.

| | | | |
|---|---|---|---|
| Mid & East Kents | 75*s* to 130*s* | Sussex ... ... | 70*s* to 84*s* |
| Weald Kents | ... 70 — 90 | Yearlings & old | Hops 20 to 50 |

### HAY.—Per Load of 36 Trusses.

Smithfield, May 8.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75*s* to 85*s* | Clover ... ... ... | 75*s* to 90*s* |
| Inferior ditto... ... | 58 66 | Second cut ... ... | 70 80 |
| Rowen ... ... ... | 60 70 | Straw ... ... ... | 27 32 |
| New Hay ... ... ... | — — | | J. Cooper. |

The supply large, and prices looking down.

Cumberland Market, May 8.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 88*s* to 92*s* | Inferior ... ... ... | 78*s* to 80*s* |
| Inferior ditto... ... | 60 75 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 28 33 |
| Old Clover ... ... | 84 92 | | Joshua Baker. |

WHITECHAPEL, May 8.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | 75s to 80s | | New Clover | —s to —s | |
| Inferior ditto | 60 | 65 | Inferior ditto | 70 | 72 |
| New Hay | — | — | Straw | 24 | 28 |
| Old Clover | 85 | 90 | | | |

COAL MARKET.—FRIDAY, May 9.

Holywell, 13s. 6d.; Eden Main, 14s.; Tanfield Moor, 12s.; Wallsend Gosforth, 13s. 3d.; Wallsend Hetton, 15s. 3d.; Wallsend Stewarts, 15s. 3d.; Wallsend Tees, 15s.—Ships at market, 65.

POTATOES.—SOUTHWARK, May 5.

The Committee report that during the last week there have been several fresh arrivals coastwise, as well as a heavy supply by rail. Our trade continues heavy at the following quotations:—York Regents, per ton, 80s. to 100s.; Scotch do., 70s. to 90s.; ditto Cups, 65s. to 75s.; Cambridge Regents, 60s. to 80s.; French whites, 60s. to 70s.

SMITHFIELD, MONDAY, May 5.

The number of Beasts was larger, consequently trade was heavy, and it was difficult to maintain late quotations. Some inferior qualities remained unsold. The supply of Sheep, although larger, was not excessive; however, trade was dull, and prices had given way. Lambs and Calves were lower. From Holland and Germany there are 578 Beasts, 650 Sheep, 119 Calves, and 14 Pigs; from France, 30 Pigs; from Norfolk and Suffolk, 2700 Beasts; and from Scotland, 330.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Here-fords, &c. | 3 | 6 to 3 | 8 | | Best Long-wools | 4 | 0 to 4 | 2 | |
| Best Short-horns | 3 | 4 — 3 | 6 | | Ditto Shorn | 3 | 4 — 3 | 8 | |
| 2d quality Beasts | 2 | 4 — 2 | 10 | | Ewes & 2d quality | 3 | 0 — 4 | 0 | |
| Best Downs and Half-breds | 4 | 2 — 4 | 4 | | Ditto Shorn | | | | |
| Ditto Shorn | 3 | 8 — 3 | 10 | | Lambs | 5 | 0 — 5 | 8 | |
| | | | | | Calves | 3 | 0 — 4 | 2 | |
| | | | | | Pigs | 2 | 8 — 3 | 6 | |

Beasts, 3976; Sheep and Lambs, 25,460; Calves, 283; Pigs, 360.

FRIDAY, May 9.

The number of Beasts considerably exceeds the demand, and prices generally are low, yet a few choice things still reach 3s. 6d. Sheep and Lambs are more plentiful; trade is very heavy, and they cannot all be sold, although there is a disposition to take even less than we quote. We have a very dull trade for Calves, at lower rates. From Germany and Holland we have 53 Beasts, 170 Sheep, and 191 Calves; from Spain, 250 Sheep; from Scotland, 120 Beasts; from Norfolk and Suffolk, 500; and 89 milch cows from the home counties.

| Best Scots, Here-fords, &c. | 3 | 4 to 3 | 6 | Best Long-wools | 3 | 8 to 4 | 0 |
|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 — 3 | 2 | Ditto Shorn | 3 | 2 — 3 | 6 |
| 2d quality Beasts | 2 | 2 — 2 | 8 | Ewes & 2d quality | 3 | 0 — 3 | 8 |
| Best Downs and Half-breds | 4 | 0 — 4 | 4 | Ditto Shorn | | | |
| Ditto Shorn | 3 | 6 — 3 | 10 | Lambs | 5 | 0 — 5 | 8 |
| | | | | Calves | 3 | 8 — 3 | 8 |
| | | | | Pigs | 2 | 4 — 3 | 4 |

Beasts, 903; Sheep and Lambs, 9210; Calves, 371; Pigs, 395.

MARK LANE.

MONDAY, MAY 5.—The supply of Wheat from Essex to this morning's market was small, that from Kent fair, which was taken off readily at prices about equal to this day week. The demand for foreign is limited, and but little progress could be made in sales; our quotations remain unaltered.—Barley meets a fair sale without any improvement in price.—Beans and Peas are scarce, and sell readily at former rates.—The arrival of Oats is large, but their value is fully maintained.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | 45 | Red | 36 | 43 |
| — — fine selected runs...ditto | 42 | 47 | Red | | 40 |
| — — Talavera | 45 | 52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red | — | |
| — Foreign | 32 | 50 | | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26 | 31 | Malting | 22 | 26 |
| — Foreign... grinding and distilling | 18 | 23 | Malting | 23 | 26 |
| Oats, Essex and Suffolk | 17 | 19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | 23 | Feed | 16 | 21 |
| — Irish ...Potato | 17 | 21 | Feed | 16 | 18 |
| — Foreign ...Poland and Brew | 18 | 21 | Feed | 17 | 20 |
| Rye | 22 | 24 | Foreign | — | |
| Rye-meal, foreign...per ton | — | | | | |
| Beans, Mazagan...22s to 26s...Tick | 23 | 27 | Harrow | 23 | 27 |
| — Pigeon...25 — 31...Winds | — | | Longpod | — | |
| — Foreign ...Small | 22 | 28 | Egyptian | 20 | 22 |
| Peas, white, Essex and Kent...Boilers | 23 | 26 | Suffolk... | 26 | 28 |
| — Maple...26s to 28s ...Grey | 23 | 24 | Foreign | 24 | 31 |
| Maize ...White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 34 | 39 | | | |
| — Suffolk ...ditto | 27 | 34 | Norfolk | 27 | 34 |
| — Foreign ...per barrel | 16 | 23 | Per sack | 26 | 34 |

FRIDAY, May 2.—The arrivals of Wheat and Oats from abroad are liberal, but of other grain and Flour, both English and foreign, small. The attendance at market this morning was thin, and the business done in Wheat limited, prices remaining nominally as last quoted.—For Barley, Beans, and Peas there is a good demand at fully late rates.—The Oat trade continues very firm.—The value of Flour remains unaltered, but there is rather more inquiry for best marks of foreign.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Mar. 22 | 37s 5d | 23s 3d | 16s 9d | 22s 8d | 25s 8d | 25s 9d |
| — 29 | 38 1 | 23 7 | 16 7 | 23 5 | 25 7 | 24 6 |
| April 5 | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| — 19 | 39 5 | 24 5 | 17 5 | 24 7 | 26 10 | 25 9 |
| — 26 | 39 3 | 24 4 | 17 10 | 24 2 | 26 9 | 25 5 |
| May 3 | 38 8 | 24 3 | 18 3 | 23 11 | 27 9 | 25 4 |
| Aggreg. Aver. | 38 9 | 24 1 | 17 5 | 24 11 | 26 6 | 25 2 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | MAR. 22. | MAR. 29. | April 5. | APR. 19. | APR. 26. | MAY 3. |
|---|---|---|---|---|---|---|
| 39s 5d | ... | ... | ... | ... | ... | ... |
| 39 3 | ... | ... | ... | ... | ... | ... |
| 38 8 | ... | ... | ... | ... | ... | |
| 38 4 | ... | ... | ... | ... | ... | ... |
| 38 1 | ... | ... | ... | ... | ... | ... |
| 37 5 | | ... | ... | ... | ... | ... |

SEEDS.—May 6.

| | | | |
|---|---|---|---|
| Canary, per qr. | 38s to 42s | Coriander, p. cwt. | 14s to 21s |
| Caraway, per cwt. | 29 — 33 | Mustard, white, p. bush. | 4 — 6 |
| Hempseed, per qr. | 34 — 35 | — brown, do. | 7 — 10 |
| Linseed, foreign, do. | — | Rape, per last | 24l.—26l. |
| Clover, red, p. cwt. | 40 — 58 | Cakes, Linseed, p. 1000 | 9l. 5s. |
| — — foreign, do. | 42 — 54 | — — foreign, p. ton | 6l. 15s. |
| — white, do. | 42 — 52 | — Rape, foreign, do. | 4l. 5s. |
| — — foreign, do. | 42 — 52 | Tares, per bush. | 3s 0d—3s 6d |

LIVERPOOL, TUESDAY, MAY 6.—The supplies of grain and Flour from Ireland and coastwise continue exceedingly small. There was a good attendance at our market this morning. Most descriptions of Wheat were in moderately fair request, at the prices of Friday, which were rather easier than those of this day week. Flour was moving freely into consumers' hands, at fully late prices. There was a better demand for Indian Corn than during the week, and the price was firmer. The best mealing Oats continue scarce, and advanced 1d. per bushel on last Tuesday's rates. Oatmeal also improved 9d. to 1s. per 240 lbs. Barley, Beans, and Peas quite supported late quotations.——FRIDAY, MAY 2.—The arrivals of grain and and Flour have been moderate. At this morning's market Wheat did not move freely, and late rates were barely obtainable. Flour in fair request. Good mealing Oats continue scarce. Oatmeal improved 3d. per load. Barley, Beans, and Peas brought very full prices.


MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of Half Moon-street Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.

Mixtures for portions of Parks near Mansions.

Mixtures for Garden Lawns and Grass Plots.

Mixtures for renovating Old Pasture Land.

Italian and other Rye-grasses.

White Belgian and Red Altringham Carrots.

Gibbs' new very large Parsnip.

Orange Globe Mangold Wurzel.

Long Red and other kinds.

Drumhead and Thousand-headed Cabbages.

Swedes, Hybrids, and other Turnips.

Clovers, Kohl Rabi, French and English Furze.

Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of Half Moon-street Piccadilly, London.

HARTLEY'S PATENT ROUGH PLATE-GLASS FOR CONSERVATORIES, &c.

See Article in the GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

Supplied Wholesale, Retail, and for Exportation; cut to order in panes of

| | | | | | |
|---|---|---|---|---|---|
| 8 by 6 under 10 by 8 | 4½d. | 10 by 8 under 14 by 10 | 5d. | | |
| 14 by 10 under 1½ foot, not above 20 inches long | | | | | 6½d. |
| 1½ foot | — 3 feet | — | 30 | — | 6d. |
| 3 feet | — 4 feet | — | 30 | — | 6½d. |
| 4 feet | — 5 feet | — | 35 | — | 7d. |

PACKED IN BOXES of 50 feet each.

| | |
|---|---|
| 6 by 4 and 6½ by 4½ ...12s. 0d. | 8 by 6 and 8½ by 6½ ...15s. 0d. |
| 7 by 5 and 7½ by 5½ ...13 6 | 9 by 7 and 9½ by 7½ and 10 by 8 ...16 6 |

Well worth the attention of Nurserymen and Market Gardeners.

LACTOMETERS for trying the quality of MILK, 4 Tubes, 5s., 6 Tubes, 7s. 6d.

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS.

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

HARTLEY'S ROUGH PLATE GLASS, one-eighth of an inch thick, weighing 2 lbs. to the foot, for RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET HALLS, and Public Buildings generally. Specimens to be seen at the Exhibition, in the extreme South-Eastern end of the building, adjoining the United States department.

It being universally admitted that Glass in Roofs of a permanent character should not be less than one-eighth of an inch thick, weighing 2 lbs. to the foot, whilst any greater thickness or weight is unnecessary, leading only to additional expense, Messrs. JAMES HARTLEY and Co. have directed their attention to the manufacture of a description of Rough Plate Glass that combines *size and strength* with *economy of cost*. The Patent Rough Plate, one-eighth of an inch thick, or 2 lbs. to the foot, is manufactured in sizes expressly for Ridge and Furrow Roofs, 62 by 18 inches, thus giving a span of 10 feet, at a price not exceeding, weight for weight, that of common Crown Glass.

Not being transparent, blinds are unnecessary; and, when used in Greenhouses, no scorching occurs. Its *non-transparency* and *strength* render it eminently suitable for the glazing of Conservatories and Roofs of all kinds; also Factories, Workshops, &c., for which purposes it is supplied in squares of all sizes from 8 by 6 inches upwards.

For further information apply to any respectable Glass Merchant in London or the country, or to the Manufacturers.

N.B. The Patent Rough Plate is also manufactured 3-16ths and ¼ inch thick, and can be supplied at a much lower cost than the common Rough Plate.

Messrs. JAMES HARTLEY and Co., Wear Glass Works, Sunderland.—May 10.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 | 5 | by 2½ | 6 | by 2½ | 6 by 3½ inches. |
| 4½ by 3 | 5 | by 3 | 6 | by 3 | 6½ by 3 |
| 4½ by 3½ | 5½ | by 3 | 6½ | by 3 | 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON supplies SHEET GLASS, packed in 100 feet boxes, at the following low prices:

STOCK SIZES.

| | |
|---|---|
| 16 by 4 to 6½ by 5 ...12s. each. | 9 by 7 to 10 by 8 ...15s. each. |
| 6½ by 5½ to 8 by 6 ...13 " | 11 by 8 to 14 by 10 ...16 " |

16 oz. SHEET GLASS in 200 feet cases.

If 10 cases are taken, 38s. per case; if 5 cases are taken, 40s. per case; or if a single case, 42s.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample upon application.

Glass Shades for Ornaments, Sheet and Rough Plate Tiles, Milk Pans, Propagating and Bee Glasses, Lactometers, and all other articles in Glass for Horticultural purposes. Priced List sent on application.

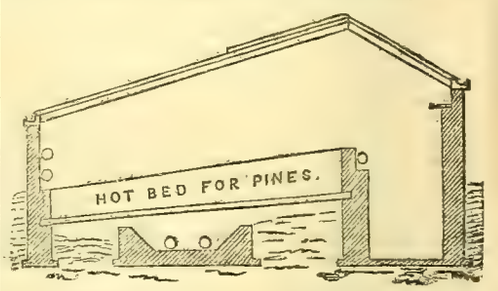
Oils, Colours, Varnishes, Sheet, and White Lead.

87, BISHOPSGATE-STREET, WITHOUT,

Same Side as Eastern Counties Railway.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.




J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell-road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B. Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Orders or Letters addressed to J. L. HANCOCK, Goswell-mews, Goswell-road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

BELFAST.

THE IMPROVED FLAX MACHINERY.—Persons wishing to erect Mills for preparing FLAX from the Straw can be supplied with the IMPROVED MACHINERY, recommended by the Royal Flax Society, on application to the Makers, M'ADAM, BROTHERS, and CO., Engineers, Soho Foundry, Belfast.—May, 1851.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT, an inodorous felt for damp walls, sold in rolls 32 inches wide, 1d. per square foot; also dry Hair Felt, for preventing the radiation of heat and deadening sound, and Sheathing for ships' bottoms, on which the copper lies smooth. Samples, directions, and testimonials, sent by post.—CROGGON and Co., Dowgate-hill, London.

DURABLE OUT-DOOR PAINT.

Removed to No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London.

No Agents.—All orders are particularly requested to be sent direct.

## SALES BY AUCTION.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on TUESDAY, May 13, and THURSDAY, May 15, a first-rate collection of Dahlias, Carnations, and Picotees, Pinks, Heartsease, Geraniums, and other Plants, in blo m, and a large Assortment of plants for bedding. May be viewed the morning of sale.—Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

IN BANKRUPTCY.—Stock of Plants in Pots, Two light Spring Carts, Van, Furniture, &c.

MESSRS. DAVIS AND VIGERS are instructed by the Assignees of Robert Westmacott to sell by Auction, on the premises, Stuart's-grove Nursery, Brompton, on FRIDAY, May 16, at 12 for 1, the entire STOCK of Camellias, Cacti, Pelargoniums, Roses, Azaleas, and a choice collection of Bulbs, Exotics, and Stove plants; in all about 1000 dozen, lotted to suit private purchasers and the trade; also two carts, covered Market Van, Tools, &c., with the furniture of the usual description in the cottage. May be viewed one day prior and morning of sale: and catalogues had on the premises; and of the Auctioneers, 3, Frederick's-place, Old Jewry.

IN BANKRUPTCY.—To Nurserymen and Florists.—Beneficial Lease of Premises, with possession.

MESSRS. DAVIS AND VIGERS are instructed by the Assignees of Robert Westmacott, to sell by Auction, on the Premises, Stuart's-grove, Brompton, on FRIDAY, May 16, at 12 o'clock, the LEASE of those well-arranged NURSERY GROUNDS and BUILDINGS, most eligibly situate, and comprising a commanding shop, seven spacious succession houses, and seven long ranges of forcing pits, all recently erected, and well fitted with hot water apparatus, stabling for two horses, cart-house, potting shed, &c.; with three good dwelling-rooms, and loft over; also a neat Cottage Residence in the grounds. The whole held for 36 years, at the nominal rent of 63*l.* per annum.—May be viewed any time prior to the sale, and particulars, with conditions of sale, had of T. B. WHITFIELD, Esq., 3, Lincoln's-inn-Fields; PHILIP JACQUET, Esq., Solicitor, Clifford's-inn; and of the Auctioneers, 3, Frederick's-place, Old Jewry.

BEDFORDSHIRE.—Great Barford, near Bedford, Biggleswade, and Sandy, Valuable Freehold Estate, Tithe free and Land-tax redeemed, giving Votes for the County.

MR. EDWARD PALMER will Sell by Auction, by order of the Mortgagee, at the Golden Cross Inn, Great Barford, near Sandy, Bedfordshire, on TUESDAY next, May 13, at 1 o'clock, in 11 Lots of about three Acres each, an important FREEHOLD ESTATE, consisting of about 34 acres of land, all adjoining and delightfully situate on an eminence facing the south, at the entrance of the village of Great Barford from Bedford, near the Wesleyan Chapel, having an extensive frontage to the road, and commanding a beautiful prospect. The land is of excellent quality, and suitable for building cottages, with garden ground attached, the cultivation of which in this neighbourhood has been found so exceedingly profitable from the easy transit of vegetables by rail to the London markets. N.B. Two-thirds of the purchase money may remain on mortgage if required, or the whole if satisfactory security is given.—Particulars, with plan and conditions of sale, may be had of Mr. Benj. Chandler, jun., Solicitor, Sherborne, Dorset; Messrs. Poole and Gamlen, Solicitors, 3, Gray's-inn-square, London; Mr. W. Wallen, jun., Architect and Surveyor, 14, Basinghall-street, City, and Greenwich, Kent; at the Law Property Assurance and Trust Society's Offices, 30, Essex-street, Strand; at the Golden Cross Inn, Great Barford; Swan Inn, Bedford; White Swan, Biggleswade; and at the Auctioneer's Offices, 20, Change-alley, Cornhill.

TULIPS.

MESSRS. GLENNY AND CO. are instructed to Sell by Auction, on the premises, Hoxton Nursery, New North-road, London, on MONDAY, May 26, at 12 for 1, precisely, 100 Rows of choice TULIPS, being a portion of the superb collection of Mr. Tebbutt. Among others will be found Pandora, Musidora, Louis XVI., Camus des Craix, Fabius, Rose Brilliant, Duke of Devonshire, Violet Alexander, Violet Quarto, Milo, Jackson's Princess Royal, Duc de Bordeaux, &c. May be viewed any time prior to the Sale, and Catalogues had on the premises, at the White Swan, Abbey Mills, West Ham; Cock and Castle, Elizabeth-street, Hackney-road; Victory, Kingsland-road; City of Canton, East-India-road, Poplar; of the Auctioneers, 420, Strand; and at 84, Fleet-street.

TO GARDENERS AND OTHERS.

TO BE LET, and entered upon immediately, a capital WALLED GARDEN, nearly Two Acres in extent, with Cottage, Shop, and Four Hothouses, well stocked with Vines, several Pits, Fruit Trees, &c. The whole well supplied with water. It is situate close to the city of Bath, only a few minutes' walk from the Railway Station. Rent very moderate. Coming-in about 60*l.*—Apply to J. H. COTTEBELL, 6, Terrace-walk, Bath.

TO BE LET, a HOUSE, with Four Acres of LAND, on the Brighton Railway—Rent, 20*l.*; pleasantly situated, facing the clump of trees adjoining the Horley Station, one hour's distance from London-bridge. An excellent opening for a Market Gardener. The two best rooms, which have French casement windows, would let furnished during the season to pay the rent.—Enquire of the Station Clerk at Horley, who will point out the premises and give the Landlord's address.

FARM TO LET.

TO BE LET, upon Lease, a most desirable FARM, with covenants for payment for unexhausted improvements, to be entered upon at Michaelmas next, consisting of about 250 acres, one-third being Arable and the remainder in Grass, singularly well adapted for Dairy purposes, being in the immediate vicinity of a large and flourishing first class market town, where the Milk and Butter is sold, and within an hour, per Rail, from London. The Dwelling-house is respectable and commodious, and all the Out-buildings, including Manure Tank and Stalls for 50 head of Cattle, large Barns, &c., are in first-rate order, and adapted to the modern system of Farming, having been partly rebuilt only a few years. The Stock of Short-horned Cattle, modern implements, Crops, &c., to be taken at a valuation. Encouragement will be given to a spirited Agriculturist, with a capital of not less than 2200*l.*—For further particulars, address to D. N., Post-office, Reading, Berks.

TO BE LET, with immediate possession, a small NURSERY GROUND, with good Seed Shop, three Greenhouses, and small Cottage attached; the said Shop has good fittings, and is situated in the market town of Reading, near the station of the Reading and Reigate line, and not far from that of the Great Western.—For particulars, apply either to J. J. BLANDY, Esq., Solicitor, Reading; to H. H., Springfield Cottage, Barbeaston, Bath; or to W. R., 14, Allington-street, Pimlico, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

CAPITAL FARM TO LET.

THE WATER EATON FARM, containing about 118 Acres of Arable and 196 acres of Meadow and Pasture Land, situate near Cricklade, in the county of Wilts, to be Let, on Lease, for a term of years, if desired, as from Lady-day last.

The owner will require to be satisfied as to the adequacy of the capital of his tenant.—Apply for further particulars and terms, to Messrs. LAWRENCE, Cirencester, Gloucestershire.

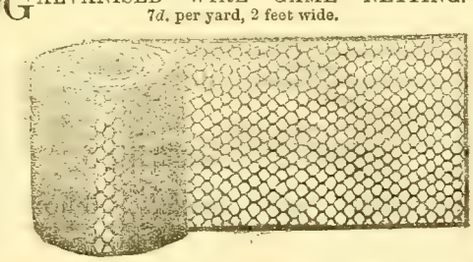
TO LANDOWNERS.—LAND DRAINAGE.

MR. BAILEY DENTON'S System of MODELLING ESTATES by a mechanical and cheap process, as shown in the Great Exhibition, No. 317, Class X., explained in a pamphlet, with plans, &c. Published by WEALE, 59, High Holborn. DENTON'S "A" LEVELS FOR WORKMEN are also shown on the same counter. None but such as are sold by JONES and Co., 39, Holborn, price 30*s.*, are made under the supervision of the Inventor.

DO YOU BRUISE YOUR OATS?

HORSE KEEP.—Oat Bruisers, Chaff Cutters, Ploughs, 42*s.*, Shares, 5*s.* per dozen; Rollers, Wheat Mills, Bean Mills, Steam Engines, Scarifiers, Turnip Cutters, Dressing Machines, Drills, Threshing Machines, Wood and Iron Harrows, Steaming Apparatus, Scotch Carts, Hay-making Machines, Horse Hay Rakes, and Drag Mills. First class goods warranted. MARY WEDLAKE and Co., 118, Fenchurch-street. Most liberal discount for cash. Goods delivered free. On receiving six postage-stamps a list, with 107 engravings, will be sent free.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

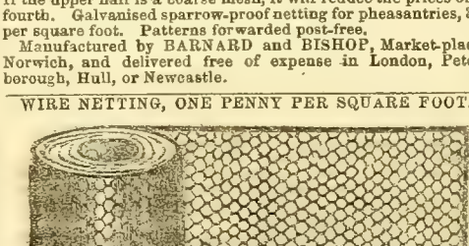


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| 1⅝-inch " light " ... | 8 " | 6 " |
| 1⅝-inch " strong " ... | 10 " | 8 " |
| 1⅝-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 " | 4½*d.* " | 36 " | 9*d.* " |
| 14 " | 6*d.* " | 48 " | 1*s.* " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, ply-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

IRON GATES, HURDLES, WIRE WORK, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfield Works, Bilston, MANUFACTURE all kinds of Park Entrance, Carriage and Field Gates, Wickets, Wrought and Cast Iron Gate Pillars, Plain and Ornamental Fencing, Palisading, and Balconies. Ox, Cattle, Sheep, and other Hurdles;

Tree Guards, Garden Seats, Garden Rollers, Wheelbarrows.

Hay Racks, Stable Fittings, &c. Iron Work of every description.

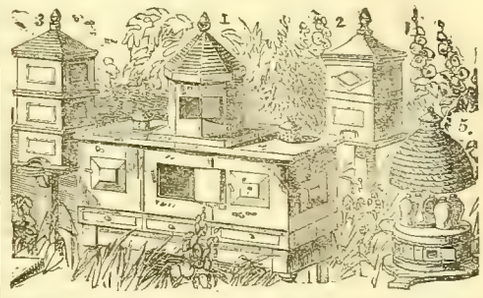
Wire Work in great variety, comprising Gothic and other Fencing, Flower Stands, Trainers, Arches, Pheasantries, &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and on the most moderate terms.

Manufacturers of every kind of Solid Iron and Tube BEDSTEADS, with all the recent improvements.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The Public is respectfully informed, that these favourite Ales may be had genuine, in casks of 18 gallons and upwards, at their respective stores, as under, where also a list of the bottles may be obtained.

The Brewery, Burton-on-Trent; Stores, 61, King-William-street, City, London; Cook-street, Liverpool; High-street, Birmingham. The Exchange, Manchester, 33, Virginia-street, Glasgow.



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS.—Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street. Glasgow: Austin and M'Aslin, 168, Trongate.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

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NEW AND ELEGANT FUCHSIA.—Fine plants are now ready to be sent out of this superb and unrivalled Fuchsia KOH-I-NOOR, which has proved itself one of the finest of the dark varieties. The flowers of extra large size, brilliant and very glossy colours; tube and sepals rich crimson; the corolla a fine purple; sepals well reflexed, showing the rich corolla to great advantage, and an abundant bloomer; the plant is also of very superior habit, and first-rate for exhibition; no collection can be complete without this forming the centre. It will also be found a most useful plant for the Nurseryman, as it continues in bloom for six months, the flowers always retaining their fine colour, and hangs well on the plant. It was seen by the following first-rate judges when in bloom last season: G. D. Fisher, Esq.; Mr. J. Pond, of Devonshire Cottage; Mr. Coles, Gardener to Miss Bayley; Mr. Carmichael, Gardener to G. Tugwell, Esq.; Mr. Hogg, Gardener to General Andrews; Mr. Grant, Gardener to G. Sims, Esq.; Mr. Wooton, Gardener to the Rev. E. D. Rhodes; Mr. Drummond, Nurseryman; Mr. Scott, Bathford; Mr. Freeman, assistant to Mr. Griffin, Nurseryman, all of Bath; and Mr. Ivery, of Peckham, London, all of whom passed their opinion in the following manner: "Your Fuchsia is one of the finest dark varieties we have yet seen; the habit is certainly splendid, and there will be no doubt as to its giving satisfaction to all who grow it."

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Exeter, May 10.

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AND
# AGRICULTURAL GAZETTE.

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No. 20—1851.] SATURDAY, MAY 17. [PRICE 6*d.*


INDEX.


Acre, the ..... 317 *b*
Allotments ..... 316 *b*
Aquatics ..... 310 *a*
Banks, penny ..... 310 *c*
Birds, British song ..... 308 *c*
Botanical Gardens, Swedish .. 307 *b*
— names ..... 309 *b*
Cabbage crops ..... 314 *a*
Calceolarias ..... 310 *a*
Calendar, Horticultural ..... 312 *a*
— Agricultural ..... 317 *c*
Ceanothuses ..... 310 *c*
Chiswick show ..... 310 *b*
Chrysanthemum, the ..... 310 *a*
Crops, rotation of ..... 316 *a*
Crystal palace ..... 307 *c*–314 *b*
Cuckoo ..... 309 *c*
Cucumbers ..... 310 *c*
Deodars ..... 309 *b*
Draining ..... 315 *c*
Drainage Act ..... 315 *b*
Entomological Society ..... 311 *b*
Fallow system ..... 317 *b*
Farms, small ..... 315 *c*
Fumigator ..... 310 *b*
Furrows, open ..... 315 *c*–316 *a*
Garden gleanings, foreign .... 308 *b*
Geology, agricultural ..... 313 *b*
Glass-houses, ridge and furrow 310 *a*
Harrows ..... 315 *a*
Hothouses, Roman ..... 311 *c*
Hyde Park ..... 310 *b*
Iris Susiana ..... 310 *a*
Johnston's American agriculture ..... 317 *b*
Lark ..... 317 *a*
Mangold Wurzel and Turnips 316 *b*
Manure, farm and lime ..... 316 *a*
Names, botanical ..... 309 *b*
Orchids, European ..... 309 *c*
Paint ..... 318 *a*
Penny banks ..... 310 *c*
Ploughs ..... 314 *b*
Quercus agrifolia ..... 311 *c*
Rose, Cloth of Gold ..... 310 *b*
Royal Bor Society ..... 311 *a*
St. Petersburgh Florists ..... 308 *b*
Seed trade the ..... 310 *a*
Soil, condition of ..... 311 *a*
Swedish Botanical Gardens .. 307 *b*
Timber, Van Diemen's Land .. 307 *c*
Trees, wall, to cover ..... 309 *c*
— hedgerow ..... 316 *a*
Turnips and Mangold Wurzel.. 316 *b*
Van Diemen's Land timber.... 307 *c*
Wall trees, to cover ..... 309 *c*
Weather, the ..... 317 *c*
Woods, Coppice ..... 309 *c*


WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE FIRST GRAND HORTICULTURAL FETE of the season (open to all England), will take place within the splendid and spacious Pavilions, specially erected for the purpose, in the Jephson Gardens, Royal, Leamington, on Wednesday, May 28, 1851, when prizes of upwards of 100*l.* will be offered for Competition, for Stove and Greenhouse Plants, Orchids, Heaths, and Ericas, Geraniums, Roses, Fuchsias, Achimenes, Gloxinias, Gesneras, Pansies, Pinks, Calceolarias, Fruits, Vegetables, and various Miscellaneous Productions; schedules of which may be obtained from the Secretary, at the Entrance Lodge of the Gardens. By the kind permission of Lieut.-Col. HODGE, the splendid Band of the 4th Dragoon Guards will attend on this occasion; also the celebrated German Band, specially engaged for the Jephson Gardens. Admission: from One o'clock to Half-past Three, 2*s.*; from Half-past Three till Six, 1*s.*; from Six till Seven, 6*d.* each; Children, 6*d.* each.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, is now prepared with extra strong plants of the followng New and First class DAHLIAS:—

| | |
|---|---|
| Yellow Superb | Baltic |
| Hon. Mr. Herbert | Antoinette |
| Beauty of Kent | Miss Pope |
| Summit of Perfection | One-in-the-Ring |
| Nepaulese Chief | Miss Herbert |

The whole stock of these are in the possession of JOHN KEYNES, and Prizes for the best Six Blooms from the above will be given at three of the leading Exhibitions of the season. Orders for Dahlias from other growers faithfully executed in conjunction with his own.—Salisbury, May 17.

HUGH LOW AND CO.'S NEW CATALOGUE OF PLANTS is just published, and will be sent free on prepaid application.—Clapton Nursery, London.

ROSES, IN POTS, FOR PLANTING OUT.—A Descriptive Catalogue of AUTUMNAL ROSES has been recently published, in which are inserted some new Hybrid Perpetual Roses, plants of which can be had in pots, grafted on Manettii Rose stocks. The above is sent free per post, on application to THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

TULIPS.

C. TURNER'S Collection is now in fine bloom. Parties desirous of inspecting the same, should do so before the 25th. Trains every hour throughout the day.
Royal Nursery, Slough, Bucks.

"KOH-I-NOOR."

NEW AND ELEGANT FUCHSIA.—Fine plants are now ready to be sent out of this superb and unrivalled Fuchsia KOH-I-NOOR, which has proved itself one of the finest of the dark varieties. The flowers of extra large size, brilliant and very glossy colours; tube and sepals rich crimson; the corolla a fine purple; sepals well reflexed, showing the rich corolla to great advantage, and an abundant bloomer; the plant is also of very superior habit, and first-rate for exhibition; no collection can be complete without this forming the centre. It will also be found a most useful plant for the Nurseryman, as it continues in bloom for six months, the flowers always retaining their fine colour, and hangs well on the plant. It was seen by the following first-rate judges when in bloom last season: G. D. Fisher, Esq.; Mr. J. Pond, of Devonshire Cottage; Mr. Coles, Gardener to Miss Bayley; Mr. Carmichael, Gardener to G. Tugwell, Esq.; Mr. Hogg, Gardener to General Andrews; Mr. Grant, Gardener to G. Sims, Esq.; Mr. Wooton, Gardener to the Rev. E. D. Rhodes; Mr. Drummond, Nurseryman; Mr. Scott, Bathford; Mr. Freeman, assistant to Mr. Griffin, Nurseryman, all of Bath; and Mr. Ivery, of Peckham, London, all of whom passed their opinion in the following manner: "Your Fuchsia is one of the finest dark varieties we have yet seen; the habit is certainly splendid, and there will be no doubt as to its giving satisfaction to all who grow it."

Fine strong plants, 1 foot high, such as will make good specimens this season, will be sent, on receipt of the amount of 10*s.* 6*d.*, hamper and package included; smaller ditto, such as can be sent by post, 7*s.* 6*d.* each, box and postage included, when remittance accompanies the order. The usual allowance to the trade when three plants are taken.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

*** Forget-Me-Not, Myosotis azurea randiflora, can still be supplied at 2*s.* 6*d.* per packet.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, respectfully informs the admirers of Roses that his collection of Standard and Dwarf Roses is now in full bloom, in the Rose house. Calceolarias, fine spotted varieties; Geraniums, Fuchsias, Verbenas, &c. A Catalogue sent on application.

E. D. informs his kind patrons that he has no Seedshop in London.

JOHN KERNAN, in soliciting further favours, begs to mention the fact that Annuals, Perennials, &c., may be sown to greater advantage all this month, than at the usual period. This arises from the hitherto ungenial state of the weather, which has been a severe check to early vegetation, in consideration of which J. K. will feel happy to make every allowance to customers whose purchases may have been injured by the untowardness of the season.

Collections may be had from 5*s.* to 20*s.*

Also the following Agricultural Seeds, &c.

TURNIPS.

| | Per lb.—*s.* | *d.* | | Per lb.—*s.* | *d.* |
|---|---|---|---|---|---|
| Yellow Bullock ... | ... 0 | 9 | Red Round ... | ... 0 | 9 |
| Rivers' Stubble Swede ... | 2 | 0 | White Round ... | ... 0 | 9 |
| Skirving's do. | ... 0 | 9 | White Globe ... | ... 0 | 9 |
| Laing's do. | ... 0 | 9 | Oxheart ... ... | ... 0 | 9 |
| Dale's hybrid ... | ... 0 | 9 | Ashcroft Swede ... | ... 0 | 9 |

Broad-leaved Rape, per bushel ... ... ... 10*s.* 6*d.*
Long Red and Globe Mangold Wurzel, per lb. ... 0 9
White Silesian or Sugar Beet, per lb. ... ... 2 0
Flax, from Riga Seed.
Mixed Permanent Grasses, per bushel ... ... 8 0
Fine mixed Lawn Grass, per lb. ... ... ... 1 6
Plants for bedding out.

Printed lists, with prices, may be had on application, enclosing a stamp.
4, Great Russell-street, Covent Garden, May 17.

AUX BOTANISTES ETRANGERS.

R. M. STARK, PEPINIERISTE, à Edinbourg, prend la liberté de faire savoir au public qu'on trouvera chez lui Graines, Plantes, et Echantillons, secs, de Plantes rares et intéressantes venant d'Ecosse et d'autres pays, et dont on pourra faire l'échange contre les plantes du Continent. Toutes espèces d'appareil de la Botanique.

Agent à Londres, Mr. Pamplin, 45, Frith-street, Soho, chez lequel on pourra d'avoir des Catalogues, avec les prix attachés.—1, Hope-street, et Edge-hill Nursery, Dean.

"THE FLOWER GARDEN."—We are enabled to supply to any extent the finest collection of handsome bedding plants for the present season. Our descriptive Price List will be forwarded on receipt of two postage stamps. It contains all the best and newest varieties of Fuchsia, at 9*s.* to 12*s.* per dozen; Verbenas, 30*s.* per 100, or 6*s.* to 10*s.* per doz.; Scarlet Geraniums, 6*s.* to 9*s.* per dozen; Calceolarias, 6*s.* to 9*s.* per dozen; Fancy Geraniums, 9*s.* to 15*s.* per dozen; Heliotropes, 6*s.* to 9*s.* per dozen; Antirrhinums, 6*s.* to 12*s.*; Lobelias, 6*s.*; Petunias, 6*s.* to 9*s.*; Phloxes, 6*s.* to 12*s.*; Chrysanthemums, large flowering, 6*s.* to 12*s.*; Ditto Liliputian varieties of 1849, 6*s.* per dozen; Ditto ditto of 1850, 12*s.* per dozen; Double White Rockets, 3*s.* per dozen; Double Purple ditto, 6*s.* per dozen.

"NEW SEEDLING PANSIES."—"Commander-in-Chief," and "Prince Arthur." Two of the best flowers of the season, price 5*s.* each. For particulars of their merits, see advertisement of February 8.

PANSIES.—12 of the finest first-class show flowers, including the above, for 21*s.* 12 fine show flowers, 10*s.*
YOUELL and Co., Royal Nursery, Great Yarmouth.

CHRYSANTHEMUMS, "QUEEN OF ENGLAND," "CLOTH OF GOLD," "RABELAIS," "JENNY LIND," "POMPON D'OR," "THE WARDEN," &c. &c.

CHANDLER AND SONS, NURSERYMEN, Wandsworth-road, are now sending out the finest Chrysanthemums from 9*s.* to 12*s.* per dozen. The newest varieties 1*s.* 6*d.* each. Good sorts for planting in open borders, 6*s.* per dozen.
Post-office orders payable at Kennington-cross.

BEDDING AND OTHER PLANTS IN POTS.

SAMUEL FINNEY AND Co. have to offer, this season, a very large stock of BEDDING AND OTHER PLANTS IN POTS, which are strong and healthy, and fit for immediate planting; for particulars of which they beg to refer to their Catalogue, which is now ready, and may be had, free, on application. The following, the selection of S. F. and Co., will be supplied at the low prices attached, package included:—

| | |
|---|---|
| Dahlias, 6*s.* per dozen. | Verbenas, 5*s.* per dozen. |
| Fuchsias, 6*s.* do. | Antirrhinums, 5*s.* do. |
| Geraniums, 7*s.* do. | Petunias, 5*s.* do. |
| Do. fancy sorts, 7*s.* do. | Calceolarias, 9*s.* do. |
| Do. scarlet sorts, 7*s.* do. | Cinerarias, 7*s.* do. |

Gateshead, May 17. Chrysanthemums, 8*s.* per dozen.

MESSRS. J. AND H. BROWN offer a Selection of the following choice PLANTS:—

| | *s.* | *d.* |
|---|---|---|
| 12 Azaleas, Belgian varieties, very fine ... ... ... | 12 | 0 |
| 12 Azalea Indica, one of a sort, do. ... ... ... | 18 | 0 |
| 12 Rhododendrons, including scarlet, white, and rose ... | 12 | 0 |
| 6 fine hardy scarlet Rhododendrons, small plants ... | 10 | 0 |
| Cupressus funebris, Cryptomeria japonica, and 6 choice Pinus ... ... ... ... ... ... ... ... | 15 | 0 |
| 50 choice Greenhouse Plants, one of a sort, by name ... (This collection is highly recommended.) | 45 | 0 |
| 12 Orchidea, choice species and good plants, for ... | 30 | 0 |
| 24 choice Ericas, one of a sort, by name ... ... ... | 16 | 0 |
| 24 choice Fuchsias, one of a sort, by name ... ... | 10 | 0 |
| 12 new double German Daisies, by name ... ... ... | 10 | 0 |
| 25 choice Pansies, one of a sort ... ... ... ... | 10 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots ... | 9 | 0 |
| 12 Climbing Roses, choice sorts, in pots ... ... ... | 6 | 0 |
| First-class Dahlias, show varieties, per doz., 6*s.*, 9*s.*, and | 12 | 0 |

Verbenas, Petunias, Pentstemons, Salvias, Calceolarias, Lobelias, Cupheas, Œnotheras, Geraniums, Antirrhinums, Phloxes, Pinks, and Climbers, 4*s.* to 6*s.* and 8*s.* per dozen.

Orders taken for the new Himalaya Rhododendrons. New descriptive priced Catalogues free by post.
Albion Nursery, Stoke Newington, London, May 17.

CALCEOLARIAS.

WIDNALL AND DAVIS, having upwards of 1000 Shrubby CALCEOLARIAS, of various colours, suitable for immediate bedding out in 3-inch pots, can supply them at 6*s.* per dozen, or 42*s.* per 100. The usual discount to the trade.
Grantchester Nurseries, Cambridge, May 17.

SELECT BEDDING PLANTS.

BASS AND BROWN have a large and fine Stock of the following, well established, and now sending out; they are mostly in small pots, so as to be packed in a little compass. Those marked * can be sent free by post, if required.

SCARLET GERANIUMS, in variety, strong, 6*s.* and 9*s.* per dozen.

* VERBENAS, a large collection of the best sorts for forming dwarf beds, such as Apollon, Anacreon, Defiance, Emma, Eclipse, Eyebright, Junon, Princess Alice, Psyche, Rosati, Vulcan, White Perfection, and others, 4*s.* per dozen.

* PETUNIAS, a large collection of bright purple and crimson flowers, 5*s.* per dozen.

* FUCHSIAS, a large collection of select varieties, 5*s.* p. doz.

DAHLIAS, the best varieties, both show and fancy, 6*s.*, 9*s.*, and 12*s.* per dozen.

Heliotropes of sorts, 4*s.* to 6*s.*; Bouvardias of sorts, 9*s.*; Lantana crocea, 6*s.*; Lobelia maxima, erinus, &c., 4*s.*; Blue Anagallis, 6*s.*; Cupheas of sorts, 6*s.*; Calceolaria of sorts, 6*s.* and 9*s.*; Dielytra spectabile, 12*s.*; Cheiranthus alpinus, 12*s.* per doz., and many others.

Also the following selections of newer varieties:
GERANIUMS, 12 fine show vars., 12*s.*; 12 superb do., 21*s.*
FANCY GERANIUMS, 12 beautiful vars., 12*s.*; 6 for 7*s.* 6*d.*
* FUCHSIAS, 12 fine vars., 9*s.*; 12 superb new vars., 15*s.*
DAHLIAS, 12 fine vars., 9*s.*; 12 quite new vars., 21*s.*
" FANCY, 12 fine vars., 9*s.*; 6 quite new, 10*s.*
* PETUNIAS, 12 fine vars., 9*s.*; 12 superb new vars., 12*s.*
* VERBENAS, 12 fine vars., 7*s.* 6*d.*; 25 do., 12*s.*; 12 superb new, 12*s.*
HARDY BORDER PLANTS, 100 select vars., 30*s.*; 50 for 30*s.*
" " superior and new, 50 vars., 30*s.*; 25 for 17*s.* 6*d.*
ROCK PLANTS, 25 select vars., 12*s.*; 12 vars., 7*s.* 6*d.*
ANTIRRHINUMS, 12 fine vars., 6*s.*; 12 superb new, 10*s.*
PHLOX, 12 fine vars., 6*s.*; 25 vars., 10*s.* 6*d.*; 12 superb newer, 9*s.*
PENTSTEMONS, 12 fine vars., 7*s.* 6*d.*; 6 vars., 5*s.*
GREENHOUSE PLANTS, 12 select vars., 15*s.*; 25 fine vars., 28*s.*
STOVE PLANTS, 12 new and select vars., 18*s.* to 24*s.*
* ACHIMENES, 6 splendid new, 7*s.* 6*d.*; 12 fine vars., 9*s.*
GLOXINIAS, 6 splendid new, 7*s.* 6*d.*; 12 fine vars., 12*s.*

NEW PLANTS, see a List in the *Gardeners' Chronicle* for May 3d, April 26th, and April 19th.

Stamped Catalogues forwarded on application, free.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.

BASS AND BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

E. G. HENDERSON is now prepared to send out the following New Plants:—

| | *s.* | *d.* |
|---|---|---|
| FANCY GERANIUM, Delicatum (Ambrose's) ... each | 21 | 0 |
| SCARLET GERANIUM, Beauty of the Parterre ... " | 10 | 6 |
| Ditto Ditto Peach Blossom ... ... " | 10 | 6 |
| Ditto Ditto Bridal Bouquet ... ... " | 10 | 6 |
| Ditto Ditto Golden Admiration ... " | 15 | 0 |
| POTENTILLA ANTWERPENSIS ... ... ... " | 7 | 6 |
| Ditto bicolor grandiflora ... ... ... " | 5 | 0 |
| FUCHSIA, Prime Minister (Henderson's) ... ... " | 7 | 6 |
| Ditto Resplendent Do. ... ... " | 7 | 6 |
| Ditto Lord of the Isles Do. ... ... " | 7 | 6 |
| Ditto Madame Sontag Do. ... ... " | 7 | 6 |
| ALCEOLARIA MONARCH Do. ... ... " | 7 | 6 |
| Ditto Queen of England, Do. ... ... " | 7 | 6 |
| Ditto Flora M'Ivor Do. ... ... " | 7 | 6 |
| Ditto Golden Knight Do. ... ... " | 7 | 6 |
| Ditto Marchioness of Douro, Do. ... " | 7 | 6 |
| Ditto Conspicuum Do. ... ... " | 7 | 6 |

For descriptions of the above, see Spring Catalogues for 1851, which will be ready for delivery early in May, and will be sent post free on application.

E. G. H. also calls attention to the following new Strawberries:

PREMISSES DE BAGNOLET, very late, good plants in *s. d.* pots ... ... ... ... ... ... ... ... each 1 0
CREMONT'S PERPETUAL, a double bearing variety of superior quality, good plants in pots ... ... each 2 6
Wellington Road Nursery, St. John's Wood, May 17.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. MRS. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d.* and 5*s.* packets, post paid, for prepayment.

CHEAP DAHLIAS.

HENRY LEGGE is now sending out all the leading Flowers of 1851, at 9s. to 12s. per dozen; the good old, from 2s. to 4s. per dozen.—Catalogues can be had by sending one postage stamp to HENRY LEGGE, Marsh Side, Lower Edmonton, Middlesex.

ROBERT WHIBLEY offers strong plants of that superb Geranium FOQUETT'S MAGNIFICENT, at 3s 6d. each. Bedding Plants, choice and strong, in pots, 21s. per 100. Catalogues for one stamp, containing a select and extensive variety of plants.—Nursery, Kennington, London.

CHEAP BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to state that he is prepared to send out BEDDING PLANTS from 1s. 6d. to 3s. per doz.; sent post free for 1s. 8d. per dozen, when three dozen are taken.

Descriptive Catalogues sent on the receipt of one postage stamp. Prizefighter and Farnham Castle Cucumber, 1s. per packet.

CALCEOLARIA "SULTAN."—This very desirable and shrubby CALCEOLARIA for bedding is now on sale, at 5s. each, or two guineas per dozen; habit dwarf, with large dark flowers; it is very hardy, and peculiarly adapted for the flower garden, throwing up a constant succession of its rich ruby-coloured trusses of bloom throughout the season.

Though of a different colour, it is equal for bedding purposes to the well known Calceolaria Kentish Hero, sent out five years since.

JOHN ANDREW HENDERSON and Co., Pine-apple-place, Edgware-road, London.

SHIRVING'S IMPROVED TURNIP SEEDS.

WM. SKIRVING begs to announce to his friends and the public, that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW-BULLOCK, at 9d. per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the Seed of his Improved Turnips, he is this season able to offer it at the above reduced price, and he is also induced to take this step to prevent Agriculturists being imposed upon by the sale of spurious Seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing. All other Agricultural Seeds, of the best quality, at very moderate prices. A remittance, or reference, is requested from unknown correspondents.

N.B. W. SKIRVING has no Agent in town or country.

Queen-square, Liverpool, May.

SHADING CANVAS, 4d. per Square Yard. To be had in any quantity from WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London.

Also BEDDING and HERBACEOUS PLANTS of every description.

FLOWER SEEDS for present sowing, in packages of 12 varieties, for 2s. 6d.; or 25 varieties, 5s.

Labels, Garden Knives, Flower-gatherers, Thermometers, and every other article useful in gardening, his prices for which are excessively moderate.

Address, 156, Cheapside, London.

N.B. Agent for the Registered Rose Girdle.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14s. each.

16s. per box:

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 ,, 5½ ,, 7 ,, 5 | 6¼ ,, 6½ ,, 7½ ,, 6½ |
| 6 ,, 6 ,, 7½ ,, 5 | |

18s. 6d. per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 ,, 8 ,, 11 ,, 9 | 10 ,, 8 ,, 13 ,, 9 |
| 9 ,, 8 ,, 12 ,, 8 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured:

| | | |
|---|---|---|
| In sizes under 15 inches | ..... | 6d. per foot. |
| ,, ,, 35 ,, | ..... | 8d. ,, |
| ,, ,, 50 ,, | ..... | 9½d. ,, |
| ,, ,, 75 ,, | ..... | 12d. ,, |

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS MILK PANS, &c., &c.

JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, beg to hand their prices of various articles for the dairy and domestic purposes.

MILK PANS.

| | s. | d. |
|---|---|---|
| 12 inch diameter ... | 2 | 0 |
| 14 ,, ,, ... ... | 2 | 6 |
| 16 ,, ,, ... ... | 3 | 0 |
| 18 ,, ,, ... ... | 3 | 6 |
| 20 ,, ,, ... ... | 4 | 0 |
| 22 ,, ,, ... ... | 4 | 6 |
| 24 ,, ,, ... ... | 5 | 0 |
| 26 ,, ,, ... ... | 6 | 0 |

CREAM POTS.

| | | |
|---|---|---|
| 6 inch diameter ... | 2 | 0 |
| 8 ,, ,, ... ... | 2 | 6 |
| 10 ,, ,, ... ... | 3 | 0 |
| 12 ,, ,, ... ... | 4 | 0 |
| 14 ,, ,, ... ... | 5 | 0 |
| 16 ,, ,, ... ... | 6 | 0 |
| 18 ,, ,, ... ... | 7 | 6 |

Lord Camoy's Milk Syphons, 3s. 6d. each.

Lactometers, 4 tubes, 6s.; 6 tubes, 8s. 6d. each.

Wasp Traps, 3s. 6d. per dozen.

Fern Shades with Glass Stands, from 2s. to 13s. each.

Pastry Pins, from 2s. each.

Glass Preserve Jars, from 3d. each.

PROPAGATING AND BEE GLASSES.

| | s. | d. | s. | d. |
|---|---|---|---|---|
| 2 inch diameter | 0 | 2 | — 0 | 3 |
| 3 ,, ,, | 0 | 3 | — 0 | 4 |
| 4 ,, ,, | 0 | 4 | — 0 | 5 |
| 5 ,, ,, | 0 | 6 | — 0 | 7 |
| 6 ,, ,, | 0 | 8 | — 0 | 10 |
| 7 ,, ,, | 0 | 10 | — 1 | 1 |
| 8 ,, ,, | 1 | 0 | — 1 | 4 |
| 9 ,, ,, | 1 | 2 | — 1 | 8 |
| 10 ,, ,, | 1 | 4 | — 2 | 0 |
| 11 ,, ,, | 1 | 6 | — 2 | 8 |
| 12 ,, ,, | 2 | 0 | — 3 | 6 |
| 13 ,, ,, | 2 | 6 | — | |
| 14 ,, ,, | 3 | 6 | — | |
| 15 ,, ,, | 4 | 0 | — | |

CUCUMBER TUBES.

| | | |
|---|---|---|
| 24 inches long ... | 2 | 0 |
| 22 ,, ,, ... | 1 | 10 |
| 20 ,, ,, ... | 1 | 8 |
| 18 ,, ,, ... | 1 | 6 |
| 16 ,, ,, ... | 1 | 4 |
| 14 ,, ,, ... | 1 | 2 |
| 12 ,, ,, ... | 1 | 0 |

Halliman's Registered Fruit Protectors, for every description of Wall Fruit, from 6d. each.

Pastry Slabs, made of Plate Glass, 4s. 6d. per foot, super.

Bouquet Tubes, for Gentlemen's Coats or the Hand.

Shades for Ornaments, Vases, Milk Jugs, Patent Rough Plate, Patent Plate, Crown and Sheet Glass, White Lead, Putty, Varnishes, Brushes, and every article in the Trade.—Apply, 116, Bishopsgate-street Without, London.

ENGLISH VERSUS FRENCH GLASS.—The importation of Glass into France is at present prohibited. Special permission has, however, been granted by the French Government for the introduction of a quantity of Hartley's Patent Rough Plate (supplied by Messrs. JAMES PHILLIPS and Co., of 116, Bishopsgate-street Without), for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country.—*Sunderland Herald*, April 18.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

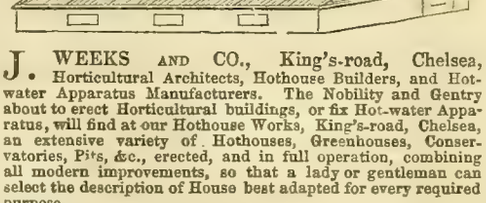
GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

CUCUMBER and MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.—JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

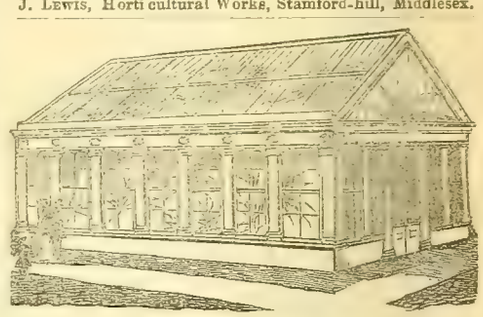
| Lean-to. | Unglazed. | Span-roofed, glass all round. Glazed. | Span-roofed, glass all round. Unglazed. |
|---|---|---|---|
| ft. ft. | £ s. d. | £ s. d. | £ s. d. |
| 12 by 8 ..... | 15 10 0 | 10 0 0 | 18 6 0 | 11 15 0 |
| 15 — 10 ..... | 22 10 0 | 14 5 0 | 25 10 0 | 16 9 0 |
| 18 — 12 ..... | 28 10 0 | 18 0 0 | 32 14 0 | 20 12 6 |
| 21 — 12 ..... | 32 10 0 | 20 0 0 | 37 8 0 | 23 2 0 |
| 24 — 13 ..... | 44 0 0 | 25 12 6 | 49 12 0 | 29 2 0 |
| 27 — 14 ..... | 51 4 0 | 29 17 0 | 58 5 0 | 33 15 0 |
| 30 — 15 ..... | 61 17 0 | 36 2 0 | 69 14 0 | 40 9 0 |
| 35 — 16 ..... | 73 4 0 | 42 14 0 | 82 7 0 | 47 15 0 |
| 40 — 17 ..... | 85 7 0 | 49 15 9 | 95 17 0 | 55 12 0 |
| 45 — 17 ..... | 93 15 0 | 54 13 9 | 105 10 0 | 61 12 0 |
| 50 — 18 ..... | 108 10 0 | 63 6 0 | 121 13 0 | 70 19 0 |
| 55 — 18 ..... | 115 16 0 | 67 11 0 | 130 4 0 | 75 19 0 |
| 60 — 18 ..... | 124 13 0 | 72 14 3 | 140 8 0 | 82 8 0 |

Height in front, 3 feet 6 ins., wood and glass; 3 feet 6 ins. brickwork.

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sashes, Doors, &c., post free, on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.



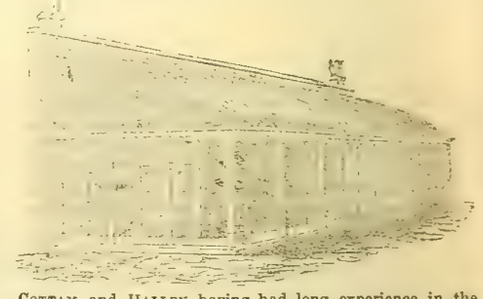
GRAY AND ORMSON, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kimmoey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any inquiries. They beg also to say the Building only is referred to, as the Heating Apparatus was not erected by them.

GRAY and ORMSON have also the honour of referring to many of the nobility and gentry in the country, and to several of the London nurseries.

N.B. Plans and Estimates furnished free.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had long experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz:—

| | |
|---|---|
| Garden Rollers | Hand-glass Frames |
| Garden Engines | Flower Stakes |
| Garden Syringes | Flower-bordering |
| Watering Pots | Flower Stands |
| Garden Vases | Garden Arches |
| Mowing Machines | Garden Chairs |

Every description of Work, both Plain and Ornamental, in wrought and cast iron, for Gardens, &c., &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole Agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London Bridge.

EXHIBITION OF TULIPS.

HENRY GROOM, Clapham-rise, near London, Florist by appointment to HER MAJESTY THE QUEEN AND TO HIS MAJESTY THE KING OF SAXONY, respectfully informs the Nobility, Gentry, and the Public, that his SUPERB COLLECTION OF TULIPS is now in flower, and can be viewed every day, from 9 o'clock until 6, Sundays excepted. Admittance 1s., Children half price.

PLANTES SUPERBES D'ORANGERIE. — Messieurs les Etrangers, Amateurs du genus Banksia et Dryandra, sont informés qu'une belle collection, comprenante plusieures espèces nouvelles et très rares, se vend à bon prix, chez l'établissement de JOHN HENCHMAN, à Edmonton, près de Londres.—Edmonton, 17 Mai, 1851.

VALUABLE VEGETABLES.—CAULIFLOWERS. — Myatt's improved early, much earlier than the old varieties, more compact and heavier, considered by the raiser as most desirable, quantity very limited; 1s. packets.

BRUSSELS SPROUTS, improved variety, direct from Brussels; 1s. per oz, 6d. per packet.

CABBAGE, MITCHELL'S ENFIELD.—This has been tried at the Horticultural Society's Garden, and pronounced one of the best; 1s. per oz., 6d. per packet.

CABBAGE, CHAPPEL'S COLEWORT, excellent for Winter Greens, 6d. per oz.

CARROT, ST. JAMES', one of the best for small gardens, and shallow or heavy soils; 3d. per oz.

CELERY, COLES' SUPERB RED, very extensively grown last season, and pronounced first-rate; 1s. per oz., 6d. per packet.

LETTUCE, VICTORIA CABBAGE, but little known, but one of the handsomest grown, and which no gentleman's garden should be without.

DUNCAN HAIRS, in offering the above selection from his general List, begs to inform his friends that he warrants them to be as described.

109, St. Martin's-lane, Charing Cross, London.

CHOICE AND CHEAP.—READ THE FOLLOWING!
(Carriage paid; see below.)
Now ready, and may be had gratis on application,
MAY'S DESCRIPTIVE CATALOGUE OF PLANTS, for ornamenting the Flower Garden, and Greenhouse display.

N.B.—All orders above 2l. 10s. carriage paid to London, or to any Railway Station within 150 miles of the Nurseries, and plants given over on smaller orders to compensate for carriage. Our central position and great facility of railway communication enables us to execute all orders with punctuality and despatch.

The Catalogue comprises the following favourites, viz.:—Calceolarias of the best sorts, Cinerarias, Fuchsias, Scarlet Geraniums (for bedding), Verbenas—the very choicest varieties, Petunias, fine Chrysanthemums for autumn display, Liliputian Chrysanthemums (these are little gems, growing about a foot high, and flowering profusely), Salvias, Heliotropes, Phloxes, new and fine; Antirrhinums, fine; various Plants adapted for Bedding, Climbers of sorts, and Roses in selection. s.
ERICAS, 12 fine blooming plants, own selection, per doz., 12
GREENHOUSE PLANTS, 12 miscellaneous sorts, blooming, our own selection, per doz. .. ... ... ... 12
HERBACEOUS PLANTS, in pots, purchaser's selection, per 100 ... ... ... ... ... ... ... ... 63
Do. do. do., our own selection, per 100, 50

The list throughout is divided into sections of the newest and best in each class, and those in more general cultivation; the selection is left to purchasers or ourselves, in the latter case our customers may rely upon our integrity in furnishing good articles, for which we have received many flattering testimonials. Every information given on application.

Address, JOHN MAY, Hope Nurseries, near Bedale, Yorkshire, to whom all Post-office orders must be made payable.

CHOICE CALCEOLARIAS.

JOHN HENCHMAN begs to inform the Trade and Furnishers, that his choice stock of about 4000 SEEDLING CALCEOLARIAS are now in all stages of bloom, at 3l. 5s. per 100. Amateurs may supply themselves with choice and distinct varieties at 1s. each. On receipt of Post-office orders, any quantity selected and packed with care.—Edmonton, May 17.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND CO., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.
Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.
Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

SULPHUR VERSUS MILDEW.

FRY'S SULPHURATOR IMPROVED. — This Machine, with numerous Testimonials, can be obtained direct from the original inventor of the Sulphurator, GEORGE FRY, Manor House, Lee, Kent. Price 15s.

EPPS'S IMPROVED REGISTERED SULPHURATOR, for destroying the Mildew and Mould in Grapes, Hops, Roses, Heaths, Pansies, Fruit Trees, and Agricultural and Horticltuural produce.

The Inventor submits this Machine with great confidence, as being the most useful and perfect of its kind invented. The construction is simple, strong, and effective, and can be used by the most inexperienced hand. It has been described in the *Gardeners' Chronicle*, and highly commended by Dr. Lindley, Dr. Plomley (in his lectures on the Mould in Hops), the editor of the "Gardeners' Magazine of Botany," and many eminent Gardeners and Agriculturists.

Manufactured and sold wholesale by BARBER and GROOM, Holborn, and to be had of all Seedsmen, Florists, Ironmongers, and the Inventor. Price 20s. and upwards.

Maidstone, May 17.

HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the Second EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, June 7th.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5s. each; or, on the day of the meeting, at Turnham-green, price 7s. 6d. each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4 in the Duke of Devonshire's road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an admission ticket to which his signature is attached. Similar privileges belong to Ladies who are Fellows of the Society.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulat.

21, Regent-street, London.

HORTICULTURAL SOCIETY OF LONDON.

NOTICE is hereby given, that the
EXHIBITIONS AT THE GARDEN,
In the year 1852, and in each succeeding year, until further notice, will take place on the
SECOND SATURDAY
IN THE MONTHS OF
MAY, JUNE, AND JULY.

21, Regent-street, May 13, 1851.

The Gardeners' Chronicle.

*SATURDAY, MAY* 17, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | | |
|---|---|---|---|---|
| MONDAY, | May | 19 | Chemical | 8 P.M. |
| | | | Statistical | 9 P.M. |
| | | | British Architects | 8 P.M. |
| TUESDAY, | — | 20 | Pharmaceutical (Anniversary) | 12 A.M. |
| | | | Horticultural | 3 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| WEDNESDAY, | — | 21 | Royal Botanic | 3½P.M. |
| | | | Microscopical | 8 P.M. |
| | | | Ethnological | 8 P.M. |
| | | | National Floricultural | 3 P.M. |
| THURSDAY, | — | 22 | Royal Soc. of Literature | 4 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½P.M. |
| FRIDAY, | — | 23 | Philological (Anniversary) | 8 P.M. |
| | | | Royal Institution | 8½P.M. |
| SATURDAY, | — | 24 | Medical | 8 P.M. |

COUNTRY SHOWS.—Tuesday, May 20: South Devon Botanical and Horticultural.—Thursday, May 22: Bath Horticultural, and Liverpool Horticultural.

IT is not a little remarkable that a nation so advanced as Sweden in all that relates to natural science, should have considered it unnecessary for its BOTANICAL GARDENS to be placed under the care of a person practically conversant with gardening. We understand, however, that such is the case; and that even the Garden of Upsal, which has furnished the materials of scientific investigation to so many celebrated professors—to the two RUDBECKS, the two LINNÆUS', THUNBERG, and WAHLENBERG—was still, at the decease of the last lamented naturalist, intrusted to the management of subordinates far inferior to what the present state of horticulture demands.

Those who are familiar with the working of such establishments as Botanical Gardens will, we doubt not, agree with us in the opinion that two wholly distinct duties have to be performed in them. The first is the botanical superintendence and the application of the materials which the garden may contain to the purposes of instruction; the other is the horticultural superintendence, by means of which those materials are preserved and augmented. The last provides the raw material of science, the first works it up and converts it into forms it did not before possess.

In saying this we do not by any means intend to say that the gardener is not to be a man of science. Quite the contrary. The more science he has the better, provided it is combined with that practical horticultural skill which can only result from much experience; just as great scientific knowledge itself results from a long and assiduous examination of the subjects to which it relates.

A botanist is not necessarily a gardener, any more than a gardener is necessarily a botanist. Very few men indeed have, in fact, combined the two qualities: and it is as unwise to entrust the cultivation of plants to a mere botanist, as it would be to call upon a mere gardener to undertake the duties of a botanical professor.

If these remarks should, as we hope they will, receive the consideration of our Swedish readers, we can hardly doubt that they will have the effect of putting an end to what must be admitted to be a great mistake. Unless, indeed, it should be thought that it matters little in what state of health a plant exists in a botanic garden, provided it can be found there, or at least in the catalogue. It is, however, now generally acknowledged that a live plant conveys little information to students unless it is in its state of natural health; and we cannot but entertain grave doubts whether their natural health will ever be secured to plants under artificial management, in the absence of the direction of those whose lives have been spent in the business of cultivation.

While upon this subject we may add, for the information of our botanical readers, that WAHLENBERG has bequeathed to the University of Upsal all his considerable fortune, a library of great value, and his herbarium, upon condition that botany should remain, as heretofore, united to the faculty of medicine. But there is a struggle on the part of the Faculty of Arts, or of Philosophy, in the University, to obtain the botanical chair, and, in the event of their succeeding, the property left by WAHLENBERG falls to his heir-at-law. It is understood that this question, which the King alone can decide, has given rise to no small conflict of opinion, the one side insisting that Natural History is a branch of general education; the other maintaining that it is a special department of medicine, treating of the functions and structure of organic bodies. We must own that, to us, this dispute seems hardly worthy of a great University.

IN speaking the other day of the important timber from Van Diemen's Land (see p. 291), now exhibited in the Crystal Palace, we undertook to consider whether or not there is any reasonable probability of the plants producing it becoming cultivated advantageously in any part of Great Britain or Ireland. At first sight it would seem that experience directs us to answer the question in the negative, for we have at present no sufficient evidence that the Tasmannian Flora has begun to establish itself in these islands. We know, indeed, that a *Leptospermum* has existed for many years in a warm sheltered garden near London, that *Swammerdamia* is an evergreen bush as hardy as a Laurel, that the Van Diemen's Land "Myrtle" (*Fagus Cunninghamii*) has also resisted the frost of Middlesex for two or three years, and especially that in some parts of Devonshire Gum trees (*Eucalypti*) and Wattles (*Acacias*) have grown into trees; but, on the other hand, it is too certain that such plants have been destroyed by unusually hard winters, and that if we have a few cases of species enduring the midland climate of England, we have a far greater number of examples of their shrinking from it.

Nevertheless it cannot be said that any experiment upon the hardiness of Tasmannian plants has yet been fairly tried. It does not follow that the vegetation of the mountainous districts should perish because that from the lowlands of Hobart Town proves tender; nor can we infer, because *Acacia lophantha* and some continental *Eucalypti* have been struck down by even a Devonshire frost, that therefore the species of more southern and severer regions would share the same fate. What we know of the climate of Van Diemen's land leads to contrary inferences.

It appears from Captain KAY's meteorological observations, made at the Royal Observatory, Hobart Town, in 1847 and 1848, that the climate, although not severe in that sheltered place, is by no means so mild as to distinguish it from the south-western counties of Great Britain and Ireland; the main difference, in fact, consists in the excessive heats for short periods during the summer. In 1847 the thermometer stood at 100° in the shade on the 21st of February, and at 103° on the 8th of December; at midnight, on the first occasion, it remained at 73°, and on the second a black bulb thermometer rose in the day to 156.5°. But in 1848 the temperature never exceeded 91° in the shade. On the other hand, the winter temperature was as follows:—

| | 1847. | | | 1848. | | |
|---|---|---|---|---|---|---|
| | Max. | Min. | Mean. | Max. | Min. | Mean. |
| May | 64. | 34.2 | 47.6 | 67. | 34.2 | 49.1 |
| June | 53.4 | 33.2 | 43.1 | 59. | 34.7 | 45.8 |
| July | 55. | 33. | 43.9 | 54.3 | 31.3 | 42.8 |
| August | 65. | 36. | 47.9 | 57.8 | 35.3 | 45.3 |

Nor was this attended with unusual dryness; for if the whole quantity of rain registered in 1847 was only 14.02 inches, it was 23.67 in 1848; and it would appear that an alternation of dry and wet seasons is characteristic of the climate of Hobart Town.

This, we conceive, is sufficiently similar to the climate of the south-west of England, and south of Ireland, to render the naturalisation there of the Hobart Town trees worthy a trial; and we see no reason to doubt that the Blue Gum Tree, Muskwood, Myrtles and Wattles of that locality would decorate the Killarney district as freely as the Arbutus itself. But in truth the climate of the observatory of Hobart Town, although on the south of Tasmannia, by no means represents the extreme climate of the island, as will be seen from the following extracts from Mr. BACKHOUSE's useful Journal:

"A single Lemon tree exists in a garden at New Norfolk, and another at O'Brien's Bridge, but the climate is not warm enough for them, and they are protected during the winter. Cape Pelargoniums (the Geraniums of English greenhouses) endure the winter at Hobart Town, but they are killed by frost at New Norfolk, and at other places in the interior." (*P.* 155.)

*Hobart Town, Aug.* 9.—"The weather at this period was tolerably mild, and generally remarkably fine for the season. We had seldom to use umbrellas as a defence against rain, and the tracked roads

were but little cut up. The tops of the mountains, adjacent to the low country in which we were travelling, were often covered with snow, and there the weather seemed to be wild and stormy." (*P.* 150.)

"The climate (of Hobart Town) is almost too cold for Grapes and Cucumbers, but Apples, Pears, Quinces, Mulberries, and Walnuts, succeed better than in England. Oaks, Ashes, and Sycamores, raised from English seeds, attain to 3 or 4 feet the first year. Bees have been lately introduced. The first hive swarmed 16 times this summer! Many of the little shrubs which ornament English greenhouses are natives of this country, so that the gardens here have the advantage of having them in the open ground, and to these are added several from Africa and New South Wales. Here also are some fine young Norfolk Island Pines." (*P.* 23.)

*Mount Wellington, near Hobart Town.*—"In company with two young surgeons I again ascended Mount Wellington, and collected specimens of various plants. Though the summer is advancing, snow fell dry on the top of the mountain, and the cold, with a high wind, was so intense, that I was unable to restore circulation in my hands by rubbing them with snow. Some of my fingers were consequently numb for several days after. Another of our company became violently affected with cramp, from which we all suffered in some degree. Though the snow was insufficient to protect vegetation from the frost, many plants which were in flower did not seem to be injured by it, yet they cannot endure the continued cold of an English winter. (*Nov.* 11; *p.* 224.)

"Proceeding across a salt marsh to the shores of Frederick Henry Bay (S.E. of island), we saw the Princess Royal, a vessel with female emigrants from England, driving from her anchors, in a violent storm of wind and snow (*Aug.* 23). The snow was about 3 inches thick in the morning. The snow among trees in full foliage presented a novel appearance to an Englishman. All the trees and shrubs of this country are evergreens; and, with the exception of the little patches of land that have been cleared by settlers, may be said to cover the whole country. The thermometer at Richmond was at 27° several times this winter." (*Aug.* 24; *p.* 65.)

*Hampshire Hills, N. of Island.*—"Notwithstanding it is now Midsummer, the weather is cold, with hail and sleet. The climate here is much colder than that of the coast. (*Dec.* 29; *p.* 118.) Heavy rain fell, and the cold became so great, that we were glad to retire to bed early for protection from the piercing wind. By a register kept by my friend JOSEPH MILLIGAN, of the quantity of rain that fell at the Hampshire Hills, from 1835 to 1839, the mean annual quantity appeared to be upwards of 67 inches. In 1837 it exceeded 80 inches. The greatest fall in one day in the five years was upwards of 4 inches. Notwithstanding it was summer, and large patches of ground were white with the blossoms of Diplarrhena moræa, an Iris-like plant, common in the colony, the Barn Bluff, and other mountains adjacent, were covered with fresh snow, and the tops of the Potatoes at Chilton were touched with frost. The land here is high, with marshy flats and grassy forest. The trees of the open ground are chiefly stringy-bark, 20 to 30 feet in circumference, and 70 to 100 feet high." (*Jan.* 22; *p.* 126.)

*Launceston, North of Island.*—"This morning the mountains visible from Launceston to the north-east were covered with snow. This was also the case in the south of the island, down to 1000 feet above the level of the sea. Snow is unusual in summer in this country; notwithstanding summer frosts are by no means of rare occurrence. (*Feb.* 27; *p.* 134.) During this period, the weather was frosty at night, the thermometer frequently falling to 25°. From the adjacent hills, the town, in a morning, often appeared as if it were based on clouds, as the fog, to which it is liable, dispersed. The days were generally clear and warm." (*May* 10; *p.* 149.)

*Macquarie Harbour.*—"The common temperature of the winter at Macquarie Harbour was 43° in clear weather, when the wind was from the south, and 52° when cloudy, with the wind from the north. Frost and great heat were of rare occurrence. Rain was said to have fallen on five days out of seven, during 10 months in the year, from the formation of the settlement in 1822." (*P.* 55.)

These extracts abundantly prove, we think, that some of the vegetation of Van Diemen's Land ought to find itself at home even in our midland counties. And when we see that the Eucalypti, called stringy bark trees, grow 10 feet in thickness where Potatoes are touched by frost at Midsummer, we cannot but think that an attempt at introducing Tasmannian plants into shrubberies and plantations would be, to a considerable extent, likely to meet with success.

## ORCHIDS FOR THE MILLION.—No. I.

BEING desirous of growing a few of the more showy Orchidaceous plants, but as neither myself nor my then gardener were acquainted with the mode of their cultivation, I applied for some information on this head to Mr. Williams, the gardener of my neighbour, Mr. Warner, and who kindly from time to time gave me such instruction as was necessary for a beginner. There is a notion amongst gardeners that the cultivation of these plants is attended with great difficulty; that different houses for different climates are necessary, and that the secret of good culture is only known to few; that, in fact, no one but those having a large establishment, and a gardener expressly skilled in Orchidaceous culture, should attempt to grow them. Mr. Bateman, in the preface to his great work, intimates that their cultivation is to be left to the aristocratic, whilst the more humble florist is to be confined to his Carnations, Auriculas, Dahlias, and such-like flowers. Mr. Williams' plan seemed to me very simple, and also that one house might easily be made to answer the purpose, if properly managed, at least for those who are not ambitious of possessing a very large collection, or of growing such as are most impatient of culture; having derived much advantage from the instruction afforded to me, I recommended Mr. Williams to make notes of his mode of culture, and since these were written I have advised him to publish them. I trust that, to humble beginners like myself, I have done good service by this advice, and I cannot but think that ere long many will be induced to attempt the cultivation of this beautiful tribe of plants, who, for want of plain instructions, have hitherto been deterred from making a beginning. A very small house is sufficient, hot-water pipes or tanks are now cheap, and a small boiler may be had for 2*l.* 10*s.*, or less; and glass (thanks to Sir Robert Peel), is also within the means of the humblest gardener, and those who refer to Mr. Rivers' account in your Paper of how to make cheap lights, and build cheap houses, will find that for 40*l.*, or less, a very sufficient Orchid-house, with hot-water apparatus, may be put up.

Knowing the pleasure derived by many in the humblest classes from the cultivation of flowers, and how much talent, patience, and ingenuity are often displayed by such amateurs, I feel gratified by the hope that I may possibly be the means of increasing the harmless amusement of many. It is not likely that Mr. Williams' instructions will interest or inform those cultivators—Mr. Mylam, Mr. Blake, Mr. Bassett, Messrs. Veitch, Rollisson, &c., or others at the head of the great collections of this country; it is merely for the benefit of the beginner that they are intended. As regards the fitness of Mr. Williams to instruct, the best proof I can offer of this is, that for some years he has exhibited, both at Chiswick, and in the Regent's Park, and a reference to the prize lists will show that he was always successful; and during the past year obtained 23 gold and 12 silver medals for Orchids, and 14 other silver ones for Ferns. Mr. Warner's collection not being so large as those of many others, it was only the last two years that Mr. Williams competed in the highest class of 20 plants. *Dodman.*

## FOREIGN GARDEN GLEANINGS.

(ST. PETERSBURGH.)

FLORISTS.—Among the different florists of St. Petersburgh, M. Alwarch, a German, stands first. He cultivates nothing but those plants which are universally sought after in Russia, viz., good evergreen shrubs and bushes. These plants, which are brought into Russia in pots, are sold in large quantities to the nobility, who, in winter, and the commencement of the fine season, use them for the internal decoration of their houses. We may mention more especially Gardenia florida; Ixora coccinea and others; Lantana; Musa; Æschynanthus; Asclepias curassavica and Hoya carnosa; Echium; Gesnera; all of which are cheaper in St. Petersburgh than in Paris. Such is not the case with the hundred-leaved, crested, four-seasons and Belladonna Roses, which, when in flower, fetch 2*s.* 6*d.* and 5*s.* The Myrtle-leaved and Chinese Orange trees are also very dear, as are also Pelargoniums and Fuchsias. Franciscea odorata and Hopeana are great favourites; Begonias and Gloxinias cost half as much again as they do in France. Camellias and North American Azaleas fetch most extravagant prices. The same gentleman has a large collection of Rhododendron ponticum maximum, and other species; but we look in vain for out-door Azaleas, Calceolarias from Chili, or Cacti from tropical America. As for Myrtles, Pomegranates, Laurels, Jasmines, climbing Roses, Dahlias, Pinks, and Spanish Jasmines, they are rare and costly.

Besides evergreen shrubs, M. Alwarch cultivates, though upon a smaller scale, out-door shrubs. We principally noticed some bushy plants, capable of resisting the severe frost of the country, such as Cornus mascula, alba, and sanguinea; Elders; Spiræa lævigata, rosea and ulmifolia; common Lilacs; Chamæ cerasus, Snowdrops, Snowberries, Service-trees, Sweet Chestnuts, Pteleas, Poplars, especially the true sweet-scented suaveolens; Caragana, with which beautiful undulating hedges are made; the charming red-fruited Acer tataricum; Buckthorns, and particularly the one from Tartary, which constitutes a large part of the live hedges in the country; lastly, Cratægus purpurea, with its handsome foliage, far surpassing in colour that of Cr. alba. The latter plant attracted my especial attention; its beauty, the rapidity of its growth and other excellent qualities, enable the Russians to make live hedges, which we should very much like to see introduced into our own country.

FLOWER MARKETS.—One of the first things which strike a stranger entering St. Petersburgh is the evident passion which all the inhabitants, rich and poor, old and young, have for flowers. The eye admires, with surprise and delight, the halls and rooms of all classes, which, for eight or nine months in the year, are more like conservatories than the interior of common dwelling-houses; being gay with plants of every clime, whilst out of doors the country is desolated by the severity of the cold. In-doors we find Palms and Figs, Musas, Dracænas, Marantas, the large leaved Arums, Camellias, Rhododendrons, and Azaleas; also some beautiful Leguminosæ, Mimosas, Cytisus in pots, Myrtles of all sorts, Olea fragrans, the large Clethra, different sorts of Laurel; and lastly, but most conspicuous, are the hundred-leaved and four-season Roses, Hyacinths, and other flowering plants.

The working classes, who cannot command a wide range of temperature, prefer such plants as Crinum, Maranta, Hoya carnosa, Asclepias curassavica, and Lantana; Oranges, Jasmines, Plumbago capensis, Ixora, Gardenia, Echium, and occasionally, too, the common Laurel, Cytisus, and Olea fragrans.

The poor, who are compelled to live continually in the town, grow Pelargoniums, Roses, Verbenas, Fuchsias, Wallflowers; and, in spring, Lilies of the Valley.

FLOWER TRADE IN ST. PETERSBURGH.—A fair, which is held as soon as the frosts are over, and which lasts a whole month, viz., from the 25th of May to the 25th of June, is almost exclusively a flower fair; it is at this fair that the nobility and country gentlemen make their purchases for decorating their country houses, to which they are about to retreat. The flowers are supplied almost entirely from Germany. We remarked the hundred-leaved and four-seasons Rose, planted in a sort of hamper; Cherry, Apple, Plum, Service, and Sweet Chestnut trees, a few Pear trees, all shrubs, and selling for double what they do in Paris; the Lilies of Valley, especially, seemed to bear a most exorbitant price. We saw, too, Pæonies, and all sorts of perennial and shrub-like plants.

Flower are sold, too, by travellers, who go from house to house, carrying upon their heads boards upon which the flowers in pots are closely packed. But these pedlars offer their purchasers neither variety nor beauty, a few Wallflowers, Pelargoniums, Fuchsias, Lilies, Echium, Gesneras, Roses, Mignonette, Cinerarias, Verbenas, Phlox, and Justicia, form the whole of their collection.

Although there are many more florists in St. Petersburgh than in Paris, the collections of the former are much more meagre than those of the latter. Their trade in bouquets and flowers in pots is prodigious, far surpassing what we had imagined. *Masson's Report.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 14.)

No. XXX.—I crave the indulgence of my readers this week, for an *hiatus* in the history of the nightingale. It is, however, an *hiatus* which will be found *non valdè deflendus;* for while it gives time to the newly-caught birds to ruminate on their sudden and cruel change from liberty to incarceration, it also affords an opportunity for an additional chapter on "the Canary," which ought not to be deferred an instant, seeing that the breeding season with these interesting little creatures has now fully commenced.

It will be borne in mind, that I have already spoken at length of nightingales' cages; and also of their proper food. These being the principal requisites to be immediately known, what has to follow will be in ample time for my readers' further consideration. The *resumé* will be given in a little week.

It appears that our familiar and popular treatises on the Canary-finch have excited no little attention, both far and near,—causing those who have never yet kept these birds to commence doing so; and those who have already kept them, to increase their stock, and study still further the peculiarities of the race. This is well; it is indeed a result which I have laboured kindly to see effected.

Among other places where our fame has extended, is that sweet, lovely, picturesque spot—Welling, in Kent, situate some dozen miles from our Modern Babylon. Here lives, in delightful seclusion, Henry Wollaston, Esq.—a most remarkable gentleman amateur in the matter of canaries, rearing them in a manner which, when explained, will be indeed thought worthy to be called "remarkable."

A friend of Mr. Wollaston, residing also in the village of Welling, and a subscriber to the *Gardeners' Chronicle*, recently asked the last-named gentleman if he ever perused that Paper? and at the same time, being answered in the negative, directed his attention to the papers contained therein on the "canary." These, it seems, so played upon the fancy of Mr. Wollaston, that a most kind and special "invite" was the immediate consequence. The delicacy of the invitation was worthy of the giver of it; for the "pleasure" asked "of a visit from *me*" ought to have been rendered *vice versâ*. Indeed, I left Welling, surprised, amazed, and exceedingly delighted. It would occupy too much space, were I to detail my journey, and say how, on one truly lovely morning this week, I went down to Abbey Wood,—the rail conveying me swiftly and pleasingly away from our murky, filthy city, and depositing me safely at my first place of destination. Nor need I do more than glance at the happy repose and universal rejoicing of all nature, as

the omnibus, which met the train, travelled leisurely onwards towards Welling, through the prettiest of pretty scenery—wood, landscape, and dell, with murmuring rivulets meandering musically along on every side. These "summer" feelings, we all know, are indescribable: they rejoice the heart; they refresh the spirit.

After travelling some two miles, I descended near the turnpike-gate,—the side road from which, to the left, leads to Bexley and Footscray. I then took the main road, to the right, and found myself speedily at the entrance of the village of Welling. My escort all the way thither, was by nightingales, blackcaps, robins, skylarks, whitethroats, and pettychaps. Here I was met, *vis à vis*, by the founder of the feast, the owner of the mansion,—who, asking my name, or indeed pronouncing it for me (for my face "looked" it), at once conducted me, with the blandest of smiles and unmistakeable cordiality, to his fairy seat.

I have been thus minute in my description, for two reasons. One is, that the imagination of my readers may be directed to the BEAUTY of the spot where canaries breed *in the open air, and in a state of perfect freedom;* the other is, with a view to indicate the precise *locus in quo* of Mr. Wollaston's picturesque abode, should any visitor, curious as myself, ask permission of that gentleman to take a peep at his little world of living wonders. On entering Mr. Wollaston's mansion, I was struck by the extensive and charming view from the window. Seated, or rather embosomed in its own grounds, from the windows, downwards, there is a verdant lawn, extending, by a gradual slope, as far as to the very margin of a large open park—the whole being *one spacious domain*, with no single interruption to the unbounded prospect.

Immediately contiguous to the dwelling-house is an ample shrubbery, beautifully laid out on every side, and comprising dwarf and tall trees of nearly every kind. To the left, immediately beyond the flower-garden, and in a shady corner, is a sheet of water; the trees overhanging which, cause the whole to have a very picturesque effect. Let me add, briefly, that this romantic spot is "peopled" by canaries of all hues, flying about in the full enjoyment of uncontrolled liberty, building their nests in every imaginable enticing spot, and feeding their young ones immediately under your eye; using all the familiarity of welcome guests, which they really are. To describe the effect produced by this pretty, this unusual sight, were impossible. The forms of the birds, their square and forked tails, peculiarity of flight, and other hitherto unrecognised habits, were alike remarkable; indeed the scene altogether is far beyond the power of my pen to describe.

Nor are the garden, park, and shrubberies tenanted by canaries only. There are, in addition, the usual number of nightingales, blackbirds, thrushes, robins, and other tribes—*all* domesticated here. Such a union of happy voices was scarcely ever before listened to. The musical powers of the canary, heard in an open field, park, wood, or garden, are as novel as they are beautiful. When thus free, this bird is heard to perfection; for he, like every other bird in confinement, feels under some degree of restraint, and sings as much from habit, in a cage, as from any other motive. Not so, when at liberty. During my stay, I examined everything; I pried into all the nests, and counted the eggs. Also took a peep at the young callow nestlings, in the trees; some of them only recently clad with the shell of the egg. Then I whistled to the sitting mothers, and industrious papas, busily engaged in search of food for their offspring. This, and all other convenient luxuries, are placed in a large cage at the lower end of the lawn, with a private door of entrance and exit, made so as to open or close at a minute's notice. This is an admirable contrivance.

In the greenhouse, on one side of the dwelling house, a large, deep, and comparatively-narrow cage, fitted up with perches, &c., is erected, close to the side window. At the top, outside, is a small opening, like the entrance to a bee-hive, but of course larger. Immediately opposite, and parallel with this, the branch or stem of a tree has been trained from the wall. This acts as a perch. The roaming birds, when they wish to enter, alight here, and go in and out *ad libitum*. It was built for their use, in case of any sudden inclement weather coming on; and is now and then used by the birds as a temporary resort under such circumstances. Young and tender nestlings or invalids, too, find this a convenient domicile; their parents coming in to and tending them with all the affection so peculiarly their own.

Mr. Wollaston is a man of method withal. His birds represent the alphabet. Thus, we have Mr. and Mrs. A., Mr. and Mrs. B., &c. &c. We also find a note in the "Book of Family Annals," that Mr. A. was bred in a Magnolia; Mrs. B. in a Larch; Miss D. in a Wistaria; and Master F. in the lofty Plum tree, &c. We observe, too, entered in the same note-book, ages, birthdays, and other memorable days in the calendar.

Then we have stratagems, and plans innumerable, artistic, and admirable, for the capture of any bird at will. He enters. His departure is prevented by an invisible string, closing his place of entrance! A long stick, mysteriously and suddenly introduced, causes him to escape from the top of the large cage into a narrow store-cage annexed; beyond which is yet *another* store-cage—all communicating. The doors are then all magically closed. Unseen pulleys let the cages descend; and what would occupy a novice a whole week, is here prettily accomplished in two short minutes. This, and very much more; which space forbids me to enter upon. The object of this chapter is to show, that as Mr. Wollaston has for three whole years kept canaries constantly in his garden and shrubberies, there can be no practical difficulty in our doing the same thing. These birds are now quite "hardy," and might easily be trained to live anywhere. As to their beauty, when trotting along upon the Grass, or flitting across the lawn, or mounting upwards to a tree,—the sight is charming beyond all conception.

One word more. From certain minute and interested remarks I made, while at Welling, I am so impressed with the novelty, as well as "prettiness" and practicability of peopling our gardens with these birds of variegated plumage, that I shall turn my serious attention to the subject. Mr. Wollaston has originated an excellent idea, and fully perfected the "principle" of it. I shall take out a patent for an "improvement" on the same, and hope to introduce quite a new era in the "decoration" of our suburban gardens. In this matter, I feel sure my new friend will most readily assist me. I read it in his generous countenance, and consider my wishes as already complied with. *William Kidd, Newroad, Hammersmith.*

## Home Correspondence.

*Deodars.*—Doubting the correctness of the conclusion arrived at by "An Old Sawyer" as regards the stuntedness of some Deodars, and having had considerable experience in the management of Conifers myself, I beg to offer the following remarks. As Deodars, either in the shape of single specimens or groups, are well calculated to enrich our landscapes, every means of producing plants speedily deserve to be fully made known. I have found the Deodar, raised from cuttings and grafts, to grow equally vigorous and symmetrical with seedlings. In cultivating this plant, I have derived great advantage from inarching it upon the Spruce Fir, 5 and 6 feet high from the ground, and when this is performed upon strong healthy stocks the growth is very rapid. I have some trees which were worked in this way seven years ago, now 15 feet high, and 12 feet in diameter of branches, the latter nearly reaching the ground. I have also found it to succeed equally well on the Silver Fir, but not so satisfactorily on the Scotch and Larch Firs; it will live on the latter for a year or two, but it soon becomes sickly and dies off, unless it is worked very low, and tongued as soon as the union is safe, so as to induce the Deodar to root from the graft, which it will do readily; and under such circumstances the plant will grow vigorously. I have seen numerous instances of young branches at the top of these trees forming themselves into leaders, and sometimes very long branches will assume that character, clearly showing that a branch possesses the capability of adapting itself to the position; and whoever will examine plantations of Conifers will find other kinds doing the same thing. In fact, I frequently find them possessing this tendency rather too much, and therefore, I am oftentimes obliged to cut off or tie down rival leaders, in order to preserve a handsome form of tree. As regards "dormancy" in the leaders of Deodars and other Pinuses too, I find it frequently to occur in them at about 3 or 4 feet high, owing to some cause, the nature of which I have never been rightly able to discover; but I am inclined to attribute the evil to some peculiar influence acting upon the vitality of the plant, causing an early development of the leader-bud, before our late spring frosts are over; and when the leader-bud is in that delicate state, the slightest frost either totally destroys it, or injures it to that extent that it is unable to push during the following summer, and sometimes not even in the succeeding one. During this time the stem of the plant greatly enlarges, apparently concentrating its energies in order to form a new leader; which, in course of time, bursts forth with extraordinary vigour; and, if not again injured, soon overtakes its more fortunate brethren, and nothing is lost in the end. I would advise those who have Deodars, or other Conifers, in this stunted condition, to shorten the side branches, as I have found this practice to greatly accelerate the pushing of a new leader. One of the stronger branches may also be tied up to an upright stake; this will shortly become as handsome a leader as could be desired; but, at the same time, the tree should have a good surface dressing of stable manure. It is the form which the branch takes that alters its character from the leader, and not any difference in its organisation; both are capable of the same change or variation, and if you vary their form you alter their character—*i. e.*, a leader will become truly a branch, if tied down; and a branch will as easily become a leader, if tied up. *Adscriptus Coniferis.*

*Botanical Names.*—I think that the endeavour to Anglicise the Latin names of plants is a mistake, and is palpable enough in reading your report of the Horticultural Society's Exhibition, viz., in the list there come, "The Baxter Leschenault, the Java Ixora, the Cels Hovea." Now these words do not convey to one's mind such a clear idea of the meaning of the names as would L. Baxteri, I. Javanensis, Hovea Celsi, from which it is apparent at once that the first and last plants take their names from their discoverer or some botanical worthy, the one in the middle from its native country. Then afterward there occurs "the noble Dendrobe, the lovely Phalænopsis." Now, one unacquainted with the plants would not be aware that these two adjectives are the distinctive names of the particular Dendrobe and Phalænopsis, but would take them to be merely the expression of your reporter's admiration of the plants. It would be otherwise if they were called, as of old, D. nobile, P. amabilis. So also, if I found a new Heath and called it "Erica Loudoni," most people would know after whom I named it; otherwise, it called the Loudon E., some might think it was the production of Loudon Hill. I must say I admire the Latin as the neatest nomenclature. *G. R. T.*

*Coppice Woods.*—A person who is alive to the advantages accruing from a judicious management of coppices, cannot travel 10 miles in any direction without having to lament the miserably neglected state of such woods, from the time the copses are cut down to the time they are in a fit state for the next fall; there is no care bestowed on them, they are left to nature, every shoot is permitted to grow, producing little else than brushwood. Whereas, if the shoots on each stool were singled out, properly thinned, and judiciously pruned, their growth would be greatly accelerated, and the value of the crop much enhanced. All the kinds of wood applicable for hoops, hurdles, and wattling purposes, would be fit for use in half the time that neglected copses require; and all the larger growing sorts, used for Hop-poles, and other purposes, would be in a proper state for being cut down one-third sooner than the time allowed between the times of cutting, under the present neglected mode of culture. The old routine practice goes on from one generation to another; no new or more profitable modes of applying the produce of coppice-wood are ever thought of. Although the way of manufacturing pyroligneous acid has been known more than 30 years, yet, strange to say, few or none of the woodland proprietors have availed themselves of that knowledge. One ton of wood produces 80 gallons of the condensed liquor. The acid is used by bleachers and calico printers, for making white lead and the sugar of lead, as well as by chemists, for making a superior transparent domestic vinegar. Pyroligneous acid is the most powerful antiseptic known; all sorts of wood, excepting those of the Pine or Fir tribes, answer the purpose. Spray or brushwood may be used, or billets of size fit for charcoal, round or square, not more than three inches in diameter. The charcoal produced is of the best quality, fit for every chemical or domestic purpose. It may be proved that no crop will pay better for good culture than a crop of wood. *J. D.*

*European Orchids.*—Little attention appears to have been bestowed on the cultivation of the terrestrial Orchidaceous plants of Sicily and other parts of the south of Europe, Algiers, &c., many of which are very curious, and some are very beautiful. I saw two large pots of one in flower at Mr. Hanbury's at the Poles, Herts, O. unicornu, I believe; and at the gardens of the Luxembourg I saw three or four kinds in flower, which were handsome, one or two marked Algiers. Have any of your correspondents any experience in the cultivation of these plants? What are the best kinds to grow for ornament, and from whence are they to be procured?—I presume at Palermo some may be obtained, and I believe at Florence, also, some of the more showy may be found. *Dodman.*

*The Cuckoo.*—One of your correspondents has lately favoured us with some remarks about the cuckoo, so similar, to what was current in the time of Aristotle, that the coincidence is rather remarkable. I happened to stumble on the passage a few days ago, and send you a translation, if you think it worth noticing. It is taken from the sixth chapter of his sixth book of Natural History:—"The cuckoo is said by some to change from a hawk, because, about the time of the cuckoo's appearance, that kind of hawk which it resembles disappears; but scarcely any hawk is to be seen except for a very few days after the cuckoo has begun to sing. The cuckoo is seen for a short time in summer, but disappears in winter. The hawk has talons on its feet, the cuckoo has not, neither is a cuckoo's head like that of a hawk; but in both these respects it rather resembles the dove, and is like the hawk only in colour—the markings, however, of the hawk are somewhat like lines, those of the cuckoo like spots. In size and flight it very much resembles the smallest hawk, which is seldom to be seen at the same time with the cuckoo. But when both have been seen together, the hawk has been seen to eat the cuckoo, though birds of the same kind never act so to one another."—*Aristotle*, Περὶ Ζῳῶν. Z. G. [We are unable to discover to what former communication our correspondent refers.]

*Covering Wall Trees in Spring.*—A few weeks ago, some of your correspondents strongly advised the covering of trees, especially Apricots, &c., with mats, canvas, or other covering, consequently I purchased a quantity of canvas at 3*d.* per yard—I mention the price, to show that it was light canvas; with this material I covered many of my trees, placing some branches of the Yew and Fir, to prevent the blossoms being knocked off by the vibration of the canvas if disturbed by the wind. I had a very good show of blossoms when covered; and last week we uncovered them, but none of the flowers have set, not upon an average two to a tree. The Plums we did not cover have set; the Pears that were covered have set. I name this for the benefit of your correspondents; and if convenient, I should like to hear of the probable cause of this total failure on the Peach and Apricot. *A Constant Reader, Teddington.* — I endeavoured to screen my Pears, Apricots, &c., this spring, but not having apparatus for raising and lowering the screens at pleasure, I fear I have only made the blossoms blind, though the canvas I had was open in texture, and I kept it well away from the wall, so as to admit the air to circulate. I wish to know whether cotton netting of ½ or ¼ inch mesh would be liable to the same objection, or whether even inch meshed woollen netting would preserve the trees; and further, whether dipping such netting in a solution of corrosive sublimate would add much to its

durability, for, strange to say, I have no tan pit within 20 miles of me. *G. R. T.*

*The Chrysanthemum.*—I do not doubt the correctness of Mr. Coombs's statement when he says all who have seen his neighbour's Chrysanthemums have admired them; but this fact by no means proves their superiority, as it is just possible that those who have seen Mr. Ivory's plants have not seen the productions of the metropolitan growers. As Mr. C. is of opinion, however, that his neighbour's Chrysanthemums are superior to those of the latter, with the view of testing the correctness of that opinion, I beg to say that I shall be most happy to show plants or blooms with him, either in town or any reasonable distance in the country. *B. James, Stoke Newington.*

*Iris Susiana* (*Death's-head Iris*).—How rarely this is well grown in this country, and not often flowered. I saw, a few days since, in the gardens of the Luxembourg, at Paris, large patches of it grown in a cold frame; there were 10 or 12 flowers (half as large again as any I ever saw in this country) open at the same time; the plants appeared to be growing in very light soil. I shall try this mode of cultivating this interesting plant, and recommend your readers to do the same. The roots are to be bought with the other Dutch roots in the autumn; but I suspect that those usually purchased have been too long out of the ground, or have been taken up too early; and that this is probably the reason they do not often succeed. *Dodman.*

*Ridge and Furrow Roofs.*—In your notice of the Royal Nursery, Slough, you remark there is "a square conservatory, with a ridge and furrow roof, on Mr. Paxton's principle," &c. &c. Permit me to say that it was made by me, and is a copy of one I presented to the Horticultural Society in May, 1846, and which was then erected in Chiswick Gardens. If you can find space to publish the letter that accompanied the presentation, your readers could then judge who has the better title to originality for this principle of construction; and, also, who first introduced it to the public. I have failed in tracing the erection of flat ridge and furrow roofs, without lap joints, to an earlier date. *James Hartley, Wear Glass Works, Sunderland, May* 13. The following is the letter alluded to:—

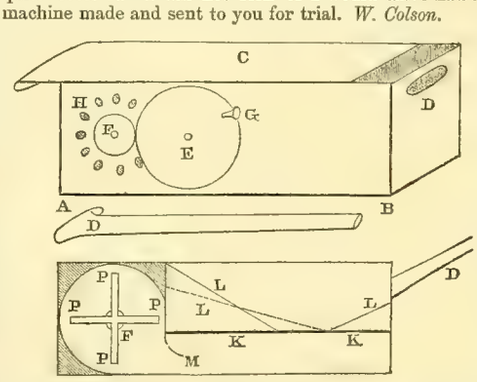
"To the Committee of the Horticultural Society, Chiswick.—Gentlemen—In consequence of the numberless applications received by me for information as to the expense of erecting conservatories, I have been induced to design and execute a sort of model conservatory, and which, with your permission, I shall be happy to erect in the gardens at Chiswick, if you will be kind enough to accept it, presuming that the information connected with the construction thereof, is within scope of the objects of your Society. My intentions are to show that the erection of a conservatory is far from being so expensive an affair as is generally supposed, and have, therefore, adopted a new principle of construction, as being more economical. At the same time, it will be found more substantial, and suitable for horticultural purposes, than the ordinary method, whilst it will be an ornament in any part of a garden or pleasure-ground. My design will, no doubt, appear crude. I only profess, however, to point out a more economical application of the materials employed in the construction of conservatories, not doubting that the idea will be worked out and perfected by more competent parties. I send herewith a model of my design; if you approve of it, and grant permission for its erection, it shall be done forthwith; and when completed, I shall be happy to give full particulars as to the cost, and the proportionate sums for larger or smaller sizes, when I hope to show that a conservatory can be erected for less money in England than upon any part of the Continent. The model is upon a scale of 1 inch to the foot, the full size being 36 feet square; the ridges are formed of single squares, so that there will not be a lap joint in the building. I remain, gentlemen, yours very respectfully,
(Signed) "James Hartley."

*Calceolarias.*—My attention having been drawn to "M. P.'s" article on the Calceolaria, and also to Mr. Rumley's comments thereon, I am induced to offer a few words on the subject. I consider that the remarks of "M. P." and Mr. R. apply only to certain localities. "M. P." perhaps in his locality, like others in less favoured spots than that of Mr. R., may find the impossibility, or nearly so, of raising plants of chosen form and colour from cuttings, as Mr. R. absolutely demands; and Mr. R., on the contrary, having local circumstances in his favour, may find it best to raise his stock in that way, but I presume if he had gained his information in other places than that of the north of England or Scotland, he would have given some other method than that of raising Calceolarias solely from cuttings; and "M. P.," on the contrary, would gladly have availed himself of Mr. R's injunctions. I agree with "M. P." in objecting to Mr. R's dangerous system of keeping saucers filled with liquid manure, or other liquid under the plant, my own experience having taught me that a superfluity of moisture, either at the roots or in the house, induces a contagious disease, which, though apparently unknown to Mr. R., all the skill of the most eminent cultivators has as yet been unable to eradicate. *G. H.*

*Aquatics.*—You inform a correspondent that Calla, Caladium, and Nymphæa cœrulea "require to be removed in winter." But these species are usually raised in pots. You cannot surely mean that the pot-ball cannot be turned out of the pot, and placed in a basket for submersion, while in a growing state? Is the Aponogeton duck-proof? Something has cropped off all the foliage of mine, and I believe it is my ducks. *A. H.* [We don't know about Aponogeton. What we meant by removing Nymphæas, &c., was to remove them to sheltered places, so as to secure them against winter cold.]

*Seeds.*—Having occasion for a few varieties of the commoner annuals, I went into a seed shop to-day, not quite a thousand miles from Exeter, and desired to have two pennyworth of each of six kinds of annuals got ready for me, and I would call as I returned for them. On calling the shopman said, "We do not usually make so little as two pennyworth of ——. You will find very little, but we did it to please you." I said I was obliged; and returning opened the paper and weighed the seeds. They weighed exactly six-eighths of a grain, upright weight, troy. Take them as one grain, at 2*d.*; that is 10*s.* per dram: equal to four sovereigns per oz. A tolerable scale of profit in these free trade times. *P., Exeter, May* 12.

*Fumigators.*—I send you a drawing of a plan I have had adopted here, by which we fumigate our largest greenhouses with the greatest success. We find "Brown's Patent" a very nice little machine for small houses and frames, but it does not produce a sufficient volume of smoke to do the work quickly or with effect; for as there is always an escape, the smoke must be quickly supplied to fill the house all over alike. I have, therefore, turned my attention to the production of a larger and quicker consumption of the tobacco, by means of a larger and more powerful machine. I am afraid that the plan will give but a bad idea of my scheme, but it will be seen that as the amount of tobacco spread out may be limited to an ounce or extended to a pound by means of the regulator, the consumption will, in both cases, be economical and effectual. The tobacco is to be placed on a little pile of ignited wood, or set alight by means of a little touch-paper, and the supply of smoke can of course be regulated by the amount of draft given by the wheel going round slow or quick. The machine can of course, like "Brown's Patent," be used from the outside of the house. We have used it now about six times, and we are perfectly satisfied with it. The smoke is not hot, as traversing through a long pipe (15 inches) quite cools it. I am not rich or I would have had a machine made and sent to you for trial. *W. Colson.*




*Section.*

*Description of Woodcut.*—The wheels are leathered all round, which causes them to act as with cogs. A small spring (unseen) draws the two wheels together. A, B, a box made of galvanised sheet iron, 18 inches long, 7 inches wide, and 8 inches deep, with a moveable smoke tight lid, C; and D, a smoke pipe, riveted on the box at D. E is the larger wheel (G the handle), moving the small one, F, on the axle of which is a fan with four blowers, P P; M, the draft aperture; K K is the grate, made of strong woven wire, about ½ inch mesh; H, holes to supply air to the fan; L are sheets of iron to contract the area of the furnace grate, as may be required to suit one ounce or a pound of tobacco.

*Hyde Park.*—Since the three or four old trees, enclosed within the building of the Great Exhibition, were considered by the legislative body of Great Britain of sufficient importance to be made a subject of debate, I trust I shall not be considered as needlessly encroaching upon your time by drawing your attention to two abuses that are now in no small degree contributing to the injury and disfigurement of Hyde Park. The abuse first to be animadverted upon (inasmuch as it is committed by that very class of society to which the orators belong who stepped forward as the champions of the community at large) is, the unfeeling galloping over, and cutting up of, the fine piece of Grass on the slope between the Serpentine and the Crystal Palace, one of the most beautiful features of the noble park, which a fortnight ago might have vied in beauty with any lawn in England. Now, these equestrians (equites, or equestres) should remember that they form but a very small portion of that community whose privileges were so eloquently defended by themselves in the senate, and that while they are thus luxuriating on the soft Grass, they are depriving the larger portion of their fellow-citizens of the quiet enjoyment of one of their favourite resorts, and destroying the very place for which they evinced so much interest. The other abuse is, allowing nuisances of all sorts to be committed round the trees near the Crystal Palace; this has been the case during the whole period of the erecting of the building, and if allowed to go on, will (I am sure you will admit) endanger the existence of those trees, some of which are among the finest of the park. The evil might, I think, be avoided by putting up proper places near the Exhibition. Such places are very much wanted throughout the metropolis, and the want of them, every medical man will admit, is the cause of many serious disorders. *A Constant Reader.*

*Chiswick Exhibition.*—In the list of awards advertised in your last Number, I notice two errors. A Silver Knightian Medal is stated to have been given for Cinerarias in 6-inch pots, and a Silver Banksian for Cinerarias, also in 6-inch pots, but the fact is that both collections were produced in 8-inch pots; and the collection of Messrs. Lane was disqualified for containing plants in other sized pots. *Censor.*

*Cloth of Gold Rose.*—Perhaps it may be interesting to growers of Roses to know that the Cloth of Gold blooms in the highest perfection out of doors in the Isle of Wight. I have now a tree of this kind on a south wall in flower, and one of its beautiful Roses measures full 5 inches in diameter. This specimen has not been planted out more than 2 years. Devoniensis also succeeds perfectly out of doors. I have a bloom at this moment in my greenhouse, measuring 4½ inches in diameter, growing upon a very small plant. *Edward Dames, St. Helen's House, Isle of Wight.*

*Penny Banks.*—In your paper of May 3d, "A Gardener's Boy" asks for information respecting penny banks. There has been one established here by the rector of the village in which I reside, and it is working very well indeed. It is really surprising what has been saved by the children who have joined this "penny save, penny get club," in putting their pence by, instead of spending them in lollylops and other worthless trash. As I keep the accounts I am prepared and willing to give any information respecting it that may be required. *Wm Griffin, Eydon, Daventry.*

*Ceanothuses.*—Among the many recent introductions of hardy plants into our gardens, there are none perhaps more effective or better adapted for covering walls than the Ceanothuses. We have here (Osborne) fine specimens of the following, which were planted on a south wall in the spring of 1848, and withstood the severity of the winter of 1849 without protection, uninjured—viz., C. dentatus, C. papillosus, C. rigidus, C. cuneatus, and C. sp. California. I beg to offer a few remarks on the mode of culture as practised here—1st, C. dentatus: I consider this to be the most beautiful of them all; the extreme neatness of its foliage, the beauty and profusion of its flowers, cannot fail to render it an object of universal admiration. Our plant, which is 6 feet 9 inches in height, is now coming into bloom; it is trained on the horizontal system; the extent of its branches at the bottom is 9 feet 6 inches, gradually decreasing to the point of the main stem. After it has done flowering we shorten back the secondary branches to within an inch or so of the main laterals; this we repeat two or three times in the course of the season, according to the growth they make. It may be well to mention that the last pruning must not be performed too late, as on these branches we depend for the principal supply of flowers in the following season. This plant matured seeds last season, which were sown early this spring, and the plants are now coming through the soil.—2d, C. papillosus: I consider this next in superiority; it will endure similar treatment to the former, but it is more vigorous in its growth—a great acquisition in a wall plant. Our specimen, which is just coming into bloom, is 9 feet in height and 10 feet in extent of branches at the bottom, gradually diminishing to the summit. Seeds of this also ripened last year, and are in the same stage as those just mentioned.—3d, C. sp. from California: This is more vigorous in its growth than papillosus; it produces laterals freely, but not secondary branches. Our plant, which is 13 feet in height and 11 feet in extent of branches at the bottom, has not flowered with us yet.—4th, C. rigidus: This is a charming species. Our plant, which is 6 feet 9 inches in height, and in extent of branches 8 feet 6 inches, has been a dense mass of bloom, the beauty of which is now past. It does not produce laterals so freely as the other species, nor does it show any disposition to produce seeds, though it has flowered two seasons.—5th, C. cuneatus: This has not flowered with us at present, consequently we cannot say much respecting it, but its appearance is very promising. This plant is 7 feet in height and 8 feet in extent of branches at the bottom. In its growth it is similar to rigidus and sp. from California. *C. Winchester, Osborne Gardens.*

*Cucumbers.*—My plants having been unusually luxuriant this year, perhaps some account of the way in which they have been treated may be acceptable. The pit in which I grow my early fruit is heated by hot water on the tank system; the soil I use consists of three parts Wimbledon loam, one part well rotted dung, with a portion of half decayed leaves and charcoal, the latter in the proportion of 1 to 10 of the whole mass. I also put 4 inches of charcoal in the bottom of the bed, so as to ensure good drainage and to allow hot air to ascend freely from the tanks. The soil is turned over once or twice, in order to mix the whole well together. The loam should be mellow and in a rough state. I grow the young plants in decayed leaf-soil, until such time as they are fit to be planted out. Only a little charcoal is used in the bottom of the pots, in order that there may be nothing to abstract at planting out time. Due attention must be paid to stopping and training. I always stop when the plants have made two leaves about the size of my thumb; the second time I stop at the third or fourth joint, according to the strength of the plant. In this way I insure strong fruit bearing wood, with the centre of the bed well furnished. I water liberally during the period of growth. The temperature of the water should be equal to that of the pit in which the plants are. Plenty of air should be admitted on all favourable opportunities. I would, however, recommend an old mat to be placed across where the air is admitted, in order to prevent the ingress of sharp cutting winds. With regard to heat, that should be kept steady; I maintain 80° at bottom, with a top heat at night of from 68° to 70°, and 75° to 80° through the day. Under the above treatment I have this season grown Cuthill's Black Spine, the improved Sion House, and a White Spine, in one pit with uniform success. *John Kenny, gardener to the Earl of Cottenham, at Copse Hill.* [The fruit we received was one of the finest and best grown that we have ever seen.]

*A Garden Anomaly.*—"My Potato ground is so loose, that I can push my arm quite under their roots, and poke my fingers through the soil on the other side," wrote somebody in a garden periodical, within a short stretch of recollection; and he added to the effect, that such a condition was what he considered the *acme* of good cultivation. A modification of such a "loose character," may possibly approximate to what is generally considered a good condition of soil for growing crops; at all events, no one, careful of his reputation as a good gardener, would risk the assertion, that constantly stirring the soil about the majority of growing crops, was not beneficial. Both practice and theory seem alike in favour of it. All authorities recommend it. First-rate gardeners to a man preach from the text incessantly. But there are two sides to every question, and the advocates of either, no matter what may be the subject, are enabled to find matter for foundation to their argument. I am not about to deny the efficacy of soil stirring, far from it. Every day do I see examples of its efficacy. But there are two or three matters so apparently contradictory, that I must beg leave to bring them into notice. Not because they are not patent enough, for every one with half an eye must have noticed them often. If you go through a Wheat field by the beaten foot-way in spring, you will notice that all the plants growing in the hardened soil of the path are more robust, of a richer green colour, and infinitely more "tillered" than those in the ordinary ridges. I shall be met here by the assertion that it is because those plants are on the outside of their neighbours, receive a larger quantum of light and air, and are not pressed upon by their fellows. I deny that this argument is conclusive. Select single plants in any other part of the field, all circumstances being similar, without the consolidated soil, and if the plants exhibit all the favourable characteristics of those on the borders of the foot-way, I yield my position. They will not be found to answer. If a Carrot or an Onion, or any other plant, is allowed to spring up or grow in the hardened "alleys" of the gardeners' seed-beds, the same phenomena will be exhibited as in the Wheat field; and I know the same argument will be opposed as antagonistic. But they will ever be found, when fully investigated, to be faulty. Plants, about the roots of which the soil has become loose, from the frosts of winter, or other causes, soon become sickly, and of an opposite condition, is not speedily effected, the plants, in the majority of instances, die, or become so stunted, as to be worthless. The advice of a gardener I was acquainted with, of no mean pretensions, if the condition of his crops may be considered as conclusive evidence, was "keep the soil consolidated above the roots of your growing crops. Never let a weed gain a footing, but do not loosen the soil." In his garden I know that all the conditions aimed at and effected by those of opposite views were realised. I do not record the cursory observations without having given both sides of the question their due consideration, nor without the knowledge that to insist on the preference of a consolidated soil, when compared with one of an opposite condition, is to lay myself open to ridicule. But these are anomalies, real or apparent, in the present question, and I should like to see them reconciled. *G. L.*

## Societies.

Royal Botanic, Regent's Park, *May* 14.—This Society was fortunate in having a dry day, though cold, for its first *fête* this season. Without anything very striking, if we except the Roses in pots, which were again produced in great beauty, the show may be said to have been a good one. It was inspected by the Queen and H.R.H. Prince Albert a short time previous to the admission of the public. Falling as it did so soon after the Chiswick meeting, it was largely composed of plants exhibited there; and as these have been fully described last week, we shall confine our remarks in the following report to such subjects as were not shown on that occasion.

In the fine collection of 30 Stove and Greenhouse Plants furnished by Mr. May, gr. to Mrs. Lawrence, of Ealing Park, we remarked a pretty example of Hovea pungens, a plant which few grow well; Gomphol obium polymorphum, beautifully flowered, in the form of a small bush, in which shape it looks much handsomer than trained on a trellis; a splendid specimen of the graceful Bossiæa disticha plumosa, measuring at least 4 feet high and as much through; and a very fine bush of the Henchman Chorozema.—The second collection in point of merit came from Mr. Cole, gr. to H. Colyer, Esq.; and third and fourth groups were contributed by Mr. Stanly, gr. to H. Berens, Esq., and Messrs. Pamplin, of Lea-bridge.

Collections of 20 Stove and Greenhouse Plants were exhibited by Messrs. Green, Taylor, and Fraser. The former had yellow and purple Azaleas, the blue Leschenault, the rosy-flowered Adenandra fragrans, two Everlastings, Pimelea spectabilis, and a neat Boronia pinnata, which still ranks among the best species of the genus. Mr. Taylor sent a group of well grown plants, among which were the useful Ixora crocata, a large plant of the Box-leaved Eriostemon, a white Azalea, two Polygalas, a handsome bush of Adenandra speciosa, and Dracophyllum gracile, a plant whose neat spikes of sweet smelling white blossoms answer well for bouquets. Messrs. Fraser had a brilliant example of Azalea refulgens, a pyramidal Eriostemon neriifolium, the blue Leschenault, Boronia pinnata, and a pretty little Pimelea spectabilis.

The best collection of 10 Stove and Greenhouse Plants was produced by Mr. Croxford. We remarked in this beautiful specimens of Epacris miniata and Pimelea Hendersoni, which, when well grown, is a very gay and really useful greenhouse shrub. Mr. Speed's plants, which were fresh and beautiful in the morning, suffered much from cold in the course of the day, and before evening arrived, had drooped considerably. Other collections also exhibited the ill effects of a cold wind, sweeping through the tents. Mr. Williams, gr. to Miss Traill, sent the broad-leaved Bossiæa, the charming Erica propendens, Pimelea Hendersoni, an Everlasting, the beautiful violet Tetratheca verticillata, some Azaleas and Cape Heaths. Other collections of 10 stove and greenhouse plants were furnished by Mr. Carson, Mr. Barnes, Mr. Hamp, Mr. Watson Mr. Norris, and Mr. Slowe. In Mr. Hamp's group we remarked the Fortune Gardenia with snowy flowers, large and sweet, a considerable improvement on those of the old fashioned G. florida.

Orchids.—There was a large bank of this interesting tribe of plants, which always seem to excite more attention than any other kind of flower. We did not recognise among them, however, much different from what was shown at Chiswick. In Mr. Mylam's excellent exhibition of 25 plants were Lycaste tyrianthina, in good condition; a splendid bush of the Purple Camarote, which was, however, unfortunately insufficiently in blossom; a fine Dendrobium nobile and Saccolabium præmorsum.—Mr. Williams had the beautiful Lælia cinnabarina, whose charming colour was approached, but not equalled, by that of the Orange Epidendrum, the small yellow Dendrobium Jenkinsi, the white-lipped Zygopetalum rostratum, and the larger variety of Dendrobium Pierardi.—Collections of 15 and 10 plants were numerous, and we remarked a noble Cattleya Mossiæ, shown as a single specimen, from Messrs. Veitch. This could scarcely have had less than from 20 to 30 glorious flowers on it, all in the highest state of perfection.—Rarities consisted of Ornithochilus striatulus, from Mr. Carson; the Henshall Bolbophyl, a creamy yellow species, from Messrs. Rollisson; and Trichopilia coccinea and an Epidendrum from Mrs. Lawrence.

Azaleas, although in some instances fine, had in general lost much of the brilliancy which they possessed at Chiswick. Mrs. Lawrence's Chinese Yellow, was, however, just in perfection, and a finer plant it would have been difficult to discover. Some of her other specimens were also excellent, as were likewise Messrs. Fraser's.

Roses in Pots formed the grand feature of the show—sweet, large, and beautiful. Messrs. Lane's collection, which was first, was uncommonly fine. Their Coupe d'Hébé was a mass of flowers, rich in colour and regular in form. Mr. Francis too, had the same variety in beautiful condition, as had also Messrs. Paul. Indeed few Roses are more handsome or useful than this fine kind. Among other varieties we noticed Louis Bonaparte, Miellez, Baronne Prevost, Géant des Batailles, Souvenir de la Malmaison, Duchess of Sutherland, Vicomtesse des Cases, Devoniensis, Blairii No. 2, Pauline Plantier, Paul Perras, Armosa, Augustine Mouchelet, Elise Sauvage, Goubault, Niphetos, William Jesse, Mansais, Madeleine, La Reine, Bougère, and Aubernon. In the Amateurs' Class, Messrs. Terry, Williams, Roser, Rowland, and Chitty, had beautifully managed plants, more especially Mr. Terry's. The foliage was clean and healthy, and the blooms numerous and well blown. Dr. Marx, Persian yellow, Lamarque, Las Cases, Mrs. Bosanquet, Bouquet de Flore, Bourbon Queen, Bardon, Tagliori, Fabvier, Odorata, Comtesse de Lacépède, and Madame Legras, were remarkable for beauty and profusion of bloom. Mr. Francis had a box full of Géant des Batailles, "worked" plants in 3-inch pots, each having a single stem about a foot high, with a brilliant crimson or rather scarlet flower on its summit. These excited much interest, as well they might, for such plants will doubtless be found very useful for many purposes for which large specimens would be worthless.

Cape Heaths were numerous, and for the most part well bloomed. Splendid plants were produced by Messrs. Smith, Cole, Rollisson, Veitch, and others. Among the different varieties, were aristata major, Beaumontiana, Westphalingia, ventricosa coccinea minor, tortiliflora, suaveolens, Cavendishii, Favoides and its purple variety, Macnabiana, mutabilis, ampullacea, Sprengeli, hybrida, florida, intermedia, ventricosa carnea, fastigiata lutescens, perspicua nana, metulæflora, odora rosæ, and Hartnelli.

The best Single Specimens consisted of the Cattleya already alluded to, from Messrs. Veitch; a huge Pimelea spectabilis and Boronia serrulata from Mr. May, gr. to Mrs. Lawrence; Erica perspicua nana, from Mr. Smith, gr. to W. Quilter, Esq.; Epacris grandiflora, from Messrs. Fraser; and Leschenaultia formosa, from Mr. May, gr. to Miss Traill.

New Plants.—In addition to those produced at Chiswick, Messrs. Veitch had Pimelea Verschaffeltiana, Messrs. Henderson Ceanothus papillosus and rigidus, and Franciscea confertiflora, a promising violet-flowered species; the sulphur-coloured Brunsfelsia nitida, from Jamaica, was shown in this class by Mr. Mitchell, of Brighton; Marshall's Wallflower, diffusing a fragrance like that of Violets, by J. Edwards, Esq., of Holloway; the Oleander-leaved Allamanda, and some equally well known plants from Messrs. Henderson, of the Wellington-road Nursery. We also remarked that Certificates of Merit were awarded to cut specimens of Beaumontia grandiflora, and the very fragrant Murraya exotica. Mrs. Lawrence had Pimelea Nieppergiana, Hoya bella, and a cut spike of Amherstia nobilis.

Pelargoniums.—Nurserymen: the first prize was awarded to Mr. Turner, Royal Nursery, Slough; 2, to Mr. Beck, of Isleworth; 3, Mr. Bragg. Amateurs: 1st, Mr. Cock, of Chiswick; 2, Mr. Robinson. Six plants: 1st, Mr. Bray; 2, Mr. Chapman; 3, Mr. Gaines. Fancies—Nurserymen: 1st, Mr. Ayres; 2, Mr. Gaines; 3, Mr. Ambrose. Amateurs: 1st, Mr. Cock; 2, Mr. Robinson; 3, Mr. Miller. Capes: 1st, Mr. Parker; 2, Mr. Roser.

Among seedling Pelargoniums, the best was Mr. Hoyle's Magnet, which was awarded a Certificate of Merit for fine colour, and abundance of bloom. He had also Chieftain, which is a good flower, and others; Mr. Turner showed First of May; Mr. Dobson, gr. to Mr. Beck, Leader, a very promising flower, Gem, Vulcan, and Isabella; and Mr. Ayres received a Certificate of Merit for his Fancy called Formosissimum.

Calceolarias were furnished by Mr. Gaines. Although good, we did not remark among them anything new or very striking.

Cinerarias were shown by Messrs. Henderson, Lane, and Gaines. The sorts consisted of well known kinds.

Verbenas.—Two or three nicely managed plants were produced by Mr. Lockner. The varieties were Minerva, Wonderful, Desdemona, Heroine, Perrier, and Reine du Jour.

Rhododendrons.—We noticed a glowing crimson kind from Messrs. Rollisson; and Messrs. Standish and Noble had a purple sort with very large trusses. The latter looked as if it might be hardy.

Pansies were shown by Mr. Turner, Mr. Bragg, and others; and we observed a stand of Tulips in tolerable condition for the season.

Among Miscellaneous, Subjects were some Ferns and Lycopods, a few Alpines and a small group of Banksias, and similar plants.

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Entomological, *May* 5.—J. O. Westwood, Esq., F.L.S., President, in the chair. Mr. Samuel Stevens exhibited a new British species of Curculionidæ allied to Dorytomus, recently captured near Fenny Stratford, on Sallows; also a living specimen of the fine Callidium sanguineum, from Bromley, Middlesex; also an Adela cuprella, being the second known British specimen; and a beautiful series of beetles and butterflies from the river Amazon, just received from Mr. Bates. The President stated that an entire bed of Strawberries, planted last autumn in his garden at Hammersmith, had been destroyed by a very minute beetle (Haltica ærata) closely allied to the Turnip flea, the leaves and young shoots being completely riddled by the insects. The plants were of the Alpine variety, termed the "Fraises des quatre saisons." Mr. Sheppard exhibited a hermaphrodite individual of the Poplar hawk moth, the right side being male, and the left side female. Mr. Waring exhibited some very remarkable spiders from the west coast of Africa. A note upon the Economy of Trichiosoma lucorum, by Mr. Maysmor, was read. An elaborate paper, by Dr. Davy, was also read, containing a detail of numerous experiments made with insects of different orders and genera; showing the effects produced upon them by changes of temperature, and by immersion in various gases and vapours, such as carbonic acid gas, azote, oxygen, coal gas, ammoniacal vapour, muriatic acid, nitric acid, alcohol, chloroform, sulphuretted hydrogen, &c. Mr. F. Smith exhibited several female winged ants taken at unusual periods, namely, Myrmica graminicola taken in December, and Formica cunicularia taken in April. He also read some notes communicated by Mr. Ker, on the habits of several species of bees and wasps from New Holland, belonging to the genera Lestis (in which he described a new species generally confounded with L. muscaria) and Abispa, the former of which are reared in cells, placed one above another in the soft wood of the Xanthorrhea, whilst the latter is solitary in its habits, forming a nest of clay, with a curious thimble-shaped orifice at its lower edge. Mr. Douglas exhibited a specimen of a very delicate species of gnat (Trichocera sp.?) which he had reared from a pupa which had bored itself a passage through the hard sand-stone of a quarry at Charlton, Kent. Mr. S. Stevens brought for distribution specimens of Hylastes rhododactylus, reared from Broom stumps from Coombe-wood. The President stated, that for the accommodation of foreign Entomologists who might visit London, during the Exhibition in Hyde-park, the Council had resolved, that the Society's collections might be inspected any day, in company with an ordinary member.

## Miscellaneous.

*Quercus agrifolia, a hardy evergreen Oak from California.*—A few miserable living plants of this species were sent home by Hartweg from California, and are now beginning to grow in the Society's Garden. It will probably be a hardy evergreen tree, concerning which Nuttall, who knew it in its native country, has the following remarks:—"This species, almost the only one which attains the magnitude of a tree in Upper California, is abundantly dispersed over the plain on which St. Barbara is situated, and, being evergreen, forms a conspicuous and predominant feature in the vegetation of this remote and singular part of the Western world. It appears more sparingly around Monterey, and scarcely extends on the north as far as the line of the Oregon territory. It attains the height of about 40 or 50 feet, with a diameter rarely exceeding 18 inches; the bark is nearly as rough as in the Red Oak. The wood, hard and brittle and reddish, is used only for purposes of fuel, or the coarse construction of log-cabins. As an ornamental tree for the south of Europe or the warmer States of the Union, we may recommend this species. It forms a roundish summit, and spreads but little till it attains a considerable age. As a hedge it would form a very close shelter, and the leaves, evergreen and nearly as prickly as a Holly, would render it almost impervious to most animals. The leaves vary from roundish ovate to elliptic, and are of a thick rigid consistence; the serratures are quite sharp; the young shoots are covered more or less with stellate hairs, and for some time tufts of this kind of down remain on the under side of the midrib of the leaves, which are, however, at length perfectly smooth, and of a dark-green above, often tinged with brownish yellow beneath. The staminiferous flowers are very abundant, and rather conspicuous; the racemes the length of 3 or 4 inches; the flowers with a conspicuous calyx and 8 or 10 stamens; the female or fruit-bearing flowers are usually in pairs in the axils, or juncture of the leaf with the stem, and sessile, or without stalks. The cup of the acorn is hemispherical, and furnished with loose brownish scales; the acorn, much longer than the cup, is ovate and pointed. We do not recollect to have seen this tree properly associated with any other, except occasionally the Platanus racemosa; their shade is hostile to almost every kind of undergrowth. By Persoon this species is said to have been found on the eastern coast of North America, while Pursh attributes it to the north-west coast, about Nootka Sound. It does not, however, extend even to the territory of Oregon, as far as my observation goes." Née says, "I have only seen branches collected at Monterey and Nootka. The leaves of the young plants are perfectly smooth when first developed, of a thin consistence, with numerous slender sharp dentures beneath; they are of a brownish yellow colour, and appear smooth and shining." The long narrow acorns, almost conical, are a remarkable feature in the species. *Journal of the Horticultural Society*, vol. vi., p. 157.

*Hothouses in the time of the Romans; by M. Dureau de la Malle.*—In the memoir a short time since read to the Academy upon the subject of Roman hothouses and pits, heated artificially, I omitted several quotations which proved my statements, and they have consequently been impugned. My first authority is Columella (XI., 3, 51, 53). Tiberius being in ill health, was advised to eat Cucumbers every day. The Roman gardeners cultivated these vegetables in frames, containing hot dung, and exposed to the sun in front of a wall. The frames were, moreover, on wheels, so as to be easily moved into, and continually placed in the sun's rays, and were, in addition, furnished with pieces of talc, by which they were covered at night, and by which the plants were protected from frost and cold. "Thanks to this invention," says Columella, "Tiberius was supplied with Cucumbers at nearly every season of the year (*fere toto anno*)." Martial (VIII., 14), the contemporary of Domitian, who had in his palace a hothouse, containing exotic plants, called

Adonea, describes a glass hothouse, belonging to one of his patrons, which was set apart for similar plants, as follows, in one of his Epigrams :—"As you are afraid that your pale fruit trees, natives of Cilicia, cannot withstand the winter, and that a too cold wind may nip your delicate shrubs, you take care that by panes of talc the chilly wintry blast may be kept off, and that nothing be admitted but sun and a genial air ; and yet I have nothing but a miserable lodging, with a window that does not fit, and where Boreas himself would not find a habitation. Is it thus, cruel man, that you lodge an old friend! I had much rather be the guest of your tree!" The use of some heating apparatus is here clearly referred to ; but Seneca (Letter 122) tells us that the Roman hothouses were heated by steam. He denounces the unbridled luxury of his contemporaries. "Do not those live contrary to nature who require Roses in winter, and who, by the use of hot water, and application of heat, compel the Lily to blossom in winter, instead of in the spring?" It is remarkable that the most direct evidence of the use of hothouses by the Romans should be furnished by a poet and a philosopher. *Comptes Rendus.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

Although the general potting has by this time been completed, there will be some plants, particularly young ones intended for specimens, that will require another shift ; and many free growing plants will require larger pots once a month, until they are about to commence flowering ; when they should be assisted with liquid manure and top dressings of rich soils. If the pots have been perfectly drained, and the plants potted in open soil, water may be liberally administered to those which are growing and rooting freely ; but, if anything like stagnation be observed, the fault may generally be attributed to some defect in the drainage, which should be immediately examined, and put right. A sufficiency of air to produce a free circulation should be at all times admitted in the houses ; but during the more active season of growth, more than this is unnecessary, unless for the purpose of moderating the temperature in very hot weather. Shading should only be used in strong sunshine, and should be so arranged that it may be easily removed or reapplied in changeable weather. All growing plants will require constant attention, in the training and occasional stopping of the young growths, especially of those intended to form handsome specimens. To plants in a growing state, the allowance of heat, shade, and moisture, during the day, should be increased rather than decreased, proportioning them to the still increasing strength of light. A temperature of 68° is sufficient for anything during the night, and whenever the weather is so warm as to raise the internal temperature higher than this, give air more abundantly ; but even in this case, a little fire will be necessary the last thing at night, to prevent the house being too cold at daybreak next morning. Syringe early in the afternoon, that the superfluous moisture may dry up before dark ; and in order to assist this, some of the ventilators should be opened about a couple of hours after syringing, and be allowed to remain open all night. This applies especially to houses with closely glazed roofs, where sufficient air to prevent stagnation cannot enter by means of the laps. Begonias that have had a rest after flowering will now require to be cut in a little, and to have their shape regulated ; and when they begin to grow, let them be repotted, using turfy loam, peat, and a little rough leaf-mould. If placed in a warm house, and syringed freely in the evenings, they will soon commence their new growth ; after which, they must have plenty of air, to prevent their becoming weakly. Pelargoniums, Calceolarias, and other summer-flowering greenhouse plants, should have sufficient room to enable them to enjoy the full benefit of the sunlight, with a free circulation of air. The flower-stems of the Calceolarias should be supported with small neat stakes.

### FORCING DEPARTMENT.

Pineries.—Let the plants be liberally supplied with air and moisture during their growth, and especially those which are swelling their fruits. The latter should be watered with liquid manure, and where it is desirable to produce the fruit as large as possible, its swelling will be assisted by removing useless suckers, and by affording a slight shade during bright sunshine. Maintain a moist atmosphere by sprinkling the paths, walls, and other evaporating surfaces, and by loosening the tan, to induce an exhalation of the congenial vapour arising therefrom. Vineries.—Attend to tying, thinning, and stopping. Where plants of any kind are necessarily grown beneath Vines, the shoots of the latter should be stopped at the first joint above the fruit, and the spurs on which there is no fruit should be stopped at the fourth or fifth leaf. This will also apply to Vines on the rafters of greenhouses, which are just now being thinned and regulated. In disbudding, not more than twice the number of shoots necessary to produce a crop should be retained, one half of which will carry bunches this year, and the other half will make wood on which to produce next year's crop. Peaches and Nectarines, which are just ripening, should be assisted by a dry atmosphere, a free admission of air back and front, and by removing any leaves which shade the fruit from the rays of the sun. In the succession house, very little fire will be required [illegible] night, if the sun-heat is properly economised by [illegible]ing early in the afternoon. Tie in the young shoots [illegible]y advance.

### FLOWER GARDEN AND SHRUBBERIES.

Even in the latest situations, the planting out will now be nearly completed ; and the chief things requiring attention will be the watering of all plants that need it, and the bringing on of the late struck cuttings as quickly as possible, to make up for any that may be deficient. There are few places in which a sufficiency of room is provided for those beautiful and useful plants, more particularly grown for bedding purposes ; and as late struck cuttings soon come into flower, if carefully removed from the frames into the flower-garden, we would recommend every possible attention to be paid to them. Places which are not visited by their respective owners before August, may be made to look gay, with cuttings not put in before April. We have put cuttings of scarlet Geraniums into a border in June, which were a perfect mass of flowers in September, without any other attention than merely watering them after they began to grow. Annuals which have been sown or pricked out into frames or beds will now require transplanting into their final situations, and biennials into reserve beds for planting out next spring. A sowing of annuals should now be made for autumn flowering, including Mignonette, Nemophila, Virginian Stock, Silene, Collinsia, Sweet Peas, Gilia, Kaulfussia, Godetia, Clintonia, and any others which are sufficiently showy, and come quickly into flower.

### HARDY FRUIT GARDEN.

Proceed with the final disbudding of Peaches and Apricots on the walls, leaving no more shoots than can be laid in without crowding. Where the young shoots seem likely to grow very strong, they should be stopped as soon as they have made from four to six leaves ; and from the laterals consequently produced, one or more may be selected, which will generally form good bearing shoots of moderate strength ; but if the wood they produce is still too strong, stop again, and continue the practice as long as the tree persists in throwing out strong growing shoots. This moderates the growth in those parts which are too vigorous, and helps to diffuse the sap over the whole tree with greater uniformity. The neglect of timely and judicious stopping of the gross shoots often proves to be the ruin of many a fine tree. Where the Peaches, Nectarines, and Apricots have fortunately set an abundant crop of fruit, it will be necessary to examine them carefully, and to take some away where they are too thick ; this should be done when they are about the size of Cob-nuts, as they come in usefully for tarts and preserving. Attend vigilantly to the destruction of caterpillars and aphides. Continue to let down the canvas screens at night, whenever the weather is wet or cold ; and wash the trees frequently with clean soft water by the engine.

### KITCHEN GARDEN.

A cool moist atmosphere should be maintained in the Mushroom house, and cleanliness strictly attended to ; let the hay used for covering the beds be occasionally changed, as it forms a more congenial harbour for insects, when allowed to get old and musty. Pay attention to the destruction of woodlice, by laying slices of Turnips to attract them, in addition to which a few toads should be kept on all the beds. The Onions will soon require thinning, and if a sufficient breadth has not been sown, a bed should be prepared for transplanting those into which are thinned out of the principal bed. Make a sowing of the silver-skinned variety, moderately thick, to produce small bulbs for pickling. Give plenty of room to all growing crops, and stir the ground frequently with a fork, to encourage their progress, and to keep down weeds. Make successional sowings of all summer vegetables which are of short duration, as Peas, Beans, French Beans, tall Runners, Spinach, &c., and salads of all kinds ; also early Cabbages, and a small sowing of Cauliflowers for late autumn and early winter supply. For Spinach crops, sown at this season, the ground should be rich and deep, or the produce will be bitter, and will soon run to seed. Transplant Celery, and water freely, that the young plants may not suffer from the check, or from drought.

State of the Weather near London, for the week ending May 15, 1851, as observed at the Horticultural Garden, Chiswick.

| May. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 9 | 29.676 | 29.639 | 59 | 43 | 51.0 | 48 | 48½ | S. | .00 |
| Satur. .. | 10 | 29.613 | 29.593 | 70 | 37 | 53.5 | 50 | 48½ | S. | .03 |
| Sunday . | 11 | 29.773 | 29.715 | 66 | 47 | 56.5 | 51 | 49 | N. | .00 |
| Monday | 12 | 30.070 | 29.975 | 68 | 43 | 55.0 | 52 | 49½ | N. | .29 |
| Tues. .. | 13 | 30.259 | 30.242 | 58 | 31 | 44.5 | 52 | 50 | N.E. | .00 |
| Wed. .. | 14 | 30.339 | 30.291 | 57 | 27 | 42.0 | 51 | 49 | N.E. | .00 |
| Thurs... | 15 | 30.355 | 30.152 | 64 | 29 | 46.5 | 49 | 48 | N.E. | .00 |
| Average .. | | 30.003 | 29.930 | 62.4 | 36.7 | 49.5 | 50.4 | 48.9 | | .32 |

May 9—Fine; clear at night; large, distinct, lunar halo.
— 10—Slight haze; very fine; shower in afternoon; clear.
— 11—Very fine; slight haze; very dry; cloudy and fine.
— 12—Overcast; very fine; rain in afternoon.
— 13—Fine throughout; clear and cold and night.
— 14—Fine; cloudy, with dry air; clear and frosty at night.
— 15—Very clear; fine; clear; frosty.
Mean temperature of the week, 2° deg. below the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 24, 1851.

| May. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 18 | 64.6 | 44.2 | 54.4 | 11 | 0.17 in. | 1 | 5 | 4 | 2 | 2 | 6 | 4 | 1 |
| Mon. 19 | 65.2 | 44.9 | 55.0 | 10 | 0.50 | 2 | 5 | 6 | 1 | 2 | 6 | 3 | — |
| Tues. 20 | 65.0 | 44.6 | 54.8 | 13 | 0.64 | 1 | 4 | 6 | 3 | 3 | 5 | — | — |
| Wed. 21 | 66.1 | 45.2 | 55.6 | 11 | 0.56 | 2 | 5 | 5 | 2 | 3 | 2 | 1 | — |
| Thurs. 22 | 65.8 | 44.4 | 55.1 | 12 | 0.20 | — | 4 | 3 | 3 | 4 | 5 | 1 | 1 |
| Friday 23 | 68.4 | 46.6 | 57.5 | 7 | 0.53 | 1 | 5 | 3 | 4 | 1 | 3 | 4 | 4 |
| Satur. 24 | 68.1 | 48.7 | 58.9 | 9 | 0.54 | 2 | 5 | 6 | — | 4 | 4 | 3 | 1 |

The highest temperature during the above period occurred on the 23d, 1847—therm. 89 deg.; and the lowest on the 23d and 24th, 1837—therm. 30 deg.

## Notices to Correspondents.

Back Nos. : The volumes for 1849 and 1850 may be had, price 30s. each.—Full price will be given for Nos. 41 and 45, 1850. —Full price will be given for the following Numbers, *with the Newspapers*, or half price for the Newspaper alone : 1845—12, 34, 35 ; 1848—49, 50.

Bees : *H.* The improved cottage, with a board and *one* glass at the top. *Y.*

Canary, Tricks of the : *Emily B.* You must immediately remove your pair of canaries from their breeding cage, and place them in a smaller cage. As they agree so well together, by all means let them live under the same roof ; but as Nature has furnished them with such egregiously large organs of "destructiveness," put them up for breeding purposes no more. Provide yourself at once with a younger pair of lively, gay-coloured canaries, and you have yet time to secure three fine healthy broods. *W. K.*

Cinerarias : *G R T.* No correct opinion can be formed of the quality of seedlings until they have flowered. Form of habit will not always indicate value, and therefore we would reject none until they had blossomed.*

Cotton Blinds : *R A H.* We doubt whether Linseed oil will prevent their mildewing ; but if dipped in a solution of chloride of zinc, they will be saved.

Ferns : *T W.* They have no flowers. Count Zuminski's observations by no means lead to any such inference ; nor do they in the least disturb the views of systematists. This, however, is a question of pure science, which we cannot discuss here.

Insects : *W G.* A dry situation, with camphor, cajeput oil, or a few drops of quicksilver in the drawers, will prevent the ravages of mites. The bodies of greasy moths should be moistened with naphtha. *W.—R S.* Strips of paper tied tightly round the stems of your fruit trees and standard Roses, and well covered with tar or bird-lime, will prevent the beetles you have sent (which are the Otiorhynchus vastater) from ascending your trees. It is better also to place a white cloth or sheet under the trees, and shake them on approaching them with a light after dark, rather than hunting for the beetles by hand, as they fall on being alarmed. *W.*

Manures : *J Macaulay.* Mix it with peat charcoal, or any other fine and soft charcoal. Peat ashes will not answer. Mr. Cuthill's Treatises are still on sale ; you can procure them by applying to him at Camberwell.

Market Gardening : *F G.* Mr. Cuthill's papers on this subject can only be had in the *Gardeners' Chronicle.*‡

Melon Leaves: *F H S.* Your leaves are in a terrible pickle. It seems to us that they have been infested with thrips, and that they have been brought to their present state by unskilful attempts at destroying this pest.

Mice : *J B.* We know of no better plan of getting rid of them, than by trapping them. This, we should think, might be effected without difficulty, provided proper skill is employed in baiting and setting the traps. ‡

Names of Plants : *Erzeroum :* 400, Campanula glomerata ; 479, C. rapunculoides.—*Carring Cathol.* Yellow Banksian Rose and Baccharis halimifolia.—*George Pickering.* It seems to be some kind of Hoarea ; but a broken leaf and a rough sketch do not enable us to speak precisely. Cassia mimosoides is an old plant, and probably exists in somebody's garden ; though we do not remember having seen it cultivated.—*S A.* 1, Tritoma media ; 2, Cochlearia officinalis ; 3, no flowers.—*T D H.* One is no doubt a mere variety of Dendrobium densiflorum ; the other is a curious thing, certainly allied to Cœlogyne, and especially to C. prolifera, but not in a state for determination. We have it from Mr. Lobb, who gathered it on the Khasiya Hills.—*R J G.* Asplenium lucidum, Forst. *S.—Phlox.* Some kind of Mesembryanthemum, not determinable without leaves.—*M G W.* Acineta Humboldtii, badly coloured.—*P B.* A variety of Oncidium stramineum.—*E S.* Hippeastrum vittatum.—A few enquiries stand over for further consideration.

Nightingales : *John Bailey.* As your butchers only "kill" once a week, keep your beef on marble (in a very cold cellar), covered over with a fine wire sieve. Ants' eggs, and mealworms, are excellent of their kind, but they must be given sparingly to these birds when in confinement. They subject them to fits. Meal-worms are a yellow, dry worm, found in meal, and are obtainable at any miller's, or through a baker. Keep them in a jar, with meal and flannel in it ; but let no damp come near them. Hang your bird on the wall of a quiet room facing the window. Administer the bath every morning, removing it immediately his majesty has retired from it. The other questions will be considered in the forthcoming article. *W. K.*

Peach Trees : *F L H.* It is now too late to prune or shorten your trees planted last October ; and their branches, from 3 to 5 feet, are too long to break well if not assisted. You must disbud the extremities, and then the eyes will break near the bases of the shoots, where you require them.‖—*Northwood.* Cold is the cause of those swollen curled leaves everywhere so abundant this season. Nothing can be done till warm weather sets in, and then healthy foliage will appear, and the other should be picked off. In the mean time take care that no green-fly exist ; snuff will kill it.‖

Pear Trees : *S T.* The evil is incurable ; it seems caused by cold. Have patience ; the trees will recover without assistance : at least we see no sign of constitutional disease.

Seeds : *N B.* Raise them in gentle heat ; sowing the Pine seeds in pure loam and the Rhododendrons upon peat. When they come up, and have formed their true leaves, harden them off by degrees.

Stoves : *A J B.* In order to maintain moisture in the air, you must syringe copiously, or throw down water upon the floors, or place *upon* your Phœnix stove a vessel containing water. A tub of water is useless. Moist earth will damp the atmosphere as long as the surface of the earth is wet, but not longer. Your own sensations will tell you nearly enough whether air is dry or damp.

Yews : *R A H.* Yes ; if you will reduce the top of the taller Yew, you will throw so much strength into its young branches that it will soon equal its companion ; but on no account use manure. You may employ an infusion of peat in alkaline water, if you have it ; but it will be just as well to let the roots alone.

Misc : *E D.* As you intend to emigrate to Illinois, Downing's "Fruit and Fruit Trees of America" will prove a suitable work. The Peach, in that country, is raised from the stone, or worked on Peach stocks. The trees grow vigorously for some years, and then they become generally affected by what is termed the *yellows.* A similar effect is produced by the Peach stock in this country. You ought, therefore, to use Plum or Almond stocks ; and if all your large family can learn to bud previously to leaving this country in August, so much the better. ‖

### SEEDLING FLOWERS.

Azaleas : *J J.* White, striped with red ; small and very badly formed.*

Calceolarias : *S W.* A nice flower, in the way of Lady Constable. Its faults are, too large a throat and want of smoothness.*—*G H.* Straw-coloured ground mottled with brown. A very nice flower, but *rather* too large in the throat.*

Cinerarias : *A Z.* Pretty, but too small.*

Pansies : *J F.* They should be at least as large again to be worth anything.*—*S S.* A showy border variety. It will not make a good show flower, on account of its colours not being well defined.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

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STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell-road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B. Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Orders or Letters addressed to J. L. HANCOCK, Goswell-mews, Goswell-road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.


THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY, empowered by Act of Parliament to execute all works of Drainage (including outfalls through adjoining estates), to erect Farm Buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money, or to enable the landowner to employ his own capital, and execute the works by his agents, and to secure repayment of the outlay by charge on the property improved spread over a number of years.

Applications for the execution of works to be addressed to WILLIAM CLIFFORD, Secretary.

Offices, 52, Parliament-street, London.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ANNUAL COUNTRY MEETING of 1851 will be held, by the gracious permission of Her Majesty and Prince Albert, in the HOME PARK, WINDSOR, in the week commencing MONDAY, the 14th of JULY.

Copies of the Prize Sheet, containing the terms, conditions, and amount of the respective Prizes, and the Rules of Exhibition, and also copies of the requisite printed Forms of Certificate, may be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates must be returned, filled up, to the Secretary, on or before the **17th of May**, the Council having decided that in no case whatever shall any Certificate be received after that date.

In the application for Certificates, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

By order of the Council, JAMES HUDSON, Secretary.

12, Hanover-square, London, May 17.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE MAY GENERAL MEETING of the Society will be held at the Society's House, in Hanover Square, on THURSDAY, the 22d May at 12 o'clock.

By order of the Council, JAMES HUDSON, Secretary.

London, May 17, 1851.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND is desirous of receiving Tenders from Innkeepers or others, to contract for the supply of a Cold Dinner for 2000 persons in the Society's Pavilion, in the Home Park, Windsor, on Wednesday the 16th of July, 1851. Printed forms of Tender may be obtained on application to the Secretary, at the Office of the Society, No. 12, Hanover-square, London; and they must be returned to him, filled up, on or before Monday the 9th of June, 1851, the Society, however, not binding itself to take the lowest Tender.—By order of the Council,

London, 14th May. JAMES HUDSON, Secretary.

# The Agricultural Gazette.

*SATURDAY, MAY* 17, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 21—Agricultural Society of England.
THURSDAY, — 22—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 28—Agricultural Society of England.
THURSDAY, — 29—Agricultural Imp. Soc. of Ireland.

ON former occasions we have adverted to one of the fallacies which has crept into agricultural geology, and which has contributed much to retard its progress—the assumption of a more intimate connection than has any existence in nature between the rock formations and the soils which cover them. The exception has, in this case, been mistaken for the rule. It would be easy to show on agricultural evidence, even with the scanty information which we at present possess, that local soils—that is, soils derived wholly from the rock immediately below them, are confined to particular situations, as, for instance, to steep escarpments, and to certain elevations. This holds good, whether we examine limited areas, and trace the variations of soil over the several formations, or whether we regard the British isles as one geological district, which has been subject to that series of operations by which the superficial deposits were formed, denuded, and rearranged. Viewed in this light, those larger areas, which are the least encumbered with these deposits, will be found to owe this immunity to the elevations at which they occur, or to the form of the surface; and though such districts constitute the strongholds of those who derive all soils from the real substrata, the assumed surface of geological maps, they merely exhibit on a large scale that dependance of the distribution of soils on contours which is apparent on a smaller scale, when we examine minor districts in detail.

It is not our intention to pursue the subject further at present. We propose rather to point out another fallacy which has met with too ready credence, namely, the assumed variation in the character of alluvial soils, with the variation in the rock formations through which the rivers which deposit them have flowed. This is only true of the alluvium near the head-waters of the large rivers, and on the banks of their minor tributaries. Near their mouths, where the principal alluvial tracts are situated, such deposits must be of a very mixed character, composed of fine detritus derived from a great variety of formations. This will be evident, whether we examine the course of the Severn or of the Thames, of the Humber, or of the various streams which discharge their waters into the estuary of the Wash. Let us commence with the Severn: it rises among the slates and sandstones of the lower silurian group; through which it flows southwards for about 50 miles, gathering strength as it goes

> "From a thousand petty rills
> That tumble down the snowy hills,"

when it emerges from amid the mountains composed of these ancient strata, and enters the plain of the new red sandstone, it turns to the south-east, and maintains that direction for about 25 miles, skirting the edge of the upper silurian shales and limestones of the Wrekin and Wenlock Edge, with their associated trap rocks. At the gorge of the iron bridge it crosses those strata and the coal measures of Coal-Brook Dale; and, turning southwards, re-enters the new red sandstone, through which it flows by Worcester to Tewkesbury; except for a small portion of its course, between Alveley and Bewdley, which lies through the coal measures. Near Worcester, it receives tribute from the old red, chiefly through the medium of the Teame; while further south, silurian and trap detritus is brought down by some minor streams from the Malverns and the Woolhope Valley. At Tewkesbury the confluence of the Warwickshire Avon takes place, which has flowed through lias and the marls of the new red. Through these rocks the Severn, thus augmented, holds its onward course by Gloucester to Berkeley, touching the old red on its right bank, from near Newnham to the coast opposite Berkeley. On the left bank, at Berkeley, the great alluvial tract of the Severn commences; south of that point the Wye, the Taff, and rivers of smaller note, pour down, on the west, detritus from the old red, the carboniferous limestone, and the coal measures. On the east the Avon of Somersetshire, the Parret, the Axe, and the Brue, add to the spoils of these rocks, those of the lower oolite, the lias, and the new red.

The stream of the fair Sabrina was bright and pure when it commenced its course in regions (if we may credit the author of "Comus," who, we fear, had more poetical than geological authority for the assertion), where its

> "Billows roll ashore
> The beryll, and the golden ore."

It terminates, amid the slime and mud of the Bristol Channel, contaminated, like many bright beginnings, with numerous defilements contracted in its course; and among the varied materials held in suspension by the turbid waters, agitated by the billows, and borne to and fro by the tide, who will venture to refer each particle to its source? Who will venture to indicate the characters impressed, by a given rock formation, on the ooze urn deposited by the muddy current, wherever it finds a resting-place; or on the soil of the rich alluvial plain which extends from Berkeley to Bridgewater, and which was deposited, in a similar manner, in bygone centuries, under relative levels of land and sea, differing slightly from the present? Nor is it only from the many rock formations enumerated above that the mixed character, and with the mixed character, the fertility of this alluvial soil, has been derived. The plain of the new red sandstone from Shrewsbury and Worcester is deeply covered with deposits of sand, clay, loam, and gravel, which contain in great abundance large blocks, and small detritus of granite and other crystalline rocks, as well as of slate rocks, derived from Westmoreland and Scotland. Atmospheric action and the eroding and transporting powers of running water, must have acted even more powerfully and extensively on these incoherent superficial accumulations, than on the more consolidated strata which occasionally rise through them. Much fragmentary matter, both fine and coarse, which had been borne, under the influence of the glacial sea of the pliocene period, from regions distant some hundreds of miles, must have been mingled in this way with local detritus derived from the rocks which bound the area drained by the river and its tributaries. The alluvial soil of the Severn will, therefore, contain materials derived more or less from every rock formation in England, except those portions of the upper secondary strata, which lie to the eastward of the great central watershed of the island. The variations of soil in different parts of this or of any alluvial tract, may be traced, moreover, to different velocities in the currents from which the materials were deposited, rather than to differences in the composition of the rocks from which they were derived. When the muddy waters of the Humber and the Trent are spread over land which it is intended to improve by the process of warping, it is found that the quality of the soil is regulated by the velocity of the current from which it is deposited. Near the point of entrance where the waters flow briskly, nothing subsides but the coarser particles; and the soil is too sandy. To the remoter portions, where the current is sluggish, nothing is borne but the finer argillaceous particles, and too clayey a soil is produced. The richest soil is found in an intermediate situation, where a due intermixture of sand and clay forms a rich friable loam. So well are these facts understood, that the great art of successful warping consists in reducing them to practice, by so regulating the current, as eventually to distribute this loamy deposit over the whole area to be improved; covering with it those

portions over which sand and clay were thrown down, during the earlier stages of the process.

With these remarks we close our geological investigation of the course of the Severn. The Humber, the Wash, and the Thames, which will hereafter pass in review, will be found to yield similar results.

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At the present moment of low prices of corn—when occupiers of heavy soils are looking out for fallow crops which will admit of profitable cultivation, and by producing an abundant growth of cattle food, will place them more nearly upon a footing with the light land farmer—we shall devote a portion of our space to a consideration of the merits of those plants which are likely to serve their purpose. Among these are the Mangold Wurzel and the Cabbage, both of which in some districts are extensively and profitably grown by heavy land farmers. The difficulties which these farmers have to contend with in the growth of roots are well known to be, first, that of securing a sufficiently fine tilth in the spring, for the vegetation of the seed, and afterwards, that the crop must be removed from the land and not fed upon it, as the injury occasioned by treading to the following grain crop is frequently greater than can be compensated for by the growth of the roots. Although the first of these objections will apply to Mangold Wurzel, yet neither of them can be urged with much force against the Cabbage, which grows to a large size upon strong loamy soil; and the fact of the plants being raised in a seed-bed and transplanted into the field, is greatly in its favour. Planting at wide intervals will admit of the frequent use of the plough or scuffler between the rows, so that nearly all the advantages of a bare fallow may be secured, whilst the constant stirring pulverises the soil, and will greatly benefit the growth of the crop; and without this stirring, the roots have to contend with an impervious mass of clod, hardened by drought, or saturated by rain into an impenetrable mass, into which it is vain to expect the young roots to seek for food. On the other hand, the pulverisation is highly acceptable to the plants, the soil is moist in dry weather, and wet sinks down without doing injury, so that the roots seek for food in a friable soil, from which, from the amount of moisture it retains, soluble aliment can always be obtained.

From the want of practice of the farm labourer, the expense of transplanting the Cabbage may, in many cases, cause it to be rejected by the farmer, who may consider it too expensive an operation, and more fitted for the market gardener; but we hold that many of the practices of the market gardener will have to be followed ere our farms are made to produce the greatest profit. Young Drumhead Cabbage plants may be purchased of nurserymen at 1*s.* 6*d.* or 2*s.* per thousand, and we have occasionally contracted for plants and planting at the rate of 2*s.* 6*d.* This shows that the expense of planting does not greatly exceed the cost of seed and sowing Mangold Wurzel or Swedes. One gentleman, a heavy land farmer, with whom we are acquainted, plants Cabbages in rows 5½ feet apart, the plants in the row being 21 or 22 inches apart. At these distances an acre requires about 5000 plants. In the intervals between the rows he pulverises by repeated ploughings, and he considers he has all the advantages of a summer fallow, with the benefit to be derived from a heavy and nutritious crop of winter food.

Upon rich loams, peats, as well as upon most of the best description of Turnip soils, Cabbages may be transplanted upon ridges, dunged and prepared in the same manner as for Turnips. The ridges being 27 inches apart, and the Cabbages planted 2 feet apart in the rows, about 10,000 plants will be required per acre.

Cabbages may be planted in May, to be given to sheep in September or October, and the planting may continue at intervals to the end of June, to secure a supply through the winter. It is excellent food for almost all kinds of stock. We have used it for fatting sheep, ewes, cows, bullocks, and pigs, and we have plenty of satisfactory evidence of the feeding and milk-producing qualities of the plant.

A writer in the last Number of the "Highland Society's Transactions," concludes a prize essay upon the cultivation of field Cabbage thus—"The Cabbage having made part of its growth when planted in the field, and not raised there from seed, is a fact of some importance, especially upon land highly cultivated, where vegetation is rapid, and the plants arrive at maturity in a comparatively short period. Here the Cabbage may follow Tares, mown or fed off; and a good crop for winter use may be grown upon stiff soils, where the difficulty of producing a finely pulverised seed-bed, and the ravages of the Turnip-fly, too often prevent the agriculturist from an attempt at Turnip culture. The transplanted Cabbage may, in some degree at least, supply its place; and it is upon this class of soils that it is likely to be of most benefit."

With the writer of the above essay we must leave the matter in the hands of those who are inclined to give this crop their attention, convinced, as we are, that a fair trial of its growth will have much more influence in extending its culture than aught we can write in praise or condemnation of this or any other farming practice. We can merely point out what may improve or aid the agriculturist, and leave him by actual practice to prove whether he can benefit by it.

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## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT INDUSTRIAL EXPOSITION OF THE NINETEENTH CENTURY.

No. II.—Those who rejoice in the conquests obtained by mind over matter, and in the successful efforts of ingenuity to save toil, will experience a rich treat in wandering amongst the wheels and straps and busy clatter of the "machinery of motion;" and after surveying the marvellous aids which mechanism has furnished to the manufacturer, will be equally delighted when, crossing over from the north to the south side of the western half of the building, they see the beautiful "agricultural machinery"—here at rest because its destination is for the broad field rather than the crowded factory—and contemplate what mechanism has done for the farmer. And here amid the many available instruments of culture are some which seem to indicate the *desiderata* of agriculture rather than supply the deficiency; for notwithstanding the repeated attempts of ingenious mechanists, the inventive skill which has superseded the use of finger and thumb in spinning has not yet dispensed with the eye and hand in guiding a plough, or substituted a steam horse for a living one in drawing it. Nor has the ingenuity which sometimes contrives in manufacture a new process supplanting one hitherto performed by hand, been able as yet to introduce a new mode of tillage better than that of the plough and spade.

For years we have been startled by paragraphs in the papers announcing the perfection of a steam plough, or of some implement that could convert a piece of Couch-encumbered stubble ground into a proper seed bed at one operation; but unfortunately these notices have never been followed by descriptions of the renovation taking place in general farm practice from the extending employment of these things. Lord Willoughby de Eresby's steam plough, the only one exhibited in the great glazed forcing-house of invention, is perhaps the most workable engine of the kind yet constructed. From the accounts which have appeared respecting its performances, it seems able to turn over land of anything like a favourable kind; but whether the expense of the operation, the laying down of tram rails across different parts of the field, the difficulty of adjusting the ploughs to varying circumstances during their work, &c., will be compensated by the rapidity of execution and other advantages, must be left to experiment and the judgment of those who have seen it work. The steam-engine is portable but not locomotive, and drags the ploughs towards it by a chain. There are four iron ploughs, with coulters before them and subsoil tines behind, all fastened in one iron frame, and so arranged as to follow each other at a suitable distance in four separate furrows. The frame or carriage, composed of longitudinal and cross bars, is mounted upon three small wheels, besides two in front, apparently intended for steering. Each end can be lifted or lowered by means of two levers, the handles of which meet about the centre of the carriage, where there is a platform seemingly for the driver to ride upon. An endless chain, extending from a drum or barrel upon the engine to a pulley fixed at some distance down the field, passes double through friction rollers on the carriage; and, by pinching either of the chains with two wedges and levers, the frame, with its ploughs, travels either forward or backward at the rate of five miles per hour; and, by letting the chains go, the progression can be instantly stopped. The difficulty in such machines has hitherto been the power wasted by the engine in drawing the ploughs back again from the engine toward the pulley; but this seems to draw the ploughs backwards, and out of work, to the far side of the plot to be ploughed, and thus perform the work only by a direct pull—the land being all turned one way, as in turn-wrest ploughing. The engine is mounted by springs upon wheels with flat tires, so as to run on common roads, and in the field it traverses tram rails at right angles to the direction of the chain and the furrows—the sectional form of the rails, so as to fit the flat-rimmed wheels being this: ⌋ ⌊. There are two horizontal cylinders within the boiler, just above the fire-box, which work an axle with fly-wheel and gear work, turning the drum underneath the boiler, upon which the chain is once or twice wound. There are two pairs of eccentrics and links for reversing the valves. The regulator is not like the common "governor," but consists of two balls at opposite ends of a bar, the middle of which is attached by a joint to the end of a horizontal spindle. When motionless, the bar is inclined to the spindle; but when revolving, the centrifugal force of the balls tends to draw the bar at right angles to it: an eccentric curve upon the bar slides a rod within the spindle which communicates with the steam valve. "C. W. H." admirably demonstrated in our columns, some time ago, that the plough is an imperfect kind of implement, and that attempts to employ steam for horse labour will not succeed unless it be made to stir and turn up the soil without sliding, pressing, and forming a hard pan upon or within it. After reading his capital idea of the wheel-cultivator required, which should revolve with a motion independent of its bodily advance, we certainly anticipated a sight of his machine in the Exhibition; but not even the idea in any altered form is to be here discovered. A few contrivances of a different nature are shown, however, for stirring or turning the soil without ploughing it. A ponderous machine, by G. Thompson, of Great George-street, Westminster, we take to be an apparatus for digging; seeing that it is furnished with several spades: we are unable to divine whether it is intended for horse or steam-power, there is no boiler or engine upon it, though there is room for one; and perhaps this has yet to be added, seeing that although poles or shafts are attached, no force of horse-flesh could possibly drag it along. This patent machine is an immensely strong timber rectangular frame, about 11 feet by 8, horizontally resting on an axle with two carriage-wheels, each of nearly 7 feet diameter. One of these wheels is iron, having internal tooth-work near its circumference, and driving by two motions a shaft along the hinder end of the frame. This shaft has six cranks, three pointing one way, and three, which alternate with them, pointing in another direction at right angles with the first. Six iron spades are suspended from these cranks by what we may call their "handle" ends; and about three quarters of the way down the shaft of each, is a cross piece with friction wheels, working up and down in slides, so that as the cranks revolve the spades receive much the same motion as that given to a common spade in the hands of a labourer. Three spades enter the ground at once, and three deliver their load together,—a fixed knife or scraper taking the earth cleanly off from them. Just below the point where the spades deliver are six scuppets or boxes fixed on an axle, which receive the soil from the spades and tip or turn it over. There are two axles, one inside the other, and three scuppets attached to each, so that three receive, and three tumble together—the axles being partly turned and then back again in a rapid manner, by means of short levers at their ends actuated by two eccentrics on the opposite ends of the crank axle. Immediately preceding the spades, and close to the ground, is an axle turned by small wheels at its extremities running on the ground; this carries one row of six teeth like harrow tines, apparently designed to cut and separate the land into as many slices or stripes as there are spades, and thus render it looser and readier for digging. The spades measure about 9 inches broad across the upper part or shoulder of the blade, tapering downward like draining tools, but are very short. Their distance apart, measuring from the middle of each, is about 15 inches, and they rise and fall about 22 inches. The spur-wheel and pinion, connecting the crank-shaft with the driving wheel, can be slided out of gear by a lever.

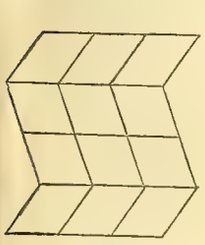
In order for the spades to work, the progressive motion of the machine must be very slow indeed; and we presume that the inventor's design is to have a steam-engine upon this large frame, which shall work the digging machinery and propel the whole concern slowly forward, leaving the soil turned over and broken behind it. But we should say that, on loose sandy soil, the spades will either not lift the earth, or else let most part of it escape undug between them; and on land tenacious enough to rise up in huge spadefuls, the blades will be at once cracked or the shanks snapped off. The aspect of this engine is certainly calculated to alarm a quiet farmer; and in another part of the implement court is a model which, had it been constructed the full size of the machine, would be still more terrific. As a particular account of this instrument, accompanied by a correct likeness, has been published in the "Expositor," we shall be brief in our description. The "Archimedæan Agricultural Machine" was invented by D. J. Murphy, of the Chamber of Commerce, Cork, Ireland, and the main portion seems to consist of a large barrel, or roller, upon the surface of which fixed cutters are arranged in a spiral manner. These cutters may be either heart-shaped knives, radiating from the surface of the cylinder, with their flat sides towards its ends, and with conical spikes between the different rows; or of these knives in a direction at right angles to this; or a continuous blade may be curved round the cylinder like the thread of a screw—the different forms being for varying soils and purposes. The weight of the barrel sinks the knives into the ground, horses dragging it onward and causing it to revolve. It may be set by screws in its frame to greater or less depth. We should expect it, on trial, to be immediately clogged full of dirt; and all we have to say respecting the flaming account given by its explanatory handbill of the work it "will" perform, and the immense benefits it "will" confer upon the farmer is, that a satisfactory performance at Pusey would have recommended the machine far more effectually than the unwarrantable assertions of the placard hung upon it.

The first year of another half century can show many improvements in agricultural mechanics; but the wonderful tool that is to shame the ploughman and banish the plough is yet to be modelled in the great foundry of time.

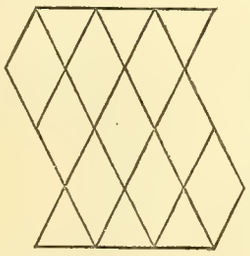
In noticing the different coulter fastenings of the ploughs last week, we omitted one, viz., that on which a round shank, held between two pairs of studs or projections on a moveable plate beside the beam, is nipped by a staple and screw against a wooden wedge at its upper

end; the point is set forward, or otherwise, by turning the plate with screw; and more or less land is given by tapping the wedge in or out. This contrivance is very simple, and has a minimum of screws.

Harrows, which are the commonest implements of husbandry next to ploughs, occur but scantily in the exhibition: possibly because the forms produced for the last years by the best makers, especially those of Howard of Bedford, leave little room for novelty combined with improvement. The peculiar zigzag shape of Howard's harrows is well known, giving the utmost simplicity to the framing, with the least liability to clog; and the arrangement and fastening of the tines appear all that can be desired in this kind of implement. At Derby, York, and Exeter, the first prize of the Royal Agricultural Society has been gained by these harrows. At the two latter meetings they were shown with joints in the centre of each harrow, allowing them to adapt themselves to any unevenness of surface. We noticed also some admirable harrows, by Sanders and Williams of Bedford. They are patented: the general shape is just like Howard's, and the two outside bulls of each harrow are bent in the same way; but the rest traverse it diagonally, so that a greater rigidity of framing seems to be secured, and a village blacksmith may more easily mend it without making a "bull." The difference is here represented:



Howard's.



Sanders and Williams'.

In these figures, the harrows are hardly long enough in proportion to their breadth. Of wooden harrows we saw none. One exhibitor has a number of iron harrows hung together so as to cover a large surface, and furnished with short levers and small wheels, by pressing on any one of which a portion of the harrow is lifted to clear it from clods or weeds. A "Patent Four Wheel Harrow" is shown by A. F. Campbell; but we hardly know whether we ought not to class it as a grubber. It consists of two rows of teeth, in shape and fixture resembling those of Finlayson's harrow; the frame supporting them being slung by four parallel connecting bars from an iron framing upon two large wheels. This upper frame rises or falls in front by means of a lever sliding it up and down on a spindle from two small front wheels; and the frame carrying the teeth can be set higher or lower by a chain wound upon a small barrel with a ratchet. The excellence of the Norwegian harrow is sufficiently established: its rowels are exactly adapted for stirring as well as breaking cloddy land, and for keeping each other clear. Barrett, Exall, and Andrews, of Reading, show one with a simple apparatus for raising the rowel axles out of work, or *vice versâ*. The frame from which they hang may be said to be supported, when out of work, upon vertical levers, at the lower ends of which are the wheels, one in front and two behind. The frame is lowered by bringing these into a slanting position, the upper ends toward the horses. They are connected above and below the frame by parallel rods, and the movement is made by a crank with screw axle. Crosskill, of Beverley, also exhibits a Norwegian harrow, which is put in or out of work by levers at each side lowering or raising it upon its wheels. A spindle runs along the top from a crank or winch to the front of the frame, and by a worm working a toothed segment, sets the fore part of the machine more or less high above a small wheel. The implements generally cannot be taken as specimens of what are in daily use by English farmers, but are the very choicest yet invented, only some having come into extensive practice. For the wooden plough and wooden harrow, the commonest implements in the country are not to be found here, unless perhaps by a scrutinising search.

Of Rollers, there is scarcely to be seen one; certainly not one of the old wooden rollers employed by almost every farmer. Among this description of implements, Crosskill's Patent Clod-crusher undoubtedly stands unrivalled; its sharp points being as well adapted for pressing and dinting in Wheats as for breaking and pounding clods, while its loose rings shake out all dirt and cannot clog. But there are several others of great merit. S. Chenery, of March, Cambridgeshire, has invented a "land-presser," particularly adapted for the light peaty fen land, consisting of 15 large iron rings upon an axle, the section of the rim of each ring being thus ⊔, the flat circumference rolling upon the ground. Mapplebeck and Low, of Birmingham, show a roller or crusher which has two axles, one before the other, and carrying a number of rings with sharp or narrow rims. These rings are about 2 feet in diameter, and about 3 inches apart, working into or between each other. The two axles are braced together at their ends by two bars, upon the middle of which the shaft frame is supported by pivot joints. By this excellent arrangement, the frame bears equally upon each roller, and is free to follow the vertical movement of the horses; while the rollers can accommodate themselves to slight inequalities of surface without altering the position of the shafts.—The only implement, however, which appears likely to compete with Crosskill's is the Improved Clod-crusher, made by Pearce, of Poole, Dorsetshire. This consists of two axles carrying rings of a peculiar form. The rims are narrow or sharp, but instead of being straight are waved or vandyked, the edge, which is seen from behind the ring, appearing thus:— ⩛⩛⩛ One axle has ten rings, and the other eight working between them. The rings are 26 ins. in diameter; they are fixed upon square axles, but the centre wheel on each can revolve independently of the rest. As there is an intervening space of 4 inches between adjacent wheels, no clogging can easily ensue; and all the land is subjected to pressure, the clods slipping between the first row of wheels being caught by the second. As the resistance is thus not met all at once, it is supposed that the draught is lighter than it would otherwise be: the width covered is 6 feet, and on rough land, three or four horses are required. Not having points like Crosskill's, it does not need encumbrance and delay of plain wheels to carry to and from the field; and yet, its piercing and grinding power is supposed to be little short of what it would be, had the wheels been serrated. One of the principal objections to double rollers is their tearing up the soil in turning round: but a beautiful and simple contrivance obviates such a disadvantage in this implement. The horses can turn the shafts round without moving the main frame, so that the crusher is drawn backwards and forwards. The shafts are fastened to a flat iron ring or wheel, which rests upon another at the top of the frame; and the upper one with the shafts can slide round upon the lower one, a pivot passing through the centre of each, the movement resembling that of a chaise turning upon the axle of its fore-wheels. Two pins or bolts passing through both rings hold the upper one fast; and when it is required to turn, the pins are raised and withdrawn by two wedges on a bar slided by a lever. The shafts can be turned either way, and when in their right position, the pins drop again into the holes. The action is extremely easy; but the whole machine can be turned round, instead if the driver chooses.—As this number of our report contains an account of a steam plough and other outlandish instruments, it ought perhaps to comprise also all the notices of a similar kind. There is a model of a digging maching to which we may hereafter refer; and there is a model of "a steam and human-power cultivator, or universal tillage machine and irrigator," invented by C. Burcham, of Fincham, near Lynn, Norfolk. This appears to be a long gallery or shed, supported above the ground at one end by a sort of pivot, and at the other by an engine-house on wheels. A great number of men are stationed in a row along this gallery, each having charge of a lever shod at its lower end with something like a hoe. The idea seems to be that, while the engine moves the whole apparatus like the radius of a great circle around the pivot; these hoes or stirrers are to do, by the help of the men, what is required for the land. Along the opposite side of the machine a number of large scissors are designed, apparently for cutting corn. A circular index at the central pivot tells the quantity of ground passed over. *I. A. C.*

[*Erratum.* The last three lines of the first column, on page 298, ought to have been the *first* three lines of that column.]

## Home Correspondence.

*Drainage Act.*—It might be of considerable advantage to some of your subscribers, if any person having borrowed money of the commissioners appointed under the Drainage Act would detail the expense of his proceedings. The printed paper of the commissioners states that applications for money are to be made "in the form furnished."—"As soon as they are entertained (but not until the end of two months after the last advertisement thereof in the *London Gazette* and local paper) the case is, on the request of the applicant, referred to an inspector, who is to inspect all the land proposed to be drained, and to report to the commissioners upon the general scheme of drainage, and if approved by them an application is made to the Treasury to authorise the issue of a provisional certificate." The printed directions state "that the greatest caution is necessary in furnishing an accurate description of the lands to be drained by an extract from the title deeds, or by a plan of the estate; for works executed on lands not included in the provisional certificate cannot in any case be allowed." Let us stop here to enquire what expense has been already incurred by this first inspection? Whether the commissioners have approved the inspector's report, or if they have not approved it—such report, be it recollected, stating that the property will be increased in value for letting, equal to an increased rent, for the money proposed to be laid out. The printed directions say, "the drainage has to be executed, in the first instance, at the expense of the applicant; but when any portion of the works which are complete in themselves has been executed to the satisfaction of the inspector, he certifies the amount expended to the commissioners," and they "being satisfied with such a report, issue a certificate of advance for the amount specified." Now, here we want to know the expense of such second inspection for work done, be it remembered, at the cost and advance of the proprietor, before he can demand any reimbursement, although the commissioners shall "have entertained the application" in the first instance. Now, so much of the work done is to be inspected; being finished, how is this accomplished, with pipes necessarily laid down, and earth filled in, to meet the term finished and done? "Another, and another, and another" visit from Mr. Inspector must occur before the total reimbursement is to happen, and the commissioners advise that it is very desirable that certificates of advance should not be required for very small sums, as it is necessary that all works should be examined and certified by an inspector, which must necessarily be attended with expense." These after proceedings "to the entertained application" raise our fear, "the dread of something after death" alarm our seeking it. The proprietor having to advance the money, and perform the task before remuneration comes, strips the loan of half its value, it being mostly wanted to set the thing going. The repayment of principal and interest in 22 years, by an annual payment of 6½ per cent. on the capital borrowed, is liberal and unobjectionable, but the appendage of lawyers, inspectors, and a host of unseen spectres, "puzzle the will, and make us rather bear the ills we have, than fly to others we know not of." Therefore I presume to ask the detail of expenses from some of the initiated of your correspondents. *A Tenant for Life.*

*Management of Small Farms.*—In your Paper of the 5th inst., you ask for any information as to management of small farms. I claim nothing original in my system; perhaps there is much that, to more scientific minds, may appear objectionable. Every farm, however, must be judged by its own peculiar circumstances. I have only a small proportion of arable land to about 26 acres of Grass. My object is to raise as much winter food as possible, and therefore look to green crops more than to corn. Carrots I grow in large quantities in the kitchen garden; consequently, valuable as they are, they are not included in the field culture. I give a sketch of the cropping &c., for 1850-51, of the four fields, if I may call pieces of an acre each by such a name, into which my arable ground is divided. No. 1. 1850. Cabbages cut in September. The leaves, sprouts, &c., fed off with sheep folded, then ploughed and sown with black Barley, which is now about to be fed off by ewes with fattening lambs, to be then immediately dug, heavily manured and sown with Mangold Wurzel. No. 2, 1850, Mangold, having been deep trenched previous winter. Manure forked in in the spring, 3 cwt. of superphosphate put in at same time as seed, produced 32 tons per acre, now under Wheat, which promises very well. No. 3, 1850, Wheat, 36 bushels per acre. Now winter Vetches to be eaten off by sheep, fed at same time with corn and oil-cake, then dug and sown with Swedes, or hybrid Turnips, manured with guano or superphosphate. No. 4, 1850. Part winter Vetches, followed by Swedes; all vacancies filled up with Kohl Rabi, the larger roots drawn off to fattening cattle, the smaller ones and tops fed off by sheep, which received at same time ½ lb. of Oat chaff (half Oaten straw and hay), *ad libitum*. This piece was heavily manured in January, ploughed deep, and is now under Drumhead Cabbage. The other part of No. 4, 1850, black Barley and spring Vetches, followed by partly Rape and partly Thousand-headed Cabbage planted out from seed-bed in August, fed off this spring by sheep, then deeply ploughed, and now having manure forked in, to be sown with Mangold next week. The sheep which have been living on this Cabbage are now folded on a warm paddock, fed with Mangold, Oats, and oil-cake, and so being made quickly ready for the butcher. The Grass of this paddock, which will be forced by the manure of the sheep, and liquid manure also, will be cut for soil, and keep some young steers in yards, while the meadows are up in May and June. *Henry Milward, Paulton Vicarage, Bristol, April* 10.

*Facts relating to a Fourteen-acre Field, drained* 4 *feet deep.*—Happening to return from the town of C— one frosty evening in December, about 7 o'clock, when a close mist hung over the whole country, I passed by the gate of my field—the moon being near the full—when thinking I would turn through the field, instead of following the road, to look at a few sheep that I had wintering there, I took to the field, when I was instantly gratified by one of the most striking sights I had ever witnessed; for I had not ventured 10 yards from the fence of the road within the area of the drained field, before the mist disappeared. The moon shone cold and clear; and I stood in a clear space of 14 acres, as if in a vast bowl or crater, surrounded by white walls of mist, indescribably beautiful. The first impression was one of astonishment, succeeded by one of satisfaction, that I had before my eyes the plainest phenomena of the results of draining. The other incident is as follows: We had in January a fall of snow, which covered the ground, say three inches deep; on the third day after it had fallen, while the whole country was still white, I took a walk to see how the drains were running, when to my surprise I found that not a yard of the field was covered with snow; it was all melted, save a little on the west side, where the main drain runs 7 feet deep, thus giving me the satisfactory hope that the field is prepared to receive the first advances of the smiling spring. *R. W.* [We should be glad to receive the further communication you propose.]

*Open Furrows on Drained Land.*—In reading Mr. Paine's reply to Mr. Mechi's observations on the necessity of making surface drains, or open furrows, on thorough drained land, it seemed to me that Mr. Paine has founded his opinions on the experience of tolerably level land; but that Mr. Mechi had alluded to steep hilly fields. I can agree with both: for I cannot imagine any clay land so porous (even after expending upon it in draining such a sum as 16*l.* per acre!) as to absorb instantaneously such rain as we have recently experienced, provided the field be a steep fall. Some

12 or 14 years since, I shallow drained with tiles and soles a Grass roadway of stiff London clay. I took up the tiles last week, finding the water standing on the surface continuously; the tiles were empty—indeed the water had flowed to them freely on piercing the clay with a wire; but though the drains were only 4 yards apart, the land was puddled. I believe that the necessity for the contiguity of drains depends as much upon the rapidity of the inclination, as it does on the depth or on the nature of the soil. *I. E. G.*

*Rotation of Crops for a Cottage Plot of Land.*—Divide the plot into three parts; let the first be trenched in the autumn, 18 inches deep, placing a good coat of manure 9 inches below the surface, and plant it with early Cabbages, which should be sufficiently forward to be cut in time for a crop of late Potatoes to be put in, in the spring; which may be succeeded by Wheat or other grain the second year. In the third year a crop of early Potatoes, followed by a crop of Turnips, may be taken, and the rotation commence again by trenching and manuring. If the production of roots is preferred to that of grain, Mangold Wurzel or Carrots may be substituted; or Broccoli might be planted instead of the Turnips in the third year, if the crop could be removed in time. *T. W., Boxley.*

*Hedgerow Trees.*—One of your correspondents, in the last Number, proposes that the landlord shall pay his tenants a shilling per annum for all the trees on the farm more than 10 years old! Why, there are many finely cultivated farms in Warwickshire and Worcestershire, where the sum to be paid by the landlord would exceed the rent, under such a proviso. *An Enquirer.*

*Farm Manure and Lime.*—There are but few practices in farming which have been more condemned than the applying manure and lime at the same time, and yet none has so often resulted in a good crop of Turnips, as far as my limited observation has extended. Upon a strong clay soil in the neighbourhood of Leeds, last year, I saw a most splendid crop of Swede Turnips; and as good crops were rare, I asked how they had been managed, and was told that after being manured from the farm-yard, they had been limed, and sown with 2 cwt. of guano, sown broadcast on the same day, the guano being sown before closing the ridges. In a field of our own, containing a good deal of iron and clay, my father sowed Swede Turnip, after manuring with night-soil and lime, both put on in the same day; it was one of the best crops we ever grew, and though very large, they were all planted for seed, and to prove that the plan had not exhausted the manure, the crop of seed was the heaviest I ever remember to have seen. Not to mention other examples, the only good crop in our neighbourhood last year was on strong land, managed on the same plan. Now, every one knows that to mix fresh lime in a manure heap, or with a heap of guano, would be to injure it, but if, as Professor Way has proved, clay and iron have such an affinity for ammonia, where is the danger of placing fresh lime and manure in contact with them, as they would be in strong soils; may it not be a good plan to render manure more immediately available for the crop? Does not strong land require the manure to be so prepared, and is this not the reason? We have found bone of little or no use here, and yet dissolved bones have had the best effect on the same land. I think I have seen somewhere stated, that a farmer found bones, dissolved in acid, of little use, unless the land had been previously limed. I believe the kind of land was not stated; if strong, was it not from the raw, unprepared, state of the manure, and was not lime required to convey away the acid, and leave the phosphate in a state proper for the crop? Whilst on the subject of lime, can any of your readers say what per cent. a soil must contain when it ceases to be advisable to apply it, and what is the minimum quantity a good soil ought to yeild on analysis. Is it necessary to apply quicklime to soil containing a good proportion of lime in the state of carbonate? and if the subsoil be rich in carbonate of lime, will deep ploughing be sufficient for the wants of the field? As these questions are in dispute here, the discussion of these subjects, will give much pleasure to some of your constant readers. *J. R. P., Chilwell.* [Read the chapter on Lime in Prof. Johnston's Lectures on Chemistry.]

*Open Furrows.*—Improved agriculture cannot admit of open furrows; their existence, at any time, can only be defended as the less of two great evils. Wherever land has been properly drained, or wherever it does not require draining, in all such cases open furrows are an abomination which no logic can defend; but wherever land has been improperly or unscientifically drained; or wherever, from some cause or other, land does not admit of being drained, though it greatly requires it, there, in such places, open furrows, as the less of two evils, may, or must, be tolerated, but in no other case. Some few years since I troubled the *Agricultural Gazette* with some observations on draining, and the chief object I had in view was to induce farmers to get rid of the necessity of open furrows. I am aware, that whatever I may write on this, or any other subject connected with the cultivation of land, has but little weight with many readers, because I cannot boast, as some writers have done, of being a farmer of 800 or 1000 acres of land. But I wish my friends to know, that my parish consists of nearly 3000 acres of arable land, under the plough; and that nearly every field in it is as much under my observation as if the whole were in my own cultivation; I think, therefore, that I could not be in a better condition for the forming of a correct judgment upon any matter of land cultivation were the whole of my parish in my own occupation, and perhaps not in so good a condition for this. But before I sent my observations to the press, I put the principles I advocate to the test on my own land. Fourteen years since, when I took possession of the land I occupy, I found it in stitches with open furrows at every 2 yards of intervals. The land was then full of water, and water stood all over it; as often as it rained, also, nearly the whole of the rain-water run off the land down the open furrows, washing away with it the essence of the manure held in solution, and with that the sand out of the soil; thus, at every shower the land was deteriorated and the manure wasted. But I set to and drained my land in my own way; but, and as I have often advocated, I made my drains, on an average, full 5 feet deep; and since then my land is become one large filterer; all the water passing through it into the drains below, how much so ever may fall in a given time on it; and it empties itself from the drains as clear as crystal. I add, also, that the subsoil of my land is a stiff clay; and yet this land is in good working condition always, and may be ridden over or walked upon with pleasure at any time, and at all times. Surely, then, it would be a mark of insanity in me to leave open furrows on my land to carry off all the fertilising rain-water, and with it the sand out of the soil, and the essence of the manure put on it also! But I have some other land, lately come into my possession, and not drained, and that is now as wet as land can well be; and, consequently, on that, until I can drain it, as the less of two sore evils, I would leave open furrows; but I will get rid of this nuisance, and the necessity for it, and put deep and proper drains into that land on the very first opportunity I may have. I am aware, Mr. Editor, that some persons have said that I ought to employ myself better than in the amusing the world with my agricultural doings; but I have the consolation of knowing that many farmers are following the example I have set them; and that, in my parish, three farmers in 49 seeded their lands, on an average, with just one Winchester bushel of Wheat an acre, and that the produce on one of the farms was nearly 6 quarters an acre, that of another 5 quarters an acre; and I have no doubt but the produce of that on the third will be quite as much as that of the others: but it is not yet threshed. I add, also, that those three farmers have reduced their seed corn still lower this year, and that I have seen a fine field of Wheat on one of their farms, which was drilled last autumn with a little over 2½ pecks an acre; and I add, also, that all the farmers in this neighbourhood, since I have been resident in it, have considerably reduced their quantities of seed-corn; and I feel satisfied with considerable profit to themselves, and at a benefit to their country. And I add further, that throughout the whole of my experience, the more intelligent I have found farmers to have been, the deeper and better they have drained their lands; the deeper and better they have ploughed it, and the less seed-corn have they used. Let me, also, ask the advocates of open furrows, if market gardeners, who pay 5*l.*, 6*l.*, 8*l.*, or 10*l.* an acre for land, use them? and if they are not all of them thin-seeders? For example, ask the intelligent Mr. Cuthill this question. *G. Wilkins, April* 22.

*Rotation of Crops for Allotments.*—One of your correspondents a few weeks ago asked for information on this head; and as no answer has appeared in your columns, I offer a few suggestions. I assume that the circumstances of these allotments are similar to the generality of others; that they differ from the farmer's occupation by a higher rent, and the tenant's having a greater command of labour and manure. It is clear then that there must be proportionate increase of produce, and, to effect this, the land, during the growing season, must never be without a crop upon it. Also, when the farmer sows, the cottager, to save time, must often transplant such crops as Mangold Wurzel and Swede Turnip. Besides this, he must aim at growing what he wants to consume himself, instead of buying and selling. I will endeavour to illustrate my meaning by a couple of examples of rotations for three and five years. In the spring of the first year of the three years' rotation Potatoes were grown. In the autumn after the crop is raised, abundance of dung is forked in, and, in October, winter Beans are dibbled in rows three feet apart. At the same time Cabbage Coleworts sown July 1, or early Cabbages sown August 1, are planted in rows, between the Beans. The open space is well hoed when the state of the ground will allow. The Coleworts will be off by the beginning of April, and Mangold Wurzel takes its place, sown in the last week of that month; or, if the intervening crop be Cabbages, they will be off by the end of May, and Mangold Wurzel transplanted when the thickness of a man's thumb. At the end of November the Mangold Wurzel will be removed, and the land well manured and forked 15 inches deep, before the end of December. In the beginning of the following April, Belgian Carrots are sown in rows 15 or 18 inches apart, which will occupy the ground to the end of the third year. The five years' rotation is as follows:—Potatoes—winter Beans, Cabbage, and Mangold Wurzel—Wheat—winter Beans, Cabbage, and Swedes—Carrots, Longpod Beans planted in January, may be used instead of winter Beans in October. Also between the winter Beans, early Cabbage and the Drumhead may be set alternately, the former off in spring, and the latter to remain until autumn, instead of a crop of Mangold Wurzel. The capabilities of the land, and the wants of the cultivator, will determine what crops are to be grown. *Sigma.*

*On Turnips and Mangold Wurzel.*—For Turnips, according to general opinion and experience, sandy soils and loams are considered most applicable; such as the coast of Norfolk, where they are cultivated under the four-course shift, which, in fact, first took its rise in that county, brought over originally from Flanders. It is, as well as other regular systems of cropping, open to objection, and it is now much varied according to convenience. Since the great advantages derived from artificial manures, the method generally in favour is, to drill the Turnips with bone-dust and ashes (as in Lincolnshire), or else dissolved, forming a superphosphate, which last plan is the best, and brings the young plant up rapidly into broad leaf, taking care to have plenty of ashes, say five loads per acre, with the bones; and, lastly, to first well dress the land with farm-yard manure, which sends along the Turnip after it has imbibed the goodness of the bones, and remains some time in the land, to the benefit of the succeeding crop. With the best management, Turnips are perhaps more than any other crop dependant upon season, which, if a dry one, may, from the ravages of the fly, take them off, and frustrate the labour and expence of the farmer. If early sown, we think it should be very early; why not in the month of April? [Too early a maturity in the south of England will generally be attended with mildew.] For Swedes at all events (if the land can be prepared in time); they would thus get, perhaps, the benefit of showers for forcing them on, if April is true to its character; whereas May, the general time chosen, is often a dry month, sometimes frosty in the mornings. June, again, is often, of late years particularly, a showery month; in two succeeding years (from a diary kept) 1847 and 1848, nearly half the month was of that character; in the first year the showers began about the 10th of the month, continuing about 10 days, sometimes nearly every half hour; in the next named year the rain came in later, about the 15th or 20th, and kept on through the month. I would therefore, almost rather sow in June, if May is inclined to be dry, especially in high situations, but if possible, by way of experiment, in April. A good course of cultivation is after Rye: for example, instead of the old system of ploughing up your Wheat stubble, and leaving it fallow till Turnip time (nearly a year). Sow Rye (manured) as soon as possible, after the stubble has been well got rid of, feed it off in April, about the first fortnight, if possible; bring the ploughs in whilst the sheep are on the Rye, and drill the Turnips with artificial manure, having some Vetches for the flock to go on, after the Rye is fed. Another system of double fold may be after Mangold Wurzel folded off on the land. A third may be (for late Turnips) after Vetches fed off, and the whole brought to Wheat. A word with respect to Rye and Tares; these are particularly useful when Turnips are over, before the natural pastures are ready; and what no farm should be without yearly. I was surprised during a residence in the Lincolnshire Wolds (a county celebrated for high farming), to observe the almost total want of these crops; so that after the Turnips were out, there was often positively little or nothing for the sheep to go on—perhaps a few seeds or Clover, but on those hills not very forward. Again, the Wheat stubbles, as I before remarked, were there, as in some other districts, left till Turnips, with no intervening crop. It is by attention to these matters that high farming is produced; nor can we think a district worthy of the name of a high farmed one which neglects these attentions to sufficiency of artificial sheep feeding year by year. There seems a difference of opinion as to which contains the most "proof"—Swedes or Mangold Wurzel. The fact seems to be, that Swedes and common Turnips are best for fatting beasts during the three winter months, and yellow globe Mangold Wurzel to finish them with in spring as a change, cut up with steamed chaff, sprinkled with Bean meal or other preparations. Mangold Wurzel, different from Turnips, likes a rather strong deep land, and likewise differs as to its cultivation, that is, according to the present system pursued by our best modern agriculturists. I believe Mr. Huxtable was the first who introduced dibbling the seed in with a pint of manure upon it: this was then tried by Mr. Graburn, agent to the Dean of Windsor, at Butleigh, and to the Earl of Fortescue in Devonshire, and has been already described in your Journal by Mr. Mechi, in his "Trip to North Devon." We think, however, if he had likewise paid a trip to Tringweston (near Somerton) to Mr. Dickenson's farm, managed by his agent, Mr. Gray, he might have made nearly equal materials for an interesting report, both as regards the culture of Mangold and of farming in general. Mr. Gray partly took his system from Mr. Graburn; and when with the former I sent reports as to its working, which are alluded to I find in Mr. Acland's prize Report of the Farming of Somersetshire, in the Society's Journal. The following was the estimated expense of the planting as pursued, and also of drilling, if it had been pursued, by way of contrast, showing the advantage of the former by 15*s.* over the latter in cheapness:

| | | | |
|---|---|---|---|
| 6 men with long dibbles, at 1*s.* 8*d.* per day | £0 | 10 | 0 |
| 6 women with manure-baskets, at 6*d.* | 0 | 3 | 0 |
| 6 children with seed, at 4*d.* | 0 | 2 | 0 |
| Horse with manure-cart, at 3*s.* | 0 | 3 | 0 |
| | £0 | 18 | 0 |

Doing 2½ acres per day, at about 8*s.* per acre.

For drilling would be:

| | | | |
|---|---|---|---|
| 2 men and boy with drill, at 1*s.* 8*d.* and 1*s.* | £0 | 3 | 8 |
| 1 with harrows | 0 | 1 | 8 |
| 4 with manure carts | 0 | 6 | 8 |
| 7 horses, at 3*s.* | 1 | 1 | 0 |
| | £1 | 13 | 0 |

Performing about 6 acres per day—difference, 15*s.*

For dibbling 20 acres (2½ per day) at 18s. ... £7 4 0
For drilling ditto .6 acres per day) at 1l. 13s. 4 18 0

So that in following it on, the speed of the drill renders it in the end cheaper, when performing the work in large quantities; as to matter of time, but then this apparent counter-advantage is again lost, by the deterioration of the crop, the roots being smaller and more irregular than when planted, for it stands to reason that seed placed on manure in each hole, must exist on it and thrive better than what catches hold of the manure from the drill by chance. This plan answers for Swedes, and might be carried out for Turnips; that is, where there are plenty of hands. The manure used for the Mangold should be large quantities of nearly equal portions of good farm-yard manure and ashes (common, and peat, if procurable); if handy, scourings of drains are useful to wet the ashes with; the dung and ashes are mixed well together with forks, which is best done by a heap of each side by side near to where the planting is to take place, done by rapid turning with the forks. After it is all well mixed, haul out your superphosphate bags, and shoot them out over the whole, mix well together, and it is ready for use; pint tin cups are the best for depositing it in the holes, which should be 27 by 14 inches apart. The best way is to mark out the rows with the drill previous to ridging up for them. A light roller finishes the work; transplanting can be performed, where necessary, after the plants are up, and hand and afterwards horse-hoeing, will come into the course of management. From 2 to 4 cwt. of superphosphate of lime should be used, which it appears answers better than guano, particularly in a dry season, and more likely to be unadulterated. Indeed, the former seems to have superseded the latter, at all events for Turnips, for which bones seem a necessary food for it to exist. It is extraordinary to see the difference in some Swedes manured and unmanured upon our home hill; those with bones are first-rate, as fine as one would desire; those without, literally not larger than marbles, both being on the same land, very shallow, in fact, hard on a limestone rock. To complete the experiment another time, some with farm-yard manure should be tried, so as to have three varieties—boned, manured, and no manure. *H. E.*

*The Lark.*—It must be admitted that the song of birds is among Nature's choicest gifts, and those only who have listened to the "charm of earliest birds" in full chorus, can form an idea of the stream of melody poured forth from hundreds of happy throats when they first wake up beneath the curtains of some shady grove:

The lark begins the lay
Ris ng the nearest Heaven,
His tribute there to pay
From whence his joy was given.

Then we have the notes of the nightingale, the thrush, and the blackbird, alternating with those of the smaller warblers, relieved at intervals by the soft cooing of the dove. Having often enjoyed this varied harmony, I must say a word in favour of the poor lark, although a tiller of the soil. Shall I boldly assert that he does no harm? No. Shall I suppress the fact that I have often seen him nipping off the young blades of Wheat? No. What then? What then! Why he ought to be shot—says the destructive. Stop a bit; if put in at a proper depth, in proper soil, he will not injure the part below the coronet, and in a short time one or more shoots will spring up again. But even if it were otherwise, you should reflect that this world "and all that it inherit" were not made for you alone, and that you have no right to destroy off the face of the earth every one of God's creatures that does not immediately minister to your convenience. However, let your principles be fully carried out. Away with all restrictions, class interests, and conscientious scruples. Contemplate first of all the extirpation of the whole race of that hard-billed villain the sparrow, who will have his allowance of corn both at seed time and harvest, in spite of gun and rattle. Then suppose the clouds to have fallen, in order that all the larks might be taken at one fell swoop, for eating it in the blade. Then pass an act for the abolition of rookeries, upon the plea of their being general feeders, and living on the plunder they obtain from the neighbouring fields. Next trap and shoot all blackbirds, thrushes, starlings, &c., for eating your fruit. Then set a price on the heads of chaffinch, greenfinch, *et id genus omne*, for levying contribution on your Turnip and Radish seed; and when all the larger tribes are disposed of in a satisfactory manner, set innumerable steel traps for the extirpation of tomtits, and bring summary ejectments against jenny wrens for taking possession of your haystacks without permission. Now reckon up the number of nuisances you have got rid of: sparrow, lark, rook, crow, blackbird, thrush, dove and ringdove, chaffinch, greenfinch, and bullfinch, hedge-sparrow, robin, and tomtit, are only a few of the most conspicuous offenders who have received orders to depart this life, and henceforth to keep company with the shade of the "last of the Mohicans" and other proscribed races. The idea is almost suffocating, but it is done, and another year is come. "How are things now? What do I hear you say? Your plant of Wheat is very gappy. How is that? There are no larks now?" "No, but there are plenty of grubs." "Oh! it's the grubs now, is it?" "Yes." "Well, what sort of a show of fruit have you got?" "Oh, I had a splendid blossom and the frosts kept off nicely, but soon after the fruit was set it fell off." "Indeed, how was that?" "Why I suspect that some caterpillars which I found in the fallen fruit were the cause of its falling off." "What a pity!" "Yes it is, I assure you, quite a blight to my expectations, after all the pains I had taken to extirpate those vermin." "Then probably you are worse off after all than you were before you got rid of those nuisances." "I really think so." "And you have had no whistle?" "None but my own." "Then you pay rather dearly for that." *F. J. Graham, Cranford.*

*The Acre.*—At page 268, third column, of your number for Saturday, April 26, there is a comparison between the English and Irish acre, stating the former at 4840, and the latter at 7840 square yards, respectively. The difference is stated to be 300 square yards, instead of 3000 square yards; this is evidently a typographical error, but it should be corrected. It is requested to give the contents of "the Cunningham and Plantation acre, the Cornish, Cheshire, Scotch, and others." I know nothing of any of these, except the last, which is as follows:—The Scotch acre consists of 5760 square Scotch ells. The Scotch ell is 37⅓ inches. By reducing 5760 square Scotch ells to inches, and fifths of inches, and by division bringing them into English measure, we have 6150⅔ square yards, as the contents of a Scotch acre in English measure. By the above, the Scotch acre would appear to be more than one-fourth larger than the English; that is, 4 Scotch acres are equal to 5 English acres, and a little more. The little more amounts to 100⅔ square yards in the above quantity. *J. G.*

*A Few Words on the Fallow System*—That great benefit has been derived from fallows, whether plain or made in the intervals of growing crops, no one who has had any practical experience in farming will for a moment doubt, but that the profits of farming have been very much increased since naked fallows gave way to green crops, is equally well known to the farmer. So very palpable have been the benefits resulting from the alternate system of cropping, that in districts where fallowing used to prevail as a general rule, it is now found to be laid entirely aside. It has been, and continues to be, the aim of every good farmer, to have his land brought into that condition, often obtained at great outlay, in draining, subsoiling, and liming, which will enable him to dispense with fallowing. But the deduction that the atmosphere will supply to the soil the means of replenishing it with matter sufficient to admit of cereals being grown in succession, without manure, ought to be received with great caution. Liebig's theory of supplying the mineral ingredients of a crop only, having proved a complete failure, neither will the most complete comminution of the soil enable it to produce a full crop, if the necessary quantity of food for the plant has been withheld. On light lands, the yield of corn has been found to be in some instances one-sixth greater, when drilled at 6 inches, than when drilled at 12. *J. D. B.*

## Notices of Books.

*Notes on North America, Agricultural, Economical, and Social.* By James F. W. Johnston, M.A., F.R.SS. L. and E., &c.

This is especially a book for the intending emigrant. He desires to know the agricultural capabilities of the localities among which his choice is wavering; and in reference to that large tract of land, partly under British and partly under American rule, which lies immediately south of the St. Lawrence, he will here find them given in great detail. It is impossible for us to give, by means of extracts, any idea of the way in which this part of the performance is accomplished. It must suffice to say, that Professor Johnston went to New Brunswick, with the special view of reporting upon the agricultural capabilities of that province, and that both there and during his travels through the States, he had all the advantages which long practice in travel, and in agricultural criticism, must give an observer. The connection of the varying geology of the districts visited—always much more obvious in land which as yet owes nothing to art—is traced with such minuteness as to furnish a key which will be useful even in localities unvisited by our author. The verdict regarding the character of the soil is, however, given not only from its geological and botanical indications, but also from the numerous instances of farm practice and experience of which he was witness.

But an intending emigrant not only wants to know the character of the climate and soil of his future home—he would also benefit greatly by possessing some of the experience of those who have already tried the experiment on which he is about to venture; and in no particular will these volumes be more useful than in the records they furnish of success and failure attending different lines of conduct in the colonies.

The following extracts show that industry there as elsewhere is the sure road to success:

"With one of these settlers, John M'Lean, I had an interesting conversation; and as his history may interest some of my readers also, as an example of the way in which steady industry overcomes difficulties, and secures comparative prosperity in a new country, I shall state the leading facts I gathered from him. He came over in the year 1822. He has 250 acres in his farm, of which 150 are cleared; but he has not force to keep all this land in crop. He works it with the aid of three of his sons, two daughters, and three horses—keeps eleven cows, eight or nine young cattle, and a few sheep. He bought his land in the wild state, cleared it all himself without hired labour, and has *raised* eleven children. He has four sons settled on farms, one of whom paid 150*l.* for his farm; two of them worked as carpenters till they had saved money to buy their farms. Neither he nor any of his children ever lumbered, nor should any of them if he could help it. Not one in twenty makes anything by lumbering; and by sticking to their farms, men in the long run always make a better living, and are more independent, than by anything else. Many others who came out with him, and since he came, have stuck to their farms, and have done as well as himself. Though the crops have failed so many years, few in this settlement are in debt. Oatmeal porridge and milk twice a-day, and oatmeal cakes, are the prevailing diet. Odds and ends, as he called sugar, tea, &c., are obtained by the sale of butter and cheese.

"Mr. M'Lean thinks a man would do well in Northumberland, who could come over with 50*l.* in his pocket, and better with 100*l.* But he ought not to have too much, if he is to labour contentedly, and to prosper. He had himself only 5*l.* when he settled, besides three carts and a year's provisions. If these statements of Mr. M'Lean are got by heart by the intending emigrant to the wilderness parts of North America, he will require little other guidance to comfort, prosperity, and contentment."

"Lumbering," we should say, is speculating in the timber trade; going to the wilderness, and cutting it; carrying it to the river, and floating it down to the shore for the merchant: it is a pursuit attended with many risks as to its reward; and with this sure certainty, on the other side, that the wild reckless sort of character, which it engenders, is altogether incompatible with the patient industry of the farmer's life.

The intelligent emigrant desires, however, to know many things beside the mere possibility of earning a livelihood in the locality to which he is bound. Its social condition; the nature of the laws under which he will live; the taxes which will be laid upon him; the nature and habits of society around him, are all points of great interest; and they are all fully detailed with reference to New Brunswick and the Northern States of North America.

To the agricultural reader this Journal of Professor Johnston will be especially interesting, independently of its instructions for the emigrant, for the information it gives on the agricultural statistics of North America; and to the general reader, for the instructive comparison it draws between Great Britain and some of the States, especially in reference to Taxation and Public Instruction.

METEOROLOGICAL REPORT.—May.
(*Continued from page* 301.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| May 5 | 6.25 a.m. | ... | 29.63 | Brisk breeze NW. all day, |
| * | 4.10 p.m. | ... | 29.63 | barometer steady; at 6 |
| | 10.30 p.m. | 29.67 | ... | p.m. wind veered to N., and barometer began to rise. |
| 6 | 7 a.m. | ... | 29.71 | NNW. all day. Blowing hard |
| | 10.10 p.m. | 29.78 | ... | in the morning; noon, gentle. |
| 7 | 7.5 a.m. | 29.78 | ... | WSW. to SW. Gentle breeze, |
| | 10.20 p.m. | ... | 29.72 | and fine day. |
| 8 | 6.45 a.m. | 29.63 | ... | SSW. a.m. Blowing hard. |
| | 10.20 p.m. | ... | 29.47 | S. p.m. Moderating at sunset. |
| † 9 | 7 a.m. | ... | 29.44 | S. a.m. Gentle breeze. |
| | 8.5 p.m. | 29.49 | ... | SE. noon; p.m. increasing. Densely overcast and raining fast. |
| | 10.40 p.m. | 29.47 | ... | Very wet night. |
| 10 | 6.55 a.m. | ... | 29.40 | SSE. a.m. Overcast, raining fast. |
| | 9.55 p.m | 29.55 | ... | Gentle breeze at south all the afternoon, and fine, no rain having fallen since noon. |
| 11 | 7.50 a.m. | ... | 29.58 | NW. Gentle, fine, and sunny. Noon, NNE., raining fast. Frequent showers throughout the day. |
| | 11.10 p.m | 29.68 | ... | Sunset, very heavy appearance in SE. |
| 12 | 8.5 a.m. | ... | 29 76 | N. Moderate breeze. Dull |
| | 10.40 p.m. | 29.99 | ... | day. |
| 13 | 6 a.m. | ... | 30.09 | NE Brisk breeze. Fine |
| | 10.40 p.m. | 30.18 | ... | day. |
| 14 | 6 a.m. | ... | 30.20 | N. Brisk breeze, and |
| | 11 a.m. | 30.21 | ... | ENE. Beautiful day. |

* This storm also would come from the westward, and pass away to north-east, having its track at a considerable distance to the westward.

† This storm came from the westward, over Spain or southern France. Possibly heavy westerly gale off Lisbon.

‡ Barometer falling with a southerly wind, and rising with a northerly one, *i.e.*, the storm coming from the south of west, and passing off to north of east; and as it moved off to the eastward, the wind drew round after it.

Dorchester, May 15th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

MAY.

Dorset Farm, *May* 12.—Since last report we have been engaged in rolling the corn, and ploughing, and otherwise preparing for the root crops. Some of the land we have rolled with Crosskill's clod-crusher, and part with a heavy wooden one; and we have found the former very useful in breaking the surface of the land after the heavy rains that we had. Although for the past fortnight the weather has been cold, still the Wheat looks well, as it was previously strong; and now that we have had some warm rain, succeeded by mild weather, I think we may expect a fair crop. Barley, where it was sown early, looks well, as it was somewhat advanced before the cold set in; but where it was late, as it has been in many places, it is rather backward. The same may be said of Oats. As Flax has been greatly recommended as a profitable crop, we have this year tried a small piece which we sowed about 16 days ago. We are now engaged in sowing Mangold Wurzel, which we put on the baulk or ridge. One plough forms the drill; the dung is carried out, spread, and covered in, each operation being performed as close to the other as possible, so that the dung does not get time to dry. We sow about 20 acres of them, and find them a very useful crop; they have this year kept quite sound, and, as we lost some of them last year, we attribute it to cutting off the tops when they were taken up. It will often happen that, in the hurry of taking off the tops, they are cut too close, and then decay is sure to take place; but if

hey are twisted off, there is no danger in this respect, and the one way is as easily done as the other. Grass is plentiful, and the hay crop promises well. We have still a quantity of Swedes for fatting oxen. They were carried off the field in February, and covered over with a little loose straw in long heaps, about 6 feet wide, as high as they would pile up, and they are quite fresh up to the present time. The sheep are eating Vetches, and by day run in the ewe-leaze; they have been very healthy, and the lambs do well. The markets for fat cattle are still very low, but mutton has revived a little and is in demand. Pork is low and little sought for. *G. S.*

## Notices to Correspondents.

AGRICULTURAL SOCIETY'S PRIZES: *J N Wales.* They are awarded by the judges, and the award is announced immediately on its being made. The awards are generally made before the July meeting.

DRAINING TILES: *W Hewitson.* Thanks for the model. The drawing seems to have been correct enough.

LAMMERMUIR SHEEP FARMING: *A Young Sheep Farmer.* In answer to your first query—"What is the principal disease to which hogs in the Lammermuirs are subject?" the answer is the same which appears to be your greatest scourge on the Cheviots, "sickness," a malignant, inflammatory fever, apparently the same malady known on the Continent as *Sang de rage*, very rarely cured, the first visible symptom generally being to find the animal dead. 2d. "What loss have your neighbours sustained during the past year?"—This we cannot answer positively. Many men will not tell their losses, or only speak of them in the general as very heavy, moderate, light, &c. We know of two cases this winter, where the loss from "sickness" has been about 10 per cent., and the third, where it has been about 5 per cent., but from a different cause. In these instances the hogs received Turnips. 3d. What we generally lost previous to following the custom of covering them with flannel jackets? Since occupying in this district, with the exception of the first year, we have used jackets, and our annual loss has never exceeded 5 per cent. in any year, the average being about 3½ per cent. Our predecessor at one time suffered severely from "sickness," when the hogs were "hirseled" separately. He then changed his system. The stock ewe hogs were kept from the ewes some two or three weeks after being weaned, and then brought back, most of them taking up with their dams, and keeping beside them all the winter. After adopting this plan, except during some of the "bad years," when many died from poverty, his loss was very trifling. We continue to manage ours in the same way, and, as far as we recollect at present, have in no year lost above half a score from "sickness." We believe wherever this system has been followed it has been attended with similar results. We will not presume to assert that jacketing will of itself prevent this disease, but we will say, that these covers, from their non-conducting properties, strengthen the constitution, and improve the general health, such being confessedly the best safeguards against every malady. *A Lammermuir Sheep Farmer*

PAINT: *B B*, in reply to "Brush's" inquiry regarding Carson's anti-corrosion paint for inside work, informs him that he has used it for the inside walls of a greenhouse, a hothouse, and also of a church, the latter of which were exceedingly damp; and although it did not wholly prevent or destroy the moisture, it succeeded better than any other previously used. For the back walls of a greenhouse, &c., "B. B." can confidently recommend it, but would advise a greater proportion of turpentine with the oil than is used for outside painting.

# Markets.

### COVENT GARDEN, MAY 17.

Hothouse Grapes are plentiful and cheap, and the same remark applies to Strawberries. Pine-apples are more abundant. Dessert Apples chiefly consist of American Newtown Pippins. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant and good. Large supplies of Asparagus, young Carrots, French Beans, and Green Peas have been received during the week from France, Cucumbers from Holland, and considerable quantities of Potatoes and Asparagus from Cornwall, as well as some good Gooseberries; the latter fetch 1s. to 2s. per pottle. New Potatoes may be obtained at from 4d. to 6d. per pound; old kinds realise better prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

**FRUIT.**

| | |
|---|---|
| Pine-apples, per lb., 8s to 12s | Oranges, per doz., 9d to 2s |
| Grapes, hothouse, p.lb., 5s to 10s | — per 100, 6s to 14s |
| — Portugal, p.lb., 1s to 2s 6d | — Seville, p. 100, 7s to 14s |
| Strawberries, per oz., 6d to 1s | — — p. doz., 1s to 2s 6d |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p. bush., 6s to 10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Almonds, per peck, 6s | — Brazil, p, bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 50s to 55s |
| Lemons, per doz., 1s to 2s | |

**VEGETABLES.**

| | |
|---|---|
| Cabbages, per doz., 9d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 3s to 4s | Artichokes, Jerusalem. p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 3s | Lettuce, Cab., p. score, 6d to 1s |
| Broccoli, p. doz. bundl., 7s to 8s | — Cos, per score, 1s to 1s 6d |
| French Beans, p. 100, 2s to 3s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 3s 6d to 5s | Horse Radish, p. bundl., 1s to 5s |
| Rhubarb, p. bundl., 4d to 9d | Red Beet, per doz., 6d to 1s 6d |
| Potatoes, per ton, 90s to 200 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 4s to 8s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 6d to 1s 6d | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| — Turnip, p. doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Celery, p. bundle, 6d to 1s 3d | Mint, green, per bunch, 4d to 6d |
| Carrots, per doz., 6d to 7d | Basil, green, p. bunch, 6d to 9d |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per doz., 9d to 1s | |
| Shallots, per lb., 6d to 1s | |

### HOPS.—FRIDAY, May 16.

Messrs. Pattenden and Smith report that the demand for all good Hops continues brisk, and that the supply on offer is unusually small for the time of year. The young bine is still in a very unkind and backward state. Late prices are fully supported.

### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, May 15.**

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 84s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 55 70 | Second cut ... ... | 70 80 |
| Rowen ... ... ... | 55 65 | Straw ... ... ... | 26 30 |
| New Hay ... ... ... | — — | | J. COOPER. |

The supply large, and trade heavy.

**CUMBERLAND MARKET, May 15.**

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 84s | Inferior ... ... ... | 65s to 75s |
| Inferior ditto... ... | 60 68 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 28 32 |
| Old Clover ... ... | 80 88 | | JOSHUA BAKER. |

**WHITECHAPEL, May 15.**

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 75s to 80s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 60 65 | Inferior ditto... ... | 70 75 |
| New Hay ... ... ... | — — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 88 92 | | |

### COAL MARKET.—FRIDAY, May 16.

Holywell, 14s.; Eden Main, 14s. 6d.; Wallsend Riddell, 13s. 6d.; Wallsend Hurton, 13s 6d.; Wallsend Hetton, 15s. 6d.; Wallsend Stewarts, 15s. 6d.; Wallsend Tees, 15s. 3d.—Ships at market, 34.

### POTATOES.—SOUTHWARK, May 12.

The Committee report that the market continues to be well supplied both coastwise and per rail. Trade is heavy, and for most samples less prices have been submitted to. The following are this day's quotations:—York Regents, per ton, 80s. to 100s.; Scotch do., 70s. to 85s.; ditto Cups, 65s. to 80s.; Catholics and whites, 60s. to 65s.; Cambridge Regents, 50s. to 70s.; French whites, 60s.

### SMITHFIELD, MONDAY, May 12.

We have a very large supply of fine oxen, and the trade for them is exceedingly dull. A few choice Scots still make 3s. 6d., but on the average prices are lower, and many remain unsold. There is also a considerable increase in the number of Sheep and Lambs; contrary to general expectation, the demand is small, and although there is a disposition to take lower rates, they cannot all be sold. Trade is very dull for Calves at less money. From Holland and Germany there are 510 Beasts, 1510 Sheep, 198 Calves, and 60 Pigs; from Norfolk and Suffolk, 3000 Beasts; and from Scotland, 600.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 0 | — 3 | 4 |
| 2d quality Beasts | 2 | 2 | — 2 | 8 |
| Best Downs and Half-breds | 4 | 0 | — 4 | 4 |
| Ditto Shorn | 3 | 6 | — 3 | 10 |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools | 3 | 8 | to 4 | 0 |
| Ditto Shorn | 3 | 2 | — 3 | 6 |
| Ewes & 2d quality | 3 | 0 | — 3 | 6 |
| Ditto Shorn ... | | | | |
| Lambs ... | 5 | 0 | — 5 | 8 |
| Calves ... | 2 | 8 | — 3 | 10 |
| Pigs ... | 2 | 8 | — 3 | 6 |

Beasts, 4718; Sheep and Lambs, 29,230; Calves, 268; Pigs, 410.

**FRIDAY, May 16.**

There is a more cheerful trade for Beasts to-day, but prices are no better on the average. The supply of Sheep and Lambs is not large, but quite adequate to the demand. Prices have advanced a little, owing to the dead markets being clearer. We have now so few Sheep in the wool we cease to quote them. Trade is still dull for Calves; however, a few choice ones have made 4s. From Germany and Holland we have 98 Beasts, 650 Sheep, and 231 Calves; from Spain, 100 Sheep; from Scotland, 200 Beasts; from Norfolk and Suffolk, 400; and 107 milch cows from the home counties.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 0 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 |
| Best Downs and Half-breds ... | | | ... | |
| Ditto Shorn ... | 3 | 8 | — 3 | 10 |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools ... | | | | |
| Ditto Shorn ... | 3 | 4 | — 3 | 6 |
| Ewes & 2d quality ... | | | | |
| Ditto Shorn ... | 2 | 8 | — 3 | 2 |
| Lambs ... ... | 5 | 0 | — 5 | 8 |
| Calves ... ... | 2 | 8 | — 4 | 0 |
| Pigs ... ... | 2 | 8 | — 3 | 6 |

Beasts, 924; Sheep and Lambs, 7690; Calves, 421; Pigs, 410.

### MARK LANE.

MONDAY, MAY 12.—The supply of English Wheat this morning was moderate, and readily disposed of at the extreme prices of last Monday. A fair amount of business was transacted in foreign at that day's rates. Flour was held for an advance of 6d. to 1s. per sack.—Barley was in fair request, and its value well supported.—The arrivals of Oats have exceeded 49,000 qrs. The sale to-day was not so brisk as on Friday last, but the improvement of 6d. per qr. obtained at the close of last week was maintained.—Beans and Peas must be quoted 1s. dearer.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | 45 | Red ..... | 36 | 43 |
| — — fine selected runs...ditto | 42 | 47 | Red ..... | | 40 |
| — — Talavera ..... | 45 | 52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 32 | 50 | | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26 | 31 | Malting . | 22 | 26 |
| — Foreign... grinding and distilling | 18 | 23 | Malting . | 23 | 26 |
| Oats, Essex and Suffolk ..... | 17 | 19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | 23 | Feed..... | 16 | 21 |
| — Irish .....Potato | 17 | 21 | Feed..... | 16 | 18 |
| — Foreign .....Poland and Brew | 18 | 21 | Feed..... | 17 | 20 |
| Rye ..... | 22 | 24 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..23s to 26s.....Tick | 24 | 28 | Harrow . | 24 | 28 |
| — Pigeon.....25 — 32... Winds | — | | Longpod | — | |
| — Foreign .....Small | 23 | 26 | Egyptian | 20 | 22 |
| Peas, white, Essex and Kent.....Boiler | 24 | 27 | Suffolk... | 27 | 29 |
| — Maple.....27s to 29s .....Grey | 24 | 25 | Foreign . | 24 | 31 |
| Maize .....White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 34 | 39 | | | |
| — Suffolk .....ditto | 27 | 34 | Norfolk . | 27 | 34 |
| — Foreign .....per barrel | 16 | 23 | Per sack | 26 | 34 |

FRIDAY, MAY 16.—There was a very short supply of English Wheat at market this morning, and Monday's quotations were readily obtained. The receipts of foreign Wheat exceed 14,000 quarters; holders were firm in their demands, and former prices were realised.—There was no alteration in the value of English Barley; foreign being in good supply, was obtainable on rather better terms than on Monday.—We have again to report rather large arrivals of foreign Oats; the demand, however, being good, the dealers were unable to supply themselves cheaper than on Monday.—Beans and Peas remain firm.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Mar. 29..... | 38s 1d | 23s 7d | 16s 7d | 28s 5d | 25s 7d | 24s 6d |
| April 5..... | 38 4 | 23 10 | 17 0 | 23 11 | 25 11 | 24 8 |
| — 19..... | 39 5 | 24 5 | 17 5 | 24 7 | 26 10 | 25 9 |
| — 26..... | 39 3 | 24 4 | 17 10 | 24 2 | 26 9 | 25 5 |
| May 3..... | 38 8 | 24 3 | 18 3 | 23 11 | 27 9 | 25 4 |
| — 10..... | 38 10 | 24 4 | 18 8 | 24 7 | 27 10 | 25 11 |
| Aggreg. Aver. | 38 11 | 24 3 | 17 9 | 24 3 | 26 11 | 25 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

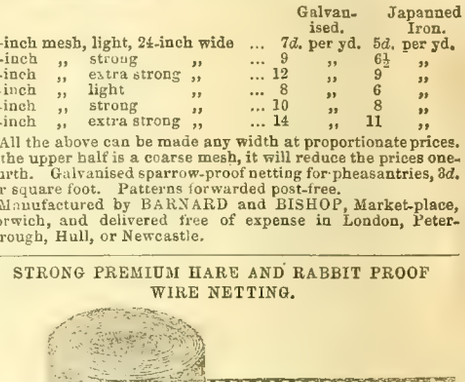
| PRICES. | MAR. 29. | APRIL 5. | APR. 19. | APR. 26. | MAY 3. | MAY 10. |
|---|---|---|---|---|---|---|
| 39s 5d | ... | ... | ... | ... | ... | ... |
| 39 3 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | |
| 38 8 | ... | ... | ... | ... | | ... |
| 38 4 | ... | ... | ... | ... | ... | ... |
| 38 1 | | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, MAY 13.—The supplies of grain and Flour from Ireland and coastwise are again very small, whilst the exports to those places are large. This morning's market was well attended, and fresh Baltic Wheat sold readily at fully the prices of this day se'nnight. Old foreign Wheat moved tardily, and prices were slightly weaker. On Friday American Flour improved 6d. per barrel, but this could not be maintained to-day; we had, however, a fair demand for all good sound qualities, of American and French, at quite as good figures as on Tuesday last. Spring corn and pulse all supported the late advance, and the quotations of this day week are raised 6d. per qr. on Indian Corn and Beans, 1d. per bushel on Oats and Barley, and 3d. to 6d. per load on oatmeal.—FRIDAY, MAY 9.—The Corn Exchange was well attended this morning by millers and dealers. There was a good tone in the trade generally, and some substantial sales were made of Wheat and Flour at very fully the rates of Tuesday; in a few instances a small advance was made on American Flour. Indian Corn also commanded extreme prices. The best mealing Oats being still scarce, went up to 3s. per 45 lbs., which is an advance of 1d. per bushel, and Oatmeal improved 6d. per load. Egyptian Beans were in request, and 6d. per qr. higher. Barley scarce, and 1d. per bushel dearer.


BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Alobert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

GALVANISED WIRE GAME NETTING.—
7*d.* per yard, 2 feet wide.

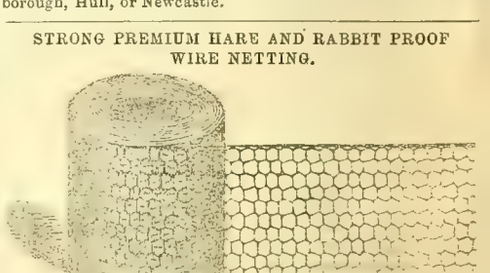


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24-inch wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT-STREET, WESTMINSTER, LONDON;
48, NORTH-BRIDGE, EDINBURGH;
32, ST. ENOCH-SQUARE, GLASGOW;
1, CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30*s.* ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | |
|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | ... | £3 15 0 |
| Do. of 100 yards, 24 ins. wide | ... | 5 0 0 |
| Do. of 100 yards, 30 ins. wide | ... | 6 5 0 |
| Do. of 100 yards, 36 ins. wide | ... | 7 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has in many instances been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG and Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

"WHERE SHALL WE GO THIS MORNING?"—Such is usually the query over the breakfast-table with visitors to London. Let us answer the question. If you can admire the most beautiful specimens of Papier-Mâché manufacture which are produced in this country, displayed in the most attractive forms—if you want a handsome or useful Dressing Case, Work-Box, or Writing-Desk—if you need any requisite for the work-table or toilet—or if you desire to see one of the most elegant emporiums in London, then you will go to MECHI'S, 4, LEADENHALL-STREET, near the India House, in whose Show Rooms you may lounge away an hour very pleasantly.

## SALES BY AUCTION.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 22d, at 12 o'clock, a first-rate collection of DAHLIAS, consisting of all the approved kinds, the newest varieties of Fuchsias, Verbenas, Heartsease, &c.; a fine assortment of Geraniums, and other plants in bloom, and a quantity of useful and ornamental plants for bedding. May be viewed the morning of sale.—Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

MR. LAWRENCE'S GRAND SHOW OF TULIPS for Sale by Auction on FRIDAY, the 30th inst., will be on view at the Red Lion Hotel, Hampton, Middlesex, until the day of Sale.—Catalogues, now ready, to be sent to all applicants by post, and at the principal Seed Shops.

ORCHIDS FROM VERAGUA—COLLECTED BY MR. WARSZEWIZ.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY next, 20th inst., at 12 for 1 o'clock, a consignment just received, containing fine healthy plants of Cypripedium caudatum, Trichopilia suavis, and many new species.—May be viewed the morning of sale, and Catalogues had.

ORCHIDS FROM AFRICA.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-Street, Covent-garden, on TUESDAY next, the 20th inst., an importation from Sierra Leone, well deserving the attention of all growers of Orchids. The Plants being in every respect superior to any yet received from that locality; it includes Angræcum caudatum. A. bilobum, a new Angræcum, and several other new species, and some fine Ferns.—On view the morning of Sale, and Catalogues had.

ORCHIDS.—THE MOST IMPORTANT EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is favoured with instructions to submit to Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, June 9th, and following day, a collection of ORCHIDS, that has ranked for some years past as one of the finest in the kingdom; it comprises magnificent Specimen Plants, in perfect health, of all the favourite varieties, an enumeration of a few of the principal of which will suffice to show the high character of the collection.

| | |
|---|---|
| Aerides maculosum | Dendrobium Devonianum |
| ,, quinquevulnerum | ,, Dalhousianum |
| ,, odoratum purpurescens | ,, Paxtonii |
| ,, crispum | ,, formosum |
| ,, rubrum | ,, armenum |
| ,, affine | ,, Ruckerii |
| Cattleya Acklandii | Phalænopsis rosea |
| ,, bulbosa | ,, grandiflora |
| ,, maxima | ,, amabilis |
| ,, superba | Saccolabium guttatum |
| ,, Mossiæ | ,, præmorsum |
| ,, crispa | ,, Blumei major |
| ,, bicolor | ,, calceolaria |
| ,, labiata | ,, papillosum |
| ,, Perrinii | Vanda Batemanii |
| ,, Skinnerii, &c. | ,, violacea |
| Chysis bractescens | ,, tricolor |
| ,, albida | ,, Roxburghii |
| ,, aurea | ,, teres, &c. &c. |

Catalogues are preparing, and will be ready 10 days before the sale.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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TO BE LET, within four miles north of London, with immediate possession, a COTTAGE, containing four Rooms, with a Garden, where a good ready-money Plant business has been done, and which may be improved. The Show and Propagating Houses, and two Greenhouses, to be taken at a valuation. Rent, including taxes, 18*l.* per annum. Apply to Mr. GEORGE RUTHERFORD, Brook-street, Upper Clapton, near London.

TO BE SOLD, Three beautiful yearling thoroughbred JERSEY BULLS. They are from the purest prize stock, brought over two years since by the gentleman who bred both the Bull and Cows whilst resident in the Island. He now offers the three beautiful yearlings for 20 guineas each. They will prove particularly valuable for crossing with the Ayrshire, Short Horn, or Devon.—Apply by letter, post-paid, to T. I., M.D., Wood Hall, Hilgay, Norfolk.

ZOOLOGICAL GARDENS, REGENT'S PARK.—AN ELEPHANT CALF and its Mother have been added to the Collection, and are EXHIBITED DAILY, together with the HIPPOPOTAMUS presented by his Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at 4 o'clock, on Saturday, May 17, and on every succeeding Saturday, until further notice. Admission, 1*s.*; on Mondays, 6*d.*

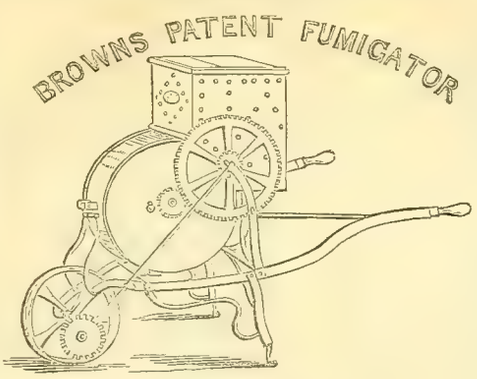


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IMPORTANT TO FARMERS, GARDENERS, FRUIT, AND HOP GROWERS.




"The skilful farmer, chaff
And blazing straw before his orchard burns
Till all, involved in smoke, the latent foe
From every cranny suffocated falls."
THOMSON'S SEASONS.

BY means of this instrument, the smoke produced by burning refuse vegetables can be directed in a cool state upon Agricultural Drilled Crops, or upon Wall or Standard Fruit Trees, Hops, &c., and blight or insects destroyed. It is also available for filling large houses with Smoke of Tobacco or other material; disinfecting impure places in ships and buildings; and for eradicating vermin. The machine may be obtained with or without the drilling apparatus.

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HORSE KEEP.—Oat Bruisers, Chaff Cutters, Ploughs, 42*s.*, Shares, 5*s.* per dozen; Rollers, Wheat Mills, Bean Mills, Steam Engines, Scarifiers, Turnip Cutters, Dressing Machines, Drills, Threshing Machines, Wood and Iron Harrows, Steaming Apparatus, Scotch Carts, Hay-making Machines, Horse Hay Rakes, and Drag Mills. First class goods warranted. MARY WEDLAKE and Co., 118, Fenchurch-street. Most liberal discount for cash. Goods delivered free. On receiving six postage-stamps a list, with 107 engravings, will be sent free.

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"ROWLAND'S UNIQUE DISCOVERIES."

ROWLAND'S MACASSAR OIL,

For the growth, and for preserving, improving, and beautifying the Human Hair.

ROWLAND'S KALYDOR,

For improving and beautifying the Skin and Complexion, eradicating all Cutaneous Eruptions, Sunburn, Freckles, and Discolorations, and for rendering the Skin soft, clear, and fair.

ROWLAND'S ODONDO,

Or PEARL DENTIFRICE, for preserving and beautifying the Teeth, strengthening the Gums, and for rendering the Breath sweet and pure. Price, 2*s* 9*d*. per box.

BEWARE OF SPURIOUS IMITATIONS.

The only GENUINE of each bears the name of "ROWLANDS'," preceding that of the article on the Wrapper or Label.

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HOLLOWAY'S PILLS, A CERTAIN SPECIFIC FOR NERVOUSNESS, LOWNESS OF SPIRITS, AND DISORDERED STOMACHS.—The wonderfully regenerating effects produced by these invaluable Pills are truly astonishing. This fine Medicine acts in so peculiar a manner on the system, that by following the directions affixed to each Box as to the mode of using it, nervous irritability is allayed, the tone of the stomach strengthened, the digestion improved, freedom of circulation given to the blood, and a robust state of health attained. Persons of studious and sedentary habits being more especially liable to the class of disorders alluded to, should take HOLLOWAY'S Pills, to insure a good state of health.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

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| | |
|---|---|
| Bedsteads, from ... | ... 12*s.* 6*d.* to 12*l.* each. |
| Shower Baths, from ... | ... 7*s.* 0*d.* to 7*l.* each. |
| Lamps (Palmer's), from | ... 1*s.* 6*d.* to 6*l.* each. |
| (All other kinds at the same rate.) | |
| Palmer's Candles ... | ... ... 6½*d.* per lb. |

WILLIAM S. BURTON'S Stock of General Furnishing Ironmongery is literally the largest in the world, detailed Catalogues of which, with engravings, sent (per post) free. The money returned for every article not approved of.—39, Oxford-street (corner of Newman-street), Nos. 1 and 2, Newman-street, and Perry's-place, London. Established in Wells-street, 1820.

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THE BLOOD.—Our bodies have been entirely formed, *are now forming, and will continue to be built up during life from the blood. What the sap is to the tree the blood is to the animal frame: and inasmuch as the strength and verdure of a tree are dependant on the moisture derived from the root, the health and vigour of the body are indispensably connected with a pure and free circulation of this important fluid. It is this that must feed the flame of existence; and unless its replenishments are freely and purely communicated, the vital fire becomes clouded, burns dimly, and is ultimately extinguished. The grand object is to keep this precious fluid (the blood) in a pure and healthy state, for without this purity, disease will show itself in some way or other.*

PARR'S LIFE PILLS.

*It is universally admitted that this medicine will purify the blood better than any other, and will conquer any disease.*

None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, on the Government stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the directions.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world.

METCALFE AND Co's NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The Public is respectfully informed, that these favourite Ales may be had genuine, in casks of 18 gallons and upwards, at their respective stores, as under where also a list of the bottles may be obtained.

The Brewery, Burton-on-Trent; Stores, 61, King-William-street, City, London; Cook-street, Liverpool; High-street, Birmingham. The Exchange, Manchester, 33, Virginia-street, Glasgow.

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WORKS ON DOMESTIC AND RURAL ECONOMY.

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IS NOW PUBLISHED,

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This will be found a perfect Treasury of information relative to Domestic and Rural Economy: one of the most useful and interesting, and at the same time, one of the cheapest volumes ever issued.

*"He that tilleth his land shall be satisfied with bread."*

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GARDENING AND COTTAGE FARMING,
BY MARTIN DOYLE.

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CONTENTS.

| | | |
|---|---|---|
| Annual pruning time, principle of execution, &c. | Planting out, arrangement of trees, &c. | distance, shortening heads, &c. saw proper for the purpose |
| Binding up | Pushing eye, spring treatment of dwarf shoots from | GRAFTING. |
| Budding knife | Roses, different sorts on the same stock | Aphides, to keep down |
| Budding, time of year, day, time of day, state of the plant, care of buds | Roses, short list of desirable sorts for budding with a pushing eye | Free-growers, remarks on |
| Budding upon body | Sap-bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
| Bud, preparation of, for use | Shoots and buds, choice of | Grafting, disadvantage of |
| Buds, dormant and pushing | Shoots for budding upon, and their arrangement | Operation in different months |
| Buds, failing | Shoots, keeping even, and removing thorns | Preliminary observations |
| Buds, securing a supply of | Shortening wild shoots | Roses, catalogue and brief description of a few sorts |
| Caterpillars, slugs, and snails, to destroy | Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending | Scion, preparation and insertion of |
| Causes of success | | Scion, choice and arrangement of |
| Dormant buds, theory of replanting with explained | | Stock, preparation of |
| Guards against | | APPENDIX. |
| Labelling [wind | | A selection of varieties |
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INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 332 *c* | Horticultural Society | 327 *a* |
| — education | 332 *b* | Kunze (Dr.) death of | 328 *a* |
| Asparagus | 326 *a* | Limestones, value of | 331 *b* |
| Beet sugar | 329 *b*—332 *a* | Manures, artificial | 331 *b* |
| Birds, British song | 325 *a* | National Floricultural Soc. | 327 *b* |
| Boilers, incrustations in | 327 *c* | Orchids for the million | 324 *b* |
| Britain, climate of | 323 *c* | Orchid shows | 325 *c* |
| Budding, instrument for | 326 *c* | Ploughs, subsoil | 330 *b* |
| Calceolarias | 327 *a* | Polmaise heating | 236 *b* |
| Calendar, Horticultural | 325 *a* | Rhododendron arboreum | 236 *c* |
| Calving, drop after | 334 *a* | Roses, Tea | 326 *a* |
| Chemistry, organic | 323 *b* | St. Petersburgh | 324 *b* |
| Climate | 323 *c* | Salamander, poisonous qualities of | 325 *b* |
| Crystal palace | 330 *a* | Scarifiers | 330 *a* |
| Cultivators | 330 *a* | Skylark, the | 332 *c* |
| Draining, fertility from | 332 *a* | Soot, adulteration of | 327 *a* |
| Drainage Act | 332 *b* | Sugar in animals | 323 *b* |
| Education, agricultural | 332 *b* | — Beet | 329 *b*—332 *a* |
| Flax, culture of | 330 *c* | Toad, poisonous qualities of | 325 *b* |
| Fuchsia, Tiley's new | 326 *a* | Trees, forest, to plant | 236 *a* |
| Garden gleanings, foreign | 324 *c* | Tulips, Mr. Groom's | 327 *c* |
| Gardeners' Benevolent Institution | 326 *a* | Ventilating, plan of | 237 *a* |
| Glass-houses, to ventilate | 327 *a* | Victoria Regia at Messrs. Weeks' | 327 *c* |
| Heating, Polmaise | 326 *b* | Vine, by Sanders, rev. | 327 *b* |
| — Grant on | 328 *a* | Weather, the | 333 *c* |
| Highbury Hort. Society | 327 *b* | | |


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*Also, for succession, the New Lincolnshire Red, and* SUTTON'S *Purple-topped Hybrid yellow Turnip.*

The Lincolnshire Red Turnip (the stock of which was presented to Messrs SUTTON, in 1849, by Philip Pusey, Esq., M.P.), should be fed off before Christmas; and SUTTON'S Purple-topped Yellow Hybrid, which is equal to a fine Yellow Swede. May be sown very late with certainty of success, and will keep till spring either in the field or housed.

Sold in quantities of not less than 10 pounds weight, at the undermentioned prices, *Carriage Free*, to any Station on the Great Western, South-Western, or South-Eastern Railways:—

| | Per pound. *s.* *d.* | per gallon. *s.* *d.* | per bush. £ *s.* |
|---|---|---|---|
| Early Six Weeks' Turnip ... | 0 10 | 5 0 | 1 16 |
| Sutton's purple-topped Hybrid | 1 0 | 6 0 | 2 4 |
| Lincolnshire Red ... ... ... | 1 0 | 6 0 | 2 4 |
| Ashcroft Swede ... ... ... | 0 10 | 5 0 | 1 16 |
| Skirving's Liverpool do. ... | 0 9 | 4 6 | 1 10 |
| Best Dwarf Rape ... ... ... | 0 4 | 2 0 | 0 12 |

SUTTON and SONS, Seed Growers, Reading, Berks.

Agents for the sale of Rivers's Stubble Swede Seed.

"THE FLOWER OF THE DAY" may now be seen in bloom at J. AND C. LEE'S NURSERY, HAMMERSMITH. Price, per dozen, according to size, on application.

AZALEA INDICA "SYMMETRY" (KINGHORN), will be sent out on 1st June, price 21*s.* Discount to the trade.

## TWENTY THOUSAND FLOWERING PLANTS

OF CRASSULA COCCINEA MAJOR FOR SALE, well set with spikes of Flowers, in pots from 4 to 18 inches in diameter, and with flowering heads varying in number from one to one hundred on a plant. This is a very desirable plant for bedding, and flowering plants can be supplied from 4*s.* per dozen to four guineas per plant, on application to J. W. THOMSON, Nurseryman, Landscape Gardener, and Hothouse Builder, Exotic Nursery, Hammersmith, Middlesex.

EDWARD GEORGE HENDERSON is now prepared to forward his new SPRING CATALOGUE for 1851, post free on application, and it will be found to contain all the new Stove and Greenhouse Plants, new Geraniums, Fuchsias, Cinerarias, Verbenas, Chrysanthemums, soft-wooded and other Plants, sent out in this country or on the Continent. Much pains have been taken to render the descriptions full and correct, so as to make it a guide to purchasers.

E. G. H. also solicits attention to the new Plants he is now sending out, as will be seen on referring to page 64 of the Catalogue.

Wellington-road Nursery, St. John's Wood, London, May 24.

CHRYSANTHEMUMS, "QUEEN OF ENGLAND," "CLOTH OF GOLD," "RABELAIS," "JENNY LIND," "POMPON D'OR," "THE WARDEN," &c. &c.

CHANDLER AND SONS, NURSERYMEN, Wandsworth-road, are now sending out the finest Chrysanthemums from 9*s.* to 12*s.* per dozen. The newest varieties 1*s.* 6*d.* each. Good sorts for planting in open borders, 6*s.* per dozen.

Post-office orders payable at Kennington-cross.

## SPLENDID NEW SEEDLING FUCHSIAS.

WILLIAM RUMLEY AND SONS are now sending out the under-mentioned superb SEEDLING FUCHSIAS, which they can confidently recommend as first-rate varieties.

VOLTIGEUR.—Tube and sepals pure waxy white, with rich deep rose corolla, large, and finely reflexed; 5*s.* each.

NORTHERN BEAUTY.—Tube and sepals white, slightly tinged with rose, deep rosy carmine corolla, well expanded; 3*s.* 6*d.* each.

New Rose-coloured GERANIUM "ROSEA PERFECTA."—Deep rosy pink, with pure white centre, good shape, and very distinct; 2*s.* 6*d.* each.

Having a splendid stock of the undermentioned in first-rate varieties, we can supply them at the very low prices affixed.

FUCHSIAS, all the best of 1850, 20 for 10*s.*; 12 for 7*s.* 6*d.*; or 6 for 4*s.* For the varieties, see our advertisement of April 19.

| | Per doz.—*s.* | *s.* *d.* |
|---|---|---|
| Dahlias, splendid show varieties ... ... ... | 9 to 12 | 0 |
| Do. good show do. ... ... ... | 4 — 6 | 0 |
| Do. choice fancy do. ... ... ... | 6 — 9 | 0 |
| Geraniums, extra fine show do. ... ... ... | 6 — 9 | 0 |
| Do. scarlet, extra fine do. ... ... ... | 6 — 9 | 0 |
| Do. do. Tom Thumb ... ... ... | | 4 0 |
| Verbenas, extra fine varieties ... ... ... ... | 4 — 6 | 0 |
| Chrysanthemums, very choice ... ... ... | 4 — 9 | 0 |
| Petunias, extra fine varieties ... ... ... ... | 4 — 6 | 0 |
| Pansies, very choice do. ... ... ... ... | 4 — 6 | 0 |
| Cinerarias, extra fine do. ... ... ... ... | 6 — 9 | 0 |
| Calceolarias, shrubby, in 6 varieties ... ... | | 6 0 |
| Salvias, in 6 choice varieties ... ... ... ... | | 6 0 |
| Stove and Greenhouse Plants, choice ... ... | 6 — 9 | 0 |
| Cuphea Donkelaarii, bright purple, very distinct, and pretty ... ... ... ... ... ... | | 6 0 |
| Lobelia fulgens multiflora ... ... ... ... | | 6 0 |

Cupheas, Heliotropes, Plumbago Larpentæ, Zauschneria californica, Lobelia erinus, and Anemone japonica, 4*s.* per doz.

Cantua bicolor, Browallia Jamesonii, and Mitraria coccinea, 6*d.* each.

The above can be forwarded in pots, hamper included, and those not too large can be sent free by post, if required, on receipt of a Post-office order, payable at Richmond. Our general descriptive Catalogue can be had on application.

Gilling, Richmond, Yorkshire, May 24.

## NOTICE.—EXHIBITION OF AMERICAN

PLANTS, KNAP-HILL NURSERY, NEAR WOKING, SURREY.—The American Plants, at this Nursery, will be in bloom on and after the 30th inst., and may be seen daily (gratis), Sundays excepted. The Knap-hill Nursery is within one hour's ride of London, being near the Woking Station, South-Western Railway, where nearly every train stops, and from whence conveyances may at all times be obtained.

HOSEA WATERER takes this opportunity of stating that the Exhibition of American Plants in the Horticultural Society's Garden, Chiswick, is entirely supplied from his Nursery, and that he is *not* this year a contributor to that in the Botanic Gardens, Regent's-park.—Knap-hill, Woking, Surrey, May 24.

## THE VICTORIA REGIA IS NOW FLOWERING, GROWING IN THE OPEN AIR, AT

J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers.

PEAT CHARCOAL can be had of G. H. FOLEY, Essex Wharf, Lea Bridge, Middlesex. Agent, by appointment, to the Irish Amelioration Society. Price at the above address, of the unmixed Charcoal, 60*s.* per ton, sacks included; mixed with night-soil, 45*s.* per ton, sacks included; or delivered at any of the London Railway Stations or Wharfs, mixed, 50*s.* per ton, and unmixed 65*s.* per ton, sacks included.

## PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1*l* quarts, 17*s.* 6*d*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

## EPPS'S IMPROVED REGISTERED SULPHURATOR, for destroying the Mildew and Mould in Grapes,

Hops, Roses, Heaths, Pansies, Fruit Trees, and Agricultural and Horticltuural produce.

The Inventor submits this Machine with great confidence, as being the most useful and perfect of its kind invented. The construction is simple, strong, and effective, and can be used by the most inexperienced hand. It has been described in the *Gardeners' Chronicle*, and highly commended by Dr. Lindley, Dr. Plomley (in his lectures on the Mould in Hops), the editor of the "Gardeners' Magazine of Botany," and many eminent Gardeners and Agriculturists.

Manufactured and sold wholesale by BARBER and GROOM, Holborn, and to be had of all Seedsmen, Florists, Ironmongers, and the Inventor. Price 20*s.* and upwards.

Maidstone, May 24.

## SHADING CANVAS, 4*d.* per Square Yard. To be

had in any quantity from WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London.

Also BEDDING and HERBACEOUS PLANTS of every description.

FLOWER SEEDS for present sowing, in packages of 12 varieties, for 2*s.* 6*d.*; or 25 varieties, 5*s.*

Labels, Garden Knives, Flower-gatherers, Thermometers, and every other article useful in gardening, his prices for which are excessively moderate.

Address, 156, Cheapside, London.

N.B. Agent for the Registered Rose Girdle.

## DEANE'S WARRANTED GARDEN TOOLS.—

Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

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|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

# ROYAL BOTANIC SOCIETY,
## REGENT'S PARK.

### AWARD OF PRIZES AT THE EXHIBITION HELD MAY 14, 1851.

#### AN EXTRA GOLD MEDAL.

To Mr. May, Gardener to Mrs. Lawrence, Ealing-park, for 30 Stove and Greenhouse Plants
To Mr. Mclam, Gardener to S. Rucker, Esq., Wandsworth, for 25 Orchids

#### MEDIUM GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, for 30 Stove and Greenhouse Plants
To Mr. Green, Gardener to Sir Edmond Antrobus, Bart., Cheam, for 20 Stove and Greenhouse Plants
To Mr. S. Smith, Gardener to W. Quilter, Esq., Crier's-hill, Norwood, Surrey, for 15 Cape Heaths
To Mr. May, for 12 Greenhouse Azaleas
To Mr. Blake, Gardener to J. H. Schröder, Esq., Stratford-green, for 15 Orchids
To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, for 25 Orchids

#### GOLD MEDAL.

To Mr. Cock, Nurseryman, Chiswick, for 12 Pelargoniums
To Messrs. Fraser, Nurserymen, Lea Bridge-road, for 20 Stove and Greenhouse Plants
To Mr. Cole, for 15 Cape Heaths
To Messrs. Rollisson, Nurserymen, Tooting, for 12 Cape Heaths
To Mr. Taylor, Gardener to G. Coster, Esq., Streatham, for 20 Stove and Greenhouse Plants
To Messrs. Fraser, for 10 Greenhouse Azaleas
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch-park, for 10 Orchids
To Messrs. Lane, Nurserymen, Great Berkhamstead, for 12 Roses, in pots
To Mr. Turner, Slough, for 12 Pelargoniums

#### LARGE SILVER GILT MEDAL.

To Mr. Stanly, Gardener to H. Berens, Esq., Sidcup, for 30 Stove and Greenhouse Plants
To Mr. Croxford, Gardener to H. H. Barns, Esq., Stamford-hill, for 10 Stove and Greenhouse Plants
To Mr. Green, for 6 Greenhouse Azaleas
To Mr. Franklin, Gardener to Mrs. Lawrence, for 15 Orchids
To Mr. Barns, Gardener to — Hanbury, Esq., Ware, for 10 Orchids
To Mr. Francis, Nurseryman, Hertford, for 12 Roses, in pots
To Mr. Terry, Gardener to Lady Pulteu, for 8 Roses, in pots

#### LARGE SILVER MEDAL.

To Mr. J. Over, Gardener to W. Macmullin, Esq., Clapham, for 15 Cape Heaths
To Messrs. Veitch, for 12 Cape Heaths
To Mr. Bray, Gardener to Sir Isaac Goldsmid, Bart., Regent's-park, for 6 Pelargoniums
To Mr Dobson, Gardener to E. Beck, Esq., Isleworth, for 12 Pelargoniums
To Mr. Robinson, Gardener to G. Simpson, Esq., Pimlico, for 12 Pelargoniums
To Mr. Ayres, Nurseryman, Blackheath, for 6 Fancy Pelargoniums
To Mr. Cock, Chiswick, for 6 Fancy Pelargoniums
To Mr. Pamplin and Son, for 30 Stove and Greenhouse Plants

#### SILVER GILT MEDAL.

To Mr. J. Speed Edmonton, for 10 Stove and Greenhouse Plants
To Mr. Green, for 6 tall Cacti
To Messrs. Fairbairn, Clapham, for 12 Cape Heaths
To Mr. Williams, Bromley, for 6 Cape Heaths
To Mr. Gaines, Nurseryman, Battersea, for 6 Calceolarias
To Mr. Rae, Gardener to J. J. Blandy, Esq., High Grove, Reading, for 10 Orchids
To Mr. Wooly, Gardener to J. Ker, Esq., Chiselhurst, Kent, for 10 Orchids
To Mr. Williams, for 8 Roses
To Mr. Chapman, Turnham-green, for 6 Pelargoniums
To Mr. Gaines, for 6 Fancy Pelargoniums
To Mr. Robinson, for 6 Fancy Pelargoniums
To Mr. Parker, Gardener to — Strachan, Esq., the Grove, Teddington, for 6 Cape Pelargoniums

#### SILVER MEDAL.

To Messrs. Henderson, Pine-apple-place, for 6 Cinerarias
To Mr. Bragg, Nurseryman, Slough, for 12 Pelargoniums
To Mr. Gaines, for 6 Pelargoniums
To Mr. Ambrose, Nurseryman, Battersea, for 6 Fancy Pelargoniums
To Mr. Miller, Gardener to R. Mosley, Esq., Pine-apple-place, for 6 Fancy Pelargoniums
To Messrs. Veitch, for Rhododendron jasminiflorum
To Messrs. Henderson, for Franciscea confertiflora
To Mr. Henderson, Wellington-road, for Allamanda nerifolia
To Mr. Cole, for Allamanda nerifolia
To Mr. Williams, for 10 Stove and Greenhouse Plants
To Mr. Speed, for 6 Cape Heaths
Extra Silver Medal to Messrs. Fraser, for 12 Cape Heaths
To Messrs. Paul, for 12 Roses
To Mr. Roser, Gardener to J. Bradbury, Esq., Streatham, for 6 Greenhouse Azaleas

#### SMALL SILVER MEDAL.

To Messrs. Rollisson, for Sarracenia, sp. from North America
To Mr. Smith, Gardener to J. Anderson, Esq., the Holme, Regent's-park, for 30 British Ferns
Extra Small Silver Medal, to Mr. Carson, for 10 Stove and Greenhouse Plants
To Messrs. Veitch, for Cattleya Mossiæ
To Mr. May, for Pimelea spectabilis
To Mr. Rowland, for 8 Roses
To Mr. Taylor, for 6 Cape Heaths
To Mr. Green, for 10 Orchids
To Mr. Wooly, for collection of Lycopodium
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, for Black Hamburgh Grapes, in pots
To Messrs. Standish and Noble, Nurserymen, Bagshot, for Rhododendron "Vesuvius"
To Messrs. Veitch, for Cypripedium caudatum
To Messrs. Lane and Son, for 6 Cinerarias
To Mr. J. Baumann, Ghent, for Deutzia gracilis
To Messrs. Veitch, for Deutzia gracilis
Extra Small Silver Medal to Mr. Gaines, for collection of Pelargoniums
To Mr. Roser, for 6 Cape Pelargoniums
To Mr. Franklin, for Amherstia Nobilis
To Mr. Turner, Slough, for 24 Pansies

#### BRONZE MEDAL.

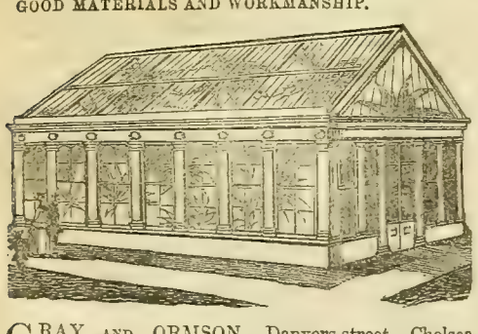
To Mr. Gaines, for 6 Cinerarias
To Mr. Bragg, for 24 Pansies
To Mr. Smith, Gardener to W. Quilter, Esq., for Erica perspicua nana
To Mr. Hamp, Gardener to J. Horne, Esq., Malby House, for 6 Cape Heaths
To Mr. Chitty, Gardener to J. S. Basset, Esq., Stamford-hill, for 8 Roses
To Messrs. Henderson, for Ceanothus rigidus, C. papillosus, and Pultenæa ericoides
To Mr. Mitchell, Brighton Nursery, for Brunsfelsia nitida, var. Jamaicensis
To Messrs. Rollisson, for Bulbophyllum sp.
To Messrs. Henderson, for Broughtonia violacea
To Mr. Williams, for Leschenaultia formosa
To Mr. May, for Boronia serrulata

#### CERTIFICATE.

To Mr. Slowe, Gardener to — Baker, Esq., Bayfordbury, for Epacris miniata
To Mr. Franklin, for Trichopilia coccinea and Epidendrum Lawrenceanum
To Messrs. Henderson, for Dillwynia sp. and Dendrobium transparens
To Mr. Henderson, of Wellington-road, for Hebeclinium ianthinum
To Mr. Ambrose, for Hybrid de Rhododendron
To Messrs. Rollisson, for Rhododendron "Princess"
To J. Wilmer, Nurseryman, Sudbury, for a collection of 50 Tulips, and for 24 Auriculas
To Mr. Patterson, Gardener to Baroness Weinman, Thame Park, Oxon, for 8 pots of Keens' Seedling Strawberry
To Mr. Cowell, Gardener to F. R. Bedwell, Esq., for one dish of Black Hamburgh Grapes
To C. B. Lockner, Esq., Warwick House, for a collection of Verbenas
To Mr. Henderson, Wellington-road, for Cineraria "Mariana"
To Mr. Lushey, Gardener to J. Hill, Esq., of Streatham, for 8 pots of Keens' Seedling Strawberry
To Messrs. Waterer, Bagshot, for Rhododendron gemmiferum
To Messrs. Standish and Noble, for Azalea "Glory of Sunning Hill"
To Mr. Smith, Gardener to Lord Tenterton, Hendon, for a basket of Strawberries
To Mr. Henchman, Edmonton, for collections of Dryandras and Banksias
To Mr. C. Ewing, Bodorgan, Anglesea, for Murraya exotica
To Mr. Parsons, Gardener to A. George, Esq., Ponders-end, for 24 Pansies
To Mr. Hoyle, Reading, for Seedling Pelargonium (1850) "Magnet"
To Mr. Ayres, Blackheath, for Seedling Pelargonium (1850) "Formosissimum"
To Mr. C. Ewing, for Beaumontia grandiflora
To Messrs. Henderson, for Pultenæa juniperina
To Mr. John Bruce, Gardener to W. Gore Langton, Esq., Newton, near Bath, for Strawberries in pots.

R. MARNOCK.


HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

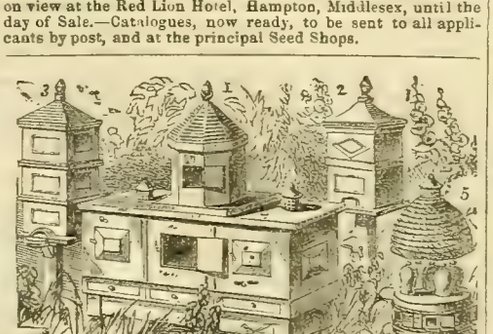


GRAY AND ORMISON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

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MR. LAWRENCE'S GRAND SHOW OF TULIPS for Sale by Auction on FRIDAY, the 30th inst., will be on view at the Red Lion Hotel, Hampton, Middlesex, until the day of Sale.—Catalogues, now ready, to be sent to all applicants by post, and at the principal Seed Shops.



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

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WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



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THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT, an inodorous felt for damp walls, sold in rolls 32 inches wide, 1d. per square foot; also dry Hair Felt, for preventing the radiation of heat and deadening sound, and Sneathing for ships' bottoms, on which the copper lies smooth. Samples, directions, and testimonials, sent by post.—CROGGON and Co., Dowgate-hill, London.

ZOOLOGICAL GARDENS, REGENT'S PARK.—AN ELEPHANT CALF and its Mother have been added to the Collection, and are EXHIBITED DAILY, together with the HIPPOPOTAMUS presented by his Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at 4 o'clock, on Saturday, May 17, and on every succeeding Saturday, until further notice. Admission, 1s.; on Mondays, 6d.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

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| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... | 6 by 3½ inches. |
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Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14s. each.

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| 6 ins. by 5 | and 7 ins. by 4 | 6½ ins. by 6 | and 7 ins. by 6½ |
| 6 " 5½ | " 7 " 5 | 6½ " 6½ | " 7½ " 6½ |
| 6 " 6 | " 7½ " 5 | | |

18s. 6d. per box.

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| 9 ins. by 7 | and 11 ins. by 8 | 9 ins. by 9 | and 12 ins. by 9 |
| 8 " 8 | " 11 " 9 | 10 " 8 | " 13 " 9 |
| 9 " 8 | " 12 " 8 | | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 500 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

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| In sizes under 15 inches | ..... | 6d. per foot. |
| " " 35 | " ..... | 8d. " |
| " " 50 | " ..... | 9½d. " |
| " " 75 | " ..... | 1s. " |

Milk Pans, 2s. to 6s. each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the Second EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, June 7th.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5s. each; or, on the day of the meeting, at Turnham-green, price 7s. 6d each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4 in the Duke of Devonshire's road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an admission ticket to which his signature is attached. Similar privileges belong to Ladies who are Fellows of the Society.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulat.

21, Regent-street, London.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN. The SECOND EXHIBITION for the Season will be held at the Royal Surrey Zoological Gardens, on WEDNESDAY, the 28th of May—open to all Exhibitors—when Prizes will be awarded for the following productions viz.: Miscellaneous, Orchidaceous, and Specimen Plants; Pelargoniums, Cape Heaths, Azaleas, Tulips, Heartsease, Vegetables, &c. In addition to the prizes offered by the Society, Mr. R. J. Lawrence, of Hampton, offers 5l. value of Tulips to Amateurs; also, by subscription, Prizes for Seedling Tulips and Heartsease, in addition to Certificates granted by the Society.

The following Exhibitions will also take place at the Royal Surrey Zoological Gardens: on Wednesday, June 25; Thursday, July 24; and Wednesday, Sept. 3.

List of Prizes and the Rules for Exhibition may be obtained from JOHN TAYLOR NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition; 21s. Shacklewell Open Showe, &c, fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

EXHIBITION OF TULIPS.

HENRY GROOM, Clapham-rise, near London, Florist by appointment to HER MAJESTY THE QUEEN AND TO HIS MAJESTY THE KING OF SAXONY, respectfully informs the Nobility, Gentry, and the Public, that his SUPERB COLLECTION OF TULIPS is now in flower, and can be viewed every day, from 9 o'clock until 6, Sundays excepted. Admittance 1s., Children half price.

CHOICE BEDDING PLANTS.

HENRY WALTON, FLORIST, &c., Edge-end, Marsden, near Burnley, Lancashire, begs to offer the following at the extremely low prices attached, viz., 100 fine named Dahlias, including several of 1850, for 50s.; 50 for 30s; 25 for 9s. to 18s.; 12 for 4s 6d. to 9s.; Pansies, 25 fine named varieties, 10s.; 12 do., 4s. 6d. to 6s.; 12 fine named Pinks, 4s; 12 Verbenas, 3s. 6d.; 12 fine named scarlet Geraniums, 4s. 6d. to 6s.; 12 Ivy-leaved do., 4s.; 12 common Geraniums, fine strong plants, 4s. 6d. to 6s.; 12 Cupheas, 3s. 6d.; 12 Heliotropiums, of sorts, 4s.; 12 fine named Petunias, 4s.; 12 Mimulus, 4s.; 12 Lobelia erinus, of sorts, 6s.; or 12 of each of the above lots for 2l. The above may be had the second week in May, in strong healthy plants, securely packed, so as to ensure safe delivery of all orders.

Achimenes Tugwelliana, longiflora alba, fimbriata, Ghiesbreghtii, Bodmeri, Escherii, rosea superb, eximia rosea, cordata, Knightii, Skinneri grandiflora, patens major. The above 12, free by post, for 10s.; or 6 for 7s. 6d. Gloxinias, 12 fine named varieties for 9s. to 16s; or 6 for 5s. to 10s.

Catalogues may be had by inclosing one stamp. Strong well-rooted plants may be depended upon. It is respectfully requested all orders be accompanied with a Post-office order, made payable at Marsden, near Burnley, Lancashire.

"KOH-I-NOOR."

NEW AND ELEGANT FUCHSIA.—Fine plants are now ready to be sent out of this superb and unrivalled Fuchsia KOH-I-NOOR, which has proved itself one of the finest of the dark varieties. The flowers of extra large size, brilliant and very glossy colours; tube and sepals rich crimson; the corolla a fine purple; sepals well reflexed, showing the rich corolla to great advantage, and an abundant bloomer; the plant is also of very superior habit, and first-rate for exhibition; no collection can be complete without this forming the centre. It will also be found a most useful plant for the Nurseryman, as it continues in bloom for six months, the flowers always retaining their fine colour, and hangs well on the plant. It was seen by the following first-rate judges when in bloom last season: G. D. Fisher, Esq.; Mr. J. Pond, of Devonshire Cottage; Mr. Cole, Gardener to Miss Bayley; Mr. Carmichael, Gardener to G. Tugwell, Esq.; Mr. Hogg, Gardener to General Audrews; Mr. Grant, Gardener to G. Sims, Esq.; Mr. Wooton, Gardener to the Rev. E. D. Rhodes; Mr. Drummond, Nurseryman; Mr. Scott, Bathford; Mr. Freeman, assistant to Mr. Griffin, Nurseryman, all of Bath; and Mr. Ivery, of Peckham, London, all of whom passed their opinion in the following manner: "Your Fuchsia is one of the finest dark varieties we have yet seen; the habit is certainly splendid, and there will be no doubt as to its giving satisfaction to all who grow it."

Fine strong plants, 1 foot high, such as will make good specimens this season, will be sent, on receipt of the amount of 10s. 6d., namper and package included; smaller ditto, such as can be sent by post, 7s. 6d. each, box and postage included, when remittance accompanies the order. The usual allowance to the trade when three plants are taken.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

*** Forget-Me-Not, Myosotis azurea grandiflora, can still be supplied at 2s. 6d. per packet.

ROSES, IN POTS, FOR PLANTING OUT.—A Descriptive Catalogue of AUTUMNAL ROSES has been recently published, in which are inserted some new Hybrid Perpetual Roses plants of which can be had in pots, grafted on Manettii Rose stocks. The above is sent free per post, on application to THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

SELECT BEDDING PLANTS.

BASS AND BROWN have a large and fine Stock of the following, well established, and now sending out; they are mostly in small pots, so as to be packed in a little compass. Those marked * can be sent free by post, if required.

SCARLET GERANIUMS, in variety, strong, 6s. and 9s. per dozen.

* VERBENAS, a large collection of the best sorts for forming dwarf beds, such as Apollon, Anacreon, Defiance, Emma, Eclipse, Eyebright, Junon, Princess Alice, Psyche, Rosati, Vulcan, White Perfection, and others, 4s. per dozen.

* PETUNIAS, a large collection of bright purple and crimson flowers, 5s. per dozen.

* FUCHSIAS, a large collection of select varieties, 5s. p. doz.

DAHLIAS, the best varieties, both show and fancy, 5s., 9s., and 12s. per dozen.

Heliotropes of sorts, 4s. to 6s.; Bouvardias of sorts, 9s.; Lantana crocea, 6s.; Lobelia maxima, erinus, &c., 4s.; Blue Anagallis, 6s.; Cupheas of sorts, 6s.; Calceolaria of sorts, 6s. and 9s.; Dielytra spectabile, 12s.; Cheiranthus alpinus, 12s. per doz., and many others.

Also the following selections of newer varieties:

GERANIUMS, 12 fine show vars., 12s.; 12 superb do., 21s.

FANCY GERANIUMS, 12 beautiful vars., 12s.; 6 for 7s. 6d.

* FUCHSIAS, 12 fine vars., 9s.; 12 superb new vars., 15s.

DAHLIAS, 12 fine vars., 9s.; 12 quite new vars., 21s.

" FANCY, 12 fine vars., 9s; 6 quite new, 10s.

* PETUNIAS, 12 fine vars., 9s.; 12 superb new vars., 12s.

* VERBENAS, 12 fine vars., 7s. 6d.; 25 do., 12s.; 12 superb new, 12s

HARDY BORDER PLANTS, 100 select vars., 30s.; 50 for 30s. superior and new, 50 vars., 30s.; 25 for 17s. 6d.

" ROCK PLANTS, 25 select vars., 12s; 12 vars., 7s. 6d.

ANTIRRHINUMS, 12 fine vars., 6s.; 12 superb new, 10s.

PHLOX, 12 fine vars., 6s.; 25 vars., 10s. 6d.; 12 superb newer, 9s.

PENTSTEMONS, 12 fine vars., 7s. 6d.; 6 vars., 5s.

GREENHOUSE PLANTS, 12 select vars., 15s.; 25 fine vars., 28s.

STOVE PLANTS, 12 new and select vars., 18s. to 24s.

* ACHIMENES, 6 splendid new, 7s. 6d.; 12 fine vars., 9s.

GLOXINIAS, 6 splendid new, 7s. 6d.; 12 fine vars., 12s.

NEW PLANTS, see a List in the *Gardeners' Chronicle* for May 3d, April 26th, and April 19th.

Stamped Catalogues forwarded on application, free.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

*SATURDAY, MAY* 24, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | May 26 | Geographical (Anniversary) | 1 P.M. |
| TUESDAY, | — 27 | Civil Engineers | 8 P.M. |
| | | Medical and Chirurgical | 8½ P.M. |
| | | Zoological | 9 P.M. |
| WEDNESDAY, | — 28 | Royal South London | 1 P.M. |
| | | Royal Botanic | 3½ P.M. |
| | | Geological | 8½ P.M. |
| THURSDAY, | — 29 | Antiquarian | 8 P.M. |
| FRIDAY, | — 30 | Royal Institution | 3 P.M. |
| SATURDAY, | — 31 | Royal Botanic Gardens (American Plant Show) | 2 P.M. |
| | | Medical | 8 P.M. |

COUNTRY SHOWS.—Tuesday, May 27: Derby Tulip.—Thursday, May 29: Oxford Horticultural.

THOUGH much practical benefit has accrued both to the gardener and farmer from the modern improvements in organic chemistry, it can scarcely have escaped the observation of any intelligent reader that a sort of absolutism is frequently displayed in the enunciation or recommendation of any favourite scheme. This is scarcely consistent with the minute circumstances, that may produce very different results from those which were at first anticipated. Where vital organs are the subject of inquiry, or where they are involved in the production of chemical changes, we must be prepared frequently for very unexpected results; we must act with great caution, both as to the hopes we may form and the inferences we may be inclined to draw. Without some mental discipline of this description we shall be liable to much disappointment, and may incur considerable loss in the working out of our theories. The truth of this has never been more forcibly brought before us, though it has always had a very palpable influence on our speculations, than by the perusal of the abstract of the very important memoir, by M. CLAUDE BERNARD, which appeared in the "Comptes Rendus" for October 21, 1850, on the production of sugar in the liver of various animals. Its bearing on many questions in vegetable physiology is so evident, that we make no apology for calling to it the attention of our readers, though in itself purely zoological.

The mixture of sugar in blood and other animal fluids, has been long considered as a merely accidental circumstance, but it appears that not only is it a constant and indispensable fact in the regular accomplishment of the functions of nutrition, but that its presence does not depend upon any particular nutriment, and is effected in the liver of man and other animals by a special action of the organ in which it is produced.

During the process of digestion, the blood which proceeds from the liver by the subhepatic veins invariably contains sugar, whatever may be the nature of the food that has been taken. At this period the substance of the liver is impregnated with sugar to a considerable degree, which is not the case with any other organ, insomuch that the presence of sugar, during the process of digestion, is a certain distinctive test of that particular tissue from all other tissues.

In proportion as the digestive process declines or entirely subsides, the quantity of sugar poured by the subhepatic veins into the general circulation diminishes, as also that contained in the hepatic tissue itself.

The author has shown very clearly by experiments conducted on various animals, that the sugar is not derived directly from the nutriment taken. Even when substances were administered which could not, according to received notions, under the process of digestion, give rise to any saccharine principle, saccharine matter was still present in the liver. In dogs fed for several months with nothing but meat, though no sugar existed in the intestines, or in the blood carried to the liver by the *vena porta*, that of the subhepatic veins was always saccharine. After long continued abstinence, when saccharine matter has entirely vanished from the tissue of the liver, as soon as digestion commences, though nothing except meat be administered, the sugar reappears in the liver, and must therefore arise from some specific action in that organ.

The sugar then produced has all the characters of glucose, and when fermented with yeast produces alcohol and carbonic acid. Its solution is rendered brown by caustic alkali and decomposed by tartrate of copper dissolved in potash.

It may be added that it is decomposed by contact with blood and animal tissues more rapidly than ordinary glucose, so that, in consequence, investigations must be made as soon as possible after the death of the subject.

Another very singular point is the influence of the nervous system on its production. The division of the two pneumogastric nerves makes it disappear at once; and, on the contrary, if the spine be punctured with a very sharp instrument, between the point of origin of the nerves just mentioned and that of the emergence of the auditory nerves, saccharine matter is produced abundantly; the blood and other fluids are surcharged with it, and the animals become, in fact, diabetic.

SOME papers have lately appeared in the Journal of the Agricultural Society, respecting the varieties of CLIMATE to be found in the British Islands. They are interesting as far as they go, and may possibly have greater truth and importance in an agricultural point of view than in an horticultural one, in which, at least, they require to be corrected in more than one instance.

It is well laid down that the ruling cardinal points of our climate are rather east and west, than north and south; in other words, that the compass, considered as an index to the climate of Britain, must be imagined as turned one quarter round,—that is, that our coldest point is east, not north; our warmest, west rather than south.

This fact is both true and important, as far as climate depends on prevalent winds, which it does more exclusively in these than perhaps in any countries in any latitude. But the sun's place in the heavens being constant, according to the season in each respective latitude, this item also must be admitted as a modification of those circumstances of climate previously alluded to, which depend upon the winds. The sun's power in each latitude, *per se*, is a fixed quantity: the influence of the winds a variable one in two senses. First, the alternation between east and west winds, which forms the basis of our peculiar climate; secondly, the variation in these alternations from one season to another, which requires an average to be struck, or assumed, before it can be used as an ascertained quantity in any theory on the subject. In short, the sun's power will be the given fixed principle of the climate, the wind's influence the modifying one.

We conceive therefore, that the nearly meridional lines by which the new climate-map of England is divided, will have to be crossed by other lines more or less approaching the latitude, before a correct estimate, at least for horticultural purposes, can be arrived at.

Every climate out of the tropics can only be correctly estimated after a long experience of three principal circumstances, viz.: the maximum, minimum, and average of winter temperature, of summer temperature, and of annual temperature. These will not depend on the two great causes alone beforementioned, sun and winds: other circumstances, meteoric and geographical, will conspire to make great differences in the results obtained from localities not far distant from each other. The proximity of the sea, which affects not only the temperature, but in a degree too much overlooked, the quality of the air in its vicinity: the elevation above it, connected not only with the coldness but rarity of the atmosphere: the light: the great difference between sea-fog, mountain-fog, and river or ground-fog (a dis-

tinction not unimportant in a sanitary point of view): the general slope or fall of the ground towards a cold or a warm quarter: the exposure to any wind more than another: and, lastly, the quality—not the richness—of soil as taken in conjunction with all the above particulars—must be considered, before pronouncing on a climate in relation to practical purposes of horticulture.

The most striking feature in the climate of Britain, the increase of dampness and mildness—or absence of extremes, of either heat or cold, at any season—is well laid down in the papers of the Agricultural Journal before alluded to. Adopting this as a principle more or less applicable to the whole length and breadth of Great Britain (Ireland will be separately accounted for), it will be interesting to trace the points successively along the coast, at which the gradual change of climate becomes perceptible.

Beginning from the mouth of the Thames, and following the shores of Kent, we find a large mass of country, in some parts of considerable elevation, exposed to the full blast of the east wind, which the storms of the German Ocean, combining frost with violence, pour in a continued stream from the icy Baltic to the two Forelands.

Proceeding westwards, the more sheltered tract of the Weald of Kent and Sussex opens as soon as we have passed the bold chalk heights of Folkstone, and immediately a slight improvement is observable in the temperature of the districts near the sea; among which the neighbourhood of Hastings is the first that can be said to possess any decided advantage. This advantage, however, is soon lost, and the bleak downs of Sussex, from Beachey Head to Brighton, and nearly to Bognor, separate by a long distance the warm nooks of Hastings and St. Leonard's from the next district whose climate shows a marked improvement. That district is comprised in the low tract around Chichester, between the downs and the sea.

Next comes the larger tract well known as a great horticultural district; the environs of Southampton, and the Southampton Water, including the Isle of Wight. This tract is worthy of remark for two reasons.

First, the influence of the sea air and consequent mildness of the atmosphere, extends further inland than in any of the before-named instances. Secondly, the breadth, north and south, of the district influenced by this milder temperature is already become, as we advance westward, so considerable, that a still further increase of mildness, or what may be termed a sub-division of climate, begins to be observable in the southern parts of it.

This sub-division begins with the Isle of Wight, or more strictly speaking with Undercliff and southern coast of that island; and may be taken for the commencement of the climate of Devon and the western counties. Further westward, the isle or rather peninsula of Purbeck, together with the southern part of the New Forest, are a continuation of the Southampton range of climate, the sheltered nooks along this coast partaking to the full of the advantages of the southern coast of the Isle of Wight.

The whole Weymouth district south of the chalk downs, and now all the coast further westward, the great valley behind Bridport and Lyme, appear to be on a par with the mildest parts of the Isle of Wight, and in the sheltered combes and southern slopes near the sea, attain a combination of winter and summer temperature perhaps superior to it. On descending from the chalk downs, the climate of Devonshire may be said to begin, at least of Devon east of Dartmoor, which seems to be the great meteoric ruler of the climates of this part of England.

On arriving at that narrowest part of the South-west of England, where the West of Somerset, between Lyme and Bridgewater, constitutes a sort of isthmus, which makes a peninsula of Devon and Cornwall, we find that the mild temperature, which has been gradually increasing in warmth and extending in range at every successive valley along the coast of the English Channel, is now become the climate of the whole of these counties, and their borders, from sea to sea, the heights only excepted. It even extends beyond the Bristol Channel, and may be said to comprehend the whole coast of South Wales between the mountains and the sea.

Dartmoor, with other high lands occupying the centre of Devonshire, forms the great wall of division between the Eastern and Western sections of that county, sheltering the former from the storms of the Atlantic, and the latter from frosts of winter and spring. As may be expected, a marked difference is to be observed between the vegetation of the two districts; the eastern being more favourable to trees and fruits, the western to tender shrubs and evergreens, as well as to herbaceous plants of warm latitudes. It will be understood that here, as everywhere else, the neighbourhood of the sea gives some additional advantage over even the sheltered districts inland, excepting in the development of the foliage of trees, which is usually earlier, if not finer, in the inland district near the sea, than in the strictly maritime one. This is owing to the effect of wind, not of temperature.

Cornwall, being narrow and near the sea on every side, and, moreover, entirely protected from the east by Dartmoor and its spurs, enjoys, with the Scilly Isles, a more complete exemption from cold than any other county; but its summer temperature is not high in proportion.

The climate of Scilly, Penzance, and the Channel Islands, has been thought something exceptional, and beyond even what has been here described as that of Cornwall in general. It were much to be wished that comparisons were made by means of experimental horticulture (the best of tests where sufficient time is allowed) to settle so interesting a question.

Ireland is generally known to be milder than England, but its southern counties being considerably to the north of the English ones here treated of, it is probable that the south of Ireland only partakes of the climate of the south-west of England and Wales without any decided improvement on it. At any rate the favoured part of Ireland is probably comprehended within the south-east point of Wexford and the mouth of the Shannon. Without positive data it is useless to hazard a more than general opinion. The north of Ireland and south of Scotland would most likely form one region in respect of climate. *S.*

## ORCHIDS FOR THE MILLION.—No. II.

INTRODUCTORY REMARKS.—Now that the nature and the habits of Orchidaceous plants are better known than they were some few years ago, we have become acquainted with the conditions of their growth in the countries where they are indigenous. Here they are exposed to a dry season, during which they are at rest; and to a rainy season, when the heat is higher, and the air moist nearly to saturation. And to grow Orchids in any perfection, their native climate must, to a certain extent, be imitated, viz., they must have a period of rest in a dry and comparatively cool atmosphere, and during their growth and flowering they should be exposed to a high moist atmosphere; but as they principally grow on the trunks and branches of trees, it is important that they should be exposed to a free current of air, and also to the light; this is essential, except in some few species, to prevent the plants being exposed to the direct action of the sun's rays, which is apt to scorch the leaves. The great heat and moisture is only necessary during the time the plants are in vigorous growth, and this period should be during spring and summer, the best periods of rest being from about November till February; and it is the long period of rest which predisposes the plant to blossom. Of course the rules as to the periods of growth and rest can only be stated in general terms. There are certain kinds which do not stop growing, to some extent, all the year round. And again, even of those which do go to rest periodically, in the completion of their growth, it does not always happen that the time of rest corresponds with that time at which the largest numbers go to rest.

PERIOD OF GROWTH.—When the growing season commences, raise the temperature of the East India house to 65° by night and 70° by day; by sun heat it may be allowed to range to 75°, and as the days lengthen, so the temperature may be permitted to increase, and during the months of May, June, July, and August it should range from 70° to 75° by night, and from 75° to 80° by day, and by sun heat to 85°, or even 90°; this will not do any harm, provided the plants are shaded from the direct rays of the sun. The Mexican house should be 60° by night, and from 65° to 70° by day; and as the days lengthen, so the temperature may be allowed to increase; and during the months of May, June, July, and August the night heat may range from 65° to 70°, and by day from 70° to 85°. Great attention should, at the same time, be paid to the state of the atmosphere, as regards moisture; at all times of the year this is of much importance to the successful growth of the plants, for they derive the greater part of their subsistence from the moisture in the air, so that wherever any plants are growing, the atmosphere should be well supplied with moisture: this is obtained by pouring water over the tables, walls, and paths of the house every morning and afternoon, and by keeping the hot-water tanks full, which will cause a nice gentle steam to rise, which is of especial value whilst the plants are in a vigorous state of growth, especially as regards the East Indian Orchids, such as Aerides, Saccolabiums, Vandas, Phalænopsis, Dendrobiums, and many others requiring a high temperature, with a considerable degree of moisture. The Mexican Orchids, most of which come from a cooler climate, not so saturated with water, of course require less heat and moisture, but these should have a considerable degree of warmth during their growing season.

WATER.—This should be administered with great care, especially in the case of plants just starting into growth, as, if watered too profusely, the young shoots are apt to be affected by the moisture of the house and by what is termed damping off; whilst, therefore, the shoots are young, only enough of water should be given as is sufficient to keep the peat in which the plants are grown moist. As they advance in growth, more may be given; and, when the pseudo bulbs are about half grown, they may have a good supply at the roots. My practice is to shut up the house in the spring of the year about 3 o'clock, and in May, June, July, August, and September, I shut it up about an hour later, when the heat of the sun is on the decline. I then usually give a gentle syringing with water as nearly as may be of the same temperature as that of the house. In fine weather, the temperature from sun heat will increase frequently as high as 95°, or even more, but I never have experienced any injury from this, so long as the house was saturated with moisture, in which case there is no fear of any injury to the plants. The house should be dried up once a day, if possible, by means of ventilation. In syringing be very careful not to wet the young shoots too much. The syringe should be furnished with a fine rose, so as to cause the water to fall on the plants in imitation of a gentle fine shower of rain, but this syringing should only be done after a hot summer's day. Those plants which are growing on blocks of wood should be syringed twice a day in the summer time; and I also find it a good method, during the growing season, to take the blocks down and dip them in water till the wood and moss are thoroughly soaked. Plants in baskets should likewise be taken down and examined, and, if they are dry, they should be soaked in the water. This is also a good mode of getting rid of many insects that harbour in the Moss, such as the woodlouse and cockroach; when the moss is soaked, they will come to the top, and then they may be easily killed. Rain or pond water is the best.

## FOREIGN GARDEN GLEANINGS.

ST. PETERSBURG.

FORCING.—As, in consequence of the extreme cold, the inhabitants of St. Petersburgh can preserve their vegetables from one year to another, there is no great demand for forced vegetables; the few that are sought after are Asparagus, Salad, early Carrots, Mushrooms, which are, however, found wild in abundance in the neighbouring woods, and especially Water Melons. Peas are grown in pots, into which the seed is put at the end of autumn, and which are then put under cover for the winter. This plan was introduced into Russia some 20 years ago by a French gardener who was enabled to gather Peas in February, and to sell them for 4*l.* per lb. As this sum is, however, too large for most people, the Russians keep the Peas through the winter. We have ourselves tasted Peas thus kept, and to our taste they were as good as any we ever met with.

No idea can be formed of the quantity of pits and houses employed for raising early eatables. Pear, Apricot, Cherry, and Plum trees are all treated in the same way; but the houses in which they are kept have roofs sloping in opposite directions, one side being taken off on the approach of fine weather; the trees themselves, always small, are placed in rows which alternate.

Apple trees and Gooseberry and Raspberry bushes are generally in the open air; however, they are often, together with Fig and Peach trees, sheltered under houses with a single slope. These plants are, in such a case, put at the bottom of the house, against the wooden wall which supports the sashes; before them, other plants are arranged according to their heights. If the house is low, the Peach trees are allowed to keep their upper branches only, which are then made to follow the glass sashes, so as to get as much heat and light as possible; the spaces between the stems of the Peach trees are filled up with Vines, and, under the sort of cradle formed by the falling branches, Strawberries and little trees in pots are forced.

No gardeners in the world, perhaps, understand how to imitate natural temperature so well as the Russians; it is to their excellent management in this respect that their success in forcing is almost entirely owing. Another great advantage, due to the climate, is the facility with which Russian gardeners can check vegetation by means of cold. Ice-houses are generally used for this purpose; but, in our opinion, better results might be obtained by other means. Why, for example, should they not do in St. Petersburgh that which is done in the agricultural and horticultural school in Finland, to keep milk and meat for summer's consumption; that is, why should they not have next to a cold-house a place set apart for ice-houses, and separated from the first by a wall pierced with valves? By opening or shutting these valves, the air in the plant-house might be cooled at pleasure; in this way, not only fruit trees, but ornamental plants, might be checked in their growth whenever necessary.

VEGETABLE AND FRUIT MARKETS.—St. Petersburgh possesses several fruit and vegetable markets, which are supplied from the interior of Russia and from France, by way of Havre. The principal and best provisioned daily market is that of the Sennaia, where fruit, notwithstanding its abundance, is 20 per cent. dearer than in Paris. This is the more surprising, as the products are not nearly so fresh as our own. In the spring there is little except what is forced, and that is by no means first-rate. Lettuce badly grown, long Asparagus, small Radishes and Carrots may be met with; the last three in great abundance. Cabbages, Potatoes, and edible fungi may be had until July. Peas are abundant during the fine season, as are also herbs used for seasoning, of which the Russians are very fond. Artichokes, which

can only be grown with difficulty, and at a considerable expense in this latitude, are extremely dear.

Fruit for the table is dear. After the 20th of May fresh Grapes, Peaches, Plums, Apricots, Cherries, Strawberries, Pine-apples, Peas, and Haricots, are all very fresh and dear. Here follows a table of the prices of some fruits, for the accuracy of which we are responsible :—

| | kopecks. | s. d. | s. d. |
|---|---|---|---|
| 1 Plum ... ... ... ... ... | 20 equal | 0 8 | |
| 1 Peach, moderate in size and quality | 30—35 ,, | 1 0 to 1 | 1 |
| 1 Pear ... ... ... ... ... | 25—50 ,, | 0 10 to 1 | 8 |
| 1 Apple ... ... ... ... ... | 25—50 ,, | 0 10 to 1 | 8 |
| 1 Cherry ... ... ... ... ... | 15—20 ,, | 0 6 to 0 | 8 |

Other fruits, such as Grapes, Melons, &c., have no fixed price ; Pine-apples, alone, are one-third less dear than in Paris. The Melons have but little taste ; a fine skin, and a flesh whitish or greenish, and very juicy, distinguish them at once from our own. Oranges and fruits for preserving are abundant, but can only be enjoyed by the rich ; less wealthy people content themselves with Onions, Cabbages, Cucumbers, and different sorts of salad.

We said that the vegetables which are sold in St. Petersburgh come, for the most part, from France and the interior of the Russian empire ; a large quantity is also supplied from the environs of the capital. The market gardens extend over a large tract of country, and are, for the most part, cultivated by the peasants of Rostoff and Hechael, whose ancestors were sent by Peter the Great into Holland for the express purpose of learning the best method of cultivating such gardens. The argilo-silicious nature of the soil, its situation, and its impermeable subsoil, render it very cold. The gardens are almost always surrounded by wooden pales, and common plants are cultivated in summer and forced ones in winter. The latter are not numerous enough to demand any comment. We shall, therefore, confine our remarks to the former.

We have already mentioned that the fine season at St. Petersburgh is very short ; the market gardeners are compelled to set to work and prepare their soil the moment the frost is fairly gone, and to make the most of the favourable weather which is destined to last so short a time. At the beginning of May, or even towards the end of April, they level the soil so as to expose it to the action of the atmosphere ; soon afterwards they throw it into trenches 1½ foot wide, and separated by planks 4 feet wide, which occupy the places of the trenches of the preceding year. In this way the soil is always worked after being rested, perfectly heated by the sun's rays, and drained of the quantities of water it at first held. When this operation is completed, the planting and sowing commences, generally in the middle of May ; and in four or five days from that time, if there be ever so little heat and moisture, the whole ground is sown and planted. Cabbages, Onions, and sometimes even Potatoes, are placed next the planks ; Carrots, Spinach, Rape, Radishes, Turnips, Cucumbers, Lettuces, and Beet, occupy the middle. The Cabbages, Cauliflowers, Lettuces, Onions, Cucumbers, and Beet, are at first placed under sashes ; the others do not require this protection.

Asparagus, Artichokes, and Cauliflowers, are objects of a special cultivation and luxury ; so are Water Melons, which are better in Russia than in France.

Strawberries also form a special branch of cultivation. M. Saracelotsol, gardener at Ropcha, near St. Petersburg, grows no Strawberry except the Roseberry, and for this he has a very large demand. *Masson's Report.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 15.)

No. XXXI.—We last week introduced an extraordinary episode in the history of the Canary,—an episode which will be carefully treasured up by all admirers of that elegant and truly fascinating bird of song.* I now keep faith with my readers, by returning at once to a further consideration of the claims pressed upon us at this season by the nightingale. His charming voice is, I rejoice to say, still heard in the favoured spots where he loves to dwell.

Now that the nightingale is keeping us awake the live-long night, with the music of his celestial voice,—while every grove and every thicket echoes to his song,—small *pleasure* is it to me to sit down, and plan in cool blood how we may hold him a prisoner for life,—how confine him by bars of wire, and walls of wood ! Yet, as duty and pleasure are not inseparable, and I have *undertaken the task*,—let me to it with all the nerve I can muster. So now to descend at once, to plain prose.

Many persons refuse to keep nightingales, because of the trouble incurred in procuring them fresh meat, twice daily. It may be some relief to such individuals to point out a substitute for raw beef.

I have been acquainted, in my time, with several first-rate nightingale fanciers ; and by interchanging "notes" with each other, we have picked up many facts worth recording. Among others, it appears, that the nightingale will live and thrive both upon German paste and bullocks' liver.

The former, however, will suit "branchers" and nestlings only. By "branchers" I mean young birds bred here, and caught soon after they have left their parents. By accustoming them, by degrees, to German paste, and stale bun, they will soon get used to it ; and if a mealworm be given them every morning, the diet will agree well with their constitution. Nestlings and branchers, however, are alone to be *so* fed ; and the former must on no account be put on such diet *too suddenly*. Until a nestling is at least six weeks old, he must have succulent food given him. *Then* you may mix a small quantity of German paste with the raw meat, until he acquires a taste for it. We will say nothing about a *relish* for it ; for I am quite sure raw beef is, after all that can be said, their most natural aliment. Nestling nightingales ought be taken, if taken at all, when about 8 days old, and fed with the end of a *stick*, exactly in accordance with the instructions I have given, under the article,—"Canary." Every now and then, when their rapacious mouths are turned up for food, dip your little finger into cold spring water, and let a drop or two dribble into each bird's throat. It assists their digestion wonderfully.

When it is a *sine quâ non* that a fresh caught bird, just arrived, should be fed upon bullocks' liver, bear in mind that raw beef must in the first instance be given him, or he will inevitably die. The liver must gradually be introduced in his food, so that he may get an acquired taste for it. By degrees, the quantity of beef must be lessened, and the liver increased—the former, eventually, being discontinued altogether.

The proper place to get your bullocks' liver, well boiled, is at the tripe shops. Ask for a pennyworth of the "nut" of bullocks' liver. See that it is quite fresh, and grate it fine on the smaller-sized holes of a bread-grater. A little stale sweet bun may occasionally be rubbed in with it. If your birds thrive on this—and I have known some remarkably fine birds do so—you will be spared a world of trouble and anxiety. Grate your liver every morning, and see that is sweet. The blow-flies will do their utmost poison to it, the moment they can get at it. When this occurs, change it directly.

The food on which nightingales live, being an animal substance, causes, when digested, a very offensive smell in their cages. This renders it a matter of imperative necessity to clean and scald their trays regularly every morning. When dry, cover them thickly with fine red sand. This will prevent the woodwork from being unduly tainted. You will never regret following out this instruction, to the very letter.

Many, novices, imagine that because nightingales are caught with meal-worms, of which they are remarkably fond,—that *therefore* they should be abundantly supplied with them. This is a palpable mistake. It must be borne in mind, that these birds, like many others, when in confinement, can get little exercise. Consequently, their digestion is comparatively feeble ; and, if fed upon much live food, they would be liable to fits—perhaps to apoplexy. I should recommend, not more than one daily. Still, meal-worms should always be kept in the house, in case of sickness. When one of these "birds of passage" is ill, nothing is so good as a meal-worm to restore him. It acts beneficially on his system. I am induced to be very precise and very minute in my instructions with respect to these birds. When I first commenced treating of them, I thought, and hoped by the way I expressed myself, that I should deter many persons from attempting to keep them. It seems, however, that the effect has been the extreme opposite from what I intended ; and I am, daily, urgently entreated to give the fullest possible instructions for their being kept in a state of health and song. It fortunately happens that I am well and deeply read in all that concerns the nightingale. As, therefore, it would be unkind in me to withhold the knowledge of what will benefit my little "pet,"—seeing that he is "doomed" to be immured in a cage—I will continue to speak clearly and kindly of all that will tend to his well-being in confinement. Let me hope, in return, that my advice will be strictly followed. *William Kidd, New-road, Hammersmith.*

* I am asked by several parties if I can introduce them to a sight of what I spoke of, last week ? I must politely but firmly decline interfering in this matter ; as it would be ungrateful in me to attempt to invade the privacy of any family, from whom I have received such marked attention. If there were *many* applications of this kind made, a gentleman's "house" would cease to be "his castle."

## ON THE POISONOUS QUALITIES OF THE TOAD AND SALAMANDER.

By MM. Pierre Gratiolet and S. Cloez.

It was formerly the universal belief that the land salamander (Lacerta salamandra L.), possessed a subtle poison ; this belief has been of late years abandoned, although a great acridity is still attributed to the viscous and milky liquid secreted by the pustules of the skin of this hideous animal.

We were led a few years ago to doubt the harmlessness of the salamander, by observing that some frogs placed in a tub with some salamanders died at the end of a week, and without any assignable cause. Having subsequently some healthy salamanders, we determined to ascertain, by experiment, whether our doubt was or was not founded upon truth.

The liquid obtained from the cutaneous pustules of the salamander is perfectly white. It has a strong acrid smell. When quite fresh it flows like milk, but after a short time it coagulates ; this coagulation takes place instantly if alcohol be added to the liquid ; it has a strong acid reaction. A small quantity of this humour placed under the skin of the wing or thigh of a little bird at first produced no visible effect whatever ; but in two or three minutes the bird grew uneasy, ruffled its feathers, tottered, soon showed signs of great suffering, opened and shut its mouth convulsively ; at the same time it stretched itself more and more, threw its head back, uttered cries of distress, became agitated, turned over several times, and then died.

A greenfinch (Bruant), wounded in the wing, died after a struggle of two or three minutes. A lark (Pinson), also wounded in the wing, died in 25 minutes, after two epileptic attacks. Several other birds, on which the experiment was also tried, died in six or seven minutes ; death was quickest in those cases in which the blood flowed from the puncture slowest. A greenfinch—wounded in the thigh, lost a considerable quantity of blood ; it did not die for 25 hours ; for the last 12 hours it was in a torpid state, broken at intervals by slight convulsions. We should add that two hours after the poison was introduced, we made the bird breathe a little ammonia, which seemed to lessen its pain and prolong its existence.

We also made some experiments with larger birds. A pigeon wounded slightly in the wing died in 20 minutes, after terrible convulsions and alternate paralytic attacks, which began after the 8th minute. All the birds acted upon by the milky secretion of the salamander were seized with epileptic convulsions.

We also tried the effect of the secretion on small mammals, such as mice or guinea pigs, by inoculating them in the thigh. They all experienced great torture at the end of 10 minutes. They breathed with difficulty and by fits ; they continually fell asleep, and as continually awoke in slight convulsions, similar to those produced by electric shocks. But after some hours these symptoms ceased and the animals recovered.

It seems, then, that a quantity of the milky substance which is sufficient to kill a pigeon has only a temporary effect on a mouse. Now, inasmuch as a pigeon is much larger than a mouse, this difference in the effect produced can only be referred to some difference in their nature and organisation. The mammals experimented upon suffered convulsions, but were not killed.

We also tried some experiments with the milky secretion contained in the dorsal and parotid pustules of the common toad (Rana bufo). This liquid is thick and viscous, its colour is yellow, its odour strong and acrid, its taste intolerably bitter. One of us having by accident tasted more than he intended, experienced no pain ; we, therefore, think that its acridity must be owing to some other liquids mixed with it, and which we propose to examine. Like the secretion of the salamander, it has a strong acid reaction.

We tried the effect of the secretion of the common toad on several small birds ; they all died in five or six minutes, but without convulsions. They opened their mouths, tottered as if drunk, and had evidently lost the power of regulating their movements. At the end of a few seconds they shut their eyes, as if to sleep, and fell dead. Comparing the above experiments, we find that the milky secretion of the salamander and the toad have an equally poisonous effect on birds, but that the first also produces terrible convulsions, which is not the case with the second.

The secretion from the toad killed birds after it had been dried—two milligrammes of the dried poison killed a chaffinch in a quarter of an hour. The poisonous quality of this secretion is not destroyed even though its acidity be neutralised by potash. We have not ascertained what internal derangements are produced by these poisons ; but we constantly found in the birds which were killed distinct symptoms of apoplexy in the region of the brain.

The above experiments, which have been confirmed by M. Chevreuil, show that the popular belief in the poisonous qualities of the salamander and toad has at least some truth, and is not, as has been of late asserted, wholly without foundation. *Comptes Rendus.*

## Home Correspondence.

*Orchid Shows.*—I am not sure that the plan of the Horticultural Society, as well as that of the Regent's-Park gardens, as regards the prizes for Orchids, is in all respects the best ; at present the prizes are all for large plants, that is, as showing good cultivation, and no one who sees the collections that are exhibited, but must be convinced these shows, and the substantial rewards, have led to admirable cultivation ; but the impression is, that only large specimens are fit to compete, and also that the judges award the prizes with especial reference to the largeness of the specimen ; and a cultivator having 20 well grown plants, if they were not large would not think of sending them to be pitted against the gigantic specimens of Mr. Rucker, Mr. Warner, &c. Now this leads to much sameness in what is exhibited, and those who for the last few years have attended the shows, can pretty well divine what will be the plants shown. Mr. So-and-so's large Dendrobium nobile, &c. &c., are sure to be on the table, and most of the specimens are kept back for another show, or at least make their second appearance in the park. And an intelligent amateur, not a grower, observed to me the other day, "After all, one sees year after year nearly the same plants." Now I believe that these shows have entirely led to the admirable cultivation which one sees ; to plants in large masses covered with flowers, instead of the few straggling ones which formerly used to be seen on the best grown plants ; but I think variety might be encouraged by having one or two prizes for smaller plants, which were well grown, and those of the rarer sorts ; there is something of the same kind, as regards size, in other classes of plants, as Roses, Cinerarias, &c. I, who am a beginner, at either of the last shows could have sent 15 or perhaps 20 well grown specimens, but the plants were mostly small, and would have been eclipsed by specimens of the commoner kinds, with 10 or 20 spikes of flowers ; but there would have been eight or 10 kinds which were not shown in the grand collections. I throw this out for consideration. It is possible that what I propose is impossible, or not worth attempting, and moreover it is probable that not having

large specimens, my views are guided by my own interest, not an unusual occurrence. *Dodman.*

*Tiley's Fuchsia, Koh-i-Noor.*—In the *Chronicle* of last week, there appeared an advertisement from Mr. Edward Tiley, of Bath, in which I am mentioned as one of the parties highly approving of his new Fuchsia, Koh-i-Noor. My name was so made use of without my knowledge or sanction; and, in justice to myself, I hope that you will allow the fact to be stated in your columns. *Matthew Cole, late Gardener to Miss Bayley, of Bath.*

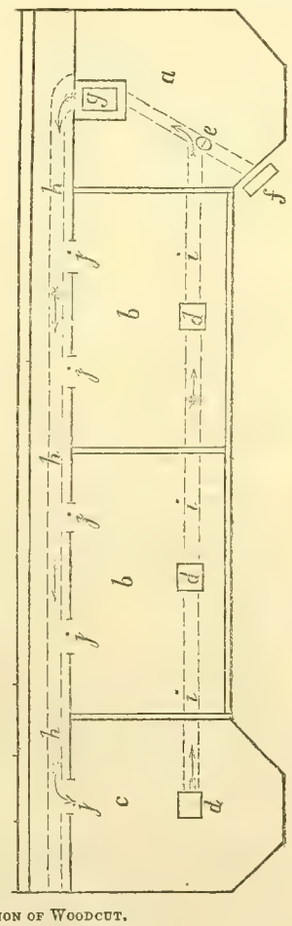
*Tea Roses.*—The Tea Rose, on account of its beautiful tints and peculiar fragrance, is a general favourite; yet with amateur cultivators, who, like myself, reside within a few miles of the metropolis, and are compelled necessarily to grow it under glass in pots, it turns out a complete failure after a season or two. We may be successful with most kinds of plants, but this one proves always more than our match. With great care, I get at first certainly very satisfactory specimens, but I find it impossible to keep the plants in the same state, and the blooms speedily deteriorate. However, before giving up this vexatious and disappointing culture, I have made a new attempt, which has been quite successful, and it is to make this plan known that I trouble you with these lines:—I planted about 50 half-standards and dwarfs in the autumn, consisting of Souvenir d'un Ami, Elise Sauvage, Adam, Devoniensis, &c. &c., in a well-prepared compost, and I erected a low span-roofed house over them, having glass sides to the ground, and side windows for ventilation, and I find it to answer admirably; the plants are looking remarkably healthy and promise well. The shoots are most vigorous and are covered with buds. *W. G., Stoke Newington, May* 20.

*Gardeners' Benevolent Institution.*—I perceive, by an advertisement in your last week's Number, that the annual dinner in aid of the funds of this institution will take place on the 9th of June next, with that distinguished member of our craft, Mr. Paxton, in the chair. I trust that upon this occasion gardeners in the country will assist the labours and endeavours of the committee in securing a large muster to support the chairman; and I would suggest that those gardeners, who have it in their power, should represent the advantages of the institution to their several employers, and solicit permission (and I feel confident it would not, in most instances, be withheld) to contribute a dish of fruit for the dinner. The benefits that would result to the society would, in my opinion, be very great, as possibly it would stimulate those gentlemen who honour the dinner with their presence to contribute more largely, and induce them to patronise the society upon future occasions. I am given to understand that the trouble of getting up a dinner is very great, and I do think the least that gardeners at a distance can do is to assist and further the exertions of the committee by producing specimens of horticultural skill. I hope that this hint will not be lost upon my brother gardeners. *One of the Oldest Subscribers.*

*Asparagus* (see p. 277).—I remark that a correspondent has noticed the system which I follow in forcing Asparagus, and that he has also detailed his own method; but as it is necessary, before we can compare one plan with another, not only to have details of practice but also the results, your correspondent will perhaps be kind enough to give us the quantity of ground he has for forcing, the commencement of cutting of his first and second beds, the number of good heads cut, and the weight per 100; how often he forces his early bed, and other matters likely to assist us in arriving at a correct conclusion, respecting the value of the different methods employed. I have two beds of 30 feet long each for forcing alternately, exactly on your correspondent's plan, but they are only used during the months of March and April, just to keep up the supply between the forced and open air cutting. *J. P., Stoke Rochford.*

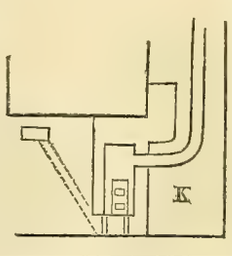
*Planting of Forest Trees.*—In the operations of art, we must imitate the processes of nature, and can only cautiously observe, and slowly discover the modes by which the natural world is sustained in the everlasting progression. The seeds of vegetables are matured, and fall to the ground, where they sprout and vegetate, take a hold of the earth, and grow into specimens of the original productions. The huge trees of the vast forests of America grow from the ripened seeds that are dropped and scattered about by the winds and accidents, and the Fir trees of the highlands of Scotland are reared from the self-sown cones of the ripened fruit. The seeds fall to the ground in any promiscuous quantity, they grow in any number as chance directs; accident directs a certain number to outstrip the others in growth, and which grow into trees, cover the whole ground, and smother all the others under their shade. No attention is required, and nature directs the results. From these examples, it may be inferred, that land intended to be planted with trees, be sown with the seeds of the plants in a varied mixture, at the rate of three or four bushels on an acre, where they will grow on the vegetable sward, and where the proper number of trees which the land can sustain for a crop will be reared into a covering for the ground, and smother all others below the shade. For this purpose, the Grass on the land should not be eaten for some years previous to the seeds being sown, as the yearly decomposition of the herbage will produce a stratum of mould, in which the seeds will find a very agreeable bed. In low situations of access, a top dressing of earths or composts will be very beneficial to the seeds when sown, but large extents will prohibit the application. In limited cases it may be used. To ensure a crop, the seeds must be thickly sown, and in a varied mixture, and the ground must be well fenced and protected. No thinning or pruning is ever required—the thriving plants kill all the weak ones, and the under branches decay and die by reason of the want of light and sunshine, in proportion as the top branches strive upwards in order to reach the benefit of the sun. Just as many trees will stand for a crop as the tops can find an upward existence, like an umbrella or an inverted cone. This is true nature, and a legitimate proceeding; it will supersede nurseries and nurserymen, and very much simplify the important department of raising timber. In the Highlands of Scotland, the workman who manufactures the timber can tell if the tree was grown from seed or the nursery plant, by the superiority which attends the former production. Thick planting has been known for some time as a substitute for the mangling knife and hatchet of the pruner, and the sowing of seeds will soon usurp the place of the planter. *J. D.* [We doubt that.]

*Polmaise Heating.*—Although little has been said for some time past in the *Chronicle* regarding the Polmaise system of heating, it is nevertheless still working and getting more into favour by those who know how to use it. I recollect that one of the objections brought forth against the heating of hot-houses by means of heated air was, that the system could not be applied to a range of buildings without separate stoves; but these are critics that have been compared to the boughs of a baneful and a barren tree, that shoots across a fruit tree, at once to screen the sun from it and hinder it by its droppings from producing anything of value. In the gardens of W. Wilson, Esq., of Bannockburn, there has lately been erected a house for stove-plants, two Vineries, and a greenhouse, all heated by means of one stove. From the nature of the ground there were




DESCRIPTION OF WOODCUT.

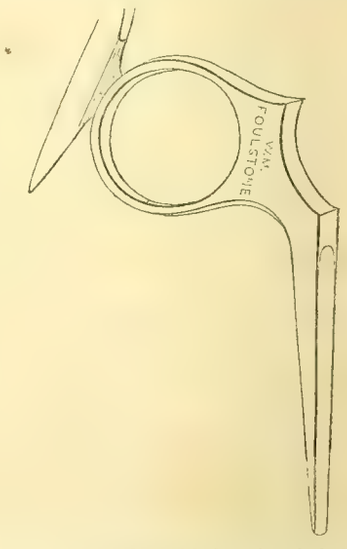
*a*, house for stove plants; *b b*, Vineries; *c*, greenhouse; *d d d*, regulators for return of cold air; *e*, valve for regulating the admission of cold air; *f*, external cold air drain; *g*, heating apparatus; *h h h*, hot air; *i i i*, cold air drain; *j j j*, openings for the admission of hot air into the houses; *k*, section of hot air stove.




what some would call engineering difficulties to surmount, but they have all been overcome, as far as the heating is concerned, by Mr. Sharp, of Stirling, who made the stove and other things connected with the warming and ventilation of the houses. A knowledge of his business and his extensive practice in heating churches, private houses, and garden erections by means of heated air, enables him to work his way through difficulties that others would be afraid to encounter. By referring to the ground plan of the houses, it will be seen that the stove is not placed in the centre of the houses—if it had been so, the heated air would have had a shorter space to travel; neither is it at the back of the houses, where they are commonly placed, but is under the floor of one of them, and from an underground chamber heat is sent out to warm the whole range. Mr. Sharp has also invented a very simple but ingenious apparatus for supplying the air of houses with moisture, which would require to be seen to be properly understood. Mr. MacGriggor, the gardener, is well satisfied with the working of the system, and prefers it to any other mode of heating he has had to manage. The time is gone past when some wore sprigs of Rue by way of prevention, and others rings made of the hoof of a wild ass for amulets, lest they should suffer by the fixing of an evil eye upon them. But the Polmaise heating has nothing to fear, although it is affirmed as a fact, that a man has not firmer resolution from reason to stand by a great principle, than obstinacy from perverted nature to adhere to a bad one. *P. Mackenzie.*

*Rhododendron arboreum.*—Observing that "A. B." wishes to be informed as to whether the Rhododendron arboreum, from Nepaul, flowers in any other part of England except in Cornwall, I feel glad to be able to satisfy him on that point, as this Rhododendron has blossomed regularly and most profusely here for many years, and without receiving any protection in winter whatever. The tree is 9 feet high and 27 feet in circumference. It has not bloomed so well this year as usual, but still it has had 230 trusses on it, each containing from 14 to 21 blossoms. I should say that the colour is decidedly a bright brilliant crimson, and not scarlet. *R. Dixon, Dolaurethy, Carmarthenshire.*

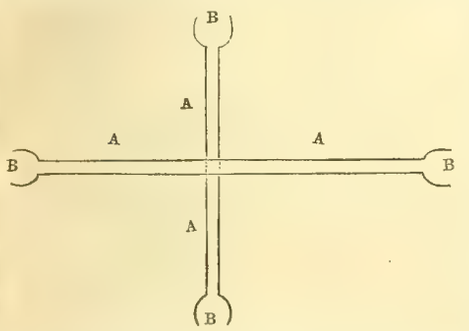
*New instrument for Budding.*—I beg to submit to your notice an instrument which I think is well adapted for cleaning and inserting buds. For several years I have been fond of budding Roses, but I have been frequently disappointed at my buds not growing, although, to all appearance, they have taken well. I attribute the failure to the heart of the bud having been removed in cleaning out the wood. To avoid this I have contrived the instrument, of which the accompanying is a representation, and which I use as follows:—When I have taken off the bud, I take the instrument in my right hand, holding it by putting my forefinger through the ring, and my thumb upon the hollow at the bottom of the long gouge; I hold the bud in my left hand betwixt my thumb and fingers, I then clean out the wood, by passing the instrument betwixt it and the bark, thus




scooping it out sooner than with the point of a knife, and it is not so liable to tear out the bud. I use the small gouge for inserting the bud; after I have made the cut, I raise the bark at the top with the point of my knife, in order to admit the point of the instrument. I then press it down the cut, and in this way the bark is raised much better than by an ivory budder, and it is less liable to get bruised. While the instrument is thus inserted, I have my bud prepared, and slide it down the groove; the instrument may then be taken out, and the bud will be fixed. Whilst tying in the bud, the instrument may be held in the left hand, by putting the little finger through the ring, and allowing the small gouge to be outside, while the large one will lie across the bottom of the fingers, and will not be at all inconvenient. In this way the operation may be performed much quicker than by the ordinary method, and I think with much more certainty of the buds growing. If you consider that the instrument will be useful, I should feel obliged by your noticing it. *Wm. Foulstone, Cutler, 254, Beet-street, Sheffield.* [As will be seen, this contrivance consists of, 1st, a longish gouge for separating the bud and bark attached thereto from the wood. 2d, a smaller gouge for ploughing open the bark of the stock, and so retaining it till the bud is inserted within the hollow of the gouge, the latter being then withdrawn. 3d, a ring connection between the gouges exceedingly convenient, for holding the instrument when not immediately in use. The first is not new in principle. Similar gouges have been successfully used. The form and adaptation of the smaller gouge are, we believe, new; but of the practical utility of this part of the instrument we have doubts. Mr. Knight used no instrument for wedging up the bark of the stock; he preferred lifting it, by a small portion taken hold of between the blade of the knife and thumb. The ring part, as already observed, is a very convenient device. Altogether the instrument is a very nice one for amateurs; and in some cases it may be used advantageously by others.]

*The Calceolaria.*—"G. H." considers "M. P." and "Mr. Rumley's" remarks to apply only to certain localities. In that I beg to differ from him, for wherever one may be placed, plants raised from cuttings will come true to form and colour, and it is much better to be certain what we are growing than to be uncertain. I shall therefore always give cuttings the preference for the general purposes of decoration. The saucer plan, *i.e.*, a saucer partially filled with liquid manure and placed under the plants, is called dangerous; but judiciously applied, much benefit is derived from the practice. The pots must, however, be thoroughly drained, and the liquid manure should never stand on the ball of the plants; the roots should only be permitted to absorb it gradually through the drainage. *J. R.*

*Ventilating Glass houses.* — Being anxious for the advancement of horticulture, I beg to suggest the following plan for ventilating conservatories and other houses, so as to be able to do away with the necessity of opening the lights, and so save all the labour, ropes, and other inconveniences attending the present method of giving air to such structures. Place a tube or trough perforated at the top, bottom, and sides, made of iron or wood, with the ends open to admit the air right through the building lengthways, and another across the centre of the house (see woodcut,) with wide mouths open to




AA, perforated tubes; BB, wide open mouths.

the four points of the compass, so as always to command a current of air from whatever quarter the wind happened to be in; they could have stoppers or lids, to be closed when not required; the long tube could run just under the upper plate of the house, and the cross one under a rafter: this would suffice for top air. Two others could be run through the entire length of the building, for ventilating the lower part, and could be placed under the stages. By perforating the tubes very finely, the air would be gradually diffused all over, and prevent a violent rush through the house. *J. R.* [But how is the air to *escape* from a house ventilated upon this plan?]

*Adulteration of Soot.*—I intimated, some time ago, that a sweep in a neighbouring village was carrying on a large trade in the adulteration of soot with sawdust. This morning the sweep and his foreman quarrelled, just as they had begun to unload a cart of sawdust. After a few words of a rough nature, "fists" were put in operation, when the master proved to be the best man; but while the foreman was taking to his heels, he turned round, and exclaimed, "You know you have been cheating the farmers for more than 12 months, by taking in 40 or 50 sacks of sawdust, and again selling it for soot, and I'll see you d—d before I work for you any longer, unless you give me higher wages." This scene took place in the presence of many spectators. I consider the adulteration of soot to be as bad as the guano case, for sawdust is poison to the roots of plants, until it begins to rot. Its price at the mills is just the carting of it away. *Dulwich, 29th April.*

## Societies.

Horticultural, *May* 20. — J. R. Gowen, Esq., Treasurer, in the chair. M. de Ysasi, Esq.; W. T. Egerton, Esq., M.P.; J. A. Houblon, Esq.; R. T. Clarke, Esq.; F. G. Nelson, Esq.; F. Scrivens, Esq.; J. Weston, Esq.; R. Taylor, Esq.; J. Tremayne, Esq.; Mrs. Tombs, and the Earl of Kilmorey were elected Fellows. Cut specimens of purple and white hybrid Rhododendrons from the open grounds at Combe Royal, near Kingsbridge, Devonshire, were exhibited by J. Luscombe, Esq. When first removed from the trees, they must have been very fine; but they were considerably injured by travelling. A Providence Pine-apple, weighing 5 lbs. 8 oz., was exhibited by Mr. Davis, of Oakhill, East Barnet, and a large basket, full of very good Black Hamburgh Grapes, for which a Certificate of Merit was awarded, was also contributed by the same grower.—Half a dozen Royal George Peaches, excellent for the season, came from Mr. Raith, gr. to Mrs. Smyth, of Ashton Court, Bristol. These received a Banksian Medal.—The Garden of the Society furnished a new pale greenish yellow Epidendrum from New Grenada; and Brownea Ariza, a Mexican stove tree with leaves resembling those of the Amherstia, and bearing a large drooping head of crimson flowers, which develope themselves for several weeks in succession. It was introduced by the Society some time ago through Mr. Hartweg, and is now flowering for the first time. The same establishment also contributed a white Azalea, Acacia pulchella, Boronia tetrandra, Chorozema varium, the two Californian Ceanoths—papillosus and dentatus; Diosma capitata, two Cape Heaths, the Indian Rhododendron formosum, which is sometimes called Gibsoni; the Chinese Indigofera decora, an Everlasting, the Myrtle-leaved Eutaxia, Anadenia pulchella, and the very pretty Bauera rubioides. It was mentioned that as the latter lives on the Hampshire Hills in Van Diemen's Land, where the winters are often very severe, it would probably be found to be hardy in this country.

National Floricultural, *May* 22.—Mr. Newhall in the chair. On this occasion both seedling and named plants were supplied in tolerable profusion and variety. Of Pelargoniums Mr. Beck's Incomparable was commended for fine colour, and Mr. Hoyle's Magnet and Herald were recommended to be "seen again." Among Cinerarias a certificate was awarded to Rosalind, a medium sized white flower with a grey disk, and narrowly edged with ultramarine blue. This was shown by Mr. E. G. Henderson, of the Wellington-road Nursery, St. John's Wood. C. Formosa, from Mr. Ambrose, was commended as a good marketable kind. It is a white ground flower, with a rosy purple tip. C. Nonsuch, a lilac purple self, from Mr. E. G. Henderson, was also commended by the censors. Some nice looking Calceolarias were produced by Mr. Gaines and others; but none were considered by the judges worthy of distinction. Pansy "Pandora," from Mr. Hunt, received a certificate. It has a bright yellow ground with a broad purple margin shaded with puce; surface smooth, and substance and shape good. A white ground seedling Pansy from Mr. Chater was commended. Nice exhibitions of this useful flower were furnished by Messrs. Turner, Bragg, Skynner, and Brown. A collection of Mimuluses came from Mr. Wyness, and another of breeder Tulips from Mr. Willison, of Whitby. Among the latter we remarked a finely-formed rose, called Juliet, with a very fine base. Gloxinias, Cinerarias, &c., were exhibited by Mr. E. G. Henderson, Wellington-road, and miscellaneous plants by Messrs. Henderson, Pine Apple-place, and others. Fancy Geraniums were plentiful; and conspicuous among other things on the table were a straw-coloured Rhododendron, and a pink Azalea, stated to be a hybrid between a Rhododendron and an Azalea.

Highbury and North London Horticultural, *May* 15.—This Society, which is only two years old, bids fair to take a prominent position. Plants, flowers, fruits, and vegetables, were much better this season than last. Stove and greenhouse plants, Ericas, Pelargoniums, Orchids, Azaleas, Roses, Pansies, Verbenas, &c., were all more or less represented and contested by the members (private growers), Messrs. Chapman, Venn, Scott, Lochner, Edwards, and others. Liberal prizes were also offered to the trade, and Messrs. Fraser, Pamplin, Paul, Bragg, and Francis were among the competitors, producing, collectively, stove and greenhouse plants, Azaleas, Heaths, Pelargoniums, Roses in pots, specimen plants, &c.: while to Mr. Cole, gr. to H. Colyer, Esq., Dartford, extra prizes were awarded for his productions, because of their excellence. Every praise is due to the working committee for the uniformity and well managed arrangements of the subjects submitted for competition, warranting the remark which was current, "that it was quite a Chiswick *fete* in a small way."

## Notices of Books.

*A Practical Treatise on the Culture of the Vine.* By John Sanders, Gardener to T. A. Smith, Esq. 8vo. Reeve and Benham; pp. 31.

Mr. Assheton Smith's place at Tedworth has long possessed a great English reputation for the excellence of its fruit and vegetables. One is continually hearing in society of the extraordinary abundance and perfection of its produce, at seasons when common gardens are empty; and the great world seems to have arrived at the conclusion that the kitchen gardening and forcing there are nowhere excelled. We have, therefore, examined with no common interest the work before us; for it would be strange indeed if the man who can act so skilfully as Mr. Sanders, should be unable to offer advice of corresponding value.

We have not been disappointed. Hackneyed as is the story of Grape growing, readers will always be attracted by a new work on the subject, especially in a country like England, where the aim of everybody is to know how a thing is done, rather than wherefore. In this case they will be fully satisfied. Mr. Sanders's directions are as plain as words can make them; and, we will add, as judicious as his long experience had led us to expect. After a very careful perusal of his little treatise, we find nothing to object to; and much to praise. Crotchets he has none. He seems to be a plain straightforward man, who tells his story in a plain straightforward way; and if he does not always appreciate the reason of his own success, at all events he teaches others how they may attain the same success as himself. Novelty there is little; and so much the better. The author's merit consists mainly in the sound judgment he has shown in selecting what is best in the practice of others, and in rejecting all sorts of doubtful schemes. Indeed, we are not sure that there is anything new in these pages, except what relates to trough-growing, a method, we believe, peculiar to Tedworth, concerning which we have full details. Our extracts shall, for the present, be limited to what is said upon that subject.

Trough-growing is a modification of pot-growing, but a great improvement upon it; and we understand that it has attracted much attention from Mr. Assheton Smith's friends. In the first instance Vines are struck from eyes and grown in pots as usual. Afterwards,

"When the buds are regularly broken, and each shoot advanced to the length of 6 inches, prepare to plant the Vines into a trough, as shown in the plan. The advantage to be derived is immense, by securing to them all the benefit of a border, independent of giving every root and branch an equal temperature, which is so essential to promote their perfection. First place upon the laths forming the bottom of the trough, a layer of pieces of turf of about 3 inches square, to prevent the fine mould from being washed down; next put a layer of 2 or 3 inches deep of the following compost, viz., equal quantities of rich turfy loam and rotted manure from the farm-yard, with the addition of a little sand. Proceed to remove the Vines from the pots by turning the ball upside down on the palm of the hand, having a convenient bench on which to rest the hand and ball whilst cautiously removing the crocks, and any objectionable soil, or worms, and taking the utmost care in so doing not to injure the roots. When so prepared, place the ball on the surface of the soil in the bottom of the trough. Proceed with another Vine, and so on till the whole are done, leaving a space of about 3 inches between the ball of each to be filled up with the same compost as used under them. Cover the surface of the roots about 1 or 2 inches deep; the soil, previously to being put round the roots of the Vines, must be warmed to the same temperature as the house. As soon as all are tied in their proper places, a good syringing will much assist them; but do not water at the roots for a few days, except it be absolutely necessary. If any water is given, let it be done by pouring it immediately on the balls.

"Before a week has expired after removing the Vines into the troughs, they will begin to show the benefit they are deriving from the change. When sufficiently advanced, stop each shoot one joint beyond the fruit, and leave only one bunch to each, and from eight to 12 to every Vine, according to their strength. A heavier crop would deteriorate both from the size and colour of the berries. A plentiful supply of water will now be necessary, which can be given abundantly without fear of injury from stagnation; provided the directions given for the formation of the trough have been strictly attended to."

We shall probably revert to Mr. Sanders' treatise, which, in the meanwhile, ought to be found among the books of every thinking and working gardener in the United Kingdom.

## Garden Memoranda.

Mr. Groom's Tulips.—These are just now in perfection, and we can promise our readers that a sight of them will amply repay a visit. The best bed, 120 feet long, and containing not less than 2000 flowers, is as fine as we have ever seen it. We observed the following favourite sorts in good condition. Roses:—Catalani, Countess of Wilton, Duchess of Sutherland, King of Saxony, and Camuse de Craix. Byblœmens:—Claude, Imperatrix florum, Michael Angelo, Parmegiano and Queen Victoria. Bizarres:—Duke of Devonshire, Lord Sandon, Duke of Norfolk, Marshal Soult, Nourri-Effendi, Prince of Wales, and Prince Albert. But in addition to fine old kinds the bed contains several novelties of merit. Dr. Horner (Bizarre) proves to be a first-rate second row flower, and we also remarked a very fine rose, called Fleur de Marie, in which the feathering is very boldly delineated. The less important beds in the open ground are also just now in full bloom, and make a brilliant display.

Messrs. Weeks and Co.'s Nursery, King's-road, Chelsea.—Early in April we stated that an attempt had been made here to cultivate the Royal Water Lily in an open heated pond. The plant is in excellent health; it opened its first flower on the 16th, and when we saw it on Tuesday last, another flower bud was swelling fast. The leaves (five in all) measure 3 feet 6 inches across. The plant, however, cannot as yet be said to have been grown in the open water, for up to the period of its blossoming it was covered with a frame whose sides dipped into the pond. This was entirely removed for two days, about flowering time; but for fear of injury from cold winds, which have prevailed so much of late, a temporary erection, closed in with lights, and surrounded with canvas, has been thrown over it. It is, however, intended to clear all away, and leave the plant fully exposed, as soon as the weather has become sufficiently warm. From what has been stated, it will be gathered that the experiment is yet in its infancy; but there are certainly good grounds for anticipating a successful result.

## Miscellaneous.

*Babington's Plan of Preventing Incrustation of Steam and other Boilers.* (Patented November 7, 1850.)—This invention consists in the application of voltaic agency for preventing incrustation in boilers, by connecting to the interior of such boiler a plate of some metal more susceptible of oxidation than that of which the boilers are composed, and in such a position as to be wholly immersed when the water in the boiler is at the usual level. The patentee recommends for iron boilers a plate of zinc of the ordinary description, and of the weight of 16 oz. to the square foot, which should be attached by one of its edges, by means of solder, to the interior of the boiler, and that the proportion which such plate should bear to the immersed surface of the boiler should be one-fifteenth, reckoning one side only of the zinc plate. Both sides of the plate being left exposed to the action of the iron and the water in the boiler, the voltaic agency thus excited is found to produce the desired effect. For large boilers, two, three, or more plates are recommended, the relative proportions above stated between the surface of the plate and that of the immersed portion of the boiler being maintained. When the zinc plates are corroded, as

they will be found to do, though but slowly, they are to be removed and replaced by others (no claims.) *Mechanics' Magazine.*

*Grant's Improvement in Heating and Regulating Temperature: Patented Oct.* 24, 1850.—These improvements relate to the construction of furnaces and apparatus for heating water or fluids, and have for their object the better regulating the application of heat and temperature of the fluid, as well as economising the fuel employed. For this purpose, the furnace and its flues are placed within the boiller, so that they, the furnace and flues, may be surrounded by, or immersed in, the fluid to be heated. A larger portion of heating surface is thus obtained. In order to insure a continuous supply of fuel to the furnace, a cylinder or tube is placed immediately above the grate of the furnace, and in this cylinder is kept such a store of coal or other fuel employed as will keep the furnace constantly and regularly supplied with the requisite quantity of fuel. The furnace grate is made of a conical form, the point of which projects upwards, so that the fuel may gradually descend or be forced towards the periphery of the grate to supply the place of that which has been destroyed by the combustion. Immediately above the periphery of the grate is a circular flue surrounding the receptacle for fuel, and extending up into the boiler as far as convenient, but leaving a space between the flue and the receptacle for fuel, into which a portion of the water or fluid to be heated may be admitted by tubes passing through the flues. At or near the top of the circular flue are inserted tubes or pipes, by means of which the gaseous products arising from the combustion in the furnace may be carried into the chimney; and the greater distance those tubes pass through the fluid to be heated, the more effectually will the caloric evolved by the combustion be absorbed, and the waste of it thus prevented. The ash-pit under the grate of the furnace is closed, but furnished with a door or doors, by the opening or shutting of which, more or less, the supply of air to the furnace may be regulated at pleasure. The regulation of the supply of air to the furnace will not only govern the amount of fuel consumed, but also regulate the temperatre employed in heating the fluid, the reservoir of fuel at all times containing such a store as may be needful for keeping up the combustion. When the furnace is in operation, and the process of heating a fluid in the surrounding boiler or vessel is going on, the heat of the circular flue will raise the temperature, and therefore diminish the specific gravity of the small portion of fluid in the space between the flue and the fuel reservoir so quickly that there will be a constant current of fluid up through that space; and in this way the greater, if not every, portion of the fluid will be made to come in contact with the heating surface by which it is to be heated. *Architect.*

*Death of Dr. Kunze.*—The continental papers report the death of Dr. Kunze, Professor of Botany at Leipsic. *Athenæum.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

That interesting little tree, the Mandarin Orange, which flowers so freely during winter, may now be propagated by putting cuttings into a brisk top and bottom heat, under a close handglass. As soon as they are fairly struck, pot them off singly in rich light soil, and replace them in the glass for a few weeks, when they may be gradually inured to the light and air. Pinch out the points of the leading shoots frequently, to keep them dwarf. Orchids now require the most liberal treatment to induce them to fully develope their interesting characters. A good and healthy growth will be ensured by a warm humid atmosphere, with fresh air so admitted as to avoid draughts, and by shading with thin canvas during the brightest part of the day. In the afternoon the plants should be gently dewed over, using a syringe, with a fine rose for the purpose; we have often seen such work done with a coarse syringe, and the water driven through it with all the force possible; but such a practice is very injurious to the plants. Some of the stove plants, which commenced their growth earliest in the season, will soon be about completing it; and that it may be properly matured, they will require to be exposed to stronger light, and a freer admission of air than has been afforded them during their season of growth. These hints, at this time, will particularly apply to those winter-flowering plants which produce their blossoms upon the young shoots of the previous year's growth. Among these we may mention the delightfully fragrant and abundant blooming Franciscea, and the several stove species of Jasminum, especially the one known as J. multiflorum or J. hirsutum, than which a more charming winter plant does not exist, if it be grown very strong during the summer, and well ripened.

### FORCING DEPARTMENT.

Where Pines are grown on the planting out system, the soil should be entirely renewed once in 3 or 4 years. The time for this operation must be left to the judgment and convenience of the cultivator; but advantage should be taken of a time when all, or nearly all of the older plants in any pit have perfected their fruit, and this is a very favourable season for the purpose. The younger plants (which have been put in one after another, as vacancies occurred), after being well watered, should be carefully lifted with balls, and set in a close shed, while the soil is being changed. But if any remain of those which have already shown fruit, they may be left standing, with a small mound of earth about their roots; or, if not very far advanced, they may be removed with balls to the back row. If this is carefully done, the plants will not receive the least injury, but will rather be improved; for we always find them to progress much faster, after being moved with balls into a fresh bed of soil. The soil should consist of about one-third of the best peat that can be obtained, and two-thirds of rich turfy loam, with an admixture of sand, according to the requirements of the other materials. The plants of the back row should be planted, before the soil is put in for the second one; and the remaining rows proceeded with in the same order, to prevent all unnecessary compression of the soil. If the new soil is moderately moist, it will be better to withhold water from the roots for a few days, to allow the plants to commence rooting; and until they are fairly re-established, a moister atmosphere must be kept up, and the pits shaded rather more than usual. Vineries.—A liberal supply of air in these houses is the best preventive against scorching. In finally regulating the Grapes of the latest crops, which are intended to hang through the winter, rather more should be cut away than from those intended for earlier use, that the bunch, when ripe, may hang looser. This will detract a little from their appearance, but the free circulation of air amongst the berries will do much to preserve them from the effects of damp weather.

### FLOWER GARDEN AND SHRUBBERIES.

Attention should now be paid to the reserve stock, intended to supply the gaps which will occur, and especially in some of the beds which are filled at first with transient annuals, and which in the course of the season will require entirely renewing. To meet these demands, we prepare a bed of coal ashes rolled solid, and lay upon it two or three inches of soil composed of chopped turves, leaves, and coarse sand; in this we prick out young plants, of such kinds as are likely to be required, at distances of from 4 to 6 inches asunder. In the preparation of plants for flower garden masses, we have tried various methods of economising labour and materials, and, for several years, have adopted this as the best. By it the plants become established much sooner, and the cost of many thousands of small pots is annually saved. As the planting out will now be nearly finished, let all the beds be gone over, picking out weeds, pegging down, or tying up such as would blow about with the wind, and giving them every possible assistance, to enable them speedily to fill the beds. Herbaceous plants of all kinds are now growing rapidly, and many of them, unless immediately supplied with stakes, will have grown out of all shape, or the wind will blow them about and break them. Make everything in this department clean and tidy; and keep the turf and walks in the neatest order. Spare hand lights and frames may be placed in shady situations, and made use of for propagating double Wallflowers, double Rockets, choice Dianthuses, Phloxes, Iberis sempervirens, and many other select herbaceous and half-shrubby plants.

### KITCHEN GARDEN.

Let all possible encouragement be given to growing crops of every kind, by supplying them freely with liquid manure. Asparagus, especially after being severely cut, should have every assistance to enable it to recover. Handlights should now be placed about a yard and a half asunder, upon the trenches which are prepared for ridge Cucumbers and Vegetable Marrows, and the plants carefully turned out the first dull day. It will be necessary that their watering be regularly attended to, and every fine evening they should be sprinkled over the foliage with a rose pot, till they are so far hardened as to admit of the covering being removed. A few Vegetable Marrows or ornamental Gourds may, with the strictest propriety, be planted against any spaces on the fruit walls which are unoccupied. The stations should be prepared for them by making large holes, and placing therein a couple of barrowsful of decomposed animal or vegetable manure, merely covering this with sufficient of the original soil to receive the plant.

### HARDY FRUIT GARDEN.

The summer pruning and thinning of all fruit-bearing plants is a vast improvement upon the common practice of allowing them to grow wild until winter. The superiority of the fruit, when this practice is adopted, is very striking, and an additional advantage consists in the work being done in half the time that it would require in winter. Tie in or nail the leading shoots of Pear trees as they require it, but do not, even for the sake of neatness, stop all the shoots, lest by so doing the natural fruit-spurs for next season are forced into wood-spurs; the former are readily known by their short thick stunted appearance, and instead of producing a shoot, only produce a bunch of from four to seven leaves. Young trees which are being trained into pyramids or other shapes, should be examined once a fortnight, and the shoots which are not wanted should be pinched in with the thumb and finger, by which the growth of others will be encouraged. This process should commence with the upper shoots, that the sap may be directed into the lower branches; and after an adequate quantity of shoots of sufficient strength is secured to form the lower part of the tree, the leading shoots may be allowed to grow and furnish wood for the top. Stopping for wood is very different from stopping for the purpose of forming fruit buds; for the latter purpose it will be time enough to shorten the shoots a month hence. Gooseberries and Currants should have their young wood thinned out by immediately stopping at least half the number of shoots to four joints, to allow the air to circulate more freely in the centre of the bushes; and the remainder of the shoots should be stopped during the summer, according as the shape of the plant requires it. This practice will almost entirely do away with winter pruning, while the flavour and size of the fruit will be greatly improved.

State of the Weather near London, for the week ending May 17, 1851, as observed at the Horticultural Garden, Chiswick.

| May. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 16 | 30.099 | 30.041 | 63 | 46 | 57.0 | 49 | 48 | S.W. | .05 |
| Satur.. | 17 | 29.962 | 29.945 | 69 | 48 | 58.5 | 52 | 49 | S.W. | .00 |
| Sunday. | 18 | 29.881 | 29.849 | 63 | 40 | 51.5 | 52½ | 50 | S.W. | .10 |
| Monday | 19 | 30.071 | 29.834 | 63 | 37 | 50.0 | 52 | 50 | S.W. | .04 |
| Tues. .. | 20 | 30.248 | 30.014 | 63 | 48 | 55.5 | 51½ | 49½ | N.W. | .00 |
| Wed. .. | 21 | 30.216 | 30.206 | 65 | 44 | 54.5 | 52 | 50 | S.W. | .00 |
| Thurs.. | 22 | 30.259 | 30.221 | 70 | 42 | 56.0 | 53 | 51 | S.W. | .00 |
| Average ... | | 30.103 | 30.015 | 65.8 | 43 6 | 54 7 | 51.1 | 49.6 | | .19 |

May 16—Clear; very fine; densely clouded; rain.
— 17—Overcast; densely clouded.
— 18—Overcast; cloudy; rain in the evening; clear.
— 19—Cloudy; fine; clear; rain at night.
— 20—Clear and cold; fine; cloudy.
— 21—Overcast throughout.
— 22—Overcast; cloudy and warm; very fine.
‖ Mean temperature of the week, equal to the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 31, 1851.

| May. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 25 | 65.9 | 45.5 | 55.7 | 8 | 0.64 in. | 1 | 10 | 1 | 1 | 1 | 5 | 5 | 1 |
| Mon. 26 | 66.6 | 43.2 | 54.9 | 10 | 0.27 | 1 | 8 | 3 | 1 | 2 | 5 | 3 | 2 |
| Tues. 27 | 68.6 | 43.4 | 57.0 | 13 | 0.51 | 1 | 8 | 6 | 1 | 1 | 5 | 2 | 1 |
| Wed. 28 | 68.0 | 41.7 | 54 9 | 9 | 0.97 | — | 6 | 7 | 1 | 4 | 5 | 2 | 1 |
| Thurs. 29 | 66.6 | 45.7 | 56.2 | 9 | 0.97 | 1 | 8 | 1 | 2 | 4 | 5 | 4 | 1 |
| Friday 30 | 68.4 | 43.8 | 57.1 | 8 | 0.22 | 2 | 5 | 5 | — | 2 | 7 | 2 | 2 |
| Satur. 31 | 70.5 | 46.2 | 58.4 | 7 | 0.38 | — | 6 | 4 | — | 3 | 7 | 4 | 1 |

The highest temperature during the above period occurred on the 28th, 1847—therm. 91 deg.; and the lowest on the 25th 1839—therm. 29 deg.

## Notices to Correspondents.

Back Numbers. 1s. each will be given for Nos. 48 and 49, 1848.

Canaries Breeding in the Open Air: *D.* We are not at all surprised at the importance you attach to our last week's article on this subject. It has excited, as we expressed our belief it would do, universal attention. The numerous questions however, connected therewith, which you now ask, would involve in the necessary reply an amount of space at least double that which has been already occupied. Suffice it to say, these questions have been anticipated and provided for; but, for the present, the further consideration of the subject must stand over. We have still stronger and more immediate claims urged on us by the migratory "warblers," whose sojourn amongst us will, alas, be but too short! Meantime we promise that the winter habits of the emancipated canaries shall not be lost sight of, at the proper season. *W. K.*

Emigrants: *A B.* You must plant your Vines in a Ward's case: there is no certainty about conveying them otherwise: and little probability of success. Why raise Deodars from cuttings, when seeds are so plentiful? It may be done, but is not worth doing, as the plants never thrive.

Fumigators: *WC.* You should not send notices to a newspaper if you do not wish them to be made public. We thought your plan suggestive enough to deserve publicity; and that is all we can say about it.

Lilies: *W G.* Your plants do not flower because they are too weak. Give them manure water from time to time till the month of August, after which let them alone. Lilies of the Valley like a little shade.

Melons and Cucumbers: *J Fits.* If these are planted together in the same box, they will fertilise each other, and become hybridised.

Names of Plants: *Seleucus.* We do not see how it differs from Viola canina.—*W M D.* We believe it to be D. transparens; but a single withered flower is hardly sufficient to enable us to speak positively.—*K.* 1, Pedicularis sylvatica; 2, Ajuga reptans.— *Correspondent.* Edwardsia grandiflora. Clematis montana flowers in March and April.— *E T C.* Genista anglica, or Petty Whin.—*G A B.* We do not know; probably some plant allied to Rigidella, and worth growing. Treat them like Cape bulbs.—*W Pass.* The plant called Scuticaria Hadwenii bears the same relation to Scuticaria as a turkey to a cock. It is a species of Bifrenaria which we had not previously seen.—*J W.* Fuchsia arborescens, an oldish plant, which we have not seen for many years. Will Mr. W. give us a cutting or two of it?—*D M.* We do not see why Major Madden's Dendrobe should not be D. fimbriatum.—*T D H.* We are quite unacquainted with it. It is not D. Griffithianum. We should be happy to have it figured for "Paxton's Flower Garden." We have no idea what Hippeastrum you describe. —*Sub.* Vaccinium amœnum, white Rhododendron ferrugineum.—*Mary Anne.* We never name florist flowers.*—A few inquiries stand over for further consideration.

Nightingales: *Amelia Herapath.* Your bird's sulkiness arises from your having in some way offended or slighted him. These birds are by nature quite as jealous as the gentle sex; but, fortunately, rather more easily reconciled when offended. Pay him, therefore, henceforward, the most constant and marked attention, and let him *see* your affectionate fondness for him. You will then possess his undivided heart—a conquest worthy of achievement. *W. K.*

Pear Leaves: *Woolton.* The appearances are very puzzling. If you look at the under side of the leaves, you will see that each pustule has a small hole in the centre; but the leaves are too young for anything to have escaped; and we cannot find anything inside the pustules. Will you watch and report progress?

Pears: *J E M.* Where the name *Colmar* appears in Frui. Catalogues, it is understood to apply to the original Colmar Pear.‖

Pelargoniums: *F G.* That is our deliberate opinion. We have long thought so, as you must have remarked, if you are a reader of this Paper. The Pelargonium mania, and the preposterous prices charged for distinctions without differences, can only be compared to the old Dahlia mania, now exchanged for rationality, and to similar follies, which rapidly work their own cure. As far as we are able to judge, some of the growers have struck a new vein; and, if they obtain distinctly new races, Pelargoniums may again come into vogue. In the meanwhile, the uninitiated pass by the so-called novelties, which are just like the old sorts, and fix their attention upon the "fancies" in which something really novel is evident. For ourselves, we can only say of the former, *tædet quotidianarum harum formarum.*

Vines: *Amateur.* Spot arises from Grapes receiving more watery sap than they can reduce by evaporation. Your house wants to be warmer, and better ventilated in the day; or else your border requires to be drier. At all events, the immediate cause is what we state; of the remote cause we have no means of judging. You will find the management of Cameline, or Gold of Pleasure, in our vol. for 1848, p. 677.

Misc: *C A T.* Ceanothus azureus is not quite hardy. It flowers beautifully in the south on a conservative wall, where it has a little protection in winter. The Chinese Wistaria is perfectly hardy.‡

### SEEDLING FLOWERS.

Pansies: *R P.* Your flower has improved considerably since we saw it last. The only fault at present appears to be the eye running into the margin of the lower petal.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | | |
|---|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

NEW TURNIP MANURE, 50s. a Ton.—Mr. POTTER can strongly recommend the above as a cheap and efficient Manure, and capable of raising heavy crops. Delivered free on rail. The Bags to be returned or paid for.

POTTER'S GUANO, 7l. per ton; SUPERPHOSPHATE OF LIME, 6l. per ton; GYPSUM, 25s. per ton, including bags and delivery on rail.—28, Clapham-road-place, London.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD FURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

TAN (Gratis), fresh from the pits.—Apply to ESSEX and SONS, 28, Stanhope-street, Clare Market, London, in the immediate neighbourhood of Covent Garden.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Burhhil-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than thy require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.


ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND is desirous of receiving Tenders from Innkeepers or others, to contract for the supply of a Cold Dinner for 2000 persons, in the Society's Pavilion, in the Home Park, Windsor, on Wednesday the 16th of July, 1851. Printed forms of Tender may be obtained on application to the Secretary, at the Office of the Society, No. 12, Hanover-square, London; and they must be returned to him, filled up, on or before Monday the 9th of June, 1851, the Society, however, not binding itself to take the lowest Tender.—By order of the Council,

London, 24th May. JAMES HUDSON, Secretary.


TO TURNIP GROWERS.—Observing the great superiority of some sorts of Turnips, both as to bulk and nutritive properties, J. SUTTON AND SONS have for many years paid especial attention to that important agricultural root; and have carefully tested the comparative merits of many varieties, *they can with the greatest confidence recommend the sorts named in their Advertisement in the 1st page of this week's Paper*, where the prices are also quoted (carriage free).—Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

TRANSPLANTED TURNIP SEED.

R. JOSLING begs to offer to Agriculturists his very excellent variety of PURPLE-TOP SWEDE, a cross between the Golden Melon and the Liverpool, decidedly one of the best in cultivation—a heavy cropper, stores well, best quality, seed warranted growth of 1850, from Transplanted Roots, at 1s. 3d. per lb.

All orders of 25 lbs. and upwards carriage free to any Railway Station in England, or packet office in London. A remittance must accompany the order.

ROBERT JOSLING, General Seed Warehouse, St. Alban's, Herts.

SKIRVING'S IMPROVED TURNIP SEEDS.

WM. SKIRVING begs to announce to his friends and the public, that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW-BULLOCK, at 9d. per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the Seed of his Improved Turnips, he is this season able to offer it at the above reduced price, and he is also induced to take this step to prevent Agriculturists being imposed upon by the sale of spurious Seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing. All other Agricultural Seeds, of the best quality, at very moderate prices. A remittance, or reference, is requested from unknown correspondents.

N.B. W. SKIRVING has no Agent in town or country.

Queen-square, Liverpool, May 24.



# The Agricultural Gazette.

*SATURDAY, MAY* 24, 1851.


MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 28—Agricultural Society of England.
THURSDAY, — 29—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, June 4—Agricultural Society of England.
THURSDAY, — 5—Agricultural Imp. Soc. of Ireland.

An opinion is very general among the farmers and landowners, that they would derive great advantage from an alteration of those fiscal regulations which prevent them from growing Tobacco and sugar. We do not participate in these views. To begin with Tobacco: If the cultivation of it were ever so profitable, and if the total quantity consumed in the United Kingdom were raised there, it would not occupy more than 28,000 acres; and what, we would ask, would that be among the cultivators of the 20,000,000 of acres of arable land in the United Kingdom, to say nothing of the 37,000,000 of acres of meadow and pasture, out of which some of the Tobacco land would probably be taken? We have about 40,000 acres under Hops; and what benefit do the farmers beyond the Hop districts derive from the withdrawal of those 40,000 acres from the production of corn, meat, and wool? It is even questionable whether the Hop culture is advantageous to the Hop districts themselves. Tobacco, again, requires the very best land; the average produce does not exceed 1000 lbs. to the acre; its cultivation involves a great amount of labour, and the price of foreign Tobacco in England does not exceed 7½d. the lb., exclusive of duty. The profit of Tobacco cultivation in Britain would, therefore, depend on the maintenance of a high protecting duty in favour of Tobacco of home growth, to the greater benefit of the smuggler than of the agricultural interest. The whole question underwent a very careful examination a few years since, by a committee of the House of Commons appointed to inquire respecting the cultivation of Tobacco in Ireland; and it was proved incontestibly, that with labour as low as in Ireland, British Tobacco, paying an excise duty of 1s. the pound, would be unable to compete with foreign Tobacco, subject to the present import duty of 3s.; and that the competition would be equally hopeless were both free of duty. In the latter case, a revenue of more than four and a quarter millions sterling, levied on the superfluous expenditure of the masses, and producing within a million and a half of the amount of the income tax, must be sacrificed to enable British farmers to grow Tobacco which none of them would smoke, even though they could obtain it 3s. a pound cheaper than the foreign. The Tobacco grievance is, therefore, rather imaginary than real.

The cultivation of Beet-root, for sugar making, is not quite so hopeless; and that is nearly all that can be said in its favour. Those who desire information respecting it should consult the work of Sir R. KANE, on the "Industrial Resources of Ireland." While including it among the resources of his country, he includes it with some hesitation, and it must be confessed that he has not placed it in a very inviting point of view. He has reduced to English weights and measures the information collected by DUMAS for the French Government respecting the Beet-root sugar statistics of France; and the results are not such as would tempt us to embark either in the manufacture or in the raising of Beet-root for sale to the manufacturer. Even in France, where the climate is more favourable than that of Britain to the production of sugar, the manufacture has been fostered by peculiar circumstances; it is felt to be disadvantageous to the community; and were there not a native sugar interest already established it would not be deemed desirable now to introduce it. It appears that the crop most productive of sugar does not exceed 12 tons to the acre. Thirty or 40 tons may be forced by high cultivation, but in that case the carbon goes to the formation of woody fibre, not sugar; so that the smaller crop is ultimately the more profitable. For these 12 tons the manufacturer could not afford to pay more than 16s. 8d. the ton. At that rate, the prime cost of the sugar, coals costing 12s. the ton, would be 26s. 8d. the cwt.; and that after giving the process credit for the refuse pulp, one-fortieth part of the whole, at 6s. 3d. the cwt., as cattle food—for the skimmings of the boiler, as manure, at 6s. the cwt.—and for the treacle at 1s. 8d. the cwt.

At the time these calculations were made, the average price of colonial sugar, exclusive of duty, did not exceed 31s. the cwt.; and amidst the subsequent alterations of duty, and the various regulations for the admission of foreign to competition with colonial sugar, it is certain that the price has not advanced. With Beet-root and cane sugar, therefore, subject to the same duty, it is evident that there is no very great inducement to embark capital in the manufacture; and as to the cultivation, we should, for ourselves, prefer a crop of 30 tons of Mangold Wurzel, consumed by cattle on the land, to a sugar crop of 12 tons yielding only 10l. an acre, delivered at the works—a crop requiring, moreover, much labour and some manure, and making no return of the latter to the land, except such as would be purchased out of the gross returns. The purchase of this manure, whether consisting of the refuse of the manufacture, or of 3 cwt. of guano, would make a deduction of 30s. the acre from the 10l. The cultivation of the Beet-root and the manufacture of the sugar have been treated as if carried on by different parties, not only for the sake of clearness, but because the sugar would be produced more economically under that division of labour than by the incongruous combination of the trades of farmer and sugar-maker in the same hands. It must be borne in mind, that in these calculations, coals are only charged at 12s. the ton, or about half their price in the southern counties, where conditions of climate prevail more favourable to the production of sugar than in the northern counties, in which the principal colleries are situated, and where coal is about 12s. the ton, at a few miles from the pit.

Such are the prospects of sugar growing in Britain. We are sorry they are not more favourable, because, if it were possible profitably to raise the natural produce of the tropics under our sunless skies, it would furnish a very comfortable solution of the African and cheap sugar questions. On these we are, at the present day, in the same awkward predicament between conscience and convenience, described by COWPER at the commencement of the movement against negro slavery:—

> I own I am shock'd at the purchase of slaves,
> And fear those who buy them and sell them are knaves;
> I pity them greatly, but I must be mum,
> For what could we do without sugar and rum,
> Especially sugar, so needful we see.
> What! give up our desserts, our coffee and tea!

We rejoice, therefore, that the experiment is about to be tried by the establishment of a Beet-root Sugar Company in Ireland, to which we wish all success. There is nothing like testing theory by actual practice, and we strongly recommend those farmers and landowners who think that they would gain by exchanging the production of corn and cattle for that of sugar, to look before they leap—to make themselves practically conversant with the details and profits of the process by taking a few shares in that company before they embark individually in the growth of Beet and the manufacture of sugar. At present there is a great dearth of employment for farmers' sons. The area of the British Isles does not increase with the expansion of the agricultural family. All the sons are brought up farmers, and hence that competition for land which forces up rents and leaves so little margin for the farmer's profit, be prices what they may. It will be different should sugar making succeed. The sons can then play into one another's hands; one can grow the

Beet, another can buy it of him and make the sugar. We have great doubts, however, whether sugar-making will ever engraft itself on British agriculture. If our farmers desire more remunerative employment than that of raising bread and meat for an ungrateful country, which sacrifices patriotism to appetite, prefers the cheap to the remunerative loaf, regardless of whence it comes, and persists in eating its way through the masses of grain with which the foreigner vainly endeavours to smother it, let them turn their attention to Flax. They will find it a better speculation than sugar or tobacco. This is said without reference to the recent inventions for preparing Flax as a substitute for cotton. Successful as we believe them to be, an important element of success appears to be a price of cotton above its ordinary level. Irrespectively, however, of these modern inventions, our Flax mills require for the ordinary purposes of Flax spinning an annual importation of 1,000,000 cwts., which cannot be valued at less than 2,000,000*l.* sterling. Our soil and climate are as propitious to Flax as they are unpropitious to sugar and tobacco. In these respects we have the advantage of every country in Europe and America, except Belgium. Let the British farmer then drive the foreign Flax grower out of the home market, before he invades the tropics, and turns his arms against Cuba and Brazil, Virginia and the Mauritius.

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT INDUSTRIAL EXPOSITION OF THE NINETEENTH CENTURY.

No. III.—CULTIVATORS or SCARIFIERS are shown in great variety, each maker having done his best to contrive a good form of tooth or tine, to fasten and arrange the teeth in the most useful and efficient manner, and to scheme the simplest and easiest method for lifting or lowering the frame which contains them. And all are constructed entirely of iron, with the exception of some of the wheels. J. Bendall, of Woodbridge, shows a useful implement called a patent universal self-adjusting cultivator, for skimming, cleaning, pulverising, or subsoiling land. It has eight tines fixed in mortices in a strong frame, which is cast in one piece. The machine is raised upon two wheels by a bent axle turned by a lever, this giving a pull very much like that in a printing press—the purchase greatest at first, when it is most wanted. There are two small wheels in front of the scarifier, the axle being attached by a joint to an upright spindle; thus being able to accommodate itself to inequalities of the land. The tines carry double-winged shares.

R. Beart's patent cultivator seems entitled to rank in the first class. The frame is a triangle of cast iron; the tines are fixed in the same way as in the Uley cultivator, and the method of raising is the same as in that excellent implement—with an improvement. The objection to the Uley wheel and screw is the length of time occupied in turning it; if the simple parallel motion could be effected by the mere depression of a lever handle, it would be the best movement yet invented for the purpose. And this has been attempted in the present case. A smaller pinion, working in that on the wheel axle, is turned by a lever; but while time is saved, the distance raised is, perhaps, not so great as in the Uley drag. To Beart's cultivator are attached two immensely heavy rowels, which either ride upon the frame to weight it, or run behind to break the larger clods.

A cultivator, by W. Nicholson, of Newark, is lifted in a singular manner. The three wheels support as many upright bars, which pass through slots in the frame furnished with friction rollers. On the top of each bar is a semicircle, the two hinder ones fastened upon an axle, and connected with the foremost one by a connecting rod; and as they all move simultaneously by a lever behind the machine, the frame is raised or lowered by chains passing round the semicircles.

H. Carson, of Warminster, Wiltshire, has invented a scarifier, with a very simple parallel action for raising. A single pull of a long lever effects the movement, but as the whole draught of the horses is opposed to the direction in which the frame is lifted, we should say the pull would have to be both "long and strong." The tines are fitted into mortices with iron wedges—the frame is all cast in a piece. R. Coleman, of Chelmsford, has a patent scarifier or drag, in which each tine works on a bolt hinge, or joint, in a mortice. A lever on the top turns a barrel or spindle, which, by connecting rods, raises the tines forward all together. This, we should think, is not on a good principle, as the joints would wear, and the teeth become unsteady.

Smith and Co., of Stamford, Lincolnshire, have a scarifier, in which the operation of lifting it out of the ground is rendered more easy, by the addition of a weight in connection with the lever; but we can hardly approve of any contrivance that introduces unnecessary weight and complication into the machine. The tines fit upon the side of the frame bars, and are screwed tight.

H. Cowan, of Costorphine, near Edinburgh, exhibits a two-horse grubber, which obtained the first prize at Edinburgh in 1848, and at Glasgow in 1850. The tines fit by studs upon their sides into mortices in the bulls or bars of the frame. They cannot be set higher or lower. The lift is very simple, but we fear not sufficiently gradual to be done with ease. Ransomes and May show Biddle's scarifier, and their West Indian cultivator. The forms of both are well known; the former being decidedly the rival of the Uley cultivator, as regards its working capabilities, though not so simple in form and mechanism. The Indian cultivator is undoubtedly a good implement; but its double frame gives it a needless complication.

Among the great improvements now struggling to get introduced into general farm practice is, the autumn cleaning of Wheat stubbles; and our implement manufacturers have determined that the fault shall not rest with them, if this system is not speedily carried out wherever practicable. For they have designed several sorts of skim and paring ploughs with which to commence operations; and we are happy to say that all the specimens appear calculated to answer their purpose in a satisfactory manner. Mary Wedlake and Co., Hornchurch, Essex, have made a double-beamed wooden plough, carrying two iron skeleton ploughs, with single winged shares lying one way, one following the other, and both furnished with coulters. E. Hill and Co., of Brierly-hill Works, near Dudley, exhibit their skim for paring stubbles, turf, &c., consisting of two broad angular shares or knives with the wings facing each other, and just crossing the centre line, one being a little before the other; these are supported by a frame of the very lightest, and yet sufficiently strong kind, carried on three wheels. A tine shod with a wide chisel or tool precedes them in the centre line; and two curved tines follow, one behind each share, for the purpose of breaking the soil into smaller portions. This has the effect of exposing the roots of weeds, &c., more perfectly than would otherwise be the case to the action of the sun, thus preventing, if possible, their growing again. These coulters or tines are suspended from the ends of two short levers, and slide up and down in slots, so that either of them can be lifted out of work instantaneously. The implement possesses simplicity of construction, will easily work three acres per day with a pair of horses, at a moderate depth; or may be employed as a scarifier, if required, 8 or 9 inches deep. By bearing on the handles the knives rise out of the ground, to facilitate the turning. John Smith, of Uxbridge, has also a skim or paring plough having two somewhat similar shares, but without the tool in front. Two curved tines follow the shares, and are thrown out of work by "Lomax's patent movement," a combination of levers so contrived that though the tines can be turned up backwards with the greatest ease, without pressing spring or withdrawing bolt, they have no purchase to move out of work of themselves.

Perhaps one of the best implements for stirring or moving land that has been once ploughed, is the "Patent broad-share and subsoil plough," invented by E. H. Bentall, of Heybridge, near Maldon, Essex. The beam is of iron, long and straight, and in section of this form ⊥, having a small wheel at its fore-end. Two hollow square arms are screwed on at each side above the plough body, and opposite each other, so as to form a transverse beam about 4 feet long, being very light and strong. The body of the plough consists of a cast-iron plate somewhat resembling a solid land-side, and as thin as consistent with its strength. It carries a chisel point in front, a wide double-winged share behind, of peculiar shape, and two horizontal blades one above the other projecting on each side of the main plate or body. Two strong cultivator tines are fastened upon the transverse beam; they are serrated behind towards the top, and are nipped by staples and screws to the face of the beam, the upper side of which has a projecting edge fitting between the teeth on the tines, this allowing of their being set higher or lower. There are many holes in the beam, through which the two staples can pass, to set the times closer or further apart. These tines have chisel points, and carry angularly placed cutters or double-winged shares behind them. By means of all these points and cutters, the soil is first broken up and then divided into small portions. The novel arrangement of placing the broad-share at the heel of the plough instead of in front, seems calculated to render its action more easy, the soil being shaken as well as cut by the chisel-point and plate preceding it. This implement appears capable also of working as a regular subsoil plough. Ransomes and May have a patent implement of a similar kind; only two additional bars or short beams are placed one at each end of the transverse beam, and parallel with the main beam. Upon these bars the tines are fixed, carrying chisel-points, followed by V shares, point foremost. The tines are fastened in a very simple manner; they are nipped against the flat side of the bar by a screw bolt passing through; a square iron plate held by the same screw, keeps the tine in its upright position by four studs, one on each side the tine both above and below the bar.

Of SUBSOIL PLOUGHS there are not many beside the old forms already well known. Messrs. Wilkie exhibit that invented by Mr. Smith; and Ransomes and May show the Rackheath subsoil-plough, which will perform the operation of breaking up the ground to the depth of from 10 to 16 inches below the surface, and when preceded by the common plough (as ought to be the case), reaching to that depth under the bottom of the furrow. Several other makers have specimens of this kind of implement, which is invaluable for breaking up the pan formed by long continued ploughing, and allowing the water to percolate freely through the bottom of the furrow. One of the simplest and easiest is Read's Patent Subsoil Pulverizer. This consists of a straight beam, furnished with a pair of handles, and carried upon four wheels, the leading pair being placed near the cock, and the following pair near the after end of the beam. The stirrer or chisel-pointed share is let down through a mortice in the beam immediately behind the after pair of wheels, and set to any required depth. By this simple plan the entire weight is carried on the four wheels, which run parallel in the furrow made by a common plough, and preserve an even action of the stirrer below the bottom of the furrow. This plough may also be used as a mole-plough, or as a broad-share plough; and, by the addition of a frame, becomes a horse-hoe or scarifier. J. Blight, of Edinburgh, exhibits "an improvement" upon Read's, by the Marquis of Tweeddale, called a "subsoil trench plough." The difference is in the shape of the share, this being angular and larger, and with a broad tail sloping upward, so as to raise the broken subsoil to the surface. The most extraordinary looking implement for the purpose of stirring the subsoil is the "revolving subsoiler" of R. J. and R. Laycock, Newcastle-on-Tyne. A square frame, with shafts before and handles behind, holds on an axle in its centre a large wheel which carries a number of long harrow tines or teeth in pairs upon its periphery. These teeth are curved, and seem adapted for piercing and breaking up the bottom of a furrow. When out of work the machine rides upon two carriage wheels.

Among the ploughs are to be seen here and there specimens of the great monster implements used for bringing up the subsoil and mingling it with the surface-mould,—as in the peat fens, where the clay lies sufficiently near, and in districts where an underlying stratum of clay or marl offer a ready means of manuring the exhausted soil above, or of changing its texture and qualities. Ransomes and May exhibit an immense double-breasted plough for trenching, each mould-board being in two pieces, joined by hinges. It is intended to act upon the land in the same manner as double digging, to the depth of from 18 to 20 inches. By removing the left-hand frame it can be used as a draining plough, opening drains to the depth of 20 inches or more if required. *I. A. C.*

## THE CULTURE OF FLAX.

THE successful cultivation of Flax requires a deep, warm, moist loam—a mellow, loose alluvium, in which there is much humus or vegetable mould, the bottom not too dry nor too moist. It is therefore not suited for hot gravelly soils, or cold wet clays; but any other soil may be so tilled and prepared as to produce good Flax. The plant thrives well in the rich alluvial land of Zealand, and it is also raised with great success in the light sands of Flanders, but much more careful tillage and manuring are required. The land must be clear of weeds, and in good heart, for the growth of Flax; and the weeding of the crop forms a very important part of the expense of cultivation. These circumstances suggest the best mode of preparing the land. The heavier loams may be prepared by a deep and well-wrought summer fallowing with an ample quantity of well-rotted manure; but the universal cultivation of green crops, as Potatoes and Beet, supersede the necessity of a bare fallow on the stiffest loams, and prepare the land for bearing Flax. Much manure is required, and well-rotted manures suit best for Flax, as peat-ashes, ashes of weeds and earths, and the sweepings of streets in towns, the emptyings of privies and the cleaning out of the butchers' stalls and shambles. On light soils much manure is required; and, where night-soil cannot be obtained in sufficient quantities, Rape-cakes, from which the oil has been expressed, dissolved in liquid manure, form the best manure. In many parts of Flanders 500 Rape-cakes are used for every acre of Flax, besides the usual quantity of Dutch ashes and of liquid manure, which is the drainings of dunghills and the urine of cattle collected in a cistern, and allowed to become putrid.

In southern climates Flax is sown before winter, because too great heat would destroy it. It is then pulled before the heat of summer. In northern climates, the frost, and especially the alternations of frost and thaw in the early part of spring, would cause the Flax to perish; it is consequently sown as early in the spring as may be, so as to avoid the effect of hard frost. This season is late March or early April in Great Britain and Ireland, and in Holland and Flanders. The ground is prepared in Flanders beyond all other countries for the growth of Flax, and it generally forms a model for description on the subject of Flax culture. Every preceding crop has a reference to the growth of Flax. The land is deeply wrought and richly manured, in order to have a large surplus in the ground for the use of the Flax, which is generally sown after a crop of Turnips that has been well manured and cleaned. Liquid manure is poured on the land in the spring, after deep ploughing and harrowing, and the seed is sown broadcast and lightly covered at the rate of 1½ cwt. to the acre. Light lands, or very finely divided soils, are rolled, or the seed is trodden in by the feet of men. When weeds appear, they are carefully taken out by women and children, who continue the work till the Flax is too high to allow it. The seed is changed every year from Riga.

The above mode of sowing Flax is applicable to Britain, where the land must be well prepared by fallowing and manuring, and stones very carefully removed. The land is ploughed in March, and the seed sown on a finely harrowed surface, and rolled, according as the ground appears close or open. In most cases rolling is useful. The weeding of the crop must be

carefully performed. A crop of Flax should be rather thick than thin on the ground, as the latter quality induces tall thick stems, which renders coarse the textile fibres of the Flaxen reeds. If very fine Flax is desired, the crop of stems is pulled when the bottom part of the plants begins to get yellow; but then the seed will be of little or no value. It is therefore generally left growing until the capsules, which contain the seeds, are carefully grown, and the seeds formed. The pulling then begins, which must be done carefully by small handfuls at a time. These are laid upon the ground to dry, two or three obliquely across each other, and fine weather is essential to this part of the operation. Soon after the handfuls are collected into larger bundles, which are placed with the root end on the ground, the bundles being slightly tied near the seed end; the other end is spread out that the air may have access, and the rain may not damage the Flax. When sufficiently dry the bundles are tied more firmly in the middle, and built in long narrow stacks on the ground, in width as the bundles are long, and about 8 or 9 feet high. These stacks are thatched, and the perpendicular ends are supported by strong poles that are fixed in the ground. In this way the steeping is deferred till next season. The Flax is most generally carried in bundles to a shed, where the stems are pulled through an iron comb fixed in a block of wood, which takes off the capsules, and is called "rippling." The Flax is immediately steeped, or in some cases it is lodged in barns till another season, where it must be kept very dry, and if the seed is left on, which is an advantage to it, mice must be guarded against, as they are very fond of linseed, and would soon take away a good share of the profits by their depredations.

Steeping the Flax is a very important process, which requires skill and experience to do it properly. The quality and colour of the Flax depend much on the mode of steeping, and the strength of the fibre may be injured by an injudicious mode of performing that operation. The object of steeping is to separate the bark from the woody part of the stem, by dissolving a glutinous matter which causes it to adhere. A certain fermentation, or an incipient putrefaction, is excited by the steeping, which must be carefully watched, and stopped at the right time. The usual mode of steeping is to place the bundles of Flax horizontally, in shallow pools, or ditches of stagnant water, keeping them under by means of poles or boards, with stones or weights laid upon them. Water nearly putrid was supposed the most efficacious, and the mud was often laid over the Flax to hasten the decomposition—but this has been found to stain the Flax, so that it was very difficult to bleach it or the linen that was made from it. The bundles of Flax are also put into wooden frames, which rest on the bottom of the rivers, and allow the water to pass below, and the Flax is held in them by boards and weights. Longer time is required by this steeping in fresh running water, but the colour is much finer, and the mode is now generally preferred. During the steeping, the time of which depends on the cold or heat of the atmosphere, frequent examinations are made to ascertain if the fibres readily separate from the wood the whole length of the stem. As soon as this is the case, the Flax is taken out of the water—even a few hours more or less steeping than is necessary will make a difference in the value of the Flax. If it is not steeped enough, it will not be easily scutched, and the wood will adhere to it. If it has been too long in the water, its strength is diminished, and more of it breaks into tow. The bundles are now untied, and the Flax is spread evenly in rows slightly over-lapping each other, on a piece of smooth clean Grass, which has been mown or fed close. Fine weather is essential to this part of the process. It is occasionally turned over, which is done dexterously by pushing a long slender rod under the rows, and taking up the Flax near the end which overlaps the next row, and turning it quite over. Thus, when it is all turned, it overlaps as before, but in the contrary direction. It remains spread out on the Grass for a fortnight, more or less, according to the season, till the woody part becomes brittle, and some of the finest fibres separate from it of their own accord. It is then taken up, and as soon as it is quite dry, it is tied up again in bundles, and carried into the barn, to be broken and hackled at leisure during winter.

In the domestic manufactures the Flax is broken or scutched at home, when the weather prevents out-door work. The common brake consists of four wooden swords fixed in a frame, and another frame with three swords which play in the interstices of the first by means of a joint at one end. The Flax is placed between the two frames, and the upper frame is pushed down briskly upon it. It breaks the Flax in four places, and by moving the hands and rapidly repeating the strokes, the whole handful is soon broken. It is then scutched by means of a board set upright in a block of wood so as to stand steady, in which is a horizontal slit about 3 feet from the ground, the edge of which is thin. The Flax held in handfuls is inserted in this slit, and struck close to the upright board by a flat wooden sword of a peculiar shape, and moved forward as occasion requires. This operation beats off all the pieces of the wood which still adhere to the fibre, without breaking it, and after a short time the Flax is cleared of it, and fit to be heckled. But the operations of breaking and scutching are tedious and laborious when thus executed by hand. Mills are now used which revolve by horse or water power, having three fluted cylinders, one of which is made to move, and carries the other two round. The Flax plants are passed between these cylinders while thus revolving, and the stalk is by this means completely broken, without injuring the fibres. The scutching is accomplished by the same mill by means of four arms projecting from a horizontal axle, arranged so as to strike the Flax in a slanting direction until the bark and other useless parts of the plant are beaten away. In the last process by which Flax is prepared for the spinner, the "heckling," the instrument employed (called the "heckle") is a square piece of wood, studded with rows of iron teeth about 4 inches long, and disposed in a quincunx order. The Flax is drawn through between the teeth of the heckle, and repeated till every particle of extraneous matter is removed, and the whole of the filaments are arranged in distinct, even, and parallel fibres.

The preparation of land for growing Flax is much more heeded than the quality of the soil itself, provided it be at least of the middling class of fertility, and dry and loamy. Accordingly, in Flanders, where the best culture of Flax has been found, the land is rendered mellow and rich by the tillage and liquid manure; and the seed, which has been carefully selected, is covered by earth spread over it with the spade; it is afterwards rolled or trod in with the feet. The urine tank supplies an excellent stimulant in the early period of growth, especially when the blades are shooting up, after the fecula of the seed is exhausted. After that time it has been found to encourage the growth of leaves rather than of flowers and seed.

England has never produced a sufficient quantity of Flax for its own use, and the cultivation of it has decreased as agricultural improvements have advanced. It suits small farming and cottage farming, and hence the very general cultivation in Flanders and in Ireland, where the above mode of using land prevails. The preparation of the land is laborious, the treatment of the growing crop is troublesome, and the application of the produce is tedious and expensive, and any plant that needs premiums and the rewards of societies to support its use may be suspected to want the intrinsic worth, under the soil and climate, and under the circumstances of the social system, which regulate the use and fix the value of every vendible commodity. The British cultivator will grow articles which suit his market most readily, and at the least cost, of the greater return.

The average produce of dressed Flax from an acre of land may be stated at 40 stones, and the quantity of seed at 20 bushels. The ripening of the seed impairs the quality of the Flax, though some assert the contrary.

A plan is now being practised of separating the fibre and wood of the Flax plant by means of hot water applied to the stems placed upright in boxes or cisterns that are under the cover of a roof. The mode is said to have complete success. A chemical process is being tried, which easily separates the parts, and also bleaches and refines the textile fibres into an appearance of cotton, and hence called "Flax cotton." *J. D.*

## INFORMATION TOWARDS MORE ACCURATE ESTIMATES OF THE VALUE OF LIMESTONES.

Manuring, with so called artificial manures, is a fashion of such general adoption now-a-days, that he would indeed be deemed a venturesome man who should doubt the propriety of employing them extensively. In my present contribution to this journal, it is my intention to add somewhat to the history of limestones, a manure than which, it may be safely asserted, that none is so much employed, so much expected from, and so little understood. Lime, no doubt, belongs to the most useful of all artificial manures; but because its nature, varying as it does in the different counties of England, is insufficiently appreciated, none gives more frequent disappointment, or is more frequently abused. I am not going into an elaborate description of the various properties of lime. Several years ago I wrote a long article upon this subject, in this paper; and since then, the whole of the agricultural world has become indebted to Professor Johnston, for a most valuable exposition of the subject. I would simply set out with the remark, that the addition of mineral substances, such as lime, gypsum, salt, and woodash, are only so far valuable as they contribute to the soil a substance required by plants, but insufficiently contained in it. Supposing a soil to be productive of sour Grasses, it would be absurd to correct it by superphosphate of lime, salt, or gypsum. A manure should be adapted to an end; chalk would therefore be the obvious remedy for a state of soil such as I have supposed. Now, the quantity of lime required by plants is very small, and bears no relation to the quantities employed. A crop of Cabbages removes but 190 lbs. weight, and this amount is greater than in any other. Is it then to be concluded that a dressing of 3 or 4 bushels is sufficient for all the purposes lime subserves? By no means; it only proves that the lime required by plants for their nutrition is exceedingly small: for various reasons, a soil should contain about one per cent. of lime, and in applying it, greater regard should be had to the chemical properties of lime. All limes are not alike. To begin with, we have pure limes, hydraulic limes, and magnesian limes. The former can only be considered to supply lime, whilst the latter affords, at the same time, a considerable per centage of magnesia, another constituent of all seeds. To furnish one per cent. of lime to a soil six inches deep, requires eight tons of quick-lime. We may calculate upon a loss of one-third of a ton annually, by rain and by the sinking of the lime beyond the reach of the plough, and this fact will give some notion of what should be periodically restored.

Pure limestones are, however, of very rare occurrence, and their value depends much upon other constituents they convey to the soil. How much they vary with to one particular, let the following statements of limestones employed in Derbyshire, Nottinghamshire, Leicestershire, Lincolnshire, and Staffordshire, prove:—

| Carbonate of Lime. | Per cent. |
|---|---|
| Ashover | 99.89 |
| Ashover Hockley (light) | 98.85 |
| ,, ,, (medium) | 94.82 |
| ,, ,, (dark) | 96.00 |
| Barrow | 76.00 |
| Bennington | 19.00 |
| Birchwood | 98.50 |
| Branston | 95.25 |
| Breedon | 54.22 |
| Bullbridge, 1st layer | 96.00 |
| ,, 2d ,, | 96.00 |
| ,, 3d ,, | 93.00 |
| ,, 4th ,, | 34.90 |
| ,, 5th ,, | 94.00 |
| Bullbridge old quarry: | |
| 1. Claybeds | 89.70 |
| 2. White ones | 96.50 |
| 3. Two-foots | 98.30 |
| 4. Crackers | 98.60 |
| 5. Black ones | 98.60 |
| 6. Shittpotts | 97.52 |
| 7. Soft white ones | 97.23 |
| 8. Ironstone beds | 99.90 |
| 9. Chatts | 95.00 |
| 10. White ones | 97.40 |
| 11. Furnace bed | 86.94 |
| 12. Blue bed | 98.00 |
| Bulwell | 44.76 |
| Dark Crich | 98.85 |
| Light Crich | 98.85 |
| Costock | 91.70 |
| Cropwell top | 82.00 |
| ,, middle | 89.20 |
| ,, bottom | 81.38 |
| Glentham | 83.62 |
| Hoton | 26.49 |
| Hoton (light) | 93.00 |
| Crystallised Hoton | 97.00 |
| Dark Hoton | 94.00 |
| Hughington | 96.45 |
| Matlock | 99.45 |
| Ticknall | 88.56 |
| Walsall | 93.56 |
| Washingborough | 96.89 |

Now of all these, only Bulwell and Breedon are magnesian limes, and yet the quantity of useless constituents in some of them is very great. Amongst the worthless parts of limestones I will include, for the sake of brevity, the oxides of iron and aluminum, under the heading silica or sand; and how much the quantity of these varies, let the following analyses prove:

| Silica.—Per cent. | |
|---|---|
| Ashover | 0.070 |
| ,, Hockley (light) | 1.490 |
| ,, ,, (medium) | 5.030 |
| ,, ,, (dark) | 4.000 |
| Barrow | 21.680 |
| Bennington | 11.980 |
| Birchwood | 0.800 |
| Branston | 3.350 |
| Breedon | 2.120 |
| Bullbridge, 1st layer | 2.000 |
| ,, 2d ,, | 3.200 |
| ,, 3d ,, | 6.000 |
| ,, 4th ,, | 75.000 |
| ,, 5th ,, | 5.000 |
| Bullbridge old quarry: | |
| 1. Claybeds | 10.150 |
| 2. White ones | 3.450 |
| 3. Two-foots | 0.950 |
| 4. Crackers | 1.150 |
| 5. Black ones | 1.250 |
| 6. Shittpotts | 3.350 |
| 7. Soft white ones | 2.751 |
| 8. Ironstone beds | 1.000 |
| 9. Chatts | 4.450 |
| 10. White ones | 2.550 |
| 11. Furnace bed | 13.000 |
| 12. Blue bed | 1.150 |
| Bulwell | 23.520 |
| Dark Crich | 0.740 |
| Light Crich | 0.739 |
| Costock | 7.700 |
| Cropwell top | 14.600 |
| ,, middle | 7.180 |
| ,, bottom | 14.560 |
| Glentham | 3.050 |
| Hoton | 13.280 |
| Hoton, light | 7.200 |
| ,, crystallised | 1.200 |
| ,, dark | 5.260 |
| Hughington | 1.750 |
| Matlock (High Tor) | 0.330 |
| Ticknall | 10.440 |
| Walsall | 6.000 |
| Washingborough | 1.600 |

More or less carbonate of magnesia is found in limestones, with but few exceptions. I have examined all the limestones above-mentioned, as regards this constituent, and I now give the results of my investigations.

| Carbonate of Magnesia. | Per cent. |
|---|---|
| Ashover | trace |
| Ashover Hockley (light) | trace |
| ,, ,, (medium) | trace |
| ,, ,, (dark) | trace |
| Barrow | 3.700 |
| Bennington | 1.09 |
| Birchwood | 0.110 |
| Branston | none |
| Breedon | 43.500 |
| Bullbridge, 1st layer | 0.366 |
| ,, 2d ,, | 0.742 |
| ,, 3d ,, | 0.742 |
| ,, 4th ,, | 0.090 |
| ,, 5th ,, | 0.757 |
| Bullbridge old quarry: | |
| 1. Claybeds | 0.109 |
| 2. White ones | 0.007 |
| 3. Two foots | 0.220 |
| 4. Crackers | 0.183 |
| 5. Black-ones | 0.054 |
| 6. Shittpotts | 0.030 |
| 7. Soft white ones | 0.109 |
| 8. Ironstone beds | 0.005 |
| 9. Chatts | 0.146 |
| 10. White ones | 0.024 |
| 11. Furnace bed | 0.007 |
| 12. Blue bed | 0.256 |
| Bulwell | 31.372 |
| Dark Crich | 0.252 |
| Light Crich | 0.253 |
| Costock | 0.360 |
| Cropwell, top | 1.844 |
| ,, middle | 1.788 |
| ,, bottom | 1.844 |
| Glentham | none |
| Hoton | 1.090 |
| ,, light | 0.290 |
| ,, crystallised | 0.730 |
| ,, dark | 0.520 |
| Hughington | none |
| Matlock | 0.219 |
| Ticknall | 1.090 |
| Walsall | 0.440 |
| Washingborough | none |

It is evident that in many of these the quantity of magnesia is sufficiently large to be taken into consideration in endeavouring to estimate the value of a limestone for agricultural purposes. But even when we are acquainted with the proportions of magnesia, silica, oxide of iron and alumina contained in limestones, we should make a great omission were we to leave out the amount of phosphate of lime or bone-earth. I have examined upwards of 150 specimens of limestones with reference to this one particular; and, because the quantity at best is but small, I have employed ounces instead of grains in my analyses. Instead therefore of calculating the amount in 100 lbs., I shall give the quantity in a ton of limestone.

| Quantity of Phosphate of Lime in a ton | |
|---|---|
| Ashover | 0.090 |
| Ashover Hockley (light) | trace |
| ,, ,, (medium) | 2.655 |
| ,, ,, (dark) | trace |
| Barrow | 0.6142 |
| Bennington | 10.260 |
| Birchwood | 0.1350 |
| Blondhill | 0.2847 |
| Branston | —— |
| Breedon | 0.180 |
| Bullbridge, 1st layer | 0.320 |
| ,, 2d ,, | 0.321 |
| ,, 3d ,, | 0.275 |
| ,, 4th ,, | —— |
| ,, 5th ,, | 0.178 |
| Bullbridge old quarry: | |
| 1. Claybeds | 0.396 |
| 2. White ones | 0.072 |
| 3. Two-foots | 0.275 |
| 4. Crackers | 0.313 |
| 5. Black-ones | 0.397 |
| 6. Shittpotts | 0.215 |
| 7. Soft white ones | 0.234 |
| 8. Ironstone beds | 0.093 |
| 9. Chatts | 0.217 |
| 10. White ones | 0.218 |
| 11. Furnace bed | 0.316 |
| 12. Bluebed | 0.256 |
| Bulwell | 6.930 |
| Dark Crich | 1.056 |
| Light Crich | 1.073 |
| Cotgrave | 46.70 |
| Costock | 20.070 |
| Cropwell, top | 21.182 |
| ,, middle | 19.260 |
| ,, bottom | 3.780 |
| Glentham | —— |
| Hoton | 0.720 |
| ,, light | 0.360 |
| ,, crystallised | 0.945 |
| ,, dark | 0.832 |
| Hughington | —— |
| Matlock | 0.832 |
| Normanton, 1st layer | 8.455 |
| ,, 2d ,, | 19.713 |
| ,, 3d ,, | 6.670 |
| ,, 4th ,, | 6.910 |
| ,, 5th ,, | 3.560 |
| ,, 6th ,, | 3.660 |
| Ticknall | 3.724 |
| Post-ticknall | 5.456 |
| Walsall | 0.714 |
| Washingborough | —— |

It must be evident, from an attentive consideration of the above facts, that the source from whence a farmer obtains his lime is a matter of much importance. Other deductions too might be made, but I forbear, fearing that this article has already occupied an inordinate length. I trust that these facts will be considered by all of sufficient importance to warrant their publication.
*Albert J. Bernays, F.C.S., Derby Chemical Laboratory, May 3.*

## Home Correspondence.

*The Beet Sugar Manufacture.*—The confidence which I am inclined to repose in your suggestions and statements has caused me to look with no little alarm on a statement in the answers to correspondents in your Paper of the 10th inst., in which, in reply to "An Irishman" you say that you do not expect the yield of sugar, in the Sugar Beet, "will be found enough to reward the cultivation and the manufacture"—alarm from my having been induced by a friend, who professes to understand the subject, to apply for some shares in the Beet Sugar Company, and also to sow several acres with Sugar Beet, to be supplied to the Company in the autumn. While disposed to rely upon your opinion, I find practical men of high character here, strongly in favour of the proposed manufacture; and you are doubtless aware that Professor Sullivan, of the Museum of Irish Industry, has published the results of several analyses which he has conducted, and which go to prove that roots grown in Ireland are richer in saccharine matter than those grown in France and Belgium, where the manufacture of indigenous sugar is extensively carried on. From some documents, official and otherwise, which a Dublin merchant obtained from France, and which I had an opportunity of inspecting, I find that 15 tons of roots are sufficient to make 1 ton of sugar; and according to Professor Sullivan a smaller quantity of roots will be sufficient here, on account of the comparatively larger quantity of sugar contained in Irish roots. From the same documents, as well as from those published by the Beet Sugar Company, I find that the actual cost of manufacture per ton of sugar, amounts to from 7*l.* to 8*l.* The question as regards the manufacturer will therefore stand thus, assuming the price to be paid for the roots to be 15*s.* per ton.

| | | | |
|---|---|---|---|
| 15 tons of roots at 15*s.* | ... | 11 | 5 0 |
| Cost of manufacture, say | ... | 7 | 10 0 |
| Cost of producing 1 ton of sugar | ... | £18 | 15 0 |

It therefore appears that Beet-root sugar could be produced at 18*l.* 15*s.* per ton, and this is without taking into account the molasses, or the refuse of the manufacture. When the duty is added to this there still remains a handsome margin for profit to the manufacturer. The manufacture of sugar from Beet-root having attracted considerable attention in Ireland during the past two years, the growth of the Sugar Beet has been tried on a small scale by many persons, under a great variety of circumstances, and the result has been generally favourable. With good management, therefore, we calculate on 25 tons to the statute acre, a return which good tillage will far exceed; but even at 25 tons the return from an acre of Sugar Beet would, at 15*s* per ton, amount to 18*l.* 5*s.*, exclusive of the leaves, which are of great value. To both farmer and manufacturer, therefore, the speculation appears to be a good one, unless some mistake is committed which I cannot see; but I place these figures before you in the hope that you may examine the question, and apprize your readers, myself among the number, whether the movement which is exciting so much attention in Ireland is likely to end in disappointment. I confess I am one of the parties who think well of it, and therefore it is that I am anxious to place before you the data on which the calculations are founded, so that if unsound, the error may be pointed out. The very great importance of the subject on which I write will, I trust, be a sufficient apology for the liberty taken in addressing you by *Another Irishman.*

*Fertility from Draining.*—In these times, when the means to continue the profitable cultivation of our land are only to be sought for in increasing its returns, I believe no information is more deserving the attention of landowners and farmers than that which will be afforded in considering some of the beneficial consequences from thorough draining of wet land. Farmers have always seen the immediate mischief to vegetation which is the consequence of water resting on their land, and from the earliest times have paid attention to keeping the surface of their cultivated land dry; but in all they have been doing, their views have been limited to preserving their crops uninjured from excessive wet, and thus have sought no other effect in their draining than the prevention of harm. The fertilising action of rain in its passage through the soil, in decomposing both organic and inorganic matter, and in carrying of warmth and nutriment to the roots of plants, has been unthought of; they have been seeking the discharge of rain from the surface of the ground by means of open furrows and shallow drains, as if each winter brought too much, and it were poison to their crops, and as though the elements of fertility which this surface running off the water robs the land were worthy of no consideration. But rain is sent at all seasons for important purposes, and none should be allowed to pass away until it has effected the ends for which it is sent. When land becomes saturated with water (and all land which does not naturally rest on a porous strata, or has not been thoroughly drained, is in this state for some months in every year), it ceases to admit of the descent of rain; and all that falls upon it, supposing the ground to have been landed up and intersected with furrows in the usual way, runs over into the furrows, and thence to the ditches, and away. The effect of rain falling on ground whilst in this condition will be readiest explained by bringing to consideration two long jars—one with, and the other without a vent at bottom. If these jars are filled with earth, and water be poured on them, the water poured on to the one without a vent, after a time—that is, after the earth has become saturated—will run over the top and down the sides; whilst the water poured on to the other, will be seen to sink down and pass out through the vent. These two vessels represent land in the two conditions—"of undrained and drained;" and to show what must be the different action of rain on land in these two conditions, we must suppose some of the matter on the two surfaces to be soluble and exposed, to water poured from a height, in imitation of the descent of rain. In one instance the dissolved matter will pass away with the water over the sides of the jar and be lost; but in the other, it will be carried into the interior, and, by the filtration of the water, be taken and retained by the soil; and this is precisely what is taking place for some months in the year, with respect to manure, and the finer particles of soil on the surface of land. The landed up ground, in casting off the rain casts with it the manure and mineral matter dissolved or taken up by the rain; and as the difference of colour of the two waters from the jars betray the presence and absence of the dissolved matter in the water, so will the muddy stream in the ditches, in contrast with the clear spring-like water from deep drains, betray the loss that undrained land sustains by the pains the farmer usually takes to preserve his crops from the injury from standing water. The use of rain on drained land, in the winter season, in annually dissolving and carrying down of matter and placing in store within reach of the roots food for the summer support of vegetation, appears to me one of the most beautiful processes in nature, to support a continuous vegetation. In this way I see the yearly provision of the tree brought to its roots, and its annual growth provided for. I can now understand the annual springing up of our pastures, and the luxuriant spring vegetation, with no other assistance than the food provided by the winter rains. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, May 14.*

*Agricultural Education.*—I am sure all lovers of their country are indebted to you, for the able manner in which you have again revived the subject of agricultural education, in the last three numbers of your valuable *Gazette.* You have clearly proved (what no considerate man ever doubted) that practice and science are not antagonists, but necessary friends to one another. I cannot understand the cause of the light estimate in which the latter is held by many excellent practical farmers, unless it be the common difficulty of appreciating what is not understood. We are most of us more or less guilty in this respect. I have known many who recognise the value of a knowledge of the dead languages, and yet refuse the same to that of the natural sciences; yet the former is merely a knowledge of words, the latter of things. How can any one be a worse farmer, steward, or labourer from knowing the qualities of the things within his reach—that surround him on all sides, and are the very subjects with which he has to operate in the application of capital and industry to a successful issue? And this is simply what these sciences teach. However, thanks to advocates like yourself, the spread of scientific knowledge is rapidly going on, and descending in so complete a form, even to the labourer, through the means of highly qualified masters from the training schools, that our friends must look about them, or they will have men at their ploughs better instructed than their sons. I lament with you that the list of institutions adapted for their use is so short, but as the importance of education is more appreciated, the demand will create a supply. I feel indebted for your consistent advocacy of the one that I have been most connected with; I have great confidence that if the system now at work, both in the schools of science, and on the farm, be steadily adhered to, the Royal Agricultural College will soon be an institution her friends may be proud of; and what is far better, one that will spread a sound and comprehensive scientific and practical education, which will raise the agricultural class to a position in the country far above that they have hitherto held. *R. J. Brown, Cirencester.*

*Draining Act.*—I beg to call your especial attention to a bill now before Parliament, entitled, "A Bill to extend the provisions of the Drainage of Lands Act, 1849, to the advance of Private Money for the Erection and Repair of Farm Buildings, &c." By the 2d clause it is provided, "That the money to be borrowed or advanced under this Act shall not in any case exceed in amount 18 months' value of land, in respect of which money shall be sought to be borrowed, &c." Now it appears to me that this restriction as to value will nearly render the Act worthless. I do not see why any rule should be laid down defining the amount to be advanced, because an inspection by a competent commissioner would have to be made of the farm and premises before any money could be obtained under the Act, and the security afforded by such inspection, coupled with the obligation on the owner to see the annual instalment of principal and interest repaid, would be sufficient protection against over building. But should it be thought necessary to interpose a limit to the amount to be borrowed, it certainly should not be less than four or five times the value of the land it was intended to benefit. I have at this moment several estates under my consideration to which an Act, allowing only 18 months' value of the land to be borrowed, would be of very little service. I will mention one instance: a large estate was left by its last proprietor with scarcely a farm house or farm offices of any kind upon it. On its coming to its present owner he began at once to erect the necessary offices for the respective farms. The farms do not average 400*l.* a year, and the house and offices erected upon each have averaged 2200*l.* Now in this case only 600*l.* could have been obtained under the Act; and had the estate descended to a gentleman with only a life interest in it, and having a numerous family, the farms must have gone without those buildings which an improved course of husbandry and difficult times render necessary. I trust to your influence and the influence of your numerous readers being given to obtain the removal or extension of this limit of value. *Roaldus.*

*Skylark, case of the; final hearing, and application for his discharge.*—I have waited one week, two weeks, and now nearly three weeks, most patiently, to see how many more witnesses would come forward against my hapless friend, the lark. To show the all-but universal reluctance entertained to prosecute this matter any further, one, only one English farmer (Mr. Hurt, of Etwall) has entered the witness-box against the defendant during all the period of discussion! The evidence of this gentleman, too, is rather general than particular; for it speaks only of larks having been seen to bite off the tender blades of young growing corn. I believe firmly they do, occasionally, so offend; and I can readily imagine that this vegetable diet amalgamates well with their animal food. Who would grudge it them? Mr. Hurt, however, shows no bitterness of spirit, and I thank him for giving his evidence so fairly. He proves neither too little nor too much. The second witness, Mr. Graham, of Cranford, enters the lists on my side. His arguments are good; he says, if the *larks* are to be killed, destroy also, for similar reasons, the mighty armies of sparrows, tits, rooks, chaffinches, &c., which devastate the land. He is right. If the principle is to be preserved intact, there must be "war to the knife" with the whole feathered tribe *feræ naturæ;* and even then, as Mr. G. naively remarks, future crops will be equally scanty and "gappy," and the whole blame cast upon the "grubs!" It is "plain to the meanest capacity," that if these birds were all killed, the GRUBS *would be* the destroyers of the corn. But thus it ever was, and thus it ever will be. We are a grumbling people; never satisfied. If Providence sends us cold, rainy weather, and it lasts, as we think, too long, we are in a rage immediately; we lament, in piteous tones, that the harvest must be a failure; that the price of bread will be raised, the poor oppressed, and the farmer ruined: and yet, after all, we find the harvest most abundant; bread cheap as ever, the poor constantly employed, and the farmer grumbling at the small value of his corn. Well is it for us that an all-wise Director sits at the helm of affairs! If the reins of power were in our hands, we should, Phaeton like, make a sad mess of it indeed! Let me volunteer now, on the part of my *protegé*, to withdraw the record, and enter a new plea of "guilty." The trembling defendant can then be brought up at once for judgment; and after being reprimanded, I urge his immediate discharge. We shall all of us hear his lovely voice somewhere this summer, as we journey about in the neighbourhood of corn-fields; and never shall any of us repent having let the "divine attribute of mercy" interfere on his behalf. "Use every man according to his deserts, and who would escape whipping?"—not *William Kidd, New Road, Hammersmith.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE MAY GENERAL MEETING was held at the Society's House, in Hanover-square, on Thursday last, the 22nd inst., his Grace the Duke of RICHMOND, K.G., President, in the Chair.

On the motion of Mr. RAYMOND BARKER, seconded by Mr. Brandreth, of Houghton-house, in Bedfordshire, and Mr. Hudson, of Castleacre Lodge, Norfolk, the Earl of Ducie was unanimously elected President of the Society, for the year ensuing the Windsor Meeting in July next.

On the motion of Mr. OVERMAN, of Norfolk, seconded by Mr. Knight, of Edmonton, the Trustees of the Society were re-elected.

On the motion of Mr. SILLIFANT, of Coombe, Devonshire, seconded by Mr. Cosens, of Langdon, in the same county, the Vice-Presidents of the Society were re-elected.

Mr. Fisher Hobbs, Mr. Jonas, and Mr. Robert Smith, having been appointed by the President as the Scrutineers of the Balloting Lists, they reported, that the election of 25 General Members of Council had been adopted by the Meeting, agreeably with the house-list of the Council.

The Secretary, by direction of the President, then read the following Report from the Council:—

REPORT.

The Council have to report that since their last General Meeting in December, the Society has been deprived by death of 65 of its members, including Sir Francis Lawley, Bart., one of the founders and trustees of the Society, and the Hon. Captain Pelham, a member of the Council and one of the Stewards of Implements at the Country Meetings of the Society; 216 names have also been removed from the list, while 163 new members have been elected during the half-year. The Society accordingly now consists of—91 life governors,

162 annual governors, 674 life members, 4175 annual members, and 19 honorary members; making a total of 5121 general members on the list of the Society.

The Council have transferred the name of Colonel Challoner from the general members of Council to the class of trustees of the Society, to fill the vacancy in that list occasioned by the decease of Sir Francis Lawley; and they have elected Mr. Pendarves, M.P., into the Council, to complete the number of their members.

The chemical investigations are proceeding in a satisfactory manner, and the subject of the absorptive properties of clay soils in reference to manuring matter continues to receive from Professor Way the attention which its importance demands. The torrefaction of soils, or burning of clays, for the purpose of effecting a beneficial change in their mechanical condition and physical properties, has been selected by the Chemical Committee as the new subject for investigation on the completion of the analysis of marls; and the Council hope that members residing in districts where such process is adopted with success, will take an early opportunity of sending to the Secretary specimens of such fertilising clays, in their natural as well as in their burnt state, along with a statement of any facts within their knowledge connected therewith. As Consulting-Chemist of the Society, Professor Way has spontaneously offered to reduce his charges to the lowest possible scale for making analyses of guano for the members; and as the Council consider a special analysis of that manure to be the only safeguard against the attempts at fraud so extensively practised by unprincipled dealers, they trust that the members of the Society will avail themselves of so cheap, simple, and effective a means of security.

The Council have decided to renew the grant of 200*l.* to the Royal Veterinary College, for the year, for the purpose of aiding that institution in carrying out one of the original objects of the Society, namely, "The improvement of the veterinary art, as applied to cattle, sheep, and pigs;" such renewal being made under the following conditions:—1. That all members of the Royal Agricultural Society of England shall have the privilege of sending cattle, sheep, and pigs to the Royal Veterinary College, on the same terms as if they were subscribers to it; and 2. That the Royal Veterinary College make a report at the end of the year of their proceedings in connection with this grant.

During the past half-year the Council have made such alterations in their bye-laws as will restrict the official business more completely to the Monthly Meetings, in order that the Weekly Meetings may be given up entirely to short introductory lectures, leading to subsequent discussion, and the communication of personal experience among the members, on topics connected with practical farming. Professor Way and Professor Simonds have each expressed their willingness to take such part in these proceedings as the Council may from time to time think desirable, and will make arrangements accordingly.

On a former occasion the Council reported to the members the offer of a site in Hyde Park for the Society's Agricultural Show of Breeding Stock: the conditions for the occupation of that site, however, which were subsequently submitted to the Council by the Commissioners of Woods and Forests, were such as the Council, acting on the part of the Society, could not accept. The First Minister of the Crown then expressed his desire to promote the objects of the Society by the offer of a site to which, from its locality, no such conditions as those necessarily required in the case of Hyde-park would apply. Accordingly, Her Majesty's consent, on his lordship's representation, was at once given for the Society to select a site in such one of the Royal Parks of Hampton-court, Bushy, or Kew, as might be found on inspection most suitable for the purposes of the Society. The Council, in pursuance of this offer, decided to select a site in Bushy Park, and were placed by the Government in communication with the Commissioners of Woods and Forests and the Master of the Horse, when the authorities of Windsor informed the Council of the gracious permission of Her Majesty, and that of His Royal Highness Prince Albert, to place the Home Park of that Royal demesne at the disposal of the Society, as a site for the purposes of that Country Meeting, should the Council consider it preferable to the one already selected in Bushy Park. The Council, on the report of the same Committee of Inspection that visited Bushy Park, decided that the Country Meeting of the present year should be held in the Home Park at Windsor, agreeably with the permission thus so graciously conceded to the Society: a permission which the members of the Society will not fail to regard as not only gratifying in itself, but as enhanced in its value by the condescending manner in which it has been communicated.

The attractiveness of the Home Park as a site for the meeting, and its immediate contiguity to the Great Western and South Western Railways, will no doubt tend to the access and accommodation of a larger number of visitors than have attended on any former occasion. Notwithstanding the short period during which the Mayor and Corporation of Windsor had on this occasion an opportunity of making arrangements for the Society's reception at a place of meeting to which they had invited its Members, the Council have the satisfaction of stating that those arrangements have been completed most satisfactorily, as in the case of other places where the Country Meetings of the Society have been held, the Mayor of Windsor, in the name and on behalf of himself and the Corporation, having entered into guarantees with the Commissioners of Woods and Forests, by which the Society will, agreeably with the Royal Permission, be granted the full and free occupation of the sites selected in the Home Park for the purposes of the Meeting, and be held harmless from all liability of damage and from all charges of occupation. The Mayor and Corporation have also placed the sum of 600*l.* to the credit of the Society's account with Messrs. Drummond, as a subscription from the town and neighbourhood of Windsor, intended to meet to that extent the heavy expenses which the Society always incurs in the preparations for its Country Meeting. The week of the Society's Country Meeting at Windsor will commence on Monday, the 14th of July next. The Show, as ascertained from the entries made, will consist of upwards of 1200 head of breeding stock, and will be opened to the public on the Tuesday, Wednesday, and Thursday; and the dinner of the Society will take place in the Home Park, on the Wednesday of the same week, in a pavilion constructed to contain 2000 guests. Members of the Society who apply to the Secretary for their Pavilion Dinner Tickets between the 20th June and the 5th July, will receive them on the usual conditions. The Council have nearly completed with the principal railways throughout the kingdom the arrangements for the conveyance of the stock to and from the Show; and in every case where they have at present received a decision, a free transit has been granted to the stock entered for the Windsor Meeting, both to and from the Show; and they have every reason to believe that the same liberal concessions in favour of the Society's Exhibitors, for the purpose of promoting the objects of the Society, will, as in former years, be conceded by the other railway companies, to whom they have also applied. The Council have taken measures for obtaining a greater number of nominations from which to select the Judges for the Country Meetings; but they still feel the imperfection of all plans hitherto adopted for their appointment. The Council duly appreciate the great importance of a strict and impartial adjudication of the Society's prizes, by men not only disinterested in themselves, but fully qualified by their abilities and experience for the arduous task confided to them; and the Council will esteem it a favour if the Members of the Society at large, will, from time to time, transmit to them any suggestions that may tend to promote this desirable object, and essentially to give effect to that competition for excellence which the Society, by its premiums, evinces so great a wish to excite. They have already referred it to the Judges, as part of their duty, to ascertain and report to the Council any failure in the due shearing of the sheep, or any excess in the market condition of the animals inconsistent with their character as breeding stock. They consider that the higher the character of their judges becomes, the more powerfully will they be able to aid the Council in repressing many of the abuses alleged to take place in the competition for prizes. They also hope that the time is not far distant when the judgments given in the Show-yard, in the case of Live Stock, will be founded on well defined-and acknowledged principles, having reference in each class to some assigned standard of excellence; and that these judgments although formed on less distinct and constant data than in the case of implements, may gradually approximate in some degree to uniform and consistent results, that may prove, like those in the implement yard, satisfactory, at the same time, both to the Judges, and the competing exhibitors; and thus tend to establish those points of form, development, and quality which constitute perfection of breed in the different classes of animals adapted for agricultural purposes.

The Council have selected Lewes as the place of the Country Meeting of the Society for the year 1852; and they have at the same time constituted a new district for the Country Meeting four years in advance from the present time, agreeably with their usual practice. The rotation of districts, therefore, now stands as follows:—

1852—South-Eastern, District comprising the counties of Kent, Surrey, and Sussex.

1853—South-Wales District, comprising the whole of South Wales, with the addition of the counties of Gloucester, Hereford, Monmouth, and Worcester.

1854—East-Midland District, comprising the counties of Leicester, Lincoln, Nottingham, and Rutland.

1855—North-Western District, comprising the counties of Lancaster, Westmoreland, and Cumberland, and the Isle of Man.

The Council, in conclusion, have every reason to congratulate the members on the continued prosperity of the Society, and on the undeviating manner in which it steadily pursues those practical objects connected with the improvement of land, the management of crops, and the general advancement of good husbandry, in which all its members are more or less deeply interested.

By order of the Council, James Hudson, Secretary.

On the motion of Sir R. P. Jodrell, Bart., seconded by Mr. Windgate, of Hareby House, Lincolnshire, this report was received and adopted by the meeting.

Mr. Raymond Barker, Chairman of the Finance Committee, read the following balance-sheet from the Auditors, on the part of the Society.

Half-yearly Account, ending the 31st December, 1850.

Receipts.

| | | | |
|---|---|---|---|
| Balance in the hands of the Bankers, 1st July, 1850 | £2435 | 3 | 8 |
| Balance in the hands of the Secretary, 1st July, 1850 | 19 | 17 | 3 |
| Dividends on Stock | 160 | 6 | 1 |
| Life-Composition of Governor | 50 | 0 | 0 |
| Life-Compositions of Members | 239 | 0 | 0 |
| Annual Subscriptions of Governors | 85 | 0 | 0 |
| Annual Subscriptions of Members | 1508 | 17 | 0 |
| Receipts on account of Journal | 234 | 13 | 6 |
| South Devon Prizes | 50 | 0 | 0 |
| Receipts on account of Country Meetings | 1143 | 2 | 11 |
| | £5925 | 19 | 11 |

(Signed) Thomas Raymond Barker, Chairman, C. B. Challoner, Thomas Austen, } Finance Committee.

Payments.

| | | | |
|---|---|---|---|
| Permanent Charges | £178 | 12 | 6 |
| Taxes and Rates | 13 | 15 | 2 |
| Establishment | 422 | 13 | 0 |
| Postage and Carriage | 20 | 8 | 6 |
| Advertisements | 13 | 8 | 0 |
| Law Expenses | 99 | 5 | 5 |
| Payments on account of Journal | 740 | 14 | 7 |
| Chemical Grant | 100 | 0 | 0 |
| Chemical Investigations | 100 | 0 | 0 |
| Veterinary Inspection | 12 | 12 | 0 |
| Prizes of the Society | 1517 | 14 | 6 |
| South Devon Prizes | 50 | 0 | 0 |
| Payments on account of Country Meetings | 1903 | 15 | 1 |
| Sundry Items of Petty Cash | 3 | 9 | 5 |
| Balance in the hands of the Bankers, 31st of December, 1850 | 738 | 2 | 8 |
| Balance in the hands of the Secretary, 31st of December, 1850 | 11 | 9 | 1 |
| | £5925 | 19 | 11 |

Examined, audited, and found correct, this 16th day of May, 1850.

(Signed) Thomas Knight, Robert Beman, Geo. I. Raymond Barker, } Auditors on the part of the Society.

On the motion of Mr. Batten, of Somersetshire, seconded by Mr. Dyer, of Hampshire, the best thanks of the Society were voted to Mr. Knight, Mr. Beman, and Mr. George I. R. Barker, for their care and kind trouble in auditing the accounts.

On the motion of Mr. Shaw, of London, seconded by Mr. Smith, of Exmoor, the best thanks of the Society were voted to Professors Way and Simmonds for the lectures they had kindly delivered before the members of the Society.

On the motion of Colonel Challoner, seconded by Lord Camoys, the best thanks of the meeting were carried by acclamation to his Grace the Duke of Richmond, the President of the Society.

The votes of thanks were respectively acknowleged by the parties present, to whom they had especial reference.

Lecture.—Professor Way will deliver a statement before the members in the council-room, on Wednesday next, at 12 o'clock, on the preparation, composition, and agricultural use of superphosphate of lime.

## METEOROLOGICAL REPORT.—May.

(*Continued from page 317.*)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| May 14 | 11 a.m. | 30.21 | ... | NE. Gentle breeze, and fine day. |
| | 10.50 p.m. | ... | 30.17 | |
| 15 | 7.20 a.m. | 30.16 | ... | a.m. Bright sunny cloudless morning, gentle NE. breeze. |
| | | | | 2 p.m. Wind shifted, and upper scud began to fly from SW., lower as before from NE. |
| ° | 5.55 p.m. | ... | 30.05 | Sunset. Very threatening appearance to W. |
| 16 | 7.50 a.m. | ... | 30.00 | NW. Gentle, fine, sunny morning. |
| | 12.40 p.m. | 29.97 | ... | SW. Wind shifted, and sky overcast; about 7 p.m. a slight shower of rain; wind S. |
| | 7 p.m | ... | 29.90 | |
| 17 | 7.30 a.m. | 29.84 | ... | SSW. Gentle, cloudy, pleasant day. |
| | 9.15 p.m. | ... | 29.83 | |
| Sun. 18 | 7.50 a.m. | 29.83 | ... | WSW. Brisk breeze; overcast, with very rainy appearance, but none fell. |
| † | 4.40 p.m. | ... | 29.78 | Thin, misty, overcast, passing swiftly from SW. |
| | 6.30 p.m. | ... | 29.79 | NW., and more moderate. |
| | 10.20 p.m. | 29.85 | ... | Fine evening and night. |
| ‡ 19 | 7 a.m. | ... | 29.84 | a.m. WNW. Stiff breeze; heavy clouds. |
| | 10.50 p.m. | 29.99 | ... | p.m. NW. Stiff breeze; fine day. |
| 20 | 7.35 a.m. | ... | 30.10 | Stiff NNW. breeze, and fine. |
| | 10.55 p.m | 30.20 | ... | |

* This storm must have been at some distance; it probably came from the Bermudas, and turned off to northward.

† This storm came from westward, and passed over England to the eastward.

‡ This was certainly a different current from the last one; it must have lain a long way to the westward, and probably on the 17th produced a heavy gale off Newfoundland.

Dorchester, May 22d. *F. P. B. M.*

(*To be continued.*)

## Notices to Correspondents.

Bricks: *W B H* says, "My object being the improvement of agricultural buildings, I take the liberty of asking your more experienced correspondents what is the best size and form to make brick for building farm premises, and whether or not it is advantageous to have them made hollow, and what is the best shaped mould for such a purpose? A brick-maker near me proposes a brick 18 inches by 9, made hollow by a machine."

Ducks: *Lover of Poultry.* Grains are hardly nutritive enough for growing ducks of seven weeks old, unless mixed with the finest pollard and a sprinkling of Barley-meal; Barley-meal with pollard and milk, not too stiff, is an excellent diet for fatting ducks. They will get on faster shut up in an old stable than when having the run of your rather large garden and pond. For further information buy a Poultry-book or two.

Escape of Milk: *W W.* When the cow becomes dry, the fistula in the teat may be cured by an operation, but not while milking continues. *W. C. S.*

Gorse: *Inquirer.* If for use as fodder, to cut it every other year will involve as little waste as possible.

Kilns: *G Forrester.* Your letter will be answered by a competent authority in a short time.

Management of Poor Land: *A Speculator* will find that all crops require manure. If your land is infertile, owing to poverty, lime will only add to the mischief. Plough it and re-plough it this summer, and force next year a crop of Turnip or Mangold Wurzel by means of guano and superphosphate, as you have no farm-yard dung at command; consume them on the land, and then grow Barley and seeds, and let the land lie down for a year or two.

Mangold Wurzel: *A B* says, "There is a paper, in the *Agricultural Gazette* of the 17th inst., signed 'H. E.,' in which he gives us an account of root crop culture. Will he be so kind as to explain whether Mr. Huxtable applies a pint of phosphate to each Turnip or Mangold Wurzel root? and if it be placed above the seed when it is dibbled?"

NAMES OF PLANTS: *Barley.* Common Burnet, or Poterium sanguisorba, and (?) Avena pubescens.

NIGHT SOIL: *J Macaulay.* Coal ash will not do so well as dry peat or peat charcoal. Add about two of the ash to one of night-soil; and six or eight tons of the mixture per acre, drilled in, will be a good dressing.

POTATOES: *Northwood.* It is too late to plant Potatoes. Turnips are now your best crop.

POULTRY: *Hertfordshire Lady.* The disease described is unfortunately not peculiar to your locality, nor uncommon amongst poultry, to which, as well as to pheasants, it is terribly fatal. Nor are Dorking fowls especially liable to it. Your cold Hertfordshire land may perhaps have a tendency to the endemical prevalence of the worm which accompanies the disease of the trachea, commonly called *the gapes*, but to say how it comes there, would be to open the whole difficult question of the *entozoa*. Although the malady may not be mentioned in "Farming for Ladies," you will find something about it at p. 257—81 of the 2d edition of Dixon's "Ornamental Poultry," and at p. 150 of the new edition of Richardson's "Domestic Fowl." Prevention of the disease is far better than cure. The best advice we can give you is entirely to change the spot where your poultry are reared, after having had the place inspected by some one competent to give an opinion. Perhaps game fowls may thrive better than Dorkings in your peculiar position.—*Constant Reader* should buy a poultry book. Having little more information than that the young pea white ducks *do* die, it is not easy for us to say *why* they die.

THE DROP AFTER CALVING: This very fatal disease prevails much more in some years than in others; occurs usually in the spring, and attacks more particularly those cows in which the lactiferous system is particularly developed. Thus Guernsey and Jersey cows are particularly liable to this disease, and the better they are kept, and the less exercise they take—in fact, the kinder they are used, the greater is the liability. It usually appears several days after calving, and with the third or fourth calf, and is ushered in by no premonitory symptoms. The animal is down and cannot rise; the head is turned back to the side, rumination ceases, the appetite is gone, the pulse is increased, and though the cow will moan heavily, she otherwise appears in a state of unconsciousness. Though inflammation of the womb is often present, it is not invariably so, and indeed does not constitute the disease, which is rather a paralysis of that part of the nervous system which supplies the hind extremities, the organs of the pelvis, and the mammæ with nervous energy, and it may be ascribed to the great and sudden demand made on this part of the system by the act of calving, and the development of the udder in the secretion of milk. There are two varieties of the disease, which may be distinguished as the *acute* and the *subacute*, the former usually fatal, the latter often curable. To prevent the occurrence of this disease in subjects predisposed to it, the cow for some little time previous to calving should be encouraged to take exercise, and should not be very highly fed; sort food may be given, and a dose of salts some days previous to calving. With regard to the cure, a powerful dose of physic should be given, such as a pound of sulphate of magnesia, with vegetable tonics, and followed by a pound of Linseed oil and 20 drops of croton oil. It is astonishing what immense doses of cathartic medicine may be given in this disease. An active blister should be applied to the spine, and the bladder relieved by means of a catheter. By following out the mode of treatment a cure may often be effected, unless the animal is in such a state of unconsciousness that fluids may be poured down the gullet without any effort being made either to swallow or resist them. These extreme cases are, we fear, "past all surgery." *W. C. S.*

TURNIPS: *W.* On the flat 24 inches is not too wide, if your land will grow a crop. Kohl Rabi should be sown in seed beds a month before his. and transplanted.

TURNIP SEED: *C A, Tottenham.* It must not be mixed with guano. Unfortunately your letter w s mislaid.

# Markets.

## COVENT GARDEN, May 24.

Hothouse Grapes are plentiful and cheap. Pine-apples are more abundant. The same remark applies to Strawberries. Dessert Apples chiefly consist of American Newtown Pippins. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant. Asparagus, young Carrots, French Beans, and Green Peas are still received from France, Cucumbers from Holland, and considerable quantities of Potatoes and Asparagus from Cornwall, as well as green Gooseberries. New Potatoes may be obtained at from 2d. to 6d. per pound; old kinds realise better prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 8s to 12s | Oranges, per doz., 9d to 2s |
| Grapes, hothouse, p.lb., 5s to 10s | — per 100, 6s to 14s |
| — Portugal, p.lb., 1s to 2s 6d | — Seville. p. 100, 7s to 14s |
| Strawberries, per oz., 6d to 1s | — — p. doz., 1s to 2s 6d |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p.bush., 6s to 10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, p.bsh, 20s to 22s |
| Almonds, per peck, 6s | — Brazil, p. bsh, 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 50s to 55s |
| Lemons, per doz., 1s to 2s | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 9d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 3s to 4s | Artichokes, Jerusalem. p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 3s | Lettuce, Cab., p. score, 6d to 1s |
| Broccoli, p. doz. bundl., 7s to 8s | — Cos, per score, 1s to 1s 6d |
| French Beans, p. 100, 2s to 3s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 3s 6d to 5s | Horse Radish, p. bundl., 1s to 5s |
| Rhubarb, p. bundl., 4d to 9d | Red Beet, per doz., 6d to 1s 6d |
| Potatoes, per ton, 90s to 200 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 4s to 8s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 6d to 1s 6d | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| — Turnip, p. doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Celery, p. bundle, 6d to 1s 3d | Mint, green, per bunch, 4d to 6d |
| Carrots, per doz., 6d to 7d | Basil, green, p. bunch, 6d to 9d |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s od to 4s | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per doz., 9d to 1s | |
| Shallots, per lb., 6d to 1s | |

## HOPS.—FRIDAY, May 23.

Messrs. Pattenden and Smith report that the market is firm, with very few Hops on offer, holders expecting much better prices.

## HAY.—Per Load of 36 Trusses.

### SMITHFIELD, May 22.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 80s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 55 68 | Second cut ... ... | 70 80 |
| Rowen ... ... ... | 55 65 | Straw ... ... ... | 26 30 |
| New Hay ... ... | — — | | J. COOPER. |

The supply large, and trade very heavy.

### CUMBERLAND MARKET, May 22.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78s to 84s | Interior ... ... ... | 70s to 78s |
| Inferior ditto... ... | 60 74 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 28 30 |
| Old Clover ... ... | 88 94 | | JOSHUA BAKER. |

## COAL MARKET.—FRIDAY, May 23

Holywell, 18s. 6d.; Eden Main, 14s. 3d.; Cowper's Hartley, 14s. 6d.; West Hartley, 14s. 6d.; Wallsend Biddell, 14s. 6d.; Wallsend Haswell, 15s. 6d.; Wallsend Stewarts, 15s. 6d.; Wallsend Tees, 15s. 6d.—Ships at market, 196.

## POTATOES.—SOUTHWARK, May 19.

The Committee report that during the last week there have been several fresh arrivals coastwise, with an unprecedented large supply by rail. Trade is so very heavy that less prices have again been submitted to. The following are this day's quotations:—York Regents, per ton, 80s. to 90s.; Scotch do., 60s. to 80s.; ditto Cups, 70s. to 80s.; Cathcies and whites, 50s. to 60s.; Cambridge Regents, 45s. to 70s.; Foreign whites, 60s. to 70.

## SMITHFIELD, Monday, May 19.

There was a great falling off in the supply of Beasts, as regards numbers, but the quality was still very good. The trade was much more cheerful than on Monday last, and 3s. 6d. was pretty generally made of choice descriptions. The number of Sheep was smaller, and the demand had considerably increased, consequently an advance of about 2d. per 8 lbs was obtained on most things. The rise was, however more perceptible on large than on small Sheep, the former being very low on Monday last. Lambs and Calves were freely disposed of at rather more money. From Holland and Germany there are 581 Beasts, 1360 Sheep, 178 Calves, and 47 Pigs; from Norfolk and Suffolk, 2000 Beasts; and from Scotland, 500.

| Per st. of 8 lbs.—s d s d | | Per st. of 8 lbs.—s d s d | |
|---|---|---|---|
| Best Scots, Herefords &c. | 3 4 to 3 6 | Best Long-wools | ... |
| Best Short-horns | 3 2 — 3 4 | Ditto Shorn | 3 6 to 3 8 |
| 2d quality Beasts | 2 6 — 3 0 | Ewes & 2d quality | ... |
| Best Downs and Half-breds | ... ... | Ditto Shorn | 2 8 — 3 4 |
| Ditto Shorn | 3 10 — 4 0 | Lambs | 5 0 — 5 6 |
| | | Calves | 3 0 — 4 2 |
| | | Pigs | 2 8 — 3 8 |

Beasts, 3499; Sheep and Lambs, 22,850; Calves, 269; Pigs, 510.

## FRIDAY, May 23.

We have a large supply of Beasts to day and only a small demand; consequently prices have given way, and several remained unsold. Sheep and Lambs are also more plentiful; trade is very dull for them, at a reduction of fully 2d. per 8 lbs. from Monday's quotations. There is a good supply of Calves; they meet with a fair demand at about late rates. From Germany and Holland we have 185 Beasts, 550 Sheep, and 176 Calves; from Scotland, 300 Beasts; from Norfolk and Suffolk, 450; and 114 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 2 to 3 4 | Best Long-wools | ... |
|---|---|---|---|
| Best Short-horns | 3 0 — 3 2 | Ditto Shorn | 3 4 — 3 6 |
| 2d quality Beasts | 2 4 — 2 10 | Ewes & 2d quality | ... |
| Best Downs and Half-breds | ... ... | Ditto Shorn | 2 8 — 3 2 |
| Ditto Shorn | 3 8 — 3 10 | Lambs | 5 0 — 5 8 |
| | | Calves | 3 0 — 4 2 |
| | | Pigs | 2 8 — 3 8 |

Beasts, 1150; Sheep and Lambs, 10,770; Calves, 406; Pigs, 520.

## MARK LANE.

MONDAY, May 19.—The supply of English Wheat to this morning's market was small, and although fine qualities are much wanted, no improvement upon late rates was obtainable, whilst the secondary were a slow sale on those terms. Foreign was not generally inquired after, and on the business done former prices were insisted upon.—For Barley and Oats the demand was good, and the extreme rates of last week were realised.—Beans must be written 1s. per qr. dearer.—Peas are more inquired after at former prices, having become cheaper than other spring corn.

| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40—45 | Red ..... | 36—43 |
| — — fine selected runs...ditto | 42—47 | Red ..... | —40 |
| — — Talavera ..... | 45—52 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 32—50 | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26—31 | Malting . | 22—26 |
| — Foreign... grinding and distilling | 18—23 | Malting . | 23—26 |
| Oats, Essex and Suffolk ..... | 17—19 | | |
| — Scotch and Lincolnshire...Potato | 19—23 | Feed ..... | 16—21 |
| — Irish .....Potato | 17—21 | Feed ..... | 16—18 |
| — Foreign .....Poland and Brew | 18—21 | Feed ..... | 17—20 |
| Rye ..... | 22—24 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..24s to 28s .....Tick | 24—29 | Harrow . | 24—29 |
| — Pigeon.....27 — 33... Winds | — | Longpod | — |
| — Foreign .....Small | 22—28 | Egyptian | 20—22 |
| Peas, white, Essex and Kent.....Boiler | 23—26 | Suffolk... | 26—28 |
| — Maple.....26s to 28s .....Grey | 23—24 | Foreign . | 24—31 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—39 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 16—23 | Per sack | 26—34 |

FRIDAY, May 23.—The arrivals of grain this week, either English or foreign, have been small; this morning's market was thinly attended, and only a retail business was transacted in Wheat; holders, however, insisted on Monday's prices for both English and foreign. Baltic f. o. b. offers find buyers on late terms. Spring corn of all descriptions fully supports our last quotations, Oats in some instances being held for an advance, which is not realised. The Flour trade is quiet, and prices are unaltered. The weather during the past week has been on the whole favourable to vegetation, excepting two cold nights. Great firmness continues to prevail in the country markets, and Wheat in some agricultural districts has further improved in value.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| April 5..... | 38s 4d | 23s 10d | 17s 0d | 23s 11d | 25s 11d | 34s 8d |
| — 19..... | 39 5 | 24 5 | 17 5 | 24 7 | 26 10 | 35 9 |
| — 26..... | 39 3 | 24 4 | 17 10 | 24 2 | 26 9 | 35 5 |
| May 3..... | 38 8 | 24 3 | 18 3 | 23 11 | 27 9 | 35 4 |
| — 10..... | 38 10 | 24 4 | 18 8 | 24 7 | 27 10 | 35 11 |
| — 17..... | 38 2 | 24 2 | 18 11 | 25 9 | 28 10 | 37 2 |
| Aggreg. Aver. | 38 10 | 24 3 | 18 1 | 24 7 | 27 5 | 35 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | April 5 | Apr. 19. | Apr. 26. | May 3. | May 10. | May 17. |
|---|---|---|---|---|---|---|
| 39s 5d | ... | ... | ... | ... | ... | ... |
| 39 3 | ... | ... | ... | ... | ... | ... |
| 38 10 | ... | ... | ... | ... | ... | ... |
| 38 8 | ... | ... | ... | ... | ... | ... |
| 38 4 | ... | ... | ... | ... | ... | ... |
| 38 2 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, May 20.—At this day's market there was a fair attendance of the town and country trade, who, however, showed little disposition to enter into business. Wheat met with a slow retail sale, at about the prices of this day week; but Flour was 6d. per sack and 3d. per barrel lower. Oats and Oatmeal, being more plentiful than of late, were rather easier to buy than on Friday, but still 1d. per 45 lbs. and 3d. per load dearer than on this day week. Barley, Beans, and Peas were in moderate request, at full prices. A liberal supply of Indian Corn being expected to arrive in a day or two, buyers acted with great caution, and price s receded 6d. per qr.; 21s. being the top price of American yellow from the quay.—FRIDAY, May 16.—The supplies of grain and Flour continue on a moderate scale. At this morning's market there was little passing in any article of the trade, the buyers, having supplied themselves pretty well last week, are enabled to keep aloof, but no alteration can be made in the general quotations of Tuesday.


MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30s. per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1s. 2d. per lb.

Fine sorts, for forming Lawns, 1s. 3d. per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, DOWN-STREET, Piccadilly, London.

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND CO., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.

Mixtures for portions of Parks near Mansions.

Mixtures for Garden Lawns and Grass Plots.

Mixtures for renovating Old Pasture Land.

Italian and other Rye-grasses.

White Belgian and Red Altringham Carrots.

Gibbs' new very large Parsnip.

Orange Globe Mangold Wurzel.

Long Red and other kinds.

Drumhead and Thousand-headed Cabbages.

Swedes, Hybrids, and other Turnips.

Clovers, Kohl Rabi, French and English Furze.

Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B. Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

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Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

IRON GATES, HURDLES, WIRE WORK, &c.

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MANUFACTURE all kinds of Park Entrance, Carriage and Field Gates, Wickets, Wrought and Cast Iron Gate Pillars, Plain and Ornamental Fencing, Palisading, and Balconies. Ox, Cattle, Sheep, and other Hurdles.

Tree Guards, Garden Seats, Garden Rollers, Wheelbarrows. Stable Fittings, &c.—Iron Work of every description.

Wire Work in great variety, comprising Gothic and other Fencing, Flower Stands, Trainers, Arches, Pheasantries, &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and on the most moderate terms.

Manufacturers of every kind of Solid Iron and Tube BEDSTEADS, with all the recent improvements.

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WEDLAKE AND THOMPSON, Inventors, Improvers, and Manufacturers of the double-cylinder HAY MACHINE (which obtained the prize of the Royal Agricultural Society), beg to call the attention of agriculturists to the above valuable Implement; the motion of which, by a very simple contrivance, is reversed, and turns the hay after being shaken from the swathe, thereby effecting a considerable saving in the expence of manual labour. Horse, Hay, and Corn Rakes, Oat Bruisers, and every description of Agricultural Implements, upon the most improved principle, and at a great reduction in price.—Address: Union Foundry, Hornchurch, Essex.

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## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— 30 inches wide and from 40 to 50 long ... Or 20 ,, ,, 50 to 70 ,, | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— Under 8 by 6 | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches | 0 5¼ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7⅞ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities* 62 *by* 18 *inches, for* 10 *feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the* 30*-inch widths will be sent, unless otherwise specified.*

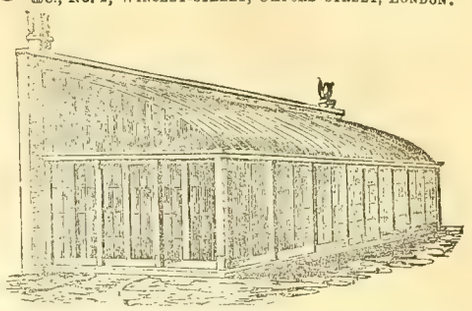
THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

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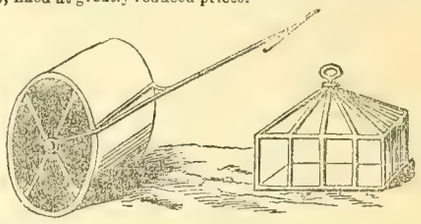
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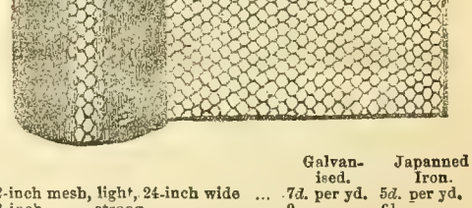
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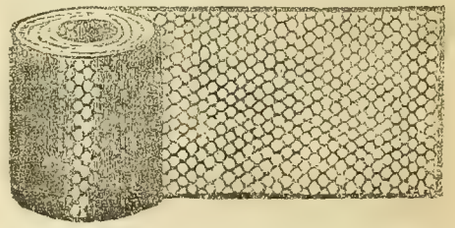


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JAVA ORCHIDS, &c.

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FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, June 2, at 2 o'clock precisely, by order of Messrs. Antony Gibbs and Sons, the Importers, 500 Tons, more or less, damaged PERUVIAN GUANO.—Catalogues, and further particulars, in due time, from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms.

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| Aerides maculosum | Dendrobium Devonianum |
| ,, quinquevulnerum | ,, Dalhousianum |
| ,, odoratum purpurescens | ,, Paxtonii |
| ,, crispum | ,, formosum |
| ,, rubrum | ,, armenum |
| ,, affine | ,, Ruckerii |
| Cattleya Acklandii | Phalænopsis rosea |
| ,, bulbosa | ,, grandiflora |
| ,, maxima | ,, amabilis |
| ,, superba | Saccolabium guttatum |
| ,, Mossiæ | ,, præmorsum |
| ,, crispa | ,, Blumei major |
| ,, bicolor | ,, calceolaria |
| ,, labiata | ,, papillosum |
| ,, Perrinii | Vanda Batemanii |
| ,, Skinnerii, &c. | ,, violacea |
| Chysis bractescens | ,, tricolor |
| ,, albida | ,, Roxburghii |
| ,, aurea | ,, teres, &c. &c. |

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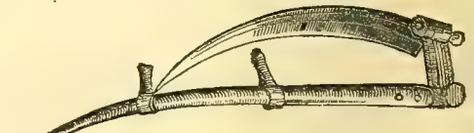
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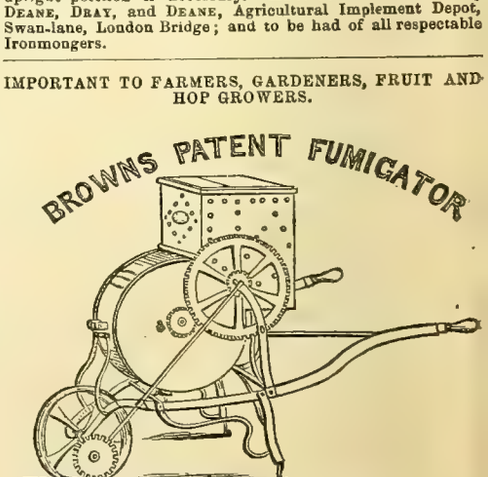
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IMPORTANT TO FARMERS, GARDENERS, FRUIT AND HOP GROWERS.




"The skilful farmer, chaff
And blazing straw before his orchard burns
Till all, involved in smoke, the latent foe
From every cranny suffocated falls."

THOMSON'S SEASONS.

BY means of this instrument, the smoke produced by burning refuse vegetables can be directed in a cool state upon Agricultural Drilled Crops, or upon Wall or Standard Fruit Trees, Hops, &c., and blight or insects destroyed. It is also available for filling large houses with Smoke of Tobacco or other material; disinfecting impure places in ships and buildings; and for eradicating vermin. The machine may be obtained with or without the drilling apparatus.

Manufactured by Messrs. DEANE, DRAY, and DEANE, Swan-lane, London.

---

Price 6d., free by post,

REMARKS ON FUMIGATING HORTICULTURAL AND AGRICULTURAL CROPS.

London: Published by BRADBURY & EVANS, Bouverie-street.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 24, 1851.

# THE GARDENERS' CHRONICLE

AND

# AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22—1851.] SATURDAY, MAY 31. [PRICE 6*d*.


INDEX.


Acre, the ..... 348 *c*
Apple, Normandy Pippin ..... 344 *c*
Asparagus, to force ..... 341 *c*
Beans, drill culture of, in Belgium ..... 347 *b*
Bermuda, Oranges, &c., in .... 339 *b*
Birds, British song ..... 341 *a*
Botanical Society of Edinburgh ..... 342 *c*
Britain, climate of ..... 339 *c*
Calceolaria, the ..... 341 *c*
Calendar, Horticultural ..... 344 *a*
Cattle, to feed ..... 348 *a*
Charcoal ..... 342 *a*
Climate of Britain ..... 339 *c*—341 *b*
Cornwall Hort. Society ..... 343 *b*
Cows, produce of ..... 348 *b*
Crystal palace ..... 345 *c*
Draining, deep ..... 348 *c*
Drills ..... 345 *c*
Eucalypti ..... 342 *a*
Farmers' clubs—Turnips ..... 349 *a*
Fortune (Mr.), news from .... 339 *b*
Game ..... 348 *c*
Gardening, French notions of English ..... 342 *b*
Gardeners' Benevolent Institution ..... 340 *b*
Gardnerian Herbarium ..... 343 *c*
Glycine in China ..... 340 *c*—343 *b*
Guano, new source of ..... 349 *b*
Herbarium, Gardnerian ..... 343 *c*
Mange, red cure for ..... 349 *c*
Notes of a Traveller ..... 340 *c*
Oranges, Bermuda ..... 339 *b*
Orchids for the Million ..... 340 *b*
— sale of ..... 343 *c*
Phloxes, to hybridise ..... 342 *b*
Pigs, cure for scour in ..... 349 *c*
Plants, to acclimatise ..... 341 *b*
Potatoes, seed ..... 342 *b*
Poultry ..... 345 *b*
Rabbits, to keep from barking trees ..... 342 *b*—343 *c*
Railway farm ..... 349 *c*
Ranunculuses ..... 341 *c*
Rhododendrons, to hybridise .. 342 *b*
Royal South London Floricultural Society ..... 342 *b*
Scott's (Lady) Petersham .... 343 *b*
South Devon Hort. Society .... 343 *b*
Sowing machines ..... 346 *a*
Tea-culture in India ..... 339 *b*
Timber, durability of ..... 342 *a*
Traveller, notes of a ..... 340 *c*
Trees, to keep rabbits from barking ..... 342 *b*—343 *c*
Turnip crop, culture of ..... 349 *a*
Weather, the ..... 349 *b*
Wheat in beds ..... 348 *b*
— Tuliian ..... 348
Wistaria sinensis ..... 340 *c*—343 *b*


STAINES HORTICULTURAL EXHIBITION, to be held on SATURDAY, June 21st, 1851. A Prize of THREE POUNDS will be given for the best Collection of 6 Distinct Species of Stove or Greenhouse Plants, which shall not contain more than two of the same genus—excluding Pelargoniums, Fuchsias, and Calceolarias. Confined to Gardeners only. Persons exhibiting in this class will not be allowed to compete for the 5*l*. Prize. Open to all Competitors.

A Prize of FIVE POUNDS will be given for the best Collection of 10 Distinct Species of Stove or Greenhouse Plants, which shall not contain more than two of the same genus—excluding Pelargoniums, Fuchsias, and Calceolarias. A second Prize of 2*l*. 10*s* will also be given.

A Prize of FOUR POUNDS will be given for the best Collection of Six Pelargoniums, varieties, in No. 12-sized pots. A second and third Prize will also be given.

A Prize of THREE POUNDS will be given for the best Collection of Six Pelargoniums, varieties, in No. 24-sized pots. A second and third Prize will also be given.

Six Exotic Orchids, varieties - - - One Prize
Collection of British Ferns - - - ditto
Collection of British Plants and Grasses ditto

The Judges will not be bound to award the full amount of a Prize if they deem the production unworthy of it. No Article sent for Competition will be allowed to be touched or removed till 6 o'clock.

Great difficulty having hitherto existed in making arrangements for the Show, Exhibitors are earnestly requested to forward to the Secretaries, at least three days previous to the Exhibition, a list of the articles they intend to produce.—All Productions must be on the grounds by 11 o'clock, after that time they will be disqualified.—CHARLES WALLIS, WILLIAM WATKINS, Honorary Secretaries.

THE YORKSHIRE FLORAL AND HORTICULTURAL SOCIETY, open to all England.

*President and Patron.*

His Grace the LORD ARCHBISHOP OF YORK.

*Vice-Patrons.*

His Grace the Duke of Leeds
The Most Noble the Marquis of Londonderry
The Right Hon. the Earl Fitzwilliam
The Right Hon. the Earl of Effingham
The Right Hon. the Earl of Carlisle
The Right Hon. Lord Feversham
The Right Hon. Lord Wharncliffe
The Right Hon. Lord Londesborough
The Right Rev. the Lord Bishop of Ripon
The Hon. and Very Rev. the Dean of Ripon
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Sir W. Payne, Gallwey, Bart., M.P.
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Robert D. Oxley, Esq.
James Clay, Esq., M.P.
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Edward Waud, Esq.
The Rev. H. F. Barnes, M.A.
The Rev. R. M. Taylor, M.A.

*Lady Patronesses.*

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The Right Hon. Lady Feversham
The Rt. Hon. Lady Wharncliffe
The Right Hon. Lady Londesborough
The Lady Frankland Russell
The Lady Boynton
Mrs. Prickett
Mrs. Boynton
Mrs. Barnes
Mrs. Creyke, Rawcliffe Hall

With others in course of addition.

The object of this Institution is to encourage and promote the Cultivation of Fruits, Flowers, and Vegetables, and to improve the practice of Floriculture and Horticulture in general; and is proposed to follow the Yorkshire Agricultural Society in its Meetings, and not only thus secure a large and influential attendance, but also give additional interest to the Meetings of that valuable Society itself, which has specially approved of the formation of this.

The Society's Exhibition in this, its First Year, will be held near to BURLINGTON AND THE QUAY, on TUESDAY and WEDNESDAY, the 5th and 6th days of August next; and in addition to the Prizes usually offered for Flowers, Fruits, and Vegetables, the Society has determined to offer Prizes for a GARDEN DESIGN, accompanied with a short Essay and Monthly Calendar of Operations on the general cultivation thereof; also, Prizes for Wirework, Tools, and Materials for Protecting Trees from Frost, Birds, and Insects.

Particulars and Prize Sheets can be had on application to the SECRETARY, at Thirsk, to whom also the Names of Members or Subscribers should be sent.

The Society has adopted the following Rule (subject to the Transfer regulation):—"That Members and Subscribers of 5*s*. and upwards be entitled to exhibit free of any charge; and that Subscribers of from 5*s*. to 10*s*. be entitled to One Ticket of Admission; 15*s*., Two; and 1*l*. and upwards, Three."

And it has also been determined to devote the surplus of any proceeds it may have to the charitable institutions of the locality where the Exhibition is held. By order,

Thirsk, May 31. ROBERT HICK, Secretary.

"THE FLOWER OF THE DAY" may now be seen in bloom at J. AND C. LEE'S NURSERY, HAMMERSMITH. Price, per dozen, according to size, on application.

AZALEA INDICA "SYMMETRY" (KINGHORN), will be sent out on 1st June, price 21*s*. Discount to the trade.

FUCHSIA "CLAPTON HERO" (BATTEN). Ditto "PAGODA" (BATTEN).—These can with confidence be recommended as the best of the dark varieties of this season; price 7*s*. 6*d*. each.

POTENTILLA LUCIA; OR, BICOLOR GRANDIFLORA.—Colour, sulphur yellow, edged with scarlet; vigorous grower, and produces the largest flowers of any known variety; 5*s*. each.

POTENTILLA ANTWERPIENSIS.—Colour, dark brilliant orange, dwarf growth, producing semi-double flowers in great profusion, which do not close at night; 7*s*. 6*d*. each.

SWEET ORANGES, 18 inches to 2 feet, in Fruit; 10*s*. each.

Also all the new English and Continental Verbenas, Fuchsias, Liliputian Chrysanthemums, German Daisies, &c. For particulars of which we refer to our general Catalogue just published, which can be had by post, free, on application.

HUGH LOW and Co., Clapton Nursery, London.

CALIFORNIAN FLOWER SEEDS.—The undersigned having received a collection of CALIFORNIAN SEEDS, chiefly Perennials, among which some striking novelties may be anticipated, he offers them at the following prices, in small packets, prepaid:—

The entire collection of 30 packets ... 18*s*.
Half of ditto, or 15 ditto ... ... ... 9*s*.
A selection of 10 sorts ... ... ... 7*s*. 6*d*.

Referring to his advertisement in the *Gardeners' Chronicle* of the 3d and 10th inst., he begs to suggest, that the flower seeds may still be sown with advantage during the next fortnight. Of the hardy Annuals, he recommends half to be sown now, and the other half in the autumn, for early flowers next year. The cold, backward springs of late, render such precaution necessary. Perennials and Greenhouse Seeds may be sown till July.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

THE VICTORIA REGIA IS NOW FLOWERING, GROWING IN THE OPEN AIR, AT

J. WEEKS AND CO'S., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers.

NOTICE.—AMERICAN PLANTS.

GEORGE BAKER begs to announce that his extensive collection of AMERICAN PLANTS will be in bloom on and after the 30th May, and may be seen gratis. The Nursery is situated seven miles from Staines Station, South-Western Railway, and three miles from Virginia Water, where conveyances may always be obtained.

G. B. takes this opportunity of informing the Nobility, Gentry, and Public that he is a Contributor to the American Exhibition, Royal Botanic Garden, Regent's Park.

Windlesham Nursery, Bagshot, Surrey, May 27.

NOTICE.—EXHIBITION OF AMERICAN PLANTS, KNAP-HILL NURSERY, NEAR WOKING, SURREY.—The American Plants, at this Nursery, are now in bloom, and may be seen daily (gratis), Sundays excepted. The Knap-hill Nursery is within one hour's ride of London, being near the Woking Station, South-Western Railway, where nearly every train stops, and from whence conveyances may at all times be obtained.

HOSEA WATERER takes this opportunity of stating that the Exhibition of American Plants in the Horticultural Society's Garden, Chiswick, is entirely supplied from his Nursery, and that he is *not* this year a contributor to that in the Botanic Gardens, Regent's-park.—Knap-hill, Woking, Surrey, May 31.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that his splendid Collection (containing many thousand specimens) of RHODODENDRONS, AZALEAS, &c., is now in full bloom, and may be seen daily, gratis, Sundays excepted.

The Nursery is situated three miles from the Blackwater Station, South-Eastern Railway, and near the Farnborough Station, South-Western Railway.—Conveyances are always to be obtained at either Station.

He also begs to state, that he is the principal contributor to the great American Plant Exhibition, now on view at the Botanic Gardens, Regent's Park.

STORY'S SUPERB SEEDLING FUCHSIAS.—FUCHSIA PRINCE ARTHUR (STORY'S).—This is the finest of all the double corolla flowers yet raised and offered by Mr. Story. The corolla is of intense purple and well formed; the tube and sepals are a fine scarlet, smooth and without excrescence, the sepals being sufficiently reflexed to show the corolla to advantage. It is a free bloomer, of good habit, and a great novelty. Strong plants, 10*s*. 6*d*.

FUCHSIA ATTRACTION (STORY'S).—This is a very attractive flower, of extra large size and brilliant colours. The tube and sepals are vermilion, the corolla a fine purple, and rendered very conspicuous by the sepals reflexing. A free-flowering and saleable variety. Strong plants, 7*s*. 6*d*.

FUCHSIA DEVONIENSIS (STORY'S).—This is a fine variety of excellent habit, with a short scarlet tube, and sepals of fine texture; corolla beautiful, light violet, and well formed. It is an abundant bloomer, and will be an acquisition to every collection. Strong plants, 7*s*. 6*d*.

The set of three, taken together, package included, for 21*s*., for cash (prepayment). The usual discount to the Trade.

Messrs. VEITCH and SON have much pleasure in offering the above beautiful Fuchsias. They are seedlings raised in 1849, and proved in 1850 by W. H. Story, Esq., of Whitehill, Newton Bushell, and were selected from a vast number of seedlings. They are all perfectly distinct, and worthy of general cultivation. Mr. Story's well-known character as a raiser of seedlings will be a sufficient guarantee that he would permit nothing to be sent out, with his name attached, that was not of first-rate character, and calculated to give satisfaction.

N.B.—A remittance or reference from unknown correspondents required; this will be strictly adhered to.

Exeter, May 31.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS offers the following Stock of Bedding-out Plants, strong and vigorous, in 60-size pots, and which will be sent to any part of the kingdom, carriage paid to London:

SCARLET GERANIUMS, Tom Thumbs, &c., 4*s*. per doz., strong.
VERBENAS, all the best varieties in cultivation, 3*s*. per doz.
PETUNIAS, Splendens, Beauty, and Fielderi, 4*s*. per doz.
FUCHSIAS, all the best leading varieties, 4*s*. per doz.
HELIOTROPES, including the new varieties, 3*s*. per doz.
PENTSTEMONS, fine varieties, 4*s*. per doz.
AGERATUM CŒLESTINUM, 3*s*. per doz.
CALCEOLARIAS, Viscosissima and other varieties, 3*s*. per doz.
ANAGALLIS, blue and red, 4*s*. per doz.
NIEREMBERGIAS, 4*s*. per doz.
CUPHEA PLATYCENTRA, 3*s*. per doz.
GAILLARDIA PICTA, &c., 3*s*. per doz.—May 31.

"BERBERIS DARWINII."

(Beautiful Hardy Evergreen Shrub, from the Snow Line on the Andes of Patagonia.)

MESSRS. VEITCH AND SON feel the greatest confidence in offering for sale the above valuable BERBERIS, a plant and also a cut specimen of which were exhibited at the Horticultural Society's Rooms in Regent-street, the 1st of April last, and received the "*Large Silver Medal.*" They beg to refer to Dr. Lindley's report in the *Gardeners' Chronicle* of April 5th, as follows:—

"This proves to be a species whose importance it is almost impossible to overrate, inasmuch as it is exceedingly handsome, perfectly hardy, and naturally produces its rich orange blossoms in great profusion during the early months of the year. Indeed, for general value, we have nothing at present at all to be compared with this fine Berberry."

Strong plants will be ready for sending out on and after the 12th of June next, at 21*s*. each, with the usual allowance to the trade.—Exeter, May 31.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, is now prepared with extra strong plants of the following New and First class DAHLIAS:—

| | |
|---|---|
| Yellow Superb | Baltic |
| Hon. Mr Herbert | Antoinette |
| Beauty of Kent | Miss Pope |
| Summit of Perfection | One-in-the-Ring |
| Nepaulese Chief | Miss Herbert |

The whole stock of these are in the possession of JOHN KEYNES, and Prizes for the best Six Blooms from the above will be given at three of the leading Exhibitions of the season. Orders for Dahlias from other growers faithfully executed in conjunction with his own.—Salisbury, May 31.

VICTORIA REGIA, and other AQUATICS.—JOSEPH KNIGHT and THOMAS A. PERRY avail themselves of this excellent medium to acquaint their distinguished patrons that they have, at an outlay of little less than 500*l*., erected a house for these much-admired plants (for an interior view of which see page 535 of the work called "London and its Vicinity Exhibited in 1851," published by Weale), and that they are not only able to show the following and other beautiful kinds, growing in great luxuriance, to those who will condescend to honour their establishment with their visits (which are most respectfully solicited), but are also able to supply them in healthy young plants, and at reasonable prices.

VICTORIA REGIA.
NYMPHÆA RUBRA.—The flowers of this superb species are an intense carmine in colour.
" SANGUINEA.
" DENTATA.—This magnificent Sierra Leone species bears flowers nearly a foot wide.
" CÆRULEA.
" STELLATA.—A beautiful and rather small tropical kind, which would flower in a china vase.
" LOTUS.
" MEXICANA.
" ESCULENTA.
" PYGMÆA.—This tiny water-lily may be flowered in the smallest vase, and would, with little attention, delight in a lady's boudoir.
" CYANA.
" MICRANTHA.

| | |
|---|---|
| NELUMBIUM SPECIOSUM | NELUMBIUM ALBUM. |
| " LUTEUM. | " FLORE PLENO. |

Those who saw the grandeur of these noble oriental plants, in our small aquarium, last year, will remember them as among the most beautiful things ever introduced into this country.

THALIA DEALBATA.—This is a very graceful plant, and flowers freely.
CALADIUM ESCULENTUM.—The leaves of this gigantic plant sometimes measure 4 feet in length, and 3 in width, and have the appearance of large shields.

| | |
|---|---|
| CALADIUM BICOLOR. | CALADIUM PICTUM. |
| " ATROPURPUREUM. | " PUNCTATUM. |

CYPERUS FLABELLIFORMIS.
" ALTERNIFOLIUS.
PAPYRUS ANTIQUORUM.
CERATOPTERIS THALICTROIDES.—This is the interesting water Fern.
PISTIS STRATIOTA.
PONTEDERA CRASSIPES.

With numerous others, of great interest and beauty.

KNIGHT and PERRY feel that they are perhaps outstepping their province, yet they cannot refrain from suggesting, that an aquarium, or residence for water plants, may be made a most agreeable and elegant appendage to the mansion; for, if designed and executed with taste and judgment, it might combine not only a fit abode for Ferns, Eastern Orchids, and low growing Palms, but also the comfort and healthfulness of a tepid bath, the luxury of which, amid tropical vegetation, disarmed of tropical dangers, may be more easily imagined than described.

The convenience of their Brooklands Nursery enables them to grow an excellent collection of hardy water plants, of which they would most respectfully solicit an inspection.

Exotic Nursery, King's Road, Chelsea, May 31.

JAMES TURRELL has to offer the finest and best New Scarlet GERANIUMS in cultivation.

FIRE KING.—Intensely vivid scarlet, very clear white eye, fine habit, and free bloomer (*individual* flowers, 1½ inch in diameter). Price 7*s.* 6*d.*, strong.

WARNEFORD PET.—Bright scarlet, with white centre; good shape. This variety is most valuable for bedding, as it is more dwarf than compactum, and a good bouquet flower. Price 5*s.*, strong.

NEW FANCY PELARGONIUM, "STRIATA COCCINEA."—Beautiful dark mulberry upper petals, the lower strikingly veined, and of the same colour. Price 10*s.* 6*d.*

Strong Bedding Plants, of sorts, 4*s.* per dozen; Crusader and Mount Etna, 1*s.* each. The Trade liberally treated.

Providence Nursery, Ramsgate.

---

NEW DAHLIAS; E. FOSTER'S, ESQ., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. MRS. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d.* and 5*s.* packets, post paid, for prepayment.

---

MEDINILLA MAGNIFICA.

MESSRS. VEITCH AND SON have much pleasure in offering this splendid and unique Stove Plant, with pendulous bunches of flowers 12 to 18 inches in length, having beautiful large rose-coloured bracteas.

It was exhibited at the Horticultural Society's Room, Regent-street, on the 2d of April, 1850, and was awarded the "*Large Silver Medal.*" For description, see *Gardeners' Chronicle*, April 6th, 1850.

It was again exhibited at Chiswick, on Saturday last, May 3d, where it received the "*Certificate of Excellence.*"

It is figured in Curtis's "Botanical Magazine" for September, 1850.

It has been so much admired by all who have seen it, and is altogether so first-rate a plant, that Messrs. VEITCH and SON can recommend it with the most perfect confidence.

Strong plants will be ready for delivery on and after the 12th of June next, at 63*s.* each, with the usual allowance to the trade; and, when six plants are taken, an additional one will be put over.—Exeter, May 31.

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TULIPS—SPLENDID OPPORTUNITY.—FOR SALE, by subscription, at 3*s.* every variety, indistinctly, of the celebrated collection of M. TRIPET, of Paris, containing 1360 different specimens, admitted to the Great Exhibition, visited by Napoleon in 1805, awarded 3 gold medals in France and Belgium. This collection is 100 years old, more than 300 varieties of which are unique. Chance alone will allot the different demands, which must be chosen according to their respective numbers in the Catalogue. Delivered with their names, and thoroughly warranted. Varieties are sold, from 12 in number. To be seen in full blossom, opposite the Exhibition.—Apply, post-paid, to Mr. FORNEY, Bute-street, Old Brompton, near London.

---

FERNS.—The present prevailing taste for this interesting and elegant tribe of plants, has induced the Subscribers to offer them in selections as under:—12 distinct exotic species, 30*s.* to 60*s.*; 25 ditto, 50*s.* to 100*s.*; 20 distinct hardy species, 1*s.* to 1*s.* 6*d.* each. Selection of sorts left to H L. and Co. It would be advisable to state if they are required for Wardian cases, as small growing sorts would then be selected.—HUGH LOW and Co., Clapton Nursery, London.

---

CATTLE DRUMHEADS (fine), warranted true, by THOMAS WELLAND, Surrey Gardens, near Godalming, Surrey.—Delivered at Godalming Station, 3*s.* 6*d.* per 1000, crates included. Cauliflowers 2*s.* 6*d.* per 100.

---

CHOICE PLANTS.

J. FOWLE AND SON are now prepared to send out Smith's new collection of VERBENAS, the set of 12, well rooted, for 1*l.* 5*s.*; Dielytra spectabilis, 15*s.* per doz.; Fuchsia serratifolia floribundissima, 5*s.* each; Choice do., of last season, 9*s.* per doz.; Antirrhinums, 6*s.* and 9*s.* per doz.; Calceolaria, Kentish Hero, 9*s.* per doz.; Choice Bedding-out Plants, in great variety, 4*s.* per doz. Catalogues may be had on application. Post-office orders made payable at Kennington Cross.

Holland Nursery, Brixton Road, Kennington, Surrey.

---

GRASS AND OTHER SEEDS.

THOMAS GIBBS AND Co., the Seedsmen to the "Royal Agricultural Society of England," corner of **Half Moon-street** Piccadilly, beg to call the attention of their friends to the following Seeds:

Mixtures of selected Natural Grasses for laying down Land to permanent Meadows and Pastures, apportioned to suit the nature of the soil.

Mixtures for portions of Parks near Mansions.
Mixtures for Garden Lawns and Grass Plots.
Mixtures for renovating Old Pasture Land.
Italian and other Rye-grasses.
White Belgian and Red Altringham Carrots.
Gibbs' new very large Parsnip.
Orange Globe Mangold Wurzel.
Long Red and other kinds.
Drumhead and Thousand-headed Cabbages.
Swedes, Hybrids, and other Turnips.
Clovers, Kohl Rabi, French and English Furze.
Sainfoin, Rape, Tares, White Mustard, and all Agricultural and Kitchen Garden Seeds, &c.

Priced Lists are now ready, and will be forwarded free, on application, by post, or otherwise, to corner of **Half Moon-street** Piccadilly, London.

---

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to notice their mixtures of GRASS SEEDS for Laying Land down to Permanent Grass, are now ready for delivery. They have reduced the price to 30*s.* per acre, allowing 2 bushels 12 lbs. to the acre.

Mixed sorts for improving old Grass Land, 1*s.* 2*d.* per lb.

Fine sorts, for forming Lawns, 1*s.* 3*d.* per lb. Directions for sowing will accompany the Seeds.

GEORGE GIBBS and Co. will feel happy in sending general priced Catalogues of Agricultural and Garden Seeds, on application to 26, **DOWN-STREET, Piccadilly, London.**

---

SKIRVING'S IMPROVED TURNIP SEEDS.

WM. SKIRVING begs to announce to his friends and the public, that he has fixed the price of his IMPROVED SWEDE, and also the PURPLE-TOP YELLOW-BULLOCK, at 9*d.* per lb.

In consequence of W. S. having extended the growth, and having had a very abundant crop of the Seed of his Improved Turnips, he is this season able to offer it at the above reduced price, and he is also induced to take this step to prevent Agriculturists being imposed upon by the sale of spurious Seeds, offered at a low rate, under his name.

W. S. can, with perfect confidence, recommend these Turnips as being the best now in cultivation, in every respect, whether for the greatest crop, the best quality, or for keeping, according to the time of sowing. All other Agricultural Seeds, of the best quality, at very moderate prices. A remittance, or reference, is requested from unknown correspondents.

N.B. W. SKIRVING has no Agent in town or country.

Queen-square, Liverpool, May 31.

---

SCARLET RUNNER BEANS.

TO BE SOLD, a few Bushels of SCARLET RUNNERS, at 25*s.* per bushel.—Apply to Mr. HENRY CLARKE, Seed Merchant, 39, King-street, Covent Garden, London.

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DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

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COCHIN CHINA HENS FOR SALE, AND NEW LAID EGGS FOR SITTING.—Apply by letter, post-paid, to "W. O.," at Mr. MACLACHLAN'S, 6, Birchin-lane, Lombard-street, London.

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BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

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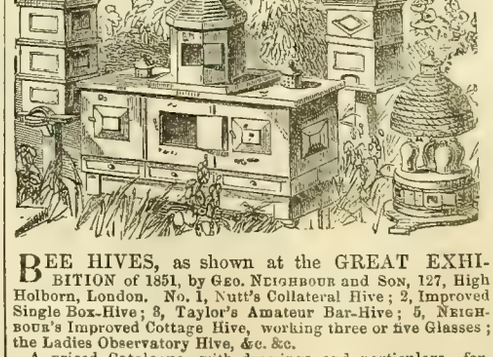
PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

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BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS.—Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street. Glasgow: Austin and M'Aslin, 168, Trongate.

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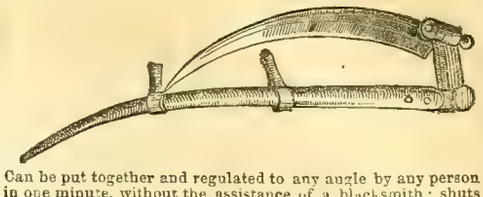
TO NURSERYMEN, FLORISTS, &c.

BETHAM AND BLACKITH, Custom House, Insurance and General Forwarding Agents, Cox and Hammond's Quays, Lower Thames Street, beg to return thanks to their Continental and Home friends for the numerous favours they have so long and largely enjoyed, and to assure them that they continue to receive and forward goods to all parts of the world at the *lowest possible* charges, consistently with responsibility, safety, and dispatch.

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BOYD'S SELF-ADJUSTING SCYTHE

(CLASS IX. OF THE EXHIBITION),



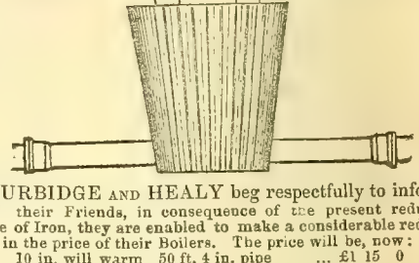
Can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary. Manufactured and sold by DEANE, DRAY, and DEANE, Agricultural Implement Depot, Swan-lane, London Bridge; and to be had of all respectable Ironmongers.

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ANTHONY'S PATENT AMERICAN CHURN obtained the following prizes:—At Exeter Agricultural Meeting, Silver Medal; at the Highland Society's Cattle Show, held at Glasgow, the two First Prizes, one for Hand-Churn, and one for Power; at Thirsk, the First Prize; and at the Royal Northern Society's Cattle Show, the First Prize; and it now stands unrivalled. Since its introduction, last year, upwards of 2000 have been sold, and numerous testimonials in its favour received, copies of which, with list of prices, will be forwarded, on application to Messrs. BURGESS & KEY, 103, Newgate-street.

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REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

| | | | | |
|---|---|---|---|---|
| 10 in. will warm | | 50 ft. 4 in. pipe | ... £1 | 15 0 |
| 12 in. | do. | 75 ft. 4 in. do. ... | ... 2 | 5 0 |
| 14 in. | do. | 100 ft. 4 in. do. ... | ... 2 | 15 0 |
| 16 in. | do. | 150 ft. 4 in. do. ... | ... 3 | 10 0 |
| 18 in. | do. | 250 ft. 4 in. do. ... | ... 4 | 10 0 |
| 21 in. | do. | 350 ft. 4 in. do. ... | ... 5 | 10 0 |
| 24 in. | do. | 450 ft. 4 in. do. ... | ... 7 | 0 0 |
| NEW PATTERN BOILERS. | | | | |
| 30 in. will warm | | 800 ft. 4 in. pipe | ... 15 | 15 0 |
| 36 in. | do. | 1500 ft. 4 in. do. ... | ... 25 | 0 0 |

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above, the same price.

130, Fleet-street, London.

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GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

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GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14*s.* each.

16*s.* per box:

| | | | | | |
|---|---|---|---|---|---|
| 6 ins. by 5 | and 7 ins. by 4 | | 6½ ins. by 6 | and 7 ins. by 6½ | |
| 6 ,, 5½ | ,, 7 ,, 5 | | 6½ ,, 6½ | ,, 7½ ,, 6½ | |
| 6 ,, 6 | ,, 7½ ,, 5 | | | | |

18*s.* 6*d.* per box.

| | | | | | |
|---|---|---|---|---|---|
| 9 ins. by 7 | and 11 ins. by 8 | | 9 ins. by 9 | and 12 ins. by 9 | |
| 8 ,, 8 | ,, 11 ,, 9 | | 10 ,, 8 | ,, 13 ,, 9 | |
| 9 ,, 8 | ,, 12 ,, 8 | | | | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d.* | per foot. |
| ,, ,, 35 | ,, ..... | 8*d.* | ,, |
| ,, ,, 50 | ,, ..... | 9½*d.* | ,, |
| ,, ,, 75 | ,, ..... | 12*d.* | ,, |

Milk Pans, 2*s.* to 6*s.* each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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ENGLISH VERSUS FRENCH GLASS.—The importation of Glass into France is at present prohibited. Special permission has, however, been granted by the French Government for the introduction of a quantity of Hartley's Patent Rough Plate (supplied by Messrs. JAMES PHILLIPS and Co., of 116, Bishopsgate-street Without), for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country.—*Sunderland Herald*, April 18.

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GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

| | | | | | |
|---|---|---|---|---|---|
| 4½ by 3 | ... 5 by 2½ | ... 6 by 2½ | ... 6 by 3¼ | inches. | |
| 4½ by 3 | ... 5 by 3 | ... 6 by 3 | ... 6½ by 3 | | |
| 4½ by 3½ | ... 5½ by 3 | ... 6½ by 3 | ... 6½ by 3½ | | |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

NEW HARDY JAPAN PLANT.
DEUTZIA GRACILIS (true.)

JOSEPH BAUMANN, Nurseryman, Ghent, Belgium, having a good stock of the above beautiful and distinct DEUTZIA, will send it out on the 1st of August.

| | | | |
|---|---|---|---|
| Extra strong well established plants | ... | ...£1 | 0 0 |
| Smaller do. do. | ... | ... | 0 12 6 |
| Grafted, 4 to 5 feet high | ... | ... | 2 0 0 |

J. B.'s Deutzia gracilis will never grow higher than 2 feet. Messrs. Hugh Low and Co., of Clapton, have seen it in bloom, and have ordered 40 plants of it.

This plant may be had in bloom six months in the year.

J. B. has received the following prizes for this plant. 1850, Ghent first prize; 1851, Chiswick, May the 3d, prize of excellence; Regent's Park, May 14th, first prize. Bruxelles first prize, Antwerp first prize, Mechlin first prize, Louvain first prize, Mentz first prize, Erfurt first prize, Paris first prize.

One over to the Trade on three. No discount if less than three plants are ordered. Free to London.

Deutzia crenata vera, new (D. gracilis of some), 1s.

EDWARD GEORGE HENDERSON is now prepared to forward his new SPRING CATALOGUE for 1851, post free on application, and it will be found to contain all the new Stove and Greenhouse Plants, new Geraniums, Fuchsias, Cinerarias, Verbenas, Chrysanthemums, soft-wooded and other Plants, sent out in this country or on the Continent. Much pains have been taken to render the descriptions full and correct, so as to make it a guide to purchasers.

E. G. H. also solicits attention to the new Plants he is now sending out, as will be seen on referring to page 64 of the Catalogue.

Wellington-road Nursery, St. John's Wood, London, May 31.

SELECT BEDDING PLANTS.

BASS AND BROWN have a large and fine Stock of the following, well established, and now sending out; they are mostly in small pots, so as to be packed in a little compass. Those marked * can be sent free by post, if required.

SCARLET GERANIUMS, in variety, strong, 6s. and 9s. per dozen.

* VERBENAS, a large collection of the best sorts for forming dwarf beds, such as Apollon, Anacreon, Defiance, Emma, Eclipse, Eyebright, Junon, Princess Alice, Psyche, Rosati, Vulcan, White Perfection, and others, 4s. per dozen.

* PETUNIAS, a large collection of bright purple and crimson flowers, 5s. per dozen.

* FUCHSIAS, a large collection of select varieties, 5s. p. doz.

DAHLIAS, the best varieties, both show and fancy, 5s., 9s., and 12s. per dozen.

Heliotropes of sorts, 4s. to 6s.; Bouvardias of sorts, 9s.; Lantana crocea, 6s.; Lobelia maxima, erinus, &c., 4s.; Blue Anagallis, 6s.; Cupheas of sorts, 6s.; Calceolaria of sorts, 6s. and 9s.; Dielytra spectabile, 12s.; Cheiranthus alpinus, 12s. per doz., and many others.

Also the following selections of newer varieties:

GERANIUMS, 12 fine show vars., 12s.; 12 superb do., 21s.
FANCY GERANIUMS, 12 beautiful vars., 12s.; 6 for 7s. 6d.
* FUCHSIAS, 12 fine vars., 9s.; 12 superb new vars., 15s.
DAHLIAS, 12 fine vars., 9s.; 12 quite new vars., 21s.
,, FANCY, 12 fine vars., 9s.; 6 quite new, 10s.
* PETUNIAS, 12 fine vars., 9s.; 12 superb new vars., 12s.
* VERBENAS, 12 fine vars., 7s. 6d.; 25 do., 12s.; 12 superb new, 12s.
HARDY BORDER PLANTS, 100 select vars., 30s.; 50 for 30s.
,, ,, superior and new, 50 vars., 30s.; 25 for 17s. 6d.
ROCK PLANTS, 25 select vars., 12s.; 12 vars., 7s. 6d.
ANTIRRHINUMS, 12 fine vars., 6s.; 12 superb new, 10s.
PHLOX, 12 fine vars., 6s.; 25 vars., 10s. 6d.; 12 superb newer, 9s.
PENTSTEMONS, 12 fine vars., 7s. 6d.; 6 vars., 5s.
GREENHOUSE PLANTS, 12 select vars., 15s.; 25 fine vars., 28s.
STOVE PLANTS, 12 new and select vars., 18s. to 24s.
* ACHIMENES, 6 splendid new, 7s. 6d.; 12 fine vars., 9s.
GLOXINIAS, 6 splendid new, 7s. 6d.; 12 fine vars., 12s.
NEW PLANTS, see a List in the *Gardeners' Chronicle* for May 3d, April 26th, and April 19th.

Stamped Catalogues forwarded on application, free.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CHOICE AND CHEAP.—READ THE FOLLOWING!
(Carriage paid; see below.)
Now ready, and may be had gratis on application,

MAY'S DESCRIPTIVE CATALOGUE OF PLANTS, for ornamenting the Flower Garden, and Greenhouse display.

N.B.—All orders above 2*l.* 10*s.* carriage paid to London, or to any Railway Station within 150 miles of the Nurseries, and plants given over on smaller orders to compensate for carriage. Our central position and great facility of railway communication enables us to execute all orders with punctuality and despatch.

The Catalogue comprises the following favourites, viz.:—Calceolarias of the best sorts, Cinerarias, Fuchsias, Scarlet Geraniums (for bedding), Verbenas—the very choicest varieties, Petunias, fine Chrysanthemums for autumn display, Liliputian Chrysanthemums (these are little gems, growing about a foot high, and flowering profusely), Salvias, Heliotropes, Phloxes, new and fine; Antirrhinums, fine; various Plants adapted for Bedding, Climbers of sorts, and Roses in selection. *s.*

ERICAS, 12 fine blooming plants, own selection, per doz., 12
GREENHOUSE PLANTS, 12 miscellaneous sorts, blooming, our own selection, per doz. ... ... ... ... 12
HERBACEOUS PLANTS, in pots, purchaser's selection, per 100 ... ... ... ... ... ... ... ... 63
Do. do. do., our own selection, per 100, 50

The list throughout is divided into sections of the newest and best in each class, and those in more general cultivation; the selection is left to purchasers or ourselves, in the latter case our customers may rely upon our integrity in furnishing good articles, for which we have received many flattering testimonials. Every information given on application.

Address, JOHN MAY, Hope Nurseries, near Bedale, Yorkshire, to whom all Post-office orders must be made payable.

"CANTUA DEPENDENS."
(A beautiful new Hardy Greenhouse Plant from Peru.)

MESSRS. VEITCH AND SON have the greatest satisfaction in offering to the Public the above lovely plant, from the Andes of Peru, where the flowers are so much esteemed by the natives that they adorn their chambers with them on feast days.

It was exhibited in Regent-street on the 15th of April last, and received the "*Large Silver Medal*" (see *Gardeners' Chronicle* of April 19th.)

It was again exhibited at Chiswick on the 3d of this month, and was then awarded the highest prize given for new plants—"*The Silver Gilt Medal.*"

It is a plant of neat habit and foliage, blooms freely in a small state, and may be kept in a cold pit or frame through winter, being of about the same hardiness as the Fuchsia, and as easy of cultivation; from its novelty and beauty, it will be an acquisition to every collection, and be cultivated by every florist. It is figured in Curtis's "Botanical Magazine" for this month, and will also shortly appear in Paxton's "Flower Garden." Good established plants will be sent out on and after the 12th of June, at 21s. each, with the usual discount to the Trade.—Exeter, May 31.

HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the Second EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, June 7th.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5*s.* each; or, on the day of the meeting, at Turnham-green, price 7*s.* 6*d.* each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4 in the Duke of Devonshire's road; or, if unable to attend personally, his wife or sister may represent him, provided she is herself furnished with an admission ticket to which his signature is attached. Similar privileges belong to Ladies who are Fellows of the Society.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulat.

21, Regent-street, London.

HORTICULTURAL SOCIETY, 21, REGENT-STREET.
NOTICE IS HEREBY GIVEN,
THAT
MR. HOSEA WATERER'S
EXHIBITION OF AMERICAN PLANTS,
IN THE GARDEN OF THIS SOCIETY, AT
TURNHAM GREEN,
*Is now open Daily, from* 9 A.M. *to* 6 P.M.

Fellows of the Society are admitted *free*. Tickets for other persons, available for every day except Sundays and the 6th and 7th of June, can be procured in the Society's Garden, price One Shilling each.

The purchase of such a ticket admits the bearer to the Garden without the order of a Fellow of the Society.

The Gardeners' Chronicle.
*SATURDAY, MAY* 31, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | June 2 | Entomological | 8 P.M. |
| | | Chemical | 8 P.M. |
| | | British Architects | 8 P.M. |
| TUESDAY, | — 3 | Linnean | 8 P.M. |
| WEDNESDAY, | — 4 | Royal Botanic | 3½ P.M. |
| THURSDAY, | — 5 | Zoological | 3 P.M. |
| | | Antiquarian | 8 P.M. |
| FRIDAY, | — 6 | Botanical | 8 P.M. |
| | | Royal Institution | 8½ P.M. |
| SATURDAY, | — 7 | Horticultural Gardens | 2 P.M. |

COUNTRY SHOW.—Friday, June 6: Darlington Horticultural.

THE late Indian mail has brought the gratifying and important intelligence that Mr. FORTUNE'S labours in procuring a supply of the finest Tea plants, and experienced Chinese workmen, has been brought to a successful issue. He had arrived at Calcutta with eight Tea manufacturers from the far-famed Tea districts of the north—the first who have ever left their native country from these districts—together with a large assortment of implements used there in the manufacture of Tea. He had also brought in good order 1749 young Tea plants, and about 17,400 *germinating* seeds; a great success, accomplished thus: He had 14 Ward's cases for the young plants. Between each row of plants large quantities of seeds were sown in China when the cases were planted. Two other cases—made to take round some Camellias for the Botanic Garden, Calcutta, were filled with seeds mixed with a little damp earth. The Camellias were planted, and their roots covered with the same mixture of Tea seeds and earth. Thus he had in each box a mass of seeds, say three-fourths seeds and one-fourth earth. In this state the cases were brought round to Calcutta; when they arrived the Camellias were gently lifted out in excellent order, and the whole mass of Tea seeds was just beginning to germinate. It is estimated that the number of germinating seeds in these two cases is 16,000, or perhaps much more. Mr. FORTUNE was about to start immediately for the north-west provinces, the Government having furnished a steamer to take up all the plants, implements, and Chinamen.

It is not in India alone that important measures are in progress for the increase of our colonial resources. Long since, Colonel REID, while Governor of the Bermudas, succeeded in directing the attention of the inhabitants of these islands to the improvement of their cultivated plants; and we now find that his example is followed by his successor. The following is an extract from the speech of Governor ELLIOTT on recently opening the legislative session in the Bermudas—islands remarkably well adapted to the growth of the Orange and Lemon, and quite capable of entering into competition with the Azores: "I still entertain the impression which I expressed on meeting the Legislature last year, that it would be useful to encourage the formation of nurseries of the best kinds of Orange and Lemon trees, as well as other valuable fruits, by the mode which I then suggested, or by any other, which may seem to you to be more suitable. Indeed I think it would repay the outlay to establish and gradually improve a botanical garden; making such appropriation as would secure the services of a soundly instructed and practical superintendent, from some of the approved institutions in England."

Nor does this intelligent officer confine himself to mere recommendations; for at his own expense he has just introduced the Longan and Cookia punctata into the Bermudas, and it is not improbable that a profitable trade may ere long be carried on in the former fruit, which may be expected to find the climate of "the vexed Bermoothes" perfectly adapted to its constitution.

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IN resuming the observations we last week offered upon the climate of Great Britain it will be useful to glance at the map.

Beginning with a few spots on the southern coast, and near its eastern extremity, we find Folkstone, Hastings, and there may be a few others less known, which show the first indications of the tendencies we meet with in a more confirmed character afterwards. Then come Chichester, Southampton, New Forest, Western Dorset, South and West Somerset, with inland and Northern Devon. These form the first range of an improved climate, on proceeding to the westward from the straits of Dover, and will be found to follow an irregular line, at first skirting the south coast, and then tending inland to the north-west, crossing the Bristol Channel south of Mendip and cutting off the whole coast of South Wales as far as Pembroke. This line, continued to the coast of Wexford and thence to the Shannon, will probably be found to comprise all that can pretend to the name of a mild climate in the British isles.

Much might be added in the way of illustration, both in particularising many places besides those mentioned, as well as in giving instances from horticulture, and even from native botany, in support of these remarks. It is to be hoped that many persons who know the districts alluded to, will still more investigate the subject, and favour us with authentic examples; for the present a generalising view was thought to be most needed.

It will have been observed that in its passage from the Southampton Water to the Bristol Channel, the imaginary line above suggested will nearly follow the direction, if not the outline of the New Forest, the Wiltshire chalk escarpment, and the Mendip hills. This remarkable chain of elevations and formerly desert tracts, has had some influence, in a physical sense (and perhaps in others), in cutting off the south-west of England, and making it in many respects a separate and a different country from the midland, and even the other southern counties. In its farming and general rural economy, as well as in other particulars, it is still so in a great degree.

It only remains to take a brief notice of the peculiarities of our climate, as compared with that of the continent. Where geographical divisions only are necessary to be stated, a general view will suffice to show the resemblances or the differences between our insular position and that of the countries nearest to us in Europe.

The same gradual change from a drier to a hotter summer temperature alternating with an equally dry and colder winter temperature, is observable on the southern shores of the English Channel, that has been pointed out as characteristic of the northern. The maritime districts of Picardy are milder than those of the interior even lying to the south of them; those of Normandy are milder than those of Picardy; and Brittany, especially the western part of it, is said to enjoy a climate like that of Cornwall. The average improvement in latitude of a degree and a half, more or less, tells but little in this case: it is not sufficiently hot to dry up the damps with which the air is, in common with our own, charged by its proximity to the Atlantic, while the general south-westerly direction of the winds blowing up Channel affects only Brittany and the rest of the coast, leaving the interior of France to its ordinary dry, hot and cold, continental climate. The existence of a rising land with such a climate at the back of the French maritime provinces exposes them to a degree of occasional cold in winter, to which ours, though to the north of them, are rarely subject.

The circumstances which have been here sketched out will, it is presumed, go far to explain the seeming anomalies of the climate of the south and west of the British Isles. With regard to the midland counties, it is notorious that their climate has more of a continental character, whether in cold winters, dry summers, or more steady weather. Were the culture of the Vine to be ever seriously attempted for profit in England it is probable that the chief success of the experiment would be found in the south midland counties or in the eastern,—of course on dry soils and in sunny aspects;—rather than in the mildest of the western. A generally stiller atmosphere, which is a condition most favourable to all vegetable development, is more frequent in the midland districts, not merely on account of their distance from the sea, but perhaps also by reason of their protection from the great westerly movement of our winds by the mass of the mountainous land of Wales. Fur-

ther north, where the island is much narrower, the westerly storms sweep over the whole land with redoubled fury, in spite of the ridge of high land (narrow and broken, however) which runs north and south through the counties from Derbyshire to Northumberland.

The climate of Scotland is a subject by itself; lying so far north of both England and Ireland, it has less affinity to, or dependance on, that of the continent; and the variations of weather seem to depend upon the play of a different set of winds from those which affect England at any given time. Hence it has been sometimes asserted to be milder than that of England. The strongly marked features of the country, both geographical and topographical, make the climate of Scotland so dependent on local causes, that it need not be further alluded to in connection with that of England. It is equally unnecessary to pursue the inquiry into the different climates of Europe in this place, although a subject of deep interest in itself, as well as in contrast to our own.

In addition to the foregoing observations, it is important to point out that in the climate of the whole of our south and west coasts, two distinct physical principles seem to be at work: viz., the increase of temperature towards the westward, and the direct and peculiar influence of the sea air. The first of these principles is simply due to the effect of geographical position with regard to the prevalent winds, the gulf stream, &c.; the second, more obscure, seems to proceed from some chemical operation connected with oceanic exhalations, whose subtle and intangible powers can, in our present knowledge of atmospheric chemistry, only be appreciated by their effects.

The first of these principles has been sufficiently explained, but the second requires some elucidation. The first is limited to the western districts, in their full extent; the second seems perceptible, though within a very narrow line, along the entire southern coast, even to the bleak shores of Dover and Brighton.

It is in consequence of this chemical influence of proximity to the sea that, independent of temperature, certain plants can be better grown and flowered there than inland, even under glass; while others, especially Alpines and Ferns, seldom succeed well near the sea. Thus, also, some plants seem to change their nature when growing within the sea-breeze, as Stocks, Wallflowers, Senecio elegans, &c., which become succulent and brittle as a Mesembryanthemum. This chemical influence probably acts both directly by its salts and moisture, and indirectly through them, so as to modify the temperature and prevent exsiccation in weather apparently dry. Hence, in such situations, the constant but slow vegetation; hence the tardy ripening of fruits, though excellent in quality when ripened.

The inland districts, however, alternate with the coasts in some of their advantages. The same wind that drives a rolling fog in from sea, till it stops at the first hills, will often give a fine bright day inland; while a November fog inland is often a perfect summer's day on the coast.

Let any one, in an ordinary winter, cross the country diagonally from some central point of the midland counties, towards the west or south-west coasts. Starting from the plateau of Warwickshire or Leicestershire, and leaving the country as far as Birmingham covered with snow, a sensible decrease of cold will be felt on descending into the vale of the Severn. The Malvern hills will have the appearance of Alps, but on passing them the hills of Herefordshire will be seen only capped with snow, as in that county and in Monmouthshire the difference of climate begins to tell. Proceeding further towards Wales, the mountains, though higher, will probably show less snow, and at last on the hills near the Severn sea, there will be none at all.

Take a similar line from the south-midland plateau of Wilts and Berks. A similar falling off of the signs of winter will be manifest; snow covering all Wiltshire, decreasing in Gloucester and Somerset, reappearing on the hills only of Dorset and Devon, and expiring on Dartmoor.

But in a rigorous winter, the case is, in appearance, reversed; there is then more snow in the western counties than in the midland or east. Then their habitually suspended moisture is, owing to an unusually low temperature, and to the nature of the country, precipitated in squalls and drifts of snow of great depth, and is altogether a worse visitation to the inhabitants than when spread as a carpet over the rest of England. In return, it seldom lasts long in the south and west, nor is the accompanying cold so severe. Short frosts, even when sharp, are one of the advantages of the western climate.

A future opportunity may occur for pointing out some of the characteristics of the climate of Europe in general, and showing how far they tend to illustrate the peculiarities of that of the British Isles. *S.*

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It will be seen by our advertising columns, that the anniversary dinner of the GARDENERS' BENEVOLENT INSTITUTION takes place on Monday, the 9th of June, under the presidency of Mr. PAXTON, whose name will, doubtless, have the effect of inducing a large attendance. Let us hope that the charity will benefit considerably on the occasion.

This institution has, as it deserves to have, our warmest support; and so long as its management is confided to persons such as those who constitute the committee, there is every hope of its success. The claims, however, upon the charity are so large and urgent—so much, indeed, beyond the means as yet at the command of the committee, that we must once more appeal to the higher classes of the community for aid to an institution founded for the support of deserving men, who have largely contributed to their pleasure, and worn out their strength in their service. The remuneration of a very large number of gardeners is such as to render it almost impossible for those having families to bring up and educate to make an adequate provision for old age, or for the infirmities to which we are all liable, but to which gardeners are peculiarly exposed, from the nature of their calling.

Let us hope, too, that gardeners themselves, if in a position to afford a guinea a year, will at once subscribe to the charity. Should they be so fortunate as never to require the aid of this institution, they will have so much the more to be thankful for. They must also remember, that if by necessity they should be compelled to fall back upon the Society for assistance, priority of subscription will now give them a claim above those who do not subscribe. This is clearly stated in the 6th rule of the charity, and is so obviously just, that we have always felt surprised that it should not have been a fundamental regulation from the very beginning.

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## ORCHIDS FOR THE MILLION.—No. III.

By T. WILLIAMS, Gardener to C. B. WARNER, Esq., Hoddesdon.

ON THE CULTIVATION OF TROPICAL ORCHIDS.—Among Orchids some are termed terrestrial, by reason of their growing in earth; such as the plants of the genera Phaius, Calanthe, Bletia, Cyrtopodium, Cypripedium, &c.—all derive nourishment from the ground. Epiphytes, the other great class, inhabit trees, from which, however, they derive little or no nourishment. These are by far the most numerous and most interesting. They are found adhering to the arms of living trees, whilst some of them delight in very elevated situations upon high trees. Others, again, grow upon low trees, some on rocks and mountains, some on trees overhanging a river, and some near dripping rocks. The latter, of course, require a particularly damp atmosphere to grow in; others are found in woods, where scarcely any sun can penetrate; these like a shady moist atmosphere, whilst those in more elevated situations do not need so much shade as the last. A knowledge of the different habitats of the various species is essential to the careful grower, so that he may, as far as his means permit, imitate their natural mode of growth; and it is, perhaps, to some inattention to this point that the want of success in the culture of some of the Orchidaceous plants, by even the most successful of our cultivators, is to be attributed.

MODE OF POTTING AND THE MATERIALS TO BE USED.—When the season of rest is over, many kinds will require repotting, but I have not confined my practice to that time only; no season can be dermined on absolutely as the proper one for this operation. The months of February and March are the best time to pot some of them, that is, after the resting season. Those that do not need potting should be top-dressed with good fibrous peat, removing the old soil from the top without breaking the root of the plants. This also affords the means of getting rid of many insects which harbour in the old soil. The pots should be thoroughly cleansed from the mould, moss, and dirt, too often seen covering those in which Orchids are growing. Previously to potting the plants, they should not receive any water for four or five days. Some, however, should be potted at a period somewhat later, viz., just as they begin to grow. All the species of the genera Phaius, Calanthe, Dendrobium, Stanhopea, Cyrtopodium, Brassia, Miltonia, Sobralia, Bletia, Oncidium, and many others, require this treatment. Lælias, Cattleyas, Saccolabiums, Aerides, Vandas, and similar plants, should be potted just before the commencement of their growing season. The chief point to be attended to in all potting is that the pots be well drained; the best material for drainage is potsherds or charcoal. Before potting, be particular to have the pots perfectly clean inside and out, and the broken potsherds should be washed; after this is done select a pot according to the size of the plant; do not give them too much pot room. Some plants will require shifting once a year; others it will not be necessary to shift oftener than once in two or three years; but if a plant becomes sickly or soddened with wet, the best way to bring it into a healthy state is to turn it out of the pot or basket, and wash the roots carefully with some clean water, cutting off such of the fibres as are dead; then to repot it, not giving it much water till the plant begins to make fresh roots. The best pots are those in ordinary use. Some employ slate pots, but they are not, in my opinion, so good for Orchids as those made of clay.

In potting large plants there should be a small pot put in the bottom of the large one; then fill in with potsherds or charcoal broken up into pieces, about 2 inches square, for large plants—smaller plants should not have pieces so large; then introduce potsherds till within 3 or 4 inches of the rim, and afterwards put on a layer of moss to prevent the peat from impeding the drainage, and to let the water pass off quickly. This is of great importance, and if it is not attended to the water will become stagnant, and the soil sodden, which is fatal to the growth of the plant. The grand point to be observed in the successful culture of Orchids, as well as of other plants, is good drainage; without that it is hopeless to keep the plants long in a healthy condition. The best material for potting the different kinds of epiphytes in is good rough fibrous peat and sphagnum moss; after this a layer of moss is applied, then fill up with peat. This should be broken into lumps about the size of a hen's egg; I always use broken potsherds or charcoal mixed with the peat. The plant should be elevated above the rim of the pot 2 or 3 inches, taking care to have all the pseudo-bulbs above the soil; then put some peat on the top of the roots so as to cover them, employing a few small pegs to keep the soil firmly on the pot. After the plants are potted I fix a stick in the centre of the plant, to keep it firm. In shifting I carefully shake off all the old soil I can without injuring the roots. Be careful not to give too much water at first; but after the plants begin to make more root, they may have a good supply. The best material for those in baskets is sphagnum moss and broken potsherds. The basket should suit the size of the plant; but do not have it too large, for it will not last more than two or three years, at which time, probably, the plant will require shifting into a larger one. There should be placed a layer of moss at the bottom of the basket, then a few potsherds, then fill up with moss and potsherds mixed. Take the plants carefully out of the old basket, without breaking the roots, shake off all old moss, place the plant on the new material, about level with the top of the basket; put a stick in the centre, to keep it firm, and finish by giving a gentle watering.

Those plants that require wood to grow upon should have moss attached to the blocks, if by experience they are found to require it; some, however, do better on bare blocks, but then they need more moisture, as they are then entirely dependent on what is obtained from the atmosphere. In fastening them firmly on the blocks have some copper nails and drive them into the block; then with copper wire secure the plants firmly to the wood. As soon as they make fresh roots they will cling to the block, and the wire may be taken away.

THE MATERIAL FOR TERRESTRIAL ORCHIDS.—These require a stronger compost than the epiphytal kinds. They should be potted just when they begin to grow, after the resting season; they do not need so much drainage as Epiphytes. The compost I use for them is turfy loam chopped into pieces about the size of a Walnut, leaf-mould, and a little rotten cow-dung; these are all mixed well together. The plants require a good sized pot; put about 2 inches of drainage at the bottom, on that a layer of moss, then some of the rough peat, and finish with the compost above-mentioned; place the plant 1 inch below the rim of the pot; water sparingly at first, but when the plants are about 6 inches high they may have a good supply.

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## NOTES OF A TRAVELLER.—No. XVI.

THE GLYCINE SINENSIS, AND WHERE IT IS FOUND WILD.—In the end of May, when the "Overland Mail" puts these notes into your hands, the noble Glycine, or Wistaria chinensis, will be in full bloom at Chiswick, and in many other English gardens. It was introduced, as your readers know, from a garden near Canton—that of a Chinese merchant named Consequa; but it is not indigenous to the south of China, and is rarely seen in perfection there. Indeed, the simple fact of its being perfectly hardy in England shows at once that it has a more northern origin.

Before the last war with China, foreigners were confined to narrow limits about Canton and Macao, where they had no means of knowing anything of the more hardy plants of the north, which they sometimes met with in gardens, and introduced to Europe. Now, however, we can prosecute our botanical researches in a country which is nearly a thousand miles further to the north-east, and at many other places which lie along that line of coast. The island of Koo-lung-sû, for example, near Amoy, was taken by our troops during the war, and occupied by them for some years, according to treaty, until a portion of the ransom money was paid. It seemed to have been a place of residence to many of the mandarins and principal merchants in peaceful times, and boasted of its gardens and pretty fish ponds. When I first saw these gardens they were mostly in a ruinous condition, and everywhere exhibited the fatal effects of war. Many beautiful plants, however, still continued to grow and scramble about over the ruined walls. Captain Hall, of the Madras army, who was stationed there for some time, was very fond of botany, and took great pleasure in pointing out to me all the plants which he met with in his rambles. "I have good news for you," said he, one morning when I met him; "come with me and I shall show you the most beautiful plant on the island, which I have just

discovered. It is a creeper, it produces fine long racemes of lilac flowers before it puts forth its leaves, and it is deliciously fragrant." What could it be? was it new? would it produce perfect seeds? or could young plants be procured to send home? were questions which rapidly suggested themselves. It is only the enthusiastical botanical collector who can form an idea of the amount of excitement and pleasure there is when one fancies he is on the eve of finding a new and beautiful flower. Captain Hall led the way, and we soon reached the spot where the plant grew. There had been no exaggeration in his description; there it was, covering an old wall, and scrambling up the branches of the adjoining trees; it bore long racemes of Pea-shaped flowers, and scented the surrounding air with its odours. Need I say it was the beautiful Glycine. But it was not found in a wild state even at Amoy, and had evidently been brought from more northern latitudes.

When I reached Chusan, in latitude 30° north, I found a remarkable change in the appearance of the vegetation. Tropical forms had entirely disappeared, or were rarely met with. Although the summers were as warm, or even warmer, than they were in the south, yet the winters were nearly as cold as those we have in England. On this ground, and all over the provinces of Chekiang and Kiangnan, the Glycine seemed to be at home. It grew wild on every hill-side, scrambling about in the hedges by the footpaths, and hanging over and dipping its leaves and flowers into the canals and mountain streams.

But by far the most beautiful effect is produced when it attaches itself to the stems and branches of other trees. This is not unfrequent in nature, and is often copied by the Chinese and introduced into their gardens. You can scarcely imagine anything more gorgeous or beautiful than a large plant of this kind in full bloom. Its main and larger branches are entwined round every branch and branchlet of the tree; and from them hundreds of small ones hang down until they nearly touch the ground. The whole of the branches are covered with flower-buds, which a day or two of warm weather brings rapidly forward into bloom. To form an idea of the effect produced by these thousands of long lilac racemes, you must imagine, if you can, a floral cascade, or a Weeping Willow covered with the flowers of the Glycine. There are some large specimens of this kind on the island of Chusan. One, in particular, was most striking. Not content with monopolising one tree, it had scrambled over a whole clump, and formed a pretty arbour underneath. When I saw it last it was in full flower, and had a most charming appearance.

The Chinese are fond of growing the Glycine on trellis-work, and forming long covered walks in the garden, or arbours and porticos in front of their doors. In a former letter I noticed a large specimen of this description in the garden of the British consulate at Shanghae. There is another remarkable one in the garden of a mandarin at Ningpo; growing in company with it is the fine new variety introduced lately by the Horticultural Society of London, and published in the Journal of the Society. In foliage and general habit the two kinds are nearly alike, but the new one bears long racemes of pure white flowers. The kind old gentleman to whom the garden belonged (he is dead now) allowed me to make layers of this plant on the top of his house, and during the summer months, when I was travelling in other districts, attended to them and watered them with his own hands. When I saw him about a year ago he told me he was then nearly 80 years old. One of the gentlemen who accompanied me (Dr. Kirk, of Shanghae), being introduced to him as a medical man, was asked if he could live for one year more. The old man said he knew he must die soon, but he was most anxious to live for another year. His presentiment was but too correct, for the next time I visited Ningpo, about six months after, I found the door of the mansion bricked up, and the garden neglected and overrun with weeds. *R. F.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 16.)

XXXII.—All the nightingales that have arrived this spring, and that are worth caging, have, 'ere this, been safely secured. All you have to do, therefore, is,—to listen with a "cunning" ear, to their vocal powers when confined, before making a purchase. As I have before hinted, much tact is requisite in this matter. Now, if ever, good birds will open up, and sing loud and merrily. After this month, their song will cease until next season. Lose therefore not one instant in making your election.

"Nestlings" will be obtainable at the end of June,—perhaps a week or so earlier. If you are desirous of securing a nest of young birds, make your wishes known early to some of the dealers. In *this* matter they cannot cheat you. Out of a nest, you are likely to rear one or two fine male birds. The hens, when proved to be such, will of course be liberated,—but not in the winter.

"Branchers" will be on sale in July, and should be caged as soon as caught. You will find them, for the most part, cheerful and sociable; and so imitative, that they quickly learn to unite a number of other voices with their own. They possess however, the charm of executing whatever they attempt, to perfection; so that this variety will be pleasingly agreeable.

Branchers and nestlings—the latter in particular—never sing their own natural song only; unless indeed they be brought up immediately under an old steady song bird, and allowed to hear the voice of none other. Here let me caution you, never to forget to pay your "pets" marked attention; for nightingales are apt, if slighted, to grow sulky, and refuse their regular food. This they will do for very many hours. In such cases, you must give way; and win their favour by presenting them with their favourite *morceau*. This will cause them to return to their food. I have seen many a bird exhibit these signs of obstinacy. Indeed I believe some would literally die, before being the *first* to give in. These lovely little fellows know their powers, and *will* be treated with becoming respect. But if you treat them with *affection*—what a reward will be your's! Their motto to a "friend" is,—"*Je ne change qu'en mourant.*" Faithful are they to their last dying gasp. I have proved it, again and again.

*Apropos* of the affection of the nightingale, where he observes a corresponding feeling on the part of his admirer. By remarkably good fortune, one of the most extraordinary of these songsters has recently taken full possession of my garden. I call the gay, joyous fellow "extraordinary," for I never yet heard such seraphic strains, such perfect freedom of song, from any of the tribe,—much as I have had to do with them. And what makes me value this merry little rogue the more, is—his almost incredible tameness. He sings, the night through, just under my chamber window, and seldom leaves the garden, by day or by night, for more than a few minutes at a time. I usually rise to greet him at 5 A.M.; and on venturing a humble imitation of his swelling note, he flies to me at once. Seating himself on a shady bough, and bending slightly forward, there he remains—holding converse with me, so long as my time permits me to tarry; and he improvises such music the while, that I can hardly tear myself away from him. He knows *my* voice, and I know *his*. Thus do we, morning by morning, exchange familiarities; and greatly do I love to return, after the fatigues of a day of toil, to renew our intimacy. I believe the pleasure is quite mutual. I cannot but imagine that this bird possesses an unusual charm; for he has drawn into one focus a host of blackbirds, thrushes, robins, blackcaps, and other vocalists, whose orchestral accompaniments, blending with his own heavenly voice, almost lead us to suppose we are in fairy land. They rehearse early in the evening; and the concert, once commenced, lasts until long after sunrise. I hardly need say, that I now retire to rest with my chamber window *open*.

Yesterday evening brought with it a new moon. For the next fortnight therefore, this melody, in a modified form, will continue. It will then gradually subside. The waning moon, and the jubilee of the birds, will disappear together! Three short months of almost uninterrupted harmony will have been our's,—a treat, as times go, of no common order. Perhaps, this has been one of the finest nightingale seasons ever known. Nor do I remember ever before to have observed so much "interest" shown towards this bird of Paradise. It cannot be his beauty that has worked this charm? Most assuredly not. It may be, that *our* good word has had something to do in the matter. Let us hope so.

The nightingale, so far from being handsome, is of a remarkably common presence; yet has he, "within, that which passeth show." No person, to look at him, would set any value upon him. This bears out my old favourite saying,—that Nature seldom gives rare excellences and a handsome person united. Look at the beautiful plumage of many of the American and other foreign birds—yet have they no voice. Exquisite in form, of faultless symmetrical proportions—yet not one particle of music, or of vocal melody, is there among the entire tribe! Here, again, we find practical instruction; and learn how vain is beauty without mind.

I never see any of these gaudy automata without a feeling of pity. They were never intended by Nature to visit our country; nor were they ever intended to be immured in cages. They cannot be said to "live" here; their's is an "existence" only; for they are never well, never happy. They suffer a martyrdom in their confinement, and die in the very prime of life. I throw out these remarks advisedly, and in the kindest spirit of humanity, trusting they will not fall far short of their intended aim. *William Kidd, New Road, Hammersmith.*

## Home Correspondence.

*Remarks on Climate.*—I send the names of some plants usually cultivated in the greenhouse, which have endured the late winter in this place (Hythe), and also the names of some which survived the winter of 1849 (rather a severe one), and which usually bear the winter here. I do this in consequence of having read the remarks on the climate of Britain in your leading article at p. 323. This last winter Primula sinensis (several plants) has been perpetually in blossom, unprotected in the open border; a cut-leaved sweet Geranium allied to the oak-leaved, is now in bloom, and the scarlet Geranium "Lord Melbourne," is coming into flower, both having lived through the winter without the slightest protection, even of straw or coal-ashes, about the roots; two purple hybrid Cinerarias are in blossom (good heads), having been under similar circumstances in a very cold border; Salvia cardinalis (fulgens) is also in flower, the points only of the shoots being injured; Maurandya Barclayana, against a wall, is uninjured. Amongst the plants which lived through the winter of 1849, and usually survive our winters, are Salvia cardinalis, which in severe frosts is killed to the ground, but springs from the crown; S. patens, sometimes lives; Veronica Lindleyana, hardy as a standard; Eucalyptus perfoliatus? (I believe), Buddlea Lindleyana (blossoming profusely against a wall), Forsythia viridissima. I have Myrtles on an east wall; the broad-leaved one 10 feet high, the narrow and other varieties from 3 to 6 or 7 feet, which bloom profusely, and are never protected in the winter. Fuchsia gracilis 6 feet high, the ends of the shoots only being injured; and globosa, Eppsii, Epps' Monarch, &c., succeed almost equally well, though, of course, their size is not as great. The Hydrangea hortensis is perfectly hardy; at Sandgate you may see plants 5 feet in diameter in the summer, covered with blossom, not having been protected in the severest frosts. Plumbago Larpentæ is now coming up in the borders. I have gathered a fair crop of ripe Black Hamburgh Grapes from the roof of a stable, with an east aspect, without any glass or other means having been applied to forward them. I therefore conceive that the climate of Hythe and Sandgate, from their peculiarly favourable position, forms an exception to the general climate of Kent. *T. D., Hythe, May* 28.

*Ranunculuses.*—I send a specimen of Ranunculus, in proof of the wonderfully mild winter we have had. My roots were planted in November, promiscuously in the borders, and are all in flower, some of them being much better filled in the centre than the one sent. Mine is a very exposed garden, much elevated, and with very little or no shelter, and sloping almost due east, slightly south. It consists of good Ranunculus soil, very deep, and very rich, without being too strong, though if it has a fault, it is on the side of excess of tenacity. The Anemones grown here are many of them 4½ inches, and some of them 5½ in diameter when laid open, and some fully 4, as they hold themselves before they are full blown *Lincolniensis, May* 15. [Your specimen of Ranunculus was early and good. We have, however, seen (May 20th) several small beds of autumn or very early spring planted Ranunculuses in bloom, and in fair condition. The seasons rarely justify planting Ranunculuses, excepting Turbans, in November, and the past winter must be regarded as an exception, rather than a rule.]

*Forcing Asparagus.*—As "J. P." does not seem to fully comprehend my plan of forcing this vegetable, I have ventured to add the following information to what was given at p. 277. My forcing beds are 54 feet long, and produce a constant succession from Christmas to the time of cutting in the open ground. I force the same bed every alternate season. As to the number of heads and their weight per hundred, I can give no correct account, having never weighed them. I may state that they have been finer and better flavoured than any that I ever saw produced by transplanted roots in pits. There can be no question as to the merits of this system over the other method as regards the superiority of the crop, both in size, flavour, and earliness, as well as in the durability of the beds. *J. W., Davyhulme Hall, Lancashire.*

*The Calceolaria.*—Does "J. R." really imagine that I meant the flowers of a cutting differed from those of its parent? Deeming it probable that he did not wilfully pervert the sense of my argument, when I said, that "M. P." like others, might discover the impossibility, or nearly so, of raising plants of chosen form and colour from cuttings; I will proceed to explain my meaning. There are to be found in England large tracts of hilly land, called Downs, the geological formation of which differs materially from most other hilly tracts. They are composed of chalk, the surface soil partakes largely of chalky matter, and it is to this I attribute the almost hopeless task of raising a stock from cuttings. In such localities the Calceolaria will not flourish as it does in other situations where the chalky matter is absent, unless the cultivator goes to a great expense in procuring soils better adapted to its growth. I would add that the north of England, and Scotch cultivators especially, rarely encounter obstacles of this nature, and to those who are permanent residents in such localities, the fact I have just mentioned is almost wholly unknown. *G. H., Tatton.*—For some years past I have raised my plants from seeds as well as from cuttings; but I prefer seeds, except in the case of shrubby kinds, or such choice sorts as I intend for exhibition. I have found the one-shift system to answer my seedling plants admirably. But there is one requisite, above every other, indispensable to the perfect culture of this plant, whether from seeds or cuttings, viz., you must provide for the free access of air to the roots at every stage of growth; and this I should think could not easily be accomplished under Mr. Rumley's plan of placing saucers of liquid manure under the pots. As soon as I find my plants well established, and in a vigorous state of growth, I give them liquid manure in a highly clarified state, about twice a week, till the flowers begin to expand. The green fly is the only formidable enemy to this plant we have to contend with. I find tobacco-smoke to be the most effectual means of destroying it. *C. T., Yorkshire.*—Ah, "G. H.!" I involuntarily exclaimed, after reading his remarks at page 310; the soil of your locality, like that of mine, partakes of some deleterious quality, of which it would be well if we could get rid. "G. H." speaks of "the impossibility, or nearly so," of raising a stock of Calceolarias from cuttings, in certain localities, and my experience in this, in a great measure, corroborates his assertion. How many gardeners on the chalky soils of England have I met with, who entertain similar ideas. Ask them why it is their Calceolarias look so yellow? Their only response is an ominous shake of the head, or a shrug of the shoulder. When I was in Derbyshire, I could grow Calceolarias to any size, with very little

trouble, and great satisfaction to myself; but now, by reason of something (the soil, doubtless), I am only able to grow them from seed, like annuals; and to raise a stock from them after flowering, is, as "G. H." states, almost impossible. *R. Gilbert, Arundel.*

*Durability of certain kinds of Timber.*—Much as has been said on the subject, it is yet a matter of dispute which kind of timber, set in the ground as a gate-post, endures the influences of the weather and other causes longest. It is well known that the part under ground, as well as that above the soil, remains but little injured, while the portion on the surface decays with more or less rapidity, being eaten away, as it were. Now, I am not aware what agencies are at work to effect the destruction of that part which are not in full force elsewhere; but it is certain they are at work, and, sooner or later, they perform their office. Now could some means not be taken to counteract this state of things; charring seems to be the most simple and effectual of any in use, and assuredly it does prolong the existence of the post; but *how* it happens to do so has always appeared to me a difficult problem to solve. Perhaps some of your more learned correspondents will enlighten us on the subject; but if I were to hazard an opinion, I would suggest that the action of the fire, to a certain extent, seals, or rather, sears up the pores or cells of the timber, on the part acted upon, in such a manner as to make them inaccessible afterwards to the action of moisture, and, what may be likewise equally baneful, the air. Whether my theory is correct or not I cannot say, but I know that if two posts exactly alike be put down at one time, one charred and the other not, the charred one will last quite one-third longer than the uncharred one. But there are other queries that seem to puzzle me; a Beech or Hornbeam post, both very hard and heavy woods, are no more durable than Willow or Poplar, and in many cases they won't stand so long. Now, how is this to be accounted for? to all appearance the hard smooth surface of the two woods first mentioned would seem to offer as much resistance to decay as Elm, Larch, Fir, or Oak, but such is not the case; and I know of nothing that will decay sooner than Beech or Hornbeam—Sycamore and Horse-chestnut last about the same length of time. I remember a case in which a considerable length of new park fencing (close paling) was put up by direction of a town agent, Beech posts being used with Oak rails and paling: after a very few years the posts all gave way; part had to be sparred, and others were replaced at a great expense and trouble. I have taken some pains to ascertain the length of time various kinds of timber will stand in the ground without undergoing any preparation before being inserted; and the result of my enquiries is that Larch, when of great age and sound, is equally as durable as Oak or Sweet Chestnut, of which much has been said lately; and when very small pieces of young timber are used, Larch stands pre-eminently first. There may, however, be fancy timbers which are never likely to be produced in useful quantities more durable. I have found an Elder hedge stake, of a circumference of 6 or 8 inches, last longer than any other I have ever seen used. Next to that in point of size is the hard gnarly top of an old Larch, but that can hardly be called fair competition; the Elder outlasts it, but it would be unwise to advise its being generally planted on that account, as I don't know a more useless cumberer of ground than the Elder; and when it finds its way into hedges let it be extirpated without delay. While on the subject of the utility and durability of timber, let me call the attention of the sanguine planter of fancy Pines to the homely fact of enquiring into their probable value hereafter. It would be useless my giving an opinion; but I may mention that no timber I know seems really of less use, where firmness or durability is wanted, than the Weymouth Pine, and I much fear many of the fancy ones will partake of the same bad quality. The old Stone Pine, of which I have seen one specimen of considerable size cut up, is really a useful looking timber, resembling Scotch Fir, which when of suitable age and size, is as good as the majority of Baltic timber, and I would presume that many of the class partaking of the Scotch Fir character will be found equally good. I doubt, however, whether the showy Insignis, and some others, will be found of any further use than that of ornamenting dress grounds. *An Old Sawyer.*

*Eucalypti.*—As attention has been drawn in your pages to the possibility of growing the gigantic Eucalypti of Tasmania in some parts of England as timber trees, it may be interesting to state that there exist in Dorsetshire and Devon three young trees of Eucalyptus, already of considerable size, and which promise, from the number of winters they have survived, and from the vigour of their summer growth, to become ornamental, if not useful additions, to the landscape garden. Of these, one is at Mount Edgcombe, planted in a wood sloping down to the sea. A second is in the ornamental nursery garden of Mr. Veitch, at Exeter, where it is called E. montana. It is the only one that has flowered. The third is at Abbotsbury, about 18 ft. high, and upwards of 2 ft. round the bole, at 2 ft. from the ground. The exact measure at 18 in. above the ground, is 2 ft. 9 in. in girth. It has been planted about 16 years. These three specimens are all different in foliage; yet all seem forms of E. resinifera. E. cordata, or pulverulenta, is well known as hardy against a wall. It is remarkable that all these are glaucous Eucalypti; the dark-green leaved E. robusta, &c., seem, unfortunately, much more tender. *W. T. S.*

*Charcoal.*—Your correspondent, "J. D." (page 309), is wrong in stating that the charcoal made by the process adopted in making pyroligneous acid is the best; it never fetches so good a price as that made in the ordinary way; and whenever it has been used it has been found of inferior quality. *John Stoveld, Stedham Hall, near Midhurst.*

*Hints for Hybridisers.*—Try the various handsome sorts of Rhododendron with the neglected American R. punctatum; a new type of neat small bushes, with more showy flowers, as in the hybrids from caucasicum, with a distinct character, might result. Why are the tall Phloxes always chosen for muling, when the equally pretty and more distinct creeping kinds might afford a fresh set of hybrids better suited for pots, rocks, and small gardens than the larger sorts?—Will Azalea sinensis mule with indica, &c.? *S.*

*Potatoes.*—It is a very mistaken notion to suppose, that because a man plants his main crop of Potatoes in February, he either anticipates or wishes to have them appear above ground early. The object is, to prevent the sets from growing, and to retard, rather than expedite their vegetating. Tubers which sprout much before planting must necessarily be weakened, more particularly if the shoot is broken off, which is generally done. Too much care cannot be paid to the preservation of all descriptions of seed, especially Potatoes, which are so frequently injured by being allowed to heat in masses, impoverishing the tubers, both as food and seed. To see the manner in which Potatoes during the late mild winter have come through the "*Buries*," ought to convince men how destructive that system of keeping Potatoes is. *Falcon.*

*French Notions of English Gardening in the last Century.*—Mason (the author of the Poem on English gardens), commissions Horace Walpole, who was going to Paris, to get him Monsieur Watelet's Essay on Gardens, and desires him to go to see an island in the Seine, near Paris, which the French author had laid out in the true English style. In the volumes just published of Walpole's Letters to Mason, is the following description of this much vaunted English garden *le Moulin Joli*. "I have begun my observations (on the conversion of the French to English gardening) methodically; I have laid the axe to the root of the tree, for I have begun by visiting M. Watelet's Isle, called *le Moulin Joli*, If he has laid the axe to the root, and even to the branches, he has used it nowhere else. Instead of finding, as I expected, a windmill made of ivory and inlaid with false stones; instead of Dryads and Hamadryads gathering Acorns in baskets of gauze, M. Watelet has jumped back into nature, when she was not above 500 years old;—in one word his island differs in nothing from a French garden into which no mortal has set his foot for the last century, it is an ate (I don't know whether I spell well) joined to his terra firma, by two bridges, one of which he calls Dutch, and the other Chinese, and which are as unlike either as two Peas, and which is pierced and divided into straight narrow walks, *en berceau*, and surrounded by a rude path quite round. To give the *étoile* and air *champêtre*, a plenary indulgence has been granted to every Nettle, Thistle, and Bramble that grew in the garden, and they seem good in his sight. The receipt is as follows:—Take an ate full of Willows, cram it full of small Elms, and Poplar Pines, strip them into cradles, and cut them into paths, and leave all the rest as rough as you found it, and you will have a Moulin Joli. You must know this effort of genius is the more provoking, as the situation is charming; besides that, the isle is in the middle of the Seine, every peep-hole (though so small that you seem to look through the diminishing end of a spying-glass), besides terminating on one real windmill, is bounded by a château, a clocher, a village, a convent, a villa where Henrietta Maria was educated, or hermitage, to which Bossuet retired—not to mortify himself, but Fenelon. It is true, you catch these points of view over wide fields of chalk, which would produce frankincense as soon as Grass, and which, if they had symptoms of verdure, were waving ranks of Fennel, I always perceive here, when I am out of Paris; but I never can think myself in the country." *Dodman.*

*Young Trees injured by Rabbits.*—Can you or any of your readers inform me how I can best protect a plantation of young wood from the ravages of rabbits. Last year I planted a small piece of ground with ornamental trees, and not being able to afford a rabbit-proof fence, I find that they are almost all cut over about 3 inches from the ground by these wantonly mischievous little pests. My landlord allows neither shooting nor snaring, and I trouble you in the hope that you can suggest something with which I might anoint my trees, or else some kind of tree or shrub which does not suit the palate of my foe. I have found nothing come wrong to them but Hollies, and they are expensive. In my garden I have another foe to contend with; an insect, or worm I take it to be, from the small holes which I see in the surface of the soil. Whatever it is, it has effectually put an end to my hopes of early Cauliflower and Cabbages for this season. *Jolly Green.* [The paint mentioned at p. 343 of to-day's Paper is said to keep hares and rabbits from injuring trees. As to the worm, try what effect lime-water has on it.]

## Societies.

ROYAL SOUTH LONDON FLORICULTURAL, *May* 28.—There was an interesting show on this occasion, and the day being fine there was a fair attendance. One tent was filled with stove and greenhouse plants, contributed by Messrs. Over, Hamp, Stanly, Fraser, Pamplin, and Hook. A second tent was occupied by Azaleas, Cape Heaths, and Calceolarias, and a third by Pelargoniums and Verbenas. The TULIPS were furnished in quantity, and very good, considering the season.—In the Amateurs' Class, for 12 varieties, the 1st prize was awarded to J. Edwards, Esq., of Wace Cottage, Holloway, for nice blooms of Madame Vestris, Cerise Blanc, Optimus, Polyphemus, Cleopatra, Triumph Royal, Platoff, Byzantine, Claudiana, and Pilot. Mr. Betteridge, who was second, had Glory of Abingdon, Mountain Sylph, Elthiron, Lady Exeter, Polyphemus, M. Catalani, Roi de Siam, Vivid, Triumph Royal, and Holmes' King. Nurserymen:—1st prize to Mr. Lawrence, of Hampton, for Strong's King, Thalia, Aglaia, Norah Criena, Jeffrey's Elizabeth, Everard, Cleopatra, Brown's Polyphemus, Pandora, Lawrence's rose Lucetta, Vivid, and Catalani. 2d, to Mr. Turner, of Slough, for Queen of the North, Triumph Royal, Mary Lamb, Polyphemus, Alcon, Heroine, Pilot, Princess Royal, Catalani, and Strong's King. HEARTSEASE:—1st prize to Mr. Turner, for Constellation, Lucy Neal, Almanzor, Disraeli, Bellona, Mrs. Hamilton, Duke of Perth, Lord Walsingham, Sir R. Peel, Eustace, Constantine, Thisbe, Ophir, Ophelia, France Cycole, Mr. Beck, Climax, Zabdi, Duchess of Rutland, Leader, Madame Sontag, Ibrahim Pacha, Queen of England, Addison, Caroline, Rainbow, Sambo, Supreme, Milton, Master Lacon, Princess, Polyphemus, Mrs. Beck, Viceroy, and Jenny Jones. In the Amateur's Class, the first prize was won by Mr. Betteridge. For Seedlings, Mr. Norman, of Woolwich, was awarded a first class Certificate for a medium-sized byblomen Tulip, named Mr. Smith, and a 2d prize for a rose Tulip, named Princess Helena. Mr. Gaines had some nice Calceolarias, and Mr. Lockner sent a pretty Verbena, an improvement on Desdemona. In a stand of Verbenas, from Mr. Smith, of Hornsey-road, we remarked trusses of the beautiful varieties Shylock and Purple Rival. A first class Certificate was given to Mr. Hunt for his Pansy "Pandora."

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BOTANICAL, OF EDINBURGH, *June* 15.—Professor BALFOUR in the chair. In taking the chair the Professor stated, that having received inquiries from various quarters as to a criticism which had appeared of the second Edition of his Manual of Botany, in which several glaring errors have been exposed, he considered that he was called upon, as holding the office of President of the Botanical Society, to take the opportunity of stating that he had not edited this edition. He therefore begged to assure the Society, that he was not responsible for the form in which the work had appeared, nor for any inaccuracies that might occur in it. The following papers were read:—1. *Biographical Notice of the late Mr. George Don.* By Dr. Neill. 2. *List of Plants found in Peebleshire.* By G. S. Blackie. Of the plants included in this list the following may be mentioned:—Vicia Orobus, Manorhead; Galium pusillum; Pyrola rotundifolia; Primula farinosa; Betula nana; Sibbaldia procumbens, Manorhead; Saxifraga stellaris; Arctostaphylos Uva-ursi; Hymenophyllum Tunbridgense, and H. Wilsoni. 3. *Notice of Exidia hispidula, Berk., used in China as a remedy in disease, and also as an article of diet.* By Dr. Dill, Brighton. This communication was included in a letter to Dr. Balfour, who communicated it to the Society. Dr. Dill remarks:—"The fungus which I enclose for your inspection was first brought to my notice in Hong Kong as a favourite remedy of the Chinese in attacks of dysentery. It is used by them in the form of decoction, being boiled along with dried plums, the latter being added merely to give flavour, &c., to the decoction. The first time I ever saw it used was in the case of the person who told me of its efficacy in the before-mentioned malady. This man, an English gardener, was suffering from a severe attack of dysentery, and as his house was a most unhealthy one I strongly advised his going into hospital. He said before doing so he would like to try a Chinese medicine, which had been strongly recommended to him by an old Chinaman, a friend of his. I said, 'Take care what you do with yourself, for your case won't do to be trifled with.' Three days after this I was surprised to find him at his work, and well again. 'Sir,' he said, 'this medicine has had such a wonderful effect upon me that I have kept some of it to show you.' The specimen he then gave me I handed to my Chinese servant, who seemed perfectly familiar with it, and speedily obtained me a large supply. I then determined to try it in the first case that came before me. A few days after a sailor applied to me for chronic dysentery, which had been going on for 18 months, having contracted the malady when in China, on a previous voyage. I immediately placed him on a strong decoction of the fungus, which he took in 2 oz. dozes, three times a day; and in eight or ten days he seemed quite cured. Being then permitted to go out, he got drunk, was exposed to night air, &c., and had a return of his malady. Again, however, the same medicine was employed with the same favourable result, and he joined his ship in the enjoyment of recruited health. These two cases made me very sanguine of the value of the fungus as a cure in diarrhœa and dysentery, but future experience by no means realised the hopes I entertained respecting it. Since then I have so often found it fail completely, that I now regard it as being inferior in efficacy to many of the remedial agents we already possess. Mr. A. H. Balfour, in Hong Kong, has also tried it successfully, but I think his experience has been similar to my own. It grows on old, dead trees, and rotten timber; hence, and from its shape, the name by which it is designated in China—'Mok-yii,' the ear of

a tree. The fungus itself is much prized by them as an article of food, on account of its mucilaginous properties. They eat it in soups, stews, &c., and consider it a great dainty. In taste it is very insipid, but certainly not more so than the far-famed bird's nest." Dr. Maclagan exhibited specimens of the plant brought from Penang by Mr. W. D. Maclagan. In that country it is called Sweekiang, and is used for food. 4. *On poisoning with Indian species of Datura.* By Dr. Herbert Giraud, Professor of Chemistry and Materia Medica, in Grant Medical College, Bombay. Dr. Giraud had brought this subject before the Medical and Physical Society of Bombay, and the observations forming the present paper were communicated to the Botanical Society by Dr. Balfour. The very numerous cases of poisoning by Datura that have of late occurred in Bombay, have afforded opportunities for observing the action of a poison, of which but a scanty record is to be found in the standard works on Materia Medica and Toxicology. Several species of the genus Datura are indigenous throughout India; and "Datura alba" (D. metel. Rox. Flora, I., p. 561) and "Datura fastuosa" (Rox. Flora, I., p. 561), are found growing in gardens and amongst rubbish, about villages, all over the country; although the species most familiar to Europeans, the "Datura Stramonium," is unknown here. The intoxicating properties of these plants appear to have been known amongst Eastern nations from time immemorial, and they have long been employed in India, China (where D. ferox is used), and the islands of the Eastern Archipelago to facilitate the commission of theft and other crimes; for which nefarious purposes the Datura Stramonium appears, of late years, to have been in some few instances employed in France and Germany. Here the cases of poisoning by the species of Datura are so frequent, that the natives usually recognise them by their characteristic symptoms. The motives that prompt the administration of the poison, appear to be extremely various. It is remarkable, that although administered under many different circumstances, and with varied motives, it should so seldom prove fatal here, that not a single case, in which the effects of Datura could be distinctly traced, has terminated fatally; and of 51 cases that were treated in the Bombay Hospital during the past year, only four presented alarming symptoms. Notwithstanding the recent prevalence of Datura-poisoning, it has been only on the presumptive evidence of its characteristic symptoms that its action has been inferred. The poison is administered so stealthily, and the natives are so backward in aiding the cause of justice, that it is next to impossible to obtain positive evidence of the administration of the poison, or to trace it to the culprit; although, from their familiarity with its nature, and with the modes of its administration, it is evident that many of the lower orders of the people are acquainted with the adepts who employ it. These remarks, however, apply with equal truth to cases of poisoning by such substances as arsenic and corrosive sublimate, the presence of which may be determined by the surer methods of chemical analysis. From the information Dr. Giraud has been able to collect from natives, it would appear that the seeds are the parts of the plant usually administered. They are powdered and thrown into Rice, Bajree, and other grains; or mixed up with cakes and sweetmeats. Sometimes, however, an infusion or decoction of the leaves is prepared and introduced into the vessels in which the food is being cooked; but of the usual quantities of the seeds employed, or of the strength of the infusion and decoction, Dr. Giraud has had no means of judging. Of the cause that has produced so sudden and remarkable an increase in the use of this poison, it is difficult to form any conjecture. Viewing the most prevalent motive to Datura-poisoning, it would seem as if some regularly organised band of thieves had, within the last year invaded our island. From 1837 and 1838, when a few cases of poisoning, supposed to be from Datura, were noticed by Drs. Bell and M'Lennan, in the annual reports of the Native General Hospital, up to 1848 only from six to ten such cases have been annually recorded; but during the past year, 51 cases have come under hospital treatment. In a note received by Dr. Cleghorn from the superintendent of Thuggee in Mysore, it was stated, that the seeds of Datura alba were employed by thieves to narcotise their victims, and deprive them of the power of resistance. 5. *Report on the State of Vegetation in the Edinburgh Botanic Garden.* By Mr. M'Nab. The latter also exhibited several sections of Oak stems found in the course of excavations made at Tanfield, Canonmills, and read the following notice supplied by Mr. M'Caul, who had superintended the operations:—"In the course of excavating a pit for a new gasometer nine years ago, a number of Oak stems, the largest two feet in diameter, were found, of which Nos. 1 and 2 are sections. At that time I did not take any interest in such things, and therefore cannot give any accurate information regarding them. In the pit now excavating, and from 80 to 90 feet from the one alluded to, two fine trees were found, from which the sections Nos. 3 and 4 were cut. The position they occupied were about 10 feet below the original surface, beneath the lowest bed of gravel, and immediately over the boulder clay, their direction being nearly east and west. Three of the pieces were lying horizontally, and two of them had a rise towards the east at an angle of 10°. At the western part of these stems roots in connection with them could be traced; but they mouldered away to the touch." The sections exhibited have been presented by Mr. M'Caul to the Museum at the Botanic Garden. A specimen of Hyoscyamus raised from seeds communicated to Mr. Moore, of the Glasnevin Botanic Garden, by Major Madden, was exhibited. The plant grows in the Himalaya, and resembles H. albus in some respects. In the open border it attains the height of 2 feet. It has ovate leaves and terminal cymes. The flowers are of a dingy yellow, and the calyx is covered with glandular pubescence. Dr. Douglas Maclagan tried the effect of the plant on the eye. A single drop of the fresh juice caused dilatation of the pupil in 20 minutes, and the dilatation with slight double vision continued for 24 hours.—Dr. Mitchell was elected Local Secretary for Nottingham, in room of Dr. Howitt, who has gone to Australia.—T. Ivory, Esq., was elected a Fellow.

ROYAL HORTICULTURAL OF CORNWALL, *May* 16.—This was the first exhibition for the present year. The prizes were awarded as follows:—Ornamental Plant, in flower, not previously exhibited (Abelia floribunda), Bronze Medal, Mr. F. Passingham. Best 12 Stove and Greenhouse Plants (Azalea indica grandiflora, Aphelexis spectabilis grandiflora, Pimelea Hendersoni, Azalea triumphans, Erica ventricosa incarnata, Eriostemon intermedium, Aphelexis humilis, Euphorbia splendens, Begonia sanguinea, Acacia pulchella, Leschenaultia formosa, Gloxiana Teuchlerii), Silver Medal, Mr. Passingham; 2d (Epacris grandiflora, Sprengelia incarnata, Pimelea decussata, Leschenaultia biloba, Azalea triumphans, A. optima, Tropæolum tricolorum, Vinca ocellata alba, Clerodendron squamatum, Chironia floribunda, Clematis Sieboldii, and a fancy Geranium), Mr. R. Friend, gr. to Mrs. G. C. Fox; 3d (Euphorbia splendens, Clematis azurea grandiflora, Begonia floribunda, Epacris miniata, Gardenia florida, Zichya tricolor, Azalea alba, Erica Cavendishii, Chorozema cordifolium, Oxalis floribunda, Azalea carminata, Corræa ventricosa), Mr. G. N. Simmons; 4th (Clerodendron splendens, C. affine, Leschenaultia grandiflora, Epacris miniata, Vinca ocellata, Tropæolum tricolorum, Aphelexis sesamoides, Tetratheca verticillata, Erica florida, campanulata, Pimelea Nieppergiana), Mr. Daubuz. Best 6 varieties of ditto (Aphelexis purpurea macrantha, Epacris miniata, a Gompholobium, Leschenaultia formosa, Chorozema rotundifolium, Begonia alba coccinea), Mr. F. Passingham; 2d (Tetratheca verticillata, Ardisia crenulata, Erica ventricosa superba, Pimelea Hendersoni, Aphelexis purpurea macrantha, Azalea triumphans), Mr. R. Friend; 3d (Eutaxia myrtifolia Leschenaultia biloba, Adenandra speciosa, Clerodendron affine, an Everlasting, Eriostemon intermedium), Mr. Daubuz; 4th (Pimelea hispida, Tropæolum tricolorum, Azalea indica alba, Epacris grandiflora, Epiphyllum Jenkinsoni, Nerium Oleander), Rev. T. Phillpotts. Best specimen of Stove Plant (Torenia Asiatica), Rev. T. Phillpotts; 2d (Clerodendron affine), Mr. Daubuz; 3d (Euphorbia splendens), Mr. F. Passingham. Best Greenhouse specimen (Aphelexis purpurea grandiflora), Mr. F. Passingham; 2d (Pimelea Hendersoni), Mr. R. Friend; 3d (Chorozema varium), Rev. T. Phillpotts. Best 6 Orchids, in flower (Phaius Wallichii, Calanthe veratrifolia, Oncidium flexuosum, and two Lycastes), Rev. T. Phillpotts; 2d (Cattleya Mossiæ, Calanthe veratrifolia, Oncidium leucochilum, and O. pumilum), Mr. G. N. Simmons; 3d (Lycaste cruenta, Maxillaria pubescens, Cattleya Forbesii), Mr. W. M. Tweedy. Best specimen (Cattleya Mossiæ), Rev. T. Phillpotts; 2d (Calanthe veratrifolia), Mr. W. M. Tweedy. Best 6 Gloxinias, Gesneras, Achimenes, or Sinningias (Teuchlerii, Fyfiana, Maxima, Sinningia guttata, Achimenes grandiflora, A. picta), Mr. Daubuz; 2d (Gesnera Douglasii, G. Suttonii, G. bulbosa, Achimenes picta, A. grandiflora), Rev. T. Phillpotts. Best 6 Bulbous Plants, in flower, Mr. R. Friend. Best 6 Geraniums (Orion, Beck's Rosy Circle, Arnal's Virgin Queen, Forget-me-not, Marmion, and a Seedling), Mr. R. Friend; 2d (Gulielma, Field Marshal, Gaines' Meleager, Beeswing, Cruentum, Forster's Constance, Mr. Daubuz. Best 6 Fancies (Queen Victoria, Anais, Lady Rivers, La Belle Africana, Unique, Sidonie), Mr. F. Passingham. Best 6 Heaths (Bowieana, Cavendishii, ventricosa conspicua, v. purpurescens, v. fasciculata rosea, v. superba), Mr. F. Passingham; 2d (elegans, perspicua nana, Loddigesii, dilecta, and sauveolens), Mr. Daubuz. Best Specimen Heath (Erica coccinea minor), Rev. T. Phillpotts; 2d (ventricosa blanda), Mr. F. Passingham. Best collection of Azaleas, Rhododendrons, or Kalmias (Azalea indica grandiflora, Herbertii, triumphans, optima, splendida, Broughtonii), Mr. F. Passingham; 2d (Indica alba, Exquisite, Rosea, Duke of Devonshire, Knight's optima, Rosea punctata), Mr. Daubuz. Best specimen of ditto (variegata), Rev. T. Phillpotts; 2d (optima), Mr. F. Passingham. Best collection of Cinerarias (Cerito, Annie, Miss Harriet, Climax, Purpurea, Princess Royal), Mr. F. Passingham; 2d (6 seedlings), Mr. W. M. Tweedy. Best specimen of ditto (Cerito), Mr. F. Passingham. Best collection of Calceolarias (Elegans, Eclipse, Lucy Neal, Rebecca, Alboni), Mr. Daubuz; 2d (Delicata, Queen of Beauties, Captivation, Resplendens, Standard, Sir C. Napier), Mr. F. Passingham. Best specimen of ditto (Seedling), Mr. Daubuz. Best collection of Heartsease (Zabdi, Sylph, Prince of Orange, Optimus, Cornish Lass, Rainbow, Caroline, Polynices, Climax, Duchess of Rutland, Supreme, Marchioness of Lothian, Magnificent, Attraction, Superb, Juventa), Mr. W. Woolcock; 2d (Ophir, Lady Sale, Taglioni, Lucy Neal, Splendid, Blue Perfection, Great Western, Caroline, Oats's Seedling, Climax, Malvern, Punch), Rev. Canon Rogers. Best 6 Roses in pots (Baronne Prevost, Niphetos, Duchess of Sutherland, Highclerc Seedling, Madame Laffay, La Belle Allamande), Mr. F. Passingham; 2d (Souvenir de la Malmaison, Géant des Batailles, &c.), Mr. R. Friend; 3d (Triumphant, Géant des Batailles, Madame Desprez, General Lamoriciere), Admiral Reynolds. *West Briton.*

SOUTH DEVON HORTICULTURAL, *May* 20.—This new Society held its first exhibition in the Royal Botanical and Horticultural Gardens, Plymouth. Several prizes were awarded; but we have only been furnished with a list of the awards, without the names of the flowers for which they were given.

## Garden Memoranda.

W. O. HUNT'S, ESQ., STRATFORD-ON-AVON.—In the garden here, there is one of the handsomest plants in the kingdom, of the Chinese Glycine, or Wistaria sinensis; it covers at the present time 2243 superficial feet of wall; there are at least 25,000 racemes of blossoms upon the tree, the effect of which is magnificent. *J. B.*

LADY SCOTT'S, PETERSHAM.—This interesting villa stands on the banks of the Thames, near Richmond. In front of the house is a small, but well arranged flower garden, whose beds are quite a mass of gaudy flowers all the spring. This is effected by means of Anemones, Hyacinths, Tulips, Narcissus, Nemophila, the beautiful hardy yellow Primrose, and its delightful companion the single dark blue Russian Violet. These are succeeded by the usual bedding plants; the walks here and there are trellised over and covered with Rose trees, as is also the west front of the house. The greenhouse was full of handsome flowering plants, and the lawn closely mown and in beautiful condition. The kitchen garden is small but compact. As in the ornamental ground, everything there does much credit to Mr. Winton, who has been gardener to Lady Scott for these last 20 years. There are two glass houses in this garden, which are used for wintering plants in for turning out in summer, as well as for growing Strawberries, Vines, &c., in. Mr. Winton has two ways of growing his Asparagus—in beds, and in single rows; but he says the single rows are always in cutting a week or more before the beds. This place is altogether quite a blaze of flowers during the summer. The moment a set of plants is done blooming another lot takes their place, from the reserve garden, and in this way the garden is constantly maintained in great beauty.

## Miscellaneous.

*Method of Preserving young Fruit Trees from the attacks of Hares and Rabbits.*—All lovers of gardens know by experience that hares and rabbits devour with great avidity the annual bark of young fruit trees, and particularly of dwarf Apple trees, among which the most healthy and vigorous are always destroyed the first, in consequence of their bark being the most tender and savoury. As soon as the ground is covered with snow, these animals, no longer finding anything in the fields on which they can browse, begin their devastations in the gardens: if they are numerous, and the fall of snow heavy, a few nights only are sufficient for them completely to ruin the most beautiful plantation, and to annihilate the result of many years of labour and care. Happily, nothing is more easy than to place these trees beyond the attacks of these marauders protected by the law. The following is the plan I have adopted with complete success during the last six or seven years. I mix about 4½ pounds of quick-lime, in lumps, with 2½ gallons of water, and add a few handfuls of soot, stirring the liquid until the two substances are intimately incorporated. I then take a handful of Rye-straw and bind it on a stick to form a kind of brush, with which I grey-wash the trunk and branches of my trees from the ground to at least a yard above it; for should the snow drift by the wind against the foot of the trees, the hares, by means of the inclined plane thus afforded them, would be able to attack the trees at a much greater height. The wash, applied hot, has also the advantage of preserving the bark of the trees in a state of perfect health, and preventing the increase of moss, which is often pernicious in its effect, and always very disagreeable to the eye. It is desirable that this preservative application should be made in dry weather, in order that the mixture on drying may adhere to the bark; for should it rain at the time, or immediately afterwards, the mixture would be washed from the trees, and it would be necessary to re-commence the operation. If the mixture also is applied during a frost, there would be little chance of perfect success; as the part of the bark on which it would be laid would be thawed. If, however, through want of foresight, a frost sets in during the course of the operation, and it becomes urgent to complete it, we may do so with perfect success by choosing that moment of the day in which the sun strikes most strongly with his rays the trees on which we wish to operate. Three gallons of this wash are sufficient to secure two or three hundred dwarf trees from the ravages of hares; a result that may be obtained for a pennyworth of lime and the day's work of an active labourer. This plan is equally infallible for the preservation of grafts and all nursery collections. *From the French of the Baron Vander-Straeten (in the Journal Agricole de Verviers.)*

*Sale of Orchids.*—A small collection from Veragua and Sierra Leone, was sold the other day, by Mr. Stevens, at the following prices:—The Sweet Trichopil, 2*l.* 15*s.*; a Brassia, 1*l.*; Trichopil, new sp., 1*l.*; the Long-tailed Lady's Slipper (Cypripedium caudatum), from 2*l.* to 9*l.* 10*s.*; Sobralia labiata, from 1*l.* to 1*l.* 4*s.*; a Huntleya "with white flowers," ditto; the Spotted Saccolabe (S. guttatum), from 2*l.* to 3*l.* 15*s.*; Angræcum caudatum, from 1*l.* 10*s.* to 2*l.* 2*s.*; other lots, of which there were in all 155, realised from 1*l.* to 2*l.* per lot. At a previous sale, which consisted chiefly of Dendrobes, a few plants of D. albo-sanguineum of Lindley, a beautiful new species, fetched from 2*l.* 12*s.* 6*d.* to 3*l.* 5*s.* each.

*The Gardnerian Herbarium.*—In consequence of the lamented death of Mr. Gardner, instructions have been given to the executors to sell, without reserve, the entire of the above-mentioned collections of this gentleman, which have recently been received in London for that purpose. The whole Gardnerian Herbarium, that is, the collection arranged by himself for his own use, it is wished should be disposed of separately and by private contract; it is admirably arranged, and as fully and correctly named as probably any of like extent, all the specimens upon the best stout demy folio paper, measuring 16 inches long by 10½ inches broad. Every genus is included in one or more envelopes of the same paper in folded sheets, and marked on the outside with the name of the genus, that of the Natural Family, and numbered according to the numbers and arrangement in Endlicher's "Genera Plantarum." The specimens are invariably in excellent condition, no trace of insect having been seen in any of them; and we have reason to believe that they are all poisoned. From as accurate a calculation as has yet been made, there are about 14,000 papers containing specimens, and we think we are within bounds when we say that there are 12,000 species of Phænogamous plants and Ferns. The collection is, as may be antici-

pated, extremely rich in Brazilian and Ceylon plants, gathered mostly by himself during 5½ years' travels in the former country (and they are the authority for his many published species), and during his 4 years' sojourn in Ceylon. It further includes numerous plants prepared by himself in Mauritius, and a still more extended assortment from the Neilgherries; a rich collection of Malacca plants from the late Mr. Griffiths; Hong Kong plants from Captain Champion; South European ones from Mr. Bentham, and others from various parts of the globe; the whole forming an extensive and well-authenticated herbarium, such as is seldom offered for sale to the botanical world. Mr. Samuel Stevens, 24, Bloomsbury-street, London, is charged with the disposal of this, and further particulars may be obtained on enquiry of him, as also a sight of the plants. The books, almost exclusively botanical, and a few unarranged bundles of duplicate plants, will be sold by auction hereafter at Mr. J. C. Stevens's Room, King-street, Covent-garden, London.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

There are many common plants which, if grown well, make a splendid appearance in the greenhouse or conservatory in the early part of the winter, when the generality of plants are going out of flower. Among these are the various Salvias, some Begonias, Plumbago capensis, Veronica salicifolia, &c. If these are now planted out in rich soil they will make magnificent plants by September, when they should be taken up, potted, trained, and placed in a shady situation to recover; and then brought into a light house, when the finest display of flowers will be obtained, at the most acceptable period. It is at all times, and with every one, an important object to preserve plants in flower as long as possible. To this end, as soon as their blossoms are perfectly expanded, they should be removed to a cooler atmosphere than that in which they have been grown, and carefully shaded from gleamy sunshine. To counteract the drying effects of strong currents of air, which are unavoidable in hot weather, the house should be kept moist by frequently sprinkling the floor and walls, or both plants and flowers will flag, in spite of the shading; much, however, may be done by hanging a thin bunting before the openings, and occasionally syringing it; this breaks and cools the current of air as it passes through it. In dull or damp weather, however, a directly opposite mode of proceeding must be pursued; moisture is then injurious, and must be carefully avoided; and the plants should stand sufficiently far apart to secure a full and free circulation of air amongst them. Let no blossoms remain after they fade, nor ever allow the energies of a plant to be exhausted in producing seed, unless it is positively required. Plants of which it is desired to make large specimens in the shortest possible time, should not be allowed to produce flowers until they have attained the desired size. All specimen plants should have plenty of room, and should be occasionally turned round, in order to prevent their growing one-sided. Leaves of Gloxinias should now be inserted into pots of sand; these, if well managed, will form strong bulbs this season, and will flower during February and March in 6-inch pots.

FORCING DEPARTMENT.

Pineries.—Look carefully to the fruiting plants, to see that they are not overburdened with suckers, and let them have an occasional watering with liquid manure, to assist the swelling of the fruit. If the plants, which are just on the point of showing, are in pots, it will be an advantage to shift them immediately into larger ones; to top-dress them with some rich turfy loam, or to turn them out entirely into the soil, which is by far the most preferable method. Where the pot system is pursued, many of the plants, especially of the young stock, will require repotting; and at this time they should receive a large shift, as their most active growing season is now approaching. After potting, a closer and moister atmosphere must be kept up for a few days, till they begin to root into the new soil. No plant stands in greater need of shading during bright sunshine than the Pine-apple; but as it is not only unnecessary, but injurious in dull weather, the canvas should be so adjusted, by means of rollers, that it can be applied or removed at pleasure. Vineries.—If the fruit is all gathered in the earliest house the Vines should again be treated with a moderately warm atmosphere, and syringed daily, to destroy insects, and to keep the foliage in a healthy state as long as possible. In order that the Vines may have every means of recruiting their energies for next season, let them have occasional waterings of liquid manure of moderate strength.

FLOWER GARDEN AND SHRUBBERIES.

All is now hope and activity with the enthusiastic gardener, in anticipation of the speedy realisation of the dreams of floral splendour, which he has been indulging in for the last six months; and for the accomplishment of which he has, during that period, striven most energetically. While this state of things is gradually developing itself, let due care be taken to have every part of the grounds in the most careful order. As the young plants progress, some will require pegging down, and others tying up. For the former purpose, small Birch hooks are most substantial for plants of a stiff habit; but many plants, if once fixed in their position, retain it, either by emitting roots or by the natural inflexibility acquired by their stems. For the fastening down of such plants, we reserve all the roughest and coarsest of our bass matting, and cut it into pieces about 6 or 8 inches long; these we form into loops, which clip the shoots, and the ends are fastened into the ground with a blunt dibble. In performing this operation, the heads of the plants should be turned towards the north, as the young laterals will be drawn by the light towards the other points of the compass, and by this means the beds will appear well filled from all sides. The young plants in the beds will be considerably benefited by stirring the soil among them with a small fork, especially when it has been caked over by rain. This operation will at the same time destroy weeds, and the ground will keep clean twice as long as it will with merely hoeing and raking, and it will also admit rain more freely, and retain the moisture longer than when the surface is smooth.

FLORIST'S FLOWERS.

The season for Tulips will now be getting over, in the southern counties, whilst we hear that the shows in Lancashire, and northwards, will take place next week. We would remind the amateur to take care of the offsets. These, generally being exposed, require taking out of the ground first, so soon as the foliage becomes yellow: by attending to this, the bulbs dry of a nice light brown, a point of some importance. As for the main beds, we would remove the side awnings, but we have our doubts about the propriety of taking off the cover; if the foliage is in a healthy state, we believe they will be in a much finer state next season, by keeping them from excessive rains, which have a tendency to cause a grossness which florists would rather avoid. Pinks and Ranunculuses will now require considerable care—the spindling flower stems must be tied to neat sticks, and as soon as green-fly appears, brush them off with a camel-hair pencil; a man will go over a very large collection in a short time. They will require plenty of water, and occasionally liquid manure. Keep the Ranunculuses free from the Cicada spumaria, or "froth louse," which will often locate itself on the stems; shade seedlings from direct sun—exposure to its warm rays is prejudicial. Dahlias.—Plant out directly, &c.

KITCHEN GARDEN.

Every means should be put in practice for checking the ravages of insects of every kind with which gardens are now teeming, and which if not prevented will commit serious havoc among the crops of fruit and vegetables. Slugs and snails are most easily destroyed by picking them by hand during moist evenings and mornings, and wireworm may be attracted by pieces of Carrot, Turnip, or Beet, put into the ground where they may be doing mischief. The Leek is becoming so favourite a vegetable, that it will well repay a little additional care in its cultivation, its value depending upon the production of a long, thick, well-blanched stem. They may be grown in one season to 14 or 16 inches in length, and upwards of 2 inches in diameter; and from their growing so closely together, they form one of the most productive of kitchen-garden crops. The ground should be trenched 18 inches deep, the bottom of the trench being stirred up with a fork, and 4 inches of good rotten manure laid on to it; over which the whole of the soil from the next trench should be placed. If the ground has not been prepared previously, it is a very convenient course of proceeding to carry on the trenching and planting together, so as to prevent in a great measure the compression of the soil after or during planting. This is the more necessary in the method about to be described, as raking or forking about the plants will, for some time, be impossible. The plants should be put in about 6 inches apart, and 9 inches from row to row. Premising that the soil is sufficiently moist to prevent its falling in, the holes for the plants should be made 14 inches deep, with a dibber 2 inches in diameter, and into each of these a plant should be dropped and watered. The plants are thus placed in the most favourable position for growing, which they will continue to do till Christmas. Forking or stirring the ground among growing crops is highly beneficial to them, and it is at the same time an excellent method of destroying weeds, which are now advancing rapidly. Cutting should now be entirely discontinued from a portion of the Asparagus beds, especially from those intended for forcing early next winter. Continue to put in successional crops of Peas, Beans, Lettuces, and Turnips. A few rows of Cauliflowers, Cabbages, and autumn Broccoli, should be planted at intervals of from 10 days to a fortnight; selecting the strongest plants from the beds, and lifting and transferring them with as much earth as will hang to their roots. If Beet, Parsnips, or Carrots, have come up badly, sow again directly, as they will still have time to make useful roots. Some trenches of Celery should now be planted, and more got ready for successional plantings. If the Cardoon trenches have not yet been prepared, lose no time in doing so; as the first sowing should now be made in the open ground, and another in about a fortnight or three weeks. When sown too early, they are very apt to run to seed.

State of the Weather near London, for the week ending May 29, 1851, as observed at the Horticultural Garden, Chiswick.

| May. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 23 | 5 | 30.263 | 30.254 | 66 | 38 | 52.0 | 54 | 51 | N.W | .00 |
| Satur.. 24 | 23 | 30.342 | 30.286 | 71 | 47 | 59.0 | 54 | 52 | S.E. | .00 |
| Sunday. 25 | 24 | 30.208 | 29.921 | 72 | 45 | 58.5 | 55 | 52 | S.W. | .08 |
| Monday 26 | 25 | 29 965 | 29.962 | 62 | 34 | 48.0 | 56 | 52½ | N.E | .01 |
| Tues. .. 27 | 26 | 30.093 | 30.066 | 63 | 46 | 54 5 | 54½ | 54½ | N.W. | .00 |
| Wed. .. 28 | 27 | 30.254 | 30.203 | 68 | 39 | 53.5 | 55 | 53 | N E. | .00 |
| Thurs.. 29 | 28 | 30.367 | 30.349 | 75 | 47 | 61.0 | 55½ | 52½ | N. | .00 |
| Average.... | | 30.214 | 30.140 | 68.1 | 42 3 | 55.2 | 54 8 | 52 1 | | .09 |

May 23—Hazy; fine; clear at night.
— 24—Fine; very fine; clear at night.
— 25—Overcast; cloudy; rain; overcast.
— 26—Fine; slightly clouded; cold at night.
— 27—Fine throughout; overcast.
— 28—Fine; hazy; clear and cold.
— 29—Fine; cloudless; very fine with bright sun; clear at night.
Mean temperature of the week, 1 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending June 7, 1851.

| June. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 1 | 70.9 | 46.6 | 58.7 | 11 | 0.27 in. | 3 | 5 | 1 | 5 | 5 | 2 | 4 | 1 |
| Mon. 2 | 70.3 | 47.1 | 58.7 | 8 | 0.33 | 1 | 4 | 2 | 2 | 3 | 5 | 3 | 4 |
| Tues. 3 | 71.2 | 46.1 | 58.7 | 8 | 0.91 | 1 | 1 | 4 | 1 | 5 | 7 | 3 | 4 |
| Wed. 4 | 71.5 | 47.2 | 59.4 | 10 | 0.76 | 1 | 3 | 2 | 2 | 3 | 6 | 5 | 3 |
| Thurs. 5 | 71.1 | 47.2 | 59.1 | 14 | 0.64 | 2 | 3 | 2 | — | 4 | 5 | 6 | 3 |
| Friday 6 | 68.6 | 47.4 | 58 0 | 13 | 0.28 | 4 | 4 | 1 | 2 | 3 | 6 | 2 | 3 |
| Satur. 7 | 68.5 | 47.4 | 58.0 | 9 | 0.53 | 3 | 5 | — | 2 | 4 | 5 | 3 | 3 |

The highest temperature during the above period occurred on the 7th, 1846—therm. 90 deg.; and the lowest on the 3d, 1837—therm. 35 deg.

## Notices to Correspondents.

Accuba japonica: *J G.* Abortive fruits are occasionally produced by it. Perfect fruit, containing good seed, never.

Books: *Mrs G C* will find a little book called "Traité sur la Camellia," by M. de Jonghe, just published at Brussels, a safe and useful guide. The best separate work on Heaths is that of the late Mr. W. Macnab.—*A A.* The last edition of the Horticultural Society's Catalogue of Fruits was published in 1842. Its price is *3s. 6d.* to Fellows, *5s.* to the public.‡

Dried Apples: *Thos Osborn.* We believe that the tree from which the Normandy Pippin is gathered is the Reinette grise, largely cultivated in Normandy. It is understood to be prepared by scalding, so as to remove the skin, and then by simple drying.

Gooseberries and Currants: *G L.* They may be formed into standards by pruning away the lower branches, so as to induce them to make a clean bare stem.‡

Hardy Azaleas: *M L.* Cut them down in November next.

Horticultural Society: *Beginner.* Send your name and address to the Secretary, 21, Regent-street, London, and a schedule will be forwarded to you.‡

Italian Gardens: *Winter Garden.* You can either use sand of various colours, not very easy to procure; or you may have the walks constructed with cement artificially coloured. Any ingenious plasterer would point out the method of colouring it.

Names of Plants: *A S.* It looks like a fragment of the Carob tree, Ceratonia siliqua, and if so, is a greenhouse plant.—*L L L.* Flowers and leaves of the Bird Cherry.—*E S.* This is the Hippeastrum vittatum; the plant which was so called, by an accidental slip, was, if our memory is true, H. reticulatum. If not, and you can send another of the latter, its exact name shall be ascertained.—*Tim.* 1, Cyanotis vittata; 2 and 3, no flowers; 4, seems to be a morsel of Acacia decipiens.—*A B C.* 1, Anthoxanthum odoratum; 2, Poa pratensis; 3, Alopecurus pratensis; 4, some indeterminable Carex. We really hope you will find some friend able to give you the names of such common things.—*E M E.* The Alpine Rose is R. alpina: it is more likely to be found in Botanic Gardens than elsewhere, as it is not handsome enough for nurserymen.—*Sub.* Geranium pratense, and Vaccinium resinosum.—*Quercus.* 1, Solidago virgaurea; 2, Mentha incana, apparently. — *Reader.* 1, Euonymus latifolius; 2, Staphylea pinnata; 3, Lathyrus tuberosus; 4, Aristolochia tomentosa.—*J L.* Ranunculus aquatilis, Veronica chamædrys, Sedum album? a monster. —*M L.* 1, Lastrea dilatata; 2, Asplenium Filix-fœmina; 3, Lastrea Filix-mas; 4, Polystichum lobatum; 5, too young, and the specimen quite crumpled—may be an Asplenium Filix-fœmina; 6, Polypodium Dryopteris; 7, Cystopteris fragilis; 8, Lastrea dilatata. *S.*—A few inquiries stand over for further consideration.

Nightingales: *John Bailey.* Considering the long distance your bird has travelled, and the disturbance he has experienced so soon after being caught, it cannot be a matter for wonder that he should "not sing yet." If he is of a quiet disposition, your having removed the tissue-paper from before his cage thus early will be of little consequence. Pay him every possible attention, and treat him to a feast of ants' eggs from time to time, and the chances are he will prove his gratitude, at an early day, by making his sentiments known in *song. W. K.*

Pears: *Inquirer.* The Beurré Rance Pear, grown on walls, does not always ripen well. When this appears likely to be the case, the fruit should be put into a temperature of 60° in February. In order to prevent damp and mouldiness, give plenty of ventilation when the external and internal air is of the same temperature.‖

Pines: *H B.* You have ample bottom heat. If you want to grow good Pines, read Glendinning on the "Pine-apple," and follow his instructions exactly; when you have done that, and had some very good Queens, then read other treatises on the subject. In the meanwhile study attentively the directions in our "Calendar," which are given by one of the best practical gardeners in England, living in a climate like that of Cheshire.

Rose Trees: *M W K.* They are attacked by honey dew. The cure is to keep the plants in more vigorous health and a damper air.

Strawberries: *J Kenny.* A nicely-fruited plant. Will you favour us with your method of cultivation.‡

The Sola: *J R.* The botanical name of the Sola or Indian Cork, whose pith is used for electrical purposes, is the Æschynomene called Iagenaria by Roxburgh. It is a perennial, and requires to be treated like an aquatic.

Vines: *Gobemouche.* A Vine from 5½ to 7 inches in circumference may bear a hundred weight of Grapes, provided you allow it sufficient space.‖—*J M.* You had better take off the new bunches.

Walls: *W F.* Unnail the trees, and grout the face of your wall with good Roman cement; it will fill up the nail holes, and restore a clean face to the brickwork.

SEEDLING FLOWERS.

Calceolarias: *R R.* 1 is a nice flower, but it wants size; 2 is worthless.* — *E T.* Useless as show flowers.* — *R H.* Too "ribby," but beautiful in colour.*

Cinerarias: *P W.* Not received.*—*W C.* Unequal to kinds already out.*

Epiphyllum: *J G.* Very large and showy.*

Fuchsias: *E Woodward.* Received in bad condition, but apparently inferior to some of the light kinds now in cultivation.*

Pansies: *S B G.* Very much inferior to flowers of the same class already out.*—*W D.* The eye extends to the margin of the bottom petal, otherwise it would be a fair average flower.*

Pelargoniums: *W H D.* Quite fallen to pieces when it reached us. The upper petals appear to be good, but the under ones are defective in shape.*—*Beta.* Can you favour us with a better specimen? That sent was too much shrivelled up for us to offer any opinion on it.*

Petunias: *W C.* Very pretty medium-sized flower.*

Erratum: In the advertisement of the "Award of Prizes" of the Royal Botanic Society's Exhibition, at p. 322, it is stated that a Certificate was given to Mr. Willmer, of *Sudbury.* It should have been Mr. Willmer, of *Sunbury.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

NEW TURNIP MANURE, 50*s.* a Ton.—Mr. POTTER can strongly recommend the above as a cheap and efficient Manure, and capable of raising heavy crops. Delivered free on rail. The Bags to be returned or paid for.

POTTER'S GUANO, 7*l.* per ton; SUPERPHOSPHATE OF LIME, 6*l.* per ton; GYPSUM, 25*s.* per ton, including bags and delivery on rail.—28, Clapham-road-place, London.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

PEAT CHARCOAL can be had of G. H. FOLEY, Essex Wharf, Lea Bridge, Middlesex. Agent, by appointment, to the Irish Amelioration Society. Price at the above address, of the unmixed Charcoal, 60*s.* per ton, sacks included; mixed with night-soil, 45*s.* per ton, sacks included; or delivered at any of the London Railway Stations or Wharfs, mixed, 50*s.* per ton, and unmixed 65*s.* per ton, sacks included.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 10*s.* per ton; and for 5 tons or more, 9*l.* 5*s.* per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

HOSE FOR LIQUID MANURE, Fire-engine, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure, it is extensively used at the Government public works; also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY, empowered by Act of Parliament to execute all works of Drainage (including outfalls through adjoining estates), to erect Farm Buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money, or to enable the landowner to employ his own capital, and execute the works by his agents, and to secure repayment of the outlay by charge on the property improved spread over a number of years.

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HORSE KEEP.—Oat Bruisers, Chaff Cutters, Ploughs, 42*s.*, Shares, 5*s.* per dozen; Rollers, Wheat Mills, Bean Mills, Steam Engines, Scarifiers, Turnip Cutters, Dressing Machines, Drills, Threshing Machines, Wood and Iron Harrows, Steaming Apparatus, Scotch Carts, Hay-making Machines, Horse Hay Rakes, and Drug Mills. First class goods warranted. MARY WEDLAKE and Co., 118, Fenchurch-street. Most liberal discount for cash. Goods delivered free. On receiving six postage-stamps a list, with 107 engravings, will be sent free.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-street, London.—JOHN A. WEST, Secretary.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell-road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B. Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Orders or Letters addressed to J. L. HANCOCK, Goswell-mews, Goswell-road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

**The Agricultural Gazette.**

*SATURDAY, MAY* 31, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, June | 4 | Agricultural Society of England. |
| THURSDAY, — | 5 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, — | 11 | Agricultural Society of England. |
| THURSDAY, — | 12 | Agricultural Imp. Soc. of Ireland. |

THE pains of newspaper editors are guessed at by everybody; some of their pleasures are unsuspected: for instance, it would hardly be thought what a store they have in hand of the pleasures of imagination.

*Omne ignotum pro magnifico* is a well-worn scrap from TACITUS. OSSIAN attains the sublime by veiling his heroes in mists and obscurity. Painters arrive at the same end by similar means, whereto MARTIN and DANBY bear witness; and TURNER, though of late incomprehensible to vulgar eyes unassisted by a pair of distorting spectacles, is pronounced by some *cognoscenti* to have reached the acme of art. IRVING'S unknown tongues had great success in their day; and some few of our correspondents, to descend a little, seem to think that they are likely to add to the glory and repute of the *Agricultural Gazette* the more they mask themselves and their proceedings under the vague and the anonymous.

This morning comes a letter *viâ* the *Gardeners' Chronicle* Office. We open it in tuneful mood, singing to ourselves the charming air,

"Oh where! and oh where! does our correspondent dwell?
He or she dwells far away, in the place no man can tell;
And it's oh! in our heart that we nothing know right well!"

So much the better for the pleasures of imagination. If people put a plain question, with full particulars, and their real name and address, as they would to a solicitor about a three-farthing debt, they would get a plain answer, and there would be an end of the matter. But instead of this, the poetic faculty has to go to work. The postmark, if any, the orthography, the calligraphy, the style, the *soubriquet* adopted, have all to be meditated upon. Dulness would be non-plussed, but genius cannot. The editorial faculties rouse themselves, and as a clever actor interests his audience, be the part assigned him never so meagre, so *we* flatter ourselves to have built sundry pleasing edifices, some in the palatial, some in the summer-house style, with a quantity of bricks and mortar, the scantiness of which would astonish our readers.

And now to the letter of our fair or gallant *incognito* or *ta*. It will be seen that no breach of confidence, which we would scorn towards man or woman, is about to be committed. The handwriting looks feminine, but we cannot exactly say; the spelling indicates no great learning; but polyglott scholars, in their confusion of tongues, are more liable to these slips than people of fewer acquirements. If we gave a *fac simile*, who could tell the more for that? The *time* of year of the writing is given, which is something; it was neither written last month, nor next week, but May 8th of *some* A.D. or B.C.

"Sir,—I am about to erect a poultry-house, for the accommodation of 50 fowls, which must be confined to their house, and to the walk in front of their house. The fowl are to be kept for their eggs, and not for breeding; and I enter into the speculation for profit, and not for pleasure. I should be exceedingly obliged if you, or some of your correspondents, would give me a plan of the dimensions, cost, &c., of such a building. It must be substantial enough to keep out the theif [so in MS.], and the cold; roomy enough, and cheap enough—and my object will be attained. And I will remain, while eyesight and income last, your reader and subscriber, H. ——."

Bravo! well done! May your shadow never be less! But (again singeth the Editor),

"Oh where! and oh where! doth our correspondent dwell?"

We have readers and subscribers in the five quarters of the globe, and wish to oblige them all. But a speculative answer must be confined to the British Isles, else we shall write the paper full, to the exclusion of the advertisements, which will displease our proprietors. So, *imprimis* as to materials; if you dwell in Caithness you will use slate, of which we have seen capital pig-sties there; it in the New Forest, prigged wood may come cheap; if in Suffolk, clay clumps may answer; if in Cambridgeshire, squared chalk; if here, or there, bricks, or stone, as it may be respectively. As to dimensions; are you a rural, suburban, or a city person? Will your walk be in the purlieus of the Poultry, or amidst the villas of Cheltenham? Or, will you be at liberty to enclose a small slice of Newmarket Heath or Salisbury Plain? The fowls are to be confined to their walk, as well as to their house. Are you near a fishing town, where worn-out nets are to be had a bargain? Or are you located next door to a skilful twister and interlacer of iron and other wires? Profit is with you the object: here, where this is written (you have no right to ask for *our* card of address, it is an impenetrable secret), *farmers* are selling eggs 24 a shilling; sometimes the identical coin will purchase even 30. Cheap materials and labour are necessary to the erection of your egg-producing establishment, if you hope to undersell *them*, whose hens have no such interest on their capital to pay out of their profits; *unless* you are a London milkman supplying Belgravia, and can get from 3*d.* to 6*d.* for every *warranted* new-laid egg; *or* have a stud of those Cochin Chinas which lay a half-crown every time they cackle,—which half-crown will soon become half-a-sovereign as amateurs improve in wisdom. But it cannot be such fairy-land birds as those, as *they* incubate; whereas yours are to be kept for their eggs solely, and *not for breeding*. If you do not keep everlasting layers, what will you do with your hens when they *will* sit? Certainly you will not treat them cruelly—dip them in pails of water, or thrust feathers through their nostrils. Eat them, then? One man's poison is another man's meat; but we will shut our ears to the sound of your dinner-bell till the course of incubators is digested and done with. *Quoad* the cold which you wish to keep out; if you are in Cornwall, you may dispense with what is indispensable among the Cheviot Hills; and anent thieves, if you erect your poultry house on certain lands in Ireland, the natives will steal *you*, or at least your life. In some districts in England poaching and fowl-stealing are found to bear an inverse proportion to each other, the sum total of the two being tolerably constant.

"But where! and oh where! does our correspondent dwell?"

So long as $x$ remains an unknown quantity, the formula of the ablest mathematician remains inapplicable. We *would* design a fowl-house and walk, but cannot. In truth, anonymous communications are as useless and non-practical as they are un-English. The Mysterious Lady is not looked up to with respect; the Mysterious Gentleman, were he to appear, would be set down as a charlatan by all except nincompoops. The precise and the real is the only entity to be grappled with, for any satisfactory result to come of it.

"Some there are that shadows kiss;
Such have but a shadow's bliss,"

said SHAKSPEARE. IXION embraced a cloud in place of a goddess, obtaining in recompence for his adventure a set of monsters and a severe punishment. Public writers might devote their whole energies and waste their entire time in the gratification of a complete seraglio of such clouds and shadows, if they did not resolve to cut scornfully all that does not come before them in an actual shape. Time, and the power of man's brain, *are* brief and intermittent. So, "I love my love with an H.,"—in these matters it is best to drop the plural We—and there stop in the amorous suit, without advancing a single letter further. Pity! but never mind. Perhaps the hand-writing was only feigned to be that of a lady. H, after all, may be the initial neither of high-born HARRIET nor handsome HELEN, but may really belong to some hirsute HENRY, or even if bad spelling be a guide, to a *h*ignorant *H*EDWARD, or a *h*awkard *H*ANDREW. We will not, therefore, quite yet devote ourselves to misanthropy and turnpike-gate-keeping, but still endeavour to answer, as well as we can, questions that strongly remind us of the schoolboy query, "What do you think of the Romans? Eh?"

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT INDUSTRIAL EXPOSITION OF THE NINETEENTH CENTURY.

No. IV.—We have now noticed most of the implements for tillage, and come next to Division B of Class 9, viz., "Drilling, sowing, manuring, and hoeing machines." The first DRILL that met our view was one manufactured by J. Guest, of Bedford, and called a "steerage drill." It is an improved form of the "Bedfordshire drill," invented at Woburn about 40 years ago. The axle-tree precedes the drill box, having two carriage wheels, with wooden spokes and iron rims or fellies. From this axle a pair of light wooden bars pass to some distance behind the drill, connected by a cross-bar, having a pair of handles at each end; by means of which the drill-man may steer the machine to a nicety while he is

attending to the cups and coulters. The cup barrel is turned by spindles and pinions connecting it with the wheels in front. The coulters, eight in number for corn, are scimitar-shaped or made with cutters curving up in front like the toes of our ancestors' boots; and are forced into the ground by an equal pressure upon each, given by a system of coupling levers from the centre of the machine. A similar drill, but with smaller coulters, is shown, for sowing Turnips, &c., with manure; the manure coulters being followed by horse-shoe irons for covering the manure before the seed falls. These may be useful little machines, but they have few advantages beyond the frame for easy guidance.

W. Busby exhibits a drill, which we should imagine would be useful on light peaty soil, when it is not desirable to have it broken up after it has been trodden solid by sheep. The levers carry scarifier tines, resembling small double mould-board ploughs without shares. The seed drops into the furrow opened by these tines. Each has an independent vertical motion; and the whole can be lifted at once by chains hung upon a long bar raised by a lever. There is a steerage wheel in front, turned by a lever crossing over the top of the machine.

A small drill (maker not named), distributes the seed without cups; sliders along the bottom of the box, being shaken to and fro by zigzag wheels on the carriage wheels. The slider in that part of the box intended for seed vibrates a number of horizontal segments under fixed brushes; these plates having each a circular hole which, by alternately coinciding with another hole below, and with the plate through which it is perforated, emits the seed intermittently, as in a drop drill. In the manure box, the slider is toothed like a rack, and rubs over a slit reaching from end to end, thus regulating the flow according to the progressive speed of the machine.

The difference observable in the sowing machines is very remarkable—some being of colossal dimensions, and covered over with a complication of chains, levers, and gear-work; while others are pretty toy-like pieces of mechanism, suited for operation in the paddock and shelter in the attic.

There is one of the smaller kind which, from its singular appearance, we must try to describe. It is exhibited by J. Gilbert, of Wardour-street, Soho, London; and seems to be all vitals without external covering, having no long box to hold its machinery, as in most drills. A light square frame of wood, about 7 feet long by 4½ feet wide, is supported about 2 feet from the ground. It is drawn by shafts; and in front is a wheel like that of a Bath chair, which can move any way. The back part has another frame about a foot below it; and an axle carrying an iron roller about a foot in diameter, and in five parts. Across the top of the frame, and about the middle of it, is an iron axle with eight cup-wheels and a band-wheel, about 2½ feet in diameter, turned by a strap from the roller. To each cup-wheel there is a small box or hopper, having inside a motionless brush, and a stop slider, with spiral spring to keep it open. These sliders can be pressed simultaneously by a rod and lever, to stop the feed. The seed runs from the cup-wheels down spouts to the coulters, which are wedge shaped or double winged, and fixed upon a bar or axle immediately above them; this bar is divided into two, and by turning either of these by a lever, four coulters are lifted together out of the ground. Behind the cup-wheels, and lower down, is a broadcast trough, with brush-wheels, &c., turned by pulleys from the axle. This, we suppose, is for sowing Clover, or small seeds; the grain sown by this machine must be a very diminutive quantity, indeed. Those who approve of thin seeding, and do not care to have the power of drilling from a peck or two to several bushels an acre, as may suit circumstances, may be inclined to purchase.

J. J. Rowley, of Cuckson, Worksop, exhibits an "improved machine for dropping peat, bone-dust, Turnip, Rape, or Mangold Wurzel seed, &c., patent." This drill deposits the seed or manure at intervals by an endless vertical strap, with flaps of leather projecting upon it, descending in a spout, open on one side—the flaps, a few inches apart, acting as valves to receive the seed, &c., falling from the cups, conduct it downward between them, as in cells, and drop it behind the coulter in separate lumps.

Ransomes and May have patented a "Universal Corn and Seed Dropping Machine," which appears well calculated to perform all that is required of a machine for this purpose. The frame is carried upon two large wheels, as in a common drill. In lieu of coulters, seven curved seam-pressers are attached to the levers, which rise and fall by a parallel motion; but the seams may also be formed either by drag coulters of similar form to dibbles, or by plain drill coulters. Above the levers are seven boxes for seed, terminating below in valve boxes, or depositors, following the pressers, and acting independently of them. A series of cams on an axle in front of the machine turned by wheel-work on one of the carriage-wheels, push or knock seven rods backward and forward; these by small cranks at their other ends working the valves in the depositors with a vibrating motion. These appear to receive the seed at one end of the stroke, and emit it at the other; a valve at the bottom of each depositor opening for the seed finally to escape, which it does within a few inches of the ground, thus insuring a great degree of regularity. The instant the horses start, the seed commences dropping with unerring uniformity of distance and quantity, and ceases at the same instant the horses stop; thus overcoming a defect which exists in most machines for a similar purpose. This machine will deposit a few kernels at a time, at detached and equal spaces, with greater precision than by hand dibbling; it can be adapted to all kinds of grain or seed, by changing the cups; will deposit any quantity of seed per acre; and can be regulated to drop the seed at intervals, so as to range in parallel lines, either directly or diagonally across the land or stetch, as well as lengthwise, in the direction of its draught.

Among the novel and yet famous machines of the day stands the Liquid-manure Drop-drill, invented and patented by F. Chandler, of Aldbourne, Hungerford, Berks, and manufactured by F. R. and J. Reeves, of Bratton, near Westbury, Wiltshire. Scoops, like those of a dredging-machine, take the liquid from a metal tank or cistern on wheels, and throw it down large drill pipes or spouts. The Turnip seed is let run into the same spouts—a slider, worked to and fro by a zig-zag groove on a drum or wheel, shutting and opening the seed spouts just above the point where they enter into the larger ones, so as to cause the intermitting or dropping action. Plain water, or liquid manure, or dissolved manure, such as superphosphate of lime, &c., may be sown by this machine; and the certainty of a Turnip crop in a season of drought hereby insured. While noticing this machine we may just refer to another of the same inventor—viz., a liquid-manure distributor. In this contrivance, instead of having spouts with a chain of buckets or scoops to each, a number of long zinc troughs, extending the width of the cistern, are carried upon endless chains within it, and fling the water, &c., over the back of the box, a ledge being there placed from which the liquid falls in a stream.

In the manufacture of drills for general purposes, Garrett and Sons, of Leiston Works, Saxmundham, Suffolk, and Hornsby and Son, of Spittlegate Iron Works, Grantham, Lincolnshire, undoubtedly stand unrivalled by any other makers, whilst rivalling each other. We dare not presume to draw comparisons between the machines of these firms, except in particulars that are easily discernible. Both have drills with a fore-carriage steerage; a triangular frame reaching from the frame-work of the drill on large wheels to a fore-carriage which has an axle as wide as that of the drill, only with smaller wheels; and the draught is taken from the upright spindle in the middle of this fore-carriage. This used to be guided by handles connected with it; but so much labour was required to hold it, that when the wheels passed over a large clod or stone, a strong man could not possibly prevent its swerving. Garrett's contrivance for overcoming this difficulty is a semicircle fixed upon the fore-carriage with its centre coinciding with the pivot on which the carriage turns. This iron arc is tightly pressed, by means of screws, against two small friction rollers within it, and situated on the triangular frame of the drill. The carriage is thus held steady by the friction, but yet not so stiffly but that it can be easily moved by hand. Hornsby's device is a "patent rack and pinion;" by which a man or a boy holding a crank handle attached to the pinion obtains a far greater leverage power, and can with ease keep the steerage wheels in the track or mark left by the drill wheels during the preceding course.

Garrett's drill for general purposes, is a remarkably neat machine; the simply loosening two screws and lifting off of the hinder and upper portion of the box converting the drill for all sorts of seeds and manure into one for only corn and manure. The seed coulters are attached to small levers suspended to the larger levers carrying the manure coulters; by which arrangement each one has an independent vertical action. Two sliders admit the manure to the distributing roller, raised or shut down by short levers having brass indexes or gauges to note the extent opened. The bottom also of the manure box beneath the roller, and over the edge of which the manure falls, is slided backward or forward by levers, so as to regulate the quantity sown. There is a slider above each cup-wheel to regulate the supply of seed; and all these are opened and shut by one handle, furnished with a gauge, though each may be altered separately, if required, without a pin or screw being withdrawn. The box is to be raised higher or lower above the frame, according to the size of the wheel used in gear with the teeth on the carriage wheel—a brass gauge-plate indicating the requisite heights. Levers are employed for this purpose, in place of nuts and screws; and, indeed, in every part of the machine, screws and racks and pinions have been discarded, and the choice given to the simple and direct lever.

Garrett's "drill for small occupations" has an admirable contrivance for obtaining a regular seeding on hilly land. The horses walk faster down-hill than up-hill, and when the cups are consequently revolving more rapidly, it is found that they throw the seed into the funnels, in addition to lifting and emptying it, so that a thicker seeding is the result. To remedy this, the barrel is worked from either end by wheels a little different in size; and by means of a lever and chains connected with it, by a single raising or depression of this handle, one end of the barrel is dropped into gear and then the other taken out, while the horses are going, so that no stoppage whatever need ensue; the alteration being made in an instant, according to the ascent or declivity of the ground. The same lever can take the barrel out of work altogether. The coulters are not in a row, but arranged so as to be alternately forwarder and backwarder, in order to facilitate their working. As the levers are all of equal length, if the weights with which they are loaded were equal, the pressure upon the forward coulters would be greater than on those behind; the weights, therefore, are properly proportioned, and so made that the drillman cannot possibly put the light or heavy ones upon the wrong levers by mistake. This drill will sow from 2 to 14 pecks of grain, or from 1 to 6 lbs. of seed per acre. A "manure and Turnip drill" has an admirable contrivance for making the manure "run." Many schemes have been tried for this purpose, and hitherto without entire success. Garrett invented a revolving bar, with pins on it, and made this rise and fall so as to squeeze down the manure into the delivery-box. Hornsby made his revolving stirrer slide to and fro endways, so as to leave no atom of the manure unmoved; but, for all this, the potterer would every now and then obstinately work clear of the clotted powder, which cohered together in a mass above it, until broken and pushed down by a stick, or drill spud. But in this drill, when the potterer works clear, a simple pulling of a handle sets the manure running again; an iron bar passing round the end and front of the manure compartment, inside, a little higher than the revolving stirrer, being lifted up and let fall again, so as to cut off the manure from lodging against the sides of the box. The Turnip and Mangold Wurzel cup-wheels are not enclosed in a long box, but are placed upon an axle behind the manure-box, each having a small seed hopper attached, and both cup-wheels and hoppers slide along the axle into different places, according to the number and situation of the coulters.

Hornsby and Son have made a great many improvements in the drilling-machine; one of them remedying what has always been a great imperfection in all drills, viz., their irregular conducting of the seeds to the ground. Tin cups, working one within another, have always been employed for conveying the seed to the coulter levers, which must be allowed free play up and down without altering the flow of corn or seed. The tins continually vibrating, more especially in windy weather, bounced the seed from one cup to another, consequently delivering it very irregularly, more particularly so with Beans or Peas. It was desirable, therefore, both to improve and simplify this part of the machine. Hornsby's "Patent Flexible or Elastic India-rubber Tubes," have supplied all that was wanted; the seed dropping down one single pipe, passes to the ground with the greatest nicety and precision, and neither wind nor rain has the slightest effect upon it. Hornsby has also an improvement for causing damp manure to run; by moving a lever, the stirrer is put in or out of action; and by pulling another lever, the front of the manure box, which is moveable, is brought forward. The slides for seed and manure are moved, not by simple levers, but by racks, pinions, cranks, and worms,—a complex, though accurate arrangement. In order to insure an equal pressure upon the coulters while they are diagonally placed, for the sake of freer working, the lever ends are not differently weighted, but the levers are fixed upon two coulter-bars, one behind the other. By the equal pressure, the seed is deposited at a uniform depth. The seed coulter-lever is attached to the larger coulter-lever underneath, and rises and falls independently of it. The upper lever is bent sideways, so as to leave room for the seed pipe; but as the weight is thus hung, as we may say, out of the straight line, we should think this would have a tendency to rack the lever joint. By the double-actioned lever, there is no difficulty in depositing corn, seeds, and manure regularly at any depth, one below the other. Most of the drills with double coulters have irons of a horse-shoe form between the manure and the seed coulters, to cover the manure, lest the seed come in contact with it. Hornsby has contrived an "improved patent convex rake," that is, a semicircle horizontally set, which covers up the manure with the finest mould, knocking aside the clods on each side the coulter-channel; and the seed coulter then follows and deposits the seed in the fresh stirred soil. The greatest novelty among the drills is Hornsby's Patent Drill, which, instead of having the barrel turned by a system of wheel-work at each end, with wheels to take off and on, has a number of different speeds in a case in the middle of the seed-box, a spindle connecting them with one of the carriage-wheels. The different speeds are set in train by spindles, and a single handle set in different notches. The slides are altered by racks, pinions, &c. The coulters are attached to a bar with "swing" action, which in a great measure compensates for the absence of a steerage. The box is not supported at each end, after the common method, but at the centre, and can be tipped more or less obliquely either way, so as to suit the most hilly land. This is done by a patent action at one end; consisting of a horizontal axis, having screw threads running in different directions, so as to form right-hand and left-hand screws on its two halves,—after the pattern of a railway-carriage link: by turning this with a crank, 2 bars, meeting at their upper ends, are brought from a slanting into a vertical position, or *vice versâ*, their upper ends being connected with the box. The drill-box is thus slanted, and held firmly in any required position, thus preserving its level over sloping land.

There are several machines in the court intended to lessen the labour, as well as equalise the result of broadcast sowing by hand. J. Windsor, of Oswestry, shows a barrow drill for sowing "all Grass seeds and Turnips on the flat." A long trough has a spindle with circular brushes upon it,—the quantity of seed being regulated by a disc of copper, which, being turned round, presents different numbers of holes of varying size, through which the seeds are to pass. J. Watt, of Biggar, Scotland

exhibits an improved broadcast sowing machine, for both grain and Grass seeds. The frame is on three wheels; the trough, which folds into three by two joints, is about 20 feet long, and iron fan-tailed pinions are substituted for the brushes. An index meter tells the number of revolutions. Garrett shows a broadcast barrow drill with a partition in the trough, for Rye-grass and Clover to be sown separately—the distributors being wheels and brushes. We observed also some examples of the driller attached to the plough, to sow on the preceding furrow.

Not content with the drop-drill mode of sowing, farmers have thought it desirable to obtain a machine for performing the identical operations involved in the process of dibbling. Not satisfied with the revolving-drums with trap-doors of Hornsby, the valves of Garrett, the tumblers of Ransome, and other inventions, most of which (excepting, perhaps, the last-mentioned) drop too much seed and manure together in each bunch; they want an implement that shall make the round holes, and leave a kernel or two in each, with less labour and time, and greater precision, than by men with pairs of dibbling irons, followed by slippery and heedless boys' fingers. Accordingly, the manufacturers have devised engines for the purpose, some for manual, some for horse-power; some light as playthings, others massive with timber and cast-iron; and most of them too complicated and delicate in detail to be understood at a glance.

The first DIBBLING MACHINE that struck our notice was the Patent Walking Dibble, invented by R. H. Nicholls, Elizabeth-street, Eaton-square, London; to the eye, at first sight, appearing to be a square-set, light, iron framing, all levers and connecting bars, with four long dibblers at one end, two handles at the other, and a balance weight in the middle; standing on four legs, the two in front terminating in spikes, and the hind legs resting on feet. By alternately lifting and bearing on the two handles behind, the implement advances at a slow gallop; the dibblers between the two front legs making holes as they fall, and leaving seeds in them as they rise. The dibble points are solid, and slide up into brass sockets to let the grain drop out. It is assuredly ingenious, and we hope the workman, taking counsel of his muscles, will not condemn it to inglorious rest.

The next was a patent seed-dibbler, invented by J. Eaton, of Woodford, near Thrapston, Northamptonshire. It consists of a long wooden frame, upon four wheels, the front wheels being made for steering; but whether it is for a horse to draw or men to push, we have not yet determined. The hind wheels are drums, each having four studs on its inner side, which lift and let fall a lever frame, to which are suspended two parallel rows of dibblers—six in each row in the direction of the movement of the machine. The ends of the dibblers are formed like two spoons set close to each other, one-half sliding up to let the seed escape. A lever is provided for raising the jumping-frame out of work. The machine is about 10 feet in length. We are unable to detail any of its good or bad qualities.

Saunder and Newberry's (of Norton, Oxfordshire), Patent Dibbling Machine, is one of those ponderous and expensive-looking engines to which the farmer has generally a fixed aversion; but this, we believe, has the credit of having performed its work well for many years. A strong square frame of wood, on wooden wheels, and drawn by shafts, carries one, two, three, four, or five large circular dibble wheels, which have dibbles projecting from their circumference, and intricate mechanism inside for depositing the seed. The dibblers are made in two halves, one-half of each being raised by an inclined curve, as the dibbling-wheel revolves in order to emit the seeds. There is one hopper to each wheel, the seed entering the wheel near its centre. The seed, delivered in a continuous flow by a drill-wheel, falls into cells or the spaces between large teeth, which catch it in pretty equal quantities as they revolve. From these the seeds pass in separate compartments to each dibbler. The earth is cleaned from the dibble-wheels by revolving scrapers of a peculiar shape, each having three dovetail blades; and as they are fixed in bearings at right angles to the dibble-wheels, they engage with the dibbles and are turned by them, in their rotation cutting out the soil clogging the wheels.

The "Improved Patent Horse Seed Dibbler," of C. Lampitt, of Neithrop, near Banbury, is evidently an alteration or improvement of Newberry's. As in the last machine, there are four iron box-wheels on an axle, with mechanism inside. The dibblers do not consist of halves like spoons, one sliding against the other, but are made whole, of the requisite conical form. A hollow box, called a "tumbril," occupies the inside of the dibble, and by protruding at the back of the dibble, just as it leaves the hole, lets the seed out. Instead of entering the wheel near its centre, the seed here passes into it as close to the circumference as possible. Each dibbling point has a funnel converging from it towards the inside of the wheel; these, in descending, pass the feeding-roller of the small hopper; and as the feed-roller and funnels conducting the seed into the tumbrils both move in the same direction, and as the seed has to fall so short a distance, a great degree of regularity is obtained. An eccentric motion closes the tumbrils as the dibbles approach the ground, thus preventing their being choked with dirt. The revolving scrapers are worked by a motion independently of the dibbles, by which the wear of both scrapers and dibbles is prevented. The wheels, of course, are of considerable weight; and while a toothed-wheel and pinion work the barrel and chains which raise them out of work, a break assists in lowering them to the ground. *I. A. C.*

## ON THE INTRODUCTION OF THE DRILL CULTIVATION OF BEANS INTO BELGIUM.

[Translated from the French of the Baron de LAFONTAINE.]

It has often been said, and said with truth, that there is nothing absolute in agriculture. Theory ought necessarily to have general laws; but it belongs to practice to select those which are capable of receiving an advantageous application. It is thus that the cultivation of the Bean, with a view to the production of seed, rather than as a green crop, so extolled in England, is not generally adopted by ourselves in Belgium, because all the circumstances of our soil and climate do not offer a complete correspondence with those in England, and consequently the Bean crop in Belgium is not uniformly a lucrative one. On this account, we shall only address ourselves on this occasion to those farmers in parts of the country where the Bean is successfully cultivated as a green crop, and often grown with Vetches and Peas. It is a question whether in these localities the drill culture of Beans, as producing the greatest amount of seed, would not be preferable to the broadcast system, so long pursued in them; and it is to this point that we wish particularly to direct the attention of those farmers by means of direct experiment. Sir John Sinclair reports, in his treatise on practical agriculture, an experiment made on three-fifths of an English acre, of which one-half was sown broadcast, and the other half in drills. It was found that, independently of the economy of the seed sown, the produce of the crop was greater in the drilled portion than in the broadcast, in the proportion of 11 to 9. The same field being sown with Barley in the following year, the crop was still more considerable in the drilled part, in the proportion of 34 to 27. This trial was made about 30 years ago, and from the publicity given to it, has much contributed to the establishment of that system in England. The adoption of drill cultivation, in general, belongs to a period that is fast approaching. If with our neighbours in Great Britain its advantages are no longer disputed, we have the satisfaction also to know that with our progressive farmers in Belgium a lively prejudice exists at the present time in its favour. It is even probable that in due time the application of this method will become the common rule. Can we indeed doubt that it will be so, when we reflect that broadcast sowing is a simple imitation of the procedure of nature, while the drill system constitutes its perfection? In reference to the origin of this improved system, it may be remarked, that if the facility offered by it in the cultivation of certain plants, has been the original spontaneous cause of its adoption, the reasonable desire so long felt to arrive at the suppression of fallows has tended strongly to its establishment.

It is not repose, strictly so called, that we wish to give the soil, but an increase of fertility by the different manipulations facilitating the successive disintegration of its molecules, and tending to the destruction of weeds. The drill cultivation of many kinds of plants known to be less exhausting, has been considered as a real fallowing in this sense, in consequence of the different preparations such system requires, without the deficiency which a fallow occasions in the general account of the farm, and in that production of manure which root crops in the other case so much promote. These truths, indeed, are well known, and scarcely require to be stated; but it is always well to repeat them, for the purpose of directing their application in a rational way; for it is almost inconceivable how the farmers in certain districts, unhappily still numerous in our country, can continue at the present day to sow Beet, Carrots, Turnips, and Beans broadcast. These crops replace fallows; but if we do not give them all the preparation they require, that is to say horse-hoeing, proper and uniform aeration, by means of placing in rows, earthing up, &c., how can we wonder at the disappointment of the farmers? Is it, under such circumstances, surprising that the produce of land under grain crops is in certain localities not so considerable as when the pretended repose of the land in fallow had been scrupulously observed? The rigorous deductions we ought to make from this very simple consideration, should induce farmers to multiply the modes of cultivation which fallowing affords us, retaining its advantages without its inconveniences. The drill husbandry of Beans is one of this number: amelioration of the soil, destruction of weeds, increase of crops, and diminution of the chances of failure, are the results of this method. Are such, it may be asked, the results of the broadcast system? Assuredly, it produces neither amelioration in the soil, increased amount of crop, or any of the advantages just specified; neither does it attain, either uniformly or completely, the object generally assigned to Bean cultivation, namely, that of a cleansing crop. To merit that character it ought to effect the complete destruction of weeds. Now this case never occurs under the broadcast plan of sowing; for a great number of plants, especially the Sow-Thistle, obstruct, and, by their reproduction, deteriorate the subsequent crop. We may remark, that we are here speaking of circumstances attending Bean cultivation, when entirely successful, under the system in question. But what happens when the crop is short, or altogether a failure, a result which occurs at least five times in ten years? In such case we have to wait for the rotation of a root-crop to repair the evil caused by the practice of a vicious system. If it be asked, whether Beans under such conditions can be regarded as a cleansing crop, I reply that they cannot, if we persist in the broadcast system of sowing them; but that they may be regarded in that light, if we adopt the drill cultivation.

We have thought it right to make a trial of the two systems previously to recommending either of them; not that we had any doubt on the subject, inasmuch as the results obtained in England on soils analogous to those of Hesbaye, where our own experiments have been made, were sufficient of themselves to establish our conviction, but because there are many truths in agriculture which can only be propagated by the evidence of actual experiment; or rather when reasons are based on indisputable facts occurring in a known locality, or on soils similar in every respect to those possessed by the farmers, who require to be convinced before they proceed to action. This caution on their part ought not to surprise us. The farmer is so often led into error by advice being given to him, without due regard being had to the difference of soil and climate, and without consideration of the demands of the market for his produce, that we may regard this very caution of his as in some degree a proof of practical wisdom. We will now state briefly a detail of the experiments in question. The field selected for trial was deeply ploughed at the end of the year. In spring it was divided into three parts, on two of which a good supply of manure was lightly ploughed in. At the time of sowing, one of these portions was sown broadcast in the usual manner; the other in drills, in the same manner as in Potato planting, namely, by placing the seed in every other furrow and covering it by means of the plough—a plan it was thought best to adopt as being the simpest that presents itself to the farmer who is not in possession of improved implements. The remaining part of the field on which no manure had been applied, was formed in high ridges, according to the Scotch method described by Low; and the Beans being sown in the hollows between the ridges, at a distance of about 24 English inches; the manure was placed upon the seed, and then covered in by a second plough, which passed through the middle of the ridges. In this manner the formation of the ridges, the sowing of the Beans, and the placing and covering in of the manure, were executed at one and the same time. It is truly to be regretted that improvement in cultivation requires in almost every case the employment of new implements, and consequently an outlay of capital, which, although repaid by increase of produce and economy of labour, is one of the causes of the repugnance felt by farmers at any innovations on old practices. The perfect and easy sowing on ridges in this case would have required the employment of a plough with a drill and double mould-board; but in order to confine the trial of this method within the ordinary limits of possibility, without incurring fresh expense, I made use of the ordinary plough, notwithstanding the difficulty of the good execution of work like that in question, particularly when the precaution is not taken of inclining the plough from the side opposite the mould-board, when covering in the furrows. The sowing of this third portion was executed by hand. A few days before the Beans came up, the whole of the three divisions of the field were equally harrowed. As soon as the plants were 4 inches out of the ground, hoeing was commenced, and was always executed in the same manner in the two drilled sections of the field. This operation ought to be repeated three or four times, with an interval of a few days between each, and always in a different direction; that is to say, taking care to turn the soil back to the stems of the plants, when, by a previous hoeing, it had been turned up in the middle of the interval between the rows. The implement indispensable for the good execution of these operations, is the horse-hoe of M. Omalius, with transposable shares. It works with the greatest facility, and earths up or exposes the plants at pleasure, according to the arrangement of the shares. The last earthing up, which is effected by a skim-hoe, adapted to this implement, ought to be executed before the first flowers of the Bean make their appearance, as the passage of the horse or implement might easily brush them away from the plant. Those weeds between the rows which have escaped the hoe may be removed by the hand. The extraordinary development of the stems and shoots soon raises the plant to a foot in height, the ground becoming covered in a short time with a thick shade, which maintains it in a state of suitable humidity during the remainder of the season. The reaping should be effected by the sickle, in order that the work may proceed row by row; as the employment of the scythe is rendered difficult, on account of the ridges. The following are the results obtained from the respective crops on the three divisions of the land submitted to trial:—

| | bush. | quarts. | |
|---|---|---|---|
| I. The first, sown broadcast, gave an ordinary return, but one which may be regarded as very satisfactory for the locality of Hesbaye ... ... ... ... | 25 | 19 | per English acre. |
| II. The second, sown in rows, as in Potato planting ... ... ... | 27 | 17 | do. do. |
| III. The third, drilled on ridges ... | 28 | 30 | do. do. |

We must add to each of the two last results, about $1\frac{2}{3}$ bushel, on account of the saving in using only half the quantity of seed for sowing. The amount in weight of the dry stalks is represented by the following figures:

1. Sown broadcast ... ... ... 22 cwt. 31 lbs.
2. Sown in rows ... ... ... 18 cwt. 25 lbs.
3. Drilled on ridges ... ... ... 19 cwt. 95 lbs.

It follows from these results, that the Beans sown in drills on ridges have an undisputed superiority in the

production of seed over those sown broadcast, and only an inconsiderable inferiority in the amount of straw. As to any fear which may be felt that the stems thus obtained will be unsuitable as food for cattle, on account of their too great development, we can assert such apprehension to be entirely groundless; our experience having proved, indeed, that animals reject no portion of them, although the fodder may appear to the eye as more gross and less inviting. We may conclude, on a consideration of these facts, that the cultivation of Beans in rows, according to the mode practised in Belgium, is by no means more advantageous than the cultivation on ridges; and it is therefore to this latter system that we wish to see the preference given. Besides the numerous advantages which attend it, there are in other respects exceedingly important consequences to be derived from it. Thus, for instance, the principal defect of this plant, even in soils best suited to it, is its liability to failure; and this tendency is such, that at the Hohenheim school in Germany, the seed produce of this crop varied in the course of five years from $10\frac{1}{30}$ to $37\frac{5}{7}$ bushels per English acre. The variable character of the Bean crop in Belgium is nearly as great as in Germany, but the causes are known to reside principally in drought and parasitic influence. Now this dryness is often combated with success by culture in rows, because the frequent workings given to the soil by the hoe, divide its particles, and obtain for it a greater degree of freshness. Garden culture also offers undoubted examples of the efficacy with which we resist, by frequent hoeings, the drying up of the soil; and the careful earthings which terminate the operations contribute at the same time in retaining the requisite humidity at the foot of the plant.

As to parasitic tendency, if the new system does not constitute a preservative, properly speaking, against that constant enemy of the Bean, it gives at least great chances of success in arresting, as we must suppose, its progress. We know that the plant is almost uniformly attacked at its top either by cryptogamous vegetation, commonly termed "rust" (mildew or blight), no doubt on account of its apparent resemblance to the rust or oxide of iron, which shows itself in the hot damp days of summer; or by a parasitic insect called the "collier," which generally makes its appearance at the same time as the rust fungus. It is to be remarked, too, that, in row culture, the flowers low down in the stem are those which principally bear the seed, because their blowing is favoured in the spring by the aeration given to the plants; while, in the broadcast system, these flowers are particularly liable to droop for want of due circulation of air. Now, as this scourge of the Bean plant occurs but rarely in the spring, the flowers which have blown at the lower part of the stem have set for seed by the end of that season, and two-thirds of the crop are accordingly saved before the ordinary epoch when the devastation begins. The facility also with which we can pass between the rows in fields sown in drills, allows easy access to the plants for the purpose of cutting off their tops, and thus diminishing in a great degree the ravages of the parasite. In broadcast culture, on the contrary, the farmer may fold his arms despairingly in the presence of a destruction, which is sometimes a total one, of his seed crop. When we take into account, too, the influence of drill cultivation on the succeeding crop, we shall find new reasons that plead in its favour. Thus the Wheat grown on the different divisions of the field which was the subject of our experiment, had a marked advantage in the two portions on which the Beans had been raised in rows, not only in quality of grain, but also in amount of produce; while the ridged portion maintained the same relative superiority in this respect as to Wheat, as it had done in the previous year in reference to Beans.

We shall terminate the enumeration of these motives of preference connected with drill cultivation by citing another not less important one, drawn from actual circumstances of the markets. For several years Bean-flour has been much sought after, and the price it has fetched has accordingly kept steadily above that offered for Rye-flour. This article of provision, therefore, being now an easy and advantageous object of sale, it is on that account important to draw attention to the means of increasing its production. Do we mean to say, it may be asked, that we recommend, without restriction, the transformation of the Bean crop, at present intended for consumption on the farm into a provision of sale, without attending at the same time to the necessity of introducing modifications of culture into the land, and of supplying the deficiency that must ensue in the production of manure? We reply: certainly not; but that if the farmer increases at the same time the production of substances proper for the food of cattle, which he can easily do by resorting to the cultivation of root crops on improved systems, we believe that the destination of the Beans for sale cannot occasion any injury to the general economy of the farm. *Journal Agricole de Verviers.*

## Home Correspondence.

*Feeding Cattle.*—Such a mild winter as the last is not recorded in the annals of agriculture since the year 1826. And the result in one respect has been highly beneficial to the generality of farmers in all districts, but more especially on the Scottish border, by causing an unexpected increase in the growth of Turnips, and counteracting in many cases the anticipations of an inferior crop. Stock of every kind has been thriving this season uncommonly well, attributable principally to the warmth so essentially necessary for the rapid improvement of their condition. I have observed that those animals fed in the open yards, have surpassed those fed in boxes, which, in my opinion, is, to a certain extent, a proof of the principle upon which Mr. Warnes recommends box-feeding, although in an opposite manner; the probable reason of the success of the open shed this year will enable us to draw a practical inference. First, then, keep beasts ever so well ventilated in the boxes, they still sweat and blow, and when they have filled their stomachs, instead of lying and quietly ruminating their food, they have appeared uneasy, and continually getting up and down, whereas, in the open yard, they are almost invariably settled, and sufficiently cool to digest their food comfortably. I am, for the sake of argument, supposing them to all feed alike. Now, most of those who have any experience on the subject, are of opinion that box-feeding is decidedly the most profitable, and in previous years have brought them quickest to perfection. From the present exception (which may never occur again in our lifetime), we see practically proved by the old plan what has been advocated by the supporters of the new system—viz., that excess of warmth is more prejudicial than even the opposite extreme; an overplus of food is required to make amends for loss of animal matter in the shape of perspiration, and more rapid respiration; now in the usual run of seasons, the same principle applies to the opposite extreme, for an overplus of food is then required to sustain sufficient animal heat to exclude the absorption by the skin and lungs of this generally cold and humid atmosphere, then again in frosty weather we all know cattle in the open yard thrive better than in warmer and wet weather. Why? because they have only one opponent to contend with instead of two.—only the temperature of a cold atmosphere instead of a cold and wet one. In the northern counties many practical men have expressed their opinion, when questioned on the subject, as follows: that they are perfectly of opinion, "that box feeding with a regular moderate temperature is a saving of food, and a rapid mode of bringing cattle to the market." On the other hand they object to them as not putting down into manure a sufficient bulk of straw, and as requiring a considerable outlay of money to erect the necessary buildings even on the cheapest principle. To the first of these objections I would say there is an increased value on the manure far surpassing a larger quantity of wet straw, and that the overplus of straw might be mixed in my opinion very advantageously with compounds of soil, mud, &c., and amply repay the extra labour. The second objection is a matter between landlord and tenant, and I am sorry to say too frequently the landlords either leave the tenant to erect buildings at his own expense, or else insist upon raising costly buildings for appearances sake and little utility, requiring a heavy per centage from the tenant, leaving him disgusted with boxes and box feeding. *E. B. H.*

*Produce of Cows.*—I noticed in your paper of the 10th inst. a communication from my man, respecting a cow of mine, and take the liberty of saying that you do not do justice to the subject, inasmuch as the article of your correspondent, on the production of cows, was as far back as March 29, since which the Grass has made its appearance in abundance, causing a wide difference in the production of cows. I think you should have inserted his letter in your next paper, viz., April 5th, and then your readers would see the comparison clearly. *John Storold.* [You are right: but it is not possible sometimes to give immediate insertion to communications].

*Bed and Alley.*—In the system practised by Mr. Smith, the "bed and alley" occupy a width of 5 feet, and there are 3 rows of Wheat sown on each bed, at a foot apart, therefore it is 2 feet from the outside row to the other; yet I consider that the 3 rows occupy a width of 3 feet out of the 5; 6 inches on the outside of each outside row should be reckoned as cropped. For instance,—was the whole of the ground sown, there would be room for only 2 additional rows in each alley; therefore, instead of half of the ground being cropped, it must be three-fifths; and if three-fifths, instead of Mr. Smith's crop having produced between 8 and 9 quarters per acre, supposing the whole to have been sown, it must have been between 7 and 8 quarters per acre, or 4 quarters and 2 bushels off three-fifths of an acre. *Wm. Griffin, Eydon, Daventry.* [Will you not give us your experience of the "Penny Savings Bank," alluded to last week.]

*Tullian Growth of Wheat: A Word in Season.*—Many of your readers will recall the correspondence that has lately appeared in the *Gazette* on the Tullian theory of growing Wheat year after year upon the same land, and without manure, simply by means of preparatory deep trenching and annually digging between the rows of the growing Wheat. There is so much in the principle this involves that is opposed to the general ideas as to the importance of manure, and at the same time so much is to be gained in our practice, if it be true that by improved cultivation the occasion for manure for growing corn may be lessened, that I am watching with great interest the progress of the seventh crop of Wheat so sown, which the author of "A Word in Season" has now growing, and it was with much pleasure I read the following letter from him:—"Vicarage, Lois Weedon, Towcester, April 29.—My dear Sir: You have taken so much interest in my farming operations, that you will be glad, though not surprised, to hear that my 4 acre field of Wheat, which you saw in the winter, is attracting astonishment. It is certainly the most beautiful growing crop I ever beheld; it has all the fine qualities we look for at this season, even all over the land, and not varying an inch in healthy colour." This report of the Wheat I was fully prepared to hear, from the fine appearance I saw it presented in the winter; and now let me ask what more can be said of any crop, that has had a preparation and a seeding at treble the cost? This instance of what may be done by tillage, without manure, to grow grain with much less than the usual charges, I regard as most worthy of attention. Not, as I have before said, as an example to be precisely copied by farmers, but as showing the benefit to be gained from deep tillage and fine comminution of the soil between the growing crop; a lesson which an intelligent farmer would read to apply to trench ploughing his land, and hoeing and scarifying the ground between his young corn. The Hop grower adopts the practice between his Hops; in the spring of the year he turns over the ground with a fork, and breaks up the surface between the rows with his nidget, and he will tell you the practice is necessary to ensure a healthy and luxuriant growth, and the scuffling plough and scarifier have long been introduced between the rows of Beans and Peas, and roots on the best cultivated farms in Scotland, and the north, with great advantage to the growing crops, and still more to those that follow; and what is there to prevent a general extension of the practice to Wheat, Oats, and Barley, now that we have Garrett's horse-hoe, which, at a cost of less than 1*s.* an acre, enables the farmer to perfectly hoe all corn drilled as close as 9 inches. In instancing this narrow width, I am far from thinking it so successful as much wider. I have long since abandoned anything nigher than a foot, and am still getting wider; I have Oats and Barley at 21 inches, so as to admit the scuffling plough passing between the rows, and expect I shall find this width near enough; and how can I think otherwise, when I find Tull in ruder times could grow 4 quarters of Wheat an acre, year after year, from double rows, with 4 feet intervals, and without manure; and I see Mr. Smith realizing 33 bushels an acre yearly, from three rows upon 5 feet beds, and also without manure; and I will appeal to farmers holding only arable land, whose accounts have been so kept that their stock shows its cost and the expenditure and loss upon it, whether a practice which lessens the occasion for manure and for keeping of stock be not a desideratum in corn growing, of the greatest importance. The lessons we have had in shed-feeding, &c., are of the greatest value in teaching us how to raise manure at least cost, but the most valuable lessons of all will be those which shall teach farmers to do with less manure. Now that we have learnt how to raise manure, let us see if we cannot improve our tillage, so as to make it go very much farther. The cost of manure raised at home is far greater, and has far more to do with the profit and loss to be made in farming, than many are aware of. *Hewitt Davis,* 3, *Frederick's-place, Old Jewry.*

*Game.*—Will the Rev. George Wilkins have the goodness to answer the following questions: 1st, Who does he consider is the master on the farm, where game is preserved? 2d, How much does a hare or rabbit cost the landlord? 3d, How much the tenant? 8th, What effect on the county rates if the Game-laws were abolished? 9th, How is it that when a large landed proprietor takes to farming himself, he always does away with the game preserves? 10th, Would it not be better for a landlord to let each of his tenants preserve his own game, and do away with that most obnoxious person—the keeper; who is the cause of all bitter strife between the landlord and tenant? I am sure that the farmer would not totally destroy his best friends, the winged game, as they live upon his enemies. *James Cuthill, Camberwell, London.* [Questions 4, 5, 6, and 7, on the relation of the Game-laws to crime, have been omitted. We wish to confine our correspondents to the purely agricultural aspect of the subject.]

*Deep Draining.*—Will Mr. G. Wilkins, whose communication on open furrows appeared in the *Journal* of May 17th, be kind enough, in a few brief unscientific sentences, to set a common-going farmer right, who should thus address him:—"I occupy land of all degrees of stiffness; some very stiff, some a jointy, brashy, mixed kind; and some half clay, half sand, or, at least, partaking of the character of the two. I am hurt by the water from the clouds, which does not get readily off. Drains cut just out of the reach of the plough-share, or the poaching of a horse's hoof, would surely catch it sooner than a drain from 3 to 5 feet deep, and in addition to this, how is it to get so low through a stiff subsoil in time to do me good, for as soon as the stiff earth, which is thrown back into the drains, becomes solid, and closes on the tiles so forcibly as even—according to a late correspondent—to break their backs, it seems to me that they might just as well be at the Antipodes. Why is it so generally recommended to fill up the drains with loose, penetrable, rubbishy stuff, that the water may more readily get down to the pipes? If so, why go to such a depth at all?" This is a commonplace expression of the notions of hundreds of owners, and occupiers, and, though I doubt not, the point has been often treated of, perhaps Mr. Wilkins would once again clear the matter up, and, I am sure the kind indulgence of the *Agricultural Gazette* will lend its columns to the elucidation; and either much prejudice will be dissipated, or it will be acknowledged that there is a just medium between the two extremes. *An Inquirer.*

*The Acre.*—In answer to your enquiries as to the rod, pole, or perch in this country, I have to inform you

that we have two local measurements in common use here, namely,—the Cheshire and Lancashire, the latter appearing to be the same as the Irish, as quoted in your letter. I give you below the measurements of the statute, Cheshire, and Lancashire perches, and also an extract from a table published many years ago by a land-surveyor of this town, equalising the three measurements. *Lawrence Walker, Stockport; to Mr. Abraham Hardy.* One statute perch contains 30¼ square yards; 1 Cheshire, 64 square yards; 1 Lancashire, 49 square yards. One statute acre contains 4840 square yards; in Cheshire measurement 1 r. 35.625 p.; and in Lancashire measurement, 2r. 18.7755p. One Cheshire acre contains 10,240 square yards; in statute measurement, 2 a. 0 r. 18.5123 p.; and in Lancashire measurement, 1a. 1r. 8.9795p.* One Lancashire acre contains 7840 square yards; in statute measurement, 1 a. 2 r. 19.1735 p.; and in Cheshire measurement, 0a. 3r. 2.5 p.——At your request we have made enquiries for the number of square yards in a rod, pole, or perch, and also of an acre in Cheshire and Lancashire, and have received the above detailed reply: from which it appears that the Cheshire square measure is—64 square yards are 1 rod, pole, or perch; or 10,240 square yards are 1 acre; and the Lancashire square measure is—49 square yards are 1 rod, pole, or perch; or 7840 square yards are one acre. *Hardy & Son, Maldon, Essex.*—— Land measure here in Berwickshire is the same as in England. The old Scotch acre is now out of use; it is sometimes, but seldom, used in the Lothians. Five English acres make nearly 4 Scotch, which, I believe, contains 6104⅛ yards. *Wm. Nicholson; to Mr. Hardy, Maldon, Essex.*

## Farmers' Clubs.

STOCKTON DISTRICT, *May 7*: The above club held their first meeting for discussion. The subject was—*The Cultivation and Management of the Turnip Crop.*

Mr. PARRINGTON remarked that he considered the subject an appropriate one for the season, and the meeting to-day afforded those present an opportunity of inquiring of each other the best way of getting a crop, which every one would allow was essential to the farmer. In this district we laboured under great disadvantages from the difficulty of thoroughly preparing strong clay land for Turnips. The first step to be taken is to drain land thoroughly. He would not discuss the merits of this or that system of draining (that would afford a subject for future discussion), he would merely say the land should be thoroughly drained. In this county Turnips generally followed a grain crop. The plan he adopted, and which he recommended to the consideration of all the farmers present, was to clean the land well in autumn; there was no plan so cheap and effectual as this. One man, with a fork, followed by three women, can do a great deal in a day, and by this process you have two-thirds less weeds to eradicate than by cleaning in the spring. You cannot plough land too deep for Turnips; it should be ploughed not later than November, and not less than 9 inches deep. He did not consider it advisable where land had only been ploughed 4 inches, to plough it at once 9 inches, but gradually to deepen the soil, bringing a small portion of the subsoil to the action of the atmosphere at a time. Having ploughed your land in the autumn, you should not begin with it in the spring until you are certain you can have all complete and ready for sowing, for if you get your land prepared and it come rain, strong clay will run together, and your labour is lost. He thought no manure was so good as farm-yard manure for Turnips. He applied to his Turnip crop 2 cwt. of guano and 12 loads of farm-yard manure per acre; and pumped the contents of his liquid manure tank upon his manure heap once a week; and when the heap was ready for the Turnips it cut like soap. Every farmer should have a liquid manure tank, as it would save him much trouble, and much valuable manure. In sowing your Turnips, it is a good plan to have 15 or 20 rows prepared at night, and your force and plough ready for the following day. It is not desirable to begin to hoe too soon; some prefer to hand-pick the Turnips before hoeing, but he did not think it necessary. The horse-hoe should be kept going two or three times; and the land should be gone over, according to the inclination of the land to throw up weeds. The Turnips will be ready for pulling off about November, when they should be stored in pits covered with the tops, and above that a depth of soil to keep them from the wind. The seed he used had been grown on his own farm, and had been grown by his father for 50 years. He produced two specimens of very fine bulbs grown from the seed alluded to.—Mr. DYKE said he had used the same seed procured from Mr. Parrington, and had Turnips from it equal in size and weight to those upon the table.—The Rev. S. H. DYKE coincided with most of the opinions expressed by Mr. Parrington, and thought that good plucking was necessary to the proper cultivation of the land for Turnips; and was glad to find, from the specimens which he had witnessed at the late ploughing-match, held under the auspices of this Club, that we had many good ploughmen in the district. The work of the men was very good, but that of the boys' class was excellent. He was glad the Club had supported such meetings for ploughing and other work, and hoped it would continue to do so. He thought it impossible to get a good crop by shallow ploughing. When he came from the south, farmers used to boast of ploughing 1½ acre a day; if they could have boasted of doing half an acre well, it would have been better. No land should be ploughed less than 7 inches for Turnips; and many thought it sufficient to plough in spring, but he was of opinion that land for Turnips should always be ploughed in November. He manured his Turnips with 12 loads of good farm-yard manure (his stock being fed on Linseed, Bean-meal, and Turnips), and 2 cwt. of guano; but differed from Mr. Parrington in the time of putting the liquid manure upon the heap; and thought, that if put on periodically, it soaked through, and much was lost; he therefore preferred pouring it on the heap a day before it was wanted for the Turnips. Many persons objected to storing Turnips against a stone-wall, but he considered that the main point was to exclude the air, as he had himself stored some against a stone-wall, which were as sound, and many as heavy as the specimens upon the table. His dung heap was covered with linseed-straw, and covered that again with rotten manure, and his Turnips were now quite sound, and would, he expected, keep some time longer. He considered that many crops were lost from the seed being bad, as persons did not always consider the kind they had got, and when they had bad crops it was attributed to the land; but he would recommend every farmer to grow his own seed. He thought that it was sufficient to leave the plants in singling 10 inches apart. Some persons say you ought not to hoe Turnips in dry weather, as you let the drought in, but he differed from this altogether. When it can be done, it is very advantageous to feed off your Turnips by sheep on those clay soils, and would be very desirable. Mr. Graham, who was present to-day, had a field at Wynyard, which he fed off, strong clay. The sheep were driven to the pasture in wet weather, but were taken back when the weather permitted.—Mr. HARRISON, of Ormesby, did not agree with Mr. Dyke about eating on the land, as he thought it would be unprofitable. He had a relative in the Wolds, who, 20 years ago, never drew a Turnip; he has now began to draw some, and by adding a little light manure he g ts equal crops, and has his manure for other purposes.—Mr. DYKE stated that Mr. John Parrington, of Sockburn, had a field which he manured in the autumn, and had an excellent crop.—Mr. S. PARRINGTON said his brother had a good crop, but he did not find the system answer as a general rule.—Mr. FAWCETT, of Ormesby, did not approve of Mr. Parrington's system of cleaning the land, but adopted the following plan:—He put on a skimmer, and skimmed 4 inches deep; then dragged across the skimmer, then harrowed after that. He used the clod-crusher, and then used the scarifier again; also mixed ashes with his guano, and ploughed 4 inches deeper, and then it the land was not clean, he repeated the above process. He had an excellent crop of Turnips. The drag he used would drag 8 acres a day; the skimmer would do 5 acres.—Mr. PARRINGTON said Mr. Fawcett's farm, when he went to it, was covered with weeds. Mr. Fawcett, by this process, had done a great deal toward cleaning the land, but his remarks referred to those cases where the land was in a usual state of cultivation, and where the weeds were comparatively few.

METEOROLOGICAL REPORT.—MAY.
(*Continued from page 333.*)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| May 20 | 10.55 p.m. | 30.20 | ... | Gentle, bright night. |
| 21 | 7.40 a.m. | 30.18 | ... | NW. Gentle breeze, and |
| * | 6 5 p.m. | ... | 30.17 | overcast. |
| 22 | 7 30 a.m. | 30.18 | ... | WNW. Calm, overcast. |
| † | 7.5 p.m | ... | 30.17 | NNW. Gentle, heavy clouds in south horizon. |
| 23 | 7.20 a.m. | 30.18 | ... | NNE. Moderate, cloudless sky. |
| ‡ | 4 p.m. | ... | 30.17 | NNW. from noon. Moderate, |
| | 10.40 p.m. | 30.20 | ... | overcast, pleasant day; night brisk. |
| 24 | 6.50 a.m. | ... | 30.22 | NNE. Gentle; warm bright |
| | 11 a.m. | 30.24 | ... | morning, hazy in south. |
| | 2.10 p.m. | 30.23 | ... | SSW. Moderate. |
| 25 | 8 a.m. | 30.18 | ... | WSW. Brisk, fine A.M.; |
| | 10.10 p.m. | ... | 29.89 | overcast P.M., and threatening rain, but none fell. |
| § 26 | 7 a.m. | ... | 29.85 | NNW. A.M., N. P.M. Stiff |
| | 2 p.m. | ... | 29.86 | breeze, frequent heavy |
| | 10.45 p.m. | 29.90 | ... | clouds; night very heavy to northward; pleasant, fine day. |
| s.L. 27 | 5.30 a.m. | ... | 29.96 | Pleasant easterly airs, in- |
| | 10.40 p.m. | 30.02 | ... | clining to south; light and sunny all the forenoon. SW. P.M., with dark passing clouds. Night gentle and overcast, wind WNW. |
| 28 | 6 a.m. | ... | 30.07 | Brisk north-north-westerly |
| | 10.30 p.m. | 30.20 | ... | and northerly breeze. Noon, drawing to NNE. Pleasant, fine day. |
| 29 | 5.50 a.m. | ... | 30.24 | Calm, bright warm morning. |
| | 1.30 p.m. | 30.26 | ... | Hot sunny day. |

* † ‡ Notwithstanding the steadiness of the barometer and the fineness of the weather, I anticipate it will be found that to the westward there has been heavy weather (probably from thunderstorms).

§ In this case the wind having sprung up from exactly the opposite point of the compass, the barometer began to give way from the storm approaching, and our being on the eastern verge of it. This storm came from the westward (and probably from the West Indies), and crossed to the eastward. A remarkably brilliant sunset on the 25th.

S.L.—This change of wind, with settled weather and a barometer steadily rising, is very unusual; it would arise from the storm curving suddenly to the northward, whilst over these islands.

Dorchester, May 29th. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*New Source for the Supply of Guano.*—We understand that information has been received at the Colonial Office, that a discovery has been made of very extensive deposits of guano on the coast of Western Australia, to the north-east of Swan River. Hitherto this coast has been very imperfectly surveyed, but this discovery will, no doubt, lead to a careful examination of it, and of the bays and passages by which it can most easily be approached. Lord Grey takes too lively an interest in all that tends to promote the advancement of the material and industrial interests of our colonies to permit such a source of wealth, both to the colony and the mother country, to remain undeveloped. It is understood that several vessels have already carried cargoes of this guano to the Mauritius, and that the quality is fully equal to that which was derived from Ichaboe. *Economist.*

## Notices to Correspondents.

BONES AND ACID: *Iago* will be both chemically and agriculturally right in mixing them with charcoal.

DUNG AND LIME: *J T W.* It is not economical to place lime near dung in the land, because, in the presence of lime, ammonia at once assumes the volatile form, and may be lost. In adhesive soils, however, which have the power of retaining ammonia, there may practically be no mischief arising from a practice which strictly is incorrect.

FARMERS' FOWLS: *T* has addressed us in a letter, bearing the Liverpool post-mark to this effect:—"A leading article some time since patronised the silver-spangled Hamburghs [this is inaccurate; the golden-pencilled were mentioned] or the cuckoo fowls, and now a reviewer speaks of getting 'back to Dorkings and common sense.'.....I would suggest that the poultry critic of the *Agricultural Gazette* should adopt a breed for the farm-yard without any *ors*, and stick by it until the time arrives for him to announce the *fact*, that another breed will be found more profitable, and the particulars which make it so." This is a very acute observation, and therefore, to follow it up, we will in future recommend one breed of cattle, and one breed of sheep indiscriminately for all farmers in the kingdom. The Durhams, say, shall be recommended not only to the lands where they now are, but to take the place of the Galloways on the Argyleshire mountains, and of the Herefords before a Norfolk plough. The Leicesters do exceedingly well in many parts of England: we will stick by *them*, and have no *ors*, but send them to the next Cheviot-hill farmer who asks our opinion. No doubt the *Gardeners' Chronicle* will embrace a like principle, and advise the same varieties and species of flowers and culinary vegetables to be grown in Devonshire and in Northumberland, in the Isle of Dogs and on the Cumberland Hills. It will save a deal of trouble. But our friend "T." will kindly again read over the leading article which he (incorrectly) quotes. He will obligingly peruse the little sentence, "The advice given must be accommodated to what the farmer *wants*," and those which follow; and we then answer his question, "What is the *best* breed of fowls for the farmer to adopt, the object being plenty of eggs, chickens, and good fowls for the table?" Try the cuckoo fowls, *or* the Surrey, *or* the Dorking, *or* the Cochin China. Any of them *may* suit you; *which* is probably the best *for you* we cannot say, as you give us no opportunity of viewing the locality of your poultry-yard. *Perhaps* a good stock of game fowls (the black-breasted red, *or* the duck-winged), may thrive in your situation better than any of the aforesaid candidates for your favour. At any rate, hold to your resolution to keep but *one* breed, and that pure.—Our correspondent will perceive from this comparison that he has altogether overlooked the grounds on which variety of recommendation is unavoidable.

FORTY-DAY MAIZE: *A Subscriber.* If you have a very hot summer, you may ripen the seed, but you cannot be sure of it.

LIQUID MANURE PUMPS: *Constant Reader.* Apply to Read, of Regent Circus, London.

MANGOLD WURZEL: *A B.* The manure should be, as I have already explained, deposited first in the holes, for making which a dibble, about 3½ feet long, and shod with iron, is the best: distance apart, 27 by 14 inches. The seed, two or three at a time, is then lightly pressed on the manure, and the hole covered up; the seed should not be deeply buried. The superphosphate, if used, must be mixed with plenty of ashes, or better still the scourings of drains, and peat earth, as without this addition the superphosphate alone would burn up the seed and be useless. Half a pint of manure will be found ample; having tried both a pint and a half pint. The former I found more than necessary. *H. E.*

MR. PAINE'S PORTABLE RAILWAY: *W Edwards.* The portable farm railway is made of the best yellow deal; the inner edges upon which the trucks run being shod with thin iron. The rails are socketed together, and are held fast by an iron clamp; they are made in lengths of 15 feet, and are easily carried by a couple of men or lads. The rails are held firmly together by the transverse pieces or sleepers on which they rest and are fitted into. Mr. Crosskill charges 2*s.* 6*d.* per yard, therefore every 100 yards will cost 12*l.* 10*s.*; but this charge does not include the cost of trucks, sidings, turn-tables, &c., which is, of course, dependent upon the requirements of the purchaser. I have pointed out some improvements in the form of the turn-tables, crossing of public roads, &c., to Mr. Crosskill, which he has adopted. The rails are easily repaired, and, indeed, can be made by any common carpenter; but I doubt whether much saving can be effected, seeing that Crosskill does so much work by machinery. When not in use, this railway ought to be carefully packed away; I have been compelled to build up a shed on purpose, mine being a long one. *J. M. Paine.*

PROFESSOR HENSLOW'S BARLEY EXPERIMENT: *To our Readers.* We should be glad to know the addresses of any who may have thought of leaving a part of their Clover seeding unseeded with Barley, as suggested by Professor Henslow, to determine the effect, if any, upon the future Clover crop.

RED MANGE: *Barkley.* It is not the effect of the acari insect. It is sometimes incurable. A lotion composed of pyroligneous acid, 1 oz.; water, 1 pint, may be tried; and if it fail, mercurial ointment. *W. C. S.*

## Markets.

COVENT GARDEN, MAY 31.

Trade is somewhat brisker. Peaches, Nectarines, and Cherries may be obtained; the former at from 12s. to 20s. per dozen, and the latter at from 6s. to 12s. per pound. Hothouse Grapes are plentiful and cheap. Pine-apples are more abundant. The same remark applies to Strawberries. Dessert Apples chiefly consist of American Newtown Pippins. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant. Asparagus, young Carrots, French Beans, and Green Peas are still received from France, Cucumbers from Holland, and considerable quantities of Potatoes and Asparagus from Cornwall, as well as green Gooseberries. New Potatoes may be obtained at from 2d. to 6d. per pound; old kinds realise high prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Double Primroses, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 8s to 12s | Oranges, per doz., 9d to 2s |
| Grapes, hothouse, p.lb., 5s to 10s | — per 100, 6s to 14s |
| — Portugal, p.lb., 1s to 2s 6d | — Seville, p. 100, 7s to 14s |
| Strawberries, per oz., 6d to 1s | — — p. doz., 1s to 2s 6d |
| Pears, per doz., 2s to 5s | Chestnuts, per peck, 2s to 5s |
| Apples, dessert, p.bush., 6s to 10s | — per 100, 9d to 1s 6d |
| — kitchen do., 5s to 8s | Nuts, Barcelona, p.bsh, 20s to 22s |
| Almonds, per peck, 6s | — Brazil, p, bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 50s to 55s |
| Lemons, per doz., 1s to 2s | |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 9d to 1s | Garlic, per lb., 4d to 8d |
| Greens, p. doz. bunches, 3s to 4s | Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d |
| Cauliflowers, p. doz., 1s 6d to 3s | Lettuce, Cab., p. score, 6d to 1s |
| Broccoli, p. doz. bundl., 7s to 8s | — Cos, per score, 1s to 1s 6d |
| French Beans, p. 100, 2s to 3s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 1s to 5s | Horse Radish, p. bundl., 1s to 5s |
| Rhubarb, p. bundl., 4d to 9d | Red Beet, per doz., 6d to 1s 6d |
| Potatoes, per ton, 90s to 200 | Mushrooms, p. pot., 9d to 1s 3d |
| — per cwt., 4s to 8s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. doz. bundl., 1s to 2s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 6d to 1s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| — Turnip, p. doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Celery, p. bundle, 6d to 1s 3d | Mint, green, per bunch, 4d to 6d |
| Carrots, per doz., 6d to 7d | Basil, green, p. bunch, 6d to 9d |
| Spinach, per sieve, 1s to 1s 6d | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 3d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per doz., 9d to 1s | |
| Shallots, per lb., 6d to 1s | |

HOPS.—FRIDAY, May 30.

Messrs. Pattenden and Smith report that the demand continues good, and that fly is on the increase.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 29.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 80s | Clover ... ... ... | 72s to 90s |
| Inferior ditto... ... | 55 66 | Second cut ... ... | 75 85 |
| Rowen ... ... ... | 55 63 | Straw ... ... ... | 26 30 |
| New Hay ... ... ... | — — | | J. COOPER. |

The trade heavy for Meadow Hay. Clover in good demand.

CUMBERLAND MARKET, May 29.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78s to 84s | Inferior ... ... ... | 75s to 80s |
| Inferior ditto... ... | 55 72 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 28 32 |
| Old Clover ... ... | 90 94 | | JOSHUA BAKER. |

COAL MARKET.—FRIDAY, May 30.

Holywell, 13s. 6d.; Carr's Hartley, 14s.; Eden Main, 14s.; Cowper Hartley, 13s. 9d.; Netherton Hartley, 13s. 6d.; Walls-

* These figures are fractions of a pole or perch, thus—$\frac{9795}{10000}$ or very near another pole.

end Hetton, 15s.; Wallsend Laudton, 14s. 6d.; Wallsend Stewarts, 15s.; Wallsend Tees, 15s.—Ships at market, 173.

POTATOES.—Southwark, May 26.

The Committee report that the market continues to be well supplied both coastwise and by rail. Trade was very heavy, and, with every description of Potato, prices had a downward tendency. Coarse second-rate samples were nearly unsaleable at any figure. The following are this day's quotations:—York Regents, per ton, 60s. to 90s.; Scotch do., 60s. to 75s.; ditto Cups, 65s. to 80s.; Catholics and whites, 45s. to 55s.; Cambridge whites, 45s. to 70s.

SMITHFIELD, Monday, May 26.

We have a few more Beasts than on Monday last, but the demand having increased, we are enabled to retain that day's quotations. There is a much larger supply of Sheep and Lambs, and on the average trade is not so good as on Monday, but rather better than on Friday last. It is difficult to effect a clearance. Good Calves are not plentiful, and are sold rather dearer. From Holland and Germany there are 435 Beasts, 1340 Sheep, 144 Calves, and 18 Pigs; from Norfolk and Suffolk, 2400 Beasts; and from Scotland, 300.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | ... | | | |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | 3 | 4 | to 3 | 8 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | ... | | | |
| Best Downs and Half-breds | ... | | ... | | Ditto Shorn | 2 | 6 | — 3 | 2 |
| Ditto Shorn | 3 | 8 | — 4 | 0 | Lambs | 5 | 0 | — 6 | 0 |
| | | | | | Calves | 3 | 0 | — 4 | 4 |
| | | | | | Pigs | 2 | 8 | — 4 | 0 |

Beasts, 3835; Sheep and Lambs, 27,070; Calves, 247; Pigs, 490.

Friday, May 30.

The supply of Beasts is small; they are readily disposed of at fully Monday's rates. In a few instances a small, but not a quotable advance is realised. The number of Sheep and Lambs is large; however, there is a fair demand; the former maintain late rates, but there is a small reduction in price of the latter. Trade is very dull for Calves, and 4s. is rarely exceeded. From Germany and Holland we have 48 Beasts, 720 Sheep, and 218 Calves; from Spain, 210 Sheep; from Scotland, 100 Beasts; from Norfolk and Suffolk, 400; from France, 6 Beasts and 48 Pigs; and 108 milch cows from the home counties.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | ... | 3 | 4 | to 3 | 6 | Best Long-wools | ... | | | |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | ... | 3 | 4 | — 3 | 8 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | ... | | | | |
| Best Downs and Half-breds | ... | | ... | | Ditto Shorn | ... | 2 | 8 | — 3 | 2 |
| Ditto Shorn | ... | 3 | 8 | — 4 | 0 | Lambs | ... | 5 | 0 | — 5 | 8 |
| | | | | | | Calves | ... | 2 | 10 | — 4 | 0 |
| | | | | | | Pigs | ... | 2 | 8 | — 3 | 8 |

Beasts, 734; Sheep and Lambs, 11,560; Calves, 484; Pigs, 495.

MARK LANE.

Monday, May 26.—The supply of English Wheat to this morning's market was small, and an attempt was made to establish a slight advance in price, which, however, was only successful in a few instances, the bulk of the arrival realising last week's prices. The receipts of foreign Wheat have not been large this week, but French Flour continues to come to hand too freely to admit of any advance in price. Barley was fully as dear as last week. The receipts of Oats since this day se'nnight amount to upwards of 23,000 qrs.; the demand, however, being large, factors were enabled to obtain an improvement of 6d. per qr. upon the rates of Monday last.—Beans and Peas fully maintained former prices.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | —45 | Red | 36 | —43 |
| — — fine selected runs...ditto | 42 | —47 | Red | | —40 |
| — — Talavera | 45 | —52 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red | — | |
| — Foreign | 32 | —50 | | | |
| Barley, grind. & distil., 17s to 22s...Chev. | 26 | —31 | Malting | 22 | —26 |
| — Foreign... grinding and distilling | 18 | —23 | Malting | 23 | —26 |
| Oats, Essex and Suffolk | 17 | —19 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —23 | Feed | 16 | —21 |
| — Irish ...Potato | 17 | —21 | Feed | 16 | —18 |
| — Foreign ...Poland and Brew | 18 | —21 | Feed | 17 | —20 |
| Rye | 22 | —24 | Foreign | — | |
| Rye-meal, foreign...per ton | — | | | | |
| Beans, Mazagan ...24s to 28s...Tick | 24 | —29 | Harrow | 24 | —29 |
| — Pigeon...27 — 33...Winds | — | | Longpod | — | |
| — Foreign Small | 22 | —28 | Egyptian | 20 | —22 |
| Peas, white, Essex and Kent...Boiler- | 23 | —26 | Suffolk | 26 | —28 |
| — Maple...26s to 28s Grey | 23 | —24 | Foreign | 24 | —31 |
| Maize White | — | | Yellow | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk ditto | 27 | —34 | Norfolk | 27 | —34 |
| — Foreign ...per barrel | 16 | —23 | Per sack | 26 | —34 |

Friday, May 30.—The arrivals of English Wheat this week amount to only 2950 qrs.; whilst from abroad we have received 7580 qrs. of Wheat, and 6560 sacks of Flour. The trade was firm this morning, and Monday's quotations were well supported. Our market was attended by several country millers from a distance, who purchased secondary and inferior sorts of Wheat at full prices. Choice marks of French Flour were in request, with the turn in price against the buyer. Inferior sorts continue very unsaleable. Barley, Oats, Beans, and Peas in short supply, and prices of all have an upward tendency.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| April 19 | 39s 5d | 24s 5d | 17s 5d | 24s 7d | 26s 10d | 25s 9d |
| — 26 | 39 3 | 24 4 | 17 10 | 24 2 | 26 9 | 25 5 |
| May 3 | 38 8 | 24 3 | 18 3 | 23 11 | 27 9 | 25 4 |
| — 10 | 38 10 | 24 4 | 18 8 | 24 7 | 27 10 | 25 11 |
| — 17 | 38 2 | 24 2 | 18 11 | 25 9 | 28 10 | 27 2 |
| — 24 | 38 8 | 24 1 | 19 5 | 24 7 | 29 2 | 26 1 |
| Aggreg. Aver. | 38 10 | 24 3 | 18 5 | 24 7 | 27 10 | 25 11 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Apr. 19. | Apr. 26. | May 3. | May 10. | May 17. | May 24. |
|---|---|---|---|---|---|---|
| 39s 5d | | ... | ... | ... | ... | ... |
| 39 3 | ... | | ... | ... | ... | ... |
| 38 10 | ... | ... | | ... | ... | ... |
| 38 8 | ... | ... | ... | | ... | ... |
| 38 8 | ... | ... | ... | ... | | ... |
| 38 2 | ... | ... | ... | ... | ... | |

Liverpool, Tuesday, May 27.—The arrivals from foreign ports are upon a very moderate scale, notwithstanding that favourable winds have prevailed throughout the week. There was a good attendance of buyers at this day's market. Good fresh parcels of Wheat were disposed of to a fair extent, at quite as good prices as last week, but old and secondary qualities were neglected; approved brands of Flour supported late rates; in a few instances American barrels gave way 6d. Indian Corn declined 9d. to 1s. per qr. from last Tuesday, at which a few parcels changed hands, and the market closed with rather more firmness. The supply of Oats was beyond the demand, and the few sales made were at a reduction of ½d. to 1d. per bushel. Oatmeal was not lower, nor was there any change in the value of Barley, Beans, or Peas. —— Friday, May 28.—This morning's market was fairly attended. The demand for Wheat was moderate, but there was no perceptible change in Tuesday's quotations for any sort. Flour was rather easier to purchase, and in some instances American barrels were 6d. lower. To get on with Indian Corn from the ship a decline of 6d. to 9d. per qr. was submitted to. Oats were ½d. per bushel lower, leaving the top value of the best Irish at 38s. per 45 lbs. Oatmeal was not any cheaper, nor was there any change in the value of Barley, Beans, and Peas.


GLASS. GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, and PUBLIC BUILDINGS GENERALLY.

| For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c. | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| Packed in Crates, for cutting up of the sizes as Manufactured:— 30 inches wide and from 40 to 50 long ... Or 20 " " 50 to 70 " | 0 6 | 0 8 | 0 10 |
| In Squares, cut to the sizes ordered:— Under 8 by 6 | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 | 0 4½ | 0 7 | 0 8 |
| 10 by 8 " 14 by 10 | 0 5 | 0 7 | 0 9 |
| 14 by 10 " 1½ feet super., if the length does not exceed 20 inches | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. " 3 " or if above 20, and not above 30 inches long | 0 6 | 0 8 | 0 10 |
| 3 " " 4 " " 20 " 30 " | 0 6½ | 0 8 | 0 10 |
| 4 " " 5 " " 30 " 35 " | 0 7 | 0 8½ | 0 10 |
| 5 " " 6 " " 35 " 40 " | 0 7½ | 0 9 | 0 10½ |
| 6 " " 8 " " 40 " 45 " | 0 8 | 0 9½ | 0 11 |
| 8 " " 10 " " 45 " 55 " | 0 8½ | 0 10 | 1 0 |
| 10 " " 12 " " 55 " 70 " | 0 9 | 0 11 | 1 1 |
| 12 " " 15 " " 70 " 85 " | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12s. per box; 7 by 5 in. and 7½ by 5½ in. 13s. 6d. do.; 8 by 6 in. and 8½ by 6½ in. 15s. do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16s. 6d.

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

Note.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.—1-8th, 6d.; 3-16ths, 9d.; ¼ inch, 1s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



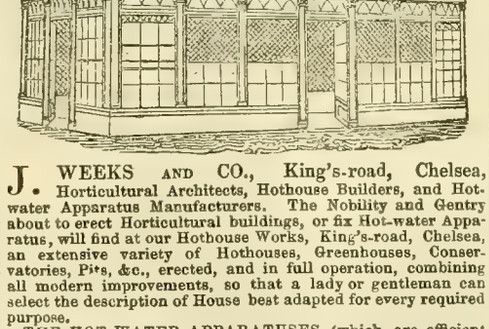
GRAY and ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS and CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

EXHIBITION GOLD PENS.—Superior Gold Pens, 2s. 6d. each; ditto, extra fine, 3s. 6d. each; ditto, best manufactured, same as sent to the Exhibition, 5s. each. Sent post free on receipt of Post-office order or postage stamps for the amount.—Address Messrs. Lindsey and Co., Pen Manufacturers, Birmingham.—*** A liberal Discount to the Trade.

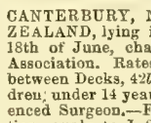
BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

E. DENCH having erected Two Patent Hothouses at the west end of the Great Exhibition, invites the attention of Gentlemen to the superior qualities, with the lowness of price, attending the erection of his Patent Houses; and having now ready for sale FIVE HOUSES of different sizes and descriptions on his premises, and some of them at a great reduction in the price, thinking of making alterations on his premises.

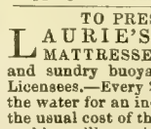
Hothouses built to be Glazed without Putty for Wood, and warranted not to drip under any circumstances.

Heating with Hot-water on the most scientific and economical principles.



FOR PORT LYTTELTON, CANTERBURY SETTLEMENT, with liberty to land Passengers and Goods at the undermentioned Ports in NEW ZEALAND.—The first-class Passenger Ship CANTERBURY, 816 tons register, for CANTERBURY and WELLINGTON, NEW ZEALAND.

MID-LOTHIAN, 530 tons register, for CANTERBURY, NELSON, and NEW PLYMOUTH, NEW ZEALAND, lying in the East India Docks, to SAIL on the 18th of June, chartered and provisioned by the Canterbury Association. Rates of passage:—Chief Cabin, a whole Cabin between Decks, 42l.; Second Cabin, 22l.; Steerage, 16l.; Children under 14 years, one half. Each Ship carries an experienced Surgeon.—For freight or passage, or further information, apply to J. Stayner, 110, Fenchurch-street; Filby and Co., 157, Fenchurch-street; or to Frederick Young, Manager of Shipping of the Canterbury Association, 74, Cornhill, London.



FOR PORT LYTTELTON, CANTERBURY SETTLEMENT, WELLINGTON, and AUCKLAND, NEW ZEALAND.—The first-class Passenger Ship DUKE OF PORTLAND, 533 tons register, lying in the East India Docks, chartered and provisioned by the Canterbury Association, to sail on the 10th June. Rates of Passage — Provisions, Medicine, and Medical Comforts included: Chief Cabin, 42l.; Second Cabin, 22l.; Steerage, 16l. Children under 14 years of age, one-half. Carries an experienced Surgeon. For freight, passage, or further information, apply to J. Stayner, 110, Fenchurch-street; Filby and Co., 157, Fenchurch-street; or to Frederick Young, Manager of Shipping of the Canterbury Association, 74, Cornhill, London.

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LAURIE'S PATENT FLOATABLE MATTRESSES (not Inflated), PILLOWS, LIFE BELTS, and sundry buoyant articles. S. W. Silver and Co., Sole Licensees.—Every Ship Mattress will sustain eight persons in the water for an indefinite period, and at a small increase on the usual cost of those in common use. Every Pillow or Seat-cushion will sustain one or more persons. The Life Belts are preventives to sinking, the cheapest yet submitted, very portable, and applied in an instant in case of accident. Thus, every Sailing Vessel, Steamer, Yacht, Boat, or craft of any kind, and every person on board, ought to be furnished with these clever Sinking-Preventives, which may be seen and tested at the manufacturers', S. W. Silver and Co., Clothiers, Outfitters, and Contractors, 66 and 67, Cornhill, and 4, Bishopsgate-street, London; and at Liverpool, where Passengers may be supplied with the whole or any portion of their Outfit without sacrificing the too usual intermediate profit, Silver and Co. being the Makers of the Manifold Articles in the Outfit, and supplying them at their Shipping Prices, including Folding Furniture for Cabin use on the Voyage, which is so contrived as to form a supply on arrival. Department for Outfitting Cadets, Clergymen, and Cabin Passengers generally, Naval and Military Uniforms, and Clothing for Home use at 66 and 67, Cornhill. Department for Outfitting Ladies, and for Home use, with experienced Female Managers, 66 and 67, Cornhill.

Department for very low-priced OUTFITS, 4, Bishopsgate-street, opposite the London Tavern, where a comfortable fit out for a four months' voyage may be procured for Four Guineas, including a SINKING-PREVENTIVE MATTRESS.

DRAFTS on AUSTRALIA, 30 Days' Sight, at Par.

## SALES BY AUCTION.

### COBHAM PARK, COBHAM, SURREY.

SECOND PERIODICAL SALE OF SHORT-HORNS.

MR. H. STRAFFORD begs respectfully to announce that he has received instructions from Harvey Combe, Esq., to Sell by AUCTION, without reserve, at the Downside Farm, Cobham Park, on TUESDAY, the 10th day of June, 1851, Forty Head of very Superior Pure Bred SHORT-HORNED CATTLE, consisting of 36 Cows and Heifers, and Four young Bulls, which have been bred from the celebrated herds of the Earl of Carlisle, Earl Ducie, Sir C. Tempest, Captain Shawe, Messrs. Burgess, Cattley, Parkinson, Wiley, Wilkinson, &c. &c.

Catalogues, with the pedigrees, may be had upon application to Mr. STRAFFORD, 3, Camden Villas, Camden Town, London; and of Mr. J. P. Giles, at the Downside Farm, Cobham, Surrey.

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TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on TUESDAY, June 3, and THURSDAY, June 5, at 12 o'clock, a first-class collection of Dahlias; also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, and other plants in bloom, Climbing and other Roses, and a variety of useful and ornamental plants for bedding.—May be viewed the morning of sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytoustone, Essex.

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ORCHIDS—THE MOST IMPORTANT COLLECTION EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is favoured with instructions to submit to Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, June 9th, and following day, a collection of ORCHIDS, that has ranked for some years past as one of the finest in the kingdom; it comprises magnificent Specimen Plants, in perfect health, of all the favourite varieties, an enumeration of a few of the principal of which will suffice to show the high character of the collection.

| | |
|---|---|
| Aerides maculosum | Dendrobium Devonianum |
| ,, quinquevulnerum | ,, Dalhousianum |
| ,, odoratum purpurescens | ,, Paxtonii |
| ,, crispum | ,, formosum |
| ,, rubrum | ,, armenum |
| ,, affine | ,, Ruckerii |
| Cattleya Acklandii | Phalænopsis rosea |
| ,, bulbosa | ,, grandiflora |
| ,, maxima | ,, amabilis |
| ,, superba | Saccolabium guttatum |
| ,, Mossiæ | ,, præmorsum |
| ,, crispa | ,, Blumei major |
| ,, bicolor | ,, calceolaria |
| ,, labiata | ,, papillosum |
| ,, Perrinii | Vanda Batemanii |
| ,, Skinnerii, &c. | ,, violacea |
| Chysis bractescens | ,, tricolor |
| ,, albida | ,, Roxburghii |
| ,, aurea | ,, teres, &c. &c. |

Catalogues are preparing, and will be ready 10 days before the sale.

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TO BOTANISTS, &c.

MR. SAMUEL STEVENS, NATURAL HISTORY and BOTANICAL AGENT, begs to announce that he is favoured with instructions to dispose of the very choice, valuable, and extensive HERBARIUM of the late GEORGE GARDNER, Esq., Director of the Royal Botanic Garden, Peradenia, Ceylon. This collection, which is presumed to contain upwards of 12,000 species, and about 14 000 specimens of Phænogamous Plants and Ferns, is beautifully arranged and in the finest condition, and, as far as possible, named, and with the greatest care. It is particularly rich in Brazilian and Ceylon plants, gathered mostly by himself during 5½ years' travels in the former country, and 4 years' residence in the latter, and are the authority for his many published species. It further includes numerous plants from Mauritius, the Neilgherries, Malacca, Hong-Kong, South Europe, and from various parts of the world, and altogether forms one of the finest Herbariums ever offered for sale. The plants may be inspected, and further particulars obtained by applying to Mr. S. STEVENS, 24, Bloomsbury-street, London.—Mr. S. S. has also on sale several sets of Dried Plants from Texas, New Mexico, Chagres, South Africa, New Holland, &c.; and large collections of Insects of all orders from the Amazon, Brazils, and other parts of South America; also from Africa, New Holland, India, South Europe, Madeira, &c.; Bird and Animal Skins, Shells, Reptiles, &c., &c.

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FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, June 2, at 2 o'clock precisely, by order of Messrs. Antony Gibbs and Sons, the Importers, 500 Tons, more or less, damaged PERUVIAN GUANO.—Catalogues, and further particulars, in due time, from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms.

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TO BE DISPOSED OF, with immediate possession, or in Autumn, an old Established NURSERY and FRUIT GROUND, the proprietor retiring from business. It is situated in a populous neighbourhood, six miles from London; the ground is unrivalled for Trees and Shrubs, also for producing the finest Fruit.—For particulars apply to J. C. HARDY, Esq., National Guardian Assurance Society, 19, Moorgate-street, London.

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FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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TO GARDENERS AND OTHERS SEEKING A CHEAP CONCERN.

TO BE LET, within four miles north of London, with immediate possession, a COTTAGE, containing four Rooms, with a Garden, where a good ready-money Plant business has been done, and which may be improved. The Show and Propagating Houses, and two Greenhouses, to be taken at a valuation. Rent, including taxes, 18*l.* per annum. Apply to Mr. GEORGE RUTHERFORD, Brook-street, Upper Clapton, near London.

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A GOOD OPPORTUNITY.

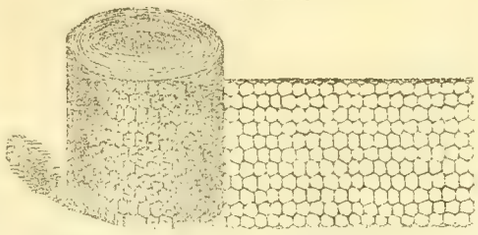
TO BE LET, an Established SEED BUSINESS, doing a good Trade in Seeds, Plants, and Dutch Bulbs; stands well for jobbing work, being situated in the main thoroughfare of a densely populous neighbourhood. The above consists of a large showy Shop and four rooms. Rent and taxes, 20*l.* Coming-in for stock, fixtures, &c., only 25*l.* Three-quarters of an acre of ground may be had, if required: rent, 3*l.*—Apply to J. SEAWARD, London-st., Greenwich, Kent.

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PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT-STREET, WESTMINSTER, LONDON;
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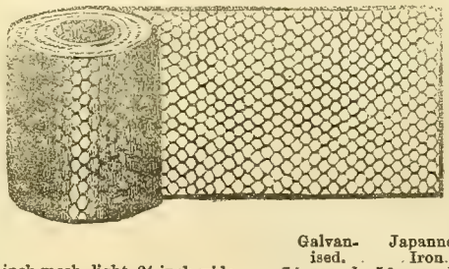
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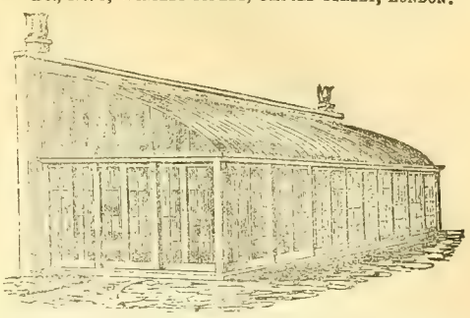
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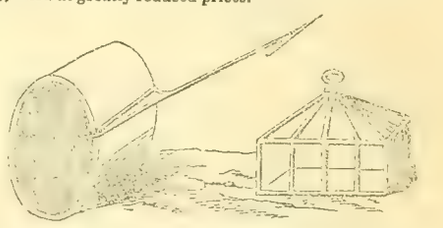
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BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has OPENED THREE LARGE ADDITIONAL SHOW-ROOMS, communicating with his original ones (which are the largest in the kingdom), devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied that has ever been submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

| | | |
|---|---|---|
| Bedsteads, from | ... ... | 12s. 6d. to 12l. each. |
| Shower Baths, from | ... ... | 7s. 0d. to 7l. each. |
| Lamps (Palmer's), from | ... | 1s. 6d. to 6l. each. |

(All other kinds at the same rate.)

Palmer's Candles ... ... ... 6½d. per lb.

WILLIAM S. BURTON'S Stock of GENERAL FURNISHING IRONMONGERY, including Cutlery, Nickel Silver, and Plated Wares, is literally the largest in the world, detailed Catalogues of which, with engravings, sent (per post) free. The money returned for every article not approved of.—39, Oxford-street (corner of Newman-street), Nos. 1 and 2, Newman-street, and Perry's-place, London. Established in Wells-street, 1820.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 31, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 23—1851.] SATURDAY, JUNE 7. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Advertisers, hint to | 358 *b* | Murphy's agri. machine | 363 *a* |
| Agricultural Society of England | 365 *a* | Orchids for the Million | 356 *b* |
| Asparagus, cutting | 357 *c* | Orchids, sale of | 359 *c* |
| Astyages, Pear tree | 357 *a* | Pæonies, tree | 356 *b* |
| Banks, penny savings | 358 *b* | Pear tree Astyages | 357 *a* |
| Bee-hives | 358 *c* | Peas, winter | 358 *b* |
| Birds, British song | 356 *c* | Potatoes, to cook | 358 *c* |
| Buckwheat | 363 *c* | Preserving fruit | 3 5 *c* |
| Calceolaria, the | 358 *a* | Roots, value of an acre | 364 *b* |
| Caledonian Hort. Society | 3 8 *c* | Rose, Cloth of Gold | 358 *a* |
| Calendar, Horticultural | 359 *c* | Sanfoin | 362 *c* |
| Cereus, night-blowing | 358 *b* | Salt, Prof. Way's lecture on | 365 *a* |
| Crystal palace | 361 *c*—363 *a* | Spade husbandry | 363 *b* |
| Dean's "Land Steward" | 361 *b* | Strawberries, to force | 358 *a* |
| Eucalypti, hardy | 358 *a* | Tares and Vetches | 363 *b* |
| Farming, Tullian | 362 *b* | Tulip show—amateur | 359 *b* |
| Food, Masson on preparing | 359 *c* | Tullian Farming | 362 *b* |
| Fruit, to preserve | 355 *c* | Turnips, to sow | 364 *a* |
| Gardeners' newspapers | 358 *a* | Vetches and Tares | 363 *b* |
| Glass pipes | 355 *b* | Walks, Trentham machine for killing weeds on | 357 *c* |
| Grapes, rust in | 360 *c* | Warwickshire Hort. Society | 359 *b* |
| Harrows, patent | 364 *a* | Waterer's exhibition | 359 *b* |
| Hoes | 361 *c* | Water-pipes, glass | 355 *b* |
| Horse hoes | 361 *c* | Weather, the | 366 *a* |
| Horticultural Society's Garden | 359 *b* | Weeds, to kill | 357 *c* |
| Labourers | 364 *c* | Wheat, black | 364 *b* |
| Lightning conductors | 360 *c* | Yew hedges | 358 *b* |
| Linnean Society | 358 *c* | | |


ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The SECOND EXHIBITION of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY next, JUNE 11th; and the Exhibition of ROSES on SATURDAY, JUNE 21st.

Tickets, to admit the holders to either of the above Exhibitions, for upon any one day in the month of June, except Sundays, may be obtained at the Gardens by orders from Fellows of the Society, or by letters from Foreign Ambassadors and Ministers, 5*s.*: or on the days of Exhibition, 7*s.* 6*d.* each. The Gardens open at 2 o'clock.

N.B. The Ticket Office closes at 6 o'clock. The Victoria Regia continues to flower freely.

NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET.

NOTICE is hereby given, that the Censors—J. Riley, Esq., Huddersfield; W. H. Story, Esq, Newton Abbott; Rev. R. Carth, Farnham; C. J. Perry, Esq., Handsworth; R. Stains, Esq., London; J. W. Newhall, Esq., Woolwich; W. Cock, Esq., Chiswick: Mr. J. Keynes, Salisbury; C. P. Lochner, Esq., Paddington; Mr. T. Moore, Chelsea; and Mr. Gaines, Battersea, will be in attendance on THURSDAY, June 12th, at 1 o'clock precisely, at which time all subjects must be entered, labelled, and staged.

The Committee begs to announce that as a large number of members and floral friends may be expected in town by the combined influences of the Royal Botanic Exhibition, the Gardeners' Benevolent Anniversary, the Seedling Pelargonium Meeting, and other causes, this meeting may therefore possess additional interest. Every facility will be granted for the admission of Non-members at an early hour; Exhibitors and Censors will therefore be punctual in their attendance, and prompt in their arrangements. By order,

June 7. JOHN EDWARDS, Hon. Sec.

SEEDLING PELARGONIUM EXHIBITION, ROYAL BOTANIC GARDENS, REGENT'S PARK, on WEDNESDAY, JUNE 11, 1851.

The Subscribers to the PELARGONIUM SEEDLING FUND are respectfully informed that the Censors specially appointed will (by the kind permission of the Royal Botanic's Council), be in prompt attendance at 10 o'clock to award the Prizes, the amounts of which will be made known at the earliest opportunity; the number will be limited to seven, and the whole of the Funds subscribed will be awarded in proportion to the merits of the productions.

In connection with the above, a Fund has been subscribed to reward meritorious Fancy Seedling Pelargoniums, in four Classes, and three Prizes in each Class.

The Censors for both Classes are—

J. RILEY, Esq, Birkley, near Huddersfield.
R. STAINS, Esq., Marylebone.
Mr. JAMES VEITCH, Jun., Exeter.
Mr. ROBINSON, Pimlico.
W. COCK, Esq, Chiswick.

JOHN EDWARDS, Wace Cottage, Holloway, Treasurer.

Subscribers will do well by forwarding their Donations prior to the Exhibition day, to facilitate the arrangements.

PRESENT SUBSCRIBERS.

Balance in hand, 1850 ... ... £5 8*s.* 6*d.*

| | £ | s. | d. |
|---|---|---|---|
| Mr. J. Veitch, 1850 | 1 | 1 | 0 |
| Mr. E. Beck | 1 | 0 | 0 |
| Mr. W. Bragg | 1 | 0 | 0 |
| Mr. J. Dobson | 1 | 0 | 0 |
| Mr. Hocken | 1 | 0 | 0 |
| Mr. Hoyle | 1 | 0 | 0 |
| Mr. Jarratt | 1 | 1 | 0 |
| Mr. Riley | 1 | 0 | 0 |
| Mr. Story | 1 | 0 | 0 |
| Mr. Turner | 2 | 0 | 0 |
| Mr. Rendle | 0 | 10 | 6 |
| Mr. Ambrose | 1 | 1 | 0 |
| Mr. Black | 1 | 0 | 0 |
| Mr. Foster | 1 | 0 | 0 |
| Mr. Andrew Henderson | 0 | 10 | 6 |
| Mr. Robinson | 0 | 5 | 0 |
| Mr. Stains | 1 | 0 | 0 |
| Mr. Rous | 1 | 0 | 0 |
| Mr. Alexr. Henderson | 0 | 10 | 6 |
| Mr. W. Foquett | 1 | 1 | 0 |

PRESENT SUBSCRIBERS TO THE FANCY FUND.

| | £ | s. | d. |
|---|---|---|---|
| Mr. Ambrose | 1 | 1 | 0 |
| Mr. Andrew Henderson | 1 | 1 | 0 |
| Mr. Stains | 0 | 10 | 0 |
| Mr. Robinson | 0 | 5 | 0 |
| Mr. C. Chapman | 1 | 1 | 0 |
| Mr. W. P. Ayres | 1 | 1 | 0 |
| Mr. H. Rosier | 0 | 10 | 6 |
| Mr. Gaines | 0 | 10 | 6 |
| Mr. Alexr. Henderson | 0 | 10 | 6 |

SCARLET RUNNER BEANS.—For SALE, a few bushels of SCARLET RUNNERS, at 25*s.* per bushel—Apply to Mr. HENRY CLARKE, Seed Merchant, 39, King-street, Covent-garden, London.

BEAUTIFUL BOUQUETS OF FLOWERS may be preserved perfectly fresh and blooming, for several days, in GLASSES adapted for gentlemen's coat button-holes, any part of a lady's dress, the hand, or for plaiting into the hair; and are forwarded to any part of the kingdom, post free, in a box containing one dozen of the various kinds, on receipt of postage stamps value 2*s.* 6*d.*, by JACKSON and TOWNSON, 89, Bishopsgate-street Within, London.

THE VICTORIA REGIA IS NOW FLOWERING, GROWING IN THE OPEN AIR, AT

J. WEEKS AND CO'S., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers.

NEW DAHLIAS; E. FOSTER'S, ESQ., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d.* and 5*s.* packets, post paid, for prepayment.

CALIFORNIAN FLOWER SEEDS.—The undersigned having received a collection of CALIFORNIAN SEEDS, chiefly Perennials, among which some striking novelties may be anticipated, he offers them at the following prices, in small packets, prepaid:—

The entire collection of 30 packets ... 18*s.*
Half of ditto, or 15 ditto ... ... ... 9*s.*
A selection of 10 sorts ... ... ... 7*s.* 6*d.*

Referring to his advertisement in the *Gardeners' Chronicle* of the 3d and 10th inst., he begs to suggest, that the flower seeds may still be sown with advantage during the next fortnight. Of the hardy Annuals, he recommends half to be sown now, and the other half in the autumn, for early flowers next year. The cold, backward springs of late, render such precaution necessary. Perennials and Greenhouse Seeds may be sown till July.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

MITCHELL'S SUPERB SHOW OF RANUNCULUSES.

EDWARD MITCHELL, FLORIST, Bristol Gardens, Brighton, begs most respectfully to inform the Admirers of the RANUNCULUS that his unrivalled Beds, containing upwards of 70,000, is now on view every day except Sundays, and Tickets may be had, at 1*s.* each, of Messrs. Hurst and McMullen, Seedsmen, Leadenhall-street, London; and at E. MITCHELL'S, 55, Marine Parade, Brighton.

EDWARD GEORGE HENDERSON begs to call attention to the following NEW and SELECT PLANTS, for descriptions and prices of which he begs to refer to his new Spring Catalogue, which will be sent post free on application.

STOVE PLANTS.

ACHIMENES Baumannii hirsuta, A. coccinea grandiflora, A. Kleii, A. longiflora alba (or jamregia), A. gloxiniflora, A. Tugwelliana. GLOXINIA argyrostigma, G. Grande Duchesse Helené, G. Maria Van Houtte, G. Madame Malibran, G. Virginalis, G. Madame Aglaé Adanson, G. spectabilis, G. Victoria Regina. Æschynanthus pulchellus, Alloplectus sparsiflorus, Begonia fuchsioides alba, 5*s.*; Capanea grandiflora, Gordonia javanica, Centroselina glabra, Clitoria brasiliensis, Cyrtanthera magnifica, Cyrtoceras Paxtonii, Dipladenia urophylla, Dipteracanthus spectabilis, Echites nobilis grandiflora, Eranthemum leuconervum, Erionema enea, E. marmoria, Franciscea eximia, F. macrophylla grandiflora, Gesnera coruscans, G. macrantha purpurea, Hebeclinium ianthinum, Inga splendidissima, Isoloma triflora, Ixora salicifolia, Lycopodium Wildenovii, L. cœsium arboreum, Passiflora alata superba, Rogiera alba, R. amœna, R. cordata, R. thyrsiflora, Sinningia punctata, Siphocampylus longipes, S. orbiguanis, and Thyrsacanthus barlerioides.

GREENHOUSE PLANTS.

Azalea Symmetry, Aphelexis Barnesii, Burtonia pulchella, Calceolaria grandis, Chorozema lanceolata, Daphne Fortunii, Gloriosa species nova, Hardenbergia ovata alba, Hemiandra pungens, Jasminum Poiteau, Leschenaultia formosa (Hunt's variety), Oxalis elegans, O. caprina pleno, Passiflora cærulea grandiflora, Rhododendron formosum, R. javanicum, Statice Halfordii, Stylidium (two species), Tacsonii Hellerii (distinct), Tagelia bituminosa, Tehlia fuchsioides (a fine free blooming winter plant), Tritonia aurea, Tree Carnations (for winter blooming), Tropæolum Hockerii (flowers in summer and winter), Zichya europhylla nana, Lantana Bonardii, L. duratifolia, L. grandiflora (fine), and Epacris delicata.

ERICAS.

Candolleana, cerinthoides coronata, favoides purpurea, Devoniana, Holfordiana, longiflora, Murrayana, Princeps Templæa, retorta splendens, tricolor Wilsonii superba, tricolor rosea, ventricosa Bothwelliana, ventricosa grandiflora (Story's variety), Vernonii superba, inflata rubra, &c.

RHODODENDRONS.

Aureum Broughtonii, aureum congestum, aureum macranthum flavum, aureum superbum, Ambrosii, Jacksonii, Boddaertianum, Mars, &c.

BEDDING AND OTHER PLANTS.

Calceolaria Hero (Cattell's), fine dark; C. sulphurea splendens, C. viscosissima major, C. Sultan (fine dark crimson), Heliotrope Gem (fine); six varieties of Phlox Drummondii, distinct colours; Lobelia erinus oculata, herbaceous Lobelia compacta, herbaceous Lobelia Aurora, Salvia amabilis, Pentstemon gentianoides Esterii, P. Cobæa (not blue, as stated in error in catalogue), and Campanula carpatica alba, 1*s.* 6*d.* each, or 12*s.* per dozen.

E. G. H. recommends his NEW FUCHSIAS "Prime Minister," "Resplendent," "Lord of the Isles," and "Madame Sontag," and many other novelties which will be found in the Catalogue.

Wellington-road Nursery, St. John's Wood, London, June 7.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to state that he has a large stock of BEDDING GERANIUMS (strong plants), he can send out at 2*s.* 6*d.* per dozen in pots; 2*s.* per dozen out of pots; and a few other kinds of Bedding Plants 1*s.* 6*d.* per dozen out of pots. Descriptive Catalogue sent on the receipt of one postage stamp.

TO THE VISITORS OF THE GREAT EXHIBITION.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his collection of ANEMONES is now in bloom; and that he expects his extensive assortment of RANUNCULUS will be in flower towards the middle of next week. They may be viewed from 9 o'clock until 6, Sundays excepted. Admittance gratis.

TURNIP SEEDS OF FINE SELECTED STOCKS.

| | | | |
|---|---|---|---|
| Rivers' new variety of Stubble Swede | ... | per lb. | 2 0 |
| Laing's improved Purple-topped Swede, p. bl. 32*s.* | | ,, | 0 10 |
| Skirving's Liverpool Swede, per bushel, 24*s.* | ... | ,, | 0 8 |
| Fine Purple-topped Swede, per bushel, 24*s.* | ... | ,, | 0 8 |
| Norfolk White, round | ... | ,, | 0 6 |
| Norfolk Green, round | ... | ,, | 0 6 |

Also Skirving's Purple-topped Bullock, Green-topped Scotch, Dale's Hybrid, Red Round, Pomeranian Globe, White, Red, and Yellow Tankards, &c., of the best Stocks.

Priced Agricultural Seed Lists supplied on application.

BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Wandsworth Road, London, are now sending out the best varieties of CHRYSANTHEMUMS from 9*s.* to 12*s.* per dozen; good sorts, for borders, 6*s.* per dozen. A printed list, with names and colours, can be had.

Post-office orders payable at Kennington Cross.

"THE FLOWER OF THE DAY."—This elegant variegated GERANIUM may now be seen in bloom, under glass and bedded out, at J. and C. LEE'S Nursery, Hammersmith, near London.—June, 1851.

THE BEST EARLY TURNIP FOR FIELD CULTURE.

SUTTON'S EARLY SIX WEEKS. A field of these Turnips, grown by Mr. E. W. Moore, Steward to Earl Radnor, on poor soil, at Coleshill, gained the 20*l.* prize at the Farringdon Agricultural Show in 1849.

JOHN SUTTON and SONS confidently recommend the above for first sowing, to feed off for Wheat.

*Also, for succession, the New Lincolnshire Red, and* SUTTON'S *Purple-topped Hybrid yellow Turnip.*

The Lincolnshire Red Turnip (the stock of which was presented to Messrs. SUTTON, in 1849, by Philip Pusey, Esq., M.P.), should be fed off before Christmas; and SUTTON'S Purple-topped Yellow Hybrid, which is equal to a fine Yellow Swede, may be sown very late with certainty of success, and will keep till spring either in the field or housed.

Sold in quantities of not less than 10 pounds weight, at the undermentioned prices. *Carriage Free*, to any station on the Great Western, South-Western, or South-Eastern Railways:—

| | Per pound. | s. | d. | per gallon. | s. | d. | per bush. | £ | s. |
|---|---|---|---|---|---|---|---|---|---|
| Early Six Weeks' Turnip | ... | 0 | 10 | | 5 | 0 | | 1 | 16 |
| Sutton's purple-topped Hybrid | | 1 | 0 | | 6 | 0 | | 2 | 4 |
| Lincolnshire Red | ... | 1 | 0 | | 6 | 0 | | 2 | 4 |
| Ashcroft Swede | ... | 0 | 10 | | 5 | 0 | | 1 | 16 |
| Skirving's Liverpool do. | ... | 0 | 9 | | 4 | 6 | | 1 | 10 |
| Best Dwarf Rape | ... | 0 | 4 | | 2 | 0 | | 0 | 12 |

SUTTON and SONS, Seed Growers, Reading, Berks.

Agents for the sale of Rivers's Stubble Swede Seed.

CHOICE SEEDS, suitable for present sowing, all of the best quality. Per paper.—*s.* *d.*

| | | |
|---|---|---|
| ANTIRRHINUM, saved from a superb collection | 0 | 6 |
| ANEMONE, new hybrid, splendid colour | 0 | 6 |
| CALCEOLARIA, saved by an amateur, from the most splendid show flowers | 1 | 0 |
| CINERARIA, from the choicest show flowers, saved by one of the best growers, from a superb collection of prize show flowers | 1 | 0 |
| HOLLYHOCK, double, saved by a celebrated grower, from Chater's best flowers | 1 | 0 |
| PANSY, very choice, saved by Thomson, and other celebrated growers | 1 | 0 |
| SWEET WILLIAM, very fine, singular colour | 0 | 6 |
| STOCKS, AUTUMNAL FLOWERING, 6 best and brightest colours, very double (per collection) | 1 | 6 |
| WALLFLOWERS, 6 beautiful varieties, imported; these will produce a proportion of double flowers (per col.) | 1 | 6 |

The above are confidently recommended, having given great satisfaction previous seasons.—To be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

"CANTUA DEPENDENS."

(A beautiful new Hardy Greenhouse Plant from Peru.)

MESSRS. VEITCH AND SON have the greatest satisfaction in offering to the Public the above lovely plant, from the Andes of Peru, where the flowers are so much esteemed by the natives that they adorn their chambers with them on feast days.

It was exhibited in Regent-street on the 15th of April last, and received the "*Large Silver Medal*" (see *Gardeners' Chronicle* of April 19th.)

It was again exhibited at Chiswick on the 3d of this month, and was then awarded the highest prize given for new plants—"*The Silver Gilt Medal.*"

It is a plant of neat habit and foliage, blooms freely in a small state, and may be kept in a cold pit or frame through winter, being of about the same hardiness as the Fuchsia, and as easy of cultivation; from its novelty and beauty, it will be an acquisition to every collection, and be cultivated by every florist. It is figured in Curtis's "Botanical Magazine" for this month, and will also shortly appear in Paxton's "Flower Garden." Good established plants will be sent out on and after the 12th of June, at 21*s.* each, with the usual discount to the Trade.—Exeter, June 7.

THOMAS JACKSON AND SON'S PRICED CATALOGUE OF PLANTS is now ready, and may be obtained by prepaid application; it contains Orchidaceous, Stove, Greenhouse, and Herbaceous Plants; Roses, Shrubs, Ornamental Trees, &c. &c.
Nurseries, Kingston, Surrey, June 7.

CHOICE CINERARIA SEED.

LUCOMBE, PINCE, AND Co., have saved from a Select Collection of all the Newest and Finest Varieties of 1851, which they have this season grown in great perfection, some Cineraria Seed, of excellent quality; and they beg leave to offer it for sale, in Packets, sealed and warranted by them, at 2s. 6d. each, free by post. If sown soon, strong plants will be produced, which will flower in 1852.
Exeter Nursery, June 7th.

"BERBERIS DARWINII."
(Beautiful Hardy Evergreen Shrub, from the Snow Line on the Andes of Patagonia.)

MESSRS. VEITCH AND SON feel the greatest confidence in offering for sale the above valuable BERBERIS, a plant and also a cut specimen of which were exhibited at the Horticultural Society's Rooms in Regent-street, the 1st of April last, and received the "*Large Silver Medal.*" They beg to refer to Dr. Lindley's report in the *Gardeners' Chronicle* of April 5th, as follows:—

"This proves to be a species whose importance it is almost impossible to overrate, inasmuch as it is exceedingly handsome, perfectly hardy, and naturally produces its rich orange blossoms in great profusion during the early months of the year. Indeed, for general value, we have nothing at present at all to be compared with this fine Berberry."

Strong plants will be ready for sending out on and after the 12th of June next, at 21s. each, with the usual allowance to the trade.—Exeter, June 7.

GERANIUMS.

BASS AND BROWN have still a fine Stock of the following choice GERANIUMS, bushy plants, with abundance of buds, for immediate flowering: Magnificent, Flying Dutchman, Painter, and Prince of Orange, 3s. 6d. each.

Cassandra, Cavalier, Clara, Crusader, Distinctus, Elegans, Empo, Forget-me-not, Grandiflora, Gulielma, Jenny Lind, Queen of Scots, Painted Lady, Princess, Rachael Superb, Rebecca, Refulgent, Resplendent, Rolla, Rosa Mundi, Scarlet Defiance, Star of the West, Sundown, Symmetry, and Windsor Castle. The above set of 25 for 30s., or any 12 for 18s.

Augusta, Brockii, Camilla, Desdemona, Duke of Cornwall, Duke of Hamilton, Gigantic, Isabena, Josephus, King, Lord Chancellor, Madeline, Marmion, Minna, Mogul, Mustee, Negress, Orion, Peri, Pluto, Pulchellum, Rosy Circle, Sarah Jane, Sir Robert Peel, The Jew, and Zenobia. The set of 25 for 15s., or any 12 for 9s.

Also the following fancy varieties:—Anais, Black Prince, Beauty of Winchester, Clown, Dandy, Harlequin, Jehu Improved, Jenny Lind, La Belle d'Africana, Lady F. Hastings, Maid of Anjou, Mazeppa Superba, Princess Alice Maude, Princess Helena, Queen of Summer, Statiaski, and Yeatmannianum. The set for 15s., or any 12 for 12s.

Catalogues supplied free on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

MEDINILLA MAGNIFICA.

MESSRS. VEITCH AND SON have much pleasure in offering this splendid and unique Stove Plant, with pendulous bunches of flowers 12 to 18 inches in length, having beautiful large rose-coloured bracteas.

It was exhibited at the Horticultural Society's Room, Regent-street, on the 2d of April, 1850, and was awarded the "*Large Silver Medal.*" For description, see *Gardeners' Chronicle*, April 6th, 1850.

It was again exhibited at Chiswick, on Saturday last, May 3d, where it received the "*Certificate of Excellence.*"

It is figured in Curtis's "Botanical Magazine" for September, 1850.

It has been so much admired by all who have seen it, and is altogether so first-rate a plant, that Messrs. VEITCH and SON can recommend it with the most perfect confidence.

Strong plants will be ready for delivery on and after the 12th of June next, at 63s. each, with the usual allowance to the trade; and, when six plants are taken, an additional one will be put over.—Exeter, June 7.

TRANSPLANTED TURNIP SEED.

R. JOSLING begs to offer to Agriculturists his very excellent variety of PURPLE-TOP SWEDE, a cross between the Golden Melon and the Liverpool, decidedly one of the best in cultivation—a heavy cropper, stores well, best quality, seed warranted growth of 1850, from Transplanted Roots, at 1s. 3d. per lb.

All orders of 25 lbs. and upwards carriage free to any Railway Station in England, or packet office in London. A remittance must accompany the Order.
ROBERT JOSLING, General Seed Warehouse, St. Alban's, Herts.

IPOMŒA LIMBATA (LINDLEY).
(A New and Beautiful Hardy Climbing Annual.)

MESSRS. WM. ROLLISSON AND SONS have the pleasure to inform the Nobility, Gentry, and Public in general, that they intend sending out, on and after the 24th of June, their new and beautiful IPOMŒA (named by Dr. LINDLEY Ipomœa limbata), 10s. 6d per plant, just coming into flower; the usual discount to the trade.

N.B. Fine plants of the true RHODODENDRON JAVANICUM, from 7s. 6d. to 10s. 6d. and 21s., according to the size of the plant.—Tooting, Surrey.

TO TURNIP GROWERS.—Observing the great superiority of some sorts of Turnips, both as to bulk and nutritive properties, J. SUTTON AND SONS have for many years paid especial attention to that important agricultural root; and having carefully tested the comparative merits of many varieties, *they can with the greatest confidence recommend the sorts named in their Advertisement in the first page of this week's Paper*, where the prices are also quoted (carriage free).

PERMANENT PASTURE GRASSES,

*Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre.*

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., and shall be glad of your advice for the purpose."

*From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

*Another Clergyman writes us:*

"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority of my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B. Instructions for sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Address JOHN SUTTON and SONS, Seed Growers, Reading, Berkshire.

AZALEA INDICA "SYMMETRY."

J. AND C. LEE are now sending out this fine variety, well established plants, 21s. each, with the usual discount to the trade.
Nursery, Hammersmith, near London, June, 1851.

GLOXINIA "PETOIANA."—Messrs. YOUELL and Co. have the greatest satisfaction in offering the above magnificent Gloxinia, raised at the seat of Samuel Morton Peto, Esq., M.P., Somerleyton Hall, Suffolk, and is without exception the handsomest of the genus. The flowers are white, suffused with the most delicate tint of blush, the upper and lower parts of the throat being surrounded (as in Gloxinia Fyfiana) with the richest crimson Lake. The following opinion of it is given in the *Gardeners' Journal* of Sept. 14th, 1850: "Superb in substance; ground white, of crystal-like appearance, just tinged with an exquisite shade of blush; the lower portion of the throat is magnificent crimson lake, minutely speckled with the same towards the base of the bloom, which is of the most perfect consistency."

Good established plants will be sent out on and after the 26th of June at 15s. each, with the usual discount to the trade when three or more are taken.—Royal Nursery, Great Yarmouth.

COCHIN CHINA HENS, AND NEW-LAID EGGS FOR SETTING, FOR SALE.—Apply by letter, post-paid, to "W. O.," at Mr. MacLachlan's, 6, Birchin-lane, Lombard-street, London.

SHEET GLASS.

A. ADAMSON, 20, Davies-street, Berkeley-square (from C. Jarvis, Castle-street, Oxford-street), begs to acquaint gentlemen and gardeners that he has a superior stout Sheet Glass, in sizes from 12 by 10 to 40 by 30, at 3d. per foot, almost free from those defects on the surface generally found in common Horticultural Glass, and which is so detrimental for Horticultural purposes, on account of its acting as a lens, and destroying the plants it was intended to protect.

GLASS MILK PANS, &c. &c.

JAMES PHILLIPS AND Co., 116, Bishopsgate-street Without, beg to hand their prices of various articles for the dairy and domestic purposes.

MILK PANS.

| | s. | d. |
|---|---|---|
| 12 inch diameter ... | 2 | 0 |
| 14 " " ... ... | 2 | 6 |
| 16 " " ... ... | 3 | 0 |
| 18 " " ... ... | 3 | 6 |
| 20 " " ... ... | 4 | 0 |
| 22 " " ... ... | 4 | 6 |
| 24 " " ... ... | 5 | 0 |
| 26 " " ... ... | 6 | 0 |

CREAM POTS.

| | | |
|---|---|---|
| 6 inch diameter ... | 2 | 0 |
| 8 " " ... ... | 2 | 6 |
| 10 " " ... ... | 3 | 0 |
| 12 " " ... ... | 4 | 0 |
| 14 " " ... ... | 5 | 0 |
| 16 " " ... ... | 6 | 0 |
| 18 " " ... ... | 7 | 6 |

Lord Camoy's Milk Syphons, 3s. 6d. each.

Lactometers, 4 tubes, 6s.; 6 tubes, 8s. 6d. each.

Wasp Traps, 3s. 6d. per dozen.

Fern Shades with Glass Stands, from 2s. to 13s. each.

Pastry Pins, from 2s. each.

Glass Preserve Jars, from 3d. each.

PROPAGATING AND BEE GLASSES.

| | s. d. | s. d. |
|---|---|---|
| 2 inch diameter | 0 2 — | 0 3 |
| 3 " " | 0 3 — | 0 4 |
| 4 " " | 0 4 — | 0 5 |
| 5 " " | 0 6 — | 0 7 |
| 6 " " | 0 8 — | 0 10 |
| 7 " " | 0 10 — | 1 1 |
| 8 " " | 1 0 — | 1 4 |
| 9 " " | 1 2 — | 1 8 |
| 10 " " | 1 4 — | 2 0 |
| 11 " " | 1 6 — | 2 8 |
| 12 " " | 2 0 — | 3 6 |
| 13 " " | 2 6 | — |
| 14 " " | 3 6 | — |
| 15 " " | 4 0 | — |

CUCUMBER TUBES.

| | | |
|---|---|---|
| 24 inches long ... ... | 2 | 0 |
| 22 " " ... ... | 1 | 10 |
| 20 " " ... ... | 1 | 8 |
| 18 " " ... ... | 1 | 6 |
| 16 " " ... ... | 1 | 4 |
| 14 " " ... ... | 1 | 2 |
| 12 " " ... ... | 1 | 0 |

Hallimau's Registered Fruit Protectors, for every description of Wall Fruit, from 6d. each.

Pastry Slabs, made of Plate Glass.

Bouquet Tubes, for Gentlemen's Coats or the Hand.

Shades for Ornaments, Vases, Hebe Jugs, Patent Rough Plate, Patent Plate, Crown and Sheet Glass, White Lead, Putty, Varnishes, Brushes, and every article in the Trade.—Apply, 116, Bishopsgate-street Without, London.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.
Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes. Inches. | | | | | | Under 6 | by | 4 | at | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| From 6 | " | 4 | " | 7 | " | 5 | " | 2d. | " | 0 16 | 8 |
| 7 | " | 5 | " | 8 | " | 6 | " | 2½d. | " | 0 18 | 9 |
| 8 | " | 6 | " | 10 | " | 8 | " | 2¾d. | " | 1 0 | 10 |
| 10 | " | 8 | " | 12 | " | 9 | " | 2¾d. | " | 1 2 | 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. " 3½d. 5d. " " "
26 oz. " 3¼d. 7½d. " " "

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14s. each.

16s. per box:

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 " 5½ " 7 " 5 | 6½ " 6½ " 7½ " 6½ |
| 6 " 6 " 7½ " 5 | |

18s. 6d. per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 " 8 " 11 " 9 | 10 " 8 " 13 " 9 |
| 9 " 8 " 12 " 8 | |

And many other sizes, or cut to order in various thicknesses.

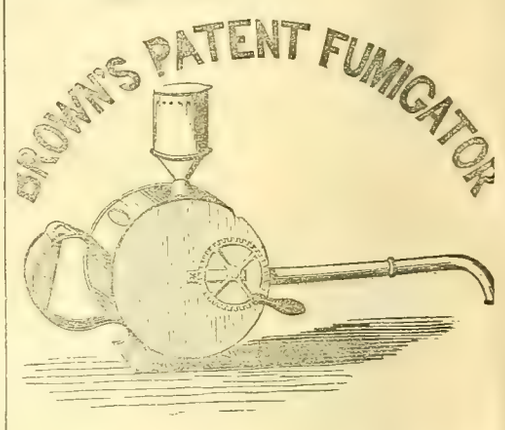
Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

In sizes under 15 inches ..... 6d. per foot.
" " 35 " ..... 8d. "
" " 50 " ..... 9½d. "
" " 75 " .....12d. "

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and frames, or Shrubs and Flowers, in the open air, more effectually in conjunction with SANGSTERS'S FLORUMBRA, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS.—Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street. Glasgow: Austin and M'Aslin, 168, Trongate.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | " Knives, various |
| Borders, various patterns | Hammers | " Saws |
| Botanical Boxes | Hand-glass Frames | " Scissors |
| Cases of Pruning Instruments | Hay Knives | " Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| " Stands in Wires and Iron | Mensgraphs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| " Loops | Mowing Machine | Trowels |
| " Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

NEW HARDY JAPAN PLANT.
DEUTZIA GRACILIS (true)

JOSEPH BAUMANN, Nurseryman, Ghent, Belgium, having a good stock of the above beautiful and distinct DEUTZIA, will send it out on the 1st of August.

Extra strong well established plants ... ...£1 0 0
Smaller do. do. ... ... ... 0 12 6
Grafted, 4 to 5 feet high ... ... ... ... 2 6 0

J. B.'s Deutzia gracilis will never grow higher than 2 feet. Messrs. Hugh Low and Co., of Clapton, have seen it in bloom, and have ordered 40 plants of it.

This plant may be had in bloom six months in the year.

J. B. has received the following prizes for this plant. 1850, Ghent first prize; 1851, Chiswick, May the 3d, prize of excellence; Regent's Park, May 14th, first prize. Bruxelles first prize, Antwerp first prize, Mechlin first prize, Louvain first prize, Mentz first prize, Erfurt first prize, Paris first prize.

One over to the Trade on three. No discount if less than three plants are ordered. Free to London.

Deutzia crenata vera, new (D. gracilis of some), 1s.

NOTICE.—AMERICAN PLANTS.

GEORGE BAKER begs to announce that his extensive collection of AMERICAN PLANTS will be in b oom on and after the 30th May, and may be seen gratis. The Nursery is situated seven miles from Staines Station, South-Western Railway, and three miles from Virginia Water, where conveyances may always be obtained.

G. B. takes this opportunity of informing the Nobility, Gentry, and Public that he is a Contributor to the American Exhibition, Royal Botanic Garden, Regent's Park.

Windlesham Nursery, Bagshot, Surrey, June 7.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS offers the following Stock of Bedding-out Plants, strong and vigorous, in 60-size pots, and which will be sent to any part of the kingdom, carriage paid to London:

SCARLET GERANIUMS, Tom Thumbs, &c., 4s. per doz., strong.
VERBENAS, all the best varieties in cultivation, 3s. per doz.
SALVIAS, blue and red, 4s. per doz.
FUCHSIAS, all the best leading varieties, 4s. per doz.
HELIOTROPES, including the new varieties, 3s. per doz.
PENTSTEMONS, fine varieties, 4s. per doz.
AGERATUM CŒLESTINUM, 3s. per doz.
CALCEOLARIAS, Viscosissima and other varieties, 3s. per doz.
ANAGALLIS, blue and red, 4s. per doz.
NIEREMBERGIAS, 4s. per doz.
CUPHEA PLATYCENTRA, 3s. per doz.
GAILLARDIA PICTA, &c., 3s. per doz.—June 7.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that his splendid Collection (containing many thousand specimens) of RHODODENDRONS, AZALEAS, &c., is now in full bloom, and may be seen daily, gratis, Sundays excepted.

The Nursery is situated three miles from the Blackwater Station, South-Eastern Railway, and near the Farnborough Station, South-Western Railway.—Conveyances are always to be obtained at either Station.

He also begs to state, that he is the principal contributor to the great American Plant Exhibition, now on view at the Botanic Gardens, Regent's Park.

JAMES TURRELL has to offer the finest and best New Scarlet GERANIUMS in cultivation.

FIRE KING.—Intensely vivid scarlet, very clear white eye, fine habit, and free bloomer (*individual* flowers, 1½ inch in diameter). Price 7s. 6d., strong.

WARNEFORD PET.—Bright scarlet, with white centre; good shape. This variety is most valuable for bedding, as it is more dwarf than compactum, and a good bouquet flower. Price 5s., strong.

NEW FANCY PELARGONIUM, "STRIATA COCCINEA."—Beautiful dark mulberry upper petals, the lower strikingly veined, and of the same colour. Price 10s. 6d.

Strong Bedding Plants, of sorts, 4s. per dozen; Crusader and Mount Etna, 1s. each. The Trade liberally treated.

Providence Nursery, Ramsgate.

FERNS.—The present prevailing taste for this interesting and elegant tribe of plants, has induced the Subscribers to offer them in selections as under:—12 distinct exotic species, 30s. to 60s.; 25 ditto, 50s. to 100s.; 20 distinct hardy species, 1s. to 1s. 6d. each. Selection of sorts left to H L. and Co. It would be advisable to state if they are required for Wardian cases, as small growing sorts would then be selected.—Hugh Low and Co., Clapton Nursery, London.

SELECT BEDDING PLANTS.

BASS and BROWN have a large and fine Stock of the following, well established, and now sending out; they are mostly in small pots, so as to be packed in a little compass. Those marked * can be sent free by post, if required.

SCARLET GERANIUMS, in variety, strong, 6s. and 9s. per dozen.
* VERBENAS, a large collection of the best sorts for forming dwarf beds, such as Apollon, Anacreon, Defiance, Emma, Eclipse, Eyebright, Junon, Princess Alice, Psyche, Rosati, Vulcan, White Perfection, and others, 4s. per dozen.
* PETUNIAS, a large collection of bright purple and crimson flowers, 5s. per dozen.
* FUCHSIAS, a large collection of select varieties, 5s. p. doz.
DAHLIAS, the best varieties, both show and fancy, 5s., 9s., and 12s. per dozen.
Heliotropes of sorts, 4s. to 6s.; Bouvardias of sorts, 9s.; Lantana crocea, 6s.; Lobelia maxima, erinus, &c., 4s.; Blue Anagallis, 6s.; Cupheas of sorts, 6s.; Calceolaria of sorts, 6s. and 9s.; Dielytra spectabile, 12s.; Cheiranthus alpinus, 12s. per doz., and many others.

Also the following selections of newer varieties:
GERANIUMS, 12 fine show vars., 12s.; 12 superb do., 21s.
FANCY GERANIUMS, 12 beautiful vars., 12s.; 6 for 7s. 6d.
* FUCHSIAS, 12 fine vars., 9s.; 12 superb new vars., 15s.
DAHLIAS, 12 fine vars., 9s.; 12 quite new vars., 21s.
" FANCY, 12 fine vars., 9s.; 6 quite new, 10s.
* PETUNIAS, 12 fine vars., 9s.; 12 superb new vars., 12s.
* VERBENAS, 12 fine vars., 7s. 6d.; 25 do., 12s.; 12 superb new, 12s.
HARDY BORDER PLANTS, 100 select vars., 30s.; 50 for 30s.
" " superior and new, 50 vars., 30s.; 25 for 17s. 6d.
ROCK PLANTS, 25 select vars., 12s.; 12 vars., 7s. 6d.
ANTIRRHINUMS, 12 fine vars., 6s.; 12 superb new, 10s.
PHLOX, 12 fine vars., 6s.; 25 vars., 10s. 6d.; 12 superb newer, 9s.
PENTSTEMONS, 12 fine vars., 7s. 6d.; 6 vars., 5s.
GREENHOUSE PLANTS, 12 select vars., 15s.; 25 fine vars., 28s.
STOVE PLANTS, 12 new and select vars., 18s. to 24s.
* ACHIMENES, 6 splendid new, 7s. 6d.; 12 fine vars., 9s.
GLOXINIAS, 6 splendid new, 7s. 6d.; 12 fine vars., 12s.
NEW PLANTS, see a List in the *Gardeners' Chronicle* for May 3d, April 26th, and April 19th.

Stamped Catalogues forwarded on application, free.

Remittances requested from unknown correspondents. Post-office orders to be made payable to Bass and Brown, or Stephen Brown. Postage stamps received for small amounts.

Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

HORTICULTURAL SOCIETY, 21, REGENT-STREET.
NOTICE IS HEREBY GIVEN,
THAT
MR. HOSEA WATERER'S
EXHIBITION OF AMERICAN PLANTS,
IN THE GARDEN OF THIS SOCIETY, AT
TURNHAM GREEN,
*Is now open Daily, from* 9 A.M. *to* 6 P.M.

Fellows of the Society are admitted *free*. Tickets for other persons, available for every day except Sundays and the 6th and 7th of June, can be procured in the Society's Garden, price One Shilling each.

The purchase of such a ticket admits the bearer to the Garden without the order of a Fellow of the Society

NOTICE.—EXHIBITION OF AMERICAN PLANTS, KNAP-HILL NURSERY, NEAR WOKING, SURREY.—The American Plants, at this Nursery, are now in bloom, and may be seen daily (gratis), Sundays excepted. The Knap-hill Nursery is within one hour's ride of London, being near the Woking Station, South-Western Railway, where nearly every train stops, and from whence conveyances may at all times be obtained.

Hosea Waterer takes this opportunity of stating that the Exhibition of American Plants in the Horticultural Society's Garden, Chiswick, is entirely supplied from his Nursery, and that he is *not* this year a contributor to that in the Botanic Gardens, Regent's-park.—Knap-hill, Woking, Surrey. June 7.

FUCHSIA "CLAPTON HERO" (Batten). Ditto "PAGODA" (Batten).—These can with confidence be recommended as the best of the dark varieties of this season; price 7s. 6d. each.

POTENTILLA LUCIA; or, BICOLOR GRANDIFLORA.—Colour, sulphur yellow, edged with scarlet; vigorous grower, and produces the largest flowers of any known variety; 5s. each.

POTENTILLA ANTWERPIENSIS.—Colour, dark brilliant orange, dwarf growth, producing semi-double flowers in great profusion, which do not close at night; 7s. 6d. each.

SWEET ORANGES, 18 inches to 2 feet, in Fruit; 10s. each.

Also all the new English and Continental Verbenas, Fuchsias, Liliputian Chrysanthemums, German Daisies, &c. For particulars of which we refer to our general Catalogue just published, which can be had by post, free, on application.

Hugh Low and Co., Clapton Nursery, London.

The Gardeners' Chronicle.
*SATURDAY, JUNE* 7, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| Monday, | June | 9 | Geographical ..... 8½ P.M. |
| Tuesday, | — | 10 | Syro Egyptian ..... 7½ P.M.<br>Medical and Chirurgical ..... 8½ P.M.<br>Zoological ..... 9 P.M.<br>London Floricultural ..... 6 P.M. |
| Wednesday, | — | 11 | Royal Botanic Gardens ..... 3 P.M.<br>Literary Fund ..... 3 P.M.<br>Geological ..... 8½ P.M. |
| Thursday, | — | 12 | National Floricultural ..... 3 P.M.<br>Royal Soc of Literature ..... 4 P.M. |
| Friday, | — | 13 | Astronomical ..... 8 P.M.<br>Philological ..... 8 P.M.<br>Royal Institution ..... 8½ P.M. |

Country Shows.—Thursday, June 12: Cheltenham Horticultural and Floral, and Highbury and North London Horticultural.—Friday, June 13: Durham Horticultural.

A correspondent of ours, some time back, spoke in high terms of the value of glass pipes for the conveyance of water for the use of man, beast, and plant; such pipes being free from those evils which belong to lead and other metals, all more or less disposed to form poisonous salts, by the action of the water upon their surfaces.

Our correspondent was Mr. Osborne, who had read a paper on the subject before the British Association; he concludes with this remark,—"We see no reason why the prediction of Sir Robert Peel, that glass water-pipes would soon be laid down, should not be immediately verified." Green bottle glass is cheaper than iron, and Mr. Osborne, as well as others, distinctly advises that it should be employed for purposes of water conveyance.

Desirable as must have appeared the use of glass pipes, yet an apparently insurmountable difficulty has hitherto served to prevent their being adopted. How were the several lengths to be connected together? All the known contrivances by which pipes of the various materials are now united, were inapplicable for joining glass. If the material of glass be selected for its suitability to convey water, on account of its purity, it is clear that no substance would be admissible in the formation of a joint, which would give off the slightest taste, or which would not resist the action of the air or of damp, equally with the glass itself. Moreover the substance of the joint must necessarily be of a firmness and durability that would bear the pressure of a column of water equal to that which the pipes, even in extreme cases, could be called upon to sustain. And further, it was desirable that the joints should be *moveable*, so that accidental breakage should be easily repaired, and alterations in arrangements be effected without trouble or expense.

Such are the obviously indispensable properties which the joints of glass pipes are required to possess, and we have reason to believe that they will be found to exist in the exhibition of glass pipes in the Crystal Palace, Class I., No. 18, at the south-west end, where may be found numerous specimens, in lengths joined together and carried in every curve and bend likely to be called for in practice. We think these deserving the careful inspection of all who take an interest in the question of an improved supply of water to our towns and our domestic dwellings, and to an improved medium of conveyance for such water, rather than through pipes of lead.

A card placed beneath the specimens in the Exhibition affords a few short particulars, which we refrain from publishing, in the hope that our readers will visit the place for themselves, and endeavour to ascertain what progress has been made towards the fulfilment of the great Sir Robert Peel's prediction.

We have frequently been asked, what is the best mode of preserving fruit, and whether there are not chemical means of keeping it, so that it may be preserved fresh and wholly unchanged for a long time; either by placing it in contact with some substance which shall counteract its tendency to spoil, or by plunging it in some gas or liquid which will prevent it from decomposing. There have been a great many attempts to do this, but they have all been attended with but very partial success. Fruit, for the most part, consists chiefly of sugar, gum, starch, cellular matter, water, and a small quantity of albumen and gluten; but besides all these, it also contains certain other substances, such as colouring matter, and a small quantity of some highly fragrant volatile oil, to which the taste and agreeable smell of the fruit is due. The most changeable component of fruit, therefore, is the azotised matter, which is generally that which first of all commences to decompose; usually, too, air is necessary to its change, and consequently those fruits which have thick dense skins, dry and shrivel up, when they are kept, without being spoilt. In drying, of course they lose some portion of the volatile flavouring matter, but they also retain some, and they may be kept for a long time, without their either putrifying or fermenting. The more delicate and highly flavoured fruits, however, are not of this description; their skins are so porous and open, that they very soon allow the air to pass into the interior of the fruit, and consequently it is impossible to preserve them by drying.

The immediate consequence of air coming in contact with the pulpy matter of ripe fruit, is that the azotised matters begin to absorb oxygen, and decompose; then the sugar, starch, and gum are acted on; the flavour is rapidly destroyed, sometimes spirit is formed, the sugar simply undergoing the vinous fermentation; at other times, the change goes on more rapidly, and the fruit soon becomes putrid. All these effects may be easily observed, by watching the ripening of any of the common varieties of fruit. The drying up of ripe Grapes, which are left to hang with their skins uninjured, and the immediate change which occurs if the skin is injured or punctured, is familiar to every one. The rapid change which takes place in ripe Gooseberries, when the skins burst, and which, in the first instance, is a mere case of common vinous fermentation, is also well known. The injury which all fruit sustains from bruises, though it often does not produce the same effect, is yet in chemical nature very similar to that which occurs in the Gooseberry. The cause of the evil in all cases is the oxygen of the air; and the mode in which it acts consists in the skin or cuticle being destroyed or injured, so that the air finds an easy entrance through the damaged part. In the case of delicate and thin-skinned fruits, they are so porous that the air enters on all sides, as soon as they are fully ripe, and even though they are not in any way injured, and this constitutes the chief difficulty in preserving them.

The fresh juice of the Grape readily ferments, as soon as it is exposed to the air, but the juice of a Raisin or half dried Grape no longer has the power of doing so, because it contains too much sugar to ferment. A weak solution of sugar, under favourable conditions, soon begins to ferment; whilst a strong one is unable to enter into the vinous fermentation. It is in part, on this fact, that the common mode of preserving fruits by means of sugar depends. In making preserves, too, the fruit is heated, and heat, by rendering the vegetable albumen solid, makes it less likely to decompose. The preservative influence of heat on all forms of organic matter is well known; the value of heat in preventing the decomposition of food generally, was minutely detailed by Appert in 1810, for which he was rewarded by the French Government with a sum of twelve thousand francs.

But both heat and sugar, though no doubt very useful agents in the preservation of fruit, are very far from being quite satisfactory; and though, by their use, the fruit may be prevented from undergoing actual fermentation, yet more or less of the flavouring matter of the fruit is always destroyed or lost. What is wanted is a means of preventing the decomposition of the fruit, without the use of any substance which could injure its flavour, either by the addition of a new flavour or the destruction of the natural one. After what has been done already in the storing and preservation of some sorts of fruit, and the improved modes of keeping it which have been devised, we do not altogether

despair of a satisfactory mode of preserving the more delicate kinds being discovered, although most of the recorded experiments which have been made with that view are certainly not very encouraging. The experiments usually referred to on the preservation of fruit by chemical means, are some which were made by Dr. HENRY in 1776, and described in the fourth volume of Dr. PRIESTLEY's "Essays on Air." The fruit in these experiments was suspended in carbonic acid, so that it was kept in an atmosphere containing no free oxygen. A bunch of Grapes exposed to carbonic acid remained fresh and plump for six weeks, whilst a corresponding bunch placed near it in a similar vessel, containing common air, was quite mouldy in three weeks. A second experiment was made with some ripe and rather stale Strawberries, which had been gathered the day before; the following day those which were exposed to the air had lost their taste, whilst the fruit kept in carbonic acid, "had become more dry, but was fragrant and well tasted; their fragrancy was even thought to be improved." On the fourth day, those in air became quite musty and mouldy, whilst those in carbonic acid were some of them firm, and had still a moderate degree of flavour at the end of eight days.

In this experiment of Dr. HENRY's there are two points which were decidedly against the preservation of the fruit, namely, that the fruit was already stale at the commencement of the trial, and that the carbonic acid employed was not pure, but contained common air. A number of similar experiments have since been made, the general result of which has been, that though the fruit kept well, it wholly lost its flavour; but we do not think that there is any reason to despair of ultimate success. It is plain, from all the trials which have been made, that it is easy to prevent the decay or fermentation of fruit; the difficulty is rather to preserve its fine flavour, and prevent it from becoming tasteless and insipid. When an Apple is bruised, the part thus injured soon turns brown, decay commences, it becomes mouldy, and the whole fruit soon rots; and this decay easily spreads from one Apple to another. If a little hole is cut through the skin of a sound Apple, and a small piece of a rotten one is inserted under the skin, the sound fruit will soon be brought into a state of decay; but if this is done in a jar of carbonic acid, no such effect will take place—the sound Apple will remain fresh, even though there is a portion of decayed Apple in contact with it. The flavour of fruit is apt to be spoilt, not merely from the loss of the peculiar volatile oil which it contains, but likewise from the absorption of other volatile substances; for fruit of all descriptions has a very remarkable power of absorbing odorous matters of various kinds.

Amongst the many plans for preserving fruit which have been described, and which more or less depend in principle on the exclusion of air, such as packing it in close sealed vessels, wrapping in fine paper, covering the ends of the stalks with sealing-wax, or arranging it in boxes filled with thoroughly dry sand, bran, straw, Fern, or other similar substance, the greatest care in all cases must be taken that the packing material has no odour; for if it has, the fruit, besides losing a portion of its own natural aroma, will acquire some of the odour of the packing material, and the delicate flavour of the fruit, and consequently its value, will be destroyed. On the other hand, when fruit is preserved by cold, and especially when for this purpose it is gathered before it is perfectly ripe, it is often found that on removing it from the ice-house or cold well in which it has been preserved, though at first it has but little flavour, yet that on gently warming it and keeping it a few days, the flavour improves and decidedly increases. This and other similar facts may fairly lead to the consideration, whether the odour and flavour of fruit which has been preserved some time in carbonic acid, nitrogen, or hydrogen, and which has in consequence become deteriorated, is, in truth, really altogether destroyed; and whether it might not be possible to recover the whole, or at least a portion, of the lost flavour?

The absorption of manure, or rather the manner in which plants fed with very strong manures acquire a peculiar and often very disagreeable flavour in consequence; and also the curious way in which the odour of flowers is sometimes modified by the absorption of particular substances, are probably also examples of the facility with which vegetables absorb odorous substances. Concerning the formation of odours by plants, very little indeed is known. There are, however, a number of curious facts bearing upon the subject, and showing how volatile odours, closely resembling those secreted by plants, are sometimes formed in the most unexpected manner. Thus, for example, in the process of bleaching rags by chlorine for making paper, it frequently happens that the bleached pulp has precisely the odour of ripe Apples; this is evidently due to the presence of some substance formed by the action of the chlorine.

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WE have lately received from Mr. VERSCHAFFELT, of Ghent, flowers of two tree Pæonies of admirable beauty. They were intended for exhibition in London, but would not keep for that purpose.

One was rosy pink, large, and uncommonly showy because of the very fine colour of the flowers. When full blown they measured 7 inches across; but in this state they showed quantities of stamens in the centre, and some of the petals, though all of good substance, were much longer than the others, giving the general aspect of the flower a somewhat ragged appearance.

The other was French white, shading off into rose at the base of the petals, and rather smaller, but more double and regular, and consequently more compact, holding together well, even after it had been cut a very long time. Both kinds were exceedingly handsome, as all tree Pæonies are. A well grown specimen ornamented with such flowers in even tolerable profusion must produce a magnificent display.

We understand that these were produced by Mr. CHARLES GOETHALS, a gentleman residing at Ghent. The darker kind, called Gloria Belgarum, is described in the "Journal d'Horticulture Pratique," as a seedling which, in 1844, had flowered for five successive years, and at that time was producing blossoms at least 10 inches in diameter; a single plant bearing seven of them. It would seem that they are now appearing in great abundance, Mr. VERSCHAFFELT having been able to forward four of them. Certainly these Moutans are among the finest we have ever seen.

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## ORCHIDS FOR THE MILLION.—No. IV.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

TREATMENT OF FRESH-IMPORTED PLANTS.—These, when newly imported, should be sponged over every leaf and bulb, and all the old decayed parts taken away. There are many insects that will harbour in them, such as the cockroach, and the different kinds of scale, which are great enemies. After they are clean they should be laid on dry moss and placed in some shady part of the house, where it is rather cool and dry. Too much light, heat, and moisture at first is injurious to them. The moss should be gradually moistened, and when they begin to grow and make roots they should be potted or put on blocks or in baskets, but care should be taken not to have the pots too large; for over potting is dangerous.

As soon as they begin to grow, those which come from the hotter parts of India should be put at the warmest end of the house, but they should not have too much moisture at first: those which come from the more temperate regions should be kept at the coolest part of the house, and they should not be allowed to stand under any drip, as this frequently rots the young shoots as soon as they appear. Such plants as Vandas, Saccolabiums, Aerides, Angræcums, Phalænopsis, are fastened on blocks as soon as they are received, and I place them so that the plants hang downwards, in order that no water may lodge about them, till they begin to grow and form new roots: this is much the safest mode of treating these valuable Orchids. This is also the mode adopted by Mr. Rollisson of Tooting, who is one of the most successful growers of these plants.

Mr. Warner's house stands north and south; it is 60 feet long, with a span-roof, 24 feet wide and 13 feet high; in the centre is a glass division, so as to make two houses, one for those that come from the warmer parts of India, next the boiler, and the other for those which come from cooler climates, and which require less heat and moisture. There are two middle tables, each 4 feet 7 inches wide, 2 feet 8 inches high, for plants, and a path 3 feet wide runs up the centre of the house. Along each side are slate cisterns for holding rain-water, and under these are three rows of 4-inch hot-water pipes; on the top of the cisterns is a table for plants, and up each side of the house there is a path 3 feet wide. York stone suits best for the floor of the house, because it holds more moisture than slate, but slate is best for tables; the latter should be made with a ledge, so that they can hold water during the summer, but in winter they should be dry: the water should never be permitted to be long on the shelves at a time. I change it once a week. I put a layer of small stones in the water to set the pots on, and in this way a good drainage is maintained.

For heating an Orchid-house nothing is better than hot water; three rows of 4-inch pipe should run round the house, and two round each centre table, and there should be an open tank in the centre, with means of turning off the water, when moisture is not required. Small iron ventilators, made to open and shut, should be inserted in the brickwork on each side, so as to allow the heat and moisture to pass into the house when required. At each end of the middle tables there should be a hole, provided with a sliding door, large enough for a man to enter under the tables, to examine the pipes at any time when the latter might be out of order.

GLAZING.—The laps here are close. The squares are 3 feet long and 11 inches wide, sheet glass, 22 oz. to the foot. On both sides there should be upright sashes, containing glass 15 inches high and 11 inches wide. The south end of Mr. Warner's house is glazed, and the north end is brickwork, for climbing Ferns and Orchids. Each sash-bar of the roof should have a small groove in it, to allow the water to run down to the bottom of the bar, where a small zinc gutter should be provided to catch the water; if this is not attended to, the latter will drip on the plants, which is very injurious to them.

VENTILATION.—This is of great importance; for if cold air is allowed to pass among the plants, they will not thrive, and all care which has previously been bestowed on them will be in vain. Means of ventilation should therefore be provided for, near the ground, close to the hot-water pipes, in order that the air might be warmed in entering the house. In the houses here there are three ventilators on each side of each house, two at the south end in the brickwork, and two at the north end near the top of the house. The ventilating shutters are made of wood, about two feet long, one foot wide, and hinged; there should be two glass ventilators at the south end near the roof, as the top lights of the house are not made to slide.

The best material for shading is canvass, and there should be blinds on each side of the house, with a strong lath at the top to nail the canvass to, with a roller at the bottom. The canvass must be nailed to the roller, but care should be taken in doing this that the blind should roll up regularly from the bottom to the top; I never, however, allow the canvass to be down, except when the sun is powerful, for I find that too much shade is injurious to most kinds of Orchids. The blinds will also be useful in the winter season for covering the house during a frosty night, being a great protection to those plants that are near the glass. It is advisable to have a covering on the top of the house for the blinds to be rolled under, in order to keep them from being exposed to the wet.

Slate cisterns are very important in a house for collecting the water which falls on the roof. We have cisterns on each side of the house over the hot-water pipes, which keep the water at the same temperature as that of the house.

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## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 17.)

No. XXXIII.—While my favorite, the nightingale, is yet with us; and 'ere his sweet voice ceases to be heard in our latitudes—in a few days more, parental cares, alas! will silence him for the season,—I am most particularly anxious to clear him, once and for ever, of the ridiculously false charge of his being a "melancholy bird," and his song indicative of "grief." Surely not,—surely not, ye lovers of melody. Whence this strange and unfair reading of my "pet's" musical voice, I know not. When HE sings, all nature is "happy." When silence prevails throughout the night, and HIS love-chant is *not* heard upon the breeze,—are WE not "melancholy" from the loss? Assuredly, yes.

It is a strange fact, that many of our best poets have ranged themselves together on the dark side of this lovely bird. Pollok, for instance, whose inspired powers none can dispute, apostrophises the nightingale thus:—

> "*Sad* bird! pour through the gloom thy *weeping* song;
> Pour all thy dying melody of *grief*,—
> And, with the turtle, spread the *wave of woe*."

Thus gloomily, too, sings our sweetest of bards,—Milton:—

> "Hail, lovely nightingale!
> Most musical, — *most melancholy bird!*"

Indeed, nearly all the Heaven-born poets follow, as if by mutual compact, in the same morbid strain; which to me is marvellous. Let us charitably hope, out of deference to the taste of the older poets, that our modern nightingale is quite a different bird from that immortalised in days of yore. It must be so. Let me confirm the thought, by quoting from one of our later poets, Coleridge. *His* ideas of love and music—sweet association!—are very closely akin to mine:—

> "List! to the '*merry nightingale*,'
> Who crowds, and hurries, and precipitates
> With fast thick warble, his delicious notes;
> Fearful, lest that an April night
> Should be too short for him to utter forth
> His love-chant,—and disburthen his full soul
> Of all its music!"

This view of our hero is graphically correct, and ought to be the popular one,—for cannot we all aver that never was bird more merry, bird more happy, bird more affectionately joyous?* Unlike us erring mortals, who

* In a little book, translated from the German by Sarah Austin, and entitled "A Story without an End"—a book, by the way, which every body should get by heart—we find a young and noble child wandering about, in ecstatic innocence and delight, among birds and flowers; and some of his pleasures are very delightfully recorded. As they refer particularly to the nightingale's joyous habits, and prove him to be anything *but* a melancholy bird, they could not be introduced at a more apposite season. "There was no end to the Child's delight. The little birds warbled and sang, and fluttered and hopped about; and the delicate wood-flowers gave out their beauty and their odours. Every sweet sound took a sweet odour by the hand, and thus walked through the open door of the Child's heart, and held a joyous nuptial dance therein. But the nightingale and the lily of the valley led the dance; for the nightingale sang of nought but love, and the lily breathed of nought but innocence; and he was the bridegroom and she was the bride. And the nightingale was never weary of repeating the same sentiments a hundred times over, for the spring of love which gushed from his heart was ever new; and the lily bowed her head bashfully, that no one might see her glowing heart. And yet *the one lived so solely and entirely in the other*, that no one could see whether the notes of the nightingale were floating lilies, or the lilies visible notes,—*falling like dew-drops from the nightingale's throat*. The Child's heart was full of joy, even to the brim." * *—No doubt it was. That boy was one of Nature's own children.

may indeed be said to "mope," when we are affectionately joyous,—(being subject to necessary and highly proper conventional observances,) Philomel, recognising no such trammels, gives way to unrestrained gaiety of spirit; telling us in all the expressive language which music alone can so happily convey, and liberty alone inspire,—the thoughts of his heart, the rapture of his soul. *This* is courtship, if you please. But as we are pledged not to be poetical, let us travel onward.

In order to keep your nightingales in good health, and cheerful withal, be careful to provide them with fresh, clean water, every morning,—so that they may take their bath regularly. When your birds are tame, and used to be waited on, you may open the door at the back of their cage, and hang thereon a square mahogany bath, similar to, but, of course, a size larger than the one I recommended for canaries. Into this they will jump; and so thoroughly will they disguise themselves by their ablutions, that recognition would be impossible. They will spend some little time in this aquatic diversion; and when tired, they will withdraw. Some considerable period will then be occupied in arranging their feathers, and completing their toilet. This done, they will commence singing merrily.

All these little *minutiæ* require to be dwelt upon; for unless such delicate attentions, as I have hinted at, be paid to your birds, and unless they see your delight consists in studying their happiness, that cruel demon—"jealousy," will destroy all their serenity of mind. I have had so many opportunities for verifying this, that I speak oracularly. Nor is it to be wondered at, that birds of such extraordinary vocal powers *should be* so "touchy,"—so alive to every slight. Accustomed as they are to rule the majesty of night, and hold the feathered race spell-bound by their nocturnal melody, it is no more than natural that they should like to have their supremacy duly acknowledged in the day-time also.

If you hang them out of doors, let it be in some snug corner, over-arched by a widely-spreading tree. Sheltered from observation—these birds love retirement, and shun the vulgar gaze—they will, towards evening, treat you to some lovely music. It is, however, advisable to take them in-doors before dusk,—lest, hearing their strains taken up, and repeated by their brethren in a state of freedom, they should pine for liberty, grow sulky, refuse their food—and die.

The nightingale revels in a treat of ants' eggs; and is remarkably fond of elderberries. I should, therefore, recommend one or two of these trees being planted in your garden. They grow rapidly, and bear freely. As, however, they are decided enemies to all other trees, and carry pestilence in their wake—plant them in an out-of-the-way corner, where nothing else will grow. A nightingale is also very fond of flies. He will take them eagerly from between your thumb and finger, and swallow them, one after the other, by the dozen. And here let me give my readers a caution.

In the summer season, when flies haunt us, and render our lives burdensome—this is the case very frequently in my locality—it is a common practice to kill them with a mixture of Quassia-root and sugar; the former made into a decoction with boiling water, the latter being added by way of a lure. The effect of the Quassia is first to stupify them and then to kill them. They sip it cautiously, and afterwards decamp, to die more at their leisure. Now for the evil of this. Your nightingales, ever on the look-out to capture as many flies as they can outwit, pounce on every one of these inebriated victims that blindly falls in their reach; and when swallowed, the poison is imbibed at one and the same time. I once lost two splendid birds in this way, and have never forgiven myself for my culpable folly. It will, however, be some reparation, if by this warning I prevent any further mischief. Now that the "Fly papers" are invented—and fatal engines of destruction they are—Quassia may be altogether dispensed with; though, let me add, the poor flies undergo, when chained to these resinous papers, agonies indescribable. The tortures of "the Inquisition" could hardly be greater. Cicero says—"*Cavendum est, ne major pœna quam culpæ sit.*" I hardly think the inventor of the "Fly papers" ever studied *this* rhetoric. With him, doubtless, "Ignorance is bliss;" and he would think it "folly to be wise," under the circumstances. *William Kidd, New-road, Hammersmith.*

## ENTOMOLOGY.

### The Large Pear Tree Astyages.

My attention was directed, at the end of May, 1850, to the state of several Pear trees trained against a wall, facing the east, in the gardens of the Horticultural Society, at Chiswick, which at that time were deplorably infested by myriads of small caterpillars, each enclosed in a blackish nearly cylindrical moveable case, although nothing of the kind had been observed in former seasons. The leaves exhibited large brown patches wheresoever they were attacked by the insects, and it was easy to ascertain in what manner this effect had been produced, as well as to be convinced that were the trees to be subject to similar attacks in subsequent seasons, they would certainly be thereby destroyed, the discoloured parts of the leaves being unable to perform their proper functions.

The cases formed by these caterpillars when full-grown, are nearly cylindrical, about half an inch in length, and of a diameter sufficient to enclose the bodies of the caterpillars, each end being open, the lower end circular, out of which from time to time the caterpillar protrudes its head and the fore segments of its body, and the upper or hinder extremity, which is partially closed, being elastic, but which the insect from time to time pushes open, in order to discharge its excrement; the case is rather narrowed at the mouth, so that the larva, although it protrudes the anterior part of the body with the greatest facility, is not able without difficulty to draw itself entirely out of its case, owing to the middle segments of its body being more dilated, as well as to the strong muscular power of the prolegs at the end of the body, which have the hooks set on so as to prevent the insect being forcibly pulled out of its case. The caterpillar is of a pale dirty fleshy-brown colour, the head is small and black, the upper surface of the first segment, behind the head, is black, horny, and shining, having a slender pale line down the middle; the sides are fleshy-coloured, with a small black dot; the second segment has a small double black triangular spot near its hinder margin above, and a small black dot on each side above the legs, as is also the case with the third segment; the following segments are fleshy, destitute of transverse rows of reflexed hooks, the sixth, seventh, and eighth having on the under side a pair of small tubercles, armed with very minute hooks, serving as prolegs; the terminal segment of the body is covered by a black scaly patch, and its underside armed with a pair of prolegs. When the caterpillar wishes to change its position it protrudes the front part of its body, and then advances forwards by means of the six feet attached to the segments following the head. On the slightest alarm, however, it instantly withdraws into its case, the mouth of which is brought into contact with the surface of the leaf, standing upright at right angles, its general position when walking being more oblique. When it has fixed upon a spot to commence feeding, it does not, like most other case-bearing larvæ, gnaw the edge of the leaf, but carefully forms a circular orifice in the cuticle of the leaf (generally the lower one, as the insect prefers the underside of the leaf for its ordinary abode); its instinct instructing it not to bite entirely through the leaf, but only through the surface on which it has taken its place; it then slightly attaches the mouth of its case to the edges of the orifices it has made in the cuticle, and commences feeding upon the parenchyme alone; it is thus enabled by degrees to introduce its head and the fore segments of the body into the cavity thus made between the two surfaces of the leaf, and thus we find the habits of the ordinary leaf-mining caterpillars (which are entirely enclosed between the two surfaces of the leaf), combined with the external wandering habits of the majority of caterpillars, a peculiarity possessed, so far as I am aware, by no other lepidopterous larva. When thus fixed, the larva mines the leaf all round the spot where it has fixed its case, to the diameter of half-an-inch or rather more; in fact it protrudes the head and front of the body out of its case, as far as it can, leaving the hind part, however, within the case, so as to make good its retreat, when necessary. When it has consumed a circular patch of parenchyme in this manner, it withdraws itself into the case, detaches the mouth from the circular orifice, and crawls off to a distance sufficient to enable it to perform the same operation in another part of the leaf, the blisters thus formed generally becoming confluent at the edges.



When the insect has acquired its full size, it leaves the leaf, to fasten the mouth of its case to the trunk of the tree, in some sheltered situation, and there undergoes its transformations, the moth making its appearance in the middle of July following. Singular as it may appear, this moth is one of our rarest micro-lepidoptera, and the specimens which I reared proved acceptable to most of our entomologists. It proves to be the Astyages (or Coleophora) Hemerobiella; its body and fore wings are of a greyish white colour, varied with very minute black specks, having an indistinct spot considerably beyond the middle of the fore wings; the hind wings are of a browner tint, and the hind legs are very hairy; it measures rather more than half-an-inch in the expansion of the fore wings.

Anxious to clear up several points in the history of this interesting insect, such as the mode of formation and enlargement of its case, the situation where the eggs are deposited, &c., I again visited the Horticultural Gardens towards the end of the present month of May, and was surprised to find scarcely a single specimen of the larvæ upon the trees, where last year they had swarmed to such a singular extent. This periodical development of particular species of insects, to an extraordinary degree, is one of the many phenomena of insect life which require investigation. In the present instance we can only conjecture that the deposition of eggs by the female moths was in some way or other prevented, or that the eggs were prevented from hatching; or, lastly, that if hatched, the young larvæ were in some manner or other destroyed as soon as hatched; the solution of these suggestions can, of course, be only obtained by continued investigation of the habits of the species.

As the cases are very conspicuous, vast numbers may be destroyed, if again found similarly numerous, by employing children to hand-pick the trees. *J. O. W.*

## Home Correspondence.

*The Trentham Machine for Destroying Weeds by the distribution of Hot Water and Salt.*—I have anticipated the issue of the *Gardeners' Chronicle* for the last two or three weeks with much interest, thinking that some article or articles might appear amongst the "Home Correspondence" commenting upon this very original piece of economy. It may be deemed presumption on my part to differ with you on a subject upon which the heavy artillery of a leading article has already fulminated (and it may be that you have in store a reserved battery for the unlucky wight who shall question the merits of the machine—be it so); but do me the favour to believe that no discourtesy is intended, and that what I say upon the matter is in perfect good feeling, and dictated only by a regard for the holy and beautiful principle of truth. "Magna est veritas et prevalebit." Premising thus much, I will only say that, having given the subject the most deliberate consideration, I have come to the conclusion that, when all the contingencies are calculated, there can be little economy, and that the little there may be is of that kind which no really philanthropic man of fortune would care to have exercised for him—a paltry saving of a sum of 80*l.* a year, to throw out of employment a few poor boys, old men, and women, in a most populous district, where their only ultimatum is the union workhouse, to which the wealthy proprietor must pay his quota; or the prison, to which idleness is the high road. I envy not the man who lives but for himself, and who would build up his own reputation with cash (not trash) "wrung from the hard hands of peasants." When we think how small an amount 80*l.* per annum is, and how limited a sum it would be thought in the purchase of a horse, a picture, or an article of vertu, and put it into the balance with the moral good it must do, and the social happiness it must effect, in employing the poor, will any liberal or well-regulated mind say that such an invention is in accordance with the age, or at all worthy of the enlightened and high-minded spirit in which the Exhibition of 1851 has been conceived and carried out. I think that gardeners have a duty to perform to their labourers, as well as their employers, and while I would scrupulously insist upon the employed doing justice to their master, I should at the same time endeavour to make them feel that the nobleman or gentleman for whom they worked did not regard them merely as a burden from which he would be free. Allow me, through the medium of your columns, to ask Mr. Fleming the following questions:—Has he not had more machines than one? Was not the first one too expensive? and what did machine No. 2 cost? Has he not killed his Box-edgings to some extent in the application? It is admitted that the machine must not go near the edges, a part of the walk where the weeds always grow in the proportion of three to one with the centres. The happy accident of the man "who happened to be at work" near the spot to help the boy, may be very well at Trentham, but in other places the men may be fewer and "far between" (rather awkward this). Mem.: 1 man is equal to 3 boys' wages per diem—thus, 1 man at 1*s.* 6*d.*, equal 3 boys at 6*d.*, and each boy will weed as much as the man. The machine costs nothing, coal costs nothing, salt nothing, and the thousands of gallons of water which deposit half an inch thickness of salt is raised without labour, or if not so, how is it? The recommendation to place ridges of sand to protect the edges appears to me most absurd—clay would be more appropriate. The water would trickle through directly, and the laying down this, and taking up, is no small labour, and must leave the walks in a "pretty pickle." The luxuriant Dandelions must imply a state of things wide of the economic point to begin with, and the dead roots washed to the sides of the walks by the rain (and, of course, left there on account of the expense), must have rather an odd effect; perhaps it is picturesque, and—but I fear I have got into hot water, and shall be pickled. *Henry Bailey, Nuneham-park, Oxford.*

*Asparagus.*—I have six beds of Asparagus, which have been planted, I should say, 30 years, and perhaps more. The plants are not spread regularly over the beds. In autumn last I raked all the soil off the plants into the alleys, covered them with good rotten manure about 2 inches thick, and on this replaced the soil to about the same thickness out of the alleys. This spring I applied a moderate coating of salt, and I must say that they have succeeded satisfactorily. My employer desires me to cut (to use his own words), "all before me;" but this I have objected to, and for the following reason: some of the plants are pushing weakly, as is the case in every bed of Asparagus, and by cutting the weaker one year, it is my opinion they will be weaker still the following

season, and that in two or three years I should not be able to procure a dish of Asparagus fit to be presented at table. Why not leave well alone, and only cut the strongest? Now, who is right in this matter, me or my employer? *Cymro.* [You are quite right in permitting the weak plants to grow.]

*Gardeners' Newspapers.*—I have had several gardeners here lately who subscribe to a certain gardening paper, requesting to know what is done with the overplus money which was intended for gardeners and their widows. Not one of those men are aware that this paper changed hands two years ago, and that those who had shares in it lost all; nor was even a notice sent to them upon the occasion of its breaking up. *A Disappointed Old Cabbage.* [We know nothing about the matter.]

*Forcing Strawberries.*—The following is the mode of treatment to which my Strawberries have been subjected. As soon as the plants were well rooted, I raised them carefully with a small ball, and potted them into the fruiting pots at once. I never layer the runners, as is usually done, as I consider that practice to be only waste of time. I would, however, recommend the plants to be potted in damp weather; I use 6-inch pots, and I only pot one plant in each pot. The soil I employ consists of two parts of Wimbledon loam, one part well rotted dung and charcoal, the latter in proportion of one to six; I also place a good portion of charcoal in the bottom of the pots, so as to ensure good drainage. The loam should be mellow, and in a rough state. After the plants are potted, I remove them to a south border, on which I have spread some coal ashes and quick lime, to prevent worms from entering the pots; I give plenty of manure water during the period of growth; and also when the fruit is swelling. In making the dung water, I employ only sheep droppings for the purpose; I would recommend the water to be prepared a considerable time previously to being used, and when used to be clear; I stack my plants in winter in coal ashes; but care must be taken that they do not then become too dry. At forcing time, I put them in a pit, with a gentle bottom heat, and remove the glass at all favourable opportunities until the fruit is all set; then I give them a shelter at the back of my Vineries, where they get plenty of heat and air. I have this season fruited a thousand plants under the above treatment with uniform success. The kind is Keens' Seedling. *John Kenny, Copse Hill, June* 4.

*Hardy Eucalypti.*—Perhaps it may be interesting to know that a variety of Eucalyptus grows in Essex in the open ground. The plants were raised from seed sent here by the late Dr. Norris, of Hackney, in 1842. They were kept in pots for two years. They were then planted in the American garden, where five are still alive and growing freely. They have flowered these last three years, and are showing bloom again this season. The largest is 25 feet high, and girths at 1 foot from the ground, 1 foot 3 inches; ditto 4 feet—10 ins.; ditto 8 feet—8 inches; ditto 12 feet—6 inches. They certainly are interesting objects growing amongst other trees, and would be more so were they able to support themselves; but I am obliged to prop them up with three rails each. I think, however, that after this season some of them will be able to support themselves. In 1847 or 1848 we had a sharp winter; the trees were then released from their supports, and allowed to blow about amongst the Rhododendrons. During the same winter one that was trained to a west wall was destroyed by frost; since that period the standards have been kept to their supports. Braxted Park is about five or six miles from the sea, but I am unable to say how much it is above its level. *George Taber, Gardener to Chas. Dulane, Esq., Braxted Park, Witham.* [The leaf sent with this corresponds with that of Eucalyptus coriacea from Van Diemen's Land; but the absence of flowers prevents its exact determination.]

*Cloth of Gold Rose.*—I am told that when this Rose was first introduced, Mr. Rivers gave a very flattering description of it. Many on that account purchased it, but it never realised their expectations, for they could not flower it at all satisfactorily, and some even termed it "an imposition." I have, however, much pleasure in testifying to the correctness of Mr. Rivers' statement. The plant here covers 176 feet of wall, and is ornamented with nearly 200 flowers, 30 or 90 being open on it at one time, and each bloom measures from 12 to 15 inches in circumference. This plant stood for some years without ever showing a flower, or even growing to any extent. I soon, however, discovered that this Rose, like all its tribe, wanted strength to flower well. I, therefore, about a year ago had all the old soil removed from the roots, and a large quantity of strong loam and dung introduced in its place. This caused it to grow very vigorously; I then had all the strong shoots nailed in full length, and the weak ones cleared away. It received no other pruning whatever, and every one who will adopt the same means will find that every bud will burst into flower—in fact, it is my employer's, as well as my own opinion, that this Rose, for size of flower, colour, and scent, stands without a rival in its class; it is now in full bloom, although a little past its best. *D. Kidd, Garnstone Park, near Hereford, June* 4.

*The Calceolaria.*—It is stated that the Calceolaria cannot be grown successfully from cuttings on chalky soils in the south of England. Having had considerable experience in its culture on soils of various kinds in different parts of the country, especially in the south, I may mention that I have experienced no such difficulty as Mr. Gilbert speaks of at p. 341. Ah, "G. H.," Mr. Gilbert might well involuntarily exclaim, if both are situated in localities where leaf or vegetable mould is not obtainable; but I presume there are few places in which the Calceolarias are cultivated where such is the case, even in districts where chalk abounds; and this mixed with some of the best surface soil, answers every useful purpose. I have found this treatment, with frequent applications of liquid manure, to answer admirably, even in what might be termed chalky districts, and I consider that if Mr. Gilbert were to follow the method above described he would be enabled to keep his plants in such health as to procure abundance of cuttings from them. *George Gorrie, Hassop.* —— Having a collection of Calceolarias in cold frames, in the spring of 1846, I took a portion of them and placed saucers under them containing liquid manure, for the purpose of testing its advantages, if it had any. The pots were well drained, so that the ball of soil was quite clear of the manure-water. I watched their progress with much interest, and soon perceived that they assumed a more vigorous appearance than those not so treated, and the flowers likewise well repaid the extra labour bestowed upon the plants. I have followed the same plan ever since, and with much success. I should not omit to mention, that both the plants experimented upon, and the others, occasionally received waterings of weak liquid manure. *Omega.*

*Penny Savings' Banks.*—In reference to the Penny Save, Penny Get Club, alluded to at page 310, the plan is the following:—In my school is a box with P. S. P. G. painted on the top, in which there is a slit to admit pence being dropped into it. Each child wishing to become a member of the Club, receives from me a card, of which this is a specimen. On this card I write the date and the money put by the child into the box. The child keeps the card and I keep a book in which I enter the name of each depositor, and his or her account. The rector (Rev. Francis Clerke) keeps the key of the box, and occasionally compares the cards, the book, and the money in the box, and certifies the correctness of the card and book accounts with the money in the box. The money he puts into the Savings' Bank, at Banbury, where it receives interest. Once a year this interest is divided amongst the depositors according to the amount of their respective accounts. As soon as a depositor's account amounts to 5*s.* 3*d.*, such depositor's money is taken from the general account, and placed in the savings' bank, in his or her own private account. In description, this may appear complicated and troublesome, but in practice it is surprising how little of either it is. By this plan all the money received during the year, being put into the savings' bank in one account, obtains interest, which is divided proportionately amongst all the depositors, and as soon as any child has 5*s.* 3*d.*, he or she has a private account in the savings' bank, which bears interest. There are no honorary members, and the children receive nothing more than the interest of their own money, with any present the rector may please to give them at Christmas. It teaches them provident habits, and they value the plan very highly. I have four children who have been members from the commencement. They have deposited upwards of 2*l.*; and I can answer for it, had not the rector, who is continually contriving something for the benefit of his parishioners, who established this "penny save, penny get club," that instead of their being worth upwards of 2*l.*, they would not have had two pence. They are, since they have had a bank book, equally as ready to put their pence into the "penny save, penny get club," as they used formerly to be in spending it. The present number of members is 27, and they have deposited, chiefly in pence and half-pence nearly the sum of 10*l.* *William Griffin, Eydon, Daventry.*

No. 10.

SARAH SAVEPENNY.

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*Winter Peas.*—In the article at p. 324, on Foreign Gleanings, M. Masson says, "the Russians keep the Peas through the winter. We ourselves tasted Peas thus kept, and, to our taste, they were as good as any we ever met with." Will any of your correspondents be so good as to inform your readers how the Peas are to be treated, so as to be thus kept through the winter? By so doing, they will much oblige *F. H. S.*

*Night blowing Cereus (C. grandiflorus).*—This delightful plant, which has for many years past bloomed profusely here, was last evening quite an object of admiration. No less than 17 fully expanded blossoms were open on it at one time. The flowers, which are very fragrant, began to expand about 6 o'clock, p.m., and by 8 o'clock they were fully developed. The plant occupies a pot 14 inches in diameter, and has produced annually between 20 and 30 flowers, for these last 5 years. *Joseph Nickson, gardener to Viscount Middleton, Godalming.*

*Hint to Advertisers*—Will you have the kindness to suggest to Messrs. Francis and others, who advertise, thus late, the sale of bedding plants with prices attached, the necessity of doing so a little earlier another season, as most persons, like myself, have long since made their purchases. I have lately been buying plants at 4*s.* and 6*s.* per dozen, not "strong and vigorous," but the very worst I ever put into the ground; whereas it appears I might, had I known it, have purchased the same description of plants, vigorous and good, for half the sums. *An Old Subscriber, June* 2.

*Yew Hedges.*—There is something the matter with my Yew-tree hedges. The leaves are falling from the more compact parts, and the dead twigs look very bad and are covered with an unusual quantity of cobwebs; no insects are to be seen. Where the plant is not pruned nor confined in a hedge, it is quite healthy. *Yew.*

*New way of Cooking Potatoes after the 1st of April.*—After this date, Potatoes ought to be peeled at night for the 1 or 2 o'clock dinner, and for late dinners any time before 9 in the morning. I have repeated this experiment many times, and the improvement in the quality of the Potato is very great. It is well known that, owing to the inherent nature of the Potato, it will push in spite of every precaution to stop growth, leaving the tuber very spongy, and with much of the water extracted out of it. By peeling and steeping in cold spring water for ten or twelve hours, the pores of the cells become filled, however limpy the tuber may be; and in the process of boiling, this fresh water is again discharged, taking with it all bad flavour, as well as partly removing the dark spots which are often found in Potatoes. I tried them steeped in salt and water, thinking that in boiling the salt would remain in the cells, which it did, and gave the Potato a better flavour, but the salt turned the outside very brown, and did not look well. I have also steeped cut sets, which in twelve hours became firm; and, like steeping seeds, no doubt the practice would have a beneficial effect upon late planting sets. Water will, however, not penetrate through the tough skin of a whole Potato. *James Cuthill, Denmark Hill, Camberwell.*

*Beehives.*—There is a hive in the Exhibition in Hyde-park, numbered 208 A, Class 9, by Mr. Hayes, Enfield Highway, as a new invention; but as I myself, and some friends, had tried the principle long since, I found upon reference to the *Gardeners' Chronicle* for November, 1844, that a person named Smartt, of Enfield, introduced it. I refer to the plan now to prevent, probably, much disappointment, as it proved an entire failure, and was afterwards admitted to be so by its inventor. The principle consists in having two floors, one 3 inches above the other, the hive case being 30 or more inches long. On the upper floor is placed a stock of bees over a large hole, with smaller holes on each side for glasses. The great objections are, that the honey in the large 3-inch division is useless to the bees, and cannot be taken by the master; and as the bees keep only in the stock hive in winter, the other becomes mildewed and mouldy in nine cases out of ten, creating serious disease among the inmates. *Charles Wildman, London.*

## Societies.

LINNEAN ANNIVERSARY, *May* 24.—The President in the chair. The Secretary read a short notice of the members who had died during the year. Of these, 17 were Fellows, three foreign Fellows, and one Associate. The Treasurer read the cash report, when it appeared that there was only a few shillings difference between the expenditure and income of the last and the previous year. Among the presents on the table, was the 2d part of Dr. Hooker's Rhododendrons of the Sikkim Himalaya, and the splendidly illustrated work on the Victoria regia. Both were presented by the publishers, Messrs. Reeve and Benham. The members present proceeded to ballot for the Council and officers for the ensuing year, when Robert Brown, Esq., was re-elected President, W. Yarrell, Esq., Treasurer, J. J. Bennett, Esq., Secretary, and Richard Taylor, Esq., Assistant Secretary. The following five members of the Council were removed:—F. Boott, Esq., M.D., E. Forbes, Esq., C. M. Lemann, Esq., M.D., E. Newman, Esq., and Sir G. T. Staunton, Bart.; and the following five elected into the Council:—G. Busk, Esq., Lord Goderich, S. Hanley, Esq., J. D. Hooker, Esq., M.D., and J. Miers, Esq.

*June* 3.—The President in the chair. J. S. Lowell, Esq., was elected a Fellow. A letter was read from Professor Treviranus to Dr. Wallich, inclosing several letters of the botanist Schreber, whose life and writings had a short time since formed the subject of a communication from Dr. Wallich to the Society. Mr. Westwood stated that he had received further intelligence of the wingless bird which he had described at a former meeting, as an inhabitant of Lord Howe's Island, of its being found on a spot called "Cato's reef." Mr. Newport gave an account of his recent researches upon the embryology of the frog, and stated that his recent researches had quite confirmed all the results he had arrived at in his paper read before the Royal Society last session. The reading of this paper led to a discussion, in which the President stated that although he was not able to confirm Schleiden's view of the pollen cell becoming the new plant, he had ascertained most certainly that the contact of the pollen cell with the ovule was necessary to the growth of the embryo.

CALEDONIAN HORTICULTURAL, *May* 10.—A great many fine plants were produced on this occasion. The prize of two guineas, offered for the four finest Shrubby Greenhouse Plants, was gained by Mr. Reid, gr. to Professor Syme, with fine specimens of Pimelea linifolia, Leschenaultia formosa, Eutaxia myrtifolia, and Acacia grandis. For the finest Rhododendron, the prize was awarded to Mr. Crocket, gr. to Colonel Ferguson, for R. formosum. The prize for the four finest Stove Plants was gained by Mr. Ritchie, gr. to W. M. Innes, Esq., who produced large specimens of Gesnera splendens, Begonia coccinea, Epiphyllum Jenkinsoni, and Euphorbia splendens. The award of one guinea, offered for the four finest Cape Heaths, was gained by Mr. Reid, with Erica aristata major, Linnæoides superba, propendens, tubiflora, and elegans. A second prize was awarded to Mr. Crocket, for Favoides elegans, intermedia, Cavendishii, and vestita alba. For the finest flowered speci-

men of a trained perennial climbing plant, the first prize was awarded to Mr. Reid, for Tropæolum tricolorum, pyramidally trained; and a second to Mr. Thomson, gr. to Mrs. Balfour, for Tropæolum tricolorum grandiflorum, trained on a balloon-shaped trellis. The prize of one guinea, offered for the two best flowered specimens of Indian Azaleas, was gained by Mr. Reid, with fine plants of Gledstanesi and lateritia grandiflora; and a second prize was voted to Mr. Ritchie, for Prince Albert and Optima. There was a good competition in stage Auriculas, and two prizes were awarded; the first to Mr. Sanderson, for Headley's Conductor, Fletcher's Mary Ann, Grime's Privateer, Coldham's Navarino, Oliver's Lovely Ann, and Dean's Regular; and the second to Mr. Foulis, gr. to J. Tytler, Esq., for Campbell's Robert Burns, Stretche's Alexander, Millar's William Pitt, Tranter's Constellation, Moor's Violet, and Barr's Flora. Culinary Vegetables: The first prize was awarded to Mr. Anderson, gr. to the Earl of Stair, whose collection embraced 25 varieties, including excellent Kidney Beans, Mushrooms, Cucumbers, &c.; the second to Mr. Thomson, gr. to R. S. Wilson, Esq., who sent 32 varieties; and the third to Mr. Pender, gr. to D. Anderson, Esq., who sent 28 varieties. The prize for Strawberries was awarded to Mr. Pender for three pots of Keens' Seedling, well fruited. The award of one guinea, offered through the Society by Messrs. James Dickson and Sons, for the six best Cinerarias, was gained by Mr. Mitchell, gr. to Lady Keith, with fine plants of Carlotta Grisi, Cerito, Newington Beauty, Edmondsiana, Angelique, and Delight. A second prize was voted to Mr. Ritchie for Cerito, Lady Prudhoe, Climax, Pauline, Angelique, and Newington Beauty. In addition to the articles for competition there was a rich display of productions sent for exhibition only, and for these extra awards were made and thanks voted, according to circumstances. Messrs. Dickson and Co. sent a fine selection of hard-wooded and other greenhouse plants, including Azaleas and Heaths, and a specimen of Chorozema Lawrenceanum; also a box of seedling Pansies. Messrs. James Dickson and Sons also sent exotic plants, including Cinerarias, a light-coloured Rhododendron, and a species of Lachenalia. Messrs. P. Lawson and Son exhibited a selection of greenhouse and other plants, including Pelargonium erectum, Trichopilia tricolor elegans, Calceolarias, Ferns, and Alpines. Mr. Carstairs contributed a number of interesting productions, among which was a fine plant of Azalea ovata in flower, Rose Géant de Batailles, and a stand of Fairy Roses in miniature pots, two bouquets, and 25 stalks of Asparagus weighing 37 oz. Mr. R. M. Stark sent Heaths, Pimeleas, Chorozemas, &c.; and Messrs. Downie and Laird contributed a plant of the new Pentstemon cyananthus in flower, several beautiful Azaleas, and Pansies in pots. Mr. Methven sent a good selection of greenhouse plants, including Heaths, Epacris, &c., and a new seedling Rhododendron. Mr. Lightbody exhibited a collection of stage Auriculas, which were deemed worthy of an honorary award. From Messrs. Ballantyne and Son, there was a display of Tulips, Roses, and Auriculas; also Corydalis nobilis, with a basket of herbaceous and Alpine plants. From the garden of Dr. Neill, were Trichopilia tortilis and Dielytra spectabilis, &c.; also a collection of Alpines, among which were Rubus arcticus, Houstonia cœrulea, Gentiana verna, from Galway, Cochlearia acaulis, and Polemonium pulcherrimum; from the garden of S. Hay, Esq., greenhouse plants, including Pimelea Hendersoni, Erica Cavendishii, Daviesia latifolia; also forced Roses and Rhododendrons; from Professor Syme, exotics, including Heaths, Kennedya inophylla floribunda, and Daviesia latifolia floribunda; from Isaac Anderson, Esq., well-flowered specimens of Rhododendron formosum, Gastrolobium spinosum ovatum, Eriostemon scabrum, and Dielytra spectabilis; for these an honorary award was made. From C. K. Sivewright, Esq., dwarf specimens of Cinerarias, Adela Villiers, Cerito, Pauline, and Nymph, and nine seedlings; for two of which a certificate of merit was granted—the one a pale blue and the other white, both of fine form and substance, and dwarf habit. Mr. John Laing, gr. to the Earl of Rosslyn, sent seven seedling Cinerarias, one of which, named Countess of Rosslyn, was particularly deserving of notice. Mr. Baxter, gr. to Sir W. Gibson Craig, Bart., contributed a stand of border Auriculas, a seedling Gesnera—a hybrid between Douglasii and faucialis, and named by the committee, Baxteri, for which an honorary award was made. Mr. Shearer, gr. to the Marquis of Tweeddale, sent several promising seedling Cinerarias; and Mr. Anderson, Oxenford Castle, a dish of fine Strawberries. Keens' Seedling, and British Queen. From Mr. Forrester, Ratho, there were good stage Auriculas, and a fine plant of Trifolium uniflorum; and from Mr. Young, gr. to T. Oliver Esq., a trained specimen of Tropæolum tricolorum. Mr. Reid, Brucefield, Dunfermline, produced a seedling Ranunculus, named Countess of Harrington, which was recommended to be grown and exhibited again next season. Mr. Veitch, Parkhall, Linlithgow, exhibited six seedling Pansies and two seedling Cinerarias; and Mr. Cuthbertson and Mr. Thomson contributed stands of Wallflowers. Among the extra Vegetables sent for exhibition, may be particularly noticed some excellent Broccoli from Mr. Pender, the varieties of which were Melville's Late White, Mammoth, and Lauder's Late; from Mr. Carstairs, six stalks of very large and fine Rhubarb; from Mr. Douglas, gr. to Sir J. Lauder, a dish of Seakale; from Mr. Methven, gr. to J. Peter, Esq., a dish of Asparagus, and Early Potatoes from the open border; from Mr. Aitken, Dalkeith, superior Flanders Spinach and Victoria Rhubarb; and from Mr. Nicoll, a bunch of Early White Carrots. Mr. G. M. Butler exhibited a portable frame for striking Heaths and other hard-wooded greenhouse plants.

AMATEUR TULIP, *May* 29.—For stands of 9 blooms: 1st prize to Mr. Edwards, of Holloway, for Triumph Royal, Optimus, Cleopatra, Princess Royal, Cerise Blanche, Claudiana, Polyphemus, Triumph de Lisle, and Pilot; 2d, to Mr. Crook, of Brixton, for Roi de Siam, Claudiana, May's Ulysses, Royal George, Vivid, La Tendresse, Bijou des Amateurs, Triumph Royal, and Strong's King; 3d, to Mr. Sauders, of Staines, for Royal George, Strong's Queen, Cerise Belleforme, Polyphemus, Salvator Rosa, Marshal Soult, Rose Brilliant, Camuse de Craix, and General Bournouville; 4th, to Mr. Wallace, of Petersham, for Holmes's King, Rose Astonishing, Vivid, Polyphemus, Bijou des Amateurs, Catalani, Lucetta, Marshal Soult, and David; 5th, to Mr. Holmes, of Hoxton, for Franciscus Primus, Triumph Royal, Ponceau tres Blanc, Polyphemus, Holmes's King, Surpasse Cat., Aglaia, Vivid, and Laila Rookh. For stands of 3 Tricolors: 1st, to Mr. Crook, for Milo, Belladonna, and William IV.; 2d, to Mr. Holmes, for Aker's Lansoni, Miss Porter, and Carlo Dolce; 3d, to Mr. Wallace, for Carlo Dolce, Ariadne, and Ivanhoe. For the best 3 Roses: 1st, to Mr. Edwards, for Triumph Royal; 2d, to Mr. Bancks, for Catalani; 3d, to Mr. Wallace, for Aglaia. For the best 3 Byblomens: 1st, to Mr. Delaforce, for Jno. Delaforce, new; 2d, to Mr. Wallace, for Holmes's King; 3d, to Mr. Sanders, for Cleopatra. For the best 3 Bizarres: 1st, to the Rev. Mr. Jephson, for Vivid; 2d, to Mr. Holmes, for Vivid; 3d, to Mr. Lane, for Strong's King.

WARWICKSHIRE HORTICULTURAL.—The first floral exhibition of the season took place in the beautiful grounds of the Jephson Gardens, Leamington Spa, on the 28th May. Among the productions, those from the gardens of H. Colyer, Esq., of Dartford, stood pre-eminent, being alike remarkable for profuseness of flowers and healthy and luxuriant growth. The Ixoras, the Aphelexis, and Erica tricolor Wilsonii, were very fine specimens, and the general collection contained some capital plants. From Mr. Willmore's garden at Birmingham some good plants were produced; and A. Kenrick, Esq., of the same locality, had a few nice Orchids. Not less remarkable were the fancy Pelargoniums and other plants from the nursery of Mr. Ayres, of Blackheath, who produced (but not for competition) the same plants which obtained the first prizes at the metropolitan exhibitions. Mr. Bragg, of Slough, had some very fine Pelargoniums, with Tulips, Heartsease, &c. The fruit, more especially a Cayenne Pine, and the Peaches and Nectarines, from the gardens of C. N. Newdegate, Esq., M.P., was of first-rate quality. Mr. Colyer gained the first prize for greenhouse plants, and Mr. Bragg for Pelargoniums.

## Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—Perhaps at no period in the history of this garden has it looked better or possessed so many attractions as it does at the present moment. The red and white "May," the Horse-chestnuts, some of the Magnolias, Laburnums, Lilacs, and other ornamental flowering trees with which the arboretum is furnished, are now in considerable beauty; the Rhododendrons, a mass of flower, exhibiting the most charming variations of colour, and the lawn, though dry, being soft and green. The great Chinese Wistaria on the wall has been and is still loaded with large bunches of lovely flowers, but unfortunately they are now past their best. Not so those on standard trees, which are just in perfection; indeed the latter seem quite as much at home on the verdant lawn of an English garden as on the hill-sides in the provinces of Che Kiang or Kiangnan. It is scarcely possible to imagine anything more graceful or beautiful than a fine plant of this kind standing by itself, supported only by a stout stake. The walks in the arboretum are fresh gravelled, rolled, and in good order. The annuals, which have been temporarily put in the recently formed beds on the east side, are masses of blossom, and the different hues of the trees, which are now sufficiently thin to be seen to advantage, all add to the general effect, which at this season of the year is peculiarly striking. Mr. Fortune's Moutans, both in the open border and in pits, from which the sashes are removed in summer, have blossomed beautifully; and in one of these pits we remarked a large bush of the Californian Ceanothus papillosus, full of gay flowers, as was also a smaller plant of C. dentatus. If these should prove to be perfectly hardy, as it is expected they will, they will add what at present is a desideratum among ornamental hardy shrubs—a good blue colour. Solanum crispum was blooming profusely on the conservative wall. We remember seeing a plant of this in the shape of a standard in Mr. Rivers' Nursery at Sawbridgeworth, where it flowers finely in this state, and is very ornamental. In the large conservatory the huge Brugmansias were covered with long orange and yellow trumpets; and we observed that the white one, called Knightii, was likewise in bloom, as were also some of the Acacias and other things. The deliciously sweet scented Tea Roses, with which the sides of the paths in this house are furnished, were just beginning to expand their flowers and shed their fragrance. These are subjects which no conservatory can well dispense with.

By far the most attractive feature of the gardens, however, at present, is Mr. Hosea Waterer's magnificent EXHIBITION OF AMERICAN PLANTS, which is now open, from 9 A.M. to 6 P.M., free to Fellows of the Society, and to the public on payment of 1*s*. On entering this "garden of flowers," for so it emphatically is at the present moment, one is struck with the variety of surface which is presented, richly clothed with blossoms of the most brilliant colours, the whole being agreeably and suitably broken up into clumps, by gravel walks neatly margined with grass; here, winding along the level ground—there, ascending, by rustic steps, a gentle eminence, planted with gay Rhododendrons, and flame and yellow-coloured Azaleas—then into hollows, glowing with flowers, of the same charming plants, while here and there a huge specimen presents itself on a little mount of green turf, all producing an effect which no description on paper can possibly convey. Certainly, no collection of exotics, not even Orchids, could afford half so rich a display; and when we recollect that the whole of the beautiful varieties of Rhododendrons and Azaleas comprising this exhibition are perfectly hardy, that no expense in the shape of glass, pipes, or fuel, is incurred in their cultivation, they must be admitted to possess many claims upon all lovers of flowers. The skill of the hybridizer has wrought wonders in blending the rich colour of the Indian species with the hardy constitution of the Americans, and the results are the numberless varieties of tint in almost every shade from pure white to the richest crimson, and from pure lilac to the richest purple, all possessing a sufficient hardiness of constitution to withstand the winters of our climate. A more charming addition to a nobleman's flower garden than a collection of the best varieties of Rhododendrons could hardly be suggested, and in every place, however small, some appropriate situation might be found for their cultivation. Among the many magnificent sorts now in bloom in Mr. Waterer's exhibition, the following are particularly worthy of notice:—Rembrandt, rosy pink, flowers individually large and fine; Rubens, rosy pink, trusses *under canvas*, somewhat loose; hyacinthæflorum, a small lilac-blossomed kind, quite a bouquet of flowers; atrosanguineum, fine crimson; densiflorum, plum colour; Currieanum, large flowers, and a good trusser; Archimedes, rose; Titian, glowing crimson, flowers arranged in compact conical heads; cœlestinum, delicate lilac; catawbiense grandiflorum, lilac shaded with rose; and Everstianum, a good old sort. The best white is certainly Mont Blanc. Among Azaleas, pontica princeps—yellow slightly suffused with orange—was by far the most conspicuous. Of deep-coloured kinds A. coccinea major was as good as any. It need hardly be mentioned that the great fault of the finer Rhododendrons is their early habit of flowering. Their blossoms are out before the frost has left us; and unless some protection is afforded them, their beauty soon gets spoiled. We are, however, happy to see, that by means of judicious crossings this evil is fast being removed, or at least is greatly remedied.

In the Orchard department, the fruit trees are generally very healthy. Apples are likely to bear a plentiful crop. Pears on walls have been much thinned by the late frosts. Notwithstanding the cold nights in April, an abundant crop had set, and was going on favourably, till the 14th of May, when the thermometer fell about 5° below freezing. This was more injurious, in consequence of its occurring after a high temperature, which prevailed a few days previous; for the flow of sap was thereby greatly excited, and the sudden check caused much of the young fruit to turn yellow and drop. Some sorts have stood better than others, but none better than the Forelle, or Trout Pear; a sort, therefore, particularly valuable in such seasons, as we have lately experienced. Peaches and Nectarines on walls appear a fair crop, and the trees are now putting forth a healthy foliage. Strawberries are likely to be a good crop; and a plantation of the best new and old sorts will this year be in full bearing, so that any one can have an opportunity of judging fairly of their respective merits. The ground is everywhere clean, and the whole in excellent order.

We understand that plants of the new Sikkim Himalayan Rhododendron are nearly ready for distribution to Fellows.

## Miscellaneous.

*Food.* — The following is a copy of M. Masson's patent, for improvements in the preparation of certain vegetable alimentary substances, for the provisioning of ships and armies, and other purposes where the said substances are required to be preserved. Patent, dated November 2d, 1850.—"The object of this invention is the preservation of vegetables, fruits, and some kinds of seeds, which are gathered in a green, moist, or succulent condition, in contra-distinction to those which, like Wheat, &c., are first allowed to ripen and dry. The process is applicable to Cabbages, Cauliflowers, Spinach, Sorrel, Carrots, Turnips, Potatoes, Apples, Pears, Cucumbers, Melons, Beans and Peas, and many others, and consists generally in drying the articles by a gentle heat, and subjecting them to pressure, so as to consolidate them previous to their being packed in cases for the sake of rendering them more conveniently portable. Modifications will of course require to be made in the treatment of different vegetables, fruits, &c. Claims.—1. The combined process or processes of drying and forcibly compressing such substances for the purpose of preserving them. 2. The preparation of the stalks of Cabbages and similar vegetables by drying them, and grinding them to powder or flour. 3. The preparation of Peas and Beans by the combined processes of immersion in boiling water and subsequent desiccation." *Mechanics' Magazine.*

*Sale of Plants.*—A small collection, consisting of Orchids from Java, and Rhododendron Javanicum, was sold the other day by Mr. Stevens, at the following prices:—Phalænopsis grandiflora, from 2*l*. to 6*l*.; Dendrobium Henshalli, a "new species," from 1*l*. to 1*l*. 7*s*.; and Saccolabium Blumei majus, 1*l*. 5*s*. The Rhododendrons fetched from 11*s*. to 18*s*. per lot, of which there were in all 25, and of the Orchids 79.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

LET neatness and order prevail in all the plant-houses, for however vigorous the growth of their inmates may

be, the effect produced is deficient, if the plants are not so arranged as that each may receive its proper share of room and light. Tying, stopping, and frequent turning, to keep every side of the various specimens in a healthy state, should be well attended to. Conservatory climbers will demand some attention, to prevent them from becoming entangled one with another. Let them be kept moderately thin, and not too closely tied in; for they never look so charming as when allowed to hang gracefully from the roof. Mandevilla, and some others, are very subject to green fly; and to keep these in check, use the syringe frequently in the afternoon, and endeavour to maintain a growing atmosphere, by sprinkling the dry surface of the borders every day after much sun heat.

### FORCING DEPARTMENT.

Admit plenty of air to Grapes which are colouring; maintaining a high temperature during fine clear weather. The litter used upon Vine borders may now be safely removed, except a little of the shortest and most decayed portion of it, which may be left as a mulching to protect any fibres brought to the surface by the warmth imparted to the soil during fermentation; and to prevent too sudden a check by the drying effects of strong sunshine upon the soil. Due attention should be paid to regulating the temperature to the various stages of the crops in Vineries. The healthy state of the foliage should always be kept in view; and to ensure this, admit air early; to dry off any excess of moisture before the rays of the sun come too powerfully upon the houses. Care should be taken to prevent, by frequent use of sulphur, the establishment of red spider or other insects. When no plants are grown beneath the Vines, the laterals may be allowed to extend themselves, so long as they do not by their shade interfere with the action of the sun on the principal leaves. Pay particular attention to the tying of the shoots, in the direction which will afford them the best opportunity of a healthy development. In the earliest house, as soon as the crop is gathered, the trees should be well washed with the engine, and syringed daily; the hot-water pipes, and any part of the house which is exposed to the action of the sun, should be washed over with lime and sulphur, to keep down red spider; and if the soil is dry, it should be well watered. These directions are given with a view to preserve the leaves, and to keep the plants in a healthy steady growing state as long as possible. By this means, the plants accumulate an extra quantity of elaborated sap, and avoid the injury arising from the alternate checks and excitements which are generally experienced during autumn in our variable climate, by plants which are allowed to go early to rest.

### FLOWER GARDEN AND SHRUBBERIES.

There are few plants which add so much to the beauty of the flower garden as the Humea elegans, of which some seed should now be sown, in order to secure a supply of fine strong plants for next season. The propagation of Pinks and many other useful plants for the flower garden should now be proceeded with, as they will strike freely at this season, and consequently no time should be lost in putting in a sufficient quantity of all the favourite kinds. Particular attention should be paid to the plants which were plunged in the reserve garden to fill up any gaps which may occur during the early part of the summer; and if any more can be spared from the late spring stock, they should be at once selected, as it is worth while to be at a little pains in keeping up a creditable display as late in the season as possible. Many of the fancy Pelargoniums are admirably adapted for planting in masses, and attention should be paid thus early to their propagation by those who possess only a few plants, that they may have as large a stock as possible for the next season. Amongst the most suitable varieties are Nosegay, Anais, Jehu superb, Hero of Surrey, Bouquet de Flore, &c. Shepherd's Victoria, and a few others which are very beautiful in the greenhouse, are too delicate for planting out of doors, except in very favourable situations, their flowers being of so slight a texture as to be quite disfigured by dashing rains.

### FLORIST'S FLOWERS.

Stretch a light awning over the Ranunculus bed; when shaded, water will not be so often required. If the flowers are intended for exhibition, they should have small glass caps or hand-glasses placed over them. These splendid flowers are not cultivated so much as they ought to be, considering the ease with which they may be grown. Carefully tend seedlings; those of the second year's growth will astonish, by the robustness of their habit; as they come into flower, mark those which show good properties, placing a small deal peg or tally against each, entering in a memorandum book their colour, qualities, &c. Should semi-double varieties exhibit any novel or striking points, these ought to be saved for the purpose of still further improvement, by crossing others with their pollen. DAHLIAS—Stake immediately, and water the young plants in dry weather. Sometimes snails make too free; it will be advisable by way of precaution, to put a ring of soot round each. Give Pinks liquid manure, reduce the buds according to the strength of the plants; keep them free from green fly; pinch out laterals; and as soon as convenient "pipe" the earliest shoots, and there will be time for another crop; some people layer Pinks, but they root so easily from cuttings, and are much neater plants, that we prefer the latter method. Do not forget Auriculas and Polyanthuses in pots, of course they are now in some cool and shaded spot for the summer; give them water as they require it, and see that the heads of seed are going on right. Propagate Pansies by the usual methods, &c. The stems of Carnations and Picotees will now elongate fast; carefully tie, but recollect that these ties must be occasionally looked to, and eased if they require it.

### HARDY FRUIT GARDEN.

It should be the aim of every cultivator of hardy fruits to induce a fruitful habit in all trees and bushes; and nothing conduces to this so much as summer stopping. The finger and thumb will do more at this season when the shoots are soft, than half-a-dozen knives in winter, and with far better results. To allow wood to be produced, which must not only be cut away again, but which, during its growth, is materially damaging the portion which is to remain, carries with it the appearance of very bad management to every reflecting mind. Thin the young shoots which have been thrown up by the Raspberry stools, leaving from three to six of the best, according to their strength; these will form fine strong canes, which may be trained as arches, or tied to stakes, at the next winter pruning. Any young shoots coming up at a distance from the old stools, may be left to form plants, which may be taken up in winter, to furnish new plantations, if such are likely to be required. Caterpillars on Gooseberry or Currant trees should be destroyed by hand-picking, or by dusting the trees with a little quick-lime. The cleanest way of proceeding is to dissolve some lime in water; and after allowing it to subside, to syringe the trees with the clear liquid.

### KITCHEN GARDEN.

All crops, which it is an object to bring to a high state of perfection in a short space of time, as early Peas, Cauliflowers, &c., will be considerably benefited by being watered with liquid manure; first loosening the surface of the soil with a fork, to allow the liquid to permeate the mass more thoroughly, and at the same time to produce a surface less favourable to evaporation. Another advantage arising from frequently stirring the soil, is in its allowing a freer action of sun and air, and at the same time the growth and increase of weeds will be prevented. Advantage should be taken of all dull and showery weather to prick out young seedlings of Celery, Cabbages, &c., into nursery beds, and to transplant the strongest plants of earlier sowings into their proper places. Basil, Savory, Tomatoes, and other things raised in hotbeds, should now be transplanted. Continue to sow Peas, and Broad and Kidney Beans, in succession, as soon as those of the last previous sowing appear above ground. Peas of former sowings must be furnished with stakes of the requisite height, as soon as the rows are perceptible; and when the plants have grown to within a few inches of the tops of the stakes, their points should be pinched off. Do not allow any crops which are cultivated for the sake of their roots or leaves to run into flower or seed, as Onions, Spinach, Parsley, Rhubarb, Lettuce, &c., but let the whole energy of every plant be directed, if possible, to the perfect development of that part for which it is cultivated, whether it be leaf or fruit; and any plants which have passed the stage in which they are useful, should be immediately removed. The early-grown crops of Parsley now require thinning; leaving them for the present about 4 inches asunder, and retaining the finest curled ones. As the plants increase in size, the intermediate ones may be cut away as they are required for use, or transplanted. Radishes and Letruces should now be sown on very rich moist ground; but, if the soil is of a hot and sandy nature, it will be better to cultivate these salads under the shade of a north wall during the summer.

State of the Weather near London, for the week ending June 5, 1851, as observed at the Horticultural Garden, Chiswick.

| May and June. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 30 | 28 | 30.407 | 30.402 | 74 | 45 | 59.5 | 57 | 53½ | E. | .00 |
| Satur.. 31 | 1 | 30.470 | 30.407 | 68 | 35 | 51.5 | 57½ | 54 | E. | .00 |
| Sunday. 1 | 2 | 30.363 | 30.195 | 76 | 43 | 59.5 | 57 | 54 | N.E | .00 |
| Monday 2 | 3 | 30.181 | 30.042 | 72 | 41 | 56.5 | 58 | 56 | N.W. | .00 |
| Tues. .. 3 | 4 | 29.879 | 29.672 | 74 | 39 | 56.5 | 58 | 56 | S.W. | .08 |
| Wed. .. 4 | 5 | 29.904 | 29.819 | 66 | 36 | 51.0 | 57½ | 54½ | N.W. | .01 |
| Thurs... 5 | 6 | 29.333 | 29.773 | 62 | 45 | 53.5 | 57 | 55 | S.W. | .14 |
| Average .. | | 30.148 | 30.044 | 70.3 | 40 5 | 55.4 | 55.7 | 54.7 | | .23 |

May 30—Very fine; clear at night.
— 31—Very fine; clear and cold at night.
June 1—Very fine; clear at night.
— 2—Very fine throughout.
— 3—Fine; very fine; cloudy.
— 4—Cloudy; fine, with some low white clouds, and deep blue sky; clear and cold at night.
— 5—Overcast; boisterous; rainbow at 8 p.m; densely clouded.
Mean temperature of the week, 2¼ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending June 14, 1851.

| June. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 8 | 69.8 | 46.3 | 58.1 | 9 | 0.10 in. | 3 | 5 | 1 | — | 4 | 6 | 4 | — |
| Mon. 9 | 71.4 | 48.2 | 59.8 | 10 | 0.50 | 2 | 4 | 1 | 1 | 3 | 9 | 3 | 3 |
| Tues. 10 | 71.9 | 48.9 | 60.4 | 10 | 0.95 | 1 | 5 | 1 | 1 | 3 | 7 | 4 | 3 |
| Wed. 11 | 72.6 | 49.4 | 61 0 | 7 | 0.47 | — | 7 | 1 | 1 | 3 | 5 | 8 | — |
| Thurs. 12 | 72.6 | 49.3 | 60.9 | 9 | 0.78 | — | 5 | 3 | 1 | 5 | 7 | 2 | 2 |
| Friday 13 | 73.4 | 49.5 | 61.4 | 10 | 0.56 | 1 | 6 | 3 | 1 | 2 | 6 | 5 | — |
| Satur. 14 | 74.0 | 50.2 | 62.1 | 9 | 0.21 | 1 | 2 | 4 | 1 | 4 | 7 | 5 | 1 |

The highest temperature during the above period occurred on the 12th and 13th, 1842—therm. 90deg.; and the lowest on the 8th, 1838—therm. 35 deg.

## Notices to Correspondents.

"BIRDS,—HOW CAN I LEARN TO TAME THEM?" *Arabella C.* This is not so difficult as you imagine; nor is it fair to lay claim to any particular "art" in the matter,—successful though we have been in nearly every effort made. The "law of kindness" is the talisman by which these things are effected; a law which, if it were brought into more general practice amongst ourselves, would make society at large infinitely better than it is. The spell can be worked at any time by the magic rod of "affection." If this be properly handled, we must ALL fall before it. Such is the extent of power. Remember, however, to use that power for good *only;* and never dare attempt to commit any breach of confidence. Your birds will then be "tame," and will love you. *W. K.*

BLIGHT: *H W A.* Your Roses are attacked by Uredo rosæ, a parasitical fungus. You can do nothing more than cut off the branches and burn them.

CINERARIAS: *Iota.* Next week.*

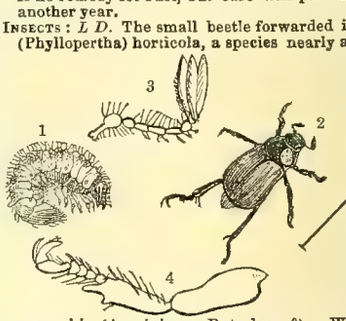
DRYING PLANTS: *Botanicus.* All you can do is to press them between leaves of paper, and change the papers as often as they become damp. When species have a tendency to cast their leaves, that may be prevented by dipping the specimens in a weak solution of corrosive sublimate for half an hour. Their colours cannot be permanently preserved. For further information on this subject, see pp. 215 and 437 of our volume for last year.‡

FUNGUS: *B R W.* The wood is attacked by some of the dry rot fungi. Immediately remove all the decaying wood and burn it. At the same time provide apertures through which a strong current of air may be maintained beneath and above the floor. If you do not take care, you will find all your timbers rotten. Never store Potatoes, &c., on wooden floors in damp, unventilated places.

GOLD FISH: *Sub.* Your brown fish may be expected to change colour when they get older. The pond should be furnished with water plants, to screen them from the fierce rays of the sun in hot weather. You will find much information on their management in former volumes, more especially at pp. 36 and 213, 1844; and 3 and 36, 1845.

GRAPES: *Cymro* Your Grapes are attacked by rust. Rust is caused by any kind of injury to the skin of the Grape when young. Therefore the skin of your Grapes must have been injured when young—by what means we cannot tell. There is no remedy for rust, but care will prevent its appearance another year.

INSECTS: *L D.* The small beetle forwarded is the Melolontha (Phyllopertha) horticola, a species nearly allied to the cock-chaffer. The accompanying is a figure of it, and an account of its habits will be found at page 700 in the vol. for 1844. Fig. 1, larva; 2, perfect beetle; 3, nine-jointed antennæ; 4, a fore leg of the male. *W.—Norway Spruce.* The shoots of the Spruce Fir sent are infested with an aphis (A. pinivora Ratzeburg?). We know no more likely plan to get rid of these insects than to enclose the trees, if small enough, in a canvass cover, which must then be filled with tobacco smoke. We fear, however, there are other influences than aphides which prevent the growth of the trees. *W.—An Old Sub.* The minute beetles which you have found in the Apple blossoms are Cateretes pulicarius. Several of the species of this genus feed upon pollen. If you were to lay a few sheets of paper pasted together and covered with pitch beneath the trees, and then have them well shaken, great numbers of the beetles would fall, and be thus destroyed. The species is quite distinct in habits and structure from the little beetles which destroyed Mr. Westwood's Strawberries. *W.—W and Co.* The beetle found on the Vines is not the Curculio Nucum (which is found only in the Nuts). It is the common Otiorhynchus sulcatus, which may be caught at night by laying a sheet under the trees and then shaking them. *W.*




IVY: *E F L.* Ivy will suit your purpose best. It will not harm the walls. ‡

LIGHTNING-CONDUCTORS: *Country Squire.* The lightning-conductor should be a stout rod of iron or copper, pointed at the end; copper does not rust, and is on that account often preferred to iron. So long as the rod is not connected with the house by a conducting substance, it seems to matter little what is used to keep the rod in its place. The rod should terminate below the ground in two or three branches, and if these can be placed in a natural spring of water, so much the better. See the "Penny Cyclopædia," article "Thunder-rods."

LUSUS: *J C L.* It is common in England, where the plant that produces such sports is usually called Cytisus Adami and purple Laburnum; sometimes the flowers are those of C. purpureus, sometimes of Laburnum, and sometimes between the two. Its true history is uncertain. *Au reste,* it is sad work; and will effectually drive off English capitalists.

NAMES OF PLANTS: *P B.* 1, D. calceolaria; 2, D. cupreum; 3 is much shrivelled, but looks like Oncidium pelicanum—a variety of O. reflexum; 4, Phytolacca octandra.—*Barbara.* Your plant is Fabiana imbricata, a half-hardy shrub, requiring nearly the same treatment as a Heath.‡—*E S.* Hippeastrum Johnsoni.—*W.* It has not the most remote resemblance to Tussac Grass.—*Geo. Pickering.* Your plant is some Hoarea, but we cannot waste time in determining what species, unless you send sufficient specimens.—A few inquiries stand over for further consideration.

MUSHROOMS: *J George.* Your proliferous Mushroom is a curious thing; but such cases are not very rare in Mushroom-houses.

PEACH-HOUSE: *J L H.* Of the two aspects, the south-west by west is the best.‡

RED SPIDER: *E W W.* The vapour of sulphur is, we believe, the only effectual destroyer of this pest.‡

TOBACCO: *J H I.* We have seen much better English Tobacco than that you have sent. Nevertheless we cannot for a moment admit that it can be cultivated profitably in Great Britain, unless with the help of a tax on the public, disguised under the name of a protecting duty. You will find upon inquiry that it is in the north of Europe a pauperising worthless crop. Surely it is obvious that a plant grown in an unfavourable climate, with costly appliances, high rents, much manure, &c., and expensive labour, can never enter into mercantile competition with the same plant with a most favourable climate, low rents, cheap appliances, no manure, and labour of nominal value. We should be sorry to see a great branch of revenue damaged by granting permission to British farmers, to ruin themselves by hopeless attempts to grow a bad article.

VINERY: *G B.* Of the two aspects, the south-west is the best.‡

### SEEDLING FLOWERS.

CALCEOLARIAS: *Amateur.* Of your flowers 1 is the best, both in colour and shape.*—*Reader.* Much too small for "show flowers."

GLOXINIAS: *Sub.* 1, large white, with a velvet purple throat; 2, in the way of Cartoni; 3, violet. 1 is the best, 2 is too small, and 3 does not expand sufficiently.*

PELARGONIUMS: *W C.* A good scarlet, but that is all we can say about it, for it had fallen to pieces before it reached us.*—*Beta.* Your "fancy" is pretty, and well worth cultivating.*—*J M A.* A confused mass of detached petals when received. 2 and 4 have good colours.*

VERBENAS: *W D.* Your pink and white Verbenas were somewhat shrivelled; but they do not appear to be near so good as some of the French kinds.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE

ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

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**The Agricultural Gazette.**

*SATURDAY, JUNE 7, 1851.*

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 11—Agricultural Society of England.
THURSDAY, — 12—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 18—Agricultural Society of England.
THURSDAY, — 19—Agricultural Imp. Soc. of Ireland.

THERE is a particular stage of growth at which the strongest of the strong, and even the fairest of the fair part of creation are said with truth to be "at the *awkward* age." The simplicity and weakness of childhood, and the vigour of maturity meeting upon neutral ground, as it were, present that singularly chaotic struggle in the frame, which, confusing for a while the appropriate characteristics of either state, produces that anti-symmetrical condition and effect upon the eye of the beholder that has been not inaptly described as "all arms and legs."

The present condition of agricultural economics, and of the agricultural literature therewith connected, is not a little suggestive of this temporary state of adolescence, ungraceful it may be to the eye of the critic, but replete with signs of excellent promise of development. It must always be the misfortune of a class, not much given to literary pursuit, even upon topics the most closely allied to its own interests, and not affording, therefore, much encouragement even to its most able men to venture into print—to realise in a great measure the foregone conclusions of its own prejudice, and reading but little, to find but little worth reading. That this *has been* precisely the condition of agriculture in our own remembrance there is scarcely one who will deny: that agriculture is peculiar in this respect is probably not true: that the art is rapidly growing out of this condition, though not yet clear of it, has received some striking evidences from the recent contributions of the press. We have begun to think, to put our thoughts into language, and our language into speeches, pamphlets, reviews, and books: but what we have yet scarcely begun to do is to put sufficient faith in each others' intelligence or attainment, to save the necessity of a fresh reiteration by each writer of a string of undisputed premisses before each conclusion that he arrives at. We have learnt to express, but not to *sup*press.

The careful and able work of Mr. DEAN* may afford to submit to this preliminary qualification of the praise with which we regard it. "There is much in your book that is new," once remarked a spiteful reviewer, "and much that is good; but that which is new is not good, and that which is good is not new." We have seldom read a work which suggests a happier converse of this cruel antithesis. We would say of it, *è converso*, that if the author had only ventured on a bolder ellipse, in his work, of that which is not new, its excellence, as a work, would have been more striking, and its utility not impaired. There are some truths that instead of being strengthened, suffer some injustice from renewed affirmation. The obvious duties of landowners to their tenants, and of tenants to their land, and their labourers; the recognition of geology as having something to say in the choice of soil in a farm, or an estate, the advantage of drainage and of suitable tenures, and security for the tenant's capital, are certainly facts, and rather important facts too; but like those of the multiplication-table, or the preliminary page of axioms in Euclid, they have become potential, and may be pretty well assumed without elaborate proof, by a writer who has so much to say, well worth a fresher attention, as the author of "The Land Steward."

* "The Land Steward." By G. A. DEAN, Agricultural Architect and Engineer. Author of "Essays on Farm Buildings, Labourers' Cottages," &c.

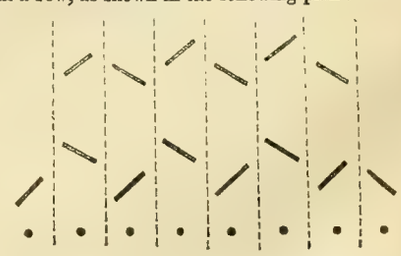
Mr. DEAN'S work is comprehensive in its character and (subject only to the above stricture), is bold, truthful, and original in its treatment. It consists of 12 chapters, all upon useful and practical subjects, to every class connected with the land-tenure, fixtures, and dilapidations, valuation, drainage, roads, farm buildings, timber, with some excellent remarks on climate. The pages on dilapidations have the virtue of an explicit tone rarely attempted upon these *vexatæ questiones* of tenant-law, and are followed by a tabular statement of the leading law cases on fixtures, accurately compiled, and of great importance. There is a passage in this chapter to which, however, we must take exception. Mr. DEAN claims amongst other securities required "a power to *compensate the tenant for improvements* effected on estates, where the landlord has *not power to grant leases*, or where his interest is so limited that he should not be required to grant them. In this case, power should be given to the tenant to effect such improvements, either by buildings or otherwise; and should he at any time quit his holding, he should have *a claim on the incoming tenant, or against the estate.*"

This reminds one a little of the advice of the French Princess to the starving people, when they could not get bread to content themselves *with pastry*. The power to charge an estate with compensation to a tenant for improvements, or to devolve such a charge upon the next owner, is one of the highest order, which *no* owner of less than the fee simple can exercise, whilst the power to grant leases, even of 21 years, is commonly possessed even by life owners. The *alternative* suggested by Mr. DEAN broaches unconsciously the grand besetting difficulty of the compensation clause, a far greater than exists in the general extension of the power of leasing, and the conferring of which on life owners, viz., a general power to charge future interest, would amount to a virtual abrogation of settlements, and of the law of entail altogether. As to a running charge upon the land, or the next occupant of the farm by an outgoing tenant (between whom and a new comer no possible contract of any sort can be raised in law), the proposal, easy-sounding as it is, treads upon a hot-bed of difficulties, far worse and more impracticable than it seeks to cure.

Writers upon agriculture have scarcely as yet a conception of the enormous undercurrent of conflict between our *whole system* of real property-law, with the present demands of our advancing agriculture. Current events are making them feel their way to the subject. They will find presently what a life-and-death struggle it is, and that the palliatives they suggest may damp the flame of strife, like fresh fuel, for an instant, but only to make it burn the fiercer, and that very shortly. We shall renew our notice of Mr. DEAN'S valuable accession to the agricultural library.

## REPORT ON THE AGRICUTURAL SECTION OF THE GREAT EXHIBITION.

No. V.—We come now to the HORSE-HOES. Every farmer has heard of Garrett's Patent Horse-hoe for work on the flat, whether corn or roots, provided the plants be in rows not less than seven inches apart; but many have not yet seen it, and many more have not begun to use it. This is universally acknowledged to be one of the most effective implements ever invented; and its principal advantage is the celerity with which it will perform the work, as compared with hand-hoeing, so that when the weather just suits, the farmer may accomplish the operation, which otherwise must have been, in a great measure, imperfectly done, in consequence of rains, &c., interfering with the slow progress of his men; and the cost with this implement amounts to no more than 6*d.* per acre, as from 10 to 15 acres per day may be hoed with one horse, a man, and a boy. The hoes are attached to levers like those of a drill, each having an independent vertical motion, and being set to any required depth by regulating keys. There is a swing action for guiding the hoes, according to the swerving of the drill-rows. All the levers are raised at once by eccentrics and chains; and any one or more can be held up out of work by means of springs. The cutting-hoes are straight blades set diagonally to their work, and arranged two in a row, as shown in the following plan:—



A bar, carrying harrow tines, is suspended behind the hoes, which is of service for shaking out the weeds from the cut soil. A box is attached for sowing Clover, &c.; the spouts are round, but flat and expanding at the bottom, so as to spread the seed. The axle-tree of

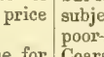
this machine is made moveable at both ends, to suit the varied intervals between the rows of cropping; so that it may be also worked on ridges as well as the flat.

W. Smith, of Kettering, Northamptonshire, has invented an admirable implement of the same kind, very simple in its construction, and calculated to be of service to those who hesitate to purchase the more expensive one of Messrs. Garrett. The hoes are fastened upon two cross-bars—one before the other—indented or toothed so as to hold the hoes firmly in a certain place and position. These bars can be easily lifted by a couple of handles. A seed-box is fixed upon the wheels in front of the machine.

Busby's horse-hoe, for use on the ridge, is an excellent implement, from the form of the cutters; the front or middle hoe being in shape something like a letter D, which is better calculated to cut weeds and roots than the triangular share. A hoe invented by D. Harkes, of Mere, near Knutsford, seemed to us to possess considerable merit. The beam has a wheel at each end, the fore one being steered by the hook holding the whippletree. The side knives resemble small single winged shares facing each other, and preceded by coulters; they are set upon two bars held parallel to the beam by two levers, attached to the beam by joints at their middle points. As these levers are set more or less obliquely to the beam, the hoes are more in or out; and yet while thus fitting a narrower or wider row, the hoes never approach nearer to each other, so as to impede their action. A lever on the right hand plough-handle alters the width by a connecting rod, without the plough being stopped for the purpose. A parallel expanding horse-hoe, by J. Barker, of Dunnington, near York, has also the same kind of action, but regulated by screw and crank between the plough handles; this is, perhaps, a neater arrangement. E. Hill, of Brierly Hill, Staffordshire, exhibits his prize horse-hoe, which has a remarkably good method of expansion and contraction, the width being altered at pleasure, when in motion, by a scissor-like action given to the handles. E. H. Bentall, of Heybridge, Essex, shows a patent mangle or ridge hoe, which, like his broad-share and subsoiler, has a narrow plough frame carrying a chisel point in front, and a forked share (of shape something like a mackerel's tail fin) at its heel, the two blades being turned up a little at their tips. A short cross-beam carries common bent cutting knives, which can be shifted along it.

There are likewise other implements of the horse-hoe species, intended either for cutting up weeds, stirring, agitating, and loosening the soil about the roots of the young growing crop, harrowing and pulverising the surface, or earthing up the plants in ridges. Ransomes exhibited an implement capable of performing all these different operations of ridge culture. It was invented by John Clarke, of Long Sutton, Lincolnshire, and is called the universal plough. By an easy transition of shape, effected in a simple manner, it becomes: 1st, a double tom, or ridge plough, for opening or closing the soil in ridge work, for setting out lands for common ploughing, or opening surface drains; 2d, a moulding plough, to be used in moulding up root crops, Peas, or Beans; 3d, a horse hoe, or cleaning plough, with curved coulters for cleaning the sides of ridges, or with flat hoes for broad work; 4th, a skeleton, or broad-share plough, to which shares of different breadths and with rising prongs may be attached, for the purpose of clearing land from weeds and rubbish. And the price is low, considering its general utility.

The double ridge-plough is used in seed-time for opening the furrows; and we observe that A. Low, of Dundee, has made an improvement for this purpose in his double water-furrow roller plough. The double breast, which can be expanded by a screw, is followed by a small roller of peculiar form, resembling, in fact, a double longitudinal section of the Crystal Palace,—the circular protuberance in the middle pressing the furrow into a neat and even trough. From North Britain, we of course expect to see various appliances for perfecting ridge husbandry; and among the less important improvements is one from G. Ponton, of Grongfoot, by Linlithgow,—being a double-winged or ridging plough furnished with a "marker,"—that is, a sort of small anchor attached by a hinge to the beam, the fluke drawing a line on the unploughed land at any requisite width, to guide the ploughman in his next furrow.

Of hand-hoes and spuds there are no doubt all varieties, to be found on searching in the proper departments; among the implements in Class 9 we noticed only two that seemed very remarkable. One is a double hoe, invented by Dr. Spurgin. The blade, which is sharp all round, is in figure somewhat like two musical brackets set together,  only rather broader in proportion to the length, and from the centre rise up two long shafts or handles, making a wide angle with each other, like the two sides of a letter V, and slanting in the direction of the hoe's length. We suppose it is to be worked by two persons at once; but the cutting blade is not large enough to do the work of more than one. Perhaps it may be designed for some peculiar operation in gardening, as certainly no farmer would venture to go into the field with a tool like this for his men. The other contrivance that we saw is called "A Lady's Garden Implement, combining hoe, spud, and rake all in one." It consists of an iron hand-rake, having a blade at each end of the row of teeth, one pointing nearly in the direction of the handle, the other the opposite way. It is designed by B. Ebbs, of 9, Lower-road, Islington; and our farmers' wives accompanying their lords into the agricultural department will find in this tool what can save them a multiplicity of instruments, and enable them to extract weeds between closely planted flowers without the necessity of treading on the beds, or stooping to pull up weeds with their hand. *I. A. C.*

## THE TULLIAN SYSTEM.

IF the principles upon which the Tullian system is founded are true—if the opinions of Liebig and other professors of agricultural chemistry are just—if the practical results of our working our naked fallows are to be relied on—crop after crop may be produced, improving with each successive production, by the soil being kept so continually open and broken up, as to admit the constant inflow of the atmosphere, of rains, and of dews, and all other natural operating causes of fertility, so as to supersede the necessity for the introduction of all other organic elements, as manures, and—with the exception of those of which there may be a deficiency in the natural composition of the soil—of all inorganic matters. I do not, however, infer from these premises that greater fertility will not be produced by such additions.

As the recovery of fertility in our exhausted lands in Ireland has always been left to the slow operations of unassisted Nature, in unworked fallows, or, in Irish parlance, "waste," I have endeavoured, since the failure of the Potato crop, and consequently of the intermission of an only worked fallow, to impress upon the farmers the probable advantage of availing themselves of the fertilising effects of natural causes, aided by mechanical operations, while they produce disposable crops; and this by adopting grain as a fallow crop on their exhausted lands, thus rendering those lands, which they leave for years in an unprofitable state, and indeed in a state of loss to them; for the rent of these lands must be paid from the produce of the cultivable grounds, productive of an ample sufficiency of home grown food for their consumption, enabling to keep up that export of grain, which, while they fed on Potatoes was—and indeed, is—our main source of income. Indeed, I saw not then, nor do I yet find, rife as the time is in inventions, any other way of meeting effectually the exigencies of our case. Our poverty must prevent us availing ourselves of the usual fallow crops; we could only grow Turnips, &c., for the market; we could not feed, nor consequently could we obtain manure for any great extension of their tillage. We must have grain fallow crops, or unworked fallows, a naked fallow is all unthought for.

Nearly one half our land is in this unprofitable natural state of recovery from exhaustion, left after the last grain crop to its natural products—a many years' accumulation of weeds; this herbage is picked up by some miserable pinched cattle; at first, perhaps, it will require half a dozen acres to give even this sort of support to a thing called a cow, worth from two to four pounds. Sir John Young, in his report on the Balieborough Union, county of Cavan, says that in 1847, in the union there were

| | |
|---|---|
| Under crops ... ... ... ... ... ... | 33,014 acres. |
| Bog and waste ... ... ... ... ... | 8,592 " |
| Uncropped and not meadow ... ... ... | 46,086 " |
| | 87,692 |

Thus more than one-half of the union (46,086 acres) is not under crop; and Sir John asks "Now what becomes of all this land and what does it produce?" and he replies "It passes under the denomination of pasture, but it is in reality fields utterly uncared for; and though subject to every burthen of rent, tithes, county cess, and poor-rate, producing nothing but noxious weeds, Sedge or Coarse Grass. These fields, exhausted by several crops of grain, taken in succession until the land would yield no more, have been cast out to rest, as it is called, or recruit their powers through time and the influence of the elements, without any help from man." The Commissioners of Poor-law Enquiry, Ireland, Appendix F., state, "In Cavan agriculture is in the most wretched state imaginable. The rotation is—1st, Potatoes from lea; 2d, Potatoes, repeated with some manure; 3d, Wheat, Flax, Barley, or Oats; 4th, Oats; 5th, Oats; 6th, Oats; and so on, as long as they can. Not much Wheat is grown. If they have a field in lea, likely to yield a better crop, on which to exercise this scourging system, they leave the land, which they have deprived of its productive powers, to come round by time for a repetition of their former operations." And this is the general prevailing system of Ireland, with some variations, such as omitting the manure altogether on the richer lands, burning the poorer lands; and, since the failure of the Potato crop, laying what little manure they have on the Oat stubble, to obtain yet another crop of Oats.

I believe, under the faith of Tullian principles, that this land might be turned to better account, and afford the employment so much required in the country; that the first year's crop would pay all expenses, including rent and taxes, and even leave some small profit, while in succeeding years the returns ought to be so much larger, with reduction in labour, that indeed so large a surplus over the cost of production would be obtained, as to enable the cultivator to supply himself with stock to consume the green crops which he might then profitably cultivate, and for the small seeds, for which the ground would then be so well prepared.

But preaching was vain; and though I had charmed ever so wisely, the voice of the charmer was not listened to. I now hope to speak more forcibly, by putting into wider practice those suggestions which have possibly hitherto been disregarded, as supposed only to exist in theory, or little esteemed, as supported only by limited experiments and the deductions of reason; for as my friend, if he will permit to me this familiarity, the Rev. Mr. Wilkins says, there are men who value experience by its width, not its closeness of observation.

Another objection which in Ireland is of great weight, and indeed where, from the cheapness of labour, it has least excuse for existing, lay in the apprehension of the heavy expense of hand labour, although hand labour is not necessarily involved in these operations; but this objection I trust I shall remove by the subjoined statements of the expense hitherto incurred in the hand tillage of 8 acres of land, which I believe will be found not to reach the expence that would have been incurred to support the labourers and their families, for the time they were employed, in the poor-house.

These 3 acres are part of two small farms, that by the poverty of their late occupiers, and the course of cropping, which their poverty and the custom of the country entailed upon them, have been reduced nearly as low as land could well be. For more than six years, except in one instance, no manure has been laid on these farms; the hay, the straw, and even the house manure, having been sold off; ejectment and a sponge having cleared them also of their tenants, and two or three years' arrear of rent.

Field of 3½ acres, very long in tillage, in successive crops of Oats, no manure for several years, got a ploughing in 1848-9 with the intention of sowing Oats, but occupier not able to purchase seed, and therefore abandoned to its natural products, loaded with Couch Grass and other weeds. Turned by spade in January, 1851, 8 or 9 inches deep, in flat ridges, 11 feet wide, with 2 feet trenches; harrowed, and a good deal of Couch Grass gathered off; Oats sown by hand, in rows about 23 inches apart, 6 rows in a ridge, and covered from the trenches, the trenches being dug so deep as to raise two or 3 inches of subsoil; the seed sown, about 6 stones to the acre. This field, under ordinary treatment, not supposed capable of yielding a crop, certainly not more than 60 or 70 stones to the acre. Dug between 7th January and 1st February, 1851; sown between 8th and 14th April

| | | | |
|---|---|---|---|
| Turning with spade ... ... ... ... | £2 | 8*s.* | 1*d.* |
| Harrowing ... ... ... ... ... ... | 0 | 8 | 9 |
| Gathering Couch Grass ... ... ... ... | 0 | 6 | 3 |
| Digging trenches, and shovelling clay on ridges | 1 | 2 | 2 |
| Seed, 21 stones at 1*os.* the barrel of 14 stones... | 0 | 15 | 0 |
| Allow for sowing (done by myself) ... ... | 0 | 5 | 3 |
| Or, 1*l.* 10*s.* an acre. | £3 | 5 | 6 |

Field of five acres much exhausted upland meadow, not having been manured from time immemorial, ploughed, and two crops of Oats taken in succession, left to Nature one year, covered with coarse weeds and some Couch Grass. Turned with spade in February and March, 1851, 8 or 9 inches deep, in flat, ridges 9 feet wide, with 2 feet trenches; Oats sown by hand, in rows about 23 inches apart, 5 rows in a ridge, and covered from the trenches; the trenches dug deep, so as to raise 2 or 3 inches of the subsoil, the seed about 7½ stones to the acre. This field, under ordinary treatment, not considered able to give a remunerative crop, supposed equal to about 70 stones to the acre. Dug between 3d February and 29th March, 1851; sown between 8th March and 4th April.

| | | | |
|---|---|---|---|
| Turning with spade ... ... ... ... | £3 | 7*s.* | 8*d.* |
| Harrowing ... ... ... ... ... ... | 0 | 7 | 10 |
| Dressing ridges with spade, digging trenches, and shovelling clay in ridges ... ... ... | 1 | 13 | 8 |
| Seed, 38 stones 1 lb., at 10*s.* a barrel of 14 stones | 1 | 7 | 2 |
| Sowing ... ... ... ... ... ... | 0 | 7 | 6 |
| Or, nearly 1*l.* 9*s.* an acre. | £7 | 3 | 10 |

A field of 7¼ acres, well manured six years ago, a Potato crop taken, and two successive crops of Oats; they would have taken a third, but could not, and left "waste;" very weedy, but considered in better heart, and well capable of yielding a crop, much more so than either of the others; supposed equal to give 100 or 110 stones to the acre; was ploughed in February, and sown broadcast, under the harrow, and trenched from deep furrows in the middle of April. It is proposed to compare the produce of this field with those of the two hand worked and sowed in wide rows. It has evidently the advantage of them in condition, and it will be seen whether the after labour of the latter will compensate for their inferiority. *J. M. Goodiff, Granard, May* 23.

## CULTURE OF SAINFOIN.

IN a former paper, we introduced this plant as deserving of more extended culture upon lands suitable for its growth. We then promised at a future time to enter more minutely into its details, and we shall now endeavour to fulfil that promise, by describing as clearly as may be compatible with the shortness of our space, the best methods of cultivation. It is well known that Sainfoin delights in all dry, calcareous soils; and light sand, and gravelly loams, having a calcareous subsoil, are equally favourable to it. To ensure a fine crop, and one that will continue good for a term of years, it is necessary that the land should be clean and in good condition; for to the neglect of these principles of good husbandry may be attributed the very generally received opinion of the south-country farmers, that the first year's crop of Sainfoin is much inferior to the after ones; while upon highly cultivated soils the first year's crop is generally found to be the heaviest.

However, the cultivation of Sainfoin may be separated into two divisions, which, for convenience sake, we will describe—the first as the permanent, and the second as the alternate system.

The first is practised in the southern counties previously mentioned by us as the head quarters of Sainfoin

farming, and where the Sainfoin leas remain several years, and are of great importance to the large flock-masters. There the practice is to sow about 5 bushels of rough seed per acre, with Barley or Oats, put in after Turnips, and to add 4 or 5 of lbs. Hop Clover to fill up the deficiency of the first year's growth. The more spirited farmers, occasionally have a crop of Swedes, followed by Rape, the latter being fed off early; the land is put in with Wheat, and the same quantity of Sainfoin is drilled across the rows of corn in the spring; and as the land is intened to remain in Sainfoin for a term of years, this plan is a very good one, for much additional fertility is given by feeding off two successive green crops with sheep, and the tillage the land receives gives a great check to the growth of weeds. One cause of Sainfoin leas so soon becoming a mass of Couch and Rye Grass, is the practice of feeding sheep with hay, that has stood too long before being cut; all good managers, therefore, are careful to use only such hay (upon land intended for Sainfoin) as is made from Grass cut before the seed is formed.

Sainfoin is usually fed or cut for hay the first year; the time for cutting begins as soon as the beautiful blossoms of variegated crimson make their appearance. The manner of making into hay is not very different from that of Clover, but care must be taken to move the swathes as little as possible, while the sun bears much power, or a great deal of the leaf, the best part, will be lost.

In the alternate system, lately introduced upon the light land farms of Suffolk and Norfolk, Sainfoin takes the place of the ordinary Clover or mixed leas, and its becoming more extensively cultivated may be attributed both to its being so highly esteemed as food for sheep and other stock, as well as to its being a most excellent preparation for Wheat, when ploughed up after the first or second year. About 4 bushels of seed are sown with Barley, grown after Turnips, or, what is better, the seed is drilled with a common coulter corn drill, across the rows of a crop of Wheat or Barley, that has been put in after a root crop, fed off. The plan we have practised with the most success is by drilling the seed upon young Wheat, on land in good condition, and that has been thoroughly cleaned. The seed vegetates with greater certainty when the land is moderately firm, with a finely pulverised surface. Seed of Burnet, Rye-Grass, and of a variety of brown Grass (?), is too often grown with Sainfoin, and it is very difficult to separate from the seed while it remains in the husk. When clean seed cannot otherwise be obtained, "Drewe's" or "Milled" seed may be sown, from 50 to 60 lbs. being used per acre. The husk is removed from the seed by subjecting it repeatedly to the rubbing action of a pair of millstones. The seed will vegetate sooner, but is hardly so certain of producing a plant as rough seed. Sainfoin seed can seldom be bought for less than 30*s.*, and it sometimes exceeds 40*s.* per quarter—the produce of clean drawn seed from a quarter of good seed is a trifle above 1 cwt. From this it will be seen that the expense of sowing down an acre varies from 15*s.* to 25*s.*, which, upon poor land, is much too great an outlay to be compensated for by the produce of a single year; still, when it remains for a succession of years, upon the poor light soils of this country, I believe there is no plant, whether in its produce of nutritious sheep food, of hay or of seed, or in its amelioration of the land by rest, is cultivated so cheaply, or is of so much advantage to the farmer.

An important feature in its culture is the almost marvellous effect which sometimes results from the application of 3 or 4 cwt. of gypsum per acre. Instances occur where the increased value of produce from the first crop exceeds many times the value of the manure, and, at the same time, in other cases, the benefit by the use of gypsum is quite imperceptible. Our advice is always to try whether the gypsum is productive of advantage, before applying it extensively. *H. R.*

## Home Correspondence.

*Mr. Murphy's Archimedian Agricultural Machine.*—Relying upon your sense of justice and candour, I expect and solicit that you will give insertion to this communication, in order to reply to an article which appeared in your Journal, as quoted in the *Express*, which purported to convey an impartial review of the model of my "Archimedian Agricultural Machine," now displayed at the Great Exhibition of 1851, and for which I have obtained a provisional registration under the late Act. If such criticism arose from a candid and impartial spirit, I should have no objection to its publication; but when it evidently commits mistakes that a fourth-form schoolboy would repudiate, I consider it is due both to myself and the public to set the matter before them fairly. For instance, in describing previously Mr. George Thompson's Patent Machine, the article alluded to proceeds to say, "it is an immense strong timber rectangular frame, about 11 feet by 8, horizontally resting on an axle, with two carriage wheels, each of nearly 7 feet diameter. The aspect of this engine is certainly calculated to alarm a quiet farmer; and in another part of the implement court is a model (the Archimedian) which, had it been constructed the full size of the machine, would be still more terrific." Now, the Archimedian machine (when constructed of its maximum size, namely, the cylinder 4 feet 6 inches in length by 4 feet in diameter) is certainly not half the magnitude of the other, as the writer could have been informed by any schoolboy, if he were himself unable to estimate the scale at which the model was formed, and therefore the term "still more terrific" was totally unjust and inapplicable. The writer, after entering into a further description of the Archimedian and its workings, goes on to state, "we should expect it on trial to be immediately clogged full of dirt," although he previously described the cylinders as armed of "different forms, being for varying soils and purposes;" and further stated, "it may be set by screws in its frame to a greater and less depth." And truly so did he state the fact, because it can be made, if necessary, not to enter the soil more than one inch. And yet how this writer and reviewer could not perceive that, from the different arming of the various cylinders, and the use of the regulating screws, this very egregious objection of his could be obviated and prevented, it is difficult to conceive. But the reviewer has cautiously avoided offering the slightest censure against the principle involved in the invention of this machine, and by which alone its utility can be truly tested, because he found it probably unassailable, and yet this machine is equally applicable to the performing, in the one operation, the work of four ploughs, at its full size; as well as in its diminished form it is capable of being used by mere manual exertion for horticultural purposes, like an ordinary garden wheelbarrow. The writer and reviewer may no doubt term this an "unwarrantable assertion," but it will be for the public to judge, and more especially for the scientific portion of it to decide whether his own objections are anything more, and whether any impartial and just object can be in view by a writer who endeavours to disparage an invention marked for its novelty, utility, and efficiency. *D. J. Murphy, Chamber of Commerce, Cork.*

*Spade Husbandry.*—I am glad to learn that Lieut. Goodiff has converted the sabre of war into the spade of the husbandman. I hope he may find more satisfaction in nourishing than in destroying his fellow-creatures, and that instead of the blood-stained Laurel, his brow may be adorned with a richly gemmed cereal wreath as the reward of his mental and manual labours, both in the pages of the *Agricultural Gazette*, and the wide farm-garden he is now cultivating. Fearing, however, that his benevolent efforts to encourage and assist the poor desponding occupiers of small farms may not receive that attention they deserve, and do the good they ought to do, in consequence of their coming from one who has had more experience in drilling soldiers than acres of corn, and more to do with military manœuvres and inspecting open columns of red-coated men than wide spaces in large yellow-grained cornfields, I wish to recommend my brother farmers to read Mr. Goodiff's excellent letters again, and, after considering them well, try his plan. After an experience of nearly half a century, during which I farmed both on a small and on a large scale, I have retired and gone about to see how the farmers were doing in distant parts—a privilege which tenant farmers can seldom find time and money to enjoy; and from my own experience, and the practices I have elsewhere noticed, I am thoroughly convinced of the benefits which Mr. G. so clearly and forcibly exhibits and explains as the consequence of a far more liberal expenditure in manual labour than has yet been practised on little or large farms in the way of deep and wide-rowed cultivation. As an old tenant farmer, I am convinced that, with present prospects, the farmer must have no more land in tillage than he can manage in as perfect a manner as a well-cultivated market garden. Instead of half working his tillage ground, let half his land be either taken away from the farm or sown down for pasture, and the other half doubly cultivated. I mean that the subsoil and top soil should both be cultivated, changing places annually. By this means, and by digging or trenching between very wide rows, I am convinced that as much produce may be obtained from half the land as was formerly produced on it all, and that the additional produce will pay for the additional labour. I have found, that where formerly only two light crops were grown in three years by draining, trenching with the spade or plough, drilling and hoeing, the land has produced three or four good crops in the same time in which it used to produce only two bad ones. I have also found it a good practice to grow Turnips, Carrots, or other green crops, in alternate rows with Beans or grain crops, having intervals wide enough to admit the plough between the rows; but I strongly recommend the substitution of the spade and the fork occasionally in lieu of the plough, particularly in winter, when hands are plentiful. Having long since recommended such practice, I should not now have repeated the recommendation, had it not been for a wish that my brother farmers, for whose sufferings I feel, should be benefited by the really useful letters of Mr. G., who will not be displeased, but encouraged by the opinion of *An Old Farmer.*

*On Tares or Vetches.*—Vetches are one of our most important green crops, thriving best on heavy soils; and when well manured, or fed off with sheep on the land, the Wheat or other crop sown after them will be as good as after a Clover lea, and they may be compared in their effect on heavy land to Turnips on light. A good crop of Vetches may be said to be equal to one of red Clover, for which it is likewise an excellent substitute as a variation to the four-field course, by preventing the too frequent recurrence of Clover on the same land. By sowing Tares from the beginning of autumn to the end of spring, a succession may be had throughout the year both to cut green for soiling horses and for sheep in fold, for whom they should be mown and forked into moveable racks, which will thus ensure all being eaten clean up. Although Vetches are a very good laxative for horses in summer, they are not equal to Lucerne, which is now gaining ground very much, from its great luxuriance and quickness of growth, shooting up directly after being cut, and affording three or four crops in the year; so that, without giving up the growth of Vetches, it might be useful to combine the two on a farm, as well as Saintfoin, another species of the same family. Lucerne, like Vetches, flourishing best on deep soils; it has a tenacity of remaining in the soil. After the May crop of Vetches are fed off, Turnips may follow, which being in their turn folded off, leave the land in good condition for Wheat, winter Beans, or Barley, according to choice. In the neighbourhood of London Vetches are cut in May, after which the land being immediately ploughed is planted to Potatoes, Mangold Wurzel, or Swedes, to be off in time for Wheat sowing. They should be sown on well pulverised land; if after Wheat, the land should be deeply ploughed and scarified, as well as, if necessary, manured, and when up, hoeing may be advisable, having given the Vetches plenty of room in the drills for working between, according to the Tullian system, and, in fact, it is observable in the case of Tares, Lucerne, and other wide-spreading crops, that the wider they are apart in the rows, the thicker they spread eventually, and this must apply to some extent to corn crops as well, which thus is equivalent to thin sowing, varying in its effects on different soils and seasons. There are many varieties of the Vetch or Tare, but only the common Vetch is used with us, as being most suited to our climate. In the south of France, they have a white Vetch, a perennial, grown for the sake of its seeds, from which soup is made; it grows in light soils, and is not affected by frost; it also goes by the name of the Canadian Lentil. Another variety is the yellow Tare, an annual, flourishing in stony soils and among bushes; it covers the ground very thickly, and is cut twice in the year. The Vetch, or as it is termed in Scripture, the Fitch, is found in every country, and in time of famine, has, in times of old, been used as food. In Judea, it is given to pigeons, who are fond of it. The Tare of Scripture has no affinity to the Vetch; in the parable in which Tares are mentioned as being sown amongst the corn, Matt. xiii. 25, the plant called in the East the Zizania, is considered to be the Tare. "It grows amongst the corn, which it resembles, but is rougher; the reapers do not separate it till at threshing time, when, from having no husk, it soon is sieved off; the same reason makes it so easy, from its lightness, to be scattered among growing corn: if eaten, the Zizania, or Tare, produces sickness."—(Rev. S. S. Wilson's "Travels in Judea.") In my last paper on the subject of Turnips and Mangold Wurzel, I did not consider that the too early sowing the Swede would be liable to bring it to too early a maturity, subjecting it to the risk of mildew, and am obliged for your mentioning it. A slight erratum occurred in the same Paper, in mis-spelling the place called Kingweston alluded to, which by an error of the printer's was put down as Tringweston, which I am not aware exists. Since last Paper I have put in some Mangold Wurzel, on the plan I mentioned, with a cupful of superphosphate of lime and ashes to each seed, which is now beginning to appear, but wants more rain to bring the plants up regularly. I have also tried the same experiments in a garden, with various vegetables; trying some seeds with bones, others with guano, both mixed with ashes. I am not aware which is considered the best manure for Parsnips; I have dibbled some according to the above plan with the seed on manure, but should be glad of any extra information on the subject, and meanwhile must wait for time to give a further report of these experiments. *H. E.*

*On the Culture of Buckwheat.*—Buckwheat is supposed by some to have come originally from Africa, but it is generally allowed that we derived it from Asia. In China and Japan the flour of Buckwheat has been long made into cakes. It is not indigenous in Europe, though it has found its way into most of the European Floras, and occurs on dung-hills, and about cultivated fields. In England it is certainly not indigenous, nor will it bear the rigour of our winters. It flowers in July and August. The seeds of Buckwheat are very white in colour, and yield a fine flour, of which thin cakes are made, and are said to be nutritious, not apt to turn acid upon the stomach; whole or unbroken, and mixed with chaff, bran, and grains, the seeds have been reckoned excellent for horses, and that a bushel is equal to two of Oats. The herbage cut green, just before blossoming, is said to flush milch cows with milk, but sheep become unhealthy when eating it. In Sweden, cows, sheep, and goats, are kept upon Buckwheat, but swine and horses refuse it. The seed is excellent food for poultry, and any merit of the plant rests upon that property. A field of Buckwheat furnishes a rich repast for bees late in the season; hence Duhamel advises to move the hives in the autumn to a situation where plenty of this plant is sown. Buckwheat requires land of at least a medium quality clear of weeds, and in good heart. The most general and approved culture is to sow the seed in two bushels on an acre in the first half of the month of May, on one ploughing of a Barley stubble that has succeeded a duly performed Turnip fallowing of the land, or after a crop of winter Tares. The seed is covered by the common harrowing. The crop seldom ripens before Michaelmas, and requires much harvest room. The stems are succulent and retain much moisture, and in wet harvests the crop is often wholly lost or preserved with much difficulty, even in ordinary seasons. The crop is best cut by the scythe, and the swathes repeatedly turned over for the purpose of being dried. The

herbage of Buckwheat grows thickly and rapidly, and smothers and kills any other vegetables. It has been used as a green manure by the crop being ploughed into the ground, and there left to decompose and add a vegetable mould to the soil. In this way the process is much facilitated by the crop being rolled and pressed level to the ground, and is further aided if a quantity of earthy compost could be spread on the surface before the ploughing is done. But this mode of fertilising land has not gained any repute in Britain, where the climate is too late and rainy to allow the early growth of the succulent crops that are necessary, and the timely development of the decomposing vegetation. The vast accession to the list of fertilisers, in the article of auxiliary manures, will completely supersede such methods of manuring land in this country, and a crop may never be accounted valuable which affords a manure only, and food for neither man nor beast. It is now decided that the haulm of Buckwheat is only to be used for the dung-heap, and the seeds are useful chiefly, if not solely, as food for poultry, and the larger game birds. Hence the cultivation of Buckwheat will not be large, and is restricted to the neighbourhood of the game covers, where it may be very usefully sown in open patches of ground within the plantations, and the seeds ripened and gathered by the birds at pleasure. The crop is alternated with Potatoes, which are thrown upon the surface by the spade in small quantities, as occasion demands. When Buckwheat is grown outside the woods, or on adjoining grounds, the crop is built into ricks on the open spaces of plantations, and the sheaves are thrown abroad to be picked by the birds at leisure. Or the dried crop is threshed, and the seeds placed in wooden troughs for the use of the game. Buckwheat contains :

| | |
|---|---|
| Water ... ... ... ... ... | 18. |
| Woody fibre ... ... ... ... | 18. |
| Starch, gum, or sugar ... ... | 45. |
| Gluten and albumen ... ... ... | 10. |
| Fatty matter ... ... ... ... | 2.6 |
| Saline matter ... ... ... ... | 2·3 |

The leafy shade of Buckwheat places it among the smothering crops, and the fibrous root ranks it among the grain crops ; consequently it is not a proper plant of any of the above distinctions, and fails to hold a place in the list of the useful plants. The crop of seed is from 4 to 5 quarters per acre. *J. D.*

*Measures.*—Observing in your Paper a request to forward the various measures, I send you that of this country—the Welch acre, which consists of

| | Square yards. |
|---|---|
| 80 perches of 8 square yards, or 64 yards × 80 perches, equal to ... ... ... ... ... ... ... | 5120 |
| English imperial acre ... ... ... ... ... | 4840 |
| Difference ... ... ... ... | 280 |

The Welsh bushel consists of—Wheat, 3 old bushels ; Barley, 3 old bushels ; Oats, 6 old bushels. *J. T.*

*Turnips.*—In your *Gazette* of the 17th, "H. E." asks why we may not sow Turnips in April, and you answer, that too early maturity will produce mildew in the south of England. But this is not all ; in the north of Scotland Turnips sown before the middle of May are apt to run to seed, which, as everybody knows, is hurtful to them, drying up the roots so that they are little better than dry wood. I am aware that the cause of a light crop is oftener too late than too early sowing. But if we take the advice of "H. E.," we shall find that an April crop is inferior to a July one, if not in bulk, at any rate in quality. But here let me notice "H. E.'s" remarks upon dibbling, *versus* drilling. I cannot help thinking that the estimated expense of each operation is a little at fault. Suppose in dibbling each plant was to occupy 3 feet. In that case there would be 14,520 pints manure used per acre, or 227 bushels, or say five cart-loads, which is the same quantity that he recommends for drilling. Now, I find in the experiment that one horse carries manure for $2\frac{1}{4}$ acres dibbling ; and for drilling, four horses carry for only 6 acres (I suppose the remainder of the seven horses are drilling). And it must be poor work for three horses to drill only 6 acres a day ; it is not too much to say 9. As "H. E." has adopted the estimate, perhaps he will explain ; and I must notice the plan that he recommends of marking the rows with the drill, previously to ridging up for them. This is surely homely farming. It reminds me of a ploughman that laid a line to enable him to go straight, and by holding the plough handle to it, managed to make a furrow with no straightness in it, but just like a bow. He must be a poor hand indeed, that cannot gauge a 27 inch drill by his eye. Now, a word as to dibbling in general ; to do it anything like right, a very careful hand must be employed, and with any of the implements that I have yet seen he must have some mechanical knowledge, for they often get out of order. But even in a perfect way several seeds will be deposited in one hole and will come up in a clump, and in hoeing will be difficult to single. While, if the seed is drilled, it will be divided over the ground more equally, and the plant will come up stronger. And if an agreement is made with the hoer to fill up any blank as he singles them, a fine equal crop will be secured. And this can be done at little or no additional cost. *G. S.*

*Patent Harrows.*—In your description of the agricultural implements in the Great Exhibition, you mention Sanders and Williams' harrows. I think it is but fair that you should state that I am the inventor of this implement. The patent was taken out by Sanders, Williams, Taylor, and Armstrong, and at the Patent Office you will find their names as the patentees, and mine as the inventor. *Samuel Lawrence Taylor, Cotton End, Bedford.*

*Black Wheat.*—A grain of black Wheat was found by a young gentleman, of Toronto, in the crop of a wild pigeon he had killed. The ear produced from this grain was given to Mr. Harry Turner, son of Colonel Turner, K.H., of Bamby, near Toronto ; by him was given to his father, and planted at Bamby in the spring of 1847. It came up almost like Grass in the summer of 1847, but was allowed to remain through the winter ; and during the ensuing spring (1848) came to perfection, being fall Wheat. The single grain, by 1850 (August), had multiplied itself by planting, during four years, into a large sheaf, containing many hundred stalks. Given to me at Bamby, on the 10th Sept., 1850. *H. P. P. C.* [The annexed is a drawing of the specimen sent.]



*A Word in Season.*—Should Mr. Nicklin and others who are growing grain crops on the bed and alley system, recommended by Mr. Smith, think the fallowed alley in it, lying uncropped, a waste of space, and would like to grow a green crop thereon during the summer months, it is my opinion they could not do better than to fork in a little manure the last time the alley is forked over, and immediately after the last stirring plant a row of Early York Cabbage, which would be ready to come off before the time of sowing Wheat. The Cabbage should be planted 18 inches plant from plant, and were they to average say 4 lbs. each, they would produce 23,232 lbs., or 10 tons 7 cwt. 48 lbs., of green-meat per acre — a weight sufficient to last four cows, supposing they were to eat 80 lbs. each per day, 10 weeks and two days. If the growing of Cabbages would not injure the present nor the after crop of Wheat, I think the experiment would certainly be worth a trial. When I have grown them between double rows of Beans, they have done well and grown to a large size ; and I have grown good crops of Wheat after them. I have twice had the pleasure of walking over Mr. Smith's farm, but unfortunately was too late in the season to see his Wheat standing, but I saw from the very strong stubble and stoolings he must have had a surprising crop. I here saw the very best crops I ever saw of Swedes, Mangolds, Carrots, and Parsnips, and winter Beans interlined with Cow-Cabbage ; these crops were really magnificent. Parties really interested in spade husbandry, who should feel disposed to visit Mr. Smith's farm during the summer, would be equally as much interested in his system of growing roots, as they would in his system of growing Wheat. Both systems decidedly merit the serious consideration and attention of all cultivators of the soil. *W. Griffin, Eydon, near Daventry.*

*The Value of an Acre of Roots* is the result of many circumstances, and climate so far alters the quality, that a comparison of crops raised under widely different latitudes must be unfair ; but there is less, if any, reason why the quantity should vary so much as it does in Great Britain, or even on two adjoining farms, under the like advantages of climate, soil, drainage, manure, and tillage. The various numbers of roots and the unnatural modes of adjusting them over an acre, militate against obtaining a maximum of produce. Drills, varying in width from 18 to 36 inches, and the plants thinned out to from 10 to 18 inches apart, are practices sufficient to cause difference enough. Some of the heaviest crops grown are recorded as having been raised on 27 inch drills, and 12 inches apart—19,360 plants per acre—which is by far the most general and approved method. Nevertheless, a plant could not be placed in a more disadvantageous position, when we consider the desired result—bulbs ; if the object were to grow leaves, then the practice would be correct, for the great preponderance of lateral play-ground encourages, nay, compels the plant to waste its energies in the production of leaves. I would suggest, as a subject highly desirable, comparing the results of roots grown as customary, and in various sized squares, say drills 12 inches by 12 inches apart, 15 by 15, 18 by 18, 21 by 21, and 24 by 24 ; the elementary source of food being the same. A few carefully conducted experiments, in different localities, will be a useful addition to our agricultural knowledge in seeking for truth. And although, as I apprehend the best yield may be found from drills too narrow to admit of culture with our present horse-hoes, that is a seeming objection which will soon vanish before the exertions of our mechanics, when the farmer has once stamped the dimensions *best* suited to his object. Three feet drills by $1\frac{1}{2}$—$4\frac{1}{2}$ square feet to one plant, or 9680 roots per acre, which is practised in parts of Cumberland, *must* be wasteful, at least for the first four months' growth ; and I believe these proverbially "cannie chiels" would find it to their advantage to allow more plants, and if the scale-beam denotes that in their climate the greatest weight is obtained by such wide intervals, to draw out and convert to useful purpose the thinnings, or to interline the Swedes with white Turnips. There is perhaps no general unpractised method which would so much add to the acreable yield of our root crops as this. But the trouble of carrying them off ! Yes : practice is churlish. Ingenuity must devise the best means, and figures proclaim whether the result is profitable. In the south of England, where the time of sowing must be late, narrower drills are preferred ; yet it may admit of doubt whether using half-grown thinnings would not be so much additional to the produce. Whatever influence climate and season may have upon the Turnip to require more or less space, it must be wrong in practice, and a waste of rent and raw material to make that space a parallelogram instead of a square. *T., May* 15.

*The Working Classes.*—There are so many contradictions in human nature that few things cause astonishment ; but though it may not surprise those acquainted with the manners and practices of the lower orders of our fellow-creatures, yet the reckless way in which hard earnings are squandered away in public-houses, offers a subject for serious consideration and reflection, and produces painful feelings of regret and disgust at the profligacy of mankind. Let the times be good, bad, or indifferent, as fancy dictates, the beer-shop never wants customers ; and many a family is brought to ruin and want by the debasing vice of drunkenness. It is deplorable to witness the utter want of principle which induces a man to sacrifice the comfort of his wife and children, and his own respectability, to gratify his brutal appetite for intoxicating liquors ; making himself lower in the scale of the animal kingdom than the horses he drives or the pigs he feeds. A human creature who indulges in the practice of steeping his senses in maddening draughts of fermented poison, is outraging common decency, and disobeying the laws of God and man. For the present, laying aside the higher views of the sin of drunkenness, let us consider how far an individual is performing his duty as a member of society. We all belong to the great family of mankind, and have in childhood experienced the fostering care of our country, in the protection of the law, and the benefit of charitable institutions ; if not directly in our own persons, yet indirectly, through our parents. Surely, a knowledge of these facts should have some influence over the feelings of a man who has the commonest intellect. Too many, in all classes of the community, pass their lives as if they were not accountable for their actions to their fellow-creatures. This is a great mistake, and leads to innumerable evils. The various grades of society are dependant upon each other, the poor on the rich, and the rich on the poor, the idea of equality, excepting as far as regards religion, and the laws, is an absurdity, not worthy of a moment's consideration. The fact of our requiring assistance from one another, proves that we have no right merely to consult our own humours, without reference to our neighbour's benefit. This golden rule being admitted, let us ask a simple question, have we any authority permitting us to destroy the intellect which our Maker has given us ? Every man, no matter how humble his station may be, has a part to perform (for which he must be answerable) in the great family of the human race ; and he is useful, or worse than useless, according to the manner in which he carries out his duty. Half a day's work, or a quarter of a day's work, is better than idleness, and living upon charity, taking the bread out of the mouths of the sick and the young. Poor-houses are only intended for the afflicted in body or in mind, and not for the able-bodied labourer. The root of almost all evil in this country may be traced to drunkenness ; the hospitals are crowded with victims brought to the lowest stage of suffering, through their practice of a habit which sooner or later will undermine the constitution. How few sots are ever reclaimed ! And where one arrives at a good old age, 99 die prematurely. Drunkenness, although more prevalent amongst the labouring classes, yet exists amongst the middle and higher orders of society, not to the extent it did some years ago, but sufficient to show a bad example to those who ought to look up to them for advice and assistance in time of need. What pleasure can an individual derive from rendering himself unconscious ? And that the drunkard does so, the police reports are a sufficient evidence. Many excuse their outrageous conduct by pleading the effects of liquor, which is however of no avail, being rather an aggravation of the offence than otherwise. The annals of crime will tell a sad tale against the drunkard. The hospital register shows how the drunkard's life is shortened. The comforts of domestic life are blasted by the drunkard. Society is insulted by the drunkard. The wretchedness, misery, and sin of many a wife and child fall heavily on the head of the drunkard, and curses loud and deep follow him to the grave. Surely there must be some means of checking the prevalence of tippling. The revenue might suffer from the decreasing consumption of poison, but mankind would benefit immensely. *Falcon.*

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A LECTURE, on the agricultural employment of common salt, was delivered before the Members, at a Weekly Council, held at the Society's House, in Hanover-square, on Wednesday, May 14 (the Hon. ROBERT HENRY CLIVE, M.P., Trustee, in the chair) by PROFESSOR WAY, the consulting chemist to the Society.

ON THE USE OF COMMON SALT IN AGRICULTURE.

MR. WAY commenced his lecture by adverting to the circumstances under which it was given. A few weeks ago, at a meeting of the Society, one of its members, Baron Mertens, expressed the desire of his (the Belgian) Government, to elicit from English agriculturists, their experience with regard to the use of salt; and at the suggestion of Mr. Fisher Hobbs and other gentlemen, it was arranged that it should form the subject of a lecture to be delivered by the chemist of the Society. He (Mr. Way) had great pleasure in appearing before the Society, in accordance with their request, but they must not expect him to bring before them anything particularly novel on the subject. The question had been repeatedly discussed by able men in lectures, books, and special essays, particularly at the period when the removal of the duty on salt was contemplated and effected; and more recently, when a like measure was proposed by the French Government. To reopen the question in detail would require not one, but several lectures, and he considered that, under the circumstances, the wishes of the Society would be best carried out, if he simply recapitulated the various conditions in which salt had or had not been beneficial as a manure, and the no less various opinions which were held as to its mode of action. It was with the last that his business chiefly lay, and in reviewing them, he should pass rapidly over those which were open and palpable, and give his chief attention to those others which, from their obscurity, were more worthy of investigation. Mr. Way should endeavour to compress what he had to say into the space of half an hour, in order that those whose practical experience it was so important to obtain, might have an opportunity of communicating it to the Society.

The combined experience of those who had obtained favourable results from the use of common salt went to prove:—

1. That common salt improved the quality and weight per bushel of the grain of Wheat, Barley, and Oats.

2. That it strengthens the straw of these cereal crops.

3. That it increases the crop and improves the quality of Swedes, Turnips, and Carrots, and still more of Mangold Wurzel.

4. That it improves the quality of the Grass in heathy pastures, and makes it more palatable to stock.

5. That it kills wireworms and slugs, and destroys noxious weeds.

6. That it promotes the health of animals when given with their food. Common salt has also been found beneficial to Potatoes, Peas, &c., but not so commonly as to the other crops mentioned.

Now, in order to establish the fact of the beneficial action of salt, it was not necessary, in Mr. Way's opinion, that every person should have obtained a similar result; nor was it necessary even that a multitude of instances of success should be adduced. One experiment, intelligently carried out and truthfully reported, was sufficient to prove that salt has, in certain conditions, a beneficial effect upon crops. On the whole, however numerous may have been the cases of failure (and it is to be remembered that failure is less often reported than success), it must be allowed that there was ample evidence to prove that common salt exercises some influence on vegetation, and it was worthy of observation that when employed in moderate doses, this influence has rarely been found to be noxious or prejudicial. The question then was as to the nature of that influence: that salt kills wireworms and slugs, if a fact, is one of those facts which needs no demonstration or discussion; that it destroys weeds is of the same kind, other plants equally suffering from its effects when used in excess. But in what way does it improve the quality of Wheat? in what way strengthen the straw of corn crops? of what nature is its influence upon Turnips and Mangold Wurzel? these are the points which demand the attention and investigation of science.

Now the advocates of common salt have been in the habit of explaining its action by reference to many different properties. They have called it a stimulant to plants. This is in reality no kind of explanation, but only the assertion of the fact. Common salt is observed to cause an increased and energetic vegetation, and it is therefore said to stimulate; but how it brings about this result we are not told. The property of salt of attracting moisture had also been referred to as accounting for its action. There was no doubt that salt did increase the proportion of moisture in the soil, but to a very small extent. Mr. Way had made a calculation by which he found that 20 bushels of salt applied to an acre of land, would, if it attracted water till it was entirely dissolved, add only half a per cent. of moisture to that ordinarily present in the soil. An experiment made by Mr. Cuthbert Johnson, and quoted by him in his excellent essay on the use of salt, as proving the increased absorption of moisture caused by salt, only showed that this effect was really insignificant. One thousand parts of a dried soil, that by exposure to the air for 18 hours gained 25 parts of moisture, was found by Mr. Johnson, when salted at the rate of six bushels an acre to gain 26, and at the rate of 12 bushels, 27 parts of moisture in the same time. Mr. Way did not think that the property of salt to attract and retain moisture went far to explain its beneficial effects on land, and the same was true in a lesser degree of muriate of lime or any other deliquescent salt which it might give rise to in the soil. Then it has been supposed that common salt is a direct food of plants; that is to say, that it is necessary to enable them to build up their organs, in the same way that phosphorus and sulphur are now known to be indispensable elements of vegetation. Were this actually the case, the whole question would be set at rest. Supposing that common salt existed in every kind of vegetable in such definite quantity as to lead to the belief that it was a component part of their organised structure, then plainly its existence in the soil in some shape or other would be absolutely necessary for vegetation; and we could readily understand how its artificial supply would in some instances have the best result; this point, therefore, demanded attention.

The analyses of the ashes of plants had shown, that whilst common salt was present in very large proportion in Mangold Wurzel, Carrots, Turnips, and such-like plants, and in lesser, although still considerable quantities in the Grasses and the straw of different corn crops, it was almost, and in some cases entirely, wanting in the seeds of plants. Thus by the table to which he directed their attention they would see that, whilst 1000 lbs. of Mangold Wurzel contained as much as 37 oz. of salt, the same quantity of Wheat furnished only 1 oz.; indeed the last figure was a manifest exaggeration, since in the ash of 26 samples of Wheat examined by him, only four cases had occurred in which common salt could be detected at all, and the amount mentioned above was the average of those four cases. This was a very important fact, and one which must be steadily kept in view, in attempting to discover the part played by salt in vegetation. If it was contended that common salt was part of the food of plants (and it must be remembered, that in speaking of the food, at all events of the *mineral* food of plants, we could only be guided by what we found in them), then how came it to be absent from the grain of Wheat in 22 out of 26 instances?

Mr. Way observed that it was at all times dangerous to generalise to too great an extent, and therefore it might hardly be safe to say that what applied to Wheat must also apply to Mangold and Turnips; that since common salt was not a necessary ingredient of Wheat, its existence in such large quantities in Mangold was also accidental; but it must be allowed that the nature of the respective plants in some measure justified such a conclusion. The grain of Wheat, for instance, contained, when ripe, from 10 to 15 per cent. of water, and 85 or 90 per cent of dry matter. In the Turnip or Mangold, on the contrary, the state of things was entirely reversed; in these roots, for 10 or 15 per cent. of dry vegetable matter, we find from 85 to 90 per cent. of water. It was reasonable to suppose that this water would contain a portion of any soluble salts existing in the soil, and quite evident that from the quantity of water present in the Turnip or Beet, we must expect to find in these roots a considerable amount of substances having nothing whatever to do with vegetation.

The seeds of plants are, when ripe, individually perfect, which no other parts of plants are. The stems and other solid parts have always in them the unmatured and circulating juices in all states of transformation. On the other hand, in the seed of a plant, every portion seems to become fixed. As the period of final maturation approaches, all substances not actually required for its well-being are excluded and expelled from it. Finding phosphorus and sulphur, magnesia and potash, in large quantity in the ripened seed, but failing to detect common salt there, we are justified in supposing that the former substances are, and that the latter is not, indispensably necessary as an element of vegetable nutrition.

It remained to be seen whether the presence of common salt in the root crops is to be accounted for on the supposition that it is really an element of their food; but, in the meanwhile, Mr. Way wished to call attention to the circumstance, that, although common salt, as a whole, might not constitute any portion of the food of plants, the alkali which it was capable of furnishing might yet be of great importance to vegetation. Common salt is the muriate of soda, that is to say, the alkali soda combined with muriatic acid. Now, it has been already shown that this compound is not a necessary constituent of the grain of Wheat. In the analyses of Wheat-ash before mentioned, soda was generally detected in small quantity; in comparison, however, with that of potash, the proportion was so minute as to lead to great doubts whether soda was indispensable to the crop in question. In the root crops soda is frequently found in large quantity in other forms of combination besides that of the muriate; but even here its presence was not constant, for he (Mr. Way) had examined several samples of Turnips in which no soda existed beyond that combined with muriatic acid.

Taking these two circumstances together—the entire absence in some cases of common salt from seeds and the equally well-ascertained absence of other salts of this alkali from Turnips and other root crops—he was inclined to think that the theory which supposed common salt to be directly or indirectly—either as a whole or as a source of soda—a constituent of the food of plants was not satisfactorily made out.

It only remained, therefore, to examine in what way salt could act as an agent of vegetation. The French had an excellent method of classifying the substances used as manures. With them only those substances were called "manures" which were known to operate by supplying some of the elements requisite for the nutrition of plants; thus ammonia and its salts would be manures as supplying an element (nitrogen), entering into the composition of plants. Those other applications which contribute to improve the texture of the soil, and to bring into play its dormant energies, are known as "amendments" or "improvers." Sand added to a heavy soil would be of the latter class, as would lime, because although it is certainly part of the food of plants, we evidently use it with other views when we apply it in such large doses to our fields.

Salt, then, having failed to prove its claim to be ranked under the first head in the French agricultural vocabulary, it remained to be seen whether it operates as an indirect agent in vegetation. Indeed, granting the efficacy of salt as an application to the soil, this was the only other way of accounting for its effects. It had been said that salt in small doses hastened putrefaction, and that in this manner it was capable of furnishing the growing plant with a more abundant supply of vegetable and animal food. Mr. Way had no personal knowledge of this property of salt, and the assertion did not appear to him to be altogether free from doubt. But at all events it so happened that the soils upon which salt has been most successfully employed; that is to say, the light and open soils, were precisely those in which the decay of manure is very rapid, and in which consequently there would be less necessity for the kind of assistance which salt was considered capable of affording. Although he did not intend to deny the possibility that salt might be beneficial, in consequence of the property imputed to it of decomposing vegetable matter, Mr. Way observed that we must seek some further explanation of its action.

He had now to bring before their notice a property of salt, which, so far as he could learn, was entirely new. When a portion of a soil is shaken up with water, and the mixture allowed to stand till it gets clear, or is otherwise rendered so by filtration, the presence of a little lime, in the state of sulphate and other soluble salts, will generally be detected by the proper tests.

If instead of water, a weak solution of common salt was employed, the indication of lime in the liquid would be immeasurably greater than in the other instance. Now if common salt was acted on by soils in the same way as salts of ammonia and potash—its base, soda, being absorbed by the soil, and lime uniting to the muriatic acid—this dissolving out of lime would be of easy explanation.

Mr. Way had, indeed, on a former occasion, stated that soda was subject to the same law of absorption as the other bases mentioned, but he had at that time made no very definite experiments on this subject. Subsequent investigations had shown him that some soils, at all events, have no power of retaining this alkali, and the soil which he had just used before them was such an one; it did not absorb soda from common salt. How then were they to account for the quantity of lime dissolved? At present he was not in a position to say with authority; but as he had proved to his own satisfaction that it did not arise from the presence of any of the ordinary salts of lime in the soil, he was led to believe that the common salt acted on certain silicates of lime present, in a way as yet not understood; and at the same time as it afforded a supply of lime to plants, gave rise probably to a modification of silica important to the straw of the cereals. But leaving out of the question this latter possibility, the mere increase of the quantity of lime in a soluble condition, might itself go far to account for the effects of salt. Our whole system of agriculture was an attempt to heighten and increase the energy of those causes which operate naturally on a smaller scale. The appointed solvent of lime was probably carbonic acid, but it is easy to conceive that the artificial cultivation of certain crops would require more copious supplies of this substance, than could be furnished by the usual methods. Salt may, at this point, step in, and meet the emergency in a way consistent with the functions of the plant, and minister to the artificial wants of the crop in an unusual and artificial manner. Mr. Way was at present following up these experiments, from which he hoped to derive some information.

It would be seen then, that the presence of large quantities of common salt in root and other crops, might be only a secondary result due to this substance, having been executing its office as a solvent, and thus introduced into the juices of the plant.

Having now taken the liberty of adding another theory to the already too large list on the action of common salt, and having expressed his opinion in favour of those views, which held it to be an *agent* rather than an *element* of vegetation, he would leave the further discussion of the question in the hands of the meeting.

## Notices to Correspondents.

ASHES: *W.* Burnt clay soil mixed with ashes of weeds is good manure for Turnips. Sea-weed may be mixed with dung in compost for Turnips. It is better used when still succulent than when dried.

CLAYS: *R W C.* We regret we have not the time necessary for the analysis of the specimens sent. Any of them will, no doubt, improve a light soil; and 25 cart loads is not a heavy dressing—quite otherwise. It is a good thing to cut hay into chaff before giving it to horses. The machine called Corne's, made in Cheshire, and now copied by most makers, has for some years received the prize of the English Agricultural Society.

GREEN MANURING: *C D.* Mustard might be sown now, to be ploughed in as manure in autumn.

MANURE: *J N.* We are not acquainted with the manure advertised in the prospectus you have sent.

PRINCIPLES OF THE TENANT RIGHT BILL: *J P.* The principle was simply this, that a certain period of years should be assumed respectively for temporary improvements by the purchase of artificial manures, or durable improvements by draining, marling, irrigating, &c., in which period, if the tenancy lasted so long, the tenant should be deemed to be compensated; but should receive, if he left earlier, money in proportion to the number of years unexpired. The bill was brought in to give the tenants this right absolutely, but the opponents took it away, in case of the tenants' giving notice. There was a further important clause, giving the tenant the absolute right of removing buildings put up by him, unless the landlord took to them at a valuation.

RATTLE GRASS: *X Y Z.* You had better keep the Grass eaten down closely for a year or two by sheep. This would ripen and shed its seed in hay harvest. Charlock may be extirpated by perseverance in pulling it annually.

SCOURING IN YOUNG PIGS: *J R R.* Prepared chalk, 1 dr.; powdered opium, 3 grs.; powdered ginger, 5 grs.; to be given twice a day in thick Wheat flour gruel. *W. C. S.*

TANK WATER: *C D.* You might deliver the liquid over a lot of charcoal dust, and spread it in the compost form. It would be then inodorous.

TRIFOLIUM INCARNATUM: *A Constant Subscriber* will feel greatly indebted to any of our readers by answering the following questions:—Does the Trifolium incarnatum seed freely? and what is the average quantity of seed per acre? In what month is it generally cut for seed? and is the haulm good for chaff?

METEOROLOGICAL REPORT.—MAY—JUNE.

(*Continued from page* 349.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| May 29 | 5.50 a.m. | ... | 30.24 | Calm, hot sunny day. |
| * | 11 p.m. | 30.27 | ... | |
| 30 | 6 a.m | ... | 30.31 | Moderate NW. breeze, and fine. |
| | 11.20 a.m. | 30.32 | ... | |
| | 6.30 p.m. | 30.30 | ... | Moderate NW. breeze, and heavy white masses, but fine. |
| | 10 p.m. | ... | 30.29 | |
| 31 | 7.40 a.m. | 30.35 | ... | Gentle north-westerly airs, and fine. |
| | 11 a.m. | 30.35 | ... | |
| | 2.10 p.m. | 30.32 | ... | SW. Gentle airs, and fine. |
| n 1 | 8 a.m. | 30.27 | ... | Gentle airs, variable from ENE. to S. Barometer falling steadily; fine day, and sun occasionally clouded over. |
| | 10 p.m. | ... | 30.13 | |
| ‡ 2 | 5 a.m. | 30.10 | ... | NNE. Moderate breeze. Heavy bank in NE. horizon. |
| | 9.40 a.m. | 30.10 | ... | |
| | 2.20 p.m. | 30.03 | ... | P.M. SW. Moderate breeze; fine day; barometer falling steadily. |
| | 11.15 p.m. | ... | 29.97 | |
| 3 | 5.5 a.m. | 29.86 | ... | Brisk SW. breeze all day; inclining, at sunset, to SSW., and deusely overcast, but no rain. |
| § | 10.30 p.m. | ... | 29.65 | |
| 4 | 7.50 a.m. | ... | 29.78 | Moderate NNW. breeze, and fine. |
| | 11.30 a.m. | 29.82 | ... | |

* Continuation of previous storm.

† A different storm from the former, passing a long way to the westward from Newfoundland towards Iceland.

‡ A storm from Bermuda, passing over Lisbon and the north of Spain.

§ A storm travelling from west to east, centre lying to the northward; and probably of very large diameters, extending a long way to the northward, from the intense cold.

Dorchester, June 5th. *F. P. B. M.*

(*To be continued.*)

# Markets.

COVENT GARDEN, JUNE 7.

Trade is somewhat brisker. Peaches, Nectarines, and Cherries may be obtained at high prices. Hothouse Grapes are plentiful and cheap. Pine-apples are more abundant, and there is a quantity of West Indian ones in the market; they fetch from 2s. to 6s. each. Strawberries are good in quality. Dessert Apples are over for a season. Oranges and Lemons are plentiful. Nuts remain nearly the same as last week. Vegetables of all kinds are abundant. Asparagus, young Carrots, French Beans, and Green Peas are received in quantity. Frame Potatoes may be obtained at 4d. to 1s. per lb.; old kinds realise high prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. per pottle. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 8s to 12s | Lemons, per doz., 1s to 2s |
| Grapes, hothouse, p. lb., 4s to 8s | Oranges, per doz., 9d to 2s |
| Strawberries, per oz., 6d to 1s | — per 100, 6s to 14s |
| Gooseberries, per half sieve, 2s 6d to 4s 6d | — Seville, p. 100, 7s to 14s |
| | — — p. doz., 1s to 2s 6d |
| Currants, per pottle, 1s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Almonds, per peck, 6s | — Brazil, p, bsh., 12s to 14s |
| — sweet, per lb., 2s to 3s | Cobs, per 100 lbs., 50s to 55s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Greens, p. doz. bunchs., 6d to 1s 6d | Garlic, per lb., 4d to 8d |
| Cauliflowers, p. doz., 3s to 9s | Artichokes, per doz., 3s to 4s |
| Broccoli, p. doz. bundl., 7s to 8s | Lettuce, Cab., p. score, 4d to 9d |
| French Beans, p. 100, 2s to 3s | — Cos, per score, 8d to 1s |
| Peas, per sieve, 5s to 9s | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 1s to 4s | Horse Radish, p. bundl., 1s to 5s |
| Rhubarb, p. bundl., 2d to 6d | Red Beet, per doz., 6d to 1s 6d |
| Potatoes, per ton, 90s to 200 | Mushrooms, p. pot., 8d to 1s |
| — per cwt., 4s to 8s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. bunch, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| — Turnip, p. doz., 8d to 1s | — Roots, p. bundl. 9d to 1s |
| Celery, p. bundle, 6d to 2s | Mint, green, per bunch, 4d to 6d |
| Carrots, per bunch, 6d to 1s 3d | Basil, green, p. bunch, 6d to 9d |
| Spinach, per sieve, 9d to 1s | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 2d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| — Spanish, p. doz., 1s 6d to 4s | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per bunch, 3d to 4d | |

HOPS.—FRIDAY, June 6.

Messrs. Pattenden and Smith report that the accounts received this morning from the Hop plantations speak of an alarming increase of fly generally throughout the grounds. Our market is in a very excited state, and prices have advanced 2s. to 4s. per cwt. on all descriptions of Hops. Duty estimated at 130,000*l.*

| | | | |
|---|---|---|---|
| Mid & East Kents | 80s to 130s | Sussex ... ... | 75s to 84s |
| Weald Kents | ... 75 — 95 | Yearlings & old Hops | 20 to 50 |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 5.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 80s | Clover ... ... ... | 72s to 88s |
| Inferior ditto... ... | 54 68 | Second cut ... ... | 72 84 |
| Rowen ... ... ... | 55 65 | Straw ... ... ... | 25 30 |
| New Hay ... ... | — — | | J. COOPER. |

Very little doing.

CUMBERLAND MARKET, June 5.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78s to 84s | Inferior ... ... ... | 70s to 78s |
| Inferior ditto... ... | 60 72 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 26 32 |
| Old Clover ... ... | 88 92 | | JOSHUA BAKER. |

COAL MARKET.—FRIDAY, June 6.

Holywell, 13s. 6d.; Eden Main, 13s. 3d.; Hartley, 13s.; Wallsend Haswell, 14s. 9d.; Wallsend Hetton, 14s. 6d.; Wallsend Lambton, 14s.; Wallsend Tees, 14s. 6d.—Ships at market, 177.

POTATOES.—SOUTHWARK, June 2.

The Committee report that there have been several fresh arrivals since our last report; trade continues very heavy, and, with second-rate Potatoes lower prices are submitted to. The following are this day's quotations:—York Regents, per ton, 60s. to 90s.; Scotch do., 50s. to 75s.; ditto Cups, 60s. to 80s.; Scotch Catholics and whites, 40s. to 50s.; Lincolnshire whites, 40s. to 50s.; foreign do., 45s. to 60s.

SMITHFIELD, MONDAY, June 2.

The supply of Beasts is not large; we have a cheerful trade, and 3s. 8d. is made in a few instances, but this is too much to quote as average of choice quality. There is a considerable increase in the supply of Sheep; trade is dull, and prices rather lower. Lambs are in demand, but prices are not higher. Trade is heavy for Calves. From Holland and Germany there are 203 Beasts, 1920 Sheep, and 208 Calves; from Norfolk and Suffolk, 2200 Beasts; and from Scotland, 200; from Spain, 150 Sheep; and 40 Pigs from France.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | 3 | 4 | — 3 | 8 |
| 2d quality Beasts | 2 | 4 | — 3 | 0 | Ewes & 2d quality | | | | |
| Best Downs and Half-breds | ... | | ... | | Ditto Shorn | 2 | 8 | — 3 | 0 |
| Ditto Shorn | 3 | 8 | — 3 | 10 | Lambs | 5 | 0 | — 5 | 6 |
| | | | | | Calves | 3 | 0 | — 4 | 0 |
| | | | | | Pigs | 2 | 8 | — 3 | 8 |

Beasts, 3482; Sheep and Lambs, 31,540; Calves, 334; Pigs, 480.

FRIDAY, June 6.

The number of Beasts is again small and the weather favourable, but we are not able to quote 3s. 8d. as average; however, Monday's prices are more freely given. We have a good supply of Sheep and Lambs; the former are selling rather dearer, the latter are more freely disposed of at Monday's rates. Calves are numerous, but choice qualities not being very plentiful still make 4s. From Germany and Holland we have 162 Beasts, 780 Sheep, 237 Calves, and 90 Pigs; from Scotland, 120 Beasts; from Norfolk and Suffolk, 300; and 92 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | 3 | 4 | — 3 | 8 |
| 2d quality Beasts | 2 | 8 | — 3 | 0 | Ewes & 2d quality | | | | |
| Best Downs and Half-breds | ... | | ... | | Ditto Shorn | 2 | 8 | — 3 | 0 |
| Ditto Shorn | 3 | 8 | — 4 | 0 | Lambs | 5 | 0 | — 5 | 6 |
| | | | | | Calves | 3 | 0 | — 4 | 0 |
| | | | | | Pigs | 2 | 8 | — 3 | 8 |

Beasts, 706; Sheep and Lambs, 12,220; Calves, 539; Pigs, 510.

MARK LANE.

MONDAY, JUNE 2.—The supply of English Wheat to this morning's market was small, and disposed of at the terms of this day se'nnight. Foreign met a slow and retail inquiry at our quotations.—Grinding and distilling Barley must be noted 6d. to 1s. per qr. dearer.—Beans and Peas meet an improved demand, and the latter are held for higher prices.—Oats are a good sale at an advance of 1s. per qr.—Flour is a dull sale.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | —45 | Red ..... | 36 | —40 |
| — — fine selected runs...ditto | 42 | —47 | Red ..... | | —42 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —50 | | | |
| Barley, grind. & distil., 21s to 24s...Chev. | 26 | —31 | Malting . | 23 | —26 |
| — Foreign... grinding and distilling | 20 | —25 | Malting . | 23 | —27 |
| Oats, Essex and Suffolk ..... | 19 | —22 | | | |
| — Scotch and Lincolnshire...Potato | 22 | —26 | Feed..... | 20 | —24 |
| — Irish .....Potato | 19 | —24 | Feed..... | 18 | —22 |
| — Foreign .....Poland and Brew | 27 | —23 | Feed..... | 18 | —22 |
| Rye ..... | 23 | —25 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25s to 29s.....Tick | 25 | —30 | Harrow . | 25 | —30 |
| — Pigeon.....28 — 33... Winds | — | | Longpod | — | |
| — Foreign .....Small | 22 | —30 | Egyptian | 23 | —24 |
| Peas, white, Essex and Kent.....Boilers | 23 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26s to 28s .....Grey | 23 | —24 | Foreign . | 22 | —33 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 18 | —23 | Per sack | 26 | —33 |

FRIDAY, JUNE 6.—The arrivals of grain, English and foreign, this week have been small, and a more general disposition was evinced this morning to purchase Wheat, which was held for enhanced prices, and thus impeded business.—Barley, Beans, and Peas obtain the extreme prices of Monday.—Oats are held firmly, and in some cases advanced 6d. to 1s. per qr. Flour meets an improved demand at late rates. There is very little doing in floating cargoes from Southern Europe; prices of Wheat and Indian Corn are about the same as last week.

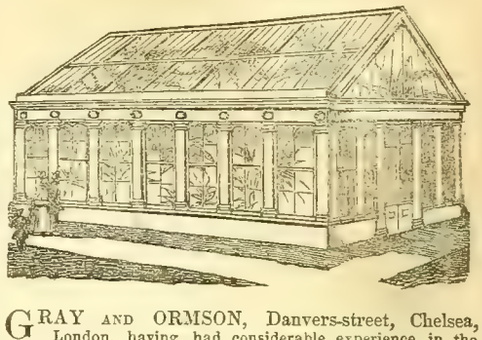
| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| April 26..... | 39s 3d | 24s 4d | 17s 10d | 24s 2d | 26s 9d | 25s 5d |
| May 3 ..... | 38 8 | 24 3 | 18 3 | 23 11 | 27 9 | 25 4 |
| — 10..... | 38 10 | 24 4 | 18 8 | 24 7 | 27 10 | 25 11 |
| — 17..... | 38 2 | 24 2 | 18 11 | 25 9 | 28 10 | 27 2 |
| — 24..... | 38 8 | 24 1 | 19 5 | 24 7 | 29 2 | 26 1 |
| — 31..... | 39 3 | 24 1 | 20 0 | 26 9 | 29 7 | 27 5 |
| Aggreg. Aver. | 38 9 | 24 3 | 18 10 | 24 11 | 28 4 | 26 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | APR. 26. | MAY 3. | MAY 10. | MAY 17. | MAY 24. | MAY 31. |
|---|---|---|---|---|---|---|
| 39s 3d— | | ... | ... | ... | ... | ... |
| 39 3 | ... | ... | ... | ... | ... | |
| 38 10 | ... | ... | | ... | ... | ... |
| 38 8 | ... | | ... | ... | ... | ... |
| 38 8 | ... | ... | ... | ... | ... | ... |
| 38 2 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JUNE 3.—The arrivals since Tuesday last from Ireland and coastwise are moderate of Oats, but light of other articles. At this morning's market there was a moderate attendance of millers and dealers, who purchased sparingly of Wheat, but Tuesday's prices were fully supported. Barrel Flour met an improved demand, and in some instances a small advance was established. Oats were in fair request at an improvement of ½d. per 45 lbs.; but Oatmeal was neglected and without change in value. Beans must be quoted 6d. per qr. dearer. Barley and Peas supported former quotations. Indian Corn met a good demand, at 30s. per 480 lbs. for American yellow from the quay, being a decline of 6d. per qr. on the week.—— FRIDAY, MAY 30.—At our Corn Exchange this morning we experienced a firm and steady market as regards Wheat of all descriptions, and previous rates were fully realised. Barley and Malt, upon a moderate demand, fully supported former prices. Beans were held on rather higher terms, which were partially acquired. No change in the value of Peas. Oats were difficult of sale at barely former rates; and Oatmeal, though rather more saleable, was not dearer. Indian Corn supported late rates.


HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

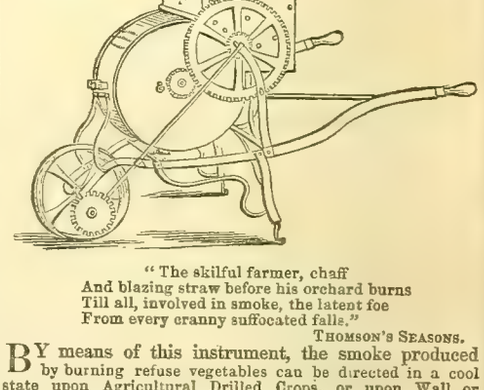
PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17s. 6*d*; 7 quarts, 15s. 6*d*.; 3 quarts, 13s. 6*d*. Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6*d*.

IMPORTANT TO FARMERS, GARDENERS, AND FRUIT HOP GROWERS.




"The skilful farmer, chaff
And blazing straw before his orchard burns
Till all, involved in smoke, the latent foe
From every cranny suffocated falls."
THOMSON'S SEASONS.

BY means of this instrument, the smoke produced by burning refuse vegetables can be directed in a cool state upon Agricultural Drilled Crops, or upon Wall or Standard Fruit Trees, Hops, &c., and blight or insects destroyed. It is also available for filling large houses with Smoke of Tobacco or other material; disinfecting impure places in ships and buildings; and for eradicating vermin. The machine may be obtained with or without the drilling apparatus.

Manufactured by Messrs. DEANE, DRAY, and DEANE, Swan-lane, London.

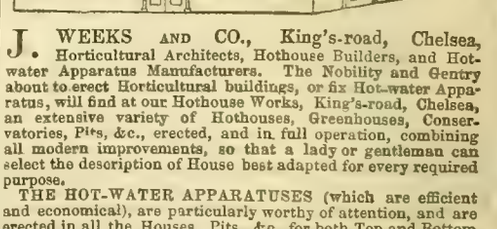
Price 6*d*., free by post.

REMARKS ON FUMIGATING HORTICULTURAL AND AGRICULTURAL CROPS.

London: Published by BRADBURY & EVANS, Bouverie-street.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew-lane, on TUESDAY, June 10, and THURSDAY, June 12, 1851, at 12 o'clock, a first class collection of Dahlias; also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, Climbing and other Roses, and a variety of useful and ornamental Plants for bedding. May be viewed the morning of Sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ORCHIDS—THE MOST IMPORTANT COLLECTION EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is favoured with instructions to submit to Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, June 9th, and following day, a collection of ORCHIDS, that has ranked for some years past as one of the finest in the kingdom; it comprises magnificent Specimen Plants, in perfect health, of all the favourite varieties, an enumeration of a few of the principal of which will suffice to show the high character of the collection.

Aerides maculosum
" quinquevulnerum
" odoratum purpurescens
" crispum
" rubrum
" affine
Cattleya Acklandii
" bulbosa
" maxima
" superba
" Mossiæ
" crispa
" bicolor
" labiata
" Perrinii
" Skinnerii, &c.
Chysis bractescens
" albida
" aurea
Dendrobium Devonianum
" Dalnousianum
" Paxtonii
" formosum
" armenum
" Ruckerii
Phalænopsis rosea
" grandiflora
" amabilis
Saccolabium guttatum
" præmorsum
" Blumei major
" calceolaria
" papillosum
Vanda Batemanii
" violacea
" tricolor
" Roxburghii
" teres, &c. &c.

Catalogues are preparing, and will be ready 10 days before the sale.

TO PLANT EXHIBITORS.

MR. J. C. STEVENS will sell by Auction, on TUESDAY next, after the sale of Orchids, at about half-past 3 o'clock, a COVERED VAN, nearly new, built expressly for the conveyance of Plants to and from the Flower Shows, and particularly deserving the attention of Exhibitors. —May be viewed at 38, King-street, Covent-garden at the time of Sale.

ORCHIDACEÆ LINDENIANÆ.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, June 12, at 12 for 1 o'clock, a consignment of ORCHIDS, just received by Mr. Linden, from his collector in New Granada, and comprising fine healthy specimens of the desiderata of that locality; including Uropedium Lindenii, Odontoglossums hastilabium, Hallii nævium, Pescatorei, Schlimmii, and a splendid new species, Sobralia Ruckerii, Oncidiums candelabrum and cucullatum, Cycnoches Pescatorei and Lindleyi, Anguloa virginalis, and many others.—May be viewed on the morning of sale, and Catalogues had.

TO BE SOLD OR LET ON LEASE FOR 90 YEARS OR LESS, TO GENTLEMEN'S GARDENERS DESIROUS OF ENTERING INTO BUSINESS, NURSERYMEN, OR FLORISTS.

TO BE SOLD OR LET, immediately, at Michaelmas, or within 12 months from this date, a very compact Horticultural Establishment, consisting of about 12,000 feet of glass erections, nearly new, having all been erected since 1843. The whole of the Pits and Houses are heated by hot water; there is an excellent Dwelling-house on the premises, in good repair, consisting of 12 rooms, which are so arranged as to accommodate two families, if required. The construction of the houses and situation is very desirable for persons wishing to cultivate Plants for market, or attending to the business of looking after small gardens, being situated on the main road from London to Brentford, and within four miles of Piccadilly. A Lease for 90 years can be granted by the present proprietor, if required, whose great increase of professional business from home is the only cause of this desirable property being disposed of. This offers an excellent opportunity for two persons wishing to enter into the Nursery business.—For further particulars apply to A. Z., at the Office of this Paper.

TO GENTLEMEN'S GARDENERS, AND OTHERS.

TO BE DISPOSED OF, 14 years' unexpired term of a snug, walled-in Garden, with Cottage, Sheds, Greenhouse, brick-built Pits, &c. The Garden is well stocked with Fruit Trees, Shrubs, Flower Roots, &c.; it is well adapted for the business of a Florist and Seedsman, in which line it has been carried on by the present Proprietor, who retires through ill-health. Rent and taxes low, coming-in moderate. For further particulars apply, if by letter, pre-paid, to Mr. Baker, Potato Merchant, Broadway, Deptford, Kent.

TO BE DISPOSED OF, with immediate possession, or in Autumn, an old Established NURSERY and FRUIT GROUND, the proprietor retiring from business. It is situated in a populous neighbourhood, six miles from London; the ground is unrivalled for Trees and Shrubs, also for producing the finest Fruit.—For particulars apply to J. C. Hardy, Esq., National Guardian Assurance Society, 19, Moorgate-street, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

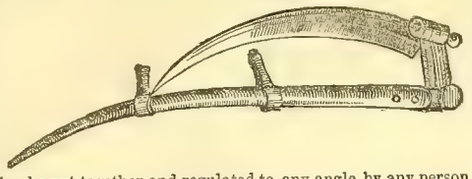
TO MARKET GARDENERS.

TO BE LET, 12½ acres of FRUIT GROUNDS, 11 miles on the Western Road, in first-rate condition, comprising the choicest varieties of the undermentioned:—Black and Red Currants, Raspberries and Strawberries, Cherries, Pears, Plums, &c. &c. Rent 25*l.* per annum. Stock at valuation. A small House, Stabling, and Sheds on the premises.—For further particulars, apply to Duncan Hairs, Seedsman, 109, St. Martin's-lane, London.

TO BE LET, and entered upon at Michaelmas next, a very desirable FARM, of about 200 acres, situate at Great Coxwell, near Farringdon, Berks, the property of the Right Hon. the Earl of Radnor. Mr. Robert Gerring, the present occupier, will appoint a person to show the Farm, and further particulars may be obtained on application to Mr. Edward W. Moore, Coleshill, Highworth.

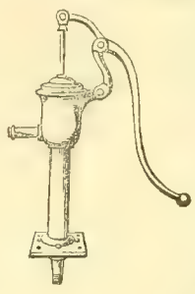
AMATEUR STRAWBERRY GROWERS are respectfully informed that HOOPER'S STRAWBERRY TILES, from being made solid, are free from the imputation of harbouring slugs. They are made large and strong, and coloured black, that they may better retain heat.—To be had of Messrs. CHARLWOOD and CUMMINS, Tavistock-row, Covent-garden, London, where they may be seen.

BOYD'S SELF-ADJUSTING SCYTHE,
(Class IX. of the Exhibition),



Can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary. Manufactured and sold by Deane, Dray, and Deane, Agricultural Implement Depot, Swan-lane, London Bridge; and to be had of all respectable Ironmongers.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0
Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes, if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

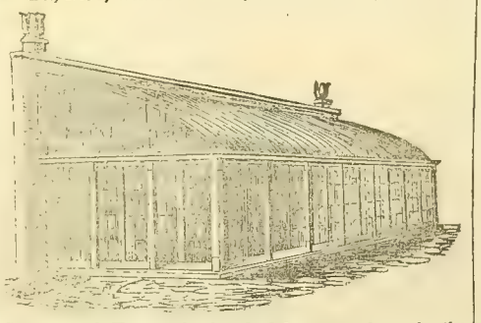
E. DENCH having erected Two Patent Hothouses at the west end of the Great Exhibition, invites the attention of Gentlemen to the superior qualities, with the lowness of price, attending the erection of his Patent Houses; and having now ready for sale FIVE HOUSES of different sizes and descriptions on his premises, and some of them at a great reduction in the price, thinking of making alterations on his premises.

Hothouses built to be Glazed without Putty for Wood, and warranted not to drip under any circumstances.

Heating with Hot-water on the most scientific and economical principles.

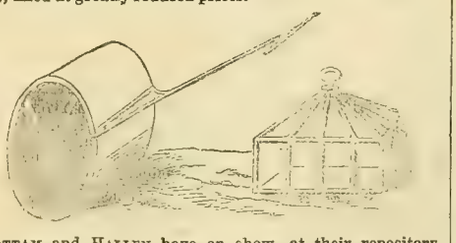
BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking apparatus possesses greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus. B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. May be seen in daily use at the Craven Hotel, Craven-street, Strand; Stevens' Hotel, Bond-street; Greenwich Hospital; University College Hospital; and is in use by upwards of 200 private families, and at the Manufactory, 130, Fleet-street, London. A prospectus can be forwarded upon application, detailing particulars and price.

COTTAM & HALLEN, Engineers, Iron Founders, &c., No. 2, Winsley-street, Oxford-street, London.



Cottam and Hallen having had long experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



Cottam and Hallen have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:—

| | |
|---|---|
| Garden Rollers | Hand-glass Frames |
| Garden Engines | Flower Stakes |
| Garden Syringes | Flower-bordering |
| Watering Pots | Flower Stands |
| Garden Vases | Garden Arches |
| Mowing Machines | Garden Chairs |

Every description of Work, both Plain and Ornamental, in wrought and cast iron, for Gardens, &c., &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

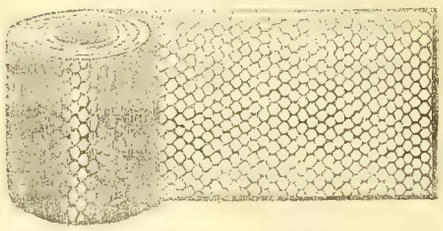
SMITHFIELD CLUB, 1851.

THE CHRISTMAS FAT CATTLE SHOW will take place on TUESDAY, 9th, WEDNESDAY, 10th, THURSDAY, 11th, and FRIDAY, 12th of December, 1851, at the CARRIAGE BAZAAR, King-street, Baker-street, Portman-square.

Lists of the Prizes offered, and every information may be obtained on application to

B. T. Brandreth Gibbs, Hon. Sec.
Corner of Half Moon-street, Piccadilly, London.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

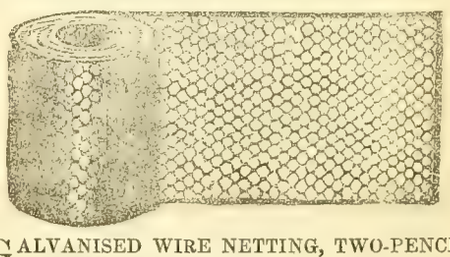


| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24-inch wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " | ... | 9 " | 6½ " |
| 2-inch " extra strong " | ... | 12 " | 9 " |
| 1½-inch " light " | ... | 8 " | 6 " |
| 1½-inch " strong " | ... | 10 " | 8 " |
| 1½-inch " extra strong " | ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 " " | 4½*d.* " | 36 " " | 9*d.* " |
| 14 " " | 6*d.* " | 48 " " | 1*s.* " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, ugly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL and Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

Her Majesty's Woods and Forests,
Honourable Board of Ordnance,
Honourable East India Company,
Honourable Commissioners of Customs,
Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny per Square Foot.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL and CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhhil-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

THE JAY HAS SPOKEN!
For the Key to the Mystery, see THE LOOKER-ON, price 2d. weekly.
London: A. HALL, VIRTUE and Co., 25, Paternoster Row; and all Booksellers and Newsvenders.

This day is published,
HOW TO SEE THE EXHIBITION.
IN FOUR VISITS.
By W. BLANCHARD JERROLD.
VISIT THE FIRST, price 6d., containing—The Transept, Nave, and South-Western Section of the British Department.
*** VISITS SECOND, THIRD, and FOURTH are nearly ready, price 6d each.
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CONTENTS.

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| Binding up | Pushing eye, spring treatment of dwarf shoots from | GRAFTING. |
| Budding knife | Roses, different sorts on the same stock | Aphides, to keep down |
| Budding, time of year, day, time of day, state of the plant, care of buds | Roses, short list of desirable sorts for budding with a pushing eye | Free-growers, remarks on |
| Budding upon body | Sap-bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
| Bud, preparation of, for use | Shoots and buds, choice of | Grafting, disadvantage of |
| Buds, dormant and pushing | Shoots for budding upon, and their arrangement | Operation in different months |
| Buds, failing | Shoots, keeping even, and removing thorns | Preliminary observations |
| Buds, securing a supply of | Shortening wild shoots | Roses, catalogue and brief description of a few sorts |
| aterpil lars, slugs, and snails, to destroy | Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending | Scion, preparation and insertion of |
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| Guards against | | APPENDIX. |
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INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 379 c | Heat of plants | 375 c |
| Asparagus | 373 c | Laburnum sports | 376 c |
| Astyages, Pear tree | 373 c | Manures, application of | 378 c |
| Balsams | 376 *c* | National Floricultural Soc. | 375 c |
| Calceolaria, the | 373 *b* | Orchids, sale of | 376 *a* |
| Calendar, Horticultural | 376 *a* | Peach trees, to root-prune | 376 c |
| Chicory, culture of | 379 *b* | Pears and frost | 373 c |
| Crops, green | 378 *b* | Pear tree Astyages | 373 c |
| Crystal palace | 377 c | Pelargoniums, new | 375 c |
| Draining, deep | 379 *a* | Plants, heat of | 375 c |
| Drainage Act | 377 *b* | Plant houses, shading for | 373 *c* |
| Equinoxes, the | 379 *b* | Potato disease | 373 c |
| Fabiana imbricata | 373 c | Root crops | 378 *b* |
| Fly papers | 373 c | Royal Bot. Society's Show | 375 *b* |
| Fruit at Chiswick | 373 *b* | Selection the true source of improvement | 378 *b* |
| Gardeners' Benevolent Institution | 372 *b* | Shading for plant houses | 373 c |
| Glass-houses, shading for | 373 c | Tanks, material for | 376 c |
| Green crops | 378 *b* | Vegetables, improvement of | 378 *b* |
| Gutta percha | 376 c | Water, London | 371 c |
| Harvesting machines | 377 c | Weather, the | 381 c |
| Horticultural Society's Show | 371 *a* | Weed destroyer, Fleming's | 372 *a* |
| — report of | 374 *a* | Whitewash | 376 *a* |
| — fruit at | 373 *b* | Wireworm, the | 376 *a* |


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June 14.

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GARDENERS' BENEVOLENT INSTITUTION.—At a General Meeting of the Members of this Society, held on Wednesday, the 11th June, for the purpose of electing Two Pensioners on the Funds of this Charity, the following was the result of the Ballot:—

| Name. | Application. | Age. | Votes. |
|---|---|---|---|
| 1. EDWARD MARSHALL | 10th | 71 | 221 |
| 2. JOHN APPLEBY | 6th | 59 | 126 |
| 3. JAMES BATTEY | 5th | 68 | 306 |
| 4. JOHN COCKS | 5th | 65 | 390 |
| 5. WILLIAM BROWN | 4th | 73 | 8 |
| 6. RICE EVANS | 4th | 73 | 22 |
| 7. CORNELIUS ROBINSON | 4th | 74 | 109 |
| 8. JOHN SNOW | 4th | 68 | 229 |
| 9. THOMAS FITZGERALD | 3d | 70 | 332 |
| 10. JOHN HOPKINS | 3d | 65 | 20 |
| 11. HENRY SCHNEIDER | 3d | 86 | 133 |
| 12. WILLIAM CARTER | 2d | 71 | 5 |
| 13. JAMES GREEN | 2d | 61 | 197 |
| 14. WILLIAM JACKSON | 1st | 69 | 179 |
| 15. JOHN MEARNS | 1st | 72 | 232 |

The Meeting then declared John Cocks and Thomas Fitzgerald, as having the greatest number of votes, duly elected Pensioners. By Order. EDWARD R. CUTLER, Secretary.

97, Farringdon-street, June 14, 1851.

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Cassandra, Cavalier, Clara, Crusader, Distinctus, Elegans, Empo, Forget-me-not, Grandiflora, Gulielma, Jenny Lind, Queen of Scots, Painted Lady, Princess, Rachael Superb, Rebecca, Refulgent, Resplendent, Roll'a, Rosa Mundi, Scarlet Defiance, Star of the West, Sundown, Symmetry, and Windsor Castle. The above set of 25 for 30*s*., or any 12 for 18*s*.

Augusta, Brockii, Camilla, Desdemona, Duke of Cornwall, Duke of Hamilton, Gigantic, Isabella, Josephus, King, Lord Chancellor, Madeline, Marmion, Minna, Mogul, Mustee, Negress, Orion, Peri, Pluto, Pu'chellum, Rosy Circle, Sarah Jane, Sir Robert Peel, The Jew, and Zenobia. The set of 25 for 15*s*., or any 12 for 9*s*.

Also the following fancy varieties:—Anais, Black Prince, Beauty of Winchester, Clown, Dandy, Harlequin, Jehu Improved, Jenny Lind, La Belle d'Africana, Lady F. Hastings, Maid of Anjou, Mazeppa Superba, Princess Alice Maude, Princess Helena, Queen of Summer, Statiaski, and Yeatmannianum. The set for 15*s*., or any 12 for 12*s*.

BEDDING AND SELECT PLANTS. See a list of these in the *Gardeners' Chronicle* for May 31 and June 7.

Catalogues supplied free on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FUCHSIA "CLAPTON HERO" (BATTEN). Ditto "PAGODA" (BATTEN).—These can with confidence be recommended as the best of the dark varieties of this season; price 7*s*. 6*d*. each.

POTENTILLA LUCIA; OR, BICOLOR GRANDIFLORA.—Colour, sulphur yellow, edged with scarlet; vigorous grower, and produces the largest flowers of any known variety; 5*s*. each.

POTENTILLA ANTWERPIENSIS.—Colour, dark brilliant orange, dwarf growth, producing semi-double flowers in great profusion, which do not close at night; 7*s*. 6*d*. each.

SWEET ORANGES, 18 inches to 2 feet, in Fruit; 10*s*. each.

Also all the new English and Continental Verbenas, Fuchsias, Liliputian Chrysanthemums, German Daisies, &c. For particulars of which we refer to our general Catalogue just published, which can be had by post, free, on application.

HUGH Low and Co., Clapton Nursery, London.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS offers the following Stock of Bedding-out Plants, strong and vigorous, in 60-size pots, and which will be sent to any part of the kingdom, carriage paid to London:

SCARLET GERANIUMS, Tom Thumbs, &c., 4*s*. per doz., strong.
VERBENAS, all the best varieties in cultivation, 3*s*. per doz.
SALVIAS, blue and red, 4*s*. per doz.
FUCHSIAS, all the best leading varieties, 4*s*. per doz.
HELIOTROPES, including the new varieties, 3*s*. per doz.
PENTSTEMONS, fine varieties, 4*s*. per doz.
AGERATUM CŒLESTINUM, 3*s*. per doz.
CALCEOLARIAS, Viscosissima and other varieties, 3*s*. per doz.
ANAGALLIS, blue and red, 4*s*. per doz.
NIEREMBERGIAS, 4*s*. per doz.
CUPHEA PLATYCENTRA, 3*s*. per doz.
GAILLARDIA PICTA, &c., 3*s*. per doz.—June 14.

JOHN DOBSON, late GARDENER to Mr. EDWARD BECK, Worton College, Isleworth, begs to acquaint the admirers and cultivators of PELARGONIUMS, that he has commenced business as a FLORIST and SEEDSMAN, at Woodlands, Isleworth; and by the aid of his late employer, who has supplied him with a large stock of his finest varieties, he is enabled at once to execute any orders with which he may be favoured, and which, until his Greenhouses are erected on his own ground, may be addressed to him at Worton Cottage, Isleworth, near London, where he has permission to show his Plants until he can remove them, as well as Mr. Beck's collection of Seedlings of the past and present year.

AZALEA INDICA "SYMMETRY."

J. AND C. LEE are now sending out this fine variety, well established plants, 21*s*. each, with the usual discount to the trade.

Nursery, Hammersmith, near London, June, 1851.

SELECTED CINERARIA SEED, saved from one of the choicest and finest varieties in cultivation, this being the proper time for sowing (which any amateur may cultivate with little trouble and sure success), to insure good strong plants that will bloom well the forthcoming season.

Packets of the above can be forwarded to any part, on receipt of 18 penny postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

MESSRS J. AND H. BROWN offer the following desirable Plants:

| | | | |
|---|---|---|---|
| 12 | ORCHIDEA, choice species and good plants, for | 30*s*. | 0*d*. |
| 50 | Choice GREENHOUSE PLANTS, one of a sort by name | 40 | 0 |
| | (This collection is highly recommended.) | | |
| 24 | Choice ERICAS, one of a sort, by name | 16 | 0 |
| 24 | Choice FUCHSIAS do. do. | 10 | 0 |
| 12 | Fine New GLOXINIAS, one of a sort | 10 | 0 |
| 12 | Fine New ACHIMENES do. | 10 | 0 |
| 12 | New Double German DAISIES, by name | 10 | 0 |
| 12 | New Perennial German Phloxes, one of a sort | 8 | 0 |
| 12 | Choice CHRYSANTHEMUMS, new sorts | 6 | 0 |
| 12 | New dwarf Ditto by name | 8 | 0 |
| 12 | Tea-scented ROSES, one of a sort, by name, in pots | 9 | 0 |
| 12 | Climbing Ditto choice sorts, in pots | 6 | 0 |
| | First-class DAHLIAS, show and fancy varieties, per dozen | 6 | 0 |

Verbenas, Petunias, Pentstemons, Salvias, Lobelias, Calceolarias, Cupheas, Œnotheras, Geraniums, Antirrhinums, Phloxes, Pansies, Lantanas, Climbers, &c., for planting out, 3*s*. 6*d*. to 5*s*. per dozen.

Catalogues of plants, &c., free by post.

Albion Nursery, Stoke Newington, London, June 14.

DALSTON NURSERY, MIDDLESEX.

WILLIAM HARRINGTON, successor to the late Mr. JOHN SMITH, begs to inform the Nobility, Gentry, and the Trade, that he has taken the above Premises, and hopes by attention and assiduity to be favoured with the same liberal patronage as his predecessor.—June 14.

RIVERS'S STUBBLE SWEDE TURNIP SEED.

J. RIVERS solicits the attention of Agriculturists to his quick-growing SWEDE TURNIP. The variety owes its origin to a cross between a large variety of the Early Stone, in 1842, and the old Green Top Swede. It has become a distinct variety, by carefully selecting, for seven years, those most like the Swede in habit, so that now it is a true Swede, with the earliness of the White Stone; it is green topped, with a short neck, with the solid yellow flesh of the common Swede; for sowing in May, for early feed, or for late sowing upon heavy land and sheep-fed leys, it will be found a valuable Turnip for hardiness and keeping qualities; also for sowing near large towns, to draw off early. It grew 11 tons per acre after Tares, mowed, without manure, on the 6th of August, 1849. Specimens of the roots were exhibited at the Baker-street Cattle Show; also Specimen Roots of different times of sowing, from May till August, were exhibited. Orders for any quantity above 10 lbs. will promptly be attended to, if addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts, at 2*s*. per lb., carriage paid to London. It will be sold in sealed bags, of 2½ lbs., price 5*s*., and 5 lbs. 10*s*., by the following agents:—Aberdeen, Union-street, Mr. J. Roy; Ayr, N. B., Messrs. Imrie and Sons; Belfast, Messrs. Farrell and Co.; Bristol, Messrs. Garaway, Mayes, and Co.; Carlisle, Messrs. Little and Ballantyne; Chester, Messrs. F. and J. Dickson; Chilwell, Nottingham, Messrs. J. R. and A. Pearson; Cirencester, Mr. R. F. Darby; Chichester, Mr. H. Silverlock; Clonmel, Ireland, Messrs. Higgins and Sons; Dunse, N. B., Messrs. Hogg and Wood; Dundee, Messrs. Urquhart and Sons; Edinburgh, Leith-walk, Messrs. Dickson and Co.; Exeter, Messrs. Veitch and Son; Folkestone, Mr. James Mickle; Glasgow, Messrs. Austin and M'Aslan; Inverness, Messrs. Howden (Brothers); Hull, Messrs. Dickson; Maresfield, Uckfield, Sussex, Messrs. Wood and Son; Malton, Yorkshire, Mr. John Sloter; Norwich, Exchange-street, Mr. Ewing; Plymouth, Mr. A. Pontey; Perth, Messrs. Dickson and Turnbull; Peterborough, Mr. Plutter; Reading, Messrs. Sutton and Sons; Sudbury, Suffolk, Messrs. Bass and Sons; Sheffield, Messrs. Fisher and Holmes; Westerham, Mr. J. Cattell; York, Messrs. Backhouse and Sons.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, NURSERYMAN AND SEEDSMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office order, made payable here, at the under-named prices, basket or mat, and package included.

All the sorts of Early Cabbage, Savoy and Kale, including Brussels Sprouts, 4*s*. 6*d*. per 1000; all the sorts of Autumn and Spring Broccoli, 5*s*. 6*d*. per 1000; all the sorts of Celery, 5*s*. 6*d*. per 1000; Cauliflower, Early and Late, and Red Cabbage, 9*d*. per 100; Drumhead, or Cattle Cabbage, 3*s*. 6*d*. per 1000. 6*d*. per 1000 less, when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway.

Seed of CATTELL'S Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz. as usual, and the latter ½ oz.

# HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JUNE 7, 1851.

## AWARD OF THE JUDGES.

### THE LARGE GOLD MEDAL.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids

### THE GOLD KNIGHTIAN MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 15 Stove and Greenhouse Plants
3 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 20 species of Exotic Orchids

### THE GOLD BANKSIAN MEDAL.

1 To Messrs. Fraser, of Lea Bridge-road, Essex, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 15 Stove and Greenhouse Plants
3 To Mr. Speed, of Edmonton, for 10 Stove and Greenhouse Plants
4 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids
5 To Messrs. Veitch and Son, of Exeter, for 15 species of Exotic Orchids
6 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of the same
7 To Messrs. Veitch and Son, for Pitcher Plants
8 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., at Sion, for plants of Nutmeg, Vanilla, Cinnamon, and Gamboge, all bearing ripe and unripe fruits; except the Cinnamon, which was in flower.
9 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heath
10 To Messrs. Rollisson, of Tooting, for the same
11 To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses, in pots
12 To Messrs. Lane, of Great Berkhampstead, for the same
13 To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for a collection of Fruits

### THE LARGE SILVER-GILT MEDAL.

1 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 15 Stove and Greenhouse Plants
3 To Mr. Croxford, Gardener to H. H. Barnes, Esq., of Stamford-hill, for 10 Stove and Greenhouse Plants
4 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 Stove and Greenhouse Plants
5 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids
6 To Messrs. Rollisson, for 15 species of Exotic Orchids
7 To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 10 species of Exotic Orchids
8 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 species of the some
9 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 6 varieties of Greenhouse Azalea
10 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for Tall Cacti, in flower
11 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for 10 varieties of Cape Heath
12 To Messrs. Fairbairn, of Clapham, for the same
13 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heath, in 11-inch pots
14 To Messrs. Rollisson, for the same
15 To Alexander Rowland, Esq., F.H.S., for 12 varieties of Roses in pots
16 To Mr. Francis, of Hertford, for the same
17 To Mr. Gaines, of Battersea, for New Pelargoniums, in 8-inch pots
18 To Mr. Chapman, of Turnham Green, for Old Pelargoniums, in 11-inch pots
19 To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for a collection of Fruits

### THE CERTIFICATE OF EXCELLENCE.

1 To Messrs. Pamplin, Lea Bridge-road, Essex, for 20 Stove and Greenhouse Plants
2 To Mr. Watson, Gardener to Mrs. Tredwell, St. John's Lodge, Lower Norwood, for six Stove and Greenhouse Plants
3 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for 15 species of Exotic Orchids
4 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of Helichrysums
5 To the same, for 6 varieties of Greenhouse Azalea
6 To Mr. Falconer, Gardener to A. Palmer, Esq., of Cheam, for Tall Cacti in flower
7 To Messrs. Fraser, for 10 varieties of Cape Heath
8 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for Cape Heaths in 11-inch pots
9 To Messrs. Fairbairn, for the same
10 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for Cape Heaths in 8-inch pots
11 To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 varieties of Roses in pots
12 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for Cape Pelargoniums
13 To Mr. Bragg, of Slough, for New Pelargoniums in 8-inch pots
14 To Mr. Gaines, for Old Pelargoniums in 11-inch pots
15 To Mr. Ambrose, of Battersea, for 6 Fancy Pelargoniums in 8-inch pots
16 To Mr. Edmonds, Gardener to the Duke of Devonshire, F.H.S., at Chiswick, for a single specimen of Rhododendron aureum superbum

### THE LARGE SILVER MEDAL.

1 To Mr. Hamp, Gardener to John Thorne, Esq., F.H.S., for six Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for six species of Exotic Plants
3 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of Helichrysums
4 To the same, for Cape Heaths in 11-inch pots
5 To Messrs. Rollisson, for Cape Heaths in 8-inch pots
6 To Mr. Terry, Gardener to Lady Puller, for 25 varieties of cut Roses
7 To Mr. Parker, Gardener to J. M. Strachan, Esq., F.H.S., for Cape Pelargoniums
8 To Mr. Gaines, for six Fancy Pelargoniums, in 8-inch pots
9 To Mr. Franklin, Gardener to Mrs. Lawrence, F. H. S, for 12 Calceolarias, in 11-inch pots
10 To Mr. Chapman, of Turnham Green, for the same
11 To Messrs. Veitch and Son, for Erica metulæflora
12 To the same, for a shrubby species of Calceolaria from Peru
13 To Mr. Floud, Gardener to C. Bailey, Esq., Aberaman House, near Aberdare, Glamorganshire, for a Queen Pine-apple, weighing 5 lbs. 14 oz.
14 To Mr. Davis, of Oak Hill, East Barnet, for a Providence Pine-apple, weighing 6 lbs. 11 oz.
15 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for Black Hamburgh Grapes
16 To Mr. Davis, of Oak Hill, for the same
17 To Mr. Smith, Gardener to S. Ricardo, Esq., Titness Park, Sunning Hill, for Sweetwater Grapes
18 To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for Muscat Grapes
19 To Mr. Harrison, Oatlands Gardens, Weybridge, for the same
20 To Mr. Bain, Gardener to B. Bernasconi, Esq., of Harrow-Weald, for White Frontignan Grapes

### THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Stuart, Gardener to T. Huggins, Esq., of Norwood, for six Stove and Greenhouse Plants
2 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a single specimen of Exotic Orchid (Dendrobium Calceolaria)
3 To Mr. Watson, Gardener to Mrs. Tredwell, Lower Norwood, for a collection of Helichrysums
4 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 6 varieties of Cape Heath in 8-inch pots
5 To Mr. Willmer, of Sunbury, for a collection of Pinks
6 To Mr. E. G. Henderson, of Wellington-road Nursery, for 6 varieties of Fancy Pelargonium in 8-inch pots
7 To Mr. Francis, of Hertford, for Pansies in pots
8 To Mr. Wood, of Norwood, for Alpine Plants
9 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for a single specimen of Erica Cavendishii
10 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for the same
11 To Mr. Wood, of Norwood, for Variegated Plants
12 To Messrs. Veitch, for Dendrobium Veitchianum
13 To Mr. Braid, Gardener to H. Perkins, Esq., of Hanworth-park, near Hounslow, for fruit of Musa Cavendishii
14 To Mr. Hoare, Gardener to J. Bailey, Esq., Glanusk-park, Brecknock, for a Queen Pine Apple, weighing 4 lbs. 12 oz.
15 To Mr. Slowe, Gardener to R. W. Baker, Esq., F.H.S., for a Providence Pine Apple
16 To Mr. Ingram, Gardener to Her Majesty at Frogmore, for Black Hamburgh Grapes
17 To the same, for Muscat Grapes
18 To Mr. Mitchell, of Brighton, for Black Hamburgh Grapes
19 To Mr. Rust, Gardener to J. Maclaren, Esq., F.H.S., for Muscadine Grapes
20 To Mr. Cox, Gardener to J. Tredwell, Esq., Leigham-court, Brixton-hill, for White Frontignan Grapes
21 To Mr. Collinson, Gardener to the Marquis of Westminster, Eaton-hall, Cheshire, for Royal George Peaches
22 To Mr. Davis, of Oak-hill, for Noblesse Peaches
23 To Mr. Elliott, Gardener to Mrs. Boothby, of Twyford-abbey, Acton, for a collection of Strawberries in pots
24 To Mr. Ewing, Gardener to O. F. Meyrick, Esq., F.H.S., for a Green-fleshed Melon

### THE SILVER BANKSIAN MEDAL.

1 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 6 Stove and Greenhouse Plants
2 To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Helichrysums
3 To Mr. Francis, of Hertford, for Yellow Roses
4 To Mr. Bragg, of Slough, for Pansies, in pots
5 To Mr. Turner, of Barnes Common, for Alpine plants
6 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a single specimen of Leschenaultia biloba major
7 To Mr. Speed, of Edmonton, for Clerodendron fallax
8 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a single specimen of Pimelea Hendersoni
9 To Mr. Coster, of Benson, for Ranunculuses
10 To Mr. Speed, for Clerodendron Bethuneanum
11 To Mr. Frost, Gardener to E. L. Betts, Esq., of Preston-hall, near Maidstone, for a Queen Pine Apple, weighing 3 lbs. 4 oz.
12 To Mr. Harrison, of Oatlands, for a Queen Pine Apple
13 To Mr. Drummond, Gardener to C. H. Leigh, Esq., of Pontypool-park, for a Providence Pine Apple
14 To Mr. Boyd, Gardener to Viscount Dillon, of Dytchley, Eustone, for Black Hamburgh Grapes
15 To Mr. Harrison, of Oatlands, for the same
16 To Mr. Challis, Gardener to Mrs. Irvine, of Luddington-house, Egham, for Muscadine Grapes
17 To Mr. Cox, Gardener to J. Tredwell, Esq., of Leigham-court, for Muscat Grapes
18 To the same, for white Frontignan Grapes
19 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for Peaches
20 To Mr. Ingram, Gardener to Her Majesty at Frogmore, for British Queen Strawberries
21 To Mr. Mann, of Isleworth, for the same
22 To Mr. Turnbull, Gardener to the Duke of Marlborough, for Keens' Seedling Strawberries
23 To Mr. Mann, of Isleworth, for the same
24 To Mr. Robertson, Gardener to Lady Foley, Stoke Edith-park, Ledbury, for a Persian Hybrid Melon

### THE CERTIFICATE OF MERIT.

1 To Mr. Bragg, of Slough, for six Fancy Pelargoniums, in 8-inch pots
2 To Mr. Kinghorn, for Leschenaultia formosa
3 To Mr. Salter, of Hammersmith, for a collection of Daisies
4 To Messrs. Veitch, for Eurybia sp., from New Zealand
5 To Messrs. Henderson, of Pine Apple-place, for Gastrolobium cuneatum
6 To Mr. Elliott, Gardener to Mrs. Boothby, of Twyford Abbey, for British Queen Strawberries
7 To Mr. Harrison, of Oatlands Palace Gardens, for Keens' Seedling Strawberries
8 To Mr. Smith, Gardener to S. Ricardo, Esq., of Titness Park, for a Bromham Hall Melon


CHOICE CINERARIA SEED.

LUCOMBE, PINCE, AND Co., have saved from a Select Collection of all the Newest and Finest Varieties of 1851, which they have this season grown in great perfection, some Cineraria Seed, of excellent quality; and they beg leave to offer it for sale, in Packets, sealed and warranted by them, at 2s. 6d. each, free by post. If sown soon, strong plants will be produced, which will flower in 1852.

Exeter Nursery, June 14th.

FERNS AND ORCHIDS.

WILLIAM MASTERS has a Stove 40 feet square, filled with a rare collection of FERNS, some adapted for Wardian cases, and others for ornamenting Tanks, &c.

Also, a large collection of Orchids, some growing in pots, others on blocks, and in rustic baskets. Where the selection is left to W. M., they can be can be supplied good and cheap.

Orders are respectfully solicited.

Exotic Nursery, Canterbury.

PINE PLANTS.—THIRTY FRUITING PINE PLANTS (chiefly Lemon Queens), and 50 Succession PINE PLANTS, to be sold cheap.—Apply to E. P. DIXON, Nurseryman, Hull.

PRIMULA SINENSIS SEED.—Any person having the above in variety (warranted to be saved from first-rate flowers) to dispose of, can apply, stating price, &c., to Messrs. J. WEEKS and Co., King's-road Nursery, Chelsea, London.

ROSES.

"SANGSTER'S FLORUMBRA," for the protection of choice Roses, when in bloom, from sun or rain, as well as for destroying the Green Fly, with the assistance of Brown's Fumigator, may be had wholesale of Messrs. BARBER and GROOM, London; and retail of most Seedsmen and Ironmongers in the Kingdom; and of W. and J. SANGSTER, at their Manufactory, 75, Cheapside. Price, as Shades only, from 4s. each, or complete, from 7s. 6d. according to size. List of prices sent on application.

IPOMŒA LIMBATA (LINDLEY).

(A New and Beautiful Hardy Climbing Annual.)

MESSRS. WM. ROLLISSON AND SONS have the pleasure to inform the Nobility, Gentry, and Public in general, that they intend sending out, on and after the 24th of June, their new and beautiful IPOMŒA (named by Dr. LINDLEY Ipomœa limbata), 10s. 6d per plant, just coming into flower; the usual discount to the trade.

N.B. Fine plants of the true RHODODENDRON JAVANICUM, from 7s 6d. to 10s. 6d. and 21s., according to the size of the plant.—Tooting, Surrey.

FERNS.—The present prevailing taste for this interesting and elegant tribe of plants, has induced the Subscribers to offer them in selections as under:—12 distinct exotic species, 30s. to 60s.; 25 ditto, 50s. to 100s.; 20 distinct hardy species, 1s. to 1s. 6d. each. Selection of sorts left to H L. and Co. It would be advisable to state if they are required for Wardian cases, as small growing sorts would then be selected.—HUGH LOW and Co., Clapton Nursery, London.

CATTLE DRUMHEADS (fine), warranted true, by THOMAS WELLAND, Surrey Gardens, near Godalming, Surrey.—Delivered at Godalming Station, 3s. 6d. per 1000, crates included. Cauliflowers 2s. 6d. per 100.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to state that he has a quantity of BEDDING PLANTS left, which he will send by post, at 1s. per dozen; GERANIUMS, 1s. 6d. per dozen.—Catalogues sent on the receipt of one postage stamp.

TO CAMELLIA GROWERS.

TO BE DISPOSED OF, a very fine well-grown Bushy Plant of the MARCHIONESS OF EXETER, measuring between eight and nine feet from the surface of the pot. Upwards of 100 blooms expanded themselves last season. Price 10l. 10s.; valued at 25l. by the trade. A certificate will be given by the grower, who is also the possessor of the original plant.—Letters, post paid, to be addressed to W. BROCK, Esq., Manor House, Guernsey.

MESSRS. VEITCH AND SON beg to call attention to the three following rare and beautiful Plants, for description of which see Advertisements in *Gardeners' Chronicle* of last Saturday, viz.—

| | £ | s. | d. |
|---|---|---|---|
| CANTUA DEPENDENS ... ... | 1 | 1 | 0 |
| BERBERIS DARWINII ... ... | 1 | 1 | 0 |
| MEDINILLA MAGNIFICA ... ... | 3 | 3 | 0 |

Good established plants now ready for sending out at the above prices. The usual discount to the Trade.

*** The Cantua is the plant that has attracted such general admiration at the recent Exhibitions at Chiswick and the Regent's-park, and has received Three First Class Medals as a New Plant.—Exeter, June 14.

FOR PRESENT SOWING, all Post free.—Mignonette, or Nemophilas, for successional sowings, 8d. per oz.; 12 packets of Annuals, for autumn flowering, 1s.; 12 packets of Biennials, 1s.; first-rate Hollyhocks, Cinerarias, Scarlet Giant Stocks, Sweet-williams, Pentstemons, Heartsease, Scabias, and Heracleum giganteum, each, 6d. per packet. Superior Summer Lettuce, and other Vegetable Seeds, 4d. per packet; or 8d. per oz.

Plants of the Heracleum giganteum 9d. each, or six do. for 3s. This plant, with us, is already 10 feet high, with leaves 6 feet long and 6 feet broad.

Remittances requested, which may be made by stamps, in exchange.—ABRAHAM HARDY and SON, Seed-growers, Maldon, Essex.

NEW HARDY JAPAN PLANT.

DEUTZIA GRACILIS (TRUE.)

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, having a good stock of the above beautiful and distinct DEUTZIA, will send it out on the 1st of August.

| | £ | s. | d. |
|---|---|---|---|
| Extra strong well established plants ... ... | 1 | 0 | 0 |
| Smaller do. do. ... ... ... | 0 | 12 | 6 |
| Grafted, 4 to 5 feet high ... ... ... ... | 2 | 0 | 0 |

J. B.'s Deutzia gracilis will never grow higher than 2 feet. Messrs. Hugh Low and Co., of Clapton, have seen it in bloom, and have ordered 40 plants of it.

This plant may be had in bloom six months in the year.

J. B. has received the following prizes for this plant. 1850, Ghent first prize; 1851, Chiswick, May the 3d, prize of excellence; Regent's Park, May 14th, first prize. Bruxelles first prize, Antwerp first prize, Mechlin first prize, Louvain first prize, Mentz first prize, Erfurt first prize, Paris first prize.

One over to the Trade on three. No discount if less than three plants are ordered. Free to London.

Deutzia crenata vera, new (D. gracilis of some), 1s.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10s. 6d. each, viz.:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s., at the Royal South London Exhibition; 21s. Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5l. in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2s. 6d. and 5s. packets, post paid, for prepayment.

HORTICULTURAL SOCIETY, 21, REGENT STREET.
NOTICE IS HEREBY GIVEN,
THAT
MR. HOSEA WATERER'S
**EXHIBITION OF AMERICAN PLANTS,**
IN THE GARDEN OF THIS SOCIETY, AT
TURNHAM GREEN,
*Is now open Daily, from* 9 A.M. *to* 6 P.M.

Fellows of the Society are admitted *free*. Tickets for other persons, available for every day except Sundays and the 6th and 7th of June, can be procured in the Society's Garden, price One Shilling each.

The purchase of such a ticket admits the bearer to the Garden without the order of a Fellow of the Society

TURNIP SEEDS OF FINE SELECTED STOCKS.

| | | | |
|---|---|---|---|
| Rivers' new variety of Stubble Swede ... | per lb. | 2 | 0 |
| Laing's improved Purple-topped Swede, p. bl. 32s. | ,, | 0 | 10 |
| Skirving's Liverpool Swede, per bushel, 24s. ... | ,, | 0 | 8 |
| Fine Purple-topped Swede, per bushel, 24s. ... | ,, | 0 | 8 |
| Norfolk White, round ... ... ... ... | ,, | 0 | 6 |
| Norfolk Green, round ... ... ... ... | ,, | 0 | 6 |

Also Skirving's Purple-topped Bullock, Green-topped Scotch, Dale's Hybrid, Red Round, Pomeranian Globe, White, Red, and Yellow Tankards, &c., of the best Stocks.

Priced Agricultural Seed Lists supplied on application.

BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

**The Gardeners' Chronicle.**
*SATURDAY, JUNE* 14, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | June 16 | Chemical | 8 P.M. |
| | | Statistical | 8 P.M. |
| | | British Architects | 8 P.M. |
| TUESDAY, | — 17 | Horticultural | 3 P.M. |
| | | Linnean | 8 P.M. |
| WEDNESDAY, | — 18 | Royal Botanic | 3½P.M. |
| | | Microscopical | 8 P.M. |
| | | Ethnological | 8 P.M. |
| THURSDAY, | — 19 | Antiquarian | 8 P.M. |
| | | Royal | 8½P.M. |
| SATURDAY, | — 21 | Asiatic | 2 P.M. |

COUNTRY SHOWS.—Tuesday, June 17: Stamford Hill Horticultural, and Guildford Horticultural.—Wednesday, June 18: Scottish Pansy, and Brechin Horticultural.—Thursday, June 19: Bath Horticultural—Friday, June 20: Beccles Horticultural, and Newberry Horticultural.—Saturday, June 21: Staines Horticultural.

THE event of the past week has been the second show of the HORTICULTURAL SOCIETY at Chiswick. A sunless but dry day brought together 9383 visitors, forming such an assemblage of rank and fashion as is to be seen in these Gardens only, in the open air, near London. At an early hour the Exhibition had the distinguished honour of being inspected by her Royal Highness the Duchess of ORLEANS.

In speaking of the objects presented for examination, we can do little more than repeat what we have said on recent occasions, namely, that the great and important feature of the Exhibition was the total absence of ill-cultivated specimens. There were various degrees of excellence, but everything was excellent in its way. We may even add that the worst plants exhibited last Saturday would have swept away the first prizes 20 years ago. The miserable penny-pressed Pansy flowers, which once collected a crowd of simple admirers, would now be considered a disgrace to the place, and are satisfactorily represented by well cultivated specimens in pots. The gawky straggling half-starved sticks, first exhibited as Roses grown in pots, are replaced by plants of exquisite beauty prepared with unrivalled skill. And let us add, in justice to one class of exhibitors, even the Cape Heaths, which were for so many years produced in silly imitation of beehives, or Hottentot kraals, have at last been permitted to assume their natural forms. The pruning-knife, in moderation, has taken the place of the shears with which some innocent gardeners thought it necessary to clip their bushes into shape (!), and the genus Erica now merits, for its beauty, the high place in these exhibitions which was once given it merely because of the difficulty attending its cultivation.

As to Orchids, the fondness for them is evidently extending; new and good exhibitors are threatening the ancient lords of the region of epiphytes; and we have no doubt that in a few years the sanguine expectations of our friend "Dodman" will be realised, through the instrumentality of Mr. WILLIAMS's capital practical papers, now appearing weekly in our columns. The continual sales by auction of these plants afford opportunities of purchase suitable to the means of different classes of buyers, and it is not extravagant to predict that Orchids will some day be as common as Heaths and Pelargoniums. It is not impossible indeed that they may dislodge the latter, admiration of whose tawdry charms is more and more clearly on the decline.

As usual Messrs. VEITCH, of Exeter, stood pre-eminent among the exhibitors of new or rare plants. Their exhibition of Pitcher plants was one of the most remarkable sights that have yet been chronicled in the annals of Horticulture. Some, the Nepenthes, from the forests of the Indian Ocean, threw abroad their tendrils, and suspended their curious bags of green and crimson and white by whatever they could cling to. Others, the Sarracenias, from the swamps of North America, stood erect, like living trumpets, or imitating ewers and jugs of green and crimson; even while the spectator was looking at them, the unhappy fly might be seen entrapped amongst the relentless teeth with which the recesses of these cups are guarded. The most curious of all, perhaps, and the most beautiful in form, was the Cephalote, from the Australian bogs, whose delicate goblets reared their richly-carved and many-tinted crests above their bed of moss. No one in the world except Mr. VEITCH could produce such an exhibition as this. He had also a new yellow shrubby Calceolaria, with leaves like a Peach-tree; a curious Aster-like plant from New Zealand, said to be a hardy evergreen shrub; and the Eucalyptus coccifera of Van Diemen's Land, a tree with glaucous leaves and an abundance of large white flowers, which has lived without injury for several years at Exeter in the open ground, where it is now 20 feet high.

New hybrid plants are slow in appearing. The only one which caught our eye was a hybrid Pelargonium obtained between the lemon-scented (*Citriodorum*) and one of the Fancies, by Mr. THOMAS KEMPSTER, of Blackheath. His object was to add good flowers to sweet foliage, and we are glad to see that he is evidently on the road to success; the specimen exhibited was very pretty, and was accompanied by a cross between Radula and Rollisson's Unique, which we also look upon as a good beginning. If growers would but persevere in this way they would soon strike a rich vein, and occupy themselves more profitably in every sense, than in trying for results which only end in running out their breed. What is wanted among Pelargoniums is new blood, of which the wild species can furnish an abundance.

Among miscellaneous objects, was a remarkable collection from Syon, consisting of a tree bearing ripe nutmegs; a branch of Vanilla with flowers, and ripe as well as unripe pods; a Gamboge-tree, with rich orange fruit; and a piece of the Serpent Trichosanth (*Trichosanthes colubrina*), loaded with its long striped and twisted Cucumbers.

Of Mr. HOSEA WATERER's magnificent display of American plants in the Society's Garden, we spoke at length last week. On this occasion it was open to all visitors, throngs of whom were gratified by one of the most varied and beautiful spectacles which the gorgeous varieties of Rhododendron and Azalea can produce. Under the influence of the beauty of so grand a scene the clumsiness of the awning which screened it from the weather was hardly remarked. A few hours however after the close of the meeting this awning gave way before a gale of wind, and it became necessary to close the ground for some days, till it could be repaired. This has naturally given rise to expressions of surprise, and to inquiries, which we take this opportunity of answering, by stating that the awning in question (not furnished by Mr. EDGINGTON) was contracted for by the gentleman lately removed from his office of Secretary by the Fellows of the Horticultural Society, at their anniversary meeting; and that the contract was made, not only without the concurrence of the proper officer, but in opposition to all experience and remonstrance.

AMONGST the host of books, pamphlets, and newspaper letters, which have recently appeared on the SUPPLY OF WATER TO LONDON, there are two more especially deserving of notice, the one by the Hon. W. NAPIER, the other by Mr. PRESTWICH. The former is entitled "Suggestions for the Supply of the Metropolis from the Soft Water Springs of the Surrey Sands;" it is addressed to the Board of Health, and by them presented to both Houses of Parliament; it may, consequently, be considered as a fifth appendix to the report of last year, upon which we have already made a few remarks. We shall, therefore, now draw our readers' attention to one or two of the subjects treated of by Mr. NAPIER, whose main object, in the first instance, appears to have been the examination of the gathering grounds, as they are called, a district of about 150 square miles, south of London, and from the drainage of which it has been proposed to draw the requisite supply of water for the use of the metropolis. The simple fact, as stated by Mr. NAPIER, divested of all arguments, is, that a sufficient, nay, abundant supply of pure water may be easily obtained from the district in question; and he further observes, that it would obviously be better to collect the water immediately as it issues from the various springs, than to allow it first to become contaminated by contact with various soils. This is so far satisfactory; but we should like it still better if he did not go on to expatiate upon the "great and scarcely estimable benefits," which would in consequence accrue, not merely to the soil, but also to the inhabitants of the district itself. As for the calculation, that there is fifteen hundred and twenty-nine tons of water on every acre of the ground, which impedes cultivation, we must say, that although the statement may be curious it is one of very little value. If it be intended so completely to drain the soil of all moisture, as altogether to prevent any further evaporation from its surface taking place, then it is pretty certain that fertility, instead of being increased, will, on the contrary, be very seriously diminished. We greatly doubt the advantages which will arise from such a general and complete drainage as shall thoroughly remove from the "whole country the stigma of unnecessary and dangerous damp." Such statements as these are evidently intended to catch the million—they do not in any way strengthen the value of the facts themselves—on the contrary, they rather tend to give rise to doubts and questionings. For example, a good deal is said respecting the cool "grateful temperature" of the water, which is stated to have an average temperature of about 50°: then we are told, that by improved drainage the temperature of the soil is to be raised, and evaporation is to be prevented. Why it is this very evaporation, and the low temperature of the soil, that causes the spring water to be cool and grateful; and it is obvious that when the natural conditions of the soil are altered, all the properties of the water collected from it, and especially its temperature, will likewise be modified. The author appears a little uncertain as to the action of heat upon water, for he says a tumbler of water cannot be exposed for half an hour to the air without its becoming warm. Water will soon become warm, even though hermetically enclosed in glass, if it is placed in a warm situation; and, on the other hand, it will never become warm by mere exposure to the air when the temperature of the latter is near the freezing point. Mere exposure to air cannot make water warm, but the influence of heat will soon warm it, even though carefully protected from the air.

A rather important fact may be deduced from some of the statements contained in this part of Mr. NAPIER's essay, though it is not one which he endeavours to make out; he shows that the quantity of water given off by the various springs on the sides of a hill at Farnham is much greater than the whole quantity of rain-water which falls on the surface of the hill itself: from this he naturally concludes that it must in part be derived from the drainage of other and more distant parts of the country. It is perfectly plain then, that if in any way the outlet for these springs is increased, and especially if any perfect mode of drainage is applied to this hill, not only will the hill itself be affected, and the proportion of spring and surface waters materially altered, but also at the same time the outflow of water from these more distant places likewise will be proportionably affected. It is necessary to bear this fact in mind in considering the general relations of the subject, for it is evident that new considerations will arise, if, besides draining the gathering grounds, as they are called, the surrounding country also, to an indefinite extent, is likewise to be drained; and it is to this point that we would particularly draw the attention of the gardeners and farmers resident in the districts in question.

Mr. NAPIER has taken some pains to prove that soft water is very greatly superior to hard water for all domestic purposes; and he is evidently displeased that Messrs. BRANDE and TAYLOR confess that they could not find any very great difference between river water and distilled water in the preparation of tea. In the same way he is eager to show that the best beer is always made with soft water, and he asserts that all practical men are well aware of this. We must, however, confess that his arguments have failed to convince us, not merely on scientific, but on mere practical grounds. We have often heard excellent brewers state that the superiority of their beer in great part depended on the gypsum present in the water which they used. We believe it is an acknowledged fact that the water at Burton is a decidedly hard water, and contains a tolerably large proportion of lime. The remarks of Lord BACON upon this subject do not possess any very great value, and we cannot help thinking they had better have been omitted.

However people may differ as to individual facts, there is no doubt about one thing, that pure water is better for most purposes than that which is impure; and we cannot but admire the assertion that the Surrey waters are too pure, because, in consequence of their purity, they will cause the corrosion of leaden pipes. We own our inability to see that this is a reason for not using pure water, though it would be a good reason for discontinuing the employment of leaden pipes, which, if they are really unfit for the conduction of pure water, should be got rid of, and the sooner the better.

Possibly ere long new light will be thrown upon the whole of this important and complicated subject; some points will certainly be decided by careful experiments—such as the action of water upon lead; but there are other questions, such as the amount of

water to be collected from a given surface of land, and the effect which the drainage of that water from the land will produce, which are not so easily settled, and which very seriously concern the owners and occupiers of land near the proposed gathering grounds. For ourselves, we doubt whether the deep springs would long continue to yield their present supply, if the main source whence the water is derived were once tapped. On first sinking into the bed or stratum charged with water, it would of course discharge a very large quantity; but it appears to us highly probable that the supply would soon begin to fall off, in the same manner as has often already been noticed when a deep well has been much used.

## FLEMING'S WEED DESTROYER.

I NOTICE in last week's Paper a letter signed "H. Bailey, Nuneham," and it may seem presumption in any party to comment upon a paper written by one so well versed not only in the polite diction of our mother tongue, but also having a glib supply of that of our predecessors in the field of literature. Still common justice demands that when one sees another unjustly attacked, the former should, in doing as he would be done by, stand forward boldly in defence of the right.

Some parties may insinuate that I am a friend of the person attacked, and therefore likely to be impressed with a partial bias in his favour; but I shall leave every rightly constituted mind to judge for himself whether I say more than facts warrant and the case demands, and I should not have taken upon myself to reply to the letter in question had I not been afraid that Mr. Fleming, from the very friendly manner in which I have always heard him speak of Mr. Bailey, would treat him with more leniency than he has a right to expect; and I write this, therefore, with a desire, as a third party, to make known the truth, as I have had most excellent opportunities of making myself fully acquainted with it, having lived as foreman under Mr. Fleming about three years, ending about Midsummer 1850, and in that capacity I was much interested in every improvement introduced during the time at Trentham Gardens, and therefore I trust that the readers of the *Chronicle* will accept my evidence as worthy of attention.

When your leading article appeared on May 3d I read it with considerable interest, and was much pleased with the clear manner in which the merits and working of the machine were stated, feeling satisfied that nothing was exaggerated. But when I saw Mr. Bailey's letter, I was struck with the wanton perversion of plain facts which it exhibited; and especially as it distinctly shows that he has written without the slightest practical experience as to the utility of the invention. To the eyes of men gifted with clearness of vision, his letter is calculated to impress them with the belief that he has been actuated by an envious, if not a malicious disposition either towards the poor machine itself or its inventor, instead of with the "perfect good feeling" which he professes to hold in view; and, with regard to the "holy principle of truth," I will give him back his proverb, and, for the convenience of general English readers, an anglicised version—"Truth is truly noble, and in the end it will prevail."

Mr. B. should have given his arithmetical calculations, if he would have convinced us of the accuracy of his assertions when he first declares the non-existence of a saving, and afterwards roundly abuses Mr. F. and his noble employers for making or sanctioning such a saving. And I cannot help fancying that, if Mr. B. were in want of a situation to-morrow, he would find that the profound contempt which he expresses for judicious economy would not insure him a very favourable reception from those he would desire to serve.

Those who are acquainted with Mr. Fleming, and I believe their name is "legion," are in general aware that his principles are too liberal and enlightened to desire to introduce improvements with a view to throw any portion of the labouring population out of employment; and with those I feel sure that the attempt to injure him in public opinion will prove utterly abortive, and will consequently recoil upon the hurler of the envenomed shaft. But as many of the readers of your Paper do not happen to enjoy the same advantage, I am anxious for their sake, and to prevent their being misled, to explain to them that, in all the horticultural improvements which he has introduced to the notice of the public, his object has been the same as it would be of every good reformer, viz., to enable gardeners to give and employers to derive more satisfaction from the expenditure of a certain sum than they could by a pertinacious adherence to the ways of our forefathers. Let me ask Mr. Bailey if the latter course of procedure is "in accordance with the age, or at all worthy of the enlightened and high-minded spirit in which the Exhibition of 1851 has been carried out." And I must not leave this part of the subject without pointing out the positive humanity of adopting such improvements as these. Is there any gardening operation more injurious to the human frame than hand-weeding? Fancy a man on his hands and knees, huddled up in a heap, his breast exposed to the damp exhalations of the earth, from morning to night, day after day, week after week, year after year!

I could adduce instances of healthy men who have been crippled, and their constitutions broken, by the injurious effects of this employment; and of lads stunted and dwarfed by the same cause. Is it just, then, that a man who introduces an invention that will take these poor creatures off their knees, and place them upon their legs, should be branded with abuse? should he not rather receive public thanks as one of the benefactors of the age, who can thus ensure more pleasure to the employer and more comfort to the employed?

As Mr. F.'s conduct and motives have been so much misrepresented, it is but fair to call public attention to his disinterestedness. How many men in a thousand would have invented such a machine and given the entire benefit of it to the public without reserving any emolument to himself by patenting, registration, or any other means? Nay, more, he has, to my certain knowledge, taken considerable pains, by making arrangements with respectable manufacturers, to ensure their being got up at the lowest possible price. Does such a man deserve to be stigmatised as one "who lives but for himself, who would build up his reputation with cash 'wrung from the hard hand of peasants'?"

It will be trespassing too much upon your space to comment at length upon Mr. B.'s insolent and uncalled-for abuse of employers in general, as upon his evident non-information as to what are the generally received theories of political economy, or the effect of improvements in arts and sciences upon labour and labourers, but I would simply ask him if he would go back to the *distaff*, the *flail*, and the *scythe*, and annihilate machinery under the impression that manual labour would find a better market. Mr. Bailey, if a well educated man, or even a man of common sense, ought to be aware that his argument is resting on a false and long exploded foundation.

I have a perfect knowledge of the extent of gravel walks at Trentham, and know well that the calculations given by Mr. Fleming are below the mark; as I perfectly remember how careful he was in making the statement not to over-rate the advantages; I have prepared, from memory, a statement for the accuracy of which I will vouch, but as the result is the same as that published by Mr. F., it will not be necessary to give it, unless circumstances seem to call for it, and I have not now time to copy it.

In conclusion, I would ask every reader of the *Chronicle* to read carefully the leading article in May 3d, and compare it with Mr. Bailey's letter of June 7th. The spirit and tone of the latter will be easily seen. *William Davidson, Weston, Shiffnal, Salop.*

## GARDENERS' BENEVOLENT INSTITUTION.

THE anniversary of this charity was celebrated on Monday by a dinner at the London Coffee House. The object of the Institution, as many of our readers are aware, is to relieve by pensions persons who have been gardeners, and who from age and infirmity have become incapable of earning a living. To assist in the promotion of this object some 120 gentlemen assembled under the presidency of Joseph Paxton, Esq., the designer of the Crystal Palace, among whom were most of the principal horticulturists and market gardeners of the metropolitan district, together with many of the *elite* of the literary world, Messrs. C. Dickens, Douglas Jerrold, Mark Lemon, Wills, and other prominent public writers being present at the principal table, and taking part in the proceedings of the day. The dinner was all that could be desired, and the dessert, which was for the most part supplied by the subscribers of the Institution, was magnificent, and included some splendid Pines from the Pineries of the Dukes of Devonshire and Sutherland; Peaches, Grapes, Strawberries, and other products of the skill of the most famous growers of the country. The cloth having been removed, THE CHAIRMAN gave, as the first toast, "The Queen," which the company responded to with enthusiastic loyalty. The next toast, "Prince Albert, Albert Prince of Wales, and the rest of the Royal family," was also received with loyal honours, and in proposing it the Chairman took occasion to say of Prince Albert that he deserved well of the country in having carried out through evil report and through good report, and amid difficulties of no ordinary kind, a project so grand that the world had never before seen the like (cheers), and when history should record the events of these times, his Royal Highness's name would stand prominently forward as that of one who in his day nobly and successfully fought the battle of social progress and improvement. (Much applause.)

Mr. DOUGLAS JERROLD then rose. He said: Our Chairman has entrusted me with a toast which I am sure you will all join me in drinking with great pleasure —it is the health of his Grace the Duke of Devonshire. (Loud cheers.) This might be an embarrassing duty to me if the name of that illustrious nobleman did not speak for itself—if it did not, as it does contain, an innate lustre which makes it shine by its own light. (More cheering.) The Duke of Devonshire may be considered as one of those just stewards who having received the blessings of Providence, multiply and fructify them by the manner in which he showers them upon others who are less fortunate. (Applause.) Gentlemen, his Grace the Duke of Devonshire has a two-fold claim upon us to-night. In the first place he is connected with the gardeners (great cheering), and in the second, to his well-placed trust and confidence in the genius of our friend the chairman (loud cheers)—to his sympathy with Mr. Paxton in his large and grand ideas of gardening, and its ultimate triumphs, we may attribute that triumph of genius which now asserts itself with a world-wide fame—the Crystal Palace. (Renewed cheering.) I will not longer detain you, but ask you to join with me in cordially drinking the health of his Grace the Duke of Devonshire. (Cheers.) The health was drunk with loud demonstrations of respect.

The CHAIRMAN then proceeded to give the toast of the day—"Success to the Gardeners' Benevolent Institution, and long may it prosper." He said: In placing this toast before you, gentlemen, I am strongly reminded of the assurance of success given at the last annual meeting of the institution. On that occasion you will recollect that a noble lord, distinguished alike for his talent and his virtues, filled the chair. (Hear, hear.) I fear I shall not be able to occupy the position of your chairman as worthily as he did. (Yes.) I shall not be able to entertain you with so poetical an account of the rise and progress of the gardeners' art as he gave you—I cannot tell you what it was in ancient times, and trace its onward progress through various ages, down to our own days—further than to say what all history proves, that in all states, ancient or modern, it is found as gardening has prospered so has the country, and as gardening has declined in any country, in the same proportion has the power and prosperity of the state diminished. We know that the Greeks, when in the zenith of their power, fostered and encouraged the science of gardening to a great extent. They had shops wherein were woven the floral wreaths with which they crowned the brows of their warriors, their poets, and their statesmen. In the latter days of Greece the art of gardening declined, and we find that from the reign of the Emperor Trajan down to the days of George II. very little progress or improvement took place in it—and the Dutch, French, and Italian gardens of that day seem to be nothing more than mere copies of the gardens of Pliny. When our empire increased—when colonies in every part of the world began to be annexed to this kingdom—and our trade, our commerce, and our wealth increased—then we find that gardening began to prosper. (Hear, hear.) The art rapidly progressed, the fruits and the flowers of distant lands were introduced and brought into cultivation here, and we have around us to-day many gentlemen who have expended large sums in transferring to this country the products of other parts of the world. (Hear, hear.) Of course, as the taste for gardening increased, gardeners have multiplied, and, as they multiply, they have, like other men, their alternations of prosperity and adversity—of enjoyment and of suffering; and it not unfrequently happens that a man, who has devoted his industry and his talent to spread fertility over the length and breadth of the land, finds himself in his old age isolated and destitute. (Hear, hear.) Whether from illness or decrepitude—from change of master or from a master's failing—the poor gardener too often finds himself, towards the end of his life, brought to a condition of suffering and distress. Then it is he requires aid to help him on easily through his few remaining days. (Hear, hear.) It was under the influence of a feeling of this kind, that several eminent nurserymen met together in the year 1838, and established the Gardeners' Benevolent Institution (Loud cheers); the purpose of that institution being to give relief, under certain conditions, to head gardeners and their foremen, market-gardeners who have cultivated not less than five acres of ground, and seedsmen and nurserymen who have been in business for a certain number of years, should they be in their old age reduced to a state of destitution. The subscription to this institution is one guinea a year, or ten guineas in one sum for a life subscription. In 1838, the year in which the institution was founded, its income was 50*l.* That income gradually went on increasing until in 1842 it was 100*l.*, and in that year 60*l.* was paid in relieving aged and infirm gardeners. In 1843 a great stimulus was given to the institution; the income rose to 271*l.*, in 1844 it increased to 342*l.*, in 1845 to 414*l.*, in 1846 to 455*l.*, in 1848 to 502*l.*, in 1849 to 552*l.*, and in 1850 to 542*l.* (loud cheering); besides which, the committee had in stock and in hand, a fund of nearly 2500*l.* (Cheers). In the same year, 1850, they paid in pensions 492*l.*, and at this time they have 35 pensioners on the books of the institution. (Cheers.) I think, gentlemen, I have now stated sufficient to assure you that this is an institution which is deserving of your warmest support. (Loud cheers.) I believe it to be one that deserves the support of all the richer classes of society—of all who employ gardeners for their gratification and comfort. I say that no man who is in that position of life, can spend 10 guineas better than by paying it in as a life subscription to this Society (hear, hear); not with the view of placing some particular person on its funds, but with the view of assisting at the proper time, and in the most effectual way, aged and deserving men, who are reduced to want. (Applause.) I rejoice to say that the institution is now making its proper share of progress. (Hear, hear.) In the earlier part of its existence, the subscriptions were confined in a great degree, I believe, to London and its immediate neighbourhood; now I find they are spread all over, not England only, but Ireland and Scotland. (Cheers.) In all parts of the kingdom, persons connected with gardening are beginning to discover that this is an excellent and a great institution, by supporting which they will be not only at once assisting the deserving poor, but may be sowing seeds of which hereafter they may themselves reap the fruits. (Cheers.) One principle of the institution which is worth attention is that it gives a preference to applicants who have subscribed 15 years to the funds, over those who have not subscribed to it at all. I have myself spoken with several gardeners about this institution, and of the great advantage of subscribing to its funds, while they are in a position to do so. I know a case at this time. I will not mention names; but I know a person who is at this moment soliciting the suffrages of the subscribers as an applicant for their bounty, who once moved in very different circumstances. Unfortunately he has not been a subscriber, and though he has many friends in the institution, and is suffering great affliction, it is very doubtful if he can be relieved from its funds. (Hear, hear.) I mention this to show how necessary it is, even as a matter of self-interest, that all who are engaged in the walk of life with which we are connected should unite with such a scheme as this, while it is in their power to do so. (Cheers.) And

when the small cost at which it can be done is considered, I would say to every gardener, to every nurseryman and seedsman, let him pay the first ten guineas of profits he makes into this institution—it will be like putting in seed at the right time, the fruit of which, should he need it, he will reap in due season. (Loud cheers.) England is renowned for the number and extent of its charities; but of all those charities I know of none that deserves better the cordial support of all classes than the Gardeners' Benevolent Institution, success to which, and long may it prosper, is the toast I now beg to propose to you. (The toast was drunk with repeated cheers.)

Mr. C. DICKENS gave the next toast. He said he felt an unbounded and delightful interest in all the purposes and associations of gardening. Probably there was no feeling in the human mind stronger than the love of gardening. The prisoner would make a garden in his prison, and cultivate his solitary flower in the chink of a wall. The poor mechanic would string his Scarlet Bean from one side of his window to the other, and watch it and tend it with unceasing interest. A holy duty it was in foreign countries to decorate the graves of the dead with flowers, and here too the resting-place of those who had passed away from us would soon be gardens; and from that old time when the Lord walked in the garden in the cool of the evening, down to the day when a Poet Laureate sang—

"Trust me, Clara Vere de Vere,
From yon blue heaven above us bent,
The gardener Adam and his wife,
Smile at the claims of long descent,"

at all times, and in all ages gardens were amongst the objects of the greatest interest with mankind. (Loud cheers.) In all ages gardens had been the delight of human nature. (Hear, hear.) There might be a few, but he believed they were but a few, who took no interest in the products of gardening except perhaps in London Pride (a laugh), or a certain degenerate kind of "Stock" which was apt to grow hereabouts, cultivated by a species of frozen-out gardeners whom no thaw could ever penetrate (hear and laughter); except these, the gardeners' art had contributed to the delight of all men in their time. That there ought then to be a Benevolent Provident Institution for gardeners was in the fitness of things, and that such an institution ought to flourish, and did flourish, was still more so. (Hear, hear.) He had risen to propose to them the health of a gentleman who was a great gardener (hear), and not only a great gardener but a great man. (Cheers.) The growth of a fine Saxon root cultivated up with a power of intellect, to a plant that was at this time the talk of the civilised world—he alluded of course to his friend the chairman of the day. (Laughter and much cheering.) He (Mr. Dickens) took occasion to say at a public assembly hard by, a month or two ago, in speaking of that wonderful building Mr. Paxton had designed for the great exposition in Hyde Park, that it ought to have fallen down, but that it refused to do so. (Cheers and laughter.) They had been told that the glass ought to have been all broken, the gutters all choked up, and the building flooded, and that the roof and sides ought to have been blown away; in short that everything ought to have done what everything obstinately persisted in not doing. (Hear, hear, and more laughter.) Earth, air, fire, and water, all appeared to have conspired together in Mr. Paxton's favour—all had conspired to one result, which, when the present generation was dust, would be an enduring temple to his honour, and to the energy, the talent, and the resources of Englishmen. (Applause.) But, said a gentleman to him (Mr. Dickens) the other day, no doubt Mr. Paxton is a great man, but there is one objection to him that you can never get over, that is, he is a gardener; now that was their case to-night—that he was a gardener (cheers), and they were extremely proud of it. (Hear, hear.) This was a great age, with all its faults, when a man by the power of his own genius and good sense could scale such a daring height as Mr. Paxton had reached, and composedly place his form on the top. This was a great age, when a man impressed with a useful idea, could carry out his project without being imprisoned, or thumb-screwed, or persecuted in any form. (Applause.) I can well understand (continued Mr. D.) that you, to whom the genius, the intelligence, the industry, and the achievements of our friend are well known, should be anxious to do him honour by placing him in the position he occupies to-night; and I assure you, you have conferred great gratification on one of his friends, in permitting him to have the opportunity of proposing his health, which that friend now does most cordially, and with all the honours. (Applause.) The toast was responded to with three times three.

The CHAIRMAN, when the cheering had subsided, rose to return thanks. He expressed the pleasure he felt at seeing around him those who had laboured with him in the same vineyard with himself, and some especially who he knew had come up 100 miles from the country to pay him the compliment of being present. That the friends of his youth gathered around him in the day of prosperity, would be an additional stimulus with him to exertion in the path he had chalked out for himself, and would stimulate him to do all he could in furthering the purposes of the institution. (Hear, hear). He would now propose the Vice-Presidents, coupling with the toast the health of Mr. Pownall. One of the Vice-Presidents, the Duke of Northumberland, intended to give the proceeds of the sale of the Stanwick Nectarine to the Institution, which, he hoped, would be a very considerable amount.

Mr. POWNALL returned thanks, and after adverting to the improvements in horticulture which had taken place during late years, and the claims of the gardeners on their attention, he expressed a hope that they might witness the results of their kindness for that class, in the shape of a comfortable asylum for aged and worn-out gardeners.

The CHAIRMAN next gave "Literature," which, he observed, had at all times been closely associated with gardening; coupling with the toast the health of Mr. Charles Dickens.

Mr. C. DICKENS briefly returned thanks. The Secretary then read the list of subscriptions for the evening, which amounted to near 300*l.*, including subscriptions from the Duke of Devonshire, the President, the Chairman, Dr. Lindley, Messrs. Fox and Henderson, Bradbury and Evans, C. Dickens, G. F. Smith, &c.

The next toast was the "Visitors of the day."

Dr. HAMMIL, of St. Petersburgh, acknowledged it, and read a paper on English gardening, in which the science of gardening in this country, to a great extent, and the introduction of numerous natural productions, were traced to John Tradescant, who had been the distant means of forming the first museum of such productions.*

Mr. CHADWICK gave the "Market Gardeners and Horticulturists," which was acknowledged by Mr. Spencer. The next toast was Mr. CUTLER, the Secretary, to whose zeal and attention the chairman paid a fitting compliment, and the other officers of the Institution. The Stewards, and some other toasts followed, after which the company separated at a late hour.

## Home Correspondence.

*Fruit at the Chiswick Exhibition.*—The judges of the exhibition of last Saturday appear to have been as profuse of their awards of medals for the Grapes in Class 3, as they were at the May meeting. In my opinion, one Large Silver and two Knightian, and perhaps one or two Banksian medals, would have been amply sufficient to mark the merits of the choicest samples of the black kinds that were shown. As for the white sorts, they were evidently, with one exception, all more or less unripe; and on what principle the prizes were adjudicated to the growers of them, I cannot imagine. It might, indeed, be said, that from want of sun during the last two months, nothing better could be expected; but then, why exhibit unripe fruit, which in itself is worthless, and of the ultimate quality of which no correct judgment can be formed? By giving prizes for such imperfect specimens, you encourage mediocrity, instead of stimulating to excellence of production. I would therefore hope that in future some stringent rules may be devised by the exhibition committee, with a view to check this abuse of the Society's liberality; and I feel very much inclined to agree with you in thinking that it will be desirable to confine the chief prizes for fruits to the July exhibition. To judge from what I have observed at some of the autumnal provincial shows, it seems to me that we should then have a much better display in Class 3 than we generally see at our garden exhibitions; and to compensate [the growers who may miss the advantages of the May and June meetings, and to incite them to increased exertions, the prizes for fruit at the July show might be on a higher scale than that at present adopted. *A. H.*——I must trouble you again on the vexed question of the white Grape. When I penned my rather hasty observations on Monday, I had not examined the programme of our exhibitions; but on referring to it since, I am inclined to modify my opinion as to the degree of blame attributable to the judges. You offer great prizes, and invite growers to send large collections of fruits to the shows in May and June; and though the specimens sent may be less mature and perfect than could be wished, yet the judges can hardly be expected to incur the odium and clamours that would be excited if they were to say—"We will award no medals for any such unsatisfactory specimens." Besides, they may allege, that in the rules for their guidance there is no longer any stipulation that the fruit shown shall be ripe. They are, however, still liable to the charge of inconsistency. They do not pronounce on the quality of a Melon without tasting it, and they would never think of allotting prizes for green Currants or green Cherries. Why then should they give prizes for green and sour Grapes? I have some doubts whether, in offering prizes for Grapes, it is desirable to specify particular sorts, and whether it would not answer better to say that they would be given "for the best black, and for the best white Grapes." But, if particular kinds must be named, I would not select such common ones as the Black Hamburgh, St. Peter's, or Sweetwaters; not that I undervalue these kinds, for I look upon them as very useful, and consider the Black Hamburgh especially as the most serviceable Grape which the market gardener can grow. My objection to the naming of them is, that they have all been brought to the highest degree of excellence of which they are susceptible, and that we cannot expect to see finer samples of them than have been already shown. Therefore, if names must be given, would it not be more profitable to give those of less known and probably still improvable kinds, such as the Cioutat, Aspiran, &c.? As for white Grapes, I should be content with naming such as the Chasselas and the Muscat. I shall be curious to learn what opinion our foreign visitors will have pronounced on our show of fruits. They will doubtless have admired our Pines, and been astonished at our Strawberries, but I fear they will not give us much credit for our taste in Grapes. *A. H.*

*The Calceolaria.*—I beg to bear testimony to the good effects resulting from the liberal application of well diluted liquid manure to the plants, both in a growing state and also during the blooming season. It has the effect of inducing large and handsome blooms, and causing the foliage to assume a vigorous and healthy appearance. I supply it in shallow feeders, so that the liquid may not stand above the drainage in the pots, and I also use it freely in watering the plants. It should be well diluted with clear water, for I have known it to destroy the plants in a very short period when used full strength from the tanks. I have been a successful cultivator and exhibitor of the Calceolaria for many years, and, as I have already stated, I have found a liberal application of well diluted liquid manure to be of the most essential service; in fact this plant seems to luxuriate in an abundant supply of moisture, and I have never witnessed any ill effects from the use of it. I have always found that plants placed in saucers, or plunged in plunging material, are invariably more healthy and vigorous than those not so treated. *An Exhibitor, Leeds.*

*Shading Plant Houses.*—In reading No. IV. of the useful papers entitled "Orchids for the Million," we thought it would not be amiss to give our plan for arranging shades or blinds on such houses. In the beginning we put them up exactly as there recommended, upon a span-roofed house, 41 feet long, but the weight of the roller at first stretched the canvas at one end so as to cause it to roll up unevenly, and at last with a slight jerk split it for some feet. The first suggestion was to use stronger canvas, but the objection to that was that we should darken instead of shading the house. The plan we hit upon, and which we find to answer perfectly, is as follows:—Procure from the draper a quantity of webbing, from 1¼ to 2 inches wide, commence operations by tacking one end firmly at the top of the first rafter of your house, as high up as you intend your blind to run; unroll it to the bottom, or as far down as you intend the roller to come, then cut it off, miss the first rafter and tack the end of your roll of webbing at the top of the next, unroll the same length, cut off, and do the same to every other rafter. The next operation is to tack the loose ends of your webbing to the roller in such a way that it will roll up and down evenly. Under this plan you can tack on either calico, linen, or canvas, and, as far as the strength is concerned, silver paper. We use unbleached calico, for which we pay 8*d.* per yard double width, that is 2 yards wide, or 4*d.* per square yard. We take the precaution to wet it well before using, as otherwise it will shrink after it is put up, and will look badly and work unpleasantly. *Jessop Brothers, Cheltenham.*

*Pear Tree Astyages.*—I have five trees—two old and three young ones—which I planted last September twelvemonth, and they are all affected by this pest. I scrubbed them in the autumn, using a mixture of lime, sulphur, and soot. The trees were covered with blossom in April and May, and I anticipated that I should have had some fruit set, but on examining them I found the leaves full of the species described in your Number for last week. I immediately mixed some lime and soot in water, and allowed it to stand for a day or so. I then strained the water off clear, and with a fine rose syringe well washed the trees, but all to no purpose. They look like a beggar in rags. I should be very thankful to "J. O. W." for the remedy which was applied to get rid of these pests at Chiswick. *A. R. Hemmings.*

*Fabiana imbricata.*—You state that this is a half-hardy shrub, &c. Here it has withstood the most severe frost, without any protection whatever, and it is now a mass of bloom. *D. Pressly, Gardener, Knockmaroon, near Dublin.*

*Fly Papers.*—Although Mr. Kidd is a studious inquirer into the secrets of nature, and much as I admire the excellent emanations from his pen, yet I think he has exceeded his knowledge of the works of the great Author of nature, or he would not have favoured the poor inventor of those "dreadful fly papers" with such an ignoble character. Pardon my presumption, Mr. Kidd, in endeavouring to reclaim the reputation of a fellow creature, and to set him right in the scale of creation. If our worthy expounder of the claims and capabilities of the charming feathered race, will condescend to examine the mute vegetable kingdom, he will then discover various plants covered with resinous excretions, forming "fatal engines of destruction" to the insect tribe. And may I ask Mr. Kidd if he can apply such an appellation to the inventor of those torturing machines as he has to the man who would think it "folly to be wise." *Curiosus.*

*Pears.*—I find it mentioned at p. 359 *c*, that the Pear "Forelle" is a sort which has stood better than others during the late frosts. My tree flowered earlier than any other kind I have, and all the fruit was cut off, but it is now throwing out a full crop of flower-buds. Do you recommend me to leave them or to pinch them off? *A. R.* [Leave them.]

*Potato Disease.*—I am sorry to inform you that the Potato blight has made its appearance again in this country. I have inclosed you two or three leaves which were attacked yesterday morning; I fear that we shall have it as badly as ever, as it is much earlier than ever it appeared before here. Is it better to cut the haulm off at once, do you think, or what is the best thing to be done? *Wm. Dickens, Peterstow, near Ross, Hereford.* [We do not feel satisfied that this is a case of Potato disease. The appearances seem to be owing rather to cold and wet than to disease.]

*Asparagus.*—"J. W." must excuse me for still being sceptical, as regards the merits of his plan for the early forcing of Asparagus, until further evidence of its utility is adduced. It is facts, and not assertions, that we require, in order to arrive at correct conclusions in gardening practice. I shall, therefore, be obliged to "J. W." if he will give us the width of his beds, and keep an account of the quantity and weight of Asparagus cut during the next season, from December 16th to April 1st, and communicate the same to the *Gardeners' Chronicle*. Such information will enable us to form some opinion of the merits of his system; at least, as far as labour, expence, and produce of one season are concerned—but

* We hope to be able to publish next week a communication from Mr. Paxton on this subject.

it must be borne in mind that my plan is only part of a 12 years' rotation of kitchen garden cropping. *J. P., Stoke Rochford.*

## Societies.

HORTICULTURAL; GARDEN EXHIBITION, *June* 7.—The leading feature of this, in all respects excellent, Midsummer Show, being touched upon in another column, we shall, as before, confine ourselves here strictly to details.

In collections of 20 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing-park, for a group whose excellence has never before been approached, even in England itself. It contained a specimen of Polygala acuminata, quite 7 feet in diameter, beautifully flowered, round and well-proportioned; another, equally large and fine, of Pimelea spectabilis, which was the admiration of everybody. This was literally one mass of white, fresh, and beautiful flowers. These were in wooden tubs, the largest sized pots being too small for them. Associated with them were the rosy-flowered Pimelea Hendersoni, an admirable specimen of a somewhat slow-growing plant. Eriostemon buxifolium, rather past the best; Erica tricolor rubra, wonderfully fine; Pimelea decussata; Azalea variegata; two of the best varieties of Aphelexis; Chorozema Henchmanni; the graceful Coleonema rubrum; Leschenaultia formosa, and the blue variety; the Cavendish Heath; the glowing Azalea magnifica; the exceedingly handsome Dipladenia crassinoda, beautifully flowered: the Scarlet Ixora, and a large and finely managed Epacris grandiflora. The second prize was awarded to Mr. Cole, gr. to H. Colyer, Esq., of Dartford, for an exhibition of finely grown plants, though for the most part much inferior to the magnificent specimens produced from Ealing-park. It comprised Polygala cordifolia, Pimelea decussata, a finely blossomed Stephanotis floribunda, Dipladenia splendens, with three clusters of glorious flowers; the Gledstane Azalea, three Everlastings, a handsome Pimelea Hendersoni, the Cavendish Heath; an Azalea, composed of lateritia, Gledstanesi, and variegata, all worked together on one stem, the different colours effecting a charming contrast; the Scarlet Ixora, beautifully bloomed; a well-cultivated Franciscea acuminata, Sphenotoma gracilis, a useful plant for cutting from; Leschenaultia formosa, the Showy Rondeletia, a variety of the Three-coloured Heath, and Eriostemon cuspidatum.—A third group was contributed by Messrs. Fraser, of Lea-bridge. It consisted of Epacris grandiflora, the showy Clerodendron Kæmpferi, bearing two great panicles of flowers; Polygala acuminata, the handsome Azalea præstantissima, Erica perspicua nana profusely bloomed, Coleonema rubrum, the Saffron Ixora, the Box-leaved Eriostemon, the yellow-blossomed Hibbertia Cunninghami, the Blue Leschenault, Pimelea Hendersoni, the Cavendish Heath, Chorozema varium nanum, Azalea variegata, an Everlasting, the Scarlet Ixora, Boronia serrulata, the snowy white-flowered Sphenotoma gracilis, and Pimelea decussata.—Mr. Stanly, gr. to H. Berens, Esq., of Sidcup, Kent, communicated Zichya inophylla, a white Azalea, Leschenaultia formosa, the purple-blossomed Chironia glutinosa, Erica Cavendishii, the sweet-smelling Stephanotis floribunda, the Large-flowered Epacris, Clerodendron Kæmpferi, the White Vinca, the free flowering Erica perspicua nana, Polygala oppositifolia, and one of the best varieties of Aphelexis.—Mr. Pamplin, of Leabridge-road, sent a fifth group, in which were Erica Bergiana, profusely clothed with little purple bells; the Box-leaved Eriostemon, the Cavendish Heath, Polygala oppositifolia, an Everlasting, Rhynchospermum jasminoides, the brilliant Epacris miniata, Pimelea lanata, Gompholobium polymorphum, trained in the form of a bush; and an example of the Myrtle-leaved Eutaxia.

In collections of 15 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. Green, gr. to Sir E. Antrobus, Bart., of Cheam. In this group we remarked well-managed plants of Ixora coccinea; the clear yellow-flowered Allamanda grandiflora, the Opposite-leaved Polygala, Rondeletia speciosa, the variegated Azalea, Boronia serrulata, the beautiful variety of Erica tricolor called Wilsoni, the blue and red Leschenaults, an Everlasting, Chorozema varium nanum, the neat rosy-flowered Adenandra fragrans, the Cavendish Heath, and Polygala Dalmaisiana.—Mr. Carson, gr. to W. F. G. Farmer, Esq., of Cheam, sent the next best group, in which were the Variegated Azalea, a finely managed Stephanotis floribunda, Allamanda cathartica, the Fortune Gardenia, splendidly flowered, and exceedingly beautiful; an admirable Ixora coccinea, Franciscea acuminata, a neat Leschenaultia formosa, Dipladenia crassinoda, trained on a globular wire trellis; a good variety of Everlasting, the Baxter Leschenault, Polygala acuminata, the sweet-smelling Sphenotoma gracilis, a pretty rosy Azalea called Bella, the Anemone-leaved Boronia, and Polygala Dalmaisiana.—A third group was furnished by Mr. Taylor, gr. to J. Coster, Esq., of Streatham. It consisted of Pimelea decussata, the large-flowered variety of Aphelexis spectabilis, Sphenotoma gracilis, the Cavendish Heath, Azalea formosa elegans, the beautiful Boronia pinnata, the fragrant Stephanotis floribunda, very full of bloom; Leschenaultia formosa, the Opposite-leaved Polygala, the variety of Erica tricolor called dumosa, Allamanda cathartica, the Henderson Pimelea, Azalea variegata, an Everlasting, and a charming example of the Saffron Ixora.

Ten STOVE and GREENHOUSE PLANTS were furnished by Mr. Speed, of Edmonton, and Mr. Croxford, gr. to H. Barnes, Esq., of Stamford Hill; Mr. Speed's plants, which were beautifully grown, consisted of a lovely Dipladenia crassinoda, a well-flowered Clerodendron fallax, Stephanotis floribunda, Coleonema rubrum, the White Vinca, the Violet-flowered Tetratheca verticillata, the purple Chironia glutinosa, two charmingly managed Cape Heaths, and Cyrtoceras reflexum.—Mr. Croxford had a very nice Stephanotis floribunda, Epacris grandiflora, Crowea saligna, insufficiently advanced in flower; Polygala acuminata, the brilliant Epacris miniata, two Everlastings, the Cavendish Heath, Pimelea Hendersonii, and the Swan River Chorozema varium.

In the class of 6 STOVE and GREENHOUSE PLANTS there were five exhibitors, all of whom produced creditable collections. By far the best group, however, was furnished by Mr. Kinghorn, gr. to the Earl of Kilmorey, who sent Aphelexis humilis; an admirable bush of Azalea Gledstanesi and lateritia, "worked" together; an excellent variety of Epacris miniata, the blue Leschenault, a large Pimelea decussata, and a beautifully blossomed Erica perspicua nana.—Mr. Watson, gr. to Mrs. Tredwell, who was second, had Hoya carnosa, Stephanotis floribunda, the useful Justicia carnea, the violet Tetratheca verticillata, Pimelea decussata, and Polygala Dalmaisiana.—A third group from Mr. Hamp, gr. to J. Thorne, Esq., consisted of the Red Coleonema, Pimelea decussata, the useful Sphenotoma gracilis, an Everlasting, Polygala cordifolia, and Acrophylla venosum.—Mr. Stuart, gr. to T. Huggins, Esq., of Norwood, produced Pimelea Hendersoni, the purple variety of Aphelexis macrantha, Erica depressa, Polygala Dalmaisiana, Aotus linophylla, rather a pretty plant, and Pimelea decussata.—From Mr. Williams, gr. to C. B. Warner, Esq., came Aphelexis splendens, the free-flowering Erica ventricosa coccinea minor, the Opposite-leaved Polygala, a neat well flowered plant of the Fortune Gardenia, with large white waxy blossoms just in perfection; the showy Azalea fulgens, and Boronia serrulata.

HELICHRYSUMS.—Collections were shown by Messrs. Green (1), Cole (2), Watson (3), and Taylor (4). In these we remarked Aphelexis macrantha purpurea, A. spectabilis, sesamoides, and its large variety, humilis, and Phænocoma proliferum.

ORCHIDS.—Fine as these were in May, they were equalled both in quality and quantity on Saturday last. Mr. Rucker's gardener, Mylam, again produced an excellent group. It consisted of Odontoglossum citrosmum, finely flowered and wonderfully coloured; a nice bush of the Purple Camarote, the Sweet Vanda, the Large-flowered Butterfly plant (Phalænopsis grandiflora), the brown Oncidium crispum, in fine condition; Aerides virens and crispum, Anguloa uniflora, quite a mass of white flowers; small plants of the purple Saccolabium ampullaceum and the singular-looking Odontoglossum niveum; Chysis bractescens, Lycaste Deppei, beautifully blossomed; the rare Dendrobium Dalhousieanum, the curious rather than beautiful Cœlogyne Lowii, the Three-coloured Vanda, the showy Moss Cattleya, the yellow-flowered Anguloa Clowesii, and the curious green-blossomed Cycnoches chlorochilum.—The second prize was awarded to Mr. Blake, gr. to J. H. Schröder, Esq., of Stratford, for a splendid specimen of Phalænopsis quite a mass of lovely blossoms; Oncidium ampliatum, finely flowered; the charming Dendrobium Devonianum, the Clowes Anguloa, a variety of the Aromatic Lycaste, Aerides affine and crispum, a large plant of Dendrobium sanguinolentum; the Bearded Lady's Slipper, the beautiful Epidendrum cinnabarinum, the Three-coloured Vanda, Dendrobium chrysanthum, Oncidium Papilio, the snowy white Calanthe veratrifolia, Schomburgkia tibicinis, Vanda cristata, and Epidendrum cochleatum.—Mr. Franklin, gr. to Mrs. Lawrence, obtained a third prize for a charmingly-flowered example of the Moss Cattleya, Oncidium flexuosum, beautifully managed; a Phalænopsis, the Roxburgh Vanda, the Twisted Trichopil, Vanda teres, the Clowes Anguloa, bearing four large clear yellow flowers; Sobralia macrantha, with seven large purple blossoms; the orange Epidendrum vitellinum, Acineta Humboldti, in beautiful condition; Epidendrum crassifolium, the handsome Odontoglossum hastilabium, the Long-tailed Angrec, Brassia Wrayæ, the rare and beautiful Cattleya Aclandiæ, Stanhopea oculata, and a highly-coloured Vanda tricolor.—Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon, had a well-managed example of Dendrobium Pierardi major, Aerides odoratum, the singular Oncidium phymatochilum, Cœlogyne Lowii, the charming Saccolabium guttatum, a Phalænopsis, a variety of Aerides crispum, the African Ansellia, a neat bush of Dendrobium cærulescens, a variety of Vanda Roxburghi, Brassia verrucosa, one or two Aerides, the Bearded Lady's Slipper, and a few other plants.

In the Nurserymen's Class of 15 ORCHIDS, Messrs. Veitch and Rollisson produced collections. The former sent Sobralia macrantha, with 10 large flowers on it; a beautifully blossomed Oncidium sphacelatum, the Noble and Close-flowered Dendrobes, Calanthe veratrifolia, with 9 flower spikes; Saccolabium præmorsum, in charming condition; three species of Aerides, the Moss Cattleya, Cypripedium barbatum, Brassia caudata, and the white Butterfly plant (Phalænopsis).—Messrs. Rollisson had a spreading Oncidium sphacelatum, Brassia verrucosa, beautifully flowered; the white, yellow-stained, Dendrobium formosum, the Moss Cattleya, Saccolabium guttatum, the Twisted Trichopil, Saccolabium præmorsum, Miltonia spectabilis, a small plant of Burlingtonia venusta, Aerides odoratum, Stanhopea oculata, the white Butterfly plant, Sobralia macrantha, and the Dalhousie Dendrobe.

Collections of 10 ORCHIDS were contributed by Mr. Carson, gr. to W. F. G. Farmer, Esq., and Mr. Wooley, gr. to H. B. Ker, Esq. Mr. Carson sent Acineta Humboldti in a square wire basket, producing eight flower spikes; Oncidium flexuosum, one of the best of the small brown and yellow flowered kinds; Brassia brachiata and verrucosa, the Bearded Lady's Slipper, the Spotted Saccolabe with five nice flower spikes, Anguloa Clowesi insufficiently in flower, Aerides crispum, the purple Epidendrum phœniceum, and a finely flowered Moss Cattleya.—Mr. Wooley produced the Aloe-leaved Cymbid, a small example of Dendrobium Farmeri, Sobralia macrantha, with three open flowers on it; Peristeria elata, beautifully blossomed; the Brazilian Oncidium flexuosum, Epidendrum crassifolium, the spotted Saccolabe, the Moss and Forbes Cattleyas, the latter in lovely condition, and Vanda Roxburghi.

Groups of 6 ORCHIDS were communicated by Messrs. Kinghorn, Ivison, and Green. The former had the white Butterfly plant, bearing a spike of flowers upwards of 2 feet in length, the larger variety of Oncidium ampliatum charmingly blossomed, Calanthe veratrifolia producing six flower spikes, the Intermediate and Forbes' Cattleyas, and a neat Dendrobium cærulescens. Mr. Ivison sent two nice examples, Oncidium luridum guttatum, and O. altissimum; Epidendrum macrochilum, Brassia maculata, the Three-coloured Vanda, and the pale variety of Cattleya labiata. Mr. Green contributed Brassia Wrayæ, Oncidium altissimum, Epidendrum crassifolium, Oncidium divaricatum, a pretty species, and an Epidendrum.

Mr. Cole showed a large plant of Dendrobium Calceolaria as a single specimen, together with Stanhopea tigrina, with two fine flowers on it; and Messrs. Henderson produced Broughtonia violacea.

PITCHER PLANTS.—Messrs. Veitch sent a charming collection, in which were noble examples of Nepenthes Rafflesiana, sanguinea, lævis, distillatoria, phyllamphora, ampullacea, and albo-marginata; together with Sarracenia purpurea, flava, Drummondi, and variolaris. Being fine specimens and neatly arranged, these attracted, and deservedly, a large share of attention.

AZALEAS were again produced by Mrs. Lawrence and Mr. Green, but their glory was evidently past. The sorts consisted of decora, variegata, Minerva, optima, Rawsoni, Gledstanesi, alba superba, lateritia, rosea punctata, and præstantissima.

TALL CACTI in flower were furnished in good condition by Messrs. Green and Falconer. The varieties were Epiphyllum rubrum cœruleum, speciosum, s. elegans, Ackermanni, Jenkinsoni, Cereus Mallesoni, its pale variety, and C. speciosissimus.

ROSES in pots, though greatly admired, were hardly so fine as they were in May. The gems of Messrs. Lane's group, which was first, were Chenédolé, beautifully blossomed, Celine, and Souvenir de la Malmaison.—Mr. Francis produced Coupe d'Hébé, Wm. Jesse, Pauline Plantier, Sophie de Houdilot, Souvenir de la Malmaison, Belle de St. Cyr, Reine du Vierges, Baronne Prevost, Triomphe de Laqueue, Duc de Cazes, Aubernon, and Las Cazes.—In the Amateur's Class, the 1st prize was awarded to Mr. Terry, gr. to Lady Puller, for nice plants of Persian Yellow, Robin Hood, Coupe d'Hébé, Sophie de Marcilly, Colonel Coombs, Œillet Parfait, Mrs. Bosanquet, Souvenir de la Malmaison, Charles Duval, Chenédolé, Elise Sauvage, and Baronne Prevost.—Mr. Rowland, who was second, had excellent examples of Souvenir d' un Ami, large and sweet; La Reine, in good condition; Blairii, No. 2, and Chenédolé.—Collections, both cut and in pots, were also contributed by Mr. Roser, and Mr. Francis showed the following yellow varieties in a cut state—Williams' Double Yellow, Single Yellow, Yellow Banksia, Elise Sauvage, Harrisonia, and Smith's Yellow.

CAPE HEATHS were plentiful, well cultivated, and finely flowered. Prizes were awarded for them to Messrs. Rollisson, Fairbairn, and Frazer; and in the Amateurs' Class to Mr. Smith, gr. to J. Quilter, Esq., of Norwood, and Mr. Cole, gr. to J. Collyer, Esq., of Dartford. In the different exhibitions we remarked suaveolens, tricolor Leeana, t. Wilsoni, metulæflora, denticulata moschata, depressa, ventricosa grandiflora (the very best of its class), v. coccinea, v. breviflora, v. prægnans, v. alba tincta, v. perspicua nana, Cavendishii, splendens, halicacaba, ampullacea vittata, florida, mutabilis, elegans, Humeana, Shannoni, Alberti, vestita coccinea, odora rosæ, Vernoni, gemmifera, and tortiliflora. Messrs. Henderson, of Pine-apple-place, showed a seedling called Grandis, which is distinct, and promises to be a good red kind.

SINGLE SPECIMENS.—The best of these were an exceedingly handsome standard yellow Rhododendron from Mr. Edmonds, gr. to the Duke of Devonshire, at Chiswick-house; a fine bush of Erica metulæflora, from Messrs. Veitch; noble examples of Erica Cavendishii, Pimelea Hendersoni and Leschenaultia formosa, from Mr. Kinghorn and Mr. Cole; the larger variety of the blue Leschenaultia, from Mr. May, gr. to Mrs. Lawrence; and Clerodendron fallax, in admirable condition, from Mr. Speed, of Edmonton.

NEW PLANTS.—Messrs. Veitch sent a yellow shrubby Calceolaria from Peru, Dendrobium Veitchianum, Cantua dependens, Deutzia gracilis, and a species o Eurybia? from New Zealand, with close heads of dingy white Aster-like flowers; Clerodendron Bethuneanum, came from Mr. Speed; Gastrolobium cuneatum, from Messrs. Henderson; and Mr. Williams sent Trichopilia coccinea. We also remarked a variegated leaved

Hydrangea japonica, and a Sinningia named punctata, an improvement on the old kind; the latter was contributed by Mr. E. G. Henderson.

Messrs. Veitch showed a branch of Eucalyptus coccifera, a strikingly ornamental tree, and found to be perfectly hardy at Exeter. It has blossomed every season in the greatest profusion for these many years past. They had also a branch from the open wall of their Escallonia macrantha.

Daisies.—A named collection was shown by Mr. Salter, of Versailles Nursery, Hammersmith, in which the best sorts perhaps were Leontine, Coquette, Charlotte, Jupiter, Decora, Bacchus, Gertrude, Bertha, and Amalie Winter.

Alpines.—Exhibitions of these were furnished by Mr. Wood, of Norwood, and Mr. Turner, of Barnes Common. In these we remarked the pretty early Squill (Scilla verna), Ajuga reptans, Potentilla tridentata, Oxytropis uralensis, Stachys corsica, Saxifraga pyramidalis, Phlox nivalis, Linaria alpina and Hepaticæfolia, Lychnis viscaria, and Primula farinosa.

Mr. Wood produced a small group of variegated plants, whose names we have given on a former occasion.

Pelargoniums were shown in excellent condition, and in tolerable abundance.—Mr. Gaines, of Battersea, obtained the first prize for 12 plants in 8-inch pots. The sorts were: Duchess of Argyll, Aspasia, Prince of Orange, Negress, Mont Blanc, Rosamond, Mars, Salamander, Centurion, Painted Lady, Firebrand, and Star. A second prize was awarded to Mr. Bragg, of Slough, for Forget-me-not, Roseum elegans, Star, Ariel, Norah, Narcissus, Victory, Gulielma, Nepaulese Prince, Conspicuum, Knight of Avenal, Lord Gough. Nine plants in 11-inch pots; 1st, Mr. Chapman, Turnham-green, for Negress, Luna, Duke of Cornwall, Camilla, Emperor, Rosy Circle, Forget-me-not, Salamander, Adonis; 2d, Mr. Gaines, for Mars, Aspasia, Negress, Rosamond, Marion, Orion, Xarifa, Chieftain, Gulielma.

Fancy Pelargoniums.—1st prize to Mr. Ambrose, of Battersea, for Defiance, Reine des Francais, Formosum, Cleopatra, Fairy Queen, and Modestum; 2d, Mr. Gaines, for Hero of Surrey, Madame Rosatti, Orestes, Reine des Francais, Odoratum, Magnificum, and Lady St. Germans; 3d, Mr. E. G. Henderson, Wellington Road, for Mrs. Loudon, Alboni, Annette, Prima Donna, Victoria, Princess Maria, and Galitzin; 4th, Mr. Bragg of Slough.

Cape Pelargoniums were exhibited by Mr. Parker, gr. to J. M. Strachan, Esq., of Teddington, and Mr. Stanly, gr. to H. Berens, Esq., Sidcup, Kent. The sorts were tricolor, flexuosum, glaucifolium, glaucum, Blandfordianum, quinquevulnerum, ardens, bicolor, and elatum.

Three seedling hybrid Pelargoniums of an entirely new description, of which some account will be found in another column, were shown in the seedling tent by Mr. Kempster, gr. to E. Fellows, Esq., Blackheath Park. The best was named Citriodorum grandiflorum.

Calceolarias.—Collections were contributed by Mr. Franklin, gr. to Mrs. Lawrence, and Mr. Chapman, of Turnham Green. The former had Elegans, Earl of Roslyn, Admiral, Goldfinch, Isabella, Alonza, Lord Byron, Grandiflora, Bridal Ring, Miss Talbot, and Lucy Ashton. The latter sent Success, Cavalier, Florabunda, Sidonia, Crocus, Marion, Alpha, Cardinal, Sappho, Prince of Wales, Cleopatra, and Keepsake.

Pansies in pots were shown in good condition by Mr. Francis, of Hertford, and Mr. Bragg, of Slough. The former had Juventa, Duke of Norfolk, Marchioness of Lothian, Mrs. Beck, Penelope, Lucy Neal, Aurora, Purity, Androcles, Supreme, and Miss Edwards. Mr. Bragg produced Junius, Industria, Clotno, Vulcan, Viceroy, Queen of England, Lucidum, Magnificent, Snowflake, Lucy Neal, Madame Sontag, and 2 seedlings.

A neat collection of 30 Ranunculuses was furnished by Mr. Costar, of Benson, Oxon. It consisted of Maria, Mrs. C. Turner, Mr. Shelling, Apollo, Atlas, Joseph Paxton, Dr. Lindley, Eliza Cook, Mr. Tyso, Lady Sale, Lord Gough, Regalia, African, Mr. Wolland, Sophia, Medora, Delectus, Naxara, Cedo Nullii, Squire Devenish, Sabina, Victoria, Alice Maud, and Gentoo.

Pinks.—Owing to the lateness of the season only one collection was exhibited. It came from Mr. Willmer, of Sunbury, and consisted of Merope, Jenny Lind, King of Purples, Lola Montez, Harry, Morning Star, Laura, Village Maid, Coronation, Oxoniensis, Surplus, and Lord J. Russell.

Very fine cut blooms of Mesembryanthemums, purple and yellow, were shown by the Hon. Fox Strangways, as examples of the climate of Abbotsbury, in Dorsetshire.

Fruit, with one or two exceptions, was not above mediocrity. There were three or four good Queen Pine-apples, but Providences were light and small. Black Grapes, Sweetwaters, and Frontignans were tolerably good; but Muscats, although sufficiently ripe for market, were deficient in that golden colour which is so highly desirable in that esteemed variety.—Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, had the best collection of fruit. It contained a Providence Pine-apple, Trentham Hybrid and Hybrid Dampsha Melons, 3 bunches of Black Hamburgh Grapes, 3 ditto of Muscat of Alexandria, 3 ditto of Chasselas Musqué, Royal George Peaches, Murray Nectarines, May Duke Cherries, British Queen Strawberries, and Figs. We believe that it was the opinion of the judges that one of the above Melons was the best flavoured of any exhibited.—The next collection came from Mr. Chapman, gr. to J. B. Glegg, Esq., of Withington Hall, Cheshire. It consisted of a Providence Pine-apple, Black Hamburgh, Purple Frontignan, and Chasselas Musqué Grapes, Cuthill's Scarlet-fleshed Melon, Grosse Mignonne and Bellegarde Peaches, Scarlet and Newington Nectarines, and Keens' Seedling Strawberries. We may remark, that the Peaches and Nectarines in this collection were extremely fine.

Pine-Apples.—Mr. Floud, gr. to C. Bailey, Esq., Aberaman House, Glamorganshire, furnished a finely-swelled Queen, weighing 5 lbs. 14 ozs. The same kind of Pine-apple, weighing 4 lbs. 12 ozs., came from Mr. Hoare, gr. to J. Bailey, Esq., Glanusk Park, Brecknock, who also exhibited several other Queens, nearly equal to the above, both in weight and quality. The third prize for this description of fruit was awarded to Mr. Frost, gr. to E. L. Betts, Esq., Preston Hall, near Maidstone. In the Market Gardeners' Class, the best Queen was shown by Mr. Harrison, of Oatlands Palace Gardens, Weybridge. A Providence, which was only considered worthy of a second prize, was exhibited by Mr. Slowe, gr. to R. W. Baker, Esq., of Bayfordbury, and a somewhat inferior, although heavier, fruit, by Mr. Drummond, gr. to C. H. Leigh, Esq., of Pontypool Park. The best Providence was that shown in the market-gardeners' class, by Mr. Davis, of Oak Hill, East Barnet; it weighed 6 lbs. 11 oz., which we need hardly say is light for this variety of Pine-apple.

Grapes.—Exhibitions of Black Hamburgh were numerous, and, as we have stated, generally good. Mr. Slowe produced beautiful bunches, and so did Mr. Ingram, gr. to her Majesty, at Frogmore, and very good fruit, of Wilmot's Black Hamburgh, which, though large, and well coloured, has the disadvantage of being thick skinned, came from Mr. Boyd, gr. to Viscount Dillon, Ditchley, Eustone. In the Market Gardeners' class, Mr. Davis, of Oak Hill, had the best bunches; but excellent examples were also contributed by Mr. Mitchell, of Brighton, and Mr. Harrison, of Oatlands. Sweetwaters came from Mr. Smith, gr. to S. Ricardo, Esq., and Muscadines from Mr. Rust, gr. to J. Maclaren, Esq., and Mr. Challis, gr. to Miss Irvine, at Egham. The best Muscats were produced by Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim, and very good exhibitions of this kind of Grape were furnished by Mr. Ingram and by Mr. Cox, gr. to J. Tredwell, Esq., Leigham-court, Brixton Hill. In the Market Gardeners' class, Mr. Harrison had the best fruit. White Frontignans came from Mr. Bain, gr. to B. Bernasconi, Esq., Harrow Weald, Mr. Cox, and Mr. Smith.

Peaches.—The best dish was communicated by Mr. Collinson, gr. to the Marquis of Westminster, Eaton Hall, Cheshire. The sort was Royal George. The same variety, and Violette Hative, came from Mr. Slowe, gr. to R. W. Baker, Esq. Mr. Davis's Noblesse was the only exhibition in the Market Gardeners' class.

Melons were generally indifferent in flavour. The best was a green-fleshed, from Mr. Ewing, gr. to O. F. Meyrick, Esq., Bodorgan Hall, Anglesea. The second best (hybrid Persian) came from Mr. Robertson, gr. to Lady Foley, Stoke Edith-park, Ledbury. A third prize was awarded to a Bromham Hall, furnished by Mr. Smith, gr. to S. Ricardo, Esq. Other varieties of Melons consisted of Snow's Green-fleshed, Emperor (green-fleshed), Lord Glinco, Victory of Bath, Parker's Hybrid, Fern-hill Green-fleshed, and Trentham Hybrid.

Strawberries.—By far the best were furnished by Mr. Ingram, gr. to her Majesty at Frogmore. The variety was British Queen, which was well coloured even to the tips of the fruit—a circumstance rare with this kind. Dishes of the same variety were also contributed by Mr. Elliott, gr. to Mrs. Boothby and Mr. Mann, of Isleworth.—The best Keens' Seedlings were shown by Mr. Turnbull, and the same sort came from Mr. Mann and Mr. Harrison, market gardeners. There were three collections of Strawberries in pots; the best was that of British Queen from Mr. Elliott, gr. to Mrs. Boothby.

Mr. Ivison, gr. to the Duchess Dowager of Northumberland, furnished plants bearing fruit, both in a ripe and unripe state, of Nutmeg, Gamboge, and Vanilla. He had also the Cinnamon tree in flower, together with dry Cinnamon produced from it at Syon; and unripe examples of the Serpent Cucumber.—Mr. Braid, gr. to H. Perkins, Esq., at Hanworth-park, exhibited a large mass of the fruit of the Cavendish Musa.

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Royal Botanic, *June* 11.—The plants mentioned in the preceding report having been very generally reproduced at this show, we confine our observations entirely to such subjects as we did not remark at Chiswick.

A collection of Orchids was produced by Mr. Barnes, gr. to R. Hanbury, Esq., at the Poles, Hertfordshire, in which there was an admirable example of the handsome Cypripedium spectabile, which, being hardy, is alike suitable for pot or out-door cultivation. He had also Bolbophyllum Lowii, and a well-flowered plant of Barkeria spectabilis.

Fuchsias.—Two groups were produced in which were Newtoniensis, Corallina, Elegantissima, Dr. Smith, Admirable, Crimson King, Acantha, Exoniensis, Miss Roberts, Cassandra, Cleopatra, and Dr. Jephson.

Pansies.—A first prize was awarded to Mr. Turner, and a second to Mr. Bragg, both of Slough. The following varieties were shown in good condition: Blanchae, Diadem Lucy Neal, Duke of Perth, Swansdown, Mrs. Beck, Lord Walshingham, Mr. Beck, Addison, and Queen of England, and a highly promising Seedling named National.

Ranunculuses were shown in good condition by Mr. Carey Tyso, of Wallingford. The sorts were, Apollo, Irreproachable, Milo, Naxara, Dr. Channing, Gomer, Brinus, Lady Dartmouth, Burns, Amasis, Kilgour's Princess, Milo, Coronation, Carouse, Highland Venus, Sabina, Dido, Mrs. Neilson, Dr. Neill, Beroth; and the following Seedlings of Mr. Tyso's: Exhibitor, Festus, Olympia, Alexia, Dilectus, Protector, Hephzibah, Felix, Lambton, Victor, and some unnamed varieties.

Pelargoniums were shown in great abundance and in excellent condition. The prizes offered by the "Seedling Pelargonium Fund" were contested for on this occasion, on which the following raisers were contributors, and many varieties were represented by two, three, and four plants: From Mr. Beck, were Incomparable, Gem, Arethusa, Ambassador, Painter Improved, Cardinal, and Exhibitor; from Mr. Story, Purity; from Mr. Hocken, Nightshade and Honeybell; from Major Foquett, Annette and Agatha; from Mr. White, Charming May and Martile; from Mr. Bragg, Jullien; from Mr. Turner, Flying Dutchman, Vivid, Supreme, Little Nell, Proteus, Breba, Cynthia, Sheet Anchor, and Illuminator; from Mr. Foster, Scarlet Eclipse, Shylock, Lablache, Optimum, Purple Standard, Rubens, Ariadne, Euridice, Enchantress, Pulchrum, Lavinia, Melissa, and Pansy; from Mr. Hoyle, Beatrice, Elise, Herald, Magnet, Ganymede, Remus, Chieftain, Azim, Colonel of the Buffs, and Van Tromp. The Censors, Messrs. Riley, Stains, Veitch, and Robinson, furnished the following award: First prize, Magnet (Hoyle); second do., Purple Standard (Foster); third do., Elise (Hoyle); fourth do., Ganymede (Hoyle); fifth do., Scarlet Eclipse (Foster); sixth do., Arethusa (Beck); seventh do., Herald (Hoyle).

Seedling Fancy Pelargoniums were shown in classes, the division of colours being—class A., light flowers, not darker than Modestum; class B, rose flowers, not darker than Minerva; class C, crimson flowers, not darker than Fairy Queen; class D, dark, not lighter than Hero of Surrey; class E, dark self, not lighter than Defiance; in these classes 34 varieties were shown. The censors made the following award—Class A, none worthy; class B, Mirandum (Ayres), a second prize; class C, Formosissimum (Ayres), a first prize; Perpetuum, (Ambrose), a second prize; Triumphant (Ambrose), a third prize; class D, Superbum (Ambrose), a first prize; Richard Cobden (Ambrose), a second prize; Caliban (Ayres), a second prize (equal); Gipsey Queen (Ayres), a third prize; class E, Captivation (Ambrose), a first prize, Advancer (Ayres), a second prize.

The Society's certificates were awarded to Ariadne (Foster), and Elise (Hoyle). A small silver medal was awarded to Magnet (Hoyle), for an exhibition of four plants; the same variety receiving the Society's certificate at the previous exhibition.

In Fancy Pelargoniums, Superbum (Ambrose), Captivation (Ambrose), and Advancer (Ayres), were selected by the Society's censors for certificates.

Ferns.—Interesting exhibitions were produced by Mr. Williams, gr. to C. B. Warner, Esq., Mr. Wooley, gr. to H. B. Ker, Esq., and Mr. Fletcher, gr. to Dr. Young. Among Mr. Williams' British kinds, we remarked wonderful specimens of Woodsia ilvensis, and Asplenium germanicum, both difficult sorts to manage. Hymenophyllum Tunbridgense was also unusually well fruited.

Lycopods.—A very good collection of these was shown by Mr. Fletcher, gr. to Dr. Young, of Kennington. It consisted of L. cæsium arboreum, cordifolium, plumosum, Louisianum, lepidophyllum, apodum, circinale, pusillum, stoloniferum, Willdenovi, denticulatum, Braziliense, umbrosum, and apothecum.

Fruit.—A Queen Pine, weighing 4 lbs. 5 oz., was shown by Mr. Bray, gr. to E. Lousada, Esq.; and Mr. Fleming, gr. to the Duke of Sutherland, had a Providence, weighing 7½ lbs.—A very fine fruit of this description of Pine-apple was produced from Chatsworth, by Mr. Paxton, not for competition. It weighed 8 lbs. 3 oz. Other Pine-apples, though good, were inferior to these.

The best Black Hamburgh Grapes were furnished by Mr. Fleming. The bunches were large, well swelled, and finely coloured.—Mr. Harrison, of Oatlands, had good Muscats; but they were deficient in colour.—Mr. Turnbull had large fruit of this Grape; but it was not half ripe.—Very fine Grizzly Frontignans came from Mr. Henderson, gr. to Sir George Beaumont, Bart.; and the best white Frontignans came from the garden of the Hon. E. Strutt.

Peaches.—Excellent specimens of Noblesse were shown by Mr. Paterson, gr. to the Baroness Wenman; and Mr. Chapman, gr. to J. B. Glegg, Esq., had good examples of Gallande. The best Nectarines came from Mr. Tillyard, gr. to Lord Southampton, and Mr Chapman sent good fruit of the Elruge.

Finely ripened Circassian and May Duke Cherries, were communicated by Mr. Ingram, gr. to her Majesty at Frogmore, and Mr. Fleming, of Trentham,

Of Strawberries, Mr. Ingram sent large and beautiful British Queens.

Melons.—The first prize was awarded to Mr. Taylor, of Streatham, for a yellow, medium-sized, netted, green-fleshed fruit, named Golden Perfection. Mr. Fleming's Trentham Hybrid was the second best, and the third prize was given to a small green-fleshed kind, from Mr. Gadd. This latter, though perhaps hardly ripe, was very finely flavoured.

We noticed specimens of the Uvedale St. Germain Pear, unripe fruit of Stephanotis floribunda, ripe ditto of Passiflora pomifera; and Vanilla, Nutmeg, Gamboge, and Cactus fruit came from Mr. Ivison, gr. to the Duchess Dowager of Northumberland at Syon.

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National Floricultural, *June* 12.—Mr. Beck in the chair. There was a good display of Seedling Pelargoniums on this occasion. A first-class certificate was awarded to Elise, a large flower, with pink under-petals, and white eye. Upper petals maroon, edged with delicate pink; a similar award was made to Ganymede, a distinct nice-looking flower with delicate pink under-petals, shaded with lilac. Upper petals dark, narrowly edged with lilac. Ditto, to Magnet, on account of its fine colour and profusion of bloom. The above came from Mr. Hoyle, of Reading. Mr. Beck, of Isleworth, received a certificate for Arethusa, a nice variety, with maroon top, very delicate salmon under-petals, and a light eye. Incomparable, from the same raiser, was commended for fine colour. Purple Standard, from Mr. Foster, of Clewer, received a certificate; and so did the same grower's Enchantress and Ariadne, both highly desirable sorts, more especially the latter. Mr. Ayres, of Blackheath, was awarded a first-class certificate for a Fancy Pelargonium, named Advancer, a well shaped very desirable flower; and certificates for Caliban, Miranda, and Gipsy Queen. These were pleasingly marked nice varieties.—Beauty of St. John's Wood, from Mr. E. G. Henderson, was commended for its colour; but in its present state it is too small. The same nurseryman's Queen of the Fancies was commended for fine form and general promising appearance.—Dr. Maclean had a seedling Pink, called Mrs. Maclean, which we hope to see again. Some Calceolarias were shown; but none were considered worth rewarding.—A shrubby yellow flowered bedding kind, from Messrs. Wood and Ingram, of Huntingdon, was very showy; but it was loose in habit.—Wellington Hero (bright yellow), from Mr. E. G. Henderson, was commended for bright colour.—Mr. Turner, of Slough, had the beautiful seedling Pansies, named National, Blanche, Swansdown, and Euphemia, and five Pelargoniums.—Messrs. Henderson sent a nice light Fuchsia.

## Miscellaneous.

*Sale of Orchids.*— An extensive collection of well grown plants, in pots, the property of a private gentleman who has given up their culture, was sold on Monday and Tuesday last by Mr. Stevens, at the following prices:—A fine specimen of Vanda Batemanni, 69*l.* 6*s.* (!); a smaller plant of the same kind, 13*l.*; Phalænopsis amabilis, from 14*l.* to 23*l.* 2*s.*; Cattleya Skinneri, 23*l.*; the orange variety of C. Mossiæ, 21*l.*; C. Mossiæ, 15*l.* 10*s.*;

C. labiata picta, 16*l.*; Epidendrum vitellinum majus, 21*l.*; Saccolabium guttatum, 19*l.* 10*s.*; S. præmorsum, 13*l.*; Aerides odoratum purpurascens, 21*l.*; maculosum, 13*l.* 10*s.*; A. affine rubrum, 13*l.*; A. quinquevulnerum, 11*l.*; Dendrobium Dalhousieanum, 12*l.* 12*s.*; Vanda violacea, 13*l.*; V. tricolor, 10*l.* 10*s.*; V. Roxburghi, 12*l.*; Angræcum caudatum, 7*l.* 7*s.* Other lots, of which there were in all 300, fetched from 1*l.* to 6*l.* per lot.

*Whitewash.*—Take 2 quarts of skimmed milk; 2 oz. of fresh-slaked lime; 2 lbs. of whiting; or the same proportions for any large quantity. Put the lime into a stone vessel, and pour upon it a sufficient quantity of milk to make a mixture resembling cream; then add the remainder of the material. When this is done, crumble and spread the whiting on the surface of the fluid, in which it will gradually sink. It must then be well stirred, or ground as any other paint. By the addition of any colouring matter, you make it suit your fancy. It must be put on with a paint brush, and, when dry, a second coat should be given. The quantity named is sufficient for 25 square yards. *Belfast Journal of the Chemico-Agricultural Society.*

*Heat of Plants.*—All living bodies have a temperature peculiar to themselves; that is to say, they have a temperature different from, and independent of, those that surround them. This temperature is intimately connected with their nature, and is modified according to the different conditions in which they may be. This necessary consequence of the successive changes which organic matter undergoes during life, is in its turn one of the causes which preserve organised bodies, and by which animal and vegetable life are protected from destruction or dissolution, which external circumstances would not be long in producing. It is this peculiar temperature which permits animals to inhabit regions of the globe that on account of their cold would be uninhabitable; which allows the development of aquatic vegetables in frozen water; which defends trees against winter, and which, in tropical regions, causes vegetables to withstand a temperature often too high for their organisation. The observations upon the elevated temperature in the flowers of Aroideous plants in general, have shown that this phenomenon takes place in a high degree, and originates in a sort of combustion, that is to say, an absorption of oxygen and emission of carbonic acid. Very recently a high degree of temperature has been observed in a plant belonging to a family in which that phenomenon has not been noticed before. Mr. Teysman, chief gardener at Buitenzorg (in Java) in 1845, has informed me that he has observed an elevated temperature, and at the same time a very strong smell, in the male cone of Cycas circinalis. I received from him, in October, 1849, and November, 1850, seven series of observations, made in the aforesaid garden, upon male flowers of this plant. What is most remarkable in these observations is connected with the following facts. The elevation of the temperature always takes place between 6—10 o'clock in the evening. Messrs. Bory (in the Isle of France) and Hasscarl (in Java) have observed the maximum at 6 in the morning. De Saussure observed it in the Arum Italicum between 4—7 in the evening; and the Colocasia odora in the gardens of Paris, Amsterdam, and Leyden has always attained its maximum at noon. This periodical production of heat, differing in different climates and in flowers of different families, has not yet been accounted for. It appears from the inspection of the tables of several hundreds of observations, that the maximum has varied between 9—14° C., and the difference has been 3·75—4·50°. It is acknowledged that in general the coloured parts among the appendicular organs in vegetables have an absorption and exhalation contrary to those of green parts. The oxygen is absorbed, carbonic acid is exhaled. Both take place in organs where the elevated temperature is shown in a high degree. It is proved that this phenomenon is constantly preceded and accompanied by rapid growth in the flower. Nothing prevents us from admitting that the same action actually takes place in the male cone of Cycas, where the rapid development of pollen, or the formation of cells which compose it, should surpass all that has been observed in this respect in the vegetable kingdom. We shall endeavour to prove it by the following calculation. The male cone, of which I have given the description elsewhere, is (in metres) 0·450 long, and 0·200 broad. The sum of the external surface is difficult to estimate, on account of the irregular form of the organ, but it cannot be considerable. In calculating the number of scales at 3500, and the surface of each of them at four square centimetres, the whole sum of the organs which compose the cone should be equal to 14,000 square centimetres. The surface of the scales at the underside is covered with unilocular anthers almost contiguous, and the number of these anthers may be calculated at 400. Thus the total number of these anthers might be calculated at 1,400,000. Each anther contains several thousands of granules of pollen, which in a very short space of time undergo, in their cavities, all the necessary organic, physical, and chemical changes. It is easy to admit that the alternate absorption and emission of gas, in so rapid a process, must have an important part. *Hooker's Journal of Botany.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

MANY plants, such as early-forced Azaleas, which have occupied the houses up to the present period, may now with advantage be placed out of doors, in a sheltered and partially shaded situation. Cacti should be set out in a sunny place, which is better adapted to their succulent habit; and we find that their growth is more robust, and that they flower with greater freedom, from being placed in front of a south wall during the latter part of the summer, and watering them occasionally with weak liquid manure. Plants which are useful for autumn and winter flowering, such as Euphorbia, Eranthemum, Justicia, Vinca, Begonia, Gesnera, Gardenia, Franciscea, Jasminum, Aphelandra, Poinsettia, Torenia, Cactus truncatus, &c., should continue to receive every encouragement in the way of rich soil, liberal pot-room, and an adequate amount of heat and moisture, in order that they may form healthy, handsome specimens. It is well also to propagate some young plants of many of these kinds, as they will be useful for flowering in small pots this season, and may be grown on to make larger specimens for next. All free-growing plants should have weak manure water once or twice a week, according to the progress which the roots have made towards the sides of the pots.

### FLOWER GARDEN AND SHRUBBERIES.

Hyacinths, Tulips, and other bulbs, whose foliage is now fully matured, should be taken up, dried, cleaned, and stored in an airy room till autumn. It is a common practice to throw away the old bulbs which have been forced, or to stick them into some out-of-the-way border, and take no further notice of them; but they are well worthy of a greater share of attention. If, after being well ripened, they are taken out of the soil, carefully stored in a dry room during their season of rest, and in autumn replanted in beds of light rich soil, a healthy stock will be established in a few years, and from these the largest and soundest bulbs can annually be selected for forcing. Of the remainder, those which are large enough to flower at all may be planted in the flower garden, where they are highly ornamental during the spring months, and are at the same time preparing themselves for forcing in future years. Therefore let all the old bulbs you have in or out of ground, be taken care of till the planting season arrives. Hollyhocks, Dahlias, Delphiniums, Phloxes, and other herbaceous plants, must be neatly tied to good strong stakes; but this is very different to bundling them up in such a manner as to deprive them of light and air. The object of tying is to support the weight of the plants; but, at the same time, light and air should be freely admitted amongst the branches. In tying the Hollyhock, it is a common practice to bind up six or eight shoots to one stake, in which case the flowers are almost entirely concealed by the leaves. The proper way is to select a few of the strongest shoots of each plant, and tie them to separate stakes, placed sufficiently distant to admit light and air; so treated the flowers display themselves to advantage, and their appearance is truly noble. The Hollyhock looks particularly well when in groups; single stems have but a stiff and formal appearance.

### HARDY FRUIT GARDEN.

The shoots which are retained on wall fruit-trees will now require attention in nailing or tying, as the fruitfulness of the trees very much depends upon the shoots not being allowed to crowd or interfere one with another; and if their ornamental appearance, in an artistical point of view, is any object, the shoots should be laid in at proper angles while they are young. Continue pinching the points of Gooseberry and Currant shoots, and especially where they are blighted; it is a very quick way of destroying myriads of insects, while at the same time it forms a necessary part of the cultivation of the plant. Continue the exterminating process wherever insects make their appearance, as well upon the smaller bush fruits as upon the wall trees. The garden engine should be at work every night and morning upon these and the walls. Early Cherries particularly require this, as the black fly is making its appearance, and if not destroyed in time will soil the fruit as well as injure the leaves. Where common tiles have been adopted as a means of keeping Strawberry fruit clean, they should occasionally be turned up, by which a congregation of snails, beetles, and other injurious insects, will be exposed to view, and may be easily destroyed. The facility with which this may be done gives the tiles a great advantage over Grass or straw, as the latter materials harbour insects without affording the means of getting at them.

### KITCHEN GARDEN.

No crops after this time should be sown so thickly as to require much thinning, for in hot dry weather considerable injury is thereby done to the plants which are retained. Plants sown now for future transplanting should be much thinner than would have been thought necessary a month or six weeks back; this is to allow them a longer period to grow before they will need to be removed, and in order that they may then be carefully lifted with large balls of earth. Make regular sowings of Turnips and Spinach, and of Lettuces and other salads once in two or three weeks; sow a bed of Carrots and of Onions for using in a young state; and as small roots of Beet are generally preferred, a late crop of them should now be sown. A sowing should be made of the Vanack, Early Dwarf, or Sugar-loaf Cabbage, for late summer and autumn use; and of Knight's Protecting Broccoli, or some other good sort, for late spring use. Cardoons should now be transplanted from the frames or pots, choosing a moist or dull day for the purpose, and watering them afterwards in hot weather till they are thoroughly established. Let the leaves of Garlic be tied in knots or twisted, to check its growth, and assist thereby the development of the roots.

State of the Weather near London, for the week ending June 12, 1851, as observed at the Horticultural Garden, Chiswick.

| June. | Moon's Age. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air. | | | Of the Earth. | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 6 | 29.950 | 29.822 | 61 | 52 | 56.5 | 56 | 54 | S.W. | .00 |
| Satur. .. | 7 | 29.965 | 29.937 | 65 | 53 | 59.5 | 56½ | 54½ | S.W. | .01 |
| Sunday . | 8 | 29.960 | 29.936 | 71 | 56 | 63.5 | 57 | 55 | S.W. | .00 |
| Monday | 9 | 29.963 | 29.551 | 61 | 48 | 54.5 | 57 | 55 | S.E. | .02 |
| Tues. .. | 10 | 29.720 | 29.642 | 55 | 43 | 49.0 | 57 | 55 | N.E | .32 |
| Wed. .. | 11 | 29.980 | 29.965 | 67 | 48 | 57.5 | 55 | 54 | S.W. | .04 |
| Thurs... | 12 | 29.737 | 29.650 | 61 | 56 | 58.5 | 55½ | 54 | S.W. | .23 |
| Average | | 29.896 | 29.786 | 63.1 | 50.9 | 57.0 | 56.3 | 54.5 | | .62 |

June 6—Boisterous; cloudy and fine.
— 7—Densely overcast; slight rain; cloudy and windy, with slight rain; overcast.
— 8—Slightly clouded and boisterous; densely clouded at night.
— 9—Slight rain, drizzly.
— 10—Uniformly overcast; cloudy and cold; rain at night.
— 11—Cloudless; clear and fine; very fine; rain.
— 12—Densely clouded; rain.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending June 21, 1851.

| June. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 15 | 73.8 | 49.8 | 61.8 | 10 | 0.30 in. | 1 | 4 | 4 | 2 | 4 | 4 | 2 | 4 |
| Mon 16 | 72.5 | 49.6 | 61.0 | 5 | 0.17 | 2 | 3 | 4 | 1 | 6 | 5 | 2 | 2 |
| Tues. 17 | 73.7 | 50.5 | 62.1 | 14 | 0.86 | 1 | 4 | 2 | 1 | 5 | 7 | 3 | 3 |
| Wed. 18 | 72.4 | 50.8 | 61.6 | 13 | 0.25 | 2 | 2 | 2 | 2 | 3 | 5 | 7 | 2 |
| Thurs. 19 | 71.2 | 50.0 | 60.6 | 13 | 0.37 | 1 | 3 | 1 | 2 | 1 | 1 | 10 | 6 |
| Friday 20 | 72.8 | 51.2 | 62.0 | 10 | 0.21 | 1 | 3 | 1 | 1 | 5 | 6 | 7 | 1 |
| Satur. 21 | 74.4 | 51.6 | 63.0 | 9 | 0.68 | 1 | 3 | 3 | 1 | 1 | 12 | 4 | — |

The highest temperature during the above period occurred on the 19th, 1846—therm. 93 deg.; and the lowest on the 15th, 1830—therm. 30 deg.

## Notices to Correspondents.

BALSAMS: *R B* says, that last year his Balsams were magnificent, every flower large and very double; he took particular care in saving the seed, which this year has produced nothing but worthless single blooms, not a double flower out of a hundred. He asks for an explanation from some Balsam grower, who perhaps will tell him whether Balsam seed is better or more likely to produce double flowers, if three or four years old?

BOOKS: *A Z.* Saunders's "Practical Treatise on the Culture of the Vine."‡

GREENHOUSE: *S C.* We never heard of a galvanised iron greenhouse, and have no knowledge of the cost of such a structure. It would certainly be a very bad sort of house, unfit for plants to live in.

GUTTA PERCHA: *A M C.* This is *not* an American production, but comes from the islands of the Indian Archipelago. Caoutchouc is produced by various trees in both the old and new worlds. We will examine the small bodies at leisure.

INSECTS: *A R.* We were unable to rear the insects sent by you last July. *W.—T F.* As well as we can judge from the shrivelled state of the specimen, the minute insect found in the bottle of filtered water is a very young larva of a Stratiomys, which is aquatic in its early stages. *W.—T C.* The insects found on the leaves of the Cucumber, which you have mistaken for spiders, are a species of garden mite (Acarus hortensis. See figure in our publication for the present year, March 22, p. 181, figure B). If repeated and careful fumigation in very close frames is not found to answer, try the plan of laying traps of dead leaves, which should be dipped from time to time in boiling water. *W.—A Subscriber.* The larva which has burrowed into the Birch shoot is a middle-sized caterpillar of the wood leopard moth (Zeuzera Æsculi. See *Gardeners' Chronicle* 1846, p. 236, for figures of its different states). *W.*

LABURNUMS: *Cytisus.* The production of purple and yellow flowers by the same Laburnum is confined to a plant called Cytisus Adami, an accidental garden "sport," concerning which you will find much discussion in former volumes of the *Gardeners' Chronicle*, but the true origin of which is uncertain. It is very common now-a-days.

MANURE: *Exeter.* Burnt oyster-shells have the same value and action as lime, and no more.

NAMES OF PLANTS: *G R.* 1, Epacris microphylla; 2, E. nivalis; 3, Acrophyllum venosum.—*F M.* 1, Phlox setacea; 2, Sedum Anacampseros; 3, Erica Bowieana.—*Sp.* Viola cornuta.—*Quercus.* The Rose-leaves are infested by Uredo Rosæ; the Mentha is incana of Sole, referred in systematic works to M. sylvestris as a well marked variety.—*J D A.* Umbelliferous plants cannot be named from their leaves; yours may or may not be Æthusa Cynapium; Kerria japonica; Carex cæspitosa.—*C Ml.* Masdevallia infracta; Oncidium ——.—*W T.* Clianthus puniceus, and Dodecatheon Meadia.—*E W, Bexley.* Raphanus Raphanistrum.—*A Subscriber.* Hermannia holosericea.—*G.* We will endeavour to ascertain.—A few inquiries stand over for further consideration.

PEACH TREES: *S S S.* Your Peach blossoms having all been destroyed, and the trees being young and over-vigorous, you may carefully root-prune next month. Dig out a trench and shorten some of the large roots to a lateral. In the meantime, check the over-luxuriant shoots by pinching, turning down their points; while weak branches should have every encouragement. If you can equally distribute the flow of sap, your trees will have but little occasion for root-pruning.‖

PEAR TREES: *A A.* We have received several communications concerning the appearances presented by your Pear leaves, and are unable to suggest their cause. Similar appearances have been remarked in other plants. The leaves look as if they had been struck by hail; but we believe there is no reason to suppose such to have been the origin. Perhaps some inquiries now instituted by us may lead to a solution of the enigma.

RUSTIC TEMPLES: *E M E.* You may see such things in the King's-road, Chelsea; and, we believe, in Hammersmith, not far from the Broadway.

TANE: *Hythe.* The cheapest and best material is slate; the next best is wood lined with lead. The latter is more unexpensive than the first, but not cheaper, because it will rot in time.

VINES: *R E C.* Your Vines are not mildewed at all. What you have done to them we cannot imagine.

WIREWORM: *J Abell.* Insert thick slices of Potatoes or Turnips in the beds, edgeways; examine them at intervals, and secure the depredators. You cannot be wrong in applying pickle and guano-water in moderation to Asparagus.‡

### SEEDLING FLOWERS.

PANSIES: *R R.* A large showy variety, dissimilar to any out, but rather coarse; colours rich. It might be sent out as a good second class flower.*

PELARGONIUMS: *F M.* As far as we can judge from a fewdetached petals, your flower is deficient in shape; the colours are good.*—*W R.* Smashed to pieces in coming through the post.*

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| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

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EDWARD PURSER, Secretary.

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**The Agricultural Gazette.**
*SATURDAY, JUNE* 14, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 18—Agricultural Society of England.
THURSDAY, — 19—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 25—Agricultural Society of England.
THURSDAY, — 26—Agricultural Imp. Soc. of Ireland.

EVERY owner of land who may desire to avail himself of the advantages of the Drainage Acts must join in the wish of our correspondent, "A Tenant for Life," that some accurate detail of the expenses of obtaining a Government loan should be furnished to the public by some one who has been the victim of the process he describes. It is certainly disheartening to be under the impression that what the Legislature intended as a boon has been so fettered by executive machinery as to make it a doubt at least whether it is worth accepting or not. But the subject is not without its difficulties, and an examination into those difficulties will show that some expense must be incidental to any system of administration that may be framed. We cannot, indeed, trace the legislative steps by which the obstacles arising out of our system of entail and the trammels of Chancery have been progressively overcome, and the power to charge a settled estate with the expense of permanent improvement conferred upon the tenant for life, without observing that much attention has been given to the subject by the most enlightened friends of agriculture, and that the expense which was found to be inseparable from every plan that could be thought of appeared to paralyse each successive effort that was made. The first Act, usually known as Mr. PUSEY's Act, by interposing the machinery of the Court of Chancery to protect the interests of remainder men, involved a delay and expense that rendered it wholly inoperative. The next Act founded on the laborious investigations of the Duke of RICHMOND's committee in 1845 swept away much of the form, and by dispensing with the attendance of counsel and solicitors, and the frequent reports of surveyors, struggled to cheapen the process down to the point of utility. But enough of the costly drowsiness of Chancery was still retained to make the measure unavailing, and only three or four applications appear ever to have been made under it. The jurisdiction was at last transferred to the Inclosure Commissioners by several public Acts, and every expense shaken off except such as in principle appear incidental and necessary to the subject. We say in principle, because it has never been doubted that a jealous protection of the inheritance is an inseparable appendage to the power of the tenant for life to charge upon it the amount of improvements which are set in motion upon his judgment; and as it cannot be said that the Inclosure Commissioners in interpreting the Drainage Acts have travelled beyond what their provisions require, the only question is whether protection to the estate can be any further interfered with, or any safe system conceived that shall be less expensive. It is clear the applicant must satisfy the authorities that he is a party comprehended within the Act, notice must be given by advertisements to all affected by the charge, their objections must be heard if raised, plans must be furnished of the lands to be drained, the mode of executing the drainage must be set out, the expense of it, and the value of the improvement shown, and, finally, inspection by a disinterested party must be made. No reversioner will be content with less than this; statesmen will startle if anything less is proposed, and how can all be done without delay and expense? The force of complaint has been directed against inspection; but it is difficult to see how any portion of what is now required can be given up. There is, perhaps, no subject on which greater difference of opinion has existed than on drainage, and the truth that half the drains in Great Britain will require to be relaid has passed into a proverb. A full plan of the drainage and a primary inspection are therefore absolutely necessary. The works being often left to the direction of a bailiff, or peradventure the village drainer, or what is sometimes more perilous still, the genius of the tenant for life himself (who is not always without temptations to complicity), the law is not severe which requires a final inspection of the work before money is advanced, which perhaps infants may be called to pay. These two inspections are all the present system demands, and if more than these become necessary, they must arise out of the exigence of the landowner that calls for instalments of the money as the works proceed, thus multiplying inspections to a like amount.

The real point of the difficulty then is, the impossibility to get the loan before the work is completed and the sanction of the Inclosure Commissioners obtained; or, as our correspondent truly observes, "the proprietor having to advance the money and perform the task before remuneration comes, strips the loan of half its value, it being mostly wanted to set the thing going." This is the true ground of complaint, and the rock on which the Duke of RICHMOND's last effort of the private advances (Drainage) Act has split. Money will not be advanced on works *to be* done, and where the security must depend upon the contingencies of obtaining the mortgage after the money is spent. The only practical form in which relief can come is by a *medium* which shall supply the money at the outset, and having the confidence of the proprietor and the commissioners, make the obtaining the sanction of the latter a certainty, while it eases the former of the expenses of a multitude of inspections, and the responsibility of getting the charge on the land. Such a medium would be of scarcely less value than the Drainage Act itself, and if this be the object of either of the companies which have lately come into existence, their parliamentary incorporation is very intelligible, and they may materially advance the interests of agriculture. The Inclosure Commissioners have cheerfully assisted proprietors in keeping expense at the minimum, and it may be well conceived that a company having their confidence may still further lessen what is necessary; and by also supplying the money required for the works, executing them where it is desired, and relieving the proprietor of all the trouble and responsibility of charging the estate, may make it more advantageous to resort to them than to encounter all the difficulties and uncertain expenses of a direct application to the Commissioners. At all events, it would be wise to investigate the expense of such a course, rather than be scared by the imaginary ills of "A Tenant for Life" from doing anything at all. It is said the existing Drainage Companies* comply with these conditions, and that the General Land Drainage and Improvement Company include within their powers equal provisions with respect to *farm buildings*. If they can, we propose, as a "rider" to our correspondent's suggestion, that this information would be of quite as much practical value as a detail of the expenses incidental to a Government loan. With present prices and present prospects, however, a stand-still policy can only lead to deeper difficulty. To make the most of the materials we have is the true wisdom, or as our correspondent will find in the next page of his favourite author—

> "Take up this mangled matter at the best:
> Men do their broken weapons rather use
> Than their bare hands."

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. VI.—The next description of implements comes under "Division C. HARVESTING MACHINES." Among the edge tools of Sheffield, and other places, are to be found plenty of sickles, scythes, and hooks, for cutting Grass and corn, but very few are present in Class 9. We observed an invention of Boyd, Lower Thames-street, calculated to render the scythe an instrument of easier management. The most common form of scythe, with its wedges, and nails, and rings, and Grass-nail, is as different from what one might suppose it could be, as the Kentish turn-wrest, with its braces, and chains, and link nails, is from an improved iron plough. Various appliances have been tried, in order to simplify the setting of a scythe on its stick; but most of these have either not given it the necessary universality of movement, or increased its weight with metal. The present invention seems to answer the required ends. The blade is

* Their advertisements constantly appear in our columns.

fastened to the handle by two joints, by one of which its point may be set at any distance from the handle, and by the other at any distance above the ground, the blade being set by it either flat for mowing lawns, or turned upward for hay and corn. Each joint consists of two small round plates of metal pressed tightly together, in one joint by a screw, and in the other by an iron wedge. This double-action scythe has been patented. Machines for mowing and reaping by horse power have never fully established themselves in this country; they may answer where the crops are light and upstanding, but a piece of mechanism without discretion in a field of laid, weather-beaten, and thorough-grown Wheat, is as useless as a single barrel-organ for universal psalmody. However, many crops do stand up; and our English machinists, unwilling to be outdone by Americans and Australians, have from time to time devised engines for reaping them. There are several in the Exhibition, both models and working machines. One exhibited we believe by T. Fairless of Conbridge, near Hexham, Northumberland, consists of a square wooden framework upon four small wheels; carrying a vertical spindle in front, to which is attached a revolving horizontal frame with two large knives near the ground. As the carriage is pushed forward, these knives are carried round by means of wheel-work, and are followed by two rakes which turn up at a certain point of the revolution so as to leave the cut hay or corn in heaps. Garrett's reaping machine is evidently on a much better principle. The horses do not push but draw it along, walking close beside the standing crop. On the right side of the machine is a broad flat iron platform or receiver very near the ground; and the cutting part of the machine is fixed upon the front edge of this. The cutter consists of a number of triangular knives fixed upon a bar, so as to present a very coarse saw edge to the Grass or corn; and these sharp points are slided rapidly to and fro sideways through slits in a number of iron fingers or square prongs, the motion being derived by a crank rod and wheel work from one of the carriage wheels. A large breast, shaped like a mould-board, is fixed upon the platform, so as to turn the cut corn and leave it in a swathe in the track of the machine carriage.

As the resistance to the advance of the machine is all on the right-hand side of the line of draught, it might be expected that the whole carriage would swerve in that direction; but the inventor has prevented this by working the cutter from the near or left-hand wheel. The machine has not been tried in the corn field, but mows Lucerne well; and it is expected, with two horses, to cut any reasonably standing crop of white corn. The implement makers have succeeded much better in applying horse-power to hay making than hay cutting. Barrett, Exall, and Andrews' haymaking machine comprises most of the recent improvements. The bars holding the teeth are arranged upon two wheels on one main shaft, but having socket axles each turned by one of the carriage wheels. The main axle can be raised or lowered by wheels and spindles for the purpose, which is an excellent provision for different kinds of surface and different states of the hay. The tines are held either shut close or radiated open by springs, one to each wooden bar on which they are set. Smith and Co., of Stamford, Lincolnshire, exhibit their patent hay-making machine, which is perhaps the most superior of its class. This is also in two parts, with socket axles, and has two motions to be put in train for going either backward or forward. The teeth are held either in or out of work by springs; and the whole can be lowered or raised in or out of work by a crank and screw. One man can work it by himself, and has never occasion to leave the side of the horse, as he can instantaneously, and with the greatest ease, raise it from or lower it to its work, and quite as quickly and easily throw it in or out of gear, or reverse the action; thus effecting a great saving of time and labour, and lessening the liability of the workman to accident. It is calculated that the substitution of wrought for cast iron in this implement, besides increasing its strength and durability, decreases the weight on the horse's back by four stones, and lightens the draught. It obtained the prize at the Exeter meeting.

Among HORSE-RAKES we remarked one in which the tines are simultaneously lifted out of work by depressing the long bar upon which they hinge; another bar very near this, and underneath the tines, acting as a fulcrum over which their hinge ends are depressed and their point ends elevated. This action is effected by simply pulling down the end of a lever, which is held up, when the tines are in work, by a short lever and balance weight. There are many horse-rakes shown by different makers, some but little varying in the form of tine and leverage for lifting. Howard's prize rake performed its work exceedingly well at Exeter, raking clean when full, littering none, and being one of the best in hand. Smith and Co.'s patent "All-Iron Horse-rake," which has gained several prizes, is very simply worked; each tooth depends separately from the common axis, so that the whole set will readily adjust themselves to the inequalities of the land; and they are all raised at once by a bar passing beneath them. The action by which this bar is lifted, seems the perfection of such a movement; all the hand does is to pull down the end of a lever, and instead of this communicating motion to the bar by joints and levers and connecting rods, it does so by making one curve depress another, these being so formed as to give the greatest purchase just at first, and lift the tines very high and clear of the stubble or hay to be left behind. There are 27 teeth in the rake, covering a space of 7 feet. It is adapted for hay, corn, stubble, or Couch raking; and also as a light scarifier for Grass lands, for clearing off moss, &c., before top-dressing. Scarcely an ear of corn or a bent of hay can be picked up after it; it is easily cleared of its load while at work, without stopping the horses; is worked by one horse and a driver, and will not cost 1s. a year for repairs. *I. A. C.*

## SELECTION—THE TRUE SOURCE OF IMPROVEMENT.

By carefully following this principle, all our breeds of live stock have been brought to that degree of excellence which is the pride of the English farmer, the admiration of the British nation, and the envy of every other—horses, cattle, sheep, and pigs, sought after with insatiable avidity. Expense, don't name it; it is a favour to part with such animals. The decendants of a noble ancestry, and a copy of the family register, form a treasure of inestimable value to the fortunate possessor of them in another land; but, notwithstanding that England is supplying other countries with those breeds which I believe are destined to work a universal change in the live stock of the whole world, it is undeniable that she herself would be both richer and happier, if the best of each were to be found on every farm which divides her soil, and if a tittle of that intelligent care and assiduity which have been bestowed, in order to bring our choicest live stock to their present state, had been imitated by others. In reference to the vegetable kingdom, their labours would have long since been rewarded by the production of plants perfect in every respect—in early maturity, in quantity and quality of produce, the whole of the nutriment appropriated being converted into the most nutritious edible food, which that race is capable of producing, and none of it expended in useless waste; in hardiness and keeping habits, and for producing the most of the best animal produce, from these immaculate specimens of vegetable art. The attainment of this is alone wanted to place the English in the richest and happiest state which it is possible for any nation to acquire from the soil to which she owes her existence.

The present year, 1851, brings forth the Great Exhibition, the World's Fair, to which everybody is going, and where everything is expected to be seen, and the Royal Agricultural Society holds it annual show of live stock, in the Home Park, Windsor, to add to the attractions, and to exhibit to the scrutiny of the world, a show of animals, which no other land can congregate together—each from the muzzle to the tail a paragon of excellence.

But our agricultural vegetable productions—what of them? which of them can be said to approach perfection? None; not even a distant gleam of a worthy attempt being made to bring them to it, nor do we yet know which race is the best suited to the production of our object, in any one department of our business. Which root or bulb shall we choose, or would not something of the Cabbage tribe answer better?

Can it be that the Swede, for instance, is incapable of improvement; that it is of such a meagre habit as to refuse to adapt itself to that degree of plethora which is so much needed. If this be so, then I beg to take by the hand a sadly neglected root—a root which in quality as far surpasses the Swede, as the latter does those spongy pigmies which are even to this very day are allowed to encumber too much of England's soil—Kohl Rabi, its only fault being that when grown side by side with the former, it has not as yet with me produced quite so heavy a crop, but the quality of its produce makes it equally valuable per acre; and it is troublesome to top, but, it is still in an uncivilised state, leaves anywhere, everywhere, and nowhere; some roots crack, and form unsightly clefts, some run to seed-stems, and nearly all have a slight tendency to do so.

Cultivation and refinement will remedy the first, the second will sometimes happen; our best Apples will do so, and those which do are the best of them; but it would be better to grow our crop without this drawback, and I look to the same source to effect it. Remove with a small knife, the first appearance of a seed-stem, and the root will generally grow on unimpaired, but this is only quackery, it is attending to symptoms instead of rectifying the health; the cause is, seed raised in a faulty manner. I have seen a field of many acres taken in August, worked, and sown with Swedes, which arrived at the size of Bantam's eggs, and the following year was reaped, threshed, and carried to the seed-room. A crop of seed from such worthless, vagrant parents, to be distributed as being of a highly improved breed, and strongly recommended; but in reality, seed raised under the most unfavourable circumstances, sown out of season, allowed to ramble in filth, uncared for, surrounded and frequently overpowered by its most baneful enemies, weeds. Seed which has been associated with such company, never can produce plants capable of taking advantage, and turning to the best account, those expensive appliances which have emptied the farmer's purse, in the hope of obtaining the due reward of his exertions to attain perfect fertility.

It excites one's risibility to see the meagre subterfuges often resorted to, in order to explain the cause of a disgraceful crop of Roots—the fly,—the fly,—made all those blanks; wireworms cut the plants down;—we had bad weather! In nine cases out of ten, the plants, from debilitated seed, were unable to appropriate even the most favourable circumstances, and the deviation of a breath of wind in an adverse direction caused death; here opens upon us a whole multitude of voices, "Grow your own seed." Yes! but I much doubt if any of us know how it *ought* to be grown: for the best methods at present practised produce a proportion of seed which either never vegetates, or only to create disappointed hopes. In order to grow perfect Grapes, the gardener not only prunes and shortens back the Vine, and adjusts the number of bunches, but he thins out and regulates the size and quantity of Grapes (seeds) to each bunch, and until our agricultural seeds are grown after the same principle, our fields must ever be dotted with tokens of abortion.

Perhaps the Royal Agricultural Society may some day see the importance of the subject, and be enabled to send forth an essay on the "Growth of the Seeds of our Root Crops," and cuts to shew the proper quantity to remove from the top of the stem, and how to thin the side branches, so that every seed produced may be vigorous and healthy, requiring only to be placed in favourable circumstances, to shoot forth and hasten on to perfect maturity; and if we are to place any reliance upon our agricultural literature, the best of what good things we have were raised by accident.

What is wanted is the Kohl-Rabi bulb, having an early York Cabbage for its top, the attainment of which is not to be had, or expected, from the efforts of a few persons, but by enlisting the careful attention and long-continued assiduity of the many; and I hope that I have shown good cause for every person to do his best—that it may be done, is doubtless; and although the lucky finder may alone have his name borne by it, and planted over England's surface, still the individual exertions of each who tries are not the less commendable.

In conformity with the precept instilled into me, that "an acre or two of this, that, and the other kind *might* be useful, for fear one sort misses," I have waded through the whole mazy mass of our priced lists and catalogues, and have tried sundry Swedes, yellows, whites, purples, and reds, with a whole medley of tops and bottoms, flats and rounds, and all sorts of hybrids, heralded in with certificates which must have been well paid for, and the cost laid on the "selling price," and have arrived at the conclusion that I, like others, seemed to have no other object in view than studying a due admixture of colours, to improve the landscape. Experience has taught me that it is far preferable to have a selection of the best, and by good cultivation to obtain the greatest quantity of the best quality of those plants, which, for dairy purposes, are Cabbages, Carrots, and Kohl-Rabi. *T., April* 25.

## Home Correspondence.

*The Applicatian of Manures—Concentration or Distribution.*—I have never been able to reconcile with certain well established facts in the growth and nutrition of plants, the very general practice of concentrating manures immediately under the seeds of our root crops. This practice appears to be extending, for I perceive our implement makers are exerting their ingenuity to contrive implements for dropping the manure; and that it has been observed repeatedly, in print, that drilling the manure is wasteful; as if that deposited between plant and plant was useless. I nevertheless adopted the practice, because, as a general rule, I think it the safer course to adopt any practice that has been in favour with the best agriculturists, rather than follow out theoretical views, however apparently well founded. Having, however, recently attended a lecture of Professor Way's, delivered at a meeting of the members of the Royal Agricultural Society, at which he entered on this subject, incidentally, in his discourse on the preparation of superphosphate of lime; and his observations having been in exact accordance with the views I had previously entertained, I am induced to recommend my brother farmers who adopt the principle of concentration, to re consider this matter. I have a strong impression the current is running in the wrong direction, and that, on the contrary, we should be seeking the means of the most minute division and extreme distribution. The facts to which I have referred, and which, to say the least of them, demand careful consideration, are that roots absorb their nourishment only at their terminal points; that these extend in all directions; and as the plant increases above ground, so do the roots increase their ramifications beneath the surface, and demand a continual supply of food. I am aware it will be replied, this process is in search of food, which will be unnecessary if this be supplied ready at hand. But is this consistent with their mode of feeding, and the conditions under which their nutrition is practically effected? It is well known they cannot feed on solids, and that they receive their nourishment only in a liquid or gaseous state; that this conversion is very gradually effected through the agency of the atmosphere or water, and consequently that it is readily accomplished in proportion to the minute division of the manure subjected to those influences. Again, just as the first delicate roots are emitted, is not the time at which they require a concentrated supply of the richest food; but their appetites and their powers of assimilation grow with their growth, and, as they increase, they require a larger supply in all directions, and that ready prepared by gradual solution and decomposition. Entertaining these views, I was much pleased to see, some time ago, a prize offered by the Royal Agricultural Society for the best manure distributor as a step in the right direction; and I cannot but think the implement makers will be more usefully employed in contriving means for minute division, and thorough and equal distribution of manures, than for their concentration. I hope your readers may have the benefit of a report of Mr. Way's very judicious observations on this subject, as they are entitled to consideration. I

has been frequent matter of discussion, whether it is the better plan to lay on the manure in the autumn, and plough it in before winter, or to do this before spring sowing. The foregoing considerations would lead to the adoption of autumnal manuring, immediately followed and covered by the plough, by which means the manure would be thoroughly incorporated with the soil during the three or four months they would be intermixed. The main objection to that system was heretofore considered to be that the fertilising elements of the manure were, in a great measure, lost by the washing of the winter rains. The observations, however, made of late years, on the absorbent powers of all soils, except those composed mainly of sand, and which have been recently demonstrated by the highly important and interesting experiments of Professor Way, have clearly established the fact that the soil has the peculiar property of absorbing and appropriating all those elements of manures intermixed with it which are essential to the growth of plants—the most valuable discovery perhaps, in its results, for which agriculture has been indebted to science. *Chas. Lawrence.*

*Deep Draining.*—Permit me to reply to the inquiries made of me by "An Inquirer." I observe, however, I should much rather have done so, if he had favoured me with his address, and which, I think, he ought to have done; I conclude that when one "voluntary" correspondent addresses another, whether privately or through a public journal, like your's, he ought to give his name and address; that is, if he would expect a careful and courteous reply. But "An Inquirer" writes, that he occupies "land of all degrees of stiffness; some very stiff, some a jointy, brashy, mixed kind; and some half clay, half sand, or at least partaking of the character of the two." "I am hurt," he continues, "by the water from the clouds, which does not get readily off." He then goes on to state further, that drains cut just out of the reach of the ploughshare, or the poaching of a horse's hoof, would surely catch it (the water) sooner than a drain from 3 to 5 feet deep; and, in addition to this, he adds, how is it to get so low through a stiff subsoil in time to do me good? &c. &c. On reading this account, I at first thought "An Inquirer" was quizzing me; but whether he be so or not, I will endeavour to reply to his inquiries; and as he asks me to be brief, I will endeavour, also, to satisfy him in this respect. I lay it down, therefore, as a truth not to be refuted, that no fertiliser that can be put upon any kind of land is equal in value to "water from the clouds;" and also, as another truth, that this water cannot be permitted to run off land, or through such drains as "An Inquirer" advocates, without continually deteriorating the value of the land. I likewise inform "An Inquirer," and all others who think and act as he professes to do, that on no account whatever should he or they put such drains as he advocates into any land of mine; or were he or they to do so, I should consider that they had greatly injured my property; and as, in so acting, they would oppose my will, I should perhaps bring an action against them for damages. But I will give an example in point. A tenant drained some land, the landlord finding tiles; the tiles were to have been put in at least 4 feet deep, but the tenant was of the school of "An Inquirer," and so he put them in at about half that depth. The land continued cold and wet, and water stood upon it in many places; and the drains were worthless, or worse than worthless. Upon which the landlord and tenant quarrelled, and the former took the land into his own occupation, and re-drained the land with pipes at a depth of 5 feet, or more. I saw the land under both kinds of draining, and the landlord's drains, though on an average full 3 feet deeper than the tenant's, rendered the latter altogether useless. I saw the deep drains pouring out their water into a deep ditch, whilst the shallow drains were perfectly dry. After that the landlord went to the expense of taking up all the tenant's tiles, and which were lying in large heaps at the corners of the fields when I last went over the farm. The land is now at all times, as the proprietor informed me, and as I myself have witnessed, as dry and in as fine a state for cultivation as a well cultivated garden. And such is the state of my own land; the deepest drains always run the first after a long drought. At this time I am now writing, one drain only is running, and that in some places is at least 7 feet deep, and the water is as pure and clear as water can be. But let me draw attention to another fact, and as worthy of serious reflection. Let us suppose an undrained field to have open furrows at stated intervals; as I have before stated, at every shower of rain water holding in solution the essence of the manure put on the land, and the sand so valuable to all heavy lands, are washed out and carried, first down those furrows, and thence into ditches, and at length into rivers, and thence to the sea. But let us suppose again, that "An Inquirer" should put his pipes or tiles into that land just "*below the poaching of the horses' hoofs*," and the effect would be nearly the same—a thick muddy liquor would issue from those drains, again deteriorating the land, and carrying away with it, as before, the essence of the manure; but let drains 5 feet deep be made in the same land, and the open furrows and shallow drains would be rendered useless, and all the water would issue from those deep drains as clear as crystal. If "An Inquirer," or any person of his chool, of which I am aware there are very many, try the experiment on some cold, wet, stiff, clayey land, and he or they will soon find that all I have stated is perfectly correct. But, Mr. Editor, these are not half the advantages resulting from thorough draining, but I reserve stating more until I have again heard from "An Inquirer." *G. Wilkins.*

*The Equinoxes.*—These, as is pretty generally known, occur twice in the year; but the influences they exert upon the weather of the succeeding half year does not appear to excite sufficient attention. The vernal equinox of the present year took place at 56 minutes past 4 in the morning of March 21st, the wind being then South-West by South—very lively—temperature about 42° Fahr., weather pretty fine at the time. The barometer, then low (several degrees below the usual mark of "changeable,") continued to fall steadily, till it marked 28.77 inches on the evening of the 22d. On the corresponding days of the last year (1850), the mercury stood at 30.13 and 30.20 inches, the whole of the preceding period, from the 4th of March having witnessed its extraordinary altitude—above 30 inches ("Fair")—amounting to 30.52 inches, as the maximum. Without venturing to prognosticate, it may safely be asserted that the meteorology of equinoctial periods affords tolerably correct indications of the intervening seasons. Now, therefore, as the wind in several instances, blew forcibly from some point, to the South, accompanied with profuse rain, from the 17th to the 26th, including, of course, the precise moment when the sun entered the spring sign of Aries—at the intersection of the two great horizontal circles—no doubt can exist that a thoroughly wet and boisterous equinox has been established. The writer was first induced to observe the equinoctial periods, in the year 1822, when the clergyman of St. Peter's, Isle of Thanet, told him that he knew an aged man who, during the course of 60 years, had rarely failed thereby to obtain a correct indication of any ensuing summer or winter. The Irish meteorologist, Kirwan, had stated, long ago, to the effect that "If there be a storm at South-West or W.S.W. on the 19th or 22d of March, the succeeding summer is generally wet, five times in six. Since 1822—a fine and fruitful year—many cases in point might be cited. Thus the March of 1828 was dry and serene till the 18th; the barometer at an average of 30 inches, but West and South-West winds prevailed. The mercury fell rapidly, cumulo-cirro-stratus clouds formed, and a South-West gale succeeded; the summer everywhere wet. The equinoxes of 1829 and 1830 indicated, and were followed by a rainy and changeable summer. On the contrary, those of 1831, 1832, 1834, and 1835, predicted fine summers; and the results corresponded." (See "Naturalists' Calendar," of March; "Domestic Gardeners' Manual.") Subsequently the summers of 1841, 1843, 1845, and 1848 were wet; and whoever can see the "Edinburgh Quarterly Journal" of March instant, will find a notice of the two equinoxes of last year, and of their results in the article "Characteristics of 1850." Experience has proved that an equinox may exercise, at the very hour of its occurrence, a changing influence. As a general rule, however, the prevailing weather, be that changeable and fickle, fine and dry, or wet and windy, must be taken as the index. The one just past is decisively adverse, more so than any other that can be called to mind since 1828-29. We therefore are warned by experience to anticipate a very rainy and unpropitious harvest. *Veritas.*

*On the Culture of Chicory.*—Chicory has been long cultivated in Italy on a large scale, and esteemed, either green or dry, as an excellent fodder for horses, cattle, and sheep. In France it has produced large crops; and found its way into England in 1788, by the enthusiastic recommendation of Mr. Arthur Young. The moist atmosphere of our island is less favourable to its being made into hay. In Lombardy it is sown, mixed with other herbs of pasture, and cut 3 or 4 feet high. It is reputed there to increase both the milk and flesh of cattle, and to be very nutritious when made into hay. Horses eat it greedily, and it is freely eaten by sheep, and it is very valuable as a green food for soiling. The growth is early, and defies drought, and the large spreading leaves retain moisture by covering the ground. The stalks are thick and stiff, and withstand the storms of wind and rain. The most severe colds do not injure it. The earliness of the produce affords an abundant food when other articles are scarce; and the growth is more rapid than Burnet, Lucerne, or Sainfoin. Two cuttings may be made of it the first year, and three or four, according to the season, every year after—in May, July, and October—never letting it become hard or sticky; or it may be cut continually, by beginning again when the whole piece is gone over, and thus afford a constant supply of fresh food during seven or eight months. The produce is said to exceed that of Lucerne as three to one, and the average produce of four years was nearly 30 tons. The partiality with which novelties are commonly viewed was not of long continuance in the case of Chicory. Some accurate experiments were made in France, at the national farm of Rambouillet, to ascertain the value of Chicory, compared with Lucerne, and other green food. The Chicory was declared inferior, giving a disagreeable taste to milk and butter, when cows are kept upon it. For sheep it is very good, and a small portion mixed with their other food, may probably be a preservative against the rot. The value of the plant has sunk to the quality of the root, as a medicine, or an infusion. Chicory is now chiefly cultivated in Germany and Belgium, for the purpose of preparing from the root a powder, which can be substituted for coffee. This has become a very considerable article of commerce. It was very lately introduced into Britain, and the consumption of it, and consequent demand, increased so rapidly, that the Government thought proper to put a check on its importation, by a duty of 20*l.* per ton on the dried root. Chicory requires a good soil of warm deep loam, clear of weeds, and well-rotted manure laid on a stubble in the end of autumn, and ploughed under with a deep furrow. In the spring, the grubber, driven lengthwise and crosswise, prepares the land for being sown with the seed in May, by the coulters of a machine which makes ruts for the reception and covering of the seed. When risen to the height of 2 or 3 inches, the plants are thinned out to 6 inches in the rows, and most carefully weeded. The intervals of the rows are scarified by a three-toed scuffler. In September, the plants are gathered, and the roots taken up, which may be done with a common Potato fork; they are then cleaned by scraping and washing. Split where they are thickest, and cut across in pieces about 2 or 3 inches long. These pieces are dried by means of a slow oven or a kiln. Some nicety is required in drying, to prevent the root from being scorched, and to keep the proper flavour. In this state it is sold to the merchants, packed in bags. It is afterwards cut or chopped into small pieces, and roasted exactly as coffee, ground in a mill, and packed in papers, in pounds and half pounds, for retail sale. When coffee, as well as all colonial produce, became too dear for the labouring classes in France and Germany, Chicory was almost universally used as the best substitute, and the taste is by many thought so grateful, that they prefer the coffee with which a fourth or a fifth part of Chicory has been mixed. Chicory is said to exhaust the soil, and to require fresh ground, to prevent its degenerating. Unless the soil is rich and light, the roots will not come to a good size in one season, and old roots become tough and stringy. It is only the young roots that are fit to be prepared for commerce. They lose a great portion of their weight in drying. The best preparation of the land for Chicory is Grass or Clover, or a very clean stubble. The manure laid on the ground in autumn, as before directed, will be decomposed during winter along with the roots of the stubble or Grass, and a deep furrow in the spring will lay the land light, and raise a depth of mould. The surface is then harrowed fine, and the seed deposited in rows of 12 inches apart and rolled. Liquid manure spread over the ground will much accelerate the growth of the plants, which must be thinned out, like Turnips or Carrots, to 6 or 8 inches from plant to plant. The leaves and roots of Chicory have always been, and are yet, held to be medicinal, though the plant has not obtained a place in the Pharmacopœia. The virtues depend on its milky juice, which is of a penetrating, bitterish taste, but of no remarkable smell, or particular flavour; the roots are bitterer than the leaves or stalks, and these much more so than the flowers. The roots and leaves have been stated to be very useful aperients, acting mildly and without irritation. The inferiority has been fully established of Chicory as a green food in comparison with Lucerne—as a root, it sinks far below Mangold Wurzel; and for hay, or a dried state, the succulent leaves are very unsuitable, as the juice evaporates, and leaves a shrivelled, tasteless fibre. In Britain, the culture can only be done on the soils and under the climate that suit the Parsnip and the Carrot, and it even requires more favourable circumstances than the latter plant. For agricultural purposes, the produce is inferior to either of the above-mentioned esculents, and the only value consists in the powdered roots being mixed with coffee. *J. D.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Continued from p.* 365.)

A Lecture, on the agricultural employment of common salt, was delivered before the Members, at a Weekly Council, held at the Society's House, in Hanover-square, on Wednesday, May 14 (the Hon. Robert Henry Clive, M.P., Trustee, in the chair) by Professor Way, the consulting chemist to the Society.

Professor Simonds, the Veterinary Inspector to the Society, then made a few observations, at the request of Professor Way, on the Action of Salt on the Animal Economy. He was not then prepared to enter fully on the subject; but he might remark, as a general rule, that although different conclusions had been drawn from the use of salt, according to the amount and under the circumstances it had been supplied, it was exceedingly beneficial in moderate quantities, but prejudicial in large ones, as a condiment for the food of animals. He was aware that it had been considered by some persons to be injurious, in producing abortion in ewes and cows. His experience, however, had not led him to such an opinion; for even when large quantities of salt had been given to animals, he had not found that it exerted any specific action on the uterine system, such as that which the ergot of many Grasses was so well known to exert both violently and deleteriously on those organs. He thought undue quantity of food and plethora the more probable cause of abortion. It was difficult to fix the limit in which salt should be given to animals. Prof. Way had placed in his hands a tabular statement of the amount of common salt contained in various kinds of herbage, from which he had been enabled to estimate the amount of that substance constantly taken into the stomachs of grazing cattle along with their ordinary food. He showed that cart horses, feeding on meadow hay, Bean-meal, and bran, took in a considerable daily proportion of salt; that in other cases the hay was salted; and that the free use of rock-salt was common on a farm: while the animals thus receiving these supplies of salt were not only uninjured by its use, but absolutely benefited in their health, gaining vigour and strength. Sheep fed on Clover-hay and Turnips would

not receive so large a proportion of saline matter, and might therefore have more salt given to them in addition to their food. Horses might take with advantage from an ounce and a-half to two ounces of salt daily: but an excess of it, no doubt, would render animals weak, debilitated, and unfit for exertion. Similar facts were applicable also to oxen, which accumulated flesh faster by the judicious use of salt than without it. Arthur Young, in his examination before a committee of the House of Commons, in 1818, had stated that he found salt prevent the rot in sheep; and Sir John Sinclair and many others had given evidence to the same effect. Prof. Simonds then alluded to the solubility of common salt, and its passage into the stomach and intestinal canal; its absorption into the system by the veins, its action on the liver, and the supply of soda it yielded to the bile: thus leading to a greater amount of nutriment being derived from the food. Sheep living on pastures giving them the rot were found to recover when they had access to salt; and he thought the probable cause of sheep not rotting on salt marshes, and recovering when put on them, was the healthy stimulus thus communicated by the salt to the liver of the animals, by which that organ was guarded from disease, and its functions invigorated. Salt, too, was well known as a vermifuge, destroying many kinds of worms in the intestines of animals, and conferring a healthy tone of action which prevented their re-occurrence. He then alluded to the prophylactic, or preservative influence of saline impregnation against marsh exhalations, and its power of destroying the poison of those miasmata, as shown by Dr. Stevens in his work on the blood, where reference is made to the fact, that at Salina, in Genessee county, near Oneida Lake, in the state of New York, all the individuals in and about some salt works, situate in the midst of a marshy district, escaped from the attacts of marsh fever, while the population around them suffered.—Colonel Challoner's attention was called to the value of salt about fifteen years ago, by the late Earl Spencer; and since that time he had invariably used it for his cattle, which in consequence had attained to a better condition of flesh than they had done when no salt was given to them. His Devons were the best cattle on his farm, and they consumed the largest quantity of that substance.—Mr. Fisher Hobbs had little more to state on that occasion than he had stated when the subject was discussed by the Council a few months previously. He agreed with Colonel Challoner, that those of his animals which had the most salt did best, and even pined after it when it was withheld from them. He did not consider that it acted simply as a manure on grain crops; but it stiffened and brightened the straw, and caused it to ripen from two to five days earlier than it would otherwise have done. In the case of root-crops it was more beneficial to Mangold Wurzel than to Turnips; and in fact, that great caution was required in its application to the Turnip plant, which was easily injured by injudicious use, on account of its great effect on the vitality of that plant. It increased the size of the Mangold bulbs, and caused the plant to retain its fertilizing character during dry seasons. He applied the pilchard-fishery salt broadcast on each side of the plants in July, either alone (in particular seasons) or mixed with ashes or guano (which improved it), and then scarifying it in. The frost had less effect on the salted than on the unsalted portions of his land; and by its means light soil becomes more retentive of moisture, and more adherent and compact in its character. His land was variable, consisting principally of sand, gravel, and mixed soil. The fishery salt he employed was nearly of the same price as the ordinary salt of commerce, and it contained oil and animal matter derived from the fish. The wireworm died in it. In conclusion, he considered salt to be very beneficial to the soil, either alone or in a state of mixture with other substances.—The Rev. A. Huxtable was rather leaving off salt. Those of his sheep which had the most of that substance were the least improved in their weight; in fact, one ewe, very fond of salt, had become a mere skeleton from taking it in excess. He found that his animals were much purged by the use of salt. His milch cows, however, requiring more flesh than fat, were much benefited by it. Roots were much used by him, and he continued the use of salt with great effect as a manure for their growth; indeed, in this respect, he could not do without it, especially in the case of his Mangolds and Carrots, for the latter of which, being a sweet root, of which all insects were fond, it acted as a shield against depredation for these crops. He drilled it in with ashes and urine. He mixed a saturated solution of salt with dissolved bones, and found it produce a more pasty and decomposed substance. His soils were gravel, clay, and chalk.—Mr. Fisher Hobbs thought it probable that the circumstance of Mr. Huxtable's sheep being tied up when the salt was given to them, was the cause of the purging; for he had known it to be the common practice in Leicestershire some years ago, when the sheep had a purging upon them, to get them into a fold, and give each of them half a handful of salt as soon as the diarrhœa made its appearance. This practice he had himself usually adopted with success, and he believed it to be common amongst flockmasters.—The Chairman, when travelling abroad, had noticed in the middle of hotel yards, where relays took place, a large block of salt, to which the post-horses had free access. He considered that horses in full work derived an advantage, more or less, according to circumstances, from this substance. With regard to its effect on vegetation a curious result had occurred in Cheshire, where the Marquis of Westminster had applied salt liberally on a road four miles long, for the purpose of destroying the weeds on it; but it was found that the weeds, instead of being destroyed by this application, were more numerous than ever.—Mr. Barrow had found salt improve the strength and quality of his Wheat straw, his neighbour's crops having been laid while his stood well. He had entirely destroyed fine rows of box in his garden by applying salt on his gravel-walks for the purpose of killing the weeds.—Mr. Parkins had not had a weed on his gravel-walks for five years, by forming them on a bed or substratum of chalk mixed with coal-gas tar sifted over gravel, and allowed to set; lime being used when a more compact substratum (capable of bearing the pressure of a loaded cart wheel without yielding) was required.—Mr. Mechi had used 150 tons of salt on 170 acres of land during five years' occupation, He found it essentially necessary for cattle and horses, when fed on Wheat straw cut into chaff with Bean-meal. If salt were not given, their coats appeared rough and unhealthy; but with salt they were sleek and healthy. His sheep and pigs also had salt. Horses and cattle received two ounces daily, yearling calves one ounce. Without being able to give the scientific reason, salt gave strength and brightness to the Wheat straw, and prevented its lodging. He applied it at the rate of 3 cwt. per acre, mixed with the same weight of guano. He also used a large quantity under the animals, to fix the ammonia in their manure, which it did far more effectually than gypsum. He had known of great advantage from mixing it in the dunghill. It was very beneficial to Mangold Wurzel. It certainly, with all deference to Mr. Way, appeared to render the land more wet and adhesive. He thought it would not be so beneficial on undrained heavy lands. Early on a hot summer's morning he had observed the grains of salt formed a wet spot, as though they had attracted moisture from the dews.—Prof. Way explained that common salt might be a better fixer of ammonia than gypsum, on account of its greater solubility. Salt, from any deliquescence it occasioned, might affect land in regard to colour and resistance to the action of frost; but moisture was not the simple cause of the good effects of salt.—Mr. Dyer instanced the deliquescent effect of salt in bacon-salting rooms, where the pavement was constantly damp. He had even known milk spilt on deal boards years ago, which now, in damp weather, always attracted moisture where the milk had been originally absorbed.—Mr. Fisher Hobbs referred to the power of the fishery salt to fix ammonia, and used it frequently with guano with a view to that object.—Baron Mertens expressed to the Council his thanks for the kind manner in which they had acceded to his request, on the part of the Belgian Government, that this subject should receive their attention and give rise to practical discussion. He would only further trespass on their time by enquiring whether any experiments had been made to ascertain the increase in the weight of milch cows, and of the milk they yielded, in consequence of the use of salt as part of their food?—The Rev. A. Huxtable, having a dairy of 40 milch cows, had found it difficult to make experiments on that express point; but Boussingault had last year given an account of experiments similar in their object to those which were now the subject of Baron Merten's enquiry.—On the motion of Colonel Challoner, seconded by Lord Bridport, the thanks of the Council were given to Professor Way and Professor Simonds, for the favour of the statements they had on that occasion made to the members, on a subject interesting and important in itself, but dependent on various circumstances of condition, and a clear elucidation of scientific principles, for its correct comprehension and practical application.—Mr. Raymond Barker expressed a hope that the learned Professors would kindly consent to deliver these short introductory lectures more frequently to the members at the weekly sittings of the Council; a request to which Professors Way and Simonds expressed their willing assent.

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A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday, the 21st of May: present, the Hon. ROBERT HENRY CLIVE, M.P., Trustee, in the chair, Lord Bridport, Sir Charles Lemon, Bart., M.P., Mr. Arkwright (Hampton), Mr. Arkwright (Sutton), Mr. Raymond Barker, Mr. D. Burton, jun., Colonel Challoner, Mr. Clavering, Mr. Cosens (Langdon), Mr. Dunn, jun., Mr. Hudson (Castleacre), Mr. Maddison, Mr. Pendarves, M.P., Professor Sewell, Mr. Smith (Exmoor), and Mr. George Wilbraham.

DRAINING.—MR. ARKWRIGHT, of Sutton Hall, Derbyshire, favoured the Council with a statement of the successful manner in which he was improving his estate in that neighbourhood, consisting chiefly of strong clay with very little soil upon it, by means of consecutive draining, carried on by degrees, and according to circumstances, over such portions of the land as were found to require it. He also submitted to their inspection the draining-book of this property, in which a plan of each field was given, and lines indicating the gradual process in which the drainage had from time to time been effected, either over the whole extent of any particular field or partially as circumstances might have required.—Colonel Challoner agreed with Mr. Arkwright, that principles might be laid down for draining, but no rule for a general case.—Mr. Hudson, of Castleacre, had about three months previously visited Sir John Boileau, Bart., at Ketteringham, in Norfolk, for the purpose of inspecting the underdraining of the Potash Farm, in that county, which had been executed under the superintendance of Mr. Fulton. This was the best piece of draining Mr. Hudson had ever seen. In walking over the farm he ventured to suggest to Sir John Boileau, that the bottom draws of clay, which were found to be full of chalk, should be spread on the surface, instead of being put into the drains; by that means, a saving of from 400*l.* to 500*l.* would be effected, as there would be about 60 yards of good clay put on the land at an expence of two or three shillings per acre, which if carted on would cost from 30*s.* to 40*s.* per acre, besides the injury that would be done to the land, by carting the clay over it.—Mr. Hewetson, of Down, near Farnborough, transmitted for the inspection of the Council some wooden models of draining tiles made "for the purpose of uniting the small and main drain where an additional fall can be obtained equal to the depth of the larger tile, on the top of which the bottom of the smaller tile rests, fitting securely in its place: the opening in the top of the large tile and the rim at the bottom of the small one being both circular, and thus allowing the drains to unite at an angle." An interesting discussion then ensued on the arrangement of drains in land, their stoppage in sandy soil, the shape and size of tiles, and mode of adjusting them, the filling-in of drains by Clayton's Drain-consolidator, and other details of practical experience, in which the Chairman, Mr. Arkwright, Col. Challoner, Mr. Hudson, Mr. Wilbraham, Mr. Cozens, and Mr. Smith, of Exmoor, took part.

AUSTRALIAN GUANO.—Mr. Manning, of 251, High Holborn, transmitted to the Council a bag of guano received from Egg Island, one of a group of islands lying off and about Shark's Bay, the most western point of New Holland, in south latitude 25°, and east longitude 113°. Mr. Manning stated that there were several other adjacent islands covered more or less with guano, of a quality supposed to be in some instances superior to that on Egg Island. Rain, he said, scarcely ever fell on those islands, and in some places the guano was found many feet deep. Mr. Manning concluded his statement by a detail of the steps that had been taken to bring about this first importation of Australian guano; and accompanied it by a hope that the Council would consider the subject of sufficient importance to request Professor Way, the consulting chemist of the Society, to make an official analysis and report on the value of the guano in question. The Council acceded to this request, and directed the sample to be passed over to Professor Way accordingly.

MISCELL. COMMUNICATIONS.—Mr. Murcott sent specimens of an insect believed by him to be the cause of the failure in the Clover plant, which the Council referred for microscopical examination to Prof. Simonds, and in reference to its agricultural bearings to Mr. Lawes. Colonel Le Couteur presented a sample of cured Jersey butter, about a year old, which was found to retain its fine qualities and fresh taste in a remarkable degree. A letter was received from M. Maurencq, the President of the French Agricultural Commission, and referred to the Monthly Council. Mr. Arkwright favoured the Council by explaining to them the advantages of a cottage stove he had found of great simplicity, economy, and capable of affording great comfort and convenience to labourers.—Mr. Hudson, of Castleacre, stated the injury done to seed-corn by mixing guano with it before sowing.—A French essay on butter-making was received, and referred for consideration to a future meeting.

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PROFESSOR WAY favoured the members, on the 28th of May, with a Lecture on the Preparation, Composition, and Agricultural Employment of Superphosphate of Lime, for which he received the thanks of the meeting. The chair was occupied by His Grace the Duke of Richmond, K.G., President of the Society, who introduced to the Council, on that occasion, M. Maurencq, Baron de Montreuil, and the other members of the French agricultural commission.

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A MONTHLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday, the 4th of June: present, the EARL of DUCIE, V.P., in the chair, Sir John V. B. Johnstone, Bart., M.P., Sir Montague Cholmeley, Bart., M.P., Mr. Alcock, M.P., Mr. Thos. Raymond Barker, Mr. John Raymond Barker, Mr. Barnett, Mr. Beasley, Mr. Blanshard, Mr. Bramston, M.P., Mr. W. G. Cavendish, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Jonas, Mr. Kinder, Mr. Lawes, Mr. Milward, Mr. Pendarves, M.P., Prof. Sewell, Mr. Shaw (London), Mr. Sillifant, Prof. Simonds, Mr. Stansfield, M.P., Prof. Way, Mr. Jonas Webb, and Mr. Wilson.

The Hon. Captain Rushout, M.P. (2d Life Guards), of Burford, in the county of Salop, was elected a governor of the Society.

The following new members were elected:—

Kennedy, Primrose William, Drumellan, by Glasgow
Bolitho, William, jun., Penzance, Cornwall
Stowey, Augustus, Kenbury House, Exeter
Guthrie, John, Guthrie Castle, Forfarshire
Webster, P. C. Gillies, Ashfurlong House, Sutton-Coldfield
Tredwell, S., Highfield House, Leek, Staffordshire
Loder, Robert, The Beeches, Slaugham, Sussex
May, Geo. Andrew, Elford Park, Lichfield, Staffordshire
Tuley, Joseph, Matchless House, Keighley, Yorkshire
Botham, William Hallam, Salt Hill, Slough, Bucks
Weatherley, James, Swinhoe, Alnwick, Northumberland
Blashfield, J. M., New London-street, Mark-lane, London
Gladman, William, Mount Pleasant, Bolney, Sussex
Postlethwaite, Woodburn, Ulverstone, Lancashire.
Parrington, Joseph, Crossbeck House, Cleveland, Durham
Rees, William, Velindre, Lampeter, Cardiganshire
Bashford, W. C. L., Norwood House, Hounslow, Middlesex
Gibbs, Wm., Bishop's-Lydeard, Taunton, Somerset
Darnbrough, Thomas S., South Ottrington, Thirsk, Yorksh.
Jackson, Dr. (Princ. Med. Off. E.I.C.), Warley Barracks
Ellison, William, jun., Low Sizergh, Kendal, Westmoreland
Miles, Frederick, Stoke Hammond, Fenny-Stratford, Bucks
Bennett, John, Rissington, Stow-on-the-Wold, Gloucester
Hall, Collison, Navestock, Romford, Essex
Boughton, John, Adsett Court, Westbury-on-Severn

Wade, Richard, 58, Upper Seymour-street, Portman-square
Congreve, Walter, Comb Field, Brinklow, Coventry
Wade, R. Craven, Clonabraney, Crossakeile, county Meath
Rinder, John, Kirkby-Overblow, Wetherby, Yorkshire
Crawfurd, Robert, Saint Hill, East Grinstead, Sussex
Partridge, Ed. Otto, Hazleburst, Ross, Herefordshire
Dobson, Roger, Bridge-street, Whitby, Yorkshire.

FINANCES.—Mr. RAYMOND BARKER, chairman of the Finance Committee, presented to the Council the Monthly Report on the accounts of the Society, from which it appeared that at the end of the previous month the current cash balance in the hands of the Bankers was 207*l.* (including special balances on account of the country meeting and life-compositions). The Council adopted the suggestion of the Committee that Messrs. Nevile, Reid, and Co., of Windsor, should be requested to act as Local Bankers of the Society during the period of the Society's approaching meeting in July.

WINDSOR MEETING.—Mr. RAYMOND BARKER then reported the favourable progress of the preparations for the Windsor Meeting in the middle of next month.

JUDGES.—The Earl of DUCIE, as Chairman of the Judges' Committee, reported the selection of Judges of Stock for the Windsor Meeting; and the recommendation of the Committee that Prof. Simonds, as the Veterinary Inspector of the Society, should be requested to act as Referee to the Judges on that occasion, and to give his opinion on such points connected with the condition of the animals as breeding stock, and with their soundness as to hereditary affection, and infectious or contagious disease, as the Judges might bring under his consideration, for the purpose of aiding them in their decisions and in any report it might become necessary for them to make to the Council.—On the motion of Mr. Stansfield, M.P., seconded by Mr. Raymond Barker, this report, and the recommendation which accompanied it, were received and adopted by the Council. Prof. Simonds, who was present, expressed his perfect willingness to act at the Windsor Meeting in the capacity proposed.

MEMBER OF COUNCIL.—On the motion of Mr. RAYMOND BARKER, seconded by Mr. Stansfield, M.P., Mr. Law Hodges M.P. for West Kent, was elected into the Council, to fill the vacancy occasioned by the lamented decease of the Hon. Captain Pelham.

FRENCH COMMISSION.—M. Maurencq, M. le Baron de Montreuil, and the other members of the French Agricultural Commission, having presented to the Society a complete set of the proceedings of the "Congrès Central d'Agriculture," of which, on the occasion of their recent visit to England, they had been the representatives, these volumes were received with the best thanks of the Council; and on the motion of Mr. Brandreth, seconded by Mr. Jonas, a complete set of the Journals of the Royal Agricultural Society of England was ordered to be sent to Congrès Central d'Agriculture de France. Mr. Raymond Barker took that opportunity of stating, that Mr. Druce had most willingly undertaken, at the request of the Council, to receive these gentlemen at Ensham and show them his farm, and had made every preparation for that purpose; but, in consequence of the short stay of the commission in this country, they were unable to avail themselves of his hospitality and kind attention, of which they had expressed to Mr. Druce their sense in the handsomest terms. The Council desired Mr. Barker to convey to Mr. Druce their own acknowledgments of his desire, as a member of their body, to meet the wishes of the Council.

AGREEMENTS.—The agreements with the Authorities of Windsor and Lewes, in reference to the Country Meetings of 1851 and 1852, to be held at those places respectively, received the great seal of the Society and the signature of the Secretary, by order of the Council, and in their presence, agreeably with the terms and powers of the Charter of the Society.

FILLING-IN DRAINS.—Mr. Slaney's offer to give a prize of 10*l.* at the Lewes Meeting, for the best implement to fill in drains, was referred to the Special Council, when the implement [prizes for next year would be taken into consideration.

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A WEEKLY COUNCIL was held at the Society's House in Hanover-square on Wednesday last, the 11th of June: present: Colonel CHALLONER, Trustee, in the Chair, Sir Robert Price, Bart., M.P., Mr. Raymond Barker, Mr. Buller (of Dilhorne), Mr. D. Burton, Dr. Calvert, Mr. A. Carden, Mr. J. Carden, Mr. Gadesden, Mr. Brandreth Gibbs, Mr. Baskerville Glegg, Mr. Hamond, Mr. Fisher Hobbs, Mr. Price Lloyd, Mr. Milward, Mr. Parkins, Mr. Pendarves M.P., Mr. Rowlandson, Mr. Villiers Shelley, Prof. Way, Mr. G. Wilbraham, and Mr. Wilson of Stowlangtoft.

MOUNTAIN FLAX.—The Hon. Captain RUSHOUT, M.P., transmitted to the Council, two specimens of Mountain Flax, with the following statement:—

"I enclose you a specimon of 'Mountain Flax,' as it is technically called in the district where it grows, in the hope that you may lay it before the Council, and that some cause may be given, or some cure suggested, for the deleterious effects which arise from it. No. 1 is the hay as drawn from the rick. No. 2 is the Mountain Flax culled out. It is common in the meadow ground in the south of Shropshire, from which the specimen is taken; and the farmer informs me, that it grows on the dry part of the field, in a deep loamy soil, partially drained.

"The land was manured last year with a compost of pond mud and lime. The farmer on whose land it grows has lost 10 or 12 head of cattle and horses. They were all affected by it in the same manner; first with purging, then with a stoppage. Since Christmas last, he has lost three horses out of five. None of the veterinary surgeons in the neighbourhood have succeeded in the treatment of it."

The hay containing this Mountain Flax was very similar in its appearance to a sample of coarse hay Professor Simonds had some months ago laid before the Council as obtained from Somersetshire, where a tenant of Lord Portman's had suffered much loss in his stock; it being a question at that time whether the atrophy and death of those cattle had arisen from the quality of the water to which they had access, the character of the herbage on which they chiefly pastured, or the insufficient amount of nourishment they derived from the food given to them, as the animals on removal to the Royal Veterinary College soon recovered their health and strength on change of circumstance and food. The Council accordingly referred these specimens of hay and Mountain Flax to Professor Simonds for his examination and comparison.—Mr. Rowlandson at once recognised the plant as the Linum catharticum or purging Flax. It occurred in different parts of the country, not only in pasture lands but among Wheat, on light loamy lands, the only cure for it being clean farming and high manuring. It was a miniature of ordinary Flax, bearing a small whitish blue flower, and cattle would eat a larger quantity of it than of better Grass.—Mr. Glegg remarked that it was common in Cheshire.—It may be added, that De Candolle includes this plant as a variety of Flax, in his order "Lineæ;" Sir J. E. Smith speaks of it as the "little" Linum catharticum, and as possessing purgative qualities; Sir W. J. Hooker describes it as an annual, everywhere abundant in pastures, with a slender stem from 2 to 6 inches high, having in June white small flowers gracefully drooping before expansion; Professor Low places it among plants indicating extreme dryness of the soil, and denoting infertility; Mr. Francis, in his "Little English Flora," refers to it as the "White Flax," and speaks of it in the following terms: "A little delicate plant that is abundant on most dry hill-sides, bearing small white flowers, which, when young, are elegantly drooping; one stem only comes from the ground; but at a little more than half way up it divides into two branches, and each of these a little higher into two others, and so on. It is violently poisonous, blossoms in July, and grows from 4 to 6 inches high."

GERMAN POTATOES.—M. KREEFT, the Mecklenburg Consul in London, transmitted to the Council, from a gentleman in Mecklenburg-Schwerin, near Rostock, much interested in agricultural pursuits, and himself a considerable landowner in that part of Germany, a supply of potatoes, for trial in England and Ireland, possessing such qualities of freedom from disease and powers of resisting its inroads, as would render their cultivation in this country highly advantageous under favourable circumstances of soil and locality. The Council ordered their thanks to M. Kreeft for this communication, and the following members undertook to try the cultivation of these potatoes and report the result to the Council: namely, Sir R. Price, Mr. Gibbs, Col. Challoner, Mr. Shelley, Mr. Fisher Hobbs, Mr. Raymond Barker, Mr. Carden (of Templemore, Mr. Wilson, Mr. Hamond, Mr. Parkins, and Mr. Burton.

SUBTERRANEAN ROOTS AND BONES.—Dr. CALVERT presented a specimen of fibrous substance having the flavour of the Turnip rind, which had entirely choked up No. 4 sized pipe-tiles laid nearly 3 feet deep in light and peaty land with a loamy subsoil, on the lower part of which a crop of Turnips had been grown and eaten off by sheep. The stoppage had occurred at the upper part of the field, to which it appeared that these fibres had ascended from the Turnips, in a direction contrary to the current of the water passing through the pipes.—Mr. Fisher Hobbs remarked, that these stoppages frequently occurred in light peaty land bearing crops of Mangold Wurzel, Carrots, and Turnips, and drained only to the depth mentioned by Dr. Calvert. In breaking up some land for draining operations, not long since, he was surprised to find that, at some time immemorial, the same land had been previously drained in a rude and imperfect manner, by laying the horns of bullocks and other animals 3 feet below the surface. These horns were in a perfectly sound and solid state, and in size were intermediate between those of the long and short-horned cattle.—Mr. Rowlandson referred to the use formerly made of wood and brambles for the purposes of draining, and he conceived that the bullocks' horns were merely substituted in some localities as being, under particular circumstances, more plentiful and ready at hand.—Prof. Way alluded to the long periods through which bones in large fragments would retain, not only their form and character, but also a great portion of their animal matter; and referred particularly to Marchand's examination of the bones of the bear, and to Dr. Buckland's discovery at Kirkdale, of the bones of the hyæna, and other animals no longer living unconfined in this country, some of which, though so long exposed to decaying influences, retained many of the characters of fresh bone. He thought these facts showed the necessity of reducing bones to very small fragments before employing them as manure on the land.—Mr. Rowlandson believed that, under the circumstances of decay alluded to, a slow chemical change was effected, the bone gradually acquiring an increase of fluoric acid.—Mr. Glegg stated that in Cheshire horn was excluded in the boning of dairy pastures, on account of its less disintegrating and fertilising qualities.

AUSTRALIAN GUANO.—The Council received from Professor Way the following report of his examination of the Australian guano, referred to him by them at a former meeting:

"June 11, 1851.

"I have examined a sample of guano from Western Australia, sent to me by direction of the Council, and beg now to forward the results of the analysis, and my opinion of its value as a manure. The sample is of a dark brown or coffee colour, interspersed with small lumps of a white substance, which is almost pure phosphate of lime. It has a slight musty but not ammoniacal smell, and is much heavier than Peruvian guano. The following is a detailed analysis of the specimen:

| | |
|---|---|
| Moisture | 30.04 |
| Animal matter and salts of ammonia | 14.75 |
| Sand | 3.94 |
| Lime | 21.07 |
| Magnesia | .17 |
| Potash | .27 |
| Soda | .29 |
| Chloride of sodium | .66 |
| Phosphoric acid | 20.44 |
| Sulphuric acid | 7.28 |
| Alumina, oxide of iron, and loss | 1.09 |
| | 100.00 |

The large proportion of moisture, the relatively small quantity of animal matter, and the absence of any considerable quantity of potash (of which Peruvian guano contains on an average 3 per cent.) are circumstances which leave no doubt that the manure has been exposed to the action of rain, which is destructive of its most valuable properties. The relation which this guano bears to Peruvian on the one hand, and Saldanha Bay on the other, will be better understood if I put them down in the form of a Table, omitting the less essential details. The following figures show the average composition of the ammoniacal guano of Peru and the phosphatic guano of Saldanha Bay, as compared with that of the sample from Western Australia:

| | Peruvian. | Saldanha Bay. | Western Australia. |
|---|---|---|---|
| Moisture | 13 09 | 22.14 | 30.14 |
| Animal matter and salts of ammonia | 52.61 | 14.90 | 14.75 |
| Sand, &c. | 1.54 | 1.62 | 3.94 |
| Earthy phosphates | 24.12 | 56.30 | 42.14 |
| Alkaline salts | 8 64 | 5.04 | 9.03 |
| | 100.00 | 100.00 | 100.00 |
| Ammonia furnished by 100 parts of each specimen | 17.41 | 1.60 | 0.75 |

"It is plain that this specimen of the guano from Western Australia, cannot be satisfactorily compared in respect to composition, with one supplying ammonia; and in judging of its value as manure, we must have regard to the Saldanha Bay variety, which is valuable as a source of phosphate of lime. Saldanha Bay guano is sold, I believe, at from 4*l.* 10*s.* to 5*l.* per ton; and the value of the sample from Western Australia will be less in proportion to the phosphate of lime which they relatively contain.

(Signed) "J. THOMAS WAY."

The Council expressed a hope, that although this first sample of the guano of Australia, from the most western point of that imperfectly explored colonial continent, and only just without the tropics and the rainless region, was not of such a quality as to compete with other established guanos, or to realise such a profit as to induce enterprise in its importation into this country, the simple fact that guano occurred at all on the islands of that coast, would be taken as an earnest of further research with greater success in a branch of discovery and trade, now become so important to the cultivators of England and America.

LECTURE.—Professor WAY's offer to deliver a lecture before the Members in the Council Room, on Wednesday, the 18th of May, at 12 o'clock, "On the Agricultural Employment of Gypsum," was accepted with the thanks of the Council.

Communications were laid before the Council from Mr. Hill Dickson, on Flax Cultivation, and from Mr. Barber Beaumont, on Locomotive Steam Power employed for Agricultural Purposes.

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## METEOROLOGICAL REPORT.—JUNE.

(*Continued from page 366.*)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| June 4 | 1 p.m. | 29.82 | ... | P.M. SW. Brisk increasing breeze, and fine sunny day. |
| | 10.10 p.m. | ... | 29.82 | |
| 5 | 7 20 a.m | 29.75 | ... | SW. all day, and blowing hard; at 2 P.M. increasing, with heavy rain. |
| | 3.30 p.m. | ... | 29.64 | |
| * | 5 p.m. | ... | 29.64 | 5, ceased raining. |
| | 8 5 p.m. | ... | 29.69 | 8, calm. |
| | 10.20 p.m | 29.72 | ... | SW. Brisk, misty. |
| 6 | 6.55 a.m. | ... | 29.72 | Stiff SW. breeze, and densely overcast all day; barometer rising slowly. |
| | 10 p.m. | 29.84 | ... | |
| 7 | 6.55 a.m. | ... | 29.85 | Do. do. |
| | 7 p.m. | 29.90 | ... | |
| Sun. 8 | 8 a.m | ... | 29.92 | WSW. Brisk do., fine and sunny. |
| | 1 p.m. | 29.95 | ... | |
| | 5.10 p.m. | 29.95 | ... | After 1 P.M., barometer remained stationary, and wind backed to SW.; scud flying low, and threatening rain; overcast. |
| | 10.30 p.m. | 29.95 | ... | |
| 9 | 4.40 a.m | 29.89 | ... | SSW. all day. Densely overcast and rainy, with brisk breeze, increasing at nightfall; barometer falling steadily. |
| † | 10.20 p.m. | ... | 29.51 | |
| 10 | 7.15 a.m. | ... | 29.54 | WSW. Gentle, steady rain. |
| | 11 a.m. | ... | 29.54 | |
| ‡ | 12.20 p.m. | ... | 29.53 | P.M., barometer falling. Wind brisk, SSW. at 4.30, inclining to WNW.; frequent showers. At sunset wind northerly, barometer began to rise rapidly, and clouds to clear. |
| | 6 p.m. | ... | 29.56 | |
| | 10.30 p.m. | 29.72 | ... | |
| 11 | 7.55 a.m. | ... | 29.87 | NW. Moderate; fine and sunny day. |

* It is remarkable, that from 1 P.M. of the 4th until night of the 7th, about 85 hours, the wind continued steadily at SW., although the barometer rose steadily from the evening of the 5th. I conceive this storm, therefore, to have originated to the SW. of Ireland, and to have moved slowly northward.

† This storm came from the SW., and crossed Scotland to NE.

‡ This storm came from the westward, and crossed England to the eastward, travelling rapidly.

Dorchester, June 12th. F. P. B. M.

(*To be continued.*)

## Notices to Correspondents.

AMERICAN CHURN: *M J R.* Now that the first intensity of the American churn mania is over, perhaps some of our readers will kindly give us their experience as to its good and bad qualities, and their cool opinion of its merits.

CHICORY: *A Subscriber.* See page 154, and the Home Correspondence in this Number of the Paper.

CLOD-CRUSHER: *H E for W T.* Your communication was sent to our reviewer; and he will no doubt pay attention to it at the proper time.

COLTSFOOT: *J B H.* You must pull the flowers diligently in early spring—cut off the leaves diligently whenever they appear—and fork out the roots diligently on all proper occasions. There is no dexterous trick or manœuvre for extirpating Coltsfoot.—We know of no objection to rearing a *first* calf.

ENGLISH AGRICULTURAL SOCIETY: *An Essayist* must have patience. The award will be announced as soon as the judges shall have made it.

MANGOLD WURZEL DIBBLE: *Sigma.* It ought to be about a cone inscribed in a cubic inch. Where they are to be had we do not know.

POUNDED LIMESTONE: *A B C.* It would have both a chemical and mechanical effect on soils destitute of calcareous matter. Rain water will dissolve limestone.

SAND: *A Subscriber.* It will not pay to cart this sand for the purpose of making your clay soil more easily workable—notwithstanding that it will pay well to cart clay on the sand. Supposing the proportion of the two necessary to give the texture you desire in your soil be 15 to 85, then if the weight of the first 8 inches of soil be 1000 tons—there will be 150 tons of clay and 850 of sand in it. Now compare two cases deviating on either side of this composition by 5 per cent. on the part of the clay—one in which the 1000 tons consist of 100 of clay and 900 of sand, with another in which the 1000 tons consist of 200 of clay and 800 of sand—in order to bring their respective ingredients to the proportion 15 and 85, which we have fixed on as desirable, you will find that, while to the too sandy soil the addition of 58 tons of clay to the 100 already present would suffice, to the clayey soil the addition of not less than 333 tons of sand to the 800 already present, would be needed to improve the texture of clay soil; therefore we advise draining, stifle burning, liming, autumn cultivation, and manuring with fresh dung, rather than the direct addition of sand.

SCOUR IN PIGS: *J R R.* Prepared chalk, 1 drachm to 4 drachms; powdered opium, 1 grain to 4 grains; calomel, ½ grain to 2 grains. The above, according to the size of the pig, may be given twice a day in thick gruel. *W C S.*

SUPERPHOSPHATE OF LIME: *A Subscriber.* An ordinary dressing is 3 or 4 or 5 cwt. per acre, and an ordinary dressing of guano is 3 cwt. per acre. Commercial superphosphate varies much in the quantity of phosphoric acid which it contains; but if you go upon their relation as regards phosphoric acid alone, the superphosphate will be superior to the guano. The latter, however, justly sells at a higher price, because it contains large quantities of ammonia as well. Your question does not admit of a direct answer—these manures are in many respects different substances.

# Markets.

### COVENT GARDEN, June 14.

Trade still continues to be somewhat brisker. Peaches, Nectarines, and Cherries are much more plentiful. Hothouse Grapes are cheap. Pine-apples are more abundant, and there are some West Indian ones in the market; they fetch from 2s to 6s. each. Strawberries are good in quality; there are but few from the open ground yet. Dessert Apples are over for a season. Oranges and Lemons are plentiful. Nuts remain nearly the same as quoted last week. Vegetables of all kinds are abundant. Asparagus, young Carrots, French Beans, and Green Peas are received in quantity. Frame Potatoes may be obtained at 2d. to 4d. per lb.; old kinds realise high prices. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. per pottle. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Cinerarias, Moss and Provins Roses.

#### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 10s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 4s to 8s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 12s to 24s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 10s to 24s | Oranges, per doz., 9d to 2s |
| Cherries, per lb., 3s to 6s | — per 100, 6s to 14s |
| Melons, each, 4s to 8s | — Seville, p. 100, 7s to 14s |
| Strawberries, per oz., 3d to 9d | — — p. doz., 1s to 2s 6d |
| Gooseberries, per half sieve, 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| | — Brazil, p, bsh., 12s to 14s |
| Currants, per pottle, 6d to 9d | Cobs, per 100 lbs., 50s to 55s |

#### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Greens, per doz. bunchs., 6d to 1s 6d | Garlic, per lb., 4d to 8d |
| | Artichokes, per doz., 3s to 4s |
| Cauliflowers, p. doz., 2s to 5s | Lettuce, Cab., p. score, 4d to 9d |
| Broccoli, p. doz. bundl., 7s to 8s | — Cos, per score, 8d to 1s |
| French Beans, p. 100, 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Peas, per sieve, 3s to 5s | Horse Radish, p. bundl., 1s to 5s |
| Asparagus, per 100, 1s to 4s | Red Beet, per doz., 6d to 1s 6d |
| Rhubarb, p. bundl., 2d to 6d | Mushrooms, p. pot., 8d to 1s |
| Potatoes, per ton, 90s to 200 | Sorrel, per hf. sieve, 6d to 9d |
| — per cwt., 4s to 8s | Fennel, per bunch, 2d to 3d |
| — per bush., 1s 6d to 3s | Savory, per bunch, 2d to 3d |
| Turnips, p. bunch, 6d to 1s 6d | Thyme, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Parsley, per doz. bun., 2s to 3s |
| Radishes, per doz., 6d to 9d | — Roots, p. bundl. 9d to 1s |
| — Turnip, p.doz., 8d to 1s | Mint, green, per bunch, 4d to 6d |
| Celery, p. bundle, 6d to 2s | Basil, green, p. bunch, 6d to 9d |
| Carrots, per bunch, 4d to 9d | Marjoram, green, do., 6d to 9d |
| Spinach, per sieve, 9d to 1s | Watercress, p. 12 bunch., 6d to 9d |
| Onions, p. bunch, 2d to 4d | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per bunch, 3d to 4d | |

### HOPS.—FRIDAY, June 13.

Messrs. Pattenden and Smith report that the market for Hops continues to advance, and that the accounts from the plantations come worse and worse daily, both fly and lice being fast on the increase; little or nothing said as to duty, all parties agreeing that it must be very low.

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 12.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 80s | Clover ... ... ... | 75s to 90s |
| Inferior ditto... ... | 55 65 | Second cut ... ... | 75 85 |
| Rowen ... ... ... | 55 63 | Straw ... ... ... | 25 30 |
| New Hay ... ... | — — | | J. COOPER. |

The supply of Meadow Hay short, but quite equal to the demand; trade brisk for good Clover.

CUMBERLAND MARKET, June 12.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78s to 84s | Inferior ... ... ... | 65s to 78s |
| Inferior ditto... ... | 70 72 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 80 88 | | JOSHUA BAKER. |

WHITECHAPEL, June 12.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 75s to 80s | New Clover ... ... | —s to —s |
| Inferior ditto ... | 65 68 | Inferior ditto... ... | 70 75 |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 85 92 | | |

### COAL MARKET.—FRIDAY, June 13.

Holywell, 13s. 6d.; Carr's Hartley, 13s. 6d.; Eden Main 13s.; Wallsend Braddyll's, 13s. 9d.; Wallsend Haswell 14s. 3d.; Wallsend Hetton, 14s.; Wallsend Lambton, 14s.; Wallsend Stewarts, 14s.; Wallsend Adelaide Tees, 13s.; Wallsend Tees, 14s.—Ships at market, 146.

### SMITHFIELD, MONDAY, June 9.

We had a larger supply of Beasts and an increased demand. We were enabled to quote 3s. 8d., it being pretty generally given for choicest qualities. The number of Sheep and Lambs was large, and the trade not very brisk; consequently prices were not better; indeed, for heavy Sheep, scarcely so good. A fair demand for good Calves, although it was difficult to obtain any more money. Trade for Lamb was brisk at Friday's rates. From Holland and Germany there are 290 Beasts, 1050 Sheep, and 139 Calves; from France, 13 Beasts; from Scotland, 240; and 2200 from Norfolk and Suffolk.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 6 | to 3 | 8 | Best Long-wools | | ... | | |
| Best Short-horns | 3 | 4 | — 3 | 6 | Ditto Shorn | 3 | 4 | to 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | | ... | | |
| Best Downs and Half-breds | | ... | | | Ditto Shorn | 2 | 10 | — 3 | 2 |
| | | | | | Lambs ... ... | 5 | 0 | — 5 | 6 |
| | | | | | Calves ... ... | 3 | 0 | — 4 | 0 |
| Ditto Shorn ... | 3 | 8 | — 3 | 10 | Pigs ... ... | 2 | 8 | — 3 | 8 |

Beasts, 3832; Sheep and Lambs, 28,890; Calves, 257; Pigs, 139.

FRIDAY, June 13.

We have a moderate supply of Beasts; however, quite sufficient for the demand; we cannot retain 3s. 8d. in our quotations, although it is made in a few instances. The supply of Sheep and Lambs is a fair average; trade is dull at Monday's prices. Calves are plentiful; middling ones are lower, but good ones still make 4s. From Germany and Holland we have 182 Beasts, 1280 Sheep, 231 Calves, and 60 Pigs; from Spain, 180 Sheep; from Norfolk and Suffolk, 400 Beasts; and 85 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | | ... | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | 3 | 4 | — 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | | ... | | |
| Best Downs and Half-breds | | ... | | | Ditto Shorn | 2 | 10 | — 3 | 2 |
| | | | | | Lambs ... ... | 4 | 10 | — 5 | 6 |
| | | | | | Calves ... ... | 2 | 10 | — 4 | 0 |
| Ditto Shorn ... | 3 | 8 | — 3 | 10 | Pigs ... ... | 2 | 8 | — 3 | 8 |

Beasts, 954; Sheep and Lambs, 12,200; Calves, 437; Pigs, 520.

### MARK LANE.

MONDAY, June 9.—The supply of English Wheat to this morning's market was small, and the demand being better than of late, it was sold at an advance of 1s. to 2s. per qr.; the attendance was larger than for some time past, and foreign must be written 1s. per qr. higher, with an improved inquiry. —Spring corn of all descriptions was in request, and we raise our quotations 1s. per qr. on Barley, Beans, Peas, and Oats.—There is a better trade for Flour, but higher prices cannot be realised.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 41 | —46 | Red ..... | 37 | —41 |
| — — fine selected runs...ditto | 43 | —48 | Red ..... | | —43 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | | — |
| — Foreign ..... | 32 | —52 | | | |
| Barley, grind. & distil., 22s to 25s...Chev. | 27 | —32 | Malting . | 24 | —27 |
| — Foreign... grinding and distilling | 22 | —26 | Malting . | | — |
| Oats, Essex and Suffolk ..... ..... | 20 | —23 | | | |
| — Scotch and Lincolnshire...Potato | 23 | —27 | Feed..... | 21 | —25 |
| — Irish .....Potato | 20 | —25 | Feed..... | 19 | —23 |
| — Foreign .....Poland and Brew | 21 | —24 | Feed..... | 19 | —23 |
| Rye ..... | 24 | —26 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..26s to 30s.....Tick | 26 | —31 | Harrow . | 26 | —31 |
| — Pigeon.....29 — 34... Winds | — | | Longpod | — | |
| — Foreign ..... Small | 22 | —30 | Egyptian | 24 | —25 |
| Peas, white, Essex and Kent.....Boiler | 24 | —27 | Suffolk... | 27 | —29 |
| — Maple.....27s to 29s .....Grey | 24 | —25 | Foreign . | 25 | —32 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 18 | —23 | Per sack | 26 | —34 |

FRIDAY, June 13.—The arrivals of grain and Flour since Monday have been moderate. To-day's market was fairly attended, but it being difficult to establish an advance upon the prices of Monday for Wheat, the business transacted was limited, excepting in offers f. o. b. and afloat, in which the amount of sales is considerable. The quantity of spring corn on the market is very small, and held for an advance, which is in some instances paid.—Flour is in good demand, and brings generally rather more money.—A large business has been done in floating cargoes of Wheat, Barley, Beans, and Maize from the Mediterranean, at advancing prices.—The weather during the last eight days has continued very stormy with much rain, which is said to have greatly benefited the crops, particularly spring corn. The feeling for an advance in the price of Wheat has become more general, and the rise of 1s. to 2s. per qr. has again been established throughout the kingdom.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 1610 | 270 | 80 | 2170 sacks |
| Irish ..... | — | — | 1950 | |
| Foreign ... | 9020 | 1030 | 5990 | 5210 sacks |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| May 3..... | 38s 8d | 24s 3d | 18s 3d | 23s 11d | 27s 9d | 25s 4d |
| — 10..... | 38 10 | 24 4 | 18 8 | 24 7 | 27 10 | 25 11 |
| — 17..... | 38 2 | 24 2 | 18 11 | 25 9 | 28 10 | 27 2 |
| — 24..... | 38 8 | 24 1 | 19 5 | 24 7 | 29 2 | 26 1 |
| — 31..... | 39 3 | 24 1 | 20 0 | 26 9 | 29 7 | 27 5 |
| June 7..... | 39 6 | 24 4 | 20 8 | 23 5 | 30 11 | 26 10 |
| Aggreg. Aver. | 38 10 | 24 3 | 19 4 | 24 10 | 29 0 | 26 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | MAY 3. | MAY 10. | MAY 17. | MAY 24. | MAY 31. | JUNE 7. |
|---|---|---|---|---|---|---|
| 39s 6d | ... | ... | ... | ... | ... | |
| 39 3 | ... | ... | ... | ... | | ... |
| 38 10 | ... | | ... | ... | ... | ... |
| 38 8 | | ... | ... | ... | ... | ... |
| 38 8 | ... | ... | | | ... | ... |
| 38 2 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, June 10.—The arrivals of grain and Flour from Ireland and coastwise this week are again trivial. The week's arrivals from abroad are large, but not over what our consumptive demand requires. The Corn Exchange this morning was well attended by millers and dealers, and, with a good healthy demand, prices improved. The advance since this day se'nnight may be called 2d. per bushel on Wheat, 6d. to 1s. per barrel and sack on Flour, ½d. to 1d. per bushel on Oats, 6d. per load on Oatmeal, 2d. per bushel on Barley, 6d. per qr. on Indian Corn, and 1s. per qr. each on Beans and Peas. Several large purchases of Wheat and Flour were made to-day to go some distance into the interior, which is an important feature to us, and indicates that there are lower stocks in the growers' hands than most people calculate upon.——FRIDAY, June 6.—The Market this morning was well attended by both town and country dealers. Fresh parcels of Wheat commanded the prices of Tuesday last, and American Flour was 6d. per barrel higher. There was also an improvement of 6d. per qr. each on Indian Corn, Beans, and Peas. Oats and Oatmeal brought fully late rates. 30s. 6d. per 480 lbs. was the top quotations for American yellow Indian Corn.


HORTICULTURAL TOOL WAREHOUSE.

GREEN AND CONSTABLE, WHOLESALE AND RETAIL IRONMONGERS, 36, King William-street (four doors from London Bridge), beg to inform Amateurs and Gardeners they have a large assortment of new and improved Garden Tools, including Lyndon's Patent Spades, Lord Vernon's Patent Hoes, jointed Hothouse Syringes, Galvanised Iron Garden Engines, Transplanting Tools, Patent Water-pots, Brown's Patent Fumigator, Improved Garden Labels and Sticks; also a large assortment of Saynor's Pruning and Budding Knives.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 13s. 6d. Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL consisting of black and white swans, Egyptian, Canada, China barnacle, brent, and laughing geese, shieldrakes, pintail widgeon, summer and winter teal, gadwall, Labrador shovellers, gold-eyed and dun divers, Carolina ducks, &c. domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

BELGIAN WHITE GLASS.—Glass of superior colour, so essential for Horticultural purposes, averaging 14 to 16 oz., can be had at HICKSON'S, 46, Long Acre, near James-st., Covent Garden; any size to 44 inches long, at 2d. to 2½d. per foot; small sizes less price. Plans and Estimates for Greenhouses, &c., complete, forwarded on application. Terms cash.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

ENGLISH VERSUS FRENCH GLASS.—The importation of Glass into France is at present prohibited. Special permission has, however, been granted by the French Government for the introduction of a quantity of Hartley's Patent Rough Plate (supplied by Messrs. JAMES PHILLIPS and Co., of 116, Bishopsgate-street Without), for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country.—*Sunderland Herald*, April 18.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14s. each.

16s. per box:

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 „ 5½ „ 7 „ 5 | 6½ „ 6½ „ 7½ „ 6½ |
| 6 „ 6 „ 7½ „ 5 | |

18s. 6d. per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 „ 8 „ 11 „ 9 | 10 „ 8 „ 13 „ 9 |
| 9 „ 8 „ 12 „ 8 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

In sizes under 15 inches ..... 6d. per foot.
„ „ 35 „ ..... 8d. „
„ „ 50 „ ..... 9½d. „
„ „ 75 „ .....12d. „

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8s. 6d. each.

| | | |
|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... 6½ by 3 |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBERS, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as u su a

GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., GLASS MANUFACTURERS, of Bristol, and Nailsea, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great pressures, in lengths from 3 to 7 feet, the lengths being less at the diameter of the brief increase. These Pipes may be seen at the Exhibition, with their various forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

E. DENCH having erected Two Patent Hothouses at the west end of the Great Exhibition, invites the attention of Gentlemen to the superior qualities, with the lowness of price, attending the erection of his Patent Houses; and having now ready for sale FIVE HOUSES of different sizes and descriptions on his premises, and some of them at a great reduction in the price, thinking of making alterations on his premises.

Hothouses built to be Glazed without Putty or Wood, and warranted not to drip under any circumstances.

Heating with Hot-water on the most scientific and economical principles.

---

ROYAL AGRICULTURAL COLLEGE CIRENCESTER.

*Patron*—His Royal Highness PRINCE ALBERT.
*President*—The Right Hon. Earl BATHURST.
*Vice-President*—The Right Hon. Earl DUCIE.

The COLLEGE will RE-OPEN, after the summer vacation, on MONDAY, AUGUST 11TH, for Agricultural and general Education. Lectures by professors of ability and experience, in Chymistry, Geology, Botany, Zoology, Veterinary Medicine and Surgery, Surveying and Civil Engineering, &c., are combined with practical instruction in Agriculture, and the several branches of a good education. Agricultural analysis will be undertaken in the Laboratory of the College at a low rate of charges.

For prospectuses and information respecting the course of studies, terms, &c., for in and out students, apply to the PRINCIPAL, the Rev. J. S. HAYGARTH, M.A.

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DR. NEWINGTON'S AGRICULTURAL INVENTIONS.—In consequence of the unsatisfactory manner in which these Inventions have been carried out, and the imperfect state in which the Implements have been manufactured by DUFAUR and Co., Dr. NEWINGTON has found it necessary to withdraw the Licence he had granted them. He has now assigned all his Patents to Mr. GABRIEL, C.E., of 62, St. Martin's Lane, London, whom he can confidently recommend to the public. For the future, all applications should be made to him at the above address.

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TO TENANT FARMERS, &c.

AGRICULTURAL EDUCATION.—Arrangements are made and Funds provided by several noblemen and gentlemen, advocates of combining "Science with Practice," to disseminate those principles through every county of England, by educating one or two youths from each county. They will be expected to know the fundamental rules of Arithmetic, and write a good plain hand on nomination, and to remain in the establishment two years at least. They will be taught Surveying, Measuring and Valuing Timber, Buildings, and Farm Stock; Analysing Soils and Manures; the Breeds, Management, and Diseases of Cattle; practical Mechanics, management of Steam Power; Botany, Mineralogy, and systems of keeping Farm Accounts, free of every cost; the parents paying only a small sum for their Board, Lodging, and Laundry.

Applications must be made, in the first instance, by letter to the Secretary for Agricultural Education, care of Messrs. DAWSON and SONS, Advertising Office, 74, Cannon-street, City.

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HAYMAKING SEASON.—Look to your HAYMAKING MACHINES, that they are fit for use beforehand. Apply early for WEDLAKE'S, Original Patentee, still manufactured in a very superior manner for durability. Delivered free, at reduced charge, to meet the times' price.

MARY WEDLAKE, Widow, 118, Fenchurch-street, City, London, only maker.

---

REPEAL OF CORN LAWS.
HOW TO MAKE HAY AT ANY TIME, AND IN ANY COUNTRY, AT HALF THE USUAL COST. A Tract for the Times. Price One Shilling. Forwarded free upon receiving 12 postage stamps.—Address to MARY WEDLAKE, 118, Fenchurch-street, City, London.

---

COCHIN CHINA FOWLS' EGGS, FOR HATCHING, of the finest description, 1*s.* each, warranted genuine; sent into the country on the receipt of Post-office order, with 1*s.* for box, &c. Also eggs of Malay, Polish, Spanish, Sebright's Lace-feathered Gold and Silver Bantams, and White Java Silky Bantams. A Malay Cock and six Hens for sale, price 3*l.*; Cochin China Fowls, 30*s.* per pair; Silver Pheasants, in full plumage, and tame, 50*s.* per pair; Cochin China, Malay, and cross-bred Chickens; Carrier and Fancy Pigeons, &c.—Apply to TIMOTHY MASON, No. 5, Bear's-place, New North-road, Islington, two doors from the North Pole Tavern. Letters to enclose stamp for reply. Genuine Japan Pea-fowl wanted.

---

ONE HUNDRED PER CENT. CHEAPER THAN AT ANY OTHER MANUFACTORY.

FRUIT TREES.—New Twine Netting for protecting Fruit Trees, Flower and Seed Beds, from Blight and Birds, can be had any width, length, or quantity, at the same price usually charged for Tanned Net, and Tanned Net at its real value. New Netting, 1 inch Mesh, 2 yards wide, 3*d.* per yard; ½ inch Mesh, 2 yards wide, 4*d.*; Tanned Net, 2 or 3 yards wide, 1½*d.*; 4 or 6 yards wide, 3*d.* Strong Tarred Cord Sheep Folding Net, 4 feet wide, 4*d.*; 4 feet and a half wide, 6*d.* Extra stout. Delivered free to any part of London, from W. CULLINGFORD'S, 1, STRATHMORE-TERRACE, SHADWELL, LONDON.—Ten per cent. discount upon 10*l.* orders.

CAUTION.—Parties are advertising Tanned Net, 2 yards wide, at 3*d.* per yard, without stating it is Old Net.

---

SHADING CANVAS, 4*d.* per Square Yard. To be had in any quantity from WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London.

Also BEDDING and HERBACEOUS PLANTS of every description.

FLOWER SEEDS for present sowing, in packages of 12 varieties, for 2*s.* 6*d.*; or 25 varieties, 5*s.*

Labels, Garden Knives, Flower-gatherers, Thermometers, and every other article useful in gardening, his prices for which are excessively moderate.

Address, 156, Cheapside, London.

N.B. Agent for the Registered Rose Girdle.

---

TANNED NETTING, for the protection of Fruit Trees, and for the security of fresh-sown Seed for birds, at unprecedented low prices, viz., 1*d.* per square yard, 200 yards for 14*s.*, 500 yards for 30*s.*, or 1000 yards for 50*s.*; bunting and scrim canvas for Wall Fruit, at THOMAS EDGINGTON AND CO.'S.

Marquees, Tents, and temporary Ball Rooms fitted up in a superb style, in town or country, on sale or hire. Rout Seats and Dancing Hollands for evening parties, on hire. Marquees and Tents for Emigrants; Flags, Banners, Tulip Covers, Sunblind, and improved Waggon and Rick Cloths. Tarpaulings for houses under repair on sale or hire at THOMAS EDGINGTON and Co.'s Warehouse, 17, Smithfield Bars, City; and Manufactory, nearly opposite the Bricklayers' Arms Station, Old Kent Road. Orders per post punctually attended to.

---

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

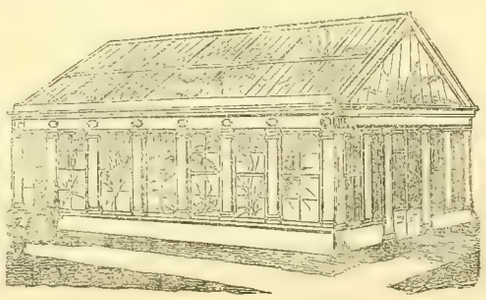
| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

---

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

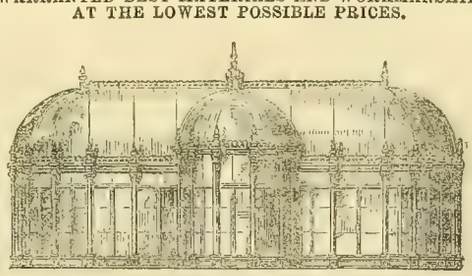
G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

---

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

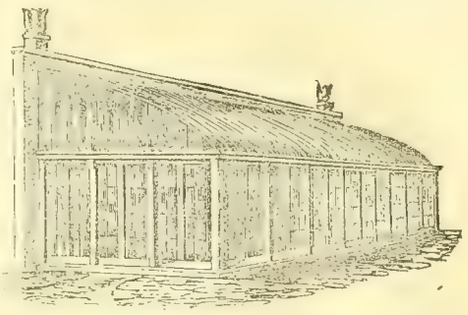
THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London

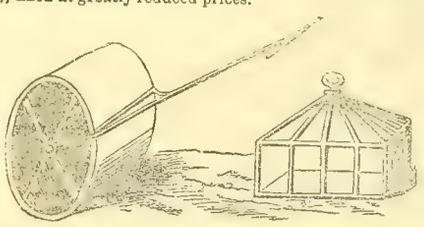
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COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had long experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:—

| | |
|---|---|
| Garden Rollers | Hand-glass Frames |
| Garden Engines | Flower Stakes |
| Garden Syringes | Flower-bordering |
| Watering Pots | Flower Stands |
| Garden Vases | Garden Arches |
| Mowing Machines | Garden Chairs |

Every description of Work, both Plain and Ornamental, in wrought and cast iron, for Gardens, &c., &c.

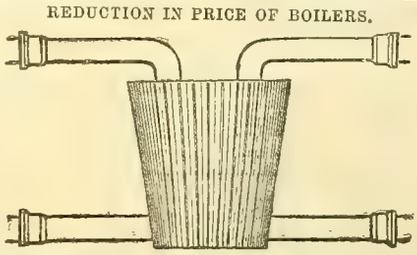
HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

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REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

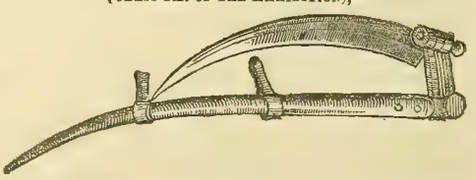
| | | | | | |
|---|---|---|---|---|---|
| 10 in. will warm | 50 ft. 4 in. pipe | ... | £1 | 15 | 0 |
| 12 in. do. | 75 ft. 4 in. do. ... | ... | 2 | 5 | 0 |
| 14 in. do. | 100 ft. 4 in. do. ... | ... | 2 | 15 | 0 |
| 16 in. do. | 150 ft. 4 in. do. ... | ... | 3 | 10 | 0 |
| 18 in. do. | 250 ft. 4 in. do. ... | ... | 4 | 10 | 0 |
| 21 in. do. | 350 ft. 4 in. do. ... | ... | 5 | 10 | 0 |
| 24 in. do. | 450 ft. 4 in. do. ... | ... | 7 | 0 | 0 |
| | NEW PATTERN BOILERS. | | | | |
| 30 in. will warm | 800 ft. 4 in. pipe | ... | 15 | 15 | 0 |
| 36 in. do. | 1500 ft. 4 in. do. ... | ... | 25 | 0 | 0 |

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above, the same price.

130, Fleet-street, London.

---

BOYD'S SELF-ADJUSTING SCYTHE, (CLASS IX. OF THE EXHIBITION),



Can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary. Manufactured and sold by DEANE, DRAY, and DEANE, Agricultural Implement Depot, Swan-lane, London Bridge; and to be had of all respectable Ironmongers.

---

THE GREAT EXHIBITION.—A valuable, newly invented, very small powerful Waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from four to five miles, which is found to be invaluable, at the Exhibition, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS. Price 30*s.*, sent free.

TELESCOPES.—A new and most important INVENTION in TELESCOPES, possessing such extraordinary powers, that some, 3½ inches, with an extra eye piece, will show distinctly Jupiter's moons, Saturn's ring, and the double Stars. They supersede every other kind, and are of all sizes for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race Course Glasses with wonderful powers; a minute object can be clearly seen, from 10 to 12 miles distant.—Invaluable newly invented preserving Spectacles, invisible and all kind of acoustic instruments for relief of extreme deafness.—Messrs. S. AND B. SOLOMONS, Opticians and Aurists, 39, Albemarle-street, Piccadilly, opposite the York Hotel.

NOTICE.—AMERICAN PLANTS.

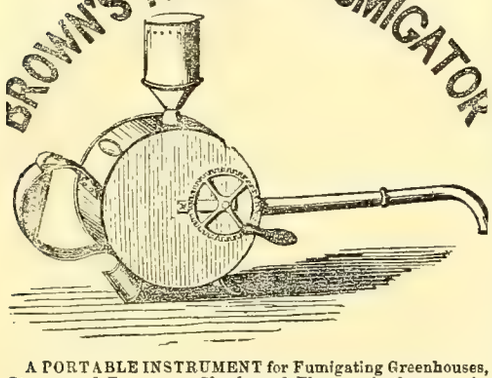
GEORGE BAKER begs to announce that his extensive collection of AMERICAN PLANTS will be in b oom on and after the 30th May, and may be seen gratis. The Nursery is situated seven miles from Staines Station, South-Western Railway, and three miles from Virginia Water, where conveyances may always be obtained.

G. B. takes this opportunity of informing the Nobility, Gentry, and Public that he is a Contributor to the American Exhibition, Royal Botanic Garden, Regent's Park.

Windlesham Nursery, Bagshot, Surrey, June 14.

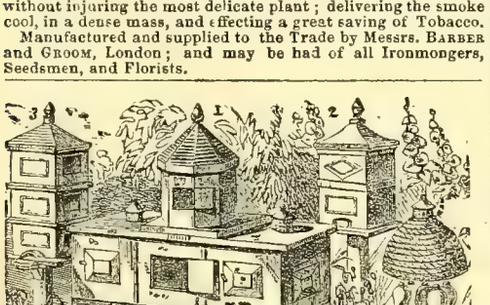
PRICE TEN SHILLINGS AND UPWARDS.

BROWN'S PATENT FUMIGATOR



A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, more effectually in conjunction with SANGSTER'S FLORUMBRA, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

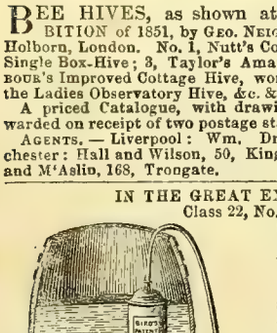


BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

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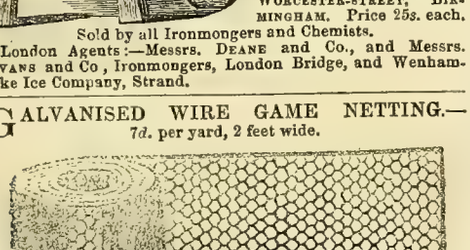
This instrument is self-acting and self-cleansing, and only requires to be dropped into the Water, and the Pipe hung down outside, in which position it becomes a Syphon. It purifies Rain, River, Tank, Pond, or Pump Water, however dirty, completely separating all animalculæ, thus rendering it perfectly wholesome.

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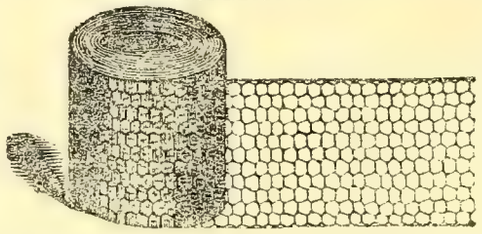


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| 2-inch mesh, light, 24-inch wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
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STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



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MANUFACTURERS OF IRON AND WIRE WORK, &c.,
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48, NORTH-BRIDGE, EDINBURGH;
32, ST. ENOCH-SQUARE, GLASGOW;
1, CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

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| Or a web of 100 yards, 18 ins. wide, will cost | ... | ... | £3 15 0 |
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NEWS FROM THE CANTERBURY COLONISTS.

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Contents:—1. Voyages and arrivals of the Ships, "Charlotte Jane," "Seymour," "Randolph," and "Cressy." 2. Landing of the Passengers. 3. Journal of Proceedings of Colonists for a Fortnight. 4. Shipping Intelligence of Port Lyttelton. 5. Meetings of Land Purchasers, and their Correspondence with Mr. Godley. 6. Letter from the Governor to the Colonists. 7. Speech of Bishop Selwyn to the Colonists. 8. Police Report. 9. Lyttelton Markets, Retail Prices. 10. Advertisements.

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On Wednesday next, June 18,

PICTORIAL HALF-HOURS, Part XIV., completing the work. The Fourth Volume, price 3s. 6d., was published on the 2d of June.

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FERNS.

NOTICE.—The new Part (Part V.; or Volume the Second, Part I.) of Sir WILLIAM HOOKER'S SPECIES FILICUM is now ready, price 10s.

London: WILLIAM PAMPLIN, 45, Frith-street, Soho.

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SPECIES FILICUM; or, A Synopsis of all known Ferns. By Sir WILLIAM JACKSON HOOKER, K.H.D.C.L., Oxon, L.L.D., F.R.S., &c., &c.; Vice-President of the Linnæan Society, and Director of the Royal Botanic Gardens at Kew. Vol. I, complete, in extra cloth boards, price 38s.

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ZOOLOGICAL GARDENS, REGENT'S PARK.—An ELEPHANT CALF and its MOTHER, have been added to the Collection, and are exhibited daily, together with the HIPPOPOTAMUS, presented by His Highness the Viceroy of Egypt. The Band of the First Life Guards will perform by permission of Colonel Hall, at 4 o'clock, on every Saturday, until further notice. Admission 1s. ON MONDAYS 6d.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 14, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 25—1851.] SATURDAY, JUNE 21. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Advertisers, hints to | 390 *a* | Gorteria rigens | 390 *a* |
| Agricultural improvement | 395 *b* | Highland Society | 396 *a* |
| Agricultural Society of England | 396 *a* | Hop plants | 398 *a* |
| Asparagus | 391 *a* | Horticultural Society | 391 *b* |
| Astyages, Pear tree | 390 *c* | — Fellows' rights | 388 *a* |
| Balsams from cuttings | 388 *a* | Ireland, state of | 394 *c* |
| Balsam seed | 390 *b* | Larch plantations | 387 *b* |
| Barn machinery | 394 *a* | Linnean Society | 391 *b* |
| Birds, British song | 388 *c*—392 *b* | Orchids for the million | 389 *b* |
| Cabbages, Drumhead | 398 *a* | — sale of | 392 *a* |
| Calendar, Horticultural | 392 *a* | Orchid shows | 389 *c* |
| — Agricultural | 397 *c* | Peas, green winter | 390 *a* |
| Charcoal, to make | 397 *c* | Pea-shells | 387 *a* |
| Chelsea Botanic Garden | 391 *c* | Pear tree Astyages | 390 *c* |
| Chiswick, fruit at | 389 *b* | Potato disease | 390 *c* |
| — yellow Roses at | 391 *a* | Roses, yellow | 391 *a* |
| Climate of Torquay | 391 *a* | — Mr. Paul's pamphlet on | 391 *c* |
| Cockscombs from cuttings | 388 *a* | St. Petersburgh | 388 *b* |
| Cookery | 387 *a* | Smithfield, removal of | 395 *c* |
| Crystal palace | 394 *a* | Stacks, coverings for | 395 *b* |
| Entomological Society | 391 *b* | Steam-power and farming | 393 *b* |
| Eucalypti | 390 *a* | Threshing machines | 394 *a* |
| Farming and steam power | 393 *b* | Torquay, climate of | 391 *a* |
| Fly papers | 390 *b* | Trade memoranda | 389 *b* |
| Fruit at Chiswick | 389 *b* | Tuberoses | 392 *c* |
| — to preserve | 390 *b* | Turnip-cutters | 395 *b* |
| Garden gleanings, foreign | 388 *b* | Viper bite, cure for | 398 *a* |
| Gardeners' Benevolent Institution | 389 *a* | Walks, to salt | 391 *a* |
| Glass, rough plate | 390 *a* | Weed destroyer, Fleming's | 390 *c* |
| | | Wheat stacks, covering for | 395 *b* |


ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of Her Most Gracious Majesty the QUEEN.—The THIRD EXHIBITION for the Season will be held at the Royal SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, 25th JUNE (open to all Exhibitors), when the Prizes will be awarded for the following productions, viz., Miscellaneous, Orchideous, and Specimen Plants. Pelargoniums, and Fancy varieties, Cape Heaths, Roses, Pinks, Ranunculuses, Fruit, &c.; also by Subscription, Prizes for Seedling Pelargoniums, Fancy ditto, Pinks and Ranunculuses, in addition to Certificates granted by the Society. The following Exhibitions will also take place at the Royal Surrey Zoological Gardens, on Thursday, 24th July, and Wednesday, 3d September. List of Prizes, and the Rules for Exhibition, may be obtained from, JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

A GRAND HORTICULTURAL FETE, Under the distinguished patronage of H. R. H. the DUCHESS OF KENT, the EARL OF ABERGAVENNY, and the Nobility and Gentry of the neighbourhood, will take place in the CALVERLEY PARK, TUNBRIDGE WELLS, on FRIDAY, 27TH OF JUNE, 1851.

The Committee have great pleasure in announcing that they have made an engagement with Mr. EPPS, of the Bower Nurseries, Maidstone, to exhibit his magnificent Collection of Plants, and to superintend the Horticultural arrangements.

By the kind permission of the Commandants, the following celebrated Bands will be in attendance: The Band of the Royal Marines (Chatham Division). Master, Mr. ROGERS. The Brass Depôt Band (Maidstone). Master, Mr. TRESON.

A PROGRAMME will shortly be published, containing some of the most popular Pieces of the day.

Subscribers of 10*s.* 6*d.* will be entitled to Six Tickets. Non-Subscriber's Tickets, if obtained before the day of Exhibition, 2*s.* 6*d.*; on the day, 3*s.* 6*d.* each, to be obtained at Tunbridge Wells, of Mr. Clifford, Hon. Sec., and at Mr. Nash's Library; and at Maidstone, of Mr. Smith, Library, Week-street, and Mr. Epps, Bower Nurseries, Maidstone, and South-Eastern Nursery, Ashford; and at the Crown Hotel, Tunbridge.

Holders of Tickets will be admitted at 1 o'clock. At 4 the admission will be 1*s.*

A Marquee will be set apart for the Productions of Cottagers, to whom Prizes will be awarded.

NATIONAL FLORICULTURAL SOCIETY.
21, REGENT-STREET.

NOTICE IS HEREBY GIVEN, that Exhibitors of Azaleas, Pelargoniums, Ericas, Antirrhinums, Pinks, Roses, Ranunculuses, Fuchsias, Verbenas, Calceolarias, Petunias, Carnations, Picotees, Pansies, or miscellaneous subjects, must have all entered, labelled and staged, before 1 o'clock on Thursday next, the 26th inst. The Censors appointed are:

FOR AZALEAS AND ERICAS—Messrs. Fraser, Fairbairn, Rollisson, and Glendinning.

FOR PELARGONIUMS—Messrs. Gaines, Cock, Catleugh, Ambrose, Robinson, and the Rev. R. Garth.

FOR PINKS, PANSIES, CARNATIONS, PICOTEES, and RANUNCULUSES—Messrs. Neville, Keynes, Newhall, Norman, and Lidgard.

FOR ANTIRRHINIUMS, FUCHSIAS, VERBENAS, PETUNIAS, AND CALCEOLARIAS—Messrs. Salter, IVERY, Lochner, and Turner.

FOR ROSES AND MISCELLANEOUS SUBJECTS—Messrs. Lane, Denyer, Lee, Paul, and Parsons.

Censors should be punctually in attendance at 1 o'clock, at which time Exhibitors are required to withdraw. Members' privileged Tickets, for the admission of friends, can be had on application. By order, JOHN EDWARDS, Hon. Sec.
21, Regent-street, June 21.

CABBAGE SEED.—A quantity of fine early NONPAREIL AND BROMPTON IMPERIAL CABBAGE SEED, warranted genuine, and of last year's growth, is offered at 2*s.* 6*d.* per lb. These two well-known Cabbages are the best and earliest in cultivation.

Address fully (to prevent mistakes, there being two of the same name in Southampton), W. H. ROGERS, NURSERYMAN, 130, HIGH-STREET, SOUTHAMPTON.

IPOMŒA LIMBATA (LINDLEY).
(A New and Beautiful Hardy Climbing Annual.)

MESSRS. WM. ROLLISSON AND SONS have the pleasure to inform the Nobility, Gentry, and Public in general, that they intend sending out, on and after the 24th of June, their new and beautiful IPOMŒA (named by Dr. LINDLEY Ipomœa limbata), 10*s.* 6*d.* per plant, just coming into flower; the usual discount to the trade.

N.B. Fine plants of the true RHODODENDRON JAVANICUM, from 7*s.* 6*d.* to 10*s.* 6*d.* and 21*s.*, according to the size of the plant.—Tooting, Surrey.

EXHIBITION OF AMERICAN PLANTS—ROYAL BOTANIC GARDENS, REGENT'S PARK.

JOHN WATERER (the principal Contributor to the above Exhibition), begs to say that his unrivalled Collection is still in full bloom, and may be seen gratis by Orders from Fellows of the Society.—The American Nursery, Bagshot, Surrey, June 21.

NOTICE.—AMERICAN PLANTS.

GEORGE BAKER begs to announce that his extensive collection of AMERICAN PLANTS will be in bloom on and after the 30th May, and may be seen gratis. The Nursery is situated seven miles from Staines Station, South-Western Railway, and three miles from Virginia Water, where conveyances may always be obtained.

G. B. takes this opportunity of informing the Nobility, Gentry, and Public that he is a Contributor to the American Exhibition, Royal Botanic Garden, Regent's Park.
Windlesham Nursery, Bagshot, Surrey, June 21.

NOTICE.—EXHIBITION OF AMERICAN PLANTS, KNAP-HILL NURSERY, NEAR WOKING, SURREY.—The American Plants, at this Nursery, are now in bloom, and may be seen daily (gratis), Sundays excepted. The Knap-hill Nursery is within one hour's ride of London, being near the Woking Station, South-Western Railway, where nearly every train stops, and from whence conveyances may at all times be obtained.

HOSEA WATERER takes this opportunity of stating that the Exhibition of American Plants in the Horticultural Society's Garden, Chiswick, is entirely supplied from his Nursery, and that he is *not* this year a contributor to that in the Botanic Gardens, Regent's-park.—Knap-hill, Woking, Surrey, June 21.

CHOICE SEEDS, suitable for present sowing, all of the best quality. Per paper.—*s. d.*

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| ANTIRRHINUM, saved from a superb collection | 0 6 |
| ANEMONE, new hybrid, splendid colour | 0 6 |
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| PANSY, very choice, saved by Thomson, and other celebrated growers | 1 0 |
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| STOCKS, AUTUMNAL FLOWERING, 6 best and brightest colours, very double (per collection) | 1 6 |
| WALLFLOWERS, 6 beautiful varieties imported; these will produce a proportion of double flowers (per col.) | 1 6 |

The above are confidently recommended, having given great satisfaction previous seasons.—To be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

ROSES.

H. LANE AND SON'S extensive Collection will be in bloom about the 25th inst., and will continue during the season.—The Nurseries, Great Berkhampsted, Herts.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS offers the following ROSES, on Dwarf worked Stems, well established in 32 and 24 size pots, full of bloom buds, strong and vigorous, fit for immediate clumping, at 2*s.* each, carriage paid to London.

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BOURBONS.
Phillaparte
Prince de Croi
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Armosa
Augustine Margat
Celimene
Phœnix
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Acidalie
Bouquet de Flore
Paul Joseph
Edward Desfosses
Pierre de St. Cyr
Souvenir de la Malmaison
Lady Canning
Dupetit Thouars
De Tourville

TEAS.
Anteros
Elise Sauvage
Gigantesque
Princesse d' Esterhazy
Roi du Siam
Safrano
Comte de Paris
Madame Rouselle
Claudia Gond
Gonda
Marie de Beaux

CHINA.
Abbe Moiland
Archduke Charles
Marjolin du Luxembourg
Mrs. Bosanquet
Infidelites de Lisette

NOISETTE.
Minette
Aimée Vibert
Euphrosine
Jaune Desprez
La Biche
Lamarque
Smith's Yellow
Cloth of Gold
Ophirie
Phaloe

MOSS.
Prolifere
Unique de Provence
Mousseuse presque partout
Ponctue Nouvelle
Comtesse de Murinais
Lanii
Celina
White Bath

PROVENCE.
Crestata
Grand Agathe

GALLICAS.
Boule de Nautieul
Kean
Letitia

HYBRID CHINA.
Brennus
Belle Marie
Comtesse de Lacepede
Madame Plantier
Chenédolé
Juno
General Jacqueminot

HYBRID BOURBON.
Triptoleme
Charles Duval
Coupe d' Hebe
President Mole
Comtesse Mole
Zehler

ALBA.
Sophie de Marsilly

DAMASK.
La Ville de Brussells
Madame Hardy

AUSTRIAN BRIARS.
Persian Yellow
Double-margined Hip
Harrisonii

STANDARDS.

HYBRID PERPETUALS.
William Jesse
Louis Bonaparte
Madame Laffay
AugustineMouchelet
Duchess of Sutherland
Melanie Cornu
Earl Talbot
La Reine
Mrs. Elliott
Baronne Prevost
Robin Hood

CHINAS.
Mrs. Bosanquet
Persian Yellow
Harrisonii.

It is respectfully requested that this List may be preserved for reference.

ROSES.

ADAM PAUL AND SON, NURSERYMEN, &c., Cheshunt, Herts, beg to inform admirers of the Rose that their Collection will be in full bloom the end of June and beginning of July. A day may now be agreeably spent amongst the various collections of Plants and Trees at the Cheshunt Nurseries. Twenty Trains of the Eastern Counties Railway leave and return to London daily. The Cheshunt and Waltham Stations are equally convenient for reaching the Nurseries.

ROSES.

"SANGSTER'S FLORUMBRA," for the protection of choice Roses, when in bloom, from sun or rain, as well as for destroying the Green Fly, with the assistance of Brown's Fumigator, may be had wholesale of Messrs. BARBER and GROOM, London; and retail of most Seedsmen and Ironmongers in the Kingdom; and of W. and J. SANGSTER, at their Manufactory, 75, Cheapside. Price, as Shades only, from 4*s.* each, or complete, from 7*s.* 6*d.* according to size. List of prices sent on application.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, NURSERYMAN AND SEEDSMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office order, made payable here, at the under-named prices, basket or mat, and package included.

All the sorts of Early Cabbage, Savoy and Kale, including Brussels Sprouts, 4*s* 6*d.* per 1000; all the sorts of Autumn and Spring Broccoli, 5*s.* 6*d* per 1000; all the sorts of Celery, 5*s.* 6*d.* per 1000; Cauliflower, Early and Late, and Red Cabbage, 9*d.* per 100; Drumhead, or Cattle Cabbage, 3*s.* 6*d.* per 1000. 6*d.* per 1000 less, when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway. A Circular, containing the sorts of the above, may be had on application, by enclosing a penny stamp.

Seed of CATTELL'S Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz. as usual, and the latter ½ oz.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:—

| | | |
|---|---|---|
| 50 best new sorts | ... ... | 25*s.* |
| 25 ditto | ... ... | 15*s.* |
| 12 ditto | ... ... | 9*s.* |

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:—

| | |
|---|---|
| 9 fine varieties, sent out in 1849 | ... ... ... ... 5*s.* |
| 13 ditto raised by M. Lebois, and sent out for the first time last season | ... ... ... ... ... 12*s.* |
| 30 extra fine ditto, quite new, of this year, and selected by us when in bloom, 3*s.* 6*d.* each, 6 for 18*s.*, 15 for 37*s.* 6*d.*, or the set of 30 varieties | ... ... ... ... ... 60*s.* |

The above are perfect gems; engravings of the same may be seen at the Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemum for exhibition, &c., will be forwarded with all orders.—Royal Nursery, Great Yarmouth.

CHAPMAN'S SPRING KIDNEY POTATOES.—Messrs. C. and T. C. are now sending out sets of the above celebrated variety. Their produce are equal to the best forced Potatoes in appearance and flavour, and are in perfection from November until May, entirely superseding the use of glass; are abundant bearers, and are no more trouble than an ordinary crop. Directions for their culture will be forwarded with them, on receipt of a post-office order, payable at Brentford. Price 10*s.* 6*d.* per bushel, free to London.
Brentford End, Middlesex.

THE BEST EARLY TURNIP FOR FIELD CULTURE.
SUTTON'S EARLY SIX WEEKS.

A field of these Turnips, grown by Mr. E. W. Moore, Steward to Earl Radnor, on poor soil, at Coleshill, gained the 20*l.* prize at the Farringdon Agricultural Show in 1819.

JOHN SUTTON and SONS confidently recommend the above for first sowing, to feed off for Wheat.

*Also, for succession, the New Lincolnshire Red, and* SUTTON'S *Purple-topped Hybrid Yellow Turnip.*

The Lincolnshire Red Turnip (the stock of which was presented to Messrs. SUTTON, in 1849, by Philip Pusey, Esq., M.P.), should be fed off before Christmas; and SUTTON'S Purple-topped Yellow Hybrid, which is equal to a fine Yellow Swede, may be sown very late with certainty of success, and will keep till spring either in the field or housed.

Sold in quantities of not less than 10 lbs. weight, at the undermentioned prices, *carriage free*, to any station on the Great Western, South-Western, or South-Eastern Railways:—

| | Per lb. | per gallon. | per bush. |
|---|---|---|---|
| | *s. d.* | *s. d.* | £ *s.* |
| Early Six Weeks' Turnip | 0 10 | 5 0 | 1 16 |
| Sutton's Purple-topped Hybrid | 1 0 | 6 0 | 2 4 |
| Lincolnshire Red | 1 0 | 6 0 | 2 4 |
| Ashcroft Swede | 0 10 | 5 0 | 1 16 |
| Skirving's Liverpool do. | 0 9 | 4 6 | 1 10 |
| Best Dwarf Rape | 0 4 | 2 0 | 0 12 |

SUTTON and SONS, Seed Growers, Reading, Berks.
Agents for the sale of Rivers's Stubble Swede Seed.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz :—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d.* and 5*s.* packets, post paid, for prepayment.

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GRASS SEEDS, FOR PRESENT SOWING.
PERMANENT PASTURE GRASSES.

*Mixed expressly to suit the soil for which they are required, at the reduced prices of 22s. 6d. to 28s. per acre.*

We are almost daily receiving unsolicited the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from *publishing names* unnecessarily, we have much satisfaction in quoting the following :—

*From a Member of the Council of the Royal Agricultural Society.*

"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of Land to sow immediately, &c. &c., and shall be glad of your advice for the purpose."

*From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.*

"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

*Another Clergyman writes us*—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hyb id. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

*The above are similar to hundreds of others.*

N.B.—Instructions for sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

*Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.*

Reading, Berks, June 21.

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PINE PLANTS.—TO BE SOLD, by Private Treaty, about 50 three years old, 50 two years old, 50 one year old, of Black Jamaica, Enville, and Ripley Queen.—Apply to Mr. W. SLATER, gardener, the Larches, Ashton, near Preston, Lancashire.

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IMPROVED BUDDING INSTRUMENT.

W. FAULSTONE begs respectfully to inform the Gardening public, that he will forward by post, to any address, his much approved BUDDING INSTRUMENT (see p. 326, *Gardeners' Chronicle*) on receipt of a Post-office order, or postage stamps to the amount of 2*s.* 6*d.* In a neat morocco case, 3*s.* 8*d.*, postage free.—Address to WILLIAM FAULSTONE, 254, Best-street, Sheffield.

---

TANNED NETTING, for the protection of Fruit Trees, and for the security of fresh-sown Seed for birds, at unprecedented low prices, viz., 1*d.* per square yard, 200 yards for 14*s.*, 500 yards for 30*s.*, or 1000 yards for 50*s.*; bunting and scrim canvas for Wall Fruit, at THOMAS EDGINGTON AND CO.'S.

Marquees, Tents, and temporary Ball Rooms fitted up in a superb style, in town or country, on sale or hire. Rout Seats and Dancing Hollands for evening parties, on hire. Marquees and Tents for Emigrants; Flags, Banners, Tulip Covers, Sunblind, and improved Waggon and Rick Cloths. Tarpaulings for houses under repair on sale or hire at THOMAS EDGINGTON and Co.'s Warehouse, 17, Smithfield Bars, City; and Manufactory, nearly opposite the Bricklayers' Arms Station, Old Kent Road. Orders per post punctually attended to.

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SHADING CANVAS, 4*d.* per Square Yard. To be had in any quantity from WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London.

Also BEDDING and HERBACEOUS PLANTS of every description.

FLOWER SEEDS for present sowing, in packages of 12 varieties, for 2*s.* 6*d.*; or 25 varieties, 5*s.*

Labels, Garden Knives, Flower-gatherers, Thermometers, and every other article useful in gardening, his prices for which are excessively moderate.

Address, 156, Cheapside, London.

N.B. Agent for the Registered Rose Girdle.

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PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

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ONE HUNDRED PER CENT. CHEAPER THAN AT ANY OTHER MANUFACTORY.

FRUIT TREES.—New Twine Netting for protecting Fruit Trees, Flower and Seed Beds, from Blight and Birds, can be had any width, length, or quantity, at the same price usually charged for Tanned Net, and Tanned Net at its real value. New Netting, 1 inch Mesh, 2 yards wide, 3*d.* per yard; ½ inch Mesh, 2 yards wide 4*d.*; Tanned Net, 2 or 3 yards wide, 1½*d.*; 4 or 6 yards wide, 3*d.* Strong Tarred Cord Sheep Folding Net, 4 feet wide, 4*d.*; 4 feet and a half wide, 6*d.* Extra stout. Delivered free to any part of London, from W. CULLINGFORD'S, 1, STRATHMORE-TERRACE, SHADWELL, LONDON.—Ten per cent. discount upon 10*l.* orders.

CAUTION.—Parties are advertising Tanned Net, 2 yards wide, at 3*d.* per yard, without stating it is Old Net.

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GLASS. GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | *s. d.* | *s. d.* | *s. d.* |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s.* *per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

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HORTICULTURAL TOOL WAREHOUSE.

GREEN AND CONSTABLE, WHOLESALE and RETAIL IRONMONGERS, 36, King William-street (four doors from London Bridge), beg to inform Amateurs and Gardeners they have a large assortment of new and improved Garden Tools, including Lyndon's Patent Spades, Lord Vernon's Patent Hoes, jointed Hothouse Syringes, Galvanised Iron Garden Engines, Transplanting Tools, Patent Water-pots, Brown's Patent Fumigator, Improved Garden Labels and Sticks; also a large assortment of Saynor's Pruning and Budding Knives.

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DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

---

BELGIAN WHITE GLASS.—Glass of superior colour, so essential for Horticultural purposes, averaging 14 to 16 oz., can be had at HICKSON'S, 46, Long Acre, near James-st., Covent Garden; any size to 44 inches long, at 2*d.* to 2½*d.* per foot; small sizes less price. Plans and Estimates for Greenhouses, &c., complete, forwarded on application. Terms cash.

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GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

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GLASS WATER PIPES.

MESSRS. COATHUPE AND Co., GLASS MANUFACTURERS, of Bristol, and Nailsea, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing great pressures, in lengths from 3 to 7 feet, the lengths being less at the diameter of the brief increase. These Pipes may be seen at the Exhibition (Section 24, Class 47, with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

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GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14*s.* each.

16*s.* per box :

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 ,, 5½ ,, 7 ,, 5 | 6½ ,, 6½ ,, 7½ ,, 6½ |
| 6 ,, 6 ,, 7½ ,, 5 | |

18*s.* 6*d.* per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 ,, 8 ,, 11 ,, 9 | 10 ,, 8 ,, 13 ,, 9 |
| 9 ,, 8 ,, 12 ,, 8 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

| | | |
|---|---|---|
| 4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches. | | |
| 4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3 | | |
| 4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½ | | |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

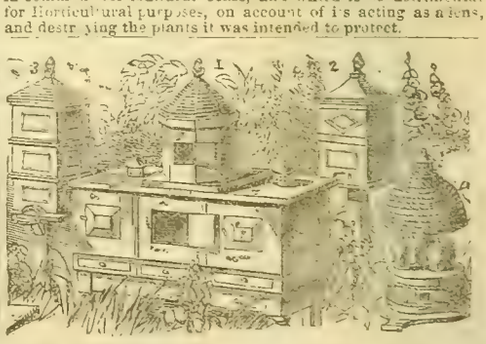
For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

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SHEET GLASS.

A. ADAMSON, 20, Davies-street, Berkeley-square (from C. Jarvis, Castle-street, Oxford-street), begs to acquaint gentlemen and gardeners that he has a superior stout Sheet Glass, in sizes from 12 by 10 to 40 by 30, at 3*d.* per foot, almost free from those defects of the surface generally found in common Horticultural Glass, and which is so detrimental for Horticultural purposes, on account of its acting as a lens, and destroying the plants it was intended to protect.



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BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

AGENTS. — Liverpool: Wm. Drury, Castle-street. Manchester: Hall and Wilson, 50, King-street. Glasgow: Austin and M'Aslin, 168, Trongate.

CHOICE CINERARIA SEED.

LUCOMBE, PINCE, AND Co, have saved from a Select Collection of all the Newest and Finest Varieties of 1851, which they have this season grown in great perfection, some Cineraria Seed, of excellent quality; and they beg leave to offer it for sale, in Packets, sealed and warranted by them, at 2s. 6d. each, free by post. If sown soon, strong plants will be produced, which will flower in 1852.

Exeter Nursery, June 21st.

MESSRS. VEITCH AND SON beg to call attention to the three following rare and beautiful Plants, for description of which see Advertisements in *Gardeners' Chronicle* of Saturday, June 7, viz.—

| | £ | s. | d. |
|---|---|---|---|
| CANTUA DEPENDENS ... ... | 1 | 1 | 0 |
| BERBERIS DARWINII ... ... | 1 | 1 | 0 |
| MEDINILLA MAGNIFICA ... ... | 3 | 3 | 0 |

Good established plants now ready for sending out at the above prices. The usual discount to the Trade.

*** The Cantua is the plant that has attracted such general admiration at the recent Exhibitions at Chiswick and the Regent's-park, and has received Three First Class Medals as a New Plant.—Exeter, June 21.

EDWARD GEORGE HENDERSON is now prepared to forward by post his new CINERARIA SEED from his best named varieties of dwarf and good formed flowers, at 2s. 6d. each packet. Postage stamps can be sent by unknown correspondents.

E. G. H. will also forward his new priced descriptive Catalogue of Plants post free on application.

Wellington-road Nursery, St. John's Wood, London.

FERNS AND ORCHIDS.

WILLIAM MASTERS has a Stove 40 feet square, filled with a rare collection of FERNS, some adapted for Wardian cases, and others for ornamenting Tanks, &c.

Also, a large collection of Orchids, some growing in pots, others on blocks, and in rustic baskets. Where the selection is left to W. M., they can be can be supplied good and cheap.

Orders are respectfully solicited.

Exotic Nursery, Canterbury.

DALSTON NURSERY, MIDDLESEX.

WILLIAM HARRINGTON, successor to the late Mr. JOHN SMITH, begs to inform the Nobility, Gentry, and the Trade, that he has taken the above Premises, and hopes by attention and assiduity to be favoured with the same liberal patronage as his predecessor.—June 21.

SELECTED CINERARIA SEED, saved from one of the choicest and finest varieties in cultivation, this being the proper time for sowing (which any amateur may cultivate with little trouble and sure success), to insure good strong plants that will bloom well the forthcoming season.

Packets of the above can be forwarded to any part, on receipt of 18 penny postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

NEW HARDY JAPAN PLANT.

DEUTZIA GRACILIS (TRUE.)

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, having a good stock of the above beautiful and distinct DEUTZIA, will send it out on the 1st of August.

| | | | |
|---|---|---|---|
| Extra strong well established plants ... | £1 | 0 | 0 |
| Smaller do. do. ... ... ... | 0 | 12 | 6 |
| Grafted, 4 to 5 feet high ... ... ... ... | 2 | 0 | 0 |

J. B.'s Deutzia gracilis will never grow higher than 2 feet. Messrs. Hugh Low and Co., of Clapton, have seen it in bloom, and have ordered 40 plants of it.

This plant may be had in bloom six months in the year.

J. B. has received the following prizes for this plant. 1850, Ghent first prize; 1851, Chiswick, May the 3d, prize of excellence; Regent's Park, May 14th, first prize. Bruxelles first prize, Antwerp first prize, Mechlin first prize, Louvain first prize, Mentz first prize, Erfurt first prize, Paris first prize.

One over to the Trade on three. No discount if less than three plants are ordered. Free to London.

Deutzia crenata vera, new (D. gracilis of some), 1s.

EXHIBITION OF MELONS.—A Present of ONE POUND will be given to the Exhibitor of the best flavoured BROMHAM HALL MELON, at the Chiswick Exhibition, in July next, by EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Churchyard, Bath.

**The Gardeners' Chronicle.**

*SATURDAY, JUNE* 21, 1851.

MEETINGS FOR THE ENSUING WEEK.

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| TUESDAY, | June 24 | Medical and Chirurgical ..... | 8½ P.M. |
| | | Zoological ..... | 9 P.M. |
| | | London Floricultural..... | 1 P.M. |
| | | Royal South London ..... | 1 P.M. |
| WEDNESDAY, | — 25 | Royal Botanic ..... | 3½ P.M. |
| | | Geological ..... | 8½ P.M. |
| THURSDAY, | — 26 | National Floricultural ..... | 3 P.M. |
| | | Royal Soc. of Literature ..... | 4 P.M. |
| FRIDAY, | — 27 | Philological ..... | 8 P.M. |

COUNTRY SHOWS.—Tuesday, June 24: Handsworth and Lozells Horticultural.—Wednesday, June 25, and Thursday, June 26: Newcastle-on-Tyne Botanical and Horticultural.—Thursday, June 26: Maidstone Horticultural, and Liverpool Horticultural.—Friday, June 27: Tunbridge Wells Horticultural.

WE are among those who read "DICKENS' Household Words" with instruction and delight, and who look forward to every coming Saturday bringing us some new subject, discussed in the best spirit. No wonder, then, we should be eager to correct an error which he has fallen into, with regard to Horticultural matters; for the time presses, the green Pea season is at hand, and many of his readers who respect the "Household Words" as we do (and their name is legion), will be led into error, and the authority of the author impugned. Speaking of cheap pleasures (May 24), he wisely and honestly enumerates those of the table, and descants on the cheap luxuries of the poor and middling classes, enumerating various dishes of vegetables which he had eaten in Germany, and in which he could scarcely recognise the miserable ill-dressed watery dishes of garden stuff, which are met with at English tables.

Speaking of the pleasures of the table as one of the important matters of life, when moderately indulged in (and here Dr. JOHNSON agreed with him), he observes, "that in the present constitution of our code of cookery, eating is the most expensive of our amusements. This arises mainly from our neglect of vegetables. About the middle of last summer, at Kreuznach, we partook of a certain dish at the table d'hôte: it was delicious; some titled English travellers were present, who seemed equally charmed. Curiosity was awakened. What could it be? The German gentleman in waiting, napkin in hand, was despatched on a special mission to the *Chef de Cuisine*, to know what we had been eating; after remaining some five minutes in suspense, the receipt was revealed. It was a dish of *Pea-shells*, stewed in butter, with a sprinkling of savoury herbs. Pea shells are the ordinary diet of pigs on this side of the channel; but in Germany a little skill, a little butter, and a little herb removes them from the sty to the best dinner tables. 'The capacities of vegetables are mournfully misunderstood, Sir, in England!' said a plethoric old gentleman next to us, who had already been fed by our cookery within a beef steak or two of apoplexy. 'Look at me, Sir! You never see a foreigner in such a state as I am; but what with light wines, and this kind of thing (swallowing a mouthful of Pea-shells), I hope to get better.'"

Now we quite agree with the writer, that nothing can be more dreary and more circumscribed than our cooking of vegetables; but if Mr. DICKENS sets his readers to cook up with any herb, or any quantity of butter, the shells of our ordinary Peas, they will be unsuccessful; and the mockery of Mr. DICKENS' vegetarian cookery will become a *household word* with our ordinary cooks. Surely, Mr. DICKENS must have overlooked the absence in the German dish of the hard, indigestible skin which lines all the Pea-shells to which he was accustomed in England, and therefore he and his readers should be warned that no success will attend the concoction of the mess he recommends, let the PHILLIS be as neat-handed as she may, unless he first procures that variety of the Pea called *Pois sans Parchemin*.

Once or twice our excellent correspondent "Dodman" has attempted to call the attention of our readers to the importance of the good and varied cookery of vegetables, and now and then there have appeared in our columns a few valuable receipts; but this matter has not been taken up systematically. We must not talk now of Synods, even though they be of cooks; but why does not such a man as M. SOYER set up as Professor of Cookery, and give clinical lectures, and confer degrees in this art as well as the London University confers degrees in other arts. What a comfort to the young and tremulous housekeeper it would be, with a cross husband coming home to dinner, and comparing everything at his own table with what he was used to "at his club" in his bachelor days! Why, if a lady could go and taste the dishes executed under SOYER, and be named a senior optima even in frying, or a wrangler in omelettes, it is very possible she might, more than could be hoped for, smooth down the ruffled temper of her husband, and win golden opinions of her guests as regards the excellence and the economy of her table.

There is some lady (Mrs. ELLIS we believe), who has her young ladies taught such household duties as superintending cooking, pickling, preserving, scouring, and marketing. Let us hope she attends most especially to vegetarian cookery; and that the rising generation of husbands may hope to see even Pea-shells (without the parchment) well dressed at their tables.

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THOSE who have LARCH PLANTATIONS should look at them just now. If the trees are thriving, green at the top, and well furnished with leaves, all may be well. But if the upper branches are bare or naked, or if the leaves there are yellowish, it will be probably found that the trunk is attacked with the "heart-rot;" and in dealing with this disease no time is to be lost. Should the disease have made much progress the trees are not likely to recover, and it will be better to remove them. If the symptoms are slight, it may still be possible to arrest the evil, by removing the cause of the mischief. What is that cause?

Many years ago we expressed an opinion that heart-rot is owing to the presence of too much water about the roots (July 15, 1843, page 488), a view in which our correspondents could not concur, because the disease is prevalent in dry sandy heaths (page 542 of the same volume), and concerning which other opinions have been subsequently expressed. For ourselves we adhere to our original conclusion, which was derived from the consideration of many cases that were then within our knowledge. We knew that the disease was most common on low stiff clay lands, where Larch grows for a few years with great luxuriance; that it is also frequent in mossy springy places, even on hill sides, if means are not taken to carry the water continually away; and that on hills it is chiefly near the bottom, where water collects, that the trees suffer most. As to dry sandy heaths often producing the disease, that is by no means irreconcileable with the view we originally expressed, because such places may be a mere layer of sand spread over a hard pan keeping down water, but through which the roots of trees can penetrate; or those places may be basins filled with water at the time when trees are making growth, although they become dry afterwards.

Many recent communications, which unfortunately show that the disease is becoming more and more common, render it desirable that the question should be again discussed; and that our opinion, if unfounded, should be shown to be so. In the meanwhile, setting aside speculation as to the cause of Larch rot, we may state what is certain upon the subject. It is certain that it begins in the heartwood, near the root; and that it spreads outwards, layer after layer crumbling like saw-dust. It is certain that among the crumbling mass is to be found in abundance a mouldy appearance, which is the spawn of some fungus. It is certain that when the rot has reached the alburnum a thick leathery white formation appears between the bark and wood, which formation is identical with the appearances connected with dry rot. We have not ourselves observed fungi proceeding from the leathery matter in question; but there is no room to doubt that they do proceed from it. Therefore it is certain that the Larch rot is a kind of dry rot.

But what causes this dry rot? It is by no means proved that fungi are the first cause of dry rot; on the contrary, it seems to be tolerably well ascertained that they merely appear in timber, because circumstances exist favourable to its decay; and that they, in the first instance, attack decaying timber, because it offers a suitable soil in which they may root. It is, however, admitted, that having once attacked timber, they spread with dangerous rapidity. Thus, a deal board placed on end, where air circulates freely all round it, was never known to suffer from dry rot; but introduce it into a floor on sleepers over heavy clay soil, making no provision for the rapid circulation of air beneath it, and in a few years the whole of the underside is overrun with dry rot. That is to say, place it where its surface begins to decay in consequence of the dampness to which it is exposed, and the dry rot fungi immediately seize upon it, and establish themselves among the rotting wood. Is it not probable, that in the case of the Larch the wood receives from heavy damp or spongy land more water than the leaves can carry off? that this water then collects among the tissue and brings on decay; and that this decay is immediately succeeded by a crop of fungus-spawn, which spreads rapidly round the centre where it first appeared, as fungus-spawn always does? To us this seems a satisfactory solution of the problem.

If this be so, the remedy for Larch rot is thorough drainage. To remove superfluous moisture is to do away with the cause which first induces decay, and prepares the wood for the inroads of fungi; and it is this proceeding that we must recommend to all who are suffering from what seems to be becoming a rural calamity. Perhaps our advice will be received with more favour if we support it with that of Mr. JAMES BROWN, of Arniston, the second edition,* of whose book on Foresting is the best work of the kind in our language.

"The Larch is a native of the south of Europe, and also of Siberia. It inhabits the slopes of mountainous districts, in the lower parts of which it attains its largest dimensions. In its native mountains, the Larch is never found prospering in any situation where water can lodge in the ground in a stagnant state; nor is it ever found of large dimensions in any extensive level piece of country having a damp retentive bottom or subsoil. On the other hand, the Larch in its native localities is found luxuriating upon a soil formed from the natural decomposition of rocks; for there the surface soil rests upon a half-decomposed stony subsoil, through which all moisture passes freely in its descent from the higher grounds. In this state of things, the roots of the trees always receive a regular supply of fresh and pure moisture, and, at the same time, the ground in which the trees grow is kept in a cleansed and sweet state, not having any stagnated gas or water lodging in it; and this forms, in my opinion, the perfection of soil for the cultivation of the Larch."

"Now, until on inquiry I was made aware of these circumstances relative to the Larch, as found in its native localities, I never could satisfy myself as to the cause of the disease which has appeared among the Larch plantations in Scotland; but since I have been made aware of the above circumstances, and have compared them with examples of healthy and unhealthy plantations on several estates where I have had the opportunity of examining for myself, I am now perfectly convinced as to the cause of the disease in question; and I am further convinced that any man who will compare the state of the ground upon which a healthy plantation

* "The Forester; a practical Treatise on the Planting, Rearing, and general Management of Forest Trees, with an Improved Process for Transplantation of Trees of large size." By JAMES BROWN, Forester, Arniston. Second edition, enlarged. WILLIAM BLACKWOOD and SONS, Edinburgh and London. 1851.

of Larch is found in Scotland (that is to say, one which has arrived at a considerable age, and is in a sound state), with what I have stated relative to the healthy state of trees of the same species as found in their native regions, will at once see the same circumstances acting in each case. Thus, in all cases of healthy Larch plantations in this country, where the timber has attained large size, and is sound in quality, we find them growing upon a soil through which the water that may fall upon it can pass away freely; as, for instance, upon the slopes of hills, and even in hollows, upon a strong clay soil, but where there is a proper drainage for the ready and free passage of the superfluous water; and I have even cut down Larch timber, of large size and sound in quality, growing upon a light sandy moss, 2 feet deep, which rested upon a stiff clay. In this case the moss was drained, and the water passed freely through the light soil; and the situation being upon a slope, there was a continual circulation of moisture passing along upon the top of the subsoil or clay."

"In a plantation on a level piece of ground, upon the estate of Arniston, I had occasion to cut down some Larches in the way of thinning. The plantation is about 40 years old, and consists of a mixture of Larch and Scots Firs. I found those which were cut in the central parts of this plantation, without exception, rotten in the heart, which was exactly what I anticipated, for the soil had never been drained; while some, which were cut upon one side of the plantation that formed a sloping sandy bank, were found every tree sound, and of excellent quality of timber; and, at the same time, every tree in this position was at least three times as large as those planted in the interior level parts of the plantation, although all were of the same age. Now, the cause of the superiority of the trees which grew upon the sloping bank may at once be seen, from what I have already said upon the point. Again, another side of this plantation was bounded by a deep ditch, forming a fence upon the edge of a field; and all along this ditch, upon the side of the wood, Larch trees of excellent size and quality were growing. Nothing can be more convincing than this, that, in order to grow Larch timber of sound and good quality upon land which formerly grew diseased trees, all that is required is to drain it, when success will be the result."

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THE Fellows of the Horticultural Society will be glad to know that, by a recent resolution of the Council, it has been determined that the power of a Fellow to transfer his or her privileged *entrée* at half-past 12 on the days of Exhibition to a wife or sister has been extended to a brother, son, or daughter resident in the family. In this, however, as in the former case, the person to whom the privilege is transferred must be provided with an admission ticket signed by the Fellow.

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## BALSAMS AND COCKSCOMBS FROM CUTTINGS.

THERE is certainly no great difficulty in raising and growing up to maturity both these beautiful subjects, if we procure good seed of the best kinds; because plenty of heat, good compost, and repeated shifts, with the precaution of always growing them close to the glass, will bring them to perfection. But how often do we find that plants are not naturally dwarf? that they will run away faster than we wish? and that the most beautiful flowers are occasionally upon plants which are not of the best habit? On such occasions it is well to practise the plan of lopping off their heads, and striking them; because we are enabled to make our choice when their flowers are partly developed. I have this season been purchasing the best seed I could procure, with the intention of shining, if possible, in Balsams; but having from various persons obtained nearly 40 different packets, all alleged to be "the best in England," and greatly varied in description, I devoted a large seed pan to each kind, and pricked out three of each, which gave me a goodly number; and having the others in the pans, with the view of planting them out in the borders if I should use them at all. One party had advertised six varieties for 2*s.* 6*d.* in sealed packets, and a separate packet of straw-coloured Balsam, also sealed up. Perhaps I took more pains with these than others, for I picked them all out. When I saw by repotting three of every sort, and growing them up to early bloom, that several of the varieties were worth growing, I naturally turned to the store pans to grow them all, but they had grown a foot high, and were as thick, and I may almost say as thin, as Mustard and Cress. As plants, they are totally useless. Unwilling to lose them, I took off all the tops, cut them up to a joint, and used the ordinary means of striking them. I rooted nearly the whole of the choice sorts in bottom-heat, first picking off all the buds that I could get hold of, and soon found myself in possession of a quantity of dwarf plants, not 3 inches high, potted into 4-inch pots, and promising to be handsome. These have progressed to my entire satisfaction, and I can safely say, that nothing strikes more freely. I was moved to this practice by the result of an attempt last year to obtain a succession of Balsams when the plants had become ugly, for I then picked off the upper buds, took off the tops, about 3 inches long, and (somewhat carelessly, I admit, for I was busy) put them under bell-glasses, with the best bottom-heat I had; the result was, that about one out of three rooted, and I had some fine dwarf plants, long after the others had seeded and died. I feel convinced, that had my bottom heat been sharper, they would all have rooted. However, my experiment this year has so completely answered, that I am very likely to repeat the experiment. With regard to Cockscombs, I have long practised the decapitation system. I allow them, after pricking out five or six round the edge of a 4-inch pot, to grow till they show their bloom, and I then take off the tops of the most promising, so as to have only six leaves above the soil, put them at once singly into 3-inch pots, plunge them all in the tan of a hothouse and shade them for a week; I then place them as near the glass as I can, keep them well watered, and shift as soon as they reach the side with their roots; the leaves and flowers grow as freely as in seedlings, but when I give them their first shift, I transfer them to a hotbed, made up on purpose, keeping them always as near the glass as possible; the leaves are of course close down to the pot, grow as large as ever I saw them on seedling plants, while the flower increases to a monstrous size, incredibly large for such dwarf plants. The only condition required is to let there be 2 inches of stripped stem below the six leaves we mean to form the plant, and let an inch and a half of this be put into the soil. They do not require covering with a glass, but there should be a genial heat in the tan; or if they are struck in a hot-bed, let the pots be plunged until they have struck root, or for one week at least, then they may be placed on the level surface.

I need not point out the advantage of this treatment; when we happen to have bad seed, yielding a straggling sort (or, as I have had this year, a batch, not two of which come alike), it enables one to select a few of the best in a forward state, and to grow a few tolerable plants, when by the ordinary means there would be a total failure. While upon the subject of Balsams and Cockscombs, I wish to remark that the notion which has long prevailed, that Balsam seed should be old to become double, or that old Balsam seed is better than new, is altogether erroneous. I have Balsams whose individual flowers are as double as a Camellia or a Rose, and these from a crop of seed saved by myself in September last; and I would also remark that they are very nearly true to the varieties they were saved from. My Cockscomb seed was purchased at a London seed shop, and I know nothing of its origin; but the plants, except those four cuttings, are all heights and colours, from yellow to crimson, and the foliage of scarcely two is alike. *Y.*

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## FOREIGN GARDEN GLEANINGS.

(ST. PETERSBURGH.)

AMATEUR GARDENS: COUNT NESSELRODE'S. — The honour of giving the first impulse to horticulture in Russia is due to Catherine II. Since her time, gardening has become more and more fashionable, so that very fine private gardens are to be met with out of the royal domains. Of these, that of Count Nesselrode stands in the first rank, and is remarkable for its numerous collections of plants of every climate. Of Camellias, especially, there are very numerous and rare species of surpassing beauty; they form in one (a large house), a sort of hedge, which when in full flower, is extremely magnificent. There are many tropical plants well worthy of notice. The garden is by no means large, but laid out in the English style, with great skill and taste. Few effects are more pleasing than that produced by the trees, shrubs, and bushes, grouped with reference to their size, and the contrast produced by their foliage, and the size and colour of their flowers. We were much struck with masses of Japan Lily covered with flowers, and surrounded by belts of Chinese Pæonies. We saw, too, Datura arborea in the midst of beautiful Scitamineous plants, enormous plants of Erythrina Crista-galli, contrasted with all the blue-flowered Salvias, fine specimens of Fuchsia corymbosa, fulgens, &c.; the whole being set off by beautiful turf, itself dotted here and there with little flowers of various forms and tints.

PRINCE COCHOUBET'S GARDEN.—This enjoys a great reputation amongst the lovers of horticulture. The houses are large and numerous, and filled, for the most part, with Leguminous plants; there are Acacias, Cytisus, Genista, the double-flowered Ulex, Anthyllis, and Sophora. These trees, the greater part of which in France are grown in the open air, are kept in houses in Russia, and are used for decorating the interior of the mansions. We noticed the Clethra arborea more than 8 yards in height, and varying in price from 24*l.* to 32*l.* a piece. As in all the gardens of Russia, Camellias in espalier are abundant; there was one of these plants which certainly surpassed anything we had previously seen; it was 6 yards high, and separated the house in which it was into two compartments. There were a large number of Rhododendron arboreum from 5 to 8 yards in height; a hothouse full of Musads attracted our especial attention. The red gravel walks contrast curiously with the adjacent green sward.

PRIVATE GARDENS: PRINCE WIASINSKI'S. — This nobleman, who is a great amateur, admits into his garden nothing but the rarest and most beautiful plants; it was here that we found the younger brother of the Araucaria excelsa of our own winter garden, bought by the Prince himself for 280*l.* He possesses an Orange tree almost as large as the connétable of Versailles; some specimens of Laurus nobilis with heads 3 or 4 yards in diameter, to be found nowhere except in Russia; and a very fine collection of rare Conifers, of which he is extremely fond. Amongst them are a beautiful Pinus longifolia, 6 or 7 yards in height; some fine specimens of Podocarpus, Dacrydium, Dammara, Aralia trifoliata, elegans, and crassifolia of enormous size. His houses contain many rare Orchids as yet unnamed. But the finest plant in this magnificent collection is undoubtedly a Luculia gratissima, which occupies a small house and is 6 feet high, and as many broad, and yields annually two or three score of beautiful bouquets of flowers. The Palm house has one immense slanting side, its interior produces a fine effect, the ground being broken and crossed by walks, winding amongst Palms and other rare plants. On the hills, slopes, and low ground, are a crowd of tropical plants in the open soil; the whole surface is covered with Moss and elegant Ferns; but we were most struck with a Littæa geminiflora surmounted by a spike of flowers, 5 or 6 yards high, and situate on the top of a rock, shaped like a kiosc.

PRINCE GAGARIN'S.—The garden of Prince Gagarin, inspector of the Imperial Gardens, although small in size, contains several genera of plants raised by the plan adopted by Parisian horticulturists, but very little known in Russia. Independently of this, they with difficulty give to their plants that elegance which is so remarkable in those trained by our own gardeners. Amongst the plants cultivated by this prince, we may mention the Indian Azalea, Pelargoniums, Rose trees which strike from cuttings, and which are found in great quantity in his houses. We were much struck with a one-year's shoot of a bud of an India-rubber tree, which was no less than 5 feet in length. This nobleman assured us that this tree accommodated itself with great ease to the temperature of dwelling-houses, and we saw many of them in his apartments. Dahlias are not to be found in much variety in Russia, but their flowers are kept as long as in France, and at a less advanced season of the year. They are taken up two months before our own, separated and planted in pots under sashes in December; and in June, when they are planted, they are in full flower. In this garden we saw a curious seed-bed of Pines from the Caucasus. *Masson's Report.*

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## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 18.)

No. XXXIV.—Another needful caution, at this season, with respect to nightingales, is,—never to let them hang up in the vicinity of fresh paint. Some years since, my house was undergoing repair; and amongst other workmen, the painters were actively employed. In a thoughtless moment, I suffered my birds to remain out as usual; but I was signally punished for my folly. The white-lead had acted fatally in one short day, upon the lungs of two very choice songsters. On the following morning they were dead! This was dearly-bought experience; for my heart was chained to these most affectionate little creatures. Nor was their's less so to me.

Few persons can be aware of the delicacy of lungs peculiar to the summer warblers; and large numbers of them perish from the ignorance prevailing on this matter. Thus, these tender little fellows are often domiciled in the winter, in a hot, close apartment; with a raging fire, and sudden draughts, alternating: or, in summer, they are hung in a closely-confined bed-chamber, ready for being put outside the window the first thing in the morning. In this latter case, the carbon evolved by the sleepers in the apartment very often materially injures the bird, whose health can never afterwards be restored. Let it ever be remembered, that birds and plants want as much attention as ourselves paid them, in the matters of air, heat, and cold, or they cannot thrive. It is against nature that it should be otherwise.

As the season for nestlings is now at hand, I would call attention to the fact of these birds being, when young, very tender; they must, therefore, be kept in the nest, covered over lightly with a piece of flannel, until they show signs of increasing strength. They should then be put in a long, covered cage, the bottom being thickly strewed with very fine red sand, quite dry and sweet. Place them in a sunny spot; and be sure, when you feed them, that the food is fresh and wholesome. They will soon learn to perch; and the males will "record" their song before they are six weeks old. Their early notes are sweetly musical.

We have, as yet, spoken only of the melodious voice of this bird; but truth compels me to say that, sometimes, the sounds they utter are harsh, discordant, and incongruous. To create an ugly word, to express their still more ugly vocabulary, I should say they "squawk." This, however, is after their song is over, and principally in the autumn. The whole habits of these birds then appear to undergo a change. They seem thoughtful, heavy, and happy, by turns; and their heart is most assuredly anywhere but in a cage. If any bird may be said to "think," it is the nightingale. When caged, and provided you are kind to him, he begins to grow cheerful about Christmas, whose festivities he often ushers in with a merry song. Philomel loves to chant,—

"When the Christmas log is burning."

The cause of the nightingale singing so mellifluously, is his having so large a larynx. His intonation is as powerful as it is perfect. All his notes are harmonious and effective. If by your mode of treatment, you can make a "friend" of a fresh-caught, newly-arrived bird, he will devote himself to you, body and soul. I envy you *such* a friend! Such I have had; such, alas, I have no longer! No value could be put upon the birds I am speaking of; they are inestimable.

There are very many persons who are fond of birds, and yet, perhaps, not like myself and a few others—"enthusiasts." To such I would say, care nothing about the fresh arrivals in April, but purchase either branchers or nestlings, in August, of the dealers. Being imitative birds, they will copy *anything*; and with such a powerful

compass of voice as falls to their share, they can, as I have before hinted, sing nothing *badly*.

I once entered a shop to inquire for some young redstarts. Whilst chatting to the dealer, I observed a very ragged-looking nightingale at the end of the shelf, and carelessly asked—what might be his age? The man at once gave me his history. It appeared his master (a brute!) was tired of him, and had brought him to town to be sold. The man candidly told me he was a "nestling," in his second year, and he knew nothing particular about him. His old master wanted 10*s.* for him. There was something about this bird's eye, something in his bearing, that won my heart over at once. I bought him at his estimated value, intuitively feeling I was "all right," and that I had won a prize.

Never had I shown more judgment. This very bird, despised of his old master, became my most intimate friend and companion. He sang all the notes of a nightingale, a thrush, a blackbird, and a sky-lark. He was "everything by turns, and nothing long." His song was perpetual when I was at home. When absent, he would sing to his mistress in a kind of interrogative strain; throwing himself into the most grotesque attitudes, and listening, *arrectis auribus*, to every arrival at the door. To say that this bird recognised my step, and knew my voice, is nothing—when compared to his *affection* for me. He not only sang out, at the top of his voice, the moment I entered the door, however late the hour of my arrival, but I was obliged to open the door of his cage, and let him out *to sit on my finger*. There alone would he rest contented, and sing in that same position so long as a lighted candle remained in the room. I then kissed him—I am not ashamed to say so—and my own hand conducted him to his apartment. This bird was murdered—by Quassia. I enjoyed his society three years only.

It must, however, be understood, that although these branchers and nestlings will sing *anything* "well," it is highly desirable never to hang them up with any but *good* birds. Those I have mentioned are quite unobjectionable; as are also the tit-lark, wood-lark, robin, and canary. Keep them quite out of the way of parrots and macaws; and all such shrieking animals. If they hear these, and *imitate* them, it will be a kindness to at once shorten their days—and so add to your own at the same time. There can be no mistake about this.

There certainly is one advantage in keeping nestlings and branchers, which those who are not enthusiasts will highly prize. These birds do *not*, as I have already shown, actually require to be fed on raw meat and egg. They will live on German paste and sweet bun, if accustomed to it when they are two months old. A mealworm every now and then, when they droop; an earwig, a wood-louse, some ants' eggs, or a spider—will keep them in excellent trim.

As for tameness,—no bird is more alive to kindness than the nightingale. If only you show towards him one tithe of the affection that is so frequently lavished on the ugliest of our ugly half-shorn French poodles—who never by any chance value it,—you will find him the best of companions — the very firmest of friends. *William Kidd, New-road, Hammersmith.**

## GARDENERS' BENEVOLENT INSTITUTION.

We understand that a donation of 50*l.* has been made to this Institution by the Queen and H. R. H. Prince Albert, and that her Majesty has graciously condescended to become Patroness of the Institution.

The following speech, in reply to Mr. Chadwick's toast, "Market Gardeners and Horticulturists," was inadvertently omitted in our report of the anniversary meeting last week:

Mr. Spencer returned thanks for the honour which had been conferred on the horticulturists. The gentleman who had proposed the toast (Mr. Chadwick) had dilated on the advantages which the agriculturists had derived from the exertions of the horticulturists. I (said Mr. Spencer) agree with him, and I believe if the agriculturists would take more from us—if they would adapt themselves still more to our practice—they need have no fear whether they have protective duties or not. (Hear, hear.) No one can deny that the horticulturists have taken immense strides of late years—no one can deny that the art and science of horticulture has progressed to an extraordinary extent. (Hear, hear.) I claim for it no pre-eminence; but I say, however great the advance which may have been made by other arts, our art has advanced to an equal extent. (Cheers.) We have an immense advantage in the name of our Chairman; and his presence amongst us to-night as one of us is sufficient, I think, to show that we have ability, energy, and perseverance enough to undertake and achieve any object within the limits of our art, and even beyond them. (Hear, hear.) What gardener ever entered the Glass Palace in Hyde-park without feeling proud of his art, when he reflected that that grand idea emanated from one of his own profession—(applause)—that it was a gardener that had the genius and the boldness to conceive a plan in every way so admirably adapted for its purpose, while it sets all the ordinary rules of architecture at defiance. (Cheers.) But, gentlemen, I am sure you will agree with me when I say that that building, great as it is as a work of art, is in another aspect an object of far higher importance—I would look for a moment at the future, not at the past, and in that view I regard the Great Exhibition as a pledge held out by this country of good fellowship to all mankind. (Loud cheers.) And however much we may admire what has been done by the talent of Mr. Paxton, and by the exertions of others in designing and carrying out the work—if it fail in accomplishing that great good we anticipate from it, the promotion of good will and fellowship among men—better were it, I say, that the glass and the iron remained in the ground. (Cheers.) I trust no foreigner will come to our shores to examine the innumerable productions collected together in that building from all parts of the world, but will return to his own country convinced that we are not the churlish barbarians we have been supposed to be, but that we have hearts open to receive our fellowmen with kindness and hospitality, and that we possess ideas which we are ready to communicate for their advantage. (Cheers.) So far as regards horticulture, we all know the beneficial effect it has on the human mind. In my earlier days I remember the attractions which the ale-house had for a large proportion of the community, but now, thanks to the improved state of horticulture, and the taste which has in consequence grown up for it, almost every labourer and every tradesman in the country devotes his leisure to the garden, in which he finds a relaxation which ennobles his mind and enlightens his understanding. (Hear, hear.) Mr. Spencer concluded by observing that the love and fellowship they were that day exhibiting to the indigent and the helpless would be permanent in its results, and by again thanking the company on the part of the horticulturists.

## ORCHIDS FOR THE MILLION.—No. V.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

Treatment of Plants in Flower, and the best Mode of Protracting their Bloom. — There are many Orchids that will succeed, when in flower, in a much cooler house than that in which they are grown, or even in a warm sitting-room. In the following remarks I shall endeavour to point out the advantage of keeping them during their period of flowering in a cool and dry atmosphere rather than, as is frequently the case, in a hot and moist house; in the latter, the flowers do not last nearly so long as they do when moved to a cooler house or a warm room. Perhaps there are not many cultivators who have studied this point more than myself, and I never found the plants injured by this treatment. Some imagine that, if they are put in a cool place, they will be injured; but this, according to my experience, is an error. During the time they are in a room, the temperature should not be below 50°. At night the room should be kept quite dry, and, before they are removed from the stove, they should be put at the coolest end of it; or, if there are two houses, those that are in the hottest should be moved to the coolest for a few days before being taken into the room, and they should be allowed to get nearly dry, and should receive but very little water—only enough to keep the roots moist. The flowers should not receive any moisture.

I will name a few that I have tried in a room during the months of May, June, July, and August. I have kept Saccolabium guttatum in this way five weeks, Aerides affine the same time; A. odoratum or roseum and some of the Dendrobiums, viz., nobile and cærulescens, I have kept in a room four and five weeks. D. moniliforme, D. macrophyllum, D. pulchellum, D. Ruckeri, and D. secundum, last a much longer time in bloom if they are kept cool. Brassias and Oncidiums, Epidendrums, Odontoglossums, Cyrtochilums, Trichopilia tortilis, Lycaste Skinneri, L. aromatica, L. cruenta, Maxillaria tenuifolia, Aspasia lunata, and all the Cattleyas, succeed well in a cool room or house, and last for a much longer time in flower. I have kept Lælia majalis in a cool room four and five weeks, and L. flava will keep a much longer time in blossom than in the warm house. When the bloom is past they should be removed to the stove, where they should be placed in the coolest end, and where there is plenty of shade; they should be kept there for about ten days, as, if they are exposed to the sun, they are very apt to become scorched.

Treatment of Plants previously to being taken to a Flower Show.—It is my practice to move them to a cool dry house or room for a few days. If the plants are growing in the hottest house, I move them to the cooler one; they should not receive any water for two or three days, and should be allowed just enough to keep them slightly moist. When it is probable that the plants will come into blossom earlier than is wished, the time of flowering may be successfully retarded by taking them to a cooler part of the house, or even putting them in a greenhouse, keeping them slightly shaded during the brightest part of the day.

## TRADE MEMORANDA.

James Watson, 4, Edge Terrace, Kensington Gravel Pits, and Gravesend.

## Home Correspondence.

*Fruit at the Chiswick Exhibition.*—Your correspondent "A. H." charges the judges of fruit with being profuse in their award of medals for Grapes in Class 3 at the May and June exhibitions, and also charges them with giving them for unripe fruit; to which charges, as one of the judges, I must beg to plead "Not Guilty." There is, as you are aware, different degrees of ripeness at which fruit is used; the growers of fruit for the market cut their Grapes as soon as they are saleably ripe, and I consider it would be wrong to disqualify such Grapes at the Horticultural Gardens. The principle by which I am guided is marketable ripeness; still, if I have any doubt as to ripeness, viz., marketable or eatable ripeness, I taste them with my brother judge, and unless we agree that they are marketably ripe, no prize is awarded. I must beg to differ in opinion with "A. H." as to not giving prizes for fruit till July. The Society's object is, as in my opinion it ought to be, to reward the skill of the practical gardener, and there would be comparatively little skill required to produce good Grapes in July. As to the idea that the kinds of Grapes named by the Society, having been brought to the highest perfection, ought not to be shown, may not the same be said of Pelargoniums, Orchids, Azaleas, Heaths, and almost every other article exhibited? As respects foreign visitors, I feel quite satisfied that they were as much pleased with the exhibition of Grapes as with that of Strawberries and Pine-apples. The show of fruit, as a whole, was, in my opinion, highly creditable to the gardeners of this country. *J. Mills, Loraine Cottage, Hammersmith.* "A. H." has charged the judges of fruit with profusely awarding prizes for unripe Grapes; and although in his second letter he modifies the hasty opinion he had previously expressed, still, as one of the judges, I consider it right to reply to him. He says, that when he penned his first letter he had not examined the programme of the exhibitions, and it appears to me that he had not done so even when he wrote his second, inasmuch as he therein states, that there is no longer any stipulation that the fruit shown shall be ripe; whereas it is distinctly laid down in the printed schedule that "all fruit must be sufficiently ripe for market." As regards the black Grapes, he considers that perhaps five medals would have been sufficient, while we, in what he terms our "abuse of the Society's liberality," awarded six! viz., three to private growers, and three to market gardeners; and so far were we from thinking we had been too liberal, that we regretted the rules laid down for our guidance precluded our granting anything to several other specimens of black Hamburgh of excellent quality, which we would gladly have rewarded had it been in our power. I deny that the white Frontignans, Sweetwaters, or Muscadines, which gained prizes, were unripe; they were well coloured, and, to our knowledge, extremely well flavoured, notwithstanding "A. H." appears to suppose that we did not taste them. With respect to the Muscats (apparently our most heinous offence), they certainly did not possess that rich golden colour, always to be wished for, but not frequently met with in that superb Grape; and on that account they attracted our particular attention; but after a careful examination of them, we did not think it a case that would justify us in taking on ourselves the invidious duty of depriving the exhibitors of the prizes which had been publicly offered by the Society. My brother judge and myself have each had more than 40 years' experience in the London fruit markets, and we were perfectly satisfied that the Muscats to which we awarded medals were "sufficiently ripe for market," and in better condition in every respect than can generally be purchased. "A. H." has fallen into the not unusual error of treating as an established fact, that which is merely his own surmise, inasmuch as he states that the judges "do not pronounce on the quality of a Melon without tasting it—why then do they give prizes to sour Grapes without tasting them?" Thus insinuating (though I cannot imagine on what grounds) that we awarded the prizes to sour Grapes without tasting them; but the fact was that we did taste the Grapes, and they were not sour. "A. H." charges us with inconsistency; but I think that charge may fairly be retorted on his proposal to discontinue giving prizes in May, when the production of first-rate fruit is extremely difficult, and increasing the rewards for it in July, when it can, of course, be procured in plenty at every fruit shop: surely such a system would not be carrying out the declared object of the Society, viz., the reward of horticultural skill. "A. H." writes of "*our* exhibitions," "*our* visitors," and "*our* show of fruit;" I therefore assume that he is connected with the Society, and if he possesses any influence in its direction, I venture to suggest to him, that if the Society would maintain its pre-eminence over rival establishments, it should increase rather than curtail its encouragement to horticulture, for at the present day it is only by the progressive development of liberal views that public support can be secured. *One of the Judges.*

*Orchid Shows.*—The two last shows at Chiswick and the Regent's Park confirm me in my opinion that it would be expedient that there should be some encouragement for the exhibition of smaller specimens of the rarer kinds of Orchidaceous plants, and if not for all of the rarer kinds, but for the encouragement of beginners in this branch of cultivation. Now I am not in the least inclined to deny the value of offering prizes for finely grown plants and large specimens. I fully believe that but for this great encouragement offered, both in the prizes and in the opportunity of our great gardeners gaining fame (for I will not believe that such cultivators as Mr. Mylam and Mr. Williams are solely stimulated by the value of the medal) have led to the wonderful specimens of good culture that every year's show produces. But as there is a feeling that only large plants covered with masses of flowers are fit to show, the result is, that the competition mainly lies between the few possessors of very large specimens, and the very same plants are produced year after year, though they are grown larger than the year before. Now I do not advocate the abandoning the existing prizes; I cannot but think, if there were also prizes given for smaller specimens of the rarer kinds, we should have a much greater variety of

* Replies to a number of questions, asked of the Editor of the *Gardeners' Chronicle*, will be found among the "Notices to Correspondents."

these interesting plants shown, and an encouragement afforded to collectors who are only just entering the field. Now as regards large specimens, a new collector, let him be ever so rich, cannot hope to rival the existing specimens of Mr Rucker, Mr. Warner, Mr. Hanbury, or Mrs. Lawrence. Now and then an occasion may happen, as at the recent sale, at Stevens's, of Mr. Blandy's plants, where large specimens may be procured; but it is not every one who can afford to give 60*l.* or 70*l.* for a good plant of Vanda Batemanni; and even if he did, he would not for some years overtake Mr. Rucker's noble tree, if I may so call it. It would be in vain, even with a very long purse, to ransack the great collections of Messrs. Rollisson and Messrs. Veitch for such specimens (with perhaps a few exceptions), as are produced at these great exhibitions. I am glad to see that you think the taste for the cultivation of this beautiful tribe of plants, is beginning to spread amongst the million. I feel certain, that with increased knowledge, and increased refinement of taste, these plants will become serious rivals to the Dahlias and Geraniums; and that before long, we shall see Dendrobium nobile carried about the streets as the Cactus speciosissimus now is. *Dodman.*

*Russian mode of Preserving Green Peas for winter use.*—The Peas to be preserved are chosen full grown, but before they become at all farinaceous; they are carefully shelled, and all damaged ones are picked out from the sound ones; the Peas are then thrown into water whilst boiling on the fire; the instant the water resumes the boil after immersion of the Peas, it is expeditiously strained off from them, the Peas are then immediately spread upon a cloth and turned over on it till all loose moisture has been soaked up; the Peas are then dried gently in the coolest part of a Russian oven-like fireplace. Green French Beans are dried in precisely the same manner, but the pods require to be cut into narrow strips previously to scalding them. Both green Peas and green French Beans dried are sold at a very moderate price at St. Petersburgh. When either of them is to be prepared for table they are soaked for a short time in lukewarm water, just enough to cover them, then gently stewed in it, with the addition of either gravy or a white sauce, and seasoned with sugar as well as salt and spices. Green Peas for winter use have been perfectly kept in England by simply bottling them like green Gooseberries, but much care is required in the process to avoid different sources of putrefaction, such as damaged Peas and moisture. Green French Beans may be preserved till winter by keeping them in brine just strong enough to float an egg; the Beans must be entire and without blemish. In preparing them for the table they should be washed in warm water; if then found salter than desirable, they should be soaked two or three hours in lukewarm water, before being put into that in which they are to be either boiled or stewed. Green Rye is also dried in Russia, is esteemed a great delicacy, and sells in St. Petersburgh for eight or ten times the price by weight of either green Peas or green Haricot dried. *M.*

*Hint to Advertisers* (See p. 358).—Allow me to thank your correspondent for his kind hint respecting the desirability of advertising my bedding plants early. It shall be duly attended to next spring season. *Edward P. Francis, Hertford.*

*Eucalypti.*—The notices of the young trees of this tribe growing in the open ground in Devonshire and elsewhere induce me to mention two luxuriant specimens that, for the last five or six years, have withstood some severe frosts, at Combe Royal, the seat of John Luscombe, Esq., near Kingsbridge, South Devon. The largest is upwards of 30 feet high, and has a stem nearly 3 feet in circumference. Specimens of the leaves are inclosed, as the writer desires to know if it is E. globulus, or not, as it was accidentally met with, and purchased without a name. The smaller leaves that accompany this communication are from a lower and more slender tree, about 20 feet high, which was bought as E. montana, having been raised from seed brought from Tasmania, by Mr. Backhouse; it is, however, quite distinct from the plant alluded to in your last number, which is growing in the private grounds of the Messrs. Veitch, at Exeter, the foliage of that plant being remarkably glaucous, and is moreover a strikingly ornamental tree, being every year covered with white flowers; whereas the plant at Combe Royal has never shown any disposition to bloom. *A Devonian.* [It is probable that the plant first named in this communication is E. globulus; but it would be necessary to see the flowers, in order to arrive at a satisfactory conclusion. The other cannot be determined without flowers. Mr. Veitch's plant is certainly the Van Diemen's Land Euc. coccifera. There is no such plant, that we know of, as E. montana.]

*Rough Plate Glass.*—In autumn I erected a cold pit, with four lights of rough plate glass. When I could safely put our half-hardy plants under a wall, I filled the pit with pots of Strawberries. I find that they have been scorched by the rays of the sun, and I am obliged to protect them as I should from any other kind of glass. *Charles Walford, Foxbro' Hall, near Woodbridge.* [We presume they were baked, not scorched.]

*Gorteria rigens.*—I would take this opportunity of mentioning that I have a tuft of the Gorteria rigens with more than 70 buds preparing to blow; nearly 40 of them are ready to expand when the first hot sun shines upon them. They are in the open ground, and sheltered occasionally in winter with a slight covering, when the weather threatened to be severe. Does this plant, with such a number of blooms, come often under your observation? [No.] *J. P.*

*Fly-papers.*—Your correspondent, "Curiosus," has, in his zeal to protect the "poor inventor of the fly-papers," not only "o'erstepped the modesty of nature" in attempting to prove too much, but he has put an interpretation on my remarks perfectly unwarrantable. So far from giving the poor inventor an "ignoble character," I volunteered the charitable belief that he was "ignorant" of the atrocious barbarities he was the author of, and hinted that if he were enlightened or made "wise" on the nature of the tortures he had invented, it would only add to his own. As these sentiments were dropped *en passant*, and savoured strongly of common humanity only, I am at a loss, and so must your general readers be, to imagine *why* "Curiosus" should feel so anxious to "endeavour to *reclaim the reputation of this fellow creature, and set him right in the scale of creation.*" Had I gone out of my way to injure him (I know him not, even by name), or indulged in any personality, it would have been another thing. "Curiosus" will please to bear in mind, that I *do* on every possible occasion "examine the mute vegetable kingdom," and that I am quite alive to the "glutinous excretions" he speaks of. I have often admired the wisdom of nature in their creation. These, however, let me kindly remark, do not at all bear upon the question at issue. If winged insects *are* secured, by the by, under such circumstances, they are speedily released by birds, spiders, and a variety of other animals; it being a wise law of nature *so* to destroy superfluities, and to send one animal to prey upon another. Let us consider *this* point settled. I will now, as the hot season is at hand, put in a word for the poor flies; and be the means, let me hope, of sparing some millions of them *unnecessary* torture. Killed let them be, by all means; but *not* first "put to the rack." Hearken all ye who patronise these fly-papers! Hear how they are made. The two compounds are, common resin and sweet oil; heated, amalgamated, and spread upon sheets of old newspapers. Thus are they "manufactured." Now for their "attractive" qualities. Wherever flies abound, *there* it has been deemed advisable to spread out these papers, one, two, three, or more. A little sifted loaf-sugar lightly sprinkled on them, completes the "charm." Let us note the result. In an instant some luckless fly descends, in search of a treat. He realises it, by finding either a leg or a wing fixed as in a vice. Escape is IMPOSSIBLE. The more he struggles, the worse the consequences. Here he must live, here he must fast, here he must linger, here he must "stick" and *groan*, till starvation and insect endurance can hold out no longer. Sometimes the poor flies are glued down by their hinder extremities, thus allowing freedom to their head and front legs, which, being elevated, give free play to their respiratory organs, and prolong life—to be *further tortured* by want of food. Every person possessing only common feelings of humanity, and who may be halting between two opinions, must feel greatly interested in putting my assertions to the proof. Let such carefully observe (whilst his thoughtless neighbour is spreading the snare), the almost supernatural endeavours of the poor flies, when inveigled by these diabolical papers, to extricate their feet from the rivets; and note how, in the vain effort, they tear out in their final agonies each several limb from its socket—their mis-shapen forms being elevated, after death, to thrice their natural height! The distinctly-audible vibrations of their wings in their last dying pangs, as they lie one glued to the other in countless numbers, complete this picture of newly-invented horrors (unfit even for Madame Tussaud's "Chamber")—a picture, alas, but too faithfully painted. These are simple "facts," which, by a few moments of close observation, *any body* may verify, by gazing on a well filled "sheet of flies." I have used the word "groan" with reference to their agonies; and if any of your readers have ever chanced to listen to the "horribly" peculiar sounds produced by the motion of the prisoners' quivering wings, either by day or by night (the latter especially), one moment's reflection will make them grateful that "Curiosus" should have unwittingly drawn forth this exposition from his obliged *collaborateur* in the field of Nature, *William Kidd, Newroad, Hammersmith. June* 19.

*Balsam Seed.*—In answer to "R. B.," p. 376, I beg to say that old Balsam seed is the best, and most likely to produce double flowers *J. R., June* 18.

*Preserving Fruits.*—I am happy that you have lately drawn public attention to the obscure but very interesting subject of preserving fruits fresh. In the present advanced state of organic chemistry, something may be expected of it, and it would well reward patient inquiry. It would appear that experiments were made in it by Couverschel, who employed nitrogen, and not, as you suggest, carbonic acid. They are mentioned by Müller in his "Chemistry of Vegetable Physiology," page 793. But other gases besides carbonic acid and nitrogen, and particularly ammoniacal and sulphurous acid, might be tried; and it seems almost unnecessary to add that temperature and light may be expected to exert important influences. Following up the controversy between Dr. Draper and Mr. Hunt, a very curious inquirer would even subject the experiment to the different rays of light (of the calorific and the colorific) alternately. The loss of flavour, I fear, will be one of the difficulties to be overcome; yet it must not be pronounced hopeless. If, as you state, the flavour in some degree returns to the fruit after an interval, it is difficult to say what might not be the effect of plunging it, after it had undergone the process, into oxygen. We know that oxygen restores the odour of essential oils, such as those of Lemon and the like, as your readers will find in Turner's Chemistry, page 1088. *A. C., Edinburgh.*

*Potato Disease.*—The following are a few particulars respecting the mode adopted in cultivating a crop of early Potatoes, and also regarding the progress of the disease with which they have been attacked, as far as I could obtain them from the gardener at a gentleman's place in this neighbourhood, which I visited the other day. Early in January a bed was made up of fermenting material, consisting of stable-dung of sufficient thickness to yield a gentle bottom-heat. The bed was covered with rather a rich black compost 6 inches in thickness. The Potatoes (good strong sets) were planted about 7 inches by 12 inches apart. The bed was then protected with strong boards nailed all round to about 18 inches above the soil, cross-bars were fastened over the bed to the side boards, so that the Potatoes could be protected from frost by a covering of mats. The plants came up well, were earthed up with a rich compost similar to that in which they had been planted, and they grew remarkably healthy and luxuriant till Saturday, April 19th, when the tops of the stems which touched the mats were slightly injured by frost penetrating the covering. In the following week, and about the 23d of the month, the gardener first observed dark blotches upon the axil of the leaves and stems. This gangrenous affection soon pervaded the whole of the stems. On or about the 5th of May digging was commenced, when one-half of the Potatoes was found very much diseased, and in the course of ten days more than two-thirds of the crops were quite unfit for use. On Wednesday last, when I saw the bed, scarcely a sound tuber could be found in the remaining part of the crop, the majority being in a putrid state, and the fœtid odour emitted from them could be recognised some yards from the frame. At a distance of 6 feet from the back of the above-mentioned bed on a south border in the open ground, are Potatoes of the same variety (Ash-leaf Kidney), and although the stems are only about 10 inches high, they are in several places very much affected, which would lead one to infer that, under favourable circumstances, the disease must be contagious. These Potatoes grew in a walled garden, rather low, lying about a quarter of a mile from the river Towy, and perhaps 30 feet above the level of the stream. The soil is very rich, and in both cases strong manure was used in planting. These conditions, acting in connexion, may to some extent account for the early appearance of the disease, as well as for its destructiveness. I have not heard of any other symptoms of disease having been noticed in this part of the country. My own frame Potatoes were never finer, and the garden and field crops look healthy. *Henry Bundy, Dynevor Castle, Llandilo.* [What else was to be expected, strong rank manure having been used?]

*Pear Tree Astyages.*—In reply to the inquiry of A. R. Hemmings on this subject, (p. 373), I am not aware that any peculiar remedy, beyond hand-picking, was applied to the Pear trees in the Horticultural Society's Gardens at Chickwick last year, whereby the numbers of this species has been so much diminished this season, which seems to me attributable rather to some natural cause, as I suggested in my paper on this species. The particular trees infested last year are, however, attacked this year by a much greater number of insect enemies than any of the other Pear trees in the Horticultural Gardens, and I believe there is some peculiarity in the border where they are planted which has affected them in some manner, and so rendered them more agreeable to the insects, as I believe it may be set down as a general rule that healthy trees or plants are much less subject to the attacks of insects than such as are in some way or other unhealthy, and hence probably the Pear trees of "A. R. H.," having been so recently planted, and not yet in full health, have been so infested. *J. O. W.*

*Fleming's Weed Destroyer.*—At the present time, when arts and manufactures are making rapid progress towards the utmost development of which they are susceptible, through the aid of machinery, it is gratifying to observe that distinguished horticulturists are endeavouring to benefit the gardening profession by means of the same great and all-powerful agency; and I am of opinion, that Mr. Fleming's laudable exertions in that direction, if not entitled to the warmest thanks of gardeners, are, at least, worthy of fair, candid, and impartial consideration. Mr. Bailey's communication of the 7th inst., however, certainly evinced a very different spirit. I could hardly have believed that any gardener would have sought to interpose obstacles in the way of the advancement of horticulture; but this, I think, Mr. Bailey has attempted to do. On Mr. B.'s own admission, there are more labourers employed at Trentham than in the majority of other places proportionately to their extent. There is, therefore, presumptive evidence to prove, without being fully cognisant of the matter, that the 80*l.* saved by machinery is expended in labour less detrimental to the operative than weeding. In this way both employers, gardeners, and labourers, may be benefited; the first, from having their gardens and grounds kept in a higher state of embellishment; the second, from deriving more satisfaction from their labour; and the last, from pursuing employments more conducive to their health. I visited Trentham myself since the machine has been used there, and I can bear testimony to the uninjured condition of the edgings, and to the high state of management observable in every department, all of which reflect the highest credit on Mr. Fleming; and I imagine, that if a similar system were pursued in other large establishments, the progress of horticulture would be more rapid, and the principles of the art more clearly

developed. *Fairplay.* [We have had other communications upon this subject; but we imagine that Mr. Bailey has by this time discovered his mistake, and therefore the discussion is better dropped.]

*Yellow Roses at the Chiswick Exhibition.*—We have been surprised to find that Mr. Francis, of Hertford, was awarded a prize at Chiswick, on the 7th inst., for six yellow Roses in a cut state, consisting of the following varieties: Williams' Double Yellow, Single Yellow, Banksian Yellow, Smith's Yellow, Harrisonii, and Elise Sauvage; for in 1849 we showed the finest varieties of yellow Roses perhaps ever exhibited in pots, and the judges disqualified us, condemning them as not being yellow. They consisted of the following sorts: Persian Yellow, Williams' Double Yellow, Banksian Yellow, Smith's Yellow, Harrisonii, and Tea Vicomtesse de Cazes. These six plants did not cost less than 18*l.* or 20*l.* to produce them. Of the value of the cut blooms we leave others to judge, remarking that it was from the circumstance of our being disqualified that we have not again attempted exhibiting Yellow Roses at the Horticultural Gardens. The Society's schedule appears to require Roses in pots being under that head. While on the subject of judging, may we enquire in regard to certain sized pots, whether they must be that exact size only, or not larger than that size; for we exhibited in May this year, Cinerarias in 6-inch pots, at Chiswick, acknowledged by the judges to be larger and finer than those exhibited in 8-inch pots by other exhibitors, and yet they were disqualified on account of the pots not being the proper size; but if we had dropped our 6-inch pots into 8-inch ones, and put a little Moss over them, we should not have been disqualified. We cannot, however, see what increased skill in cultivation there would have been in that, and therefore we beg that the judges will set us right on the subject. *E. Lane and Son, Great Berkhampstead.* [The size of pots, when mentioned in the schedule, must be attended to. If larger or smaller than is required the exhibition ought to be disqualified. If plants grown in 6-inch pots are merely transferred to 8-inch pots, they too would be disqualified.]

*Salting Gravel Walks.*—I use salt, not because it is cheaper (which it is), but because it does the work much better than hand weeding. It clears off the smallest weeds, Moss, &c., adds to the solidity of the walk, and if the operation is well done during dry weather in spring, it is done for the season. We only employ it on walks with Grass edgings, for it is as certain to kill Box as weeds. In using it, we sow it all over the walks, to within 6 inches of the edges, and then water, so as to dissolve the salt. Sufficient filters towards the edges to destroy all weeds. If done in rainy weather, it is liable to be washed from the walks, and do mischief. Old men, women, and boys can be better employed than in crawling on walks. That salting walks will help to fill the workhouse need not disturb Mr. Bailey. The gardener who would discharge labourers on this account, ought to have a place in the Crystal Palace beside the salting machine. *J. W. R.*

*Climate of Torquay.*—Permit me to call attention to some remarkable specimens of flowers and trees which were exhibited in the Crystal Palace on Saturday last. They consisted of the prize bouquet and other collections shown at the Torbay Horticultural Society's Exhibition as "Tender plants grown in the open air, and wholly unprotected during the preceding winter." Amongst them were branches of Olive from a wall tree 35 feet, and a standard 15 feet high; the Eucalyptus globosus or blue Gum-tree of Australia, of which you gave a drawing in a recent number; also Heliotrope, Petunia, Eccremocarpus, Bignonia, Acacia, Plumbago, Pelargoniums, &c., from plants which have withstood several winters. It appears from the observations which I have contributed to the reports of the Registrar-general, that the thermometer in ordinary years never falls below 28°, or rises, during the summer, above 76°, whilst in other parts of England the range exceeds this by 20° or 30°. In regard also to the humidity of the atmosphere, the remark of the Registrar-general, "That the counties of Devon and Cornwall are not only warmer, but the humidity of the air is less than in other parts of the country," is confirmed by every successive year's observations. Sir J. Clark adds, "Torquay is drier than the other places (on this coast), and almost free from fogs." *E. Vivian, Hon. Sec.*

*Asparagus.* — Is there any advantage in cutting Asparagus with the old-fashioned saw-knife? and is it right to cut off all the heads not wanted, or to let them grow? Some one mentions that cutting them down until the cutting season is over, which is the general custom here, weakens the plants. According to the advice of one of your correspondents, I dressed the half of my beds with a thick coating of salt in March; the consequence of which was that they did not shoot for three weeks after the others, and are not yet equally prolific with those not salted. I did not measure the quantity of salt but, as directed, put on enough to make the beds look as if it had snowed. *F. S. W., Bradley Wood.* [If you allow many of the young shoots to grow until you have done cutting, you will weaken the eatable shoots; a few, if your bed is weak, will do no harm. But when beds are weak, they should not be cut at all until they are stronger. If strong enough, every shoot may be cut, and that is the right way.]

## Societies.

Horticultural, *June* 17.—J. B. Gregg, Esq. in the chair. Lord Gardner, T. Lawford, jun., Esq., J. Rashleigh, Esq., H. St. John Mildmay, Esq., and Mr. Francis of Hertford, were elected Fellows.—Mr. May, gr. to E. Goodhart, Esq., Langley-park, Beckenham, Kent, sent a beautiful purple and white striped Phlox, called Mayii variegata. It is one of the prettiest we have seen of the many seedlings obtained from the Drummond Phlox crossed with other kinds; and if constant, will, no doubt, be an acquisition.—Mr. Mackintosh, Nurseryman, Maida-vale, Edgeware-road, furnished a small example of a white Chrysanthemum in blossom, in order to prove that this favourite autumnal flower may be made to bloom in the middle of summer. It was raised from a cutting put in in December last, and had been grown on a greenhouse shelf near the glass.—Mr. Chapman, gr. to J. B. Glegg, Esq., was awarded a Knightian medal for beautifully ripened Grosse Mignonne Peaches and scarlet Nectarines, and two dozen finely swelled and highly-coloured Elruge Nectarines, which received a Banksian Medal, were produced by Mr. Tillyard, gr. to Lord Southampton, at Whittlebury.—Mr. Cuthill, of Camberwell, obtained a Certificate of Merit for very fine fruit from the open ground, of his Black Prince Strawberry, a valuable sort, now becoming pretty well known. It is certainly the earliest and most prolific of Strawberries, yielding as it does a constant and plentiful supply of good fruit from this season up to the very latest period at which Strawberries can be gathered out of doors. A singular circumstance connected with this variety is, that blossoms have been detected on some of the plants exhibiting a beautiful crimson colour.—Melons came from Mr. Chapman, and Mr. Eckford, gr. to C. Child, Esq. The former sent two oblong fruit of the Sweet Melon of Cashmere, a white-fleshed sort of which little is at present known. It is, however, evidently related to the Persian kinds; it looked as if it would be very good. Mr. Eckford had two fruit of the Bromham Hall, one not externally different from it, named Brown's Green-fleshed, and two of the Trentham Hybrid. — From the Garden of the Society came the scarce Brassavola Digbyana, with a broad fringed lip; Cyrtochilum stellatum, having bright green healthy leaves, a rare occurrence with this plant; Cyrtoceras reflexum, Franciscea Hopeana, a profusely-flowered medium-sized bush of Pimelea decussata; Dillwynia clavata, one of the handsomest of the genus; an Epacris, two Cape Heaths, eight varieties of Achimenes, an Everlasting, and the Chinese Indigo plant, (Isatis indigotica).

Linnean, *June* 17.—The President in the chair. Dr. Adamson exhibited several fossil plants, in sandstone and lime-stone, from the Cape of Good Hope. A paper was read from Mr. B. Clarke, on the position of the raphe in anatropal ovules. The author observed that the position of the raphe in single ovules was very constant in many families of plants. He treated of the position of the raphe in six divisions; 1. In pendulous ovules with the raphe turned away from the placenta. This was seen in a large number of Endogens also in Ranunculaceæ, Piperaceæ, and in Araceæ and Piperaceæ; 2. Pendulous ovules with the raphe lateral, seen in Malpighiaceæ, Chenopodiaceæ, and several genera; 3. Pendulous ovules with the raphe next placenta. This is the ordinary position of the raphe in anatropal ovules. 4. In erect ovules, with raphe turned away from placenta, seen in Compositæ, in Penæa and Calythrix. 5. Erect ovules, with raphe lateral; very general in Exogens. 6. Erect ovules with raphe next placenta. The ordinary form in erect anatropal ovules. The paper concluded with some observations on the theory of the position of ovules. A letter was read from Thomas Forster, Esq., dated May 21, Bruges, "On the present season in relation to the migration of birds, and other natural phenomena. The author observed that there was always a great disproportion between the numbers of migratory birds that arrived as compared with those that went away, and that this disproportion was always greater in late springs, and specially after mild and damp winters. The swallow, sand-martin, and swift, had, this season, been very late in Belgium; and the house-martin *(Hirundo urbica)* had not yet appeared at all. Insects, which were usually common, were very scarce this spring; and the vegetable world had suffered generally, plants being later in flowering, and producing much fewer flowers. The month of April had been 8° Fah. below the usual average of temperature.

Entomological, *June* 2.—J. O. Westwood, Esq. F.L.S., President, in the chair. In addition to numerous donations of Entomological publications from the Natural History Societies of Moscow, Stettin, Munich, &c., a fine series of insects from the Cape of Good Hope was presented by Mr. Rooper, and a beautiful specimen of a hornet's nest by Mr. H. W. Newman, of Stroud. Mr. W. W. Saunders exhibited some beautiful Fulgoridæ from India, and also a very remarkable cocoon of open net work from Assam, together with the moth produced from it; Mr. Douglas, the singular cases formed of the flower-buds of Erigonum vulgare, by the larvæ of a small moth; Mr. I. F. Stephens, a new British Tenthredo (Selandria sericans of Hartig); Mr. Westwood, various insects which attack the leaves and young fruit of the Pear, at the present time, including both sexes of the beautiful Lyda fasciata, the pretty little Argyromyges scitella, (the larvæ of which form large blotches on the leaves at a later period of the year), various case-making caterpillars, &c.; Mr. Rich, some very splendid Goliath beetles, and other coleoptera from West Africa; Mr. Robert Ellis, some curious cases found upon and formed of the leaves of the Oak, being the nests of some species of Attelabidæ, and other leaves rolled up by the larvæ, apparently, of Tortrix viridana; Mr. Edwin Shepherd, a very strange variety of Vanessa Io, with the margins of the wings white; Mr. Preston, an equally curious variety of the orange tip butterfly with the green markings of the hind wings obliterated; Mr. A. Shepherd, a specimen of Smerinthus populi, with an appendage on one side of the body, somewhat like a fifth rudimental wing; Mr. Stainton, some cases formed entirely of lichen by the larvæ of a small species of moth; Mr. S. Stevens, two new British species of Curculionidæ, one of them belonging to the genus Mecinus found on the Plantago maritima, near Gravesend, and a new species of Elateridæ, found on the Oak, also a series of very beautiful lepidoptera, recently received from Quito, including some very rare species, and apparently a new Papilio allied to the singular P. Zagreus; and Mr. Weaver, specimens of Fidonia carbonaria, from Perthshire. Mr. S. Stevens communicated a notice of the capture of Gastropacha ilicifolia, a large moth, new to this country, on Cannock Chase, in Staffordshire, by Mr. Atkinson. A memoir on the economy of various species of Bombus, by Mr. H. W. Newman, together with supplementary notices by Mr. F. Smith, was read: likewise, some notes on a specimen of Goliathus cacicus by Mr. Rich, who had kept it alive five months; and a supplementary monograph on the Evaniidæ by Mr. Westwood. It was announced that a new part of the Transactions, vol. 1, N.S., part 5, was ready for distribution among the members.

## Notices of Books.

*Observations on the Culture of Roses in Pots.* By William Paul; second edition, pp. 43. Piper, London.

Beginners, in this kind of cultivation, will find this a most useful pamphlet, and it may doubtless be read with advantage by persons even experienced in the art. The excellence of Mr. Paul's Roses, in pots, at our great metropolitan exhibitions, forms, perhaps, the best guarantee that could be offered of his ability to teach; and those who would wish to obtain similar results, cannot do better than follow his instructions implicitly. A few woodcuts, illustrative of training and pruning, have been introduced into this edition, which, altogether, must be considered a very cheap shilling's worth. We heartily recommend it to the notice of all cultivators of the "Queen of Flowers."

## Garden Memoranda.

Botanic Garden, Chelsea.—The alterations commenced in this ancient garden, some three or four years since by Mr. Fortune, have been completed; they consisted chiefly in the clearing out of overgrown and unimportant plants, breaking up the formal arrangement of the hardy plants, converting the greater part of the surface into lawn, on which the herbaceous and other hardy species were planted in irregular beds, according to their natural orders, and erecting a new stove 60 feet by 20, and a greenhouse 40 feet by 20. These structures are very well adapted for plants, being low, span-roofed, and light; they are close glazed with rough plate glass. The stove is heated by hot-water; and is perhaps only deficient in not having any provision to supply bottom heat to the plants—a circumstance of the more importance in consequence of the miscellaneous character of a botanic garden collection. We noticed in the stoves good plants of the Upas tree (Antiaris toxicaria), the Allspice (Eugenia Pimenta), the Cinnamon (Cinnamomum zeylanicum), the Chu-lan (Chloranthus inconspicuus), used medicinally in China, as well as employed in scenting some of the perfumed teas. A good example of the very curious and really ornamental Ruibarbo (Jatropha podagrica), had been flowering for some months past. There is a fine old plant of Zamia elegans; and we noticed a small species of Zamia, called furfuracea, a dwarf branching stemmed kind, from which arrow-root of the best quality is sometimes obtained. A small house full of Aloes, Gasterias, and allied plants, was tolerably gay, with flowering examples of this now neglected race, many of which deserve to be more generally cultivated for their interesting and distinct exotic aspect no less than for their freely-produced and very ornamental blossoms. In the open air, one of the most interesting plants we saw was a large old specimen of one of the shrubby spiny branched Tragacanths, here called Astragalus pseudo-tragacantha, the plant having lately been exposed by the clearing away of some old rubbishing "rockwork." Fabiana imbricata was flowering very freely, trained on the outside of one of the greenhouses, and is here found to be quite hardy, and very ornamental at all seasons. The lions of the garden, the "old" Cedars, are, we are sorry to see, rapidly decaying; and indeed the out-door plants generally give evidence of having to struggle against a very ungenial atmosphere, which we understand is daily becoming more smoke-polluted. Though so near the Thames, the plants here suffer much from drought, the subsoil being a sand-bank, and the surface-soil exhausted. More efficient means of irrigation seem to be much required. We must not omit to mention some of the noble species of Ferula, or Giant Fennels, which seem to flourish in the dry subsoil which they here find. Two of these species are now coming into flower.

## Miscellaneous.

*Sale of Orchids.*—A small collection from New Granada, was sold by Mr. Stevens the other day, at the following prices:—Uropedium Lindenii from 2*l.* 12*s.*6*d.* to 5*l.*; Oncidium candelabrum, from 3*l.* to 4*l.*; Odon-

toglossum hastilabium, 3*l.* 15*s.*; O. nævium, from 1*l.* 12*s.* to 3*l.* 15*s.*; O. Pescatorei, from 1*l.* to 3*l.* 5*s.*; Cycnoches Pescatorei, 2*l.* 10*s.*; C. Lindleyi, 1*l.* 10*s.*; Angulos virginalis, from 2*l.* to 3*l.* 5*s.*; Myanthus sanguineus, 2*l.* 12*s.* 6*d.*; Paphinia, tigrina 2*l.* 12*s.* 6*d.*; other lots, of which there were in all 193, fetched from 1*l.* to 2*l.* per lot.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

THE daylight and sunshine having now arrived at their climax for this season, stove plants, which are in a growing state, should be supplied with the maximum amount of heat and moisture, that they may the sooner complete their growth, and have a longer period to ripen it in. Water should be freely and frequently sprinkled on every evaporating surface, with a view to counteract the drying effects of the abundant ventilation, so indispensable in hot weather. Houses which are not so situated as to receive the first rays of the morning sun should be assisted with fire-heat, if necessary, early in the day, that the plants may enjoy the benefit of a high temperature in conjunction with the strong daylight of these summer mornings. Incessant exertions must be made to keep insects in check, particularly red spider; syringing and washing the walls and hot-water pipes with lime and sulphur will have the desired effect, if perseveringly proceeded with. The flowering season of many plants may be retarded by pinching off the earliest flowers, thereby husbanding their strength, and inducing them to make a longer season of growth; the latter object may be assisted by means of liquid manure. Forcing-pits should now be actively employed in forwarding Achimenes, Gloxinias, Balsams, Cockscombs, Globe Amaranths, and other plants, for immediate autumnal display. Shading and ventilation must now be attended to with watchful anxiety, taking care, however, not to habituate the plants to an excess of the former, as it is only necessary in strong sunshine.

FORCING DEPARTMENT.

PINERIES.—When the bottom-heat is declining, it may be recruited by surfacing the beds with a few inches of new tan; as, independently of its own fermentive power, it absorbs a considerable quantity of heat from the sun, and attracts the roots to the surface, where they revel amongst the new materials. In addition to these advantages, it checks evaporation, economises labour in watering, and keeps the roots in a more equable state of moisture during hot weather. VINERIES.—Let the late Vines be supplied with a sufficient amount of heat and moisture to keep them growing at a healthy rate; and do not be fearful of the Grapes ripening too early, as, by the retarding process, nothing is gained except ill-flavoured, badly-coloured berries. Grapes intended to be kept through the winter should be perfectly ripe by the middle of September; and as it is important to the flavour that the ripening process should be gradual, let them be grown briskly till they are beginning to change colour, and then by giving plenty of air, accompanied by heat, they will ripen thoroughly, and hang along upon the Vines without shrivelling. PEACH-HOUSE.—Continue to keep insects in check, using the syringe freely to keep down the red spider, and tobacco smoke to destroy thrips. The foliage must be kept healthy, to ensure success in the crops of this and future seasons. Should mildew make its appearance in the late house, dust the plants with sulphur immediately. MELONS.—Keep up the top temperature, and a bottom-heat of 85°, with a moderately moist atmosphere to the successional plants, and give occasional waterings.

FLOWER GARDEN AND SHRUBBERIES.

The most pressing work at present is that of keeping the place in order. A little pains taken with the walks at this season will be amply repaid by the air of comfort and pleasure which well-kept walks give to any place. The old surface should be loosened a little with a sharp rake, and then receive a slight sprinkling of fresh clean gravel; the best time for the operation is when they are in a medium state between wet and dry, as the roller is then more effective in restoring the hard smooth surface than when the gravel is too dry. In connection with the repairs of the walks, any irregularities in the edges should be put right, and the edgings, whether of Grass or Box, or other evergreen, should be repaired or clipped. This may appear to some to be an unseasonable time for such work; but where it can be done, the effect produced amply repays for the trouble; and in flower gardens effect is everything. This is the best time of all to clip evergreen hedges or edgings, as they have time to make and mature a new growth, while the season is far enough advanced to prevent their growing very materially out of shape. Watch the different annuals as they come into flower, and mark those varieties whose superior habit of growth, size of flower, or brilliancy of colour, make it desirable to procure seed from them; and that these good qualities may be perpetuated in their progeny, destroy inferior ones as soon as they expand their first flower.

FLORISTS' FLOWERS.

Carefully tie any Pinks, which it is desirable to retain in form—when this precaution is not taken, they are apt to burst, and if wanted for exhibition are then disqualified. Some varieties, especially north-country flowers, will bloom without; preparations may be made for piping, a very gentle hot-bed is the best to put them on, though they will strike very well in sandy compost, on a north border, provided they are covered with a hand-glass. Some florists layer the first shoots, but these plants are not so handsome as those struck from cuttings. If any Tulip flowers have been impregnated during their bloom, it will be advisable to cover the capsule or seed vessel, as moisture will often cause it to root: a stick, having a notch sawn in it, so that a piece of flat glass may be inserted, is, perhaps, the best contrivance; by placing it immediately over the seed vessel, wet is avoided, whilst the sun and air exert their influence on it. Tie Carnations as they spindle; this must be done gradually. Should very hot weather occur, careful watering must be resorted to: for should the plants get a check now, it will very materially affect their future well-doing. Dahlias will also require water for the same reason; these plants will do better with more moisture than is usually given them.

HARDY FRUIT GARDEN.

Pyramidal fruit trees, or trees trained to any other form, should have the gross shoots frequently stopped, to prevent the weaker parts of the tree from being injured, and to encourage a more equable diffusion of the sap to every part. Tying in young shoots, where required to fill up vacant spaces, and checking excessive growth, where wood is unnecessary, will demand our attention during the next two months; and if this is well attended to, little or no pruning will be required in the winter. Trees that appear too vigorous, may, with safety, be root-pruned, any time during the next month, and this will immediately ensure a fruitful habit. These directions will apply to wall trees, as well as to standards in open situations.

KITCHEN GARDEN.

Successions of the Brassica family may be planted upon land which has already been cleared of its former occupants, or intermediately amongst other crops, which will shortly be removed, provided that the ground had been well manured previously. Another sowing of Peas should be made; and the last in about 10 days after. Sow Cabbage for Coleworts, Endive for main crop, and make the usual sowings of Radishes, Turnips, Lettuces, Chervil, &c. Attention should be paid to the earthing up of Potatoes, using the three-pronged hack instead of the sharp draw-hoe, which it is a common practice to use, although very liable to cut off the young strings which lie near the surface of the ground. The soil for earthing should be drawn from the centre of the space between the ridges. The earliest crop of Celery now requires partially earthing up; and as this is intended for immediate use, it should be earthed up by degrees, as the growth of the plant renders it necessary. Carrots, Parsnips, &c., should be thinned, the perfection of such plants greatly depending on the space allotted to them individually.

State of the Weather near London, for the week ending June 19, 1851, as observed at the Horticultural Garden, Chiswick.

| June. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 13 | 29.913 | 29.722 | 67 | 47 | 57.0 | 57 | 54½ | S.W. | .04 |
| Satur. .. | 14 | 30.061 | 30.036 | 67 | 41 | 54.0 | 58 | 56 | S.W. | .01 |
| Sunday.. | 15,16 | 30.056 | 29.904 | 64 | 52 | 58.0 | 58 | 55½ | S.W. | .38 |
| Monday | 16 | 17 | 30.031 | 29.832 | 67 | 45 | 56.0 | 57½ | 56 | W. | .00 |
| Tues. .. | 17 | 18 | 30.383 | 30.209 | 66 | 38 | 52.0 | 57 | 55 | N.W. | .00 |
| Wed. .. | 18 | 19 | 30.402 | 30.231 | 71 | 55 | 63.0 | 57 | 56 | W. | .03 |
| Thurs.. | 19 | 20 | 30.160 | 30.103 | 75 | 49 | 62.0 | 57½ | 56½ | S.W. | .00 |
| Average | | | 30.143 | 30.006 | 68.1 | 46.7 | 57.4 | 57.4 | 55 6 | | .48 |

June 13—Overcast; densely clouded; rain at night.
— 14—Fine; heavy clouds; drizzling rain.
— 15—Cloudy; densely clouded; rain; boisterous.
— 16—Boisterous throughout; clear at night.
— 17—Clear early A.M.; cloudy; fine; clear and cold.
— 18—Very fine; boisterous with rain; overcast.
— 19—Very fine; clear at night.
Mean temperature of the week, 4 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending June 28, 1851.

| June. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 22 | 73.7 | 49.2 | 61.4 | 11 | 0.59 in. | 1 | 1 | 1 | 1 | 2 | 9 | 8 | 2 |
| Mon 23 | 71.0 | 48.1 | 59.6 | 6 | 0.44 | 1 | 1 | 3 | 1 | 3 | 10 | 4 | 2 |
| Tues. 24 | 73.3 | 50.5 | 61.9 | 9 | 0.49 | — | 3 | 4 | 1 | 2 | 9 | 3 | 1 |
| Wed. 25 | 71.6 | 50.1 | 60.8 | 13 | 0.72 | 1 | 1 | 5 | 2 | 3 | 7 | 4 | 2 |
| Thurs. 26 | 72.3 | 50.8 | 61.5 | 12 | 1.00 | 1 | 2 | 4 | 1 | 1 | 8 | 7 | 1 |
| Friday 27 | 69.8 | 49.2 | 59.5 | 14 | 0.20 | 2 | 2 | 2 | 2 | 3 | 8 | 6 | — |
| Satur. 28 | 72.3 | 50.4 | 61.4 | 9 | 0.65 | 2 | 2 | 4 | 1 | 2 | 5 | 3 | 6 |

The highest temperature during the above period occurred on the 27th, 1826—therm. 93 deg.; and the lowest on the 25th, 1835—therm. 37 deg.

## Notices to Correspondents.

BEEHIVES: *G Neighbour, M Hays*, and others. We must reserve our opinion of the hives in the Crystal Palace until after the jury has published its decision—after which we shall examine the matter for ourselves—fully—and, we hope, to the satisfaction of the public.

BIRDS: *F M.* It will be some weeks before the treatise on the "Linnet" appears. Meantime, if you wish to rear young birds from the nest, feed them every half hour (while very young) with scalded rape seed, bruised; yolk of hard-boiled egg; and a small quantity of the crumb of stale roll,—the whole moistened and formed into a thinnish paste. The point of a wooden skewer is the most eligible instrument to feed them with. *W K.—C L.* The "stone-runner" is, in our southern parts, known as the "stone-chat." It is a tender summer warbler, and sings sweetly when at liberty. It is impatient of confinement, and would die if caged. It is a "bird of passage." The "Reed Sparrow" is also so called by us. It is a very prettily-marked bird, with a pleasing chattering note. It is migratory, but never leaves this country. In an aviary it is a showy, gay bird; but is not suited to a cage. The "Hocker" and the "Kip" are names, I imagine, peculiar to Romney; we do not recognise any birds here so called. *W. K.—"Cage."* The description given by our fair correspondent, of the bird "frequenting the running stream of water," puzzles us greatly. The size and shape; the colours of the breast and wings (orange brown); the top of the head, white; and habits, shy,—are perplexing. From the rapidity of its motion, it must be of the genus *motacilla*; but "singing" as it does so sweetly, it cannot belong to the race of wagtails. Its nest, too, being constructed, and its young reared "in an old building," perplexes still more. It must surely be peculiar to Wales only, where its habits and qualities appear to be so well known. We should much like to possess one of this family of very beautiful and *most* curious birds,—alive, of course. *W. K. —Diana W.* Your little favourite canary has the "surfeit," You have been too liberal with your unripe green food; or have been purchasing *old* bad seed. The acidity caused thereby has eaten away the feathers from its head. Wash the bald part with a strong brine of common salt and cold spring water. Dry it; and when dry, anoint it with fresh butter or hogs' lard. Repeat both operations daily for a week, and the disorder will be cured. The feathers will reappear,—if not immediately, when your bird moults. Perhaps in a week or two. *W. K.*

BOOKS: *G Porter.* A new edition of Liebig's "Letters on Chemistry" has just appeared, and wholly supersedes the last edition.—*S S.* By all means procure "Babington's Manual," 3d edition, if you are studying British plants.—*R L., Manchester.* Dr. Royle's very important work on Cotton will be noticed fully the moment we can find space.

CUCUMBERS: *A P.* A curious monstrosity, but nearly rotten when it reached us. Concerning the Laburnum, see p. 360 of the present year.‡

GREENHOUSES: *B H C.* Employ an honest tradesman, and allow him a fair profit. Use Hartley's Rough Plate Glass. If your operation is a small one, and you can obtain a plan, your village carpenter would execute it. That is the cheapest way to build a greenhouse. If, however, your operation is a large one, you had better obtain tenders from some of the respectable firms who advertise in our columns.

HERBARIA: *L N R.* There is no such work. Saturate spirits of wine with corrosive sublimate, and then dissolve the saturated solution in an equal quantity of fresh spirit.

INSECTS: *Sub.* We could discover no insects on your Melon leaf, the discoloured patches on which do not appear to us to have resulted from the bites of insects. *W.—C G.* The insects on your Geranium leaves are aphides. Envelope the plant in a cotton bag (an old pillow-case will do, if large enough), and fumigate it with tobacco smoke. *W.—Victim.* The worm-like insects from your flower border are the immature state of some kind of two-winged fly. Turn up the ground and water it well with a decoction of Quassia, Wormwood, or lime and soot. If you will take the trouble to read the two articles headed "What is an Insect?" which appeared in our pages at the beginning of the present year, you will see that woodlice do not undergo the same changes as beetles or butterflies, but simply increase in size without altering their form. *W.*

MOWING MACHINES: *W W R P.* That most in favour now is Shanks's, worked by a pony. Budding's is smaller and less efficient, but it pleases the owners of little lawns.

NAMES OF PLANTS: *W S.* Philadelphus coronarius, the common Syringa.—*F B.* Scilla Peruviana.—*L N R.* 1, Polystichum aculeatum; 2, P. lobatum; 3, Lastrea spinulosa. *S.*—*J B S L.* It is not a Fern at all, but a tuft of leaves like those of common Burnet.—*G Y.* 1, Valantia cruciata; 2, Polygala vulgaris.—*G F.* Carexes are neither horticultural nor agricultural productions, and we cannot undertake to name them. Consult "Babington's Manual of British Botany," new edition.—*A B C.* 10, Dactylis glomerata; 6, Lolium perenne; 7, Looks like a bit of Lolium italicum; 12, Cynosurus cristatus; 11, Alopecurus agrestis; 2, Poa trivialis; 3, Poa pratensis; 1, Bromus sterilis; 8, Holcus lanatus; 9, Bromus mollis.—A few inquiries stand over for further consideration.

PEARS; *K.* We imagine your unhappy Pears to have been frozen when partly swelled. Perhaps they were exposed to a snow storm, in that state, or were frozen while wet. There does not seem to be any constitutional injury.

PELARGONIUMS: *Barbara.* You cannot do better than select from the lists of these flowers given in our recent reports of the different metropolitan exhibitions, where all the best kinds are produced.*

PRICES OF PLANTS: *Y Z.* We cannot possibly report the prices obtained for plants in private trade. If you try the experiment of dealing in plants you will soon discover that it is not a very profitable occupation. If you have a cottage, a bit of land, and 70*l.* a-year, you would be insane to exchange such a position for the hazardous trade of a small nurseryman. Your letter reminds us of the pedlar in the "Arabian Nights," who kicked over his hawker's basket of glass, all he possessed, while he was indulging in visions of wealth to be gained by becoming a merchant.

ROSES: *A T.* We do not think it will answer to send cut Roses to Chiswick from Derby. The Horticultural Society will not undertake to stage them ‡—*M D* next week.

TROPÆOLUM DECKEBANUM: *C A.* Treat it as you would T. tricolorum.‡

TUBEROSES: *T.* The best soil for these is light sandy earth, mixed with one-third part very rotten cow-dung. About the middle of April prepare your bed by clearing it out to the depth of 3 feet, and fill it nearly to the top with fresh stable dung that has been cast into a heap to heat a fortnight before, treading it firmly. Upon this lay 18 inches in depth of compost, sloping it to the south. In a day or two after, plant your roots 5 inches distant from each other, just covering the tubers with earth. Shut up the bed at night, especially if frosty; or if in the open air cover it with a double mat till the leaves appear; but give little or no water, and protect it from heavy rains. When the leaves have grown about an inch long, add a little compost to the surface. If the season prove dry your bed will now require watering, and towards the end of June and in July, when the leaves are in full vigour, very copiously; from this period till the beginning of winter nothing more is necessary. About the first week in December thatch the bed over with dry straw, if in the open air; and about the middle of February, if not prevented by frost, take up the roots, preserving the fibres, and pack them in very dry sand in cellars till April, when they must be replanted as before. The taking up disposes them to form their flower-stems earlier. Offsets will by this time have made their appearance round each root and must be removed. This second year some of the largest roots will probably flower, and if early, they may be allowed to blossom in the open air; but if later than July, they should be potted and placed under glass. Such is an outline of the general management of Tuberoses in the open air or in a frame; but for particulars we recommend you to read the excellent paper on this subject, published at page 101 of our volume for 1847.‡

VINES: *A H.* Luxuriant growth and a damp atmosphere have caused the small green excrescences, which have alarmed you, to appear on your Vine leaves. They will do no harm.‡

## SEEDLING FLOWERS.

ACHIMENES: *Huddersfield.* So badly packed in cotton wool that it is impossible to say what its properties are. The colour, however, is good.*

CACTI: *J A P.* A nice medium-sized flower of good colour.*—*S B W.* A large and handsome variety; deep orange shaded with violet. Well worth cultivating.*

CALCEOLARIAS: *W S.* Nice flowers, but no improvement on kinds already out.*—*Flora.* When your blooms reached us they were in the condition of dried specimens. They appear to be good in colour, and, as far as we can judge, well shaped.*—*G A.* Useful sorts, but not good enough for "show flowers."*

CINERARIAS: *B S.* All inferior to the best kinds now in cultivation.*—*W S.* A good blue, but too small.*

ERRATA: In Mr. John Hayes' advertisement, inserted last Saturday for "send by post," read "sent out of pots."—In the advertisement of the list of prizes awarded at the Horticultural Society's meeting, on the 7th inst., Mr. Cox is placed both 2d and 3d for white Frontignan Grapes. It should have been—1st, Mr. Bain; 2d, Mr. Cox; 3d, Mr. Smith, gr. to G. Elliott, Esq., Binfield, Berkshire,

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WINDSOR MEETING, 1851.
PROGRAMME.

FRIDAY, JULY 11.—Cattle received into the Show Yard, in the Home Park, from Eight o'clock in the Morning until Eight at Night.

SATURDAY, JULY 12.—The Show Yard open for receiving Cattle from Eight o'clock in the morning until Four in the afternoon; after which latter hour no Stock will be received.

MONDAY, JULY 14.—The Judges will enter the Show Yard at Nine in the morning, and commence their examination of the Stock.—In the afternoon, or evening, when the Judges have delivered in all their awards, Members of Council and Governors of the Society will be admitted into the Show Yard, on the payment of Two Shillings and Sixpence each, and the public at Ten Shillings each.

TUESDAY, JULY 15.—The Show Yard open to the public from Six o'clock in the morning until sunset, at Five Shillings for each person.

WEDNESDAY, JULY 16.—The Show Yard open to the public from Six o'clock in the morning until sunset, at Two Shillings and Sixpence each person.—The Great Dinner of the Society in the Pavilion, at Four o'clock in the afternoon.

THURSDAY, JULY 17.—The Show Yard open to the public from Six o'clock in the morning until Eight at night, at One Shilling for each person.—At Nine o'clock, P.M., the Cattle may be removed from the Show Yard.

FRIDAY, JULY 18.—The General Meeting of the Society, in the Guildhall, at Ten o'clock in the forenoon.

The Show Yard and Pavilion are situate, by the gracious permission of Her Majesty and His Royal Highness Prince Albert, in the Home Park, immediately below the slopes and terraces of the north front of Windsor Castle.

*President*, His Grace the DUKE OF RICHMOND, K.G.

*Stewards of Departments:*

| | |
|---|---|
| Cattle ... ... ... | Mr. Stokes, Mr. Jonas, Mr. Milward. |
| Finance ... ... ... | Colonel Challoner, Colonel Austen. |
| Sale of Tickets ... ... | Mr. Wilson, of Stowlangtoft. |
| Receipts and Admission to Show Yard. | Mr. Raymond Barker. |
| Pavilion Dinner ... ... | Hon. Robert Henry Clive, M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. Shaw of London, Mr. Villiers Shelley. |
| General Arrangement of Show. | Mr. Brandreth Gibbs. |

By Order of the Council,
London, June 11, 1851. JAMES HUDSON, Secretary.

By the Regulations of the Society, all persons admitted into the Show Yard, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

PAVILION DINNER TICKETS.—Members may obtain their Tickets for the Pavilion Dinner by enclosing a Post-office order for Ten Shillings to the Secretary of the Society, at No. 12, Hanover-square, London, between the 20th of June and the 5th of July. The Tickets will be forwarded by return of post, in the order of application; and should any remain unclaimed they will be sold at the Finance Rooms, within the Society's Enclosure in the Home Park, on the Monday, Tuesday, and Wednesday of the week of meeting, until disposed of. Each of these Dinner Tickets also entitles the holder to a pint of port or sherry.

SUBSCRIPTIONS.—For the convenience of Members attending the Meeting, the Finance Committee will, in the same Rooms, also receive any Subscriptions that may be due from Members to the Society.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by Dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

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| Clover Manure, per ton ... ... ... ... | £11 0 0 |
| Turnip Manure, do. ... ... ... ... | 7 0 0 |
| Superphosphate of Lime ... ... ... | 7 0 0 |
| Sulphuric Acid and Coprolites ... ... | 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

SHALE MANURE.—The Bituminous Shale Company can now supply Pulverised Shale Ashes in sacks at 2l. 10s. per ton, delivered at any station or branch line of the South-Western Railway, and at the Terminus, Nine Elms.

This valuable Manure is at once cheap, durable, and fertilising, and will be found to be superior to all others for Grain, Grass, and Root crops.

A singular property of this Manure is that it entirely prevents the ravages of the Fly in Turnips and Hops; it is also utterly destructive of the Wire worm.

Orders to be addressed to the Bituminous Shale Company, 145, Upper Thames-Street, London, where also testimonials from the first agriculturists of the day may be obtained.

ALGERNON POLLOCK, Secretary.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta purcha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

HOSE! HOSE!! HOSE!!! Improved Canvas Hose, Lined and Coated with Gutta Percha for Liquid Manure, Fire Engines, Garden and Farm purposes. — The rigidity of seam avoided, the flexibility increased, and the pliancy that of a lady's glove. A new material will be ready this week for ¾-inch Hose for Garden purposes, of a very superior description to any yet seen. The Improved Gutta Percha Union Joints are much approved of, and all sizes can now be had.—Apply to Messrs. MITCHELL and Co., 93, High Holborn, London; International Depot for Patented and other Inventions.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.

HENRY KER SEYMER, Esq., M.P., Chairman.
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Empowered by Act of Parliament to execute all works of drainage (including outfalls through adjoining estates), to erect farm buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money, or to enable the landowner to employ his own capital and execute the works by his agents, and to secure repayment of the outlay by a charge on the property improved, spread over a number of years. Applications to be addressed to Offices, 52, Parliament-street, London. W. CLIFFORD, Sec.

**The Agricultural Gazette.**

*SATURDAY, JUNE* 21, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, June | 25 | Agricultural Society of England. |
| THURSDAY, — | 26 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, July | 2 | Agricultural Society of England. |
| THURSDAY, — | 3 | Agricultural Imp. Soc. of Ireland. |

THE subject of CULTIVATION BY STEAM seems to hang fire. Not for want of thought upon the topic; for there are many minds full of thought about it, and few people now-a-days believe the thing impossible: indeed no one can find any good reason why it should be so. There is no particular difficulty or peculiarity about the mechanism of cultivation, to "forbid the banns" between the soil and the steam-engine; and a recent passage of the *Times* (in noticing the husbandry implements in the Great Exhibition) assures the world pretty boldly that the match will take place some day, slow and unpromising as the courtship may seem at present. We join hands in this belief; and in the meantime invite the attention of our readers to some preliminary points which may help a little to account for past delay, and possibly to advance the question a step or two from its present silent condition. *Silent*, because invention is apt to be so. Self-interest keeps it so; and in the mean time a generation may pass by, and nothing be practically done towards a consummation which, once attained, it requires no ghost to see that Great Britain would leap a-head in agriculture as much as her mines of coal and iron, and her still deeper and richer mine of mechanical skill and improvement, have led her to do in every art and manufacture upon which the breath of Steam *has* been brought to bear.

Here lies the grand motive in the matter; and one so emphatically important in reference to this particular application of steam-power—yet to be achieved—that one cannot help wishing that all who really think at all about it—who are not of that class of infidels who think the womb of invention is age-stricken, and that nothing is possible but what *has been* done—would come into committee upon the subject, and abating a little of that exclusive faith which each has in his own cleverness and chance, would help to bring in this tide, as the tide of human progress is wont to come in—not by one great wave, all at once, but by a great many waves after and upon each other.

There is one grain of comfort, and of corresponding hope, visible already. The *Times* has got quit of the steam-*plough*, and got as far as the *spade:* that is something. We speak, of course, with the intensest deference of our great contemporary, merely venturing our kite-string into his thunder-cloud, to catch an electric spark or so of intelligence as to the *status quo* of the public mind, which nothing can, especially in such a case, more powerfully represent. It is something, we repeat, to have got to the Spade; for those who have got thus far will not stay long there. The public mind moves slowly; but once in motion, the *inertia* once shaken off, and the *vis inertiæ* once aroused, it will never stop till it reaches the goal.

Again and again be it repeated, that it is not *ploughing*, neither is it *digging*, that we want. These are only *means*. What we want is the *end:* we care not for the process. Give us A SEED-BED: shew us the soil *comminuted*, *aërated*, and *inverted*, 6 or 8 inches deep, and we will not ask you *how it came so*. What does that matter? If you wanted your coffee ground for breakfast, to a certain fineness of texture, would you be very particular to ask whether the mill that crushed the fragrant berry had worked by horizontal, vertical, alternate, elbow-crank, or by circular motion? If the farmer or the gardener could only have his seed-bed made ready for him as fine as a new mole-heap, or to any other coarser texture, according as he wants it, what would he care whether the soil had been first cut into longitudinal strips, plough-fashion, or into flattened cubes, spade-fashion, before it was finally granulated for his use? Surely the one is as indifferent as the other; and singularly enough, both offer problems far more difficult to the steam-engine (if any thing can be called so), than the performance at once of the ultimate and entire process without these preliminary forms at all.

Until steam-power was discovered this possibility did not exist. Wind and water-power being out of the question, there remained nothing for it—no *other* power that could be taken to the field—but men or horses. Ploughing or digging then were the indispensable preliminaries; there was no getting on without them; they were but preliminaries, it is true, the former leaving everything, the latter a great deal (according as the work was done) to be accomplished afterwards to complete the cultivation.

But it is not so now. Since the birth of the steam-engine—no such very long time ago—the whole elements of the question are altered. There exists *now* a portable power—not limited to horizontal action like the horse, nor to vertical action like a man using the spade or hoe,—which if merely told *what to do* will go and do it, merely dropping a hint into your ear that *circular* motion is its favourite.

But the willing giant stands idly panting and smoking: for nobody can agree to tell him what to do. One says, "go and *plough!*" another says, "go and *dig*," each mistaking the means for the end, and trying to yoke this youngest born of human genius to the peddling routine of manual or equine capacity, out of the very perversity of backsightedness that clings to forms and modes which belonged to the *implements* not to the *task*—backsightedness that would with equal reason puzzle its brains in looking for the pole and splinter-bar of a locomotive, the pendulum of a watch, or the paddle-boxes of a screw-steamer.

But if it is not ploughing, and it is not digging, what is it? "Go to the mole thou dullard" (the old proverb might be travestied), consider her *ways* and be wise—who without any coulter, share, or mould-board, without spade, hoe, or pickaxe, leaves behind her in her rapid track a finer mould than ever RANSOME, HOWARD, or CROSSKILL—than ever spade or rake produced, or the most careful-handed gardener used, to pot his plants with. The very rabbit that scratches his hole in the ground, or the fox that scratches after him—like a king-crab, to *eat the kernel and lie in the shell*—or the dog that scratches after both—the whole tribe of 'claw-foot' in fact—had scratched hard earth into soft mould, before ever the plough or the spade, or even the more ancient hoe, had broken ground on this planet.

Let us begin from the beginning: let us take 'Cultivation' itself into thought for a serious moment, and analyse it into its simplest elements, dropping all conventionalities of plodding custom. What is it? How would you do it, if you had neither plough nor spade nor hoe nor rake to help you? Surely with the same tool that the Monks of La Trappe used, to dig their graves, and in like manner! If the mole, the rabbit, the fox, the dog, are not sufficient indicators, take the hand of man, glove it with hardened steel, multiply it a dozen or twenty times, till you have an instrument as broad as CROSSKILL'S clod-crusher, each hand or claw with its separate arm forming the radius from a central shaft, which bristles all around with a forest of such arms, a sort of revolving BRIAREUS, *not rolling*—let that be especially remembered—but steam-driven, a thousand *dog*-power if you please, for we must not even mention horses, or we shall drop back into the old Scylla and Charybdis of 'traction' and of 'rolling,' two ideas to be eschewed like poison.

Let us suppose the picture of this formidable looking cylinder of claws to be sufficiently described, for the moment—reminding one at a distant view, of a half-breed between a hay-tedding machine and

a CROSSKILL's clod-crusher—but unlike them, fundamentally distinct from any and every instrument that was ever seen afield, as doing its work not by traction, not by its rolling weight, but DRIVEN by its axis, as the steam-paddle, the circular saw, the driving-wheel of the locomotive, are driven, supported by its own apparatus, and abrading the soil with its armed teeth, first cutting its own trench, burying itself to the required depth, and then commencing its onward task, *tearing down the bank* (so to speak) on the advancing side, canting back the abraded soil, earth's *sawdust*, "comminuted, aërated, *inverted*" into the trench it leaves behind.

And here we would stop for the present to take breath, and let our readers do the same, before proceeding to a future chapter. If we have failed in making our picture clear, or intelligible, it is yet not that about which we feel so much solicitous, as to "draw aside the curtain." The idea of ploughing and digging stands like a thick blind before the whole philosophy of the subject, and screens the inventive mechanician from the simple application of his mind to the *quod est faciendum*. His faculties are clogged, stupified, held in check by the pestering contemplation of *processes* that enter not necessarily into the problem to be solved, nor need appear in its solution. They are unessential to the matter. They became so *the very instant the steam-engine was discovered;* a power, and the only one we possess that can be carried to the field, and *put into* an agricultural machine—like the main-spring into a watch—to give it independent intrinsic action *within itself*, owing nothing to, but separate entirely from, the traction and progression of the implement along the field. Hitherto there is not even the attempt so to apply it; it has never had a chance. Every field-implement we have, works *by* traction—like the *pedometer* that ticks because the wearer marches; but with steam for our mainspring we can make the '*watch* tick in the fob of the dead soldier'! When we understand that, when we have in idea and in fact detached the *work* of *cultivation* from the mere progression of the implement, made them perfectly separate and independent, so that if you ceased to proceed, your "coffee-mill" would still be *at work*, and only wanting fresh coffee to grind, then, and only then, shall we have laid hold of the end of the clue that leads to cultivation by steam; for then, and only then, shall we have begun to appreciate the real and unique value of the new agent we possess. To attempt to gear its noble faculty to the dragging of ploughs or the redoubled solecism of *rolling spades*, implies an utter oversight of the very elements of the enquiry, arising from a blindness of the essential characteristics of the new power we possess, the *specific* advantage that it offers, and the exactions that it makes,—exactions founded in the deepest axioms of physical truth, inherent in the recondite laws that pervade Matter and Motion, and regulate their harmonious development under the inventive energy of our race. *C. W. H.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. VII.—The next part of our Report refers to "Division D. BARN MACHINERY."

THRESHING MACHINES cannot receive from us any weight of commendation equal to that contained in the tabular statement of results of their trials at the Royal Agricultural Society's meetings; and therefore, without attempting any description, we will just state a few of the comparative merits of some, as brought out by the tests applied at the Exeter meeting last year.

| Names of Makers. | Nominal Horse-power. | Speed of Horse in Miles per Hour. | Revolutions of Horse-wheel per Minute. | Revolutions of Drum per Minute. | Horse-power required to drive the Machines empty. | Time of Threshing 100 Sheaves of Wheat. | Horse-power required to Work the Machine. | Horse-power that would be required to Thresh 100 Sheaves in one Minute. | 20 supposed to represent perfect Work. Clean Threshed. | State of Straw. | Broken Corn. | Total Numerical Estimate of Excellence of Work. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | m. s. | | | | | | |
| Garrett . | 4 | 1.87 | 2.439 | 712 | 1.39 | 3 18 | 6.34 | 20.92 | 20 | 20 | 16 | 56 |
| Crosskill | 4 | 2.31 | 2.700 | 840 | .83 | 3 16 | 5.12 | 16.72 | 19 | 19 | 18 | 56 |
| Hensman | 4 | 2.05 | 2.390 | 1000 | 1.39 | 3 1 | 4.73 | 14.26 | 19 | 20 | 20 | 59 |
| Hornsby. | 4 | 2.47 | 2.890 | 900 | 2.81 | 2 50 | 8.61 | 24.39 | 20 | 19 | 17 | 56 |
| Holmes . | .. | 2.21 | 2.583 | 1020 | ... | 2 6 | 7.15 | 15.03 | 15 | 19 | 20 | 54 |
| Barrett, &c. | 4 | 2.42 | 2.832 | 1000 | ... | 3 13 | 8.21 | 20.02 | 20 | 19 | 17 | 56 |
| Clayton, &c. | .. | 1.91 | 2.229 | 950 | ... | 5 40 | 6.36 | 36.04 | 19 | 20 | 16 | 55 |

As it is desirable to perform work cheaply as well as perfectly, the eighth column here given is quite as important as the last; and by comparing the two, the farmer wanting to purchase a machine may discover which of the principal makers can furnish him with one that will thresh in the best manner for the least expense. There are various advantages, however, possessed by a good portable threshing machine, which are open to every one's observation—such as lightness combined with strength, convenience for taking up and setting down, &c. And in these particulars, we believe, there is little that is new, the separate carriages for horse and barn work, or arrangements for packing both on one pair of wheels, are well known. It is certain, though, that the general workmanship of the different machines is much improved within the last year or two. Straw-shakers seem now to be thought an indispensable adjunct of the barn works; and in some cases a screen or riddle has been attached, in order to facilitate the after operation of roughing. The favourite form of shaker is that composed of parallel bars, the alternate ones rising and falling with a circular motion; but the bars are of different shapes and fitted with various kinds of screens and teeth. Garrett's Patent Portable Threshing-machine has a registered straw-shaker, and also a patent riddle and winnower. It is adapted for threshing all descriptions of grain in large quantities, and may be worked by steam, water, or horse power. A screen attached to it riddles away all loose ears, short straws, &c., and leaves the corn ready for the dressing-machine. When driven by a small steam-engine, the cost of the whole operation is supposed not to exceed from 6*d.* to 9*d.* per quarter.

Crosskill's Threshing-machine, with four horses, has threshed from 40 to 45 quarters of Wheat per day, and 50 to 60 quarters of Oats per day. The shaker will thoroughly shake the corn from the threshed straw, and rapidly convey the straw 10 feet clear away from the machine, thus saving much corn and the labour of two men and a boy. W. Hensman and Son, of Castle Works, Woburn, Bedfordshire, obtained the first prize at Exeter, for their Threshing-machine. The drum being on a new and superior principle, the draught is lessened while the work is better done, as appears from the table already given. It will thresh clean all descriptions of corn and seeds; and by its being fed lengthways, instead of ears foremost, as in other machines, it will deliver the straw as straight and unbroken as when in the sheaf. Barley may be threshed by it in a superior manner for malting, a brighter and better sample and more free from awns being produced, than when threshed with the flail, and without the nib of the seed being in the least injured. Hensman's Patent Vandyke Hand-threshing-machine, is a valuable invention. The outer edges of the beaters on the threshing cylinder are of a vandyke or tooth shape, revolving through similar notches in the concave; they perfectly penetrate the straw and strip it of its contents. The average capability of the machine for three men, is to thresh seven or eight quarters of Barley, Wheat, Oats, or other grain per day, without injuring either corn or straw more than in flail threshing; and it will head and draw Clover seed upon an average six bushels per day.

Hornsby's patent united threshing, shaking, and riddling machines will thresh all sorts of grain, and combine upon one frame (moveable from place to place upon four wheels, on which they stand when at work), a double crank straw shaker with a patent reciprocating trough underneath, which delivers all that drops through the shaker to a riddle placed on the end of the trough, where all the corn, chaff, short straws, &c., are separated.

Barrett, Exall, and Andrews' patent hand-threshing machines have the advantage of being entirely of iron, and yet very easily shifted from place to place. This firm have a remarkably ingenious contrivance for adjusting the concave to the drum; and their patent safety horse-works appear to supply all that is needed of compactness without a counterbalancing amount of extra friction. The two-horse power machine threshes from 10 to 14 quarters of Wheat, or from 12 to 15 quarters of Barley in a day. The horse works are fixed upon a wood frame on low iron wheels; and the levers, which act as shafts, have a strip of iron running along their top side, so that the barn-works on little wheels are very easily run up and down upon them as on a tram rail.

Most of the straw shakers, from their tearing action, and from the number of long spaces between the bars or rails, make a great deal of pulse; and Hornsby has adapted his reciprocating trough on purpose to catch and riddle this pulse out of the corn. But Tuxford and Sons, of Boston, have attempted to obviate this defect altogether Their patent perforated table shaker-off, is clothed with a continuous web of wire, so that only a very small portion of straw is passed through with the grain. It is also furnished, when required, with a finer web of wire, by which the pulse is separated from the grain, and delivered into a separate partition.

We noticed what we supposed to be a straw-shaker, patented by Robinson, of Halsham, in Holderness, Yorkshire. It consists of nine plates like windmill shades, revolving in one direction by means of small wheels at both ends. It does not seem calculated the prevent the defect we have mentioned above.

W. Carpenter, of Banbury, exhibits an anti-attrition threshing machine, in which he has boldly applied friction-wheels to the drum bearing. The axle rests upon a wheel about one foot in diameter, and has two smaller ones above it. If these wheels will keep the drum axle exactly true in every direction, they will undoubtedly lessen the draught very materially.

M'Cartney and Drummond, of Cumnock, Scotland, exhibit a fixture threshing apparatus, for horse power. It is in cast-iron framing; has a circular straw shaker, and elevators to conduct the corn up to the winnowing fans and riddles situated high up above the drum. Fixed machines, though on a different principle to this, are coming into use in our better farmed counties; but steam power is preferred before that of horses. From the increasing number of portable steam-engines, we should say that we are much more likely to see the corn in every stackyard threshed out by these travelling machines, than by mechanism permanently erected in the buildings.

The best WINNOWING or CORN DRESSING MACHINE in the Exhibition is most probably that invented by Hornsby and Son—seeing that it obtained the Royal Agricultural Society's first prize in 1850, in 1849, in 1848, and a prize also in 1846; and this after trial in competition with all the best machines. At Exeter, the closest competitors were Hensman and Hornsby; but as the former had borrowed the best parts of his machine from the latter, the judges awarded the prize as we have stated. The advantage of Hornsby's over others is, its being fitted with a spike roller working through a grating, so arranged as to form a hopper: it it is capable of separating the corn from the chaff in a rough pulsy state, as it comes from the threshing machine, without having been previously riddled; and is easily adjusted to suit corn either in rough chaff or any other state. It is also fitted with a double shaking screen at bottom, which more effectually cleans the corn from all kinds of small seeds than a fixed one. For the second time over, the strap which turns the spike feeding roller is taken off; and a board being placed in front of the grating, makes it an excellent machine for finishing the corn for market. Superior as its action may be for rough corn, it is of still greater value for finishing—the judges at Norwich describing it as "dividing the refuse in a masterly manner." The dressing machines of Cooch, Holmes, Wedlake, &c., and all the better makers, are also to be viewed on their respective stands in this class. We noticed one by W. Nicholson, of Newark, having a simple contrivance for regulating the power of the blast. The back of the fan case is eccentric, and has a shutter or valve which is opened inwards or shut to throw the double blast off or on. A "potterer" and the screen and riddles are all vibrated from one crank.

Another machine, shown by W. Halston, of Marno, Renfrewshire, is of peculiar construction; and evidently intended for cleaning the grain of hariff while winnowing it. There is an endless cloth in the place usually occupied by the screen; and this delivers the corn on to a shaking screen near the ground. The hopper consists of a flat dish or receiver on the top of the machine, resting on friction rollers, and by a quickly sliding motion jerking the corn into the machine. W. Grounsell, of Louth, Lincolnshire, exhibits a "registered corn-dressing machine," which seems capable of cleaning grain and seeds by means of sloping and shaking riddles, without the aid of wind. *I. A. C.*

## IRELAND.

PERHAPS there is not a more questionable subject than the existing state of Ireland. By those who benevolently and rather sanguinely look for her prosperity, every favourable symptom is seized on with avidity, and lower poor-rates and diminished recipients of poor relief are regarded as conclusive proofs of coming prosperity. By those who, in governing the country, would gladly get rid of the Irish difficulty, the shaded side of the picture is disregarded, and they fondly direct attention to the prominent points on which the sunlight gleams. But to those who will more intimately inquire into the various workings of our social state, and do not allow their sight to be dazzled by a surface glare, nor their opinions to be led by their wishes, *la couleur de rose* is not quite so apparent. It is not quite evident to them that our transition state has yet assumed a favourable phasis.

That some beneficial springs of action are in motion there can be no doubt, the inevitable consequences of the ever-changing modes in man's existence. Stimulated by the recent impulse given in Ireland by the deplorable sufferings in the years of famine, and by the painful consequences of them, an acceleration of these social movements has probably obtained, and we have, perhaps, somewhat sooner than we otherwise should, in the necessity of securing our daily bread by our daily labour, become, in all ranks of society, from the highest to the lowest, more provident, more given to habits of industry. We are no longer a reckless people, regardless of the morrow. We are yet, however, without those surest signs of advancing prosperity, an increased employment of the people.

A decrease in poor-rates and of the numbers receiving relief, which has been confidently put forth as a proof that we have turned the corner and are now on the open road of prosperity, ought not, I think, to receive that implicit trust which is demanded for it; for we are to recollect that many other causes are at work, other than an improvement in our social condition, which are sufficient to cause this decrease: among which I will name a population daily decreasing, and the great distaste to poor-house restraint and poor-house treatment which covers our roads with beggars. An increased demand for land is perhaps rather to be attributed to a subsidence of the panic than to any improvement in the pecuniary condition of the tenantry. The new tenant appears as deficient of capital and to be as struggling a man as the old one; he follows no other system of tillage; his only effort is still to take from the land all he can, and to give it as little as possible. He has been drained by the cupidity of his landlord of what little money he had, as an admission fee, and will hold on as long as his landlord will feel himself compelled to allow

arrears to accumulate, and then, with the proceeds of a runaway crop, will run away to the land of *freedom*.

To enable us to form a just estimate of our actual condition, whether progressing to improvement, or yet but living from hand to mouth, it may be requisite to look back to our state previous to the Potato loss, with a view to ascertain in what condition it has left us—indeed, to see whether it has left us a leg to advance with.

The Irish farmer of every grade, at least in the centre, the south, and the west of Ireland, has ever been very deficient in capital; and I believe in this category I must include far more than half of the north and east. Indeed, for high farming, except in very few instances, it does not exist anywhere. Even the little capital he has he grudges to expend on labour. So far, indeed, does this feeling go, that he rarely talks of expending money in labour, but of losing it. A distant return from outlay is not thought of; in truth, it rarely can be waited for. The buildings he requires on his farm he has been habituated to erect; he will therefore build; but draining and subsoiling are novelties; and if his landlord will not do these things, however the land may require them to be done, they must remain undone; he cannot do them; and if he could, he would not be so very a simpleton,—such an "Omadhaun"—as to lay out his money on another man's ground, although he and his children have every prospect of remaining tenants on it as long as they pay the rent, and perhaps for two or three years afterwards. The land was therefore never any more than the farmer's pocket, in a state of repletion, and when the Potato loss occurred, both were found unequal to the struggle that ensued.

From this general want of capital, the farmer was compelled to deal on credit for everything, even his stock and seed, &c., were rarely bought by ready money; for the labour of his farm, including blacksmiths' and carpenters' work, he always, with few exceptions, depended on credit; and this he was enabled to obtain, by these persons being capitalists, to at least the amount of their year's provisions. The system netly was this: "My labourers, my smith, and my carpenter, upon a pretty just calculation of what their several earnings would amount to in the year, rented from me such a quantity of land to grow Potatoes on, as at the end of the year would mutually discharge us." If the land was manured, or otherwise in a state to yield a crop of Potatoes, the rent was from 3*l.* to 5*l.* an acre. Where manure was of small value, as in localites in which bog was convenient, or where the manure was rather a stimulant than a food to the land, as sea-weed, or in the burning the surface, the operations of paring and burning being performed by the temporary tenant at a rent of from 25*s.* to 50*s.* To the labourer constantly employed, I perhaps let a cabin and patch of ground for a Cabbage garden at 30*s.* a year; the summer grazing of a sort of a cow, if he happened to have the good luck to have one, at two guineas, and hay for wintering her at 30*s.* a ton. In some cases the labourer would have a couple of ewes, whose milk he shared with their lambs, and for which the summer grazing was a guinea; or he rented from me, during pleasure, an acre and a half of land, which he cropped one-half in Potatoes and the other half in grain; but in whatever way it was managed, I got his labour without possibly giving him more than 10*s.* in hard cash during the 12 months. This was the general rule in Ireland.

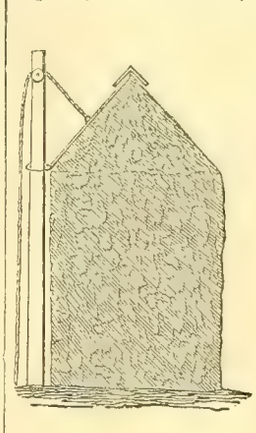
The loss of the Potato, on which esculent this whole system rested, brought a change which no one was prepared to meet, and which there was not energy or wisdom in the Government to smooth down. At once, with one fell swoop, the whole capital of the country, on which alone hung our labour, and which enabled us to expect some 13,000,000*l.* of produce, was swept away. It virtually left us nothing but the land, and deprived us altogether of the means of using it. As yet, no change from this state, in which this loss has thrown us, has taken place; nor without some extraordinary provision of the Government, attended perhaps with some extension of grain culture, in the way I have suggested, or the recovery of the Potato, can any arrive. We are still without capital, as we were in 1846, and so we must remain. We have no means wherewith to pay labour; our land is therefore laboured at the smallest expense of tillage, and Oat crop after Oat crop is dragged from it as long as it will give it, with only a spring ploughing, perhaps with asses, 3 or 4 inches deep; the only labourers employed being the occupier and his family, frequently young children, in an occupation of 30 or 40 acres.

There is, however, I doubt not, much less of physical suffering, both as respects numbers and intensity; the broken-down are in the grave, in the poor-house, or in America, or in somewhat more comfort from the assistance they derive from relatives or friends who have emigrated, and who, when they can remit, rarely neglect their friends at home. The first intent of the emigrant is to defray the cost of emigration of some one from the mother country; when his means do not reach to this, to send them small sums for their support at home.

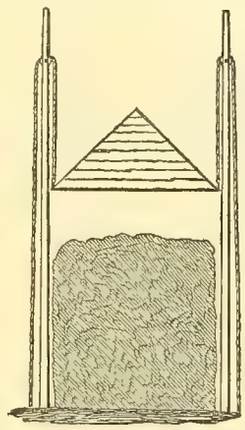
These small sums, in the aggregate, come to a very considerable amount, for it is wonderful how much they send over; yet they tend not to enrich the country; they return with very serious additions to America for Maize, which has become the common food of the poorer classes. The recovery of the Potato will keep this money at home, and the hope of the people, which rests solely on its recovery, is well founded; it will gradually lead to the re-establishing that order of things which existed previous to the disease in it, and we can expect no greater good. We have been taught the value of this deservedly favourite bread-fruit of the Irish, and the folly of expecting to derive any benefit in the deprivation of it. *J. M. Goodiff, Granard, June 3.*

## Home Correspondence.

*Thatch v. Permanent Shelter.*—The letter of "C. L." has induced me to send you a rude drawing (No 1) of a permanent covering to a Wheat stack I saw in the neighbourhood of Southampton; it consists of a light hiped framing of wood, and a covering of canvass made to fit it. A pole was placed in the ground at each corner, provided with pulleys at the top, over which passed ropes attached to each corner of the frame, and by this means the covering was raised or lowered as required, either at harvest, or when housing the Wheat.



No. 2.



No. 1.

The canvass was painted occasionally, and when my informant told me that it had been in use 14 years. I am unable to state now what it cost; but if it has been in use so long, I think there can be little doubt but that it is cheaper than thatch, to say nothing of its superior advantages in other respects. Such coverings would have been no small boon in the harvest of 1848; and I see no reason why the same covering may not be applied to oblong, as well as square or round stacks, only the covering should be in two parts, and if the rick be long, a pole in the middle will be necessary, and rings that would slide easily on the cross poles should be fixed to the bottom of the framing, by means of a piece of stout hoop-iron bent through the rings, and screwed to the frame-work; this would form a joint that would admit each half of the covering being drawn up close to the poles, whilst the roof of the stack is being made, and when finished to be lowered until the parts meet. A ridge cover might be made by nailing two wide boards together, which would make all safe, but I have sent a rough sketch (No. 2) of what I mean, and if you think this will assist in promoting the discussion desired by "C. L.," perhaps you will give this a place in the *Gazette*. *E. Curtis, Kempshott, Hants.*

*Turnip Cutters.*—As I observe you are pointing out the characteristics of the different agricultural implements in the Exhibition, I beg leave to add to the description of my new patent Turnip cutter, recently sent to you, that it still maintains the distinguishing features of Gardner's patent—the crank step by step knife—which is the only one that has hitherto successfully withstood the test of hard-frozen Swedes. *B. Samuelson.*

*Agricultural Improvement.*—As this ought to be the great lever for lifting the incubus that depresses agriculture, I may perhaps be permitted to make a few remarks on the subject. Though I may not be able to do more, in the way of new discoveries, than merely to throw out hints for others to improve upon, yet, if they should tend to the consideration of the subject by landlords, stewards, tenants, gardeners, mechanics, chemists, geologists, botanists, and others, who may be able to throw light upon it, the effort will not be useless. Although very great improvement has been recently made, there is still a wide field open for further investigation. A few minerals have been discovered, and some precious metals have been extracted; but the mine has not been profitably worked, not because of its poverty, for it is undoubtedly rich, but because the proper means of penetrating to a far greater depth have not yet been hit upon. Recent advances prove that the deeper we penetrate, the richer the store is found. Poets and fabulists, may, in some cases, be considered as prophets. Thus when the old farmer in the fable told his sons to dig deep for the hidden treasure, he seemed prophetically to tell us of the food of plants which has been, and may probably be much more largely discovered in the subsoil. So, when the poet sang about every rood of land maintaining its man, he intimated the amazing power of production which the soil possesses—a power, the extent of which has not, even to this day, been discovered. "Stop!" says an old brother farmer, "You are going too fast; I have tried high cultivation and I have found that my land could not be forced beyond a certain production." As another old farmer, who has tried it, I grant you are right, according to the present practices of high cultivators, at least with respect to corn crops. But we know not what future discoveries may do. Can nothing be done to prevent corn from being laid? May not the straw be strengthened, and the root-hold be increased? Both chemical and local means may be employed for this purpose. Let us take a hint from animals. We endeavour to feed and train them according to their destination. We do not stint the young animal of bone-producing food, or the growth of our young stock, by pinching them up, as a Chinaman does his feet, lest they should grow as large as they were designed to be; neither should we pinch our vegetables of the room they require, sideways and downwards—upwards we cannot—to bring them to the full perfection which they are capable of attaining. They would probably pay for much more liberty both sideways and downwards, particularly downwards, than even the best farmers have allowed them. The number of Turnip, Bean, Wheat, or other plants, that ought to grow on a given surface must vary to some extent, according to the nature of the land and climate; but numerous and repeated experiments are required on this subject. If agricultural societies would expend less money in premiums for live stock, and more in experimental and practical cultivation, they would become more useful than they now are. With respect to thin sowing, I would observe that the trial has been unfairly made, from the subsoil not having been sufficiently cultivated, and the plants being crowded, instead of being placed singly in rows, though those rows may have had wide intervals between them. More attention ought to be paid to the cultivation both of the alleys and the subsoil, so as to tempt the delicate fibres to seek far and wide for the deeply hidden treasure. Without strict attention to these matters, the excellent system so long since successfully adopted by Tull is not fairly tested. Thus many good practices are condemned, because they are not fully and fairly carried out. Labour is the source of wealth, and by labour alone the soil may be enriched; labour is, in some measure, a substitute for manure. What is the Turnip crop when the hoeing is neglected? Even if the land be well manured it is a miserable affair. But to hint at something new; for we must try to discover new improvements, as well as to practise recent and older established ones more fully. I would ask, how can steam-heated air or vapour be generated or infused in the soil? And can we not make it the storehouse for all those precious gaseous and aqueous virtues which escape from our farm-yards and manure heaps? How wastefully are the atmosphere and the water-course polluted with those essences so essential to the fertility of the soil. I would also ask our scientific men to consider how we can convert an enemy—superfluous or stagnant water—into a friend, after filtering it through the earth? Can we not bring it back as a useful servant? Can we not convert it into a profitable kind of liquid manure? Treasures untold may be extracted from the elements, and we want information on the means of applying them to the service of agriculture, as science has arrested them, and applied even the terrific lightning to the service of the world, and as the miller long since employed the wind and the water as his servants. When we think of the wonderful improvements effected elsewhere, we must be convinced that very much still remains to be done for agriculture, and we must endeavour to make the discoveries. Chemical combination is a very important subject for investigation. How greatly has the practical farmer suffered by his ignorance of it! How sadly has good manure been wasted by suffering quicklime to come in contact with it! And how have vegetable soil and quicklime been wasted by being mixed together in compost; whereas if lime and salt had been judiciously mixed, a far better dressing would have been obtained at less cost; and the vegetable soil might have been advantageously mixed with liquid manure, or with farm-yard manure, and covered over it. But I must conclude by saying that our general practice is by no means up to the example exhibited by a few first-rate cultivators, and even their cultivation is capable of being carried to still greater perfection. Therefore let us not sit down in despair, but go forward. *O. F.*

*The removal of Smithfield, and the want of two Markets, north and south of the Thames, in its place.*—Now that the market at Smithfield is decided to be done away, permit me to call attention to the occasion there is for two markets, and the inconvenience to the farmers, butchers, and landowners, if the present intention be carried out of having only one market on the north side of London in its place. I would direct attention to the extra loss to the graziers of the districts south of the Thames in having to drive their stock so much further through London and back, to those butchers, who, living south, must be buyers at the northern market. The loss of weight, from the driving of cattle, is very considerable, even with the best care; but who can say to what this amounts, when animals, after long confinement in stalls or yards, and loaded with fat, have been urged beyond their strength through the bustle of London. It has often been a subject of reflection to me, both as to what is the amount of the loss, and who is the loser? and I am satisfied that the difference between the weight of the animal when he quits the farmer and when he falls at the London butcher's, is never less than 3 per cent., and much oftener 6 per cent.; and that this loss falls entirely on the feeder, for the butcher, in buying, ever judges the animal by his experience of the weight he realizes in his slaughter-house; and in this way the feeders of stock sent to Smithfield lose 3 to 6 per cent. on the ten millions per annum of stock sold there, without benefiting anyone a farthing. Now, in considering the subject of cattle markets for London, two points are most important. The first is the economy of those who supply the market; and, secondly, the public convenience. It is easy to show that all this can only be attended to by giving two markets, one north and

another south of the river. Surely it must be evident to everyone considering the question, that the removal of Smithfield from a centre to an outside will not, in the least, relieve London of the present nuisance of cattle passing through; for the saving of driving from the one side will be counter-balanced by the farther distance the stock must go the other. The farmers of Kent, Surrey, and Sussex must still drive their stock through London, and the butchers south of the Thames will have to drive back again; but if the market were divided and held on alternate days most of the driving and hubbub of a single market would be done away. The butchers south would soon be taught to draw their supplies from their own market, as those north would from their side, and in this way there would be but little cattle traffic through London; and the sufferings of the animals would be lessened in proportion; and I can see no legitimate interest that would not be the better for it. I am sure the farmers and consumers would, and I should then look forward to seeing all stock coming by railways, and London relieved of its cattle droves, and farmers getting the better prices London should afford them by the higher prices the consumers pay; but which is now all lost by the way. If the South Western Railway would take this up, and appropriate some of its waste land in the York-road to the making a market and abattoir, such as the late Mr. Perkins formed at Islington, what a public advantage would it be! We should have the breeders in the west sending up their stocks, and London, with greatly reduced inconvenience to its inhabitants, would become the emporium for meat and stock to all the principal towns down the line; for all parties would soon become sensible of the saving and utility of such a market aside such a highway. *Hewitt Davis, 3, Frederick's-place, Old Jewry.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PROFESSOR WAY delivered before the members, on Wednesday last, a lecture on the Agricultural Employment of Gypsum; a report of which, and the discussion which followed it, we shall give in our next publication.

HIGHLAND AND AGRICULTURAL, *April* 16. — A Monthly Meeting of the Society was held in the Museum, when Dr. ANDERSON delivered an Address on the Discussions which have taken place during the Session. Professor Low occupied the chair.—The subjects of our discussions during the past winter have been four in number.

1st. The best varieties of Wheat to sow: quantities of each, and comparative advantages of drilling, dibbling, and sowing broadcast.

2d. The substances which can be most profitably employed as an auxiliary for Turnips, for fattening cattle and sheep.

3d. The best mode of preparing and applying the different manures produced upon the farm.

4th. The most suitable proportions and quantities of Grass and Clover Seeds to sow for Hay, soiling, and pasturage; the substances most profitable for top-dressing, and the proper time for applying them.

The subject of the first discussion, that of the best varieties of Wheat to sow, is one of a purely practical character, on which I shall not venture to offer any opinion, but shall endeavour as succinctly as I can, to review the opinions of the different speakers. The subject, however, is unquestionably one of great and increasing importance to the farmers in Scotland, as it appears from Mr. Finnie's statement, that within the last 10 years the cultivation of Wheat has extended so greatly in Scotland, that the quantity of land under that crop now exceeds the quantity under Barley, while previously to that period exactly the reverse was the case. It appears that close attention must be paid to the climate and soil of each farm, and that certain Wheats are adapted to the climate of different districts. It is distinctly made out by the concurrent testimony of the speakers, that few if any of the English varieties of Wheat are adapted for cultivation in Scotland. Many have been tried, among which Taunton Dean, Tall Cluster, Kent White, Woolly-eared, Uxbridge, Talavera, and several others, but experience has almost invariably proved unfavourable, the quantity generally having proved decidedly inferior to that obtained from Scotch Wheat, sand the quality, though at first occasionally fine, appears soon to have undergone degeneration. Of the ordinary Scotch Wheats, the varieties largely cutivated do not exceed four or five, and these have attained the support of the farmers of all the principal Wheat districts of Scotland. The varieties are Fenton, Hopetoun, Hunter's, Red straw white, Spalding's Prolific, and one or two others of inferior importance. Of these, the first appears to be most generally preferred, and it possesses the important advantage of having a short, thick, and strong straw, which makes it little liable to lodge, and peculiarly adapted to high farming. The Hopetoun and Hunter's next to it, are the most approved, and until lately, Hunter's appears indeed to have been the most generally cultivated of all the Scotch varieties. As to the quantity of seed sown, considerable difference appears to exist in the different districts. In East-Lothian from 8 to 9 pecks are given up to the 20th of November, after that 10, in December 11, and in spring 12. Nearly the same proportions are recommended by Mr. Scott and Mr. Dickson, as those they have found best adapted for their purposes; but Mr. Finnie employs from 12 to 16 pecks, and in Stirlingshire from 8 to 15 appear to be used, and after green crop 2 or 3 pecks more. In one point all the speakers agree, and it is the necessity for increasing the quantity of seed as the season advances, a practice which appears to me to be intelligible on physiological grounds. The probability is, that all the grains of Wheat are not equally readily germinated, some requiring a longer time to commence their growth, and when they are later sown less time is allowed them for this purpose, and a larger number never come to maturity, and to provide for this a larger quantity of the grain must be sown. The same explanation will serve as the reason why some of our speakers employ habitually a larger quantity of seed than others. Mr. Finnie, for instance, employs a much larger quantity; now his farm is a high lying and exposed one, and on it the germination of the Wheat is more likely to be slow and imperfect than on those farms which have a superior climate. Should this explanation be correct, it may serve to indicate to those cultivating in high and backward districts the necessity of giving a liberal supply of seed. And it may also explain the different experience of Scotch and English farmers on the subject of thin sowing, a practice which has been tolerably successful in England, but in Scotland has invariably been attended with disappointment. The superior climate of the Wheat districts of England enables nearly all the grains to germinate, while here, unless in favourable seasons, this cannot be expected. On the subject of the different methods of sowing, the experience of the speakers appears to vary more than on any other point, and on one method, that of dibbling, we have very little information. The only experiments referred to being those of Mr. Hay, of Whiterigg, who found that a larger produce of Wheat was obtained from dibbling than from that sown broadcast; but that the quality was decidedly inferior, the former containing a larger proportion of light grain, and the good weighing only 59 lbs., while the broadcast weighed 62 lbs. Opinions seem to be pretty equally divided between broadcast and drilling, and Mr. Paterson and Mr. Hope state that no difference is to be observed between these two methods of sowing. That this should be the case in some instances I can easily imagine, but I should for my own part, and on theoretical grounds, be inclined to go in favour of drilling. My reason for it is the facility which it affords for employing the hoe, a practice which I think is consistent with theory, and which I believe has been found advantageous on most farms. As far as the *mere sowing* goes, however, I cannot see what advantages the one can possess over the other. Provided the grain be pretty equally distributed and properly covered, I should imagine it immaterial whether it be arranged in straight lines or dotted over the land. It is the facility of cleaning the land which gives drilling its superiority. Mr. Hope has touched in his observations on the prevalent idea that Wheat is a more exhausting crop than any of the other cereals, as Oats for instance, and has expressed the opinion, in which I agree with him, that this can scarcely be considered to be correct. Weight for weight—no doubt Wheat is so; but in order to arrive at a fair result we must not compare equal weight, but determine the total amount of valuable matters removed by a crop of each, and we shall then find that an Oat crop ought to be decidedly more exhausting than Wheat, as it removes from an acre a much larger quantity of those substances than the latter. The grain of Wheat and Oats contain very nearly the same per centage of nitrogen, but the amount of mineral matters is twice as great in the latter as in the former, and if we further take into account that a Wheat crop may be from 4 to 5 quarters, and an Oat crop from 8 to 10 quarters, it seems tolerably clear that the exhausting effect of the latter must be decidedly greater than that of the former. I confess, however, that I do not think we ought to discuss too minutely the comparative exhausting effects of different crops, a question which really appears to me a less important consideration at the present time than it was in a less advanced state of the science and practice of agriculture. It was of paramount importance, under the old system of agriculture, when we trusted much more to the unassisted efforts of Nature than it would be considered either prudent or profitable to do at the present day. The system of high farming now prevalent, however, is characterised by the continual addition to the land of a much larger quantity of those matters than the crops remove from it, so that when that system is fully and effectually carried out, no deterioration, but rather an improvement of the land takes place. The second discussion on the substances which can be most profitably employed, as auxiliary to Turnips in the fattening of cattle and sheep, presents another of these subjects, which the progress of agriculture has raised to a high degree of prominence and importance. Mr. Brodie, of Abbey Mains, who opened the discussion, has illustrated this by a number of very interesting details. He informs us that some farmers employ extra keep for their stock, to the extent of 1*l.* per acre, over the whole of their holdings, and that taking the country at large, many millions sterling are annuallly expended on the purchase of such food. Considering the magnitude of these sums, one would be inclined to anticipate that every farmer would have endeavoured, by careful experiment, to determine the plan of feeding best adapted to his farm. Mr. Brodie, however, is inclined to think that this is not generally the case, and that notwithstanding the extent to which the use of the extra food has reached, many farmers have adopted their special systems, without that amount of careful experiment, and minute registration of expenses, which are required for a full estimate of the advantages and profits of their practice. I can easily understand, that there are many instances in which special circumstances may have induced a person to adopt a particular practice, and carry it on for a long period with average success, without a sufficiently complete comparison with other systems to enable him to determine whether it is really the most profitable that can be employed. The employment of other substances along with Turnip is a practice in all respects consistent with our knowledge of the physiology of digestion. In order that that process may proceed in the most perfect manner, it is necessary that there shall be a certain quantity of food for the purpose of sustaining the health of an animal, but the object of the feeder is to cause his cattle to consume a larger quantity than this, so as to produce what may be called an unnatural accumulation of flesh and fat. But the increased amount which can be consumed is limited in the case of the Turnip, by its excessive bulk, which overloads the stomach and prevents the process of digestion going on with that regularity and completeness which is required. In order that digestion may be complete, every part of the food must, by what are called peristaltic motions, be brought in contact with the absorbing surface of the intestines; but when the quantity of food is excessive this takes place imperfectly, and the intestines are distended in such a way as to retard the process of absorption. The feeder must therefore endeavour to supply a large quantity of nutriment in a smaller bulk, and for that purpose he is compelled to select some auxiliary to his Turnips, by which he gains not merely in the improvement of his stock, but also in the production of a larger quantity of valuable manure. In the selection of the particular auxiliary to be employed, then, the farmer must look for that which contains the largest amount of nutritious matters at the smallest price, and in doing this, we require to consider two points; firstly, the chemical composition of the substances by which we determine the amount of nutritious matters contained in them, and secondly, the proportion of these matters which may become available to the nutrition of the animal. The first of these is a matter on which, by extended chemical analysis, much light may be thrown, but the latter is a question for experiment on cattle themselves. It is not a chemical, but a physiological question, and its importance will be understood, when we bear in mind that even where digestion is complete, a certain proportion of the valuable matters always escapes assimilation, and that the proportion which does so may vary in different species of domestic animals, and even in the same animal at different periods of its life. To take an illustration of this point, suppose we supply a lot of sheep and a lot of cattle with the same quantities of food, it by no means follows that the increase in weight of the two shall be equally great; in other words, the same quantity of food supplied in the two cases does not produce the same amount of fat and flesh; yet, in both cases, the amount of nutritious matters is the same, and the cause of the difference is in the physiological peculiarities of the different species of animals. Now, chemistry can supply the requisite information as to the amount of nutriment which any food contains, but experiment on animals must determine how far that food is capable of increasing the weight of the animal. The investigations of different chemists have thrown much light on the nutritious value of different foods, and at the discussion I referred to experiments on progress in my laboratory, the object of which was, to form a complete and extended table of the nutritive value of all our most important cattle foods. In these experiments the proportions of nitrogen and soil, which are infinitely the most important of the nutritious elements, have been selected as the means of comparison, and I have thus formed a table, as yet however incomplete, which will enable us to estimate the comparative advantages of the foods employed. Of that table, the following gives a view of the results. It shows the number of pounds of nitrogen and oil contained in the different foods, deduced principally from analysis made in my own laboratory, partly from the results of other chemists:—

| In a ton of | No. of lbs. Nitrogen. | Oil. |
|---|---|---|
| Linseed, English | 97 | 777 |
| ,, Foreign | 76 | 715 |
| Oil-cake | 103 | 224 |
| Poppy-cake | 110 | 129 |
| Rape cake | 105 | 223 |
| Beans | 85 | 32 |
| Peas | 77 | 29 |
| Oats | 60 | — |
| Barley | 42 | — |
| Oat dust | 27 | 83 |
| Turnips | 4¼ | 7 |
| Distillery | 5½ oz. | — |

Now by comparing these results it will, I think, be sufficiently clear, that no substance is equal to oil-cake in point of nutritive value at the same money. A ton of oil-cake may be bought for 8*l.*, and for that sum there are obtained 103 lbs. of nitrogen, and 224 lbs. of oil. A ton of Turnips, on the other hand, is valued at somewhere about 8*s.*; 20 tons will, therefore, bear the same money value as 1 ton oil-cake, but they will afford in the form of nutriment only 85 lbs. of nitrogen, and 150 lbs. of oil. So, by comparing the other substances, it will be seen that Poppy and Rape cakes supply nutriment at a cheaper rate. All these are what may be called oleaginous foods, but we have also others, in which the quantity of oil is deficient, but in which we have abundance of nitrogen and of starchy and saccharine matters. Beans and Peas are the most important and valuable of them, and after them follow Oats, Barley, and the other grains. Such are the conclusions which chemistry leads us to draw; and their general correctness was fully confirmed

by the very valuable and clearly explained practices of the gentlemen who favour the Society with their opinions. Mr. Brodie gave the result of a very interesting and complete set of experiments on four lots of cattle. The first fed with Turnips alone; the second with Turnips and oil-cake; the third with Turnips and ground corn; and the fourth with distillery grains and Bean-meal. The cattle were kept from October to June, and at the end of that time, the first lot weighed 536 stone, and had cost 108*l.* 9*s.*; the second lot weighed 552 stone, and cost 103*l.* 16*s.*; the third lot weighed 517 stone, and cost 113*l.* 8*s.*; and the fourth weighed 545 stone, and cost feeding 118*l.* 3*s.* Here we have the most conclusive evidence of the superiority of oil-cake; and, be it observed, the cattle fed with it weigh 16 stones more than those fed with Turnips, also while the cost of feeding has been nearly 5*l.* less. Where corn has been used the difference is still more conspicuous, the weight being 35 stones less than the second lot, while the cost of keep is nearly 10*l.* more. These results are also fully borne out by the practice of Mr. Kennedy, of Myremill, and the other speakers at the meeting, all of whom have found the great advantage of giving other foods, and especially oil-cake, as auxiliaries to Turnips; and we can understand at once the results of their practice, when we inquire, not into the gross weight of the food they give but the amount of nutritive matter it contains. Thus, for instance, Mr. Kennedy considers that the best practice is to allow 60 or 70 lbs. of Turnips; and, in addition to that 2 lbs. oil-cake boiled into mucilage and poured over 2 lbs. Bean-meal, 2 lbs. bruised Oats to 12 lbs. hay, and a stone of chaff. Now, these substances contain in all about ¾ lb. of nitrogen, which is equal to the quantity of that element contained in above 3 cwt. of Turnips. Suppose, however, that the animals were fed on Turnips alone, 2 cwt. would be about the extent of what they would consume, or they would be able to obtain little more than half the nutriment which they get from the food supplied by Mr. Kennedy's plan of feeding. Mr. Russell and Mr. Wilson have added their valuable experience to that of the other speakers in support of the example of supplying food in much the same manner as is done by Mr. Kennedy, and in every case we observe that there is given a quantity containing much more nutritive matter than is contained in the quantity of Turnips which they replace. Now this directs our attention to the question to which I have already alluded, of the availability, if I may so express it, of the nutritive matters in these different foods. It needs scarcely be observed that where, as in Mr. Kennedy's case, the supply of nutritive matter is so greatly above what can be consumed in Turnips, the weight of cattle is *proportionally* increased. The cattle become fatter, but not to the extent which might be expected, from the large supply of food, because the nutritive matters are not so readily assimilated in the forms in which they exist in oil-cake, and other similar substances, as in Turnips. It is especially for the determination of this point that I think careful, minute, and oft-repeated experiments on feeding of stock with food of known composition and quantities, are requisite. Such experiments, however, would require a far more minute and constant attention than it is possible for a farmer occupied with his other avocations to give them, and in fact are the sort which would require the exertions of a Society supplied with liberal funds. I am free to admit that with the present feeling of the agricultural public, their performance on anything like an extended scale is at the present moment almost impossible, but I feel equally certain that the time will come when it will be absolutely necessary that such experiments shall be made. In the meantime I do not see that we have any reason to complain of the advances hitherto made. The statements of the speakers show how greatly the practice of feeding has extended and the attention which has been bestowed upon it, and as time goes on we may feel sure that the principles of successful practice will become more and more understood, but could a systematic series of experiments be instituted under the supervision of some of our great agricultural societies I am convinced that most important results would be derived from them. The third discussion on the best methods of preparing and applying the different manures, brought out a large amount of precise and valuable information, and may be looked upon as a very valuable illustration of the care and attention now devoted by our best farmers to such matters. Mr. Finnie, who opened the discussion, entered at great length into the best arrangement of a farm-yard, the manure heap, and liquid manure tank, best adapted for the collection and preservation of the shed and liquid manures. His principles, without entering into details, may be described as endeavouring as far as possible to collect the liquid separate from the solid excreta. The latter he would interstratify with peat, where it can be had, or failing that, with soil or clay. Over the heap he ladles the liquid manure, so as to allow as much as possible to be absorbed, and collects in the liquid manure tank only that which cannot be obtained. Mr. Finnie, with full knowledge of the beneficial results obtained from the application of liquid manure, is of the opinion, in which I fully agreed with him at the meeting, that it will, generally speaking, be much more economical to apply manure in the solid than in the liquid state. When liquid manure can be obtained in any quantity, and applied exactly as it is required, no method, perhaps, produces more striking results. Its invigorating effects are immediately seen, and by them we are apt to be led to form an estimate of liquid manure higher, perhaps, than that which it actually deserves, and even conceive it to be superior to, and likely to form a substitute for, the solid farm-yard manure. I do not, however, think that it is consistent with what we know of its chemical composition, which should incline us to class it rather as an auxiliary, such as guano, sulphate of ammonia, and the like. Viewed in this way, its importance cannot be over-estimated, but I confess I consider it doubtful whether its advantages are likely to be felt, excepting upon what may be called altogether exceptional farms, when the quantity is so great that it becomes desirable to erect machinery for its economic distribution. That such cases exist, the experience of several distinguished farmers seems unequivocally to show, but nothing would be more rash than to attempt the extension of their systems to the general husbandry of the country. In fact, we must have solid as well as liquid manure, and for the very important reason that the latter is deficient in phosphates, which are among the most important and needful elements of our cereal crops; and wherever the quantity of liquid manure does not exceed that produced on ordinary farms, I agree with Mr. Finnie in thinking that the best and most economical plan is to convert it by means of absorbents into a solid form, rather than to attempt the application of it partly in that, and partly in the liquid form. On the subject of these absorbents, we have heard much lately, and peat charcoal and other substances have been recommended for the purpose, especially of retaining the ammonia. Some experiments and analyses made in the Laboratory of the Society on this subject will be found in the last Number of the Transactions, which show that in this respect peat itself greatly surpasses charcoal or any other substance. In these experiments, it was found that solution of ammonia was absorbed in the most effectual manner by dried peat, and that even when the saturated peat was exposed to the air until it became dry, it retained a very large quantity of ammonia. It was, however, always observed that a larger quantity of ammonia was absorbed by the peat than was retained by it after it was allowed to become dry, in some instances as much as half escaping in the latter case; and I think the fact an important one, because it indicates what practice confirms, namely the necessity of keeping the dung-heaps in a state of moderate moisture, which is the condition best adapted for preventing the escape of its ammonia. There cannot, on the other hand, be anything more important than the avoidance of too large a quantity of moisture, as nothing is more prejudicial to the manure heaps than its exposure to all the vicissitudes of our climate, at one moment saturated with rain, or more than saturated, at another dried up by the heat of the sun, in both of which cases a loss of ammonia must be occurring, with much more than the average rapidity. All the gentlemen who took part in the discussion were fully alive to this, and it afforded me much satisfaction to observe that one and all of them supported the introduction of correct manure depots, which I anticipate will be the next great improvement in the arrangement of our farm steadings, for it is only under cover that the perfect preservation of manure can be effected, or all those precautions taken which are required to protect it from loss. Such opinions, however, though they are consistent with theory, and are borne out by the observations made on the superior value of the manure produced by the system of box feeding, and other similar plans, have not as yet been sufficiently substantiated by experiment. So far as I know, we have only one experiment on the comparative value of manure made under cover and without, that of Mr. Campbell of Craigie, to which I referred at the meeting, and I mention the matter again here, because it would be doing a good service to the progress of agriculture if any of our members could be induced to institute an extended series of experiments on this subject. The condition in which farm-yard manure should be applied is a question which has been fully discussed by several of the speakers, and the general opinion is, that in autumn it should be applied pretty fresh, but that in spring it should be well and thoroughly rotted. Such, I need scarcely say, is the general opinion, and it is that also to which we should be directly led by theoretical considerations. The rotting of manure is, in fact, the conversion of its nitrogen into ammonia, the state in which it is absorbed by the plant, and when the manure is to lie long in the ground before that process is to take place, it is obvious that the less of its nitrogen that is converted into the condition of the volatile and soluble ammonia the less likely will it be to lose by the protracted exposure to the vicissitudes of the winter. Exactly the reverse of this should be the farmer's object when he applies his manure in spring. He must then endeavour to have as much of its nitrogen in the form of ammonia as possible, as we know well that the abundant supply of that substance is most valuable as giving a start to the young plant, and bringing it rapidly through the first stage of its tender existence. Such should obviously be the system, where farm-yard manure alone is to be employed, but it is worthy of observation that the rotting or fermentation of manure can scarcely be carried on without at least some loss of ammonia, and it has frequently struck me, that now we can obtain guano, sulphate of ammonia, and the ammoniacal manures, theoretically, the best and most economical method of applying farm-yard manure, would be to use it unrotted, and to mix with it a sufficient quantity of one or other of these substances to supply the ammonia requisite for starting the plants. Mr. Main communicated to the meeting the results of a very interesting experiment, in some respects confirmatory of this view, for he found that the best results were produced when a smaller quantity of manure was employed along with a certain proportion of guano. All the manure he applied in this experiment was, however, well rotted; but he gives the results of another experiment in which equal quantities of rotted and recent manure were employed for Turnips, and the latter produced by much the best effect. This experiment and its results are certainly at variance with what has hitherto been the practice established by experience, and I trust it will be carefully repeated, because, should the results be confirmed, it will create a very great change in our agricultural practice. In fact, Mr. Main finds that 28 tons of recent manure produce a better effect than 28 of rotten; but any one acquainted with the management of a dung-heap knows that 28 tons of well-rotted manure correspond to a much larger quantity, perhaps 35 tons, of the recent manure, so that if Mr. Main's experiment be confirmed, not only will the application of the manure in a recent state produce a better crop, but there will be also a very great economy in the quantity employed. The question is one of great importance, and should not be lost sight of by our practical men. It would occupy too much time if I were to attempt entering upon the observations made by the speakers regarding the other manures made upon the farm; but attention was directed to several other sources of manure, which, though of less importance than that of cattle, should not be neglected. Poultry manure was particularly alluded to, and estimated at about half the value of guano, which is probably not far from the truth, and it seems to me that its production is worthy of more attention than it has hitherto met with in Scotland, and might be coupled with the feeding of poultry, which would be a profitable matter in the neighbourhood of large towns. Compost heaps were also touched upon by some of the speakers, though none enlarged upon their management; and allusion was also made to the importance of collecting vegetable and animal refuse of all kinds whatever; nothing in fact which is organic ought to be neglected, and the manure heap, as Mr. Finnie well observed, should be like the purse of the miser, in which should be collected every thing that meets the farmer's eye, as he may be assured, that however trifling it may be, everything he adds to it will go eventually to make his profits.—The last discussion on Grass and Clover seeds, for hay-making and pasturage, we have not yet published in our Journal, but shall do so as soon as room is possible.

## Calendar of Operations.

JUNE.

LAMMERMUIR SHEEP FARM, *June* 3.—The unpropitious circumstances under which May opened, arising from snow, sleet, and cold rain, soon gave way to more cheerful prospects; and if the weather has not been so genial as we have frequently seen it, yet it has been dry—an extreme of this being what the Lammermuir hills rarely complain of; still, as it has only been during the last fortnight that the thermometer has kept at, or a little above, temperate, the pastures are by no means rough. The sheep, however, have enough to be doing with, and are healthy, as well as improving in appearance. The lambing being over, we can now pronounce our crop to be an average one. With the exception of a few of the youngest lambs, the joint operations of castrating, docking, and ear-marking have been got through. The state of the atmosphere, this season, was particularly favourable for this work, being cool—extremes of heat or cold being frequently followed by severe loss. Though the principle on which many agricultural operations are performed by different men be the same, the result is frequently considerably influenced, according as the working of the details is more or less carefully attended to. To one little acquainted with the management of sheep stock, it may appear a very trifling matter, whether in such an ordinary business as docking and castrating a few lambs, the tails be kept "long" or "short," or the scrotum be "slit" or "topped," and yet, as these things are attended to, will the after appearance, and consequently, the value of the flock be affected. As the tails of the black-faced breed are naturally short, these are never interfered with; and as lowland breeders should know best what "cut" suits them, our remarks refer to Cheviots only. These, we think, should have their tails cut away exactly at the hocks, care being also taken to have them all of a uniform length. If removed much higher up than this point, it gives to the body of the sheep an appearance of shortness, which it would not otherwise have. Besides being considered a point of beauty in the Cheviot to have a well covered broad tail, a "good tail" also serves the important purpose of protecting the animal during the cold storms to which it is so much exposed. In castrating, we prefer "slitting" to "topping;" for, although by the latter method any matter which may collect can more readily escape, yet this takes place so seldom as to be of little consequence, while, when the animals come to be fed, although equally fat in other respects, those which have been slit will be found to be much better filled up below; this, at least, pleases the butcher, which is not always very easily done. With the exception of the rams, and a few odds and ends kept in the enclosures, sheep-shearing will not be begun in good earnest till towards the end of this month. The fresh growth of wool is not yet sufficiently advanced, and sudden unfavourable changes are of too frequent occurrence in hill districts to venture upon divesting them of their fleece in a hurry. Of this we have abundant evidence since we began writing, the wind having shifted from west to east, and the thermometer falling from 55° to 40°, with heavy rain. We have got 18 acres of Turnips sown, consisting of a few white Globes and Swedes, the rest of green top yellows, a variety we find to be admirably adapted for our climate. From the dry state of the soil, very few have hitherto brairded; now, however, they have plenty of moisture, and with heat following, they will soon be above ground. We have still a considerable quantity to sow, but as the ground is either already prepared, or will require little work to put it in order, another fortnight should finish our Turnip sowing. Oats are not looking so well as we could wish. Many of them were late in being sown, and want of rain has hitherto retarded their progress. This year we had a few acres drilled on a piece of ground much infested with annual weeds; and these look better than some sown broadcast on the same field, though this may be owing, in some measure, to the former being on the best soil. At present they are being hoed. The cattle are now at Grass; and the milking calves are turned out during the day, but brought under cover at night, when they receive Clover hay and a small quantity of bruised Oats. *A Lammermuir Farmer.*

## Notices to Correspondents.

CHARCOAL: *F Benson.* The cheapest plan is to light a peat fire, and continually cover it over with dry peats as it gets red-hot

through, until you have a large red-hot fire, and then quench it with water; or, you may make a kiln in the edge of the bog, and get a more perfectly red-hot mass of peat in this way, quenching it as soon as it is perfectly red through out.

CHICKENS: *F B.* We do not imagine that it is any pernicious *weed*, found in the woods close by, which causes your chickens to die of "the gapes," but should still advise you to shift them to fresh ground immediately, as well as to see that they are carefully protected from the wet.

COW FEED: *G T.* The answer to your question must depend upon the quantity of brewers' grains you purpose to give. A large cow will eat about 30 tons of green food per annum, which will in general require for its production an acre of land under arable cultivation. A good short-horn cow may produce 800 gallons of milk per annum.

CURE FOR BITE OF VIPER IN SHEEP: *George Summers.* Camphorated olive oil. *W. C. S.*

DRUMHEAD CABBAGES, &c.: *Sub.* We have just finished setting ours about 30 inches apart every way, requiring nearly 7000 plants per acre; but on richer land a yard apart would be close enough, requiring 4840 plants per acre. We expect to have these plants ripe in October and November. The seed should be sown in February and March; Rape seed should be sown now for use in autumn. Sows are kept in general till after their third litter. Ewes are kept to different ages, according to the breed. Ram-breeders will sometimes keep them as long as they will bear a lamb. Commonly they are fattened off after their second or third lamb. One acre of Cabbages will yield more keep than an acre of Rape.

GLASS CHURNS: *E G Caithcary.* They are perfectly efficient; but we cannot say anything on their merits relatively with those of the wooden box churns.

HOP PLANTS: *Arborist.* They are generally raised from cuttings; if raised from seed they must be *proved* before they can be depended upon, for not one in 50 of the varieties you would then obtain would be worth keeping. Any of our principal seedsmen could introduce you to Hop-growers from whom cuttings might be had.

INSURANCE SOCIETIES: *E B.* There are two insurance societies. Apply to Mr. Shaw, of the Strand, for the one; and the secretary of the Agricultural Cattle Insurance Company, London, for the other.

MR. ROWLEY'S DRILL: *Anon.* This machine, mentioned at page 346, is manufactured by Thomas Cuckson, of Worksop. Mr. Rowley, named as of Cuckson, near Worksop, resides at Hawthorn, near Chesterfield.

STAIN FOR WOODWORK OF STABLES: *T D.* Stockholm tar, heated, and applied with a brush, is a good stain and preservative for stalls and mangers. *W. C. S.*

STEAM ENGINE: *A Sub* can obtain one of low power for from 15*l.* to 25*l* per horse-power. Our steam-engine of about six-horse power (stationary), with a boiler for 10-horse power—all new, cost 225*l.* fixed. You can have one—a locomotive—from Lincolnshire makers for from 160*l.* to 250*l*, according to build and quality.

THRESHING MACHINE: *Dec.* Short straw, very productive, may yield to a 6 horse-power engine, in a good threshing machine, 40 bushels of Wheat per hour. But the quantities of which you hear depend more on the character of the material that is being threshed than of the machine employed for the purpose.

VETCHES: *Juvenis.* Cut them before they are out of blossom. They will make good hay, which must be made as in the case of Clover, with as little turning as possible.

# Markets.

## COVENT GARDEN, JUNE 21.

Trade is now steady, and the market well supplied with all kinds of Fruit and Vegetables in season. Forced Peaches and Nectarines have been sent in unusually large quantities. English Pines and Hothouse Grapes are plentiful and good. Keens' Seedling Strawberries have made their appearance from the open ground. Cherries are cheaper. West Indian Pines fetch from 2s to 5s. each. Oranges and Lemons are plentiful. Nuts remain nearly the same as quoted last week. Asparagus, young Carrots, French Beans, and Green Peas are received in quantity. Frame Potatoes may be obtained at 2d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Cinerarias, Pinks, Moss and Provins Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 6s to 10s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 4s to 8s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 12s to 24s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 10s to 24s | Oranges, per doz., 9d to 2s |
| Cherries, per lb., 3s to 6s | — per 100, 6s to 14s |
| Melons, each, 4s to 8s | — Seville, p. 100, 7s to 14s |
| Strawberries, p. pottle, 1s to 6s | — — p. doz., 1s to 2s 6d |
| Gooseberries, per half sieve, 2s to 3s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, per hf. sieve, 3s to 4s | — Brazil, p, bsh., 12s to 14s |
| | Cobs, per 100 lbs., 50s to 55s |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Greens, per doz. bunchs., 6d to 1s 6d | Garlic, per lb., 4d to 8d |
| Cauliflowers, p. doz., 2s to 4s | Artichokes, per doz., 1s 6d to 2s 6d |
| French Beans, p. 100, 1s 6d to 2s 6d | Lettuce, Cab., p. score, 4d to 9d |
| Beans, p. hf. sieve, 1s 6d to 2s 6d | — Cos, per score, 3d to 1s |
| Peas, per sieve, 2s 6d to 3s 6d | Small Salads, p. punn., 2d to 3d |
| Asparagus, per 100, 1s to 4s | Horse Radish, p. bundl., 1s 6d to 6s |
| Rhubarb, p. bundl., 2d to 6d | Red Beet, per doz., 6d to 1s 6d |
| Potatoes, per ton, 90s to 200 | Mushrooms, p. pot., 8d to 1s |
| — per cwt., 4s to 8s | Sorrel, per hf. sieve, 6d to 9d |
| — per bush., 1s 6d to 3s | Fennel, per bunch, 2d to 3d |
| Turnips, p. bunch, 6d to 1s | Savory, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Thyme, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Parsley, per doz. bun., 2s to 3s |
| — Turnip, p. doz., 8d to 1s | — Roots, p. bundl. 9d to 1s |
| Celery, p. bundle, 6d to 2s | Mint, green, per bunch, 4d to 6d |
| Carrots, per bunch, 6d to 1s | Basil, green, p. bunch, 6d to 9d |
| Spinach, per sieve, 9d to 1s | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 2d to 4d | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per bunch, 3d to 4d | Corn Salad, p. hf. sieve, 1s to 1s 6d |

## HOPS.—FRIDAY, June 20.

Messrs. Pattenden and Smith report that there is an active trade for all sorts of Hops, at an advance of fully 5s. per cwt. since this day week. The accounts from the plantations this morning are worse. Fly and lice are rapidly increasing, followed by honey-dew.

| | | | |
|---|---|---|---|
| Mid & East Kents | 90s to 140s | Sussex ... ... | 88s to 100s |
| Weald Kents ... | 90 — 110 | Yearlings & old Hops | 20 to 50 |

## POTATOES.—SOUTHWARK, June 16.

The Committee report that there have been a few arrivals since our last report coastwise, and a considerable quantity by rail. Trade still continues dull, except for the best samples. The following are this day's quotations:—York Regents, per ton, 60s. to 100s.; Scotch do., 40s. to 75s.; ditto Cups, 60s. to 75s.; Scotch Cathbolics, 40s. to 50s.; Lincolnshire, 40s to 50s.; Jersey, 40s.; foreign whites, 40s. to 60s.

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 19.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 80s | Clover ... ... ... | 75s to 90s |
| Inferior ditto... ... | 55 65 | Second cut ... ... ... | 75 85 |
| Rowen ... ... ... | 55 65 | Straw ... ... ... | 25 30 |
| New Hay ... ... | — — | J. COOPER. | |

The supply short, but quite equal to the demand.

CUMBERLAND MARKET, June 19

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 73s to 84s | Inferior ... ... ... | 65s to 73s |
| Inferior ditto... ... | 70 72 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 26 30 |
| Old Clover ... ... | 80 88 | JOSHUA BAKER. | |

WHITECHAPEL, June 19.

| | | | |
|---|---|---|---|
| Fine Old Hay | 75s to 84s | New Clover ... ... | —s to —s |
| Inferior ditto | 60 68 | Inferior ditto... ... | 70 75 |
| New Hay ... ... | — — | Straw ... ... ... | 24 27 |
| Old Clover ... ... | 90 95 | | |

## COAL MARKET.—FRIDAY, June 20.

Holywell, 13s. 6d; Eden Main, 13s.; Tanfield New, 12s; West Hartley 13s. 6d.; Wallsend Tees, 14s. 3d.—Ships at market, 13s.

## SMITHFIELD, MONDAY, June 16.

The supply of Beasts is good, and although the weather is favourable, trade is very slow. Prices on the average are lower than on Monday last. We have about an average number of Sheep and Lambs; the demand is very limited, and late rates are with difficulty maintained. Good Calves are in demand, but we cannot quote more than 4s., although it is exceeded in a few instances. From Holland and Germany there are 349 Beasts 2110 Sheep, 188 Calves, and 24 Pigs; from France, 11 Beasts and 30 Pigs; from Scotland, 400 Beasts; from Norfolk and Suffolk, 2200; and 120 Sheep from Spain.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | ... | | | |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn | ... 3 | 4 | to 3 | 6 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | ... | | | |
| Best Downs and Half-breds | ... | | | | Ditto Shorn | ... 2 | 8 | — 3 | 2 |
| Ditto Shorn | ... 3 | 8 | — 3 | 10 | Lambs | ... | 4 | 6 — 5 | 4 |
| | | | | | Calves | ... | 3 | 0 — 4 | 0 |
| | | | | | Pigs | ... | 2 | 8 — 3 | 8 |

Beasts, 3778; Sheep and Lambs, 29,880; Calves, 323; Pigs, 427.

FRIDAY, June 20.

The number of Beasts is large and demand small; they cannot therefore be all sold. A few choice ones make 3s. 6d., but it is an extreme quotation. The supply of Sheep exceeds the demand, and although 2d. per 8 lbs. reduction is submitted to, many remain unsold. Trade is dull for Lambs; middling ones are unsaleable, but choice ones can be sold. There is a large number of Calves, but good ones are not over plentiful, consequently some make nearly 4s. From Germany and Holland we have 164 Beasts, 780 Sheep, 292 Calves, and 81 Pigs; from Norfolk and Suffolk, 400 Beasts; and 105 milch cows from the home counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | ... 3 | 2 | to 3 | 6 | Best Long-wools | ... | | | |
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn | ... 3 | 2 | — 3 | 4 |
| 2d quality Beasts | 2 | 2 | — 2 | 8 | Ewes & 2d quality | ... | | | |
| Best Downs and Half-breds | ... | | | | Ditto Shorn | ... 2 | 6 | — 3 | 0 |
| Ditto Shorn | ... 3 | 6 | — 3 | 8 | Lambs | ... | 4 | 6 — 5 | 4 |
| | | | | | Calves | ... | 3 | 0 — 3 | 10 |
| | | | | | Pigs | ... | 2 | 8 — 3 | 8 |

Beasts, 857; Sheep and Lambs, 15,220; Calves, 662; Pigs, 510.

## MARK LANE.

MONDAY, JUNE 16.—The supply of Wheat to this morning's market was small from Essex, but fair from Kent, and sold at an advance of 1s. per qr. upon the prices of this day week; a similar improvement was obtained on foreign, but business was not extensive. The market continues exceedingly bare of all descriptions of Spring Corn, and a slight enhancement on late prices is obtained. Flour is held for an advance of 6d. to 1s. per sack, which prevents transactions from being large.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 42 | 47 | Red ..... | 38 | 42 |
| — — fine selected runs...ditto | 45 | 50 | Red ..... | — | 44 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 34 | 52 | | | |
| Barley, grind. & distil., 22s to 25s...Chev. | 27 | 32 | Malting . | 24 | 27 |
| — Foreign... grinding and distilling | 22 | 26 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 20 | 23 | | | |
| — Scotch and Lincolnshire...Potato | 23 | 27 | Feed ..... | 21 | 25 |
| — Irish .....Potato | 20 | 25 | Feed ..... | 19 | 23 |
| — Foreign .....Poland and Brew | 21 | 24 | Feed ..... | 19 | 23 |
| Rye ..... | 24 | 26 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..27s to 30s .....Tick | 28 | 31 | Harrow . | 28 | 31 |
| — Pigeon.....29 — 34... Winds | — | | Longpod | — | |
| — Foreign .....Small | 22 | 30 | Egyptian | 24 | 25 |
| Peas, white, Essex and Kent.....Boiler | 24 | 27 | Suffolk... | 27 | 29 |
| — Maple.....27s to 29s .....Grey | 24 | 25 | Foreign . | 25 | 32 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | 39 | | | |
| — Suffolk .....ditto | 27 | 34 | Norfolk . | 27 | 34 |
| — Foreign .....per barrel | 18 | 23 | Per sack | 26 | 34 |

FRIDAY, JUNE 20.—The arrivals of foreign grain since Monday have been larger than for some weeks past, and a fair business was transacted in Wheat at the extreme rates of that day, which will also apply to English.—Barley sells less freely.—In the value of Peas and Beans there is no alteration.—The Oat trade is low, and prices must be written 6d. per qr. lower. The late advance on Flour is fully maintained to-day.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2660 | — | 1140 | 5050 sacks |
| Irish ..... | — | — | — | |
| Foreign ... | 22250 | 6260 | 24479 | 1700 brls |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| May 10..... | 38s 10d | 24s 4d | 18s 8d | 24s 7d | 27s 10d | 25s 11d |
| — 17..... | 38 2 | 24 2 | 18 11 | 25 9 | 28 10 | 27 2 |
| — 24..... | 38 8 | 24 1 | 19 5 | 24 7 | 29 2 | 26 1 |
| — 31..... | 39 3 | 24 1 | 20 0 | 26 9 | 29 7 | 27 5 |
| June 7..... | 39 6 | 24 4 | 20 8 | 23 5 | 30 11 | 26 10 |
| — 14..... | 39 11 | 24 6 | 20 1 | 26 1 | 30 10 | 28 6 |
| Aggreg. Aver. | 39 0 | 24 3 | 19 7 | 25 2 | 29 6 | 27 0 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. MAY 10. MAY 17. MAY 24. MAY 31. JUNE 7. JUNE 14. | | | | | | |
|---|---|---|---|---|---|---|
| 39s 11d | ... | ... | ... | ... | ... | |
| 39 6 | ... | ... | ... | ... | | ... |
| 39 3 | ... | ... | ... | | ... | ... |
| 38 10 | | ... | ... | ... | ... | ... |
| 38 8 | ... | | ... | ... | ... | ... |
| 38 2 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JUNE 17.—The arrivals of grain and Flour from Ireland and coastwise this week are again small, and exports large. The arrivals from foreign ports are very moderate, and not equal to the consumption. The advance on last Tuesday's quotations may be called fully 4d. per bushel on Wheat, 1s. 6d. to 2s. per barrel and sack on Flour, 2d. per bushel on Oats, 1s. 6d. per load on Oatmeal, 1s. per qr. each on Beans and Peas, and 2d. per bushel on Barley. Indian Corn has not participated in the excited demand, but it is, nevertheless, 6d. per qr. higher than last week.—FRIDAY, JUNE 13.—This morning's Market was well attended, and a great business resulted in Wheat and Flour. The advance on Wheat has been fully 1d. per bushel, 3d. to 6d. per barrel on American, and 1s. per sack on French Flour. Indian Corn was not dearer. Oats improved 1d. per bush., and Oatmeal 6d. per load. Barley, Beans, and Peas brought full prices.


COCHIN CHINA EGGS AND BIRDS.—Fresh Eggs from these fine and prolific Birds will be sent out on application to Mr. H COPLAND, Chelmsford, Essex, and securely packed, at 10*s.* 6*d.* a set of 13 Eggs, box included.

H. C. will also have some fine young Birds to dispose of. Particulars on application.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

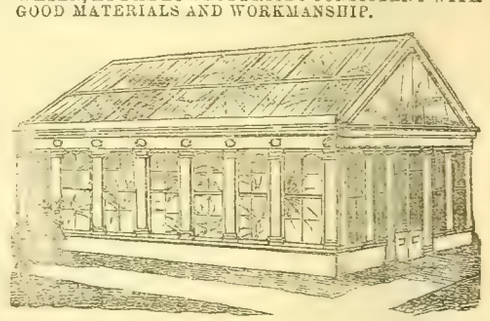
GALVANISED SHEET-IRON GREENHOUSES, HOTHOUSES, CONSERVATORIES, &c.

E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road, Chelsea, who now offers 10*l.* to any person that can show a House of Grapes, equal for Quality, Quantity, and in proportion to space and age of Vines, as Mr. Thomas Frost, Head Gardener to Edward L. Betts, Esq., Preston-hall, which is a Galvanised Sheet-iron House, built and heated by himself. The superiority of these Houses having been fully proved in all parts of the Kingdom, references can be given in every instance where a Patent House has been erected. E. D. has at present five Patent Houses of different sizes for sale, and some at a greatly reduced price, thinking of making alterations on the premises, and has erected two Patent Greenhouses in the open space of the Great Exhibition; one the roof glaized without putty or wood, and one with putty. Heating by Hot-water.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



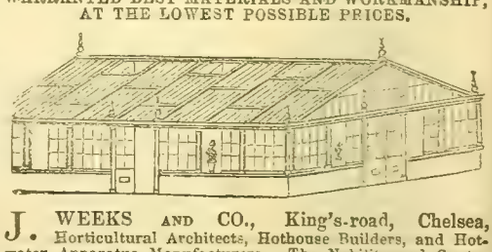
GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

DR. NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS. These Patents having been assigned to Mr. Gabriel, C.E., &c., of the Surrey Chambers, Arundel-street, Strand, London; agriculturists are informed that specimens of the Implements, viz.—The Hand Cultivators, Dibbles, Hand and Horse Drills, Manure Distributors, single-horse Ploughs, &c., can be seen there, as well as in the Agricultural Implement Department in the Great Exhibition, Hyde-park. N.B. The Patent Dibble obtained the Prize awarded by the Royal Agricultural Society at Norwich, in 1849.—Catalogues, with engravings of the Implements, and numerous Testimonials, can be obtained upon application at the Surrey Chambers, Arundel-street, Strand, London.

THE STANWICK NECTARINE.

MR. J. C. STEVENS will Sell by Auction, from 50 to 60 fine Plants, in pots, of this valuable Fruit Tree, on TUESDAY, July 1, at his Great Room, 38, King-street, Covent-garden, on account of the Fund forming by his Grace the Duke of Northumberland, in aid of the Gardeners' Benevolent Institution.—Catalogues of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

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FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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TO BE SOLD OR LET ON LEASE FOR 99 YEARS OR LESS. TO GENTLEMEN'S GARDENERS DESIROUS OF ENTERING INTO BUSINESS, NURSERYMEN, OR FLORISTS.

TO BE SOLD OR LET, immediately, at Michaelmas, or within 12 months from this date, a very compact Horticultural Establishment, consisting of about 12,000 feet of glass erections, nearly new, having all been erected since 1843. The whole of the Pits and Houses are heated by hot water; there is an excellent Dwelling house on the premises, in good repair, consisting of 12 rooms, which are so arranged as to accommodate two families, if required. The construction of the houses and situation is very desirable for persons wishing to cultivate Plants for market, or attending to the business of looking after small gardens, being situated on the main road from London to Brentford, and within four miles of Piccadilly. A Lease for 90 years can be granted by the present proprietor, if required, whose great increase of professional business from home is the only cause of this desirable property being disposed of. This offers an excellent opportunity for two persons wishing to enter into the Nursery business.—For further particulars apply to A. Z., at the Office of this Paper.

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TO BE LET, for a term of years, the commodious FAMILY HOTEL, and 110 ACRES of excellent LAND, situated at Hunstanton, St. Edmund's, on the west Coast of Norfolk, the well-known Cliffs and Sands of which are the favourite resort of visitors and families during the summer and bathing season. Occupation of the Hotel may be had immediately, and of the Land at Michaelmas next.

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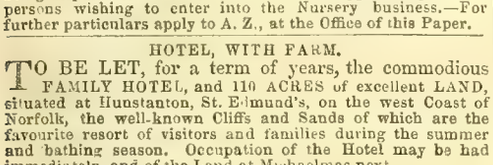
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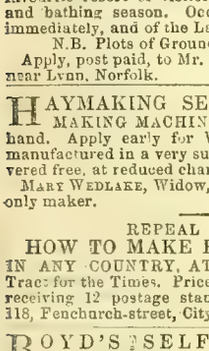
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PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

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| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

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For prospectuses and information respecting the course of studies, terms, &c., for in and out students, apply to the PRINCIPAL, the Rev. J. S. HAYGARTH, M.A.

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STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

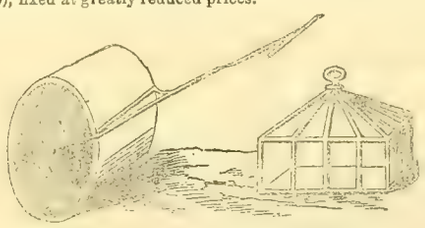
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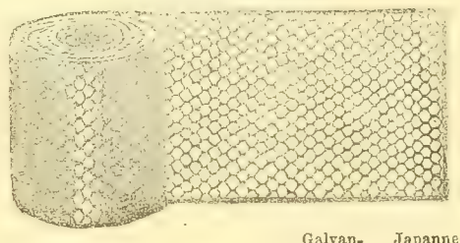
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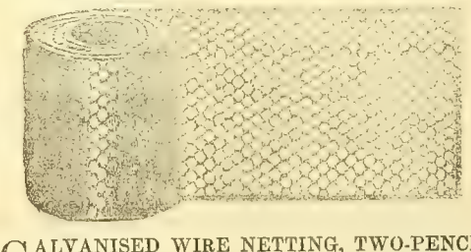
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INDEX.


| | | | |
|---|---|---|---|
| Æsculus rubicunda | 406 *a* | Larch rot in | 405 *b* |
| Agricultural Society of England | 412 *b* | Manure, sewage | 409 *b* |
| Apple bloom, singular | 406 *b* | Moth, bark | 404 *b* |
| Atmosphere of plants | 403 *b* | Mushrooms, to grow | 407 *c* |
| Barometers, to place | 408 *c* | National Flori. Soc | 407 *a* |
| Birds, British song | 404 *c*—405 *c* | Orchids for the million | 414 *a*—406 *a* |
| Budding Plums and Cherries | 406 *a* | Paint for iron | 405 *b* |
| Caledonian Hort. Society | 406 *b* | Peaches to force | 405 *c* |
| Calendar, Horticultural | 408 *a* | Pigs, to fatten | 411 *c* |
| Carbonic acid | 403 *b* | Pine-apples, standard weights of | 405 *c* |
| Chaff-cutters | 410 *a* | Plants and the atmosphere | 403 *b* |
| Cherries, to bud | 406 *a* | — to dry | 405 *c* |
| Churn, American | 411 *b* | Plums, to bud | 406 *a* |
| Climate of Torquay | 406 *a* | Rhododendrons | 406 *a* |
| Crystal palace | 410 *a* | Root crop value of | 411 *b* |
| Devon, climate of | 4 6 *a* | Roses, yellow | 405 *c* |
| Dixon's Dovecote and Aviary, rev. | 407 *a* | Royal South London Society | 406 *c* |
| Drainage companies | 411 *b* | Sewage manure | 409 *b* |
| Drain pipes, kiln for | 410 *c* | Shows, country | 406 *a* |
| Fumigator, Brown's | 413 *b* | Steam, waste | 403 *a* |
| Game | 412 *a* | Thermometers to place | 408 *c* |
| Glass, rough plate | 406 *b* | Tile kiln | 410 *c* |
| Gypsum | 412 *b* | Turner's (Mr.), nursery | 407 *b* |
| Heating by waste steam | 403 *a* | Village clubs | 411 *c* |
| Hemp, culture of | 410 *b* | Walks to salt | 405 *b* |
| Hydropeltis | 406 *b* | Water plants | 407 *b* |
| Iron, paint for | 405 *b* | Way's (Prof.) lecture | 412 *b* |
| Labourers, agricultural | 411 *a* | Weather, the | 413 *c* |


*** In Mr. FOULSTONE's Advertisement, at p. 383, col. *a*, of last week's Number, his name was incorrectly given as "FAULSTONE;" and for "*Best* street," read "*Beet*-street," Sheffield.

NORTH KENT HORTICULTURAL SOCIETY.—EXHIBITIONS will be holden at the Rosherville Gardens, Gravesend, on the 5TH JULY and 23D AUGUST, when Prizes of upwards of 150*l.* will be distributed.

Particulars of W. A. COOMBS, Esq, Hon. Sec., Northfleet, or 3, Bridge-street, Westminster.

THE VICTORIA REGIA IS NOW FLOWERING, GROWING IN THE OPEN AIR AT

J. WEEKS AND CO.'s, King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers.

EXHIBITION OF AMERICAN PLANTS—ROYAL BOTANIC GARDENS, REGENT'S PARK

JOHN WATERER (the principal Contributor to the above Exhibition), begs to say that his unrivalled Collection is still in full bloom, and may be seen gratis by Orders from Fellows of the Society.—The American Nursery, Bagshot, Surrey, June 28.

CATTLE DRUMHEADS (fine), warranted true, by THOMAS WELLAND, Surrey Gardens, near Godalming, Surrey.—Delivered at Godalming Station, 3*s.* 6*d.* per 1000, crates included. Cauliflowers 2*s.* 6*d.* per 100.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, 3 miles from London, informs his kind patrons in general that his unrivalled collection of Roses, reaching to nearly 1000 varieties, is now in bloom, and free to the inspection of all visitors, Sundays excepted. Orders taken at this time, and executed in November next. Fruit and Ornamental Trees, &c., may also be seen in great varieties.

E. D. informs his friends that he has no Seed Shop in London.

ROSES.

ADAM PAUL AND SON, NURSERYMEN, &c., Cheshunt, Herts, beg to inform admirers of the Rose that their Collection will be in full bloom the end of June and beginning of July. A day may now be agreeably spent amongst the various collections of Plants and Trees at the Cheshunt Nurseries. Twenty Trains of the Eastern Counties Railway leave and return to London daily. The Cheshunt and Waltham Stations are equally convenient for reaching the Nurseries.

ROSES.

H. LANE AND SON'S extensive Collection will be in bloom about the 25th inst., and will continue during the season.—The Nurseries, Great Berkhampsted, Herts.

ROSES.

"SANGSTER'S FLORUMBRA," for the protection of choice Roses, when in bloom, from sun or rain, as well as for destroying the Green Fly, with the assistance of Brown's Fumigator, may be had wholesale of Messrs. BARBER and GROOM, London; and retail of most Seedsmen and Ironmongers in the Kingdom; and of W. and J. SANGSTER, at their Manufactory, 75, Cheapside. Price, 8s. Shades only, from 4*s.* each, or complete, from 7*s.* 6*d.* according to size. List of prices sent on application.

CHOICE CINERARIA SEED.

LUCOMBE, PINCE, AND CO, (have saved from a Select Collection of all the Newest and Finest Varieties of 1851, which they have this season grown to great perfection, some Cineraria seed, of excellent quality; and they beg leave to offer it for sale, in Packets sealed and warranted by them, at 2*s.* 6*d.* each, free by post. If sown soon, strong plants will be produced, which will flower in 1852.

Exeter Nursery, June 28 h.

NEW PLANTS FROM CALIFORNIA.

HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to recommend to the notice of the Nobility, Gentry, and Public the following novelties, and to state that his CATALOGUE OF NEW PLANTS AND PELARGONIUMS will be forwarded, by post, on application.

CERASUS ILICIFOLIA, an EVERGREEN CHERRY, with beautiful dark green foliage. A most desirable plant. 7*s.* 6*d.* and 10*s.* 6*d.* each.

LAURUS REGALIS, a new BAY; very fragrant; an evergreen. 15*s.* each.

PAVIA CALIFORNICA, a new HORSE-CHESTNUT. 21*s.* each.

MYRICA, a new species from California. 10*s.* 6*d.* each.

He begs to say that he has a few strong plants of CERASUS ILICIFOLIA, fit to grow into specimens, at 21*s.* each,

## THE CARMINE-COLOURED WATER LILY.—

We have the satisfaction to inform our Patrons that the arrangements made in our new Aquarium for the culture of this and other beautiful Water Plants, have been very successful; and that we not only have the superb species named at the head of this notice flowering in a very superior manner every morning, but have also the gratification of daily showing to those who honour us with their visits seven or eight other kinds in singularly fine bloom, among them we may especially refer to—

| | |
|---|---|
| Nymphæa cyanea | Nymphæa dentata |
| ,, mexicana | ,, micrantha |
| ,, sanguinea | ,, esculenta |

All of which, those who love Exotic Water Plants, will recognise as possessing great beauty and rarity. We may also observe, that our Aquarium possesses two extremely vigorous plants of Sir Robert Schomburgk's celebrated introduction, the VICTORIA REGIA, one of which is now flowering in great perfection.

We shall esteem it an honour to show our Patrons, or their friends, these noble productions; and, therefore, most respectfully solicit their visits to see them and the other objects of interest our establishment may possess.

*** The new and beautiful scented Pæonies, rivalling the Rose in fragrance, are now blooming.

KNIGHT and PERRY, Exotic Nursery, King's-road, Chelsea.

ROSES.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON respectfully announce to their Friends and the public that the Collection of ROSES at Woodlands will be in fine bloom about the first week in July, and will continue flowering during the Rose season.

W. W. and Son here think it necessary to state, in justice to themselves, that their stock this season far surpasses in quantity (by many thousands), the display of former years. For the convenience of visitors, a raised platform has been erected, from which parties will be enabled to compass at one view a quarter of 10 acres covered with Roses in full bloom, presenting a *coup d'œil* perhaps never before witnessed in one garden.

Maresfield is situated 12 miles from Hayward's Heath, a station of the London and Brighton Railway, from whence conveyances to the Nursery may be obtained. Parties leaving London by an early train would reach Lewes in time for the 12 o'clock coach, which runs daily to Ringles Cross Gate, about two miles from the Nursery.

Woodlands Nursery, June 28.

H. DE LANGE AND SONS, FLORISTS, at Haarlem, in Holland, sell, at very reasonable prices, all sorts of FLOWER ROOTS, as double and single HYACINTHS, early and late TULIPS, NARCISSUS, double and single JONQUILS, ANEMONES, RANUNCULUS, CROCUS, AMARYLLIS, GLADIOLUS, &c., &c.

Catalogues to be had at the Office of Mr. N. BREEBAART, 45, Commercial Sale Rooms, Mincing-lane, London.

SELECTED CINERARIA SEED, saved from one of the choicest and finest varieties in cultivation, this being the proper time for sowing (which any amateur may cultivate with little trouble and sure success), to insure good strong plants that will bloom well the forthcoming season.

Packets of the above can be forwarded to any part, on receipt of 18 penny postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

NEW DAHLIAS; E. FOSTER'S, Esq., CHOICE PELARGONIUMS; PICOTEES, CARNATIONS, HOLLYHOCKS, PANSIES, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May at 10*s.* 6*d.* each, viz:—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25*s.*, at the Royal South London Exhibition; 21*s.* Shacklewell Open Shows, &c., fourteen first class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first class certificates, &c., shown in several winning stands.

The Hon. Mrs. ASHLEY, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. LINDLEY a certificate of merit at the Horticultural Society, &c. Gained five first class certificates.

QUEEN OF FAIRIES, Domeyer. W. BRAGG has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give 5*l.* in prizes the next season for this flower. It gained a Seedling prize and first class certificate, with Edwards's Mrs. HANSARD; at the Royal South London Open Show Exhibition five first class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good; the best Hollyhock Seed ever sent out can be had in 2*s.* 6*d.* and 5*s.* packets, post paid, for prepayment.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, NURSERYMAN AND SEEDSMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office order, made payable here, at the under-named prices, basket or mat, and package included.

All the sorts of Early Cabbage, Savoy and Kale, including Brussels Sprouts, 4*s.* 6*d.* per 1000; all the sorts of Autumn and Spring Broccoli, 5*s.* 6*d* per 1000; all the sorts of Celery, 5*s.* 6*d* per 1000; Cauliflower, Early and Late, and Red Cabbage, 9*d.* per 100; Drumhead, or Cattle Cabbage, 3*s.* 6*d.* per 1000. 6*d.* per 1000 less, when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway. A Circular, containing the sorts of the above, may be had on application, by enclosing a penny stamp.

Seed of CATTELL's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz. as usual, and the latter ½ oz.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS offers the following ROSES, on Dwarf worked Stems, well established in 32 and 24 size pots, full of bloom buds, strong and vigorous, fit for immediate clumping, at 2*s.* each, carriage paid to London.

ROSES.

HYBRID PERPETUALS.
Aubernon
William Jesse
Louis Bonaparte
Madame Laffay
Augustine Mouchelet
Melanie Cornu
Earl Talbot
Marquise Boccella
La Reine
Lane
Baronne Prevost
Robin Hood
General Allard
Géant des Battailles
Cynedor
Jacques Laffitte
Comtesse du Chatelle
Marquis of Ailsa
Lady Alice Peel

BOURBONS.
Phillaparte
Prince de Croi
Armosa
Augustine Margat
Celimene
Pœœuix
Queen
Augustine Lelieur
Acidalie
Bouquet de Flore
Paul Joseph
Edward Desfosses
Pierre de St. Cyr
Souvenir de la Malmaison
Lady Canning
Dupetit Thouars
De Tourville
Comte de Rambateau
George Cuvier
Souchet

TEAS.
Anteros
Elise Sauvage
Gigantesque

Princesse d' Esterhazy
Roi du Siam
Safrano
Comte de Paris
Madame Rouselle
Claud a Gond
Gonda
Marie de Beaux
Belle Alimand
Devoniensis
Bougero
Jaune
Souvenir de 30 Mai

CHINA.
Abbe Moiland
Archduke Charles
Marjolia du Luxembourg
Mrs. Bosanquet
Infidelites de Lisette
Clair Sylvain

NOISETTE.
Minette
Aimée Vibert
Euphrosine
Jaune Desprez
La Biche
Lamarque
Smith's Yellow
Cloth of Gold
Ophirie
Phaloe

MOSS.
Prolifere
Unique de Provence
Mousseuse presque partout
Ponctue Nouvelle
Comtesse de Murinais
Lanii
Celina
White Bath

PROVENCE.
Crestata
Grand Agathe

GALLICAS.
Boule de Nautieul
Kean
Letitia

HYBRID CHINA.
Brennus
Belle Marie
Comtesse de Lacepede
Madame Plantier
Chenédolé
Juno
General Jacqueminot

HYBRID BOURBON.
Triptoleme
Charles Duval
Coupe d' Hebe
President Mole
Comtesse Mole
Zehler

ALBA.
Sophie de Marsilly

DAMASK.
La Ville de Brussells
Madame Hardy

AUSTRIAN BRIARS.
Persian Yellow
Double-margined Hip
Harrisonii

STANDARDS.
HYBRID PERPETUALS.
William Jesse
Louis Bonaparte
Madame Laffay
Augustine Mouchelet
Duchess of Sutherland
Melanie Cornu
Earl Talbot
La Reine
Mrs. Elliott
Baronne Prevost
Robin Hood

It is respectfully requested that this List may be preserved for reference.

E. P. FRANCIS's extensive collection of Roses is now in full bloom; and an early inspection is respectfully solicited. Trains 8 times per day to Hertford. Morning and evening are the best times to inspect a collection of Roses; but blooms are exhibited at Mr. Clark's, 25, Bishopsgate-street, throughout the season.

June 28

G. P. TYE'S REGISTERED HYACINTH BOTTLE, WITH FLOWER SUPPORT.—The very favourable notice which this invention elicited when submitted to the Horticultural Society, the high opinion expressed by Dr. Lindley of its merits, and the satisfaction with which it has been hailed by many eminent florists, have fully established its claim to public favour.

The Horticultural Society's Meeting, May 18th, 1851.—"These are handsome, clever, contrivances; if cheap enough (the price not being sent), cannot fail to be universally approved of."

In leading article (with engraving), after describing the invention, Dr. Lindley remarks, "this is *by far* the most beautiful contrivance of the kind we have yet seen; and will, no doubt, universally displace the ugly things now in use."—*Gardeners' Chronicle, May* 10.

Birmingham and Midland Society, for the advancement of Floriculture.—A First Class Certificate awarded for it.

In a *critique* on the articles from Birmingham, in the "Great Exhibition," Class 22.—"The defects in the ordinary glass, so painfully apparent to all lovers of floriculture, are completely remedied in the improved stand, which has a firm broad base, and is furnished with an ingeniously contrived, but simple, apparatus, intended to maintain the flower in an upright position. These bottles are made in various coloured glass, are tasteful in shape, and are easily convertible, when not in use for Hyacinths, into flower vases, or else into appropriate ornaments for the drawing-room or toilette table."

May be obtained from Mr. JOHN POWELL, Trentham, Staffordshire; or Mr. G. P. TYE, the Inventor, Snow-hill, Birmingham.

HORTICULTURAL TOOL WAREHOUSE.

GREEN AND CONSTABLE, WHOLESALE and RETAIL IRONMONGERS, 36, King William-street (four doors from London Bridge), beg to inform Amateurs and Gardeners they have a large assortment of new and improved Garden Tools, including Lyndon's Patent Spades, Lord Vernon's Patent Hoes, jointed Hothouse Syringes, Galvanised Iron Garden Engines, Transplanting Tools, Patent Water-pots, Brown's Patent Fumigator, Improved Garden Labels and Sticks; also a large assortment of Saynor's Pruning and Budding Knives.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half moon-passage, Gracechurch-street, London.

GLASS. GLASS.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— | s. d. | s. d. |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 |
| Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... ... | | 0 10 |
| IN SQUARES, cut to the sizes ordered :— | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... ... | 0 6½ | 0 8 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... ... | 0 7 | 0 8½ 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... ... | 0 7½ | 0 9 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... ... | 0 8 | 0 9½ 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... ... | 0 8½ | 0 10 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... ... | 0 9 | 0 11 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... ... | ..... | 1 0 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

### GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

### GLASS FOR PIT FRAMES, HOTHOUSES, &c.

in Boxes of 100 feet, 8*s.* 6*d.* each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

### GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14*s.* each.

16*s.* per box :

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 ,, 5½ ,, 7 ,, 5 | 6½ ,, 6½ ,, 7½ ,, 6½ |
| 6 ,, 6 ,, 7½ ,, 5 | |

18*s.* 6*d.* per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 ,, 8 ,, 11 ,, 9 | 10 ,, 8 ,, 13 ,, 9 |
| 9 ,, 8 ,, 12 ,, 8 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

### GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

### GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 9 *l.*; 21 feet long by 13 feet wide, 50*l.*; 12½ feet long by 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

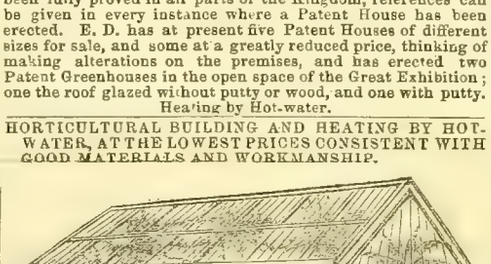
BY HER MAJESTY'S ROYAL LETTERS PATENT.

### GALVANISED SHEET-IRON GREENHOUSES, HOTHOUSES, CONSERVATORIES, &c.

E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road, Chelsea, who now offers 10*l.* to any person that can show a House of Grapes, equal for Quality, Quantity, and in proportion to space and age of Vines, as Mr. Thomas Frost, Head Gardener to Edward L. Betts, Esq., Preston-hall, which is a Galvanised Sheet-iron House, built and heated by himself. The superiority of these Houses having been fully proved in all parts of the Kingdom, references can be given in every instance where a Patent House has been erected. E. D. has at present five Patent Houses of different sizes for sale, and some at a greatly reduced price, thinking of making alterations on the premises, and has erected two Patent Greenhouses in the open space of the Great Exhibition; one the roof glazed without putty or wood, and one with putty.

Heating by Hot-water.

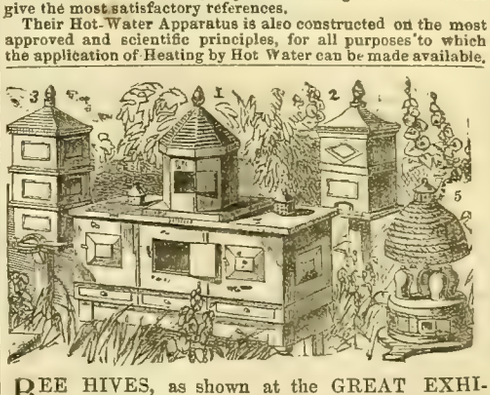
### HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR and SON, 127, High Holborn, London. No. 1, Nutt's Collateral Hive; 2, Improved Single Box-Hive; 3, Taylor's Amateur Bar-Hive; 5, NEIGHBOUR'S Improved Cottage Hive, working three or five Glasses; the Ladies Observatory Hive, &c. &c.

A priced Catalogue, with drawings and particulars, forwarded on receipt of two postage stamps.

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THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

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STRAWBERRIES AND FRUIT TREES.—TANNED GARDEN NETTING, for protecting the above from birds, or as a fence for fowls, pigeons, tulip and seed beds, from JOHN KING FARLOW'S fishing tackle and net manufactory, 5, Crooked-lane, London-bridge, at 1½*d.* one yard, 3*d.* two yards, or 6*d.* four yards wide. Forwarded carriage free, on all orders over 20*s.*, accompanied with post-office order or stamps.

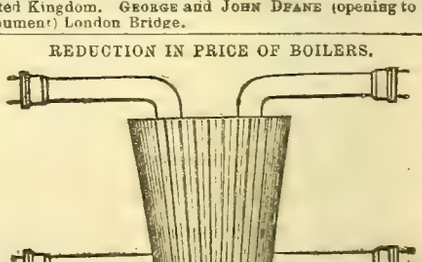
DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
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| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
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G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

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### REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now :

| | | | |
|---|---|---|---|
| 10 in. will warm | 50 ft. 4 in. pipe | ... | £1 15 0 |
| 12 in. do. | 75 ft. 4 in. do. ... | ... | 2 5 0 |
| 14 in. do. | 100 ft. 4 in. do. ... | ... | 2 15 0 |
| 16 in. do. | 150 ft. 4 in. do. ... | ... | 3 10 0 |
| 18 in. do. | 250 ft. 4 in. do. ... | ... | 4 10 0 |
| 21 in. do. | 350 ft. 4 in. do. ... | ... | 5 10 0 |
| 24 in. do. | 450 ft. 4 in. do. ... | ... | 7 0 0 |
| NEW PATTERN BOILERS. | | | |
| 30 in. will warm | 800 ft. 4 in. pipe | ... | 15 15 0 |
| 36 in. do. | 1500 ft. 4 in. do. ... | ... | 25 0 0 |

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above, the same price.

130, Fleet-street, London.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17*s.* 6*d*; 7 quarts, 15*s.* 6*d.*; 4 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

HORTICULTURAL SOCIETY OF LONDON.—His Grace the Duke of Devonshire, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 19th JULY. Tickets are issued to the orders of Fellows of the Society only, at this Office, price 5*s* ; or at the Garden, in the afternoon of the 19th July, at 7*s* 6*d* each, but then also only to orders signed by Fellows of the Society. But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 17th of July, may obtain from that Office an authority to procure Tickets on this occasion. No official orders for Tickets will be issued after that day.

N.B.—No Tickets will be issued in Regent-street on the day of Exhibition.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulate.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He or she may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4, in the Duke of Devonshire's road; or, if unable to attend personally, a wife, brother, son, daughter, or sister, if resident in the family, may represent the Fellow, if furnished with an admission Ticket on which the signature of the Fellow is inscribed.

21, Regent-street, London.

ROYAL BOTANIC SOCIETY, Regent's Park.—The last EXHIBITION of PLANTS, FLOWERS, and FRUIT, this season, will take place on Wednesday next, July 2d. Tickets to be obtained at the Gardens, by orders of Fellows of the Society, or by letters from Foreign Ambassadors and Ministers, price 5*s*., or on the day of Exhibition, 7*s*. 6*d*. each. The Rose Garden is expected to be in full bloom.

THE STANWICK NECTARINE.

MR. J. C. STEVENS will Sell by Auction, from 50 to 60 fine Plants, in pots, of this valuable Fruit Tree, on TUESDAY, July 1, at his Great Room, 38, King-street, Covent-garden, on account of the Fund forming by his Grace the Duke of Northumberland, in aid of the Gardeners' Benevolent Institution —Catalogues of Mr. J. C. Stevens, 38, King-street, Covent-garden, London.


# The Gardeners' Chronicle.

*SATURDAY, JUNE* 28, 1851.


MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| Tuesday, | July | 1—Horticultural | 3 P.M. |
| Wednesday, | — | 2—Royal Botanic Gardens | 2 P.M. |
| Thursday, | — | 3—Zoological | 3 P.M. |
| Friday, | — | 4—Botanical | 8 P.M. |
| Saturday, | — | 5—Asiatic | 2 P.M. |

Country Shows.—Tuesday, July 1: Oxford Horticultural.—Thursday, July 3: Highbury and North London Horticultural, and Ipswich Horticultural.—Saturday, July 5: North Kent Horticultural.

On several occasions we have ventured to suggest to the owners of stationary steam engines that they might, with advantage to themselves and the public, economise the heat belonging to their waste water, by applying it to horticultural purposes. Manufacturing towns were more especially pointed at as places where this kind of economy might have a large application.

We particularly referred to some important experiments of Mr. Dillwyn Llewellyn, of Penllergare, which we think it desirable to reproduce. From a small 8-inch cylinder engine, employed by him for agricultural purposes, this gentleman conducted a jet of steam for twenty minutes daily, through an inch iron pipe, into a bed of rough stones, covered by a glazed frame. A journal of the temperature was kept for 11 days, with the following result:

Statement of Experiment with Waste Steam, as a medium of Bottom-heat, made at Penllergare, 1850.

| Date. | Time of Observat | Thermometer. | |
|---|---|---|---|
| April. | | Degrees. | |
| 9... | 12 Noon..... | 51 | Steam introduced about 12 [o'clock. |
| ,, ... | 5 P.M. ..... | 54 | |
| ,, ... | 7 P.M. ..... | 56 | |
| 10... | 12 Noon ..... | 68 | Steam introduced. |
| ,, ... | 3 P.M. ..... | 73 | |
| ,, ... | 5 P.M. ..... | 85 | |
| ,, ... | 7 P.M. ..... | 96 | |
| 11... | 7 A.M. ..... | 108 | Steam not introduced. |
| ,, ... | 12 Noon..... . | 104 | |
| ,, ... | 5 P.M. ..... | 98 | |
| 12... | 10 A.M. ..... | 83 | Steam not introduced. |
| ,, ... | 7 P.M. ..... | 79 | |
| 13... | 10 A.M. ..... | 69 | Steam introduced. |
| ,, ... | 6 P.M. ..... | 75 | |
| 14... | 10 A.M. ..... | 82 | Steam not put on. |
| ,, ... | 7 P.M. ..... | 79 | |
| 15... | 10 A.M. ..... | 70 | Steam introduced. |
| ,, ... | 6 P.M. ..... | 73 | |
| 16... | 10 A.M. ..... | 81 | Steam introduced. |
| 17... | 10 A.M. ..... | 76 | Steam introduced. |
| ,, ... | 4 P.M. ..... | 79 | |
| 18... | 10 A.M. ..... | 94 | Steam introduced. |
| ,, ... | 5 P.M. ..... | 110 | |
| 19... | 10 A.M. ..... | 108 | Steam not introduced. |
| | 6 P.M. ..... .. | 96 | |

From this it appears, 1st, that although steam was introduced among the stones for only 20 minutes a day, the temperature was raised from 51° to 68° in the first 24 hours; 2d, that the temperature continued to rise for many hours after the second application of steam, until the thermometer reached 108°; 3d, that, at the end of 19 hours, the heat of the frame diminished; yet 4th, that at the end of *seventy hours*, the temperature still was 69°. This appears a conclusive answer to those who think that masses of heated water, or heated porous materials, like rough stones, will become so reduced in temperature by a few hours' withdrawal of the prime heating power, as to endanger the plants cultivated in houses thus warmed.

Our learned "practical" friends thought that we were poking fun at them, shook their sagacious heads, and pronounced the scheme an idea worthy of the editor of the *Gardeners' Chronicle*, and, we suppose, of nobody else. We have, therefore, for their especial comfort, the pleasure of announcing that the experiment has been attended by continued and perfect success, that Pine Apples grown in this way have actually fruited, that the fruit has actually ripened, that fine clear-skinned, evenly-swelled Queens, with a barrel like a hand-organ, have been produced, and that the said fruit was of so fine a quality, so fragrant, so rich, so everything that a Queen should be, as to have excited the private admiration of the fastidious jury, No. III., now sitting in judgment upon the eatables, drinkables, and smokables, submitted to their Rhadamanthine opinion in the Crystal Palace.

Thus it appears that a Pine Apple climate may be formed in Great Britain, without the cost of a farthing for heat, and that a West Indian sun may be had for nothing.

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Plants play a very important part in the economy of the creation; for, independent of their relation to animals as the real source of all food, they are essential to the purity of the air. We are told by chemists, that the composition of the atmosphere is quite constant and uniform; that air, from whatever place it is collected, is always found to consist of the same proportions of oxygen and nitrogen and carbonic acid. This fact has now been established by a number of careful experiments, made by different observers, in various parts of the globe, and extending over a considerable period of time, so that it may in fact be considered as proved, not only that the composition of the air is uniform throughout, but also that it does not undergo any appreciable variation in nature from year to year. There is certainly something very wonderful in this, and indeed it seems difficult to understand how it really can be the case, when we observe the great chemical changes which are at all times going on in the atmosphere, and the enormous quantities of certain substances which are constantly being poured into it in various ways. Night and day all living animals are consuming the oxygen of the air, converting it into carbonic acid, and the same effect is also constantly being produced all over the earth, by fires, furnaces, lamps, candles, and in short by combustion in all its forms. Decay, putrefaction, and fermentation, are also giving rise to the evolution of carbonic acid; and lastly, besides all these sources, immense quantities of the gas in question are evolved from fissures in the earth, especially in what are termed volcanic districts. There are then, to say nothing of smaller or more local causes, at least half a dozen great natural operations, all tending to vitiate the air, diminishing the quantity of oxygen which it contains, and increasing the proportion of carbonic acid. All these causes, we are told, are exactly balanced and neutralised by the decomposing influence of plants, and the wonderful power which they have of absorbing the carbon of carbonic acid. We owe this remarkable fact to the researches of Drs. Priestley and Ingenhousz, extended, repeated, and confirmed by a host of other observers.

In Dr. Priestley's first experiments on carbonic acid or fixed air, it is evident that he regarded it as highly poisonous to plants; for in the first volume of his very interesting Essays on Air, he says,—"Fixed air is presently fatal to vegetable life;" and he then goes on to show that plants, in many cases, were very soon killed, when exposed to the influence of carbonic acid gas, collected from the fermenting vat of a brewery; he however observes, that he did not repeat the experiment with pure carbonic acid artificially prepared, and regrets that he had not yet had leisure to do so. These experiments were repeated and extended by his friend Dr. Percival, who published an account of his results in Hunter's "Surgical Essays." The conclusion to which he arrived, was just the contrary of what might have been expected from Dr. Priestley's experiments; for he states, "that fixed air not only retards decay, but actually continues the vegetation of plants, and affords them a pabulum, which is adequate to the support of life and vigour in them for a considerable length of time." So satisfied was he of the truth of this, and the important influence that the discovery would have upon the art of gardening, that he goes on to point out how the florist who is anxious to obtain a prize at some great meeting held for the encouragement of horticulture, might perhaps avail himself of the powers of "fixed air," either to quicken the growth of his plant if still immature, or to preserve it in all its beauty, and retard its decay if fully developed; and he accordingly gives several directions to gardeners who are willing to try the effect of carbonic acid gas on their flowers. Some years before this time, however, Dr. Priestley had observed that plants grew well in air which had been vitiated by the breathing of animals, and that they soon restored such air to its original state of purity; it seems that he did not at that time very distinctly connect the two phenomena together, for it was not till after Dr. Percival's experiments had been published, and after Ingenhousz had promulgated his views upon the subject, that carbonic acid began to be regarded as essential to the growth of plants. It is not easy now, neither in fact is it very important, to decide exactly what degree of merit belongs to each of these three philosophers. The experiments of Ingenhousz were the most numerous and minute, and his views were the most strongly criticised by contemporary naturalists; at the same time he distinctly states that his experiments arose out of those of Dr. Priestley.

The circumstance which prevented many observers from believing in the importance of carbonic acid to plants, arose from the fact, that as in nature they are only supplied with it very gradually and in small quantities, and as their organs are only fitted to absorb it when largely diluted with common air, so, when placed in an atmosphere containing a considerable proportion of this gas, they are always more or less injured; and it was difficult to understand how, if carbonic acid in small quantities was food and nourishment, that in rather larger quantities it would be hurtful and even poisonous.

Dr. Percival's idea of the probable value of carbonic acid as a powerful agent in the hands of the skilful gardener, is one which naturally leads to several interesting considerations, and it has accordingly produced a number of curious experiments, which, though they certainly do not justify his prediction, or, indeed, give much prospect of any really important direct improvement in practical gardening, are nevertheless very curious and interesting. The primary question of course is, are plants always able to absorb as much carbonic acid from the air as they require, and would benefit be derived by increasing the proportion of it, in the air of a forcing-house for example? When Dr. Priestley found that pure carbonic acid was hurtful to plants, he next tried mixtures of it with common air, and he found that even one-eighth of it rendered the air poisonous. Ingenhousz, after a great number of experiments, and, though quite satisfied that plants really decompose carbonic acid, speaks with great doubt of the effects which it produces when artificially added to the air. He says, "plants grow tolerably well in air to which a small quantity of carbonic acid has been added, especially if they are exposed to the sunshine; sometimes even they seemed to grow all the better for it," but he adds, "that it is doubtful if this effect was really due to the presence of the carbonic acid." A second, and very remarkable series of experiments is described by De Saussure, the result of which showed that the addition of carbonic acid, where more than a tenth was added, always did harm, whilst a twelfth produced a decidedly beneficial effect, if the plants were exposed at the same time to the influence of light; there are however, unfortunately, several interfering causes in these experiments, which Saussure overlooked, and which diminish their real value. Three years since, some valuable observations on this subject were made by Dr. Daubeny, who conducted a careful series of experiments, with the object of ascertaining what proportion of carbonic acid in the air healthy plants are able to endure, without inconvenience. The result of his investigations prove, that 10 per cent. of carbonic acid is not at all injurious to plants, and that it is some time before even rather larger proportions of that gas begin to produce bad effects. Even as much as 20 per cent. produced no injury in 10 days.

In all considerations of this sort, it is obviously the best way to commence by studying the natural conditions of plants, before we begin to place them in new and unnatural circumstances. In nature, plants are supplied with an almost infinitely small quantity of carbonic acid, and the effect of their growth is to deprive the air which surrounds them of that carbonic acid, and to replace it by an equal volume of oxygen.

The chief difficulty which exists in comprehending the true bearings of this great fact, depends on the enormous magnitude of the entire atmosphere, and the almost infinitely large quantities which we have to consider. It is easy to form some idea of the quantity of carbonic acid which is produced in a given time on a square mile of the earth's surface, and which the plants growing on it consequently may be supposed to have to decompose in the same period. But it is very difficult to form any just idea of the whole atmosphere, or to comprehend the relation which exists between the bulk of the carbonic acid and that of the entire atmosphere. Large as the former appears to us, and enormous as its quantity is, when compared to the largest tree,

yet it is a mere trifle, a thing of very little account, when contrasted with the bulk of the whole atmosphere.

If, for example, we assume, for the mere purpose of comparison, that on an average each human being on the surface of the earth gives out, in the course of twenty-four hours, twenty-four ounces of carbonic acid gas, a proportion probably not very far from the truth, the volume of the gas thus expired would be about twelve and a half cubic feet; and the entire quantity given out during a whole year at this rate, would be 4744 cubic feet of carbonic acid gas; having a weight of about 547 lbs., very nearly a quarter of a ton! If then we go a little further, and calculate what would be the bulk and weight of the quantity of carbonic acid that would be given out by the entire population of the globe, during a whole year, assuming its number to be 600 millions, and supposing that every individual required the same quantity of carbonic acid, we should then arrive at the result of very nearly three million of millions of cubic feet, or 316,266 million cubic yards of carbonic acid. This quantity is so large that it is difficult to conceive any just idea of its real volume, and the consideration is not rendered much simpler, if we reduce it into cubic miles; we then find that it would amount to about 58 cubic miles. On the other hand, if we calculate the weight of such a quantity of carbonic acid, we are nearly as much bewildered with high numbers, for we find that it amounts to 326,200 million pounds, or 145 million tons! and this, be it remembered, is but a very small portion of the carbonic acid which plants must absorb every year.

## ORCHIDS FOR THE MILLION.—No. VI.

(By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.)

TREATMENT DURING THE TIME OF REST.—Rest is of great importance to Orchids, as well as other things. No plant will continue long in good health without it. My practice is to give them a long season of rest, generally from November to the middle of February. During this time the temperature of the East India house should be regulated so as to keep it as near as possible at 60° by night, and 65° by day; but by sun heat the temperature will rise a few degrees higher. Air must then be given so as to keep it about 65°; but a few degrees of solar warmth above this point will do no harm. A little air should be given on every fine day, in order to dry up damp; but the air must be admitted close to the hot-water pipes, so that it may become warm on entering the house. As to those plants that come from the hotter parts of India, the temperature should not be allowed to go below 60°. The Mexican house should range from 50° to 55° by night, and from 55° to 60° by day; this should not be allowed to go below 50° at night.

Rest is induced by lowering the temperature and withholding water from the plants; during this season they should only receive sufficient water to keep them from shrivelling. There are, however, some plants that will grow during the winter months, as many of the Aerides, Vandas, Saccolabiums, Phalænopsis, Zygopetalums and similar kinds. These will require water at the roots to keep them increasing, but be careful not to wet the young roots, for if they get wet they are very apt to rot at this season of the year. Those that are growing should be placed at the warmest end of the house.

Some Orchids are deciduous, losing their leaves after they have finished their growth. To this class belong Cyrtopodiums, Barkerias, Cycnoches, Phaius albus, some of the Dendrobiums, Cœlogyne maculata, C. Wallichiana, and many others. I always place these so that they may have as much light and sun during their season of rest as possible. This s the only way to ripen their bulbs, which causes them to grow stronger and flower more freely. These plants require but very little water when at rest. But when such plants as Vandas, Angræcums, Aerides, Saccolabiums, and Phalænopsis are at rest, they should never be allowed to get too dry at the roots, always keeping the moss a little damp; for the bulbs and leaves are very apt to shrivel if kept too dry, and this often causes them to lose their bottom leaves. The stems and leaves of such plants should be kept plunged, and they require but a short season of rest; those which are growing on blocks will require more water than those which are in pots or baskets, and they should be watered about twice or three times a week if the weather be fine, but in dull weather they will not require it so often. The water should be poured over the paths and walks every fine morning, with a view to create a moist atmosphere, but the moisture in the house must be regulated according to the weather outside—this is an important point to be attended to; if the weather is dull outside, the house, inside, must be kept dry. The glass and roof should always be perfectly clean, so that the plants can have plenty of light and sun; it is my practice, as soon as the season of rest commences, to wash every piece of glass on the house, and also the woodwork.

INSECTS.—The plants are liable to be injured by many sorts of insects, such as red spider, thrips, mealy bug, white and brown scale, woodlice, cockroaches, and the small shell snail. The cockroach is one of the greatest plagues we have to deal with; they will do a great deal of mischief in a few nights, if they are not sought after, on every opportunity. The food they like best is the young tender roots and flower stems. I have seen the roots of a plant completely eaten off in one night. The only way to keep these insects under, is constantly looking after them, both by night and day. I search for them every evening by candle-light, and in the daytime by moving the pots and baskets under which they harbour. They leave their hiding places in the evening, and seek after food, and it is then that they are most easily caught. It is also a good plan to lay some damp Moss in the hottest part of the house; I have killed many in this way, looking the Moss over every two or three days. I have also destroyed them with a mixture of honey, lard, and arsenic, the latter in very small quantity. I place some of this in oyster shells in different parts of the house. Some growers mix the arsenic with tallow put on a stick which is stuck in the pots; care however must be taken that the mixture does not touch the leaves or bulbs of the plants.

The woodlouse and the small shell snail are also very destructive. These, like the cockroach, are very fond of the young roots; they may be trapped by cutting some Potatoes in two, scooping out the inside, and placing them on the pots and baskets, looking over them every night and morning till you clear your house of these visitors. Turnips cut in slices will answer the same end. Toads are very useful in catching insects; I always keep a stock of them in the house.

The best way of getting rid of red spider and thrips is constantly washing the leaves with clean water, and by fumigating the house with tobacco. My method is to fill the house with tobacco smoke three or four times; this should be done every two or three days till the insects are quite destroyed. Evening is the best time to do this. It is also a good plan to mix some lime and sulphur together, and rub it on the pipes in different parts of the house, but be careful not to use too much, and it should be used only when the pipes are warm. There should be a good supply of moisture at the same time, but not too much heat. The green fly, which makes its appearance in spring on the young flower buds, may also be destroyed by tobacco smoke.

The brown and white scale and mealy bug I keep under by constantly sponging the leaves and bulbs with water; the white scale is very troublesome if not looked after. Cattleyas are very subject to this; the following recipe for destroying these insects was given me by Mr. Veitch of Exeter, who is a very successful grower of Orchids, viz, to one gallon of rain water, add 8 ozs. of soft soap, one oz. of tobacco, and three tablespoonfuls of turpentine; stir well together, and leave the mixture for 48 hours; then strain it through a cloth; what you have to spare must be bottled off. It is necessary to rub the plants over two or three times, if they are much infested, but once will be sufficient in most cases.

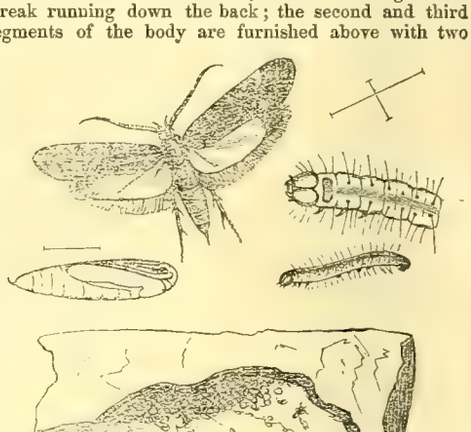
## ENTOMOLOGY.

### THE YELLOW UNDER WINGED BARK MOTH.

ONE of the prettiest of our small British moths is to be met with rather abundantly in gardens in the end of May and beginning of June, flitting about with an unsteady kind of flight, and often to be seen on the wing during the day-time. It is the Tinea (Œcophora) sulphurella of Fabricius (by whom the female was considered as a separate species, under the name of Tinea flavella and cornutella), and is figured by Hubner in his great work upon the European Lepidoptera, under the name of orbonella, in allusion to its being a miniature resemblance to the Noctua (Triphœna) orbona. It measures about two-thirds of an inch in the expansion of its fore wings, which, as well as the body, are of a purplish black colour. The sides of the head and the palpi are ochre-coloured, the antennæ black, with a band of white along the middle, the thorax blue-black, with an ochre stripe on each side. The fore wings (which, in the female, are tinged with deep dull blue) are marked with two longitudinal streaks of fulvous scales, extending from the base to about the middle of the wing (which are less distinct in the male than in the female). There is also a large triangular fulvous patch on the inner margin near the extremity, nearly opposite to which, on the costal margin, is another fulvous patch, which is scarcely distinct in the males. The under-wings are fulvous yellow, with the costal margin, the extremity, and the fringe blackish. The accompanying figure represents a female moth magnified, the cross lines indicating the natural size; together with the caterpillar of the natural size, and with the fore segments of the body magnified; the chrysalis magnified, and a piece of Currant stem showing the wound formed by the caterpillar.

The genus to which this species belongs is distinguished from the other Yponomeutidæ by having the palpi longer than the head, and recurved, with the terminal joint very slender and naked, the antennæ of moderate length, with the base short, very pilose beneath as far as the middle, beyond which they have a pale coloured ring; the fore wings are much deflexed at the sides of the body when at rest, being long and rather narrow. The genus comprises another elegant British species, namely, the Œcophora Oliviella, which is not uncommon on palings and in hedges in June and July, flying about in the sunshine in the morning.

Œcophora sulphurella possesses considerable interest for the gardener, on account of its habits in the caterpillar state, during which period it resides beneath the bark of trees, the female depositing her eggs in slight fissures or wounds in the bark, which are then greatly extended in size, by the burrowing habits of the larvæ. Fabricius says that it inhabits old Oak wood, and that the larva state continues for three years. It is upon the inner bark and soft outer layer of the wood that the caterpillar feeds, boring only to a very little depth in the old wood, and forming for itself a web as a covering in its burrow, which is filled with excrement and bits of gnawed wood. I have found it especially numerous under the bark of Elder trees, as well as under the bark of old Currant stumps, which it sometimes burrows to such an extent as to destroy large branches of the tree, by eating away the inner bark all round the stem, whereby the current of the sap is entirely destroyed. I also received specimens, evidently of this larva, from "Este," at the end of April, 1850, which he found burrowing beneath the bark of a Downton Pippin. The caterpillar is rather long and thin, of a dirty yellowish grey colour, and the head orange or Chestnut coloured, the first segment of the body pale in front but brown behind, a darker longitudinal streak running down the back; the second and third segments of the body are furnished above with two



small shining dots, and the fourth and following segments have two pairs of similar dots, besides lateral ones—all these little dots emitting slender, bristle-like hairs; the jaws are powerful, but not porrected; each of the three anterior segments of the body is furnished with a pair of jointed legs, the sixth and three following segments have a pair of fleshy prolegs attached to each, and there is a pair of similar legs at the extremity of the body, the upper side of the last segment being dark-coloured and rounded. The larva moves very quickly, and, when alarmed, wriggles itself about, backwards, sideways, and in all directions, with great agility, throwing itself down from the stem, taking care, however, to secure its reascent by a thread from its mouth, so that it falls with its body in a perpendicular direction, the head being upwards. Its situation beneath the bark is generally to be perceived, owing to the mass of small black pellets of excrement with which the wound in the tree is thickly covered. In the month of January, I found these caterpillars of very different sizes; the smaller specimens were nearly white, whilst others had already assumed the chrysalis state, each being enclosed in a slender silken cocoon, the outside of which was covered with little pellets of excrement, and particles of rotten wood.

The chrysalis is rather more than a quarter of an inch in length. It is of a chesnut colour, and of an elongate oval form, with the extremity of the body conical. Unlike most subcortical chrysalids, it is not furnished with transverse rows of reflexed hooklets, across the segments of its abdomen, enabling it to move about in its case; the only analogous appendage which this insect possesses being a curved slender horny point at the extremity of the body. From its position, it is doubtless of much service, from the flexibility of the abdominal segments, in retaining itself in such position as may be necessary for its development. *J. O. W.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 19.)*

No. XXXV.—When I first commenced dilating (contrary to my original intention) on the habits of the nightingale, I was fearful lest my extended observations from week to week might prove tedious. Each successive day, however, brings with it such pleasing, such abundant proof to the contrary, that I have thrown all my best energies into the subject. It is indeed, as most of my correspondents remark, no less singular than true, that there is really no valuable *practical* work on British Song Birds existing; and I can well understand why, under such circumstances, I am urged to be "explicit." Let me hope that my intimate acquaintance (some 30 years) with the feathered tribe, will at last furnish the required desideratum. Thus much, parenthetical.—If ever your nightingales droop, or show an unusual want of liveliness, which in the autumn they very often do, change their food a little. They are particularly fond of ants' eggs, and liver gentles. Give them occasionally a few of each; and never pass them without taking some notice of them. They cannot bear a slight. On every occasion of kindness shown, *you* will be the gainer.

* A number of "anxious enquirer" will be gratified to learn, that their favourite bird, "The BLACKCAP," will be introduced in Cage Birds No. 22, to appear July 19.

I need hardly remark that nightingales never "breed," when in confinement. So contrary would such a thing be to their nature, that I apprehend no authenticated instance of their having done so is on record. When this is the case, I think we cannot err in saying,—that keeping birds which were born "free," under such circumstances, *must be* cruel. They rather exist than live with us. Their hearts are far,—far away.

I have before casually noted (whilst treating on SEED birds) that soft-billed birds when performing any call of Nature, always bolt their tails, and this action proves them to be in health—whereas the very converse is the case with *seed* birds. This makes it needful to attend to proper diet. If the nightingale were *not* to bolt his tail on certain occasions, it would be an unerring symptom of illness; and a meal-worm or two should be given him immediately. If he refuses *these*, he must be bad indeed!

Sometimes, in the heat of summer—indeed oftentimes, if not regularly looked to—the cages of these birds emit a very offensive smell. This, as I before remarked, arises from the nature of the food they eat. Let me, therefore, again urgently recommend extreme cleanliness. The bird can then respire freely, and enjoy himself; and he stands a fair chance of keeping in good health. One-half of our birds and domestic animals have their lives shortened, and their health injured, by neglect.

As a rule, I should say never keep a nightingale, unless a brancher, or a nestling, more than three years. About this time, oftentimes sooner, you will observe their legs to swell, and to become gouty. Large scales will form, from the upper joint downwards, causing your birds so much pain, that they will frequently perch upon one leg only,—the other being drawn up for relief. I *have* succeeded in reducing these scales; but as it is difficult, and attended by danger, I shall give no "instructions." Let us therefore charitably consider that the time is now come to reward our little friend, for the pleasure he has afforded us. We have unmistakeable signs that confinement has brought on premature old age. The only remedy for this—the only way to regenerate his system—is, to let him fly. This should be done in the month of July or August, just before he moults. He will then have time to recruit himself before taking his final leave in September, and acquire renewed strength to waft him across the Mediterranean.

How long these birds live in a state of freedom, I am not quite prepared to say,—it is supposed about 12 years. This much, however, is certain—the very same bird you liberated will speedily be restored to health, and to youth. The chances, too, are, that he will return to your garden the very next season, and there abide,—until having reared a family, he again revisits his former haunts. These are notorious "facts." Far be it from the nightingale easily to forget the rights of hospitality. You have fostered him, and given him liberty, and he will annually reward you with songs of gratitude as long as he lives, and you live to hear him.

Nightingales, if affectionately tended, moult freely in a cage, and get through their troubles in a very few weeks. They should be kept warm, and quiet, but not covered up too close. It is desirable to keep their food varied, and to treat them now and then to a few ants' eggs, raw scraped Carrot, or a meal-worm. Do anything but neglect them. *This* would cause their sensitive hearts to break. They are not fashioned like ours!

Do not feel surprised if, at the "fall of the year," your birds show unusual excitement, and dash about their cages. They *will* do so. The same will occur at the spring of the year. It is called "agitation," and is peculiar to all "birds of passage." This is so interesting a subject, that it will form matter for discussion in a separate chapter, hereafter. Nature's laws are truly wonderful! Let me, however, remark that although the birds' plumage may suffer from this agitation, they will regain their self-possession, and their usual flow of spirits, in about three weeks. Still you will observe *occasional* signs of melancholy throughout the autumn.

Birds caught immediately on their arrival in England, are of little value the first year. Their song seldom lasts, in a cage, more than three weeks. When, however, use, which is said to be second Nature, reconciles them to their master or mistress, they show great gradual improvement. They break out into song either at Christmas, or early in the following year, and continue in fine song until June. They are then silent until October; when they "settle down" with the family in a nice snug room, warmed by a bright cheerful fire, and gaily lighted for the happy enjoyment of a merry round party. *Then* will the mellifluous jug-jug, the soul-enchanting water-bubble, and the thrilling love-chant, be heard throughout the house. *Then* will the inherent excellences of our noble hero be universally acknowledged. *Then* are our household-gods "complete."

It is perhaps not so well known as it ought to be, though I have already hinted at it, that the nightingale, when in confinement, is a most cruelly-jealous bird,—jealous not only of his master or mistress noticing any other bird than himself,—but jealous of his own tribe. His motto is,—*Aut Cæsar, aut nullus*. He will admit no rival near the throne. Hence, to keep two of these birds in one room would be ridiculous.

The same extraordinary failing prevails in most of our "warblers." If out-done in song, they frequently fall "dead," from off their perches. Some of these rival musicians, be it known, do not weigh a quarter of an ounce! When, therefore, it is considered desirable to keep several nightingales, let each occupy a separate apartment. By this precaution, not any one of the birds will be put down or silenced, and each will sing without having his temper ruffled. It is sometimes a hard matter to restore the serenity of one of these "enraged musicians." Even then, his rage smoulders!

When autumn visits us, and there is a sudden change of temperature, be sure and keep your birds in a warm, cheerful room. Never leave them by any chance, in a room without a fire. They are very sensitive, and soon fall sick. Extreme cold inflicts blindness on them, and they cannot see to find their food. Their finely-constructed lungs require to be studied in the minutest particular. Never therefore let them remain in a smoky room; and let them be always removed *pro tem.*, when your Abigails have a "domestic rout;" also when there is a general sweeping of carpets. Attend to these little matters, and you will be rewarded to your heart's content. *Wm. Kidd, New-road, Hammersmith.**

## Home Correspondence.

*Rot in Larch.*—My opinion as to the cause of Larch rot is quite different from yours. Of course all land to be planted ought to be well drained, but I am not aware that this is more necessary for Larch than for other timber trees. I have cut down unsound Larch on land which I know was dry. I have had sound Larch growing on land that would hardly bear my weight, and I have seen unsound on like land. I believe that there are two conditions essential to the growth of sound Larch. The first and principal one is, that the Larch should never be planted mixed with Scotch Firs, or on land that has previously borne a crop of Larch, Scotch, or any other kind of Fir. Second, that it should have, at all stages of its growth, the free and healthy use of all its branches; or, in other words, that it should be planted thin, kept thin, and never pruned, except it is absolutely necessary in order to prevent dead knots. In this opinion I think I am confirmed by Loudon's "Arboretum et Fruticetum Britannicum," where this subject is largely discussed, and also by certain passages in Mr. Brown's work. *J. H., Liverpool.*——Your observations on the rot in Larch trees coincide generally with my own experience; namely, that it is commonly caused by too much water about the roots in winter. Every tree growing naturally in a suitable soil and climate secretes certain peculiar gums and resins of an antiseptic character, which glue together the fibres of which the annular layers are chiefly composed—hardening in time and amalgamating with them. These secretions are sufficient to preserve the tree from premature decay; but when a mountain tree is planted in a swamp, or one from a hot and dry climate is removed to a situation cold and wet; those conservative principles are not sufficiently elaborated to enable the tissue to withstand the undermining agency of the air, water, and inclement weather, of which probably water is the most injurious; soddening the roots during their period of rest, and in time dissolving that conservative cement which had been previously stored up. This dissolution I have always found to commence at the root; and then fine interstices are left between the concentric layers, into which, as you observe, a white mycelium penetrates, and no doubt expedites the disintegration of the tissue. What this mycelium is, it may be difficult to decide, but it is reasonable to suppose that it belongs to one of those species of fungus to which the tree is most commonly subject. The species usually found on the Larch is "Thelephora sanguinolenta," Eng. Flora, vol. 5; and the Mycelium beneath it bears a general resemblance to that found in the decaying trees; this, however, cannot be much relied upon, that of many species being nearly alike. It appears that old Larch trees are also subject to other species of fungi in their natural habitats. W. Turner, the famous physician and herbalist in Queen Elizabeth's reign, speaks of "the moste precious Agarick" found upon them in Italy and Norway, which was "soulde very dere in Italy, France, Germany, and England." This was probably "Dædalea sepiaria," Eng. Flora—"Agaricus boletiformis," Sowerby; but it does not grow I believe in this country, except on foreign timber. It should be observed, however, that the Larch is not a solitary instance of the particular state of decline to which you have called the attention of your correspondents. The Birch tree frequently fails under similar circumstances. I have examined trunks, in which all tenacity between the concentric layers was lost, so that they might be separated very easily; and a white mycelium occupied the interstices. This was succeeded by a small sessile Polyphorus, with a buff pileus and greyish hymenium, which I do not find described by authors—and by "Dædalea betulina." As to the exceptional cases to which you advert, I have myself seen not a few trees, which, I believe, were absolutely starved on dry heaths, for want of water enough; and it is not unusual to see large trees die where deep drainage has deprived them of their due supply. I think it very probable that most plants contain, while living, the spores of those fungi which prey upon them in decay; but that they have not the power to act upon those conservative substances which they contain when perfectly organised. If, however, these secretions are dissolved, the spores soon vegetate and penetrate the softened mass, with their creeping mycelium, to a great extent, without being able at all times to reach the surface and fructify. I have examined Oak staves which might be snapped easily between the thumb and finger, from lying in a damp place; yet these did not contain a trace of spawn; in others, however, the white filaments were running up the vertical tubes—the wood then affording their proper pabulum. This is commonly called "dry rot," but I do not think it invariably belongs to that much-dreaded species—the Oak being subject to several others, even more common—one of them "Fistulina hepatica" amongst the most beautiful of the order. *F. J. Graham, Cranford.*

*A Standard Weight for Pine-apples at the Chiswick Exhibitions.*—As Providence Pines have been produced weighing 14 lbs.; Enviles, 8 lbs.; and Queens the same; would it not be advisable that some standard be named by the Horticultural Society as to what the different kinds of Pines must reach in weight to be considered worthy of merit by the judges? Something like the following might answer:—No Providence Pine to be deemed eligible under 7 lbs.; no Enville, under 5½ lbs.; no Queen, under 5 lbs.; no Black Antigua, under 4 lbs.; no Otaheite, under 4 lbs.; and no Black Jamaica, under 2 lbs. I perceive that the Society's medals have been given for Providence and Queen Pines, in May and June, of very small sizes. *C. Bundy, Wadley-house, Berks.*

*Song Birds.*—It is stated, at page 392, that "the stonechat is a tender summer warbler." This is entirely erroneous. The stonechat (Saxicola rubicola) remains with us the whole year, and braves the severest cold upon open furzy commons, and only leaves these places when a fall of snow prevents it from obtaining food: it then seeks the marshes near the coast, where it may often be seen in considerable numbers. The whinchat (Saxicola rubetia) is migratory, and seems unable to bear much cold; but I kept both species in cages in perfect health for several years upon the plan recommended by the late Mr. Sweet; indeed, all the warblers may be easily kept in this way, and a supply of the maggots of the common flesh fly may be preserved through the winter in pots of earth, and upon these the birds will greedily feed. I may also observe that there is some confusion about the reed sparrow—the note of the sedge warbler being apparently described as belonging to this bird. The call-note of the reed sparrow is a simple squalk, and its song, if song it can be called, consists of only two notes, the first being repeated twice, and may be represented by the words "cheep-cheep, chee;" it is more monotonous than that of the yellow-hammer. The bird alluded to as found in Wales is undoubtedly the common redstart. *Henry Doubleday, Epping.*

*Forcing Peaches.*—In the Number for February 22, of this year, is an article on this subject by "J. M.," in which it is asserted that, when the fruit begins to stone, and till its completion, "the syringe and watering-pot must be sparingly used, or the fruit will drop off." I am aware that this is a maxim handed down to us by our forefathers; but have the growers of the present day investigated the matter? If moisture is the prime mover of the evil, in what way does it act to cause the fruit to drop? Perhaps "J. M." will oblige by giving his opinion on the subject, probably having experienced the effect, and made some observations on the cause. *Curiosus.* [Did "J. M." ever try the effect of warm water, say at 70°?]

*Drying Plants.*—If your correspondent "Botanicus" would take his plants out of the paper they had been partially dried in, that is to say, after two or three days, and the most tender and delicate plants after about 24 hours, and placing them in dry paper (a couple of quires under and one sheet over), proceed to iron them with a common smoothing iron, moderately hot, he would find the colours preserved in a much greater degree than by the common method. I have a large collection made in Italy and the south of France, mostly dried in this manner, and many dried thus in 1835, are still perfect in their colours; even the common Broom (Cytisus scoparius), which usually turns black (both blossom and leaf), and the flower of the blue Campanula, which becomes white, perfectly retain their colour when dried in this manner. Care is required to have the iron sometimes less hot, and sometimes more so, according to the different sorts of plants to be acted on; but this must be learned by experience. This process of drying prevents the necessity of dipping plants, such as Heaths, which have a tendency to cast their leaves in the drying, into scalding water, or any other mixture, as the hot iron effectually destroys the vitality at once. It has been found useful to lay silver paper, dipped in a strong solution of alum, on the specimens. *J. R. G., near Dublin.* [The specimens accompanying this letter were well dried. The point to be observed in drying plants is to do it quickly at a moderate temperature; that is all.]

*Composition for Iron Hurdles.*—I have tried, more than once, Mr. Fleming's mixture of Stockholm and gas tars heated, on wood and iron fences, and have not succeeded with it. It was shortly washed off, and taking the cost of the materials, the iron barrow, and two men (a boy cannot move the barrow), it was expensive. I have, however, used for many years, and found it to succeed perfectly for wood, as well as iron work, a mineral gas tar, prepared by Messrs. Cassall, Mill-wall, Poplar, London, and sold in casks containing from 270 to 300 lbs., and costing about 12*s.* or 14*s.* each. *LL., Shrewsbury.*

*Yellow Roses at the Chiswick Exhibition.*—I would advise Messrs. Lane to keep more correct data of their grievances. In 1849 Messrs. Lane and Francis were awarded first and second prizes for 6 yellow Roses in pots! In 1850 the rules stated, that "pale cream colours were inadmissible;" on that ground we were both disqualified, and the prize was given to six cu

* Replies to a number of questions, asked of the Editor of the *Gardeners' Chronicle*, will be found among the "Notices to Correspondents."

yellow Roses. Why did Messrs. Lane not state their grievances then, when the prize was given to an amateur gentleman's gardener? The reason is obvious. Are Messrs. Lane quite correct as respects their list of yellows shown in 1849 and 1850? I think not. *E. P. Francis, Hertford.*

*Budding Plums and Cherries.*—Although quite successful in my budding and grafting of Apples, Pears, &c., I find that in Plums and Cherries it is far otherwise, and I frequently find that although the bark of the bud is alive in the spring following, yet the bud itself remains dormant, even when stimulated by the stock being headed down to a foot above the insertion; I sometimes fancy the scion too old and sometimes that it is too immature, for it seems to be equally uncertain whether I bud at the end of July or the middle of August; sometimes every bud takes, and those inserted a few days earlier or later not one. I also find that the same uncertainty prevails whether I leave the young wood adhering to the bark of the bud, or take it away before insertion; please to give me some advice on the subject. *T. G., Clitheroe.*

*Climate of Torquay.*—I remark in your paper of this day (June 21), which I have frequently done before, a communication from Torquay which, from the respectability of the writer, I have no doubt is true. I would wish, however, to correct the notion which of late it has been the fashion to inculcate, that the place alluded to (Torquay) is so peculiar for its mildness and those general recommendations which the south of Devon enjoys. Torquay is simply one of the little coves with which Torbay and the coast down to Salcombe abounds, in all of which the same genial climate prevails, and the same fruits, flowers, and vegetation luxuriate; and if you refer to the hand-book of Devon and Cornwall, you will there see that the whole of Torbay, bound on its south by Berry Head (not the quay called Torquay alone), possesses the charms of which all desire to partake. *South Devon, June* 21.

*Æsculus rubicunda.*—People talk of the purple Laburnum, which bears its threefold blossoms here and everywhere. But an Æsculus rubicunda in my garden yearly produces, upon one branch, spikes of pale yellow flowers, smaller in size, and somewhat similar in colour to those of the Æsculus or Pavia, called flava. I count seven yellow spikes on it this year. What is Æsculus rubicunda; a species or a hybrid? *A. H.* [We presume a hybrid.]

*Rhododendrons.*—Three or four plants of the true R. arboreum have this spring bloomed in the open ground at Combe Royal, after a growth of some years. The plants in question were raised from seed, imported from Nepaul by Messrs. Veitch, and were planted out of doors as an experiment. Though Combe Royal is situated in one of the mildest parts of Devonshire, a still warmer climate seems to be required by this magnificent shrub, as the young shoots are often injured by a spring frost, and the flower-buds also damaged. It is observable that many of the seedlings vary in size, form, and hue of their flowers, several being spotted, others of a uniform tint, while one has produced such a cluster of blossoms of glowing scarlet, which for size, texture, and waxy opaque colour (if I may use such a term) as few conservatory plants can boast. R. arboreum roseum, being of a more robust constitution, has flowered during the month of April, in the most luxuriant manner, while R. zeylanicum produced perfect heads of bloom in January. Is there any difficulty in growing the yellow and buff hybrid Rhododendrons, raised by Mr. Smith? and have they succeeded anywhere, in a satisfactory manner, in the open air? *A Devonian.*

*Country Shows.*—In 1844 a horticultural society was established in Airdrie for improving the science of gardening in the burgh and neighbourhood. The prizes offered were open to all competitors; but after three years' experience it was found that parties with small gardens could not compete with gentlemen's gardeners, and in 1847 the society was divided into first and second classes, class first being open to all competitors, class second open to amateurs only. A dispute has arisen among the members as to who ought to be considered amateurs. For instance, I cultivate a small piece of ground attached to my rented dwelling-house, not exceeding seven falls, others more or less; but the following is an example of what is complained of on the part of amateurs: Mr. C. W. has a large garden, walled and otherwise sheltered; he employs a gardener constantly from the beginning of March till the end of May, and afterwards at least three or four days in the week during the rest of the year. Mr. W. A. has a walled garden, containing upwards of an acre of ground, with two large Vineries and a greenhouse, besides a number of frames; his whole time is occupied in the cultivation of his garden, the productions of which he sells to the best advantage. Mr. J. A., governor of a certain institution in the locality, has upwards of an acre of ground attached to the institution, besides the garden allotted for himself; and although he works a good deal, yet the inmates, both male and female, do the heavy work. Your opinion as to whether these individuals with their large gardens, Vineries, greenhouses, frames, &c., ought to be allowed to compete with an individual or individuals who have not above seven falls of ground out of which to take their articles for competition, will oblige *A. W. A.* [This question can only be settled on the spot. Upon the face of the statement this writer seems to be a cottager, and should show as such.]

"*Orchids for the Million.*"—Although Mr. Williams' papers are very useful to cultivators of Orchids, yet there are some plants which are either specially difficult to cultivate, or specially difficult to grow so as to produce flowers. I believe nearly all find Epidendrum bicornutum difficult to grow under the ordinary treatment. I inspected a good specimen of Paphinia cristata, which flowered, but has since made little progress. Both of them have been potted in rough peat, and kept in a moderately warm part of the Orchidaceous-house. Burlingtonia rigida, treated in the same manner, rarely blossoms. Epidendrum rhizophorum is tied to a tall block, which is inserted in a pot, and kept in the cool house; and this, though it grows freely, produces no flowers, and I believe this is the case with most specimens of this plant. It is probable some of your correspondents may be more successful with the plants I have named, or may be able to suggest some mode of treatment different from that which I have mentioned. *Dodman.*

*Singular Apple-blossom.*—My attention was this week attracted by what appears to me to be a very singular blossom on an Apple tree growing in the orchard here. It is perfectly white, about 2½ inches in diameter, contains in its corolla 26 petals, regularly placed, and in every respect presents the appearance of a beautiful semi-double Camellia. The tree appears to be about 20 years of age. It is in good health, with a good crop of fruit fully set on it, and the other blossoms were of the ordinary form and colour. The soil on which it grows is rich, strong, and calcareous, resting on a deep, rich marl bed. Having never seen or heard of such "a sport" in an Apple tree before, may I beg to ask your fruit growing readers if such occurrences are common? If not, I would be disposed to have the young shoots which grow outside this blossom grafted next spring, in the hope of making permanent what strikes me would be a beautiful addition to our hardy flowering trees. I should, perhaps, state that I do not know what kind of Apple the tree bears, but I think it a rather early variety. *Edward Carroll, Beg Erin, Wexford, June 18th.* [We are not acquainted with any variety of the Apple answering to this description].

*Salting Walks.*—Some years since I made two or three experiments in killing weeds in walks by strewing salt upon them in the spring; but the weeds appeared thicker in the autumn, and required another dose with the same effect. On each occasion the walks had a slovenly appearance till the burnt weeds were got rid of. The expense was at least equal to that of hand-weeding, and I gave up the practice. Mr. Fleming's plan of applying salt and water may perhaps answer on a large scale, but I should fear that, taking into consideration the cost of the machinery and its application, it would hardly pay. *LL., Shrewsbury.*

*Hydropeltis.*—Is this plant, figured in Bot. Mag. 28, 1147, cultivated in our garden ponds? *A. H.* [We never saw it alive.]

*Rough Plate Glass.*—I observe that a few complaints have reached you respecting this glass; but I am of opinion that they are groundless. It is used in pits and frames here in quantity, and answers perfectly. Indeed, so much am I in favour of it, that I can confidently recommend its use for all gardening purposes. It is cheap and strong, and is on that account very suitable for pits and frames, whose lights, being frequently moved, are liable to be broken. It may not look so well in fine houses as other glass; but it does not burn, and that is a great advantage. Mr. Walford's Strawberries must have been scorched through his not giving them air enough. *D. Kidd, Garnstone Park.*——In consequence of the letter of "C. Walford, Esq.," which appeared on Saturday last, I have to-day waited upon him, to ascertain if his lights were really glazed with "Hartley's patent rough plate" or not. For the present, I take the liberty to send you a few of the leaves of the Strawberries, in order that you may see if they really are "scorched or baked." *Jas. Phillips,* 116, *Bishopsgate-street Without.* [These leaves are in wretched plight; but there is nothing to show that the injury is caused by scorching through glass.]

## Societies.

CALEDONIAN HORTICULTURAL, *June 5.*—Professor BALFOUR, V.P., in the chair. On this occasion there was a good display of plants and florists' flowers; but the weather being unfavourable in the early part of the day, the attendance of visitors was not so numerous as usual. Prizes were awarded as follows: For the best four Pansies, grown and exhibited in pots, to Mr. Mitchell, gr. to Lady Keith, the varieties being Aurora, Supreme, Mrs. Beck, and Duke of Norfolk. For twelve blooms, to Mr. Currie, gr. to Miss Wedderburn, for France Cycole, Climax, Duke of Norfolk, Sir Robert Peel, Queen of England, Polyphemus, Sambo, Supreme, Helen, Miss Wedderburn, Mrs. Beck, and Duchess of Rutland; 2d, Mr. King, for Cossack, Polyphemus, Supreme, Sambo, Aurora, Eliza, Satirist, France Cycole, Duke of Perth, Countess of Zetland, Mrs. Beck, and Lucy Neal; 3d, Mr. Shearer, gr. to the Marquis of Tweedale. Tulips: 1st, G. B. Simpson, Esq., for Herodus Superb, Surpasse Triomphe Royale, Cerise de Maroc, Bienfait (flamed), Nero, Washington, Bienfait (feathered), Calypso, Polyphemus, and Commandante de Berlin; 2d, Mr. Young, gr. to T. Oliver, Esq., for Louis XVI., Black Bouquet, Grand Duchess of Wellington, Grand Monarque, Athalia, Camuse de Craiz, Glory of Walworth, Helena, Caledonian Hero, Duc de Savoy, Commander-in-Chief, and Duke of Sussex. Pelargoniums: the Silver Medal was awarded as 1st prize to Mr. Cameron, gr. to S. Hay, Esq., for Forget-me-Not, Negress, Chaplet, and Tysiphone; 2d, Mr. Cossar, gr. to Lady Hay, for Lady Clare, Queen Anne, Centre of Attraction, an Diana; 3d, Mr. Crocket, gr., Raith, for Duke of Cornwall, Symmetry, Beauty of Clapham, and Forget-me-Not. White Stocks: 1st, Mr. Gordon, gr. to J. H. Mackenzie, Esq., Red Stocks: 1st, Mr. Dunn; Cinerarias: 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., for Carlotta Grisi, Climax, Vulcan, and three seedlings; Alpine Plants: 1st, Mr. Pender, gr., Moredun, for Euphorbia Cyparissias, Saxifraga pyramidalis, Erinus hispanicus, Pentstemon procera, Thalictrum alpinum, and Cheiranthus Marshallianus. There were six competitors for the prize offered for the heaviest 24 heads of Asparagus, fit for the table, with an account of the mode of culture. The best bundle (which was 7 inches in length and weighed 27 oz.), was from Mr. Carstairs, Warriston Lodge, but it contained only 23 heads, being one short of the specified number, and was disqualified: the second best, which was from Mr. Pousty, Ayton House, was also set aside, no account of the mode of culture having been sent. Early Turnips: 1st, Mr. Reid, gr., Edmonston, for White Dutch. Peas: 1st, three stems of Peas, with roots attached, Mr. Bryden, gr., Dun Edin, the variety being Early Frame. Cucumbers: 1st, Mr. Anderson, gr. to the Earl of Stair, for a brace of Infant Cucumbers. The prize of One Guinea, offered through the Society by Messrs. Dickson and Co., to practical gardeners, for the six finest varieties of Calceolaria, was awarded to Mr. Mitchell, Ravelston, for well flowered plants of Tam o' Shanter, Van Tromp, Ianthe, Aurora, Pearl, and Bass Rock. There was likewise a good display of productions sent for exhibition only, and not for competition. Messrs. Dickson and Co. sent the new Mitraria coccinea, Escallonia macrantha, many Heaths, and other plants of interest. Messrs. J. Dickson and Sons, Inverleith Nurseries, likewise sent Greenhouse Plants. Messrs. P. Lawson and Son exhibited Abies Deodara robusta and variegata, Taxodium distichum microphyllum, Quodria heterophylla, a new species of Isopogon from Swan River, &c. From Mr. Carstairs were Fuchsias, Fancy Pelargoniums, and several seedling Cinerarias; and from Mr. Stark, Saxifraga leucanthemifolia, Cinerarias Lady Hume Campbell and Madame Sontag, &c. The collection of Mr. Methven, Stanwell Lodge, included a plant of Cupressus funebris, nearly 2 feet in height, Cinerarias Lady Hume Campbell and Madame Sontag, and three hardy seedling Rhododendrons. Mr. Handasyde contributed a stand of Ghent Azaleas, Pansy blooms, and an interesting set of Alpines, including "Viola lutea," Ajuga genevensis, and Aquilegia Whitmaniana. Messrs. Sang and Sons sent a well-flowered Azalea lepida, 5 feet in height. There were stands of Roses, Pæonies, Rhododendrons, and choice Calceolarias from Messrs. Ballantyne and Sons; and a stand of Tulips from Mr. Lightbody. Various papers were read, and 12 new members elected.

ROYAL SOUTH LONDON FLORICULTURAL.—This Society held its third show for the season on Wednesday last. The day was favourable, and there was a large attendance. The show itself was a good one. Stove and greenhouse plants, Cape Heaths, Pelargoniums, Fuchsias, cut Roses, and other flowers, were plentiful, and there were a few Orchids.

PINKS were somewhat small in size. In the amateurs' class, for 12 varieties, the 1st prize was awarded to Mr. Baker, of Woolwich, for Sappho, Whipper-in, Lola Montez, Narborough Buck, Double X, Harriet, Alpha, Hark-forward, Criterion, Countess Rossi, and Mrs. Herbert; 2d, to Mr. Halladay, of Woolwich, for Alfred Morrison, Lady Mildmay, Double X, Lola Montes, Lord J. Russell, Hardstone's William, Agitator, Harriet, Jane Sarah, Brilliant, Winchester Rival, and Oxonian; 3d, to Mr. Edwards, of Wace Cottage, Holloway, for King of Purples, Lady Mildmay, Double X, Winchester Rival, Laura, Harriet, Oxonian, Prince Albert, Rosalind, Alfred Morrison, Mrs. Herbert, and Jenny Lind. Other exhibitors in this class were Messrs. Ellis, Hardstone, Venables, and Willmer.—Nurserymen: 24 varieties, 1st prize to Mr. Norman, of Woolwich, for King of Purples, Rosea elegans, Narborough Buck, Willmer's Surplice, Lady Mildmay, Whipper-in, Goliah, Lola Montes, Rubens, XX, Surpriser, Harriet, Brilliant, Diana, Criterion, A. Morrison, Laura, Morning Star, Alpha, Kate, Pickwick, Countess Rossi, Jenny Lind, and Melona; 2d, Mr. Ward for Narborough Buck, Lady Mildmay, Smith's Goliah, Harriet, Hillier's Goliah, William, Winchester Rival, Brilliant, Bell's Henry, Laura, Melona, Morning Star, Lord W. Russell, Prince Albert, Jenny Lind, Lord J. Russell, Willmer's Elizabeth, Duchess of Kent, A. Morrison, Creed's President, Alpha, and Countess Rossi; 3d, Mr. Bragg, of Slough, in whose stand we remarked, in addition to the flowers mentioned above, John Bull, Gay Lad, Sir Robert Peel, Benjamin, Nonpareil, Edward, British Queen, and Mrs. Hooper.

RANUNCULUSES: In the amateurs' class, the 1st prize was awarded to Mr. Airzee, for good blooms of Alphonso, Queen Victoria, Lord Byron, Ferdinand, Claudiano, Leonidas, Mrs. Airzee, No mistake, Bijou, Jenny Lind, and Valerius. Messrs. Franklin and Coster had Hogarth, Dr. Gardner, Orange Brobance, Milo, Mrs. Airzee, Demosthenes, Queen Victoria, Bensoniensis, Prince Albert, Venus, Intruder, Juliet, and Triumph.

In a stand of cut Verbenas from Mr. Lockner, we observed the beautiful scarlet, white-eyed variety called Shylock. Irises were furnished by Mr. Salter of Hammersmith.

In the Seedling tent were several novelties. Mr. Foster's Pelargoniums which were not sufficiently in

bloom at the last show, were this time shown in excellent condition. Optimum is a magnificent variety, robust in habit, large trusser, and free bloomer; colours, crimson scarlet, with black blotch in the top petals, shaded to the margin with vivid crimson scarlet; very attractive. Enchantress possesses the colours and shape of Gipsy Bride, but it is nearly twice the size; it is good in habit, and constant. Ariadne, rosy-purple, with dark blotch on the upper petals, a free bloomer, and a good exhibition plant. Rubens, crimson, with dark blotch on the upper petals, the latter being nicely margined with scarlet crimson, very stout. Fancy varieties were shown by Mr. Ambrose and Mr. Salter. Richard Cobden, in the way of Hero of Surrey, is a good shaped flower; Superbum, mottled rosy purple, is good in shape; Crispinum too much like Alboni, but showy; Symmetry is a nice flower, and Premier is a showy variety, but defective in form. Many others were too much like sorts already out. Several Pinks were shown; one, "Turner's Optima," rich dark lacing, on the purest white, was very evenly marked, quite smooth on the edge, and a large first-class variety; 22 blooms were shown, which served to prove its constancy. Mr. Bragg had several sorts, all of which were more or less rough on the edges. Mr. Costar had two seedling Ranunculuses, Madonna and Venus, both nice flowers. Banks' Verbena "Cynthia" is a pleasing light variety with purple centre. Pansies, Blanche and Swansdown, two good whites; Black Diamond, the darkest we have seen; and National, a flower described before, were shown in good condition. There was a promising Picotee, heavy purple, large and distinct, named Fellowes' Prince Arthur.

First class certificates were awarded to Mr. Black, gr. to E. Foster, Esq., for Pelargonium Optimum, Enchantress, and Ariadne. To Mr. Turner, for Pink Optima; ditto, Pansies, Swansdown, and Black Diamond; and to Mr. Bragg, for Pink Desdemona. Mr. Foster's Pelargoniums also received first, second, and third prizes from the "Seedling Fund." Mr. Turner's Pinks, first; Mr. Bragg's, second, from the same source.

Among Fruit, which was very scarce, was a nice dish of Black Prince Strawberry, from Mr. Cuthill, of Camberwell; a round medium sized seedling Strawberry, from Mr. Bragg, and some very fine British Queens, together with a Pine-apple, a few Grapes, and a Melon.

National Floricultural, *June* 26.—Several periodicals were presented on this occasion. Interesting stands of seedling Pansies were contributed by Mr. Hunt; collections of Pinks by Messrs Turner, Edwards, Norman, Bragg, Ellis, Ward, and Newhall; Antirrhinums by Mr. Joy, of Oxford; and Petunias by Mr. Wyness. Certificates were awarded to Pelargoniums Optimum, Rubens, Ariadne, and Enchantress, descriptions of all which will be found in our report of the Royal South London Floricultural Society of to-day. These were shown by Mr. Black, gr. to E. Foster, Esq. Mr. Rogers, of Uttoxeter, had a Pansy named Kossuth, which received a certificate. It is a large, rich, glossy, dark purple self, of good substance.—Mr. Ambrose's Fancy Pelargonium, Richard Cobden, was also distinguished by a certificate; as was a lilac-blue self Verbena, named Orlando, from Mr. Smith of Tollington Nursery, Hornsey-road. This is a showy large flowered variety. The same grower likewise sent a good red Verbena, called Koh-i-noor, which was, we believe, commended by the censors.

## Review.

*The Dovecote and the Aviary.* By the Rev. E. S. Dixon, M.A.; pp. 458. Murray.

The reverend author of this goodly tome tells us, in his preface, that his object has been "to ascertain the place which certain genera and species are likely eventually to take, in respect to their association with mankind, and to obtain a cognisance of the circumstances most immediately connected with that relationship." He also informs us, that "three of these essays have already appeared in *Bell's Weekly Messenger*;" and he attaches great apparent importance to the remarkable fact of their being "immediately transferred to the *Morning Herald*, and, perhaps, to other prints." In pursuance of his inquiries, he has introduced multitudinous extracts from all quarters, and from nearly all sources; so that the work may be regarded, on the whole, rather as a compilation than an original treatise. So many authorities, and so many opinions, collected together, must necessarily, to a certain extent, prove readable and interesting. It is to be regretted, however, that the author does not enter into his subject *con amore*; that is to say, he is diligent and painstaking in getting his materials together, but he lacks that true energy of style, and gentleness of feeling, which win upon a reader who is engaged heart and soul in his researches after "facts" in natural history. As a book of reference, it will be undeniably useful, and it will take its place in the library; but it is not a work adapted for the general reader, or for the multitude, whose delight is in keeping pigeons and doves; and yet it might easily be made so.

Six chapters are devoted to the "Dovecote," and 13 to the "Aviary." That the author understands the secret of "book-making," is evidenced in the construction of his chapters, with their running table of contents; each several item in which, under a distinct head, is printed in full. *Ex gr.*:—"Guans at the Surrey Gardens—their native habits and diet—our own mishaps—troublesome tameness of the birds—tricks and dangers—impudence and capriciousness—possible profitableness—narrative of a coadjutor—his ill success—our own—&c., &c." This will show the style of the author's "constructiveness."

We have been pigeon fanciers from our youth upwards to old age, and must be excused if we take *some few* of the rev. gentleman's remarks, connected with our domestic pigeons and doves, *cum grano salis*. We do not for one instant presume to call in question the truth of what he states as having occurred within his own experience,—but we demur to the dictum,—"*ex uno disce omnes*." There are many isolated facts, remarkable to witness, but which it would yet be dangerous for us to promulgate as being of common occurrence. Among other interesting topics of discussion, carrier pigeons, and the *causes* of their singular powers of traversing such long distances, are introduced. The remarks, *pro* and *con*, deserve attentive perusal. Dr. Gall considers, that they possess to the fullest extent the organs of "locality," and that this natural endowment explains the apparent mystery of their extraordinary "gift." We are *quite* of the Doctor's opinion; and can but wonder that the phrenological development, both in men and animals, has been hitherto so little considered. There can be no doubt that, in the carrier pigeon, the eye and brain are the principal,—the *only* active agents—save of course their swiftness of wing. All the known tribe of pigeons are treated of, in turn, and in some instances, they are "figured" in wood-cut illustrations. We are sorry that we cannot commend them as faithful or spirited delineations of the originals. In a future edition, should such be called for, it will be advisable to look well to this. Accuracy is of great importance in a subject of such interest.

By the way, we must, whilst noticing the wood-cuts, direct special attention to one of them, on the 58th page, designated "a pigeon chick a day old." *Certes*, the reverend author, when he limned so "remarkable" a creation, must have done it in a most happy moment. No person can say that, in making *this* "graven image," he has in any way infringed upon the "second commandment." The birds noticed under the head of the aviary include curassows, guans, crested turkeys, waterhens, kingfishers, ortolans, gulls, quails, &c. Of these latter some interesting details are given. They are horribly pugnacious animals, if allowed the range of a room, though perfectly tame when confined in a store-cage.

At the end of the book is a chapter on "the Nightingale," the natural history of which is now being treated of in another part of the *Gardeners' Chronicle*, by an amateur. Although little conversant with that branch of knowledge ourselves,—yet, as we have carefully perused *both*, we may remark that there seems to be a *little* difference in the sentiments of the two writers; for Mr. Dixon speaks of them with much *goût*, as being a fine relish for the dinner table. "Were they," he says, "to become the fashion at London dinners, they could be supplied during their season by the poulterers, at a rate not dearer than is paid for many delicacies, especially those out of season." He then launches out in praise of "singing birds" generally, as being most eligible for *entrées*, or the spit. By the way, even his favourite pigeons he does not spare. He advocates their being shot at, for wagers; and he thinks the amateur sportsman has a right (as well as the poulterer) to take their lives *ad libitum*. What about the "wounded?" On this point, deponent sayeth as little as may be. The "scouts" *sometimes* "kill" what have been already "wounded!"

Despite these and sundry other moral blemishes which disfigure the work, it will be perused with interest It is well and handsomely printed.

## Garden Memoranda.

Exotic Nursery, King's Road, Chelsea.—We understand that the Victoria Regia in Messrs. Knight and Perry's very interesting Aquarium, opened its first blossom on Wednesday last, and that three more flower-buds are appearing. Nymphæa rubra, sanguinea, and cyanea are also, we believe, in bloom, as well as dentata and cærulea. The two latter grow and flower in the greatest luxuriance here, conditions indeed common to all the plants which the tank contains. Some very fine new herbaceous Pæonies are also in flower, and well worth inspection.

Royal Nursery, Slough.—Pelargoniums and Pinks are now at their best here: the former are blooming profusely, and the plants are very dwarf and bushy. The Fancies give life to the other kinds, which, without them, would present too much sameness. Some of Mr. Foster's seedlings are very beautiful. Several of the Pinks raised by Mr. Smith were in excellent condition. This was the case with Huntsman, Whipper-in, Diana, and a seedling. The following were also good in colour and size:—Lola Montes, Sappho, Criterion, Narborough Buck, Countess Rossi, Kossuth, Pindar, Double X, Diana, Queen of England, Harriet, Great Britain, and a seedling named Optima, the finest in the collection. Perhaps the most interesting subjects here, at present, however, are the Carnations and Picotees, which are now coming into bloom. The greatest vigilance is employed to keep down green fly; continually brushing them from the points of the shoots is considered to be the most effectual remedy; this is performed by boys with small brushes. The principal object is to keep these pests down; if they once get ahead the mischief is done, and the chances of a good bloom are diminished. Now, that the weather has set in warm, Mr. Turner has the pots occasionally turned round; watering at this critical time (swelling of the buds) is considered of great importance, and receives much attention—weak liquid manure being used once or twice a week. There is every appearance of a good bloom, but it will be as late as the 20th or 30th of July. The operation of piping these flowers, as well as Pinks, had commenced, under glasses, about 1 foot square, with small holes for ventilation in their tops. These are placed on raised hot-beds, with considerably more heat in them than would be desirable with smaller glasses. Dahlias are planted in large numbers, and are looking robust, but rather late. Hollyhocks will be very attractive next month, when the Carnations and Picotees are in bloom. A large house of specimen Fuchsias of the leading kinds, and some seedlings raised by E. Banks, Esq., are just coming into bloom, and will soon be worthy of inspection. The sorts are not sufficiently forward to report on them at present. Voltigeur and Expansion were the best; and Géant des Batailles here, as everywhere else, was the gayest of the Roses.

## Miscellaneous.

*Hints on Mushroom Growing* (By Mr. J. Murray, Hunmanby Hall; read to the Caledonian Horticultural Society).—As the Mushroom is in a great measure what is termed a chance production, especially when compared with other vegetables, it follows, that anything likely to throw a ray of light on its more easy or certain culture, will be acceptable to many of your readers, more especially to those who are required to grow Mushrooms for their employers' taste. I may premise, before detailing my method, that I have nothing particularly new to offer, there being only a slight difference in my mode of management, from that generally followed by most growers; but from apparently trifling differences, in the mode of growing many crops, very different results often follow. Even the different inferences men draw from the meaning of a word or sentence, may be productive of good or evil to the crops under treatment, just in proportion as the operator leans to the right or wrong side of nature's law. The truth of this appears to be obvious when we see some men fail under equal advantages, to bring some plant, fruit, or flower, to the same perfection which others have arrived at, even though they are to all appearance completely initiated in the art. This certainly proceeds from only following the leading features of the method, and neglecting that which is of the first importance in the working out of any plan or system, complete attention to its minor details. In preparing dung for the Mushroom bed, it should be got with a sufficiency of short litter to keep it open, and spread or ridged in the common way, in an open airy shed for a few days, to divest it of its superfluous moisture; but by no means to expose it until it becomes dry to the look, as much of the success of the grower depends on his retaining a sufficient natural humidity in the dung. When a sufficient quantity has been collected and has undergone the necessary preparation, it should be shaken up into a conical heap with the dung fork, and all long and unnecessary litter shaken out, leaving it in the proportion of one-fourth short litter to three-quarters of droppings. This operation completed, the bed should be made up without delay to any required length and breadth, and 10 or 12 inches deep at least, as shallow beds are liable to get too dry. Beat every layer of dung as it is laid on, but not to that degree as to render it hard; it is sufficient that it be slightly firmed. There should be no earth mixed up with the dung, neither for the purpose of rendering the bed more compact, nor with the idea of benefiting the crop thereby; at least, so far as my experience goes, it serves no purpose. Such beds as I have had beat in the usual way, and mixed with a small quantity of mould, were decidedly inferior, as regards the size and quantity of Mushrooms, to those that were composed solely of dung and more sparingly beat. A slight top-dressing of droppings two-thirds, and fresh mould one-third, may be practised with advantage, provided the covering of mould be light. To prevent the dung taking a burning heat, make it only 9 inches deep or so at first, and allow some of the heat to pass off quickly, then add other 3 inches. The spawn should be prepared by steeping it in water at a temperature of 65°; the time it should remain in the water depends very much on whether it absorbs water readily or not. There is therefore no rule for this operation, farther than allowing it to remain in the water until pretty well moistened, then lay it on the surface of the bed until required for spawning. On the third or fourth day after being put up, the bed will in all probability have taken a pretty strong heat; it should be bored as soon as the heat is up, 8 or 9 inches apart; but if the heat is likely to be very violent, it should be gently eased up with a fork for a short time, until the heat has considerably declined, then press back to its former solidity, and bore as before. A burning heat must be particularly guarded against, or the bed will lose substance speedily by evaporation, and in all likelihood prove all but a failure. When the heat is about 70°, and on the decline, the bed may be immediately spawned, by introducing small pieces into the holes made in boring. A few pieces may also be crumbled down by the hand, and spread over the surface of the bed, then give a light beat with the back of a spade. It will now be necessary to give a light covering of fresh mould, if from a heap that has lain for two or three years, so much the better; it may either be sifted or laid on after being well broken with the spade to the depth of about one inch at most.

I think it will be found, by those willing to make the trial, that a greater depth is injurious to the full development of the Mushroom. I believe a slight mixture of soil on the surface of the bed, with a covering of sphagnum moss, would answer well. Next in order to earthing, is to cover the bed with a light covering of straw, to prevent a too rapid evaporation from the surface. The longer the natural humidity is kept in the bed by covering, and surrounding it with a moist atmosphere, the better. Whenever signs of dryness appear, give a gentle watering with water at the temperature of 65°. Neglect on this head is dangerous, as much more mischief is to be apprehended from the bed getting too dry than from damp. It is advisable to leave the straw covering off the bed for a few hours after watering, to prevent the surface getting damp and mouldy, which might probably be the case if covered up at once, especially when the atmosphere of the house is kept well charged with moisture. A bed, treated after the manner described, with a house temperature of 55°., will in all probability produce Mushrooms in the fourth or fifth week at furthest, and yield a plentiful supply for three months, the majority of the Mushrooms being from 4 to 6 and 7 inches in diameter. A certain degree of light, heat, and a humid atmosphere is indispensable to the successful growing of the Mushroom. The necessity of heat and humidity will readily be admitted by all; but why light should be excluded from the Mushroom house appears to me to be a mystery rather difficult to solve. We might as well argue, that because some Potatoes had been grown in cellars, all Potatoes should be grown there, were it not that we have the direct evidence of our senses against such fallacious logic. The main error which many commit in Mushroom growing, is in drying the dung too much, too hard beating, and farther, loss of moisture by a too active fermentation, all of which must render the bed unfit to produce but a very scanty crop, more especially when dry spawn is introduced into a bed in this condition, which cannot yield it the necessary moisture to cause it to run freely. Hence it follows, that after two or three months' fruitless expectations, and several heavy waterings, a small cluster of bitter Mushrooms are produced over the piece of spawn, instead of fine ones of the natural size. *North British Agriculturist.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Now is a good time to sow seed of Chinese Primroses for winter and spring flowering. Old plants may have the soil partially removed, and be then repotted in a compost of loam, a little well-decayed cow manure, and leaf-mould, with a portion of sand. By placing them in a cold frame in a shady situation, and keeping them close for a time, they will be useful for furnishing a supply of flowers during the early part of winter. Some seed of the Humea elegans should now be sown both for furnishing the conservatory next year, and for plants to turn out into beds in the flower garden; or for any of the various decorative purposes, for which this fine plant is so well adapted. Seedling Cinerarias, for autumn and winter flowering, should be potted as they require it in light rich soil, containing about one-fourth of loam. The plants obtained by dividing the old ones of approved sorts should be stimulated into vigorous growth, to produce fine specimens for late flowering, by repotting them progressively, as soon as the roots reach the sides of the pots. It will, however, be advisable to retain a portion of the plants in small pots, for flowering during autumn and early winter.

FLOWER GARDEN AND SHRUBBERIES.

Perhaps no plants are more generally useful than the hardier kinds of Carnations, Picotees, and Cloves; their beauty and fragrance not only recommending them to a prominent place in flower beds, but also rendering them invaluable for glasses or bouquets. If pipings of them are taken off about this season, they sometimes strike as freely as Pinks; but the operation will be more certain to succeed if the hand-lights are set on a slight hotbed, or the pots plunged in a frame where there is a gentle bottom heat. Points that require special attention are—that the cuttings be taken not later, on any account, than the expanding of the first flower, and that they be carefully shaded from every ray of sunshine. The most certain method of propagating them is by layers; but it is equally important that this operation be performed early, as the plants root sooner, and thereby become better established before winter; but in all cases it will be found the most satisfactory mode of proceeding, to defer the transplanting of Carnations raised from layers till the spring following; as, if transplanted in autumn, they are liable to be thrown out of the ground by frost. Where the locality is unfavourable, it sometimes becomes necessary to remove the young plants to a frame during winter. Late sown annuals, intended for autumn flowering, should be thinned out or transplanted before they crowd one another, and become too weak to support themselves, choosing moist weather for the operation. Timely tying, staking, and regulating of all plants is of much importance, both as regards the effect produced, and the time occupied in doing so.

FLORISTS' FLOWERS.

Seedling Ranunculuses will now require taking up; generally speaking, they are so very small the first season, that without great care, many may be lost. Perhaps the better way is to get a fine wire sieve, in which compost and roots together may be put; this may then be placed under a pump, and a stream of water allowed to pass through; by this means the soil will be washed away, leaving the root in the sieve; these may then be spread out, and gradually dried in a shady place. The bulbs on the main beds will require attention, inasmuch as they are seldom ready to be taken up all at once. Some of the Grass will become yellow before the other; these should be lifted directly, for if allowed to remain and showery weather sets in, they will immediately make a second growth, to the serious and often irreparable injury of the root. TULIPS.—As the foliage decays, let these also be taken up and stored away for drying; let the place be shady. We recollect a number of valuable sorts being put into a glazed frame to dry; the consequence was that they were all destroyed, assuming a disease which made them impenetrable to the thumb nail. Auriculas, Dahlias, &c., as last week.

KITCHEN GARDEN.

As every available means should be adopted for stimulating the various crops into a vigorous growth, let due use be made of liquid manure, if this valuable auxiliary can conveniently be obtained. This is the best time of year to make use of it, by applying it to all plants which are cultivated for the sake of their roots, stems, or leaves, the object being to induce a luxuriant growth, and to prevent or retard the production of flowers or seeds. Make every provision for autumn and winter, by planting good breadths of Brussels Sprouts, Cabbage, Savoys, Broccoli, and other winter vegetables, taking care that the ground be previously well manured. Let there be no idle ground in this department; but, as the quarters are gradually cleared of their summer occupants, let them be succeeded by something else. Celery planting should also be completed with the least possible delay. Sow Chicory, Endive, Parsley, American Cress, &c., for winter; and Lamb Lettuce or Corn Salad for late autumn use. Kidney-beans, Peas, and other crops with weak collars, should be earthed up before they are blown aside. A supply of Watercress for the autumn and winter may be easily obtained by planting some strong young tops, about 4 inches long, in a line at the foot of a north wall. The cuttings should be of pieces which are protruding roots from the joints. The Watercress will grow freely in such a situation; and in many places where there are no artificial beds, and where natural ones are a considerable distance off, these will be found very useful. Supply the young plants with plenty of water until they are rooted.

State of the Weather near London, for the week ending June 26, 1851, as observed at the Horticultural Garden, Chiswick.

| June. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 20 | 21 | 30.093 | 30.035 | 81 | 47 | 64.0 | 59½ | 57 | S W. | .00 |
| Satur.. 21 | 22 | 29.883 | 29.659 | 87 | 55 | 71.0 | 61 | 58 | S E. | .00 |
| Sunday. 22 | 23 | 30.014 | 29.813 | 67 | 41 | 54.0 | 62 | 59 | N.W. | .00 |
| Monday 23 | 24 | 30.248 | 30.163 | 67 | 35 | 51.0 | 59½ | 59 | N.W. | .00 |
| Tues. .. 24 | 25 | 30.267 | 30.242 | 73 | 45 | 59.0 | 59 | 58 | W. | .00 |
| Wed. .. 25 | 26 | 30.269 | 30.249 | 77 | 47 | 62.0 | 59 | 58 | W. | .00 |
| Thurs.. 26 | 27 | 30.267 | 30.200 | 85 | 46 | 65.5 | 61 | 59½ | S. | .00 |
| Average | | 30.148 | 30.055 | 76.7 | 45.1 | 60.9 | 60.1 | 58.5 | | .00 |

June 20—Very fine; cloudy; clear at night.
— 21—Dry haze; very fine; slightly clouded; very hot; clear and fine.
— 22—Cloudy; clear at night.
— 23—Fine throughout; clear at night.
— 24—Cold, nearly at freezing early A.M.; fine; clear at night.
— 25—Fine; slightly overcast; clear.
— 26—Fine; very hot; clear and fine.
Mean temperature of the week 1 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending July 5, 1851.

| June and July. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 29 | 72.9 | 49.5 | 61.2 | 7 | 0.20 in. | 2 | 4 | 2 | 1 | 1 | 9 | 5 | 1 |
| Mon. 30 | 72.4 | 50.2 | 61.3 | 9 | 0.80 | — | 4 | 3 | 2 | 4 | 6 | 4 | 2 |
| Tues. 1 | 72.0 | 52.3 | 62.1 | 9 | 0.20 | 1 | 2 | 4 | — | 4 | 7 | 5 | 2 |
| Wed. 2 | 73.1 | 52.6 | 62.9 | 12 | 0.38 | 1 | 2 | 2 | — | 5 | 6 | 7 | 2 |
| Thurs. 3 | 73.1 | 53.4 | 63.8 | 12 | 0.78 | 1 | 2 | 2 | — | 4 | 7 | 7 | 1 |
| Friday 4 | 76.5 | 52.6 | 64.6 | 11 | 0.73 | — | 3 | 2 | 1 | 1 | 10 | 7 | 1 |
| Satur. 5 | 78.0 | 52.1 | 65.0 | 5 | 0.24 | — | 1 | 4 | 1 | 4 | 7 | 8 | 1 |

The highest temperature during the above period occurred on the 5th, 1846—therm 95 deg; and the lowest on the 30th of June, 1848, and 1st of July, 1837—therm. 37 deg.

## Notices to Correspondents.

BEES: *S D E.* The article enquired for can be obtained at Milton's, 10, Great Marylebone-street, London. *Y.*

BIRDS: *Louisa C.* Your surmise is correct. Your *skylark* may be, and no doubt is, a beautiful songster; but the "variety" of his notes, resembling so greatly those of "other songbirds," is *not* reckoned a desirable qualification, and prevents his being deemed "first-rate." If you will carefully peruse the series of "Treatises on the CANARY," you will therein find the question of "a bird's early education" fully discussed. Birds, like the human race, are, in their infant state, open to receive the earliest impressions—either good or otherwise. Hence the necessity for causing them always to be found in the best company. With them, as with us, "evil communications" act prejudicially; and bad habits, though easily acquired, are *not* so easily eradicated. It is pleasing to know that you take such an increasing interest in the subjects now under discussion. Observation, and practical experience, joined to your zealous and inquiring mind, will soon make you a proficient in what you are so desirous to learn. You have selected a delightful branch of study, and will never regret having made *such* a choice. *W. K.—M W K.* What has been told you by the countryman about the *nightingale*, may or may not be true. Admitting, however, that he *has* had it in his possession a month, and that it *has* "sang delightfully," it is *now* quite off song, and will remain so for six months. The injury done to the bird's leg, induces us to advise you *not* to purchase it; unless, indeed, the limb be already restored, and the bird have the full use of it. The value of nightingales, after Midsummer, is so exceedingly trifling, that it would be an act of folly to provide yourself with a cripple; more especially when others may be readily obtained, sound both in "wind and limb." *W. K.—Annie J.* The bird you describe so accurately, is the *golden-crested wren*—a beautiful little creature, truly. By no means attempt to do as you propose, but give him *instant* liberty. Perhaps he has a fond mate, anxiously expecting him to share with her the heavy and wearisome duties of incubation; perhaps a large family, to assist in feeding. At this season, it is sinfully cruel to immure these innocent, gay, happy, confiding creatures. I grant that it is often done, as in your case, from a mistaken act of intended "kindness." Reparation is easily made. Fly at once to the rescue of your little "prisoner of hope," and let me assure you that by giving him *his* liberty, you will thereby greatly add to *your own* happiness. *W. K.—An Old Maid.* Unripe, green food, is of various kinds; for instance, Chickweed and Groundsel before they are in full flower, or seeded; and indeed *any* rank vegetable produce. Birds suffer as much from partaking of these crudities, as we do from eating sour fruit. Watercresses are an agreeable change for a Canary. *W. K.*

FIRS: *Dedhamiensis.* You had better wait till winter before you cut them down.‡

INSECTS: *C C.* The insect sent is the preparatory state of the lady-bird (Coccinella 7-punctata) which feeds on the green flies of Roses, &c. When full grown, it fixes itself to the plant, and in a few days it comes forth in the perfect form. See Westwood's "Introduction to Entomology," Vol. I. *W. —A R H.* Thanks; but we should be glad for some information respecting the insect sent. *W.—Clericus rusticus.* The transformations of the Gooseberry grub are represented in the accompanying wood-cut, and a full description of the insect is given in the *Gardeners' Chronicle* for 1841, p. 548. 1, a twig of the tree; 2, the eggs; 3, the larva; 4, the cocoon formed under ground; 5, the perfect insect, Tenthredo Ribesii, or Grossulariæ. *W.*




METEOROLOGICAL INSTRUMENTS: *M.* In commencing a series of observations on the weather, the instruments should be placed so as to indicate the natural climate of the locality, as nearly as circumstances will permit. Artificial interferences should therefore be guarded against. Thermometers, for example, should not be placed, as they too frequently are, so near the wall of a house as to be greatly influenced by radiation. In such a situation they occasionally indicate several degrees above freezing, whilst at the same time Grass, at a little distance, is hoary with frost, and tender vegetation is destroyed. In the "Instructions for making Meteorological Observations," by a committee of the Royal Society, the thermometer is directed to be fixed upon a bracket projecting 8 inches from the wall, or other support, to be completely sheltered from rain, and where no reflected sunbeams from water, buildings, rocks, or dry soil can reach it. Delcros, in the "Annuaire Météorologique de la France," recommends the thermometers for external temperature to be placed not less than 30 centimetres, or about a foot from, the wall; but adds that an open space is to be preferred. We fully agree with him; and would advise you to place them on a piece of lawn; the one for registering the maximum temperature in the shade, about 4 feet from the ground, screened from the sun's rays, but exposed to free circulation of air; there should be one for the minimum temperature in the shade, another for the maximum in the sun, and each of these should be about a foot from the ground. The barometer should be placed exactly perpendicular, and where it will not be liable to be affected by currents of air, and sudden changes of temperature. The rain gauge should stand on the ground. We believe the arrangement above sketched out is the simplest and most correct you can adopt for the objects you have in view.‖

NAMES OF PLANTS: *Ipomœa.* You are called "Quamoclit" by your countrymen in Mexico, but as we do not understand Mexican, we must refer you to them for further information. —*G C R.* Cephalanthera ensifolia.—*W P.* We do not see how it differs from the common Vetch, Vicia sativa, a very variable plant.—*Halifax.* Hakea pugioniformis.—*M K.* Sempervivum villosum, Nicotiana undulata.

ROSES: *M D* says, "My garden, which slopes to the west, was formed in the autumn of 1849. The field had been bearing an excellent crop of Wheat, which was just harvested. All the flower borders were trenched 2 feet deep; the soil is a rich brownish loam, varying from 1 to 6 feet deep, lying upon what is called here 'Coome Rock' (a rich calcareous marl), beneath which is a thick bed of chalk. This being my soil and situation, can you kindly explain the following facts? I planted, in 1849, about 60 Rose trees—standards and dwarfs; these were obtained from Uckfield, near Lewes, and were good healthy plants. Last year they grew well, and flowered very freely for the first year; this year, however, the majority of the flowers are abortive, as in the accompanying specimen—the buds being hard in the centre, and composed of an agglomeration of green leaves, in place of petals. I should mention, that most of these Roses were planted without manure. Can you explain the cause of this? and, still more, can you suggest a remedy? The dwarfs have, on the whole, suffered much more than the standards." The centres of these Roses are all converted into leaves in the usual way. Of the *cause* we can form no opinion, can any correspondent?

VINES: *Z Z Z.* We do not believe that pruning Vine roots three years ago can be the cause of fine old plants that used to bear a ton of Grapes, having this year but six bunches. It is more likely that in your wet land, the roots have got below the level of your drain tiles; more likely still, that the true cause is unskilful management.—*Constant Reader.* Your leaves do not seem to ail much. Probably, they have been grown at one time in a very warm, damp atmosphere—and have since been exposed to a lower temperature, and much more dryness.

WEEDS: *Mrs. H.* The plant is the Buck's-horn Plantain (Plantago coronopus), of which you can only rid yourself by continually pulling it up; unless you can pare and burn your lawn, and re-turf it with better materials.

MISC: *T G.* We shall feel obliged by the papers you mention.‡

### SEEDLING FLOWERS.

CALCEOLARIAS: *Beginner.* Not so good as similar kinds already out.*

PANSY: *P P.* Dried up.*

PELARGONIUMS: *Beginner.* Apparently a fair second class flower.—*W D.* A nice horse-shoe leaved variety, and a good trusser.—*T E.* The petals had all dropped, and were mixed together when your package reached us. Flowers loosely placed in a box can never be expected to travel safely.*

POTENTILLAS: *W W.* All dropped to pieces when received. Some of the petals exhibited great richness of colour.*

ROSES: *W W.* A good flower; but not better than many of the same class now in cultivation.*

VERBENAS: *W D.* Not so good as Princess Alice and many others.*

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EDWARD PURSER, Secretary.

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ALGERNON POLLOCK, Secretary.

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DR. NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS. These Patents having been withdrawn from a firm under the name of DUFAUR and Co., in consequence of the unsatisfactory manner in which the inventions have been carried out, and the imperfect state in which the implements have been manufactured, have been assigned to Mr. GABRIEL, C.E., &c., of the Surrey Chambers, Arundel-street, Strand, London; agriculturists are informed that specimens of the Implements, viz.—The Hand Cultivators, Dibbles, Hand and Horse Drills, Manure Distributors, single-horse Ploughs, &c., can be seen there, as well as in the Agricultural Implement Department in the GREAT EXHIBITION, HYDE PARK. N.B. The Patent Dibble obtained the Prize awarded by the Royal Agricultural Society at Norwich, in 1849. Improvements have recently been made in the Drop Drills and Manure Distributors; they are lighter, can be turned round with ease, and there is a contrivance for stopping the escape of the seed at pleasure.—Catalogues, with engravings of the Implements, and numerous Testimonials, can be obtained upon application at the Surrey Chambers, Arundel-street, Strand, London.

The Agricultural Gazette.

*SATURDAY, JUNE* 28, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, July | 2 | Agricultural Society of England. |
| THURSDAY, | 3 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, | 9 | Agricultural Society of England. |
| THURSDAY, | 10 | Agricultural Imp. Soc. of Ireland. |

THE high price of guano, reduced as it is to one half of what it was a few years ago, has been complained of by some writers in this journal, and defended by others. The complainants attribute it to monopoly on the part either of the Peruvian Government, who are the proprietors, or of Messrs. GIBBS and Co., the importers, their agents. Some invoke the diplomacy of the foreign office; and there are not wanting those who would have it demanded under the guns of Admiral PARKER. We can only say that they who are dissatisfied with guano at its present price have other resources. It is curious to observe how in this matter the farmers encourage the foreigner and neglect native industry. We import guano to the value of more than a million annually, and waste home-made manure of as good or better quality, to the value of many millions. We do not here allude to those black pools with which even now, after all that science and practice have taught and done, during the last 10 years, are still to be seen in the majority of farm-yards, where they serve as temporary receptacles of the dark porter-like-looking fluid, till it suits the convenience of the farmer to turn it into the nearest stream, or form nurseries of typhus for the neighbourhood, if it should not be so fortunate as to possess a stream into which it can be turned. Our remarks apply to the sewage of towns and the mine of wealth which it contains, richer than those of California, if our capitalists could but be inspired with sufficient confidence in its value to undertake the working of it; if the crotchets and individual interests which prevail in municipal bodies would permit its application, and if the prejudices of farmers in favour of the exclusive use of solid manure, as of all other established usages, would allow them to profit by the treasure when placed within their reach.

The greatest obstacle to be encountered in the application of the sewage of towns to the land consists in this, that a large preliminary outlay of capital for pipes and steam-engines is required to convey it from localities where it is not only worthless but a nuisance, to others where it would become valuable; and that if companies were formed to undertake this outlay, they would run great risk of sinking their money unprofitably, from the reluctance of farmers and landowners to adopt anything new. This prejudice against the use of liquid manure is not likely to be diminished by a dictum which has recently issued from a quarter deservedly looked upon as of high authority in agricultural matters, that liquid manure is a pretty toy, but solid dung is for farming in earnest.

With all deference we would remind Mr. PUSEY, who has uttered this sweeping condemnation on manure in the form to which it must be reduced before plants can take it up, that very few years have elapsed since the use of guano and other portable manures was denounced in terms equally decisive and authoritative by practical men, the denunciation being generally clenched by the reply of the Scotch farmer to Lord KAMES, "that he who carried manure to the field in his waistcoat pocket, ran great risk of bringing home the crop in the pocket of his coat." We shall not enter into the general question whether manure is best applied in the solid or the liquid form. On this, as on every point of practice in agriculture, there is the usual difference of opinion and the usual amount of discordant facts or reputed facts. In every farmer's club in which the subject is discussed, at least a dozen speakers will be found on each side of the question. One set describe the splendid crops which they obtained by the use of liquid manure, the other declares that they have tried it in all forms, on all soils, to all crops, at all seasons, and have either found it useless or positively injurious. Some admit the value of liquid manure, if a cheaper mode of distributing it could be devised than by means of the water cart; others declare as the results of their practical experience, that even thus applied they find it the cheapest and most efficacious manure which they can use. It is sufficient for our purpose that there exists in the sewage of towns a vast quantity of valuable manure which can only be used in the liquid state. Its profitable application depends on the following questions: the cost at which it can be conveyed from the towns to the rural districts, the cost of distributing it over the farm when placed within reach of the cultivator, and the value of the manure when thus rendered available. To all these questions satisfactory answers can be given. To begin with the cost of conveyance into the country. It is calculated by experienced engineers, that sewage water may be raised by the steam engine 150 feet, and forced through iron pipes in the way the supplies of water are brought to most large towns, and thus conveyed and sold with a profit at 2½*d.* the ton, after being conveyed in this manner 14 miles. The practice of the water companies of the metropolis confirms these calculations. The supply of water to London is not conducted in the most economical manner. Under the competition system we have three or four expensive establishments laying three or four sets of mains down every street, where one set of mains and one set of superintendents would suffice. The consumers are burthened with the extra expense attendant on such a system, and yet under these disadvantages the contractors for watering the metropolitan roads resort to the standing pipes of the water companies as the cheapest source of supply. They pay 20*s.* for 100 tons, and at this rate they find the water costs only one-half of the mere labour of pumping it from wells provided for their use at convenient distances by the road side. It would be an insult to the understanding of our readers to remark that foul water can be conveyed out of a town, at as low a rate, by the same means, as pure water, or water professing to be pure, is conveyed into it. The water companies, again, have furnished us with practical proof that the cheapest mode of removing refuse is in a state of suspension in water. The West Middlesex Water Company were about to contract for the removal of the silt which had accumulated for 8 or 10 years in their reservoir at Kensington. The cost of removing this deposit, which covered nearly an acre, was to have been 400*l.* It occurred, however, to one of the officers, before the contract was accepted, that the cleansing might be better effected by stirring up the silt, mixing it with water, and then cutting an outlet in the main-pipe, by which the water was conveyed to London. The experiment was tried, and the refuse was removed in this way, in three or four days, at a cost of between 40*l.* and 50*l.* The reservoir is now cleaned in no other way; and the sediment washed into the common sewer.

The evidence as to the cost of distribution over the farm is equally satisfactory; whether as regards the capital required for the distributing apparatus, or the labour necessary to apply the manure delivered by the pipes laid down under the land. There are two farms on which this mode of distributing liquid manure has been successfully used; the farm of Mr. HUXTABLE, in Dorsetshire, and that of Mr. KENNEDY, of Myre-mills, in Ayrshire. Both are equally satisfactory; Mr. HUXTABLE, however, is an amateur farmer, and therefore we pass over his operations, of the success of which we have been eye-witnesses, for those of the more practical Mr. KENNEDY, and the report of the practical men deputed by the Berwickshire Farmers' Club, to examine the merits of the system. The propriety of applying all the manure of the farm in the liquid form, which is Mr. KENNEDY'S object, the deputation left an open question. It is a question, moreover, on which Mr. KENNEDY himself maintains a prudent reserve, merely declaring that, as far as his experience has gone, he is satisfied with it. The report of the deputation however was decisive as to the economy of the mode adopted at Myremill for distributing that portion of the farm-yard manure which is naturally liquid; and which in ordinary practice is for the most part wasted. The farm consists of 400 statute acres. Capacious and substantial tanks have been built, a stream of water has been brought a mile for the purpose of diluting the manure, and iron pipes have been laid over the whole farm. The cost of the collecting and distributing apparatus does not exceed 30*s.* an acre. A steam engine of 12 horse power, which performs the threshing, winnowing, grinding, chaff cutting, and other ordinary operations of the farm, forces the liquid manure through the pipes into the fields. One stand-pipe is sufficient for 10 acres; and from this, by means of a gutta percha hose, one man to direct the jet, and a boy to assist in moving

the hose, manure 10 acres a day. Of the 400 acres, 70 are under green crops consumed in the yard. Estimating the roots at a medium crop of 25 tons, the straw at 300 tons, and the Italian Rye Grass, cut thrice, at 20 tons; this with 1000 tons of water used for diluted the liquid, and dissolving the solid manure, amounts to 4000 tons. The distribution of it over the farm was calculated by the deputation to cost 75*l.*, including engine power, men directing hose, interest, and wear and tear of pipes and tanks. The distribution of the equivalent quantity of solid manure, including filling, carting, turning, filling, carting again, and spreading, they made amount, at 1*s.* a ton, to 150*l.* The conveyance, then, of the sewage of towns to a distance into the country, by means of underground pipes, appears to be practicable and economical, and the distribution of it over the farm by means of a minor system of pipes, equally practicable and economical. For proof of the former, we appeal to the practice of the metropolitan water companies; for proof of the latter, to the practice of Mr. KENNEDY, of Myremills. That, however, only goes to the distribution of the liquid manure of the farm. The value of the sewage of towns, and whether its manuring powers are such as to repay the cost of application, are independent questions, which will require separate consideration. *E. W.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. VIII.—CHAFF-CUTTERS are present in every form. The economical supply of food in cattle feeding is one of the most momentous points of husbandry; and an efficient chaff-cutter, requiring but a small amount of motive power, is certainly one of the most valuable agents towards effecting it. Many kinds of these machines have been invented; and it becomes important to ascertain whether boxes with radial knives, or knives upon a transverse cylinder—whether one or more knives—whether ratchets or worms or pulleys or gearing wheels—are best for their respective purposes. We cannot here enter into a discussion upon these points; but we may mention the result of the trial of the best chaff-cutters of different sorts at Exeter; the general excellence of each standing forth in comparative numbers in the table. Several of the machines now in the Exhibition were tried in cutting chaff ⅜ of an inch in length.

| Names. | Comparative Amount of Power in Units that would be required to cut 112 lbs. of Chaff. |
|---|---|
| Smith and Co. ... ... | 20,407 |
| Richmond and Chandler | 33,152 |
| Garrett ... ... ... | 29,792 |
| Cornes ... ... ... | 23,096 |
| Williams ... ... ... | 23,341 |

The work performed by Cornes's was found to be the best; and although the power required to drive it was somewhat more than for Smith's, the prize was awarded to the former. The most generally employed form of knife, as exemplified in Cornes's, Smith's, Stanley's, and other chaff engines, is radial and curved—its cutting edge being on the convex side; and either one, two, or three knives are affixed to the fly-wheel. Instead of a direct chop, these knives give a quickly drawn cut—so that, in Smith's machine, five feet of cutting edge are drawn through a width of straw that might be chopped by a straight knife only a foot and a half long. It is this drawing principle which has rendered the best chaff engines capable of cutting up threshed straw for litter. Different speeds of gear work for altering the length of the cut, seem to be more than ever employed; and with contrivances more or less simple for putting them severally in train. W. P. Stanley, of Peterborough, exhibits a three-knived chaff-cutter, in the gear-work of which not only different sized pinions, but also an additional motion is used, so that a variety of different speeds are obtained, instead of only three, as is the case when there is only one additional shaft or axle. A lever handle is set into one of three notches—the middle one throwing the whole wheel-work out of gear, and the two extreme ones reversing the motion according to the wheels then turning the rollers. The lengths cut vary from ¼ to 2½ inches. The material to be cut is drawn forward between two rollers, the upper one being weighted by a lever, so as to rise and fall according to the irregular quantity in the box.

Lomax's Patent Chaff-cutter appears to be a successful attempt at giving the motive power more leverage over the work without narrowing the width of the box. In the general form of cutter, the power acts at a great disadvantage when the knife is cutting the material on that side of the box front farthest from the axle of the fly-wheel on which the knives are fixed; in this machine the axle is placed above the middle of the box instead of at its side, and carries three short knives of a peculiar triangular form, with convex cutting edge. The length of the cut is altered by gearing-wheels of different speeds.—Barrett and Co. have a chaff-cutter in which the rollers are moved by a ratchet and bar alternated by a cam upon the main shaft. The length of feed is regulated by a stud upon the ratchet bar, which is set nearer to or further from the side of the cam, the bar being shifted more or less according to the place of the stud.

We are merely noticing a few of the different peculiarities and ingenious contrivances attaching to the several varieties of chaff-cutters, and not attempting a particular description of any one. Mary Wedlake and Co. exhibit a small chaff engine, having a bruiser fixed upon one side of the box, so as to be actuated by the main shaft, and which can be put in or out of gear. In one of Garrett's chaff-cutters we observed an excellent arrangement of the weight which presses the material to be cut; if the feed is increased beyond a certain amount, the lever beneath the box, carrying a weight at its end, rises so as to take a second weight off the ground; and this extra pressure, when there is a greater bulk of straw for the knife to pass through, is found very advantageous.—Smith and Co., of Stamford, seem to have especially devoted their attention to the lessening of the friction of the material upon the bottom and against the sides of the chaff-box, and to the prevention of any irregularity or stoppage of the feed. Thus they devised a superior chaff-cutter, in which the whole box was made to move forward with the material, which was pinched between an upper roller and a plate upon the bottom of the box. They have now made the box itself a fixture, but the bottom is composed of an endless web, on rollers, which advances with the material upon it. An upper roller having conical spikes also helps to draw and press the material. There are two radial knives, with convex cutting edge; and in addition, a series of small vertical saws are made to vibrate up and down in front of the box face, so as thoroughly to cut up the material, and not suffer any straws to escape by coming athwart the box. This machine, owing to its peculiar construction, will effectually cut up straw into litter, and this of any length from ¼ inch to 5 inches.

Richmond and Chandler, of Manchester, exhibit their excellent chaff-machines, with teethed rollers, which claw the material forward; and Crosskill his three-knived cutter, with ribbed and plain rollers, and pulleys of different sizes for altering the length of cut. The patent Guillotine Chaff-cutters, invented by Gillett, of Brailes, near Shipston-on-Stour, Warwickshire, are so well known as to need no remark; we believe their efficiency is equal to the ingenuity displayed in them, but the sliding motion, delicate as that of a steam-engine, does not seem to be so well adapted to dusty work and rough usage as the common rotary motion where there is less friction, and where a little inaccuracy from wearing is of less consequence.

There are several machines for crushing Gorse; and though this has always been found a difficult operation, the progress of mechanical art has now furnished the farmer with a means of converting an unprofitable encumbrance into valuable cattle food. Messrs. Barrett, Exall, and Andrewes' Gorse Machine, which obtained the prize at both York and Norwich Shows, is certainly one of the best. Knives diagonally placed upon a cylinder in front of the box cut the Furze, which is then squeezed between rollers underneath. It is adapted both for horse and steam-power.

Among CAKE-BREAKERS, we observed Hornsby's Double Cake-crusher, with its two pairs of rollers toothed with pinnacle points; Wedlake's, with cam rollers, &c., &c., a great variety, the merits of which are to be found by trial.

Almost all the greater makers exhibit specimens of corn and seed BRUISERS, some in which the grain is broken between plain cylinders, in others between fluted rollers. Stanley, of Peterborough, Garrett, Wedlake, &c., are great in this department. Bean-splitters and Portable Flour-mills offer also considerable variety; and machines of this kind, for preparing food for stock, seem now to be indispensable to even the plainest farmer. Stanley exhibits a very neat and convenient arrangement of Barn machinery, in which a Chaff-cutter, Cake-breaker, Turnip-cutter, and Bruiser are all turned from one shaft by a two-horse portable oscillating steam-engine.

One instrument in our barns and granaries that seems to need improvement is the Weighing-machine; and the farmer will notice with pleasure the Balance Sack-weighing-machine of J. James and Co., Whitechapel, London. This is very neat and concise, and will weigh sacks and bags, without the inconvenience of heavy half-hundred weights. The cast-steel measures for corn, &c., of H. A. Thompson, Lewes, Sussex, appear calculated to supersede the old wooden bushels, pecks, &c. *I. A. C.*

## ON THE CULTIVATION OF HEMP.

HEMP requires for its growth a soil of deep, rich, moist alluvium, such as is found in the best parts of Lincolnshire, where the ingredients of the earth are numerous, finely comminuted, and very intimately mixed. It will thrive on friable loams, and on loamy sands, provided the culture be rich, and the manuring abundant. On the latter soils the produce is not so abundant as on black rich moulds, but the quality is finer, and can be used for more valuable purposes. The land must be very perfectly cleaned and heavily manured, or made very rich by the previous cropping. If freshly manured, the quantity may be 16 to 20 loads of dung on an acre. On this rich and pulverised surface, two bushels of Hemp seed are sown by the hand in broadcast, during the two first weeks of the month of April, and covered by a light and gentle harrowing. The heaviest and brightest coloured seed should be selected, and some of them should be cracked to see if they have the germ perfect. Birds must be scared from the sown ground till the plants appear. It has been practised to hoe the crop, setting the plants at 12 to 16 inches apart, cutting down all weeds, and repeating the hoeing at the distance of a month or six weeks; but when the culture of the land is proper, the plants very soon cover the ground and kill every weed.

In about four months after sowing, the plants of Hemp turn yellow in the leaves, and the stalks become white, when the crop is ready to be pulled. When thread only is intended, without any regard to the seed, the whole produce is pulled at once; when ripened seed is grown, the male plants are first pulled, usually in August, and the female ones afterwards, in the beginning of October, when the seeds are seen to be ripe. In both ways the stems are tied in bundles of about a yard in diameter, and with a rope at each end. The crop is then conveyed to the steep of water, in order to undergo the operation of water-retting. The bundles are placed in rows crossing each other, and are kept under water by blocks and logs of wood. It soaks generally four to ten days, if the weather be warm; if not, five or six more, till the outside coat easily rubs off. It is then spread out singly on Grass, and turned, if there be showers, thrice a week; if not, twice a week. This is called Grassing, and requires five or six weeks. It is then tied up in large bundles, and carted to a barn or house for breaking, by a machine called a "brake;" this is either done directly, or the bundles are laid up to dry for the future purpose. The Hemp being beat and broken by the hand or mill, is dressed or combed, by being drawn through hickles or heckles, resembling wool-combers' tools, only fixed. The Hemp that is broken off by the operation is called "shorts;" this is bound up by itself, and is about the value of the long Hemp. The offal is called Hemp sheaves, and makes good fuel. Sometimes the Hemp is dressed to one quality of fineness, or it is made into two or three sorts, as the demand of purchase may direct. The heckler sells the Hemp to be spun for thread, or himself applies it to that purpose. Being converted into yarn, it is sent to the "whitester," who returns it in a bleached condition.

The female plants of Hemp produce the ripened seeds, and for that purpose remain longer on the ground. The pulled bundles of tied stems are stacked up or housed till the seed be threshed out. In the spring (January or February) the stems are spread upon Grass, and if the season suits, particularly if covered with snow, it will come a good colour, and make a strong coarse cloth; but it is much inferior to Hemp pulled in proper time, and water-retted or steeped. Although Hemp, in the process of manufacturing, passes through the hands of the breaker, heckler, spinner, whitester, weaver, and bleacher, yet many of these operations are frequently carried on by the same person. Some weavers bleach their own yarn and cloth; others their cloth only. Some heckle their tow and put it out to spinning; others buy the tow and put it out; and some carry on the whole of the trade themselves. When the trade is conducted by different persons, their interests often clash. By under-retting the Hemp, the grower increases the weight; by slightly beating it, the heckler increases the quantity of tow, but leaves it fuller of bark; by drawing out the thread beyond the staple, the spinner increases the quantity of yarn, but injures the quality; by forcing the bleaching, the whitester increases his profit, but diminishes the strength of the yarn. In general, in manufacturing cloth, strength is sacrificed to fineness and colour.

The average produce of an acre of Hemp may be estimated at 40 stones, or 16*l.* in money. The expense per acre may be about 10*l.*, leaving 6*l.* for clear profit, along with the value of two to three quarters of ripened seed (about 4*l.*), when the crop is raised in that way. Even this average statement requires good land and rich culture. *J. D.*

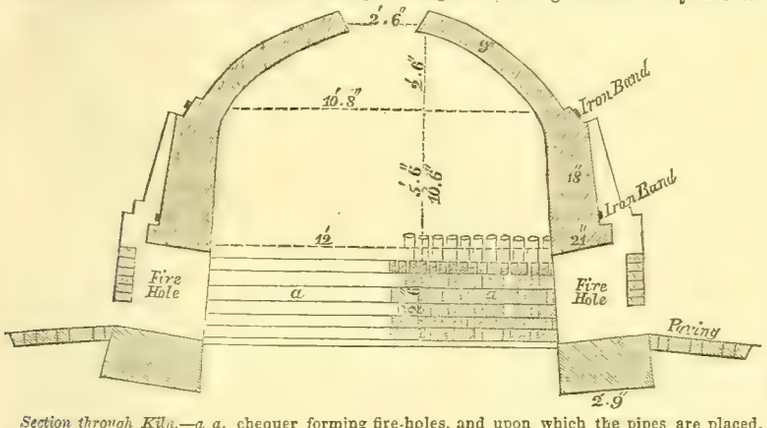
## KILNS FOR BURNING DRAIN-PIPES AND TILES.

IN building a kiln for burning draining-pipes and tiles, although economy of fuel may be of the first, yet there are other things of nearly equal, importance; among these we may mention cost of erection, economy in filling and removing the goods, and the applicability of the kilns for carrying on the works with the regularity and despatch that can only be ensured by division of labour, which in well-conducted works is known to be the secret of success, and in which the large always has the advantage of the small manufacturer. The men employed by the one acquire skill by constant practice; the other loses much by being obliged to call the attention of his men to different descriptions of work. Another desideratum (which a correspondent has lately inquired for) is a kiln in which drain-pipes and tiles can be burnt without its being nearly half filled with bricks. The kiln which appears most applicable for the purpose is that now in use in many of the best-arranged tile-yards, and which has been introduced from Staffordshire, where, of course, everything relating to the manufacture of pottery, the coarser descriptions of which are near akin to the pipes and tiles of the farmer, has had the test of a lengthened experience of its use, and therefore it can be more confidently recommended to the notice of the pipe and tile maker. It possesses many of the advantages mentioned above, and it is used in works where only draining-pipes and tiles are made, although it is capable of burning bricks as well as other ware. In constructing the kiln, a circle is first described upon the ground for the foundations, which are dug out with the bottom sloping towards the centre, to enable the dome to be turned with greater facility and strength. But we need hardly describe the process of building, as the annexed section will amply show how the bricklayer should proceed in his work.

The bricks forming the chequer or bottom of the kiln, and upon which the pipes are placed, may either be permanent and constructed of fire-bricks, or it may be put in with green bricks each time of burning. In the section, these bricks are shown with vacancies left to distribute the heat equally throughout the kiln. It will be understood that the fire-holes which run from the walls to the centre are formed by these means, and that upon the top of the chequer the pipes are placed in a vertical position; the large pipes are of course filled in with those of smaller dimensions, both to economise space and to prevent the fire drawing through them too rapidly.

The cost of a kiln of the dimensions given, taking the materials at a reasonable price, will not exceed 30*l.*, and this should include bricks, lime, labour, and iron bands; but it will be exclusive of the fire-bricks required to form a permanent bottom or chequer.

We need hardly remark, that in the introduction of a new kind of kiln, such as the one described, among brick and tile-makers who cannot be expected at once to fall in with, or see the merits of, a thing which they perceive for the first time in their lives, or to which they have not been accustomed, it is perhaps the most advisable plan to procure a respectable man who has had experience in its working; and with his assistance business is more likely to go on smoothly than amongst strangers.




*Section through Kiln.—a a*, chequer forming fire-holes, and upon which the pipes are placed. There should be 10 fire holes running from the outside to the centre of the kiln, and openings for this purpose are left through the wall in building the kiln; these should be 10 inches wide on the outside, decreasing to 6 inches in the inside of the wall. It is advisable that the fire-holes should be built with fire-bricks.

## Home Correspondence.

*Do Labourers need Strong Drink?*—In your number of the 7th, is a communication from "Falcon," on the prevalence of drunkenness and drinking habits, more especially among the labouring classes, and stating that "there surely must be some means of checking the prevalence of tippling." No doubt there is a means at once simple, economical, and effectual, and that is, not to drink intoxicating liquors at all. Every other means, as far as society at large is concerned, has failed, and will continue to fail, and the only wonder is, that any sensible or observant individual, viewing the weakness and sensuality of human nature on the one hand, and the insidiously tempting nature of alcoholic liquors on the other, should expect anything but failure. If then, the continuance of manufacturing and using these drinks, is to subject us to the fearful evils to which "Falcon" has briefly alluded, but which it would be all but impossible adequately to describe, it becomes a matter of no trifling interest, to enquire how far such articles are necessary for carrying on the operations of agriculture, for which purpose they are still considered essential by many of those who are engaged in farming. Considering how heavily the evils arising out of our drinking customs fall upon the farmer, in the shape of poor and county rates, accidents to men and horses, abused or neglected cattle, slighted labour, and grumbling labourers, &c., I have been surprized that the subject has not been more often alluded to in the columns of the *Gazette*, not so much in a moral, as in an economical point of view, for surely these are times in which no means of improving the moral and physical condition of the employed, or of lessening the inconveniences and cost of cultivation to the employer, ought to be neglected. Permit me then to state to such of your readers as need the information, that it is now proved, by long and extensive experience, that the most arduous labour, either at the workshop or the field, can be performed not only as well, but better on the average, without intoxicating drinks than with them; indeed, I presume very few but ignorant or ill-informed persons will venture to question the truth of this statement. With these important facts before us, viz., that intoxicating drinks are not necessary to persons in health, whatever their occupation, that the use of them leads to an indescribable amount of misery and crime, for which the farmer has largely to pay, it may well occupy a few pages of the *Gazette*, to discuss the propriety of continuing the custom, as a mere matter of £ *s. d.* The enlightened Christian philanthropist need not hesitate long in pronouncing a judgment upon the wisdom or the humanity of destroying every year millions of bushels of wholesome food, to deluge the country with needless temptations, under which thousands continue to fall, and all this to gratify one sensual appetite, which in the long-run rather lessens than increases the intellectual and social enjoyments of life. *S. Bowly, Gloucester*; 16*th*, 6*mo.*, 1851.

*Land Drainage Companies.*—In the leading article of your paper, published on Saturday last, you alluded to the General Land Drainage and Improvement Company, and amongst other sensible remarks referring to the difficulty and expence attendant on the borrowing of the Government money for drainage purposes, you state, in reply to the letter of your correspondent signed "A Tenant for Life," that if the existing Drainage Companies can relieve land-owners from the trouble, risk, and uncertainty of obtaining funds for the improvement of their estates, "this information would be of quite as much practical value as a detail of the expenses incidental to a Government loan." As a Director of the General Land Drainage and Improvement Company, I am enabled to assure you that such is the object of our Company. Under the powers of our Act of Parliament we are not only enabled to advance money for draining, but we also have power granted to us to erect such farm buildings as may be required to meet the present improved system of husbandry, a power which is enjoyed by no other Company, and to which the Government loans do not extend. We have entered into contracts, and are about to commence operations, in making roads, in draining, and in erecting new farm offices, and also in improving old buildings, and I feel convinced, when the existence of our Company, and the powers which have been granted to it by Act of Parliament, become more generally known, that landowners will eagerly take advantage of the saving of trouble and expence, which is thus held out to them, instead of being satisfied with the hold-hard policy suggested by the "Tenant for Life." Any information respecting the expenses to be incurred in employing the Company, may be obtained of the Secretary, at the office, No. 52, Parliament-street, London. It is a sad, but no less undoubted fact, that a large portion of the drainage which has been done in this country, has been carried out so badly, that the land had to be drained a second time. The object of the General Land Drainage and Improvement Company, is to provide an efficient staff of drainers, &c., to whom the landowners may look for the proper execution of such works, instead of the ignorant bailiff or village drainer; although in cases where the landowner himself understands the work to be done, or has a steward or bailiff capable of carrying it out, we are ready to leave the execution to the landowner or his agent, subject only to the Company's supervision, the plans being furnished by the Company. The whole subject of good draining and the improvement of land having become more than ever so important and national a question, I make no apology for thus troubling you. *John Villiers Shelley, Maresfield Park, Sussex, June* 18.

*The Value of an Acre of Roots.*—"F." advocates sowing Turnips in squares rather than drills; this is reverting to broadcast under another name. The great advantage of rows over broadcast or squares consists, I think, in admitting a less obstructed passage of air, and on this freedom from stagnation perhaps depends the growth of plants more than is suspected. Certainly, if a plant depended for its food solely on what it could draw by its roots from the soil, it would appear more reasonable that it should be placed so as to draw this food most equally all around it; but it is not so, and I believe the same number of plants, moderately proximate in wide rows, would give a return fully equal to the same number of plants in squares; I need not say that the rows would afford greater facilities for working the ground. I have myself, experimentally, and also without any ulterior views, Potatoes both in drills and in squares on both a small and a large scale for many years, and found no advantage in the squares over the rows; and indeed, under peculiar tillage, I have found drills yield much heavier crops than I ever got from squares. The growth of the roots is promoted by every thing that gives a previous encouragement to the development of the leaves. *J. M. Goodiff, Granard.*

*American Churn.* — On looking over the "Notices to Correspondents" in your Paper, 14th June, we find your corespondent "M. J. R.," wishes to have a candid opinion of the American Churn. Although we are the agents for the proprietors, yet we hope you will excuse our troubling you with copies of a few letters recently received from disinterested parties who have had the churn in use for some time, in addition to which we have just received a note from Lord Camoys, in which he states, as follows:—"I have had one of your churns in use for some time and it answers perfectly;" we could also show you numerous other testimonials in its favour, but these being recent ones, we think them more satisfactory, we shall be happy at any time to show you the originals of these letters, or if your correspondent should be visiting London we shall be happy to show them to him, or if he will supply us with some cream we shall be happy to show him the churn in operation. *Burgess and Key*, 103, *Newgate-street, London.* "About a year ago I purchased of you one of Anthony's Double Acting American churns; my small dairy was then managed by a very obstinate servant, who hated novelties, and you are well aware that I was at first much disappointed with it; but I have now great pleasure, after some experience of the merits of the churn, in adding my testimony to its great value. Instead of my servant being put out of temper as heretofore by turning the old-fashioned barrel churn from half an hour at least to sometimes an hour and a half, and being surprised with bad butter as the result of all her labour, I now can depend upon obtaining the first-rate butter in 10 or 12 minutes. *Charles Margetts, Huntingdon, April* 14." "On reading the letter of your Huntingdon correspondent, I began to think I was similarly situated in regard to a dairy-maid, so I sent to a friend (who was anxious about it) the churn; he managed to make it answer as regards time and the excellence of the butter, this acted as a stimulus to my dairy-maid, and since its return I have succeeded in the same way, and have much pleasure in bearing testimony to its merits. *Anne Allen, Wenggwnd Glen, near Llangollen, 3d May*, 1851."—We have also received the following:—A correspondent enquires, now that the American churn mania is over, that some one will perhaps give an account of its merits.—The merits of this churn are in a nut-shell; as a churn for amateur dairymen, it will answer remarkably well up to 6 lbs., but there its merits end. To that size it can be depended on to produce butter in from 10 to 15 minutes, but there is no advantage of quantity or quality over 'Baker's,' or any other loose churn, and, in fine, it is extravagant. In large sizes it is useless. I have tried it carefully, and in fact, was most desirous to find a good working churn to supersede the old barrel, which I have used for 20 years. I took much pains to arrive at such a conclusion; but, after many repeated trials, was compelled to return to the old one. I cannot account for the mania in any other way than by supposing that the manner in which it was brought out had something to do with the mania, for, on its own merits, it cannot rest. It has obtained a prize or two, but really we old hands begin to think little of these rewards of merit. *An Essex Farmer.*

*Village Industrial Club.*—On Friday last, June 13th, the first meeting of a Village Industrial Club was held at Eydon, in the county of Northampton. The object of this Club is to promote habits of industry in the cultivation of land, skill in handiwork, personal and household cleanliness, and good moral conduct among the inhabitants. At this meeting was exhibited, in the school-rooms, a show of flowers, vegetables, needle-work, and works of ingenuity, which far surpassed the most sanguine expectation of the promoters of the Club. The manner in which the room was decorated with flags and wreaths of flowers (the willing gifts of the inhabitants), displayed great skill and considerable taste. The anticipation of pleasure and benefit from the establishment of the Club is so great, that the inhabitants appeared to be animated with but one spirit of endeavouring to do all they could to celebrate the first meeting. In the Club, which is only just formed, there are already 150 members: these have free entry to the show, and other persons pay 6*d.* or 2*d.*, according to their station; and although the morning was not propitious, 2*l.* 15*s.* 0½*d.* were taken at the doors. One hundred and twelve articles were exhibited, and 39 prizes given. The money value of the prizes is very small, but with each is given a particularly neatly printed card, with an appropriate device. Of needle-work, the marked feature was patch-worked quilts, made by the school children, which, for arrangement of colours and device of pattern, excited general admiration. Among the articles of ingenuity were three tables, a towel-horse, and doll's bedstead and furniture, made by a boy. A band of music attended, and the farmers and principal inhabitants subscribed to give tea and cake to all the women and children, and bread and cheese and a pint of beer to the men, of which more than 450 partook. In the evening the whole party, with several of the neighbouring gentry and farmers, joined in the dance. At 10 o'clock "God Save the Queen," and "Rule Britannia," was sung, and the party broke up, having spent a day that all classes felt has done much to strengthen the feeling of good fellowship and unity among them. *Wm. Griffin, Eydon, Daventry.*

*Pork.*— I am in the habit of fatting pigs for London, and I have been accustomed to use Barley-meal, but the price of Barley having advanced, I have been induced to use Lentils; but am uncertain how this food will act with the pork as to colour. Can any one give this information? *A. B.*

*Land Drainage Companies.*—Having noticed some observations in the *Gazette*, in reference to the supposed difficulties and expense attendant on borrowing money of Government under the general Drainage Act by tenants for life, I can bear testimony to the attention of the Inclosure Commissioners to applications, and to the economy of their proceedings. Having undertaken for a friend to superintend the drainage of a farm of which he was tenant for life, and finding individuals indisposed to lend money for the purpose, involving repayment by periodical instalments, I was, after some misgivings from past proceedings in Government offices, induced to apply for a Treasury loan through the Inclosure Commissioners in the course of last winter. The drainage has been effected, certified by their surveyor, and the amount of the certificate paid over by the Treasury, and the total charge on the part of the commissioners was rather under 3 per cent. upon the outlay, which included the

cost of the advertisements required by the Act, and which are inserted by the commissioners. The difficulty which has been observed upon in the *Gazette*, as to the first advance of the money for the execution of the works as they proceed, surely is not very formidable under ordinary circumstances. Before this is commenced the loan by Government will have been agreed to; any banker in the neighbourhood who knows the circumstances, and has any confidence in the party, will make the necessary advances for paying the workmen during the progress of the work, to be repaid with interest when the loan is paid over from the Treasury. *C. Laurence.*

*Game.*—I rejoice that so intelligent a correspondent of the *Agricultural Gazette* as Mr. Cuthill should have deemed my challenge to defend Game from the obloquy cast upon it, to be worth his accepting; as I consider that from his experience, observations, and prudence, he is well qualified to defend and support any views he may undertake to advocate. I shall, however, require much indulgence, both from him and others, who may take an interest in this very important subject; for the task I have assigned myself of defending what is generally condemned, is not a very grateful one: but I hope, nevertheless, to eradicate some of the prejudice existing against game and game-preservers, and I trust also to make some proselytes to my own opinions. I observe, however, that I shall keep my mind open to conviction, and be more anxious to acknowledge that my own views are erroneous, than to gain a triumph over my competitor. But first, and *in limine*, I wish it always to be borne in mind, that in my challenge I studiously and carefully used the word "Game," meaning thereby game in the aggregate, and not any one or more kinds of it. With these preliminary remarks, I proceed to Mr. Cuthill's six questions as they appear in the *Agricultural Gazette* of May 30. 1. "Who does he," Mr. Wilkins, "consider is the master on the farm where game is preserved?" I answer this question by putting a parallel one; namely, when a master of foxhounds covenants with a tenant to keep for him breeding-hound bitches and their puppies, or brood-mares and their foals, who does Mr. Cuthill consider is master on the farm whereon those bitch-hounds and puppies, and mares and foals are kept? 2 and 3. "How much does a hare or rabbit cost the landlord? How much the tenant?" These questions embrace so many circumstances and casualties, that a volume would be required in which to enumerate them; but I will endeavour to give a brief reply to them, by again asking a counter question. The proprietor of a farm says to an applicant for it to rent, "Sir, I preserve the game on my estate, and on this account I have fixed the rent of the farm at 450*l.* a year, otherwise it would have been 500*l.*" "Very well," replies the applicant, "grant me a lease on those terms, and I will sign it and become your tenant." Now, should the landlord get annually 50 hares and rabbits only from that farm, each one would cost him just 20*s.*, besides the expenses of preserving: and were 25 only obtained by the landlord, then, in that case, each one would cost him 2*l.* But what would the 50 or 25 hares and rabbits cost the tenant? Perhaps 50 pence or 25 pence, or say, 50*s.* or 2*l.* 10*s.*; but this would be a very high sum indeed. 4. "How is it that when a large landed proprietor takes to farming himself, he always does away with his preserves?" Were this the case, it would certainly tell somewhat against my argument, but my experience has shown to me that just the reverse has been the truth. For example, at this time I am personally acquainted with several game preservers, and every one of them farms, and some of them extensively; and I believe this to be the rule with most preservers, and the other to be the exception to it. 5. "What effect on the county-rates, if the Game Laws were abolished?" I reply to this question by again asking one or two more; namely, what effect upon the county-rates were the laws abolished for the preservation of poultry, or fruit? For I, myself, can perceive but little or no difference between these cases, except that to steal hares, and rabbits, and partridges, and pheasants, is called poaching, whilst to rob fowl-houses and orchards is called thieving. But in my opinion there is but little difference between the crimes, except that the poacher is the most desperate character, as he generally pursues his vocation in the dead of the night, armed like a bandit, with murderous weapons, whilst the other but seldom commits violence. Were I, therefore, to advocate the abolition of the laws for the protection of one kind of property, I would also abolish the laws for the protection of the other kind. But I am also asked, "Would it not be better for landlords to let each of his tenants preserve his own game, and do away with that most noxious person, the keeper, who is the cause of all bitter strife between landlord and the tenant?" My decided opinion is, that it would not be better, but a great deal worse, were landlords not to preserve game by means of keepers; nor do I believe that game-keepers are the cause of all bitter strife between landlords and tenants. It is true, and quite possible, that tenants may not like a keeper, or that the keeper may be litigious or overbearing to the tenants; but the same rule applies also to stewards. But if stewards and keepers be necessary or useful, as I maintain they are, this is no reason why they should be dispensed with, and especially if it be proved, as I expect it will, that game is beneficial to the tenants, and consequently that it must be preserved, and by keepers also, or made by law into private property; but that it never can be. Having so far replied to my worthy adversary's questions, I close the subject for the present, reserving what I have to say in defence of game itself for subsequent discussion. I wish, however, to thank Mr. Cuthill for the kind spirit in which his letter is written, and to observe, that even now I think our opinions are not far from coinciding, and that I do not fear but ultimately they will meet and coalesce entirely. I draw this conclusion from the enlightened sentiment at the conclusion of his letter, that "a farmer would not totally destroy winged game, as they are his best friends, living upon his enemies;" or he might have said, that a single brood of partridges do more real service to the farmer, by destroying wire-worms and other insect pests on his land, than a score or two of rabbits or hares do injury. *Geo. Wilkins.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday, the 18th of June, the Hon. ROBERT HENRY CLIVE, M.P., Trustee, in the chair; when Professor WAY, the Consulting Chemist of the Society, delivered a Lecture on the—

AGRICULTURAL EMPLOYMENT OF GYPSUM.

Professor Way commenced his lecture by stating the chemical composition of Gypsum, or Plaster of Paris. He described it as a Hydrated Sulphate of Lime, consisting of—

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|---|---|---|---|
| Lime ... ... ... | 32·5 | Or as composed, in general terms, of about .. .. | 1 Lime. |
| Sulphuric acid ... | 46 5 | | 1 Sulphuric acid. |
| Water ... ... ... | 21 0 | | 1-5 Water. |
| | 100·0 | | |

It occurred in the older transition rocks, in the secondary strata (especially in the new red sandstone), and in the tertiaries above the chalk: for instance, in the London and Paris beds, the Oxford clay, the red marl in Cheshire above the salt beds, and generally in the counties of Cumberland, Stafford, Derby, and Nottingham; in the state of alabaster, and also in the form of lance-headed crystals, as selenite. The colour of natural gypsum varied according to its impregnation with iron and other substances. He submitted to the members some specimens from Normandy, Nottingham, and Derbyshire, which had that morning been received, in which this variety of colour was shown. Gypsum was soluble in 461 times its weight of water. When heated to 272 degrees, its water was driven off, and the gypsum lost about one-fifth of its weight; it could then be easily reduced to a fine powder, and became the well-known substance, "plaster of Paris," so extensively used in plastic operations; the powder on being wetted assuming a compact mass, having the shape of the vessel or mould into which it was poured. Professor Way supposed this binding effect to be the mechanical result of the interlacing of the crystals formed during the operation of the water on the plaster of Paris. If heated too strongly, however, as, for instance, much beyond the common heat of a baker's oven, it would not set afterwards on the admixture with water. He thought there might perhaps, prove to be an advantage in this result when gypsum was required for application to the soil, as it would no longer have binding properties. He then performed a very simple and striking experiment to show how easily gypsum could be recognised when held in solution by water. He filled two tumbler-glasses with water impregnated with gypsum: into one of these he poured a solution of oxalate of ammonia, which immediately gave a copious white precipitate showing the presence of *lime;* into the other he poured a solution of muriate of barytes, which also gave a copious white precipitate, indicating, however, in this case, the presence of *sulphuric acid.* The two tests thus establishing, by their combined evidence, the existence of sulphate of lime, or gypsum, in the water under examination. Professor Way remarked, that nothing could be more easy than for any person to discover by this simple means whether water contained gypsum; and the question was an important one, for he thought he was pretty safe in saying that gypsum would do no further good to land in which it already existed. In order to ascertain whether such was the case, the farmer had only to digest some of the soil in cold water, filter the liquid through blotting paper, and then add to two separate portions of it a little oxalate of ammonia and muriate of barytes, as just shown. Gypsum, when broken down into powder, might be drilled in with the seed, or used (as was more generally the case) as a top-dressing in the spring. In America gypsum had been applied with great success to all crops; but in England, while it had been found valuable to Clover, Italian Rye-grass, Sainfoin, Lucerne, and to leguminous plants and artificial Grasses generally, it had not proved beneficial in the same degree to the Grasses of natural pastures. The action of gypsum on vegetation was very capricious and often fallacious: although occasionally useful, like common salt, it was sometimes successful and at other times not so. These apparently inconsistent results had arisen from want of care in noting the precise circumstances in each case of the application of this manure. To one of these cases he had just made reference, namely, to that of gypsum being already present in the soil, as on the new red sandstone and Oxford clay formations, and therefore not further required by crops growing on such land. Failure might also be due to the want of sufficient moisture, or to the absence of any other necessary ingredient in the soil. When the land was in good condition to produce crops, then gypsum might be applied under favourable circumstances. Prof. Way then proceeded to discuss the theory of the action of gypsum. If it in certain cases proved of service, in what manner, it might be asked, was this beneficial result produced? what had been the mode of action in character and circumstance? Was the lime, the sulphuric acid, or both—or sulphur alone—the cause? He would first refer to its direct, and then to its indirect action on vegetation. Sir Humphry Davy had found, in the course of his researches into the relation between plants and soils, that there existed more gypsum in Clover and Sainfoin than in other plants which he examined; and he therefore drew the conclusion that gypsum, as a whole, namely, as a combination of sulphuric acid and lime, acted merely as an essential food of plants.

"In examining the ashes of Sainfoin, Clover, and Rye-grass, I found that they afforded considerable quantities of gypsum; and this substance, probably, is intimately combined as a necessary part of their woody fibre. If this be allowed, it is easy to explain the reason why it operates in such small quantities; for the whole of a Clover-crop, or Sainfoin-crop, on an acre, according to my estimation, would afford by incineration only three or four bushels of gypsum."—*Sir H. Davy's Seventh Lecture.*

In none of the experiments made by Sir H. Davy did gypsum appear to increase the putrefaction of animal matter, or the decomposition of manures. He found the Berkshire and Wiltshire peat-ashes contain a large portion of this substance: the Newbury peat-ashes contained from one-fourth to one-third; the Stockbridge peat-ashes a larger proportion. He had, however, examined many peat-ashes in which gypsum was found. In general, when fresh peat, on being acted on by vinegar, emitted a smell of Harrowgate water, he thought it might be inferred that it would furnish gypsum. Baron von Liebig considers that the sulphuric acid of gypsum becomes decomposed in the course of the vegetative process of plants, and that its sulphur is the element which is given off to leguminous seeds and corn crops generally.

"Thus we are enabled to explain the use of common salt as a manure; it enables the plants for which this manure is useful to extract its sulphur from the soil in which it existed in the form of sulphate of lime."

"Gypsum, or sulphate of lime, is the most generally diffused sulphate. Being soluble, it may either pass directly into the plant, or it may be decomposed by the carbonate of ammonia existing in rain water, when its sulphur will pass into the plant in the form of ammonia."—*Liebig's Agr. Chem.*, 4 *ed.*, (*chapter* vi.)

M. Boussingault regards lime as the valuable component part of gypsum, and considers gypsum to be of no value where there is an abundant supply of carbonate of lime.

"In conclusion, we perceive that it may fairly be assumed, that gypsum acts beneficially on artificial meadows, by carrying lime into the soil: that, at least, is the opinion which seems best to accord with agricultural facts, and with the results obtained by analysis from the ashes of crops; I may even add, that best accords also with results obtained from the analysis of arable soils; for it may be inferred, from a series of researches made by M. Rigaud de l'Isle, that gypsum acts only on those soil's which do not contain a sufficient amount of lime in the state of carbonate."—*Boussingault: Economie Rurale*, 1814 (*Chap.* vi)

Liebig ascribes to gypsum the power of solidifying the ammoniacal vapours floating in the atmosphere, and of giving to nitrogen or ammonia a fixed condition in the soil.

"The evident influence of gypsum upon the growth of Grasses, the striking fertility and luxuriance of a meadow upon which it is strewed, depends in some degree upon its fixing in the soil the ammonia of the atmosphere, which would otherwise be volatilised with the water which evaporates. The carbonate of ammonia contained in rain-water is decomposed by gypsum in precisely the same manner as in the manufacture of sal-ammoniac. Soluble sulphate of ammonia and carbonate of lime are formed; and this salt of ammonia, possessing no volatility, is consequently retained in the soil. All the gypsum gradually disappears; but its action upon the carbonate of ammonia continues as long as a trace of it exists." "The action of gypsum, chloride of calcium, and of other salts of lime, really consists in their giving a fixed condition to the nitrogen or ammonia introduced into the soil. This nitrogen is indispensable for the nutrition of plants."—*Liebig's Agr. Chem.* (*Chap.* v.)

Boussingault opposes this view of the question propounded by Liebig. The carbonate of ammonia would decompose the gypsum when in solution, and carbonate of lime and sulphate of ammonia would be the result; a fixed ammoniacal salt being thus obtained in lieu of the volatile one. This double decomposition would not take place under circumstances of such mere dampness as that in which soil generally existed; it required the presence of water in a greater amount, and in a less diffused state. Boussingault therefore inferred that gypsum could have no effect in decomposing the carbonate of ammonia of the atmosphere in the ordinary state of the soil. If ammonia, too, is valuable to all plants, and particularly to the Wheat crop, why, he asks, does not gypsum act beneficially on all crops, by this absorption of ammonia which Liebig assumes to take place? Professor Way then ventured to state his own objections to the theories of these three distinguished chemists. Sir Humphrey Davy's philosophical mind led him to deduce sound conclusions from the facts as they stood before him; but the analysis of plants at that time was very imperfect, and had, since the publication of his lectures, been carried on more extensively; and it was now known that many other plants contain quite as much gypsum as Saintfoin and the artificial Grasses, without being benefited by its application during their growth. M. Liebig's theory was open to the objection, that although gypsum may no doubt furnish sulphur to plants, soils possess the power of fixing ammonia without gypsum being present. M. Boussingault was met with the fact that more lime was found in many other crops than in those of artificial Grasses; for instance, that a crop of Carrots takes from the soil nearly four times as much lime as Clover hay does, six times as much as Saintfoin hay, and fourteen times as much as Italian Rye-grass; and Professor Way thought it might therefore reasonably be asked why gypsum, as a source of lime, is not a good manure for Turnips and Carrots? It was unfortunate that the state of science on these points was as yet so imperfect. He thought we should go much straighter to the mark in such cases

by confessing our ignorance than by attempting to construct theories founded on insufficient data. Professor Way then referred to the use of gypsum in stables. Liebig had recommended it to be strewn on the floors of stables, for the purpose of removing the smell and arresting the ammonia, which he supposed will thus be carried out with the manure. This effect had been denied. Professor Way conceived that the failure might be due to an amount of water being present, only sufficient to absorb the volatile carbonate of ammonia, which was again given up to the atmosphere on the gypsum's becoming dry, but not sufficient to lead to its conversion by double decomposition into the fixed sulphate of ammonia. He would recommend, in preference to the use of gypsum in these cases, diluted sulphuric acid put in boxes and troughs in different parts of the stables. Gypsum was often put into liquid manure tanks, to prevent the escape of the volatile alkali. It would answer if the gypsum was frequently well-stirred up from the bottom of the tank, to which it fell on account of its slow solubility. He would recommend the gypsum to be put into a basket of good size, to be placed under the spout by which the liquid manure was brought unto the tank : this would save the trouble of stirring. Green copperas and sulphuric acid were better for liquid manure in tanks or wells, but gypsum was cheaper. In the filtration of liquids, however, through the gypsum, it should be remembered that the ammonia was not arrested and retained in the basket, but passed off through it ; as the sulphate of ammonia formed was soluble, though not like the original carbonate of ammonia, volatile.

Professor Way having concluded his lecture, expressed his willingness to answer any question in his power connected with the scientific principles of the subject, their practical elucidation being better understood by the members present. In reply to inquiries by Dr. Calvert, he stated that there was no difference between burnt and unburnt gypsum as an absorbent ; but that gypsum in a dry state could not absorb ammonia. It was part of the duty in some union houses for the inmates to break this stone for agricultural use. Burning made it easier to pound, but by thus rendering it a cementitious powder it was more liable to cake when used. This was prevented by mixing the powder first with dry soil.—Colonel le Couteur had been much struck some years ago with the remarks of Sir H. Davy on the component parts of the Clover plant ; and having land in Jersey, on coming into his estate, on which it had been impossible ever to grow Clover, he caused an analysis of the soil to be made for him by Prof. Bachhoffner, who found that it had not a particle of lime in its composition. Having thus a clear insight into the cause of the failure, he lost no time in dressing his land with nine bushels of lime to the acre, putting it in heaps about the field, and covering them with earth. This application had so completely altered the character of the soil that he had not only himself the finest crops of Clover anywhere to be seen, but his neighbours had also followed his example with the same success. He thought this fact, as one of a particular case, strengthened the theory of M. Boussingault, that it was as lime, and not as sulphate of lime, that gypsum acted beneficially on crops of this nature.—Colonel Challoner inquired whether our own analyses of the ashes of plants agreed with those on which Boussingault rested his conjectures ; and he was answered by Prof. Way that there was no essential difference between them. Colonel Challoner then proceeded to remark that it was desirable to know whether, in making peat ashes, the peat should be only charred or burnt at a red-heat. He believed failures in the use of gypsum chiefly to arise from applying it in dry weather, when there was not a drop of rain. He had always applied it either early in the morning, when a heavy dew is on the ground, or when rain was likely soon to fall. He had himself been a successful Carrot-grower in this part of the country, and he would next year try the effect of gypsum on that root-crop. As his land did not contain a particle of lime, gypsum might probably have a good effect. He had to that time been obliged to get lime by means of soap-ashes.— Lord Ashburton suggested that Colonel Challoner should vary his experiment, to ascertain whether the lime or the sulphuric acid in gypsum was the efficient agent ; namely, by dividing his trial-field into three portions, leaving the circumstances the same in each, excepting in the application of gypsum to the first, simple lime to the second, and sulphuric-acid and bones to the third.—Colonel Challoner always manured his Carrots by a previous crop ; as they never did so well by direct manuring, which made them clubby. He found it answers well never to have a horse on the ground after sowing. He employed a hand-drill, by Holmes, of Norwich, by means of which a man sowed the seeds in the sand ; the plants were straightened, by a boy, with the back of a common rake. By adopting this system, his Carrots speared, or started, a fortnight or three weeks earlier than formerly. It was desirable, however, that the white Belgian Carrot-seed should be of the same date ; for if a mixture of old and new seed was employed, the spearing would occur at different times. Messrs. Thomas Gibbs and Co. had much aided him in this object by their attention to his wishes on this point.—Professor Way thought an excess of gypsum injurious. He stated that Mr. Hamond had been desirous that his tenants in Nottinghamshire should subsoil the land on the Norfolk system ; but they strongly objected to bring up the subsoil to the surface, as their experience had taught them that great damage invariably resulted in their case from such a process. Mr. Hamond being desirous of ascertaining the cause of this injury, sent to Professor Way a specimen of this subsoil, which on analysis was found to contain half its weight of gypsum. This no doubt had destroyed the crops. Hard water, he believed, was known to be unfavourable to some plants, and the water passing through this dressing of subsoil washed the gypsum out of it, and thus became very hard water from such impregnation.—Dr. Calvert wished to know the quantity of gypsum that might with safety be applied to land ? —Prof. Way thought that one per cent. in soil would do no harm ; and to produce that proportion to the depth of five inches, five tons of gypsum per acre would be required : a limit within which our ordinary applications were safely included.—The Hon. R. H. Clive, M.P., remarked that although guano had answered, in his own case as in that of others, most completely, it must not be forgotten how essential was the old lime-system, which of late years had been discarded ; if we went on much longer with strong animal manuring, we should begin to feel the bad effects of not reverting to that wholesome and excellent application.—Mr. Thompson (President of the Agricultural Association of Upper Canada), who had favoured the Council with his attendance on that occasion, referred to the practice followed in the United States in the employment of gypsum. When used alone to the land, it was found not to produce good crops. It was most successfully applied to the Clover, in which it occasioned a strong growth, and improved the succeeding Wheat crop. It was also extensively employed in the cultivation of Indian Corn, but the land required to be brought into good heart by some previous application. Good crops were grown in sandy soils, but manure was required in addition to the gypsum. In America they never thought of burning the gypsum, but erected mills which ground it as fine as the finest Wheat-flour. It was important in the agricultural employment of this substance, that it should be thus finely ground ; the difference in the results obtained from coarse-ground and fine-ground gypsum was most striking. It occurred not far from a place of his own residence and other parts of Canada, as well as at Oswego, Rochester, and other localities in the United States.—Colonel Challoner thought that a means of improvement in the soil by the ploughing-in of green crops was in this country too much neglected. In Southern Italy, near Naples, Lupin crops were grown extensively for this purpose ; and the difference in the appearance of the land where this fresh manuring had taken place was so great, as to be distinctly seen at a great distance. He considered the subject well worthy of the attention of our farmers.—Mr. Thompson remarked that it had not been found beneficial in Canada to apply gypsum to the Wheat crop directly, but that there was a district of deep sandy loam in his part of the country, on which it had been the practice of the occupier for the last 20 years to grow a Wheat crop every alternate year. In the autumn he sows Wheat ; in spring, 3 lbs. of Clover seed to the acre ; harvests the Wheat and grazes the Clover : in the following spring sows gypsum over the Clover, and when in good growth turns stock upon it, from the middle of June to the 1st of July ; then ploughs up : and so on, obtaining a crop of Wheat every alternate year, without any falling off in its amount on quality. —Mr. Bateham, of Columbus, in the United States (Editor of the Ohio *Cultivator*), at present also on a visit to England, has favoured the Council with the following statement of similar results connected with judicious cropping under favourable circumstances :—

"*Soil for Wheat in America.*—In the State of Ohio one of the central states, latitude 39° to 41°, we have tracts of remarkably fertile land—deep alluvion, along the borders of streams and rivers, called by the inhabitants bottom-lands, say from 1 to 3 miles in breadth, and mostly level. These lands are famous for growing Indian Corn (Maize) ; but where the soil consists of a good portion of sand and lime pebbles, as well as dark vegetable matter, these lands are used for Wheat (as along the Miami river), and in some cases Wheat has been grown successfully every other year for 10, or even 15 to 20 years in succession, without any apparent decrease of fertility. I can furnish statements from individual farmers on my return if desired. The crop raised alternately with Wheat on these lands is commonly Indian Corn, but sometimes Oats or common Red Clover. When the Wheat is sown after Corn, the Corn is cut up and put into stooks or shocks to ripen, and the ground once ploughed and sown in September with Wheat. Oats are sown (after Wheat crop) in March or April, and harvested in July ; the ground immediately ploughed, and left till 1st September, then ploughed again, and sown to Wheat ; but this rotation is not approved by good farmers. Clover (red) is everywhere with us regarded as the best alternate with Wheat, only it is found a rather wasteful practice to plough it in the next year after sowing. Clover is sown on the Wheat in winter, or early in spring ; then pastured after Wheat harvest, and again the next spring and summer, or cut for hay in June, then ploughed in late in August or September, and sown to Wheat. On ordinary soils three to four crops are allowed to intervene between crops of Wheat."

The Chairman having informed Professor Way that the thanks of the Council had been unanimously voted to him for his kindness in giving them so valuable a Lecture on that occasion, expressed his satisfaction at the interesting practical statements with which the meeting had been favoured, and his acknowledgments to the respective individuals by whom they had been made, the Council adjourned to their next weekly meeting, on Wednesday, the 25th of June.

## Reviews.

*Remarks on Fumigating Horticultural and Agricultural Crops.* Published at the Office of the *Gardeners' Chronicle and Agricultural Gazette*, 5, Upper Wellington-street, Strand.

THIS pamphlet describes a machine for fumigating plants either in a confined or in an open place.

"Although it is not pretended that blight, or *aphis*, can be totally destroyed in the open air by means of smoke, without some covering to keep it for a time in contact with the vermin, still the insect will be so paralysed as to render it unable to prey upon the young crop ; and if the plant can be grown into rough leaf, it is beyond the danger of its ravages. Every agriculturist will appreciate the means of effecting this, and of securing his Turnip-crop, the foundation of profitable farming. It may now certainly be done ; and the fly prevented, paralysed, or extirpated, by going repeatedly over a field, or a Hop-garden, for a few days ; indeed, if the operation is commenced so soon as the young plants come through the ground, and fruit trees and shrubs fumigated before the enemy appears, it will prevent their approach ; and the prudent cultivator should always fumigate in anticipation, mindful of the sage maxim of the philosopher,

'Venienti occurrite morbo.'*

"These implements, whether large or small, are also available for combusting scented woods, and for fumigating and disinfecting impure places in houses or ships ; also for extirpating vermin from dwellings, barns, and corn-stacks. In furtherance of this latter object a prepared powder may be obtained of the vendors of the instrument, called 'Brown's Fumigating Powder,' which, being mixed, according to direction, with some combustible substance, evolves an acrid vapour, extremely nauseous, and intolerable to snakes, lizards, and the reptile tribe, as well as rats, mice, cockroaches, black beetles, bugs, &c., &c. The Fumigator may also be used for suffocating bees, wasps, or ants."

The machine has been advertised repeatedly in our columns; and though we have no personal experience of its merits, we do not object to say that the inventor appears to have received a number of trustworthy certificates of its efficacy.

## Miscellaneous.

*Kilns.*—Joseph Christian Davidson, of Yalding, Kent, Brickmaker, for improvement in lime and other kilns and furnaces. Patent dated November 2d, 1850. "1. Mr. Davidson's improvements have relation to lime kilns, in which, as usually constructed, the fire has been lighted in the kiln underneath an arch built of the limestone to be calcined. According to this method a great waste ensues from pieces of the stone chipping off by the action of the heat and falling into the fire, from which they have necessarily to be removed. It is now proposed to have the fire-place alongside of the kiln, and to conduct the flame and products of combustion through the side of the kiln, to act upon the limestone, which is to be piled in the kiln on an arch built in the usual manner, and so as to act as a reticulated flue. 2. The same principle is applied to the kilns used for baking bricks, the fire-places being arranged at the side of the kiln, in such position as to make the openings in the walls thereof the throats of the furnaces." *From the Mechanics' Magazine of May* 10

METEOROLOGICAL REPORT.—JUNE.

(Continued from page 402.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| June 11 | 10.30 a.m. | 29.90 | ... | SSW. Gentle, overcast ; at night several heavy showers. |
| | 10.15 p.m. | ... | 29.70 | |
| 12 | 7 a.m | 29.59 | ... | SSW. Blowing hard and raining fast, and densely |
| | 6.15 p.m. | ... | 29.56 | overcast all day (barometer steady till sunset, when it fell, and rain moderated). Night, less wind and rain. |
| * | 10.30 p.m. | ... | 29.54 | |
| 13 | 7 25 a.m. | ... | 29.63 | SW. Moderate, overcast, hazy ; barometer rising steadily. At 6 P.M. wind had shifted to WNW. Bright moonlight 10.30 P.M. |
| | 10.30 p.m. | 29.87 | ... | |
| 14 | 7.40 a.m. | ... | 29.94 | Gentle southerly breeze, increasing P.M. ; barometer rising slowly. Warm cloudy day, at 5.40 wind SW. |
| | 10 p.m. | 29.97 | ... | |
| Sun. 15 | 8.5 a.m. | 29 97 | ... | SW. Brisk, cold, and overcast ; barometer falling steadily. |
| † | 9 55 p.m. | ... | 29.83 | 5 P.M. Raining fast, and increasing wind till night. |
| 16 | 6.50 a.m | ... | 29.85 | A.M. WSW. Brisk, overcast, gleamy ; barometer rising steadily ; fine sunny afternoon. |
| | | | | P.M. WNW. |
| | 6.10 p.m. | 29.97 | ... | 5.10 NW. |
| ‡ | 8.30 p.m. | ... | 29.97 | 8.30 wind shifted to W., and barometer dropped ; but at 10.40 had risen again. |
| | 10.40 p.m | 30.02 | ... | |
| 17 | 6.40 a.m. | ... | 30.15 | 6.40 WNW., noon NW. Brisk, white cumuli ; barometer rising steadily. Evening, sky cloudless and clear. |
| | 10.30 p.m. | 30.30 | ... | |
| 18 | 7 a.m. | 30.32 | ... | A.M. W., 11 SW. Gentle, breeze increasing, and sky gradually clouding over ; barometer falling steadily. |
| | 10 p.m. | ... | 30.18 | 5 P.M. SSW. Brisk ; night calm. |
| § | 19 7.30 a.m. | ... | 30.14 | N. Gentle breeze, overcast. |

* A storm coming from south-west, and crossing England to the eastward.

† A storm coming from the west and north of west, from its extreme coldness, and travelling to the east.

‡ A storm coming from south-west, and travelling to the east.

§ A storm coming from west, and travelling to the north.

Dorchester, June 19th. *F. P. B. M.*

[By an accident, the above report did not reach us in time for our last Number.]

* Meet the approaching disease.

METEOROLOGICAL REPORT—*Continued.*

| | | | | | |
|---|---|---|---|---|---|
| June | 19 | 11.20 a.m | 30.12 | ... | A.M. SW., P.M. SSW, WSW. Moderate breeze and fine sunny day, and very hot. |
| * | | 6 p.m. | ... | 30.08 | |
| | 20 | 6.30 a.m. | 30.03 | ... | Gentle SW. hot breeze; cloudless sky. Night: wind veering to S. |
| | | 8 p.m. | ... | 29.94 | |
| | 21 | 7.15 a.m. | 29.75 | ... | A.M., SE; 11.55, S.; 3 P.M., SSW. Gentle breeze, cloudless sky; intensely hot summer's day; foggy in the evening. Barometer falling slowly all day. |
| † | | 6.30 p.m. | ... | 29.64 | 6.30. SW. |
| | | 10 10 p.m. | ... | 29.65 | |
| Sun. | 22 | 7.50 a.m. | ... | 29.73 | NW. Brisk breeze; bright sky, with large white masses. |
| | | 10 p.m | 29.97 | ... | 5.10. N. Barometer rising steadily. |
| | 23 | 6.50 a.m. | ... | 30.08 | Moderate NNW. breeze. Fine day. Barometer rising steadily. |
| | | 10.30 p.m. | 30.16 | ... | |
| | 24 | 7.10 a.m. | 30.19 | ... | NNW. Gentle, bright morning. |

* A storm coming from the Azores, and passing away to the northward.

† This storm came from the south, travelling nearly due north, having its central line to the westward, over the Irish channel probably; or perhaps even to the west of Ireland. Although in London it produced no visible result, being limited to a most intense degree of suffocating heat, in Cheshire and Lancashire it burst in a most tremendous hurricane of thunder and lightning. This extreme heat is easily explained, as are also the fluctuations of the barometer and veerings of the wind, if we move a storm-card from south to north over the Irish channel, and bear in mind that this atmospheric body was coming from the heated regions of Africa to our latitude.

Dorchester, June 26th. *F. P. B. M.*

(*To be continued.*)

## Notices to Correspondents.

BRAILLE'S PROCESS FOR GRINDING CORN: *G S W* asks for information on this subject. It was lately spoken of in the *Times* newspaper. Where is it to be heard of, or seen?

CHURNS: *Sub.* Tin may be used safely, as the material of which they are made. Wooden churns are generally preferred.

IMITATION WOOD: *W J.* Can any one give our correspondent any information as to the method of preparing imitation wood from the leaves of the coffee chicory? [The thing shall be referred to in detail under "Wood."]

LIQUID MANURE: *Ammonia.* If you dilute it sufficiently with water, it will not annoy your neighbour when you spread it over the land; or you may try oil of vitriol, which will convert the volatile carbonate of ammonia, to which the smell is owing, into the fixed and inodorous sulphate.

SALT: *J P* may sow 2 cwt. of salt broadcast on his Mangold Wurzel plants per acre.

SHELL MANURE: *R T Gardener.* Will any one give us his experience of the pulverised shell manure as advertised?

# Markets.

## COVENT GARDEN, JUNE 28.

Trade is steady, and the market well supplied with all kinds of Fruit and Vegetables in season. Forced Peaches and Nectarines continue to be sent in unusually large quantities. English Pines and Hothouse Grapes are plentiful and good. Strawberries from the open ground are now in good demand, and the supply is well kept up. Cherries are cheaper. West Indian Pines fetch from 2s to 5s. each. Oranges and Lemons are plentiful. Nuts remain nearly the same as quoted last week. Asparagus, young Carrots, French Beans, and Green Peas are received in quantity. Frame Potatoes may be obtained at 2d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. The best Mushrooms fetch 1s. 3d. per pottle. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Cinerarias, Pinks, Moss and Provins Roses.

### FRUIT.

Pine-apples, per lb., 5s to 8s
Grapes, hothouse, p. lb., 3s to 7s
Peaches, per doz., 10s to 20s
Nectarines, per doz., 10s to 20s
Cherries, per lb., 1s to 5s
Melons, each, 4s to 8s
Strawberries, p. pottle, 6d to 1s
Gooseberries, per half sieve, 2s to 3s
Currants, per hf. sieve, 3s to 4s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Lemons, per doz., 1s to 2s
Oranges, per doz., 9d to 2s
— per 100, 6s to 14s
— Seville, p. 100, 7s to 14s
— — p. doz., 1s to 2s 6d
Nuts, Barcelona, p. bsh, 20s to 22s
— Brazil, p, bsh., 12s to 14s
Cobs, per 100 lbs., 50s to 55s

### VEGETABLES.

Cabbages, per doz., 6d to 1s
Greens, per doz. bunchs., 6d to 1s 6d
Cauliflowers, p. doz., 2s to 4s
French Beans, p. 100, 1s 6d to 2s 6d
Beans, p. hf. sieve, 1s 6d to 2s 6d
Peas, per sieve, 2s 6d to 3s 6d
Asparagus, per 100, 1s to 4s
Rhubarb, p. bundl., 2d to 6d
Potatoes, per ton, 90s to 200
— per cwt., 4s to 8s
— per bush., 1s 6d to 3s
Turnips, p. bunch, 6d to 1s
Cucumbers, each, 3d to 1s
Radishes, per doz., 6d to 9d
— Turnip, p. doz., 8d to 1s
Celery, p. bundle, 6d to 2s
Carrots, per bunch, 6d to 1s
Spinach, per sieve, 9d to 1s
Onions, p. bunch, 2d to 4d
Leeks, per bunch, 3d to 4d
Shallots, per bunch, 3d to 4d
Garlic, per lb., 4d to 8d
Artichokes, per doz., 1s 6d to 2s 6d
Lettuce, Cab., p. score, 4d to 9d
— Cos, per score, 3d to 1s
Small Salads, p. punn., 2d to 3d
Horse Radish, p. bundl., 1s 6d to 6s
Red Beet, per doz., 6d to 1s 6d
Mushrooms, p. pot., 8d to 1s
Sorrel, per hf. sieve, 6d to 9d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, per doz. bun., 2s to 3s
— Roots, p. bundl. 9d to 1s
Mint, green, per bunch, 4d to 6d
Basil, green, p. bunch, 6d to 9d
Marjoram, green, do., 6d to 9d
Watercress, p. 12 bunch., 6d to 9d
Corn Salad, p. hf. sieve, 1s to 1s 6d

### HOPS.—FRIDAY, June 27.

Messrs. Pattenden and Smith report that the market for Hops is still on the advance, and that the accounts from the plantations generally speak of an increase of vermin and honey dew.

### POTATOES.—SOUTHWARK, June 23.

The Committee report that there have been no arrivals since our last report, nor are any more expected this season; there is no improvement in prices this week; the few old Potatoes left salesmen are anxious to get rid of at any figure. In closing our report for the season we are happy to say at present the crops are looking well.

### HAY.—Per Load of 36 Trusses.

**CUMBERLAND MARKET, June 26.**

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 84s to 88s | | Inferior ... ... ... | 60s to 80s | |
| Inferior ditto... ... | 60 | 75 | New Clover ... ... | 60 | 75 |
| New Hay ... ... | 60 | 72 | Straw ... ... ... | 28 | 30 |
| Old Clover ... ... | 84 | 95 | JOSHUA BAKER. | | |

**WHITECHAPEL, June 26.**

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 75s to 80s | | New Clover ... ... | —s to —s | |
| Inferior ditto ... | 60 | 65 | Inferior ditto... ... | 75 | 80 |
| New Hay ... ... | — | — | Straw ... ... ... | 26 | — |
| Old Clover ... ... | 90 | 95 | | | |

### COAL MARKET.—FRIDAY, June 27.

Carr's Hartley, 14s; Eden Main, 13s. 3d.; Wallsend Braddyll's, 14s. 9d.; Wallsend Stewarts, 14s. 6d.; Wallsend Adelaide Tees, 13s. 3d.—Ships at market, 86.

### SMITHFIELD, MONDAY, June 23.

The number of Beasts was smaller, so also was the demand. Consequently we were unable to alter our quotations, although there was a small advance on a few choice ones. The supply of Sheep was considerably larger than the demand, and they could not be disposed of, although the prices were lower. There was an inquiry for choice Lambs, but middling ones, which were plentiful, made very little money. Trade was heavy for Calves at lower rates. From Holland and Germany there are 330 Beasts, 2660 Sheep, 296 Calves, and 11 Pigs; from France, 36 Beasts and 30 Pigs; from Scotland, 240 Beasts; from Norfolk and Suffolk, 1800; and 270 Sheep from Spain.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 0 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 |
| Best Downs and Half-breds | ... 3 | 8 | — 3 | 10 |
| Ditto Shorn | ... | ... | | |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools | 3 | 2 | to 3 | |
| Ditto Shorn | ... | | ... | |
| Ewes & 2d quality | 2 | 8 | — 3 | 2 |
| Ditto Shorn | ... | | ... | |
| Lambs ... | ... 4 | 6 | — 5 | 4 |
| Calves ... | ... 2 | 6 | — 3 | 6 |
| Pigs ... | ... 2 | 6 | — 3 | 4 |

Beasts, 3518; Sheep and Lambs, 33,080; Calves, 441; Pigs, 335.

FRIDAY, June 27.

The number of Beasts is again small, but there is an unusually scanty attendance of buyers, consequently many remain unsold, and 3s. 4d. is an extreme quotation for choicest kinds. Sheep and Lambs are again plentiful; it is difficult to maintain Monday's rates for the former, and the latter are fully 1d. per 8 lbs. lower. We have an extraordinary supply of Calves, and a slow trade; the choicest are 2d. per 8 lbs. lower, and there is a considerable reduction in inferior kinds. From Germany and Holland we have 103 Beasts, 900 Sheep, 330 Calves, and 20 Pigs; from Spain, 140 Sheep; from Scotland, 68 Beasts; 400 from Norfolk and Suffolk; and 68 milch cows from the home counties.

| Best Scots, Herefords, &c. | ... 3 | 2 | to 3 | 4 |
|---|---|---|---|---|
| Best Short-horns | 3 | 10 | — 3 | 2 |
| 2d quality Beasts | 2 | 2 | — 2 | 8 |
| Best Downs and Half-breds | ... 3 | 8 | — 3 | 10 |
| Ditto Shorn | ... | ... | | |

| Best Long-wools | 3 | 2 | — 3 | 6 |
|---|---|---|---|---|
| Ditto Shorn | ... | | ... | |
| Ewes & 2d quality | 2 | 8 | — 3 | 2 |
| Ditto Shorn | ... | | ... | |
| Lambs ... | ... 4 | 0 | — 5 | 0 |
| Calves ... | ... 2 | 0 | — 3 | 4 |
| Pigs ... | ... 2 | 4 | — 3 | 4 |

Beasts, 714; Sheep and Lambs, 14,480; Calves, 784; Pigs, 420.

### MARK LANE.

MONDAY, JUNE 23.—The market was shortly supplied with English Wheat this morning, and a further advance of 1s. per qr. was readily obtained. Notwithstanding a large arrival of foreign Wheat, a steady demand was experienced, at a similar improvement in value. There was no alteration in the nominal price of town-made Flour, but country and best French brands were 1s. per sack dearer.—Barley of home growth scarce, and fully as dear.—The receipts of foreign Oats this week are large, several vessels having arrived. Really good sweet horse corn could not be purchased any cheaper than last week.—Beans and Peas firm, at the recent improvement in value.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 43—48 | | Red ..... | 39 | 43 |
| — — fine selected runs...ditto | 46—51 | | Red ..... | | —45 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | | — |
| — Foreign ..... | 35—53 | | | | |
| Barley, grind. & distil., 22s to 25s...Chev. | 27—32 | | Malting . | 24—27 | |
| — Foreign... grinding and distilling | 22—26 | | Malting . | | — |
| Oats, Essex and Suffolk ..... | 20—23 | | | | |
| — Scotch and Lincolnshire...Potato | 23—27 | | Feed..... | 21—25 | |
| — Irish .....Potato | 20—25 | | Feed..... | 19—23 | |
| — Foreign .....Poland and Brew | 21—24 | | Feed..... | 19—23 | |
| Rye ..... | 24—26 | | Foreign . | | — |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..27s to 30s.....Tick | 28—31 | | Harrow . | 28—31 | |
| — Pigeon.....29 — 34.....Winds | — | | Longpod | | — |
| — Foreign .....Small | 22—30 | | Egyptian | 24—25 | |
| Peas, white, Essex and Kent.....Boiler | 24—27 | | Suffolk... | 27—29 | |
| — Maple.....27s to 29s .....Grey | 24—25 | | Foreign . | 25—32 | |
| Maize ..... White | — | | Yellow ... | — | |
| Flour: best marks delivered ...per sack | 34—39 | | | | |
| — Suffolk .....ditto | 27—34 | | Norfolk . | 27—34 | |
| — Foreign .....per barrel | 18—23 | | Per sack | 26—34 | |

FRIDAY, JUNE 27.—The arrivals of English corn since Monday have been moderate, but we are well supplied with foreign. The attendance at market was small, and we observe no alteration in the value of English Wheat, and as foreign was generally held for late prices the business transacted was confined to needy buyers. Spring corn of all descriptions is very firm at Monday's quotations. The prices of Flour are maintained, but the sale is inanimate. In f. o. b. cargoes of Wheat business has been less lively; with the exception of one, all southern cargoes arrived on the coast are disposed of.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 1970 | — | 1340 | 1780 sacks |
| Irish ..... | — | — | 1610 | |
| Foreign ... | 18890 | 8880 | 20460 | 7560 brls |

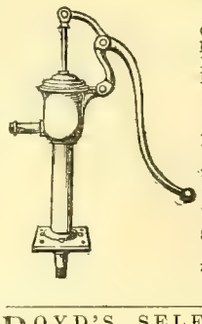
| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| May 17..... | 38s 2d | 24s 2d | 18s 11d | 25s 9d | 28s 10d | 27s 2d |
| — 24..... | 38 8 | 24 1 | 19 5 | 24 7 | 29 2 | 26 1 |
| — 31..... | 39 3 | 24 1 | 20 0 | 26 9 | 29 7 | 27 5 |
| June 7..... | 39 6 | 24 4 | 20 8 | 23 5 | 30 11 | 26 10 |
| — 14..... | 39 11 | 24 6 | 20 1 | 26 1 | 30 10 | 28 6 |
| — 21..... | 40 7 | 24 4 | 21 4 | 28 0 | 30 5 | 27 6 |
| Aggreg. Aver. | 39 4 | 24 3 | 20 1 | 25 9 | 29 11 | 27 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | MAY 17. | MAY 24. | MAY 31. | JUNE 7. | JUNE 14. | JUNE 21. |
|---|---|---|---|---|---|---|
| 40s 7d | ... | ... | ... | ... | ... | |
| 39 11 | ... | ... | ... | ... | | ... |
| 39 6 | ... | ... | ... | | ... | ... |
| 39 3 | ... | ... | | ... | ... | ... |
| 38 8 | ... | | ... | ... | ... | ... |
| 38 2 | | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JUNE 24.—At this day's market there was a fair attendance of the town and country trade, who showed some disposition to purchase, but the high prices asked checked business, and only a moderate retail sale was experienced for Wheat and Flour at Friday's prices, being an advance on the week of 1d. to 2d. per 70 lbs. on the former, and 6d. per barrel and 1s. per sack on the latter article. Oats and Oatmeal being scarce, commanded an advance of 1d. per 45 lbs. and 1s. per load. Barley, Beans, and Peas were without alteration in value. Indian Corn met with little inquiry. ——FRIDAY, JUNE 20.—There was scarcely so much briskness in the Corn Market this morning as we have experienced every day this week, still there was a good demand for Wheat and Flour from the interior, and there was an improvement on Tuesday's prices of 1d. to 2d. per bushel on Wheat, 6d. per barrel on American, and 1s. per sack on French Flour. Oats also advanced 1d. per bushel, and Oatmeal 1s. per sack, and both very scarce. Beans and Peas were held for higher rates. Indian Corn was also in good favour, but not any dearer.


FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

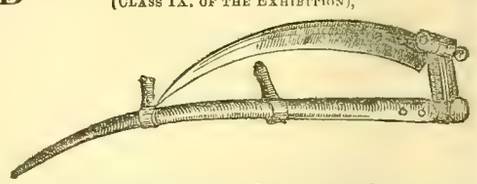
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Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0
Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

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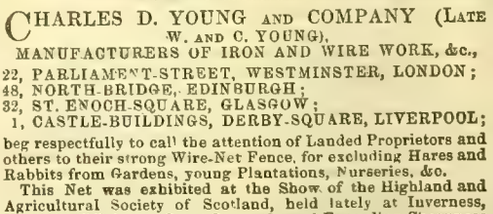
Can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary. Manufactured and sold by DEANE, DRAY, and DEANE, Agricultural Implement Depot, Swan-lane, London Bridge; and to be had of all respectable Ironmongers.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



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MANUFACTURERS OF IRON AND WIRE WORK, &c.,

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48, NORTH-BRIDGE, EDINBURGH;
32, ST. ENOCH-SQUARE, GLASGOW;
1, CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30*s.* ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

| | | |
|---|---|---|
| Or a web of 100 yards, 18 ins. wide, will cost | ... | £3 15 0 |
| Do. of 100 yards, 24 ins. wide | ... ... | 5 0 0 |
| Do. of 100 yards, 30 ins. wide | ... ... | 6 5 0 |
| Do. of 100 yards, 36 ins. wide | ... ... | 7 10 0 |

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has in many instances been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2¼ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

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Workmen sent to all parts of Scotland, England, and Ireland.

ORCHIDS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on THURSDAY next, at 12 for 1 o'clock, a Case of ORCHIDS, just received overland from Sylhet, consisting of Aerides, Vandas, and Dendrobiums of many species, some of which are evidently new; to which will be added some lots of Cattleyas and Oncidium papilio from South America, fine specimens.—May be viewed on the morning of sale, and Catalogues had.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET (from year to year), subject to Tithe Rent Charge, to be entered upon on the 11th of October next, a desirable FARM, called the Manor Farm, in the parish of Swavesay, in the county of Cambridge (a Railway passing through the said parish), comprising a good Residence with all requisite Agricultural Buildings, and about 510 a 2 r. 1 p. of Arable and Pasture Land, as now occupied by Henry Wiles, whose tenancy will expire at the above time.—For leave to view, apply to the Tenant, and for further particulars to Mr. RANDALL, Solicitor, Cambridge; or to ROBERT EMSON, Esq., Camden-place, Cambridge.

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TOLLINGTON-PARK, HORNSEY-ROAD.

TO BE LET, or the Lease (15½ years unexpired) to be Sold, a Convenient, 10-roomed House, pleasantly situate, in one of the most healthy and delightful neighbourhoods near London. The House is in perfect repair, and the garden laid out in tasteful style, well stocked with a choice collection of Roses, and other flowers. Greenhouse filled with a variety of plants and approved Grape Vines in the most healthy state. Omnibus every five minutes from the Bank, Charing-cross, and Oxford-street.—For particulars, apply by letter, to Z., Messrs. Mudie and Sons, Coventry-street, Piccadilly, or viewed any day from 10 to 6 o'clock; 19, Tollington Park.

ROYAL AGRICULTURAL COLLEGE,
CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President—The Right Hon. Earl BATHURST.
Vice-President—The Right Hon. Earl DUCIE.

The COLLEGE will RE-OPEN, after the summer vacation, on Monday, August 11, for agricultural and general education. Lectures by Professors of ability and experience, in Chemistry, Geology, Botany, Zoology, Veterinary Medicine, and Surgery, Surveying, and Civil Engineering, &c., are combined with practical instruction in agriculture, and the several branches of a good education. Agricultural Analysis will be undertaken in the Laboratory of the College, at a low rate of charges.—For prospectuses and information respecting the Course of Studies, Terms, &c., for in and out Students, apply to the Principal, the Rev. J. S. HAYGARTH, M.A.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The ANNUAL MEETING and GREAT NATIONAL CATTLE SHOW of this Society will take place this year in Dublin, at the Royal Dublin Society's Premises, Kildare-street, on WEDNESDAY, AUGUST 13TH, and the days following, on which occasion ONE THOUSAND POUNDS and upwards, including the Challenge Cup and Medals of the Society, will be offered in premiums for Cattle, Horses, Sheep, Swine, Poultry, Dairy Produce, Flax, and Agricultural Implements, the particulars of which, together with Prize Sheets and blank forms of Entry, can be had on application to the Secretary.

Monday, the 21st of July, will be the last day for lodging notices of Entry for the Show, after which day none can be received.

All implements must be in the Show Yard on or before Monday, the 11th of August, as the Judges will commence their inspection on Tuesday morning early.

All Stock and other articles, except Horses, must be in the Show Yard before 6 o'clock on Tuesday, the 12th of August, when the gates will be closed.

Arrangements are in progress for the conveyance of Stock and Implements, duly entered for Exhibition, by Steam Boats and Railways, to the Show, the particulars of which shall be communicated on application.

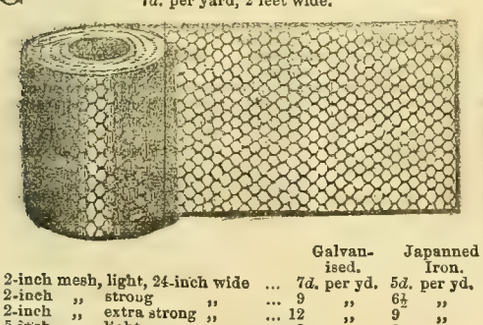
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| 2-inch " strong " | ... | 9 " | 6½ " |
| 2-inch " extra strong " | ... | 12 " | 9 " |
| 1½-inch " light " | ... | 8 " | 6 " |
| 1½-inch " strong " | ... | 10 " | 8 " |
| 1⅓-inch " extra strong " | ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

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Binding up
Budding knife
Budding, time of
year, day, time of
day, state of the
plant, care of buds
Budding upon body
Bud, insertion of,
into stock
Bud, preparation of,
for use
Buds, dormant and
pushing
Buds, failing
Buds, securing a
supply of
Caterpillars, slugs,
and snails, to
destroy
Causes of success
Dormant buds,
theory of replanting with explained
Guards against
Labelling [wind
Loosing ligatures
March pruning
Mixture for healing
wounds
Pruning for transplantation
Planting out, arrangement of
trees, &c.
Pushing eye, spring
treatment of dwarf
shoots from
Roses, different sorts
on the same stock
Roses, short list of
desirable sorts for
budding with a
pushing eye
Sap-bud, treatment
of
Shape of trees
Shoots and buds,
choice of
Shoots for budding
upon, and their
arrangement
Shoots, keeping
even, and removing thorns
Shortening wild
shoots
Stocks, planting out
for budding upon;
the means of procuring; colour,
age, height; sorts
for different species of Rose; taking up, trimming
roots, sending
distance, shortening heads, &c.
saw proper for
the purpose
GRAFTING.
Aphides, to keep
down
Free-growers, remarks on
Graft, binding up
and finishing
Grafting, advantage
of
Grafting, disadvantage of
Operation in different months
Preliminary observations
Roses, catalogue
and brief description of a few sorts
Scion, preparation
and insertion of
Scion, choice and
arrangement of
Stock, preparation
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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27—1851.] SATURDAY, JULY 5. [PRICE 6d.


INDEX.


Acre, the ..... 429 a
Agricultural Society of England 429 a
— Chemistry ..... 425 b
Auriculas, properties of ..... 424 c
Birds, British song.....421 b—422 b
Bone dust ..... 430 a
Buckwheat..... 422 a
Bulbs and tubers, classification of..... 423 c
Calendar, Horticultural ..... 424 a
Carbonic acid ..... 419 b
Charcoal..... 428 c
Cheltenham flower show ..... 421 c
Chemistry, agricultural ..... 425 b
Crystal palace ..... 419 a—426 b
— — Mr. Paxton's pamphlet respecting .... 420 b
Drainage Act..... 428 a
Gas lime..... 430 a
Glass, rough plate ..... 422 a
Grass land, Fifeshire management of ..... 426 c
Great Marlow Hort. Soc. .... 423 c
Iron, paint for ..... 421 c
Irrigation ..... 428 c
Labourers, farm ..... 428 b
Manures..... 428 a
Melons, culture of ..... 421 c
Newcastle Farmers' Club..... 429 b
Nymphæa, red ..... 420 a
Orchids for the Million..... 431 a
Ox tribe, rev..... 429 c
Paint, tar ..... 421 c
Parsnip cow..... 428 c
Pines, Black Jamaica ..... 422 a
Plants and the atmosphere .... 419 b
— variegated ..... 423 a
Potatoes, early to protect..... 431 a
Potato disease ..... 422 c
Rose, yellow ..... 422 c
Royal Botanic Society ..... 422 c
Sheep, fleeces of ..... 429 c
Soap ashes..... 430 a
Soil, difficulties in cultivating.. 429 b
Tar paint ..... 421 c
The weather..... 429 c
Trade memoranda ..... 421 c
Tubers and bulbs, classification of ..... 423 c
Turnip cutters ..... 426 b
Vasey on Oxen, rev. ..... 429 c
Viola lutea ..... 422 b
Water plants..... 420 a
Weather, the..... 429 c


SCOTTISH GARDENERS AND LAND-STEWARDS' ASSOCIATION.—At the Annual General Meeting of the Association, held on the 28th ult., ARCHIBALD SCOTT, Esq., in the Chair, it was resolved, that THREE PENSIONERS be placed on the roll at the ensuing Election—that the time for applicants to send in their claims be extended to 1st August ensuing, and that the Election take place on the 28th of the same month.

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*** Forms of application for Candidates may be obtained of the Secretary, 1, George IV. Bridge, Edinburgh; of Mr. THOMSON, Secretary to the Glasgow Board, Trongate, Glasgow; and of Mr. SOMMERS, Secretary to the London Board, 159, Fenchurch-street, London.

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Woodlands Nursery, July 5.

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| PACKED IN CRATES, for cutting up of the sizes as Manufactured:— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered:— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*ths*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

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GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

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GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14*s.* each.

16*s.* per box:

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 ,, 5½ ,, 7 ,, 5 | 6½ ,, 6¼ ,, 7½ ,, 6½ |
| 6 ,, 6 ,, 7½ ,, 5 | |

18*s.* 6*d.* per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 ,, 8 ,, 11 ,, 9 | 10 ,, 8 ,, 13 ,, 9 |
| 9 ,, 8 ,, 12 ,, 8 | |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

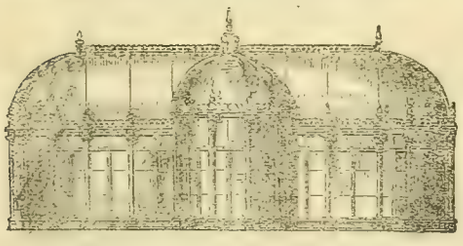
ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

---

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes. Inches. | | | | | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|---|---|
| | | Under 6 | by 4 | at | 1½*d.* | is £0 12 | 6 |
| From 6 | ,, 4 ,, | 7 | ,, 5 | ,, | 2*d.* | ,, 0 16 | 8 |
| 7 | ,, 5 ,, | 8 | ,, 6 | ,, | 2½*d.* | ,, 0 18 | 9 |
| 8 | ,, 6 ,, | 10 | ,, 8 | ,, | 2¾*d.* | ,, 1 0 | 10 |
| 10 | ,, 8 ,, | 12 | ,, 9 | ,, | 2¾*d.* | ,, 1 2 | 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3¾*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

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COCHIN CHINA CHICKS.—A few first-rate birds for sale.—Address, C. B., care of Publisher of *Gardeners' Chronicle.*

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FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

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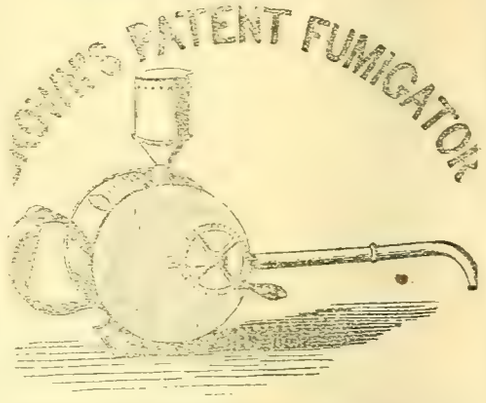
BY HER MAJESTY'S ROYAL LETTERS PATENT.

GALVANISED SHEET-IRON GREENHOUSES, HOTHOUSES, CONSERVATORIES, &c.

E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road, Chelsea, who now offers 10*l.* to any person that can show a House of Grapes, equal for Quality, Quantity, and in proportion to space and age of Vines, as Mr. Thomas Frost, Head Gardener to Edward L. Betts, Esq., Preston-hall, which is a Galvanised Sheet-iron House, built and heated by himself. The superiority of these Houses having been fully proved in all parts of the Kingdom, references can be given in every instance where a Patent House has been erected. E. D. has five Patent Houses of different sizes for sale, and some as low as 1*d.* and 2*d.* per foot super., complete, thinking of making alterations on the premises, and has erected two Patent Greenhouses in the open space of the Great Exhibition; one the roof glazed without putty or wood, and one with putty. Heating by Hot-water.

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PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, more effectually in conjunction with SANGSTER'S FLORUMBRA, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

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IRON GATES, HURDLES, WIRE WORK, &c.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE-PARK), And Highfield Iron-works, Bilston,

MANUFACTURE all kinds of Park Entrance, Carriage and Field Gates, Wickets, Wrought and Cast Iron Gate Pillars, Plain and Ornamental Fencing, Palisading, and Balconies.

Ox, Cattle, Sheep, and other Hurdles.

Tree Guards, Garden Seats, Garden Rollers, Wheelbarrows.

Stable Fittings, &c.—Iron Work of every description.

Wire Work in great variety, comprising Gothic and other Fencing, Flower Stands, Trainers, Arches, Pheasantries, &c.

The works being situated in the centre of the Staffordshire Iron district, THOMAS PERRY AND SONS are enabled to execute promptly orders to any extent with the greatest facility, of the best quality, and on the most moderate terms.

Manufacturers of every kind of Solid Iron and Tube BEDSTEADS, with all the recent improvements.

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TO NOBLEMEN, LANDED GENTRY, AGRICULTURISTS, ROAD AND RAILWAY CONTRACTORS.

WIRE STRAND FENCING, as furnished with all its fittings, by R. S. NEWALL and Co., having elicited the unqualified approval of practical men, is confidently recommended as the best Fencing for Park and Farm Inclosures, or Subdivisions, for temporary agricultural inclosures (instead of any kind of hurdles), for road-side and all other Fencing.

The PATENT WIRE STRAND FENCE possesses an economy, security, and durability, not to be found in combination in any other Fence hitherto introduced. This Fence, as fitted by R. S. NEWALL and Co. (after the model of the Fences of this material in the Slopes, and Home-park, at Windsor), has the inherent property of remaining equally tight and rigid, under any variations of temperature.

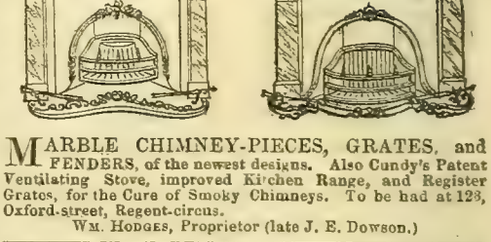
N.B. Estimates given at so much per running yard, for Fencing, fixed complete. Specimens, Sketches, or any other particulars, will be forwarded on application.

Office and Warehouse, 130, Strand, London.

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ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily from 12 to 6 o'clock, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by His Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at 4 o'clock, on every Saturday, until further notice. Admission 1*s.* ON MONDAYS 6*d.*

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MARBLE CHIMNEY-PIECES, GRATES, and FENDERS, of the newest designs. Also Cundy's Patent Ventilating Stove, improved Kitchen Range, and Register Grates, for the Cure of Smoky Chimneys. To be had at 128, Oxford-street, Regent-circus.

WM. HODGES, Proprietor (late J. E. Dowson.)

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HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room furnished.

HORTICULTURAL SOCIETY OF LONDON.—His Grace the Duke of Devonshire, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 19th JULY. Tickets are issued to the orders of Fellows of the Society only, at this Office, price 5s.; or at the Garden, in the afternoon of the 19th July, at 7s. 6d. each, but then also only to orders signed by Fellows of the Society. But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 17th of July, may obtain from that Office an authority to procure Tickets on this occasion. No official orders for Tickets will be issued after that day.

N.B.—No Tickets will be issued in Regent-street on the day of Exhibition.

Messieurs les étrangers qui desireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulate.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a ticket. He or she may also personally introduce a friend with an Admission Ticket at half-past Twelve, at Gate No. 4, in the Duke of Devonshire's road; or, if unable to attend personally, a wife, brother, son, daughter, or sister, if resident in the family, may represent the Fellow, if furnished with an admission Ticket on which the signature of the Fellow is inscribed.—21, Regent-street, London.

NATIONAL FLORICULTURAL SOCIETY,
21, REGENT-STREET, LONDON.

NOTICE is hereby given, that the SEVENTH MEETING of the above Society will be held on Thursday next, the 10th inst., at 3 o'clock, for the examination of SEEDLING FLORISTS' FLOWERS, and rewarding deserving novelties by granting LABELS OF COMMENDATION, CERTIFICATES OF MERIT, or FIRST CLASS CERTIFICATES, at the discretion of the Censors.

All subjects for examination must be entered, labelled, and staged at least two clear hours before the hour of meeting. Censors are required to be punctual in their attendance at the time stated in their summons, viz., 1 o'clock.

By order, JOHN EDWARDS, Hon Sec.

SEEDLING PELARGONIUM FUND.—The Treasurer takes this opportunity of announcing that a statement of receipts and expenditure will be produced for examination, and the PRIZES PAID. All interested are therefore requested to attend at 21, Regent-street, on the 10th inst., at 1 o'clock.

July, 5th, 1851. JOHN EDWARDS.

SELECTED CINERARIA SEED, saved from one of the choicest and finest varieties in cultivation, this being the proper time for sowing (which any amateur may cultivate with little trouble and sure success), to insure good strong plants that will bloom well the forthcoming season.

Packets of the above can be forwarded to any part, on receipt of 18 penny postage stamps.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

**The Gardeners' Chronicle.**

*SATURDAY, JULY 5, 1851.*

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | July | 7—Entomological | 8 P.M. |
| TUESDAY, | — | 8—Vauxhall Gardens | 6 P.M. |
| | | 8—London Floricultural | 6 P.M. |
| | | 8—Zoological | 9 P.M. |
| WEDNESDAY, | — | 9—Literary Fund | 3 P.M. |
| | | 9—Royal Botanic | 3½P.M. |
| THURSDAY. | — | 10—National Floricultural | 3 P.M. |

COUNTRY SHOWS.—Tuesday, July 8: South Devon Botanical and Horticultural, and Truro Horticultural.—Wednesday July 9: Barton-on-Humber Horticultural.

SHALL WE KEEP THE CRYSTAL PALACE? says "DENARIUS." WHAT IS TO BECOME OF THE CRYSTAL PALACE? asks Mr. PAXTON; and the same questions are daily put by thousands of voices, less powerful but not less earnest. As yet no answer has been given, and probably no answer will be given till the public has more generally expressed its own opinion. Let us then endeavour to point out to those who do us the honour to read our columns in what way this question strikes us.

"DENARIUS" believes that the building may be applied to various scientific uses, that it may become a great gallery of sculpture, a winter garden filled with fountains and groves of Orange trees, a gymnasium where science and art may unite in friendly contest, where schools and lectures would naturally arise, and where periodical exhibitions would be held of silk-weaving or cotton-printing, and the manufactures which give their names to the great City Corporations, the Goldsmiths', the Ironmongers', the Mercers', the Dyers', &c. "If the place," he says, "were recognised as a receptacle for plants and shrubs, it might be expected that in a very short time it would be well furnished with public donations. Proceeding with the development of this idea more in detail, it may be pointed out that the nave and the aisles 48 feet wide would give a space of 10 acres independently of the galleries, which would give in addition walks exceeding a mile. The ground-floor might be used for plantations and sculpture, the galleries for potted flowers and smaller works of statuary; but care should be taken to consider the promenade as the chief feature, and not to occupy too much space with the collections. The public would desire to have walks among flowers and plants—not flowers and plants with some walks. This last kind of treatment belongs to Kew and Chiswick, and the Regent's Park. Spaces at the extreme sides of the building might be kept vacant to be applied to various public purposes, such as periodical exhibitions of agricultural produce, colonial raw produce, machinery, perhaps models of objects claiming patent rights, manufactures, and fine arts."

These ideas he, however, as we understand him, only offers as "supplementary to the great object of a winter garden;" and we are bound to say, that we doubt the wisdom of carrying them out, even if it were possible.

Mr. PAXTON, whose pamphlet we reprint in another column, entertains different views. He would have a garden or park, and nothing more, embellished with birds, and flowers, and trees, and sculpture, displayed in a climate temperate at all seasons. HIC VER PERPETUUM would be inscribed above his portals, and the scene within them would be that of a noble "park, decorated with the beauties of nature and art, under a sky-roof, having a climate, warmed and ventilated for the purpose of health alone, furnishing, close to their own firesides, a promenade unequalled in the world, and, for the six winter months, a temperature analogous to that of Southern Italy. Beautiful creeping plants might be planted against the columns, and trailed along the girders, so as to give shade in summer, while the effect they would produce by festooning in every diversity of form over the building, would give the whole a most enchanting and gorgeous finish."

Are these visions capable of being realised? That is the question which it really interests us to answer. The funds and means out of which such a reality may arise are subordinate considerations; especially since the building, the main feature in any calculation of cost, may be said to be already paid for.

That all which Mr. PAXTON proposes to do may be easily done, no one acquainted with gardening will doubt; that the climate of Naples or Madeira may be secured to Hyde Park by means of the Crystal Palace, is as certain as the existence of those two countries. All we require in order to accomplish such an end is a heating power, which will exclude frost in winter, and a water power which will exclude drought in summer. The rest is simple. That the great engineers who put together the vast fabric can water it and heat it, nobody doubts; that plants will thrive in it if heated and watered, we all of us know perfectly well.

But would such a winter garden be attended by the advantages that are expected from it to public health and convenience? That is to say, would it be agreeable to ride and walk under shelter while rain or snow is falling all around? Would it be comfortable to have a cool garden of 18 acres as a place of resort in the dog-days? Have dust or mud irresistible attractions to us English? These are matters of taste which all men can judge of for themselves.

If we look at the matter as it affects the value of contiguous property, then such questions as the following arise. Would it be advantageous to the neighbourhood to be within a few minutes' walk of Naples or Madeira? Would invalids find any comfort therein? Would the aged and infirm? And if health and comfort should be increased by turning the Crystal Palace into such a place as Mr. PAXTON contemplates, would the value of houses and land at Knightsbridge, Kensington, Brompton, and Bayswater, rise or fall? The owners of property there will probably express their opinion as to those points.

Should all these questions be answered in the affirmative (and who can doubt it); if the comfort, the health, the enjoyment, the wealth of the metropolis would be thus largely increased, by converting the Crystal Palace into such a park as could only be naturally found in Portugal or Madeira, then the last inquiry that we should make would be, WHO WILL RECOMMEND ITS REMOVAL, when a short Act of Parliament shall be introduced to enable it to remain where it is.

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IN speaking of the influence of CARBONIC ACID GAS upon growing plants, and pointing out the effects which they produce in regulating the composition of the atmosphere, two questions naturally arose, the one relating to the entire quantity of carbonic acid at all times to be found in the air, and the second, having reference to the more practical question of artificial supplies of that substance, to plants cultivated under glass, or in houses. Both these points deserve a little further consideration. It is plainly evident, that if the composition of the entire atmosphere were liable to undergo considerable fluctuations, it would naturally produce corresponding effects on the growth of plants; on the contrary, however, there is good proof that the proportion of carbonic acid in the air is very nearly always the same. The cause of this, we shall now proceed to show, is not so much that the production of carbonic acid is always exactly counterbalanced by its decomposition by plants, but that the quantity of that substance which the whole atmosphere contains, is so vast, that no ordinary natural cause is able to make any sensible change in its average proportion, in the space of a single year or two.

Perhaps the best way in which we are able to gain any clear idea of such enormous quantities as the volume of carbonic acid produced during an entire year by the breathing of the whole human race, is, as we have already said, by attempting to ascertain what relation it bears to the bulk and weight of the entire atmosphere; and though in doing so we must necessarily speak of even still larger quantities than those just mentioned, yet the subsequent comparison is comparatively easy. It is well known that the atmosphere is not all of the same density; that the higher we ascend, the rarer and more attenuated it becomes, of which, in fact, we have an accurate measure in the fall of the barometer, when it is taken up the side of a hill, or in a balloon. By means, too, of the barometer, it is easy to calculate the weight and bulk of the entire atmosphere; and we learn that the whole quantity is equal to one mile in height, the whole being supposed to be of the same density as that of the air at the surface of the earth. In order then to ascertain the bulk of the entire atmosphere, and to know the extent of the storehouse of vegetable food from which plants derive their nourishment, we have only to calculate the surface of the whole globe, and ascertain how many cubic miles of air would be required to cover it. In round numbers the quantity is nearly 200 million of cubic miles. Now a cubic mile of air would weigh about 1,673,290 tons, and consequently if we wish to know the weight of the whole atmosphere, we must multiply these two numbers together, and we shall have 334,658,000,000,000 tons!

As far, however, as plants are concerned, we have only to consider that small portion of the atmosphere, the carbonic acid which it contains, and which amounts to about one-thousandth part; in calculating therefore the total supply of carbonic acid, on which plants have to depend, we must divide these large numbers by a thousand, which leaves us 200,000 cubic miles of carbonic acid, or, in weight, about 350,000,000,000 tons. Now, the statement with which we set out was, that the quantity of carbonic acid which would be formed during a whole year, by the breathing of 600 millions of human beings, would be 145 millions of tons; and this, large as it is, is evidently but a small quantity compared to the whole quantity which usually exists in the atmosphere; in fact, it only amounts to about one 2400th part of the whole quantity. With this statement before us, it is not so difficult to understand the kind of natural balance which must exist between the production of carbonic acid, on the surface of the earth, and its decomposition by growing plants. It is plain from the action of the winds, and other causes, that the whole mass of the atmosphere must be in a constant state of mixture, and that the carbonic acid poured into it must be soon regularly diffused throughout the whole of it; observing, then, the enormous quantity of this gas, which is at all times present in the atmosphere, it is evident that a very considerable addition may at any time be made to it without any very evident increase being produced in its relation to the entire atmosphere. From what we have just shown, it appears that the carbonic acid gas formed by the respiration of the whole human race, large as the quantity certainly is, would not, in a century, do more than increase the present proportion one twenty-fourth part. Such a quantity must be added to the atmosphere every year, for more than 10,000 years in succession, in order to double the present proportion of carbonic acid.

It is difficult to understand how the growth of plants should be so nicely proportioned to the formation of carbonic acid, as to insure constant equality of composition in the atmosphere; although as INGENHOUSZ has well observed, the circumstances which tend to increase the formation of carbonic acid, are also, for the most part, those most favourable to the growth and development of plants. But from the facts just stated, we may be led to inquire whether a very considerable increase in the total quantity of carbonic acid in the atmosphere may not take place, which yet would not cause the per centage to be raised to an extent capable of being indicated by the most accurate chemical tests. That this may really be the case, a very little consideration will readily prove; setting aside the extreme difficulty and delicacy of the experiment, it appears that the recorded results of different observers vary considerably, and though the evidence is quite satisfactory that the average amount is not far from one-thousandth part of the whole air, yet it has sometimes been found to be as low as one two-thousandth, or even still less. The acknowledged variation may be fairly set down at from one-thousandth to one twelve hundred and fiftieth—one quarter of the whole; a variation which, if it happened to occur equally throughout the atmosphere, would evidently amount to many thousand millions of tons. In fact, so large is the quantity of

carbonic acid in the atmosphere, that it would be years before any visible increase could be produced from any natural source, and consequently also, it might be months before the counteracting influence of vegetation began to produce any sensible diminution.

The growth of land plants however, is not the only means by which the atmosphere is purified, the sea also performs a very important part in the absorption of carbonic acid; the proportion of carbonic acid in the air appears to be generally diminished by storms; and the air collected out at sea, especially in stormy weather, contains a smaller proportion of carbonic acid than that which is collected some way from the sea-shore. It is probable that as much carbonic acid is absorbed and decomposed by marine plants every year as by those which grow upon the land; that which is abstracted by the latter is for the most part sooner or later again returned to the atmosphere, by decay or combustion; but that which is removed by marine plants is apparently altogether lost as regards the growth of future plants, possibly it in part goes to form beds of carbonaceous matters, analogous to coal. The practical conclusion which we would draw from these remarks is, that the quantity of carbonic acid decomposed by the vegetation of the whole globe in a year, may be greater or less, by many hundred thousand tons, than the quantity formed during the same time, and yet no sensible difference may be perceived in the composition and properties of the air.

It is a well ascertained fact that the power of plants to decompose carbonic acid varies very considerably, according to the conditions under which the plant is placed; it depends on vigour and vitality in the plant, on temperature, and on the influence of the sun's light. Ingenhousz and Saussure found that the power of decomposing carbonic acid was greatest at a certain hour in the morning, and that after that period it began to decline, even though the strength of the sun's rays continued to increase. It is true that many of these experiments were made in small glass receivers, and consequently under highly artificial and unnatural conditions, but they are nevertheless quite varied and accurate enough to establish the general conclusion, that at some periods plants are much more able to decompose carbonic acid than they are at others. It is probable that in the free and open air those conditions most favourable to the growth of the plant are also favourable to its obtaining carbonic acid; but when plants are cultivated in a close house, and more especially when the house contains a comparatively small surface of earth, it is certainly quite possible that the plants may not always be able to obtain as much carbonic acid as they could decompose, and in such cases the artificial addition of carbonic acid to the air might be advantageous. It is an experiment which could easily be tried, and one which might very probably lead to interesting results. It is obvious, that the gas should only be introduced at that period of the day when the growing powers of the plants are most active; and probably not more than from a thirtieth to a fortieth of the whole volume of the air should be introduced at a time. In an ordinary hot-bed or tan-pit, the effects produced are chiefly due to the increased temperature, but at the same time some benefit is certainly produced by the carbonic acid evolved; in this case, however, the gas is constantly and regularly evolved, and bears no relation to the powers or wants of the plants; very nearly as much food is offered to them in the middle of the night, when they are wholly unable to make use of it, as in the brightest part of the morning. If an experiment were tried on the artificial addition of carbonic acid to the air of a forcing-house, it is hardly necessary to add, pure carbonic acid must be used; it might be obtained with great facility and of great purity by mixing chalk and sulphuric acid in any suitable vessel. The gas should be introduced pretty early in the morning, allowed to remain in contact with the leaves of the plants during the greater part of the day, the house being entirely closed, and in the afternoon a certain amount of ventilation might be allowed, in order to permit the free circulation of air and the escape of the surplus gas before night.

## THE CRIMSON NYMPHÆA AND OTHER WATER LILIES.

The introduction of Victoria regia into this country has been the commencement of a new era in the history of stove aquatics. The Victoria required a tank or basin of gigantic size, and would not be put off with an instalment of its demands; setting pots and tubs at defiance, it scorned all reasonable bounds, and could not be stowed into any kind of coopery, since a brewer's vat could scarcely float more than one of its splendid leaves. We have, therefore, to thank this noble plant for such a reformation in tanks, as never could have been anticipated by the warmest admirers of this tribe of plants; for if it would have behaved itself, and lived in a tub, two feet in diameter, and flowered, however shabbily, in a bushel of mud, and struggle as other aquatics heretofore had to be contented with, we should never have seen the splendid effect that Nymphæas produce in an aquarium 30 feet wide. Not only have gentlemen built tanks of immense size for the Victoria, but nurserymen have done the same; and besides growing this white Water Lily, they have tried the superior culture applied to the Victoria upon other plants, and the experiment has nobly rewarded them for their pains.

I cannot help stating that I felt rather disappointed on first seeing the flower of the Victoria, after the marvellous display made by its foliage. Such a leaf seemed to promise much, and measuring the bloom by the proportion that Nymphæa flowers bear to their leaves, one might have reasonably expected the Victoria to produce a flower as large as the top of a bushel basket; and if it had been rich in colour, in addition to this large size, it would have been still more desirable; however, with all its beauties and all its shortcomings, it is fair indeed; but its ephemeral life extends only to a day, the morrow dawns only upon its decline, its work is finished, and the foot-prints of decay are stealing over its loveliness. In colour, too, it suffers by comparison with aquatics of less pretensions, for I need only refer to one well known genius, the Nymphæas—plants of the easiest culture, where there is room and warmth afforded them, to show that the tanks erected for the Victoria may be greatly enriched by a margin of Nymphæas—a square yard or two of space is all that they require; in fragrance they are not to be surpassed; in colour, some are of the purest white, others are of the fairest shades of blue, whilst one or two are crimson.

On visiting the new Victoria house at Messrs. Knight and Perry's the other day, I was handsomely rewarded, after the many long miles I had travelled, to see the "Lions of London" with a sight of by far the loveliest flower I had ever set my eyes upon. It grew in a corner of the tank, and might be 25 feet from where I stood; it was a Nymphæa with a flower about as long as my hand, possessing the colour of Le Géant des Batailles Rose, and like all other plants or flowers that grow upon the brink of still water or that float upon its bosom, it was reflected in the "liquid element" and consequently counted double; therefore, if any one is at all disappointed, as I confess I was, in the flower of the Victoria regia, let him try a verge of Nymphæas, and he will not go unrewarded. I would also just hint to the London sight-seer, that a cab-hire of half-a-crown to Chelsea will not be thrown away in a visit to the nursery in question, where this beautiful plant is in bloom; and before I take leave of this subject, I would beg to remark, that as the Victoria Lily has raised the tanks to a dignified standing, as compared with what they were, the same dignity ought to be observed in the plants that are made to associate with this queenly flower.

The Nymphæas are worthy of a place in every large tank, and those who can add Nelumbiums will find that these three genera, well grown, will form such a selection as cannot be excelled by any aquatics in cultivation.

I was led to this remark, by seeing in one place the gouty legs of Pontederia crassipes, and the light foliage of Limnocharis Humboldtii, floating under the heavy batteries of the Victoria, which seemed ready to swamp them with the next leaf that it unfurled. *Alex. Forsyth, St. Mary's Church, June 26.* [Now that 3500*l.* are voted for an aquarium at Kew, it is to be hoped that we shall see water plants as they ought to be seen.]

## WHAT IS TO BECOME OF THE CRYSTAL PALACE?

By Joseph Paxton.

The time is approaching when the World's Fair will terminate, and the vast roof under which it is held, being no longer required for that purpose, must, according to the terms of agreement with the Commissioners of Woods and Forests, be removed; and, by this time next year, the ground is to be made as smooth, and the Grass is to look as green, as before the 25th of September, 1850 The Exhibited articles will all be removed, and many of them will be looked upon as precious relics, connected with an event, the greatest of our times, and they will be cherished more and more as they become separated further from the day of their great triumph, whilst the Building (I hope I may say without vanity)—the great feature of the Exhibition—must, if removed, be either transported to another country, or be rent asunder and dispersed in fragments to perform a variety of inferior offices Now, if I can show—as I believe I can—good reasons why the structure should remain standing, I trust the Royal Commissioners will do all in their power to further that object.

Apart, then, from all thoughts of its present use, and also from all those considerations which fairly entitle it to great attention—the Building, I would suggest, should be allowed to remain standing, on account of its peculiar fitness to supply a great public want, which London, with its two and a half millions of inhabitants, stands most essentially in need of—namely, a *Winter Park and Garden* under glass.

When I determined on sending in a design for the Glass Palace, I had in view quite as much the after purpose for which the Building could be adapted as the object then more immediately required; and, in my original prospectus, I prominently mentioned the fact, as one which had received a large share of my attention. Since that day nothing has transpired to alter my views, but, on the contrary, everything has contributed to strengthen and establish them, and to further convince me, if such further conviction had been needed, how valuable an appendage to this great metropolis would be a large national place of recreation and instruction, such as I propose.

Within the last 20 years, the physiology, economy, and requirements of animated nature, with the effects which climate, locality, and various contingencies have upon their health and habits, have been studied and examined, with the best results. Geology, closely connected with the study of plants, has, in its wondrous discoveries, unfolded to our view the mysteries of ages long gone by, when the earth's inhabitants differed widely from those now seen occupying its surface; of these no recorded history furnishes us with particulars, and but for this science we must have looked back through the thick mist of time, with scarcely a glimmering of light to guide us. By the aid of Chemistry and Botany many useful discoveries have been made, which practical Horticulture has rendered subservient to the comforts and happiness of man; and the removal of the duty on glass has given an impetus to this science which only a short time ago no efforts could possibly have called into action; indeed, had that duty still existed, no building such as I am now treating of could possibly have been erected, and without an extensive use of glass, to equally admit and diffuse a subdued light, no such display as at present could have been secured.

The achievements of Horticulture, however, do not stop here, or merely consist in what has been accomplished within the Great Exhibition Building, where dry and polished articles and the most tender fabrics may be safely preserved; but it leads onwards to the formation of climates, which even under opposite influences are rendered healthy, and suited to the wants and requirements of man. Formerly, wherever plants were congregated beneath a glass structure, the atmosphere was invariably deteriorated, and rendered unfit for being more than transiently inhaled; the usual method with visitors being to take a hurried view of the chief beauties within, and then retire to a more genial air. But now Plant-structures are no longer unhealthy, pent-up ovens; although the immense variety of objects they contain form a remarkable contrast with the meagre appearance of former collections, yet these objects are seen growing with an ease and natural vigour which, with the limited knowledge and means we possessed formerly, it was impossible to imitate. The ventilation and climate of our dwelling-houses have also been considered, and many additions to our comfort have in this respect been made. The perfection of these internal arrangements, contrasted with the atmosphere without, renders it still more desirable that something on a large scale should be done to counteract the effects of the outer air, which, in this country, and in the neighbourhood of London especially, is often during many months in the year impure, murky, and unfit for healthy recreation and enjoyment; and it is to meet this want that I offer the present recommendation. All hitherto erected structures, however great and noble some of them are, fall far short of answering this end, and I cannot but recommend, now that we do possess a building like the Crystal Palace, which in its dimensions is the best adapted for such a purpose of anything that has been hitherto attempted, that it should be so appropriated—and especially as its peculiar site between Hyde Park and Kensington Gardens is the best spot that could have been selected; connecting as it does those two great promenades—it appears exactly calculated to concentrate beneath its roof the pleasures of both.

A Building like this, if properly laid out, will open a wide field of intellectual and healthful enjoyment; it will likewise, I hope, stimulate the wealthy in large manufacturing towns to a similar adoption of what may now be raised so cheaply; and when judiciously furnished with vegetation, ornamented with sculpture and fountains, and illustrated with the beautiful works of Nature, how pure, elevating, and beneficial would its studies and exercises be. At present England furnishes no such place of public resort, for although Kew has a splendid Palm-house, where daily are congregated a great number of individuals, yet its warm and humid atmosphere is only calculated to admit of visitors taking a hasty view of the wonders of the tropics, as they pass in their walks through the gardens. On the contrary, in the Winter Park and Garden I propose, climate would be the principal thing studied; all the furnishing and fitting up would have special reference to that end, so that the pleasures found in it would be of a character which all who visit could share; here would be supplied the climate of Southern Italy, where multitudes might ride, walk, or recline amidst groves of fragrant trees, and here they might leisurely examine the works of Nature and Art, regardless of the biting east winds or the drifting snow. Here vegetation in much of its beauty might be studied with unusual advantages, and the singular properties examined of those great filterers of Nature, which during the night season, when the bulk of animal life are in a quiescent state, inhale the oxygen of the air, whilst in the day, when the mass of animal existence have started into activity, they drink in the carbonic supply, given out by man and animals, which goes to form their solid substance, at the same time pouring forth streams of oxygen, which, mingling with the surrounding atmosphere, gives vigour to man's body and cheerfulness to his spirits.

In this Winter Park and Garden, the trees and plants might be so arranged as to give great diversity of views and picturesque effect. Spaces might be set apart for equestrian exercise, and for carriage drives; but the main body of the building should be arranged with the view of giving great extent and variety for those who promenade on foot. Fountains, statuary, and every description of park and garden ornament, would greatly heighten the effect and beauty of the scene.

Beautiful creeping plants might be planted against the columns, and trailed along the girders, so as to give shade in summer, while the effect they would produce by festooning in every diversity of form over the Building, would give the whole a most enchanting and gorgeous finish. Besides these, there might be introduced a collection of living birds from all temperate climates, and the science of Geology, so closely connected with the study of plants, might be illustrated on a large and natural scale, thus making practical Botany, Ornithology, and Geology, familiar to every visitor.

The alterations necessary to the Building itself, to produce the effects I have suggested, would not be many or cost much money. Shortly will be published by me a view showing how the whole may be finished so as to do away with all idea of smoke, chimneys, or other kind of nuisance. The details of the alterations necessary I do not propose to treat of now; but I may mention, for the information of those who live opposite the Crystal Palace, that I should recommend the wood boarding round the bottom tier of the Building to be removed and replaced with glass; the present appearance of it is heavy, and gives anything but the idea indicated by its name; when glass is substituted for wood, the appearance will be marvellously changed; those who drive and ride in the park will even in winter see the objects within as they pass by, and the whole will have a light aerial appearance totally unlike what it has at present. In summer I should recommend the whole lower glass tier to be entirely removed, so as to give, from the park and the houses opposite the Palace, an appearance of continuous park and garden. Here I must state what I believe will be the position of those who live opposite the Crystal Palace. I fully admit they have had just cause of complaint by having all the turmoil of so vast an undertaking as the Great Exhibition developed under their eyes and ears, with all its attendant inconveniences; but if the Building is allowed to stand, and be adapted as I propose, the advantages derivable to them will fully compensate for all the evil they may have sustained in that respect. The boarding being all removed and glass substituted, they will have, within a few minutes' walk, a beautiful park, decorated with the beauties of Nature and Art, under a sky-roof, having a climate, warmed and ventilated for the purpose of health alone, furnishing, close to their own firesides, a promenade unequalled in the world, and, for the six winter months, a temperature analogous to that of Southern Italy; and I have no doubt the property in that immediate neighbourhood would, from such an arrangement, considerably advance in value, because of the recreation and exercise afforded to the inhabitants and their families.

The advantages derivable from such an appropriation of the Crystal Palace would be many, and may be thus summed up. In a sanitary point of view its benefits would be incalculable. By its various objects it would produce a new and soothing pleasure to the mind. The great truths of Nature and Art

would be constantly exemplified. Peculiar facilities would especially be given for the development on a large scale of the sciences of Botany, Geology, and Ornithology. A temperate climate would be supplied at all seasons. Taste would be improved by individuals becoming familiar with objects of the highest order of Art, and by viewing the more beautiful parts of Nature without its deformities. Pleasant exercise could be taken at all times, and in every variety of weather. It would serve as a drive, for equestrian exercise, for a promenade or lounge, and as a place which could at all seasons be resorted to with advantage by the most delicate.

Although the Crystal Palace at present, with its magnificent display of useful and ornamental articles, is truly wonderful, yet if the Building be converted into a Winter Park and Garden, and arranged as I propose, I feel confident it would become a still more extraordinary and beautiful object. These things all considered, I cannot help expressing an earnest hope that the Building will be allowed to stand, and be converted to so laudable a use. The cost of forming it in the first instance must entirely depend upon the extent to which my proposition is carried out. Should it be decided for the Building to stand, and be so appropriated, a calculation of the cost could readily be given.

I have, however, thought it right to state what I believe would be the annual outlay, if the whole were kept in first-rate condition and constant repair; of course, a less sum would be required if a high standard was not aimed at; and this yearly sum might be obtained either by a national grant, or by making the Building itself self-supporting.

ANNUAL EXPENDITURE.

| | |
|---|---|
| Labour, fuel, water, implements, gravel for walks, feeding and attendance to Birds, and general superintendence ... ... ... ... ... ... ... | £8,000 |
| Besides the above, constant painting and renewal would be required; for this a Reserve Fund should be provided, and by which the Building might be renewed for ever ... ... ... ... ... ... ... | £4,000 |
| Making a total of ... ... | £12,000 |

## ORCHIDS FOR THE MILLION.—No. VII.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

PROPAGATION.—There are different modes of propagating the various kinds of Orchids; some are easily increased by dividing them into pieces, or by cutting the old pseudo-bulbs from the plants, after the latter have done blooming; such plants as Dendrobiums are increased in this way. The best time for dividing the plants is just as they begin to grow, or when they are at rest; they should be cut through with a sharp knife between the pseudo-bulbs, being careful not to harm the roots; each piece should have some roots attached to it. After they are cut through they should be parted, potted, and put in some shady part of the house, without receiving much water at the roots till they have begun to grow and make fresh ones, then they may have a good supply. Dendrobium nobile, Pierardi, pulchellum, macrophyllum, Devonianum, and similar growing sorts, are easily propagated. This is effected by bending the old pseudo bulbs round the basket or pots in which they are growing, or by cutting the old flowering bulbs away from the plant, and laying them on some damp moss, in a shady and warm part of the house, with a good supply of moisture. After they break and make roots, they may be potted, or put in baskets. Such as D. Jenkinsii, D. aggregatum, D. formosum, D. speciosum, D. densiflorum, and similar growing sorts, are increased by dividing the plants.

Aerides, Vandas, Angræcums, Saccolabiums, Camarotis, Renantheras, and similar growing sorts, are all propagated by cutting the tops off the plant just below the first root, or by taking the young growths from the bottom of the plant; after they have formed roots, they should be cut off with a sharp knife, and afterwards put on blocks or in baskets with some sphagnum, and kept in a warm and damp part of the house, without receiving much water, till they have begun to grow, when they may have a good supply. Odontoglossums, Oncidiums, Zygopetalums, Sobralias, Trichopilias, Stanhopeas, Schomburgkias, Peristerias, Mormodes, Miltonias, Lycastes, Leptotes, Lælias, Galeandras, Epidendrums, Cyrtopodiums, Cyrtochilums, Cymbidiums, Cycnoches, Coryanthes, Cœlogyne, Cattleyas, Calanthes, Brassias, Bletias, Barkerias, Aspasias, are all propagated by dividing them into pieces, each having a portion of the roots attached to it, and a young bulb on the pseudo-bulb.

Phaius albus is very easily increased: the best way is to cut the old pseudo-bulbs off after the young ones have begun to flower, that is, just before the plant has made its growth. The pseudo-bulbs should be cut into pieces about 6 inches long, and then put into a pot in some silver sand, with a bell-glass over them, till they have struck root; they should then be potted in some fibrous peat, and should have good drainage, and a good supply of water in the growing season.

Some of the Epidendrums are readily propagated, such as cinnabarinum and crassifolium; these will form plants on the tops of the old flower-stalks; they should be left to grow till they have made their growth, they should then be cut off and potted, and they will soon make good plants. Some Dendrobriums will also form plants on the tops of the old pseudo-bulbs, and they should be treated in the same way.

ON THE MODE OF MAKING BASKETS, AND THE BEST WOOD FOR THAT PURPOSE.—Blocks or baskets are most suitable for true air plants, such as Vandas, Saccolabiums, Aerides, Angræcums, Phalænopsis, &c.; when planted in baskets or on blocks, they send out their roots much stronger into the air, and suck up the moisture; whereas, if their roots are covered too much, they are very apt to rot. Various materials are used for forming baskets; some are made of copper-wire, which is very durable, but I prefer those made of wood, though they do not last so long. They look better, and are more suitable for the roots of the plants to cling to. The best kind of wood is Maple, or Hazel, and the best baskets those of a square shape. The wood should be cut into lengths according to the size of basket required, but do not make them too large; there are two objections to this—one is that they take up much space, the other, that the plants do not require much room; after the wood is cut into proper lengths, the pieces should be bored within 1 inch from the ends, taking care to have all the holes bored the same distance; there should be four lengths of copper wire, one for each corner; the wire should be put through each piece of wood, and brought up to form the handle for suspending the plants from the roofing. Iron wire should never be used in making baskets, for it is probably injurious to the plants.

The best kinds of wood for blocks are Acacia, Apple, Pear, Plum, or Cork, if it can be obtained. The wood should be cut into lengths, according to the sizes required; get some nails and drive one at each end with some copper wire, to form the handle, wind the wire round each nail, and have the handle about 10 inches high. Small copper nails are the best by which to fasten the plants on the blocks.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 20.)

No. XXXVI.—We have now arrived at our penultimate chapter. Let me, therefore, once more impress most forcibly on the minds of my readers, before parting company with the nightingale, that these birds form the strongest of all possible attachments—attachments which, when once formed, know no change; unless, indeed, they be cruelly slighted, or thoughtlessly neglected. They do not at all recognise the legal axiom —"*Qui facit per alium, facit per se.*" No servant, therefore, no giddy child, must have the care of them. If you have endeared yourself to them by personal attention, you must continue to minister to their wants and their pleasures, and feed them *with your own hand.*

To a true lover of the feathered tribe, these demands on their affectionate regard will be anything but irksome, for, next to loving, what can exceed the pleasure of being loved? unless, indeed, it be the *knowledge* of that pleasing fact—a knowledge, by the way, that we cannot on *every* "particular occasion" directly arrive at, much being left, *in rerum naturâ*, for hopeful, painful, pleasureable conjecture. I have heard of well-authenticated cases, in which nightingales have pined gradually away from the very day they were handed over to the care of a stranger; refusing their food, and turning melancholy. It has been beautifully remarked, that "love is strong as death." These sweet little innocents are faithful expositors of the fact, and here let me make a slight digression.

One of the regular subscribers to the *Gardeners' Chronicle*, who, in common with many others, feels an uncommon degree of anxiety on the subject of "taming" birds, recently consulted me at some length by letter,* and wished me to enlarge upon this. A few sentences, however, judiciously expressed, will suffice for the desired end.

We have no direct means of divining the "why and because" of certain predilections, and prejudices, observable in birds and other animals. We daily see actions among them for which we cannot in any way account. Thus, for instance, if a dog enter a room full of company, you shall presently observe him make a careful tour of the apartment, sniffing first at one, and then at another of the assembled guests. Towards some, his tail will be seen to wag with every symptom of kindliness and good-will; whilst towards others, he will, with tail deflected, show unmistakeable signs of suspicion, perhaps of disgust. Depend upon it the animal's discernment is rarely at fault. I would willingly be guided by such a Mentor.

Just so is it with the feathered race. Some masters and mistresses can never tame their birds; never get them to be on terms of intimacy. The cause is evident. There are no feelings of *affection* in common between them. They do not love their birds. The latter know as much; and are assuredly aware that they are kept simply for the sake of furnishing amusement. I have noted the same unerring sagacity with all my squirrels. They would instantly detect any person who might be preparing, or wishing, to play them off some practical joke, and would, to my great delight, fasten on them at once,—paying handsomely, and in full, for all favours "about to be" received. It was, however, impossible for *me* to anger them. They too well knew the friendliness of my disposition,—seeing what merry romps and gambols we had together, both by day and night; upstairs, down stairs, and in the garden. No doubt it is a wise provision of Nature, thus to endow our little friends with instinctive powers of perception. The face is the index of the mind. They read our *character* when they catch our eye. But to return.

The nightingale is a remarkable bird for more reasons than one. He is of the most peculiar habits too, whilst sojourning in this country. In some of our most beautiful counties, his visits are unknown. He religiously avoids them; and if caught and let loose there, his exit is as speedy as his entrance. Thus, for instance, he discards, among other beautiful localities, Wales and Devonshire.† In these places, "his voice is never heard." Nor does he wander far into our northern manufacturing counties. He shows his good taste therein. There has been a "pretty" reason assigned for his seceding from Devonshire. The fair lassies of that favoured spot, are, it is said, gifted with heavenly voices; and sing *so* sweetly withal, that our bard of song feels he can have "no position" there.* His gallantry, therefore, and excellent judgment, cause him to direct his flight to other less-favoured parts. I secretly incline, however, to the belief that he *does* visit Devonshire—not as a "performer" indeed, but as a "listener;" for the Devonshire syrens *are*, be it known, lovely choristers,—*Hommage aux dames!* Do not let us, for one instant, deprive them, even in thought, of the happy conceit that exists in their praise.

Why our hero has banished himself from the picturesque scenery of Wales, does *not* so clearly appear. The Welsh harpists and the warbling Jenny Jones-es—attractive though the former, and charming though the latter be—yet come not up to *his* mark. Perhaps his tribe have been undervalued in times gone by—their vocal powers not duly appreciated. Hence, the punishment of the Principality has been condign.

We can more readily comprehend why his lovely face and transporting voice have been averted from Ireland. His song can never be sung in *that* ill-fated country. Even the skylarks, there, forsake their natural food, and with morbid greediness prey on the germ of the young budding corn. It is said that they devastate, in armies, whole acres of land by their voracious appetites. Joyous by nature as our English lark, the Irish lark *has* "attempted" to rise on the wing, and chant his heavenly anthem, but could not. *Vox faucibus hæsit!* He cannot sing—neither can the nightingale—"the Lord's song in so strange a land." *William Kidd, New Road, Hammersmith.*

* See "Answers to Correspondents.—*Arabella C.*," in the *Gardeners' Chronicle*, June 7th.

† The fact of the nightingale not being ever heard or seen in Devonshire—a most astounding truth—is, I observe, again recently confirmed in the *Naturalist*, Monthly Magazine, No. 4. R. A. Julian, Esq., a very intelligent and watchful correspondent of this interesting work, writing from Lara House, Plymouth, says—"I have *never* observed either the nightingale or reed warbler in Devonshire; although I have seen them both tolerably numerous in all our Midland counties."

## TRADE MEMORANDA.

BLOMFIELD, BRADLEY, and WATSON.

## Home Correspondence.

*Melons.*—I have generally been a most successful Melon grower; last year, however, the crop failed without my being able to account for it. The plants this year were put into the bed on the 1st May, and progressed most favourably. Ten days ago there was an abundant show of blossoms, and everything in favour of a good crop. The surface of the bed has been kept dry, plenty of air given, water withheld—in fact the management precisely the same as in years previous; nevertheless I am again disappointed. Only two of the blossoms set at all, and the fruit a week old is not larger than a Walnut. Some few of the other blossoms appeared inclined to set, seemed to hesitate for a day or two, and then turned yellow. I am completely puzzled how to account for this entire failure, and hope you will be able to throw some light on the subject. I have now cut the plants completely in, and am giving water over the foliage in hopes of getting a second show of blossoms. *R. B.* [Have you not set them before the plants were strong enough to carry them?]

*Fleming's Tar Paint.*—I observe, at page 405, an attack by "L. L., Shrewsbury," on the tar paint I some time ago introduced to the notice of the public. If "L. L." will take the trouble to favour me with his real address, I might perhaps think it worth while to refer him to several respectable parties who have "not failed," and who have not had the tar "washed off." I will undertake more. If "L. L." has really a fire-barrow that takes two men to move it (and I almost conclude from his letter that he found two necessary), I would call to see it as a matter of curiosity, should business at any time lead me to his neighbourhood; when I might, perhaps, convince him against his will that the tar, when properly applied, would be perfectly dry and hard in a few hours, and that it cannot possibly wash off. My mode of killing weeds has also been noticed by "L. L.," and I beg to tell him that in these experiments I have been guided by figures, over which there is no getting; but there is a certain class of people in whose hands the best of plans and implements are useless. *G. F.* [It is evident that the tar *cannot* wash off if it is applied as Mr. Fleming recommended.]

*The late Cheltenham Flower Show.*—As one of the judges at the Horticultural Exhibition at Cheltenham, my attention has been directed to a remark in the *Cottage Gardener*, June 19th, p. 174, which I quote:—"The inhabitants of Cheltenham had a chance of establishing one of the finest shows in England, having the advantage of a heavy subscription. But they farmed the exhibition out to private speculators, who turned out one of the worst schedules that was ever printed, promised the most ridiculous prizes, cut them down after they were fairly won, and were actually threatened with law proceedings before even some of these were paid. It may be improved, but it will never be what it might have been with good management." Such a paragraph, if left uncontradicted, would be a slur on the character of the censors; I take the liberty, therefore, of submitting a statement of the case to you, along with a schedule of the prizes and a list of the

* My correspondent, "Amicus Volucrum," is quite right in his remarks about Buffon, Bechstein, and other speculative commentators on the nightingale. They run riotously wild in their description of his *imagined* song, losing sight entirely of the harmony of his improvised gushes of melody. No person can give any adequate verbal description of the nightingale's song. The happiness of the bird is so perfect, his *abandon* to the inspiration of his muse so complete, that there is *no end* to the variety of his expressed notes.

rules which were put into our hands for our guidance. My fellow judges were Mr. Kemp and Mr. Parsons. It is not our business who arranged the schedule; but you, from your long-standing experience, will be the best judge whether the schedule was "one of the worst ever printed," or whether the prizes were "most ridiculous." We, the censors, considered that the prizes were sufficiently liberal to induce the attendance of some of the first growers within 100 miles, at least (as I believe the Society pays carriage of specimens); and therefore we did not think we should be doing justice to the Society if we awarded all the prizes offered; we therefore, in several instances, withheld the first prize. And if, in doing so, we erred at all, it was in being still more liberal than the articles merited. I do not believe two dozen plants could have been selected from the whole number exhibited that would have been admitted at Chiswick upon any terms. In fact, taking them altogether, I never saw a more indifferent lot at any provincial exhibition; and I have often seen better plants where the prizes did not exceed one-tenth of the value of those offered at Cheltenham. Besides publishing the above paragraph, the disappointed exhibitors have circulated a report that the committee, or their officials, influenced the judges in curtailing the prizes. This is another insult both to our abilities and to our integrity. No honourable judge would allow himself to be guided by anything excepting the printed schedule and the printed rules, and by those alone we decided; it is due therefore to the public, to the committee, the exhibitors, and to ourselves, that we do declare we were not nor would we have submitted to it had the attempt been made—influenced by anything save the schedule, the rules, and our own judgment. The above is a plain statement of the matter. *William Davidson.*

*Rough Plate Glass* (see p. 406).—The result of Mr. Phillips's visit here (Foxborough Hall) was, that he appeared to be quite satisfied that the Strawberry plants were scorched, and not baked, as you supposed. I think you could form no correct opinion from the leaves which were sent to you, and which could only be collected from the muck heap. By the specimen of Hartley's patent plate glass, which Mr. Phillips produced, it was evident that mine was the common rough plate, and not Hartley's patent; this appears to me to be the sole cause of the scorching. There is no flue in my pit, and air was freely admitted all day and night. *Charles Walford, Foxborough Hall, Woodbridge.*——We are at present engaged in investigating several cases where parties ordering from their tradesmen "Hartley's patent rough plate," have been supplied with quite a different article, preparatory to adopting some remedial measure; we consequently sent a gentleman to examine the glass referred to by Mr. Walford, in his letter of the 21st June, and, as we anticipated, the glass was not manufactured by us; and, notwithstanding, the tradesman employed by Mr. W. was instructed to obtain "Hartley's patent rough plate," another description of glass was substituted, as you will see by a square forwarded herewith, taken out of the frame. Being desirous of obtaining legal evidence of similar instances of deception, we shall be happy to receive communications from parties suspecting anything of the kind, with a sample by letter, when, if necessary, we will send a competent person to inspect the glass. *James Hartley and Co., Wear Glass Works, Sunderland, July* 2. [We have seen a sample of the spurious article, which is an ingenious counterfeit.]

*Black Jamaica Pine-apples.*—If the Pines exhibited at Chiswick are to be taken as examples of the varieties generally grown for dessert, it appears to me that gardeners have fallen into error in cultivating the Queen and Providence kinds more extensively than Black Jamaica. This is much to be regretted, for it must be admitted that the Black Jamaica yields to no variety in flavour. I am aware that it is more delicate and difficult to manage than the two above-named varieties, or any other sort with which I am acquainted. But gardeners have surmounted great difficulties in bringing many other plants and fruits to perfection, and why should the Black Jamaica Pine-apple, whose fruit, as I have already stated, possesses such superior excellence, be so long neglected? More assiduity and care are, indeed, needed to produce a handsome fruit of this kind, with a small crown, and weighing 3 lbs., than are required to grow a Queen 5 lbs., or a Providence 9 lbs. But I hear a gardener exclaiming, "Who ever saw a Black Jamaica of any size without a large crown!" This Pine-apple, I know, has the reputation of producing large crowns, which are objectionable; but would not the gardener's skill, if correctly applied, prevent this superabundant growth? This variety is esteemed either in the shape of a winter or summer fruit, for which reason I consider it worthy of especial attention; and I trust that, if Black Jamaica Pines are exhibited at the next Chiswick Show, the Society's judges will signify their approval of this partially neglected sort, by awarding it such medals as fair specimens of the kind may deserve. I would also hint that, if the Horticultural Society gave awards for "best flavoured Pines," more attention would be paid by growers to that important point. All the Pines which I saw at the last show, to which medals were awarded, appeared to me to have been "coddled," and I doubt much if any of them possessed first-rate flavour. *H. B., Llandilo.*

*Buckwheat.*—It seems to be implied in the *Agricultural Gazette*, p. 363, that the grain of Buckwheat is not desirable as food for man; yet in countries where it is largely used it is considered as economical, as particularly favourable to easy digestion, and as being devoid of any medicinal quality. In Russia Buckwheat is served at the best tables as well as at the most homely ones; in Holland the flour of it is preferred for many kinds of cakes and delicate pastry; *wafeln*, for instance, it has been said, cannot be well made of any other kind of flour. The immense quantity of Buckwheat consumed in Russia is usually deprived of its husk in appropriate mills, and the grain is broken as Oats are to make groats in this country; in this state it is called greshna croup. To prepare the greshna croup it is usually put into a deep earthenware pot with water, a little more in quantity (to allow for evaporation) than the grain will absorb; the pot, with its contents, is then kept for two or three hours in a gentle oven heat, by which time the water has been wholly absorbed, the grains of Buckwheat have become perfectly tender, and each one of them dry and distinct, like well-boiled rice for curry; the greshna cassia is served in the pot in which it was cooked, a napkin being rolled round the vessel; fresh butter and salt are stirred into the cassia, which is eaten generally with roast meat, but often alone. For the factory girls at Alexandrovsky the greshna cassia is cooked in large coppers, cold-drawn Hemp or linseed oil being used for them, as for the generality of the people, instead of butter. The nursery breakfast in English merchants' houses at St. Petersburgh is frequently greshna cassia, eaten with milk instead of butter. A very favourite dish at all tables is a kind of raised pie, with greshna cassia in its composition. An ordinary raised pie crust being rolled out, there is spread upon it a layer an inch or more thick of already cooked greshna cassia; along the middle of this foundation is then laid a fish; the cassia, with its supporting crust, is doubled over and properly closed; the pie thus made is baked in a gentle oven. The fish preferred at St. Petersburgh for this purpose is the *beloë riba*, a white species of salmon, which furnishes fat as well as flavour; were the fish of a dry sort it would have bits of butter placed around it. Pies of this nature might be made in England with other kinds of grain; some very *recherché* for a great table, others very economical, but savoury and nourishing, for the humbler classes of our people. *M.*

*Song Birds.*—Mr. Doubleday, in his comments on my remarks on certain birds and their habits, at page 392, has kindly endeavoured to set me right, on one or two points in which he conceives I am in error; but as he did not, in the first instance, peruse the letters containing the precise "questions" to which I replied, he is hardly in a position to take the judge's chair. The bird, about which he speaks so positively as being the redstart, was described to me as resembling the sparrow in form and size, and as haunting a running stream, &c., with other puzzling points. Now, the sparrow (*Passer domesticus*) is far larger, and of infinitely less symmetrical proportions, than the redstart (*Phœnicura ruticilla*), which is 5½ inches long, and a most sleek and elegantly formed bird; nor would it live in cages so happily and contentedly (as my informant told me these birds do in Wales), if it were the bird Mr. Doubleday supposes it to be. Redstarts are very sulky in confinement, and sing "very small." I have at the present time in my possession one of the handsomest I have ever seen. It was caught the very day of its arrival in England, some 4 years ago. Its white sprinkled throat, and snow-white cap, are strikingly beautiful; indeed, its plumage is altogether so. Their haunts, let me remark, are *not* usually running streams,—but gardens, shrubberies, and forests, for the most part, particularly at this season. As for the stone-chat (*Saxicola rubicola*), I have always found them very tender when immured in cages. In their natural wild state, they may be hardy enough, like the redbreast and the wren (*Troglodytes vulgaris*); but even these two latter,—hardy to a proverb, must be kept in an equable temperature if required for song, and to live as "cage birds." Many migratory birds, impatient of confinement, are yet well able to withstand the most rigorous of our English winters, when they have the free use of their wings and live as rovers. As for the monotonous trisyllabic call of the reed sparrow,—I turned a nest of them, when they were quite young, into my aviary; and they acquired in such "mixed company" a very lively, sprightly note,—short indeed, but pleasing withal. I readily admit that Mr. Doubleday's success in domesticating for so long a period the various families of "chats," far exceeds mine. My patience with them has long since become utterly exhausted, and it will never again be called into similar exercise. *W. K., July* 4.

*Viola lutea.*—It seems necessary to call the attention of your readers to the confusion caused by florists and gardeners, who, either through ignorance or carelessness, give to their garden varieties names previously employed for the designation of species. The term placed at the head of this paragraph is a conspicuous instance. No botanist would suppose that the "Viola lutea," of advertisers, and even reports of horticultural exhibitions, is not the native species so called and described under that name in botanical works. That it is not such, however, is well known; but what it really is, the present writer is not informed. Surely the gardener who named it Viola lutea could have found some name of a less ambiguous kind than this, which necessarily leads to confusion. If the plant is a species it probably already possesses a name; but if unnamed it cannot bear the name now given to it. If a gardener's variety or hybrid, it should be named as such, and not in such a manner as to lead to the supposition of its being a species. Let a florist name his flower as florists usually do, not ape the nomenclature employed in scientific botany. Perhaps you will kindly inform your botanical readers what the so-called Viola lutea really is. *C. C. B.* [We do not know.]

*Potato Disease.*—I detected a few spots of disease in a patch of Potatoes here, about 10 days ago, and since that time it has spread rapidly over the whole piece, which is now nearly destroyed. Disease has likewise made its appearance in spots over the whole of my Potatoes, of which I have about an acre. The Ash-leaved which I am now using are excellent, but the haulm is beginning to spot; if the disease continues to spread as rapidly as it has done during these last few days, in three weeks the whole crop will be completely spoiled. The soil is loam on a chalky bottom. *A. S., Slindon, near Arundel, Sussex, June* 30.

*Yellow Roses at the Chiswick Exhibition.*—Mr. Francis's reply to our article on yellow Roses contains incorrect dates, and no portion of his letter argues the question at issue. If Mr. Francis or the judges had offered some rule for the future guidance of exhibitors, it would have been something satisfactory. As to dates, we find that we were awarded a 1st prize in 1849, and disqualified in 1850, the judges stating that our Roses were not yellow, and allowing Mr. Terry to take the prize for six sorts which were said to be yellow. In 1851, however, Mr. Francis is awarded a prize for six cut yellow Roses, which, on the aggregate, had less pretensions to yellow than those in pots, for which we were disqualified in 1850. This is the point on which we feel aggrieved; and we ask if it is fair that a prize should be given for the same Roses (in a cut state, be it remembered) that we showed in pots and were disqualified with? Mr. Francis wishes your readers to believe that pale cream colours were inadmissible only in 1850, but facts are stubborn things. Referring to that part of the schedule of prizes which relates to Roses, we find it worded the same in 1849, 1850, and 1851; and yellows placed under the head "to be grown in pots." The exact words are these: "No. 5. Yellow Roses, best six varieties. N.B. To be really yellows, pale cream colours inadmissible." Mr. Francis will have some difficulty, therefore, in inducing us to believe that Elise Sauvage and Smith's Yellow were pale cream-coloured in 1850, and really yellow in 1851! *H. Lane and Son, the Nurseries, Great Berkhampstead.* [This seems to us to be a mere question whether the judges have attended to the directions given in the schedule. If Mr. Francis or Mr. Lane, or any other grower, has at any time produced cream-colours as yellows, they ought to have been disqualified.]

## Societies.

ROYAL BOTANIC, REGENT'S PARK, *July* 2.—A large number of Pelargoniums, a good display of Orchids, many well-cultivated Stove and Greenhouse Plants, good collections of Cape Heaths, and some tall Cacti, were assembled on this occasion, and there was an extensive exhibition of Fruit.

In collections of 30 STOVE and GREENHOUSE PLANTS, the 1st prize was awarded to Mrs. Lawrence, of Ealing Park, for beautiful plants of Allamanda cathartica and grandiflora, Clerodendron paniculatum, Kalosanthes miniata, Ixora coccinea, a white Heath, Rondeletia speciosa, double and single examples of Tabernæmontana coronaria, a very fine blue Leschenaultia, three varieties of Everlasting, the charming Dipladenia crassinoda, Erica tricolor rubra, the Cavendish Heath, Sollya linearis, Pimelea mirabilis, the white-blossomed Ixora, the red and white Vincas, the Long-flowered Exostemma, the lovely Chinese Indigofera decora, and Pimelea hispida.—Mr. Cole's group, which was second, contained two fine plants of Dipladenia splendens, two of Allamanda, and two of Crowea saligna, together with the red and white Vincas, Dipladenia crassinoda, the Scarlet Ixora, Clerodendron Kæmpferi, a very fine white Ixora, insufficiently in bloom; two Everlastings, a noble Lisianthus Russellianus, a handsome bush of Epacris miniata, the scarlet Kalosanthes (K. coccinea), some well-managed Heaths, and Æschynanthus Lobbianus.—A third collection, contributed by Mr. Stanly, contained the Saffron-coloured Ixora, Cyrtoceras reflexum, Kalosanthes miniata, the large-blossomed Epacris, the variety of Erica tricolor called elegans, one or two Everlastings, Pimeleas, and Vincas.—Messrs. Pamplin's exhibition, which was fourth, consisted mostly of small plants, among which were Allamanda cathartica, Euphorbia splendens, Kalosanthes, Vincas, Cape Heaths, and good specimens of Stephanotis floribunda and Pimelea decussata.

In collections of 20 STOVE and GREENHOUSE PLANTS, Messrs. Fraser, of Lea-bridge, were first. Their group contained finely-managed plants of Allamanda grandiflora and cathartica, Pavetta caffra, Dipladenia crassinoda, the Scarlet Ixora, the Diosma-leaved Pimelea, the Sweet Sphenotoma gracilis, Kalosanthes coccinea and miniata, Epacris miniata, Rhyncho-spermum jasminoides, the blue Sollya linearis, Stephanotis floribunda, and Clerodendron Kæmpferi.—The next group, communicated by Mr. Taylor, gr. to J. Coster, Esq., consisted of Allamanda cathartica and Schottii, Stephanotis floribunda, Dipladenia crassinoda, highly-coloured; Sollya linearis, the showy Kalosanthes miniata, a very fine Ixora coccinea, the small pink-flowered Erica pulverulenta, Leschenaultia formosa, the white Sphenotoma gracilis, one or two Everlastings and Azaleas.—Mr Green sent a third group, in which were Allamanda cathartica and grandiflora in beautiful condition, the Scarlet Ixora, the brilliant Epacris miniata, a large Rondeletia speciosa, the extremely handsome Pleroma elegans, a plant which ought to be in every collection; Dipladenia crassinoda, the Cavendish Heath, the violet Tetratheca verticillata, Erica Massoni, admirably grown; the showy Epiphyllum grandiflorum, Leschenaultia formosa, the rose-coloured variety of Aphelexis macrantha, the sweet-smelling Sphenotoma gracilis, and Polygala oppositifolia.

Mr. Speed, of Edmonton, had a handsome group of 10 STOVE and GREENHOUSE PLANTS. They consisted of Allamanda Schottii and cathartica, the white-flowered Schubertia graveolens, Clerodendron fallax, the Java and Scarlet Ixoras, Kalosanthes miniata, a Vinca, Epacris miniata, and Dipladenia crassinoda.—A collection from Mr. Williams, gr. to Miss Traill, contained Polygala cordifolia, two white-flowered Cape Heaths, Leschenaultia formosa, Pimelea Hendersoni, two kinds of Franciscea, the Scarlet Ixora, and the pretty Roella ciliata.—The next 10 were from Mr. Croxford, of Stamford Hill, who produced Allamanda Schottii, large and fine; Clerodendron fallax, the sweet-smelling Stephanotis floribunda, Kalosanthes miniata, a Cape Heath or two, Æschynanthus Lobbianus, Pleronoema proliferum, and Ixora javanica.—Mr. Watson, gr. to Mrs. Tredwell, had Allamanda cathartica, Clerodendron

fallax, a Cape Heath, Kalosanthes miniata, the White-flowered Vinca, Aphelexis spectabilis, the blue Sollya heterophylla, Leschenaultia formosa, the Gledstane Azalea, and the charming variety of Cape Heath called meruleflora bicolor.—From Mr. Hamp, gr. to J. Thorne, Esq., came Hoya imperialis, Stephanotis floribunda, the brilliant Kalosanthes miniata, Allamanda cathartica, the lovely Dipladenia crassinoda, Epacris miniata, and Ixora croeata.

ORCHIDS, as usual, were arranged on one side of a long tent behind the Pelargoniums, and had a good effect. In collections of 25 plants, Mr. Mylam, gr. to S. Rucker, Esq., was first. His plants consisted of a huge Aerides odoratum, loaded with long racemes of lovely blossoms; a large plant of Vanda Batemanni, with two spikes of flowers; Sobralia macrantha, with five blossoms; a magnificent Dendrobium formosum, literally one mass of orange and white flowers; the large white Butterfly plant (Phalænopsis grandiflora); the yellow-blossomed Anguloa Clowesi, the singular Coryanthes macrantha; the twisted Dendrobe (D. tortile), Saccolabium guttatum with four fine spikes of flowers, Cypripedium Lowi, the scarce Huntleya meleagris, Barkeria spectabilis, Aerides maculosum, the Dalhousie Dendrobe, Odontoglossum grande, the rare Phalænopsis rosea, Epidendrum verrucosum, the Moss Cattleya, and the brown and green flowered Cycnoches pentadactylon.—Mr. Franklin, gr. to Mrs. Lawrence, had Epidendrum vitellinum, Stanhopea tigrina, the singular looking Cycnoches Loddigesii, Brassia Wrayæ, the Clowes Anguloa, the large white Butterfly plant (Phalænopsis grandiflora), the Stapelia-like Promenæa, Oncidium ampliatum majus, Aerides odoratum, Oncidium Papilio and Lanceanum, Barkeria spectabilis, the twisted Trichopil, and Odontoglossum hastilabium.—Mr. Williams, gr. to C. B. Warner, Esq., had Peristeria pendula, the Bearded Lady's Slipper (Cypripedium barbatum), Cattleya violacea and crispa, Phalæ opsis amabilis, two plants of Oncidium Lanceanum, Aerides maculosum, odoratum, and roseum; Calanthe Masuca insufficiently in bloom, and the white Calanthe veratrifolia.

A collection of 20 plants, contributed by Messrs. Rollisson, contained a large Dendrobium moschatum, Stanhopea tigrina, a fine pot full of Miltonia spectabilis, the green tailed Dendrochilum filiforme, Cyrtopodium stellatum, Calanthe Masuca, Stanhopea saccata, the rare Aerides quinquevulnera, the large white Butterfly plant (Phalænopsis grandiflora), a well flowered Maxillaria tetragona, and Oncidium luridum guttatum.

In his group of 15 plants, Mr. Blake, gr. to J. H. Schröder, Esq., had a profusely flowered Galeandra Baueri, Aerides affine, two plants of the large white Butterfly plant (Phalænopsis grandiflora), Oncidium pulvinatum, a highly-coloured Odontoglossum citrosmum, Epidendrum cinnabarinum, the Moss Cattleya, Barkeria spectabilis, Stanhopea oculata, Odontoglossum pulchellum, the long-tailed Angræc, and the white-blossomed Aganisia pulchella.

Collections of 10 plants were furnished by Mr. Barnes, gr. to R. Hanbury, Esq., and Mr. Wooley, gr. to H. B. Ker, Esq., of Cheshunt. The former had Aerides odoratum majus, in good condition, Phalænopsis grandiflora, Barkeria spectabilis, well flowered; the charming Saccolabium Blumei, Odontoglossum citrosmum, the tailed Angræc, Vanda teres, Saccolabium præmorsum, S. guttatum, and Aerides maculosum.—Mr. Wooley produced Peristeria elata, a finely-blossomed Cattleya Harrisoniæ, Oncidium pulvinatum, the rare and beautiful Warrea tricolor, Saccolabium Blumei, bearing a fine flower spike, the White Phaius, Epidendrum alatum and variegatum, the Roxburgh Vanda, and Oncidium leucochilum.

Mr. Schröder sent a new Chysis, Messrs. Lane a variety of Stanhopea oculata, Messrs. Veitch Dendrobium albo-sanguineum and a handsome Cypripedium, and Mr. Ker Bolbophyllum Henshalli.

CAPE HEATHS.—Excellent collections were furnished by Messrs. Smith, Cole, Rollisson, Fairbairn, and others. The varieties consisted of Massoni, tricolor elegans, t. Leeana, t. rubra, t. Wilsoni, jubata major, perspicua rosea, inflata, infundibuliformis, depressa, retorta major, Bergiana, ampullacea, Parmentieri rosea, Juliana, Shannoni, jasminiflora, metulæflora bicolor, eximia, Halicacaba, Aitoniana, Savileana, Clousiana, Irbyana (not out), pulverulenta, ventricosa grandiflora (a fine Heath), mutabilis, and obbata.

LISIANTHUS RUSSELLIANUS.—Four or five admirably managed specimens of this showy and, when well grown, really beautiful plant, were produced by Mr. Constantine, of Hillingdon, near Uxbridge.

Among SINGLE SPECIMENS the best were Erica Massoni, from Mr. Smith; a large Dendrobium moschatum, and Luxemburgia ciliosa, from Messrs. Rollisson; Curcuma Roscoeana, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon; Vinca rosea, from Mr. Speed; and Medinilla magnifica, from Messrs. Veitch.

NEW PLANTS consisted of a Bejaria from Mr. Ivison; Gloxinea cærulea grandiflora from Messrs. Veitch; a Blandfordia from Mr. Barnes; a hybrid Statice in the way of macrophylla from Mr. Scott; Achimenes longiflora alba, and a white Escholtzia, from Messrs. Henderson; and Nepenthes javanica from Messrs. Rollisson.

The following variegated STOVE PLANTS were furnished by Messrs. Henderson—viz. Paretta Borbonica, Dracæna terminalis, D. t. variegata, Croton pictum, Maranta sanguinea, zebrina, bicolor, and albo-lineata; Dieffenbachia maculata, Caladium bicolor and variegatum, Vitis velutina, Bartolina maculata, Physurus pictus and argenteus, Cypripedium venustum, Clerodendron indicum, Aspidistra lurida variegata, Hoya carnosa picta, Tillandsia zebrina, Eranthemum leuconervium, Tradescantia zebrina, and Campylobtrys discolor.

Messrs. STANDISH and NOBLE, of Bagshot, exhibited the following rare hardy plants: Ilex microphylla, an Ilex something in the way of cornuta, Berberis japonica, a dwarf variety of Cryptomeria japonica, Quercus inversa, Q. sclerophylla, the funeral Cypress—6 feet high, Ilex cornuta, Libocedrus Chilensis, Cephalotaxus Fortuni, Abies Jezoensis, an unnamed Ilex, and Berberis Bealii.

PELARGONIUMS, as we have stated, were plentiful, and in good condition, considering the season. Varieties in 8-inch pots. Nurserymen: 1st prize to Mr. C. Turner, Slough, for Foster's Gipsey Bride, Narcissus, Alonzo, Conspicuum, Hoyle's Nectar Cup, Ajax, Nandee, Beck's Centurion, Emily, Turner's Rowena, Illuminator, and Foquette's Magnificent; 2d, Mr. Bragg, Slough; 3d, Mr. Gaines, Battersea. Amateurs: 1st prize, Mr. Black, gr. to E. Foster, Esq., Clewer Manor, near Windsor, for Foster's Enchantress, Shylock, Monteith, Lavinia, Conspicuum, Spot, Voltigeur, Ariel, Sheet Anchor, Rubens, Pulchrum, and Rouse's Alibi; 2d, Mr. R. Stains, New-road; 3d, Mr. Robinson, Pimlico; 4th, Mr. Cock, Chiswick. 6 plants, in 11-inch pots: 1st prize to Mr. Chapman, Hammersmith, for Forget-Me-Not, Matilda, Negress, Bianca, Rosy Circle, and Cassandra: 2d, Mr. R. Stains.

FANCIES.—Amateurs: 1st prize to Mr. W. Miller, gr. to R. Moseley, Esq, for Jenny Lind, Reine des Français, Oreates, Lady St. Germans, Fairy Queen, and Bouquet tout fait; 2d, Mr. R. Stains; 3d, Mr. Robinson. Nurserymen: 1st prize to Mr. Gaines, for Statuaski, Odoratum magnificum, Triumphans, Queen Superb, Fairy Queen, and Orestes; 2d, Mr. Ambrose; 3d, Mr. Chapman. Certificates were awarded to the Seedling Pelargoniums, Optimum and Purple Standard, varieties that we have described on former occasions.

CAPE PELARGONIUMS were furnished by Messrs. Parker, Stanly, and Stains.

PICOTEES.—1st prize for 12 varieties, to Mr. C. Turner, for Mary (Dodwell), General Bem (Read), Cleopatra (May), Prince Arthur (Fellows), Miss Burdett Coutts (Burroughes), Duke of Rutland (Holyoake), Constance (May), Beatrice (May), and 4 Seedlings; 2d, Mr. Willmer.

CARNATIONS.—1st prize for 12 Carnations, to Mr. C. Turner, for Romeo (May), Prince Albert (Hale), Blondel (Puxley), Count Pauline (Holmes), Cradley Pet (Wallis), Lord Byron (Taylor), Voltigeur (Cheetham), Percy (May), Cardinal Wolsey (May), Omnium Primum (Kaye), and 2 Seedlings; 2d, Mr. Willmer.

PINKS were shown very large and fine, and in tolerable quantity for July: 1st prize for 12 varieties to Mr. C. Turner, for Optima (Turner), Great Britain (Ward), Goliath (Hillyer), Lola Montes (Costar), Sappho (Colcutt), Narborough Buck (Maclean), Diana (Smith), Lord Valentia (Kirtland), Spark (Turner), Criterion (Maclean), Huntsman (Smith), and Whipper-in (Smith); 2d, Mr. Bragg; 3d, Mr. J. Edwards.

PANSIES.—1st prize for 24 varieties to Mr. C. Turner, for Constantine (Turner), Bellona (Hooper), Duke of Perth (Handasyde), Sambo (Hale), Mrs. Coleridge (Turner), Queen of England (Fellows), Lord Jeffrey (Blanche), National (Turner), Swansdown (Turner), Disraeli (Hunt), Mrs. Beck (Turner), Black Diamond (Turner), and 11 Seedlings.

FUCHSIAS.—These consisted of Acantha, Cassandra, Exoniensis, Dr. Jephson, Elizabeth, Sir R. Peel, Exquisite, Crimson King, Duke of York, Star, Cavalier, Dr. Grosse, Shylock, Magnificent, Lord Nelson, Dr. Smith, Beauty of Leeds, and Pearl of England. Mr. Turner showed a good light Seedling, called Conspicua.

CALCEOLARIAS were shown by Mr. Gaines and Mrs. Lawrence. The sorts were Amœna, Desperanda, Mary, Magnifica, Standard, Baron Eden, Earl of Rosslyn, Chieftain, Lady Flora, Duke of Rothsay, Rosalind, and Catherine Seaton.

TALL CACTI were produced by Mr. Green; the sorts were Epiphyllum formosum, Jenkinsoni, Greenii, mexicanum, rubrum cœruleum, and aurantiacum.

CUT ROSES were exhibited in great profusion and variety by Messrs. Lane, Paul, Francis, Terry, Rowlaud, and others. Among them we remarked splendid boxes of Paul Ricaut, Géant des Battailles, and Devoniensis. They maintained their freshness well throughout the day, and formed a very attractive feature of the show.

Among MISCELLANEOUS SUBJECTS, the more prominent were collections of Ferns, Lycopods, and white Lilies (L. longiflorum and eximium). In his group of Ferns, Mr. Wooley sent two exceedingly well-managed plants of Adiantum trapeziforme and Asplenium cicutarium. Mr. Williams had also good exhibitions of this interesting tribe of plants.

FRUIT, as we have stated, was plentiful and good. Many of the white Grapes, were, however, unripe. Among Pine-apples there was nothing particularly striking. The best Providence came from Mr. Bray; it weighed 7 lbs. 12 oz. Second prizes were awarded to Mr. Ewing, Mr. Turnbull, and Mr. Collinson, for good examples of this kind of Pine-apple. Collections of six sorts were shown by Mr. Bray (1st) and Mr. M'Ewen (2d). These were chiefly Queens. As single Queens, examples were shown by Mr. Jones (1st), Mr. Brewin and Mr. Bray (equal 2d), and Mr. Constantine. For single fruits of other varieties, prizes were taken by Mr. Drummond and Mr. Turnbull (equal), and Mr. Frost (3d).

GRAPES.—In the class of three dishes of distinct varieties, the first prize was taken by Mr. M'Ewen, gr. to the Duke of Norfolk; and the second by Mr. Henderson, gr., Coleorton Hall. In collections of not less than 12 lbs., of any kind, there were 14 competitors. The best of these came from Mr. Thompson, gr. at Wrotham Park, and consisted of beautiful Muscats. The next best were those of Mr. Mitchell, of Brighton, who had Black Hamburgh. A sample of equal merit was shown by Mr. Davis, of Oak-hill, the sort being Muscat of Alexandria. Mr. Spar, of Brighton; Mr. Head, Worthing; Mr. Harrison, Oatlands Palace; Mr. Harrison, Chertsey; Mr. Mackie, Kingston Hall; Mr. Munro, Colney House; Mr. Eaton; Mr. Bray, Sidmouth; and Mr. Moffat, Cumber, were all exhibitors in this class, producing Black Hamburghs—except the latter, who had Sweetwater.—For a single dish of three bunches of Black Hamburgh—first prizes were taken by Mr. Heywood, Rounday, Leeds, and Mr. Forbes, gr. to the Duke of Bedford, both samples being well swelled and coloured; 2d prizes were taken by Mr. Slowe, Bayfordbury, and Mr. Foggo, gr. to the Marquis of Abercorn; 3d prizes were awarded to Mr. Henderson, Coleorton Hall; Mr. Davis, Oak-hill; and Mr. Morrison, gr. to Lord Harrowby. The other competitors were Mr. Stent, Mr. Mitchell, Mr. Jackson, Mr. Taylor, Mr. Dytch, Mr. Munro, Mr. Robertson, and Mr. Silverlock. Mr. Turnbull had a good sample of West's St. Peters, for which a bronze medal was awarded. In the class of white Muscadines or Sweetwaters, the best sample was shown by Mr. Williams, gr. to C. B. Warner, Esq.; the next best by Mr. Mackie and Mr. Snow, gr. to Earl de Grey. Of Muscats there were four beautiful samples, the best of which were shown by Mr. Taylor; the next belonged to Mr. Thompson, while small silver medals were taken by Mr. Turnbull and Mr. Mitchell. A bronze medal was awarded to Mr. Henderson for a good example of Chasselas Musque, and one of the same value to Mr. Judson, for a dish of the Richmond Villa Black Hamburgh, as having been introduced within the last seven years.

PEACHES.—In the class of one dish of six fruit there were four contributors. The best were those of Mr. Collinson, gr. to the Marquis of Westminster. The next best were from Mr. Thompson, Wrotham Park, who showed Royal George.

NECTARINES.—The best came from Mr. Davis, of Oak-hill, the sort being Elruge. The next best were from Mr. Graham, gr. to Mrs. Smith, to whom a bronze medal was given, and certificates were awarded to Mr. Reikie, gr. to Lady Hunter, and also to Mr. Collinson. Mr. Smart, Mr. Hill, and Mr. Robertson were also competitors.—In 4 dishes of distinct varieties, the first prize was awarded to Mr. Turnbull.—In the class of 2 dishes there were nine competitors, the best samples being those of Mr. Snow (1st), Mr. Collins, and Mr. Davis, gr. to G. Dixon, Esq. (equal 2d). A bronze medal was awarded to Mr. Hill, Keil Hall, Staffordshire; and certificates to Mr. Mitchell, gr. to Lord Shannon, Castle Martyn, Cork; and to Mr. Smy, gr. to Sir T. Cullum, Bart., Hardwick House. The others in this class were Mr. Foggo and Mr. M'Ewen.

CHERRIES.—Of these four samples were shown, the principal sorts being the Circassian, from Mr. Gainsford, to whom a bronze medal was awarded. An equally fine sample of the Elton, came from Mr. Snow, to whom a certificate was also given for a dish of Knight's Early Black. Others came from Mr. Bray, Sidmouth.

MELONS.—The best green-fleshed varieties were from Mr. Mitchell and Mr. Robinson (equal). The second best were shown by Mr Phillpotts and Mr M'Ewen (equal), and the third by Mr. Inwood, Mr. Fleming, and Mr. Chapman (equal). Mr. M'Ewen and Mr. Stains received prizes for scarlet fleshed.

STRAWBERRIES.—In the class of two dishes there were five competitors, and the same number in that for four dishes. The samples were generally well grown, the sorts being chiefly the British Queen and Keens' Seedling. The awards in the first class were, Mr. Kitley (1st) and Mr. Munro (2d); and in the second, Mr. M'Ewen (1st), Mr. Lydiard (2d), Mr. Munro (3d), and Mr. Wells (4th). Mr. Cuthill, of Camberwell, had fine examples of his Black Prince.

MISCELLANEOUS COLLECTIONS.—The best was sent by Mr. Fleming, gr. to the Duke of Sutherland, at Trentham. This included a finely grown Ripley Queen Pine-apple; three large bunches of Black Hamburgh Grapes, Royal George and Noblesse Peaches, three Melons, and a dish of May Duke Cherries. The next in point of merit came from Mr. M'Ewen, Arundel Castle, and included some beautiful Circassian Cherries, Royal George Peaches, Elruge Nectarines, and Black Hamburgh Grapes. Mr. Chapman, gr. to J. B. Glegg, Esq., took a third prize for a similar collection.

Mr. Hunter, gr. to N. Clifton, Esq., 38, Cross-street, Islington, had a brace of very fine Cucumbers. They measured 30 inches in length, and quite 7½ inches in circumference, both fruit being straight and even. The variety was a white spine, called Hunter's Prolific, and was stated to have been grown in a Polmaise stove, which Mr Hunter has found to answer perfectly every purpose to which it has been applied.

We may take this opportunity of stating that the Rose exhibition, from which so much was expected, has proved all but a complete failure. Speaking of it to one of our largest Rose growers, who is himself a contributor to it, his remark was "it's just passable." We, however, go further, and say that it is "not passable;" as a whole it makes little display, and the blooms individually are so poor and bad in colour that they convey an incorrect idea of the varieties they represent. Such a project, we expect, will never be attempted in the neighbourhood of London again.

GREAT MARLOW HORTICULTURAL, *June* 24.—There was an interesting meeting on this occasion, and many prizes awarded; but we have only been furnished with a list of the awards, without the names of the subjects for which they were given.

## Notices of Books.

*Zur Morphologie der Monokotylischen Knollen-und Zwiebelgewächse; von Thilo Irmisch.* Berlin. 8vo, 1850; pp. xxii. and 286., tab. 10.

THE volume before us is a very welcome storehouse of information, for though many scattered treatises, and some of great merit, exist respecting the structure of bulbs and tubers, there was not previously any grand collection of facts to which the botanist might at once refer with the reasonable hope of finding the desired information. The species examined are mostly of common occurrence either in the field or garden, a circumstance which affords the ready means of verifying the correctness of the information which the work supplies, and the justice of the inferences which have been formed. It is highly probable that the author's researches will be extended to a wider field, which may be expected, particularly in the examination of more tropical forms, and of dicotyledons, which though not entirely passed by, have formed rather an incidental than an especial object of research, to yield many circumstances of interest; but, above all, he gives us reason to hope that the process of germination and subsequent growth may be observed in cases where it is possible to do so with the attention it deserves, and that thus the whole history of the development of the buds of succession, and their proper connection with the formation of bulbs and tubers, may be placed clearly and completely before the botanist. A solid foundation has already been laid in the description and figures of this excellent treatise. Above 80 species have been well examined, and of their bulbs and tubers under various forms and circumstantial details, no less than 400 figures appear in the 10 plates which accompany the volume, and which present everything that can be desired on the score of clearness, precision, and accuracy. The individual descriptions occupy three quarters of the volume, the remainder being taken up with the general conclusions and explanations of the figures. The arrangement at which the author has arrived may be briefly stated as follows. The productions in question may be considered as forming two distinct divisions, tubers and bulbs, the word tuber being taken in a wider sense, so as to include tubercles. The first may be divided into two classes—

1. Those which may be considered as formed of a portion of the stem.

2. Those which are evidently of the nature of the roots.

The first admits of two divisions, one containing those examples in which the tuber is fully formed previously to the bud or buds which it is destined to support, and belongs to the same axis with them as in the common Potato; or to take an instance from Monocotyledons, where they are very rare, *Cyperus esculentus*. The second division comprises those cases in which the tubers are perfected, after the other parts which belong to the same axis with them, so that both they and the buds which they are destined to nourish belong to two different axes, or, at least, to two different offsets, or shoots of one axis. In this division belong *Sturmia, Malaxis, Arum maculatum, Colchicum, Crocus,* and *Ranunculus bulbosus.*

The radical tubers comprise two similar sections. To the first belongs *Orchis,* and other bituberate genera; to the second *Spiranthes,* the two divisions being exactly equivalent to those of the tubers formed from the stem.

Bulbs also admit of a like classification: a first group consisting of *Tulipa,* some species of *Allium, Iris Xiphium, Tigridia pavonia,* in which, after the flowering stem is perfected, the old bulb dies away completely, and has nothing to do with any future bud. The second section consists of two subsections, in one of which (α), containing such plants as *Galanthus nivalis, Fritillaria Meleagris* and *imperialis, Ornithogalum umbellatum,* &c., the scales of the bulb of the previous year survive everything of that year, except that portion of the axis on which the new bulb is formed, and which maintains the connection between it and the old bulb, destined to support the bud of the current year. In the other (β), the new germ is supported by the bulb of the penultimate year, or even of the year or years preceding that. Examples are afforded by such plants as *Ornithogalum nutans, Hyacinthus orientalis, Lilium martagon* and *bulbiferum, Leucoium vernum, Narcissus Pseudo-Narcissus,* and *Amaryllis formosissima.* It is not to be supposed that these distinctions admit always of mathematical precision, as intermediate forms occur. They will, however, be found practically correct.

The author does not appear to have satisfied himself as to the proper nomenclature to be used in descriptions; and it is obvious that no good general nomenclature can be derived from the examination of a single class of plants. "The tubers and bulb of the first se

tion," he says, "might be called *bulbi annui, tubera annua;* the tubers of the second section, and the bulbs of the subsection (*a*), *biennes,* and the bulbs of the subsection (*β*), *perennes;* but if objection be made to talking of a perennial plant, with an annual or perennial bulb, the word *prævenions* or *præventitius* may be applied to the productions of the first section; the second section will then contain *bulbi relicti,* or *tubera relicta* (*postvenientia*), and bulbs of the subsection (*a*) and (*β*) may be marked by the additions of *unius anni* or *plurium annorum.* We must pass over the critical examination which follows of the views of previous authors. This, however, we the rather do, as, together with a great part of the general remarks, they have been given to the public by Mr. Henfrey in an English form in his "Botanical Gazette." It is, however, to be regretted that in this, as in some other of his translations, he adheres so closely to the idiom of the original, as not only to make them unpleasant to read, but even to render the meaning extremely difficult, though the sense of the author is, as far as mere words are concerned, correctly given. Where the German is occasionally hard enough, when translated into so many equivalent words, it becomes positively obscure without reference to the original, which is manifestly a fault to be most carefully avoided.

It is with great pleasure that we observe that the work is quite free from the mystification which is so common in German authors; all is straightforward enough, and we trust that this and some other works which have lately appeared in Germany, are proof that Okenism is getting out of fashion.

Before concluding we cannot help drawing the attention of our readers to the interesting memoir of M. Clos in Annales de Sc. Nat. for Jan., 1850, on the *collum* or space between the ascending and descending axes. He does not, indeed, always take the same view as Irmisch; and when he differs, is sometimes, we think, clearly incorrect; for instance, he considers the *cormus* of Crocuses as a true bulb; but if this be the case, a Palm trunk must be a bulb too; the tubercles of *Cyclamen* he regards as belonging to the *collum,* and not being true stems; and the tubers of *Orchis,* in contradiction of their intimate structure and mode of development, as leafless branches, though those of *Spiranthes* are looked upon as roots. The paper, however, is well worth reading in connexion with the larger work of Irmisch, though it is confined to tubers. It may be useful to give M. Clos' arrangement, which is not without interest, especially as Irmisch has confined himself to the tubers of Monocotyledons.

1. *Tubera radicalia.* Tuberous roots, as Carrots, Beet-root, &c., known by the regular series of rootlets which spring from their surface.

2. *Tubera colli,* as *Corydalis cava, Cyclamen.* Void either of leafs or rootlets on their surface. Root springing from their base.

3. *Tubera radicalia et colli.* Radish. Rootlets distributed regularly over the lower portion only, terminated above by the Cotyledons.

4. *Tubera hypomerithallia. Begonia, Orchis.* Origin axillary; formed of a branch void of leaves and rootlets.

5. *Tubera monomerithallia. Tamus communis.* Base not prolonged into a root, no leaves, or regularly disposed rootlets.

6. *Tubera polymerithallia.* Potato. Comprising many internodes.

7. *Tubera adventitia. Spiranthes. Œnanthe fistulosa.* Formed from adventitious roots.

8. *Tubera lenticellaria. Lupinus* and many *Leguminosæ.* Scattered tubercular bodies, either on the roots or rootlets. These are described by Bivona Bernhardi, and after him by Fries, as fungi, though we think most decidedly without reason.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Discontinue stopping the shoots of Vincas, Euphorbias, Poinsettias, Gesneras, Eranthemums, and other plants of similar habit, which are designed for autumn or winter flowering; and attend duly to potting, watering, and regulating the heat and moisture. Plenty of light and air are indispensable for the ripening of the shoots of these and other plants grown for the same purpose. Amongst these, one of the most useful is the Linum trigynum, which produces large clear yellow flowers in great abundance throughout the winter. As the tender kinds of greenhouse plants complete their growth, they may be set by themselves in houses or frames, of which the sashes can be easily put on or removed. In such a situation, they can be freely exposed to the sun and air, but at the same time may be covered when the weather is excessively wet. In staging the plants, they should be so arranged as to shade only the pots of those which are behind them. The hardier kinds of greenhouse plants may be set in the open air without any kind of shading. It is a great mistake to place established plants behind a north wall during any portion of the summer, as if they were taken their season of repose; but on the other hand, it is essential that the pots be protected from the sun. When the plants are necessarily put out of doors during this season, they should be plunged in beds of sifted coal ashes, taking care to place them far enough apart to ensure a free circulation of air amongst them. The training of conservatory climbers should be regularly attended to, avoiding looseness or negligence, but still leaving them to hang in graceful festoons from the roof. Maintain the plants in a healthy vigorous state, by occasional waterings with liquid manure, as it is important by every possible means to provide an extensive in-door display of floral beauty for the late autumn months, so as to compensate in some measure for the sudden prostration which will then take place in the open garden. Use the syringe more sparingly, except in very fine weather; and at all times apply it early enough in the day to allow the superabundant moisture to pass off before night. Propagate choice Calceolarias, Cinerarias, &c., by cuttings or offsets from the old plants, taking care that they are free from the green-fly or other insects. Make another sowing of Chinese Primulas, to flower in small pots.

FORCING DEPARTMENT.

Pineries.—Having selected, to meet the demand in winter and early spring, those plants which are now showing or flowering, and those which shortly promise to do so, a portion of the strongest and best-rooted of those remaining should be picked out to succeed them; these should be potted immediately, if they require it, and grown on steadily without any check; any of the smaller plants which are in immediate need of potting should also be attended to. Keep up an uninterrupted succession, by planting a few suckers occasionally in a brisk bottom-heat. Where the planting-out system is practised, there is no difficulty in keeping up the succession, if all vacancies are filled up as they occur, with the best plants that can be selected.

Vineries.—As the Black Hamburgh Grape is so liable to shrivel after it is ripened, and as it is thereby deteriorated in quality, it is advisable to shade them during very hot sunshine. Where the crops are swelling, let the state of the borders be frequently examined, especially those which are covered with tarpauling or other material. If the soil is dry, let the surface be carefully loosened with a fork, and watered with liquid manure. Examine the bunches of swelling crops, thin crowded clusters, and remove any small berries, which will spoil the sample if allowed to remain.

Peach Houses.—Admit a free circulation of air through all the houses during fine weather; but where the fruit is just ripening, ventilation during the night and in damp weather should be effected by means of the front, keeping the top sashes closed, to prevent damp cold dews from settling on the fruit. The foliage in the early houses should be kept in a healthy state as long as possible by syringing, and guarding against insect depredators.

FLOWER GARDEN AND SHRUBERIES.

Remove suckers from Rose trees, and stop all gross shoots on the summer flowering kinds. Employ mulching as a means of protecting the soil against evaporation during summer, and especially round standard Roses and other choice shrubs, whose leaves afford little or no shade. Leaf-mould, thoroughly rotted dung, or short Grass, are well adapted as materials for this purpose, particularly the two former, as the soluble ingredients contained therein will be washed downwards in showery weather. After finishing the propagation of Pinks and Carnations, by pipings and layers, proceed with other hardy herbaceous plants, as Phloxes, Pansies, Wallflowers, Antirrhinums, Pentstemons, &c., all which will strike under handlights with the greatest freedom; or even without such assistance, if a shady situation is chosen, and watering is carefully attended to. It is of the first importance to propagate these plants as soon as possible, as time is thereby gained to allow of their being pricked out into nursery beds, where they soon become thoroughly established, and are enabled to endure the winter with very slight protection. The old Linum flavum makes a good yellow bed, continues in flower all the summer, and is perfectly hardy; it will strike freely if the cuttings are taken before the wood gets too hard. Sow Brompton and Queen Stocks for spring flowering, and intermediate Stocks for autumn. A sowing may also be made for late autumn flowering of some of the hardier annuals, which come very quickly into a flowering state. Very much may be done towards stimulating the growth of weakly plants, and assist the flowering of healthier ones by frequent waterings of liquid manure. It is an expeditious and immediately successful mode of increasing the fertility of the soil. Perhaps the flower-garden does not possess more beautiful ornaments during early summer than the Ayrshire and evergreen Roses, worked high on standards, with their branches allowed to hang down, as Nature dictates. This will be a hint to those who are budding Roses, to select some of the tallest stocks for this purpose; or, if none of their stocks are large enough for this season's work, some of the strongest should be left unbudded, so that by pruning and liberal treatment, sufficiently high stems may be secured against the proper time next year.

KITCHEN GARDEN.

If Asparagus beds are liberally supplied now, and during the next month, with liquid manure from the farm-yard, or soap-suds from the laundry tank, with common salt added, it will effect wonders in the way of improving the size and quantity of next year's crop. Asparagus seedlings should be thinned, and the ground kept in a loose state about the young plants. If well attended to, and watered with rich water, with a little salt added, it is wonderful how rapidly they will advance. Sow Early York Cabbages for transplanting, thick, to draw as Coleworts for autumn use, taking care to adopt effectual means for protecting the seed from the depredations of birds. Sow also a bed of Parsley for late autumn and winter use, upon ground which has received a rich dressing of soot and well-rotted manure. Let no pains be spared to obtain a good stock of material for Mushroom beds, to succeed the open fields in supplying this delicacy. Horse droppings are to be preferred for this purpose; but if a sufficient quantity of these is not procurable, the excrements of sheep or deer may be mixed up with them. Until as much is collected as will make up a bed of the required size, let them be spread very thinly on the floor of a dry airy shed, and turned once a day to prevent fermentation from taking place.

State of the Weather near London, for the week ending July 3, 1851, as observed at the Horticultural Garden, Chiswick.

| June and July. | Moon's Age. | Barometer. | | Temperature. Of the Air. | | | Of the Earth. | | Wind | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 27 | 26 | 30.169 | 30.125 | 91 | 52 | 71.5 | 65½ | 59½ | S. | .00 |
| Satur.. 28 | 29 | 30.147 | 30.137 | 84 | 51 | 67.0 | 64½ | 61 | E. | .00 |
| Sunday . 29 | 0 | 30.148 | 30.125 | 82 | 50 | 66.0 | 64½ | 62 | E. | .00 |
| Monday 30 | 1 | 30.124 | 30.061 | 82 | 55 | 68.5 | 65 | 63 | E. | .00 |
| Tues. .. 1 | 2 | 30.005 | 29.899 | 78 | 59 | 68.5 | 65 | 62 | E. | 1.18 |
| Wed. .. 2 | 3 | 29.988 | 29.851 | 82 | 54 | 68.0 | 65 | 63 | N.E. | .00 |
| Thurs.. 3 | 4 | 30.021 | 30.013 | 66 | 52 | 59.0 | 64 | 61 | N.E. | .00 |
| Average . | | 30.056 | 30.072 | 80.7 | 53.2 | 66.9 | 64.3 | 61.6 | | 1.18 |

June 27—Slight dry haze; excessively hot and dry: clear.
— 28—Hot and dry; clear at night.
— 29—Hot and dry with brisk east wind: clear and cool at night.
— 30—Hot and dry; slightly clouded at night.
July 1—Thunder; cloudy; rain, 9—10 A.M.; lightning; heavy rain at night.
— 2—Fine; very fine; clear at night.
— 3—Uniformly overcast; cloudy and fine.
Mean temperature of the week, 4 deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending July 6, 1851.

| July. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 6 | 76.4 | 52.6 | 64.5 | 10 | 0.59 in. | — | 3 | — | 4 | 5 | 7 | 5 | 1 |
| Mon. 7 | 73.4 | 53.2 | 63.3 | 10 | 0.45 | 1 | 1 | 3 | 1 | 5 | 8 | 4 | 2 |
| Tues. 8 | 75.0 | 51.2 | 63.1 | 13 | 0.46 | — | — | 3 | 1 | 1 | 10 | 7 | 3 |
| Wed. 9 | 75.2 | 50.7 | 63.9 | 8 | 0.57 | 3 | 1 | — | — | 2 | 7 | 8 | 4 |
| Thurs. 10 | 74.6 | 51.8 | 63.2 | 6 | 0.36 | 1 | 1 | 1 | 1 | 3 | 12 | 3 | 3 |
| Friday 11 | 74.8 | 52.0 | 63.4 | 6 | 0.71 | 3 | — | 3 | — | 4 | 5 | 5 | 5 |
| Satur. 12 | 74.4 | 51.6 | 63.0 | 10 | 1.10 | — | 2 | 3 | — | 3 | 8 | 8 | 1 |

The highest temperature during the above period occurred on the 12th, 1847—therm. 90 deg; and the lowest on the 8th, 1850—therm. 39 deg.

## Notices to Correspondents.

Ants: *C L H.* Plunge the tub in water—in a pond if you please. Let the tub remain under water for an hour. Then wash all the earth off the roots, so that they may be quite clean, and then repot in earth in which there are neither ants nor ants' eggs. Take care that the ants do not escape into the branches of the tree, and then come back again.

Auricula: *P C, Ireland.* The colour of the outer ring or edging is that which constitutes the class to which Auriculas are referred by florists—as green, grey, and white edged: an outer ring of *green,* a ring of *ground colour,* then a ring of *paste,* and a centre or *eye,* all bearing due proportion to each other, form the standard of excellence by which the value of a variety is determined.*

Birds—The "Stone-Chat;" *G L.* At page 392, we answered several queries put by our correspondent, with reference to certain birds. The correctness of one of our replies has since been called in question,—we mean that concerning the stone-chat. "Bechstein," however, to whom we have since had the curiosity to refer, more than confirms what we then stated. Speaking of the *whin-chat,* he says: "This is a *delicate* bird. * * It arrives at the commencement of May, and leaves us about the end of September. When caught, it is scarcely possible to induce them to eat." Of the *stone-chat,* he remarks: "This bird leaves us in September, and returns at the end of May. In habits it resembles the preceding bird. Being a *very delicate bird,* it requires to be fed upon nightingale's food, when in confinement." In calling it a "tender" bird, therefore, we appear to be fully justified. We have always found it so. *W. K.*

Books: *P C Ireland.* "English Botany," Sowerby's "British Fungi." Both are very costly works; there neither is nor can be cheap works on such subjects.—*G O L.* The first volume of the cheap edition of "English Botany."—*A B.* Sanders's "Practical Treatise on the Culture of the Vine."‡ —*Const Reader.* Loudon's "Suburban Gardener," Do. "Encyclopædia of Architecture," and Downing's "Designs for Cottage Residences," an American work.

Glass: *S.* Hartley's patent rough plate. The sides had better be glazed with the same material.‡

Names of Plants: *A H.* Escallonia macrantha.—*C E A.* There is no plant or flower called "Demerary," and we have no idea what the name can possibly represent.‡—*Sub.* Justicia carnea.—*F W L* The specimens are not in a state to be exactly named. They appear to be as follows: 1, Lyonia arborea; 2, Vaccinium frondosum; 3, Vaccinium (?); 4, Vaccinium fuscatum; 5, Andromeda axillaris; 6 (?). Plants cannot be named without flowers.—A few inquiries stand over for further consideration.

Plants in Dwelling Houses: *Enquirer.* Those give off most oxygen that grow fastest, provided they have as much light as others that grow slower. But it is useless to seek for a solution to this inquiry, because no plants will grow fast in dwelling-rooms, if the rooms are to remain habitable. The best are those which are scentless and succulent.

Pruning: *H.* This is a good time enough for taking off large branches from Oak and Elm trees, but we prefer mid-winter.

Seedling Strawberry: *J T, Limpley Stoke.* A good-looking well-flavoured fruit, resembling the round white Carolina, but having considerably more colour than that variety usually possesses.

Vinery Lights: *G O L.* Copper wire rope is what is sometimes employed for moving Vinery lights of great weight.

Vines: *Constant Reader.* Luxuriant growth and a damp atmosphere have caused the small green excrescences to appear on your Vine leaves. They do no harm.

Woodlice, &c.: *C E A.* A little attentive observation will soon show you the kind of injury they commit. A toad or two kept in your hotbed will thin them.‡

SEEDLING FLOWERS.

Calceolarias: *A P W.* Labels mixed, and therefore we cannot distinguish them by name; buff mottled with dark crimson is a pleasing flower of good shape, but a little rough. White motted with chocolate is large and showy, but deficient in shape. Lemon ground with dark brown blotch, finely streaked with yellow, too small, but a break in the right direction. The others are prettily marked, but possess little novelty.*

Pansies: *A J.* 1, yellow and chocolate; a fine large variety, which will make a good show flower; the best of the lot. 2, large, rich, dark self; the indentation on the bottom petal prevents it from being first-class. 3, straw, with blue top petals; same shade of blue on the side and bottom—rather coarse. 4, orange ground colour, with rich red bronze top, lower petals belted with the same; good. 5, white and blue; thin and poor. 6, two shades of yellow for ground colour, and notched on the bottom petal; fine eye; it may come better earlier.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—WINDSOR MEETING, 1851.

PROGRAMME.

FRIDAY, JULY 11.—Cattle received into the Show Yard, in the Home Park, from Eight o'clock in the Morning until Eight at Night.

SATURDAY, JULY 12.—The Show Yard open for receiving Cattle from Eight o'clock in the morning until Four in the afternoon; after which latter hour no Stock will be received.

MONDAY, JULY 14.—The Judges will enter the Show Yard at Nine in the morning, and commence their examination of the Stock.—In the afternoon, or evening, when the Judges have delivered in all their awards, Members of Council and Governors of the Society will be admitted into the Show Yard, on the payment of Two Shillings and Sixpence each, and the public at Ten Shillings each.

TUESDAY, JULY 15.—The Show Yard open to the public from Six o'clock in the morning until sunset, at Five Shillings for each person.

WEDNESDAY, JULY 16.—The Show Yard open to the public from Six o'clock in the morning until sunset, at Two Shillings and Sixpence each person.—The Great Dinner of the Society in the Pavilion, at Four o'clock in the afternoon.

THURSDAY, JULY 17.—The Show Yard open to the public from Six o'clock in the morning until Eight at night, at One Shilling for each person.—At Nine o'clock, P.M., the Cattle may be removed from the Show Yard.

FRIDAY, JULY 18.—The General Meeting of the Society, in the Guildhall, at Ten o'clock in the forenoon.

The Show Yard and Pavilion are situate, by the gracious permission of Her Majesty and His Royal Highness Prince Albert, in the Home Park, immediately below the slopes and terraces of the north front of Windsor Castle.

*President*, His Grace the DUKE OF RICHMOND, K.G.

*Stewards of Departments:*

| | |
|---|---|
| Cattle ... ... ... | Mr. Stokes, Mr. Jonas, Mr. Milward. |
| Finance ... ... ... | Colonel Challoner, Colonel Austen. |
| Sale of Tickets ... ... | Mr. Wilson, of Stowlangtoft. |
| Receipts and Admission to Show Yard. | Mr. Raymond Barker. |
| Pavilion Dinner ... ... | Hon. Robert Henry Clive, M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. Shaw of London, Mr. Villiers Shelley. |
| General Arrangement of Show. | Mr. Brandreth Gibbs. |

By Order of the Council,
London, June 11, 1851. JAMES HUDSON, Secretary.

By the Regulations of the Society, all persons admitted into the Show Yard, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

PAVILION DINNER TICKETS.—Members may obtain their Tickets for the Pavilion Dinner by enclosing a Post-office order for Ten Shillings to the Secretary of the Society, at No. 12, Hanover-square, London, between the 20th of June and the 5th of July. The Tickets will be forwarded by return of post, in the order of application; and should any remain unclaimed they will be sold at the Finance Rooms, within the Society's Enclosure in the Home Park, on the Monday, Tuesday, and Wednesday of the week of meeting, until disposed of. Each of these Dinner Tickets also entitles the holder to a pint of port or sherry.

SUBSCRIPTIONS.—For the convenience of Members attending the Meeting, the Finance Committee will, in the same Rooms, also receive any Subscriptions that may be due from Members to the Society.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.

HENRY KER SEYMER, Esq., M.P., Chairman.

JOHN VILLIERS SHELLEY, Esq, Deputy Chairman.

Empowered by Act of Parliament to execute all works of drainage (including outfalls through adjoining estates), to erect farm buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money, or to enable the landowner to employ his own capital and execute the works by his agents, and to secure repayment of the outlay by a charge on the property improved, spread over a number of years. Applications to be addressed to Offices, 52, Parliament-street, London. W. CLIFFORD, Sec.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The ANNUAL MEETING and GREAT NATIONAL CATTLE SHOW of this Society, will take place this year in Dublin, at the Royal Dublin Society's Premises, Kildare-street, on WEDNESDAY, AUGUST 13TH, and the days following, on which occasion ONE THOUSAND POUNDS and upwards, including the Challenge Cup and Medals of the Society, will be offered in premiums for Cattle, Horses, Sheep, Swine, Poultry, Dairy Produce, Flax, and Agricultural Implements, the particulars of which, together with Prize Sheets and blank forms of Entry, can be had on application to the Secretary.

Monday, the 21st of July, will be the last day for lodging notices of Entry for the Show, after which day none can be received.

All Implements must be in the Show Yard on or before Monday, the 11th of August, as the Judges will commence their inspection on Tuesday morning early.

All Stock and other articles, except Horses, must be in the Show Yard before 6 o'clock on Tuesday, the 12th of August, when the gates will be closed.

Arrangements are in progress for the conveyance of Stock and Implements, duly entered for Exhibition, by Steam Boats and Railways, to the Show, the particulars of which shall be communicated on application.

Signed by Order, EDWARD BULLEN, Secretary.
Society's Rooms, 41, Upper Sackville-street, Dublin.

YORKSHIRE AGRICULTURAL SOCIETY.—The Fourteenth Annual Meeting will be held at Burlington, on the 6th of AUGUST next. The ENTRY CLOSES on the 23d of JULY. Free transit of Stock, both ways, and half rates for Implements, are conceded by the Railways of the district. PRIZE SHEETS, for Stock, Implements, or Poultry, with Forms of Certificate, may had, free, by application to Sowerby, Thirsk. M. M. MILBURN, Secretary.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | |
|---|---|
| Clover Manure, per ton ... ... ... | ...£11 0 0 |
| Turnip Manure, do. ... ... ... | ... 7 0 0 |
| Superphosphate of Lime ... ... | ... 7 0 0 |
| Sulphuric Acid and Coprolites ... | ... 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 10*s.* per ton; and for 5 tons or more, 9*l.* 5*s.* per ton, in dock. Sulphate of Ammonia, &c.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parti s from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

HOSE FOR LIQUID MANURE, Fire-engines and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

HOSE! HOSE!! HOSE!!! Improved Canvas Hose, Lined and Coated with Gutta Percha for Liquid Manure, Fire Engines, Garden and Farm purposes.—This Hose is greatly improved. The rigidity of seam avoided, the flexibility increased, the waterproof qualities extended, the price more reasonable. Much research and trial by the Manufacturers, has enabled them to arrive at what they consider a perfect Hose. Improved Gutta Percha Union Joints of all sizes. Gutta Percha in all its branches.—Apply to Messrs. MITCHELL and Co., 93, High Holborn, London; International Depot for Patented and other Inventions.

**The Agricultural Gazette.**

*SATURDAY, JULY 5*, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| WEDNESDAY, July | 9 | Agricultural Society of England |
| THURSDAY, | 10 | Agricultural Imp. Soc. of Ire and. |
| TUESDAY, | 15 | Meeting of the English Agricultural Society at Windsor. |
| WEDNESDAY, | 16 | |
| THURSDAY, | 17 | |

ANY one who has paid the least attention to the progress of agricultural chemistry within a comparatively recent period, must be convinced that the existence of certain mineral elements in the ashes of plants, in very regular proportions, according to the different genera and species, is not the result of accident, but that many of them are essential to vegetable life. Analyses of the ashes of plants, and deductions which have been legitimately drawn from the facts revealed, have shed much light on the relations of geology to agriculture, and have taught us to look beyond mere considerations of texture for the primary elements of fertility. Thus far theorists agree. The practical agriculturist, however, discovers that theoretical doses of mineral matters, such as would be naturally suggested by chemists, do not supply his "deaf" loams with the materials which will remedy the innutritious qualities of his Turnips and Grasses, which he finds so opposite and diverse on soils which, so far as he can judge, are physically similar; and an application of nitrogenous manures, wherein is contained the basis of all nutritive matter, only aggravates the evils that are intended to be remedied. The most important service which chemistry has done to agriculture has been the discovery of the relation which nitrogen holds to the other vegetable constituents of plants and the intimate relation which its compounds have to animal nutrition. It is now clearly made out that under our systems of cropping, nitrogen in such states of combination as can be assimilated by plants is the chief element of which our soils have suffered exhaustion; it being at the same time the most expensive constituent for which the farmer has to go to the market, to buy it—in guano, and in all other manures.

Our views of the influence of nitrogen on vegetable growth were very imperfect, until LIEBIG propounded his theories on the subject. After demonstrating that compounds capable of supplying it to plants existed in the atmosphere in abundance for the wants of all vegetables growing on the surface of the earth, he proceeded to apply the very principles which he observed in one class of plants that actually did obtain and work up as much of nitrogenous matters from these natural sources, as the most highly manured Wheat field was able to accomplish on the same space, to every other crop which it was the object of cultivation to produce, in circumstances which were quite abnormal, but demanded by the tastes and wants of man. Although LIEBIG did much to give us correct notions of the manner in which plants obtained the nitrogen contained in their structure, as well as practical hints of immense importance in the preservation and economising of manuring substances still a large amount of disappointment has arisen from his assuming that "the crops on a field diminish or increase in exact proportion to the diminution or increase of the mineral substances conveyed to it in manure," and from the high expectations which were formed on the promulgation of these statements, great discredit has fallen on the other truths which he taught us.

Since our soils contain nitrogen in very small proportions, and since cereals remove it, as has been found, in large quantities in their products, often expending a much larger quantity in the growth and maturation of their seeds than these actually assimilate, it must be very evident that some plants which are grown in our rotations must have the power of appropriating it from the natural sources—the air and rains—or else our fields would soon be reduced to barrenness. The conditions under which any class of plants yield either less or more nitrogen in their produce than is contained in the soil, thus becoming more or less exhausting, are subjects of great practical importance in rightly apprehending the principles upon which manuring depends. The question at once suggests itself, whether this is a natural defect in their structure, in consequence of which some can grow and flourish only in a soil which has been enriched by artificial means, or through the decay of others that yield up the nitrogen contained in them, while some plants have the qualities of appropriating enough for their wants from the atmosphere alone. Or whether it may arise from the external conditions to which we have subjected these so-called exhausters, being inconsistent with their exercising the function of appropriating the nitrogen from those natural sources which, unassisted, are so ample for the abundant produce of the Oak and other timber trees. We must confess that our opinions are more in harmony with the latter proposition than with the former one. We believe that all plants have the power of collecting their organic constituents from the air, if the requisite conditions are maintained for their so doing, but if not, art must supply what nature cannot do under the circumstances.

It is often observed that, within certain limits, the abundance of one element of growth will compensate for the deficiency of another. A richly-manured field will maintain a verdant hue against very unseasonable weather, when another field, having the same temperature in the soil and atmosphere, will exhibit a sered and withered aspect. Every species of plant is variously affected by heat, light, moisture, &c.; in fact, each is its own thermometer and hygrometer, and the readings of our imperfect instruments are left in the rear. The necessities of man have placed many of them under cultivation in conditions totally different from their native climes, and it is the art of culture to assist Nature in accommodating herself to artificial demands and surrounding circumstances. The elements of animal nutrition are almost the same in all vegetables used as food, but only in various states of elaboration, and the various races of plants can only be looked upon as different machines to collect and store up the crude materials and fit them for animal bodies: and, while the products are in a great measure similar, the elements out of which these are formed are still more so. Chemical theories of vegetable nutrition are very apt to be pushed too far, if they are merely founded on isolated experiment; and solutions of our agricultural experience and practices are exclusively looked for from this source, while they have often more to do with the physiology than the chemistry of plants.

A series of articles lately appeared in the leading section of the *Gardeners' Chronicle*, on the assimilation of nitrogen in plants, and illustrations were given of the complex conditions that vegetables are subjected to, both within and without the soil. We do not, however, intend to go over the ground which has already been trodden, but rather to take up another branch of the subject which has not occupied attention, on which, for agricultural considerations, it

has a prominent claim. In the interesting papers alluded to, we were struck with the following passage:

"It is pretty well ascertained, that the two most valuable ingredients of dung and similar rich manures, are the phosphoric acid and nitrogen which they contain; and it is plain that the quantity of the former, which plants are able to take up, must depend upon the proportion of it naturally existing in the soil, or artificially added to it. In the case of ammonia, however, it must be different if the quantity which plants contain is independent of the soil altogether, and depends on the proportion which they are able to collect from that unlimited source, the atmosphere. It is evident that if plants are able to appropriate the nitrogen of the air, *our views respecting the application of manure must be considerably modified;* because the question will no longer be, how to fix ammonia, and how to supply plants with a certain quantity of nitrogen in a state of combination, but rather how *to bring plants into that state in which they are best able to appropriate the nitrogen of the air.* Always therefore bearing in mind that it is by no means impossible that plants may absorb a portion of free nitrogen, *we must say that probability is much against it.*"

We believe that this extract embraces most important considerations in agricultural practice, and that many of the fanciful distinctions which are often drawn and made in regard to the fictitious value and effects of different specific substances on certain classes of vegetables, are in a greater measure due to the state in which we have placed the plants, than to the fact that the food or requirements of our crops are different. And, besides, some of these principles lie at the root of those questions which involve and determine the agricultural tendencies and systems of a country. For without overrating or trusting too much to primitive practices, still the natural history of many of them affords a safe guide by which to survey and trace the spirit of modern innovation, which has brought into the field skill and capital, and thus introduced new disturbing elements.

The power which our cultivated plants have of developing their organs, and maturing their products, depends on certain states of soil and atmosphere. The economy with which they can work up the nitrogenous materials supplied to their roots depends on a vast number of circumstances, some of which are within, while others are entirely beyond the control of the cultivator. The same ends are sometimes attained by very opposite means—thus, for example, we see Mr. H. Davis and others obtain large results in the cultivation of the cereals, from comparatively small outlay in the shape of manure, by their skilful and careful management, and to us the rationale of their practice seems to be, that by placing the plants in healthy and favourable states to extend their roots and leaves, they either expend less manure in their growth, or can rely to a greater extent upon the natural sources, and thus they are able to supplement the deficiency of vegetable food in the soil, which would have been inadequate for effecting the same results had the ground been overcrowded with plants, and unassisted by acts of cultivation. No one will deny that there is a wide margin for effecting a saving, when we consider that the cereals are supposed to expend five parts of ammonia in fixing one equivalent in their produce. We cannot believe that this is a necessary proportion. But on the other hand, the atmospheric elements—arranged in endless variety—have specific influences on vegetation, and accordingly modify results. Over what wide geographical limits is that wonderful plant, the Wheat, distributed by man! Were its most favourable clime, for production, dependant on a certain amount of temperature, the lines of our thermal maps would then furnish us, as they are supposed to do, with safe and easy guides in our inquiry. But if we dip a little more minutely into practical details, a vast number of compensating elements thrust themselves on our view, which will often render it difficult to say, whether that much desired district is situated on the verge of its Polar or Equatorial limits. Do its natural means of subsistence and capabilities of maturation keep pace with each other? Does the same amount of that essential element, ammonia, produce a corresponding return of produce in all its latitudes? Apart from all party and political considerations, the answer to this question would afford important topics for discussion; but we can only refer to them incidentally in illustration of the leading principles above adverted to, as these apply to our narrower task of endeavouring to lay bare the natural foundations upon which rest the varied systems of agriculture over the British islands. It will be our wish, in dealing with the subject, to do it with impartiality to all parties. In the prosecution of our inquiry, we shall first examine into the current chemistry of the subject, which lies on its threshold, and for this end we intend to review some of the deductions which Mr. Lawes has arrived at, in his excellent papers on "Agricultural Chemistry," in the 8th volume of the Royal Agricultural Society's Journal, so far as they lie in our way. *R.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

[A mistake was committed in our notice of the Chaff-cutters last week. The machine *like* a chaff-box, with a bottom of endless web, and vertical saw-edged knives, as well as a radial curved knife, shown by Smith & Co., of Stamford, is for *cutting fat.* Smith's Chaff-cutter, however, we have noticed as worthy of every commendation—for the completeness of the cut, the variety of the lengths of chaff, and the efficiency of the feeding apparatus—as, so far from a skilful feeder being required in order to keep the engine going without choking, the box may be fed by even a boy with a fork. *I. A. C.*]

The next division is "E—Field, Fold, and Yard Machinery."

Turnip-cutters are shown of the disc, cylinder, and other forms. Stanley's has a vertical disc, carrying two large V-shaped knives, with smaller preceding ones at right angles, in order to subdivide the slices. An inventor named De Porquet exhibits a model of a Turnip-cutter, which has large and small knives fixed upon the exterior of a cone on a horizontal axis. The knives resemble those of the original disc cutter; the hopper seems incapable of clogging, and the slices fall out at the expanded side, and not inconveniently underneath.

Burgess and Key, of Newgate-street, London, exhibit a patent Turnip-cutter, which consists of a long trough partitioned into four, the bottom being an iron plate, which carries the knives, and is vibrated to and fro endways. The cutters in each compartment are of different sizes for cattle and sheep, and gratings allow the slices to drop through; but an alternating sliding motion of this kind can hardly be so good or easy as the rotary one—on much the same principle that makes the *Times* printing-press, with its revolving type-cylinder, a better machine than one in which the horizontal form is rapidly reciprocated.

C. Phillips and Co., of Bristol, show their patent Improved Gardners' Turnip-cutter, in which the hopper, constructed with grated sides, is made to shake, by means of a small crank, a spiral spring upon the connecting rod preventing any jolting or concussion from the movement.

To improve upon the best model, is to approach nearest to perfection; and therefore one of the very best Turnip-cutters yet manufactured is that exhibited by B. Samuelson, successor to the late Mr. Gardner, of Banbury, which remedies the principal defect of the famous instrument invented by that maker. At the Royal Agricultural Society's two last meetings at Norwich and Exeter, Mr. Samuelson obtained the prize for his addition to the Turnip-cutter for sheep, of a knife which cuts large slices for cattle, and is brought into action by merely reversing the motion of the fly-wheel. In all barrel Turnip-cutters hitherto made, the last piece of the root was allowed to pass through unslit, or if cut, it was done with considerable waste and loss of power. The Turnip-cutter recently patented (Jan., 1851) by Mr. Alexander Samuelson, has upon it the words—"cuts the last piece," and this is effected in the following way: the last piece of each Turnip is thrown by the centrifugal action of the barrel upon a ledge about on a level with the axis, where it is held until it is cut by the knives at their next revolution. Another improvement is the substitution of a patent wrought-iron frame for the wooden one hitherto used, which adds greatly to the durability of an implement left in the field for months night and day, and in all vicissitudes of weather.

Among Washers, of which there are several varieties with more or less mechanism about them, there appears to be none more simple and effective than Crosskill's Archimedian Root-washer, and the similar machine, made of perforated zinc, for washing Beans. Stanley exhibits his well-known Steaming Apparatus, which gained the Royal Agricultural Society's prize at Exeter, Norwich, and York. The Portable Steam Generator has a tub for boiling on one side, and a pan or tub on the other for steaming. The boiling tub is surrounded with steam, so that the contents cannot burn; it boils in 30 minutes, and when at boiling point, a jet of steam is sent by a pipe into the middle of the compound, to stir it up. The waste steam from the boiler of the engine which works the cutters and mills before mentioned, as being compactly yet conveniently arranged, may be made to heat this copper. The steaming-pan swings, so as to turn over for emptying; and the steam enters at the top—not, as is commonly the case, at the bottom, when it becomes condensed by the water from the roots, almost as quickly as it comes in.

Mr. J. Blackhall, of Edinburgh, shows a model of a High-pressure Steam-boiler, for digesting bones for manure, heating tanks, retting Flax, steaming chaff, Turnips, and other food for cattle. The inventor informs the public that "the process of steaming bones supersedes the use of expensive crushing machinery and sulphuric acid at present required. The cost of fuel and labour by this new method from 3*s.* 6*d.* to 6*s.* per ton." Now, as many will want to know the real merits of an apparatus for this purpose, and whether steamed or boiled bones are as valuable as bone-dust or superphosphate, we may, perhaps, assist them by giving the conclusion arrived at from trial by Mr. Hannam, in Morton's "Cyclopedia of Agriculture." "That in many districts Mr. Blackhall's idea will be very valuable, is certain. That it can, however, supersede dissolved bones, where they are required, or be cheaper than crushed bones, where *power* is cheap and steam is dear, is more than we can or ought to expect from it." From experiments by Mr. Slight, of Edinburgh, it seems "that the mere process of steaming was *not sufficient* to bring bones into a state fit for application; but that a supplementary one of pounding or bruising was necessary;" and Dr. Anderson came to the same conclusion. The advantage of the new process over that of crushing, in point of expense in the process, is by no means clear. The steaming and after process are estimated at 10*s.* per ton, but may cost much more; and if to this be added 10*s.* for carriage, and 5*s.* for interest and risk of capital, the expense will amount to more than the price paid for crushed bones. "That this method can supersede bones and acid, is not to be expected. Mr. Blackhall overlooks the fact, that if we pay for acid, it prevents our paying for a larger quantity of bones. In all instances, experiments establish this conclusion, even in comparison with fermented bones." The application of steam to *facilitate* the dissolving of the bones by acid is, however, a desirable improvement; and may, perhaps, with this furnace, be found to answer. It appears that, after steaming, the coarser fragments of crushed bones are more thoroughly dissolved than the finely ground, and with a reduced quantity of acid. In this way the extra expense of bruising bones so fine, as well as a third of the acid, has been saved; but whether the cost of steaming overbalanced this saving, we are unable to state.

Among the machines of use in a farm-yard, and valuable as assistants in manuring, we must not forget to mention Deane, Dray, and Deane's patent Cess-pool Cleanser. It is calculated to effect a saving of precious fertilising liquid, and economise the mode of its application to the land. *I. A. C.*

## THE MANAGEMENT OF GRASS LAND IN THE NORTH OF FIFE.

The following paper by Mr. Haxton, of Drumnod, is the abridgment of a paper read by him at a late meeting of the Highland and Agricultural Society of Scotland, when the subject of discussion was, "The most suitable proportions and quantities of Grass and Clover seeds to sow for hay, soiling, and pasturage; the substances most profitable for top-dressing, and the proper time to apply them."

The whole district is exceedingly uneven, being elevated into long ridges, or isolated conical hills, with intervening valleys. The quality of the land is, consequently, very various, passing from a poor, thin soil, near the tops of the hills, to a fine alluvial deposit, at their bases; while, between these extremes, there is much excellent dry, sharp land, capable of producing good crops, both of corn or roots. In this part of Fifeshire, Grass seeds are generally sown amongst Barley, either in a five or six-course shift, but on the firmer and deeper class of soils, they are not unfrequently sown amongst Wheat when this crop is taken instead of Barley. The larger proportions (two-thirds) of the Grass sown in my neighbourhood is for pasturing cattle and sheep, while the remaining one-third is cut for hay, or for soiling horses and cows, and occasionally a few cattle are fed in the yards on the soiling system. The kinds of Grasses and Clovers sown for pasture are perennial Rye-grass (of which there are several varieties), some of which are local, and others, as the Ayrshire, brought from a distance. Common red and white Clover are also sown along with Rye-grass, and latterly Cow-grass has been a good deal sown. When the land is intended to remain two or more years in pasture, and to a less extent, Alsike Clover has been cultivated very successfully for the same purpose. For soiling and hay, either annual or perennial Rye-grass is sown—the latter always, of course, when the land is to remain in Grass a second year—and common red Clover, Cow-grass, or a half and half mixture of the two. The usual quantities sown for pasture are—1½ to 2 bushels of perennial Rye-grass, 5 lbs. of white Clover, and 3 to 4 lbs. of red Clover, or a like quantity of Cow-grass; and for soiling, 4 to 5 pecks of Rye-grass, and from 8 to 10 lbs. of red Clover or Cow-grass per Scotch acre. Now, as regards the quantities of the different kinds of Rye-grass and Clover usually sown per acre in the county of which I am speaking, I am convinced that the error has long been committed of sowing too much Rye-grass and too little Clover. The reason usually assigned for sowing so large a proportion of the former, compared with the latter, is, that Clover—the red variety especially—is so uncertain a crop, that it is necessary to adopt the precaution of having the land well stocked with Rye-grass, in order to obviate, or at least lessen, the loss that would be sustained in the event of the Clover proving a failure. However readily we may be inclined to admit the necessity of such a precaution, it must be evident to most minds that the practice itself is productive in no small degree of the evil sought to be avoided, for as Rye-grass pushes away more rapidly in spring than Clover, so will it, when too thickly sown, be the more ready to impede or choke the growth of the latter. This is particularly the case as regards Rye-grass and red Clover sown together for soiling, or to be made into hay; and even in the case of pasture Grass, we have all, I dare say, experienced the

bad effects of the Rye-grass running to seed, and becoming so hard and withered, that neither cattle nor sheep will eat it, unless forced to do so by sheer necessity. The better plan in both cases, I believe, would be to increase the quantity of Clover sown, and diminish that of Rye-grass. The 8 or 10 lbs. of red Clover usually sown for soiling or hay, should be increased to 14 lbs. at least, and for pasture 8 or 10 lbs. of white Clover, and 5 or 6 lbs. of red Clover or Cow-grass might be used with advantage. The herbage produced from a thick plant of Clover, with only a moderate mixture of Rye-grass, is not only more succulent and nourishing, but also more rapid in its growth—whether used for growing purposes or for soiling—and will keep a larger number of stock per acre than that yielded by a field where the Rye-grass bears a large proportion to the Clover. In the one case, that of Rye-grass, we get an early spring growth, which ceases at Midsummer; while in the other, that of Clover, we obtain a constant succession, until vegetation is checked by autumn or winter frosts. The greatly diminished cost both of red and white Clover removes all objections on the score of expense. The difference of cost in seeding an acre with Rye-grass and red Clover now and formerly, according to the data given above, will be:

| Formerly. | | | | Presently. | | | |
|---|---|---|---|---|---|---|---|
| 2 bush. Rye-grass ... | £0 | 7 | 6 | 1 bush. of Rye-grass | £0 | 3 | 6 |
| 8 lbs. of red Clover, at 10*d.* ... ... | 0 | 6 | 8 | 15 lbs. of red Clover, at 6*d.* ... ... | 0 | 7 | 6 |
| Total ... ... | £0 | 13 | 8 | Total ... ... | £0 | 11 | 0 |

But as this does not give a fair comparison, as regards the two systems, at present prices, we may contrast them in another way:

| Present system. | | | | Proposed system. | | | |
|---|---|---|---|---|---|---|---|
| 2 bush. of Rye-grass, at 3*s.* 6*d.* ... ... | £0 | 7 | 0 | 1 bush. of Rye-grass | £0 | 3 | 6 |
| 8 lbs. of red Clover, at 6*d.* ... ... | 0 | 4 | 0 | 15 lbs. of red Clover, at 6*d.* ... ... | 0 | 7 | 6 |
| Total ... ... | £0 | 11 | 0 | Total ... ... | £0 | 11 | 0 |

Which gives exactly the same expense in both cases. This comparison holds good whether we sow red or white Clover, but of course when Cow-grass or Alsike is sown, the expense will be correspondingly increased. In confirmation of what has been stated, I may mention that, in the spring of 1848, I sowed, by mistake, 20 lbs. of Alsike Clover per acre, instead of 10 lbs., and the result was the thickest and most luxuriant pasturage I ever had on my farm, so much so that I do not exaggerate when I say that the portion of ground so treated kept twice the number of stock than any other part of the field. In this case, however, something must be allowed for the circumstance that the other part of the field was sown with white Clover and Cow-grass, at the rate of 5 lbs. of the former to 4 lbs of the latter, and was also not so good land, but notwithstanding that the data do not bring out a clear verdict in favour of the thick sowing of Clover, inasmuch as the trial was not betwixt Clover of the same variety, yet I am satisfied that the result would have been the same, had the comparison been made between 20 lbs. and 10 lbs. of the same variety of Clover. I have been fortified in this opinion by conversing with and seeing the practice of a farmer well known in East Lothian, who informed me that he had continued to increase the quantity of Clover sown on his farm, until, by repeated experiment, he found that the best results were obtained by sowing from 16 to 20 lbs. per Scotch acre. It is for these reasons that I have come to the conclusion that my own practice has hitherto been faulty, and in future I shall certainly sow at least 14 lbs. of Clover to the acre when for pasture or hay.

The mode of sowing Grass seeds in the district referred to, is to scatter them broadcast, either by the hand or by a machine, the former being by far the most common way, upon a rolled or finely harrowed surface, which the previous harrowing of the Barley generally affords. For example, after sheep *tath*, the land being ploughed in ridges or large feirings, is sown with Barley or spring Wheat, and after a double stroke of the harrows has been given lengthways, and a single stroke across, it is rolled, and the Rye-grass and Clover, previously mixed together, are sown on the smooth surface, and thereafter covered by a double or single stroke of a break of light harrows. Light harrows are not, however, always used for this purpose—the operation often being performed by the ordinary heavy harrows used for covering seed-corn—but this I consider to be a very great mistake, as much of the Clover, as well as Rye-grass, is deposited too deeply for germinating vigorously, and the probability is that a considerable proportion never vegetates at all. A pamphlet published some years ago by Messrs. Drummond and Sons, of Stirling, on the Sowing of Grass Seeds, gives an experiment, illustrated by a diagram, by which it is satisfactorily proved that small seeds, such as red and white Clover, and several of the natural Grasses, do not vegetate at a depth greater than 1 inch and a half below the surface, or if they do, the stem is too feeble ever to produce a healthy plant. If this be true, and few we think will doubt it, if is no exaggeration to say that wherever Grass seeds are covered by the common harrows, one-half of the Clover and a large proportion of the Rye-grass are literally buried, in consequence of being deposited below the germinating point.

In the pamphlet already referred to, even light harrows are considered objectionable, on account of their liability to bury the seeds of Clover; and the chain-web harrow and the bush harrow are recommended as the "only efficient" implements for Grass seeds. As I have never used either of the latter, I am unable to say how far the statements in regard to them are correct, but I may mention that the Grass harrows I use are very light, weighing only 21 lbs. each, and are made with wooden balls and sheaths, iron teeth, each of which is fastened into its socket by means of a screw and nut. Six of these harrows form a break, covering 15 feet, and are drawn by two horses attached to a long swingle-tree. These harrows are coupled together by iron sliders, so constructed as to admit of a considerable vertical and longitudinal motion; thus, in some measure, making each harrow independent of its neighbour. They work remarkably well, striking every height and hollow of the ground equally, and are admirably adapted either for covering Grass seeds or breaking the crust from hide-bound winter Wheat.

While on the subject of harrowing Grass seeds, I may state that what applies as a rule in the case of small seeds is applicable to a certain extent in the case of all the Cerealia. The seeds of Wheat, Oats, and Barley vegetate most freely and vigorously when near the surface, atmospheric air being as essential to vegetation as heat and moisture. But, of course, in practice it is found necessary to deviate from the theoretical rule, in order to obviate the destructive effects of other causes, such as the ravages of birds, and the changes produced on the immediate surface of the soil by the alternate frosts and thaws of winter. I may state here, however, that 1½ inch below the surface is sufficiently deep to enable the young roots of all cereal grains to withstand the atmospheric changes referred to; and, in proof of this statement, I may mention that for two years I used Grass harrows for covering autumn and winter-sown Wheat, whether drilled or sown broadcast, and the result was in every way satisfactory, whether as regards the thickness of braird, its permanence, tillering in spring, or yield at harvest. So far as my experience goes on this head, it is entirely opposed to the practice of ploughing in the seeds of Wheat, Oats, or Barley. With Beans it is quite different, as the vegetative power of one seed is equal to the raising of a weight of 4 lbs.

I have mentioned these facts—although a little apart from the subject of the present discussion—in confirmation of the experiment given in the Messrs. Drummond's pamphlet, and for the purpose of proving that if the seeds of corn-bearing plants suffer injury from being too deeply deposited in the ground, much more will the small seeds of Clover aad Rye-grass, and I may add of Turnips also. In sowing Rye-grass and Clover amongst autumn or winter-sown Wheat we are never exposed to the risk of burying the seeds, and hence we find that when early enough sown, both Clover and Rye-grass take root and vegetate freely, although neither harrowed nor rolled. Many instances are fresh in my recollection of Clover and Rye-grass being sown amongst young Wheat as early as February, without any harrowing or rolling, and although followed by every variety of ungenial weather, the plant and subsequent produce were all that could be desired. This proves two points, first, that Grass seeds vegetate most freely when deposited on or near the surface of the soil; and secondly, they thrive best when the land is firm and well consolidated. While, however, it is true that Rye-grass and Clover sown as early as February will do well without any harrowing or rolling, it is altogether different when we approach farther into the spring months. Then it is absolutely necessary either to harrow or roll after sowing, otherwise the dryness of the air and the heat of the sun will destroy the vitality of seed quite as effectually as if they were deposited 3 or 4 inches below the surface. My practice is to sow amongst Wheat as early in spring as the land will admit of the harrow and roller being used without working raw—the double object thereby being accomplished of breaking up the winter crust, and covering the Grass seeds at the same time. I will now say a few words on the laying down of Grass to permanent pasture. If for grazing purposes solely, the following kinds and quantities, per statute acre, would, I think, form a good mixture for dry land of medium quality:

| | |
|---|---|
| Perennial Rye-grass ... ... ... ... | 1 bushel. |
| Hard Fescue ... ... ... ... ... | 4 lbs. |
| Sheep's Fescue... ... ... ... ... | 4 „ |
| Meadow Foxtail ... ... ... ... | 4 „ |
| White Clover ... ... ... ... ... | 5 „ |
| Alsike ... ... ... ... ... ... | 3 „ |
| Cow-Grass ... ... ... ... ... | 3 „ |

Both Lawson and Drummond recommend Timothy and Cocksfoot for permanent pasture, but while I would not for an instant oppose my limited practice to the very extensive experience of these gentlemen, I must say that I cannot recommend either of the above-named Grasses for dry trap soils. They are both coarse Grasses, and when grown on such soils, in a dry climate, produce a hard and woody herbage not relished by sheep or cattle, especially the former. A residence for some time in Ireland has led me to the conclusion, that both Cocksfoot and Timothy may be sown with advantage in deep land, situated in a moist climate; and the reason simply is, that these plants produce a more succulent herbage under such circumstances, than when both soil and climate are dry, as is the case in most parts of the eastern sea-board of Scotland and England. The Fescues are small-stemmed Grasses, and never get coarse, and I believe they make up in closeness of sole what they want in luxuriance of growth. I was long under the impression that Cocksfoot, from its rapidity of growth, even in dry weather, and on dry land, would prove an excellent Grass for my thin trap soil; but although it grew well, and was much earlier than the common Rye-grass, I found that both cattle and sheep preferred nibbling the latter, however short, to eating the former, however luxuriant. Before leaving this subject, I would lift up my testimony against two Grasses which are generally recommended for permanent pasture, these are Crested Dogstail and Holcus lanatus. The latter is a soft, worthless, innutritious Grass; and the former is hard and wiry, and should never be sown except for bowling-greens or policy-grounds kept constantly under the scythe. It is generally recommended for lawns, but this I consider a great mistake when the Grass is not to be cut, but pastured by sheep or cattle. There is a very handsome lawn in my neighbourhood, very much disfigured by the prevalence of this Grass, which the proprietor, I have no doubt, would give a good round sum to get extirpated. This lawn is regularly pastured by sheep, and during spring and the earlier part of summer it is beautifully green, but towards autumn and during the whole winter it is quite brown with the tall ripened stalks of the Crested Dogstail, which have been left untouched by the sheep.

With respect to those manures best adapted for increasing Grass crops, I have found it a very good, but not an unfailing plan, to apply farm-yard manure to the previous corn crop. Ten to 12 cart-loads laid on this way, generally give better Clover than half a crop of Turnips consumed on the land by sheep. It is seldom, however, according to the present system of green crop husbandry, by which the great bulk of our manure is applied to the raising of roots, that we can command a sufficient quantity of farm-yard dung to apply to those crops amongst which Grass seeds are sown, and consequently recourse must be had to some of the special manures for the purpose of increasing the produce of our Grass fields.

Ten years ago, I first commenced using these manures as top-dressings for Grass, and during the intervening period I have tried guano, saltpetre, nitrate of soda, sulphate of soda, common salt, and sulphate of ammonia, with various success, but latterly I have confined myself entirely to guano, nitrate of soda, and sulphate of ammonia, either separately or mixed together. Last year a mixture was employed with great success, consisting of 1 cwt. of guano, ½ cwt. sulphate of ammonia, and ½ cwt. of nitrate of soda, to the statute acre, the cost being exactly 25*s.* The two latter substances, mixed half and half, have been a good deal used in Fife within the last two or three years as fertilisers for Grass land, and I believe with very great benefit in most cases. There is one circumstance, however, I have noticed in connection with the use of these fertilisers, viz., that if applied to a field in which the Rye-grass predominated over the Clover, the effect produced was a remarkable growth of the former and nearly the entire disappearance of the latter; and on the other hand when the Clover predominated, the Rye-grass disappeared. If this be a general rule it proves the propriety of sowing a large proportion of Clover in those fields we intend for hay or for soiling, as it is only when there is plenty of Clover that we can expect a succession of cuttings throughout the summer and autumn.

The best time to apply guano and ammoniacal salts and the nitrates to Grass is just when spring vegetation has fairly commenced. April I find to be the best month for applying these substances, and a rainy day is always selected for the purpose, as much depends on this circumstance for giving the Grass a quick start. My experience of liquid manure as a fertiliser is so very limited and imperfect, that I do not consider myself qualified to pronounce any opinion as to its utility. All the liquid manure made on my farm is nearly absorbed by the straw-yard, and what escapes is caught upon a large compost heap placed near the outlet of the yards, but at a much lower level, and what escapes from this mixen, which is only a very small quantity, is allowed to run over a field immediately below, so that in this way I do not think there can be any very notable quantity wasted. I have tried guano partly dissolved and partly diffused through a large quantity of water as a top-dressing for Clover aftermath, but the weather being very droughty at the time, the result was not by any means satisfactory, and the experiment was not repeated.

I am strongly inclined to think that dilute solutions of nitrate of soda and sulphate of ammonia might be advantageously applied to Clover; and if spared, I shall certainly give the plan a trial next summer. A cwt. of these salts in equal proportions dissolved in 400 gallons of water would suffice for an acre. Assuming the gallon of water to weigh 10 lbs., this would give a solution containing about 3 per cent. of salts; which, so far as I am aware, would not be too strong for Grass. Of course, in wet weather, it is quite unnecessary to make solutions of nitrate of soda or sulphate of ammonia, as they are both easily dissolved by rain, or even when scattered over a moist surface; it is only, therefore, to dry weather that the suggestion refers. Before concluding these desultory remarks, I would beg leave to say that in obstinate cases of Clover failure, the only remedy is a discontinuance of its cultivation for 10 or 12 years. Happily, we have a substitute in Italian Rye-grass, which possesses all the hardiness of common Rye-grass, with the succulency and rapidity of growth which characterises the broad-leaved Clover. I have also proved repeatedly, that land which refuses to grow red Clover, will grow Cow Grass. Finally, I may mention that I have seen fields which refused to grow red Clover, the one rotation, produce an excellent crop the next—Nature thus pointing out the remedy to consist in a longer rotation of crops, thereby placing the Clover crops farther from each other.

## Home Correspondence.

*Drainage Act.*—Understanding there is a Drainage Act passing through Parliament, I venture to suggest, through the columns of the *Agricultural Gazette*, whether it may be advantageous to extend the operation of the general drainage acts to open commons, or waste lands and stunted pastures, whereon a great number of parties are entitled to rights of herbage, either unlimited or defined. In the north of England there still remain large tracts of such land, the expense of dividing and enclosing which may be too great to afford remunerative returns, but the drainage whereof may be attended with highly beneficial results. *A Constant Reader.*

*Manures: No.* I.—Although the subject of manures has been from time to time noticed in your columns, yet I think it would not be inappropriate to briefly notice, in a classified form, their nature, action, and the circumstances affecting their application. The soil is formed from the disintegration of rocks. Plants grow partly at the expense of the soil, chiefly at the expense of the air. Animals are supported by the vegetable and, through their medium, the mineral kingdom also. Some soils, peculiarly favoured, will contribute for a number of years to vegetable growth and existence, but a time will ensue when the natural fecundity of the soil will give way. To maintain the natural fertility of the soil we must add those substances in the same quantities the plant abstracted from it; to increase fertility we must add more. Therefore, any substance which restores these elements of fertility to the soil, to aid vegetable development, is called a manure. Manures may be divided into two classes—organic and inorganic; organic when derived from the remains of organised beings, as plants and animals; inorganic when produced from the mineral kingdom. Vegetable differs much in its action from animal matter. Green vegetables, when deprived of vitality, rapidly decay; their great succulency promotes it when assisted by air, facilitated no doubt by the azotised matters of the sap, which impart the putrefactive tendency, reducing the fibrous organism to carbonic acid, water, and ammonia; at the same liberating its earthy and saline ingredients. Dry vegetables decay slowly—the sap being dried up is less inclined to putrify; but how soon it commences when moistened or mixed with animal matters, as when straw is employed as litter! Peat is a vegetable manure in which decomposition is checked, not only by antiseptic matters, but chiefly by excessive moisture, and the consequent exclusion of air. Yet when dried, and mixed with animal manures or caustic lime, how speedily it moulders down! The principal supply of vegetables for manure is derived from the leaves and stems of grain crops, Grasses, the collection of weeds, the consumption of green crops, and, in some cases, of the seeds of plants. Seeds of plants are not directly used as manures, being too valuable as an article of food. Seeds contain the richest elements for fertilisation—the phosphates and nitrogenous products; hence the rich manure obtained from cattle on oilcake or Linseed grain. The refuse of some seeds is used for manure, as bran, Rape-cake, malt-dust, &c. Green vegetables are sometimes used as a cheap manure, such being cultivated as are of quick and easy growth. Corn-spurry is grown for this purpose in Germany, Lovage in Holland, Clover in America, Lupine in Tuscany and south of France; the plant possessing deep penetrating roots, a thick stem, and much leaves. Turnips sown on stubble, Turnip tops, Rape, Rye, white Mustard, are those generally employed in our kingdom. Buckwheat and Vetches have been also ploughed lightly into the soil, but such crops are either too expensive or too valuable for spring feeding purposes, to be employed. Ploughing up lea land is the most common method of green manuring in this country. Green manuring confers much benefit upon light thin soils, deficient in organic matter; it cannot increase the inorganic part, except by restoring that washed down, and which, in all likelihood, deep-rooted plants bring up. But may it not bring inert mineral substances into action, by the elements liberated from the matter undergoing decay? As weeds should be pulled before coming into flower, to prevent the formation of seed, reproduction, exhaustion of the soil, and escape of nitrogen from the flower-leaves, so ought the same method to be pursued in ploughing down lightly vegetables into the soil on which they grew, to admit air to expedite decomposition, and nitrogen to be absorbed by the decaying roots. To destroy weeds with vivacious roots, as Couch Grass, they should be mixed in alternate layers with farm-yard manure. Many imagine the pests of the farm cannot be thus extirpated; those who have tried the method can testify to its efficacy. Weeds may be placed in a heap, in a twelvemonth they will be reduced to rich vegetable earth. Sea-weed may be mixed with the weeds, or one-third of salt with two-thirds of lime will hasten their decay, and increase the richness of the compost. Weeds should never be burned, for the organic matter is thus dissipated. Peat is vegetable matter imperfectly decomposed. As a manure its value has been long recognised; as a deodoriser, it is now generally admitted. Dr. Anderson and Professor Davy have made some startling experiments on the deodorising property of dried peat. Peat is extensively employed as a manure in Ireland. The inhabitants, during the summer months, cart home the peat when it is dry in the bank, preferring the second spit of the bog, it being more pulverulent. The peat is formed into a heap in the yard, never becoming so wet again as it was. It is broken as finely as possible, strewed under and behind the cattle, placed in layers through the manure heap, made into a compost, with coral, sand, or salt; sea-weed, mixed with weeds, and then wetted with liquid manure, or sewerage waters, or mixed with guano, and drilled in with green crop seeds. The moist peat and stimulating guano conspire to the rapid growth of the young Turnip plant. For light soils peat is admirably suited; as an absorbent, it cannot be overrated. Peat manure and Potato culture are synonymous terms in Ireland. Some individuals state, peat when applied to land, engenders weeds. I have never known it to be the case, and it is questionable if the seeds of aquatic plants will vegetate in dry arable land. Peat should never be applied to land, except in a prepared state. Although charred peat has been known to every country blacksmith for years, and employed by farmers residing in the vicinity of bogs, with success, yet Mr. Rogers is indebted the thanks of the public, for having so strongly urged upon their attention the necessity of investigating its merits. Unquestionably, peat charcoal is a valuable deodoriser, and when mixed with animal substances, forms an excellent manure. I use it extensively in the cow-sheds, stable, and water-closets; and being convenient to a bog, make it for a mere trifle. Thus I prepare it. Place on their ends round a burning sod of turf, as many sods as will form the base of a cone 4 feet in diameter; pile the sods still endways on top of each other, until the sides of the cone terminate in a point. In one hour's time the heap will become one red mass, when it should be extinguished by throwing two bucketfuls of liquid manure upon it. Break the charred turf with the back of a shovel, and wheel the powder into a dry house. Any sod not completely burned in the centre, containing what is called a bone, should be thrown into the next burning heap. Two small boys will make an immense quantity of charcoal in a day. I drill charcoal in with all small seeds, which stimulates their growth exceedingly, and preserves the seed sound; keeps away insects, in consequence of the liquid manure disquieting them. Having several interesting experiments going on to test the efficacy of charcoal with any bog mould and other manures, I shall place the results before your readers at the proper time. *Libra.*

*Temperance.*—It is in vain to preach temperance to the confirmed drunkard, and at the same time offer him the means of indulging his depraved appetite. The custom, so common in most counties, of paying labourers a certain amount of wages, with an allowance of drink, is both injurious to master and servant. In the former it establishes a taste for beer and cider, which after a time must be supplied at any cost; and being thrown temporarily out of work, a score is run up at the public-house, which impoverishes the man for months, inducing him too often to follow poaching, and many other devices, not quite in accordance with the law, to enable him to live, thus destroying a previous fair character, and bringing him into trouble. Those who first put temptation in the labourer's way are to blame; hard work and a hot day make a man thirsty, yet the more he imbibes the more he will require. There can be no objection to a moderate allowance being served out at dinner and supper; but the mischievous system of drinking large quantities should be put a stop to, and an increase of wages substituted. In many cases the plan is adopted as more economical than paying an additional trifle in money on Saturday night; however, it may be classed under the head of "penny wise and pound foolish." There can be no question of the relative value of a sober and a drunken man; no matter what station of life he fills amongst agriculturists, one will perform a greater amount of labour than the other, sticking steadily to the spade or fork, whilst the toper is but a poor creature till he swallows a certain measure of beer or cider, which must be repeated at intervals, or his artificial strength fails. A few iron constitutions can, for a time, bear up against the fearful wear and tear of the system, but the most vigorous at last gives way under the stupefying influence of prolonged indulgence. It is in the power of employers, if they will take the trouble, to mitigate the sufferings of thousands, by refusing to admit the drunkard into their service, and giving encouragement to the man who conducts himself in a creditable manner. The broad line drawn between master and man is much to be regretted, as having the effect of destroying the kindly feeling which it is so advisable to keep up amongst persons who cannot get on in the world without each other. The upper and middle classes are placed in a responsible position with regard to those whom they employ; they should act towards their servants in whatever capacity, either indoors or outdoors, with kindness and consideration, not merely in the light of hired menials, but as part of the family establishment, requiring advice and instruction, and, above all, a good example. The estimate of the value of man's power to produce a certain profit, without reference to his present and future comfort, is a low view to take of a human being, who happens to have been born in a station of life compelling him to toil for his daily bread. It is of the utmost importance to the welfare of this country, that a better understanding should exist, in agricultural districts, between the farmers, gardeners, and their labourers; a desire to assist each other in cases of necessity, should predominate over every selfish consideration. Personal investigation into the manners, wants, and characters of servants, by their masters, would be productive of the most beneficial results to both parties, advancing the interests of society, and establishing a friendly intercourse between master and man, now so rarely witnessed. This should be done in a fair open manner, and not through the interference of a third party, who might be set down as a spy. Although, from long neglect, the working classes are becoming daily more estranged from those above them, yet it is not too late to do much towards bringing them back to a proper sense of their position, and rendering them more contented and happy. But as there is increased difficulty in bending a tree of certain growth, compared with a young sapling, so the task of forming the ideas of an adult is more laborious than instructing and educating youth in the right road to respectability and independence. However, something may be accomplished by perseverance, and the sooner the attempt is made the better for the country; for, with all our ingenuity and all our riches, there is something "rotten in the state of Denmark." Intoxication is not one of the least evils that afflicts the nation; go where an Englishman will, his character as a lover of strong drink precedes him. It is to be hoped that all masters, whether agriculturists, manufacturers, or independent members of the community, will endeavour to check the debasing vice of drunkenness, and thus prevent a wilful waste of health and money. The hard cash squandered away in the pot-houses, both by mechanics and labourers, would be more than enough to keep many a family from the union, if properly invested. Is it just that those who are careful, and work honestly, should be compelled to maintain the idle and reckless? Such is, however, the fact. *Falcon.*

*Protection.*—The farmer needs protection from waste of any kind, whether it be by water, by sun, by wind, by weeds, or by any want of attention or judgment. In many cases ignorance causes wasteful mismanagement; hence it may truly be said, that "knowledge is power." We have need to learn the most economical means of preventing waste in that valuable article, manure, which is almost universally wasted to a lamentable extent. We want to know how we can most cheaply and effectually aid—not supersede—the power of labour by means of machinery. In this department great progress has recently been made, and each advance is a step towards a higher one. But I must now try to turn these preliminary remarks to some definite practical purpose, by confining my observations at present to mechanical means. Let the mechanic try to produce a machine of as simple and unexpensive construction as possible, by which a Turnip or other crop may be obtained on the driest soil and in the driest season. To the thinking, practical farmer, it is evident that manure should be both concentrated and diffused, so as first to stimulate the vigour of the young plant, and afterwards supply continual food to its far-penetrating roots in a more advanced state. Hence the soil should be deeply and finely cultivated, and a small quantity of farm-yard manure carried on and covered up at a dry time. A dry seed bed is also very desirable, if moisture enough can be had just after the seed is deposited. Therefore we want a machine to drill or dibble a little dry manure in a trench or hole, cover it with a very light covering of earth, deposit the seed upon that earth, cover it up and water it. Then as soon as the young plant appears, the machine, divested of its sowing apparatus, should give the plants a slight evening shower of water, the water being enriched and medicated by infusing into each load a little chemical composition, which should accompany the machine. Or the sowing and watering machines might be entirely separate, only that the same wheels and shafts would do for both. But where is the water to be obtained? and will the expense be repaid? These are important questions, to which I answer, "Wilful waste makes woeful want." And what so valuable is so much wasted as water? Instead of suffering the springs that rise out of the hills, and the rains that fall upon them, to run direct into the valley, let all the water be carefully conducted on as high a level as possible, so as to be carried without waste into each field. In addition to this, let the mechanic contrive an economical method of raising water in large quantity to a considerable elevation. Such means as these may form a new era in agriculture, and in conjunction with deep draining of wet and even moderately dry land, and high and deep cultivation of all, enable the farmer to grow as much produce on 50 or 100 acres as is now commonly produced on three or four times as many. The farms might, by such means, be multiplied by subdivision, so as to suit the demand and ability of tenants; for it is an injury to the landlords, the tenants, the labourers, and the whole community, to suffer any man to occupy more land than he can cultivate in the most perfect manner. The study of mechanics will also suggest many other beneficial ideas. *O. F.*

*Charcoal.*—Your correspondent, John Stoveld, reminds me of the old adage, "a wise man does not know everything, and a fool knows something." Now I know this "something," that having made some hundreds, if not thousands, of tons of cylinder charcoal, I am prepared to say that I have obtained a higher price, and a preference over that made in the wood. "J. D.'s" observations about Oak coppices are perfectly correct; his hints about pruning are very judicious, and, if applied to his chemistry, would be equally so—it being too luxuriant as it stands. *W. E. Gill, Truro.*

*Heracleum sphondylium, or Cow Parsnip.*—To all persons who have thought proper, through our recommendation, to cultivate this useful British plant for cattle, and more especially for pigs and rabbits, it is but right in us to observe that now, the beginning of June, is due time to finish cutting the first crop; seed-stalks on two years old plants sometimes appear, such should all be cut and stowed away with the leaves; our own, growing from cultivated seed, is producing an abundance of food, far beyond our sanguine expectations. It is also worthy of remark that the Heracleum giganteum,

from Siberia, is not the plant above alluded to, and is of no use as cattle food, as some have supposed. It is, however, a grand ornamental plant, and worthy a place in all open sceneries. We have plants now about half-grown, free to public inspection, presenting a noble appearance, 7 feet high, with leaves 6 feet long and 5 feet broad, sending up immense shafts 27 inches in circumference. A pair, planted 2 yards apart, cover a space of 15 square yards. The Hon. Lady Matilda Moore, of West Ilsley, who first presented us with this magnificent plant, informs us that she has grown it 15 feet high, with flowers 3 feet in diameter. *Hardy and Son, Maldon, Essex.*

*The Acre.*—A correspondent in the neighbourhood of Worcestershire informs us that there, and in Staffordshire, and Shropshire, the perch is 48 yards, or 7680 yards to an acre. If worthy of notice, we now give an explanation of English statute land measure by Gunter's chain of 100 links. RULE.—To give the contents of a square plot, multiply the length by the breadth, and divide the product by 100,000, the number of square links in an acre. For an angular plot multiply the whole base by half the perpendicular, &c.

EXAMPLE OF A SQUARE PLOT.

Length 225 links
Breadth 740

9000
1575

1.66500 Acres
4 Roods in an Acre

2.66000 Roods
40 Perches in a Rood

26.40000 Perches
Acre. Roods. Poles.
Ans. 1 2 26 $\frac{40000}{100000}$

EXAMPLE OF AN ANGULAR PLOT

Base 940 links
Perp. $\frac{1}{2}$)640

320 links
940

12800
2880

3.00800 Acres
4 Roods in an Acre

.03200 Roods
40 Poles in a Rood

1.28000 Poles
Acres. Rood. Pole.
Ans. 3 0 1 $\frac{28000}{100000}$

*Hardy and Son, Maldon, Essex.*

*Award of Prizes in the Agricultural Department of the Industrial Exhibition.*—When is it expected that the prize report of the agricultural implements will be made public?—for when I go to the Exhibition I wish to have my attention specially drawn to the most deserving implements, or rather to those that will answer my purpose best, amongst the rest to a gorse bruising hand implement, which do you consider the best for a *Cottage Farmer, Hants.* [The Box bruiser made by Wedlake has had a high character given to it. We don't know when the award of prizes will be made known.]

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held on the 25th of June: present, Mr. RAYMOND BARKER, V.P., in the chair, Lord Camoys, Sir Montague Cholmeley, Bart., M.P., Mr. T. B. Browne, Mr. Buller, Dr. Calvert, Col. Challoner, Mr. Druce, Mr. T. R. Evans, Mr. Foley, M.P., Mr. Garratt, Mr. B. Gibbs, Mr. Glegg, Mr. Kinder, Col. Kinloch, Col. Le Couteur, Mr. Milward, Mr. Pendarves, M.P., Professor Sewell, Mr. Shaw (London), Professor Way, Mr. Wilbraham, Mr. H. Wilbraham, and Mr. Wilson (Stowlangtoft). The Chevalier de Masslow, Councillor of State, and Secretary of the Imperial Agricultural Society of Moscow; M. Annencoff, Secretary of the Central Society for the propagation of Merino sheep in Russia; and Mr. Bateham, of Columbus, Ohio, were also present at this meeting.

[The attention of the members was called on this occasion to a most interesting collection of presents for the Society, brought over from Moscow by the Chev. de Masslow; and to the result of extensive inquiries which the Council at a former meeting had directed the Secretary to make, in reference to the supply of native phosphate of lime from the United States, and its probable occurrence in our own country: to both of which subjects we shall revert in detail in our next publication.]

A MONTHLY COUNCIL was held on Wednesday last, the 2d of July: present, the Hon. R. H. CLIVE, M.P., Trustee, in the chair, Sir M. W. Ridley, Bart, Sir J. B. V. Johnstone, Bart. M.P., Sir M. J. Cholmeley, Bart. M.P., Sir R. Price, Bart. M.P., Mr. Raymond Barker, Mr. S. Bennett, Mr. H. Blanshard, Mr. Bramston, M.P., Col. Challoner, Mr. Druce, Mr. Foley, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Law Hodges, M.P., Mr. Kinder, Mr. Lawes, Mr. Milward, Mr. Pendarves, M.P., Prof. Sewell, Mr. Shaw, (London), Mr. Stansfield, M.P., Mr. C. H. Turner, Prof. Way, Mr. Jonas Webb, Mr. Wilson (Stowlangtoft), and Mr. Wingate.

Henry Richard Eyre, Esq., of Shaw House, Newbury, Berkshire, was elected a Governor of the Society. The following new members were elected:

Topham, Abraham, High Mowthorpe, Malton, Yorkshire.
Greenham, Frederick, Hendford House, Yeovil, Som.
Wright, T. B., Union-street, Birmingham.
Torcliffe, Thomas, Borough House, Ilfracombe, Devon.
Sawyer, Charles, Heywood Lodge, Maidenhead, Berks.
Besly, William, Dunmoor House, Bradninch, Collumpton.
Atkinson, William, Ashton Heyes, Chester.
Waters, John, Eastbourne, Sussex.
Child, Coles, The Palace, Bromley, Kent.
Busby, Henry Goodear, Moreton-in-Marsh, Gloucester.
Dent, John Dent, Ribstone-park, Wetherby, Yorkshire.
Johnson, Arthur Harry, Heathfield, Hailsham, Sussex.
Nugent, Walter, Thurloe-square, Brompton.
St. Aubyn, H. T. Molesworth, Clowance, Cornwall.
Rickard, Thomas Martyn, Devonport.
Elorza, Colonel da Francisco Maria de, Oviedo and Guipuzcoa.
Feetham, John, Great Burdon, Darlington.
Faviell, Jeremiah Bourn, Stockeld Park, Wetherby.
Melville, Alexander Leslie, The Bank, Windsor.
Darvill, Henry, Windsor.
Byers, James Broft, Strawberry Hill, Pembroke.
Maxwell, Sir John Heron, Bt., Sprinkell, Ecclesfechan, N.B.
Caird, James, Baldoon, Wigtonshire.
Williams, John, Fallowfield Lodge, Manchester.
Saxby, Thomas, Ringmer, Lewes.

FINANCES.—Mr. RAYMOND BARKER, Chairman of the Finance Committee, presented the monthly Report on the accounts of the Society, from which it appeared that the current cash balance in the hands of the bankers was 2584*l.*

WINDSOR MEETING.—Lord PORTMAN transmitted to the Council the Report of the Windsor Committee of the near and satisfactory completion of all the arrangements connected with the ensuing Country Meeting of the Society, to be held in the Home Park in the week commencing Monday, 14th inst.

LEWES MEETING.—The Council, on the motion of Colonel CHALLONER, entered into the preliminary consideration of the prizes to be offered for agricultural implements and machinery at the Lewes Meeting in 1852.

CHANNEL ISLANDS' CATTLE.—At the request of Colonel LE COUTEUR the Council directed the scale of points adopted in the Channel Islands for determining the excellence of their breed of cattle, to be transmitted to the Judges appointed by the Society in that class for the Windsor Meeting, the Council leaving it at the discretion of the Judges to make such use of that scale as they might think most advisable.

LECTURE.—Prof. WAY's next Lecture will be delivered before the members on Wednesday next, at 12 o'clock: "On the Agricultural Employment of Lime."

## Farmers' Clubs.

NEWCASTLE: *February Meeting.*—JAMES KIRSOPP, Esq., J.P., of the Spital, near Hexham, read a paper, entitled "A Review of Some of the Difficulties which Landlords and Tenants have to encounter in the proper Cultivation of the Soil."

One of the giant evils which the landowners of the present day have to contend with, and which appears to receive little attention, is the state of the law relative to real property, or more particularly that portion of it which relates to the law of entail. In a long series of years the English aristocracy have delighted in extravagance and expense of all kinds, and after a life spent in that way, have strictly entailed their estates, so that in consequence of the present proprietors having to support the family mansion, and to pay the interest of debt out of their present diminished rents, they have not in reality the money to carry out those improvements which are so requisite for the prosperity of agriculture. It is a well-established rule in agricultural matters, that no tenant can do justice to his land unless his landlord will give him a lease for 19 years, or thereabouts; that he cannot, as a prudent man, lead materials for buildings and put his land into a good state without having a certainty of tenure; how, then, allow me to ask you, can a landlord who holds an entailed estate, and who, owing to bad health or advanced years, expects the lease of his life to expire every day—how can such a man be reasonably asked to incur the larger expense of building and draining, when, in reality, his *own* lease of the estate is much shorter (because so much more uncertain) than the tenant's? I am perfectly well aware that a partial but insufficient remedy is provided for such cases by the Drainage Act, which enables landlords to borrow money of Government, paying 6*l.* 10*s.* per cent. for the same for 22 years, after which all payments cease; and we constantly hear this act extolled as a boon to the agricultural interest, and we hear intelligent people say, "Oh, borrow money of Government, and your tenant will pay you 5*l.* per cent., so that you will only have to pay 30*s.* per cent., and so get your land drained so cheap!" But stay and reflect a moment, and look at both sides of the picture, before you indulge in so much praise of the act. In the first place, if a landlord is required to pay 6*l.* 10*s.* per cent. for borrowed money, an insupportable burden is added to his present debts, which is quite sufficient to ruin him; for what consolation is it to a man who now requires money, and is in difficulties, to reflect that 22 years *hence*, these payments will cease, and his land be improved? If no better remedy than this can be found, he is to be pitied indeed. But even suppose a tenant agrees to pay 5*s.* an acre more for his land when drained, he will very soon require a reduction of 5*s.* an acre, in consequence of low prices; so that the landlord is just in the same state as he was, with the pleasing reflection that he has an annuity of 6*l.* 10*s.* per cent. to pay to Government. Suppose, for instance, a tenant pays 300*l.* per annum for rent, and the landlord agrees to spend 1000*l.* in draining, for which the tenant agrees to pay 50*l.* a year. The rent of that farm, in truth and in fact, is 350*l.*; and no landlord can impose upon an intelligent tenant by calling the 50*l.* interest money; for if the tenant has to pay the amount, the name of it is of little consequence. Another difficulty which landlords meet with is, that they are not, generally speaking, practical farmers; the consequence is, that they cannot see the wants of their tenants and provide for them. When a landlord possesses practical knowledge, the tenants and land are always better taken care of, because the real wants of a tenant are seen in a moment, and remedied if possible, and the slovenly and dishonest tenant is checked by knowing that his tricks will soon be exposed.—Now that I have called attention to a few of the difficulties of a landlord, let us review shortly the difficulties of tenants. In the first place, the great competition which existed at one time for farms, and the system of letting by proposal or auction, induced many farmers to bid more than they valued the land at, in the hope that, when once in possession, they could effect a reduction. The consequence produced was, that disappointment, bad farming, and arrears of rent soon made their appearance. Insufficient capital is also a difficulty which tenants have to regret. Professor Low, of the University of Edinburgh, says "that a tenant should have 6*l.* an acre capital, if he wishes to do well;" and other writers think he should be able to command even more; but, if we look around, how many do we each know who cannot boast of any such sum! The consequence is, that they are compelled to sell their produce at a loss, when by keeping it a larger price might be realised.—Nothing adds so much to a farmer's prosperity, as his having at all times at his door an abundant supply of skilful and cheap labour; but the farmers are in a great measure deprived of this advantage by the old and cruel law of settlement, as it exists at present in this country. The gentlemen whom I now address are too well aware of the nature and working of this law, of the hardships it inflicts on the real poor, to make it requisite for me to enter into details, further than by saying that this law ought to be entitled "An Act for driving the Poor out of the rural districts, and compelling them to go and reside amid the haunts of vice and immorality in large towns."—I shall now proceed to consider a few of the remedies which are required to bring the landed interest to a healthy state. It is always a much more easy task to point out a difficulty than to suggest a safe and prudent remedy; but the only way to arrive thereat is to discuss frequently such matters, and bring them before the public view. Nothing could confer on the landed interest so much advantage as power being given to the owners of encumbered estates to sell a portion thereof for the purpose of paying off debts. Such a relief would confer present advantage on the landowners themselves, as well as on the labouring poor, by giving them a greater abundance of work; for nothing is so injurious to the country at large as a pauper aristocracy; nor would any injustice in reality be inflicted on the heirs to the property; for a small property, free from debt, would be as valuable as a larger one incumbered with debt. Landlords who have the power to break the entail of their estates should always exercise that power, so far at least as to free it from debt. They should also look more closely to their present expensive establishments, and introduce stringent reforms therein; they should, moreover, look more closely into their own affairs, and become more men of business, and not leave their affairs so entirely to agents and others; for it is only by energetic means of this kind that the owners of the soil can continue such; for if pleasure and amusement be allowed to engross too much of their time, ruin and distress must soon overtake them, and their places be filled by those who, by attention to commerce, have raised themselves to wealth and influence. Mortgage debt, as I have already pointed out, is the monster evil which landlords have to encounter: it is this which keeps their heads under water, and prevents them from exercising that beneficial influence which otherwise would be of such essential service to the lower classes. But how, you will ask me, has it happened that so many of the larger estates are mortgaged and burdened with debt? For a number of years the system which is now found to be so injurious has been as follows:—When the owner of, or heir to, an estate, is about to marry, he, generally speaking, receives the lady's fortune, which is expended in liquidating debts which youth, folly, and bad company had entailed upon him; and at the time he charges his estate with a jointure for his intended wife and portions for her younger children. It is very easy to see the injurious effects in which this killing process must at last involve the estate. This plan is what lawyers very modestly term resettling an estate; they would be much more correct if they would call it unsettling the estate, for sooner or later it will no doubt have that effect.

## Review.

*Delineations of the Ox-tribe; or the Natural History of Bulls, Bisons, and Buffaloes. Exhibiting all the known species, and the more remarkable varieties of the genus Bos.* By George Vasey. Illustrated by 72 Engravings on Wood by the Author. G. Biggs, 421, Strand.

THIS work will interest the naturalist more than the farmer. It relates to the science—the zoology of the subject, rather than to its economics. But the former ought not to be disregarded, even by those to whom the latter is of the most concern. It would be but a poor compliment to the agriculturists of England to suppose them capable of interest in only the money-making aspect of their profession: and the detail of what is known regarding a genus of animals, to which they owe so much, will surely still preserve their attention, even when it departs from the particulars to which the mere breeder and feeder of stock devotes himself.

Mr. Vasey's work is fully illustrated by wood engravings; some of the cuts we cannot speak very well of; those, for instance, of the short-horn, Hereford, and Highland breeds are obviously incorrect; and of many of the others we are unable to give an opinion. The descriptive part of the work seems written with the fulness and confidence of an actual observer, and is probably trustworthy. Mr. Vasey has, however, unfortunately had the bad taste, as we consider it, to travel out of his way in order to criticise with sarcastic severity the descriptions of naturalists of acknowledged eminence; and his own performance will therefore doubtless have to stand a closer and less kindly criticism than it would otherwise have received. His work would have been equally satisfactory, and his authorship would have left a more agreeable impression on the minds of his readers, if the appendices on "the indefinite definition of Col. Hamilton Smith," and "Mr. Swainsons' transcendental attempt at classification" had been omitted.

METEOROLOGICAL REPORT.—JUNE.
(*Continued from pages* 413, 414.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| June 24 | 11.40 a.m. | 30.18 | ... | 11.40 A.M., breeze sprung up at SSW., and barometer receded. 1.30 P.M., wind SW., increasing. |
| | 10.20 p.m. | ... | 30.18 | Brisk breeze, barometer and wind steady till night. |
| 25 | 7 a.m. | 30.18 | ... | SW. all day. Moderate; hot sunny clear day. |
| | 9 p.m. | ... | 30.18 | |
| 26 | 6.5 a.m. | 30.14 | ... | SSW. Light winds; cloudless hot day. Dense fog at 6 A.M. |
| | 10 p.m. | ... | 30.08 | |
| * 27 | 6 30 a.m | 30.02 | ... | A.M. ESE. to SSE. Moderate breezes; hot sunny day. P.M. SE. to ESE. 6 P.M. ENE., 10.20 NE. Barom. steady; thermometer on a stick in garden, clear of all reflected heat, rose from 60° at 6 A.M. to 102° at 10 A.M., and to 104° at noon. |
| | 10.20 p.m. | ... | 30.02 | |
| 28 | 7 a.m. | 30.03 | ... | A.M. NE., P.M. ENE. Another hot cloudless day, but less oppresive; a brisk breeze all day. |
| | 1.30 p.m. | 30.03 | ... | |
| | 4.30 p.m. | ... | 30.01 | |
| 29 | 10.50 a.m. | 30.01 | ... | ENE. all day. Moderate, increasing P.M. Bright warm day. |
| | 10.20 p.m | ... | 30.01 | |
| 30 | 6 25 a.m. | 30.60 | ... | ENE. Gentle breeze, thin fleecy clouds; sunny day. |
| | 1.40 p.m. | ... | 29.99 | |

* This storm came from the westward, and travelled eastward, over France; after it had passed the meridian of England the temperature fell.

Dorchester, July 3d. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Patent dated December 7th*, 1850.—Alexander Main, of Glasgow, accountant, for certain improvements in treating the fleeces of sheep, when on the animals (a

communication from the late James Smith, of Deanston, Perth). "The invention consists in dipping the sheep into a succession of chemical solutions, so as to obtain an insoluble, or sparingly soluble, and water-repellant coating to the fibres of wool; thus increasing the warmth and promoting the health of the animal, and at the same time, rendering the wool better suited for manufacturing purposes. The bath in which the sheep are first dipped is composed by dissolving 20 lbs. of alum in 4 gallons of boiling water, and diluting to 40 gallons. The second bath consists of 31 lbs. of soft or black soap, dissolved in a like quantity of water; and these baths will be sufficient for 100 sheep. The dipping, for which three persons will be required, two to hold the sheep, and the third to keep its head out of the solution, is recommended to be performed in a vessel of about 4 feet long, 2½ feet deep, and 2 feet wide, and capable of holding about 20 gallons; the sheep being allowed to dry between each successive dip. Arsenic or sulphur, to prevent the attacks of flies, &c., may be added to the above solutions if thought necessary. Claim. The application of chemical solutions, suitably prepared to obtain, when used in succession, an insoluble or sparingly soluble and water-repellant coating to the fibres of wool, when on the animal." *Mechanics' Magazine, June* 14.

## Notices to Correspondents.

BONE-DUST: *A Young Farmer.* It is useful on lands light enough to permit the weather to rot it, and on lands poor enough in phosphoric acid to benefit by the addition of that substance. Many lands are too stiff, few lands are too rich to benefit by bone-dust. Superphosphate is generally good for Grass lands. Spread it mixed with ashes in quantity enough to enable you to spread 3 cwt. per acre evenly. Iodine as a stimulator to germination is a proper subject for a *parlour* experiment. Unfortunately we have no information on the subject. Chlorine has been found to have that effect.

DEAD CHICKENS: *Anon.* The cause of chickens being found dead in the shells, fully formed, is attributable either to misconduct on the part of the incubator, or to defective vitality in the eggs, which may be ascribed to the fault of the cock, or of the hen, or to staleness in the eggs themselves.

GAS LIME: *A Young Farmer.* It is useful after long exposure to the air, which converts some of it into gypsum. Make it into a compost with any light vegetable refuse, turn it frequently, and use a ton per acre.

ITALIAN RYE-GRASS: *A Sub.* It will not last satisfactorily beyond the first year.

POTATOES: *W C.* The only advantage of earthing them up is that they are more easily dug in October.

SOAP ASHES: *A K Smith* You may expose them for a month or two and turn them in the heap repeatedly, and then spread them broadcast over plough or pasture land, at the rate of 20 or 30 cwt. per acre. If you use them on pasture, they had better be mixed with earth in a compost first.

SUPERPHOSPBATE: *G M.* It may be mixed with *old* ashes without injury.

TO PROTECT EARLY POTATOES: *X A* asks, "Would it probably answer to sow Rye early in July, at 2 feet distance between the rows, to be interlined in February with early Potatoes? The object being to protect the Potatoes from the spring frosts—the Rye to be cut green, beginning with alternate rows, as soon as danger from frost is at an end, say in the first half of May. Would any other grain answer the purpose better than Rye?" [Rye would be the best grain for this purpose. This idea is worth trial.]

EBBATUM: *W S.* For "Imitation wood," in this section of the Paper last week, read "Imitation woad."

# Markets.

## COVENT GARDEN, JULY 5.

Trade remains steady, and the market is well supplied with all kinds of Fruit and Vegetables in season. Peaches and Nectarines continue to be sent in large quantities. English Pines and Hothouse Grapes are plentiful and good. Strawberries from the open ground are now in good demand, and the supply is abundant. Cherries are furnished in large quantities, more especially from Kent. West Indian Pines fetch from 2s. to 5s. each. Oranges and Lemons are plentiful. Nuts remain nearly the same as quoted last week. Asparagus, young Carrots, French Beans, and Green Peas are received in quantity. New Potatoes may be obtained at 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are dearer. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Pinks, Moss and Provins Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 5s to 8s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 3s to 7s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 10s to 20s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 10s to 20s | Oranges, per doz., 9d to 2s |
| Cherries, per lb., 6d to 2s | — per 100, 6s to 14s |
| Melons, each, 4s to 8s | — Seville, p. 100, 7s to 14s |
| Strawberries, p. pottle, 6d to 1s | — — p. doz., 1s to 2s 6d |
| Gooseberries, per half sieve, 5s to 7s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, per hf. sieve, 5s to 7s | — Brazil, p. bsh., 12s to 14s |
| | Cobs, per 100 lbs., 50s to 55s |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Cauliflowers, p. doz., 1s 6d to 3s | Garlic, per lb., 4d to 8d |
| French Beans, p. 100, 1s to 2s | Artichokes, per doz., 1s to 2s |
| Beans, per sieve, 2s to 2s 6d | Lettuce, Cab., p. score, 4d to 9d |
| Peas, per sieve, 2s to 4s | — Cos, per score, 3d to 1s |
| Asparagus, per 100, 1s to 4s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 2d to 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Potatoes, per ton, 90s to 200 | Red Beet, per doz., 1s to 4s |
| — per cwt., 4s to 8s | Mushrooms, p. pot., 1s to 2s |
| — per bush., 1s 6d to 3s | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. bunch, 3d to 6d | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Thyme, per bunch, 2d to 3d |
| — Turnip, p. doz., 8d to 1s | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 2s | — Roots, p. bundl. 9d to 1s |
| Carrots, per bunch, 4d to 6d | Mint, green, per bunch, 4d to 6d |
| Spinach, per sieve, 1s 6d to 2s | Basil, green, p. bunch, 6d to 9d |
| Vegetable Marrows, per doz., 1s to 2s | Marjoram, green, do., 6d to 9d |
| | Watercress, p. 12 bunch., 6d to 9d |
| Onions, p. bunch, 2d to 6d | Corn Salad, p. hf. sieve, 1s to 1s 6d |
| Leeks, per bunch, 3d to 4d | |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 3.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Clover ... ... ... | 75s to 95s | |
| Inferior ditto ... | 56 | 63 | New do. ... ... ... | 60 | 75 |
| Rowen ... ... ... | 55 | 65 | Straw ... ... ... | 26 | 30 |
| New Hay ... ... | 55 | 70 | | J. COOPER. | |

The supply short.

CUMBERLAND MARKET, July 3.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 84s to 90s | | Interior ... ... ... | 75s to 84s | |
| Inferior ditto ... ... | 60 | 75 | New Clover ... ... | 68 | 80 |
| New Hay ... ... | 65 | 72 | Straw ... ... ... | 28 | 30 |
| Old Clover ... ... | 88 | 95 | | JOSHUA BAKER. | |

### HOPS.—FRIDAY, July 4.

Messrs. Pattenden and Smith report that the market continues firm. The late rains have washed away some of the honey dew, but the vermin continues very strong in most parts, with the exception of Worcester.

COAL MARKET.—FRIDAY, July 4.

Hollywell, 13s.; Eden Main, 13s. 3d.; Howard's West Hartley, 12s. 6d.; Wallsend Haswell, 14s. 6d. to 14s. 9d.; Wallsend Gosforth, 13s.: Wallsend Stewarts, 14s. 6d.; Wallsend Tees, 14s. 6d.—Ships at market, 177.

SMITHFIELD, MONDAY June 30.

We had a short supply of Beasts, but the weather being warm buyers were scarce; consequently, on the average, it was difficult to advance prices; however, for something choice and not too heavy, 3s. 6d. was obtained. The number of Sheep and Lambs, although not so large was fully sufficient for the demand. In a few instances rather higher prices were realised, but it was difficult to effect a clearance. Calves were rather more in demand, at a small advance. Lamb was more readily disposed of, but not much alteration in price. From Holland and Germany there are 296 Beasts, 3690 Sheep, 189 Calves; from Spain, 120 Sheep; from France, 30 Beasts; from Scotland, 200 Beasts; from Norfolk and Suffolk, 1800; and 250 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | to 3 | 8 |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn ... ... | | | | |
| 2d quality Beasts | 2 | 6 | — 2 | 10 | Ewes & 2d quality | 2 | 8 | — 3 | 0 |
| Best Downs and Half-breds | 3 | 8 | — 4 | 0 | Ditto Shorn ... ... | | | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 4 | 4 | — 5 | 0 |
| | | | | | Calves ... ... | 2 | 8 | — 3 | 8 |
| | | | | | Pigs ... ... | 2 | 4 | — 3 | 4 |

Beasts, 3156; Sheep and Lambs, 30,690; Calves, 380; Pigs, 410

FRIDAY, July 4.

We are but moderately supplied with Beasts; the weather being cooler they are readily disposed of at a small advance. We cannot quote 3s. 8d., still it is nearly reached, and also 3s. 6d. for Short-horns. The number of Sheep and Lambs is considerable; the demand has, however, increased, and prices on the average are rather better. Calves, although plentiful, are rather dearer. From Germany and Holland we have 105 Beasts, 1052 Sheep, and 252 Calves; from Scotland, 80 Beasts; and 75 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 6 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... ... | | | | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds | 3 | 8 | — 4 | 0 | Ditto Shorn ... ... | | | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 4 | 6 | — 5 | 0 |
| | | | | | Calves ... ... | 3 | 0 | — 4 | 0 |
| | | | | | Pigs ... ... | 2 | 6 | — 3 | 6 |

Beasts, 906; Sheep and Lambs, 14,880; Calves, 693; Pigs, 395.

MARK LANE.

MONDAY, JUNE 30.—The supply of Wheat from Essex this morning was small, but fair from Kent; the greater part of the former remains unsold, although offered at a decline of 2s. per qr.: the latter was chiefly disposed of at a reduction of 1s. to 2s. per qr. upon the prices of this day week. There was a moderate country demand for the ordinary descriptions of foreign, but holders not being inclined to comply with a greater reduction than 1s. to 2s. from the highest terms lately realised, only a trifling business resulted. There is no alteration in the value of Spring corn; all descriptions are in good request at fully Monday's quotations. Flour is the turn lower.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 40—45 | Red ..... | 36—40 | |
| — — fine selected runs... | ditto | 44—48 | Red ..... | —42 | |
| — — Talavera ..... | | — | | | |
| — Norfolk, Lincoln, & York... | White | — | Red ..... | — | |
| — Foreign ..... | | 35—50 | | | |
| Barley, grind. & distil., 22s to 25s... | Chev. | 27—32 | Malting . | 24—27 | |
| — Foreign... grinding and distilling | | 22—26 | Malting . | — | |
| Oats, Essex and Suffolk ..... | | 20—23 | | | |
| — Scotch and Lincolnshire... | Potato | 23—26 | Feed ..... | 21—24 | |
| — Irish ..... | Potato | 19—24 | Feed ..... | 19—22 | |
| — Foreign .....Poland and Brew | | 21—23 | Feed ..... | 19—22 | |
| Rye ..... | | 24—26 | Foreign . | — | |
| Rye-meal, foreign..... | per ton | — | | | |
| Beans, Mazagan ... ..27s to 30s... | Tick | 28—31 | Harrow . | 28—31 | |
| — Pigeon.....29 — 34... | Winds | — | Longpod | — | |
| — Foreign ..... | Small | 22—30 | Egyptian | 24—25 | |
| Peas, white, Essex and Kent..... | Boiler | 24—27 | Suffolk.. | 27—29 | |
| — Maple.....27s to 29s ..... | Grey | 24—25 | Foreign . | 25—32 | |
| Maize ..... | White | — | Yellow ... | — | |
| Flour, best marks delivered ...per sack | | 34—39 | | | |
| — Suffolk ..... | ditto | 27—34 | Norfolk . | 27—34 | |
| — Foreign ..... | per barrel | 20—23 | Per sack | 28—34 | |

FRIDAY, JULY 4.—The arrivals of Wheat since Monday have been moderate, of Oats good. The greater part of the English Wheat left over from Monday remains unsold, a small proportion only having been sold at a decline of fully 1s. per qr. Business in foreign is extremely limited, and vessels with difficulty cleared at a similar reduction.—Barley, Beans, and Peas are unaltered in value.—Oats are a slow sale at a decline of 6d. to 1s. per qr.—Flour continues very unsaleable.—In floating cargoes of grain from the Mediterranean there is little doing, with the exception of Maize, which is more inquired after.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| May 24..... | 38s 8d | 24s 1d | 19s 5d | 24s 7d | 29s 2d | 26s 1d |
| — 31..... | 39 3 | 24 1 | 20 0 | 26 9 | 29 7 | 27 5 |
| June 7..... | 39 6 | 24 4 | 20 8 | 23 5 | 30 11 | 26 10 |
| — 14..... | 39 11 | 24 6 | 20 1 | 26 1 | 30 10 | 28 6 |
| — 21..... | 40 7 | 24 4 | 21 4 | 28 0 | 30 5 | 27 6 |
| — 28..... | 42 4 | 25 2 | 22 3 | 28 11 | 32 1 | 29 2 |
| Aggreg. Aver. | 40 0 | 24 5 | 20 7 | 26 3 | 30 6 | 27 7 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES.— | MAY 24. | MAY 31. | JUNE 7. | JUNE 14. | JUNE 21. | JUNE 28. |
|---|---|---|---|---|---|---|
| 42s 4d | ... | ... | ... | ... | ... | ... |
| 40 7 | ... | ... | ... | ... | ... | ... |
| 39 11 | ... | ... | ... | ... | ... | ... |
| 39 6 | ... | ... | ... | ... | ... | ... |
| 39 3 | ... | ... | ... | ... | ... | ... |
| 38 8 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JULY 1.—The arrivals from Ireland and coastwise during the past week have been quite insignificant, those of foreign moderate. At this day's market there was a thin attendance of the town and country trade, who for the most part, went away without making a purchase. Wheat may be quoted fully 4d. per 70 lbs., and Flour 1s. per sack, and 2s to 2s. 6d. per barrel lower, at which decline, towards the close of the market, several parcels of the latter article changed hands on speculation. Oats and Oatmeal were scarcely inquired for, and decline ½d per 45 lbs. and 6d. per load. Barley, Beans, and Peas were quite neglected, and nominally 2d. per 60 lbs. and 6d. to 1s. per qr. lower. Indian Corn met with little inquiry, although fine American yellow could have been bought fully 1s. per qr. cheaper than on this day se'nnight.——FRIDAY, JUNE 27.—This is the first week we have had of really summer weather, and, as a natural consequence, we have less spirit in the corn trade. The arrivals of grain and Flour since Tuesday are to a good extent, but the consumptive demand is greater. So far, there has been very little business here of a speculative character. The business at our Corn Exchange this day was limited, and the general quotations were more nominal than otherwise. Holders might have conceded slightly if buyers to a moderate extent had appeared.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London.

No Agents.—All orders are particularly requested to be sent direct.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

DR. NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS. These Patents having been withdrawn from a firm under the name of DUFAUR and Co., in consequence of the unsatisfactory manner in which the inventions have been carried out, and the imperfect state in which the implements have been manufactured, have been assigned to Mr. GABRIEL, C.E., &c., of the Surrey Chambers, Arundel-street, Strand, London; agriculturists are informed that specimens of the Implements, viz.—The Hand Cultivators, Dibbles, Hand and Horse Drills, Manure Distributors, single-horse Ploughs, &c., can be seen there, as well as in the Agricultural Implement Department in the GREAT EXHIBITION, HYDE PARK. N.B. The Patent Dibble obtained the Prize awarded by the Royal Agricultural Society at Norwich, in 1849. Improvements have recently been made in the Drop Drills and Manure Distributors; they are lighter, can be turned round with ease, and there is a contrivance for stopping the escape of the seed at pleasure.—Catalogues, with engravings of the Implements, and numerous Testimonials, can be obtained upon application at the Surrey Chambers, Arundel-street, Strand, London.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This Cooking Apparatus possesses greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus. B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. May be seen in daily use at the Craven Hotel, Craven-street, Strand; Stevens' Hotel, Bond-street; Greenwich Hospital; University College Hospital; and is in use by upwards of 200 private families, and at the Manufactory, 130, Fleet-street, London. A prospectus can be forwarded upon application, detailing particulars and price.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

BOTANICAL AND OTHER BOOKS OF THE LATE DR. GARDNER.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY next, the 11th inst., at 12 for 1 o'clock, the LIBRARY OF BOOKS of the late GEORGE GARDNER, Esq., Director of the Royal Botanic Gardens, Ceylon, comprising a general collection of Works on Natural History, but chiefly on Botany, by most of the modern authors of repute.—May be viewed on the day prior and morning of sale, and Catalogues forwarded on application.

BROOK STREET, CLAPTON.—Erection of nearly New Greenhouses, Greenhouse Plants, Under-duty Pony, Four-wheel Chaise, Two Carts, Harness and Effects.

MR. RICHARDS will Sell by Auction, on the Premises, Brook-street, between Stoke Newington and Clapton, on THURSDAY, July 10, at 12 o'clock, by order of the Proprietor (quitting the Premises), a nearly new Greenhouse, 21 feet by 12, and two others; 500 Plants in Pots, comprising Double Camellias, Geraniums, Roses, Heaths, Shrubs, &c.; Garden Tools, Double and Single Van Harness, Brewing Utensils, Useful Materials, &c. &c., on view.—Catalogues on the Premises, and of the Auctioneer, Tottenham, Middlesex.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

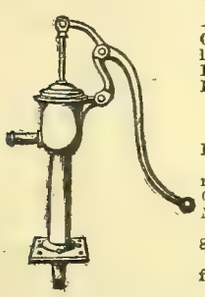
Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET, Tithe Free, for a term of 8 or 12 years, a good Arable and Stock Farm, of 280 Acres, in a ring fence, within 4 miles of a Railway Station and a River Thames Wharf, and 43 miles from London, and 8 miles from an important Market town.—For particulars apply by letter, in the first instance, to Mr. WM. CHESTER, Hazelbeach, Northampton.

TO NURSERYMEN, FLORISTS, AND MARKET GARDENERS.—NORTH-END, FULHAM.

TO BE LET, 5 acres of WALLED GARDEN, with immediate possession. Ground well stocked with Trees and Bushes, and a very large stock of Moss and China Roses. The Land in good condition, and has thereon a Grapery, about 60 or 70 feet long.—For particulars, apply to Mr. ATWOOD, Auctioneer and Land Agent, Mortlake, Surrey; or at the "Rainbow," King-street, Covent-garden; and at HANDCOCK and YOUNG'S, 20, Tokenhouse-yard, City, back of the Bank; or at Mr. RUTTY'S, near the "Seven Stars," North-end, Fulham.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0
Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

MODELS OF FARM BUILDINGS IN THE GREAT EXHIBITION.

The *Times* of Wednesday last, has the following observations:—"Among miscellaneous contributions, the models of farm-buildings are worthy of particular attention. The want of accommodation in this last respect is perhaps the greatest evil of our present agricultural system. Go where you like, you rarely see substantial and well-arranged homesteads, and, generally speaking, there is a complete absence of a decent provision for the farmer's stock. We are glad to find in the Exhibition, contributions which are likely to be of service in this matter—if not by suggesting new and valuable ideas, at least, by directing attention to a point which is every day becoming more important." Among these models is one from Mr. John Baxter, of the *Sussex Agricultural Express*. Lewes, and Oaklands Farm, Ringmer, which, from its inexpensive character in erection, and excellent adaptation to the economising of labour in farm-yard management, has attracted the especial attention of those who aim at practical usefulness, rather than saving of labour by the application of expensive machinery. Farms of from 50 to 300 acres, will not find steam generally available, and what is wanted is a good system of farm-buildings for these establishments; and for these Mr. Baxter's models seem eminently calculated. We are glad to find that full details of his models, with diagrams, have been added to "Baxter's Library of Practical Agriculture," which popular work is now re-issued, and in the hands of the London Publishers, Messrs. Simpkin, Marshall, and Co., Stationers'-court, and Mr. Ridgway, Piccadilly.

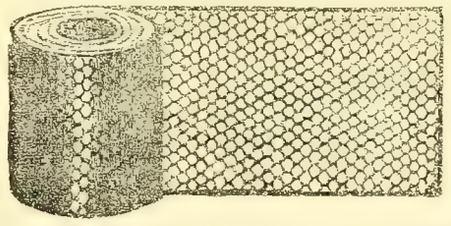
BAXTER'S LIBRARY OF PRACTICAL AGRICULTURE, in 2 vols., imperial 8vo., 3*l*.

[Also from *Bell's Weekly Messenger*, June 23.]

AGRICULTURAL FARM BUILDINGS.—Whatever may be the difficulty which we experience, under the present circumstances of agriculture, in directing the attention of our readers to plans or experiments which involve an additional outlay of capital, we cannot forbear calling to their notice the various models of farm buildings now on exhibition at the Crystal Palace. We do so, because we are sure that an alteration in this part of the economy of the farm has become almost a matter of absolute necessity, and also because we believe that it is only necessary for the subject to be placed before the great body of landlords throughout this country in a proper light, to induce them to meet the necessities of the times, either by erecting suitable farm buildings, or remodelling the present ones in a manner which experience has proved to be more advantageous to the tenant, and which must consequently be promotive of the interest of the landlord. Among the models which will well repay a careful examination, we may specially mention those designed by Mr. J. Baxter, of Lewes, and Oaklands Farm, Sussex, a gentleman whose practical acquaintance with agriculture is well known to many of our readers. These models have elicited the approbation of some of the most experienced farmers, and are highly spoken of by those most competent to form an opinion on the subject. We are glad to find that a full description of them, illustrated by diagrams, has been appended to the new edition of "Baxter's Library of Practical Agriculture," a work which justly ranks among the most useful to be found in the walks of modern agricultural literature.

Every gentleman connected with land, who does not already possess a copy of the above work, should avail himself of the present opportunity, for but few copies are left on hand.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



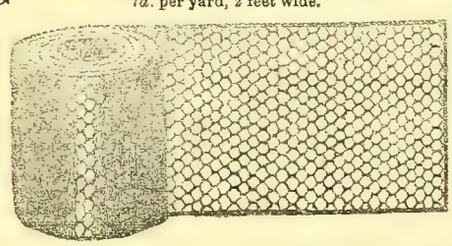
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| Chives | Mustard | Summer Savory |
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| Budding upon body | Sap-bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
| Bud, preparation of, for use | Shoots and buds, choice of | Grafting, disadvantage of |
| Buds, dormant and pushing | Shoots for budding upon, and their arrangement | Operation in different months |
| Buds, failing | Shoots, keeping even, and removing thorns | Preliminary observations |
| Buds, securing a supply of | Shortening wild shoots | Roses, catalogue and brief description of a few sorts |
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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 28—1851.] SATURDAY, JULY 12. [PRICE 6*d.*


INDEX.


Acre, the ..... 445 *b*
Asparagus, to cut ..... 440 *b*
Birds, British song..... 436 *c*—438 *a*
— and Gooseberry trees.... 438 *c*
Botanical Society of Edinburgh .... 438 *c*
— — of London..... 439 *a*
Calendar, Horticultural ..... 439 *c*
— Agricultural ..... 446 *b*
Cattle feeding ..... 444 *b*
Cheltenham Hort. Soc..... 437 *b*
Chemistry, agricultural ..... 441 *b*
Crystal palace..... 438 *a*—441 *c*
Currants ..... 438 *c*
Draining ..... 444 *c*
— by machinery ..... 446 *a*
Drunkenness..... 444 *a*
Entomological Society..... 439 *a*
Farming, cost of..... 445 *c*
— and protection ..... 444 *b*
Farm implements ..... 441 *c*
Flax..... 445 *b*
Fowls, to mark..... 444 *b*
Frosts, spring ..... 436 *a*
Fruit, to gather ..... 439 *c*
— and spring frosts ..... 436 *a*
Gardens, London..... 437 *c*
— to water ..... 438 *b*
Garden gleanings, foreign .... 437 *a*
Gardening, kitchen..... 437 *c*
Glazing, new mode of ..... 437 *c*
Gooseberries..... 438 *c*
Grape mildew ..... 438 *b*
Gypsum ..... 446 *a*
Haymaking ..... 445 *b*
Insects, destructive ..... 437 *c*
Iron, paint for ..... 437 *b*
Landed property, transfer of .. 442 *c*
Lane's (Messrs.) nursery..... 439 *b*
Larch, rot in..... 435 *a*—438 *b*
Law, transfer of landed property..... 442 *c*
Liebig and English farming .. 443 *a*
Mangold Wurzel and Turnips 445 *a*
Manure, artificial..... 435 *b*
Mildew..... 438 *b*
National Floricultural Soc... 438 *c*
Naturalist, by Dr. Morris, rev. ..... 439 *a*
Orchids for the Million..... 437 *b*
Paint for iron..... 437 *b*
Paris, gardens around ..... 437 *a*
Parrots, disease in ..... 438 *b*
Peaches, to force ..... 437 *c*
Poultry ..... 445 *a*
Probus Farmers' Club — Rape ..... 445 *b*
Rape ..... 445 *b*
Roses, new..... 439 *b*
Royal Botanic Society ..... 438 *c*
Seed trade ..... 437 *c*
Strawberries, early and late .. 440 *c*
Tar paint..... 437 *b*
Turnips and Mangold Wurzel.. 445 *a*
Vegetables for different soils.. 440 *c*
Victoria Regia ..... 439 *b*
Watering..... 438 *b*
Wood in season ..... 445 *b*


SCOTTISH GARDENERS AND LAND STEWARDS' ASSOCIATION.—At the Annual General Meeting of the Association, held on the 28th ult., ARCHIBALD SCOTT, Esq., in the Chair, it was resolved that THREE PENSIONERS be placed on the roll at the ensuing Election—that the time for applicants to send in their claims be extended to 1st August ensuing, and that the Election take place on the 28th of the same month.

CHARLES LAWSON, junior, HON. Sec.

*** Forms of application for Candidates may be obtained of the Secretary, 1, George IV. Bridge, Edinburgh, ; of Mr. THOMSON, Secretary to Glasgow Board, Trongate, Glasgow ; and of Mr. SOMMERS, Secretary to the London Board, 159, Fenchurch-street, London.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, 3 miles from London, informs his kind patrons in general that his unrivalled collection of Roses reaching to nearly 1000 varieties, is now in bloom, and free to the inspection of all visitors, Sundays excepted. Orders taken at this time, and executed in November next. Fruit and Ornamental Trees, &c., may also be seen in great varieties.

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NEW AND CHEAP PLANTS SENT OUT THIS SPRING.

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CARNATIONS AND PICOTEES.

C. TURNER'S extensive collection of the above beautiful flowers are now in full bloom, and may be viewed (Sunday excepted), till the end of the month. Parties visiting the Great Agricultural Show, at Windsor, will find ready conveyance by Great Western Railway or omnibus.

Royal Nursery, Slough, July 12.

THE SUBSCRIBER ceased (in terms of the Contract), to be a Partner of the Firm of JAMES DICKSON and SON'S Nursery, Seedsmen and Florists in Edinburgh, on the death of Mr. James Greig, on 25th December, 1850.

JAMES ALEXANDER.

3, Warriston-place, Edinburgh, 1st July.

J. RIVERS'S LARGE YELLOW STONE TURNIP SEED, is particularly recommended for very late sowing; it is much superior to any known variety of Yellow Turnip, for quickness of growth in its young state, hardiness in withstanding the winter, and keeping in the clamps until late in the spring, and for growing to a greater weight per acre. It originated from a cross between the Stubble Swede and the Green-top Stone; those of yellow flesh have been carefully selected, to make a distinct kind; price 1*s.* 6*d.* per lb.—Orders are respectfully requested to be addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts. A Post-office order is requested from unknown correspondents.—Sawbridgeworth, Herts.

TO NURSERYMEN AND GENTLEMEN PURCHASING PLANTS IN WHOLESALE NUMBERS.

THOMAS JACKSON AND SON respectfully invite attention to their very large stock of PLANTS IN POTS, which they are selling in wholesale numbers at extremely low prices; it consists of a general collection of Stove, Orchidaceous, Greenhouse, and Hardy Plants, and includes fine flowering plants of Erica ventricosa superba, do. carnea, do. tenuiflora, do. breviflora, do. coccinea minor, do. Bothwelliana, do. globera; propendens tubiflora, hyemalis, Willmoreana, Cavendishi, sulphurea, depressa, hybrida, perspicua nana, M'Nabiana, Eassoniana purpurea, vestita coccinea, mirabilis, &c. Epacris, strong bushy plants of most of the fine free-flowering sorts; Camellias of the finest kinds, well set with flower buds; Azalea indica, in fine variety; Achimenes and Gloxinias now showing full of bloom; large-flowered and Liliputian Chrysanthemums, of fine sorts, in immense quantity; large specimens and good flowering plants of the Japanese Lilies. Amongst the Hardy Plants (in pots), in great number, are Cedrus Deodara from 1 to 6 feet high; Araucaria imbricata, 1 to 4 feet; Juniperus chinensis, do. recurva; Cryptomeria japonica; Picea Douglasi, do. Brunoniana, do. pindrow, do. Webbiana; Pinus cembroides, do. Gerardiana, do. insignis, do. excelsa, 1 to 6 feet, do. Lambertiana; Taxodium sempervirens, 1 to 7 feet; Taxus adpressus, do. Dovastoni, do. gold striped; Escallonia macrantha; Ceanothus dentatus, do. rigidus; Ilex latifolia, 1 to 4 feet, &c.—Nurseries, Kingston, Surrey, July.

DUTCH FLOWER ROOTS.

J. G. WAITE'S PRICED CATALOGUE OF ROOTS is now ready, and can be had on application at his Seed Establishment 181, High Holborn, London.

NEW PELARGONIUMS.

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HORTICULTURAL SOCIETY OF LONDON.—The Proprietors of the GARDENERS' MAGAZINE OF BOTANY beg to announce that, by the kind permission of the Council of the Horticultural Society, the following PRIZES, as offered in that work, Vol. 2, p. 46; and the "Florists' Guide," p. 102, for best 12 PICOTEES exhibited in pots, viz.—

1st Prize, "Gardeners' Magazine of Botany," Vols. 1 and 2;
2d Prize, "Gardeners' Magazine of Botany," Vol. 1;
3d Prize, "The Florists' Guide," Vol. 1;

will be given to the three Exhibitors who may stand first according to the awards of the Society's Judges, on Saturday, July 19. The plants must be in the Garden before half-past 8 o'clock.—July 12.

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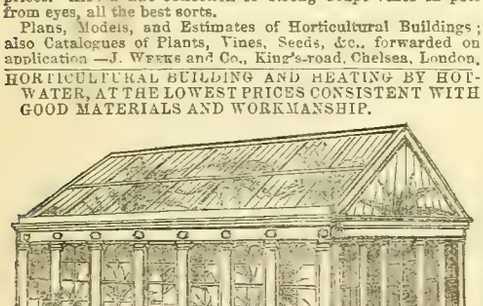
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E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road Chelsea. The superiority of these Houses having been fully proved in all parts of the Kingdom, references can be given in every instance where a Patent House has been erected. E. D. has several Patent Greenhouses for sale, and some as low in price as 1*s.* 2*d.* per foot super.—making a Greenhouse fitted complete with excellent glass, 8 foot long, 1 foot wide, and delivered to wharf or station free 25 feet 6 in. long, 16 feet 6 in. wide, 13 feet high at back, 5 feet 6 in. high at front, length of rafter 15 feet, with two ends and doors, amount to but 850 feet, which, at 1*s.* 2*d.*, is 49*l.* 11*s.* 8*d.* Heating by Hot-water.

STRAWBERRIES AND FRUIT TREES.—TANNED GARDEN NETTING, for protecting the above from birds, or as a fence for fowls, pigeons, Turnip seed beds, from JOHN KING FARLOW'S fishing tackle and net manufactory, 5, Crooked-lane, London-bridge, at 1½*d.* one yard, 3*d.* two yards, or 6*d.* four yards wide. Forwarded, carriage free, on all orders over 20*s.*, accompanied with post-office order or stamps.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, Chinese, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, spotted and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

AYLESBURY DUCKS (White).—The Advertiser has for Sale a limited number of the above, in fine healthy birds, of this season; the breed is warranted pure and of the largest known, weighing, when fattened, 8 lbs. to 10 lbs. each. Price, including package, 8*s.* 6*d.* per couple.

Also a few of the largest breed of NORFOLK GEESE, 12*s.* per couple.—Orders, accompanied by Post-office orders or reference, addressed to ISAAC BRUNNING, North-end, Great Yarmouth, will receive prompt attention.

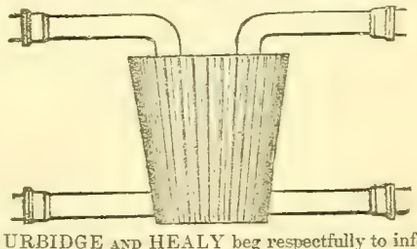
PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

REDUCTION IN THE PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

| | | | |
|---|---|---|---|
| 10 in. will warm | 50 ft. 4 in. pipe | ... £1 | 15 0 |
| 12 in. do | 75 ft. 4 in. do. ... | ... 2 | 5 0 |
| 14 in. do. | 100 ft. 4 in. do. ... | ... 2 | 15 0 |
| 16 in. do. | 150 ft. 4 in. do. ... | ... 3 | 10 0 |
| 18 in. do. | 250 ft. 4 in. do. ... | ... 4 | 10 0 |
| 21 in. do. | 350 ft. 4 in. do. ... | ... 5 | 10 0 |
| 24 in. do. | 450 ft. 4 in. do. ... | ... 7 | 0 0 |

NEW PATTERN BOILERS.

| | | | |
|---|---|---|---|
| 30 in. will warm | 800 ft. 4 in. pipe | ... 15 | 15 0 |
| 36 in. do. | 1500 ft. 4 in. do. ... | ... 25 | 0 0 |

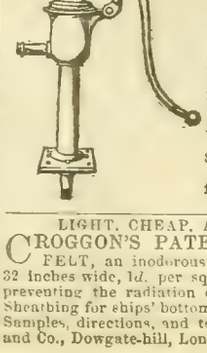
All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above, the same price.

130, Fleet-street, London.

DR. NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS.—These Patents having been withdrawn from a firm under the name of DUFAUS and Co., in consequence of the unsatisfactory manner in which the inventions have been carried out, and the imperfect state in which the implements have been manufactured, have been assigned to Mr. GABRIEL, C.E., &c., of the Surrey Chambers, Arundel-street, Strand, London; agriculturists are informed that specimens of the Implements, viz.—The Hand Cultivators, Dibbles, Hand and Horse Drills, Manure Distributors, single-horse Ploughs, &c., can be seen there, as well as in the Agricultural Implement Department in the GREAT EXHIBITION, HYDE PARK. N.B. The Patent Dibble obtained the Prize awarded by the Royal Agricultural Society at Norwich, in 1849. Improvements have recently been made in the Drop Drills and Manure Distributors; they are lighter, can be turned round with ease, and there is a contrivance for stopping the escape of the seed at pleasure.—Catalogues, with engravings of the Implements, and numerous Testimonials, can be obtained upon application at the Surrey Chambers, Arundel-street, Strand, London.

TURNIP HOEING.—A man can hoe 2 acres per day with the Cultivator, and it is used for all other crops.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | ... £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... | ... 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT, an inodorous felt for damp walls, sold in rolls 32 inches wide, 1*d.* per square foot; also dry Hair Felt, for preventing the radiation of heat and deadening sound, and Sheathing for ships' bottoms, on which the copper lies smooth. Samples, directions, and testimonials, sent by post.—CROGGON and Co., Dowgate-hill, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of hearing for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

MAYFIELD, SUSSEX,

TO BE LET, together or separately, on Lease, at Michaelmas next, TWO DESIRABLE FARMS, with advantages for occupation seldom to be met with, each containing a out 170 Acres of Arable, Hop, Meadow, and Pasture Land, in the usual proportions. The above Farms have long been celebrated for their excellent growth of Hops, and the present plantations are in their prime. They will be let tithe free; are close to an intended Railway Station; and a good Tenant will meet with every encouragement from the Landlord. Hares and Rabbits not preserved.

For further particulars, and to treat for the hiring, apply to Mr. WILLIAM EVANS, the Gate House, Hurst Green, Sussex.

TO MARKET GARDENERS AND OTHERS.—NEAR HOUNSLOW.—TO BE LET.

MR. STRANSOM has instructions to Let on Lease 15 Acres of excellent GARDEN GROUND (in one plot), broken up about two years since, and part well stocked with Fruit Trees. The stock, &c., to be taken at a valuation. Rent moderate.—For further particulars, apply to Mr. STRANSOM, Auctioneer and Valuer Uxbridge, Middlesex.

PARTNERSHIP.—WANTED, in an old-established NURSERY, an active PARTNER, who can command about 200*l.* Owing to the recent death of a Partner, and other arrangements, a person possessed of such a capital would find the offer very advantageous.—For particulars, apply to Messrs. LUCAS and SHOWLER, Solicitors, 1, Trinity-place, Charing-cross, London.

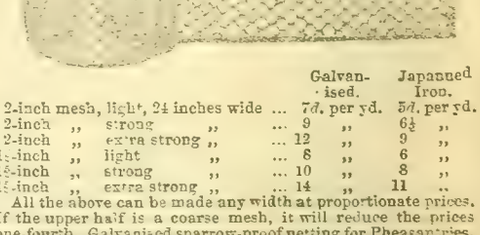
PATENT GARDEN NETS.—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60*s* net. Other sizes, in proportion. Orders promptly attended to.—J. and W. STUART, Patent Net Factory, Musselburgh, July 12.

FOWLER'S PATENT DRAINING PLOUGH may be seen at work every day, between the hours of 9 and 6 o'clock, during this month, at Wormwood Scrubbs, near Shepherd's Bush, on the Uxbridge-road, about three miles from Hyde Park.

DRUMMOND'S REAPING SCYTHES.—These Scythes continue to give the greatest satisfaction, and for cutting down all sorts of corn with expedition and without waste of steam cannot be surpassed; price 9*s.* each. Orders promptly executed by W. DRUMMOND and SONS, Agricultural Museum, Stirling, N. B.

N.B. When three or more of the Scythes go together, the expense of carriage to the principal ports and Railway Stations in the kingdom will not exceed from 6*d.* to 1*s.* each.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

GREAT WESTERN RAILWAY.—ROYAL AGRICULTURAL SHOW AND GREAT EXHIBITION.—TO LONDON OR WINDSOR AND BACK.—Excursion Trains are appointed as follows, at Reduced Fares, during the week, from Bristol, Bath, Frome, Chippenham, Cheltenham, Gloucester, Stroud, and Cirencester, on the 14th, 15th, 16th, 17th, and 18th inst.

From Swindon, Shrivenham, Farringdon-road, Abingdon, Oxford, and Banbury, and intermediate Stations, Wallingford-road, and Pangbourne, on the 15th and 16th, and on the 17th to Windsor only.

TO WINDSOR AND BACK.

From Hungerford, Newbury, and other Stations, and from Basingstoke, Reading, Twyford, and Maidenhead, on the 16th and 17th inst.

The particulars of Fares, times of Departure and Return, and the number of Days allowed for Passengers coming to London, may be known on application at the several Stations, and parties are recommended to engage their Tickets beforehand, to ensure room for them in the Train.

GREAT WESTERN RAILWAY.—ROYAL AGRICULTURAL SHOW.—On Wednesday the 16th, and Thursday the 17th inst., there will be Special Excursion Trains for Visitors to WINDSOR AND BACK, and the Fares on these days will be—

First Class, 4*s.* 6*d.*; Second Class, 3*s.*; Open Carriages, 2*s.*

The Trains will run about every half hour from the Paddington Station, commencing at 8.30 A.M., until 12.30, and returning after 5 o'clock P.M., until 11.30 P.M.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices.—Brussels Carpets, 2*s.* 6*d.* per yard.—Damask Curtains, 1*l.* per pair and upwards; Ditto, in silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions 2*s.* 8*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

HORTICULTURAL SOCIETY OF LONDON.—His Grace the Duke of Devonshire, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 19th JULY. Tickets are issued at this Office, price 5s; or at the Garden, in the afternoon of the 19th July, at 7s 6d. each. Respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 17th of July, may obtain from that Officer an authority to procure Tickets.

Messieurs les étrangers qui désireront se procurer des billets d'admission pourront en obtenir des mandats en s'addressant à leur Ambassade ou à leur Consulat.

21, Regent-street, London.

THE LONDON FLORICULTURAL SOCIETY.—The next Meeting under this Society for the EXHIBITION OF SEEDLINGS of every class of Florists' Flowers, and Class Showing for the under-mentioned Flowers, will take place at Exeter Hall, Strand, on TUESDAY, the 22d instant, at 12 o'clock:—

CARNATIONS (cut flowers), in 6 Classes.—Scarlet Flake, Rose Flake, Purple Flake, Pink and Purple Bizarre, Scarlet Bizarre, and Crimson Bizarre.

PICOTEES (cut flowers), in 4 Classes.—Rose edge, Purple edge, Red edge, and Yellow Ground.

FUCHSIAS (in pots), in 3 Classes.—Light tube, Dark tube, and Purple Corolles.

VERBENAS (cut flowers), in 3 Classes.—Light, Dark, and Fancy.

PETUNIAS (cut flowers), in 3 Classes.—Light, Dark, and Striped.

All Flowers to be ready for the Censors by 1 o'clock.

45, Lime-street, July 12. J. W. Jewitt, Hon. Sec.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of her Most Gracious Majesty the Queen.—The FOURTH EXHIBITION for the season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on Thursday, 24th July (open to all Exhibitors), when prizes will be awarded for the following productions, viz., Miscellaneous and Specimen Plants, Cape Heaths, Fuchsias, Roses, Carnations, Picotees, Verbenas, Cut Flowers, Fruit, and Honey. In addition to the Prizes offered by the Society, W. T. Iliff, Esq., offers a Small Silver Linnæan Medal for the best collection of 30 cut specimens of Indigenous Plants. By Mr. J. Marriott, of Gracechurch-street, for the best glass of Honey in the Comb, the Large Silver Victoria Medal. Also, by subscription, prizes for Seedling Antirrhinums, Calceolarias, Carnations, Picotees, and Petunias, in addition to Certificates granted by the Society.—Lists of Prizes and the Rules for Exhibitors may be obtained from John Taylor Neville, Ebenezer House, Peckham, Surrey. Secretary.


# The Gardeners' Chronicle.

*SATURDAY, JULY 12, 1851.*


MEETINGS FOR THE ENSUING WEEK.

Saturday, July 19—Horticultural Gardens .....2 P.M.

Country Shows.—Wednesday July 16: Arbroath Horticultural.—Friday, July 18: Beccles Horticultural.

It is evident that the history of the rot in Larch is not yet complete. It is admitted that in wet situations the rot is most prevalent, and that Larch when planted there has no chance of escape from the disease. But facts seem to prove that rot will appear even when drainage is perfect. Cases have been mentioned where this malady has appeared elsewhere than in the roots, and where trees have been growing on dry hill sides. We have no doubt of it. A storm which loosens and breaks the roots, a hailstorm when the shoots are pushing, imprudent thinning which leaves the trees top-heavy, have been pointed out as other causes; and we believe with perfect justice.

Whatever shall produce decay in the tissues will favour the appearance of dry rot fungi; dry rot fungi rapidly increase a mischief which might be unimportant in their absence; wet situations *invariably* bring on incipient decay, and more especially favour the progress of dry rot fungi; therefore wet situations are necessarily among the principal causes of the rot in Larch.

Of course we do not deny that disease, to be followed by the rot, may appear in situations apparently most favourable for the growth of Larch. Disease occasionally attacks living things, under all circumstances. Cholera prevails in low damp places near putrifying matter, and there it is said to be most malignant; but we know that it also appears in high dry places, amidst an atmosphere not impure. The first is the rule, the last the exception. So it is with Larch; the rot attacks it invariably in ill-drained places; there the malady is inevitable; rot also attacks it in well-drained places, and there the malady is accidental.

That Larch may be affected under circumstances the reverse of wet has been shown by our invaluable correspondent, the Rev. M. J. Berkeley, to whose kindness we owe the following communication:—

"A specimen of diseased Larch has lately been sent to me from Wentworth by Mr. Henderson, which appears to be highly worthy of attention. The trees amongst which the disease occurs grow on a sort of blackish shale, which is taken out of the iron-stone pits and made into little round hills, which are afterwards planted. The composition of the hills should seem to insure good drainage, and the disease, indeed, does not seem, as in many cases, to commence at the roots, but in the centre of the trunk. The wood, in the decayed portions, is mottled with little white spots, which often run in longitudinal lines, though seldom so confluent as not to retain somewhat of their original form, which is, however, sometimes obliterated.

"These spots do not consist, as might at first be supposed, of mere mycelium, but of the tissues of the plant which are bleached and shining; and whether woody tissue, medullary rays, or dotted tubes, they are as completely separated from each other as if the connecting matter had been dissolved by some chemical substance. They are, in consequence, very nice objects for the microscope, and call to mind the disintegrated fossil wood which occurs in the trap rocks of Tasmania. Though a common lens fails to detect anything like fungus threads, a very attentive examination exhibits extremely minute filaments, which are evidently of fungous origin, both in the interior and on the surface of the tissue, but in general so obscure as to require great caution before coming to any positive decision. Few tissues, perhaps, of decaying or decayed vegetables are without some traces of fungi, instances of which have been published by Reissek and others, who have paid especial attention to the subject; but we must not, therefore, conclude in every case that the fungi are the cause of the decay. In the present instance we observe the tips of the dotted tubes to be frequently distorted or forked, a circumstance which is worthy of more minute investigation.



"The specimen is interesting too, as I conceive, in a different point of view—viz., as giving an excellent instance of the wisdom of not trusting to mere appearances. Ninety-nine persons out of a hundred would at once declare the white spots to consist of mycelium, and we are free to confess that had we not possessed a specimen of the Tasmanian wood mentioned above, we should not have submitted the tissue to the microscope, but should have passed it over as an ordinary case of wood traversed by mycelium.

"I have given in the above figure a representation of portions of two of the dotted tubes, exhibiting mycelium on their inner and outer surface."

Mr. Henderson adds in a letter which has just reached us, that "the roots of the Larch trees growing on the ironstone hills, as above described, are not exposed to much wet, but on the contrary are rather dry. They grow on little hills, composed of what is called *bind*, which is brought up with the ironstone and remains on the surface after the pits are filled up. It takes some years to decompose, before it is fit for growing trees, and ultimately becomes something like a strong blue clay. Beech and Spanish Chesnut thrive pretty well on it, but Firs do badly, and Larch is subject to the rot. Between the hills, where the trees grow in the natural soil, they are not subject to the disease, although the land is in some places wet and springy; and he is therefore induced to think, that as far as the Wentworth trees are concerned, a wet bottom is not the cause of the disease, but rather some injurious quality in the soil itself."

This explanation, received after the previous remarks had been sent to press, may be compared with the view taken by us in the commencement of the present article. It seems to show that disease may appear where land is thought to be well drained. But we doubt whether stiff blue clay, necessarily very retentive of moisture, however dry it may become in the autumn, can be otherwise than wet in the early part of the year, when the Larch is making its growth, and when, therefore, the mischief is done.

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It is an excellent custom in certain foreign countries, and one which leads to very valuable results, to send from time to time scientific men to travel in the various neighbouring kingdoms; they are sent with a specific object, they carefully investigate the matter to which their attention is directed, and on their return, they make a report to the Government who sent them, embodying the facts which they have collected in their travels, and the conclusions at which they have arrived; these reports, which are generally drawn up by men eminently well qualified for the task, often present better and more impartial views of the particular manufactures of the kingdoms so visited, than could possibly be prepared by any one residing in them. There is a good illustration of the truth of this, in the skilful reports lately drawn up by M. Payen, by desire of the Minister of Agriculture and Commerce of France, on drainage, the use of peat, and the employment of artificial manures in England. These reports, written by an excellent observer, one who is intimately acquainted with all the various departments of scientific agriculture, and the economy of vegetation in general, are of the highest interest and importance.

If, however, a stranger visiting England for such a specific purpose comes with the advantage of an unprejudiced and unbiassed judgment, he has at the same time the disadvantage that he does not always know in how far he may safely rely on the statements which are made to him, and he therefore runs considerable risk of being misled by false or erroneous information. The conclusion which M. Payen appears to have arrived at, from a very careful study of the present state of the manufacture of artificial manure in England, and of the results of numerous experiments on the practical application of those manures, might probably be expressed as follows. A dozen years ago it was stated by Liebig and his followers that the great object of all artificial manures was to supply certain inorganic matters to growing plants. It was asserted that soils became exhausted from the abstraction of potash, phosphoric acid, and soluble silica, and it was therefore said that manures were chiefly valuable in proportion to the quantity of those substances which they contained. The experience of the last few years has, however, shown that this is not really the case, for the most careful and satisfactory experiments have proved, that soils are very seldom wanting in the inorganic elements of plants, such as phosphoric acid and alkalies; but that they are often deficient in nitrogen, in a state capable of being assimilated by plants. In other words, that ammonia and nitric acid are far more important components of manure than phosphoric acid or alkalies.

That Liebig did, at one time, attribute very great importance to the earthy and alkaline parts of manure, no one will deny; and, indeed, it is evidently proved, by the fact that he even became the originator of a patent mineral manure, which, as Payen remarks, has for the most part been found of comparatively little real value. If, however, it is acknowledged on the one hand, that the value of these inorganic manures has been over-rated, it must, however, at the same time be admitted that there are circumstances under which they produce very remarkable effects; and that even though it is proved that they are not the only things necessary to the growth of plants, or the only things which the cultivator has to add to the soil, it does not, therefore, follow that they are of no value at all; and we ought to take care that in acknowledging our error, we do not fall into the opposite extreme.

It has been all along known, that the very best manures were those which contained a mixture of organic and inorganic matters; substances, such as common farm-yard manure, consisting of decomposed and decomposing animal and vegetable materials, intimately mixed together. The error which has been committed consisted in the attempt to compare perfectly different and opposite things; and to decide which of the two was the most important. The alkalies and phosphoric acid are, no doubt, quite essential to the growth and well-being of plants; but so also are ammonia, nitric acid, and the various other sources of nitrogen. To attempt to compare the two kinds of food, is pretty much as though we were to try and compare together meat and bread, as articles of animal food; both are valuable, and the two taken together are more valuable than either taken alone. So it is with plants; it is of no use attempting to determine whether ammonia or alkaline phosphates are the most important, as constituents of manure; they serve very different objects in the nutrition of plants, and when the one is required, it is certainly idle to attempt to supply its place, by giving more of the other.

There are a number of curious experiments which have at times been quoted, as proving that the organic part of common yard manure is of no value; and that its virtue consists entirely in the inorganic salts which it contains. Thus, for example, it has been stated, that on manuring two equal pieces of ground, the one with a certain weight of good farm-yard manure, and the other with the ashes of an equal quantity of the same manure, no difference could be subsequently observed between the crops raised on the two fields. The truth of this, again, has been called in question by other experiments, the results of which were just the reverse; and those who attempted to draw general conclusions from the two experiments, were at last fairly puzzled how to reconcile two apparently diametrically opposite statements. The real cause of the difficulty, however, was simple enough; it arose merely from the attempt to compare together dissimilar things, which, from their very nature, could not fairly be contrasted with one another. If we admit that which is now pretty well generally acknowledged, namely, that all plants, in addition to certain other substances, require both ammonia and also alkaline phosphates, it is very easy to perceive, not only that

a manure containing both those substances must be generally valuable, and therefore more certain in its effects than a manure which contains only one or the other; but also that such a manure would act in a very different manner on different soils, and applied to different plants. For example, good farm-yard manure, applied to a soil rich in earthy phosphates, and abounding in bone earth, will, nevertheless, be found to do good, and cause the plants cultivated in it to grow with increased vigour and luxuriance; not because of the phosphoric acid which it contains, but chiefly from the presence of a certain quantity of ammonia, nitric acid, and matters capable of yielding those substances by their putrefaction. Nevertheless, the same manure, applied to a soil containing no phosphoric acid, but artificially supplied with salts of ammonia, will also be found to act beneficially; in this case it is not the ammonia, but the phosphoric acid of the manure, which is of importance. Or, if in place of applying a mixed manure such as we have imagined, to these two soils, we were to take simple chemical manures —say phosphate of lime and sulphate of ammonia, we should probably find, that upon the one soil the phosphoric salt was the best manure, whilst upon the other the salt of ammonia would produce the best effect. It is plain, then, that the value of these different elements of manure must depend on the wants of the plant, and on the capabilities of the soil.

The conclusion, therefore, to which M. Payen arrives, namely, that the mineral manures, consisting chiefly of phosphate of lime, and containing little or no organic matter, are of comparatively trifling value, and that they act so slowly as to be of small profit to cultivators, is perhaps rather too sweeping a condemnation. Undoubtedly they will not supply the place of ammonia, but at the same time they are valuable manures, and on certain soils the cost of their use is amply repaid, especially when they are employed in conjunction with animal or ammoniacal manures. In the composition of artificial manures, M. Payen fully admits the value of sulphuric acid as a solvent of phosphate of lime; and he insists strongly on the great practical value of charcoal, when associated with rich animal manures.

In concluding his report, M. Payen well observes, that there is one thing wanting which would be a very great aid to the cultivator, and that is, that all artificial manures should be designated by plain and simple names, expressing their real nature, and that their exact chemical composition should be honestly stated, as their purchasers would be no longer deceived by mysterious names, or misled by vexatious uncertainty as to the real value of the manures they buy. On this point there can be no doubt as to the evil, though the remedy may not be quite so clear. Perhaps the best advice which can be given is this—buy only of respectable dealers, and do not be deceived by *cheap* manures; if you are tempted by what is termed a bargain, you are pretty sure to suffer in the end; good manure is well worth its fair market value; the trash which dishonest dealers sell you is often not worth having as a gift.

## SPRING FROSTS AND FRUIT GROWING.

This is the fifth consecutive spring in which the hopes of the orchardists have been blighted by severe late frosts. In 1846 they commenced. We had in that year a very forward spring, for on February 26 the blossom-buds of the Pears were bursting, and Roses were showing their flower-buds; but on March 20, the thermometer registered 18°, or 14° of frost; the Pear-buds were frozen through, and nearly all failed.

1847, *April* 16.—Thermometer registered 22°, or 10° of frost, the blossom-buds of Pears had not burst; but in spite of that, all the Marie Louise were destroyed. Of other sorts, the crop was tolerably abundant.

1848, *April* 27.—A sharp hoar-frost, thermometer registered 27°, or 5° of frost; nearly all the Pear blossom destroyed. They were in full bloom, and owing to the beautiful and favourable weather in the early part of the month, gave high promise of an abundant crop. Alas! all, or nearly all, failed. This was a very early and very agreeable spring; for on May 14, I gathered a fine bunch of Roses (Madame Laffay and Baronne Prevost), from the open borders.

1849, *April* 16.—After a spring-like January and February, winter paid us a visit; on this day a heavy fall of snow took place, and on the 18th, a sharp wind frost; thermometer registered 19°, or 13° of frost. Many varieties of Pears were nearly in bloom. Beurré de Capiaumont and Williams' Bon Chretien were rather backward. I had hopes that their woolly coats would have saved their blossoms; but I find, a little further on, the following entry:—"April 30: Bon Chretiens and Capiaumonts in full bloom, their flowers are very abundant, but small, the petals crimped or curled; they appear injured. Are they?" Another entry answers this:—"May 14: Nearly all the Pear blossom has dropped off."

1850, *May 3d.*—A sharp hoar frost, thermometer registered 23°, or 9° of frost. April had been dry, sunny, cold, and very favourable to fruit blossom; Pears, Plums, and Cherries were all in full bloom, and nearly all perished; Apples were not in blossom, their buds were just open, but so nicely covered with their downy coat, that it was hoped, and I remembered asserted, they had not received any injury; they blossomed towards the end of May in apparently great vigour and certainly with much beauty; every petal was perfect, and every stamen and pistil appeared to do its office, but after a brisk wind one night, scarcely a germ was left on the trees, and the ground was strewed with the hopes of the orchardist.

I think I never heard it more than once asserted that no fears need be entertained of spring frosts unless the blossom is nearly or quite expanded; the above memoranda seem to contradict this. I have known many disastrous fruit seasons, but never one like that of 1850; I had not enough Pears for even one moderate dessert by the beginning of November; Plums were equally scarce, for only two varieties out of 200 bore any fruit; one, the Early Prolific, a hardy sort, raised here from seed from the Precoce de Tours many years ago, and the other the Prune d'Agen or Date Plum, from the south of France; these both bore an abundant crop, and they have both withstood the frosts equally well this spring; the Prince of Wales, a very hardy Plum, lost all its blossom by the frosts of 1849 and 1850, although the trees bloomed vigorously, but this season there is a good crop on my young trees; it is really very odd to find a tender French Plum, a very old variety, growing alongside (which is the fact) of a hardy English seedling, bearing equally well the rigours of our climate.

1851, *April 26th, 27th, and 28th*, sharp frosts; thermometer registered 25°, or 7° of frost. Louis Bonne Pears, Beurré d'Amanlis, Beurré d'Aremberg, and many other varieties, and all the Plums, were in full bloom; Beurré Capiaumont, the most backward, its blossoms not expanded. The weather was dry, and the blossom did not appear to have received any injury. The petals did not turn brown, and the germs were fresh and green, and not black at the core, as last year. All the Pear bloom, indeed, seemed to be so vigorous and healthy as to defy the effects of the frosts.

*May 14th.*—Again a frost, and this time a heavy hoar frost of 6°. Nearly a thousand fine trees of the Beurré Capiaumont, from 5 to 15 years old, were in full bloom, as were the trees of Marie Louise, which this year blossomed some days later than usual; still they did not appear injured, for their petals for several days held their snowy whiteness, and the germs of the fruit were green and fresh: but in lieu of swelling, they remained stationary, and, after a brisk wind, nearly all fell, leaving very many trees quite bare, and on others but a very thin crop. All the trees of the two sorts last mentioned are fine healthy standards, and half standards, on Pear stocks. To my surprise, many young pyramidal trees, on Quince stocks of three or four years' growth, although on bloom at the same time, have escaped, and are bearing a fair crop; as have also some Pears raised from seed, the blossoms of which seemed injured by the petals turning brown, yet they have set their fruit freely. Of Mr. Knight's Pears, the Althorp Crassane seems the hardiest, the Dunmore has failed. This is the sixth consecutive season in which the Marie Louise Pear has totally failed on standard trees. I remember the late Mr. Wilmot, of Isleworth, telling me I think, in 1849, that he intended to cut down all his trees of this sort, owing to their so repeatedly failing; this is the fifth spring in which we have had these destructive frosts, and I hope it finishes the cycle. I remember some years since, after a series of abundant fruit seasons, saying, that our climate seemed so changed for the better, that I thought it must be fixed, and that destructive spring frosts were matters of history; let us now hope that our cycle of abundance is near at hand. Apples are an abundant crop, and Plums of hardy kinds are also abundant, as are Cherries. I am inclined to think that the cold damp weather had much influence on the Pear blossom, for trees against wooden fences and other sheltered places, well protected with Fir branches, shed nearly or quite all their blossom without setting their fruit.

Tender varieties of Plums, such as Green-gage, Coe's Golden Drop, Imperatrice, Reine Claude de Bavay, and some others, young trees in pots in one of my orchard houses, with a bush hedge for a back wall and a Yew hedge for a front ditto, have set more fruit than they are able to bring to perfection; as have also some Pears in pots on Quince stocks. Some Peaches and Nectarines in a like structure are also full of fruit; while those against walls in this neigbourhood, whether protected or not, have totally failed. The trees are also blighted and in a bad state. The trees under glass, owing, I suppose, to their being kept perfectly dry all winter, are in a fine healthy vigorous state, no curled leaves and no aphis to be seen. To more completely exemplify the effects of our wet mild winters on fruit trees, some Plums which have been with the Peach trees in the same house ever since last summer, and were, like them, kept perfectly dry all the winter, have finely developed foliage and the most vigorous health, while some trees of the same age which were in pots in the open air, the pots protected from the frost with litter, and not removed to the house till the end of February, have had the curl and the aphis, and other ills to which Plums "are heir to." What volumes of evidence this simple fact seems to give, as to the proper treatment of the roots of our fruit trees! for these BULLET, on which have been standing alongside of those which [illegible] wintered under glass, and have had exactly the same treatment; they have set plenty of fruit, but their health apparently suffered from their roots having been exposed to the heavy rains of winter and early spring. Dry roots make ripe shoots. Verily, if our cold springs and mild wet winters continue, we must have "crystal" fruit gardens as well as "crystal palaces." *T. Rivers, Sawbridgeworth, June 18.*

## BRITISH SONG BIRDS.

(Cage Birds, No 21.)*

No. XXXVII.—We have glanced at those ill-starred spots where the nightingale does *not* pay his annual friendly visit; we will mention anon those localities which are regularly blessed with his presence from year to year.

It is quite clear that this bird loves retirement as well as sociability. Safely hidden under the lowly branches of an evergreen, or buried in the recesses of a copse, he feels himself secure from harm; and thus encamped, he sings freely and happily both by day and by night. It is when thus located, that he makes the acquaintance of his tender-hearted hosts, who hail his advent with listening ears and a joyful heart; and in the precincts of their grounds he takes up his abode, seldom wandering beyond prescribed limits. The same bird, as I have elsewhere noted, returns to his former haunt regularly every year—provided he has not been molested, and provided he has not been deprived of his offspring. Such an offence *contra bonos mores* would banish him for ever!

Surrey, Kent, and Middlesex, are the counties most favoured by the Nightingale,—perhaps because they find therein an abundant supply of everything they delight in. Woods, groves, brakes, shrubberies, copses, and thickets, wherein abound all varieties of insect life; these, with gliding streams, running brooks, and flowing springs, make up their little heaven of happiness. They visit, in addition, Berks, Sussex, Essex, Cambridgeshire, Herts, and other neighbouring counties. Hampshire is the god of their idolatry. In the Isle of Wight, for instance, I have seen, even in the first week of April, some scores of Nightingales; and so tame! To look at each little happy rogue as he sat beneath a branch, shivering with song, you would think that—

> "From every feather in his frame
> He poured the notes——."

And yet, he is said to be a "melancholy bird!" This vulgar error must now be exploded. It is unworthy of the year 1851:

> "——Therefore be merry, *Philomel*,
> For thy solicitor shall rather die
> Than give thy cause away."

There can be no doubt that our very changeable climate offers serious cause of offence to this king of birds. Our mornings are chilly, our days in summer (if we have any) are oppressively sultry, and our nights are decidedly cold. What a contrast is presented in France! I had occasion to visit Paris in 1849, just at the season when nightingales *here* were becoming silent. The treat in store for me on my arrival was beyond description great. Not only did these birds frequent the gardens of the Tuileries by day and by night, and every other quarter where green trees could be seen (Versailles in particular was a highly favoured locality for them)—but the inhabitants of the "gay city" had them suspended in appropriate cages in nearly all parts of the town. The Parisians in fact—let me record it to their perpetual praise—seemed nightingale-mad.

Strange, too, was it that these birds, with us so shy, sang abroad, even in the day-time, with the boldest front—causing the very streets to echo to their voice. At night also, when the noise of passing vehicles was all but deafening, *then* did these charmers cause their melodious notes to be heard high above all! My friend, who accompanied me as *compagnon de voyage*, speedily made up his mind that I was a veritable lunatic, and often repaired to his hotel in despair,—leaving me to parade the public thoroughfares, "with ear attent," till long after midnight.

The very delightful climate of France fully accounts for this excellence in the nightingale. The atmosphere is always clear; the inhabitants burn wood fires; and the heavy smoke, so peculiar to England, is there unknown. Every other song bird, I should observe, excelled in like degree, to my great astonishment. Their notes were far more perfect; their song far more joyous; their plumage far more "trim" and showy,—thus making it indisputably clear, that for birds to be healthy and well, their lungs must have free play, and they must live in a pure atmosphere. Indeed I myself experienced an immediate and most salutary benefit from the genial change of climate.

All this may, and indeed does fully account for the nightingale being so particular in absenting himself from certain localities in England. It is beyond all question that their instinct acts as an unerring guide to them in their selection of a place adapted for their constitution, and the well-being of their young families; and we cannot but admire the benignant hand of Nature, so observable in all her works. The time for emigrating

* Our Treatise on the Nightingale is this day completed. I believe it contains every thing that needs to be known connected with that bird. Long acquaintance with his habits, and peculiar opportunities for noticing his disposition and temper, have enabled me to invest his character with an originality that has already won him hosts of new friends and admirers. My remarks in the *Gardeners' Chronicle* week by week, have, I observe, in a disjointed form, been borne on the wings of the Public Press into all lands. The Nightingale deserves such homage; and I feel proud to have been his historian.

is early in September. If that month be unusually fine, and there is little wind, they occasionally tarry till the first week in October. After this, they are no more seen. It is at this season that the "agitation" commences with the caged-birds left behind; of which, as promised, more hereafter.

I would here remark, that several observant correspondents anxiously ask me—if I *never* remember to have heard this bird discoursing music in a "melancholy" strain? I unhesitatingly answer, yes; but it was after the spoliation of her nest of its callow brood, by the ruthless hand of a heartless robber:—

" —— Hark! How the nightingale *laments*
Her ruin'd care,—too delicately framed
To brook the harsh confinement of the cage!
Oft when, returning with her loaded bill,
The astonish'd mother finds a vacant nest,
By the hard hand of unrelenting clowns
Robb'd,—to the ground her vain provision falls!
Her pinions ruffle, and, low drooping, scarce
Can bear the *mourner* to the Poplar shade;
Where, all abandoned to *despair*, she sings
Her *sorrows* through the night; and on the bough
Sole sitting, still, at every dying fall,
Takes up again her *lamentable* strain
Of winding woe; till, wide around, the woods
Sigh to her song, and with her *wail* resound!"

Thus sings our sweet poet—Thomson. Too well do I know; too often, alas! have I verified the truth of his elegant poetic sketch.

Little more now remains to be said. When you feed your branchers and nestlings on German paste, remember always to rub in with it hard-boiled yolk of egg, a little bruised Hemp-seed, and some sponge-cake. Be careful not to use "Sterry's" German paste, but that which is made with honey instead of treacle; the latter being far too gross for their digestion. If ever you have occasion to handle your birds, hold them securely, but avoid all undue pressure; and never keep them longer in your warm hand than is absolutely necessary. Their structure is curiously delicate, and the machinery of their body is very easily destroyed.

One word more. I take it for granted that you wish your nightingales to sing by candle light. To ensure this, let them, from September until the following spring, hang in one particular spot in the room where you sit. When they become used to this, they will feel quite at home and happy. To change their position, would perhaps unsettle them for months to come! So singular are the fancies, and so peculiar are the habits of this truly extraordinary bird.

Some people aver that the song of the nightingale is not the same by day as it is by night. The fact is, it is listened to under distinctly different feelings. There can be no doubt that it is more effective by night, because all nature is in a state of repose, and our minds are under different influences. The strain, however, is virtually the same, and every note is a volume. It is not often that one meets with a kindred spirit in the appreciation of this bird's song. We want a few more Izaak Waltons amongst us. Methinks I see the good old Izaak, rod in hand, setting out at early dawn for the river's brink, Philomel the while enchanting him with his morning hymn:—

"The stars were cut—the sky was full of them,
Dotted with worlds. The land was all asleep."

"Lord!" exclaimed he, raising his eyes aloft in the fulness of his overflowing heart—"WHAT music hast thou provided for the saints in heaven, when thou givest bad men SUCH MUSIC ON EARTH?" *William Kidd, New Road, Hammersmith.*

## FOREIGN GARDEN GLEANINGS.

(PARIS.)

BEING in Paris for a few days at Easter, I was anxious to see any collections of Orchidaceous plants which were accessible; a friend procured for us permission to see the collection of M. Pescatore, at the Château de la Celle St. Cloud, near St. Germains, and which you have more than once noticed in the *Gardeners' Chronicle*. We were very kindly received by the proprietor, who, with Mr. Luddeman, the director, showed us the plants. The collection is very large. In the printed catalogue, the number of species and varieties enumerated is 783; and in the interleaved copy there are nearly 200 more added. As far as I was able to judge, the plants were well grown, and the collection in general appeared very healthy and remarkably free from insects. Perhaps the use of a more fibrous peat (like that which most growers in this country procure from Messrs. Veitch, of Exeter), would be found beneficial; and I think that the plants grown in the collection of Mr. Rucker, Mr. Warner, and Mr. Hanbury have the appearance of being exposed to more air and light than those of M. Pescatore. There were several plants in flower, amongst others a magnificent specimen of Dendrobium fimbriatum (purchased of Mr. Cox), Chysis bractescens, Arpophyllum giganteum or spicatum; Odontoglossum nævium, (the two last obtained from Messrs. Rollisson, and very beautiful), &c. I observed, both in this collection and in those of the Jardin des Plantes and of the gardens of the Luxembourg, many of the plants had seed-pods, the flowers having been artificially impregnated. I did not, however, learn whether the cultivators had been successful in raising plants from seed; I only saw one house, at M. Pescatore's; either there was another, which we did not see, or he stated his intention of building a second house; but as we had arrived late and hungry, and had to return to Paris to dinner, we had only time for a very cursory inspection of this vast collection.

In addition to almost every plant which is to be found in the English catalogues, there are many in the list which are not grown in this country, several being imported from the Isle of Bourbon and other French settlements, or obtained from the foreign collectors. Of the two collections at the Jardin des Plantes and at the Luxembourg, the first appeared to be cultivated with most care, but the collection at the latter garden was the largest; though it does not appear that much attention is bestowed on their cultivation. At the Jardin des Plantes there was one marked Centrosia rosea coming into flower, said to be handsome, and several others, the names of which I do not find in the ordinary catalogues of the English nurserymen. *Dodman.*

## ORCHIDS FOR THE MILLION.

By B. S. WILLIAMS. gr. to C. B. WARNER, Esq., Hoddesdon.

(*This will be continued in our next Number.*)

## Home Correspondence.

*Cheltenham Horticultural Show.*—On perusing your Paper of the 5th instant, I see a letter from Mr. William Davidson, one of the judges at the Cheltenham Horticultural Show, held on the 11th June last. Though perfectly right in the main, yet, from being a stranger to the place, he has fallen into one or two errors, which, with your permission, I will try to rectify. The article he refers to, in the "Cottage Gardener," cannot apply to any shows held under the management of the Cheltenham Horticultural Society, as has, I think, been clearly shown in a letter to that journal of July 3d; but as there appears to be a great deal of confusion and misunderstanding relative to the Cheltenham shows, I will, if possible, put them in their true light. The Cheltenham Horticultural Society has been established for many years, and held its five or six meetings annually, which were mostly of a local character, and seldom heard of beyond the county. Last year, however, some of the leading inhabitants of the town formed a committee, and raised a subscription, as a means to revive the amusements and attraction of Cheltenham as a watering-place, &c., and one way in which they disposed of part of the money so collected was, in giving 200*l.* in prizes for a Grand Monster Show or Horticultural Fête, to be held at the Old Wells, on the 20th of June in that year. This fête took place, and proved highly successful, and the lessees of the Spa (encouraged by their former profits) *this* year advertised a similar one, which they held on their own account as a private speculation, and which took place on the 19th of June last. *The Committee of the Horticultural Society had nothing to do with either of the fêtes*, though attempts were made to unite them, but from circumstances that I need not enter into without success. Some of the members of the Society, seeing that if good prizes were offered, that a far superior exhibition might in future be calculated upon, took the matter in hand, and made considerable alterations in the rules of the Society, reducing the number of shows to three instead of five or six, and removing many of the restrictions that existed under the old rules, and by great exertion considerably increased—nearly doubled—the number of their subscribers, by which means they were enabled to advertise a schedule amounting to about 150*l.* for the three shows. The first, held under the new management on the 8th of May, proved eminently successful, and gave *great satisfaction*. Upwards of 90*l.* was taken by the sale of tickets for *that* day only (nearly four times the amount ever taken before), and the collection of Orchids, stove, and greenhouse plants was most satisfactory. The second fête took place on the 12th of June, but owing to the proprietors of the Old Wells having arranged to have their fête on the 19th inst, *seven days* afterwards, and offering 200*l.* in prizes, many of the usual competitors of the Horticultural Shows *held back their best plants, or did not send them at all*, in hopes of gaining the larger amount of money the week following. *Hence*, the reason why Mr. Davidson remarks, "in fact, taking them altogether, I never saw a more indifferent lot at any provincial exhibition, &c." The committee of the Society have *but one* object in view, and that is to raise the Society to the highest point, and to make their shows (as stated in the letter above referred to in the "Cottage Gardener") to be "the first and most attractive out of London." The strictures in that journal evidently refer to the show held at the Old Well, in June, 1850. The above is a simple statement of facts, and I defy contradiction; and if you will favour me with a space in your journal for the above somewhat long (but unavoidably so) letter, I shall feel obliged. P.S. Mr. Davidson has fallen into an unintentional error, when he supposes that the Society pays carriage of the specimens; they wish, and, I think, do act with every liberality, but the want of means prevent them from doing the above. *Verax.*

*Fleming's Tar Paint.*—Having a quantity of iron fencing, hurdles, &c., which require dressing with some composition to prevent corrosion, and likewise to give them a decent appearance, I was disposed previous to the correspondence of "L. L.," to adopt Mr. Fleming's system of tarring, which is evidently advantageous both for present and future economy when applied as Mr. F. advises. But as the system has failed with "L. L." from some unknown cause, the idea suggests itself that it may also fail with me and others, except we can benefit by his failure and take precautionary measures. The evidence of other parties is now solicited to confirm its merits—or *vice versa*; and if "L. L." would oblige by stating precisely the plan he followed, it would assist materially in arriving at a fair conclusion, as to the cause of failure, &c. I will offer the following questions for his consideration; which, I believe, embrace the more important details to be observed for securing success in using the "tar." Was the iron rusty when tarred? perfectly dry? the weather warm? and the tar boiling hot? and were the proportions used those which Mr. F. recommends, viz., two-thirds gas, and one-third Stockholm-tar? Every one must duly appreciate Mr. Fleming's zeal to economise labour, and more especially those who have almost endless iron fences, gravel-walks, and extensive gardens to manage. *W. C. E., Gloucester.*

*Forcing Peaches.*—In a letter we have received, "J. M.," of Earleston Gardens, near Birmingham, offers the following statements for the consideration of "Curiosus," who criticised an article written on this subject by "J. M." some time ago. The latter is of opinion that many of the golden rules handed down to us by our forefathers cannot yet be well dispensed with, although some of their practices have been much improved upon by modern gardeners. "J. M." asks "Curiosus," what the consequence would be of giving water in moderate or immoderate quantities to the vegetable kingdom, say at any time, and he further enquires if the latter, by way of experiment, never started his early Peach-house at a given temperature, maintaining the same for nearly three weeks until three-fourths of the buds had dropped off, and then reduced the heat 10° in order to save what remained of a crop. He considers that these inquiries form the best answer to "Curiosus'" remarks.

*Our London Gardens.*—I have sent you a specimen of the black grub which infests the garden in Oxford-square. I observed it last year; and during the present season it has prevailed to such an extent, that many quart measures have been gathered. It lives just below the surface, and eats into the stems of plants near the roots. Almost every Pink, Carnation, Sweet-william, White-rocket, and Thrift (Sea Pink), has been destroyed, and I believe a great portion of the annuals. The gardener has been incessantly employed in collecting the grubs. Can you tell me what it is? and what is the most likely mode of extirpation In another pot, I send some lumps of rape-cake, which I placed round Pinks and Carnations; in consequence of seeing the article on the destruction of wire-worm, in the last Number of the Royal Agricultural Journal, by J. M. H. Charnock. The lumps, within a week of being placed in the ground, appear to become a nidus for the worm; but I fear they only give facilities for its increase. I have not perceived that any of the worms show symptoms of disease or death; on the contrary each lump swarms with them and their young. *J. W.* [The black grubs which infest the squares of London at this season, in such great numbers as to be a perfect pest, are the full-grown larvæ of the common daddy long-legs, Tipula oleracea. As they feed upon the roots of growing vegetables only, they are not attracted by the Rape-cake, the small insects in which are not the young of the black grubs (which are not able to reproduce their kind until they have arrived at the winged state), but are the larvæ of various small two-winged flies and beetles. We know no better plan of extirpating these insects than employing children to catch and kill them *in the winged state*. *W.*]

*New Mode of Glazing.*—Near the boiler-house, at the Great Exhibition, is a greenhouse, contributed by Mr. A. Kent, of Chichester, showing a contrivance by which the glass is fixed by India rubber and screws, instead of putty. The advantage of this invention consists in the facility it affords for painting and repairs, by the easy removal of the glass, which renders this kind of glazing useful for any plant or other structure requiring full or partial exposure during the summer months. The house in question is worthy inspection by those interested in horticultural buildings. *A Subscriber.*

*Seeds* (see p. 310).—I observe that one of your correspondents has complained of having to pay 2*d.* per paper for various seeds which he had bought at a shop in or near Exeter, and that the man assured him that they rarely made up such cheap packets. I should think not, indeed. But your correspondent took the seed home, and spent his valuable time weighing the quantity, &c., and implied that he had got a very scanty allowance for his paltry 2*d.* What would he have? a tradesman's time and paper and string and trouble and seed, with a character for genuineness to depend upon—all for nothing? Does he consider what the produce of that seed is, and how large a patch of beautiful flowers he gets for his money? Does he know that some seeds are worth many guineas an ounce. I regret that your quick eyesight allowed such a letter to pass without comment. The value of seed of all sorts should never be considered if you can have it pure and genuine, as the increased value of the produce upon the original outlay is so enormous—and of course the risk equally in proportion. What with roguery and unfair competition and the cheap mania, the seed trade is bad enough, without such worthless complaints as those of your correspondent. *Northwood.*

*Kitchen Gardening.*—The following are my ideas of a kitchen garden as applicable to myself, and probably not inapplicable to others. My kitchen garden is an old exhausted one, surrounded by timber, not desirable to dispense with, nor now economical in cultivation. Admitting that it is expedient to form a new one, although it may not altogether suit the pocket, I castle-build to make a new one, and I lay down certain premises for the formation of my structure. In these days of easy communication, bought articles are often the cheapest, therefore too large a garden is expensive; but many articles are not so well in perfection when purchased for the table as those grown on the premises. I will

divide all my fruit and vegetables into two: permanent and transitory. I shall have two gardens, the one permanent for the walls and early cultivation, the other moveable. My walled garden costs much money. I will have it as small as possible, to provide sufficient surface of wall; after that expenditure, why sacrifice my walls to cheap vegetables better grown elsewhere. I shall therefore grow nothing on my walled borders, but allow the fruit tree roots to ascend to the surface for the benefit of the sun. Asparagus, for instance, belonging to the permanent class, will take the open space in the centre with other crops of similar nature; and for early purposes I would have small interior walls from 3 to 4 feet high. The great bulk of my vegetables will be in my shifting garden, for which I shall enclose a space in the fields, secure from vermin, &c., as cheaply as possible; this I shall trench and cultivate for some years for sweeter vegetables, and, when desirable, I shall move off again to adjoining land, or elsewhere, marching over the land, subtrenching and improving the soil, and by inoculation from each shift, I shall lay it down at once again. *C. P., York.*

*The Crystal Palace.*—The great question of the day, whether the Glass Palace, in Hyde-park, should be perpetuated as a monument of British skill and enterprise, and at the same time made subservient to other important objects; or whether, when its present purpose is fulfilled, it should be removed, lest it should be desecrated by being converted to any less noble use, appears not to have met with an unanimous response. And as this is a question which should be settled by popular suffrage, and upon which the people must speak, if they would have their rulers act, the matter is fairly open to discussion. It may surely be assumed that a winter garden, accessible to the resident and visiting population of the metropolis, would be an incalculable advantage. To deny this would be to deny the importance of any sanitary schemes. In a climate like that of England, especially, where, for two-thirds of the year, an invalid hardly dare breathe the free air, shelter, such as this building affords, and an atmospheric volume such as it contains, of so great magnitude as to be beyond the possibility of contamination from ordinary sources, would be a boon beyond description. But besides aëration for the valetudinarian, there would be exercise for both the sedentary and unoccupied; and there might also be instruction for those who sought it, and sensible amusement for all. Indeed, the advantages of retaining such a building, for such purposes, are so obvious and manifold, that one feels surprise that any other view of the matter should be seriously advocated. I do not, therefore, agree in the opinions elsewhere expressed, that the building should be taken down because no adequate reason has been assigned. I may be short-sighted, but I do not see how, for instance, it could in any way tend to increase or even secure the lustre of Mr. Paxton's fame, to pull down that noble structure, within a few months of its erection, as if it could not be trusted to stand any longer where it is! Besides, why should such an opportunity of providing the means of health, exercise, instruction, and pleasure, for the "people" be lost? The rich folk of London—or at least a portion of them, have their winter garden in the Regent's Park, a luxury which they fail not, many of them, to enjoy. But, why should not those classes too, who would not be admitted there, why should not these have access to a winter garden—a promenade for their healthful exercise, a garden-scene for their gratification, and thus at all times within their reach? That expenses must be incurred, and these of some magnitude, in order to keep such a building in proper repair, and in proper keeping, is a matter of course; but as it has been shown that the proposed winter garden scheme might be made self-supporting, there need be no anxiety on this head. The Government, if need be might even do worse than take the responsibility of repairs upon themselves; and as to the keeping, as the means will be forthcoming, so it cannot be doubted will be the man. Whether the building stands just where it ought to stand as a permanent structure, is another question. I with many others, think it does not. Placed at it is—to use an Erinism—"It's so big you can't see it." But this could hardly be taken to justify pulling it down, merely for the sake of putting it up again in a more appropriate situation. These are questions upon which probably the public must express its opinion, before anything can or ought to be done; and the way to do this is of course by public meeting and petition, or address to Parliament, one or both. My chief object is, to suggest that the horticulturists of Great Britain, as a body, should in this matter make their petition, that the Glass Palace be retained, and converted into a public winter garden. The management of such a petition could not be in better hands than those of the Editor of the *Gardeners' Chronicle*, and the occasion of the approaching horticultural *fête*, would afford many residents in the country, interested in this national undertaking, an opportunity of affixing their signatures. *Thos. Moore, Chelsea.*

*Song Birds* (*see p.* 422).—I wish to say a few words more in regard to the stone-chat. I think any person would conclude that a bird designated as a "tender summer warbler" was a migratory species, and I merely wished to state that the stone-chat was a resident here throughout the year; it is one of our earliest breeders, and I have frequently known the young birds to leave the nest by the middle of April: it is possible that it may be migratory in Germany, although stationary here. The whin-chat, which used to be one of our most abundant summer visitors, has nearly deserted this neighbourhood, and for the last three years I have not seen more than one or two pairs. It would be very easy to have a specimen of the bird found in Wales sent by post, and this would settle the question beyond all doubt. *Henry Doubleday, Epping.*—— There is no doubt in my mind that Mr. Doubleday is correct in saying that the strange bird seen in Wales is the male redstart (or some undescribed bird), or the pied fly-catcher, although that has no red about it; this last is an exceedingly local bird. I never saw it but in one place (in the woods adjoining Gisburn Park, the seat of Lord Ribblesdale); but when angling there some years ago, I saw at least half-a-dozen pairs between Pugthorn-bridge and Gisburn corn-mill; how it happens to be so plentiful there, whilst seven miles off, in localities that are very similar, one is never seen, it may be somewhat difficult to account for. Mr. Kidd promises some papers about the black-cap; will he be kind enough to point out the differences (if any) between the nest, eggs, song, and fretting notes (notes of distress uttered by the bird when anyone goes near the nest) of the black-cap and those of the garden warbler (Sylvia hortensis)? I must confess they puzzle me. The birds are quite distinct in appearance, but until I see the bird I cannot tell from its note, its nest, or its eggs whether it is a black-cap or a garden warbler. This latter has a most extraordinary liking for Kentish Cherries, and until my boys declared war against them (not war to the knife, but the rifle ball), we could never secure a ripe one. They seldom came into the garden until the Cherries were nearly ripe, and they entirely disappeared when the crop was eaten. *E. G.*—— I beg to inform Mr. Kidd, that the stone-chat remains here throughout the year; whereas the whin-chat leaves these parts in the autumn, and does not return to them until about the middle of April. Mr. Kidd will find an interesting, and as far as my experience goes, accurate mention of both birds in Yarrell's "History of British Birds," *John Boswell, Iver, Bucks.*

*Cure for Mildew on Grapes.*—I was sent for one day to inspect a beautiful house of Grapes. The Vinery contained 10 Vines of different sorts. I remarked that mildew had spread all over the house, and was beginning to settle on the wood. I ordered a fire to be lighted about 3 o'clock in the afternoon, the house to be well slushed with water, and the Vines to be syringed all over, in order to make everything damp. When the house was heated to 75°, I had water poured on the pipes, and the latter dusted with black sulphur. I then had the heat raised to 90°, and in the morning I observed black spots through the leaves, instead of white spots of mildew on the top of the foliage. The quantity of sulphur used was 1 lb. at two dressings, for the same treatment was repeated the next night; and now the Grapes are swelling and going on favourably, with no signs of mildew except the spots where it was. I have sent you some leaves for inspection. *W. Sowden, gardener to D. Rutter, Esq., Hillingdon.*

*Watering a Flower Garden* during continued sultry weather has been condemned as doing more harm than good; and so it will, if the usual sprinkling from a rose is all the plants are to have, which only hardens the surface of the soil; but if the earth is loosened with a fork, and well saturated in the cool of the evening, the nozzle being removed from the pot, the blossom and foliage will soon speak for themselves, and reward the amateur, who must have the beds soaked under his inspection, not merely damping the earth, an injurious practice. In these days of invention, no man having a brook within half a mile of his garden, should be without plenty of water. *Falcon.*

*Parrots.*—If the following statement of the case of a parrot, which, from some irritation, picks out all its feathers, should elicit a reply, and suggest a remedy, it will greatly oblige an individual, and be useful to many, as the instance is not a singular one. It is an African grey parrot, about 12 years old, and was formerly very healthy. About four years ago, it began to bite the feathers off the shoulders of the wings, which it continued to do for the last 3½ years; the last six months it has bitten off all its feathers except the quills of the wings and tail, and has stripped the down off the wing quills. It often appears to be vomiting, with a kind of tremour and drowsiness. The following remedies have been tried. Washing with cold water, with liver of sulphur and water, with tan water, with a kind of lime-water that parchment is dipped in, and with tobacco-water; these have each been tried in succession, allowing ample time for proving the failure of all. As medicines I have used (also in succession), and with great patience and caution:—Magnesia, milk of sulphur, nitre, saffron, chillies, capsicum, and grains of paradise; these being mixed with bread and water. It has been bountifully fed with bread and milk, bread and water, biscuits, cakes, nuts, hemp and canary seed, fruit and vegetables, sometimes chicken bones, and rich puddings. For the last six months its diet has been changed to sopped bread and Indian corn, boiled and raw. Since it has been dipped in tobacco-water, its skin has become clean and bright; it allows its feathers to grow for a time, and then picks them off; it appears always to have an itching sensation. It drinks very little, it is kept in a brass cage, and carefully attended to in every respect. *G. R., Guildford, Surrey.*

*Decay in Larch.*—Having planted, and paid much attention to the growth of Larch, in Devonshire, I have been surprised to find the same symptoms of decay mentioned in your paper a short time ago, after a growth of 30 years, and some younger, both in damp and dry situations. One beautiful plantation in particular, planted on a dry, slaty bank, at Lifton Park, near Launceston, and which has made great growth, though quite healthy in appearance, shows unmistakeable signs of decay, when cut down. *An Old Subscriber.*

*Gooseberry and Currant Trees Disbudded by Birds.*—I have many Gooseberry and Currant trees in my garden, and for several years successively I found that numbers of the branches possessed blank pieces of a foot in length without an eye or leaf, and it occurred to me that it was occasioned by birds destroying the eyes in winter. As a preventive I adopted the plan of loosely festooning thick darning cotton from branch to branch on the outside of each of the trees as soon as I had pruned them, and it had the desired effect; so much so, that for four years during which I practised it, there has scarcely been a missing eye on any of the branches. A curious circumstance, however, has attended the plan, viz., in a number of instances where the attachment of the cotton has taken place, the branches have died, and, in some cases where the trees were old, one half has been killed. This has been the case every year up to the present. It occurred to me that the cotton was a conductor of the electric fluid, and that that might have been the cause of the evil. To prevent for the future the loss of my trees, and at the same time to save my fruit, I think of placing three or four hazel sticks round each tree, and attaching the cotton to those instead of the trees. *J. W., Walthamstow.*

*Royal Botanic Society.*—In your report of the fruit at the last exhibition, you have committed an error. In the award of the 1st class prize for Strawberries, you say that "Mr. Kitley was first;" but it should have been Mr. Lydiard, for Kitley's Seedling Goliath. Mr. Kitley did not exhibit at all in either class of fruit. *Peter Lydiard, Batheaston, Bath.* [We take this opportunity of remarking, that great difficulty exists in obtaining correct information regarding the prizes for fruit. We suspect that the "award board" was never suspended in the garden at all; or, if it was, it must have been as late as 6 o'clock in the evening! Under such circumstances, can it be wondered at that errors are committed?]

## Societies.

NATIONAL FLORICULTURAL, *July* 10.—E. FOSTER, Esq., in the chair. Various Pelargoniums, Petunias, Fuchsias, Verbenas, Calceolarias, Carnations, Picotees, and Pinks, were exhibited on this occasion, together with a double Cineraria (?), resembling Senecio elegans, and one or two other plants. Mr. Turner, of the Royal Nursery, Slough, received a certificate for Dodwell's Mary Picotee, a pleasing variety, but wanting in purity; Fellowes' Prince Arthur, though rather rough, was commended. The same grower was also awarded a certificate for Fuchsia, "Banks' Diamond," a dark variety, much reflexed, but a little loose in habit. Messrs. Henderson's Carnation-striped variety of Drummond's Phlox was commended for its colour and suitability as a bedding plant. A first-class certificate was awarded to J. Edwards, Esq., of Holloway, for a Primrose-coloured Antirrhinum, which, on account of its size and shape, is certainly an acquisition to this somewhat neglected class of plants. Mr. Edwards's Pink Titus appears to be a first-rate flower; but only a single bloom was shown. Of Mr. Major's Calceolarias, Nos. 9 and 11 were the best; none of them were, however, considered worthy of reward. Certificates were given to Mr. Smith, of Hornsey, for Verbenas "Purple Rival" and "National," both desirable kinds. Mr. Ambrose had a Fancy Geranium, named "Fireball," which was commended. Some good Gladioli were furnished by Mr. Stains, and Gloxinias Princess Alice and Victoria by Mr. Parmenter, of Kentish Town. [We would here remark that the Society should insist upon plants being produced on all occasions, and refuse all notice of mere blooms. ED.]

BOTANICAL, OF EDINBURGH, *June* 19.—Professor BALFOUR in the chair. The following papers were read:—1. On the Government Teak Plantations of Mysore and Malabar. By Dr. Cleghorn.—2. On Chantransia, Desv. By J. Ralfs.—3. Notice of Belenia prælta of Jacquement. By Dr. Balfour. Dr. B. stated that the plant exhibited by him at last meeting, as a species of Hyoscyamus, turns out to be the Belenia prælta of Jacquemont. The genus Belenia differs from Hyoscyamus in its corymbose inflorescence and more regular flowers. The plant is described and figured in Jacquemont's work. It grows on the Himalayas at great elevations, and towards the northern slope, abounding in the flat plains on the lofty summits. The plant in the Botanic Garden was raised from seeds sent by Major Madden, to Mr. Moore, of Glasnevin.—4. Remarks on some Australian products. By S. Mossman. Dr. Balfour made some remarks on the glandular stipules of Cinchonaceæ. Mr. Weddell states that on the inner surface of the base of the stipules of Cinchona and allied genera, he had observed numerous small glands which secreted a gummy fluid. In Cinchonas the secretion is transparent and fluid, while in several other genera it is solid and opaque, and seems to glue the stipules to the bud which they embrace; this is particularly the case in Pimentelia glomerata. In Rondeletia the secretion is soft, like wax, and of a beautiful green colour. The inhabitants of Peru give it the name of Aceite-Maria, or Oil of Mary; they collect it carefully, and use it as an external application in various diseases. The stipular glands have an oval or lanceolate form, and are somewhat pointed. The axis of the gland is in the form of an elongated cone; it is composed of

elongated and dense cellular tissue. Dr. Balfour, with the aid of his pupil, Mr. Matthews, examined these glands in many Cinchonaceæ, and they detected them in fresh specimens of the following:—Cinchona Calisaya, Burchellia capensis, Cephaelis Ipecacuanha, Coffea arabica, Ixora javanica, Mussænda frondosa, Rondoletia speciosa, Pavetta indica, Luculia gratissima and Pinceana, Pentas carnea, Gardenia Stanleyana, and other species. In some the secretion was beautifully coloured. Specimens were shown under the microscopes, as well as magnified drawings of the glands. Dr. Balfour stated that he had recently received a letter from Dr. Walker Arnott, in which he remarks, that in preparing spiral vessels, to show them fresh, he finds the most easy plan is to take the petiole or peduncle of Pinguicula vulgaris and squeeze it between two glass slides, so that it may become thin and transparent. In this way a preparation is made, which, when put under the microscope, exhibits spiral vessels and annular ducts distinctly, without any farther trouble. Dr. Balfour exhibited specimens of Knappia agrostidea, recently collected by Mr. Syme at Gullane Links, but which he had subsequently ascertained to have been sown there by several botanists at different times; as also, Ranunculus confusus, Gr. et G. from a pond at the same place; and R. trichophyllus, from the pools at Gullane: the latter is considered by Mr. Babington and others as a variety of R. aquatilis. Many interesting plants were exhibited from the Botanic Garden, among which were Solanum fragrans, a well-flowered specimen of Dendrobium densiflorum, a set of Robertsonian Saxifrages, Alpine plants, rare Carices, &c. A collection of Alpine plants was likewise exhibited, from the garden of Dr. Neill, Canonmills-cottage, including Stellaria scapigera, Oxyria reniformis, and others of interest. Mr. Stark exhibited Stylidium androsaceum, Orchis muscifera, Aceras anthropophora, and other plants in flower; also, a fresh specimen of Trichomanes radicans in a state of fructification. Three new Fellows were elected.

Entomological, *July 7.*—J. O. Westwood, Esq., President, in the chair. Donations from the Linnean Society of London, Dr. Asa Fitch, of the United States, and other naturalists to the library and collections were announced. Mr. E. Shepherd exhibited a box of British Lepidoptera from Burwell fen and Darenth wood, including many rare and a few new British species of Micro-lepidoptera; also a beautiful specimen of the very rare Stauropus Fagi, from Black Park, Bucks. Mr. F. Smith exhibited a specimen of the fine new British Gastropacha ilicifolia, captured in Cannock-chase, near Rugeley, in May last, by the Rev. W. S. Atkinson; also living specimens of the splendid Chrysomela cerealis, sent by Mr. Foxcroft, from Snowdon. Mr. Douglas brought an exotic species of Blatta and another of Pentatoma, which had been found (together with the larva of Stene ferruginea, one of the Tenebrionidæ) in Kousso, a new and high priced drug, from Abyssinia, used as a vermifuge. He also exhibited illustrations of the habits and transformations of Pædisca bilunana, Ditula angustiorana, Cochylis francillonana, and other micro-lepidoptera.—Mr. Weir exhibited various interesting moths from Suffolk, and Mr. A. Shepherd, specimens of Depressaria assimilella reared from Broom. Mr. S. Stevens announced the capture of Acalyptus carpini and Meginus collaris, two species of Curculionidæ, new to this country.—Mr. W. W. Saunders read a notice of some inquiries he had recently made as to the variation in the weights of different specimens of both sexes of the common cockchaffer. The President observed, that as this insect had been extensively used in Hungary in the manufacture of grease for cart-wheels, the observations of Mr. Saunders possessed a practical value in addition to their physiological interest. The President also gave an account of Dr. Asa Fitch's observations on insects of different species found upon snow in North America. It was announced that the annual excursion of the members was fixed for the 12th instant, at Weybridge.

Botanical, of London, *July 4.*—Mr. G. E. Dennes, in the chair. The Curator (Mr. Syme) exhibited one of the various forms or sub-species usually grouped under the name of Ranunculus aquatilis, which had been collected by that gentleman, at Guillow Links, Haddingtonshire, early in June. He, and others, had referred this form either to R. Baudotii (Batrachium marinum, of Fries), or to R. confusus, of Grenier, and Godron's "Flore de France," two very nearly allied plants, and neither of them easily distinguished from some varieties still usually joined with the typical R. aquatilis.

## Reviews.

*The Naturalist; A Popular Monthly Magazine, Illustrative of the Animal, Vegetable, and Mineral Kingdoms.* Conducted by Beverley R. Morris, Esq., A.B., M.D., T.C.D., Mem. Wern. Club. London: Groombridge and Sons.

Of this very interesting and well-conducted monthly periodical, five numbers only have appeared,—these are amply sufficient, however, to enable us to form a correct judgment as to the value of such a work. The editor appears every way qualified for the conduct of a publication of the kind; and his modestly-urged appeals for support in his undertaking have been largely and readily responded to. We observe among his contributors and correspondents, the names of some very estimable individuals, whose united co-operations cannot fail, we would hope, to render the speculation a successful one. The information sought for and supplied, is that of "a popular character";—all dry, scientific details, being avowedly and very properly excluded, so far as is practicable. One feature in particular is worthy of especial notice. All contributors are requested to append to the articles sent in, their names and addresses. These, if not in every instance published to the world, are in the possession of the editor. This is the direct way of obtaining accurate intelligence, which is of the last importance in journals of this character. The topics introduced are varied and extensive,—all, however, having reference to the legitimate objects of the magazine.

Let us, however, hint to amateur observers that one single "fact" is worth a hundred surmises. We have often regretted to observe how, at this season in particular, remarkable anecdotes get into the papers, of "singular attachments" between animals of the most opposite dispositions. A few weeks since, there was recorded, with much elaborate detail, "a remarkable fact" connected with the domestication of a canary and a mouse.

Every morning, it was gravely stated, the latter was found in the cage of the former; and on one particular occasion, the cage-door was observed to be open, and the bird gone. After a careful search, the "little truant" (*sic in orig.*) was found behind the window curtain—"asleep," by the side of the mouse! This most ridiculous invention, which we have materially abridged, was carefully and literally copied into all the prints. We need hardly remark that science is greatly injured by such oft-recurring fabrications. They answer no good end, and cast stumbling-blocks in the way of youthful inquirers into the secrets of Nature. We hope now that the time has arrived for "prodigious Gooseberries," "enormous circumferential Cabbages," and other such "annual" summer monstrosities—that we shall, for a season at least, be released from such absurd outrages upon Nature and common sense.

Whilst offering a friendly tribute of welcome to our new contemporary, we would just observe that, among the Notes on "Spring Arrivals," in No. 5, are some very interesting particulars of the cuckoo. In the earlier numbers, too, the *affection* of that bird (to some a matter of doubt) is confirmed. It *does* "assist" in feeding its offspring. There are also scattered throughout the work, *inter alia*, some curious particulars of the kingfisher—all very delightful to the lover of Nature.

## Garden Memoranda.

Messrs. Weeks and Co.'s Nursery, King's Road, Chelsea.—The Royal Water Lily has been fully exposed here in an open pond, night and day for the last three weeks, and it is growing and flowering most satisfactorily, the total number of blossoms it has produced being 16. The leaves are 4 feet across, and perfectly healthy; but as yet they have exhibited little inclination to form rims; their whole surface prefers laying quite flat upon the water. A new leaf developes itself about every fourth day, and a flower every third day; the appearance of the plant would indicate a likelihood of its blooming for some considerable time yet to come. The water in the basin is kept at between 80° and 90°, and the boiler from which this heat is derived also warms five houses and two pits of moderate size. About two dozen gold fish were introduced into the pond some short time ago, and they have since multiplied so abundantly that the water literally swarms with their young, which all present the fine colour of their parents. Indeed so well do they succeed and breed in the warm water, that Mr. Weeks is of opinion they will ultimately almost pay the cost of heating it. We need hardly mention that this experiment points out another purpose to which waste steam might be employed both profitably and for pleasure. It is the Thames water in which the plant is growing at Chelsea, and we understand that it is the intention at present to widen the pond next year, and plant in it the various other kinds of tender Water Lilies. It may be worth notice, that the overflowings of this tank are collected into a cistern, from which tepid water can at all times be had for the purpose of watering plants with.

Messrs. Lane's Nursery, Great Berkhampstead, Herts.—The beautiful collection of Roses which this nursery contains is now in full bloom, and, therefore, all who wish to examine them in perfection should see them as early as possible. Conspicuous in the beds on Grass, behind Mr. Lane's house, were the glorious Géant, des Battailles, Souvenir de la Malmaison, the glowing crimson Fabvier, the profuse blooming Miss Glegg, Belle de Florence, and Mrs. Bosanquet; and near these were the climbers Thoresbyana, Ruga, Amadis, and Banksiæflora, concealing the poles which supported them with thousands of flowers and flower buds. Farther up the hill were large beds of all the finer kinds of Hybrid Perpetuals and Bourbons, specimens of each of which are planted here for show. Mr. Lane has been budding largely on the Manetti stock, by way of experiment, in order to prove its suitability for different kinds of Roses, and the result cannot fail to be highly instructive; but at present it would be unfair to offer any opinion on the subject, inasmuch as the experiment has not yet been sufficiently tested. In another part of the grounds, we observed a plantation of three acres of stocks—all Dog Roses, in admirable condition, the stems being straight and clean. Budding has already commenced, and will occupy a large share of attention for some time to come; 13 men are stated to be employed at this kind of work throughout the season. Some weeping or fountain Roses, as they are sometimes called, were exceedingly handsome, by the side of a Grass-walk. This description of Rose is not so much cultivated as it should be, for we are sure that their judicious introduction into many kinds of garden scenery would improve it. We also remarked several sorts of Cytisus "worked" standard high, whose close heads of yellow flowers strikingly contrasted with the many coloured Roses with which they were associated. The common Broom itself treated in this way has an excellent appearance. The usual nursery stock, which is not lost sight of here, is everywhere intermixed with fine plantations of Roses; but to see the latter under the most advantageous circumstances, the Hill Nursery, on Berkhampstead Common, must be visited. Here the queen of flowers is to be found in all her glory. Large beds of Géant des Battailles, Baronne Prevost, Moss Rose Lanei, and other leading flowers everywhere meet the view, all in the most admirable condition—clean and free from blight. The soil here, a hazelly loam, though not rich, seems to suit the Rose perfectly. Among newer varieties were Paul Ricaut, certainly a very fine Rose, beautiful in shape, and occasionally as brilliant in colour as Géant des Battailles; Baron Hallez, crimson, large and fine; Caroline de Sausal, a neat shaded rose; Chereaux, rose, large and double; General Cavaignac, a very fine rosy pink; Géne de Chateaubriand, reported to be a good Rose, but it has not proved so here; Lady Frances Waldegrave, said to be an improvement on Madame Laffay, but in reality very different from that variety; Madame de Lamoricière, pink; Reine Mathilde, large light pink, and good when young, but soon gets out of shape; and Standard of Marengo. The latter is a charming flower, which must certainly become a favourite. Fortune's five-coloured proves to be distinct and rather pretty. The colour is creamy white striped with carmine.

## Miscellaneous.

*Gathering Fruit.*—The chief merit of the gardener, in this respect [the management of ripe fruit], is the supplying of the table with them in the utmost perfection; and the art of gathering, which is very little understood or thought of, is a very essential and material article. I have seen one common custom among gardeners, which is, to go out for fruit an hour before it is to be served at table; and this they think very meritorious, because it will be fresh. I have seen also a contrary practice, which I shall explain, together with its reasons; but first, in order to show its real use, this fact must be inserted. Two gentlemen, relations and neighbours, who had the same soil, and the same kind of trees, and those, to all appearance, managed in the very same manner, found a vast difference always in the fruit; it was so great, that their company never failed to perceive it as well as themselves; and when it came at last to be explained, the whole cause was, that the gardener of him whose fruit was worst, gathered it just before it was wanted, and the other much earlier. This seems to contradict reason, freshness being esteemed the great article in the nicety of fruit; but it is only a seeming contradiction. Let any one examine the state of plants in general in summer, and he will find it this; as the great heat of the day comes on, their leaves begin to flag, and they droop more and more till the cool of the evening. The reason is, the great evaporation of their juices by the sun's heat: they grow flaccid from toward noon till near sunset, then the heat is over, and the dews refresh them: they continue recruiting and recovering during the whole night, and they are firm and lively in the morning. The case is the same in fruits, only it is not so easily perceived. At noon they are exhausted and flattened, and they are heated to the heart: all this renders them dead, and unpleasing. They begin to recruit towards the evening, as the leaves; and in the same manner are in the full perfection at early morning. One hour after sun-rise is the time for gathering them: this was the secret of the successful gardener, and this every one should practise. Let him take some fruit-baskets of open work, cover them with large leaves, and at seven in the morning go out to gather his fruit. When he has carefully chosen what is ripe, and laid it handsomely in the basket, let it be placed in a cool, but not damp room, till it is wanted. *Old Magazine.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Any more of the Indian Azaleas which have completed their growth, and formed their flower-buds, may now have a slight shift, if becoming root-bound, according to the advice given some time back. They should be kept cool, so as to avoid a second growth. This treatment will be equally appropriate for any hard-wooded plants in a similar state of maturity. Although water may for some time yet be liberally supplied to plants in general, it is necessary to make many exceptions to the rule, and these will every day become more numerous. Many plants which have matured their growth require a less abundant supply; and to those with bulbous or tuberous roots, which are now ripening their growth, the supply of water must be more restricted. Plants in flower of Thunbergias, Achimenes, Gloxinias, Geraniums, Fuchsias, &c., the beauty of which it is desirable to preserve as long as possible, should be assisted with occasional waterings of liquid manure; and that the foliage, as well as flowers, may retain their healthy appearance, let the pots, if possible, be plunged,

or shaded by surrounding plants, to protect them from the scorching heat of the sun. Pelargoniums of the forcing kinds, which were cut down some time since, and are now commencing their growth, should be shaken out of the old soil, and, after having their roots trimmed, should be repotted in sandy soil moderately rich, placed in a close frame, and sparingly watered, till they have made some progress in their new growth. None of the sorts form more beautiful objects, or are better adapted for forcing, than the fancy varieties; and for this purpose a quantity of healthy plants should be expressly prepared. Last year, about this time, we selected a hundred bushy plants from the Pelargonium house, and placed them in an open situation for about three weeks; during which time they had very little water. We then gave them a moderate shift, and set them again in the open air; removing every truss of flowers as they appeared, until the plants were again set upon the stage in the end of September, where they continued flowering beautifully until Christmas.

FORCING DEPARTMENT.

PINERIES.—If the heating apparatus of any of these structures is at all defective, or even doubtful, the natural heat of the season admits of the artificial heat being now with the least risk dispensed with, and thus affords the needful opportunity for making the requisite alterations. It is annoying enough to have our arrangements disturbed at any time, but this is not equal to the vexation arising from an old boiler bursting, or a set of pipes or tanks giving way in the middle of winter; especially when due forethought and careful observation would have prevented the catastrophe. Withhold water from plants which are ripening their fruit; and the soil in which plants in other stages are growing should be frequently examined, to see that the constant syringings do not make it too wet, and thereby endanger the health of the roots. Do not, on the other hand, allow them to suffer from lack of moisture, either about the roots or in the atmosphere, and let them be supplied with a bottom heat of about 85°. VINERIES.—The most important thing to be attended to in the houses is to keep the red spider in check. Where this has been properly attended to during the last three months, and where syringing was not continued too long, the bloom will be uninjured, and the appearance of the fruit will thus be considerably enhanced; besides which, the plants are in a much better condition to perform the functions necessary for ensuring a good crop next season. Let this be kept in view during the rest of the autumn, as it is still more essential that the foliage of late Vines should be kept in the highest health to the latest period possible. Attend, when necessary, to the watering of inside borders, and to those on the outside which are covered with tarpaulin or other material. A slight mulching of decayed leaves or dung is very useful during summer, in preventing excessive or sudden variation in the state or temperature of the soil, and the cracking of the ground, and consequent injury to the roots in hot dry weather.

FLOWER GARDEN AND SHRUBBERIES.

Strict attention to neatness should prevail in this department, by rolling, sweeping, mowing, &c., and by pegging down half-hardy plants as they advance in growth. Do not allow any of these to extend themselves outwardly so far as to injure the edgings, whether of Box or turf; and in cleaning the shrub masses, where herbaceous plants or annuals have been planted or sown in vacant places, take care that the latter are not injured by the encroachments of these quick growing plants. Where flowers are planted in the circles of bare soil round specimen fastigiate shrubs, great care should be taken to prevent the lower branches of the latter from sustaining injury. Any annuals or half-hardy plants, whose season of beauty is past, should be immediately removed, and their place supplied from the reserve garden, planting sufficiently near to produce at once a dazzling display. The Roses should be again gone over, and all gross shoots that are not likely to flower this season, with those which have done flowering, and the dead flowers, should be cut out. Young strong growths of autumn flowering Roses in masses should be pegged down, and those of the summer flowering kinds, as the Moss, Provins, or Gallica varieties, should be layered; the whole surface of the beds should be forked over, and if a good soaking of liquid manure can be given, its effect will be very apparent in the greater permanency of the colours, and in the lengthened period of blooming. Remove dead flower-stalks from bulbous rooted Irises, unless seed is wanted from them; do not, however, disturb the foliage, until it is quite ripe. If any alteration in their arrangement is contemplated, it should be effected as early as possible after that time, as they commence making new roots immediately. White Lilies, which are now in beauty, should be taken up and replanted once in two years, and, as in the case of the Iris, this should be done as soon as the old stems are decayed. The beds for either of these plants should be prepared of rich loamy soil, containing a good portion of sand or burned clay, and charred refuse, with a sufficient admixture of soot to destroy all animal life. And in planting, a little sand should be laid above and below the bulbs.

KITCHEN GARDEN.

A few days of hot dry weather at any time during summer, renders it indispensable on the part of good gardeners to supply water artificially to some of their crops; as the check which the plants otherwise receive is very detrimental to their health, especially if they have been recently planted, or are natural inhabitants of marshy ground or the seashore, such as Celery, Asparagus, or Seakale. When the operation of watering is necessary, take advantage of such opportunities to stimulate the plants with liquid manure, if it is by any means obtainable. Proceed with the planting out of the various autumn and winter crops, selecting the most favourable weather for the purpose, and taking care that the ground has plenty of manure; and if there be any doubt about the quantity already dug being insufficient, let an additional portion of manure, and a good sprinkling of soot be forked in as the planting proceeds. Give every attention to all growing crops, so as to insure abundance and quality. Liquid manure will now be found of great service, and this, with stirring the ground deeply with a fork among the growing crops, is the sure way to succeed in realising the best results. Rampion, which is invaluable as a winter substitute for the Radish, should be transplanted from the seed bed into a south border. Care should be taken not to injure the tap root; and before planting any strong side shoots should be removed, to throw strength into the main one.

HARDY FRUIT GARDEN.

One of the most important things to be done at this time is the preparing of ground for new plantations of Strawberries, and planting them as early as possible, that they may produce a crop of fruit the first season. This they will do, and the fruit will be of the finest quality, if they are planted this month, and proper care taken to keep them well watered during dry weather until they are fairly established. Strawberries do best in a rather strong, rich, and deep soil. Where the soil of the garden is naturally light, improve it by adding marl or strong loam with plenty of manure. Rows of Strawberries along the edges of walks look well, and are very convenient, as the fruit can be gathered without treading upon the ground, while the quarters are relieved and made available for crops which it is desirable to place a little further from the eye. The earliest plants produced by this year's runners should be selected, and, in separating them from the parent plants, a few inches of the string should be retained to assist in fixing the plant in the ground. If they are planted on quarters, the rows should stand 2 feet apart each way. This will allow room for intermediate rows of Endive, Spinach, or dwarf York Cabbage this autumn, and the plants will require all the room next spring. By allowing plenty of room the fruit is finer, cleaner, and more abundant than when the plants are allowed to crowd one another and entirely shade the surface. The most desirable of the old kinds are Myatt's Eliza for a very early sort, Keens' Seedling and British Queen for general crops, and the Eleanor, which is very fine and comes in later. For preserving, none surpasses the old Grove-end Scarlet, and the Roseberry; but housekeepers are the best judges in preserving matters, and with regard to Strawberries they seem to be guided more by colour than by flavour.

State of the Weather near London, for the week ending July 10, 1851, as observed at the Horticultural Garden, Chiswick.

| July. | Moon's Age. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air. | | | Of the Earth. | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 4 | 30.027 | 30.011 | 67 | 37 | 52.0 | 62 | 60 | N.E. | .00 |
| Satur. .. | 5 | 30.021 | 29.975 | 75 | 45 | 60.0 | 61 | 63 | N. | .00 |
| Sunday . | 6 | 30. 58 | 30.050 | 74 | 50 | 62.0 | 62 | 60 | N.W. | .00 |
| Monday | 7 | 30.051 | 29.904 | 75 | 55 | 65.0 | 62 | 62 | N.W. | .00 |
| Tues. .. | 8 | 29.798 | 29.714 | 71 | 50 | 60.5 | 62½ | 60 | N.W. | .08 |
| Wed. .. | 9 | 29.811 | 29.696 | 67 | 43 | 55.0 | 62 | 59 | S.W. | .16 |
| Thurs. .. | 10 | 29.864 | 29.677 | 69 | 38 | 53.5 | 61 | 59 | N.W. | .24 |
| Average | | 29.917 | 29.718 | 71.1 | 45.4 | 58.3 | 61.8 | 60.4 | | .48 |

July
4—Overcast; very fine; clear and cold at night.
5—Fine; very fine; clear at night
6—Clear and fine; overcast. densely clouded.
7—Overcast; very fine; overcast and mild.
8—Cloudy and fine; thunder, with showers.
9—Overcast; cloudy and fine; rain at night.
10—Rain; fine at intervals; thunder-storm in afternoon.
Mean temperature of the week, 5½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending July 19, 1851.

| July. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 13 | 73.0 | 51.6 | 63.3 | 9 | 0.60 in. | 1 | 2 | 3 | 1 | 3 | 8 | 8 | 1 |
| Mon. 14 | 75.3 | 51.8 | 64.1 | 9 | 1.46 | 1 | 1 | 2 | 2 | 3 | 7 | 9 | 1 |
| Tues. 15 | 73.2 | 50.8 | 63.0 | 12 | 0.15 | 1 | 3 | 3 | 1 | 3 | 10 | 4 | 1 |
| Wed. 16 | 76.6 | 50.9 | 63.7 | 6 | 0.46 | 1 | 3 | 2 | 1 | 2 | 10 | 6 | 1 |
| Thurs. 17 | 76.5 | 54.2 | 65.4 | 8 | 1.23 | 2 | 4 | 2 | 1 | 2 | 6 | 4 | 2 |
| Friday 18 | 73.8 | 52.3 | 63.0 | 12 | 0.60 | 1 | 1 | 1 | 1 | 1 | 9 | 7 | 3 |
| Satur. 19 | 71.7 | 51.5 | 61.6 | 15 | 0.60 | 1 | 1 | 1 | 1 | 1 | 6 | 7 | 2 |

The highest temperature during the above period occurred on the 17th, 1834—therm. 94 deg.; and the lowest on the 13th, 1840, 15th, 1845, and 19th, 1832—therm. 41 deg.

## Notices to Correspondents.

ADULTERATIONS: *Sinapis.* Do not be misled by the statements about shop adulterations. Recollect that much of the truth of these statements applies only to low and poor neighbourhoods, and that the facts themselves are often very highly coloured. As to Mustard, you have nothing to do but to procure the common white Mustard-seed of the shops, to grind or pound it, and the siftings will be what you want; but such Mustard, although pure, will probably be unpalatable and intolerably pungent.

ANATOMISED PLANTS: *G H.* We are unable to inform you how the most beautiful specimens of anatomised plants, from Miss King, of Edmonton, in the Great Exhibition, have been prepared. We can only say that they are wonderfully fine.

ASPARAGUS: *A S.* There is no particular indication of the proper time to leave off cutting Asparagus for use. The appearance of green Peas is the general signal for laying aside the Asparagus knife. But previously to that, it is advisable to let a portion of the beds proceed in growth. Those intended to be soon destroyed, or to be taken up for forcing, should be cut the latest. The haulm should be cut down when it becomes dead; it is of no further use to the plants, and would afford very little manure if dug into the trenches.‖

BEES: *W H C.* It is an unneighbourly and disgraceful act to appropriate your bees, and the person who does so ought to be sent to Coventry by all his acquaintances. We believe that you have a right to follow your bees as long as you do not lose sight of the swarm; that at least is the custom, if not the law. But if a question of law arises, you must consult a lawyer, who will probably show your bee-stealer that what is yours is not his.

BIRDS—NIGHTINGALES: *M W K.* There can be no possible objection to your keeping the two young nightingales together, in one cage, for another month. They must then have separate apartments. If males, the birds will soon "record" their song, while sitting on their perches; if females, they will mope and keep silence. Let us hope that *both* your little friends are of the "singing class." *W. K.*—FRUIT-DESTROYING BIRDS: *Avis.* If you can persuade your gardener to form a good opinion of *any* bird frequenting your kitchen garden at this season, you will do what has scarcely yet been ever done. The gardener's business is to preserve his fruit; and a gun is his only argument against all offenders. The "Eighth Commandment" is too indelibly imprinted on his memory, to be ever erased; and for one act of pity or compassion shown by him, he would feel bound to exterminate the whole race, by way of satisfaction to his conscience. The birds you request to have named, are—sparrows, the titmouse, the wren, robin, chaffinch, thrush, blackbird, bullfinch, starling, garden warbler, whitethroat, and swallow. This last is purely insectivorous; and if destroyed, it must be from very wantonness of cruelty. The starling, bullfinch, chaffinch, blackbird, and thrush, are, it must be confessed, depredators on the orchard, during the fruit season. The others, however, may be said rather to indulge their appetite with an occasional "treat" of fruit, than to live on it, insects being their legitimate food. The garden warbler, and black-cap, with other of our little summer visitors from foreign parts, certainly do love ripe fruit; but their depredations are *not* heavy, and they give ample "value" in their song. Try and get your gardener to credit this,—and assure him that *but* for these birds, which, in the spring particularly, devour insects and caterpillars by the million,—his garden would never have been what it now is. *W. K.*—THE SKYLARK: *Susanna Y.* Your bird is husky. Give him boiled milk for two days, instead of water; and keep him out of the reach of all draught. *W. K.*—THE LINNET: *Augusta M.* Your cage must be infected with vermin. Destroy it instantly, and procure another. The bird "droops," because these blood-suckers are living on his body. Wash him carefully in tepid water once daily; and when dry, with your finger raise his feathers, and search for the enemy. The water will soon make them decamp. *W. K.*

CARNATIONS: *A Subscriber* asks, "How long Carnations will last, no pipings or layers being taken from them; but the original plants left in a state of nature." Hardy strong growing kinds will last six or eight years; but there are many that will not stand at all if the winter proves wet. The latter is more injurious to them than frost.

GREAT EXHIBITION: *J W H.* There are no specimens of the wood of the Deodar, Abies Douglasii, or Araucaria imbricata in the Crystal Palace.‡

INSECTS: *W G.* The two insects sent are the real wire-worms; that is, the larvæ of Elater striatus, or some closely allied species of skip-jack beetles. *W.—Chirurgicus.* The little black flies found on the ears of Wheat are parasites on the larvæ or grubs of the Wheat midge. They are named Platygaster tipulæ, and belong to a family allied to the Ichneumons. A useful microscope, of small size, may be had for about 30*s.* Pritchard's "Book on the Microscope" will answer your purpose. *W.—Anon.* Cynthia Cardui, the painted lady butterfly, passes the winter in the egg, as well as the chrysalis and perfect states, and is consequently to be found perfect at other times than August. Those which you describe, and others which we saw at the end of June, were most probably the produce of the last autumn butterflies. We believe the habits you mention, which we have also observed, to be peculiar to the males. *W.*

LIANES: *Isabella.* This is the name given to all sorts of strong woody, climbing, and scrambling plants found in tropical forests. We have no idea what is meant by a plant so vaguely described as the prickly Liane of South America.

MOSS ROSES: *E F L.* The most certain method of propagating them is perhaps by layers.‡

NAMES OF PLANTS: *C M H* Arum Dracunculus.—*Irish Sub.* Common Spearmint.—A few inquiries stand over for further consideration.

NEW GARDEN: *Clapham.* Your new sandy soil wants chalk, and clay, and manure. Having drained, clayed, and chalked it well, as soon as you can, let it be well mixed, turned over, and exposed to the weather, till you want to use it; then give it a heavy dressing of rotten dung. Do your ground work while the days are long, and the weather dry. To furnish you with directions for all the details that have to follow, would be to write a treatise. You will find ample information upon every possible question if you consult the Indexes of our volumes, which you appear to possess. If you have them not, then you would do well to procure Loudon's "Suburban Gardener," Neill's "Fruit, Flower, and Kitchen Garden," "The Manse," and similar books.

PINUSES: *J W R* We doubt much if you will be able to procure seeds of the Pinuses you mention. Worked plants of them may be had of some of the great London nurserymen.‡

PINE APPLES: *X.* Perhaps the best material to mix with your poor loam is sheep droppings; but you must not manure too heavily, or the plants will make leaves at the expense of fruit.‡

ROSES: *Anon.* The Rose you inquire about is Hybrid Chinese Fimbriata ‡

SEAKALE: *Anne.* If you do not want seed, by all means cut the flowering stems off your Seakale. They impoverish the crop for next year.‡

STRAWBERRIES: We have received from Mr. Myatt of Deptford, fruit of a new seedling *five*-leaved Strawberry, raised by him. Its parentage is not mentioned. We find it to be a stout hairy-leaved variety, capable of bearing enormous fruit, six of the berries having each measured 5¼ inches in circumference, and having together weighed 7¼ ounces. If the sort should continue to produce thus, it cannot fail to have a high market value: but we must add that this, like all the large coarse Strawberries, will not bear comparison, in flavour, with the old Pine.—*A Z.* The old Scarletis the very earliest, and we believe Turner's Pine is the very latest; but as the first is a shy bearer, and the last has but indifferent flavour, we should prefer Cuthill's Black Prince and the Elton.‖—*Fragola.* The best way of securing them against the depredations of birds is to net them.‡

VEGETABLES FOR DIFFERENT SOILS: *Clericus.* On almost a complete chalk your cottagers may grow, with the assistance of such manure as they possibly can collect, Potatoes, Onions, Bishop's Longpod, or other dwarf Pea; Mazagan Bean, planted in autumn, winter, and spring; Negro, or Black Belgian Kidney Bean, sowing them in rows 16 inches apart, in order that they may completely shade the ground; some Vegetable Marrows and Gourds, more especially the egg-shaped, may be profitably grown by planting in holes filled chiefly with manure. On low spongy soil, you may grow most kinds of Vegetables suitable for cottagers. Potatoes, Carrots, Parsnips, on ridges; Celery, in trenches; and Lettuces intermediately on the ridges. In short, from your stating that this spongy soil is by the banks of a swiftly running stream, we presume that sufficient drainage may be effected, and then every necessary vegetable can be grown.‖

MISC: *Northwood.* Do not shorten your Apple and Pear shoots before the middle of August. Transplant your Asparagus after the shoots have died down. Nine inches will be sufficient distance apart.‡

SEEDLING FLOWERS.

PELARGONIUMS: *J Berry.* Your seedlings are not so good as some of the old kinds; but one or two of them are well worth keeping, on account of their brilliant colours; 3 is especially remarkable in this respect.*

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The ANNUAL MEETING and GREAT NATIONAL CATTLE SHOW of this Society will take place this year in Dublin, at the Royal Dublin Society's Premises, Kildare-street, on WEDNESDAY, AUGUST 13TH, and the days following, on which occasion ONE THOUSAND POUNDS and upwards, including the Challenge Cup and Medals of the Society, will be offered in premiums for Cattle, Horses, Sheep, Swine, Poultry, Dairy Produce, Flax, and Agricultural Implements, the particulars of which, together with Prize Sheets and blank forms of Entry, can be had on application to the Secretary.

Monday, the 21st of July, will be the last day for lodging notices of Entry for the Show, after which day none can be received.

All Implements must be in the Show Yard on or before Monday, the 11th of August, as the Judges will commence their inspection on Tuesday morning early.

All Stock and other articles, except Horses, must be in the Show Yard before 6 o'clock on Tuesday, the 12th of August, when the gates will be closed.

The city of Dublin Steam-packet Company have undertaken to carry all Stock and Implements, regularly entered for Exhibition, free of all expense from Liverpool to Dublin, on producing the proper form of certificate, to be had from the Secretary.

Signed by Order, EDWARD BULLEN, Secretary.
Society's Rooms, 41, Upper Sackville-street, Dublin.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | | |
|---|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

GUANO AND OTHER MANURES.—Peruvian Guano of the finest quality; Superphosphate of Lime; Gypsum; Salt; Nitrate of Soda; Moffat's Patent Concentrated City Sewage Manure, and all others of known value.—Apply to MARK FOTHERGILL, 204, Upper Thames-street, London.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London.

No Agents.—All orders are particularly requested to be sent direct.

**The Agricultural Gazette.**

*SATURDAY, JULY* 12, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, July 15 } Meeting of the English Agricultural
WEDNESDAY, — 16 } Society at Windsor.
THURSDAY, — 17—Agricultural Imp. Soc. of Ireland.
THURSDAY, —

Mr. PUSEY has stated, in his review of agricultural knowledge in England (Eng. Ag. Journ., vol. xi.), that "except LIEBIG's suggestion for dissolving bones with acid, and Sir R. KANE's for using Flax water as manure, he knows of no agricultural process arising out of chemical discovery:" and again, "the more we value the labour of agricultural chemists, the more warmly we look forward to their future progress through the patient examination of existing practice, which is, itself, the accumulated and varied science of ages, the more we should discourage undue expectation of immediate advantage. It is a great mistake to suppose that men can be made farmers by teaching them doubtful chemistry."

Baron LIEBIG, on the other hand, in the third edition of his "Familiar Letters on Chemistry," says, "Those who should believe, in Germany and other countries, that the above remarks of the former president of the Royal Agricultural Society of England express the public opinion of England, would deceive themselves; and as an honorary member of that Society I regard it as a point of honour to contradict the statements of Mr. PUSEY."

Now the relations of science to agriculture, and especially those of chemistry, constitute a subject on which it is very desirable that a sound public opinion should exist, and it may therefore be desirable to examine the differences which appear to exist on this point between these two authorities. The questions, What is public opinion? and, What ought it to be?—are of course entirely distinct. As regards the former we believe that Mr. PUSEY, who certainly is in a better position for ascertaining it, is better informed than M. LIEBIG. Since the great German chemist was in this country a considerable change has taken place in the opinions of agriculturists on chemistry as their instructor: and, in deference to this change of opinion, as well, probably, as in deference to their own better acquaintance with the true relations in which they stand to agriculture, the chemists of this country do not now adopt so confident a tone as they formerly assumed when discussing the details of farm practice. Take the case of gypsum, to which Messrs. PUSEY and LIEBIG both appeal, as an illustration. The latter gentleman asserts that every tyro in chemistry knows perfectly that thousands of cwts. of sulphate of ammonia have been made by simply bringing powdered gypsum into contact with carbonate of ammonia: the former has applied powdered gypsum to his dung-heaps, and finds that it does not check the escape of ammoniacal vapours. Baron LIEBIG speaks with all the confidence of a chemist 10 years ago: we do not at present dispute his accuracy; we merely wish to bring this to bear on the question—What is the existing public opinion of agricultural chemistry in England?—and we ask our readers to contrast his tone with that of Professor WAY, in addressing an English agricultural audience on this very subject.

The chemist of the English Agricultural Society, after discussing the opinions of chemists on this point—which cannot be so simple and elementary a matter as M. LIEBIG generally succeeds in convincing us that all his doctrines must be—after showing the bearing of his own most valuable researches on the subject—confesses that the current theories wholly fail to satisfy us, and yet that he is unprepared to offer any other in their place, and he says most truly that it is better to confess our ignorance and wait patiently for the light of truth, than to hazard conjectures which will not bear a close scrutiny, but serve only to retard the progress of knowledge. Well might Mr. PUSEY speak of "doubtful chemistry" in its relations to agriculture, had he no other instance than that of gypsum to appeal to. Sir H. DAVY taught that its value arose from its direct agency as the food of plants: LIEBIG teaches that it acts as the vehicle of ammonia, BOUSSINGAULT as that of lime, and Mr. WAY, perfectly competent to criticise their theories, pronounces them all untenable, and confesses his ignorance. We may be glad that in this country we have a public opinion amongst intelligent agriculturists, which does not look for positive, and absolute, and definite instruction on farm practice, at the hands of chemists, which, in fact, whatever M. LEIBIG's opinion of the subject may be, looks cautiously, and almost suspiciously, at such instruction when it is offered. That we have such a public opinion is proved both by the way in which Mr. PUSEY's review has been received and by the style which the chemists of the Highland and of the English Agricultural Societies adopt in their addresses, as contrasted with that which characterises those of Professor LIEBIG. And that we may be glad of it, we argue not merely because we are thereby saved from losses attending the hasty adoption of ill-considered doctrines; but because the more rapid progress of chemical knowledge, and the higher respect for it amongst our agriculturists, from which great benefit may be expected, are both of them thereby the better ensured.

But what ought public opinion in connection with this subject to be? for M. LIEBIG's contradiction of Mr. PUSEY's assertions may relate not to the nature of the existing public opinion, but to the particular topics which are referred to as justifying it. Now we could wish for no better public opinion on the subject than that which Mr. PUSEY himself, and we have no doubt the great majority of intelligent farmers already hold; and for the soundness of which, we, as farmers, and the professors of an *art*, may, without presumption, contend with M. LIEBIG, who, though most highly distinguished as the professor of a science, is not a professional agriculturist. The public opinion then, that seems most desirable, is one which, while it admits the great value of that knowledge of causes which chemistry is continually approaching, shall, at the same time, hold very loosely the trustworthiness of individual doctrines, especially those of recent date, which have been subject to the test of mere laboratory experiment. Of course, we do not pretend to ask any one to suspend his faith in those facts of chemical science on which all men of science are agreed: we advise merely that he should not place the *theories* of agricultural chemistry on the same step in the scale of trustworthiness with those chemical and agricultural facts with which they are connected. We quote a first-rate authority when we say, that the chemistry of soils has, as yet, scarcely been investigated, and we have only just now learned that chemical changes, which in the abstract form are looked upon as axioms of science, are suspended or altogether reversed when the soil is the sphere of their operations.*

It is surely quite possible that distrust of much of the existing theory of agricultural chemistry may co-exist with a full conviction of the great value of the true theory, to which we are making daily approximations; we have no doubt that this distrust and this conviction exist in many of the most intelligent minds of the present day, among both the farmers and the chemists of England. That the former will gradually and reasonably disappear, while the latter shall wax stronger and stronger, we have every reason to hope and believe.

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. IX.—Machines of local use occur in the Agricultural department,—as, for instance, Hop-bagging machines, for compressing Hops into their bags, after the same manner that powders and many articles of grocery, &c., are squeezed into packets and cases. These machines are designed to effect, with less expence of time and labour, the work usually done by men's feet. There are also specimens of Cider-Mills. We observed one hand mill by Pearce, of Poole, Dorsetshire, which crushed the apples between ribbed rollers of a peculiar form, and will grind about 30 bushels per hour. It has wheels of different speeds, to suit the condition of the fruit.

Apparatus for SHEEP-DIPPING seems to be included in implements, &c. for the fold. Bigg's admirable contrivance is exhibited; and the convenience of the vat, the excellence of the "drain," and the suitability of all the parts to sheep of all sorts and sizes, appears to be all that a flock-master can desire in this way. We noticed a "Sheep-dipping Apparatus and Sheep carriage, in one machine." designed by R. M. Rome, of Langholme, Dumfries, which must be valuable to the shepherds of moorland sheep-walks, or of large grazing farms. The vat is made with an ascending curve at one end, up which the sheep, after being dipped, is to walk into the waggon and down an inclined board at its other end. But the vat is only about 20 inches in width; and would be useless in Lincolnshire, or on the Cotswold Hills, the sheep there being far too elephantine to be squeezed into it.

The most novel instrument for the service of the flock,

* Professor Way, article "Gypsum," Cyclopedia of Agriculture.

is the "Syphon apparatus for the washing of sheep, and improving the growth of wool by a copious application of pure water;" invented by W. W. Fyfe, of Edinburgh. In order to decide upon the usefulness of this contrivance, it will be necessary to determine first, whether washing improves the growth of the wool, and second, whether this new mode is better than that now in use. The wool is nourished by a peculiar secretion from the glands of the skin, called the yolk, a kind of animal soap, soluble in water. The greater part of this matter is removed by the process of washing. When there is a deficiency of yolk, the fibre of the the wool is dry, harsh, and weak, and the fleece becomes thin and heavy. Where the natural quantity of it is found, the wool is soft, oily, plentiful, and strong. It is found in greatest quantity about the breast and shoulders—the very parts that produce the best, healthiest, and most abundant wool—and in proportion as it extends to any considerable degree over other parts, the wool is then improved. It differs in quantity in different breeds; it is very abundant in the Merinos, and is sufficiently plentiful on most of the southern breeds; but in the northern districts, where the cold is more intense, and the yolk of the wool is deficient, a substitute for it is sought by smearing or salving the sheep with a mixture of tar, and oil or butter. Both the natural yolk, and the use of salve, improve, strengthen, and increase the quantity of the wool. Youatt says they have, "in a thousand instances, been manifestly beneficial to the sheep and the wool, and in no case been proved to be injurious." We should not, therefore, think it advisable to wash away this indispensable nourisher of the wool. In Spain, and also in Devonshire, we believe the short-woolled sheep are never washed. The process of washing before shearing, is merely to cleanse the fleece of dust, dirt, and other impurities; and so easily does the yolk or soapy matter dissolve in the water, that the wool is generally sufficiently washed by a good sousing and a little rubbing in a stream. As regards the feasibility and convenience of the syphon-washing, we very much doubt whether it will prove superior to the mode practised in many parts of England. Driving the sheep into a running stream, in which men stand to catch them, turn them over, and let them swim out on to the opposite bank, may be a good method among small sheep; but the following is the plan to which we refer:—A large pond or a brook, widened into a reservoir, forms the "wash-dyke," across which, a number of stakes or poles are set in two rows, so as to include a swimming-path between them, a rope on each side this gangway forming a fence for the sheep. At one end is a platform adjoining the sheep-pen; two men seize a sheep, put a stick under his belly, grasp the wool on his neck, and, carrying him to the brink, throw him tail foremost into the water. He sinks, and, rising again, finds himself swimming with four or five others in a small area enclosed with a rope, and called the "vat." Here, by struggling against his companions, and by being rubbed with a wooden instrument, called a "poy" his wool is well soaked, and half cleansed. The washer stands in a tub in the water fast to a post, and by lifting the rope, takes the sheep, one by one, out of the vat, and rubs them well, turning them on their backs, and when sufficiently washed, sending them along the "swim," their heads being held up and guided by a man with a poy, walking along planks laid for the purpose. It is very rarely that a sheep is drowned; and, with proper care, they are but little fatigued with the adventure.

The new syphon apparatus consists of a wooden washing-trough, and syphon tube of iron. The trough is 4½ feet long, by 3½ feet wide, and 2½ feet high, so as to hold one sheep at a time. It is provided with woollen girths, such as are used in the hot bath, buttoned across the top, and on these the sheep is rested or slung, with its feet just clear of the bottom; and thus suspended, may be operated on without any struggles occurring. In rests attached to the side of the trough, an iron rod is placed for the support of the syphon. The syphon-tube is of an inch bore, and is expanded to a span of 4½ feet, surmounted at the bend by a box or reservoir, for containing water enough to replenish both arms of the tube, in order to prepare it for action. The longer arm is furnished with a horizontal spreader, consisting of a perforated tube, which can be directed either longitudinally or transversely across the back of the sheep. As the apparatus cannot work unless the spreader be at a lower level than the surface of the water in the reservoir, in which the shorter leg is placed; consequently a hole has to be dug in the ground, and the washing-trough let down into it, which must be attended with much inconvenience. And those who have tried to perform the offices of ablution upon a sheep, without immersing him, will support our opinion that this new method is not calculated to cleanse the wool so thoroughly in every part as the operation we have described, and that the great expense of time and labour will not be compensated by the extra quality of the tub-washed fleece. If the wool is to be perfectly purified by soaps and leys, let it be done without subjecting the live animal to the same process. Let the flock-master have clean wool to sell; but it can be no part of his business to dress it and prepare it, while yet unshorn from the animal's skin, and pass it, as it were, through the first stage of its manufacture.

Even in a scrutinising survey of the agricultural department, it is hardly possible to catch a sight of every article; and during a few days previous to the opening, in which the "fourth estate" of this realm, as well as the first, was allowed a private inspection, several machines, particularly models, were under cover, and so not likely to arrest the novelty-seeking eye. It thus happened that we have passed by some implements which we ought to have mentioned in their proper places. We find that there are one or two small models of Steam-cultivators besides those already described; and likewise a newly invented clod-crusher, which certainly deserves special notice. At a future time we may give a description of the contrivances denominated steam-diggers or steam-ploughs; and at present merely furnish a short outline of an omitted clod-crusher, and a Steam-plough. Of the implement which aspires to rival and out-crush Crosskill's, we can only give our readers a general idea taken from the maker's description, without attempting to detail its merits. It was invented by Dr. Sillar, and is exhibited by H. Bennett, of Liverpool, and consists of a number of serrated rings, without arms or spokes, bolted together at a certain distance apart by three round bars, which pass through holes in the rings, an empty space being left in the centre. The outside rings have arms, and are the only ones running upon the centre axle. This works on bearings in two iron ends, and a centre stay, fixed to a wooden frame carrying the shafts. Each ring is so formed that the outside edge is a little thicker than the inside one, *i. e.* they gently taper from the external to the internal edge, so that any part of the clod being squeezed into the space between any two of the rings, if dry, falls into the interior as it is broken, and if damp, is squeezed through at the next revolution of the roller; so that the implement is perfectly self-cleaning. In comparing this clod-crusher with Crosskill's, the inventor says, "As the principle by which Crosskill's is self-cleaning, consists in every wheel having an independent motion on the axle, it follows that the combined friction of all the wheels would render it impossible to be worked by the ordinary horse-power of even a large farm; and, therefore, to obviate this he has made the axle itself to revolve, the consequence of which is, that in a large field where there is no necessity to turn, it is no better than if the wheels were all fixed, and consequently it gets choked up—it is only by frequent turning, so that the wheels may move at different velocities, that it can be kept clean; therefore, Crosskill's is not self-cleaning in large fields, as mine is. 2d. As all the wheels in Crosskill's revolve separately, each wheel must have its own arms; and as these are equal in weight to the rims, Mr. Crosskill has been obliged to make his of a very small diameter, and consequently of very heavy draught."

In Sillar's roller, the weight is thrown to the outside of the cylinder, and the great friction of all the rings bearing on the centre shaft is avoided. It is also made in two pieces, for convenience of turning. The rings are so fixed upon the three external shafts, that each alternate ring is made to rise at two or three parts of its revolution, thus effectually crushing all clods which might have a tendency to stick in the teeth. This implement appears well calculated to diminish friction and to lessen draught; but we should fear that the peculiar form of the rings is scarcely a substitute for Crosskill's smaller teeth projecting upon each side of the rings. We hope that it may answer the promise contained in its description, and that it will crush the clods which it clears from itself as efficiently as Crosskill's does—the vibrating, ragged wheels of which when they take up a clod shake it as a terrier might a rat, and there is then but a small chance for it to escape unbroken. The price of Sillar's crusher is to be more moderate than the Beverley one.

We now offer a few observations upon an engine denominated in the catalogue—"Model of locomotive steam-plough; the ploughs revolving behind the carriage act as propellers: patent,"—invented by J. Usher, of Edinburgh. The exhibitor says that he expects the full-sized machine to be ready to take the field in July with locomotive engine and all complete; and as the model has been approved of by hundreds who have seen it at work, he hopes soon to show the large one to the same advantage. And he further affirms it to have all the requisites emanating from "C. W. H.;" to which we have alluded. From the *Agricultural Gazette*, for September 21, 1850 (No. 38) in which appeared the remarks of that writer, whose essays are no less an ornament than a treasure to our agricultural literature—we extract the following:—"I hold it to be an idea *fundamentally erroneous* to attempt to combine steam-machinery with the plough. . . . . It is *no essential whatever* of cultivation that it should be done by *the traction of the implement*. Spade-work is perpendicular. Horse-work is horizontal. Machine-work is *circular*. . . . Why should not a strip or layer of earth be cut up into fine soil *at one operation*, as easily as a circular saw cuts a plank into saw-dust? As to employing a steam-engine to turn a drum, to wind up a rope, to drag a plough, to turn up a furrow, and all this as a mere prelude for an after-amusement to all the ancient tribe of harrows, scufflers, rollers, and clod-crushers, to do supplementally the real work of cultivation, it reminds one of 'the House that Jack built.' . . . . The mere invention of *the subsoiler* is a standing commentary on the mischief done by the plough." He then suggests an instrument of 6 or 7 feet width, not *rolling* on the ground, but performing *independent revolutions* behind its locomotive, cutting its way down into a semicircular trench about 1½ foot across, and "throwing back the pulverised soil just as it flies back from the feet of a dog scratching at a rabbit hole: then imagine the locomotive moving forward on the hard ground with a slow and equable mechanical motion, the revolver behind, with its cutting points playing upon the *edge* or *land-side* of the trench as it advances, moving always *forward*, and leaving behind perfectly granulated, and precisely *inverted*, by its revolving action, a seed-bed seven or eight inches deep. . . . . The teeth of a saw clear themselves, by the centrifugal motion they communicate to the particles they have detached from the substance they act upon. A circular 'cultivator' steam-driven will do the same, for I have proved it." No machine answering to this description is exhibited; but Usher's Steam-plough and a 'Model of a Digging-machine" invented by J. Parsons, of Craven Farm, Stamford Hill (which we intend hereafter to describe), both profess to fulfil the conditions indicated by "C. W. H.,"—the inventor of the latter having planned it in consequence of the remarks published by him.

As the steam-plough is likely to appear before long in the open field, to try its powers in earnest, it will be premature to praise or to condemn; but still we may give our impressions respecting its efficiency or failure which its appearance promises. It consists of a locomotive steam engine carrying behind it an axle parallel with the axles of the carriage wheels, and upon this are mounted a series of ploughs which are made to revolve and come successively and momentarily into action. There are five plates or discs upon the axle, each carrying three ploughs with coulter blades, the shares and mould-boards being formed to a curve struck from the centre; and they are so arranged that only one share-point strikes the ground at one time. These ploughs revolving as the machine advances at a slow rate, turn over as it were five furrows in curved pieces or ploughsful. Both the ploughs and the main roller upon which the machine rests are turned by cog-wheels from the crank shaft of the engine; and the action of the ploughs meeting with the resistance of the earth assists in propelling the locomotive, after the manner of a stern-wheel paddle of an American steam-boat. There is no need to enter into a longer detail, except to say that the plough axis works in bearings upon a lever frame, which can be raised or lowered, and that the two front-wheels can be steered by a crank pinion and circular rack. Each of these ploughs is essentially a wedge, but as there is no sole, the pressure sustained by the sole of a common plough is here transferred to the main axle; this varies in an exact ratio with the weight of sod lifted, *plus* that of the force required to effect the cleavage, and this must render the friction of the axle in its bearings very great; and must tend to drag down the lever frame, and lay an enormous downward pressure upon the carriage roller or wheels preceding the ploughs. The side-long pressure sustained by the ploughs in turning over the earth, when lifted, seems to be counter-balanced by the resistance of the unploughed ground to their "land-sides;" otherwise, the whole machine would swerve itself round just as a screw steamer would turn round if her propeller were fixed athwart her stern. As it is, we do not see how the machine can be steered. By changing the direction of the front-wheel axle it is intended that the fore-part of the machine should advance more to the right or left; but as the roller or else a pair of wheels carrying the principal weight is situated about half-way between the front wheels and the ploughs, it forms a fulcrum upon which the frame turns sideways, so that the front could not move to the left without the ploughs at the other end being moved to the right; and as the resistance of the unturned land prevents their thus moving excepting on one side, it is difficult to understand how the line of progress of the machine can be directed. The inventor's description speaks of employing tines or teeth of any suitable shape in place of the ploughs, and applied about an axis in the same manner. Something of this kind would meet the ideas given at the commencement of this notice; but bent ploughs like those of this model would not complete the operation of preparing a seed-bed, and "play out the long comedy of our present field cultivator in *a single act*;" the whole would amount to little more than a substitution of steam for horse-power in the preliminary process called "ploughing." For our own part, we anxiously wish for a reasonable implement which shall perform all that "C. W. H." proposes; but while we believe an independently revolving apparatus attached to, and partly propelling, a locomotive engine, to be the best in principle, we cannot think that the desired end will be attained unless the cutters themselves have each a separate motion, to allow of their entering more freely into hard ground, and enable them to shake and turn the soil which they throw behind them. Perhaps a number of spades or forks arranged so as to have the necessary movements while revolving round an axis, may be nearer to the right idea. *I. A. C.*

## THE TRANSFER OF LANDED PROPERTY.

A LECTURE upon this important subject was given last Tuesday at Willis's Rooms, by Mr. Rainy, the celebrated auctioneer. The subject of the lecture, as stated in the circulars, was, "the present legal system of conveyancing, and also that of effecting sales by public auction and private contract, illustrated by cases; proposals of a remedy for the existing evils and abuses, for facilitating the completion of contracts, lessening the expenses, and for checking litigation, whether in respect to the courts of equity or law."

The lecturer began by comparing the different methods pursued in this country for transferring funded and landed property, remarking that nothing could be simpler, quicker, and cheaper than the transfer of the former; or more complicated, more tedious, and more expensive than the transfer of the latter. The reasons for this difference were not, the lecturer asserted, founded

upon any principle intelligible to the common sense of mankind, although no doubt historical and technical reasons might be, and were given, for the existence of such difference. The question he wished to have answered by those who defended the complicated system of conveyancing at present in use in Great Britain and Ireland was, not why such difference did exist, but why it should any longer exist? Why landed should not be as easily passed from hand to hand as funded property? In early stages of civilisation land was transferred as easily as a watch or any other chattel, and in proof of this he mentioned the earliest sale recorded in history, namely, that of the field in Machpelah, by Ephron, to Abraham, when the latter paid 400 shekels of silver for the land, and the former gave it to Abraham without more ado.

The great evils of our system of conveyancing were stated to arise from the necessity of investigating the title of the seller every time land was offered for sale. If a person wished to purchase land he was put to an enormous expense and immoderate delay in ascertaining whether the vendor had a right to sell; voluminous abstracts of title had to be perused, doubts to be answered, and technical objections to be overcome before he felt himself safe in completing the contract he had made. If, having at last obtained the property he wanted, he in his turn wished to sell it, or raise money upon it, the very same process had to be gone through before his object could be accomplished. This state of things had lasted for ages, but had at length become intolerable; the public had long been calling for a change, and they would long ago have had their desire had they not, as the lecturer asserted, been thwarted by those interested in keeping up existing abuses—by those members of the legal profession who looked after their costs much more than the interests of those whom they professed to serve.

The first step in the way of reform was to insist upon and to obtain a register; a register had long been called for, but had not yet been obtained; the lecturer was, however, pleased to see by the report of the "Registration and Conveyancing Commission," published last year, that the importance and necessity of a general register was strongly urged by several learned members of the legal profession, and that Lord Campbell, acting upon that report, had brought forward and passed through the House of Lords a bill for carrying such recommendation into effect. The lecturer did not say much in favour of this bill; though sound in principle, its practical working would, he was afraid, prove expensive and troublesome, though far less so than the present system. Having obtained a general register, the lecturer would compel every person who wanted to sell or mortgage his property to register it before bringing it into the market. That this might be effected, he proposed to have a standing commission of five persons, somewhat similar to that appointed in Ireland for the sale of encumbered estates; this commission should examine the state of the title to the property in question, and if this were satisfactory, a sealed certificate to that effect should be given to the owner; with this certificate he should go to the registrar and be registered as owner; the commissioners' certificate, coupled with a certificate of registration, should be a complete title to the property; when those two certificates had been obtained, and not till then, should the property go into the market; they might then be transferred like any ordinary chattels to whomsoever chose to buy them, and such person would, on obtaining the certificates and a receipt for the purchase money, become absolute owner, without trouble, needless expense, or delay.

Such is an outline of Mr. Rainy's scheme for facilitating the transfer of real property in this kingdom. As the plan of one who has been all his life engaged in conducting the sale of land, it deserves consideration.

## CRITIQUE BY LIEBIG ON MR. PUSEY'S PAPER IN VOLUME XI. OF THE ENGLISH AGRICULTURAL SOCIETY'S JOURNAL.

In the Journal of the Royal Agricultural Society of England, Vol. XI., Part II., there appeared last year a paper by Mr. Philip Pusey, on the progress of agricultural knowledge during the preceding eight years, in which, when considering the influence of chemistry upon agriculture, he concludes as follows: "The mineral theory too hastily adopted by Liebig, namely, that the crops rise and fall in direct proportion to the quantity of mineral substances present in the soil, or to the addition or abstraction of these substances, which are added in the manure, has received its death-blow from the experiments of Mr. Lawes." "Mr. Lawes," our best authority," Mr. Pusey adds, "has certainly shown this much, that of the two active ingredients of manure, the ammonia is especially suited to grain crops, the phosphorus for Turnips, and that the woody matters of straw are probably advantageous for Turnips. Except Liebig's recommendation to dissolve bones in sulphuric acid, and Sir Robert Kane's, to use Flax-water as manure, there is," says Mr. Pusey, "no improvement in agriculture which has been derived from chemical discoveries." "It is a great mistake to suppose that we can make agriculturists by teaching them doubtful chemistry."—(P. 392.)

Those who should believe, in Germany and other countries, that the above remarks of the former president of the Royal Agricultural Society of England express the public opinion of England, would deceive themselves; and, as an honorary member of that society, I regard it as a point of honour to contradict directly the statements of Mr. Pusey. Mr. Pusey is not a chemist by profession, and the extent of his acquirements in chemistry as a science, is sufficiently shown by his statements in regard to the formation of fat, in the feeding of stock, from starch and sugar, which he declares, in the same paper, is denied by Boussingault and Dumas; as well as by his notion that gypsum must be dissolved in 500 parts of water before it can be transformed by the action of carbonate of ammonia into sulphate of ammonia and carbonate of lime. It is precisely M. Boussingault who has given the strictest experimental proofs that starch really possesses the property of becoming fat in the body of animals, and M. Dumas who has proved that sugar is converted into wax in the body of the bee; from which it does not of course follow, as Mr. Pusey supposes, that starch is to be given to animals by preference, with the view of producing fat. Moreover, it is known to every tyro in chemistry, that thousands of cwts. of sulphate of ammonia have been made by simply bringing powdered gypsum into contact with carbonate of ammonia, and that in the manufactory of Nussdorf, near Vienna, the same process—treatment of gypsum with the distillate of putrid urine—in all probability, is still employed.

Chemistry, during the last 8 or 10 years, has given to agriculture the most complete explanation of the nutrition of plants and of the sources of their food; it has shown that plants must obtain from the soil as well as from the atmosphere a certain number of elements, if they are to be developed and to thrive on the soil; it has explained the causes of the advantage derived from the mechanical preparation of the soil, from quick-lime, from fallow, and from the rotation of crops. Chemistry, therefore, has given to agriculture, the object of which is the profitable production of plants, during these years, a scientific basis which it did not previously possess, and has thus supplied the first and most important condition of progress and of improvement. The fact that Mr. Pusey in his article, which will be read with some astonishment in Germany and France, speaks of phosphorus (it ought to be phosphoric acid), and of ammonia, proves in the most striking manner the injustice of his assertions; for 8 or 10 years ago nothing was known in agriculture of phosphorus or phosphate of lime and nothing of ammonia. It was known, indeed, that bones had a good effect as manure, but no one knew what it was in the bones which really acted. Most agriculturists then believed that the good effects were to be ascribed to the organic matter, the gelatine of the bones; and the detection of this mistake is surely a great gain to agriculture. The nitrogen of plants was not then supposed to be derived from ammonia, but from the nitrogenous constituents of manure; and no intelligent person will deny that the discovery of the true origin of the nitrogen of plants, of its derivation from ammonia, has led to many most profitable applications. The farmer knows how he must proceed, in order to fix this active ingredient in his manure, and at the present time it is the gas works which enable him to fertilise his fields with it. Of all this, eight years before Mr. Pusey wrote, very little was known, and I consider myself therefore justified in declaring that the assertion of Mr. Pusey, "that chemistry, during that long period, has only given to agriculture a recipe for manuring Turnips, and a new manure in Flax water," is erroneous. The recommendation to dissolve bones in sulphuric acid, or to use Flax-water as manure, has, in a scientific sense, no greater value than a useful recipe for good blacking.

With regard to the experiments of Mr. Lawes (the best authority, according to Mr. Pusey), they are entirely devoid of value, as the foundation for general conclusions. With a knowledge of our experience of the effects of fallow, and of production on the large scale, it requires all the courage derived from a want of intimate acquaintance with the subject to assert that certainly ammonia is peculiarly fitted for grain and phosphorus for Turnips, and that the manuring with straw is probably advantageous for Turnips; for, not to speak of individual cases, in which these substances have been found to lead to an increase of produce, we might prove, exactly as Mr. Lawes has done, for a hundred thousand other fields, that these substances do not increase the crop, or even that they do not in any way affect it. At one time precisely similar conclusions were drawn with respect to the effects of gypsum, and of nitrate of soda; and such conclusions, in truth, are only proofs how little those who draw them are acquainted with the principles of agriculture. Everything, in the action of any manure, depends on the composition of the soil to which it is added. To fertilise a soil for grain by means of ammonia alone is like trying to rear an ox with food from which the elements of his bones and blood were excluded.

The opinion that potash, in many cases soda, lime, magnesia, phosphoric acid, sulphuric acid, iron, and (for the cerealia) alkaline silicates, are ingredients of a fertile soil; that these substances, along with certain constituents of the atmosphere, constitute the food of plants, and are as essential to them as bread and meat to men, or hay and Oats to horses;—this opinion is not the expression of a theory, but of a natural law or universal fact. For such persons as understand the scope and bearing of such a law of nature, that indisputable axiom follows as a matter of course, which Mr. Pusey thinks the experiments of Mr. Lawes have annihilated; for it simply coincides with the familiar truth, that a purse of money becomes empty when the money is taken out of it and not returned: or that a man must be reduced to poverty, who consumes his capital instead of the interest.

The problem in agriculture, at the present day, is no longer to ask for proofs of this truth, which no man of science doubts; but the grand object is to substitute for farm-yard manure, that universal food of plants, its elements obtained from other and deeper sources, retaining its full efficacy; and this can only be done when we shall have learned what as yet we know but imperfectly, how to give to an artificial mixture of the individual ingredients the mechanical form and chemical qualities essential to their reception and to their nutritive action on the plant; for without this form they cannot perfectly supply the place of farm-yard manure. All our labours must be devoted to the attainment of this important object.

The negative results of experiments, made without the guidance of just principles, do not gain in value by their multiplication; and millions of them do not outweigh one successful experiment, if the cause of its success be recognised and ascertained. It is perfectly clear that *unexplained* negatived results, or failures, if they are to serve as foundation for an opinion, will yield proofs the more brilliant and striking, the more foolishly and thoughtlessly the experiments have been made: for in this case their irreconcilability with the opinion which they are to refute, is so much the greater. It is certain that the most accurate knowledge of mathematics and of the laws of physics and mechanics does not suffice to render a man an engineer, a machine-maker, or an astronomer; but to conclude from this that an acquaintance with mathematics, with the forces which produce mechanical motion, and with the laws of statics and dynamics is useless for the engineer, the machine-maker, and the astronomer, is as absurd as it would be to say that chemistry is not useful or necessary to the agriculturist. True it is, that chemistry is only then useful, when we have acquired a thorough knowledge of that science, and that it is perfectly useless to those who do not understand it.

Every discovery, every improvement, every new truth in science, as in life, has two ordeals successively to pass through. In the first period of its existence it is proved that the new thing is not true or of no value (let us call to mind the circulation of the blood, gas-light, cow-pox, steam-engines, &c., &c.) After it has fortunately got through this period, it is next proved that the new thing is not new, that it has been long known, that more than a hundred years ago there were people enough who knew it perfectly. It is only in the third period that the new truth bears its fruits. The truth, on which Mr. Lawes has inflicted the death-blow, is yet in its first stage, and my faith in it is such as to lead me to hope that I may be permitted to live to see it in its second and third stages.* It is Providence, of which Sir Robert Peel was only the instrument, which, by the abolition of the Corn-laws, has sent to the agriculturists of England necessity, the mother of invention and of progress, in order to force them to overcome the fear and repugnance they feel towards learning what is new. Let them not, however, deceive themselves by supposing that they can ever attain to real improvements, to real progress, or to the perfecting of agriculture, unless they acquire thorough and accurate knowledge of its principles. If they are not furnished with the capital of science, they will only waste their powers; sooner or later they must see that in this so-called mineral theory, in its development and ultimate perfection, lies the whole future of agriculture.

I know that energetic and vigorous race of men, to which, in its kind, no other can be compared, the English yeomanry, and the wonders which they have accomplished by industry, exertion, and perseverance. When the English farmer has acquired the insight which is still wanting, his iron will, strengthened by his motto, "Through," will conquer all the obstacles which exist between him and the light of science; and when that time comes, Great Britain will cease to import corn. There is no want of land or capital. The agriculturist must no longer calculate on protection; the time is past when the state ought to show or could show him any favour. When the state is shaken to its foundations by internal or external events; when commerce, industry, and all trades shall be at a stand, and perhaps on the brink of ruin; when the property and fortunes of all are

* I do not conceal from myself that the discredit into which the employment of the constituents of the ashes of plants, as manure, may have fallen in England, arises in part from the so-called patent mineral manure. It was the discovery of a new and remarkable compound of carbonate of potash with carbonate of lime, which led, at that time, to the idea of the composition of this manure. And it was on account of this compound, which appeared likely to be of use in other ways, that, according to the custom of England, and by the advice of sagacious men, the manure was patented. The composition of the manure itself could be no secret, since every plant showed by its ashes the due proportion of the constituents essential to its growth. It was a circumstance deeply to be regretted, and the idea which this manure was intended to bring into operation, took the form of a commercial speculation. This, as I know for certain, was not the intention of the excellent persons who manufactured the manure; for in regard to the commercial working of the patent, they did exactly the reverse of what would have been necessary to render it a source of profit. The idea was brought forth prematurely, and, as in the case of a child born before the time, death quickly followed. I have, for three years past, on about 12 English acres of the most barren soil, near Giessen, by the use of a mineral manure, composed on the same principles, obtained, for all the crops which are cultivated in the district, results, which were declared, previous to my experiments, to be impossible, by all the agriculturists who knew the land. For what is called mineral manure, the time will perhaps yet come, when English agriculturists will send ships to Iceland or Sicily to bring from thence, for their corn-fields, cargoes of Palagonite (a mineral, which gelatinises even with acetic acid).

shaken or changed, and the inhabitants of towns look forward with dread and apprehension to the future, then the agriculturist holds in his hand the key to the money chest of the rich, and the savings-box of the poor; for political events have not the slightest influence on the natural law, which forces man to take into his system, daily, a certain number of ounces of carbon and nitrogen. This is protection enough. Whatever else the agriculturist requires, he must find himself. *Professor Liebig's Familiar Letters on Chemistry.* (3d edit.)

## Home Correspondence.

*Drunkenness.*—There are many difficulties in the way of at once putting an end to drunkenness; it must be a work of time. Those who have for years been accustomed to drink deep, whenever an opportunity offered, have created an artificial want, which must either be supplied by another stimulant, or the quantity of fermented liquors gradually diminished. The stomach, from having been continually excited, will have lost its natural tone, and indigestion will result, if left to its own powers, fearfully weakened by indulgence. Let every man enjoy luxuries in moderation as far as his income will allow him, after doing justice to his family. But it is one thing to use, and another to abuse the comforts, within the reach of all, who are careful and industrious. A labourer who has to walk two or three miles to his work, should have something to quench his thirst during the day, besides the water he may procure from the ditch or nearest pump, to moisten the bread he swallows for breakfast and dinner; good tea or coffee, with milk and sugar (cold), are found to be more nutritious and refreshing during hard toil than sour beer or sharp cider; a greater amount of labour will be performed on the former than on the latter, and with less fatigue to the individual. The common style of living in the country, being so much below par, it is not to be wondered at that the labourer cannot resist, during hay-time and harvest, indulging in drink far beyond prudence. In this case the fault lies more with the master than the man. Every species of truck trading should be abolished, each man receiving fair wages at the end of the week, without reduction either for Wheat, Potatoes, or drink. Let him take his cash to the cheapest market, and bargain for himself, without compelling him to purchase at a marked shop. It ought to be well known how the poor man suffers from being obliged to deal with a huckster who will give credit. He and his family must have food; but from the irregular payment of his scanty wages, or from the want of employment, he runs in debt, and is supplied with articles 100 per cent. dearer, and of an inferior description, to those he could procure, if he was a free agent with a few shillings in his pocket. A labourer often gives 5*s.* for tea which could be obtained for 3*s.* per lb. were he at liberty to choose his own tradesman. Other things are proportionably expensive under the compulsory plan of exclusive dealing. Raising the moral character of the peasantry, by attending to their wants and respectability, will redound to the employers' benefit. At present, circumstances rather tend to degrade than elevate the working classes in agricultural districts. Wages are low, occupation uncertain —from the mistaken notion that because produce is cheap labour must be reduced. The contrary is the truth. Cottage accommodation insufficient to preserve common decency in families. No provision made to assist the poor man in procuring the necessaries of life good, and at a moderate price; in fact, in too many instances he is looked upon as a mere machine, from which the greatest amount of profit must be obtained. It is granted, that from long neglect many of the lower orders have become exceedingly unprincipled, will take an unfair advantage of kindness, and disgust those who endeavour to serve them. Although such conduct is unwarrantable, allowance must be made for imperfect education in youth; at the same time a severe check should be put on those who show bad feelings, and the honest man encouraged. Benevolence is often imposed upon. It is a remark amongst labourers, "that the idle live much better upon charity than they who toil hard six days in the week do upon their wages." It must have come under the notice of your readers, how many broad-shouldered fellows lurk about a parish or town, showing themselves in a superior condition to those who "earn their bread by the sweat of their brow." The anomaly should not exist, and indicates neglect and want of management somewhere. It is the duty of every one above want, to take an interest in finding profitable employment for those inclined to work, as well as endeavouring to check the infamous trade of begging, which is one of the feeders of drunkenness. Those who know their situations depend upon sobriety and regular conduct are not so likely to squander away their money in public houses, as those persons who contrive, by ingenuity in making out a hard case, to pick up a few shillings from the tender hearted. There are towns in which, during certain seasons of the year, trampers congregate for the express purpose of plundering the unwary by distressing histories. The orgies of these creatures baffle description; their tables are plentifully supplied with excellent fare, and the nights are spent in drunkenness and profligacy. Will people continue to give at their doors and in the streets, without inquiry, and thus encourage every species of vice? It is in vain to hope for better things whilst such an inconsistency exists. It is a melancholy reflection on this country, to observe the able-bodied young men between the ages of 15 and 30, sauntering about the doors of beer-houses. These bipeds must eat, and how do they procure nutriment? Certainly not by their own labour. They are the leeches sucking the life-blood out of the community. They should be made either to support themselves at home, or be despatched to the colonies, where there is plenty of elbow-room. *Falcon.*

*Cattle Feeding.*—In a late Number you report an interesting experiment by Mr. Brodie, of Abbey Mains, in the various modes of feeding four lots of cattle, which resulted in favour of Turnips and cake. As some apparently important particulars are not mentioned in the process, will you allow me to suggest that the report would, to me, and, I doubt not, to many of your general readers, have been more satisfactory had it stated—that which we are, I think, led to infer—namely, that the original weight of the animals composing the several lots was the same at tying up; and that their original lean cost was included in the stated amount of stones weight to which they were brought. It is not said what quantity of Turnips were consumed by the first and the second lot during seven months; whether any, and what quantity of hay was consumed; nor at what prices such roots were valued per ton in the aggregate of cost. I wish it could have been made to appear that the result had proved of a nature more consolatory to the grazier; but it seems that, while the top price at Smithfield is but 3*s.* 6*d.* per stone (and here about 7*s.* 9*d.* per score only), the lot fed on Turnips and oil-cake cost 3*s.* 9*d.*, while the three others cost respectively, 4*s.* 0½*d.*, 4*s.* 4½*d.*, and 4*s.* 4*d.*; to which would be added, I presume, interest and insurance—driving to market, and salesman's charges. I should hope that the cost, somewhere incidentally alluded to in your Number, of 8*s.* per ton of Turnips, will be found unnecessarily high where the manure is returned by stall-feeding on the roots, &c. It may not be uninteresting to any practical gentleman into whose hands this may fall, to hear the result—which I can myself vouch—of the growth of a measured acre of Yellow Globe Mangold Wurzel, for two consecutive years, on the same ground in this parish. The soil is our general red one; very good, but not particularly rich, nor extravagantly manured with farm-yard dung. The grower's name is Manley. In November, 1848, he harvested 48 tons of roots, and had, besides, 8 tons of tops, not having stripped any leaves in their course of growth. In November, 1849, he harvested 34 tons of roots, and about 8 tons of tops, having, during 10 weeks in August, September, and October, drawn and stripped above ten computed tons of surplus roots (and leaf) for store pigs, in thinning the rows originally sown at 24+13 inches. In 1850 he had 38 bushels of Wheat an acre (by ordinary methods) on the same ground, and from which, having seeded, he is now cutting Clover the second time for soiling. I may mention that the other half of the field (of 2 acres) was sown with the Long Red Mangold Wurzel the first year, and its produce fell short of the yellow by about 10 per cent. *A Constant Reader and Subscriber, Dawlish, Devon.*

*Marking Fowls.*—In your paper of February 22d is a communication from a "Subscriber, Midland Counties," who describes his mode of marking fowls. I abstain from repeating it, to avoid giving publicity to so cruel a practice. The Almighty has made no part of animals without its use to them. *A Member of the Society for Prevention of Cruelty to Animals.*

*Protection.* — It has been argued that agriculture labours under peculiar difficulties, on account of the vicissitude of seasons; but have not the mariner and the merchant similar difficulties to contend with and guard against? and do they not strive to fortify themselves against those casualties to which they, and in a measure, all of us are subject? and should not the farmer do the same? Though dependent upon Providence, we are permitted to a considerable degree to guard against vicissitudes; and while we acknowledge our dependence, it is our duty and our interest to use all practicable means of protection. We have been blessed with a number of fine harvests, more than could have been expected in succession; and without faithless forebodings, we may reasonably expect to be less favoured in this respect; and while we hope for the best, we should provide for the worst. The repeal of the duty on glass enables the agriculturist, as well as others, to apply that light, cheap, and useful article, to various valuable purposes. The Palace of Glass suggests many ideas, such as the roofing of barns, granaries, and drying sheds, with strong plates of coarse glass. I would also suggest the construction of portable protecting sheds for winrows of hay or stooks of corn in the field, or for stacks. These might be made in the form of a long roof with wooden rafters, each two being coupled with a bolt or hinge at top, to open and shut, like a pair of compasses. These rafters should be stayed with cross-bars, bolted or clasped together. They might either be covered with oiled canvas, or grooved and notched for glass, so as to slip in plates, overhanging, and having a ventilating space at the bottom of each plate. Such drying sheds might be made as portable as either hay or corn; and readily set up in a field, adding to or taking from the length at either end, so as to dry first one then another long row of hay or corn, drying and carrying in succession. Long low roofs would be most generally useful, but they might be elevated by means of poles, pulleys, and ropes, or by shanks like the moveable legs of a pair of compasses. Such portable or fixed sheds need not probably be so costly but that one or two wet seasons would repay the expence of them. In addition to these, I would also advise all farmers, without delay, to provide stack staddles of some kind, even if merely of rough wood, though stone, brick, or iron pillars, properly coped, are the most to be preferred. By these, and similar contrivances, and by building the stacks with a hole or two up the middle of each, as far as the casings, hay or corn may be well got in a wet season. I merely throw out these hints for others to improve upon them, hoping that they may be of some service to my poor suffering brother farmers and their implement makers. *O. F.*

*Draining.*—"Inquirer," whose letter addressed to me appeared in the *Agricultural Gazette* of May 31, having in a very friendly spirit sent me his address from Bruges, and given me liberty to reply to it publicly, I trouble you with my answer. "Inquirer" has again put to me several very pertinent questions, to which I wish to reply in the best manner I can; but first I will ask all gentlemen who take an interest in this discussion, to turn to my letter of May 17, which led to it, and likewise to "Inquirer's" reply of May 31, and my answer of June 14. Draining! What sums of money have been worse than uselessly thrown away in land draining! In an age so pre-eminently scientific as our own, how painful it is to hear gentlemen, landlords, and tenants, and many others connected with land, expressing themselves as "Inquirer" has done, in his article above referred to of May 31st; namely, that all that hurts them is the water from the clouds; and all they aim at in the draining of land is to get rid of that water. I have lately made a tour through a part of this county, and on making inquiries as I drove along of farmers and labourers whether they drained their land, and if so, for what purpose; the replies in almost every case were, that they feared nothing, except the "top water," and that all they aimed at in draining their lands was to get rid of that water. Nothing but this could I hear, though I inquired of, I should think, nearly a hundred individuals, and always put the same or similar questions. Permit me, therefore, to reason on this subject with my new friend, who, as I have said, has again asked me several additional questions; but I must, in order to insure a space in the *Agricultural Gazette* for my reply, compress them into the following four, namely—Why do I so strongly recommend deep drains? How deep—or, to use his own words, what is the minimum depth drains ought to be made? With what materials they should be made? and in what shape? My replies to these questions I have no doubt will create as much surprise as my advocacy of rational seeding did some years since; but I entreat "Inquirer" and all others to consider them well, and refute them if he or they should be able. First, then, as I have shown in former articles, in the draining of land my object is just the reverse to what "Inquirer's" is, and, I believe, all others. I drain, not to carry away, but to *prevent* the top water from running *off* my land, and to raise the temperature of the subsoil; and to accomplish these most desirable objects, deep and thorough draining alone will be effectual. But methinks I hear a multitude of tongues all at once asking *if* deep and thorough draining will accomplish these objects? and to them I reply, that it will in all kinds of soils wherever such drains can be made, or wherever the water from them can find outlets. Let "Inquirer" and others expend their money in judiciously making such drains, and then both he and they will not dread but welcome every shower of rain that may fall on their lands and consider rain water to be of more value to them than all the guano in the world could be, highly valuable as that fertiliser always is when properly applied. But "Inquirer" asks how deep such drains ought to be made? I have given a medium depth of 5 feet; but the deeper the drains the higher the temperature of the ground for the roots of the plants to luxuriate in, and the deeper will the roots descend after food and water, and the more certain and yielding will be the crops; nor will he or they require but very little manure or other kinds of dressing except atmospheric air and top water. On this plan I have for the last four years grown 44 bushels per acre on an average on the same land, and from less than two pecks an acre of seed on an average; and for three years in succession grown 48 bushels of Barley per acre on an average, and from less than two pecks of seed per acre; and I should not fear but I could go on in the same way for as many more years, relying more upon atmospheric influence—that is, upon air and rain water—than upon any manures I could use. But "Inquirer" seems surprised at my assertion, that the deepest drains always run first after a long drought, and continue to run the longest after a long continuance of rain; but such are the facts, and in my next letter I will show him the reason why they do; but I must not make my present one too long, or I would indulge him now. I therefore come now to the materials with which the drains should be made. I have no experience in turf drains, and should fear them; but I have known admirable drains made of shingles from the sea-shore, and very rough gravel, or stones picked from the fields; I know drains made 40 years since with such materials, and they now act, I believe, as well as ever they did before. But as pipes and tiles are very cheap, and as they are made upon true principles, they act well, I myself should always use them, unless stones or shingles were close at hand; in all other cases I should use either pipes or tiles. With reference to the size of the pipes, in very small patches of land of about one or two acres, and if the drains are made at very short distances asunder, pipes of one inch bore might be sufficient; but for large fields of from 10 to 20 or 30 or more acres, or for the draining of farms or estates, pipes of various capacities ought to be used, but none of them of less bore than 1½ or 2 inches at the least, and some of them much larger; but on this point also I will write

more at large on some future occasion, when I shall be able, I flatter myself, to satisfactorily demonstrate all that I here assert. But as this question is put to me, and as the capacity of the drains, of whatever material they may be made, is of the utmost importance, I repeat that to accomplish the objects I have in view, namely, to raise the internal temperature of land, and to cause the water from the heavens, which is always charged with ammonia, to permeate through it, and leave its fertilising properties at the roots of the plants, drains (unless in small patches of land or put in very thickly together) should as a minimum quantity always carry at least double as much water as a one-inch pipe can, and in some cases six, eight, or ten times as much, and even more than that. *G. Wilkins.*

*Turnips and Mangold Wurzel.*—On again referring to this subject, I will endeavour to answer some of the objections of "G. S." to the best of my power; premising that he must not be too hard on any slight errors I may have made during my novitiate in farming, which I have only taken to a few years. With regard to the estimate, it was chiefly compiled by the gentlemen I was with, the agent of Mr. Dickinson, late M.P. for that division of Somerset, by whom the estate is highly farmed. I believe the estimate for dibbling will be found correct; but I confess I am not so sure about the drilling, as the latter was never tried; it is, therefore, a *supposed* estimate. Indeed, on reconsidering it, I think I put in too many horses into the bill; and, certainly, the marking out the ground previously with the drill *is* superfluous. I did not mean to say it was necessary. Then we come to the number of acres drilled per diem. This quantity varies in different parts of the country, and depends on how long they are at it each day, and on other causes. Now, in Lincolnshire, where I also passed a term of farm study, they drill from 10 to 12 acres per day: this was on light land on chalk in the Wold district,—and certainly 9 or 10 acres ought to be done, if the drill stays out till 5 or 6; but if it goes in, as they sometimes do, when the ploughs finish, of course less will be performed. With respect to Turnips, I have already acknowledged that April is premature even for Swede sowing. I merely asked the question for experiment sake, thinking that as Mangold Wurzel goes in during that month, Swedes might follow them at the end of the month, and so they would soon after in May. But I also mentioned (which is not noticed), that I considered June to be, after all, as good a time as any, particularly in a dry May, and that June is often a moist month, chiefly in the early part of the month. Lastly, although I do not doubt that drilling Mangold along with manure (like Turnips), might answer, I must defend the system of dibbling, with the seed on the manure. The thing speaks for itself; I have seen the most splendid crops grown under this plan: every year, on the farm I above mentioned, about 40 acres are grown, and if your correspondent "G. S." were to pay a visit to the farm, he would, I have no doubt, see the same this year, and also the same system pursued, explained better than I can do it. With regard to the difficulty of dibbling, &c., surely it does not require any very great capacity for making holes in the earth with a dibble, at regular intervals, especially when done with an improved implement, four feet long, and shod with an iron point. As is remarked, two or three come up in one hole: and so they would in a manner, in drilling, but careful hands are employed to single them, transplanting to any missing hole. Men go first with hoes, and women and girls follow to thin by hand: finally, if necessary, horse hoeing across the ridges is resorted to. There is no more trouble in all this, than if they were drilled like Turnips. I have seen the system pursued for two years: and the roots raised have been so splendid in size, and abundant, that there has been seen no necessity for discontinuing it, in favour of any other. The Mangold (which is the Orange Globe variety), comes in for the stall-fed beasts, of which there are generally from 25 to 30 yearly tied up, of the Hereford breed. They begin with cut Turnips, and steamed hay chaff, sprinkled with meal or oil cake, and towards spring the Mangold comes in as a change. If any are left over, which is generally the case, they are given to the sheep, of which 600 or 700 are yearly fatted (wethers), in fold, on land in preparation for Turnips, for whom it is also cut in troughs. To further advocate the Mangold Wurzel dibbling, I may allude to its being pursued by Mr. Huxtable, I believe, its first inventor, I mean, as to the plan of the seed laid on manure: also to Mr. Mechi's report of its working on the farm of Lord Fortescue, at Castle Hill, by Mr. Graburn, his Lordship's agent, as described in your back numbers. *H. E.*

*Poultry.*—Many of your correspondents seem to be in difficulties about their poultry. From long experience I have found that none of the choice fancy sorts will thrive well in the cold damp districts of the midland counties. I have tried the Dorking, Poland, Topknots, and others, but they became diseased, and did no good. There is a kind of poultry much valued in this neighbourhood, that I do not remember to have seen in London or the south. We call it the Poland Pheasant. They are very handsome, the plumage something like a cock pheasant; the cock is nearly black, with reddish wings, and when well-bred, with a double comb, can scarcely be equalled in beauty; and, in size, not inferior to the Spanish, with good short legs. They are very hardy, and prolific layers. We gathered upwards of 3000 eggs last year, from four or five-and-twenty hens. Allow me to add, for the benefit of poultry fanciers, that fowls will seldom prosper unless they have plenty of liberty, and are allowed to range in the fields. They eat a good deal of green food, the tops of plants, and Grass, which is essential to their health, and which they cannot get in a poultry-yard. Fowls, too, are often killed by too much kindness—particularly by the ladies. One good feed of corn (Barley) a day, is generally sufficient in summer. Perhaps two in winter, night and morning, that is, if they run out. *Clericus Derbiencis.*

*Haymaking.*—Having a small field of 1 acre of mowing Grass, I thought it advisable to make an arrangement with a neighbour to put the produce with his (he having about 5 acres), by which both might be improved by being in a larger bulk. Having the convenience of a weighing machine, I had the curiosity to have mine weighed before taken to the stack; there were 3 waggon loads of it, and the hay weighed 3 tons 7½ cwt.; but what ought I to calculate that would produce of hay when fit for use, say at Christmas. The Grass was cut on Saturday, and carried on Wednesday, consequently in this fine weather it was well made. What I wish to know is—what further loss in weight I may calculate on, or what ought I to charge for it at 3*l.* per ton? *A Young Haymaker.* [Your hay will probably decrease one-fourth part in weight. The Tree Cabbage or Cow Cabbage is sown in February and March, transplanted in May and June, and consumed in autumn.]

*A Word in Season.*—I have been searching in vain in the former number of your Paper for a review of a pamphlet which has just been put into my hands, "A Word in Season." If the statements are to be relied on, and I have no reason to doubt them, it will create a complete revolution in agriculture; but I wish to know what wiser heads than my own think of it. I have given up farming, but keep a few acres for experiments, and would willingly try this. If I have overlooked your critique on the work (which, as it has got to a 7th edition, must have been some time before the public), I shall be obliged by your directing me to the number in which it appears; if not, perhaps you will favour us with your opinion. *R. N.* [The work and its doctrines have been the subject of ample discussion in past numbers of this year's volume.]

*The Acre.*—This question appears to be still open to a further reply. Here, in Cornwall, the customary acre exceeds the statute acre by having 18 feet in the side on the square rod, pole, or perch, while the statute acre has but 16½; therefore, the area of the Cornish acre is to the statute acre as 324 is to 272.25, or, in round numbers, as 100 is to 84—very nearly. *W. E. Gill, Truro, June 3.*

## Societies.

BELFAST SOCIETY FOR THE PROMOTION OF THE GROWTH OF FLAX IN IRELAND, *June* 25.—The growing Flax crop was reported to look generally well, though in some districts it appeared rather short, and had, in a few instances, been attacked by the Flax-flea; but the late showery weather had greatly improved the crop, and it promised well. A return of the quantity of sowing Flax seed imported from Russia, Holland, Prussia, America, and England, into Ireland, for the season just terminated, had been received, and a rough estimate made of the amount actually sown, after adding the probable quantity of home-saved seed employed, and deducting what had been left unsold. From this calculation it appeared that the sowing of Flax in the present year amounts to about 119,454 statute acres, which should yield nearly 30,000 tons of fibre. Comparing this with previous years, it appeared that the sowing was, in 1847, 58,312 acres; 1848, 53,863; 1849, 60,314; 1850, 70,000; 1851, 119,454. The quantity sown in the present year was, therefore, about double the average of the previous four years. The largest quantity sown in Ireland, in any year, was in 1844, when it was estimated that there were 122,688 acres under Flax; so that the breadth grown this year is within a fraction of the largest previous culture. The attention of the meeting being drawn to the circumstance that specimens of Flax and of manufactures, ticketed "Golden Flax," had been placed among the samples of fibre exhibited by the Royal Flax Society in London, it was resolved that the parties who had done so should be required to remove the articles, and that a notice should be placed on the spot to the effect that they had been deposited without the committee's knowledge, the society not sanctioning the use of its name in connection with substances termed "Golden Flax," as there is no such variety of the Flax plant, and having previously disavowed its sanction of such advertisements. A stone of Flax fibre, steeped on Schenck's system, by Mr. Allen, Latimerston, County Wexford, was shown to the meeting. It was of great strength, and valued at 52*l.* per ton.

## Farmers' Clubs.

PROBUS: Mr. W. TRETHEWY, of Treegoose, on "*The utility of an early crop of Rape, and the best means of obtaining it,*" showed the present method of cultivation in his district.

The method adopted a few years since, he said, for preparing the land for this root was to skim, burn, and plough down the ashes, or plough to rot, &c., but it was now found that a single ploughing with the skim coulter, with the aid of artificial manures, is not only a more certain means and less expensive; but, in addition to these two advantages, the land may be pastured to the very day of ploughing and tilling. If the weather prove favourable, in a few weeks the Rape may be stocked with fattening sheep, either draft ewes or wethers: whilst the lambs may be put in such pastures as are best adapted for bringing them forward. I can speak, he said, from experience that, the better lambs are kept the less danger attends them, and therefore the early crop of Rape gives food to the draft ewes or wethers (if not gone before), and the lambs have a better herbage. I wish you to understand, that I do not recommend lambs to be kept on Rape, unless they are intended to be immediately slaughtered. From late Rape I have rarely seen much benefit, the weather being often wet, &c., and sheep feed more plentiful, in addition to which the markets are usually better supplied with mutton. Rape does well for spring feed, particularly if tilled in a sheltered situation; it renders, perhaps, a greater quantity of food per acre than may be calculated on, for it sprouts very quickly in the spring, if not eaten too close during the autumn, and if continued to be stocked on during the summer the land can be again sown with Rape, Turnips, or Vetches. Wheat stubbles, after an early harvest, may be tilled to Rape with great advantage. I would recommend sowing Rape as early as possible in the spring, drilling it 15 or 18 inches apart, horse-hoeing, and, if necessary, hand-hoeing also. A very useful implement for preparing the land for this as well as other crops is the shaver; its capabilities, I have no doubt, you all know. With guano, superphosphate, &c., Rape may be grown after Turnips, Wheat, Barley, Oats, Grass, or almost any crop. I have frequently seen Mustard sown with Rape, which I have heard proves a good mixture. I would add, by way of conclusion, that it would very much tend to improve the following crops, irrespective of the benefit to the sheep, if, when folded on Rape, they were given a small portion of oil-cake daily, say half-a-pound each. I would not advise confining them on Rape, but would recommend their having a Grass field to run in at times, if convenient. Bullocks and pigs also do well on Rape. There is also another advantage to be derived from Rape, when you have more than your own stock will consume, and when stock is dear, viz., in ploughing it in, which Mr. Nesbit says will improve the land, if heavy, more than feeding it off; and in the *Mark Lane Express*, of 30th September last, you may find his statement confirmed by many practical farmers; and experience has proved it to be one of the best preparations for a Wheat crop. In the discussion which ensued, some useful points were elicited. Three successive sowings of Rape were advocated—the first in the commencement of May, or even the latter week in April, if the weather proved favourable, and the soil congenial; and the two next sowings should take place at intervals of a month or five weeks from each other. The English Dwarf Rape was recommended for sowing. This variety having small roots could be grown on land of inferior quality to what was necessary for the common sorts, while it produced a broad leaf and ripened earlier. The drilling of Rape in preference to broad casting was strongly recommended. Some of the members stated it could be grown a week to 10 days' earlier, besides producing a much heavier crop.

## Miscellaneous.

*Cost of Cultivation.*—The different items which make up the costs of cultivation are found to vary considerably, influenced partly by the nature of the soil and climate, partly by the system of husbandry pursued, and chiefly by the greater or less command of capital and energy possessed by the cultivator. It is difficult to ascertain with precision the amount of these costs, and any reliable facts on this point are, therefore, the more valuable. We have been favoured with such information as has enabled us to compile the following table, showing the sums which make up the cost of cultivation, with the yield of corn per acre, in the undermentioned districts:

| Howdenshire Farm, East Riding—strong clay, 140 acres arable, 25 acres Grass | Holderness — fertile clay on red clay subsoil, 230 acres all arable | Holderness—98 acres arable, 17 acres Grass | Yorkshire Wolds—230 acres arable, 46 acres Grass | Yorkshire Wolds—400 acres all arable | Lincolnshire Wolds — 1017 acres arable, 500 acres Grass | Lincolnshire Wolds — 524 acres arable, 130 acres Grass | Warp Land Potato Farm—400 acres arable |
|---|---|---|---|---|---|---|---|
| Rent. s. d. | 13 9 | 27 0 | 29 0 | 29 6 | 25 0 | 35 0 | 21 4 | 20 0 |
| Tithe. s. d. | 3 2 | Free. | 1 0 | Free. | Free. | 2 8 | Free. | Free. |
| Public & Local Taxes. s. d. | 2 4 | 3 9 | 4 8 | 5 3 | 1 11 | 5 3 | 2 3 | 4 6 |
| Manual Labour. s. d. | 24 2 | 27 2 | 26 4 | 22 5 | 37 4 | 29 0 | 25 2 | 32 6 |
| Horse Keep. s. d. | 10 5 | 9 2 | 12 0 | 8 5 | 11 7 | 11 2 | 10 6 | 13 10 |
| Tradesmen's Bills. s. d. | 5 8 | 2 2 | 5 0 | 4 5 | 7 0 | 4 7 | 6 9 | 4 0 |
| Manure Purchased. s. d. | 5 6 | 1 8 | 4 5 | 4 9 | 4 11 | 8 6 | 3 9 | 10 0 |
| Cake, &c. Purchased. s. d. | 1 9 | 6 8 | 5 5 | 3 4 | 5 6 | 11 0 | 7 6 | 10 0 |
| Total per acre. s. d. | 66 9 | 78 2 | 80 0 | 78 1 | 105 0 | 84 6 | 77 3 | 104 10 |
| Yield per acre in bushels. Wheat. | 20 | 32 | 35 | 26 | 35 | 32 | 20 | 33 |
| Oats. | 28 | 48 | 55 | 48 | 64 | 48 | 56 | 64 |
| Barley. | 24 | — | — | 32 | 44 | 36 | Six tons Potatoes; previous to 1847, 10 tons per acre. | 36 |
| Beans. | — | 20 | 10 | 20 | — | 28 | — | — |
| Proportion in bare fallow. | 1-6th | 1-5th | none. | none. | none. | none. | none. | — |

The column of "total cost" does not include interest of capital, depreciation, insurance, or tenant's profit; and under the head "yield" is only included the corn, as we had no sufficient *data* for comparison and future reference, by which they may test their own expenses and produce, and ascertain in what respects they excel or fall short of the examples here given. It is proper

to explain that the three first columns are averaged on the whole extent of each farm, arable and Grass; while the rest are charged on the extent of arable land only. This is not strictly correct, but it appeared the fairest criterion we could adopt, as the comparative extent of Grass land on each farm was so exceedingly variable. The figures may be relied on as a statement of facts as they exist—not estimates of what might be, but what they at this moment are. *Times Commissioner; Northallerton, Yorkshire, Nov.* 1850.

*Draining by Machinery.*—A series of interesting experiments have been lately made at the farm of Mr. Ruck, Down Ampney, Gloucestershire, for the purpose of proving the superior advantages of draining land by machinery, both in time and expense, as compared with manual labour. The machine is an invention of Mr. Fowler, of the firm of Fowler and Fry, of Bristol. The field selected for the experiments consisted of stiff clay land, exceedingly dry on the surface, and crossed by a gravel path. The machine is formed by two horizontal iron frames, 9 feet long, placed 2 feet apart, supported at one end by three wooden rollers, of 1 foot diameter, turning on axles; at the other end by two cart wheels. At the end nearest the cart wheels, and between the two frames, is supported a perpendicular plough or coulter of iron, 7 feet in height, 9 inches broad, and three-quarters of an inch thick; the side of this plough or coulter, intended to cut the drain, has a sharpened edge, the other side is formed into a rack, which can be raised or depressed at pleasure, by a pinion or winch working into it, so that the plough is capable of being placed in the ground at any required depth. At the bottom of this upright plough or coulter is a socket, in which is placed a lengthened horizontal cone or plug, the point or apex in the same direction as the sharp edge of the coulter; at the back of this plug is fixed a rope, upon which is strung as many drain pipes as its length will allow; a simple process is adopted to add fresh coils of rope, as more pipes are required. A hole is then dug in the ground, say 2 feet deep, and a foot wide, as in the present experiment, gradually sloped at the back, so as to allow the rope with the pipes to enter freely, and the coulter is placed upright in the hole, with its sharp edge and the point of the plug in the direction the drain is to be formed; at the end of the horizontal iron framing, farthest from the coulter, is fixed a horizontal pulley, through which a wire rope is passed, fastened at the other end to a capstan placed at the opposite extremity of the field, up to which the drain is to be formed. Four horses were harnessed to the capstan, which they turned with very trifling exertion, thus drawing the coulter through the land, the plug forming the drain and the rope with the pipes following. The time occupied in laying the nine chains of piping was 33 minutes, and the surface land was not more disturbed that if a knife had been drawn through it; when the coulter was drawn up to the capstan it was raised out of the ground, the rope disengaged from the plug, and the horses hitched to the other ends of the coils of ropes, which they immediately drew out, leaving the tiles accurately placed, as was ascertained by digging down to the drain. Another drain was then immediately formed in the same manner, at a parallel distance of about 15 feet, the capstan in the same position. The estimated expense of draining land in this manner, independent of the cost of the tiles, is about 4*d.* a chain. From 6000 to 7000 feet can be drained in one day, at an expense of about 30*s. Architect, June* 14.

*Gypsum.*—The Belgian Government, having established depots in different places throughout Luxemburg and Namur, for supplying lime to the farmers of those districts, in which it had been very difficult for them to obtain that earth, for the improvement of their land, have, by a further measure, ordered the establishment of depots of gypsum in different parts of Flanders for the same purpose, a substance which, although most cheap and abundant in France, is not found naturally in Belgium, at least not, as we know, in any working quantities. Although the utility of gypsum in agriculture is no longer questioned, we avail ourselves of this opportunity of stating the principal advantages to be derived from its agricultural application. It has especially the property of stimulating the growth of leguminous forage plants, particularly of the Pea, Vetch, Bean, Lucerne, Sainfoin, Clover, Lupine, and Lupuline or Golden Minette. Among these plants, Sainfoin, Clover, and Lupine are those of which the products are most obviously increased by means of gypsum. It is well known that Franklin, in order to demonstrate this effect to his countrymen, the Americans, in a striking manner, in reference to Clover, spread gypsum on a Clover field, near a public road, in such a manner as to form, in gigantic letters, the words, "This Clover has been gypsumed." As the crop came up the superior growth and deeper green of the plants constituting these words, thus traced by the gypsum, rendered the characters more visible; and the demonstration was considered so satisfactory as to put an end to all the arguments that had been adduced against its application in the case of Clover. Lupine, which has been recommended as a green crop for ploughing-in on poor lands not easy otherwise to manure, assumes so great a development, when aided by a little gypsum, as to give to the soil into which it is introduced while in flower, a manure occasioning it to bear abundant crops. When mixed only in small proportions with liquid or solid manuring matter, it has the property of absorbing from them the ammoniacal gas which constitutes so great a part of their fertilising power. The means thus placed by the Belgian Government within the reach of the farmers of that country for obtaining a cheap and abundant supply of this substance, will enable them to verify its advantages by direct experience, and to give a new extension to the cultivation of the most nutritious forage plants, which will thus increase in a large proportion the number of cattle, the amount of manure, and consequently that of all the products of agriculture. *From the French of the Revue Villagoise.*

## Calendar of Operations.

JULY.

LAMMERMOIR SHEEP FARM, *July* 1.—In our last communication, dated about the 1st of June, we stated that the weather was ungenial and vegetation considerably retarded. Although the same state of things continued during the greater part of last month, matters have been greatly changed for a week past, when, instead of very little sunshine, we have had an unclouded sky, and the thermometer at 78° in the shade at noon, instead of 55°. We need scarcely add that the face of the country is greatly altered, and that there is now abundance of Grass. During June, the care of the shepherds has not been directed to any one particular work, but to the general comfort of their flocks. On flat rough grounds especially, where sheep are most apt to get "awkward," their constant attendance is required to keep them from rolling. Indeed, from 3 in the morning until after 9 at night they must be on the look-out, and even with all this care, sheep are occasionally lost. Sheep-shearing is generally over in the district, although we do not begin ourselves until the 3d. The half of the stock were washed yesterday, and we expect to finish to-morrow. The universal custom on the Border hill farms is to swim, instead of hand-wash, the sheep, as practised in Lowland districts. A natural or artificial pool, 4 or 5 feet deep, and from 15 to 20 yards broad, having a "jump," or bank, about 3 feet high on the one side, and a gradual slope on the opposite, is selected in some convenient place. Through this the sheep are made to swim some three or four times, after which the wool will be found as white and clean as that which has been hand-washed. There is also much less fatigue to man and beast, while ten times the number can be got through with the same hands. Especially during hot weather like the present, the washing should be performed early in the morning, or towards evening, both because it is less fatiguing to the sheep, and because they are more easily collected before they have left their "lairs" on the morning, or when they are returning to them about sunset. The shearing is seldom all performed by the shepherds on the farm. The day having been fixed, and it being desirable to have a certain number of sheep finished on the same day, notice is given to the neighbours that so many hands will be required. In this way a dozen or more shepherds are assembled; but we know some who prefer hiring their hands, and the plan has certainly its advantages, but we do not think they are great, and like to keep by the patriarchal fashion, which, moreover, tends to foster a spirit of good neighbourhood both among masters and men. We finished Turnip sowing on the 21st ult., and have begun to thin this day. Until within the last week, the plants have been growing very slowly, but are now pushing away vigorously. Thinning, horse and hand hoeing this crop, will furnish abundant work on the arable portion of the farm all July. *A Lammermuir Farmer.*

## Notices to Correspondents.

FELT: *J W H.* It requires dressing every year, and will then last long.

LAURELS, &c.: *J O P.* We are not aware that the eating of these plants will produce the effects complained of. *W C S.*

THE EXHIBITION: *X.* We shall be doing a service to working men from the country, who may be in town for a few days, and to all others who wish to unite economy with comfort and cleanliness, by recommending to them the Model Lodging-house, or Metropolitan Chambers, Albert-street, Buxton-street, Mile End New Town.

## Markets.

COVENT GARDEN, JULY 12.

Trade is good, and the market is well supplied with all kinds of Fruit and Vegetables in season. Peaches and Nectarines continue to be sent in large quantities. English Pines and Hothouse Grapes are plentiful, and the former cheaper. Strawberries are now in good demand, and the supply is abundant. Cherries are furnished in large quantities, and they are excellent in quality. West Indian Pines fetch from 2s. to 5s. each. Oranges and Lemons are sufficient for the demand. Nuts remain nearly the same as quoted last week. Asparagus, Carrots, French Beans from the open ground, and Green Peas are received in quantity. New Potatoes may be obtained at 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle dearer. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Pinks, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4s to 7s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 10s to 20s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 10s to 20s | Oranges, per doz., 9d to 2s |
| Cherries, per lb., 6d to 2s | — per 100, 6s to 14s |
| Melons, each, 4s to 8s | — Seville. p. 100, 7s to 14s |
| Strawberries, p. pottle, 6d to 1s | — — p. doz., 1s to 2s 6d |
| Gooseberries, per half sieve, 2s to 4s | Nuts, Barcelons, p. bsh, 20s to 22s |
| Currants, per hf. sieve, 3s to 5s | — Brazil, p. bsh., 12s to 14s |
| | Cobs, per 100 lbs., 50s to 55s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Cauliflowers, p. doz., 1s 6d to 3s | Garlic, per lb., 4d to 8d |
| French Beans, p. hf. sieve, 3s to 5s | Artichokes, per doz., 1s to 2s |
| Beans, per sieve, 2s to 2s 6d | Lettuce, Cab., p. score, 4d to 9d |
| Peas, per sieve, 2s to 4s | — Cos, per score, 3d to 1s |
| Asparagus, per 100, 1s to 4s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 2d to 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Potatoes, per ton, 90s to 200 | Red Beet, per doz., 1s to 4s |
| — per cwt., 4s to 8s | Mushrooms, p. pot., 1s to 2s |
| — per bush., 1s 6d to 3s | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. bunch, 3d to 6d | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Thyme, per bunch, 2d to 3d |
| — Turnip, p. doz., 8d to 1s | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 2s | — Roots, p. bundl. 9d to 1s |
| Carrots, per bunch, 4d to 6d | Mint, green, per bunch, 4d to 6d |
| Spinach, per sieve, 1s 6d to 2s | Basil, green, p. bunch, 6d to 9d |
| Vegetable Marrows, per doz., 1s to 2s | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 2d to 6d | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per bunch, 3d to 4d | Corn Salad, p. hf. sieve, 1s to 1s 6d |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 10.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Clover ... ... ... | 75s to 95s | |
| Inferior ditto ... ... | 55 | 65 | New do. ... ... ... | 60 | 75 |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 26 | 31 |
| New Hay ... ... | 60 | 70 | | J. COOPER. | |

A dull trade.

CUMBERLAND MARKET, July 10.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 84s to 88s | | Inferior ... ... ... | 80s to 88s | |
| Inferior ditto ... ... | 65 | 72 | New Clover ... ... | 80 | 88 |
| New Hay ... ... | 65 | 72 | Straw ... ... ... | 28 | 32 |
| Old Clover ... ... | 95 | 105 | | JOSHUA BAKER. | |

HOPS.—FRIDAY, July 11.

Messrs. Pattenden and Smith report that the market continues firm at late quotations. The accounts from the plantations are still of an unfavourable character, speaking of lice and honey dew in abundance. The duty is estimated at 100,000*l.*

COAL MARKET.—FRIDAY, July 11.

Carr's Hartley, 13s.; Eden Main, 13s. 3d.; Wallsend Hetton, 14s. 6d.; Wallsend Lambton, 14s.; Wallsend Stewarts, 14s. 6d.; Wallsend Tees, 14s. 3d.—Ships at market, 86.

SMITHFIELD, MONDAY, July 7.

There was a larger supply of Beasts, but the dead markets being clear there was a demand for choice ones not too big; these readily made 8s. 6d., and in a few instances rather more. Heavy cattle were with difficulty disposed of at late rates. The number of Sheep and Lambs was larger, however; the demand has increased for sizeable ones, and rather better prices were obtained, but fat Sheep were not dearer. Good Calves meet with a steady sale. From Holland and Germany there are 342 Beasts, 2250 Sheep, 174 Calves, and 70 Pigs; from Scotland, 70 Beasts; and 70 from France.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Here-fords, &c. | 3 | 4 to 3 | 6 | | Best Long-wools . | 3 | 4 to 3 | 8 | |
| Best Short-horns | 3 | 2 — 3 | 4 | | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 6 — 3 | 0 | | Ewes & 2d quality | 2 | 8 — 3 | 6 | 4 |
| Best Downs and Half-breds ... | 3 | 8 — 4 | 0 | | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 4 | 4 — 5 | 0 | |
| | | | | | Calves ... ... | 3 | 0 — 4 | 0 | |
| | | | | | Pigs ... ... | 2 | 8 — 3 | 4 | |

Beasts, 3651; Sheep and Lambs, 33,230; Calves, 345; Pigs, 390.

FRIDAY, July 11.

The supply of Beasts is larger than the demand; consequently the best kinds with difficulty reach Monday's quotations, and many second-rate remain unsold. There is also a considerable number of Sheep and Lambs; trade is slow for the former at lower prices, but for the latter late rates are fully maintained. Calves are very plentiful; the choicest make nearly as much as on Monday, but inferior are unsaleable. From Germany and Holland we have 326 Beasts, 990 Sheep, and 167 Calves; from Scotland, 80 Beasts; from Norfolk and Suffolk, 300; from Leicester and Northampton, 100; and 98 milch cows from the home counties.

| Best Scots, Here-fords, &c. | 3 | 4 to 3 | 6 | Best Long-wools . | 3 | 4 — 3 | 6 |
|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 — 3 | 2 | Ditto Shorn ... | | ... | |
| 2d quality Beasts | 2 | 4 — 2 | 10 | Ewes & 2d quality | 2 | 6 — 3 | 2 |
| Best Downs and Half-breds ... | 3 | 8 — 3 | 10 | Ditto Shorn ... | | ... | |
| Ditto Shorn ... ... | | | | Lambs ... ... | 4 | 4 — 5 | 0 |
| | | | | Calves ... ... | 2 | 8 — 3 | 10 |
| | | | | Pigs ... ... | 2 | 6 — 3 | 4 |

Beasts, 963; Sheep and Lambs, 15,880; Calves, 714; Pigs, 385.

MARK LANE.

MONDAY, JULY 7.—The supply of Wheat from Essex to this morning's market did not exceed 500 qrs., that from Kent was moderate; the greater part was disposed of on about the terms of Friday last, being a decline of fully 3s. from the highest point. Finest qualities of foreign must be quoted 2s., and inferior 2s. to 3s. per qr. lower than this day fortnight, with a very limited demand.—The value of Barley is unaltered.—Beans and Peas are a dull sale.—Oats must be written 1s. per qr. cheaper.—The demand for Flour is very small at our quotations.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 40 | —45 | Red ..... | 36 | —40 |
| — — fine selected runs...ditto | 44 | —47 | Red ..... | | —42 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 35 | —50 | | | |
| Barley, grind. & distil., 22s to 25s...Chev. | 27 | —32 | Malting . | 24 | —27 |
| — Foreign... grinding and distilling | 22 | —26 | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | 20 | —23 | | | |
| — Scotch and Lincolnshire...Potato | 23 | —26 | Feed ..... | 21 | —24 |
| — Irish .....Potato | 19 | —24 | Feed ..... | 19 | —22 |
| — Foreign .....Poland and Brew | 21 | —23 | Feed ..... | 19 | —22 |
| Rye ..... | 24 | —26 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..27s to 30s.....Tick | 27 | —31 | Harrow . | 27 | —31 |
| — Pigeon.....29 — 34... Winds | — | | Longpod | — | |
| — Foreign ..... Small | 22 | —30 | Egyptian | 24 | —25 |
| Peas, white, Essex and Kent.....Boilers | 24 | —27 | Suffolk... | 27 | —29 |
| — Maple.....27s to 29s .....Grey | 24 | —25 | Foreign . | 25 | —32 |
| Maize ..... White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk ..... ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 20 | —23 | Per sack | 28 | —34 |

FRIDAY, JULY 11.—The arrivals of English corn this week have been small, but of foreign considerable.—In the value of English Wheat we observe no alteration from Monday, and towards the close of the market we experienced more inquiry for foreign, but without leading to business, excepting where holders to clear vessels were induced to accept some abatement in price.—Barley is firm at former rates.—Beans and Peas are a dull sale.—Oats are difficult of disposal at a decline of 1s. per qr.—Holders of sack Flour insist on late prices, but barrels are obtainable at a slight reduction. A few cargoes of Galatz Maize on the coast have changed hands during the week at 27s. to 27s. 6d. per qr. In the floating cargoes of Wheat there is nothing passing. Polish Odessa is nominally worth 35s. to 36s. per qr.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| May 31..... | 39s 3d | 24s 1d | 20s 0d | 26s 9d | 29s 7d | 27s 5d |
| June 7..... | 39 6 | 24 4 | 20 8 | 23 5 | 30 11 | 26 10 |
| — 14..... | 39 11 | 24 6 | 20 1 | 26 1 | 30 10 | 28 6 |
| — 21..... | 40 7 | 24 4 | 21 4 | 28 0 | 30 5 | 27 6 |
| — 28..... | 42 4 | 25 2 | 22 3 | 28 11 | 32 1 | 29 2 |
| July 5..... | 43 5 | 25 2 | 22 5 | 27 6 | 31 8 | 28 10 |
| Aggreg. Aver. | 40 10 | 24 7 | 21 1 | 26 9 | 30 11 | 28 0 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES.— | MAY 31. | JUNE 7. | JUNE 14. | JUNE 21. | JUNE 28. | JULY 5. |
|---|---|---|---|---|---|---|
| 43s 5d | ... | ... | ... | ... | ... | |
| 42 4 | ... | ... | ... | ... | | ... |
| 40 7 | ... | ... | ... | | ... | ... |
| 39 11 | ... | ... | | ... | ... | ... |
| 39 6 | ... | | ... | ... | ... | ... |
| 39 3 | | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JULY 8.—At this day's market there was a good attendance of the town and country trade, who evinced more disposition to make purchases. Wheat and Flour met with a slight advance. Oats and Oatmeal were difficult to dispose of, and 3d. per 45 lbs. and 6d. per load lower. Barley, Beans, and Peas were in moderate request, at late rates. Indian Corn attracted little attention, though prime yellow American was offered at 28s. per qr. from the quay, being a reduction of fully 2s. per qr.—FRIDAY, JULY 4.—We have had another week of brilliant weather. The growing crops of grain, but more particularly of Wheat, have everywhere greatly improved. The sharp fall in the price of Wheat and Flour on Tuesday has brought forward some parties willing to invest, and a few parcels of American Flour have changed hands at fully 6d. per barrel on Tuesday's low rates. With the small business done in Wheat and Flour at our market this morning, it is scarcely worth while to quote any advance in prices, but there was evidently a better feeling towards the trade than on Tuesday, and purchases could not be made at the low rates of that day. Indian Corn was in slow request for Ireland, and it was offering at 6d. to 1s. per qr. reduction. The American best yellow corn was not worth over 28s. 6d. per 480 lbs. Oats, Barley, Beans, and Peas stand as quoted on Tuesday.

*Just published, considerably enlarged, price 5s. 6d., the Third Edition of*

# RURAL CHEMISTRY:

AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE THIRD EDITION.

"In accordance with numerous suggestions, very considerable additions have been made to this little book, in preparing it for a new edition; several important practical matters, not treated of in any former editions, having been introduced. Brief descriptions of the more important of the domestic arts, such as Wine and Vinegar Making, Brewing, the Manufacture of Spirits, Baking, Cheese-making, Cookery, &c, have been added, together with some account of the Scientific Principles involved in those arts. Numerous recent analyses of agricultural crops have likewise been given, and the whole has been carefully revised and corrected."

CONTENTS OF THE VOLUME.

Absorption of manure
Acetates
Acetic acid
Acetic fermentation
Acids
Acids, organic
Acids, test for
Action of plants on the air
Active principles
Adulterated guano
Affinity, chemical
After-damp in Air [mines
Air contains ammonia
Air contains carbonic acid
Air contains water
Air, inflammable
Air necessary to life
Air, composition of
Air resists compress-
Air. weight of [sion
Alabaster
Albumen
Albumen, vegetable
Alcohol
Ale
Alkali, test for
Alkali, volatile
Alkalies
Alkalies, vegetable
Alloys
Almonds
Alum
Alumina
Alumina absorbs ammonia
Alumina in soil, use of [of
Alumina, phosphate
Alumina, silicate of
Alumina, sulphate
Aluminum [of
Aluminum, oxide of
Ammonia
Ammonia absorbed by alumina
Ammonia absorbed by charcoal, &c.
Ammonia, carbonate of
Ammonia, fixing of
Ammonia in air
Ammonia in rain-water
Ammonia, loss of
Ammonia, muriate
Ammonia, phosphate
Ammonia, salts of
Ammonia, sulphate
Ammonia, urate of
Analysis
Animal heat
Animal manures
Animal principles, proximate
Animal substances
Animals, breathing of [of
Animals, fattening
Annotta
Apple jelly
Aquafortis
Argol
Arrack
Arrow root
Arteries
Artichoke, Jerusa-
Ashes [lem
Atom
Attraction
Azote
Balloons
Bamboo
Barilla
Barley
Barley-straw
Barley sugar
Barm
Barometer
Base
Basting-meat
Batatas
Bay salt
Bean, field
Bean straw
Beans, kidney
Beech ashes
Beech nuts
Beer
Beer, Bavarian
Beet
Beet-root sugar
Bell metal
Bile
Binary compounds
Biphosphate of lime
Bitartrate of potash
Bittern
Bleaching by chlorine
Bleaching by sulphur
Blonde
Black Currant jelly
Blood
Blubber
Bones
Bran
Brandy
Brass
Bread
Bricks
Brimstone
British gum
Bromide of magne-
Bromides [sium
Bromine
Brown stout
Buckwheat
Buds
Burning
Burning lime
Burning of plants
Burnt clay
Burnt sugar
Butter
Butter, clarified
Butter, how co-loured
Butter, melted
Butter, salt
Butyric acid
Cabbage
Cabbage, red
Calamine
Calcium
Calcium, chloride of
Calomel
Camphor
Candles
Candle, burning of
Cane
Cane sugar
Caoutchouc
Caramel
Carbon
Carbon in plants
Carbonate of ammonia
Carbonate of iron
Carbonate of lead
Carbonate of lime
Carbonate of magnesia
Carbonate of potash
Carbonate of soda
Carbonates decomposed by acids
Carbonic acid gas
Carbonic acid gas necessary to plants
Carbonic acid gas, decomposition of
Carbonic oxide
Carburetted hydro-
Carcases [gen
Carrot
Caseine
Caseine, vegetable
Castor oil
Caustic potash
Cellars, foul air in
Cellulose
Chalk
Chamomile
Changes, chemical
Charcoal
Charcoal absorbs ammonia [of
Charcoal, burning
Charcoal, disinfecting powers of
Charring
Cheddar cheese
Cheese
Cheltenham salts
Cherry-tree gum
Cheshire cheese
Chestnuts
Balloons
Chlorides
Chlorine
Churning
Chyle
Chyme
Circulation of the
Cider [blood
Cinnabar
Citric acid
Clay
Clay, burnt
Clay iron ore
Climate, differences
Clover [of
Coagulation of al-
Coal ashes [bumen
Coal-gas
Coal-tar, naphtha
Cocoa-nut oil
Cognac brandy
Cohesion
Coke
Colophony
Colour of soils [of
Colours, changing
Colours, vegetable
Colza
Combination
Combination, [by changes produced
Combining weights
Combustion
Combining numbers
Combustion, results
Common salt [of
Composition of animal matter
Composition of organic matter
Composition of plants
Composition of soils
Composition of stones
Compounds
Contagion
Contagious matter
Cookery
Copper
Copper in plants
Copper, oxide
Copper, pyrites
Copper, salts of
Copper, sulphate of
Copperas
Coprolites
Corn
Corrosive sublimate
Cotton
Couching
Cream
Cream cheese
Cream of tartar
Crops, rotation of
Cubic nitre
Cultivated land
Curd of milk
Currants
Daguerreotype
Dahlia
Death of plants
Decay [lime
Decay, influence of
Decay, like burning
Decay of humus
Decay of plants
Decay, results of
Decay, under water
Decomposition
Decomposition, induced [rocks
Decomposition of
Decomposition, spontaneous
Deliquescence
Dew
Dextrine
Diamond
Diastase
Digestion [ment of
Digestion, derange-
Diseases of plants
Distillation
Ditch scrapings
Double salts
Dough
Drainage water
Draining
Dunder
Dung
Dutch rushes
Dyeing
Earth
Earth nut
Earths
Earths, alkaline
Earthy matter in the air
Earthy silicates
Earthy substances in plants
Effervescence
Egg, white of
Elaine
Electricity, influence on plants
Elements
Embryo
Epsom salts
Equivalent
Excrement [fowl
Excrements of sea
Exhaustion of soils
Expansion [damp
Explosion of fire-
Faints, distiller's
Fallowing
Farm-yard dung
Fat
Fat of animals
Feathers
Feeding off with
Ferment [sheep
Fermentation
Fertility
Fibre, woody
Fibrin, animal
Fibrin, vegetable
Finings
Fir-ashes
Fire
Fire-damp
Fish, refuse
Fixed oil
Fixing ammonia
Flame
Flax
Flesh
Flint
Flooring malt
Flour
Flour, damaged
Flowers
Flowers, their effect on the air
Fluorides
Fluorine
Food of animals
Food, chemical use
Food of plants [of
Formation of seed
Formation of soils
Foul smells
Freezing, effects of
Freezing of water
Fruit
Fruit, ripening of
Fuel [chlorine
Fumigating by
Fumigation by sul-
Fungi [phur
Fur from water
Galvanised iron
Game, preserving
Gas
Gas coal
Gas, inflammable
Gas, manufacture of
Gas liquor
Gas liquor, strength
Gas tar [of
Gastric juice
Gelatine
Geneva
Germination
Germination acce-
Gin [lerated
Glass
Glauber salts
Gliadine
Gloucester cheese
Glue
Glue, refuse
Gluten
Glycerine
Gold
Gold, chloride
Gold of Pleasure
Gold mosaic
Gooseberries
Grain of Wheat
Grains, spent
Grape sugar
Grapes
Grass
Gravity
Gravity, specific
Greaves
Green manures
Green vitriol
Growth of plants
Guano
Gum
Gum arabic
Gum, British
Gum, cherry-tree
Gum, formation of
Gum, resin
Gun cotton
Gunpowder
Gutta percha
Gyletun
Gypsum
Hair
Hard water
Hartshorn
Hay
Heat
Hedges, foul
Hemp-seed
Hollands
Honey
Hoofs
Hops
Hordein
Horn
Humates
Humic acid
Humus
Hydrogen
Hydrogen, carburetted [of
Hydrogen, lightness
Hydrogen, sulphu-
Ice [retted
Iceland moss
Indian corn
Indian rubber
Indigo
Inflammable air
Inorganic matter in plants
Inorganic manures
Inulin
Iodides
Iodine
Iodine in sea water
Iron
Irrigation
Isinglass
Ivory
Juniper
Kelp
Kidneys
Kiln-drying
Kirschwasser
Lactic acid
Latent heat
Lead
Leather
Leaven
Leaves
Leaves, fall of the
Leaves, office of
Lees of wine
Legumine
Lemons
Lentils
Lettuce
Light, effects of
Light, influence on plants
Lighting a fire
Lignin
Lime
Lime, action on soil
Lime and salt
Lime, biphosphate
Lime, burning [of
Lime, carbonate
Lime, caustic
Lime, citrate
Lime, hydrate of
Lime in plants
Lime, muriate of
Lime, nitrate of
Lime, oxalate of
Lime, phosphate of
Lime, silicate of
Lime, slaking
Limestone [sian
Limestone, magne-
Lime, sulphate of
Lime, superphosphate of
Lime, when useful
Lime, when not to be used
Limes, juice of
Linen
Linseed
Liqueurs
Liquid manure
Liquid manure
Litharge [tanks
Liver
Loss of manure
Lucerne
Lungs of animals
Macaroni
Magnesia
Magnesia, carbonate of
Magnesia in plants
Magnesia, muriate of
Magnesia, phosphate of
Magnesia, silicate of
Magnesia, sulphate of
Magnesian limestone
Magnesium
Magnesium, chloride of
Magnesium, oxide of
Maize
Malt
Malting
Malic acid
Manganese
Manganese in plants
Manganese in soils
Manganese, oxide of
Mangold Wurzel
Manures
Maple sugar
Maraschino
Marble
Mark of Grapes
Margarine
Marl
Mashing
Mead
Meat boiling
Meat roasting
Medicines, action of
Mercury
Mercury, chlorides
Mercury, oxides of
Mercury, sulphuret
Metallic alloys [of
Metallic oxides
Metallic salts
Metals
Milk
Millet
Minium
Mixture
Mixture of soils
Molasses
Mordaunts
Mortar
Mosaic gold
Mould
Mouldering
Mouldiness
Mucilage
Muriate of ammonia
Muriate of lime
Muriate of magne-
Muriate of soda [sia
Muriates
Muriatic acid
Muscle
Muscovado sugar
Musk
Must
Mustard
Naphtha
Nascent state
Natural vegetation
Nightsoil [fected
Nightsoil, disin-
Nitrate of lime
Nitrate of potash
Nitrate of soda
Nitrate of silver
Nitrates
Nitrates, in plants
Nitre
Nitre beds
Nitre, cubic
Nitric acid
Nitric acid in ma-
Nitrogen [nure
Noyeau
Nutrition of plants
Nutrition of ani-
Oak ashes [mals
Oats
Odours of plants
Oil
Oilcake
Oil, castor
Oil of cloves
Oil, cocoa-nut
Oil, dregs
Oil, drying
Oil, fat
Oil, fixed
Oil, linseed
Oil, mustard
Oil of lavender
Oil of lemons
Oil of turpentine
Oil of vitriol
Oil, olive
Oil, poppy
Oil, rape
Oil, rock
Oil seeds
Oil, volatile
Oleine
Opodeldoc
Ores, roasting of
Organic acids
Organic manures
Organic matter
Organic substances in soils
Organic transformations
Organised matter
Oxalate in lime in
Oxalic acid [plants
Oxalis
Oxide, carbonic
Oxide of copper
Oxide of iron
Oxide of lead
Oxide of manganese
Oxide of mercury
Oxide of silver
Oxide of tin
Oxides, metallic
Oxygen
Paint, white
Palm juice
Paper bleached by
Paring [chlorine
Parmesan cheese
Parsnip
Paste
Pearlash
Peas
Peat ashes
Pectine
Per-oxides
Perry
Persalts
Petre
Petre, salt
Pewter
Phosphates
Phosphoric acid
Phosphoric acid in plants
Phosphoric acid in bone [water
Phosphoric acid in
Phosphorus
Pickling cabbage
Pine-apples
Pipes, bursting of
Pitch
Plants, composition
Plants, death of [of
Plants, decay of
Plants decompose carbonic acid [air
Plants, effect of, on the
Plants, elements of
Plants, food of
Plants, growth of
Plaster of Paris
Plaster stone
Plough, subsoil
Plums
Polenta
Pond mud
Poppy seed
Porter
Potash [of
Potash, binoxalate
Potash, bitartrate of
Potash, carbonate of
Potash, caustic
Potash in plants
Potash in the soil
Potash, muriate of
Potash, nitrate of
Potash, salts of
Potash, silicate of
Potash, sulphate of
Potashes
Potassium
Potassium, chloride
Potato [of
Potato haulm
Potato spirit
Potato starch
Potato, sweet
Pottery
Principles, active
Proportions
Protein
Proto-salts
Protoxides
Proximate animal
Pruning [principles
Putrefaction
Putrefaction, influence of lime in
Putrefying animal matter
Putrid fermentation
Putrid urine
Putty powder
Pyrites
Pyrites, copper
Pyroligneous acid
Pyrolignites
Pyroxylic spirit
Quartz
Quaternary com-
Quicklime [pounds
Quicksilver
Rain water
Raisins
Rape seed
Rape vine
Red cabbage
Red lead
Refuse of gas works
Rennet
Resins
Respiration [tion
Results of combus-
Results of putrefac-
Rhubarb [tion
Rice
Ripening of fruit
River mud
River water
Road drift
Rock salt
Rocket [tion of
Rocks, disintegra-
Roman vitriol
Roots
Rotation of crops
Ruby
Rum
Rushes, Dutch
Rust of iron
Rye
Rye straw
Saccharine matter
Safety-lamp
Sago
Sainfoin
Sal-ammoniac
Saline compounds
Saline draughts
Saline manures
Salt
Salt and lime
Salt bay
Salt, common
Salt in sea water
Salt, rock
Salt, spirit of
Salt, sea
Salt, solution of, in
Saltpetre [water
Salts
Sand
Sapphire
Sawdust
Schiedam
Sea fowl, excre-
Sea-water [ments of
Sea-weed
Seeds
Seed, formation of
Seeds, germination
Seeds, steeping [of
Seidlitz powders
Selection by roots
Semolina [of plants
Shell sand
Shells
Silex
Silica
Silica in plants
Silica in soil, use of
Silicate of alumina
Silicate of lime
Silicate of magnesia
Silicate of potash
Silicate of soda
Silicates
Silicic acid
Silicon
Silk dyeing
Silver
Silver, chloride of
Silver, nitrate of
Silver, oxide of
Silver, salts of
Silver, sulphuret of
Size
Size, resin
Skimmed milk
Skin
Slaking of lime
Slag
Smells, foul
Smoke
Straw ashes
Straw of barley
Straw of buckwheat
Straw of lentils
Straw of maize
Straw of oats
Straw of rye
Straw of vetch
Straw of wheat
Strong manures
Sub-salts
Subsoil
Subsoil ploughing
Substratum
Suffocation from
Sugar [charcoal
Sugar, barley
Sugar, candy
Sugar, formation of
Sugar of lead
Sugar of milk
Sugar, refining
Sugar refiners' waste
Sulphates
Sulphur
Sulphur in plants
Sulphuret of iron
Sulphuret of lead
Sulphuret of silver
Sulphurets
Smelting
Soap
Soap-boiling
Soap, decomposi-
Soap, soft [tion of
Soap, transparent
Soap, yellow
Soapmaker's ash
Soda
Soda, carbonate of
Soda in rocks
Soda in plants
Soda in soils
Soda, muriate of
Soda, nitrate of
Soda, silicate of
Soda, sulphate of
Sodium
Sodium, chloride of
Soft water
Soil
Soils, analysis of
Soil, colour of
Soils, composition of
Soils, exhaustion of
Soils, formation of
Soils, mixture of
Soils, nature of
Solder
Soot
Sorrel
Soup
Specific gravity
Spices
Spirit proof
Spirit, pyroxylic
Spirit of salt
Spirit of wine
Sponge
Spring water
Springs
Stall feeding
Starch
Steam
Stearic acid
Stearine
Still
Stilton cheese
Sulphuret of tin
Sulphuretted hydrogen
Sulphuric acid
Sulphurous acid
Sulphurous acid checks fermenta-
Sunflower [tion
Sunflower seed
Super-salts [lime
Super-phosphate of
Super-tartrate of
Swedes [potash
Tabasheer
Tannin
Tanning
Tapioca
Tar
Tarnish on silver
Tartar
Tartaric acid
Tartrates
Teeth
Ternary compounds
Tests, vegetable
Thermometer
Thunderbolt
Tiles
Tin
Tin, oxide of
Tin plate
Tin, sulphuret of
Toast
Toasted cheese
Tobacco
Toddy
Treacle
Tropical countries
Tubers
Turf-ashes
Turmeric
Turnips
Turpentine
Turpentine, oil of
Urate of ammonia
Urea
Uric acid
Urine
Use of leaves
Use of plants
Usquebaugh
Vapour condensed by cold
Vapour in the air
Vegetable alkalies
Vegetable manure
Vegetables, boiling
Veins [of
Vermilion
Vetch
Vinegar
Vinegar distilled
Vinous fermenta-
Vitriol, blue [tion
Vitriol, green
Vitriol, oil of
Vitriol, white
Volatile alkali
Volatile oil
Walnuts
Wash, distillers'
Water
Water, action on
Water, air in [lead
Water, composition of
Water, freezing of
Water, hard
Water, impurities in
Water, mineral
Water necessary to plants
Water, New River
Water, phosphoric acid in
Water, pure
Water, rain
Water, sea
Water, soft
Water, spring
Water, Thames
Water, well
Wax
Weed-ash
Weeds,
Weeds, burning of
Weeds, putrefaction
Weeds, spread of [of
Wheat grain
Wheat straw
Wheat starch
Whey
Whiskey
White lead
White of egg
Wine
Wine, brandy
Wine, domestic
Wine, fermentation
Wine, fining of [of
Wine, pricked
Wine, ripening of
Wine, vinegar
Wood ashes
Wood spirit
Woody fibre
Wool
Wool dyeing
Wool, mill refuse
Wool rags
Wool soap
Wort
Wort, foxiness of
Xyloidine
Yeast
Yeast as manure
Yeast, artificial
Yeast, bad
Yeast, dry
Zinc
Zinc, chloride of
Zinc, oxide of
Zinc, sulphate of

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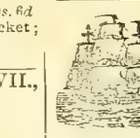
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| Budding upon body | Sap-bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
| Bud, preparation of, for use | Shoots and buds, choice of | Grafting, disadvantage of |
| Buds, dormant and pushing | Shoots for budding upon, and their arrangement | Operation in different months |
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| Guards against | | APPENDIX. |
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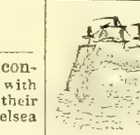
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INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England —Meeting at Windsor | 459 c | Grubber, Tennant's | 461 c |
| Agricultural chemistry | 457 b | Guano trade | 461 a |
| Allotments | 459 a | Herd Book, rev. | 461 a |
| Art r. nature | 454 a | Larks, Irish | 455 a |
| Birds, British song | 455 a | Liverpool Hort. Society | 455 b |
| Birds' nests | 455 a | Marigolds | 454 b |
| British Association | 452 a | Meath Hort Society | 455 b |
| Cacti | 454 c | Orchids for the Million | 453 b |
| Calendar, Horticultural | 455 c | Paint, tar | 453 c |
| Carriages | 458 a | Parrots | 454 b |
| Carts | 458 b | Paul's (Messrs.), Roses | 455 b |
| Charcoal, peat | 459 c | Pea, skinless | 455 a |
| Chemistry, agricultural | 457 b | Peat charcoal | 459 c |
| Churns | 458 c | Picotee seeds | 453 c |
| College, agricultural | 458 c | Potato disease | 452 a—453 c |
| Cornwall Hort. Society | 455 a | Roses at Regent's-park | 455 a |
| Cottage stove | 454 b | Rose stocks | 454 c |
| Cotton, African | 455 c | Salting walks | 452 b |
| Crystal palace 451 b, 453 b—458 a | | Scale, cure for | 453 c |
| Cuckoo, the | 454 c | Smithfield | 459 b |
| Draining tools | 458 b | Sparrow's nest | 453 c |
| Fleming's salting machine | 452 b | Stove, cottage | 454 c |
| — tar paint | 453 c | Tar paint | 453 c |
| Fowls, to mark | 459 c | Walks, salting | 452 b |
| Fruit at Regent's Park | 454 c | Weather, the | 461 c |


THE ANNUAL SHOW DAY AND DINNER OF THE BUCKINGHAM HORTICULTURAL AND FLORAL SOCIETY, will take place on WEDNESDAY, 30th July, 1851, at which the Most Noble the Marquis of Chandos, M.P. will preside. The Show will be held in Spacious Booths erected for the Society, on Church Hill. By the kind permission of Colonel Hall, M.P., the splendid band of the 1st Regiment of Life Guards will attend. Five Prizes will be given to Nurserymen and Market Gardeners for the best 12 Picotees, 12 Carnations, 12 Hollyhocks, 12 Dahlias, and the best collection of Roses. Every person intending to compete for Prizes, is requested to send a list of the Plants, &c. in order that proper space may be provided. The Flowers, &c., will be open for inspection at 12 o'clock. In the evening, a magnificent display of Fireworks will take place under the direction of a celebrated Pyrotechnist from London, who has been engaged for the occasion.

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12 very fine varieties for 12*s.*, including Carminata splendens, Grandis, Fyfiana, Rubra grandiflora, Teuchleeri Wortleyana, &c., &c.

Plants free to London; and extra plants gratis for orders above 40*s.*

Catalogues on application. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CATTELL'S Superior DWARF BARNES CABBAGE, and CATTELL'S RELIANCE Ditto.—Seed of the above valuable Cabbages may be had as usual, Post free, by enclosing 12 penny stamps for each, the former containing 1 oz., and the latter ¼ oz.—Address JOHN CATTELL, Seedsman, Westerham, Kent.

BECK'S SEEDLING PELARGONIUMS, &c.

J. DOBSON, late GARDENER to Mr. E. Beck, respectfully informs the public that his Priced Catalogue of Pelargoniums, including "Incomparable," and other fine varieties, will be ready in a few days, and will be sent in answer to prepaid application.

Woodlands Nursery, adjoining the Railway Station, Isleworth, Middlesex.

J. RIVERS'S LARGE YELLOW STONE TURNIP SEED, is particularly recommended for very late sowing; it is much superior to any known variety of Yellow Turnip, for quickness of growth in its young state, hardiness in withstanding the winter, and keeping in the clamps until late in the spring, and for growing to a greater weight per acre. It originated from a cross between the Stubble Swede and the Green-top Stone; those of yellow flesh have been carefully selected, to make a distinct kind; price 1*s.* 6*d.* per lb.—Orders are respectfully requested to be addressed to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts. A Post-office order is requested from unknown correspondents.—Sawbridgeworth, Herts.

MESSRS. J. AND H. BROWN offer the following desirable Plants:

| | *s.* | *d.* |
|---|---|---|
| 12 Orchides, choice species and good plants, for ... ... | 30 | 0 |
| 50 Choice Greenhouse Plants, one of a sort, by name (this collection is highly recommended) ... ... ... | 40 | 0 |
| 24 Choice Ericas, one of a sort, by name ... ... ... | 16 | 0 |
| 24 Fine new Fuchsias, do., do. ... ... ... ... | 10 | 0 |
| 12 Fine new Gloxinias, do., do. ... ... ... ... | 10 | 0 |
| 12 Fine new Achimenes, do., do. ... ... ... ... | 10 | 0 |
| Passifloras and Jasminums, Stove and Greenhouse species, each ... ... ... ... ... ... | 1 | 6 |
| Gardenia Florida, Radicans and Fortunii, per doz. ... | 18 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots ... | 9 | 0 |
| 12 Climbing do., choice sorts, in pots ... ... ... | 6 | 0 |
| 12 Choice Chrysanthemums, new sorts, by name ... ... | 6 | 0 |
| 12 New Dwarf Chinese Carysanthemums, do., do. ... | 8 | 0 |
| 12 New Perennial German Phloxes, one of a sort ... | 8 | 0 |
| 12 Ferns, beautiful varieties, in three collections, each, suitable for Glass Cases, Greenhouse, and hardy rock work ... ... ... ... ... ... ... | 10 | 0 |
| Choice Vines, strong plants, from eyes, in pots, per doz. | 15 | 0 |
| By Post, Best Cineraria, Calceolaria, Primula, Pansy, Cyclamen, Auricula, and Geranium Seed, each packet | 1 | 0 |

Albion Nursery, Stoke Newington, London, July 19.

DR. HOOKER'S NEW INDIAN RHODODENDRON.

WILLIAM HUSSEY begs to offer several Species of the above beautiful RHODODENDRONS, Seedlings of this year, well established, in small pots, at 7*s.* 6*d.* each, or 80*s.* per dozen.—For description of the above, see the *Gardeners' Chronicle*, March 15, 1851. Also the under named:—

| | |
|---|---|
| Mitraria coccinea, per dozen ... ... ... ... | 6*s.* |
| Camellias, fine plants, per do. ... ... 24*s.* to | 30 |
| Ericas, fine plants, per do. ... ... ... ... | 9 |
| Oxalis elegans, per do. ... ... ... ... ... | 6 |
| — major, per do. ... ... ... ... ... | 6 |
| Calceolaria grandis, per do. ... ... ... ... | 6 |

Horticultural Gardens, Norwich, July 19.

STRAWBERRIES, CHERRIES, AND WALL FRUIT.—TANNED GARDEN NETTING, for protecting the above from birds, or as a fence for fowls, pigeons, Tulip and seed beds, can be had in any quantity from JOHN KING FARLOW'S Fishing Tackle and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½*d.* one yard, 3*d.* two yards, or 6*d.* four yards wide. Forwarded, carriage free, on all orders over 20*s.*, accompanied with Post-office order or Stamps.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

| | | |
|---|---|---|
| Averuncators | Garden Scrapers | Pick Axes |
| Axes | Grape Gatherers and Scissors | Potato Forks |
| Bagging Hooks | Gravel Rakes and Sieves | Pruning Bills |
| Bills | Greenhouse Doors and Frames | ,, Knives, various |
| Borders, various patterns | Hammers | ,, Saws |
| Botanical Boxes | Hand-glass Frames | ,, Scissors |
| Cases of Pruning Instruments | Hay Knives | ,, Shears [riety |
| Chaff Engines | Hoes of every pattern | Rakes in great va- |
| Chaff Knives | Horticultural Hammers and Hatchets | Reaping Hooks |
| Daisy Rakes | Hotbed Handles | Scythes |
| Dibbles | Ladies' Set of Tools | Scythe Stones |
| Dock Spuds | Labels, various patterns, in zinc, porcelain, &c. | Shears, various |
| Draining Tools | Lines and Reels | Sickles |
| Edging Irons and Shears | Marking Ink | Sickle Saws |
| Flower Scissors | Mattocks | Spade and Shovels |
| ,, Stands in Wires and Iron | Menographs | Spuds |
| Fumigators | Metallic Wire | Switch Hooks |
| Galvanic Borders & Plant Protectors | Milton Hatchets | Thistle Hooks |
| Garden Chairs and Seats | Mole Traps | Transplanting Tools |
| ,, Loops | Mowing Machine | Trowels |
| ,, Rollers | | Turfing Irons |
| | | Wall Nails |
| | | Watering Pots |
| | | Weed Extractors and Hooks |
| | | Wheelbarrows |
| | | Youths' Set of Tools |

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.

Also, wholesale and retail Agents for Saynor's celebrated Pruning Knives, used exclusively by the first gardeners in the United Kingdom. GEORGE and JOHN DEANE (opening to the Monument) London Bridge.

HORTICULTURAL TOOL WAREHOUSE.

GREEN AND CONSTABLE, WHOLESALE AND RETAIL IRONMONGERS, 36, King William-street (four doors from London Bridge, beg to inform Amateurs and Gardeners they have a large assortment of new and improved Garden Tools, including Lyndon's Patent Spades, Lord Vernon's Patent Hoes, jointed Hothouse Syringes, Galvanised Iron Garden Engines, Transplanting Tools, Patent Water-pots, Brown's Patent Fumigator, Improved Garden Labels and Sticks; also a large assortment of Saynor's Pruning and Budding Knives.

PATENT GARDEN NETS.—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60*s* net. Other sizes, in proportion. Orders promptly attended to.—J. and W. STUART, Patent Net Factory, Musselburgh, July 12.

MARQUEES, Tents, and Flags, for SALE and on HIRE. Rick, hay, and waggon cloths; ropes, twines, and sacks; cocoa matting and mats. Manufacturers by Royal Letters Patent: MORISON and HURN, 25, Norton-falgate.

PEACH AND GRAPE GLASSES.

HALLIMAN'S REGISTERED FRUIT PROTECTORS are now offered at 40 per cent. less than the former price:

Glasses, 4 inches diameter..... 6*s.* 0*d.*
,, 6 inches ,, ..... 9 0 } per dozen.
,, 8 inches ,, ..... 15 0 }

By the use of these Glasses the Fruit on the wall grows to a much larger size, wasps and flies are effectually kept out, and the Fruit when ripe cannot fall to the ground. Wasp Traps, 3*s.* 6*d.* per dozen.—To be had only of JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, London.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

6 inches by 4 and 6 inches by 4½, 14*s.* each.

16*s.* per box:

| | |
|---|---|
| 6 ins. by 5 and 7 ins. by 4 | 6½ ins. by 6 and 7 ins. by 6½ |
| 6 ,, 5½ ,, 7 ,, 5 | 6½ ,, 6¼ ,, 7½ ,, 6½ |
| 6 ,, 6 ,, 7½ ,, 5 | |

18*s.* 6*d.* per box.

| | |
|---|---|
| 9 ins. by 7 and 11 ins. by 8 | 9 ins. by 9 and 12 ins. by 9 |
| 8 ,, 8 ,, 11 ,, 9 | 10 ,, 8 ,, 13 ,, 9 |
| 9 ,, 8 ,, 12 ,, 8 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol,

GLASS. GLASS.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities* 62 *by* 18 *inches, for* 10 *feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.—*1-8*th,* 6*d.; 3-16ths,* 9*d.; ¼ inch,* 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the* 30*-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

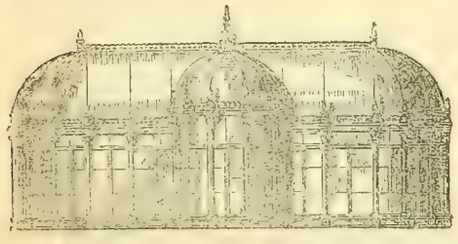
*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

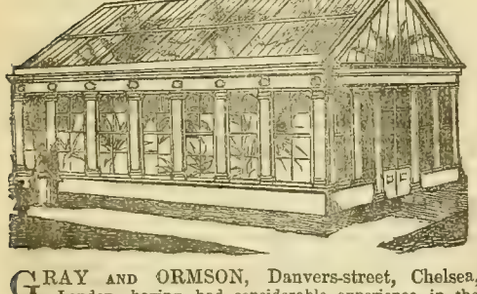
THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

---

CHINA PIGS.—Sows of the above breed, or what is better, Sows half-bred between Chinese and the small Yorkshire, either black, black and white, or white. A number of these carefully bred, very hardy, and requiring very little food to keep them in the best condition, may be had, of any age.—For particulars, apply to Mr. DUTTON, Delamere Rectory, Chester.

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GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

---

TO BE SOLD, A PORTABLE SPAN-ROOF GREENHOUSE, 13 ft. by 11 ft., price 15*l.*—For particulars, apply personally to Mr. J. LEWIS, Stamford Hill, near London.

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GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90*l.*; 21 feet long by 13 feet wide, 50*l.*; 12½ feet long by 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

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FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

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TO NOBLEMEN, LANDED GENTRY, AGRICULTURISTS, ROAD AND RAILWAY CONTRACTORS.

WIRE STRAND FENCING, as furnished with all its fittings, by R. S. NEWALL and Co., having elicited the unqualified approval of practical men, is confidently recommended as the best Fencing for Park and Farm Inclosures, or Subdivisions, for temporary agricultural inclosures (instead of any kind of hurdles), for road-side and all other Fencing.

The PATENT WIRE STRAND FENCE possesses an economy, security, and durability, not to be found in combination in any other Fence hitherto introduced. This Fence, as fitted by R. S. NEWALL and Co. (after the model of the Fences of this material in the Slopes, and Home-park, at Windsor), has the inherent property of remaining equally tight and rigid, under any variations of temperature.

N.B. Estimates given at so much per running yard, for Fencing, fixed complete. Specimens, Sketches, or any other particulars, will be forwarded on application.

Office and Warehouse, 130, Strand, London.

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FRUIT TREES.

THE ELASTIC HEXAGON GARDEN NETTING, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½*d.* per square yard. New Twine Netting, 1 yard wide, 1½*d.* per yard; 2 yards wide, 3*d.* per yard. Worsted Netting, 2 yards wide, 4*d.* per yard. SHEEP-FOLDING NET, of superior quality, 4 feet high, 4*d.* per yard; three Stranded Cord ditto, 6*d.* per yard. The Repaired Tanned Fishing Netting, 2 or 3 yards wide, 1½*d.* per yard; 4 or 6 yards wide, 3*d.* per yard—exactly the same as advertised by others at double the above prices. Nets made to order. The trade supplied at W. CULLINGFORD'S, 1, Strathmore-terrace, Shadwell, within 50 yards of the Shadwell Station, Blackwall Railway. Orders by post punctually attended to.

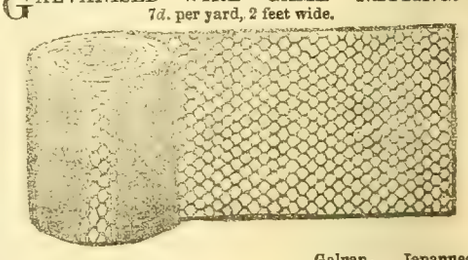
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BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road, Chelsea. Hothouses and Greenhouses built and heated, and warranted to defy all competition, both as to quality, durability, and price, in every respect. Patent Hothouses built on the premises, of the very best materials and workmanship, with superior strong glass 3 feet long by 1 foot or 2 feet wide, carefully marked, and taken down, delivered free to any Wharf or Railway at the following prices, cash—12 feet 6 ins. long, 9 feet wide, with 10 feet rafter, 5 feet 6 in. high in front, 10 feet high at back to the ground, two doors and ends, 285 feet, at 1*s.* 2*d.* per foot superficial, 16*l.* 12*s.* 6*d.*; 16 feet 6 in. long, 10 feet 8 in. wide, 12 feet rafter, 5 feet 6 in. high in front, 11 feet do. at back, two ends and doors, 400 feet, 23*l.* 6*s.* 8*d.*; 20 feet 6 in. long, 13 feet 4 in. wide, 5 feet 6 in. front, 12 feet 6 in. high at back, 15 feet long rafters, with two doors and ends, 580 feet, 33*l.* 16*s.* 8*d.* Two of these Houses are erected at the western open space of the Great Exhibition. The sash being the same materials as the Electric Telegraph Wires, not required to be painted, and every House is warranted, and not one has ever failed in any way whatever.

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GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



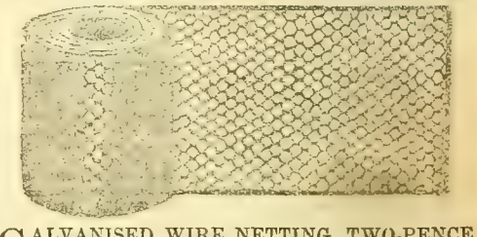
| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 ,, ,, | 4½*d.* ,, | 36 ,, ,, | 9*d.* ,, |
| 14 ,, ,, | 6*d.* ,, | 48 ,, ,, | 1*s.* ,, |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

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ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron,—His Royal Highness PRINCE ALBERT.
President,—The Right Hon. EARL BATHURST.
Vice-President,—The Right Hon. EARL DUCIE.

THE COLLEGE will RE-OPEN, after the summer vacation on Monday, August 11, for Agricultural and General Education. Lectures by professors of ability and experience, in Chemistry, Geology, Botany, Zoology, Veterinary Medicine and Surgery, Surveying and Civil Engineering, &c., are combined with practical instruction in agriculture, and the several branches of a good education. Agricultural analysis will be undertaken in the Laboratory of the College at a low rate of charges. For Prospectuses and information respecting the course of studies, terms, &c., for in and out students, apply to the Principal, the Rev. J. S. HAYGARTH, M.A.

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CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London No Agents.—All orders are particularly requested to be sent direct.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of her Most Gracious Majesty the Queen.—The FOURTH EXHIBITION for the season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on THURSDAY, 24th July (open to all Exhibitors), when prizes will be awarded for the following productions, viz., Miscellaneous and Specimen Plants, Cape Heaths, Fuchsias, Roses, Carnations, Picotees, Verbenas, Cut Flowers, Fruit, and Honey. In addition to the Prizes offered by the Society, W. T. Iliff, Esq., offers a Small Silver Linnæan Medal for the best collection of 30 cut specimens of Indigenous Plants. By Mr. J. Marriott, of Gracechurch-street, for the best glass of Honey in the Comb, the Large Silver Victoria Medal. Also, by subscription, prizes for Seedling Antirrhinums, Calceolarias, Carnations, Picotees, and Petunias, in addition to Certificates granted by the Society.—Lists of Prizes and the Rules for Exhibitors may be obtained from JOHN TAYLOR NEVILLE, Ebenezer House, Peckham, Surrey. Secretary.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, 3 miles from London, informs his kind patrons in general that his unrivalled collection of Roses reaching to nearly 1000 varieties, is now in bloom, and free to the inspection of all visitors, Sundays excepted. Orders taken at this time, and executed in November next. Fruit and Ornamental Trees, &c., may also be seen in great varieties. E. D. informs his friends that he has no Seed Shop in London.

TO NURSERYMEN AND GENTLEMEN PURCHASING PLANTS IN WHOLESALE NUMBERS.

THOMAS JACKSON AND SON respectfully invite attention to their very large stock of PLANTS IN POTS, which they are selling in wholesale numbers at extremely low prices; it consists of a general collection of Stove, Orchidaceous, Greenhouse, and Hardy Plants, and includes fine flowering plants of Erica ventricosa superba, do. carnea, do. tenuiflora, do. breviflora, do. coccinea minor, do. Bothwelliana, do. globera; propendens tubiflora, hyemalis, Willmoreana, Cavendishi, sulphurea, depressa, hybrida, perspicua nana, M'Nabiana, Bassouiana purpurea, vestita coccinea, mirabilis, &c. Epacris, strong bushy plants of most of the fine free-flowering sorts; Camellias of the finest kinds, well set with flower buds; Azalea indica, in fine variety; Achimenes and Gloxinias now showing full of bloom; large-flowered and Liliputian Chrysanthemums, of fine sorts, in immense quantity; large specimens and good flowering plants of the Japanese Lilies. Amongst the Hardy Plants (in pots), in great number, are Cedrus Deodara from 1 to 6 feet high; Araucaria imbricata, 1 to 4 feet; Juniperus chinensis, do. recurva; Cryptomeria japonica; Picea Douglasi, do. Brunoniana, do. pindrow, do. Webbiana; Pinus cembroides, do. Gerardiana, do. insignis, do. excelsa, 1 to 6 feet, do. Lambertiana; Taxodium sempervirens, 1 to 7 feet; Taxus adpressus, do. Dovastoni, do. gold striped; Escallonia macrantha; Ceanothus dentatus, do. rigidus; Ilex latifolia, 1 to 4 feet, &c.—Nurseries, Kingston, Surrey, July.


# The Gardeners' Chronicle.

*SATURDAY, JULY* 19, 1851.


MEETINGS FOR THE ENSUING WEEK.

TUESDAY, July 22—London Floricultural.....1 P.M.
THURSDAY, — 24—Royal South London.....1 P.M.
COUNTRY SHOWS.—Wednesday, July 23: Stamford Hill Horticultural.—Thursday, July 24: Bath Horticultural.

MR. ALCOCK has given notice of his intention to move on Tuesday next for a Select Committee to inquire into and report on the state and prospects of the trade in GUANO. What purpose the hon. gentleman expects to gain by his move it is difficult to conjecture. There is nothing secret in this branch of commerce, except the frauds that it gives rise to; there is nothing to learn, except what every well-informed person already knows; so that a committee of inquiry seems at first sight to be as useless a measure as it is possible to conceive. There may, however, be reasons which do not occur to us, and therefore we shall await with patience the statement with which the member for East Surrey is about to favour the House of Commons. In the meanwhile, it may prevent misconception if we anticipate the Parliamentary discussion by drawing attention to a few facts which may assist Mr. ALCOCK's hearers to arrive at a just conclusion.

The guano trade may be stated to consist at present of the annual sale, by the Peruvian Government, of a certain number of thousand tons of this substance, through their agents in this and other countries. As for African, Australian, and other guanos, they are too inconsiderable in quantity to be of mercantile importance. On the arid western coast of South America, where rain rarely falls, vast banks of this substance have collected in the course of centuries, and its sale now forms an important part of the revenue of Peru, which virtually enjoys a monopoly of it. The merchants in this country sell a large quantity, on account of the Peruvian Government; and other countries are its customers, though in a less degree. This year Great Britain has taken about 118,000 tons, the United States from 25,000 to 30,000, Belgium 10,000, Spain, for the Rice and Maize grounds of Valencia, 4000; concerning other markets we have no certain information, but the quantity sent there is large.

The great importance of this substance to cultivators of the soil is shown better by the increasing demand for it, than by the actual amount of sales. In this country, for instance, the sales have risen from 90,000 tons in 1850 to 118,000 in 1851; a similar increase is observable elsewhere; and there is no doubt that it will go on increasing annually if no unwise attempts are made to fetter the trade by legislating about it. The great progress of guano has arisen from the consumer having discovered that there is no manure so cheap as it is. The Peruvian Government wisely sells it for less than the market value of the ammonia it contains. A ton of guano contains, on an average, as much ammonia as can be bought for 9*l.* 14*s.* The wholesale price of guano is 9*l.* 0*s.* 6*d.*; therefore the Peruvian Government makes its customers a present of 13*s.* 6*d.* per ton, in the form of ammonia, and throws into the bargain all the phosphoric and alkaline matters, worth, on an average, 2*l.* 8*s.* 6*d.* more. For this, we submit, that Europeans should be grateful. It is much the same as if gold, if worth 3*l.* 15*s.* 6*d.* the ounce, were to be sold to us by the Peruvians at 3*l.* 3*s.*

We own that we look with alarm upon the attempts that are made from time to time to interfere with Peru in this matter. Guano has become a necessary of the first class; cultivators cannot do without it; there is no getting up a competition with Peru, because no other country yields guano in quantities worth speaking of. Gentlemen must take care that in their eagerness to lower the price of the article, which we imagine to be the true meaning of Mr. ALCOCK's motion, they do not cause it to advance. It is a dangerous game to tell a monopolist, however liberal-minded he may be, that you cannot possibly dispense with his commodities, and in the same breath to urge him to reduce his price. What if his answer is "No—I have sold it you at a fair rate, and you are discontented; therefore I shall advance the price, which I trust will suit you better." Mr. ALCOCK's Surrey constituents would not thank him if he should be the means of raising the price of guano from 9*l.* to 10*l.* a ton.

It may be thought that this is unlikely to happen, and that the Peruvian Government would not venture upon a measure that might seriously affect one of their most important branches of revenue. Don't let us be too sure of that. No doubt the guano sales are of great importance to that Government. In the *Times* of July 12th is an official statement of the net receipts for guano on account of the Peruvian Government, from which it appears that the average return per ton, after deducting expenses, is 4*l.* 4*s.* 7½*d.*, which is paid over to the Peruvian Government or its agents. The total accounted for in this document is 87,894 tons, yielding a net return of about 371,899*l.*, one half of which, viz., 185,949*l.* went to the Peruvian agency in London in payment of dividends and redemption of stock, and the other half to the Peruvian Government itself as part of its ordinary revenue. But that very circumstance should teach gentlemen the impolicy of drawing attention to the present price of the article. The addition of 10*s.* a ton to what is now charged would immediately add 44,000*l.* a year from England alone to the revenue of a poor Government, and that is a contingency which we at least can have no hand in producing. It would be more popular, no doubt, to assist in raising a clamour against what is called monopoly, to abuse foreign Governments, and to join in an idle outcry for reduction of prices. But on this, as on other occasions, we feel it our duty to guard the public against the consequences of its own acts, without being over-curious as to the manner in which our advice is taken; and therefore, instead of encouraging the hon. member for East Surrey to persevere in his motion, whatever that may mean, we are bound to declare that, to the best of our judgment, it would be much better to let well alone.

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THE discussions respecting the CRYSTAL PALACE are increasing in warmth and interest. Lord BROUGHAM, in the House of Lords, pleads in its favour; Lord CAMPBELL objects. The *Economist* would regard its destruction as an act of Vandalism. "Pull down the Crystal Palace!" exclaims its editor—"pull down Saint Paul's, pull down Westminster Hall." "Away with it," cry the clergy of Belgravia—"the place is immoral." "Down with it," shout Mr. Justice CRESSWELL and his neighbours, "the building is a nuisance—or causes a nuisance—which is the same thing." "No, no," says Lord LISTOWEL, "pray preserve it; it will be a charming place, and I shall be delighted to find it at my door." "Let it alone," says the *Times;* "give it a chance of becoming what the public expect it to be, and if it be otherwise let it stand self condemned"—*ruat mole suâ.* "We will have it," exclaims Mr. BULL, who we learn, on the high authority of Lord BROUGHAM, is absolutely enamoured of it—and no wonder. He has constructed it himself—vicariously—and he is proud of it.

We shall leave it to others to urge on the one hand the maintenance, on the other the removal, of this remarkable building. There is zeal in abundance on both sides, and we have no doubt that the issue between the public and the Government, or between Mr. PAXTON and Lord CAMPBELL, will be fairly tried. We would only observe, what we hinted at a fortnight since, that Lord SEYMOUR will not be able to preserve the Crystal Palace, whatever his wishes may be, or whatever the resolutions of the Houses of Lords and Commons may be, unless those resolutions assume the tangible form of an Act of Parliament. If such an Act is not passed before Parliament separates, down the Palace must come at its appointed time. The only point to which we would address ourselves is the possibility of converting the area on which the Palace stands to the purpose of a promenade, agreeable and healthy at all seasons. This, indeed, has become the more necessary, in consequence of the opinion expressed by a very clever writer in the last number of the *Quarterly Review.*

"It is the *open air,*" says our lively friend, whom we quote at length, "that must stimulate the languid appetite, raise the depressed spirits, and colour the faded cheek with newly-oxygenised blood. Were the Crystal Palace to be kept up in spite of rather strong pledges, and, as some prophesy, to present us by-and-bye with a wilderness of walks meandering through bowers of exotic bloom, it would be the most insalubrious promenade in London; the rarer and choicer the Flora the less entitled to rivet *your* admiration, young ladies! On a sultry summer's day, fairly divided between heavy showers and scorching sunshine, you have seen a bottle of claret—or the decanter to which it ought *not* to have been transferred—or a caraffe of water from the deep well—brought into your dear papa's comfortable dining-room; before it stood long on the table, the bright glass was dim, and soon down trickled the dew drops, running races which should reach the bottom first; well, permit us, paternal reviewers, to whisper that, after half an hour's walk through the frosty air, *you* are the cool claret bottle, or the caraffe of spring water, when you enter the seductive Orchid-house. The dew does not run off your encasing integuments, but it *saturates* them. You might almost as wisely take a walk on the floor of the aquarium as here. If you doubt our word, go and stand before the nearest kitchen-fire, and see how you will reek and steam. What would your mamma say—what would Sir —— —— or Dr. ——, who has taken such pains with you, think, if you were to spend two or three hours in the laundry during the height of the engagement on a washing-day? As you happen to have lungs and a skin, it matters not what you are looking at, as long as the atmosphere is the same—whether at the brightest of flowers or the most prismatic of soap-bubbles. No in-door promenade should tell more forcibly on the hygrometer, or indicate the dew-point with greater suddenness, than a common sitting-room. But in this *arid* climate, even the Camellia casts off its blossom-buds. It disinherits its own lovely offspring, and rejects them with as decided a scorn as if it had discovered that it was producing a crop of Hygeian pills instead of pure ornaments for innocent beauties. The climate of the Orange, not that of the Camellia, *may* do for a winter-garden. If ever our admirable Palace of Glass becomes a showy, steamy, suffocating Jardin d'Hiver, it will be a capital thing for the apothecaries; such a vigorous crop of colds, coughs, and consumptions will be raised that it will be the Walk, if not the Dance of Death, to frequent it. If all tales be true, we may anticipate *the Canter;* but, seriously, we hope never to see a comparative bill of mortality of those who take the Hyde-park exercise in whatever shape within doors, and those who take it without."

This is clever writing; but it does not touch the question which is before the public. No one proposes, that we know of, to make the Crystal Palace a hot-house. Of all men, Mr. PAXTON would be the last to suggest such an absurdity. We entirely agree with the reviewer that a hothouse in the form of a winter garden would be a death-house; but a hot-house is not thought of, and if it were, might not, with such a surface of glass, be capable of realisation. That being so, all that is said in the *Quarterly* about water condensing on young ladies' clothes, claret bottles, laundries, and prismatic soap-bubbles, is a waste of words.

What Mr. PAXTON proposes, as we understand him, is a *cold* house, not a *hot*-house; and this makes the whole difference between the salubrity and insalubrity of a winter garden. The utmost that would be permitted in it during winter would be the temperature of a fine London day in February—no heat—no cold—the earth dry, the east wind excluded. In other words, it would be, in winter, a winter *minus* frost, and snow, and rain; the earth, unchilled by melted ice, would continually bring forth its vernal treasures; flowers, unnipped by nocturnal congelation, would expand as in their own mild climate. The Camellia, the Chinese Azalea, eastern Hyacinths, Mesopotamian Ranunculuses, Italian Tulips, and the thousand gay products of milder climates, extricated from the

stern embrace of the icy north, would embellish walks and drives in which the air would be all but frozen. A minimum temperature of 34°, a maximum of 50°, in the winter, would do all this, and secure to visitors the gay flora of the Cape of Good Hope, of Australia, of the Himalayas, and of China, without exposing them to greater inconveniences than are felt when quitting a sitting-room for a walk in the open air on a fine winter's day. As an example of what the Crystal Palace then would be, the iron Conservatory in the garden of the Horticultural Society may be taken as a true example. Exclusion of frost is all that is therein permitted, and no one ever found the smallest inconvenience from spending an hour or two in it in the winter time, after however long a drive or walk. And yet it is always gay with Acacias and Camellias, Rhododendrons, Orange trees, and the delicious Tea-scented China Rose. This is what Mr. PAXTON proposes—and this is what the metropolis will not have, if the Crystal Palace is removed.

With respect to its summer application, since no one seems to have thought of criticising that, we are hardly called upon to offer any observation. Even the quick-sighted reviewer in the *Quarterly* appears to acquiesce in the absence of inconvenience during summer. But we would represent that whatever comfort might be found in it in cold weather, at least as much may be expected during our mid-summer and autumnal heats. Mr. PAXTON proposes to remove the whole of the glass sides of the building in the summer time, the effect of which would be, we presume, to cause such a continual motion of the atmosphere throughout the edifice, as effectually to prevent all sensation of heat. This, combined with the water of fountains, and the shade of the climbing plants and trees that would be found there, could hardly fail to produce that peculiarly agreeable sensation which gives so indescribable a charm to every woodland scene.

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REPORTS concerning the reappearance of the POTATO DISEASE have again become rife. Irish newspapers, in particular, speak of unmistakeable evidence having been obtained of the renewal of the "plague-spot;" and our own correspondents have, here and there, announced the same fact.

That we should see such symptoms for some years to come is the least that can be expected; for a disease like that in question is not likely to disappear as rapidly as it came on. But we are happy to be able to allay such apprehensions as exist, by stating that after diligent enquiry we can hear of nothing which ought to excite alarm; and that we believe the crop to be just as safe as it was last year.

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE 21st meeting of this Association was held this year at Ipswich, during the week commencing July 3d. From the time it was announced that the Association was likely to visit Ipswich, it was anticipated, on account of its vicinity to London, and the presence of so large a number of foreigners at the Great Exhibition, that it would be an unusually large meeting. This anticipation was rendered almost a certainty, when it was announced that Prince Albert would visit Ipswich, for the purpose of attending the meetings of the sections. These expectations, however, were not at all realised; and although the meeting was not deficient in scientific interest, it was amongst the smallest the Association ever held. Several reasons may be assigned for this. In the first place the meeting was held too early in the year for many of its members to be present; neither the courses of instruction in the Scotch or foreign universities, or those in the medical schools of London, terminate till the end of July. In this way most of the Scotch and London professors were prevented from attending; and even Dr. Royle, the general secretary, could not be present. In the second place, we may mention the absorbing interest of the Great Exhibition. Many of those who are engaged in the work of the Crystal Palace, as on the juries, reporting, &c., are amongst the most conspicuous members of the British Association. In the third place, although the locality was just one the British Association should visit, yet our seaport towns, especially when surrounded by an agricultural population, have generally failed to afford a large number of working members to the Association, and Ipswich was no exception to this rule. The meeting assembled this year under the presidency of the Astronomer Royal, who has richly deserved this honour in the place of his birth. The following gentlemen were presidents of the various sections:—A. Mathematical and Physical Science, the Rev. Dr. Whewell; B. Chemistry and Mineralogy, Prof. S. Graham; C. Geology, W. Hopkins, Esq.; D. Natural History, including Physiology, Prof. Henslow; E. Geography and Ethnology, Sir R. I. Murchison; F. Statistics, Sir J. P. Boileau; and G. Mechanical Science, W. Cubitt, Esq.

Amongst the members of the Committee of the Natural History section, we observed the following representatives of the science of botany: C. C. Babington, F.R.S.; C. J. F. Bunbury, F.R.S.; Prof. Allman, M.R.I.A.; Dr. Lankester, F.R.S.; Arthur Henfrey, F.L.S.; Professor G. Forbes, F.R.S.; J. G. Winterbottom, F.L.S.; Captain R. Strachey; Robert Wigham; D. W. H. Harvey, M.R.I.A.; Joshua Clark; Thomas Spurgin; Professor Asa Gray; Sir W. J. Hooker, F.R.S.; Dr. Joseph Hooker, F.R.S.; E. S. Gibson, F.L.S.; Dr. Daubeny, F.R.S.

Although in previous years we have had to complain of the little attention given to botany by the Association, or rather the neglect of botanists to make the Association the medium for the promulgation and discussion of their views, we have much pleasure in observing the increased value and importance of the botanical contributions, as compared with those of former years. Of these papers we hope to give our readers abstracts, as we have done in previous years, when they will be enabled to judge of their value. In the other sections there were several communications which, we think, will be found of interest, and of which we hope to give a short account.

The next meeting of the Association is to be held at Belfast, under the Presidency of Colonel Sabine, who has for so many years held the office of General Secretary. We make no doubt that the meeting will be not only well attended, as it is to be held in the month of August, but that the scientific interest will be great, as on all previous occasions, when the Association has visited Ireland, every exertion has been made to obtain papers on subjects of local interest, which have greatly contributed to the success of the meetings.

## ON THE APPLICATION OF DRY SALT TO WALKS.

I HAVE noticed two communications on applying dry salt to walks, one by "J. W. R." in your No. of June 21, and the second by "L. L." in last Saturday's Paper. These have caused me to very much regret that I did not touch upon this part of the subject when I replied to Mr. Bailey's letter on June 14. The simple reason why I did not do so was that circumstances compelled me to make a journey which curtailed my time so much, that I was obliged to cut the matter much shorter than I had originally intended to do. This I hope will be my apology for renewing the subject, as I feel pretty confident of being able to satisfy the doubts of some of your correspondents.

With regard to the use of dry salt, it is extravagant, and not always effectual. The result of careful experiments at Trentham on this part of the subject, were as follows:—That the quantity of salt necessary to destroy the weeds is twice as much when put on in cool water, as it is when put on boiling hot; as in the latter case the heat of the water assists in their destruction. And that when dry salt is used the quantity required to make sure work is at least three times what is necessary when dissolved and boiling; that is, supposing the weather is favourable. But if any quantity of rain falls before the salt is quietly dissolved by dews and very gentle showers, it is not effectual, and is liable to do considerable damage. The heavy rains, and especially thunder-storms, wash it off the walks instead of into them, and when the walks are not perfectly true in shape, and furnished with a slight channel on each side, it is almost certain to be washed into the edgings, whether of turf or Box.

Of the two—"J. W. R.'s" mode is the best; but allow me to remind him that the machine does all that his method does, namely, "it clears off the smallest weeds, moss, &c., adds to the solidity of the walk, and if the operation is well done during dry weather, in spring, it is done for the season." And it does more, in that the boiling salt water destroys thoroughly the seeds, as well as the existing weeds, which cold water will not do so completely. Then, as I mentioned before, there is a saving in salt of one-half, and a perfectly even distribution ensured, and I think, "J. W. R." will allow that the labour of distributing water by means of a carefully contrived machine will be less than with a rose watering-can. Then, again, the machine renders the operator more independent as to what sort of weather succeeds his operation: the cold water is slower in its execution, it goes quietly to work, and requires a day or two, at least, to make sure of weeds of any size; but the effect of the scalding water is instantaneous, and if a thunder-storm were to occur in an hour afterwards I should have no fear of resuscitation taking place; and as the machine does the work with the smallest possible quantity of the salt, accidents to the edgings are rendered most unlikely. With regard to its use in the case of Box-edgings, there is no danger if care is taken to keep a few inches farther away than from turf, as the roots of Box extend into the gravel, and generally very near the surface.

With regard to "L. L's." inauspicious experiments, I can only suppose that he must have been either unfortunate or somewhat injudicious in his selection of weather, as he has met with the same result in both instances; one would imagine that a sharp shower must have swept the greater part of his salt into the drains, leaving just enough to afford a slight manuring for a future crop. The fact of the burnt weeds having a slovenly appearance, and of the expense altogether being equal to hand-weeding, argues that the disease must have been allowed to become very bad indeed before the cure was attempted. This is the conclusion I should come to, unless, indeed, there be some natural influences in the neighbourhood of our county town, which produce effects widely differing from those observed in other parts of the country. Seeming grounds for such an inference are given by the same party in his communication concerning tar-paint, at which I may be allowed just to glance, in passing. I have seen the composition used to a very considerable extent, and always with perfect success; and, with regard to its washing off, the idea is perfectly absurd, unless your correspondent made the application in wet weather, when such a result might be naturally expected in any part of the country. I feel tempted to ask "L. L." if he is an agent of the firm whose articles he so warmly recommends.

I must now beg your permission to make a few remarks by way of addenda to my letter of June 14th, as there were several points in Mr. Bailey's letter which, if not explained, may lead some parties to imagine that his arguments and questions in those respects are unanswerable. Mr. F.'s Box edgings have not been killed at all by the application of salt water by means of the machine; but a portion of Box edging was killed by the application of dry salt, while the first machine was being manufactured, and this through the carelessness of a labourer who scattered his salt close to the Box, in spite of his instructions, which were to clear 10 inches away from it. So much for the information which Mr. Bailey has procured concerning Trentham transactions.

Though the machine may not be allowed to go close to the edging, as "J. W. R." remarks, "sufficient filters to the walks to destroy all (or nearly all) weeds." So that the hand-weeding along the edges is very trifling.

I consider the recommendation to place sand by the walk side a very useful suggestion; for unless put to some little inconvenience, labourers will out of pure heedlessness neglect frequently the most important part of the directions they receive; and until they get thoroughly accustomed to a new thing, such as using a salting machine, for example, they will neglect some important point, such as keeping proper distance from the edges, for instance. But if they are made to adopt some plan for counteracting their carelessness, they will out of pure shame learn quickly to do without it. If the master can devote his whole time to watching them for the first few days, he may do without any sand, or any such dirty substitute, as Mr. B. recommends. *Mem.* Neither sand nor clay were ever used at Trentham.

What Mr. Fleming calls luxuriant Dandelions, would probably be very small ones in Mr. Bailey's eyes; for you well know that different individuals view the same thing in different lights.

I will now conclude with the statement of cost, &c., which I mentioned in my former letter.

I have made the following account from my knowledge of the actual extent of walks at Trentham, and my accurate recollection of the cost of cleaning them by hand and by machine.

The extent of gravel walks in Trentham gardens and pleasure grounds is about 9 acres. The cost of hand weeding was—

| | £ s. d. | £ s. d. | £ s. d. |
|---|---|---|---|
| 1 man at ... ... ... ... | 0 12 0 | | |
| 1 boy at 8s., 5 boys at 6s. ... ... | 1 18 0 | | |
| Weekly cost of labour ... | 2 10 0 | | |
| Two-thirds of the year, or 36 weeks, average... ... | | | 90 0 0 |
| The cost of cleaning by machine— | | | |
| Cost of machine 12l. 10s., interest on this amount at 7 per cent. ... ... ... | | 0 17 6 | |
| The machine may be worked by a stout lad, worth about 8s. or 9s. per week in this locality; but to leave plenty of margin, we will say a man instead of a lad, 28 days at 2s. ... ... ... ... | | 2 16 0 | |
| 6 tons of coals, at 10s. ... ... ... ... | | 3 0 0 | |
| 7 tons of salt, at 15s. ... ... ... ... | | 5 5 0 | |
| | | | 11 18 6 |
| | | | £78 1 6 |

This will be found to agree very nearly with the statement in your leading article of May 3d. *William Davidson, Weston Shiffnal, Salop.* [We have been obliged to curtail this a little for reasons that Mr. Davidson will doubtless understand.]

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 22.)

No. XXXVIII.—On reviewing what has been written on the nightingale, I feel satisfied that nothing of any importance has been omitted. More than this. By the careful step-by-step method I have adopted, whilst discussing the habits and food of the bird, and by speaking at much length on the proper mode of his general treatment,—I have gone over a great deal of ground which need *not* be gone over, in detail, again. The warblers to a certain extent, be it observed, are of one family; and much that concerns the one concerns the whole tribe.—I come, next in order, to speak of the black-cap.

We are, at this time of writing, in the very midst of summer; and this is just the time to listen to the black-cap's song. Not that his song is more beautiful now, than it has been; but because most other birds have been silenced by the heat, and by those laws of Nature which seem to rule the habits of nearly all our summer birds at this season. Hence, our attention is less distraught. Our ear, too, is more delicately fine.

Accustomed as I am to range the fields on every seventh day of the week, many new and pleasing facts connected with the "Natural History of the year" come necessarily under my observation. Sometimes on Sabbath days,—

> "The woods I make my 'church;' my preacher boughs,—
> Whispering high homilies through leafy lips.
> Lo! Worshippers in every bee that sips
> Sweet cordial from the tiniest flower that grows
> 'Mid the young grass; and in each bird that dips
> Light pinions in the sunshine, as it throws
> Gold showers upon green trees,—All things around
> Are full of praise to GOD!"—

On such occasions, as I ramble onward, and explore the most favourite abodes of our little winged friends, I am well able to note the cessation of song in any particular bird, during the past few days. It is curious and interesting to observe how, one by one, well-known voices all at once become silent; whilst others, considerably modulated, are still distinguishable,—as if their owners were reluctant to cease singing altogether. 'Tis now that the lazy hum of exhausted insects breaks upon the ear; and when Nature, in a state of universal repose, lulls all active life into a state of pleasing stupor.

At this very season it is, that our hero, the black-cap, on his elevated perch, distils upon us the dew of his flute-like voice, and charms us with the richness of his happy note. It is quite a mistake in modern writers, echoing back the short-sighted sentiments of those who lived in "the light of other days," to call him a wild bird; and to say that he shuns mankind as if they were his enemy. This assertion is ridiculously false; for next to the robin, he is one of our *most* domestic, household birds. Walk whither you will,—along the high road, in an orchard, a garden, a by-lane, or a field; *there* shall you find, crossing your path in all directions, my good friend, the black-cap. Nor does he fail to *make* you see him, and hear him. He tells you plainly, and in the most musical of all musical strains, that he loves your company, and that he *will* escort you hither and thither. His seat is always on a lofty tree, and he usually sings with one leg slightly elevated above the other,—his little body being hidden by the leaves. When you move, he moves. It is a pleasing fact, that you can scarcely ever walk abroad at this season, without some one of his family presenting himself to sing to you by the way.

This is the precise time of the year in which to admire the affectionate tenderness of the black-cap's "better half." Never was wife more amiable, never was mother more sedulous and self-denying. Observe, how busily she is now occupied in feeding her five callow offspring, in yonder Hawthorn! See how unceasingly, yet cautiously, she flies backwards and forwards with some sweet morsel in her bill; and how overjoyed her little family are to listen to her approach, and to partake of her savoury provision!

Then again shall you note another parent, full of maternal solicitude for her children who have just quitted their cradle. How carefully she instils into their infant minds the necessity for their being ever on the watch; and how warily she coaxes them into the shadiest thickets! Well does she know, by an instinct bordering very closely on reason, that those iron-hearted butchers, the bird-catchers, are even now in their wake; and thus is her anxiety doubled. The disobedience of her children, however, too often costs them dear. A tempting bait, set on a circular painted board, by an artful, hatchet-faced villain lurking under a hedge, soon lures them to their ruin. They transgress the command, eat the forbidden fruit, and their doom is fixed. The child of liberty is now on its way to the pest-houses of the Seven Dials! What lessons of practical wisdom are we thus constantly taught, if we would but be apt scholars!

The hen black-cap differs from the male, in the colour of her head-dress; which, instead of being jet black, is a dusky brown. She is, too, of a more sombre, Quaker-like aspect. She is often mistaken for the garden warbler at a distance, though the latter has a much longer and fan-like tail; also a more taper and genteel neck. The nests of both these birds are firmly and strongly built, and of the same materials. They are composed externally of dry Grass, twigs, and the fibres of roots, and are lined within with fine hair, delicate blades of Grass, and soft, pliant moss.

The number of eggs laid by each is from four to six. Those of the black-cap are of a yellowish-white colour, with brown spots; whilst the eggs of the garden warbler have in addition a mixture of pale grey spots upon them. Their nests are seldom built at a height exceeding 3 feet from the ground. They are usually found in a Hawthorn. The notes of distress uttered by both, during the season of incubation, are greatly alike, being harsh and discordant. Those of the black-cap are the loudest, and fall most gratingly on the ear. In song, these birds differ widely. The notes of the garden warbler are soft, gentle, and quietly sweet. The song of the black-cap is loud, bold, clear, and distinct.

Whilst instituting a comparison between this bird and the nightingale, much judgment should be shown. They are both equally excellent in degree. While the quality and power of the nightingale's voice cannot be over-rated, yet he sings for a very limited time only; and is subject to great depression of spirit. The rapidity of his execution, and the "value" of his notes, while he is in song, place him certainly *highest* in the scale of excellence; and, so far as this extends—"*Palmam qui meruit ferat.*" When, however, we weigh well the comparative tempers of the birds, their general deportment in a cage, and the unceasing attention they require,—it then becomes a matter of question how to choose between them. Both are equally robust in point of constitution; both arrive here nearly at the same time, and both are heartily welcomed when they do come. Of all the summer warblers, these are "the" two, *par excellence*.

The depression of spirit in the nightingale, it must be borne in mind, does not exist when he is enjoying his liberty out of doors. It is only when caged that he is seen to mope; and this is why I have so sedulously endeavoured to prevent his being numbered so generally among "cage birds." He may, and does love a kind master, dearly; but his own kindred have the sum of his affection. His heart is ever thinking of them. Not so, altogether, the black-cap; though *he*, too, has his wandering thoughts towards fatherland, at certain seasons of the year.

As regards externals, the *personnel* of the black-cap exceeds in beauty that of the nightingale. The latter is of a long inelegant form, with a dusky breast, and a seedy-brown coloured coat. The black-cap, on the contrary, has a clear and grey-white breast, a handsome *bonnet noir*, a keen intelligent eye, and a crest for the most part erect. His tail, too, is trim, his feathers close, and his whole form shorter and more compact. His legs, which are slim, are of a blue-black cast, and his claws always "neat."

Nor is he ignorant of his personal attractions; for he makes his toilet with consummate taste and care, and shows himself off at all times to the very best advantage—singing all the while these domestic operations are in progress. If you humour the little rogue by noticing kindly these manœuvres of his, he will treat you to an *impromptu* of surpassing excellence, and you will find no difficulty whatever in making a friend of him for life. Try the experiment—and I shall secure your good-will for the recommendation. *William Kidd.*

## ORCHIDS FOR THE MILLION.—No. VIII.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

Hot Climate—Plants grown in Pots with Peat.

*Cattleya Skinneri.*—A beautiful Orchid from Guatemala. It produces rosy-purple flowers in March, April, and May, and they remain three weeks in perfection, if kept dry. It is best grown in a pot in fibrous peat, with good drainage, and it should be placed at the warmest end of the house during the growing season, but afterwards it should be kept cool and rather dry. The same treatment is required for the other species of Cattleya hereafter mentioned; they will all succeed on blocks, but the pot and peat culture is the best.

*Cattleya Mossiæ.*—A magnificent plant from Central America; flowers from March to August, the blossoms being of every shade of colour from pale pink to rose purple; it remains a long time in perfection if the flowers are kept dry.

*Cattleya crispa.*—A beautiful Orchid from Brazil; flowers in July and August; the blossoms are pure white, with a purple lip, curled at the edge; it remains in perfection about two weeks, if kept in a cool house.

*Cattleya superba*, from Guiana, flowers in June and July; it has a fine rich crimson lip, and remains in bloom three weeks, if the flowers are kept dry.

*Cattleya labiata.*—One of the best of the Cattleyas; it comes from Brazil, and flowers in October. The blossoms are dark purple, and they remain two or three weeks in perfection.

*Cattleya pumila.*—A charming species from Brazil, blooms in September. The flowers are rose-coloured, with a rich crimson lip, and they remain long in beauty. This should be kept warm whilst it is growing, but it should not have too much moisture.

*Cattleya Loddigesii*, from Brazil, blooms in August and September, and remains long in perfection.

*Cattleya Harrisoniæ*, from the same place, blooms in July, and remains three weeks in beauty.

*Cattleya violacea*, also a Brazilian species, produces flowers in abundance, from July to September, and these last in good condition three weeks, if kept dry.

*Cattleya guttata*, flowers in October, and lasts 10 days in bloom. The blossoms are greenish yellow, with crimson spots.

*Cattleya candida*, flowers in November, and remains long in perfection.

*Cattleya intermedia*, blossoms from April to June. It remains long in beauty.

*Cattleya granulosa*, blooms in September, and remains long in perfection.

## THE CRYSTAL PALACE.

To the Right Hon. Lord Campbell,—My Lord, I take the liberty of addressing the present letter to your Lordship, feeling confident you will be glad to receive any information likely to correct the misapprehensions under which you appear to labour respecting the construction, stability, and suitableness of the Crystal Palace to be retained as a permanent building. From your lordship's reported speech in the House of Peers on Friday last, it appears you had founded your principal objections to the Building remaining as a Winter Park and Garden upon information derived from an anonymous pamphlet, very much calculated to mislead you, and which, if true, would furnish grave objections to the continuance of the structure for the purposes I have suggested. The errors to which I allude are these—That the building, as at present constructed, is not stable enough to be put to any permanent use, being both frail and transient; and that the only way to preserve it would be to take the whole of it down and rebuild it. That two-thirds of the columns of support are made of wood, which will in a short time perish, and the girders being of the same, are only calculated to endure for one season. That the sashes and other portions of wood-work would endure only for a very limited period, and would then have to be replaced at a great cost.

In adding my corrections to these mistakes, I might just mention that, from the very commencement, when preparing my original plans of the building, my views were to make it in every way suitable to be appropriated to a permanent use, which fact I mentioned to Lord Brougham, and many others; the entire frame-work and strength of the structure, as it now stands, is, therefore, composed of wrought and cast iron, fixed securely together, and firmly bedded in a concrete foundation, and with ordinary attention to painting, this, the most important part of the edifice, will last for ages to come, with but little repairs of any kind being necessary. Every column on which the house rests is made of iron; the intermediate ones in the exterior row are merely placed there for effect, and to divide the sashes, but have nothing to do with the support or stability of the building. All the girders which form part of the frame-work and security of the structure are composed of wrought and cast iron. There are some wooden girders, but they are only introduced for effect.

Of the permanence of wooden sashes and other wood work, if kept properly painted and attended to, we have sufficient experience to be able to form a good opinion; there are some hot-house lights at Chatsworth which have, at least, been in constant use for upwards of 100 years, and appear likely to endure for a long time to come. My estimate of duration for the sash and glass-work of the Crystal Palace is 50 years, but in my statement of expenditure provision was made for a renewal every 25 years; however, with care and attention, my belief is that 100 years would be nearer the reality. The duration of wood-work depends very much upon its position, and the attention paid to it. We must not forget that many of our most enduring public buildings have wooden roofs; for instance,—Westminster Hall, Lincoln's-Inn Hall, and the dome of St. Paul's, all of which are still in excellent preservation.

In order to render the building as it now stands fit for a winter garden, considerable expenses must be incurred; an estimate of which I shall shortly be able to lay before the public; but without at this time entering into financial particulars, I am convinced that when once formed the after expenses for maintenance could be easily sustained without a public grant, and that the terms of admission could be made such as to suit the position and wants of all classes of individuals.—I have the honour to be, my Lord, your Lordship's obedient servant, Joseph Paxton.

36, Gloucester-place, Portman-square, July 14.

## Home Correspondence.

*Potato Disease.*—We have now a proof that however a wet season may give a tendency to increase the Potato disease, yet that a dry one does not prevent its appearance. I usually grow several sorts of Potatoes in my nursery, and am careful in having the sets looked over, both when dug up and also again previously to planting. The small and perfect tuber I prefer, and such were the sets, as far as the eye could discern, that were planted. Yesterday, seeing a man at work amongst them, I asked him if the blight had shown itself? He replied, "No." I told him to look again. I had seen it, and in half an hour after he had found it too. We have had but one shower of rain for two months. We are literally parched up, and yet the disease manifests itself as unmistakeably as if we had been flooded. It is proper to state that although five sorts were in the same plot, that only one, "the Cockney," was affected yesterday. To-day, a few of the Ash-leaved variety are affected. Let us hope that although it has set in so early, yet that it may not be wide-spreading, or so destructive as on former occasions. We should naturally expect that gardeners working amongst the crops would be the first to discover and report any ailment the crops were showing; but it is not so, for in three Grape houses this year, I have seen the parasite before the workmen employed in the houses. I wish the Potatoes could be rectified as readily as the Grape Vines. *W. Masters, Canterbury, July* 17.

*Picotee Seeds.*—Having in the year 1847 saved more Picotee seed than I could conveniently sow the succeeding season, I tried the following experiments, with the view of ascertaining if I could preserve its vitality for some years. I dried some river sand in an oven; when cold, I mixed some of it with the seed and filled a small phial with the mixture, corking it down tight, wrapped it in paper and placed it in a drawer. This season I entrusted it to a friend to sow, and I understand that he has obtained a crop of fine healthy plants. I took the hint from having learned, some time back, that earth raised many feet from the surface, on being exposed to the action of the atmosphere, had produced several plants of new varieties; it therefore struck me that, if I could exclude the air, light, and moisture from the seed, it might probably retain its vitality, and I think the experiment has verified the correctness of my idea. *C. N. R.*

*Fleming's Tar Paint.*—"W. C. E.," Gloucester, and perhaps many others, seem to have been deterred from the use of the above valuable and cheap composition by the remarks of "L. L." Two years since I carefully followed the directions given in your paper for the preparation used by Mr. Fleming, and applied it in the manner prescribed, viz., on a fine summer day, laid on with a common tar-brush, the liquid itself being kept up to boiling heat by means of a fire, built up in a little portable stove mounted on a wheel-barrow, and moved along close to the operator. Had I 20 miles of iron fencing instead of only 20 perches, I should, from experience, set to work in the same manner, with the utmost confidence of success. My railing had a few years previously been painted. *E. T. W., Chepstow.*

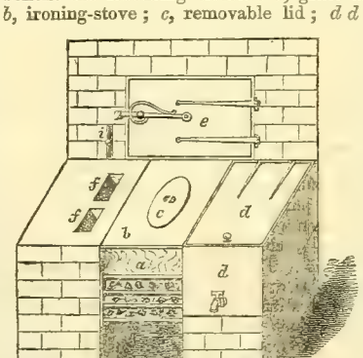
*A Sparrow* recently built its nest in the hollow of the lock attached to the entrance gates of the Hanwell Asylum. The circumstance is the more remarkable, from the continual locking and unlocking of the gates by the porter of the institution, rarely less than 300 times in the course of the day, to say nothing of the noise on each shooting and movement of the bolt of the lock so closely contiguous to its nest. None of these inconveniences have, however, appeared to disturb the little intruder; the work of incubation still went on, and three young ones were the result; the latter have within the last few days taken wing. I may mention, that for the last two years this lock has been a favourite spot, nests having been made within it on previous occasions; but owing to prying curiosity, they have been forsaken by the parent birds, or the nests have been torn out by some thoughtless or ruthless hand. *F. Waite, Heath House, Hanwell, July* 16.

*Effect of Linseed Oil as a Cure for Scale.*—Last year three old Vines in my garden (two Black Hamburghs and one White Muscadine) were tremendously assailed by "the scale" (I think you call it); the leaves were all shrivelled, and the fruit mildewed and dried up. In the autumn, the rods were perfectly covered with the

scale, the sap became dark-brown, and the shoots dry and brittle, so that if I bent them they broke. This insect had also attacked some neighbouring Apricot and Plum trees, and a limb of a Moor-park Apricot died off in consequence. An article in your paper directed the application of a mixture of two parts cold boiled Linseed oil with one of raw. I painted my Vines over once with it; the insect was perfectly destroyed, and so are my Vines nearly; for one Black Hamburgh has thrown out only one weakly shoot, the other Black Hamburgh three strong shoots from three consecutive eyes on the top of one rod only, and the White Muscadine none at all, except at the bottom of the trunk, where the oil had accidentally not been applied. This agent, though destructive to my Vines, has, I am convinced, been of immense service to my Apricots and Plums. They are thriving this season in a manner they have never done before, and strange to say, the ants, which in previous years had infested the Plum and Apricot trees in millions, have entirely withdrawn from their favourite sylvan haunts, and now not one is to be seen on these trees. *C. B. Garrett, Surgeon, Thames Ditton, Surrey.*

*Art* v. *Nature, considered in relation to Horticultural Operations.*—The letter of "J. D.," which appeared at p. 326, suggested this article. In that letter there are ideas sought to be promulgated, so utterly at variance with sound theory, or known practice, that it is difficult to believe the writer in earnest. It has so much the air of a burlesque, that one is at a loss whether to consider it a clever satire or an absurdity. Assuming, however, the writer is in real earnest, there appears to me sufficient reason for pursuing a few points of inquiry suggested by his arguments, from which may be gathered some instructive hints. Whoever heard of the gardener, theoretical or practical, that did not pride himself on his adherence to the laws of nature? However adverse in reality the practice of two individuals may be, each asserts that Nature has been his preceptress; that his code of rules is based upon her laws; that his success is to be ascribed solely to a rigid adherence to Nature. But how are we to recognise the apparent contradictions? In this way. As the "devil can quote scripture for his purpose," so the gardener, with equal facility, can quote Nature when he deems it expedient. The fact is, we all deceive ourselves with this same stereotyped assertion—"the laws of Nature." We know that certain laws in the development of organic life cannot be violated with impunity. We know that vegetables possess life, and exhibit its attendant phenomena; and, in a measure, we adopt our modes of procedure to meet them. But to say we follow Nature in a hothouse, or copy the climate of India in a Pine stove, is a manifest absurdity. The truth is this. Nature, *i. e.* the Creator of the Universe, has endowed vegetables with certain innate properties, capable of being developed, to contribute to the wants, comforts, or conveniences of man, and at the same time, has endowed him with intellect to work out those properties. In their natural state almost all our fruit and vegetables are vastly inferior to the cultivated ones, to say nothing of the countless varieties which skill and perseverance or accident has originated. Are the Pines of Trinidad, produced by the hand of Nature, equal to those of artificial production in England or France? Are the Grapes from the banks of the Rhine, or from the vineyards of France or Portugal, at all comparable to those from the houses of Trentham or Frogmore? Yet the former, without perhaps being strictly natural productions, are at all events much more so than the latter. A blind recognition of the efficacy of a state of Nature would, in gardening, as in society, soon produce disastrous effects. Yet we attempt to cheat ourselves into the belief of that which, beyond all others, we should not believe. However anomalous this may seem, it is not the less true. The operations of Nature were never intended to be exposed by man. Her laws should serve as guides, not as oracles. The great distinctions between man and the inferior animals lies in this very particular. Man improves, experiments, digests; the brute performs the same to-day as a thousand years past or to come. The one follows Nature, the other improves her as it is his peculiar province to perform. If we had only to copy Nature, where the use of intellectual powers? If the wild Carrot of the hedge had been suitable for the many purposes to which it is now applied by civilised communities, would it have been endowed with the valuable properties which man has developed? The same may be said of hundreds of other plants. The Peach, the Apple, the Plum, amongst fruits; and in flowers a countless host present themselves to notice. Because Nature is sometimes pleased to perform strange things, it does not follow that man should copy her. If she plants an impenetrable forest, and weaves it together with bush-ropes and creepers innumerable, it is because certain conditions are necessary adjuncts to such a state of things, and not that man who wants timber for his dwellings, and ships, and a thousand other purposes, should follow the example. Because an Ash tree will flourish on a ruined wall, and push down roots to the soil beneath — does it follow that we should make ruins, on which to make plantations of Ash! On one of the cupolas of Beau Desert, the seat of the Marquis of Anglesey, is an Elder tree growing from between the leads. It has been there these 40 years. Does it follow that such trees require lead to grow instead of soil? The finest plant of Campanula pyramidalis I have ever seen grew from between the joints of the bricks in a damp wall. It had a stem as thick as my wrist, and was more than 6 feet high Yet the man who should plant Campanulas in the joints of a wall, with the idea that he would realise like results, would justly be considered insane. And to follow the "natural system" of forest management, suggested by "J. D.," would be equally absurd. When it is said of a painter that he copies Nature on his canvas, it signifies nothing more than that by artificial means he produces an effect representing to the eye the scene he has been copying. He may convey the effect of a tree to admiration; but he does not represent that tree leaf by leaf, and branch by branch. To attempt that would be to defeat the end in view. By skilful manipulations he produces the desired effect, each different artist by a peculiar system of his own. A dozen skilful artists may each attain equal perfection by as many opposite styles, and all be said to copy Nature. So is it in operations in reference to vegetables. Each has a system of his own. He produces a series of causes, by which he influences the plants under his treatment, and a known result is arrived at. Yet, in many instances, the combination of causes is as opposite to what would take place in Nature as can be well imagined. The constitution of plants is such that they adapt themselves to our treatment. Were it not so, our success would often be a sorry one. The management of forest trees, as generally practised, is of a most primitive description. Any one who has ever paid attention to the subject must be aware of this. Practice inimical in the highest degree to the welfare of the tree when living, and calculated to depreciate its value when felled, is obstinately followed. The fact is, that forest management has hitherto been placed in the hands of a class of men possessing no capabilities whatever for the task—in no way responsible for the charge placed in them—yet the fault is not theirs. We cannot blame them. If their superiors are satisfied, it is enough. At all events, there is ample room for improvement in that particular and important branch of rural economy. The theory of "J. D." will not effect that. *G. L.*

*Plan of a Cottage Stove.*—The following is a description of my cottage stove, which I hope will be found to benefit the labouring classes: *a*, grate and fire-place; *b*, ironing-stove; *c*, removable lid; *d d d*, boiler; *e*, oven in chimney back, round which the heat and smoke from the fire passes into the chimney; *f*, aperture from which hot air ascends; *g*, aperture at which cold air is admitted and conveyed to a hot air chamber at the side of the fire-place thence to the aperture; *h*, aperture at which cold air is admitted and conveyed to a hot air chamber at the back of the fire-place thence to the aperture *f*; *i*, damper. The warm air from the two hot air chambers would be sufficient to warm a cottage of almost any size, and would take but a very small quantity of fuel. The boiler would furnish a continual supply of hot water, and by removing the damper the oven would be heated in a few minutes. A little extra heat would be required in heating the oven. I have one put up which warms a room 25 feet by 15 feet, and 14 feet in height, and heats an oven at the back, although the oven is 10 inches back from the fire-place, and opens into another room. I can heat it sufficiently to bake a dinner, but if it was situated as the one above, it would require much less fuel to heat it. It burns any kind of rubbish, which is a great advantage to cottagers of small means. It would be an improvement to convey pure air from without to the hot air chambers by means of draining pipes, to be laid underneath the floor, which would not be a serious expense; indeed, an active labourer might accomplish the whole of the making of the drain and removing and relaying of the floor. It is my opinion that if there was a stove of this description put up in all our cottages, the inmates would derive great benefit and comfort therefrom. Without the cooking apparatus, it is equally adapted for the heating of churches, chapels, school-rooms, &c., and the halls and passages of gentlemen's houses. As the hot air does not come in contact with iron, it therefore gives a very agreeable warmth, free from any unpleasant smell. *Wm. Griffin, Eydon, Daventry.*




*Parrots* (see p. 438).—I have kept a grey African parrot in perfect health for many years, its sole food being boiled bread and milk and biscuit, with occasionally a chicken or mutton bone. No meat or delicacies should be allowed them, and salt or Parsley is particularly injurious. The picking out of the feathers is invariably caused by meat and other heating food. In the case of your correspondent's parrot, I would recommend a plentiful supply of boiled milk daily. My parrot was kept in a galvanised wire cage, not a brass one. *A. B., Morcbath, Devonshire.*

*Wonderful, if true.*—A Bath seedsman advertised in the *Chronicle* to supply seed (per post) of a very superior kind of African Marigold; I sent to him for a packet of it, and the plants raised from it are now in flower, but instead of superior African, they are French Marigold of the very commonest kind. I thought it right to tell the gentleman of my disappointment, as I thought he might have sent me wrong seed through mistake, but he tells me to plant in rich soil 14 inches apart, and then I shall be more successful; that thus treated he has seen them from 6 to 8 inches across. Now I say that such transformation is really "wonderful, if true," and I make no doubt but that Mr. Anderson, the wizard of the north, will be glad to learn the trick; but before communicating it to him, I should like to hear if it has succeeded with any of your readers besides our Bath seedsman. *J. G. P.*

*Fruit at the Regent's-park Show.*—Your correspondent, who says your report of the Strawberries at this Show is wrong, is himself in error, as may be seen by the official advertisement in a contemporary paper. That the entry was wrongly made is another affair, with which a reporter has nothing to do. I quite agree with you in thinking that it is no great wonder if mistakes are now and then committed, where there is so much confusion as almost invariably takes place in the fruit tent at the exhibitions in question. For my own part, I looked in vain for the award board of the fruit, and I know other persons were equally unfortunate. It seems quite clear that three judges are unable to get through their task of deciding the merits of so much fruit as was shown on the last occasion; and that the space allotted to it is insufficient. Surely these two drawbacks might be easily remedied. Who could tell at a passing glance one exhibitor's fruit from another, in the huddled manner in which the dishes were placed? *Provincial.*

*Roses.*—The following Roses were budded and grafted on the Manettii stock, in the summer of 1850 and spring of 1851: Standard of Marengo, 20 plants, budded from June 15th, 1851, from a plant that flowered in the greenhouse. Not a bud has failed, and the plants are now, 16th July, 2 feet 6 inches in height, and covered with bloom. Princess Clementine, buds and grafts, 3 feet high; Mos Lanei, do., 3 ft.; do. Comtesse de Murinais, 4 ft.; do. Unique de Provence, 2 ft.; do. White Bath, 3 ft.; do. Crested, 3 ft. to 4 ft.; Géant des Batailles, buds and grafts, 18 inches, and densely covered with bloom; Harrisonii and Persian Yellow Briar, from 3 ft. to 4 ft.; Bourbon Dupetit Thouars, 4 ft.; Louis Bonaparte, buds and grafts, 3 ft.; Julie Krudner, a dwarfish grower at all times; not a plant failed. It was grafted April, 1851, and is now 18 inches high, and covered with bloom, together with many other kinds. *Dillistone and Co., Sturmer Nurseries, Halstead.*

*The Cuckoo.*—In a review of the "Naturalist" in your last number, it is stated, on the authority of a writer in that periodical, that the cuckoo does feel attachment to its young, &c. This statement, in such a widely circulated journal as the *Gardeners' Chronicle*, may mislead many persons accustomed to place implicit confidence in its contents. As it appears to confirm assertions altogether incorrect, I will proceed to notice the writer's remarks; he says, "In the month of July, a hedge accentor constructed its nest in a holly hedge." This bird is one of our earliest breeders, and I much doubt if ever a recent nest was seen in the month of July. "Immediately on its being finished, and before the owner had time to deposit her second egg, a cuckoo deposited in the nest her egg, which occupied but a few minutes, and immediately took her departure, uttering at the same time her well-known cry of 'cuckoo, cuckoo,' in rapid succession." Nearly all the old cuckoos leave this country at the end of June and beginning of July, and the female never utters the cry of "cuckoo," her only note being a harsh chatter. The writer then goes on to state that the young were fed by the female cuckoo, upon the larvæ of Abranas grossulanata, taken from Gooseberry bushes. Now it so happens that in July not a larva of this moth can be found, all having assumed the winged state; the larva which strips the Gooseberry bushes of their leaves belongs to one of the saw-flies (Nematus ribesii). In conclusion, I positively state that the cuckoo never feeds its own young; that the female never utters the cry of "cuckoo," and that an old cuckoo is never seen in this country at the end of July, at which time, according to the writer's statement, the young cuckoo was in the nest. There is an equally erroneous statement about the black woodpecker by the same writer; probably some other bird was meant, as the black woodpecker inhabits the wildest pine forests of the north of Europe, of Asia, and has only in one or two instances been met with in Britain; and has most certainly never been bred in this country. *Henry Doubleday, Epping.*

*Strawberries.*—After having made up a dish of Strawberries the other day I had a few Elton Pines left, 16 of which I put into the scale, and I find their weight to exceed 1 lb. Not often having a chance of seeing your Paper I cannot say whether these were superior or inferior fruit. They were grown on an open bank on loamy soil, which has not received manure of any kind for the last two years; how long before that time I cannot say. *The Gardener to W. Edwardes, Esq., Lealeyham, Haverfordwest, South Wales.*

*Cactus Opuntia, C. Ficus indica.*—Under these two names almost every Cactus (of the division now well distinguished as Opuntia), of those which have been long known in the south of Europe, has been cultivated or described. Modern gardening has introduced many new species into the Mediterranean which were not known till lately, and are not meant to be included in this description. Cactus Opuntia is generally said to be that which is used in Italy for making hedges, and the fruit of which, yellow, or purple, or red, is much eaten in that country, in which, also, it is supposed to have run

wild and naturalised itself. No less than five species are here confounded together. 1. *Q. Opuntia vera?*—The first, used for hedges, is erect, prickly, has oval articulations set transversely, yellow flowers, as all the rest, and fruit inferior in quality. 2. *Opuntia Ficus indica? (Fico d' India, Prickly Pear of our colonies).*—The second has few or no prickles, but numerous setose eyes; large, yellow, oval, well-flavoured fruit, keeping through the winter; and has thick transverse articulations, growing erect to 20 feet high. 3. *Opuntia pseudo-Tuna.*—The third has thin, flat, or concave, battledore-shaped articulations, with few setose eyes, and few prickles; grows bushy, rather than erect; and bears bright yellow flowers, and purple fig-shaped fruit, not much eaten. 4. *Opuntia Tuna.*—The fourth has thin, light green, venous articulations, with many strong tawny prickles; flowers dim yellow, numerous, succeeded by rugose crimson fruit, used as colour by painters—perhaps one food of the cochineal. 5. *Opuntia humilis, or vulgaris.*—The fifth, small, prostrate, has articulations irregularly oval, transversely rugose, bears yellow flowers, and purple, smooth, fig-shaped fruit; and is naturalised on the hills of Florence and other parts of Italy. N.B. 3 and 5, which have much affinity, except in size, are much the hardiest, even in Italy. *S.*

*Birds' Nests.*—In reply to the inquiry of your correspondent respecting the nest and eggs of the garden warbler and black-cap, I may say that they are extremely similar, but the nest of the former bird is generally larger, and composed of a greater quantity of materials than that of the black-cap; it is also looser in its construction. The eggs are often difficult to separate, but those of the garden warbler are generally paler in colour than the black-cap's, and less distinctly marked. The eggs of this latter bird are often of a bright rosy hue, which is never the case with the garden warbler's. It is not easy to describe the call-notes of the two species, but they are easily distinguished by a practised ear. *Henry Doubleday, Epping.*

*The Rose Garden at Regent's Park.*—I paid a visit to this garden on the day on which the Roses were said to be in bloom, the 20th of June, but I was, with many others, disappointed, and my money was duly returned, with the promise that the Roses would be fully in flower on July the 2d: but what was my disappointment, when on that day I found them no better than on the 20th of June. Indeed, the most common sorts could not even then be said to retain their original character. This must be allowed to be a complete failure. *Sagittarius.*

*Irish Larks.*—If your clever contributor, Mr. Kidd, means to say that there are no larks in Ireland, or that they do not sing, I am happy to assure him, that they not only abound, but sing gloriously. I have never, indeed, heard the like in any other land. I have a suspicion, too, that the nightingale, *nacht-i-gallen* (old German—to sing a'nights), comes sometimes, but rarely, rarely. *H. M'Cormac, M.D.*

*Peas.*—I brought the skinless Pea, noticed at p. 387, many years back from Flanders, but I could not induce the good folk to make use of it. I observed Mr. Dickens's mistake ere you set him right. This Pea would be a most desirable addition to English and Irish cookery. *H. M'Cormac, M.D.*

## Societies.

Royal Horticultural of Cornwall, *July* 8.—At this, the second exhibition of the season, the following prizes were awarded:—Fruit: Finest Pine-apple (Queen), Mr. Vivian; 2d do. (Ripley Queen), Mr. M. Williams. Best dish of Grapes (Muscat of Alexandria, Muscat of Tottenham Park, Black Hamburgh, Wilmot's new Muscat, White Frontignan, and Dutch Sweetwater), Mr. Friend, gr. to Mrs. G. C. Fox; 2d do. (Tokay, Black Frontignan, and Royal Muscadine), Admiral Reynolds. Best bunch of Grapes (Dutch Sweetwater), Mr. Friend. Best Melon (Netted Persian Green-flesh), Rev. T. Phillpotts; 2d do. (Teneriffe), Mr. Friend. Best pound of Cherries (Mayduke), Rev. Canon Rogers. Best quart of Gooseberries (Pearl), Rev. T. Phillpotts; 2d do. (Hit or Miss), Mr. Friend. Best quart of white Currants (White Dutch), Rev. Canon Rogers. Best quart of red Currants (Knight's Red), ditto. Best quart of black Currants (Black Naples), ditto. Best quart of Raspberries (Fastolff), Mr. Friend; 2d do. (Red Antwerp), Rev. T. Phillpotts. Best quart of Strawberries (British Queen), Rev. T. Phillpotts; 2d do. (Myatt's Eleanor), Mr. Friend; 3d do. (Myatt's Helena), Mr. W. M. Tweedy. Flowers: Ornamental Plant, in flower, not previously exhibited (Gardenia Fortuni), the Bronze Medal, Rev. T. Phillpotts. Best 12 Stove and Greenhouse Plants, Admiral Reynolds. Best 6 varieties of ditto, Rev. T. Phillpotts; 2d, Sir C. Lemon, Bart., M.P. Best specimen Stove Plant (Stephanotis floribunda), Rev. T. Phillpotts. Best Greenhouse specimen (Kalosanthes miniata), Rev. T. Phillpotts. Best 6 Orchids, in flower (Calanthe veratrifolia, Sobralia macrantha, Epidendrum cuspidatum, Broughtonia sanguinea, Oncidium flexuosum, and Bletia Shephardii), Rev. T. Phillpotts. Best specimen (Cattleya granulosa), Rev. T. Phillpotts. Best 6 Gloxinias, Gesneras, Achimenes, or Sinningias (Achimenes grandiflora, A. longiflora, A. venusta, Gloxinia cærulescens alba, G. grandis, Gesnera zebrina), Rev. T. Phillpotts. Best specimen (Achimenes grandiflora), Mr. G. N. Simmons. Best 6 Geraniums (Elegans, Queen of the West, Thurtell's Pretender, Rebecca, Zelinda, and Aspasia), Mr. M. H. Williams. Best 4 Geraniums (Star, Nandee, Madeline, and Lyra), Mr. M. H. Williams. Best specimen (Centurion), Mr. M. H. Williams. Best Heath specimen (Viridiflora), Mr. Friend. Best 6 Fuchsias (Dr. Jephson, Beauty of Leeds, Purity, Fountain, Shylock, and Fire King), Mr. G. N. Simmons. Best Roses in pots (Dr. Marx, Duchess of Sutherland, Lady Alice Peel, Earl Talbot, and Souvenir de la Malmaison), Admiral Reynolds. Best Rose specimen (Coupe de Hebe), Admiral Reynolds. Best 6 Pinks (Read's Jenny Lind, Smith's Diana, Henbrey's Rubens, Keynes's Hon. Mrs. Herbert, Smith's Huntsman, and Colcott's Sappho), Mr. W. Woolcock. Best 3 Balsams, Sir C. Lemon. Extra: Dahlias (Pickwick, Queen of Sheba, Shylock, M. Adolphe, Snowflake, Marquis of Aylesbury, Admiral Stopford, Fulwood scarlet, Rembrandt, Miss Vyse, Harlequin, Mrs. Shelley), the bronze medal, Rev. Canon Rogers; Verbenas (Defiance, White perfection, St. Margaret, Rosette, Chauveril, Mrs. Mills), Mr. W. M. Tweedy.

Liverpool Floral and Horticultural, *June* 26.—The 1st prize for 6 Heaths was awarded to Mr. Fairrie, for tricolor (seedling), ventricosa superba, Easoniana, Cavendishii, Bergiana, and tricolor; 2d, to Mr. Winch, for ventricosa densa, tricolor elegans, ventricosa carnea, v. rosea, v. fasciculata superba, and Bergiana. Four Heaths: 1st, to Mr. Littledale, for tricolor speciosa, ventricosa superba, Cavendishii, and ventricosa breviflora; 2d, to Mr. Fairrie, for tricolor dumosa, ventricosa superba, v. magnifica, and perspicua nana rosea. Six Fuchsias: 1st, to Mr. Leatherbarrow, for Comte de Beaulii, Elegantissima, Esteem, Bianca, Dr. Jephson, and Beauty of Leeds; 2d, to Mr. Harrison, for Dr. Jephson, Fair Rosamond, Coronation, One in the Ring, Prince Albert, and Una; 3d, to Mr. Fairrie, for Purity, Gem of the West, One in the Ring, Leucantha, Pearl of England, and Exoniensis. Four Fuchsias: 1st, to Mr. Leatherbarrow, for a seedling, Elizabeth, Bianca, and One in the Ring; 2d, to Mr. Bardswell, for Elegantissima, Napoleon, Duchess of Sutherland, and One in the Ring; 3d, to Mr. Fairrie, for Elizabeth, Dr. Smith, Purity, and Sir Robert Peel (Lawson's). Eight Pelargoniums: 1st, to Mr. Winch, for Lord Ebrington, Duke of Cornwall, Sylph, Witch, Orion, Forget-me-not, Sir Robert Peel, and Standard of Perfection; 2d, to Messrs. Davies and Co., for Major Domo, Ajax, Magnificent, Emily, May Queen, Salamander, Star, and Victory. Four Pelargoniums: 1st, to Mr. Littledale, for Matilda, Lord Ebrington, Sylph, and Hannah; 2d, to Mr. Stringer, for Zenobia, Witch, Blanche, and Hebe. Six Fancy Pelargoniums: 1st, to Messrs. Davies and Co., for Hero of Surrey, Reine de Francaise, Statuiski, Anais, Exquisite, and Jenny Lind; 2d, to Mr. Stringer, for Lady Flora Hastings, Lady Rivers, Yeatmannianum, Statuiski, Nosegay, and Queen Victoria; 3d, Mr. Winch, for Reine de Francaise, Lady Rivers, Diadematum rubescens, Statuiski, Countess St. Germaine, and Hero of Surrey. Four Scarlet Pelargoniums: 1st, to Mr. Rylance, for Lucium Roseum, Dazzle, Tom Thumb, and Superb seedling. Pot Roses: 1st, to Mr. Griffiths, for Coupe de Hébé, Brennus, Felicité, Charles Duval, Sextus Pomponius, Vanhuisson, and Crimson Globe. Four Achimenes: 1st, to Mr. Wilson, for Patens Major, Picta, Longiflora, and Ghiesbreghtiana. Six Verbenas: 1st, to Mr. Rylance, for St. Margaret, Avalanche, Vulcan Superb, Zoe, Iphigene, and Tommy; 2d, to Mr. Bates, for St. Margaret, Magnificent, Defiance, Minerva, Atrorubeus, Adela, and Chauviere. Six Petunias: 1st, to Mr. Rylance, for Prince Albert, Sylph, Rainbow, Splendens, Diana, and Lady Middleton; 2d, to Mr. Bates, for Beauty, Queen of May, Sylph, Alba Magna, Lady Sefton, and Marginata; 3d, to Mr. Harrison, for John Bull, Mont Blanc, Lady of the Lake, Pale Lilac, Rosea perfecta, and Ashtoni. Six Calceolarias: 1st, to Mr. Bate, all seedlings. Gloxinias: 1st, to Mr. Wilson, for macranthe grandiflora, Fyfiana, carnosa, rosea, and Wortleyana; 2d, to Mr. Brown, for Cartoni, and 5 unnamed; 3d, to Mr. Bates, for macrocarpa, alba, sanguinea, Teuchlerii, grandis, and Duc de Blas. Miscellaneous Plants: 1st, to Mr. Wilson. Single Specimens: 1st, for a Heath, to Mr. Winch, with ventricosa superba; 1st, for a Fuchsia, to Mr. Harrison, with Signor Bianchi; 1st, for a Pelargonium, to Mr. Winch, with Prince of Wales; 1st, for a fancy Pelargonium, to Mr. Winch, with Beauty of Winchester; 1st, for an Orchid, to Mr. Hadwen, with Saccolabium guttatum; 1st, for a Stove Plant, to Mr. Sharples, with Stephanotis floribunda; 1st, for a Greenhouse Plant, to Mr. Davies, with Kalosanthes miniata; and 1st, for a Herbaceous Plant, to Mr. Whalley, with Myosotis azoricus.

Meath Horticultural.—In looking over a list of the Kells Show, held on the 24th ult., we find among the winning Pelargoniums Beck's Governor, Major Domo, Gulielma, Aurora, Princess, Gustavus, Rosy Circle, Cuyp; Simmonds' Field Marshal; Foster's Gipsy Bride, Constance, Victory, Negress; Hoyle's Crusader, Lyne's Forget-me-not and Firefly, Arnold's Virgin Queen, Gipsy King, and several others. Again, in Pansy stands are Hooper's Masterpiece, Bellona, Berryer; Turner's Mrs. Beck, Mr. Beck, Gem, Addison, Viceroy; Bell's Aurora, Climax, Duke of Norfolk; also Cropley's Golden Gage, Byne's Lucy Assheton, Fellowes' Queen of England, Hunt's Helen, &c. In Roses, Mrs. Elliott, Baronne Prevost, Géant des Batailles, Souvenir de la Malmaison, and a host of other beauties. In Pinks, Wilmer's Laura, Kerr's Harriet, Young's Double X, Ellis's Brilliant, Costar's Lola Montes, Young's Lady Mildmay, &c.

## Garden Memoranda.

Messrs. Paul and Son's Nursery, Cheshunt, Herts.—We visited this establishment the other day, and found the extensive collection of Roses which it contains beautifully in bloom. They are now well worth inspection. On entering we passed through an avenue of standard Noisette and Hybrid Chinese varieties, many from 15 to 20 years of age, of immense size, and covered with gay and fragrant blossoms. One of the first met with was "Fulgens," the head of which, when measured, proved to be upwards of 20 feet in circumference; and the *stem* of another measured 13 inches round. Pursuing this walk for about 100 yards, we met with several "Union Standard Roses." The combinations we most admired were:—Fabvier and Madame Bureau, Mrs. Bosanquet and Le Grenadier, Fellenberg and Aimée Vibert. On reaching the top of the main walk, a path branches right and left, 50 feet long, leading between avenues of pillar Roses. Nothing could be more charming than the effect of these pillars, planted about a yard apart, rising to the height of 12 feet, and covered with flowers, from their summit to the ground. Some of the most striking were:—Le Rampante, The Garland, Thoresbyana, Splendens, Madame d'Arblay, Rosea plena, Reine des Français (beautiful), Belle de Rosay, Blush Hip, Richelieu, La Biche and Acidalie. A few steps from this avenue led to the Rosetum, where the arrangement has been recently much improved; nearly 1000 varieties are disposed in such a manner that the general effect is not only good, but the trees are individually shown to great advantage. The beds are irregular in form, the walks winding, and partly of Grass. Among the Roses in this enclosure, the following were finely in bloom. *Perpetuals and Hybrid Perpetuals:* Duchesse de Praslin, Pius the Ninth, La Capricieuse, Neomé, Duchesse de Rohan, Caroline de Sausal, Comte Bobrinsky, Baronne Hallez, Gen. Cavaignac, Madame de Lamoricière, Madame Fremian, Madame Guillot, Standard of Marengo. —*Moss:* Purpurea rubra sanguinea, Alice Leroy, Latone, Gen. Druot (perpetual).—*Provins:* Adrianne de Cardoville, Domitelle Becar.—*Gallica:* Napoleon, Ohl, Colonel Coombs, Jules Bagot, Malherbe. *Tea Scented:* Madame Bravy, Madame de St. Joseph, Madame Villermoz.—*Bourbon:* Aurore de Guide, Duchesse de Thuringe, Sidonie Dorisy, Miroir de Perfection, Angelina, Bucelle, and Henri Clay. Quitting the Rosetum, we passed a collection of ornamental hardy trees, the Hollyhock ground, and entered a field of Roses, consisting of several acres. Here the effect was very striking, produced as it was by Roses of every hue, and conspicuous among the whole was the universal favourite, Géant des Batailles. The Weeping Roses formed an attractive feature. Numbers of them budded on stems six, seven, and eight feet high were arranged in rows, their pendant branches almost touching the ground, and flowering abundantly. On turning a corner we caught sight of a beautiful wax-like almost white Perpetual, whose form was that of La Reine, and it was nearly equal to that variety in size; the colour approached more nearly that of the Celestial Rose, but the flowers were full, the habit vigorous, and the whole plant perfectly distinct. This is named "Paul's Queen Victoria." By the side of it grew a rich scarlet-crimson Bourbon, nothing inferior in point of beauty, called "Paul's Prince Albert." There were other interesting seedlings, but these were the most remarkable.

## Miscellaneous.

*African Cotton.*—Three kinds of cotton grow spontaneously on the west coast of Africa—white, brown, and pink. None of them are precisely like any American variety, but the mode of culture pursued here is well adapted to the plant there; with this vast advantage that there the same plant bears a succession of crops, for a great number of years. It is of much larger growth than ours, and the yield is much greater; but the staple is short. The fact of its great yield and continuance from year to year, coupled with the cheapness of labour in Africa, must ultimately produce a large supply from that country. The grand obstruction to its being profitable as an export, is the want of proper machinery for the extraction of the seed. This operation is now done by hand, or by a little machine consisting of two rollers about the size of a common ruler, between which the cotton is passed, so as to leave the seed behind. We have heard of no efforts, as yet, to introduce the American cotton gin. *Colonization Herald, Philadelphia.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Do not allow any of the transient summer beauties to remain in the flower houses longer than they are ornamental; and those which have been grown as annuals, to serve merely for a season, should be thrown away when they cease to be useful; for if kept beyond a certain stage, they only engender filth, and harbour insects. That portion of the Gloxinias, Achimenes, and other bulbs, requiring a season of rest, which are now becoming shabby in appearance, should be placed in a close frame, where they can be ripened off by gradually diminishing the quantity of water. It is seldom necessary to extend this care to the whole of the stock, as a few of the best pots of each kind will furnish enough to work from next year. Take care that these plants are correctly labelled before the foliage is destroyed; and mention on the label the date when put to rest, that they may be excited in the same rotation next year. By going over the stock in this manner, more room will be gained for those plants which are being grown for autumn and winter. These should enjoy a rather freer admission of air during the day, that they may be gradually inured to a cooler temperature than that in which they have been growing for the last three months. The same course of treatment must be pursued with stove plants in general, especially with those which have completed a growth for next year's flowering; these may be placed on the spare shelves of a greenhouse, from which the plants have been removed. In this situation they must have abundance of air, except when ths weather is cold or windy. Greenhouse plants require similar attention in everything except temperature, which should be kept as low as possible, unless for plants which it is desirable to bring quickly into flower. On fine afternoons syringe overhead with a fine rose all plants which are under artificial covering. In fine warm nights it will be of great benefit to remove the glass or other covering, that the plants may be refreshed by the evening dew; and also during warm gentle summer showers. Some of the earliest specimens of the Lilium lancifolium and varieties will soon be coming into flower. Place them in a situation in the conservatory where the sun's rays will not act too powerfully upon them. Supply them with sufficient water, and occasionally with liquid manure, that their flowers may be prolonged, and enhanced in brilliancy; and also that their foliage may be preserved.

FORCING DEPARTMENT.

Pineries.—Give every encouragement to those plants which are now showing and swelling, by means of a moist high day temperature, and good bottom heat, and by shading during very warm weather. If the quantity of fruit which has already made its appearance is inadequate to meet your probable requirements during winter, water may for a short time be withheld from a portion of the plants which are fittest for fruiting. On the other hand carefully avoid any check to those which it is desirable to keep on in a growing state. Vineries.—In the late Vineries the Grapes which are required to hang till the new year should be well thinned, and the shoulders tied out, so as to ensure a free circulation of air amongst the berries, that their skin and footstalks may be better matured, and less liable to decay during

winter. The potting of Strawberries for forcing should be proceeded with as soon as the young plants have made sufficient roots to allow of their being transferred to the pots with nice little balls of soil, which will adhere to them if taken carefully up with a curved trowel. We prefer this plan to laying them in small pots, as it saves time and pots, and succeeds perfectly. The soil for forcing Strawberries should be of rather a strong loamy nature, and have some well rotted cow or horse-dung added to it. Take pains to make the drainage very perfect, as it is necessary to give a considerable quantity of water during their growth through the autumn, and when they are being forced next season; and if the drainage is defective, the health of the plants must suffer. Some gardeners do not pot their plants till September, but we prefer doing it as early as we can, placing them at once into the size of pot in which we intend them to fruit, or putting them into 4 or 5-inch pots, and shifting them, in a fortnight or three weeks, into 7-inch pots. A portion of the healthiest plants of those which were forced last season should be immediately shaken out of the old soil, soaked in water, re-potted in rather larger pots, and set on beds of coal-ashes in an open situation. During the summer the runners must be regularly moved, and the growth of the plants encouraged by occasional waterings of liquid manure. As habit becomes a second nature to plants, these Strawberries will complete their growth much earlier than those raised from this year's runners; and if carefully attended to, with regard to water, they will be better prepared for an early excitement.

### FLOWER GARDEN AND SHRUBBERIES.

Those who can spare time for budding Roses will, of course, be busy with that operation, selecting moist weather for the purpose. Very interesting specimens for the flower garden may be created by budding some of the choicer Perpetuals, Bourbons, and other autumn-flowering varieties, upon the strong young shoots of the climbing species, which have formed such attractive objects during the last few weeks. By allowing a portion of the spurs of the original variety to remain, a pleasing succession of bloom will be obtained from early summer to late autumn. The propagation of hardy plants should now be energetically proceeded with. After the smaller matters, such as Phloxes, Antirrhinums, Pentstemons, &c., are completed, cuttings should be taken of all the choice kinds of Roses which it is desirable to increase; and if this is done immediately they will have time to form fine plants before winter. They will strike pretty freely in a close frame on the north side of a wall, or even in a shady border without a frame. If in frames, pull off the sashes every evening, that they may be refreshed by the night dews. We never yet saw a pleasure ground or flower garden which contained a superabundance of Roses; but we would direct particular attention to the early-flowering climbing Roses, than which nothing can be more beautiful when they are tastefully arranged. In selecting the varieties for extensive cultivation, those should be chosen which, in addition to their beauty, are found most able to endure the severity of the winter unchecked, and which are least liable to be affected with mildew during summer, as varieties differ very much in both these points, and many are found to succeed much better in some localities than in others.

### FLORISTS' FLOWERS.

PANSIES.—These will require abundant water; and it will often happen at this time of the year that the flowers will come so much out of character as scarcely to be recognised even by the raisers; we would not advise seed to be gathered from these inferior flowers, but would rather pull them off. Still pipe the latter shoots, these will make neat plants and plenty of them; in showery weather plant out, on well prepared beds, those which are already rooted; should the weather prove dry, and hot, if possible cover the bed with hoops and a slight protection of calico; it is much better than giving a great deal of water in this sort of weather. TULIPS.—If not already done should all be out of the ground; do not remove the loose skin when taking the bulbs up. This is better done when they are dry. DAHLIAS.—Let stakes be placed round the plants to which the side shoots may be attached, as they elongate; mulch the surface with rotten manure, and give abundance of water. AURICULAS and POLYANTHUSES.—Go over the whole stock; they will be benefited by stirring the surface soil; gentle waterings may be given in the evening, but still retain them in their shady situation. CARNATIONS and PICOTEES are now coming into bloom fast; tie the buds, slacken those which are too tight, and water freely.

### HARDY FRUIT GARDEN.

Suckers should be carefully removed from fruit trees of every description. It is not sufficient merely to cut them off level with the surface of the soil, as such a mode of treatment only causes them to throw up a progeny ten times more numerous. To do the thing properly, the soil should be bared away, and the suckers traced back to their origin, and carefully removed with the point of a sharp knife. If any of the stone-fruit trees on the walls are of inferior varieties, they may, if kind and healthy, be budded with other and better sorts, and especially with such as are found more adapted to the peculiarities of soil and situation. The same advice applies to Apples and Pears on walls or otherwise. In all cases strong healthy shoots should be selected upon which to perform the operation. Any young stocks which are sufficiently large for the purpose should be budded immediately, and if they fail the stocks can be cut down in spring, and grafted.

### KITCHEN GARDEN.

As soon as any crop is removed let the ground be trenched, that an air of neatness may reign over every part of the garden, that insects may be disturbed and destroyed, and that the soil may derive the advantages resulting from the action of the atmosphere. If it does not interfere with the methodical rotation of the crops, let the ground be immediately planted or sown; and in such cases the two operations should proceed simultaneously, and thus prevent unnecessary treading upon the ground. Give the Celery crops one or two good waterings with liquid manure. Only those rows or beds which are intended for early use should be earthed up at present. With regard to the main crops, this operation should be postponed until the plants have attained full size, when it may be finished off at once. We find in this a considerable saving of time, and the Celery does not rot in winter. When we were in the habit of earthing the winter crops early in autumn, we frequently lost entire trenches by its rotting during winter; but since we have made it our practice to defer the operation until the end of September or beginning of October, we have lost none, and the quality is as good as we can desire it. We find the same practice equally good with regard to Cardoons.

State of the Weather near London, for the week ending July 17, 1851, as observed at the Horticultural Garden, Chiswick.

| July. | Moon's Age. | Barometer. | | Temperature. | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air. | | | Of the Earth | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 11 | 30.140 | 30.089 | 70 | 56 | 63.0 | 59 | 58 | W. | .00 |
| Satur. .. | 12 | 30.036 | 29.919 | 75 | 48 | 61.5 | 61 | 59 | W. | .00 |
| Sunday . | 13 | 29.866 | 29.571 | 73 | 51 | 62.0 | 61½ | 59 | S.W. | .20 |
| Monday | 14 | 29.577 | 29.462 | 71 | 50 | 60.5 | 61 | 59 | W. | .00 |
| Tues. .. | 15 | 29.730 | 29.727 | 70 | 41 | 55.5 | 61½ | 59½ | W. | .02 |
| Wed. .. | 16 | 29.884 | 29.763 | 67 | 46 | 56.5 | 60 | 59 | N.W. | .00 |
| Thurs.. | 17 | 29.851 | 29.826 | 74 | 41 | 57.5 | 60 | 58½ | N.W. | .10 |
| Average .. | | 29.869 | 29.764 | 71.4 | 47.5 | 59.5 | 60.5 | 58.8 | | .22 |

July 11—Partially overcast; very fine; overcast.
— 12—Very fine throughout; clear at night.
— 13—Very fine; cloudy and fine; overcast; boisterous, with rain at night.
— 14—Cloudy; fine but windy; clear.
— 15—Fine: windy; cloudy; slight showers.
— 16—Fine; very fine; cloudy
— 17—Very fine throughout; cloudy; cold at night.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending July 26, 1851.

| July. | Average Highest Temp. | Average lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 20 | 71.1 | 51.5 | 61.3 | 15 | 1.47 in. | 1 | 1 | 2 | — | 1 | 11 | 8 | 1 |
| Mon. 21 | 72.1 | 51.1 | 61.6 | 10 | 0.54 | 2 | — | 1 | 1 | 3 | 8 | 7 | 3 |
| Tues. 22 | 72.1 | 52.8 | 62.4 | 18 | 1.37 | 2 | 3 | 1 | 1 | 3 | 9 | 4 | 1 |
| Wed. 23 | 72.5 | 52.6 | 62.5 | 11 | 0.40 | 1 | 3 | 3 | 1 | 2 | 5 | 5 | 5 |
| Thurs. 24 | 72.5 | 52.0 | 62.2 | 8 | 1.16 | — | 7 | 3 | 1 | 3 | 6 | 3 | 2 |
| Friday 25 | 73.5 | 51.0 | 62.2 | 8 | 0.22 | 2 | 5 | 2 | — | 2 | 6 | 7 | 1 |
| Satur. 26 | 73.3 | 52.1 | 62.7 | 11 | 0.70 | 2 | 1 | 3 | 2 | 3 | 7 | 3 | 2 |

The highest temperature during the above period occurred on the 25th, 1844—therm. 92 deg.; and the lowest on the 24th, 1838, and 23d 1843—therm. 40 deg.

## Notices to Correspondents.

AMERICAN PLANTS: *M W K.* The American plants sent by Mr. Waterer to the Horticultural Society's Garden for exhibition are not removed in pots. They are merely lifted out of the open ground and placed in vans, in which they are conveyed to the gardens.‡

BALSAMS: *T H.* Either of the sizes will answer your purpose; but to make sure, you had better, perhaps, keep the required number of both. The most forward plants might be retarded a little, and you may pick off the blooms with advantage. ‡

BEES: *Northwood.* Your want of success arises from the "boxes" you have employed. Use properly constructed straw hives next year, and you will find no difficulty in obtaining glasses of honey, yielding you a fair harvest, without occasion for the troublesome and dangerous process you name. *Y.*

BIRDS—THE BLACK-CAP AND GARDEN WARBLER: *F G.* The various questions asked respecting the nests, eggs, song, &c., of these two birds have been duly considered in the article on the "black-cap," which is this day commenced in another part of the Paper. As regards the voracity of the "garden warbler" in the matter of *fruit*, he stands alone as a *gourmand*. He will never give himself time to enjoy it, but will swallow enough at one mouthful to almost choke him. We apprehend the enjoyment of his repast goes on *pari passu* with his digestion. Let us kindly hope so. While a Kentish Cherry is left upon a tree, *there*, as you justly remark, will he tarry to the last moment; and as for soft, ripe, mellow Pears, get him away from them if you can. He gorges them to repletion, and speedily returns to them with even an increase of appetite. Still, let us bid him welcome. His stay here is short, his song sweet, and his company agreeable. It is quite evident that he thinks himself "entitled" to our hospitality, and the conceit is surely a harmless one. *W. K*—THE WOODLARK: *S B.* Your pet bird is in a pitiable plight. He has had too much dry food, and his cage is too small for him. He will never again be what he has been. As his wing feathers still remain, we should advise you by all means to let him fly, without a moment's delay. You could select no better spot than the Kensall-green Cemetery grounds. As you reside so near, you might often catch a glimpse of your little friend, who would doubtless, until he has recovered his strength, make this place his sanctuary. Woodlarks are, of all birds, perhaps, the *most* difficult to preserve when moulting. They require plenty of room, air, and exercise; and, in our opinion, should never be kept in a cage more than one season. To replace them, the cost would be trifling, and most of them sing freely. *W. K.*—THE CANARY: *Angelina.* You have lost your bird from an attack of epilepsy. Had you, when he fell from his perch in a fit, taken him up and immersed his feet and legs in warm water, he would have recovered. It is now too late for us to aid you by our counsel in this particular instance, but it may prove useful to you hereafter. *W. K.*

CONVOLVULUS: *A L.* There is no plant known to us by the name of Convolvulus syriacus. Is it C. tomentosus? a velvety-leaved Syrian perennial.

COWS: *B.* Neither of the plants left by your Lordship can possibly do injury to cows. One was the Hypochœris radicata, and the other a plant nearly allied to it. Both possess the same properties as Dandelions and Sow-thistles, and are quite harmless.

CRYPTOMERIA: *G T.* The case of the central fixed point of the cones of this plant changing into a growing point and becoming a branch is not rare. Yours, however, are remarkable instances, because of the extent to which the growth has been carried.

DEODARS: *J H.* You may either single pot them or prick them out in beds like Larch.

EARLY TURNIPS: *J F.* The early Stone or Dutch are the kinds generally used by the London market gardeners. They are raised in frames, and in hooped beds covered with straw.‡

FUCHSIA CORYMBIFLORA: *H C.* It should not be grown too vigorously, or it will not flower with you. If your plant is very luxuriant give it a check by partially withholding water, and placing it in a warm corner of your garden. F. fulgens suits a window better than corymbiflora.‡

GRAPES: *N B.* Your Vinery should range from 75° to 85° at mid-day, according to the state of the weather. If very hot, the temperature of the house will perhaps be as high as 85° or 90°, with all the ventilation you can give. Sprinkling the floors, &c., to moisten the atmosphere, will then be of the greatest service. Give 2 or 3 inches of top air at night. The night temperature should be from 68° to 75°; but in very warm weather fire-heat will not be requisite, nor at any time except during damp weather, or when the thermometer falls below 65°. The number of inches of ventilation at front and top depends upon the temperature. Some houses require 18 inches opening at front, and 36 at top; while others never have any opening at front, as narrow steep houses; flat wide houses require much ventilation.

GREENHOUSES: *Cartmel.* We advise you to follow your friend's advice, though not for the reasons alleged by him, in which we cannot concur, for reasons that it is needless to give, as his advice is certainly right. Use Hartley's rough plate glass everywhere, unless you wish to look through the sides, in which case you should have common sheet.

HEATING: *W G.* Always let the flow pipe rise as far as its further extremity, and let the return fall in the same manner.

HYACINTH BOTTLES: *Y Z.* Mr. Tye's address is Snow-hill, Birmingham.

INSECTS: *A Constant Subscriber.* The caterpillars which have attacked your Rhododendron robustum are the common golden-tail moth, Bombyx chrysorrhœa, and the beetle on the Nepenthes is the common Curculio Lapathi, which have taken a fancy to these plants; the former being a general feeder, and the latter not being able to get its ordinary food. *W.*—*Anon.* The insect found in your window is the common deg-tick. *W.*—*G G (Dundee).* Your Currant trees are covered with a large coccus or scale insect, like that upon the Vine, the white cottony matter secreted by the female beneath the scale being full of minute eggs. They must be cleared off, with a hard brush and warm water, at once, before the eggs hatch. *W.*—*Tom Thumb.* The holes in your Geranium leaf do not appear to have been made by an insect. The base of the underside of the leaf is covered with minute dried up tubercles, which may have been caused by aphides, but they seem more like the result of irregular atmospheric action. *W.*

NAMES OF PLANTS: *Micklewell.* Sempervivum villosum.—*A Z.* 1, Cistus creticus; 2, C. salvifolius; 3, Globularia Alypum.—*G.* Dracæna ensifolia.—*A Young Beginner.* Those who said that your Cypripedium is not Calceolus have made a mistake. There is no doubt that it is right; it is quite distinct from the American species C. pubescens and C. parviflorum, with which alone it can be compared. We have been long in giving this answer, owing to your letter, with some others, having been unfortunately mislaid.—*M J.* Veronica salicifolia.—*W T.* All Loliums; 1, perenne aristatum; 2, arvense; 3, temulentum.

PEAS: *G W M.* On comparison, your Pea has been found identical with the Early Dwarf, the Pois nain hâtif of the French.‖

PINKS: *N B.* Next week.*

POTATOES: *W G.* When Potatoes have sent out their fibrous roots, so as to meet between the rows, stirring deeply amongst them would retard rather than advance their growth.

ROSES: *O P Q.* Gross shoots should be cut completely out, down to the stem from whence they spring. The bark at the bottom of the stem of a tree Rose, which is apt to become injured and loosened by contact during winter with the layer of manure put round it for nourishment and protection, is dead bark, and should be rubbed off, as it is a harbour for insects.

SPINACH: *A Subscriber.* Summer Spinach may be thinned out to 2 or 3 inches apart in the rows; winter Spinach to 4 inches.‖

STRAWBERRY: *G. W.* Probably a new variety, bearing considerable resemblance to Myatt's Globe. It is excellently flavoured. It did not, however, arrive in good condition, the fruit being too tender to travel well.

SUMMER PRUNING: *J S C.* This may be advantageously practised, more or less, on all fruit-trees that are in a condition to produce a superabundance of shoots. It is absolutely necessary for the proper formation and good bearing of dwarf trees; and regularity of growth should also be maintained in young standard trees by timely checking, even now, such shoots as appear to outgrow others which it would be desirable they should only equal. It is well to keep the middle of the trees open, to admit sun and air, as you observe. Keep these objects in view; but recollect that in order to attain them you must not all at once deprive the trees of a large quantity of shoots and foliage. The reduction must be gradually carried on. ‖

MISC: *G B.* We are sorry, but we cannot assist you in obtaining the object of your desire—*Sub.* Solanum crispum is hardy, and very ornamental. It will succeed in common garden soil. We would require a good specimen of the Euphorbia to be able to say what species it is.‡

### SEEDLING FLOWERS.

ACHIMENES: *E H*: A large and beautiful variety of A. longiflora.*

ANTIRRHINUMS: *F G G.* The best are 1, 2, 3, 5, 12, and 13. These are pretty Carnation-striped varieties.*

CALCEOLARIAS: *T B.* Both box and flowers crushed to pieces in coming through the post.*

DELPHINIUMS: *G F Wood.* Your seedlings are certainly very beautiful. Superbum, with a spike of flowers, 10 inches in length, is a fine variety, and so is Pulchrum. The latter is a fine blue edged with pink.*

FOXGLOVES: *G Mitchell.* Beautiful in shape and marking, and well worth preserving, more especially the light kinds so finely spotted in the inside with pink.*

FUCHSIAS: *J W.* Of your two dark seedlings 1 is the largest and best. It is a flower of great substance, and will be a useful variety.*

MAURANDYA: *L.* Too much like M. Barclayana to be worth attention.*

PANSIES: *P P Truro.* Worthless, if it does not come better than the flower sent.*

ROSES: *N A P B.* We can offer no opinion as to the merits of your Rose, for it had fallen to pieces when it reached us.*

SWEET WILLIAMS: *A T.* Your flowers arrived in sufficiently good condition to enable us to say that they are all exceedingly handsome varieties. Improvements like yours and others on the established forms of our border plants are highly interesting, and must ultimately be productive of the very best results.*

ERRATA.—In sixth paragraph of "Spring Frosts and Fruit Growing," read, "I think I *have*," instead of "never." In last paragraph read "beech hedge" for "bush hedge."

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contibutions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

HOSE! HOSE!! HOSE!!! Improved Canvas Hose, Lined and Coated with Gutta Percha for Liquid Manure, Fire Engines, Garden and Farm purposes.—This Hose is greatly improved. The rigidity of seam avoided, the flexibility increased, the waterproof qualities extended, the price more reasonable. Much research and trial by the Manufacturers, has enabled them to arrive at what they consider a perfect Hose. Improved Gutta Percha Union Joints of all sizes. Gutta Percha in all its branches.—Apply to Messrs. MITCHELL and Co., 98, High Holborn, London; International Depot for Patented and other Inventions.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25l. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

YORKSHIRE AGRICULTURAL SOCIETY.—The Fourteenth Annual Meeting will be held at Burlington, on the 6th of AUGUST next. The ENTRY CLOSES on the 23d of JULY. Free transit of Stock, both ways, and half rates for Implements, are conceded by the Railways of the district. PRIZE SHEETS, for Stock, Implements or Poultry, with Forms of Certificate, may be had, free, by application to Sowerby, Thirsk. M. M. MILBURN, Secretary.

**The Agricultural Gazette.**

*SATURDAY, JULY* 19, 1851.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, July 23—Agricultural Society of England.
THURSDAY, — 24—Agricultural Imp. Soc. of Ireland.

LIEBIG'S experimental researches, founded on certain views of vegetable nutrition, have put us in possession of a valuable treasury of facts; and, after 10 years of inquiry, we have done little more than confirmed the principles which he at first enunciated. In their application to practical agriculture, however, it was found necessary to modify them in many essential particulars. The condition and manner in which plants absorb the nitrogen in their structures are still involved in considerable doubt, and will form the *questio vexata* for many years to come. The fact that, on some soils, the same beneficial results were often obtained from the application of very different substances, tended to obscure their true action. Thus it was impossible to trace and recognise the fundamental principles upon which all were agreed. This was more particularly the case on rich soils, and the facts could be explained only on the idea that the different kinds of application gave the plants a vigorous and healthy start, which enabled them to expand their roots, and appropriate the fertilising substances which were thus more perfectly placed within their reach. It was evidently, for instance, a few isolated experiments on rich soils that led to the supposition, that the mere steeping of the seeds of grain, &c., was all that was required to produce the heaviest crops.

There never was much discordance in the effects of specific manures on poor soils; the harmony of principle was there seen in broad and consistent indications by the most cursory observer. We are indebted to Mr. LAWES, of Rothamstead, for a series of experiments, to endeavour to unravel the intricacies in which many points affecting the principles of manuring were wrapt. By making his experiments on land quite exhausted by a succession of crops, he was in a better position to find out the actual elements which made up a rich soil, than by taking a fertile one as the basis of his deductions, and subjecting it to the most rigid analysis; and, by observing the special and relative effects of the various substances which he applied to the crops on this exhausted land, the practical truths and lessons which the results were fitted to teach were more easily apprehended. Some of these experiments were most satisfactory, so far as they went; and in their arrangement and execution a vast amount of labour and care have been expended. Every student in this field will find ample materials for information in Mr. LAWES' papers on agricultural chemistry, in the "Journal of the Royal Agricultural Society;" but they are especially useful in furnishing him with suggestions which lead to more extended inquiries into the contiguous branches of science which bear upon the practice of agriculture, and which will be taken up and explored as our knowledge advances. Throughout the whole of these intricate experiments we have evidence of carefully-recorded results, and the chemical figures connected with them are pushed to their extreme limits in the extensive deductions that have been drawn from them. In this latter characteristic consists their weakness; what was locally and only circumstantially correct was, without hesitation or inquiry, deemed to be so absolutely. Thus, while the experiments themselves are extremely interesting, their interpretation affords a wide field for disagreement; for it is on this territory that the chemistry and meteorology of agriculture meet, and, we think, intersect each other.

Mr. LAWES clearly demonstrated that the natural produce of Wheat on his soil, at Rothamstead, could not be raised beyond 17 bushels, by the application of any kind of mineral matters, unless they were applied in conjunction with nitrogenous manures. Witness the results of the following applications:

| | Bushels. | |
|---|---|---|
| Unmanured ... ... ... | 16¾ | Wheat per acre. |
| 700 lbs. superphosphate ... | 16¾ | " " |
| Ash of 14 tons of farm-yard dung | 16 | " " |
| Sulphate of ammonia 65 ... | 21¼ | " " |
| Ditto 80 ... | 26¼ | " " |

The same experiment has been repeated year after year with similar results. From this it was quite evident that the active principle in raising the produce of the Wheat was the nitrogen contained in the two last manures. We must not be held to maintain that nitrogen, in manures for Wheat, is all that is practically necessary; for some of us have found out that the mineral elements, or perhaps the mineral conditions of our fields, are a serious obstacle in the way of the cultivation of Wheat on many soils. But, to avoid immaterial points, we assume that ammonia is the only manure that is required by Wheat.

From the slight data furnished by the above experiments, Mr. LAWES launches out into the most extensive series of generalisations, for the guidance of the agriculturist. Had he gone no further than the results warranted him in doing, he would have done more eminent service to the cause which he had so much at heart. But he weighed many of our practices by a constant and particular standard, even under circumstances which were totally different; and he has, through his name, arrested inquiry in many quarters which it was of much importance to explore. As a specimen we take the following passage:

"The various contradictory results obtained by the application of mineral manures to Wheat are completely accounted for when it is known that they only increase the produce in proportion to the available azotised matter existing in the soil. Although I have confined my remarks to the Wheat crop, they apply equally to the whole class of plants belonging to the same 'natural order.' Though they do not thrive equally well in the same climate and soil, I consider them all to be plants in which the nitrogen supplied in the manure is more than what is obtained in the produce. They may for our present purpose be called nitrogen-consuming plants, in contra-distinction to those which are nitrogen-collecting plants, and contain more of this substance than was supplied to them in the manure. Common pasture belongs to the same class of plants as our grain crops; hence we have an additional argument to the number already advanced in favour of breaking it up in every case where it is not required for ornamental purposes."

We have already stated the probability that all plants have the power of collecting nitrogen, either in rains or by direct absorption from the atmosphere, in the same manner as carbonic acid is fixed and assimilated, if the plants are placed in proper states for doing so. Let us take for example the common Rye Grass, which bears a strong analogy to some of our cereals. It is a useless plant on ordinary soils in France, where the heat and dry atmosphere propel it to develop its seeds instead of its leaves for forage. In Kent, where we still have continental characteristics in the summers, it is looked upon by the farmers as a "*weed*" (BRAVENDER) It is no great favourite in the eastern counties of England, as it "draws" the land, and it only grows in pasturage in the early spring, and in the moisture of Autumn. But in the cool northern counties of Scotland, and almost throughout Ireland, it is a valuable pasture plant, and by its growth exhausted land very soon enriches itself. In short, it is the peculiar glory of the British islands that they rapidly feed their exhausted soils under pasturage; for in continental countries the Grass grows fewer months, and its growth is entirely suspended during the heats of summer. The comparative rapidity with which land improves in pasturage over the British islands, forms one of the turning points (as we shall afterwards see) in the systems of farming, which, strange to say, has been very much overlooked in discussing the peculiarities of its husbandry.

Again, as connected with the same subject—the absorption of nitrogen—we would ask, What is the theory of irrigation? If Prof. WAY'S interesting discovery of the absorption of the ammonia by loams containing clay be absolutely correct, the springs which issue from this class of soils must have left this valuable ingredient on the argillaceous filter; and however rich they may be in all the inorganic elements which can nourish the highest class of vegetables, they will be useless as a means of nourishing the Grasses, which we have been told have not the power of collecting nitrogen from the atmosphere; or must we believe that by the process of irrigation we have given the plants these conditions in which they can take a considerable amount of nitrogen from the atmosphere, like the Oak, or an autumn-sown Turnip?

Much difference of opinion has always prevailed in regard to the comparatively exhausting properties of Wheat, Barley, and Oats. The recent advance of science enables us to discuss this question, if it does not yet admit of finally settling it. We now know what are the principal elements that it is the object of the agriculturist to supply to his reduced and impoverished fields to repair their condition and again fit them for bearing crops. Mr. LAWES has adverted to this subject, and settled it in a very summary manner, and Mr. HUXTABLE has deemed his reasons to be quite satisfactory.

"I am inclined to think that for practical purposes we may assume 5 lbs. of ammonia to be required for the production of every bushel of Wheat beyond the natural yield of the soil and season."

Also, page 253:—

"We have no reason to suppose that one grain crop possesses the power of exhausting the soil more than another. The tenant farmer should therefore be permitted to grow that crop which is most suited to his soil. On the heavy soils alternate Wheat crops might be grown."

But why cannot alternate crops of Wheat be grown on the light lands as well as on the heavy, if it is a mere question of ammonia? Mr. LAWES has very clearly drawn the distinction between exhausting crops and their converse, but he does not keep it steadily in view. But it is only by this means we are enabled to see the reasons upon which practical farmers here build the opinions on which they act. Farmers naturally consider those crops to be most exhausting which take the largest amount of manure to raise them. But although one crop does take more manure to raise it than another, it is not a sound conclusion to draw that the one exhausts the soil more than another. Wheat is considered to be a much more exhausting crop in Scotland than Oats or Barley, and there is a great deal to be discovered by following up the arguments which are adduced in confirmation of this current notion. Every lease bears ample testimony to this idea; and on all secondary soils it has been deemed prudent to restrict and limit its extent on the farm. It is very evident to us, that this practice is founded on the most absurd data imaginable. This opinion is so firmly believed and persisted in, that it is now found by practical men to be a thorough nuisance in their covenants. As the errors involved actually defeat the end which is intended to be gained, we shall be at some trouble in endeavouring to lay bare their sources, and in so doing, perhaps some will gain a better acquaintance with the spirit of Scotch farming. For this end we must have a clear understanding of the points at issue. Under certain circumstances, we believe that Wheat requires more manure than Oats or Barley, especially in Scotland and

Ireland; or, at least, that the soil must be in a higher state of fertility to raise Wheat. On the other hand, there is no well authenticated fact to prove that Wheat actually leaves the land in a more exhausted state than Oats or Barley does; but, on the contrary, an overpowering array of facts may be brought forward to demonstrate that the soil is in a much better condition, after having carried a good crop of Wheat, than when it has merely produced one of Oats or Barley. The chemist is always appealed to, and he sets about solving the problem, although it scarcely lies in his crucible. He tells us that a crop of Oats ought to be decidedly more exhausting than Wheat, as it removes a much larger amount of valuable matters than the latter; for the grain of Wheat and Oats contain nearly the same per centage of nitrogen, while the amount of mineral matter is twice as great in the Oat as in the Wheat. But this does not touch the question, as the mineral elements are thrown aside, and we have therefore only to deal with the nitrogenous. It is believed that the Wheat plant, in its growth, gets rid of rather more than 3 lbs. out of every 5 lbs. of ammonia supplied in the manure: and the question to be discussed is, whether the Oats and Barley are as costly in their habits as has been maintained by Mr. LAWES, and broadly reiterated by Mr. HUXTABLE, in his pamphlet on "Present Prices." Under such an array of authorities, the truth of this proposition is never questioned. It will be admitted on all hands, if Oats, under certain conditions, could economise the manure, so as that there should be as much nitrogen in the produce as there was supplied to them in the manure, that they are less exhausting than Wheat, in the sense on which practical men evidently ground their opinions, viz., that it would take more guano or any other manure, whose principal element is nitrogen, to raise a crop of Wheat, than of Oats. And it is here that practice and theory are at issue.

> Like damaged clocks where hand and bell dissent,
> "Science" sings six, while "Practice" points at twelve.

If the sweeping deductions of chemists were correct, the value of all grains should be exactly in proportion to the amount of nitrogen contained in their produce. The relative prices which the different kinds of grain bear in the market, however, indicates that this can hardly be the case. The puzzle to Englishmen would also be involved in a double labyrinth—in the fact, that as high rents are paid for land in arable cultivation in Scotland, where the low-priced grains, Barley and Oats, are chiefly grown. They must be surpassing farmers in Scotland to achieve such results (and they have often been told so); but we have long thought that "there is something in this quite natural, if philosophy could find it out." We are well aware that current theories are rather against us on this subject, but we feel convinced that the whole circle of practical results can be adduced in our favour, and that it is impossible to discuss the systems of agriculture over the British islands, without modifying, to a very considerable extent, prevailing opinions and prepossessions. It has always been a source of some satisfaction to us, that one immortal authority has expressed himself in such a manner, that our modern chemists will one day have either to refute the fallacy, or illustrate the truth of his philosophy. Sir HUMPHREY DAVY, in his work on "Agricultural Chemistry," 2d edit., p. 188, states—"In cases where plants cannot absorb sufficient moisture, they must take up more manure; and in Ireland, Cornwall, and the Western Highlands of Scotland, corn will exhaust less than in dry inland situations. Oats, particularly in dry climates, are impoverishing in a much higher degree than in moist ones."

We consider that truth is shadowed forth in this passage; and although it may not be expressed in the language of our modern nomenclature, it broadly states a principle which has been entirely overlooked, and has been a fruitful source of confusion in some quarters. We intend to go somewhat into detail on this subject; but before we enter upon it, we shall glance at the opinions of Mr. LAWES, regarding the effects of nitrogenous manures on the Turnip, which may furnish a key to our inquiry. *R.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. X.—We have but little to remark upon the articles coming under "DIVISION F. AGRICULTURAL CARRIAGES, HARNESS, AND GEAR." It is certain—not merely a few people's opinion—but certain that a more extensive substitution of ONE-HORSE CARTS for the heavier carts and waggons now in very general use, would be of incalculable benefit to the distressed English farmers. One advantage seems to be that they cost one-third less outlay when stocking a farm; while there is no farming purpose to which waggons or large carts are applied for which one-horse carts are not also adapted. But their great recommendation is that with them *five* horses will effect an equal amount of carriage with *ten* horses in waggons, as proved by the trials instituted by Mr. Pusey, in Berkshire, and by Sir John Thorold, in Lincolnshire. The saving of horse-labour is, without dispute, *one-half*. Specimens of the best class of these light and strong one-horse carts, combining good workmanship with cheapness, and fitted with improved axles, wheels, drags, and tilling irons of different sorts, are exhibited by several makers. Unpainted wood, well varnished, meets the eye without deception; and displays the firmness and neatness of its joinings, as well as the goodness and durability of its material. The bodies of the best carts are placed upon the axle without being bolstered up, thus giving greater facility for filling; less alteration of the weight upon the horse's back in ascending and descending hills; and in rough roads less lateral pressure on the wheels, and less jostling of the horse; and the wheels are made upon the principles best calculated to sustain the lateral and perpendicular pressures of the load when in motion; and are less liable to cut into the land, from the tire of the wheels being perfectly cylindrical (which form gives the true rolling motion required), whilst the spokes are at the same time sufficiently dished. Frames are also constructed so as to make one of the small carts into a complete harvest-cart, with plenty of foundation to build the load securely upon. Compactness and strength, without studs or spindles, or ornamental carving, seem to be the chief attributes of the framing; and simplicity rules the action of the various contrivances for tilling and tipping with ease and celerity. The prize carts of W. Busby, of Newton-le-Willows, Bedale, Yorkshire, cannot fail of drawing attention; and Crosskill's carts and wheels not only merit but command inspection. His improved one-horse cart and harvest-cart is made broad and low, without a single mortice, slot, sole, or nail; and is intended to carry 30 cwt. loads. Crosskill's celebrated wheels are made almost entirely by machinery. The naves are of iron, cast upon steel pins, by which process they become so hard as to resist the file. When the spokes (made of well-seasoned Oak) are properly driven, the wheel is fixed in a lathe and the end of each spoke is turned with the greatest possible accuracy, to fit double-shouldered sockets, bored with equal precision in the fellies. The fellies, too, are turned in a lathe. After which the hoop tire is cut, bended, bevelled, and affixed by machinery, with an accuracy and firmness that cannot be equalled by any hand process. The arms on wrought-iron axles are also turned (without boxes, &c.) by self-adjusting machinery, and case-hardened. The body of the carts consists of Oak framework, and strong red plank sides; the shafts and shelvings of Ash.

Among the carts of other exhibitors, worthy of examination, we may mention that with revolving axle, invented by E. Harding, of Oldsprings, Market Drayton, and the Clydesdale tilt-cart, of Harveys and Tait, Strathaven, Scotland. Among waggons, we advise a look at Crosskill's, which is of simple as well as strong construction; it is furnished with a break worked by a small wheel in front, a useful appendage in hilly districts. W. Squires, of March, Cambridgeshire, exhibits a well-made road waggon, but which, from the absence of lock-holes, can turn only in a long curve. Braby and Sons, of Duke-street, Upper Stamford-street, show an extraordinary-looking waggon, which is likely to remind some old fashioned farmers of a bird cage. The sides are formed of thin iron spindles, holding up the raves or side-bars, and made of an elegant waving form, like Hogarth's "line of beauty." It is a beautiful specimen of carriage building, and runs with a pole instead of shafts. Its advantages in strength and durability on the rude roads, and in the all weathers of a farm, we are unable to state.

Of Harness, we have scarcely yet observed any specimens; one article that we did see, however, we consider well worthy of being made known to the public. A. Low, of Dundee, exhibits a mouth-bag for horses, having a gauze-wire front for facilitating respiration. It is labelled "Humanity for the Horse." This admirable improvement explains and recommends itself.

DIVISION G. DRAINAGE IMPLEMENTS.—Among the sets of draining tools exhibited, including spades, bottoming tools, shovels, picks, pipe-layers, scoops, gauges, &c., the workman will find many that seem by far too heavy to suit his sinews, and in shape not exactly according to his taste. But out of so large an assortment he may also select many most valuable instruments for easing and improving his labour. Mapplebeck and Lowe, Clayton, and other manufacturers, show specimens of their tools, of first-rate workmanship and quality. Clayton's patent drain consolidator, consisting of a horizontal bar or weight of iron, wedge-shaped, so as to fit the sides and bottom of a drain, and having a long upright handle to be set to any depth, appears to be a useful tool. It acts as a rammer, and from its length seems calculated to perform much the same office upon the soft bottom of a drain that a carpenter's plane does upon wood, viz., level its lesser inequalities. But the manufacturers of Sheffield, and other towns, exhibit sets of tools for draining and all other agricultural purposes; and we may hereafter be more particular in our description.

Many machines have been invented for the purpose of applying horse-power to the excavation of drains, but hitherto with only partial success; and, indeed, implements of this kind cannot be entirely successful, except in clay soils, free from stones. We noticed some models, and also full-sized machines intended for this purpose. A draining plough, by J. Ferguson, Bridge-of-Allan, Scotland, is stated to have been in very successful operation on the Mains of Dun. It has something like a large plough-breast or mould-turner, with an inclined plane reaching to the bottom of the drain. On the same side of the drain as the mould-board is a sword-coulter, sloping backwards from the drain bottom to the plough beam; and on the opposite side, the land side of the plough, reaches the whole depth of the drain, having a circular cutting edge to form one side of the drain. This edge tapers toward the coulter at bottom, so as to make the trench of proper shape. A wheel follows the inclined plane along the bottom, and two others run upon the land in front of the plough, and can be steered by a long lever from behind. Sixteen horses are required in order to open a regular drain 30 inches deep, 18 inches wide at top, and 5 inches at bottom.

E. Alexander, of Taylorton, Stirling, exhibits models of two ploughs, which, by following each other, cut out a drain 30 inches in depth. The principle and shape of the different parts much resembles the one just described. The first-furrow plough cuts a depth of from 15 to 18 inches, 15 inches wide at top and 7 at bottom, and is drawn by 12 horses, doing one Scotch acre per hour. The second-furrow plough takes out a further depth of from 10 to 12 inches, finishing the drain to the exact breadth of the tiles, to the depth of 30 inches, throwing the furrow or slice to the side opposite to that which receives the furrow from the first plough. This also requires 12 horses, and completes one Scotch acre per hour. These ploughs have gained several prizes, particularly of the Highland Agricultural Society, and of the Stirling Association.

The most extraordinary drainage implement is, however, that invented by Mr. Fowler, of Melksham, Wiltshire. Its principle is now well known; it consists in making a mole plough draw a string of wooden pipes into the tunnel formed by its passage. The mole is attached to an upright blade about 7 feet long, 9 inches broad, and 1 inch thick, which can be raised or lowered vertically in its broad-arched girder-like frame, by means of a pinion working in teeth on its back edge. A strong sword coulter precedes it. The capstan turned by the horses has not to be shifted, and the chain unwound at intervals, as is generally the case with mole-ploughs, but is itself moved on continually as the horses go round it. The contrivance for anchoring, so as to obtain a purchase, the novel and simple apparatus for lifting the heavy frame upon its carriage wheels, must be seen either in reality or in picture, in order to be understood. This remarkably ingenious engine seems likely to effect extensive improvements upon smooth lands, either level or sloping. The wood employed (which is the ordinary faggot-wood used as fuel), is cut up into long square pieces, and pierced by lathe drills, &c., for 8s. per 1000 feet; and three-quarters of a mile of pipes are laid per day, with the labour of 3 horses and 3 men. The names of Clayton, Whitehead, Scraggs, Williams, Ainslie, Brodie, &c., are known as those of the best manufacturers of drain-tile and pipe machines. We cannot now stay to remark upon the relative merits of the vertical and horizontal actions, the advantages of peculiar fastenings for the die-plates, of different contrivances for cutting, &c. These machines are more or less complicated, and a description of them seems to belong more to the machinist and implement manufacturer than to the farmer. The results of the trials instituted by men who understand the merits of these machines, are of far more value than any mere outline of their principal features and peculiarities. At Exeter, Clayton's machine was by far the most superior in point of the *labour* required to produce a certain quantity of pipes; while Whitehead's 1½ inch pipes "were decidedly superior in quality, and a much greater number were produced in a given *time*."

DIVISION H. DAIRY IMPLEMENTS.—Scattered about among the implements are to be found churns, lever cheese-presses, milk-buckets, and other utensils, &c. &c., which we have not time to enumerate. We recommend farmers' wives not to miss a sight of the churn and stand, milk-pails, butter-tub, butter prints and boards, and milk-strainer, manufactured and exhibited by J. Jolly, Vale of Aylesbury. Barrel-churns of different sorts, dash-churns, paddle-wheel-churns, and American churns that bring butter quickly, may all be inspected. We were pleased with the anti-metallic table churns, invented by P. R. Drummond, of Perth, which have six actions. This churn consists of a rectangular box parted into two, in each of which works vertically a circular dasher. The partition has holes in it just above and below the range of the dashers, one of which ascends as the other descends; the effect of this construction is that each box affects the cream by three different actions—vertical, horizontal, and atmospheric. The dashers are moved by cords passing in a peculiar manner round a rigger on the top of the churn, and this is alternated by either a wheel and crank or by a pendulum. *I. A. C.*

## ROYAL AGRICULTURAL COLLEGE.

EXAMINATION PAPER.—JUNE 21.

1. Describe the acts of husbandry since February last, in fields, Nos. 7, 9 (6, 10), 11, 22.

2. Describe the treatment of the sheep; of the breeding cows, and calves, on the College Farm, during the above period.

3. How many weeks do the mare, cow, ewe, and sow, go with young?

4. When, and on what kind of soil do you usually sow Beans? What are the most common kinds sown? Describe the usual methods of sowing them; the distance

between the rows; the crops which they succeed, and which succeed them.

5. After what crops do you usually sow Oats, and in what months? Give the number of bushels usually sown per acre; the most prolific kinds; and the width between the rows.

6. What are the best months for sowing Barley? By what circumstance (weather permitting) is the time of its being sown determined on light soils? What crop does it follow, and by what is it followed? What are the two most common sorts, and what quantity of seed would you use per acre?

7. What are the three most common kinds of Clover? What Grass seeds would you sow to stand for one year; and what for two years? Give the proportions.

8. When are Carrots best sown? Describe the process, and give the quantity of seed per acre, the depth at which it should be sown, and the general cost of an acre of Carrots where the rent, tithe, and taxes amount to 2*l.* per acre.

9. When is the best time for sowing Mangold Wurzel? What is the best sort? What quantity of seed is used per acre, and at what depth? What preparation does the seed usually receive previous to sowing?

10. What months does Turnip sowing occupy? What kinds of early Turnips, and of Swedes are usually sown? and what quantity of seed? What weight of farm-yard manure is considered a good manuring per acre? What weight of guano—of bone dust (half-inch)—of superphosphate of lime? Calculate the cost of an acre of Swedes and Turnips; the rent, &c., as in Question 8.

11. Give the cost of an acre of Potatoes, including seed, manure, and labour. Rent, &c., as before; seed assumed at 2*s.* per bushel.

12. What is the usual time for sowing Flax? What quantity of seed is used per acre? and what crops does it usually succeed?

13. When does haymaking usually commence? What weight of Clover-hay per acre do you consider a fair crop? and what crops generally follow Grass or Clover?

14. What weight of roots would be consumed per day by a one-year old sheep? what by a two-year old beast? supposing the sheep to have a pint of Oats daily, and the beast from 15 lbs. to 20 lbs. of hay or straw, in addition to the roots. What would be the weekly cost of each?

15. About what is the cost of each pair of horses annually on a farm, allowing the horses to be worth 20*l.* each?

16. What is the usual cost of a common iron plough? of a horse cart? of a set of iron harrows? of a two-horse roller?

17. How many head of full grown beasts will 100 acres of ordinary Grass keep during the summer? how many sheep?

18. About what weight of green Vetches would there be on an acre, the crop being average? what of Grass or Clover? What material loss of nutritive matter is incurred by turning Grass or Clover into hay?

19. What is the commercial weight of a bushel of salt? of Potatoes? of Turnip seed? of half-inch bones? of a truss of old hay? of a truss of straw? of a tod of wool? What is the average weight per bushel of Wheat, Oats, Barley, Beans, Peas, Vetches, Rye Grass, Turnips?

20. What account books does a farmer require to enable him to keep his farm accounts, on a regular system of book keeping?

21. How many men and boys would it require to carry, stack, and perform all the usual work, in clearing 10 acres of Clover-hay in a day? the stack to be placed somewhere on the 10 acres, and the crop to be of average weight? State the usual prices given for thatching per square yard, or per square of 100 feet, or per square of 100 yards?

22. What are the tests for judging of the ripeness of corn:—say of Wheat, Barley, Beans, Oats, and Peas? What are the advantages and disadvantages of reaping prematurely, or when corn is called dead ripe? State the general average cost of harvesting corn per acre, including cutting, carting, stacking, and thatching? State the usual prices paid per quarter for threshing Wheat, Oats, Barley, and Beans, by flail? State the cost of threshing corn per quarter, by the College engine, including all charges?

23. When are sheep usually put upon Turnips? What month? How many sheep would be required to feed off 100 acres of Swedish Turnips, of an average crop, in six months; the sheep being in a fattening state, and allowed, say 3 lbs. of hay-chaff per day each? How many two-year old beasts in a fattening state would be required to consume 100 acres of Turnips in six months, the beasts to be allowed Grass, *ad libitum*, along with about 20 lbs. of chaff per day?

(The last three questions were only given to those who had attended at the College two sessions.)

## Home Correspondence.

*Allotments.*—I have felt interested in what is called the "Allotment System" for many years, and have noticed the working of it, ever since its commencement. I think it is about 25 years ago that a nobleman, the landed proprietor of the neighbourhood in which I then lived, allotted and fenced off a portion of a large field for the purpose of field gardens. I well remember what was said by some of the villagers respecting it—"We do not hold with these new schemes. They are no good to the poor man; all that is wanted is to make us as are the poor Irish. And when we have got this bit of land we shall not get any parish relief?" There were many at first who were quite unwilling to have any, and it was not until a few years after, that any of them went to work in right good earnest. When they found that they were really benefited by it, they were then anxious to obtain more. And this benevolent gentleman being always ready to help those who tried to help themselves, and being anxious to improve their condition, let them have half an acre each, at a moderate rent, as near to the village as possible, and adjoining a good road. One of the pieces thus allotted was in as bad a state of cultivation as any in the parish, but it is now acknowledged to be in as good a state as any in the county. The same worthy nobleman, in many other parishes, let out half acre allotments; and in some instances, where the labourers were very badly off, in order to give them a start, he seeded their land for them the first year, and gave each of them money with which to purchase a pig. And they have ever since thriven on their little farms. At the commencement of the allotment system, the farmers in this neighbourhood (as was the case generally) were quite averse to it, and said they should have their corn stolen, and that it would be the means of making thieves of honest men, and that when they wanted their work done, they should not be able to get men; but through the good conduct and honesty of allotment tenants generally, this sort of feeling has in a great measure subsided, and their opinion is altogether changed. I have known two farmers who have actually let out allotments for the benefit of their poorer neighbours. One of these persons was a tenant farmer, and got permission to do so from his landlord. And although he had the conscience to exact of these poor men three times the rent he himself gave, yet they did well on it, and very soon made that which was the worst bit of land on the whole farm the best. These allotments were situated a full mile from the village, and to be got at only by a miserably bad road, on which I have seen from 20 to 30 men of an evening, in the spring time, (after having done their day's work) working in right good earnest, levelling in the ruts, before they could get their manure on the land. I mention this merely to show their industry and perseverance. It has been too often the case, in letting out allotments, that they have been allotted at a great distance from the village, and on the very worst land in the parish, and often at a greater rent than is given by a farmer for the best land; when such is the case it must be very disheartening and discouraging to the tenants. I admit that allotment tenants, on account of their greater produce—through their superior cultivation—can afford to give a little more rent than a farmer can. When allotments are cultivated chiefly for the purpose of growing grain and root crops, and the tenants are charged 4*l.* an acre, while the same land, only on the other side of the hedge, is rented by the farmer at 2*l.*, it must be acknowledged that the poor man in such cases is greatly exacted upon. When allotments are let out in order to improve and benefit the labouring classes, an exorbitant rent ought not to be required of them; if it is, it cannot be expected to have the desired effect. I once heard a labourer reply, when he was asked if his land did him good, "Well it's too high rented, I don't believe I have anything at all for my labour, after my rent is paid; but, as I have now got it in good heart, I don't like to give it up, and we should feel quite at a loss without it." The rents of allotments ought neither to be too high nor too low; if too high, the tenant feels discouraged, and does not persevere as he would do, provided he had his plot of land at a fair rent; if too low, he might probably become slovenly and negligent. Cases in which allotments are really beneficial are where they are rented at a fair rent, and the tenants have no more land than they can properly manage, without losing much of their time. A few days in spring and autumn are not out of place, as the land will do them harm except the seeds are sown at the proper time. Little village tradesmen have more time on their hands than a labourer has; they can therefore manage more land to advantage than a labourer can. They, therefore, should be allowed the privilege of holding an acre or two, provided they properly manage it. Almost all villagers have a small piece of garden, if not an allotment, and require some instructions how to manage it, for which purpose they would find that cheap and very useful little book, "Paxton's Cottagers' Calendar," just the thing; and no cottager who has a garden should be without it. *Wm. Griffin, Eydon, Daventry.*

*Smithfield.*—It has been very wisely and justly decided to discontinue Smithfield market; and the quicker the nuisance is blotted from the face of the map of London, the greater will be the satisfaction of all who take an interest in the welfare of the metropolis, which has so long permitted a quarter teeming with vice and cruelty to exist. One good deed having been accomplished let not not the effect be destroyed by mismanagement in forming new markets; one will not be sufficient for the supply of the increasing population—two should, at the least, be constructed in situations accessible to railroads, with every convenience and accommodation for the animals, so as to ensure the inhabitants of the most populous city in the world eating wholesome meat, instead of consuming flesh slaughtered in a feverish and bruised state, from the beasts being over-driven and cramped in the pens. Should the corporation of London refuse to undertake the construction and management of the new markets, private companies may be found ready and willing to enter into what cannot fail to be a lucrative speculation. Our Houses of Parliament have proved expensive failures, being constructed neither with regard to the number of members they were to contain, nor with any respect for the science of acoustics. Let the plans of our new markets be well digested before being put into operation, and kept within the estimate: and not handed down to posterity as monuments of ignorance of the wants of our fellow-creatures, who are to come after us. *Falcon.*

*Peat Charcoal.*—"Libra" would further much oblige, if he would either insert in your next paper a statement giving more particularly his mode of making up the cones of peat he speaks of: viz., the shape and sizes of the sods of peat used; the height of cone; and say whether the cone is hollow like a bee-hive, or a nearly solid mass, with a burning sod in the centre. *J. Vivian.*

*Marking Fowls.*—I am perfectly at a loss to imagine why a correspondent in your paper of the 12th of July, signing himself a "Member of the Society for the Prevention of Cruelty to Animals," should attract the attention of your readers to my system of marking fowls, given in your paper of the 22d Feb. last. As he considers it a practice too barbarous to mention, surely silence would have been its most politic condemnation; but as I widely differ from your correspondent, I must defend a method which is absolutely necessary, unless he can teach us farmers' wives an equally effectual, expeditious, and less defective system—as the amputation of the claw is effected as soon as the chicken is hatched, and after it has been under the mother a few hours the wound is completely healed. I cannot see where the cruelty lies, and as far as I have been able to discover, the chicken attains its full growth without experiencing the slightest inconvenience. Shielded as your correspondent is by the title of member of that beautiful institution the Society for the Prevention of Cruelty of Animals, I will not taunt him with countenancing indirectly many cruel practices, which custom has rendered less offensive to his feelings; for instance, shooting, fishing, coursing, and I may also add, ringing of pigs, &c. If your correspondent's pen were turned to the revolting usage in Yorkshire, and many other parts of England, of plucking the feathers from live geese, he would be doing a humane act. I presume that an early number will favour us with a new and better plan for distinguishing the age of poultry than the one in question, otherwise it is a pity to condemn a system the utility of which is undeniable, where much stock is kept. *A Subscriber, Midland Counties, July* 14.

## Societies.

### GREAT MEETING OF THE ENGLISH AGRICULTURAL SOCIETY AT WINDSOR.

If large numbers of stock of excellent quality exhibited, and a multitude of spectators of all ranks drawn together by them, are the elements of success at these annual meetings of our national Agricultural Society, then the Windsor meeting of the English Agricultural Society has been the best it has hitherto known. Last year the catalogue of live stock exceeded the number of 700; this year it includes nearly 1000. The position of the show, both for centricality as regards the country generally, and for its neighbourhood to Windsor Castle, has caused a large attendance, notwithstanding the absence of one-half of the usual attraction—by the absorption of the implement show in the Hyde-park Exhibition. The labours of the reporter, by the absence of this important department, are materially lightened, and their usefulness very much diminished. It is possible to describe a *machine* in terms capable of presenting it accurately to the mind of the reader; but it is quite impossible similarly to describe an ox or a horse. Besides, the differences of which the farmer takes notice are not those of genus, or even of species; they are those slight variations of shape and quality in individuals which require the educated sight and touch of an immediate observer, satisfactorily to appreciate, and which no hearsay account of the animal is capable of representing. Besides, even if we were able accurately to describe any or every animal of the show, yet, in the absence of any knowledge of the pedigrees of those animals, very little usefulness would attach to our performance. The effect of the intermixture of certain families, which might be known to all, if pedigrees appeared in the catalogues of the Agricultural Society of England, as they do in those of the Irish Society, and which is known by long and laborious study to all who themselves undertake the breeding of live stock—this effect appearing in the specimens exhibited at these annual meetings would render a fuller catalogue than has hitherto been given us very instructive and useful. In the absence of any such information we must be satisfied with publishing the prize list, and naming two or three of the most remarkable animals exhibited, reserving till the ensuing week remarks upon the exhibition of sheep, and horses, and pigs.

### LIST OF PRIZES FOR CATTLE, &c.

#### SHORT-HORNS.

*Judges.*—Thomas Parkinson, John Wright, and James Topham.

Class I. Bulls calved previously to the 1st of January, 1849.—1st prize, 40*l.*, to Mr. Thomas Wetherell, of Kirkbridge, Darlington; 2d, 20*l.*, to the Right Hon. Lord Hastings, of Melton Constable, Thetford, Norfolk.

Class II. Bulls calved since the 1st of January, 1849.—1st prize, 25*l.*, to Mr. John Kirkham, of Hognaby, Spilsby, Lincoln; 2d, 15*l.*, to Mr. Thomas Raine, of Gainford, Darlington; 3d, 10*l.*, to Mr. Thomas Bentley, of Pannal Hall, Pannal, Wetherby, Yorkshire.

Class III. Cows in milk or in calf.—1st prize, 20*l.*, to Mr. Richard Booth, of Warlaby, Northallerton; 2d, 10*l.*, to the Right Hon. Viscount Hill, of Hawkstone, Shrewsbury.

Class IV. In-calf Heifers, not exceeding three years old.—1st prize, 20*l.*, to Mr. Charles Towneley, of Towneley Park, Burnley, Lancashire; 2d, 15*l.*, to the same; 3d, 10*l.*, to Mr.

James Douglas, of Athelstaneford, New Mains, Drem Haddington.

Class V. Yearling Heifers.—1st prize, 15*l.*, to the Hon. Viscount Hill, of Hawkstone, Shrewsbury; 2d, 10*l.*, to Mr. Henry Ambler, of Watkinson Hall, Halifax; 3d, 5*l.*, to the Right Hon. Viscount Hill, of Hawkstone, Shrewsbury.

HEREFORDS.

*Judges.*—Wm. Fisher Hobbs, Henry Chamberlain, and Thomas Townsend.

Class I. Bulls calved previously to the 1st of January, 1849.—1st prize, 40*l.*, to the Right Hon. Lord Berwick, of Cronkhill, Shrewsbury; 2d, 20*l.*, to Mr. Edward Price, of the Court House, Pembridge, near Leominster.

Class II. Bulls calved since the 1st of January, 1849.—1st prize, 25*l.*, to Mr. Fowler Boyd Price, of Huntington, near Hereford; 2d, 15*l.*, to Mr. Sylvanus Archibald, of Holmer, Hereford; 3d, 10*l.*, to Mr. John Monkhouse, of the Stow, near Hereford.

Class III. Cows in milk or in calf.—1st prize, 20*l.*, to the Right Hon. Lord Berwick, of Cronkhill, Shrewsbury; 2d, 10*l.*, to the Rev. John Robert Smythies, of East Hill, near Colchester.

Class IV. In-calf Heifers, not exceeding three years old.—1st prize, 20*l.*, to the Right Hon. Lord Berwick, of Cronkhill, Shrewsbury; 2d, 15*l.*, to the same; 3d, 10*l.*, to Mr. Philip Turner, of the Leen, Pembridge, Leominster.

Class V. Yearling Heifers.—1st prize, 15*l.*, to Mr. Fowler Boyd Price, of Huntington, Hereford; 2d, 10*l.*, to Mr. Walter Mayberry, of Penlan, Brecon; 3d, 5*l.*, to the Right Hon. Lord Berwick, of Cronkhill, Shrewsbury.

DEVONS.

*Judges.*—William Bullen, Thomas Reynolds, and H. Trethewy.

Class I. Bulls calved previously to the 1st of January, 1849.—1st prize, 40*l.*, to Mr. John Quartly, of Champson Molland, South Molton, Devon; 2d, 20*l.*, to Mr. James Davy, of North Molton, Devon.

Class II. Bulls calved since the 1st of January, 1849.—1st prize, 25*l.*, to Mr. Samuel Farthing, of Stowey Court, near Bridgewater; 2d, 15*l.*, to Mr. Thomas Miller, of Castle Farm, Sherborne, Dorset; 3d, 10*l.*, to Mr. Thomas Bond, of Bishops Lydeard, Taunton.

Class III. Cows in milk or in calf.—1st prize, 20*l.*, to Mr. George Turner, of Barton, near Exeter; 2d, 10*l.*, to Mr. Frederick Hogg, of 40, St. James's-street, London,

Class IV. In-calf Heifers, not exceeding three years old.—1st prize, 20*l.*, to Mr. George Turner, of Barton, near Exeter; 2d, 15*l.*, to the same; 3d, 10*l.*, to the Right Hon. the Earl of Leicester, of Holkham Hall, Norfolk.

Class V. Yearling Heifers.—1st prize, 15*l.*, to Mr. William M. Gibbs, of Bishops Lydeard, near Taunton; 2d, 10*l.*, to Mr. John Quartly, of Champson Molland, South Molton; 3d, 5*l.*, to Mr. George Turner, of Barton, near Exeter.

LONG-HORNS.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. Bull calved previously to 1st of January, 1849.—The prize of 10*l.* withheld.

Class II. Bull calved since the 1st of January, 1849.—The prize of 10*l.*, to Mr. Richard H. Chapman, of Upton, Atherstone, Warwick.

Class III. Cows in milk or in calf.—The prize of 10*l.*, to Mr. Thomas Beards, of Stowe, near Buckingham.

Class IV. In-calf Heifer, not exceeding three years old.—The prize of 5*l.*, to Mr. Thomas Beards, of Stowe, near Buckingham.

Class V. Yearling Heifers.—The prize of 5*l.*, to Mr. Thomas Beards, of Stowe, near Buckingham.

CHANNEL ISLANDS.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. Bulls calved previously to the 1st of January, 1849.—The prize of 10*l.*, to the Right Hon. the Earl of Egmont, of Cowdray, near Petworth, Sussex.

Class II. Bulls calved since the 1st of January, 1849.—The prize of 10*l.*, to Mr. J. G. Watkins, of Woodfield, Worcester.

Class III. Cows in milk or in calf.—The prize of 10*l.*, to Mr. George Torode, of the Forest Parish, Guernsey.

Class IV. In-calf Heifers.—The prize of 5*l.*, to Sir John Cathcart, of Cooper's Hill, Chertsey, Surrey.

Class V. Yearling Heifers.—The prize of 5*l.*, to Mr. William Henry Chapman, of Wraysbury, near Staines.

SUSSEX.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. Bulls calved previously to the 1st of January, 1849.—The prize of 10*l.*, to Mr. Henry Catt, of West Firle, Lewes, Sussex.

Class II. Bulls calved since the 1st of January, 1849.—The prize of 10*l.*, to Mr. John Waters, of Modcombe, Eastbourne.

Class III. Cows in milk or in calf.—The prize of 10*l.*, to Mr. Thomas Child, of Michelham, near Hailsham, Sussex.

Class IV. In-calf Heifers.—The prize of 5*l.*, to Mr. William Marshall, of Bolney-place, Cuckfield, Sussex.

Class V. Yearling Heifers.—The prize of 5*l.*, to Mr. William Marshall, of Bolney-place, Cuckfield, Sussex.

SCOTCH HORNED.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. No entry.

Class II. Bulls calved since the 1st January, 1849, one year old.—The prize of 10*l.*, to Mr. Charles Fielder, of Sparsholt, near Winchester.

Class III. Cows in milk or in calf.—The prize of 10*l.*, to Sir John Cathcart, of Cooper's Hill, Chertsey.

Class IV. In-calf Heifer.—The prize of 10*l.*, withheld.

Class V.—No entry.

SCOTCH POLLED.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. Bull calved previously to the 1st of January, 1849.—The prize of 10*l.*, to Mr. William M'Combie, of Tillyfour, near Alford, Aberdeen.

Class II. Bull calved since the 1st of January, 1849.—The prize of 10*l.*, withheld.

Class III. Cows in milk or in calf.—The prize of 10*l.* to Mr. Robert Scott, of Ballwyllo, Montrose, Forfar.

Class IV. In-calf Heifers.—The prize of 10*l.* to Mr. William M'Combie, of Tillyfour, Alford, Aberdeen.

Class V. Yearling Heifers.—The prize of 5*l.*, to Mr. William M'Combie, of Tillyfour, Alford, Aberdeen.

WELSH. IRISH, &c.

*Judges*—James Walker, John Clayden, and William Cox.

Class I. Bulls calved previously to 1st January, 1849.—The prize of 10*l.* to Lieutenant-General Sir Edward Kerrison, Bart., of Oakley-park, Eye, Suffolk.

Class II. Bulls calved since the 1st January, 1849.—The prize of 10*l.* to Mr. George David Badham, of Thurlston, Ipswich, Suffolk.

Class III. Cows in milk or in calf.—The prize of 10*l.* to Lieutenant-General Sir Edward Kerrison, Bart., of Oakley-park, Eye, Suffolk.

Class IV. In-calf Heifers, not exceeding three years old.—The prize of 5*l.* to the same.

Class V. Yearling Heifers.—The prize of 5*l.* to Mr. George David Badham, of Thurlston, Ipswich, Suffolk.

HORSES.

*Judges.*—John Hannam, William Greaves, and J. R. Kirkham.

Class I. Stallions of any age, for agricultural purposes.—1st prize of 30*l.*, to Mr Thomas Catlin, of Butley, near Woodbridge; 2d, 15*l.*, to the same.

Class II. Two years old Stallions, for agricultural purposes.—1st prize of 20*l.*, to Mr. Frederick Thomas Bryan, of Knossington, near Oakham; 2d, 15*l.*, to Mr. Henry Taylor, of Bishopstone, near Farringdon; 3d, 10*l.*, to Mr. Samuel Clayden, of Little Linton, Cambridge.

Class III. Dray Stallions.—The prize of 20*l.*, to Mr. Robert Brown, of Farleigh Wallop, Basingstoke.

Class IV. Hunter Stallions.—The prize of 30*l.*, to Mr. Thomas Groves, of Manor-house, Nun-Monckton, Yorkshire

Class V. Carriage Stallions.—The prize of 30*l.*, to Mr. Thomas Holtby, of Brandesburton, Beverley.

Class VI. Roadster Stallions.—The prize of 15*l.*, to Mr. Thomas Groves, of Manor-house, Nun-Monckton, Yorkshire.

Class VII. Mares and Foals.—The prize of 20*l.*, to Mr. J. G. Sheppard, of the High House, Campsey Ash, Woodbridge, Suffolk; 2d, 15*l.*, to Mr. John Smith, of Crownthorpe, Wymondham, Norfolk; 3d, 10*l.*, to Mr. William Thompson, of Thorpe-le-Soken, Colchester.

Class VIII. Fillies, two years old.—1st prize of 20*l.*, to Mr. N. G. Barthropp, of Cretingham Rookery, Woodbridge, Suffolk; 2d, 15*l.*, to Mr. Thomas Beale Browne, of Hampen, Andoversford, Gloucester; 3d, 5*l.*, to the Right Hon. Lord St. John, of Melchbourne, Kimbolton.

LEICESTER SHEEP.

*Judges.*—Jos. Allison, N. C. Stone, and Val. Barford.

Class I. Shearling Rams.—1st prize of 35*l.*, to Mr. William Sanday, of Holmepierrepont, Nottingham; 2d, 20*l.*, to the same; 3d, 10*l.*, to the same.

Class II. Rams of any other age.—1st prize of 30*l.*, to Mr. Thomas E. Pawlett, of Beeston, Biggleswade, Beds; 2d, 20*l.*, to the same; 3d, 10*l.*, to the same.

Class III. Shearling Ewes.—1st prize of 20*l.*, to Mr. William Sanday, of Holmepierrepont, Nottingham; 2d, 15*l.*, to Mr. William Abrsham, of Barnetby-le-Wold, near Brigg, Lincoln; 3d, 10*l.*, to Mr. William Sanday, of Holmepierrepont, Nottingham.

SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.

*Judges.*—Messrs. Edward Pope, Peter Purves, and Thomas Weall.

Class I. Shearling Rams.—1st prize, 35*l.*, to Mr. Jonas Webb, of Babraham, Cambridge; 2d, 20*l.*, to the same; 3d, 10*l.*, to the same.

Class II. Rams of any other age.—1st prize, 30*l.*, to Mr. William Rigden, of Hove, Brighton, Sussex; 2d, 20*l.*, to Mr. Jonas Webb, of Babraham; 3d, 10*l.*, to the same.

Class III. Shearling Ewes.—1st, 20*l.*, to Mr. Jonas Webb, of Babraham; 2d, 15*l.*, to the same; 3rd, 10*l.*, to Mr. William Rigden, of Hove, Brighton.

LONG-WOOLLED SHEEP (NOT LEICESTERS).

*Judges.*—Robert Beaman, John Clarke, and Edward Clarke.

Class I. Shearling Rams.—1st prize, 25*l.*, to Mr. William Garne, of Aldsworth, Northleach; 2d, 15*l.*, to Mr. William Lane, of Eastington, Northleach, Gloucester.

Class II. Rams of any other age.—1st prize, 20*l.*, to Mr. George Hewer, of Ley Gore, Northleach, Gloucester; 2d, 10*l.*, to Mr. William Garne, of Aldsworth, Northleach, Gloucester.

Class III. Shearling Ewes.—1st prize, 10*l.*, to Mr. William Lane, of Eastington, Northleach, Gloucester; 2d, 5*l.*, to the same.

MOUNTAIN SHEEP.

*Judges.*—James Walker, John Clayden, and William Cox.

Class I. Rams of any age.—1st prize, 20*l.*, to Mr. John Dodd, of Catcleugh Otterburn, Northumberland; 2d, 10*l.*, to Mr. John Robson, of East Kieldor, Bellingham.

Class II. Shearling Ewes.—The prize of 10*l.*, to Mr. John Nurcombe, of Hopcott Farm, Minehead, Somerset.

Class III. Ewes of any age.—The prize of 10*l.*, to Mr. John Robson, of East Kieldor, Bellingham.

PIGS.

*Judges.*—William Hesseltine, Benjamin Swaffield, and W. Tindall.

Class I. Boars of a large breed.—1st prize, 15*l.*, to Mr. R. Broadhurst Hill, of Bach Hall, Chester; 2d, 10*l.*, to Mr. George Edward Taylor, of Oatlands Mill, Leeds, Yorkshire; 3d, 5*l.*, to Mr. John B. Spearing, of Chilton, Hungerford, Berks.

Class II. Boars of a small breed.—1st prize, 15*l.*, to Mr. James Dixon, of Westbrook Place, Horton, Bradford, Yorkshire; 2d, 10*l.*, to Mr. William Ludlam, of Bradford, Yorkshire; 3d, 5*l.*, to Mr. John Radmore, of Thorverton, Cullompton, Devon.

Class III. Breeding Sows of a large breed.—1st prize, 15*l.*, to Mr. Joseph Tuley, of Keighly, Yorkshire; 2d, 5*l.*, to Mr. Charles Jackson, of 46, Goodram Gate, York.

Class IV. Breeding Sows of a small breed.—1st prize, 15*l.*, to Mr. Samuel Druce, jun., of Eynsham, Oxon; 2d, 5*l.*, to Mr George Edward Taylor, of Oatlands Mill, Leeds.

Class V. Breeding Sow Pigs of a large breed, above four and under eight months old.—1st prize, 10*l.*, to Mr. Joseph Tuley, of Keighly, Yorkshire; 2d, 5*l.*, to Mr. Matthew Newman, of Court Farm, Hayes, Uxbridge.

Class VI. Breeding Sow Pigs of a small breed, above four and under eight months old.—1st prize, 10*l.*, to Mr. E. G. Barnard, M.P., of Gosfield Hall, Halstead, Essex; 2d, 5*l.*, to the same.

Veterinary Inspector—Professor Simonds.

COMMENDATIONS.

Short-horns.—Class 1. Mr. J. S. Crosland's bull; Mr. Joseph Gillett's bull; Mr. James Pearson's bull; Mr. Wm. Raine's bull; Mr. Chas. Towneley's bull; Mr. R. C. Lownde's bull; Mr. Thomas Crisp's bull; Mr. Thomas S. Atkin's bull; Mr. J. Squire Gray's bull; and Mr. James Douglas's bull. Class 2. Mr. F. H. Hawkes's bull; Mr. Charles Towneley's bull; Mr. Benjamin Wilson's bull; Sir C. R. Tempest's bull; and Mr. Harvey Combe's bull. Class 4. Mr. H. L. Maw's heifer; Mr. Richard Stratton's heifer; Mr. Charles Towneley's heifer; and Mr. Wm. Fletcher's heifer. Class 5. The Hon. H. Noel Hill's heifer; Mr. Wm. Smith's three heifers; Mr. John Kirkham's heifer; Lord Feversham's heifer; Mr. E. Smithe Owen's heifer; Mr. B. Wilson's two heifers; Mr. John Booth's heifer; Mr. Richard Booth's heifer; Mr. James Douglas's heifer; Mr. M. S. Stewart's heifer; and Mr. Thos. Crisp's heifer.

Herefords.—Class 1. The Rev. J. R. Smythie's bull; and Mr. James Walker's bull. Class 2. Mr. Philip Turner's bull. Class 3. The Rev. J. R. Smythie's cow; Mr. J. Walker's cow; and Mr. John Monkhouse's cow. Class 4. The Rev. J. R. Smythie's heifer. Class 5 Lord Berwick's heifer; Mr. Edward Price's heifer; Mr. Edward Williams's heifer; and Mr. J. Addis's heifer.

Devons.—Class 1. The Earl of Leicester's bull; and Mr. Thomas Miller's bull. Class 2. Mr. J. A. Thomas's bull. Class 3. Mr. George Turner's two cows; and Mr. T. W. Fouracre's cow. Class 4. Mr. Samuel Farthing's two heifers; and Mr. J. K. Farthing's heifer. Class 5. Mr. Samuel Farthing's heifer; Mr. John Nurcombe's heifer; and Mr. William M. Gibbs's heifer.

Channel Islands.—Class 1. Mr. John Boswell's bull. Class 2. Mr. H. le Messurier's bull. Class 3. Mr. John Hume's cow; and Mr. P. Dauncey's cow. Class 4. Mr. P. Dauncey's heifer.

Sussex Breed.—Class 1. Mr. Jas. Gorringe's bull. Class 3. Mr. T. Child's cow.

Scotch Polled.—Class 5. Mr. W. Fullerton's heifer.

Horses.—Class 1. Mr. F. L. Popham's stallion. Class 7. Messrs. Stevens and Haynes' mare and foal.

Short-wools.—Class 1. Mr. Jonas Webb's three rams. Class 2. Mr. R. Boy's ram; Mr. William Sainsbury's ram; and Mr. J. R. Overman's ram. Class 3. Mr. J. V. Shelley's pen of ewes; and Mr. J. R. Overman's pen of ewes.

Long-wools.—Class 1. Mr. C. Large's ram; Mr. G. Hewer's ram; and Mr. Wm. Lane's ram. Class 2. Mr. Charles Large's ram; Mr. Wm. Garne's ram; and Mr. George Hewer's ram.

Pigs.—Class 1. Mr. E. Bowly's boar. Class 2. Mr. J. H. Down's boar; the Earl of Radnor's boar; Mr. John Radmore's boar; and Mr. Henry Watson's boar. Class 3. Mr. William Abbott's sow; Mr. James Robinson's sow; Mr. Joseph Tuley's sow; Mr. E. Bowley's sow; and Mr. M. Cartwright's sow. Class 4. Mr. John Radmore's sow; Mr. Timothy Town's sow; and the Earl of Radnor's sow. Class 6. Mr. E. G. Barnard's pen of pigs.

B. T. Brandreth Gibbs, Hon. Director of the Show.

Among the cattle exhibited, both extremes of quality were to be seen, the *best*, probably, in the case of the two years and four months old short-horn bull, exhibited by Mr. John Kirkham, of Hognaby, near Spilsby, Lincolnshire, a remarkably well made animal; and the worst, *certainly*, in the case of an older but much smaller and very poor beast from Shetland. But though both extremes may have been present, certainly the steps on the scale between them were crowded only at its upper end.

The short-horn bull which received the first prize in Class I. was remarkable for the softness and fineness of its skin—we never remember to have handled one so excellent in this respect—but it was not remarkable for its size, nor, so far as we could judge, for the excellence of its form: it was faultily small behind the shoulders, the difference of its girth there and farther back being very considerable. The bull in Class II., to which we have already alluded, was much the superior of the two in this respect.

Lord Hastings' bull, No. 6, which received the second prize in Class I., was a remarkably large animal, 9 feet 2 inches in girth, 5 feet 9 inches long from the shoulder to the insertion of the tail, and 5 feet 6 inches high; one of the largest bulls shown.

The judges were somewhat liberal in their commendations of the short-horn stock, which probably deserved all that was said in their favour, though such abundant praise is hardly consistent with the duty of selection, which is connected with the office of judge.

Among the Herefords shown, some very fine animals appeared, the prize bull in Class I., exhibited by Lord Berwick, was a large well made animal of very even quality, standing 5 feet high, 9 feet in girth behind the shoulders, where it is remarkably deep, and 5 ft. 9 in. long. Their dimensions, considering the age of the animal, exceed those of the large bull in Class I., of the short-horns, but generally the size of animals in the Hereford class was less than that of the short-horns of equal age. The North Devon, again, of which there was a large herd, are in general remarkable more for elegance of form than for size. They certainly are a very fine and useful breed of cattle, and their breeders were not backward in the show; for, considering the extent of country over which the breed prevails, a larger show of Devons than of any other breed was exhibited. Among the successful exhibitors, the well-known names of Turner and Quartley occur. A large and respectable show of Channel Island cattle was present.

THE FOLLOWING IS AN ANALYSIS OF THE EXHIBITION OF CATTLE.

| | Bulls. | Cows. | 3-Yr.-Old Heifers. | Yearling Heifers. |
|---|---|---|---|---|
| Short-horns | 89 | 25 | 22 | 40 |
| Herefords | 19 | 6 | 7 | 9 |
| Devons | 21 | 15 | 17 | 21 |
| Long-horns | 2 | 2 | 1 | 2 |
| Channel Islands | 12 | 8 | 6 | 5 |
| Sussex | 9 | 6 | 3 | 4 |
| Scotch horned | 3 | 4 | 2 | 0 |
| ,, polled | 2 | 3 | 2 | 3 |
| Welsh, Irish, &c. | 6 | 4 | 3 | 2 |

In the afternoon of Wednesday the great dinner of the Society took place, under the presidency of the Duke of Richmond, and in the presence of Prince Albert, who was most enthusiastically received. Among the speeches of the evening, we find room for that of His Royal Highness, and for extracts from one or two others.

His Royal Highness Prince Albert said—"My Lord Duke—My Lords and Gentlemen,—I am very sensible of the honour which you have done me in proposing my health, and I can assure you, gentlemen, that the kind way in which you have responded to the toast will never be forgotten by me. (Cheers.) Some years have already elapsed since I last dined with you in this migratory pavilion; and I am glad that you should have pitched it this day under the walls of Windsor Castle, and that I should myself have an opportunity of bidding you a hearty welcome in the Home-park. (Cheers.) Your encampment singularly contrasts with that which the barons of England, the feudal lords of the land, with their retainers, erected round Old Windsor Castle, on a similar mead, though not exactly in the same locality. (Cheers.) They came then clad in steel, with lance and war-horse. You appear in a more peaceful attire, and the animals you bring with you to the meeting are the tokens of your successful cultivation of the arts of peace. (Loud cheers.) King John came trembling amongst his subjects, unwillingly compelled to sign that great charter which has ever since been your birthright. (Great cheering.) Your Sovereign came confiding among her loyal and loving people; she came to admire the results of their industry, and to encourage them to persevere in their exertions; and the gratification which the Queen has felt at the sight of your splendid collection must, I am sure, be participated in by all who examine it. (Cheers.) I am doubly pleased at this success, not only because it is witnessed by many visitors from foreign lands now within our shores, whom every Englishman must wish to inspire with respect for the state of British agriculture (cheers), but also because I feel, to a certain degree, personally responsible for having deprived you of one, generally most interesting, feature of your show—I mean the field fruits, and the agricultural machines and implements. Though separated from your collection, they are seen to

great advantage in another Royal park (cheers); and you will have been glad to hear that whatever the difficulty may be in deciding upon the superiority of the works of industry and art sent to the Crystal Palace by the different nations of the earth, the British agricultural implements are acknowledged by common consent to stand there almost without a rival. (Cheers.) Let me now use the privilege which your President has allowed me to enjoy, in proposing to you as a toast 'Prosperity to the Royal Agricultural Society.' (Loud cheers.) To its exhibitions, the means of comparison which they have afforded, and the emulation which they have stimulated, we owe to a great extent the progress which British agriculture has made of late. (Cheers.) To this society belongs the honour to have been one of the first to appreciate the value of such exhibitions, and to have, from the beginning, liberally and fearlessly admitted all competitors without restriction. I drink, 'Prosperity to the Royal Agricultural Society.'" His Royal Highness resumed his seat amidst loud applause.

Lord PORTMAN, who rose to propose "Agriculture, Manufacture, and Commerce," did so in a very able, argumentative, and amusing speech, showing, with much clearness and ability, the connection between the different subjects of the toast he proposed. He was intrusted with a toast that was in effect "the earth and all that therein is." The glass they drank from, the knife they used, the plate which held their food, were all made by the manufacturer from material supplied by the merchant, who had brought for their use the products of different portions of the globe. To those who had come there by rail he needed not to speak of the utility of iron, nor to agriculturists was it necessary to speak of the uses of glass; there was, however, in another Royal park a combination of iron and glass, which was new not only in its uses, but which had taught them all to live in unison, in harmony, and peace. Our daily life testified to the fact that commerce was the link which bound the capitalist and artist to the raw material; that manufacture was the work of civilised and intellectual man; that agriculture was the perpetuity of the work assigned to man by the Almighty will. All in that unity they admired—all in that unity they respected; but he felt, as he believed they all did, as the child loved his mother best of all, so they all loved the earth. (Great cheering.) They loved it as their first love; they loved it as the source whence they sprang, and they regarded it, after the cares and sorrows of the world were over, as their last homes. (Cheers.) He gave them "Agriculture, Commerce, and Manufactures, and long might they flourish together." (Loud cheers.)

Mr. EVELYN DENISON gave "the Sister Societies of Agriculture." Standing as he did, surrounded by visitors from many of our district societies, and by many distinguished foreigners, he might urge the toast on the ground of courtesy, and becoming hospitality; but he would press it on wider considerations, in the certain conviction that we might do a great deal of good to each other in meetings such as that. Could it be doubted that in a business so purely practical, experiments accurately made, and results carefully noted, must be of general advantage? (Hear, hear.) If he wished for an instance of the benefit of a wide range of observation, and of the stimulating influence of this society, he would name the case of the guano trade. Ten years ago, the article of guano was unknown for practical purposes in this country. The work of a German professor, noticing the great deposits on the coast of Peru, was translated into an early number of their "Journal of Agriculture." Lord Stanley—the Earl of Derby (great cheering) spoke of it at the Liverpool meeting. Among the many things which the voice of Lord Stanley had effected, it gave its first impetus to the guano trade—a trade which now employed 100,000 tons of British shipping, and which produced a revenue of above half a million to the Governor of Peru, from which (be it said) the British bondholder was paid his dividend, for which above 1,000,000*l.* sterling was paid every year in this country; with what results—with what increased verdure to our fields and fertility to our crops, they knew better than he could tell them. Again, the important discovery of dissolving bones by sulphuric acid was made by a German chemist; and following up this discovery there was present among them to-day from across the Atlantic a gentleman, then in his eye, who had announced the discovery of a mineral stratum in the state of New York, rich in the same compound as that of bones, and which, he was informed, could be brought to our shores at such a price as to place it within the reach of every farmer.

## Reviews.

*The Herd Book of Hereford Cattle.* By T. C. Eyton, Esq. Vol. II., Part 2. Messrs. Longman and Co.

WHILE a considerable portion of our space is this week devoted to the discussion of topics connected with the different British breeds of cattle, it may not be out of place to call the attention of the reader to Mr. Eyton's efforts at preserving and making known the pedigrees of Hereford stock. The present number of the series, which will eventually form a good Herd-book of that breed, gives the pedigrees of 80 bulls: and it contains an appendix, from which we extract four passages by Mr. Welles, descriptive from memory of the stock of one of the most eminent of Hereford breeders, Mr. John Price:—

"When Mr. John Price commenced cattle-breeding, the character of bull most in esteem in the chief midland districts, was one having a throat with as little loose flesh as possible depending from it. This character was also introduced by some breeders amongst Herefords. The celebrated Purslow bull, the property of the Haywoods, of Clifton-on-Teeme, had this character. Mr. Walker, of Burton, had also adopted it, and from him Mr. Price had a bull or two. Mr. B. Tomkins and other Hereford breeders had not been affected by this fashion, and Mr. Price when he became acquainted with Mr. Tomkins's stock, relinquished it, preferring, and upon sounder principles, that character which better indicated the male animal, a considerable degree of throatiness not being objected to. This character belonged to Wellington, the first bull, and I think the only one, bought by Mr. Price of Mr. B. Tomkins. This bull was very dark in colour, with face and bosom both mottled and speckled; his dam, too, bought afterwards by Mr. Price (but did not breed with him), was also of the same colour. The cows bought by Mr. J. Price of Mr. B. Tomkins were the following:—First, a large cow with speckled face, giving a blue appearance to it, with what may be termed an arched forehead or Roman nose, tips of horn blackish, body of lightish brown dappled, under part of body and legs inclining to blackness, white along her back, and well formed, but on rather high legs. Secondly, a cow commonly called the mark-nosed cow, a red cow with mottle face, square made, and on short legs, rich quality of flesh, with a soft and thick pile of hair moderately curled. This cow was unfortunate to Mr. Price as a breeder, the only produce I recollect out of her being the mark-faced bull, *alias* Pion, at his sale. Thirdly, a large yellow cow with white face, rather long-headed, and not carrying much flesh; she was the dam of Voltaire, by one of Mr. Tomkins's bulls. Pigeon, by far the most remarkable cow he had of Mr. Tomkins—and her own character as well as that of her descendants will well warrant me in terming her the best—was a large cow, rather on high legs, somewhat shallow in the bosom, with very fine bone, neck rather light, head good, but horn short; her colour a speckled grey, the red parts being dark, growing still darker about her legs; hair rather short but soft, quality of flesh excellent, back and hind quarters great, excepting thighs, which were rather light, but with good twist; her constitution hardy, and she was a regular and successful breeder. About the same time also Mr. Price had another cow from Mr. B. Tomkins, which was called the rough cow, from her coat being much curled; she was a middle-sized cow, nothing remarkable in form, her colour dark red with white back, and she had the reputation of being of a family that were good ox breeders. Mr. Price had a bull from this cow, called the rough bull, *alias* Original; but he did not long retain any of his stock. There were sisters to him by other Tomkins's bulls, the most noted of which was No. 14. Two more cows Mr. Price subsequently obtained from Mr. B. Tomkins,—a half sister to No. 25, and a daughter of Mr. Tomkins's famous slit-teat cow, No. 21; the former of these was a small cow but of very true form, dark colour with white along her back; she was the dam of Lord Talbot's Woodcock, sire of Mr. Price's Woodcock Pigeon. I am not aware that Mr. Price had any more cows from Mr. B. Tomkins; but he afterwards obtained two cows of his blood,—one called Damsel, from Mr. T. Tomkins's, and another from Mr. Tomkins, of Wombridge; the former the dam of Woodman, and the latter the dam of Diana. He also bought a few Tomkins bred of Mr. James Price, among those was the dam of Peg Murphy.

"Mr. Price began early to consider, and never lost sight of, the improvement of form, and his crosses were always made, immediately or remotely, with that object in view. His pedigrees will also show that he did not scruple occasionally to breed from near affinities; and though a practice not to be recommended for general adoption, may sometimes be beneficially resorted to, to render more permanent a particular quality; but it is seldom attended with success, unless the animals brought together are exempt from any striking deficiencies, which would be more aggravated by the same faults existing in both parents.

"I can make the assertion very confidently that Mr. Price never introduced into his herd any other blood with the view to a cross after he possessed the abovementioned individuals, which constitute the foundation of his subsequent stock.

"At his great sale in 1806, I bought in for Mr. Price the following lots:—

Lot 25.—Pigeon, (bought of Mr. B. Tomkins), No. 6 of his pedigree catalogue.

Lot 66.—No. 25. (No other name given to her).

Lot 98.—No. 61. A 3-year-old heifer, by Wellington, dam No. 21, bought by Mr. Price of Mr. Tomkins when a yearling.

Lot 60.—No. 19. A cow by Original, dam, No. 9, sister to Diamond. This cow had a cross of Gloucester, but Mr. Price did not continue to breed from her.

Bull-calf, Leopard, dam, No. 64, grand-dam, No. 21, out of Mr. B. Tomkins's Lovely.

"The above were bought in at the sale by myself at the following prices:

| | £ | s. | d. |
|---|---|---|---|
| Pigeon ... ... ... ... ... ... ... | 216 | 5 | 0 |
| No. 25 ... ... ... ... ... ... ... | 32 | 11 | 0 |
| No. 19 ... ... ... ... ... ... ... | 31 | 10 | 0 |
| No. 61 ... ... ... ... ... ... ... | 173 | 5 | 0 |
| Bull-Calf ... ... ... ... ... ... | 126 | 0 | 0 |

"Mr. Price, in the breeding of Toby Pigeon, seems to have left out entirely the blood of several of the cows obtained from Mr. B. Tomkins. One I would more particularly allude to is the mark-nosed cow, from whose decendant (Pion) came the dams of Waxy and Sovereign; but he afterwards introduced into his herd some of that blood by two cows descended purely from Tomkins's, which were bred by Mr. James Price, both got by Sovereign, and from one of these he bred several bulls, the most remarkable being Dan O'Connell and Woodstock, both out of the same cow, a red one with mottle face.

"Mr. Price, it may be worthy of remark, obtained celebrity for his stock without having recourse to the pampering system: indeed his bulls were generally in a lean state, and, notwithstanding that, in good request. The example given in this work of his bull Young Trueboy was taken when in lean condition, but two years afterwards (the present year 1849), and after a few months' indulgence, he took the premium for the best bull at the Worcester Agricultural Meeting (Mr. Blocksidge sole judge), though at the time 11 years old."

METEOROLOGICAL REPORT.—JUNE—JULY.

(*Continued from p.* 429.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| June 30 | 1.40 p.m. | 29.99 | ... | ENE. Still, gentle. |
| | 10.30 p.m. | ... | 29.97 | Evening, calm and very close. |
| July 1 | 4.30 a.m | 29.92 | ... | ENE., gentle; P.M. SE., do. |
| | 6 p.m. | ... | 29.85 | Distant thunder all day. |
| 2 | 6.30 a.m. | 29.82 | ... | A.M. WNW. Moderate. |
| * | 11 a.m | ... | 29.80 | Noon, P.M., N. Stiff breeze. |
| | 6.30 p.m | ... | 29.80 | Very heavy thunder all day; storm at 5 P.M. travelling from east to west. |
| 3 | 7.15 a.m. | 29.94 | ... | Strong northerly breeze all |
| | 6.50 p.m. | 29.94 | ... | day, barometer steady. Overcast. |
| 4 | 6 a.m | 29.95 | ... | Gentle N. breeze. Dull. |
| | 11 a.m. | 29.95 | ... | |
| | 3.12 p.m. | 29.92 | ... | P.M. gentle breeze northerly. Cloudy. |
| † | 6.20 p.m | ... | 29.91 | Evening, calm and bright. |
| | Night | 29.94 | ... | |
| 5 | 8.10 a.m. | 29.94 | ... | NNE. Gentle; bright and sunny. |
| | 12 40 p.m. | 29.94 | ... | Wind SSW. all P.M., and |
| | 10.30 p.m | 29.94 | ... | gentle. Bright clear day; barometer steady. |
| Sun. 6 | 7.40 a.m. | ... | 29.99 | Barometer steady; gentle |
| ‡ | 7.10 p.m. | ... | 29.99 | breeze, with heavy white |
| | 10.30 p.m. | 30.01 | ... | masses passing constantly. Wind veering as follows: 7.40 A.M. NNE., 10 50 N., 1.20 P.M. NW., 4.50 WNW., 7.10 W. |
| 7 | 6.30 a.m. | 30.01 | ... | NW. Gentle; bright and |
| | 11 a.m | 30.01 | ... | sunny. |
| | 2.10 p.m. | 29.95 | ... | 2.10 P.M. Brisk WSW. breeze sprung up. |
| | 10.15 p.m. | ... | 29.88 | 4 till night, W., almost calm. |
| § 8 | 6.10 a.m. | 29.75 | ... | A.M. WNW. Brisk; large |
| | 12.30 p.m. | ... | 29.73 | white masses and bright blue sky. |
| | 10.50 p.m. | 29 77 | ... | P.M. NW. |
| 9 | 7 a.m. | 29.77 | ... | NW. Gentle; large white masses and bright blue sky. |
| | 12.40 p.m | 29.72 | ... | WSW. to SSW. Moderate. |
| | 3 p.m. | ... | 29.68 | Do. Clouds and sunshine. |
| ¶ 10 | 7.10 a.m. | ... | 29.64 | A.M. NNW. Stiff breeze; 6 P.M. heavy shower for ¼ of an hour. |
| | 10.40 p.m. | 29.90 | ... | P.M. NW. |
| 11 | 7 a.m. | ... | 30.01 | Gentle NW. breeze. Bright |
| | 1.30 p.m. | 30.09 | ... | sunny day. |
| | 6 30 p.m. | 30.07 | ... | P.M. wind sprung up briskly at S. Sky overcast; barometer falling. |
| ‡‡ | 10 p.m. | ... | 30.06 | Evening, WSW. Gentle. |
| 12 | 7.30 a.m. | 30.02 | ... | Noon, WSW. Brisk; sunny day. |
| | 6.30 p.m. | ... | 29.92 | Evening, W. Calm almost. |
| Sun. 13 | 7.35 a.m. | 29.83 | ... | Brisk breeze S. |
| | 10.40 p.m. | ... | 29.55 | Evening, SE., with some showers. Night, blowing very hard. |
| 14 | 7.10 a.m. | ... | 29.42 | A.M. WSW., P.M. W. Stiff |
| | 11.5 p.m. | 29.60 | ... | breeze, sunny; barometer rising steadily. |
| 15 | 5 a.m. | ... | 29.65 | Brisk breeze westerly. |
| | 10.45 a.m. | 29.73 | ... | Dark clouds in eastern horizon. |

* This storm travelled over France eastward; and as the centre of it was to the south of us, the air was heated before it reached us. Being in the left hand semicircle on the 2d, we had the thunder clouds travelling the reverse way of the storm.

† This must have been a current at a considerable distance to the westward, which not only cooled the air, but drove away the damp which had overclouded the sky during the preceding days.

‡ This storm came from the SW., and travelled over France eastward, until it overtook storm *, and then curved northward, the wind *backing* with us, according to the established law, we being in its left hand hemisphere.

§ A storm coming from the westward, passing over England to the eastward.

¶ Do. do.

‡‡ A storm coming from the Bermudas, and crossing England to the eastward.

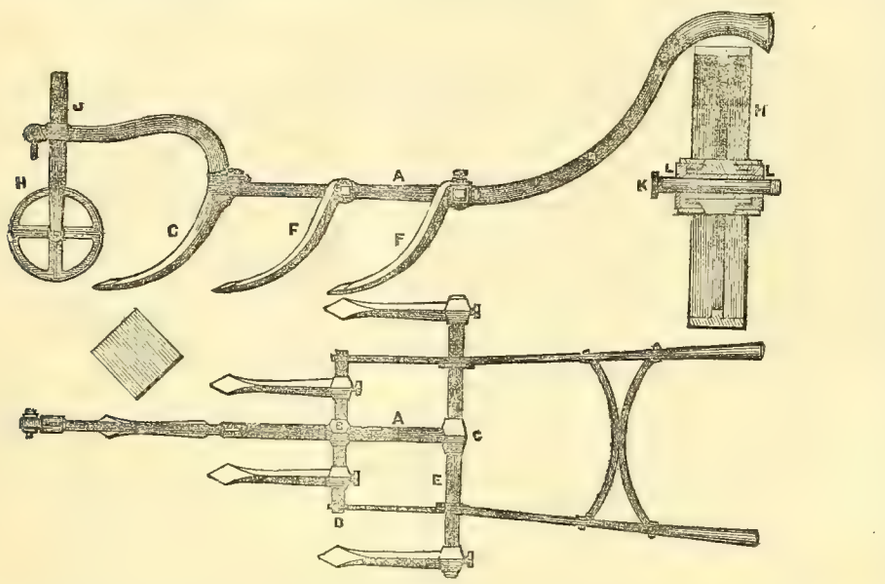
Dorchester, July 17th. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Self-cleansing Diamond-toothed Wheel Grubber: Registered for Mr. John Tennant, Shields, Monkton, Ayrshire.*—This remarkably effective implement comprehends a superior grubbing action, for disintegrating and cleansing land—simplicity and strength of parts—the retention of the lubricating oil upon the spindle of the adjusting pilot wheel—and the prevention of the entry of sand into the wheel bearings. The four figures of our engravings exhibit, in fig. 1, a longitudinal elevation of the grubber; fig. 2, a corresponding plan; fig. 3, a transverse section of one of the tines, or teeth, on a larger scale; and fig. 4, a longitudinal section of the bearing of the pilot wheel spindle also on a larger scale. A, is the main longitudinal beam, morticed at B C, to receive the two tine bars, or transverse trams, D E. Four of these teeth, F, are carried upon these two bars, the heads of the teeth being morticed for adjustment upon the bars, their positions being fixed by

set screws. A fifth tooth, G, is attached by a mortice and pin to the main beam, A, in front of the other four. The front portion of the beam is curved upwards, in order to give greater height for the adjustment of the vertical position of the wheel, H, the spindle of which is carried in the lower end of the forked bar, J. morticed into the extreme front end of the beam. The spindle of the wheel is tubular, the bolt, K, being passed through it with a tight fit, to hold it firm without revolving. At each end of the tubular spindle is a cylindrical cup, or chamber, L L; one being in one piece with the spindle, whilst the other is loose, to allow of adjustment. The boss of the wheel is turned down on each side, and the edges of the two chambers fit over these turned portions, spaces being left to retain a supply of oil for the constant




lubrication of the spindle, as it revolves in the boss of the wheel. For the further security of the spindle, and the prevention of the entrance of sand, two ferrules are passed tight over the chambers, and fitted on two slight shoulders, turned upon the wheel boss. This mode of construction insures great strength, whilst the frictional surfaces are kept well secured from sand. The angular action of the diamond, or square section of the teeth, as in the enlarged section, fig. 3, is most effective in disintegrating the clods of earth, and this form, at the same time, allows the teeth to pass easily through the ground. [The following letter from Mr. Tennant also appears in the journal from which the above is taken.] "The universal approval which this implement has met with amongst the Lothian and Berwickshire farmers, has stimulated me to the exertion of still further improving upon it in point of execution, or getting through its work. After long deliberation, I have adopted the square section of tooth as best fitted for the purpose; and the test of this form, in conjunction with my foreman and an experienced ploughman, has shown this modification to be a vast improvement. It is perhaps not too much to say, that it is now twice as efficient as before. I have, in addition, improved the action of the pilot wheel, by excluding the sand from its bearing, and forming it so as to retain the oil upon the rubbing surfaces. Along with this grubber, I have now the satisfaction of submitting to the public the system of agriculture which I have pursued on my farm of 400 acres for the last 10 years. My plan is this:—So soon as the crop is removed from the land—if mown or low cut, so much the better—I commence grubbing on the end ridge, going round and round the field till there is one turn given on the end of the ridge. If two grubbers are used, a pair of harrows may follow. I next turn and go over the same ground backwards, followed by harrowing. The end ridges are thus done before being consolidated or trampled by the horses. I then begin on the ridges longitudinally, going about half the depth of the furrow, following with a stroke of the harrows. This operation being completed, I cross the ridges with the grubber a little deeper, and harrow. If the land be foul, a third turn may be required, with harrowing. A pair of horses can easily grub three Scotch acres per day in winter, and four in spring, unless the land be very foul, and the winter open. By spring, the weeds will nearly disappear. Should it be found necessary to take off any of them, they are easily freed from the earth, and may be collected by hand-rake at half the cost of hand-picking. The months of April and May being arrived, the land should be substantially ploughed across, harrowed, rolled, and have one more turn with the grubber to complete the pulverisation. By this time, the practical farmer will be much satisfied with the result of his labour. His land will have received far more benefit from the atmosphere; and I do not hesitate to say, that when compared with the old way of working, he will have saved 1*l.* per acre by following the method above described. The 1*l.* per acre of a saving on my land is 10 per cent. on the rent, which, I presume, will not be thought unacceptable in the present depressing times. In support of what I have advanced, it is necessary to state objections to the old or common method. First, then, instead of taking the weeds when above ground, they are ploughed in, where they gain strength till spring, when they have become riveted to the soil, and are very expensive to get out. The land having lain in whole furrows unbroken down, has received no atmospheric benefit. It has only been wasted by the frost and winds. No doubt, it may be said, it is preparing to pulverise; but pulverisation is not the enriching process of itself, it is merely the means, and without it the land can derive no benefit from the atmosphere. This process I perform in autumn, and the land is still further worked up by the frost, admitting the air to a free and minute circulation to fertilise it. All land should be kept in this state when there is no crop on it. By the old plan, it is delayed until spring. *John Tennant, Shields, Monkton, Ayrshire, June*, 1851." (*From the Practical Mechanic's Journal, July* 1, 1851.)

## Notices to Correspondents.

GORSE: *An Old Subscriber.* It is used during winter. Cut it to the ground, and carry it home; afterwards strip the branches of all which, being crushed, is edible, and burn the remainder. The smaller twigs and foliage are crushed in a mill proper for the purpose, and given to cows and horses at the rate of 20 lbs. to 40 lbs. each daily.

HOPS: *Ireland.* The fullest existing statement on the subject of Hop culture will appear in an early number of Mackie's "Cyclopedia of Agriculture," from the pen of Mr. Paine, of Farnham. To that we must for the present refer you.

STRONG CLAY LAND: *J W Sherrand.* It can be drained for less than 5*l.* per acre, except when stony; and we would place the drains 24 feet apart, and 4 feet deep. 7*l.* or 8*l.* per acre will be amply repaid by increased fertility, if judiciously invested on land requiring draining. It will not do to carry manure from London to Reigate, paying 10*s.* a ton for it in the former place; you had better obtain crops of Cabbages, and Vetches, and Mangold Wurzel, by guano, Rape-cake, &c., and *so* ensure a store of dung against another year.

# Markets.

COVENT GARDEN, JULY 19.

Peaches and Nectarines continue to be sent in large quantities. English Pines and Hothouse Grapes are plentiful, and the former cheaper. Strawberries are abundant. Cherries are furnished in large quantities, and they are excellent in quality. West Indian Pines fetch from 2s. to 5s. each. Oranges and Lemons are scarce. Nuts remain nearly the same as quoted last week. Asparagus, Carrots, French Beans from the open ground, and Green Peas are received in quantity. New Potatoes may be obtained at 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle dearer. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Pinks, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4s to 7s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 10s to 20s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 10s to 20s | Oranges, per doz., 9d to 2s |
| Cherries, per lb., 6d to 2s | — per 100, 6s to 14s |
| Melons, each, 4s to 8s | — Seville, p. 100, 7s to 14s |
| Strawberries, p. pottle, 6d to 1s | — — p. doz., 1s to 2s 6d |
| Gooseberries, per half sieve, 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, per hf. sieve, 3s to 5s | — Brazil, p, bsh., 12s to 14s |
| | Cobs, per 100 lbs., 50s to 55s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6d to 1s | Shallots, per bunch, 3d to 4d |
| Cauliflowers, p. doz., 1s to 2s | Garlic, per lb., 4d to 8d |
| French Beans, p. bf. sieve, 3s to 5s | Artichokes, per doz., 1s to 2s |
| Beans, per sieve, 2s to 2s 6d | Lettuce, Cab., p. score, 4d to 9d |
| Peas, per sieve, 2s to 4s | — Cos, per score, 3d to 1s |
| Asparagus, per 100, 1s to 4s | Small Salads, p. punn., 2d to 3d |
| Rhubarb, p. bundl., 2d to 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Potatoes, per ton, 90s to 200 | Red Beet, per doz., 1s to 4s |
| — per cwt., 4s to 8s | Mushrooms, p. pot., 1s to 2s |
| — per bush., 1s 6d to 3s | Sorrel, per hf. sieve, 6d to 9d |
| Turnips, p. bunch, 3d to 6d | Fennel, per bunch, 2d to 3d |
| Cucumbers, each, 3d to 1s | Savory, per bunch, 2d to 3d |
| Radishes, per doz., 6d to 9d | Thyme, per bunch, 2d to 3d |
| — Turnip, p. doz., 8d to 1s | Parsley, per doz. bun., 2s to 3s |
| Celery, p. bundle, 6d to 2s | — Roots, p. bundl. 9d to 1s |
| Carrots, per bunch, 4d to 6d | Mint, green, per bunch, 4d to 6d |
| Spinach, per sieve, 1s 6d to 2s | Basil, green, p. bunch, 6d to 9d |
| Vegetable Marrows, per doz., 1s to 2s | Marjoram, green, do., 6d to 9d |
| Onions, p. bunch, 2d to 6d | Watercress, p. 12 bunch., 6d to 9d |
| Leeks, per bunch, 3d to 4d | Corn Salad, p. hf. sieve, 1s to 1s 6d |

HOPS.—FRIDAY, July 18.

Messrs. Pattenden and Smith report that the accounts received this morning are decidedly worse on the whole, and the duty has fallen to 90,000*l.* in consequence, with but few in favour.

HAY.—Per Load of 36 Trusses.

CUMBERLAND MARKET, July 17.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 78s | to 86s | Interior ... ... ... | 75s | to 88s |
| Inferior ditto... ... | 60 | 70 | New Clover ... ... | 75 | 88 |
| New Hay ... ... | 60 | 70 | Straw ... ... ... | 30 | 38 |
| Old Clover ... ... | 95 | 100 | | | |

JOSHUA BAKER.

SMITHFIELD, July 17.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s | to 84s | Clover ... ... ... | 75s | to 95s |
| Inferior ditto... ... | 55 | 70 | New do. ... ... ... | 60 | 80 |
| Rowen ... ... ... | 60 | 65 | Straw ... ... ... | 28 | 32 |
| New Hay ... ... | 55 | 70 | | | |

J. COOPER.

A short supply.

COAL MARKET.—FRIDAY, July 18.

Eden Main, 13s. 6d.; Wallsend Riddell, 13s. 3d.; Wallsend Haswell, 14s. 6d.; Wallsend Hetton, 14s. 6d.; Wallsend Lambton, 14s. 3d.; Wallsend Stewarts, 14s. 6d.; Wallsend Adelaide Tees, 13s. 6d.; Wallsend Tees, 14s. 6d.—Ships at market, 100.

SMITHFIELD, MONDAY, July 14.

We had to-day an extraordinary number of Beasts for the time of year, and although there was a considerable consumption, many remained unsold, notwithstanding there was a disposition to take lower terms than we quote. The number of Sheep and Lambs was also unusually large. Prices were in consequence lower, nor could a clearance be effected. Calves were plentiful and lower. From Holland and Germany there are 632 Beasts, 3380 Sheep, and 240 Calves; from France, 60 Beasts; from Scotland, 200; from Norfolk and Suffolk, 1600; and 700 from the northern and midland counties.

| Per st. of 8 lbs.— | s d | s d | Per st. of 8 lbs.— | s d | s d |
|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 2 | to 3 4 | Best Long-wools . | 3 2 | to 3 6 |
| Best Short-horns | 3 0 | — 3 2 | Ditto Shorn ... | ... | ... |
| 2d quality Beasts | 2 4 | — 2 10 | Ewes & 2d quality | 2 8 | — 3 0 |
| Best Downs and Half-breds ... | 3 6 | — 3 10 | Ditto Shorn ... | ... | ... |
| Ditto Shorn ... | ... | | Lambs ... ... | 4 0 | — 5 0 |
| | | | Calves ... ... | 2 6 | — 3 8 |
| | | | Pigs ... ... | 2 8 | — 3 4 |

FRIDAY, July 18.

The number of Beasts is again large and the demand small; consequently prices are not better than on Monday—indeed, they cannot be cleared out at the prices of that day. There is a good supply of Sheep and Lambs; trade is exceedingly dull, and many inferior ones remain unsold. The number of Calves is very great, and our top quotations are only realised in a few instances. From Germany and Holland we have 423 Beasts, 1260 Sheep, 433 Calves, and 38 Pigs; from Spain, 690 Sheep; from Scotland, 120 Beasts; from Norfolk, 300; from northern and midland counties, 100; and 113 milch cows from the home counties.

| | | | | | |
|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 2 | to 3 4 | Best Long-wools . | 3 2 | — 3 6 |
| Best Short-horns | 3 0 | — 3 2 | Ditto Shorn ... | ... | ... |
| 2d quality Beasts | 2 4 | — 2 8 | Ewes & 2d quality | 2 8 | — 3 0 |
| Best Downs and Half-breds ... | 3 6 | — 3 10 | Ditto Shorn ... | ... | ... |
| Ditto Shorn ... | ... | | Lambs ... ... | 4 0 | — 4 10 |
| | | | Calves ... ... | 2 4 | — 3 6 |
| | | | Pigs ... ... | 2 8 | — 3 4 |

MARK LANE.

MONDAY, July 14.—The supply of Wheat from Essex this morning was rather better than last week, and that from Kent good; the former was disposed of on the terms of this day se'nnight; some of the latter was unsold at a late hour. The foreign arrivals during the last four weeks exceed those of any similar period this year; buyers in consequence refrain from purchasing, and holders being disinclined to make any material concession, very little business resulted; we therefore leave our quotations unaltered.—Barley maintains its former value.—Beans and Peas are very unsaleable, and must be written 1s. per qr. cheaper.—The Oat trade is heavy, at a decline of 1s. to 2s. per qr.—Holders of Flour are firm, but sales limited.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40—45 | Red ..... | 36—40 |
| — — fine selected runs...ditto | 44—47 | Red ..... | —42 |
| — — Talavera ..... | — | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 35—50 | | |
| Barley, grind. & distil., 22s to 26s...Chev. | 27—32 | Malting . | 24—27 |
| — Foreign... grinding and distilling | 22—26 | Malting . | — |
| Oats, Essex and Suffolk ..... ..... | 18—21 | | |
| — Scotch and Lincolnshire...Potato | 22—25 | Feed ..... | 20—22 |
| — Irish .....Potato | 19—23 | Feed ..... | 19—21 |
| — Foreign .....Poland and Brew | 20—22 | Feed ..... | 18—21 |
| Rye ..... | 24—26 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..26s to 30s.....Tick | 27—31 | Harrow . | 27—31 |
| — Pigeon.....28 — 34... Winds | — | Longpod | — |
| — Foreign .....Small | 21—29 | Egyptian | 23—24 |
| Peas, white, Essex and Kent.....Boilers | 23—26 | Suffolk... | 26—28 |
| — Maple.....26s to 28s .....Grey | 23—24 | Foreign . | 24—31 |
| Maize .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—39 | | |
| — Suffolk .....ditto | 27—34 | Norfolk . | 27—34 |
| — Foreign .....per barrel | 20—23 | Per sack | 28—34 |

FRIDAY, July 18.—The arrivals of English corn this week have been small, and of foreign moderate. To-day's market was better attended, and foreign Wheat met an improved inquiry, but without leading to any great increase of business; in prices we observe no alteration.—The value of Barley, Beans, and Peas remains as on Monday, and they are a slow sale.—Oats are in better demand, and Russian have been disposed of at 6d. to 1s. per qr. advance upon the lowest prices lately taken.—Flour is only a retail sale at late rates.—In floating cargoes of grain from the Mediterranean there is hardly anything doing; late prices are supported.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| June 7..... | 39s 6d | 24s 4d | 20s 8d | 23s 5d | 30s 11d | 26s 10d |
| — 14..... | 39 11 | 24 6 | 20 1 | 26 1 | 30 10 | 28 6 |
| — 21..... | 40 7 | 24 4 | 21 4 | 28 0 | 30 5 | 27 6 |
| — 28..... | 42 4 | 25 2 | 22 3 | 28 11 | 32 1 | 29 2 |
| July 5..... | 43 5 | 25 2 | 22 5 | 27 6 | 31 8 | 28 10 |
| — 12..... | 43 6 | 25 8 | 22 0 | 32 5 | 32 6 | 28 8 |
| Aggreg. Aver. | 41 6 | 24 10 | 21 5 | 27 9 | 31 5 | 28 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | JUNE 7. | JUNE 14. | JUNE 21. | JUNE 28. | JULY 5. | JULY 12. |
|---|---|---|---|---|---|---|
| 43s 6d | ... | ... | ... | ... | ... | ... |
| 43 5 | ... | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |
| 40 7 | ... | ... | ... | ... | ... | ... |
| 39 11 | ... | ... | ... | ... | ... | ... |
| 39 6 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, July 15.—Unaffected by the dull accounts received from Mark-lane this morning, we experienced a moderate demand for Wheat at our Corn Exchange to-day, all descriptions of British and foreign fully maintaining the current rates of last week, to which holders steadily adhered. American Flour continued to meet a tolerable inquiry, but last week's quotations were scarcely exceeded; whilst French and Irish merely sustained late prices. Barley, Beans, and Peas, being more difficult of sale, were rather depressed in value. Malt, on the contrary, advanced 1s. per qr. Oats, being in moderate request, supported former prices. Oatmeal dull, and 6d. per load cheaper. Indian Corn declined 6d. per qr.—FRIDAY, July 11.—This day's market being well attended by home and country millers, the trade relative to Wheat assumed a firmer tone, and a fair extent of business having been transacted, all descriptions of English and foreign commanded the full rates of Tuesday, closing with a tendency rather buoyant. States and Canadian Flour was in tolerable request, and prices a little better. Barley, Beans, and Peas were severally the turn cheaper. Oats and Oatmeal moved sparingly at a slight reduction. Indian Corn continued to meet a fair inquiry, and fully supported the current rates of Tuesday, few parcels being offered.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

MAYFIELD, SUSSEX,

TO BE LET, together or separately, on Lease, at Michaelmas next, TWO DESIRABLE FARMS, with advantages for occupation seldom to be met with, each containing about 270 Acres of Arable, Hop, Meadow, and Pasture Land, in the usual proportions. The above Farms have long been celebrated for their excellent growth of Hops, and the present plantations are in their prime. They will be let tithe free; are close to an intended Railway Station; and a good Tenant will meet with every encouragement from the Landlord. Hares and Rabbits not preserved.

For further particulars, and to treat for the hiring, apply to Mr. WILLIAM EVANS, the Gate House, Hurst Green, Sussex.

WORTH NOTICE.

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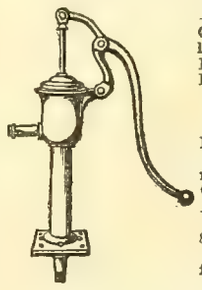
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|---|---|---|
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| Anemones | Grafting | Potatoes |
| Annuals | Green fly | Pruning |
| Apples | Heartsease | Privet |
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| Auriculas | Herbaceous Perennials | Pyracantha |
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| Beet | Hollyhocks | Ranunculus |
| Biennials | Honeysuckle | Raspberries |
| Black Fly | Horse-radish | Rhubarb |
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| Borage | Hydrangeas | Roses |
| Borecole | Hyssop | Rue |
| Box edgings | Indian Cress | Rustic vases |
| Broccoli | Iris | Sage |
| Brussels sprouts | Kidney Beans | Salvias |
| Budding | Lavender | Savoys |
| Bulbs | Layering | Saxifrage |
| Cabbage | Leeks | Scarlet Runner Beans |
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| Calceolarias | Lettuce | Sea Deisy or Thrif |
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| Carrots | Marigold | Snails and Slugs |
| Cauliflowers | Marjoram | Snowdrops |
| Celery | Manures | Spinach |
| Cherries | Marvel of Peru | Spruce Fir |
| China Asters | Mesembryanthemums | Spur pruning |
| China Roses | Mignonette | Stocks |
| Chrysanthemums, Chinese | Mint | Strawberries |
| Chives | Mustard | Summer Savory |
| Clarkias | Narcissus | Sweet William |
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| Colewort | Onions | Tigridia Pavonia |
| Cress | Pæonies | Transplanting |
| Creepers | Parsnip | Tree lifting |
| Crocus | Parsley | Tulips |
| Crown Imperials | Peaches | Turnips |
| Cucumbers | Pea-haulm | Vegetable Cookery |
| Cultiuation of flowers in Windows | Pears | Venus's Looking-Glass |
| Currants | Peas | Verbenas |
| Dahlias Daises | Pelargoniums | Vines |
| Dog's-Tooth Violets | Perennials | Virginian Stocks |
| Exhibitions, preparing articles for | Persian Iris | Wallflowers |
| Ferns, as protection | Petunias | Willows |
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The Annual General Meeting of this Society was held on the 22d of May, when a report of the business for the last year was presented, exhibiting a statement of most satisfactory progress, the new policies issued exceeding by one-third the number of those of 1849, and the claims being fully one-fourth under the estimate. After considering a very careful valuation of assets and liabilities, it was resolved to allow a reduction of 30 per cent. on the premiums, payable on all policies on the participating scale on which five or more annual payments had been previously made.

Credit is allowed for half the annual premiums for the first five years. The following table exemplifies the effect of the present reduction:—

| Age when Assured. | Amount Assured | Annual Premium Hitherto paid. | Reduction of 30 per cent. | Annual Premium Now payable. |
|---|---|---|---|---|
| | £ | £ s. d. | £ s. d. | £ s. d. |
| 20 | 1000 | 20 17 6 | 6 5 3 | 14 12 3 |
| 25 | 1000 | 23 0 0 | 6 18 0 | 16 2 0 |
| 35 | 1500 | 43 15 0 | 13 2 6 | 30 12 6 |
| 45 | 2000 | 80 11 8 | 24 3 6 | 56 8 2 |

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|---|---|---|---|
| 30 | £133 7 6 | £72 3 8 | £1205 11 2 |
| 35 | 135 19 0 | 73 3 7 | 1209 2 7 |
| 40 | 138 15 6 | 74 9 7 | 1213 5 1 |
| 45 | 142 9 0 | 76 18 9 | 1219 7 9 |
| 50 | 148 17 6 | 81 8 4 | 1230 5 10 |

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| Age when Policy was issued. | Date of Policy. | Sum assured. | Original Premium. | Reduced Annual Premium for the current year. |
|---|---|---|---|---|
| 20 | On or before 14th of May, 1846. | £1000 | £19 6 8 | £10 12 8 |
| 30 | | 1000 | 24 8 4 | 13 8 7 |
| 40 | | 1000 | 31 10 0 | 17 6 6 |
| 50 | | 1000 | 42 15 0 | 23 10 3 |
| 60 | | 1000 | 66 11 8 | 36 12 5 |

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| Sum Assured | Time Assured. | Sum add. to Pol. in 1841 | Sum added to Pol in 1848. | Sum Payable at Death. |
|---|---|---|---|---|
| £5000 | 13 yrs 10 mts | £638 6 8 | £787 10 0 | £6470 16 8 |
| 5000 | 1 year | ..... | 112 10 0 | 5112 10 0 |
| 1000 | 12 years | 100 0 0 | 157 10 0 | 1257 10 0 |
| 1000 | 7 years | ..... | 157 10 0 | 1157 10 0 |
| 1000 | 1 year | ..... | 22 10 0 | 1022 10 0 |
| 500 | 12 years | 50 0 0 | 78 15 0 | 628 15 0 |
| 500 | 4 years | ..... | 45 0 0 | 545 0 0 |
| 500 | 1 year | ..... | 11 5 0 | 511 5 0 |

* EXAMPLE.—At the commencement of the year 1841, a person aged 30, took out a policy of 1000*l.*, the Annual Payment for which is 24*l.* 1*s* 8*d.*; in 1847, he had paid in Premiums 160*l.* 11*s.* 8*d.*; but the profits, being 2½ per cent. per annum on the sum insured (which is 22*l.* 10*s.* per annum for each 1000*l.*), he had 157*l.* 10*s.* added to the Policy, almost as much as the Premiums paid.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 30—1851.] SATURDAY, JULY 26. [PRICE 6*d*.


INDEX.


| | | | |
|---|---|---|---|
| Adulteration of manure | 477 *b* | Horticultural Society | 467 *b* |
| Agricultural chemistry | 474 *b* | — report of | 469 *c* |
| Agricultural Society of England —Meeting at Windsor | 475 *c* | Labourers, beer for | 475 *b* |
| Aquatics | 469 *b* | Lawes' (Mr.), experiments | 473 *c* |
| Birds, British song | 468 *a* | London Farmers' Club | 477 *b* |
| British Association | 468 *a* | Manure adulteration | 477 *b* |
| Calendar, Horticultural | 472 *a* | Mildew | 467 *b*—467 *c* |
| Charcoal | 468 *c* | Nightingale | 469 *a* |
| Chemistry, agricultural | 474 *c* | Orchids | 469 *b* |
| Crystal palace | 468 *b* | — for the million | 467 *c* |
| — prizemen at | 477 *a* | Parrots | 469 *b* |
| Cuckoo, the | 469 *b* | Potato disease | 469 *b* |
| Farming implements | 474 *b* | Poultry Yard, rev. | 471 *c* |
| Flax | 473 *a* | Rape, culture of | 475 *a* |
| Gardens, to water | 469 *b* | Roses | 468 *c* |
| Grape mildew | 469 *c* | Subsoil grubber | 475 *b* |
| Grubber, subsoil | 475 *b* | Sulphurator, Epps' | 468 *c* |
| Guano | 467 *c*—468 *c* | Turnip moth | 473 *a* |
| | | Weather, the | 478 *b* |


## NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET.

The CENSORS appointed for the EXHIBITION, on THURSDAY, the 31st inst., are—

| | |
|---|---|
| Mr. John Keynes, Salisbury | Mr. Hamp, South Lambeth |
| C. P. Lochner, Esq., Paddington | Mr. J. T. Neville, Peckham |
| Mr. N. Norman, Woolwich | Mr. Paul, Cheshunt |
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| Mr. Henry Pope, Birmingham | G. Edmonds, Esq., Wandsworth |
| Mr. J. F. Wood, Nottingham | Mr. Stanton, Lewisham |

NOTICE.—Contributors of Picotees, Carnations, Verbenas, Antirrhinums, Petunias, or other Seedling Florists' Flowers, must have all ready for the Censors by one o'clock; none will be received later. By Order.

JOHN EDWARDS, Hon. Sec.

## THE ANNUAL SHOW DAY AND DINNER OF THE BUCKINGHAM HORTICULTURAL AND FLORAL SOCIETY,

will take place on WEDNESDAY, 30th July, 1851, at which the Most Noble the Marquis of Chandos, M.P. will preside. The Show will be held in Spacious Booths erected for the Society, on Church Hill. By the kind permission of Colonel Hall, M.P., the splendid band of the 1st Regiment of Life Guards will attend. Five Prizes will be given to Nurserymen and Market Gardeners for the best 12 Picotees, 12 Carnations, 12 Hollyhocks, 12 Dahlias, and the best collection of Roses. Every person intending to compete for Prizes, is requested to send a list of the Plants, &c. in order that proper space may be provided. The Flowers, &c., will be open for inspection at 12 o'clock. In the evening, a magnificent display of Fireworks will take place under the direction of a celebrated Pyrotechnist from London, who has been engaged for the occasion.

## TO NURSERYMEN AND GENTLEMEN PURCHASING PLANTS IN WHOLESALE NUMBERS.

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# HORTICULTURAL SOCIETY OF LONDON.

## EXHIBITION AT THE GARDEN, JULY 19, 1851.

## AWARD OF THE JUDGES.

### THE LARGE GOLD MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., F.H.S., for 20 species of Exotic Orchids

### THE GOLD KNIGHTIAN MEDAL.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids

### THE GOLD BANKSIAN MEDAL.

1 To Messrs. Fraser, of Lea Bridge Road, Essex, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Speed, of Edmonton, for a collection of 10 Stove and Greenhouse Plants
4 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids
5 To Messrs. Veitch and Son, of Exeter, for 15 species of Exotic Orchids
6 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 10 species of the same
7 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for a collection of 10 varieties of Cape Heath
8 To Messrs. Rollisson, of Tooting, for the same

### THE LARGE SILVER-GILT MEDAL.

1 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Croxford, Gardener to H. H. Barnes, Esq., of Stamford Hill, for a collection of 10 Stove and Greenhouse Plants
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4 To Messrs. Rollisson, for 15 species of Exotic Orchids
5 To Mr. Carson, Gardener W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids
6 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of six species of the same
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10 To Messrs. Rollisson, for the same
11 To Mr. Gaines, of Battersea, for a collection of New Pelargoniums, in 8-inch pots
12 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for a very fine set of miscellaneous Plants
13 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for a collection of Fruits

### THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for a collection of six Stove and Greenhouse Plants
3 To the same, for six species of Exotic Orchids
4 To Mr. Godfrey, Gardener to R. Dawson, Esq., of Tottenham, for a collection of Achimenes
5 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of Helichrysums
6 To the same, for a collection of Cape Heaths, in 11-inch pots
7 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 10 varieties of Cape Heath
8 To Messrs. Fraser, of Lea Bridge-road, for the same
9 To Messrs. Fairbairn, of Clapham, for a collection of Cape Heaths, in 11-inch pots
10 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for a collection of the same, in 8-inch pots
11 To Messrs. Lane and Son, of Great Berkhampstead, for 50 varieties of cut Roses
12 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for six species of Cape Pelargonium
13 To Mr. Gaines, of Battersea, for a collection of Fancy Pelargoniums, in 8-inch pots
14 To Mr. Lochner, of Paddington, for 12 varieties of Carnations, in 11-inch pots
15 To the same, for 12 varieties of Picotees, in 11-inch pots
16 To Mr. Norman, of Woolwich, for 12 varieties of Carnations, in 11-inch pots
17 To the same, for 12 varieties of Picotees, in 11-inch pots
18 To Mr. Salter, Gardener to T. Yeels, Esq., Bath, for a single specimen of Erica Shannoni
19 To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for a collection of Fruits
20 To Mr. Smith, Gardener to S. Ricardo, Esq., of Titnesspark, for three specimens of Black Hamburgh Grapes, in pots

### THE LARGE SILVER MEDAL.

1 To Mr. Bunn, Gardener to — Richards, Esq., of Edmonton, for a collection of 6 Stove and Greenhouse Plants
2 To Mr. Woolley Gardener to H. B. Ker, Esq., of Cheshunt, for 6 species of Exotic Orchids
3 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of Kalosanths
4 To Mr. Munro, Gardener to the Earl of Clarendon, The Grove, Watford, for a collection of Achimenes
5 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of Helichrysums
6 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of Cape Heaths, in 11-inch pots
7 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of the same, in 8-inch pots
8 To Messrs. Paul, of Cheshunt, for 50 varieties of cut Roses
9 To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts., for 25 varieties of cut Roses
10 To Mr. Parker, Gardener to J. M. Strachan, Esq., F.H.S., for a collection of Cape Pelargoniums
11 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for a collection of Fuchsias
12 To Mr. Newhall, of Woolwich, for 12 varieties of Carnations, in 11-inch pots
13 To the same, for 12 varieties of Picotees, in 11-inch pots
14 To Mr. Bragg, of Slough, for 12 varieties of Carnations, in 11-inch pots
15 To the same, for 12 varieties of Picotees, in 11-inch pots
16 To Messrs. Henderson, of Pine-apple-place, for Hemiandra pungens
17 To Messrs. Veitch, for a single specimen of Erica metulæflora bicolor
18 To Messrs. Lee, of Hammersmith, for a collection of variegated Stove Plants
19 To Messrs. Standish and Noble, of Bagshot, for a collection of New Hardy Shrubs and Trees
20 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for Hothouse Ferns
21 To Mr. Munro, Gardener to Mrs. Oddie, of Colney House, St. Albans, for a collection of Fruits
22 To Mr. Jones, Gardener to Sir John Guest, Bart., F.H.S., for a Queen Pine-apple, weighing 5 lbs 12 oz
23 To the same, for an Enville Pine-apple, weighing 8 lbs. 9 oz.
24 To Mr. Briddon, Gardener to W. O. Gore, Esq., of Porkington, Salop, for a Providence Pine-apple, weighing 9 lbs.
25 To Mr. Stent, Gardener to W. Herbert, Esq., of Clapham, for Black Hamburgh Grapes
26 To Mr. Harrison, of Oatlands Palace Gardens, Weybridge, for the same
27 To Mr. Elphinstone, Gardener to the Speaker, at Heckfield, for 3 bunches of Black Hamburgh Grapes, cut from Vines grown in pots
28 To Mr. Macqualter, Gardener to Col. Challoner, F.H.S., for Black Prince Grapes
29 To Mr. Rust, Gardener to J. Maclaren, Esq., F.H.S., for Muscadine Grapes
30 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for Muscat Grapes
31 To Mr. Mitchell, of Brighton, for the same
32 To Mr. Leonard, Gardener to J. Cox, Esq., of Weybridge, for Chasselas Musqué Grapes

### THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Over, Gardener to W. M'Mullen, Esq., of Clapham, for six Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for a single specimen of Aerides odoratum
3 To the same, for Epidendrum replicatum from New Grenada
4 To Mr. Watson, Gardener to Mrs. Tredwell, of Lower Norwood, for a collection of Helichrysums
5 To Mr. Godfrey, Gardener to J. Lester, Esq., of Tottenham, for a collection of Achimenes
6 To Messrs. Rollisson for a collection of Cape Heaths in 8-inch pots
7 To Mr. Francis, of Hertford, for 50 varieties of cut Roses
8 To A. Rowland, Esq., F.H.S., for 25 varieties of cut Roses
9 To Mr. Salter, F.H.S., for a collection of Fuchsias
10 To Mr. Willmer, of Sunbury, for 12 varieties of Carnations in 11-inch pots
11 To the same, for 12 varieties of Picotees in 11-inch pots
12 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for a single specimen of Erica retorta major
13 To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon for a single specimen of Lisianthus Russellianus
14 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a single specimen of Dipladenia splendens
15 To Messrs. Henderson, of Pine Apple Place, for a collection of variegated Plants
16 To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for Hothouse Ferns
17 To Mr. Turner, of Holloway, for 12 Alpine Plants
18 To Mr. Watson, Gardener to Mrs. Tredwell, of Lower Norwood, for 6 Statices
19 To Mr. Frost, Gardener to E. Betts, Esq., of Preston Hall, Kent, for a Queen Pine-apple weighing 5 lbs. 5 oz.
20 To Mr. Bray, Gardener to E. Lousada, Esq., of Peak House, Sidmouth, Devon, for a smooth Cayenne Pine-apple, weighing 6 lbs. 9 oz.
21 To Mr. Jones, Gardener to Sir John Guest, Bart., F.H.S., for a Providence Pine-apple weighing 10 lbs.
22 To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for Black Hamburgh Grapes
23 To Mr. Spary, of Brighton, for the same
24 To Mr. Turnbull, Gardener to the Duke of Marlborough, F.H.S., at Blenheim, for West's St. Peter's Grapes
25 To Mr. Wood, Gardener to Scott Murray, Esq., F.H.S., for Muscadine Grapes
26 To Mr. Campbell, of Darlington, for Muscat Grapes
27 To Mr. Carpenter, Gardener to Sir E. Scott Bt., of Great Barr Hall, Staffordshire, for Grizzly Frontignan Grapes
28 To Mr. Snow, Gardener to Earl de Grey, F.H.S., for Peaches
29 To Mr. Wilson, of Warwick, for the same
30 To the same, for Nectarines
31 To Mr. Tillyard, Gardener to Lord Southampton, F.H.S., for Nectarines
32 To Mr. Brown, Gardener to H. Minton, Esq., of Stoke-upon-Trent, for a Trentham Hybrid Melon

### THE SILVER BANKSIAN MEDAL.

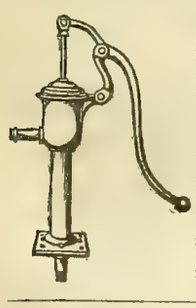
1 To Mr. Watson, Gardener to Mrs. Tredwell, of Lower Norwood, for six Stove and Greenhouse Plants
2 To Mr. Falconer, Gardener to A. Palmer, Esq., of Cheam, for a single specimen of Renanthera coccinea
3 To Mr. Carter, Gardener to H. Hughes, Esq., of Hoddesdon, for 25 varieties of cut Roses
4 To Messrs. Fraser, for a collection of Fuchsias
5 To the same, for a single specimen of Kalosanthes miniata
6 To Messrs. Rollisson, of Tooting, for Cattleya granulata, var. Leopoldii
7 To Messrs. Henderson, of Pine Apple Place, for Gordonia Javanica
8 To Mr. Turner, of Barnet, for Alpine Plants
9 To Mr. Over, Gardener to W. M'Mullen, Esq., of Clapham, for a single specimen of Hoya bella
10 To Mr. Henchman, of Edmonton, for a collection of New Holland Protaceous Plants
11 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for three variegated Stove Orchids
12 To the same, for Muscadine Grapes
13 To Mr. Salter, F.H.S., for a collection of Petunias
14 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for Hothouse Ferns
15 To Mr. Higgs, Gardener to J. Barchard, Esq., F.H.S., for a Queen Pine-apple weighing 4 lbs. 4 oz.
16 To Mr. Chapman, Gardener to J. B. Clegg, Esq., F.H.S., for a Black Jamaica Pine-apple weighing 3 lbs. 12 oz.
17 To Mr. Moffat, Gardener to the Duke of Newcastle, at Clumber, for a Providence Pine Apple weighing 7 lbs. 12 oz.
18 To Mr. Umpleby, Gardener to Mrs. Benyon, of Roundhay, near Leeds, for Black Hamburgh Grapes
19 To Mr. Davis, of Oak Hill, East Barnet, for the same
20 To Mr. Hill, Gardener to R. Sneyde, Esq., of Keele Hall, Staffordshire, for Black Prince Grapes
21 To Mr. Davy, Gardener to Mrs. Smith, of Colney Hatch, for Muscat Grapes
22 To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for Grizzly Frontignan Grapes
23 To Mr. Turnbull, Gardener to the Duke of Marlborough, F.H.S., at Blenheim, for Peaches
24 To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., of Hill House, Windsor Forest, for Nectarines
25 To Mr. Marcham, Gardener to J. Smith, Esq., F.H.S., for Black Circassian Cherries
26 To Mr. Myers, of Brentford, for the same
27 To the same, for White Bigarreau Cherries
28 To Mr. Snow, Gardener to Earl de Grey, F.H.S., for Elton Cherries
29 To Mr. Elliott, Gardener to Mrs. Boothby, of Twyford Abbey, Acton, for British Queen Strawberries
30 To Mr. Beach, of Isleworth, for the same
31 To Mr. Parsons, Gardener to A. George, Esq., of Ponder's End, for Myatt's Eleanor Strawberries
32 To Mr. Lydiard, of Bath, for the same
33 To Mr. Munro, Gardener to the Earl of Clarendon, The Grove, Watford, for a Persian Green-fleshed Melon

### THE CERTIFICATE OF MERIT.

1 To Mr. Hamp, Gardener to J. Thorne, Esq., F.H.S., for a single specimen of Oncidium pictum
2 To Mr. Parsons, Gardener to A. George, Esq., for 25 varieties of cut Roses
3 To Messrs Veitch, of Exeter, for Hoya, sp. Manilla
4 To the same, for a Yellow Capsicum from Peru
5 To Messrs. Henderson, Pine Apple Place, for a collection of Petunias
6 To Mr. Masters, of Canterbury, for Hothouse Ferns
7 To Mr. Munro, Gardener to the Earl of Clarendon, The Grove, Watford, for Peaches
8 To Mr. Turnbull, Gardener to the Duke of Marlborough, F.H.S., at Blenheim, for Nectarines
9 To Mr. Busby, Gardener to S. Crawley, Esq., F.H.S., for Black Circassian Cherries
10 To Mr. Gainford, of Brentford, for the same
11 To Mr. Elliott, Gardener to Mrs. Boothby, of Twyford Abbey, Acton, for White Bigarreau Cherries
12 To Mr. Eckford, Gardener to C. Child, Esq., F.H.S., for British Queen Strawberries
13 To Mr. Lydiard, of Bath, for the same
14 To Mr. Wood, Gardener to Scott Murray, Esq., F.H.S., for Downton Strawberries
15 To Mr. Wilson, of Warwick, for Eleanor Strawberries
16 To Mr. Grant, Gardener to G. H. Simons, Esq., of Bath, for a Bromham Hall Melon

N.B.—Mr. Steers, of Teddington, having sent only three bunches of Sweetwater Grapes, instead of six, was on that account disqualified from receiving a prize.


FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0
Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abetbaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 90*l.*; 21 feet long by 13 feet wide, 50*l.*; 12½ feet long by 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

DURABLE OUT-DOOR PAINT.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London No Agents.—All orders are particularly requested to be sent direct.

GARDEN ENGINES, &c.—EXHIBITION, CLASS 9, No. 89. RICHARD READ, INSTRUMENT MAKER, by special appointment to her Majesty, 35, Regent Circus, Piccadilly, London, Inventor and Patentee of the following Instruments:—Stomach Pumps and Injecting Machines; Double-action Aperitive Fountains, &c. GARDEN ENGINES, Machines, and Syringes of every description; Injecting Instruments for Cattle, &c. Probangs for relieving Hoven or Choked Bullocks, Calves, Sheep, &c., &c. Manufactured only by the Patentee, 35, Regent Circus, Piccadilly, London.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

AYLESBURY DUCKS (White).—The Advertiser has for Sale a limited number of the above, in fine healthy birds, of this season; the breed is warranted pure and of the largest known, weighing, when fattened, 8 lbs. to 10 lbs. each. Price, including package, 8*s.* 6*d.* per couple.

Also a few of the largest breed of NORFOLK GEESE, 12*s.* per couple.—Orders, accompanied by post-office orders or reference, addressed to ISAAC BRUNNING, North-end, Great Yarmouth, will receive prompt attention.

CHRYSANTHEMUMS.
STRONG PLANTS FOR EARLY FLOWERING.

BASS AND BROWN have a fine and strong stock of the above, and are enabled to offer them at the following low prices, comprising the best new sorts, very superb. They are in small pots and in strong growth for immediate shifting. They can be sent out by post, if desired, prepaid.

| | s. | d. |
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| 40 new and splendid varieties ... ... ... | 20 | 0 |
| 20 do. do.. 12s. ; 12 do. do. ... ... ... | 9 | 0 |
| 9 beautiful Lilliputienne do. ... ... ... | 5 | 0 |

ACHIMENES.

Fine plants to flower immediately, The following 10 new and beautiful varieties for 12s., viz. :—Bowmanii, Bodmerii, Coccinea grandiflora, Multiflora, Escheriana, Fimbriata, Longiflora alba, Rosea superba, and Tugwelliana.

12 very fine varieties ... ... ... ... ... 6s.

GLOXINIAS.

Maria Van Houtte, each, 3s. 6d. ; Frederick Lenning, 2s. 6d. ; Gen. Baudrand, 3s. 6d. ; Godfroud de Boullion, 2s. 6d. ; or the four for 10s.

12 very fine varieties for 12s., including Carminata splendens, Grandis, Fyfiana, Rubra grandiflora, Teuchleeri, Wortleyana, &c., &c.

Plants free to London; and extra plants gratis for orders above 40s.

Catalogues on application. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE BLACK PRINCE STRAWBERRY will be sent out on Monday, 18th of August, at 6s. per 100, box included ; it has proved itself to be the earliest round London these five years, good in flavour, and a tremendous bearer, and the best for preserving ; has taken six prizes. The Keens and British Queen 5s. per 100 ; same time, a pamphlet of 36 pages on "Market Gardening round London," explaining everything. Price 1s. 6d., or by post, 1s. 8d. ; also, a pamphlet of 56 pages containing, the "Belgian Prize Essay on the Potato and 12 other first-rate Fruits and Vegetables ;" price 2s., or by post, 2s. 4d. Post-office orders on Camberwell—JAMES CUTHILL, Camberwell, London.

**The Gardeners' Chronicle.**

*SATURDAY, JULY 26, 1851.*

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, July 31—National Floricultural .....3 P.M.
FRIDAY, August 1—Botanical .....8 P.M.

COUNTRY SHOWS.—Tuesday, July 29: Handsworth and Lozells Horticultural. — Wednesday, July 30: Buckingham Horticultural. — Thursday, July 31: Oxford Horticultural.

ON Tuesday last "Mr. ALCOCK moved the appointment of a select committee on the trade in guano. He offered to prove that a duty of 5*l.* would yield a larger return than a duty of 10*l.* ; that the freight from the Pacific might be reduced to 3*l.* per ton and other expenses to 1*l.* per ton ; that guano was unexhaustible in Peru, three islands containing 18,000,000 tons ; that the reduction of duty would benefit the agriculturist more than a 5*s.* duty on Wheat ; and that the import of guano had fallen from 283,000 tons in 1845 to 116,000 tons last year.

"Mr. LABOUCHERE could not consent to the motion. The hon. gentleman had not made out a case, and his argument was one which might properly be addressed to the Peruvian Government, but not to that House. The motion was withdrawn."

Such was the result, according to the *Times*, of the attempt, mentioned in our last issue, to enhance the price of guano. The honourable member for East Surrey thought that an import duty of 5*l.* or 10*l.* a ton would render the article better suited to the means of purchasers! In other words, having assisted in enabling foreign agricultural produce to be sold in this country almost duty free, he proposed to levy an enormous import duty upon the most important aid which our cultivators can obtain in contending with foreign grown commodities. Guano, selling for 9*l.* a ton, Mr. ALCOCK would increase the market price by levying an import duty of 5*l.* or 10*l.* It must be confessed that the country interest is under great obligation to the hon. gentleman for this brilliant device, which Lord PALMERSTON aptly described as a new method of procuring plenty by a system of prohibition.

The motion being still-born, it would hardly be worth further notice, if it were not for one circumstance. Mr. ALCOCK is reported to have said that the importation of guano had fallen from 283,000 tons in 1845 to 116,000 tons last year, meaning, we presume, 117,000 tons, the official return giving 116,925 tons. With this correction the statement is true ; but it does not convey the whole truth. The year 1845, in which 283,300 tons were received, was quite exceptional ; the quantity in 1844 was 104,251 tons, and in 1846, 89,392, the market having been evidently glutted with the article. Among the imports in 1845 were 207,679 tons of low priced Ichaboe guano, a very inferior article, which may be said to have been exhausted by the great speculation of that year ; for during the five years that have since elapsed, the whole amount obtainable from the western coast of Africa has only amounted to 12,703 tons, or about 2500 tons a year.

If, on the other hand, we look to the returns of Peruvian and Bolivian imports, we find that they have amounted to the following quantities since 1841, viz., 2062, 14,231, 1589, 16,475, 14,101, 25,102, 59,430, 64,191, 73,567, and 96,295 tons in 1850. It is, therefore, clear that the imports of guano have not diminished because of the diminished demand, but because of the sudden exhaustion of the only source of supply that could contend with Peru.

Nothing is more remarkable than the endless inaccuracies, to call them by the mildest name, which it is our misfortune to be obliged to correct in this matter of guano. By way of illustration, we give the following extract from the letter of one of our city correspondents just received.

"There are two American ships now discharging guano, the Hibernia and Mechanics' Own, in the London Docks, with cargoes of about 1600 tons of guano, from New York. The dodgery of this importation I cannot reveal, but the following may be a reasonable inference : No reduction in the price of guano is offered to the public, although the cost of freight to import is considerably reduced. Now, if this guano has been imported to New York with other cargo, and there landed for transhipment to England, it is a question (presuming it to be originally obtained in Peru) whether the double freight will so operate as to allow of a competition. We know by the wail from Wapping and other nautical regions, that the Yankees can carry goods and undersell the Britisher."

Upon enquiry we find this statement to be a tissue of misinformation. The ships in question are not to be found in the London Docks, but are discharging their cargoes in the West India Docks. They are not from New York, but from the Chincha islands direct, having cleared last from Callao, the port of Lima. They have nothing to do with American agents, but their cargoes are consigned, like all other Peruvian guano, to the house of ANTONY GIBBS and SONS. There is no "dodgery" in the matter ; this and all other importations of guano being regularly declared in the import lists.

We cannot wonder that gentlemen in the House of Commons should be mystified, when it requires all the caution and experience of a London newspaper to avoid being misled by statements like that we have just exposed.

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THE last great meeting of the HORTICULTURAL SOCIETY for the present season took place on Saturday last, when 9345 visitors attended, in defiance of a wet uncomfortable day. As was expected, they included a large number of foreigners, especially Germans and Americans, who appeared not a little surprised at the gorgeousness of the scene in the tents, and charmed by the beauties of Chiswick House, its fine trees, rich turf, tranquil waters, and brilliant flower garden.

What struck us most was the great variety of objects which the exhibitors brought together ; of all things an abundance, but of nothing too much. Contrary to what is usual in July, the tables were crowded with plants, and the plants possessed the highest order of merit. Of fruit, too, there was a noble display, and we had no cause to blush for the productions of our forcing gardens, even when scrutinised by the critical eyes of those who are accustomed to see the finest fruit that southern Europe can produce in the open air. The Peaches were admitted by gentlemen from the United States to be better than the best of theirs ; and as for Pine-apples and Strawberries, where can we look upon their like, except in England.

Now that the season is over, we would suggest to exhibitors the propriety of immediately sending to the Horticultural Society whatever suggestions they have to offer for another year. Arrangements for 1852 are already in contemplation, and all advice is very carefully considered, although it is not always taken. We believe that important changes in the mode of showing will be brought under the consideration of the Committee.

The days for next year were long since fixed for the second Saturdays in the months of May, June, and July.

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A FEW weeks since some observations were published in our journal, accompanied by figures, tending to show the identity of those kinds of mildew which are known by botanists under the generic names of *Oidium* and *Erysiphe*. Our observations were indeed confined to Pea mildew, and even in that case specimens collected at the same time, and submitted to a very practised observer, failed to exhibit the structure which we had ourselves been able, by some lucky touch of the dissecting needle, to demonstrate, but which, in some other species, we had not been able to extricate. We were, therefore, much interested by the pretty drawing of the Hop mildew, by Dr. PLOMLEY, in Class 3, No. 64, of the Great Exhibition, which shows, in the clearest manner, the origin of the *Erysiphe* from the *Oidium*. In this the perithecia do not spring, as in the Pea mildew, from the procumbent threads which give rise to the erect flocci, whose ultimate articulations are moniliform, and finally deciduous, and capable of propagating the plant ; but one, or sometimes two, of the terminal or subterminal articulations themselves swell out, and give rise to a perithecium, so that the same organ is capable at a certain stage of growth of germinating and producing a mould similar to that from which it sprang, or, by a further development into a reticulated cyst containing sporidiferous asci, of originating within its cavity a host of reproductive bodies equally fertile with itself, in its unchanged condition. Nor, indeed, is this the only case amongst fungi where so strange an alteration takes place in the condition of a simple cell. The usual mode of fructification in the genus *Antennaria*, is exactly analogous, and in this case the reticulated cyst itself assumes two very different structures, either containing a mass of free spores, which, doubtless, arose in the first instance from sporophores, or a complicated branched epitome of the parent plant. Such deviations from the normal tendency of the vegetative powers, is not, indeed, without example in higher orders of plants ; as, for instance, in the production of cellular masses, instead of seeds, in *Crinum*.

It is very possible, that the perithecia in the Hop mildew, as well as in the Pea mildew, may arise from the creeping threads, as well as from the ultimate or penultimate articulations of the erect flocci, and that this may hold good in other species. Few things, however, are more difficult than to remove the parasite from the matrix in such a condition as to show clearly the connexion of the several parts, in consequence of the deciduous character of the moniliform joints, and the close felting of the threads of which the mass is composed. It is at least matter of certainty that the white, black, and red mildews of the Hop-growers are merely different states of the same thing, and it is more than probable that there will, in process of time, be as certain a remedy for these as the farmer possesses against Bunt. *M. J. B.*

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## ORCHIDS FOR THE MILLION.—No. IX.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

HOT CLIMATE—PLANTS GROWN IN POTS WITH PEAT.

*Miltonia spectabilis*, flowers from July to September. The blooms are yellowish white, the lip being purple and yellow, and they remain four weeks in perfection. It is best cultivated in a pot in fibrous peat, with plenty of heat and moisture when growing.

*Miltonia candida* flowers in October and November, the blossoms are a deep rich brown, spotted with yellow, the lip being white. This succeeds best in a pot in fibrous peat and good drainage, with plenty of heat during the growing season : the flowers remain long in perfection. These two Miltonias come from Brazil.

*Oncidium leucochilum*, from Mexico, blooms from March to August : this succeeds well in a pot in fibrous peat and good drainage ; when growing it should be kept warm, but afterwards cool. It remains long in perfection.

*Oncidium sphacelatum* (*grandiflorum*) comes from the Honduras, and is a free-flowering variety ; the blossoms, yellow and brown in colour, are very showy, and remain long in beauty. It should be treated like the last.

*Oncidium ampliatum* (*majus*).—A fine variety, from Trinidad ; blooms in March and April, and remains a long time in perfection. The flowers are bright yellow.

*Oncidium ornithorhynchum* is a neat little species from Mexico ; it blooms from October to December, remains long in beauty, and is very fragrant.

*Oncidium incurvum*, from the same country ; blooms in November and December, and remains long in bloom.

*Oncidium guttatum* comes from Jamaica ; it flowers in May and June. The blossoms are very showy—yellowish green, spotted with dark brown ; the lip much darker, and self-coloured. These all require nearly the same treatment.

*Oncidium Barkeri* is a fine Mexican species, which blooms in October ; the sepals and petals are richly spotted with brown, while the labellum is bright yellow. This succeeds best in a pot with peat and potsherds ; it likes a good supply of heat and moisture while growing, but afterwards it may be kept much cooler. The blooms remain three or four weeks in beauty.

*Oncidium bicallosum*, from Guatemala, flowers in January and February. The blossoms are rich yellow, with sepals and petals bordered with cinnamon. This is a useful plant for the winter, as it remains five or six weeks in flower. It should be treated the same as the last.

*Lælia Perrinii*, a beautiful plant from Brazil, flowers in October and November. The blossoms are light purple, with a crimson lip, and they last two or three weeks in perfection. It is best grown in a pot with fibrous peat and potsherds in a warm part of the house ; it requires a liberal supply of moisture during the growing season, but afterwards it may be kept cool and rather dry.

*Cœlogyne cristata* comes from India, and flowers in February and March ; the blossoms are white and yellow, stained in some parts with pink ; it is very fragrant, and remains long in beauty. This will succeed on a block, but it does best in a pot in fibrous peat and good drainage, with plenty of heat and moisture while growing.

*Cœlogyne flaccida*, from Nepal, blooms in March and April. The sepals and petals are pure white, the label-

lum being blotched with yellow; the flowers remain long in bloom.

*Cœlogyne Wallichiana*, a beautiful Orchid from the mountains of India, flowers in October and November, and remains long in beauty. This plant succeeds best in a pot; the blossoms are of a beautiful rose colour.

*Cœlogyne præcox* requires the same treatment.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No 23.)

No. XXXIX.—It is a fact admitted by all careful observers, that the black-cap, like the nightingale, regularly revisits, year after year, the scenes of his childhood. Where he was born, there lies his heart. This cannot be a matter for wonder or surprise; indeed, appreciating their instinct as we do, it would be strange were it otherwise.

This very year, I recognised most readily, by the peculiarity of his voice and richness of his notes, one of my favourites that left us last autumn. There is so much difference in the quality of their song, and also in the arrangement of their notes, that you might really "swear" to a particular bird. I speak of this identical bird, because of his rare excellence. Doubtless many others, of second-rate powers, accompanied him to their old quarters. Nature is always true to herself.

The black-cap is known to naturalists as the *contralto* singer of the woodland choir. His fine, varied, musically-joyous voice arrests the attention of the most listless traveller, and he feels his weary way beguiled by such an attendant. Main describes the strain of the black-cap as occupying about three bars of triple time in the performance; and he very justly adds, that although very frequently repeated, it is varied at every repetition. He begins with two or three short essays of double notes, gradually *crescendo* up to a loud and full swell of varied expression. One passage in particular often occurs, as truly enunciated as if it were performed on an octave flute. It has been remarked that the style and key of the song are nearly the same in all the tribe; but all have not the power of improvising such extraordinary "variations." This is Nature's own gift.

In some situations, this bird courts unusual retirement, and you can very rarely get a sight of him. When this is the case, approach carefully the spot where you hear him singing, and conceal yourself under the nearest bushes. While you remain quiet, he will unsuspectingly continue his song: and even should you by chance disturb him, he will, if you stand still, speedily recommence his song. These birds are of so joyous a temperament, that singing is the one great business of their happy lives! No heavy cares sit on *their* brow.

The black-cap arrives amongst us, very frequently, before the nightingale. This year he was *en avance* some 10 days. Like the latter, he comes to spy out the land, before the *lady*-birds set foot on our shores. *Their* arrival may be noted about the 20th to the 24th of April. No time has been lost by their liege lords during the *interregnum* caused by their absence. Their song has been duly chanted from the very moment of their arrival; and convenient localities have been warily chosen for the pitching and furnishing of the family tent.

I may here remark that the black-cap is, of all birds, the most prudent and cautious in its selection of a site for rearing its young. Apparently aware of the innate propensity of men and boys to rob and plunder the feathered tribe of their eggs and children, they build their nests in the most artfully-concealed places; and they are as cunning in their movements to and fro, during the period of incubation, as ever was fox when fleeing from his pursuers. This is evidenced by the fact of very few of their nests being obtainable by purchase, when those of other birds are plentiful enough. They go to nest almost immediately after their arrival, and rear one brood. Sometimes, but rarely, they have a second family. This depends on the fineness of the season.

Talking of nests, reminds me of the cruel acts of spoliation which I now regularly witness, week by week, in my rambles. For the last three weeks, I have seen most painfully verified the truth of Virgil's remark,—"*Sic vos non vobis nidificatis aves!*" The remnants of eggs, the rude destruction of beautifully-formed nests, the pitiful outcries of young, unfledged nestlings, and the bewailments of their bereaved parents; these sights I have seen, and these sights I continue to see, *ad nauseam*. There assuredly must be still something radically wrong in the early education of our youth. The organ of "destructiveness" cannot surely be so egregiously large in the whole genus *juvenis*, that no means can be taken to reduce it. Gigantic are the strides we have made, since the days of Virgil, in every one of the known arts. The art of curing the innate propensity in boys to rob orchards and birds' nests, is, it would seem, *malheureusement*, the one solitary human art, in which no progress has been, or ever can be made! I should have imagined that Dr. Birch *might* have effected more good than he appears to have done. I fear he is grown indolent as he is callous. *William Kidd.*

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THURSDAY, *July* 4.—SECTION A.—*On a New Mode of Illuminating Opaque Objects under the highest powers of the Microscope;* By C. BROOKE.—A parallel pencil of rays is obtained by placing a camphine lamp (which, of all kinds of lamps, gives the most intense illumination) in the principal focus of a combination of two plano-convex lenses. This pencil is secured on the surface of a small parabolic mirror, the vertex of which is truncated, so that the focus of the mirror may be about 0·1 inch beyond the truncated edge. The rays which are converging to the focus are received on the surface of a small plane mirror which is attached to the bottom of the object-glass, so that the surface of this mirror may be nearly level with the lowest surface of the object-glass. All the rays of light which subtend any angle from that of the object-glass up to about 170° are thus rendered available for the illumination of the object; which, as it is illuminated by very oblique rays, must not be placed in a depression or cavity of any kind.

*On a New Arrangement for facilitating the Dissection and Drawing of Objects placed under the Microscope;* By C. BROOKE.—Two short pieces of tube, one of them the size of the eye-piece, the other the same size as the body of the microscope, are attached at an angle of about 4° to the sides of a brass box containing a rectangular prism. The smaller tube enters the body of the microscope and the larger screws the eye-piece. The image that enters the eye is now inverted in a plane passing through the axis of the body and of the eye-piece; and in order to erect the image, a cap is placed over the eye-piece, to which is attached a small rectangular prism, having its axis in the plane in which the image is already inverted. This arrangement provides a very convenient position of the eye when the hands are engaged in manipulating an object placed under the microscope. A rectangular prism has already been introduced into the body of the microscope by Machez; but as this was placed near the object-glass, it must, to a certain extent, interfere with the definition of the objects. For the purpose of drawing, a small piece of parallel glass is substituted for the rectangular prism placed in front of the eye-piece, through which the drawing-paper is seen directly through two opposite surfaces, and the object is seen by reflection from an outer surface placed at an angle of about 45° with the axis of the eye-piece. The image inverted by the first reflection is again inverted in the same plane by the second; and is, therefore, correctly represented in the drawing.—Sir D. Brewster said that there were physiological reasons which rendered these contrivances for enabling a person to use the microscope with erect head important. When the eye was turned downward, in the first place, the fluid which works the cornea, and which during ordinary vision is spread in a uniform film over the cornea by the action of the cornea, and is constantly draining downwards over the cornea in the intervals, collects, when the eye is placed downwards, in a lenticular-shaped mass on the very centre of the cornea, so as greatly to impede vision:—and, moreover, those little fragmentary portions of the crystalline lens which, when it is breaking up, particularly in old age, become the elements of the *muscæ volitantes*—those which, in the erect position of the head by sinking down to the lower part of the lens, remain without interfering with vision—these when the eye is turned down collect in what is then the lowest and central part of the lens in the direct line of sight, and greatly impede the rays of light.

SECTION B.—Dr. GLADSTONE gave the results of experiments made and still in progress, with his brother, Mr. G. Gladstone, *On the Growth of Plants in various Gases, especially substituting Carbonic Oxide, Hydrogen, and light Carburetted Hydrogen for the Nitrogen of the Air.* The experiments were at present in an incomplete state, Mr. R. Warrington suggesting, that in such experiments the plants be allowed to take root well before immersing them in the gases; next, that the combined atmospheres were too much saturated with moisture, often causing rapid growth and decay, and that these flowers and roots should be compared with others grown in similar volumes of confined common air.—Prof. Dumas spoke of the great and, indeed, almost unsuspected influence of carbonic oxide gas. The judicial investigations in France had disclosed the fatal effects of this gas as being so much greater than carbonic acid gas. In the atmosphere produced by the burning of charcoal, one 200th part of carbonic oxide was fatal, while with one-third the volume of carbonic acid the animal was asphyxiated, but afterwards revived.—The Chairman said he had reason to believe that in the combustion of anthracite, much carbonic oxide gas is produced.

## Home Correspondence.

*The Crystal Palace.*—The paragraph which you quote from the writer in the "Quarterly Review," although indicating abilities, is so extremely hyperbolical as to assume the appearance of a burlesque, and reminds one of the quaint anecdote related of the *savans* who, in getting up an article on the crab, described it as a fish of a red colour, which walked backwards; when, *a-propos*, in came Cuvier, and the exact description was handed to him, upon which he is said to have observed, "That with three exceptions, it was perfectly correct: 1st, that it was not a fish; 2dly, that it was not red; and 3dly, that it did not walk backwards." Mr. Paxton is the Cuvier of glass houses, and has sufficient abilities not to erect a hot stove where he requires a cool frame, and to prevent the humidity of an Orchid house with a medium temperature of 42° in that most splendid and wonderful building, in which he might bid

> "Sweet Ivy wind its boughs and intertwine
> With blushing Roses and the clustering Vine,"

without saturating the finest muslin; and from which black soot balls and fogs also in a great degree might be excluded, and all sudden alternations of climate avoided, instead of ladies shutting themselves up in close carriages, on the windows of which the action of damp air on a glass medium might be brought forward as a much more palpable case in point than either the claret bottle which they do not enter, or the laundry which they do not occupy; but this would not suit the writer's purpose. The ladies may be shrouded in steam in close carriages, with impunity; but to enter a well ventilated garden of 10 acres is to imbibe a consumption! We should not like such a physician to prescribe for us. Leave the arrangements to its designer, and the world will be probably as much pleased as it is now astonished; no one need fear its being converted either into an Orchid-house, an aquarium, or a laundry; all of which have been called into action by the above writer, for the purpose of getting up the steam against the most marvellous combination that ever resulted from the energy of man. *F. J. Graham, Cranford.*—If Mr. Paxton's excellent proposition should be carried into effect, allow me to suggest a plan that would greatly facilitate its being stocked with plants, and give additional interest to the whole, viz., that invitation be given to the inhabitants of the United Kingdom, to contribute any large specimens of plants, suitable for the purpose. A list, with their height, &c., could be forwarded to any party named, as soon as possible after the proposition is decided on, and if the plants should turn out suitable to be placed in the Palace, and the name of the donor marked on the usual label, it would induce many parties gladly to contribute plants that have grown too large for their own conservatories, by their being again enabled to recognise them, as, in many cases, there would be some peculiar interest attached to the plants by the donors. If this were carried into effect, I humbly conceive that it would be carrying out the original plan of the building by making it mainly a contribution from the nation. *Vectis.*

*Guano and Charcoal.*—During the prevalence of the Potato disease last year, I caused 48 different experiments to be made with genuine Peruvian guano, mixed with different chemical salts, on both early and late varieties, to ascertain if, through the means of this potential manure, it was possible to counteract the Potato plague. My idea was that the Peruvian guano, by reason of its ammonia, would supply food to the plant, so as to strengthen it against the first attack, and then one or other of the salts would furnish the remedy. I will not detain you with the unsuccessful ones, but point out at once that where 2 cwt. of Peruvian guano were mixed with 30 bushels of carbon, either soot or charcoal, and given to late varieties of Potatoes, I obtained the best results. And I am firmly of opinion, that if experiments are made this year with Peruvian guano and carbon, we shall gain sufficient knowledge on this subject to enable us to meet the difficulty next year, should it occur. The carbonised guano is best applied as soon as the first leaf in the neighbourhood shows the disease, or even in anticipation of it; if applied at the time of earthing up it saves extra labour. In the absence of carbon, I would use fresh new clay earth. I have a very high opinion of guano as a top dressing for the Grasses. In this neighbourhood a gentleman put a ton of Peruvian guano, in February, on a 10 acre meadow, costing him, say, 1*l.* per acre, and he had, in June, a crop of hay, to the extent of 2½ loads of hay to the acre, being twice as much as had ever been taken from that field before. A return of 70*s.* for the expenditure of 20*s.* on the same rent (only four months before) is something in these days of agricultural difficulty. The only thing requisite to attend to is, that when the guano is top-dressed on the Grasses, it must be done in very wet weather. I am only waiting for very wet weather to put Peruvian guano at the rate of 2 cwt. to the acre on some uphill land, which having been overstocked with sheep, is now as bare of herbage as the back of my hand. Query: Is it possible, by the aid of Peruvian guano, to obtain two crops of hay in the same year, the second crop to be in every respect as good as the first, and at what cost? But it must be unadulterated Peruvian, for I have tried on Grass, Possession Island, Saldanha Bay, Chilian, Patagonian, and others, and have come to the conclusion that some of them are not worth the cost even of carriage. It is generally supposed that Messrs. Gibbs, of Bishopsgate-street, will not sell less than 30 tons at the minimum wholesale price of 9*l.* 5*s.* per ton. This I believe is not the case; any person who has once in the season obtained 30 tons, can have any quantity he requires afterwards (not being less than five tons in each order) at the same wholesale price. *Edward Haslewood, Holloway.*

*Epps's Sulphurator.*—Since Read produced his garden syringe, I am of opinion that no instrument, either so economical as this in its application, or so effectual in its results, has been submitted to the gardening public. I have had one in use for some time, and I am delighted with its effects. An ordinary greenhouse or Grapery may be thrown into a complete mist with the particles of sulphur in two or three minutes, and all will be diffused in the most regular manner. I have employed it not only in glass structures, but on trees against walls in the open air; and, indeed, on quarters of fruit trees, with the most complete success. From information received from various parts of the kingdom, I am sorry to state that mildew has again made its appearance in an unmistakable form, and in some places it has completely destroyed the crop of Grapes. As a friend of gardeners, let me seriously recommend this instrument to their use. *R. Glendinning.*

*Roses* (see p. 455).—In our article on the Roses on Manettii stocks, it should read thus: Standard of

Marengo, 20 plants budded on (not from) the 15th of June, 1850 (not 1851). *J. Dillistone, Sturmer.*

*The Nightingale.*—I have been more than pleased with Mr. Kidd's remarks on the nightingale; and, comparing them with what he has written before on ornithology, I am led to believe the rank of amateur does not belong to him—he is more. Coupled with his own experience, he has sought the "dens" where the prisoned king of the feathered tribe is annually immured; and he has obtained a deal of startling information, that astounds a common observer, like myself. Still, as he does not rely on the cruel gentlemen practitioners (who make a trade by taking nightingales) for wisdom on the subject, I am the more inclined to attend to his instructions. Perhaps my sense of shame ought to lead me to own that I blush to reveal my character, connected, as it is, with the subject of nightingales; but will be candid enough to own my failings at once, caring but little for the condemnation that will be awarded me by the readers of your Paper; for, being a nightingale catcher, keeper, observer, &c., my time is much occupied at this season of the year, or I should weekly have solicited an explanation on one or two points (which Mr. Kidd asserts) that have never come under my notice. As well as my memory will serve me, and, previous to Mr. K. closing the subject, allow me to ask two or three questions. Mr. K. asserts (I have not the Paper by me, remember, for a reference), that in the natural state, the cause of the male bird ceasing to sing in the proper season is owing to its duties in assisting the female during parental occupation. I cannot assert as much; but this I know, that the male bird in the cage, having no paternal care, ceases also at the same time. He also states that extreme kindness and accustomed familiarity will induce the bird in question to become very tame. I have it not in my power to corroborate this (to myself) new statement. Perfectly tame as the bird appears to be in its natural state during captivity, I have always found it the reverse; and in justification of my statement can remember visiting a friend at Bath, who had a nightingale in each corner of the room, and though I had been often charmed with the song of these feathered warblers, the moment an advance was made towards the cage, or the reflection of a shadow cast its gloom in the wiry habitation of these prisoners, their rushing and beating about their "prison-house" was painfully terrific; and though my friend (who had kept them for 30 years), continually offered to present me with one, the cause just named never allowed me to suppose I could divest myself of a feeling approaching to nervousness at the unhappy disposition of these birds in confinement; of course, this was previous to my becoming a nightingale-keeper. I merely wish to find out how Mr. K. succeeded so well with his nightingales. *James Wait, Portishead, near Bristol.*——In the last of Mr. Kidd's very interesting papers upon "British Song Birds" he makes a statement which I have always considered, with him, "a most astounding truth," viz., that "in Devonshire, as well as Wales, the song of the nightingale is never heard." Now, I was in company with a lady and her daughter who have lived most of their lives in a part of the county of Kent where nightingales abound, and who in musical talent may perhaps rival the "Devonshire syrens," and "ken" the voice of that sweet and cheerful warbler full well, and they assure me that, while staying at Torquay a month or two ago, they were nightly enchanted by the song of the nightingale, and they very positively contradicted the popular error. Should Mr. Kidd or any one else wish it, I will inquire further of them, but I think their ears are too good to have been deceived. *Northwood.*—I am one of the many who will ever feel indebted to Mr. Kidd for the very interesting articles on "British Song Birds," which appear, from week to week, in the *Gardeners' Chronicle*, —articles well worth a place in that excellent journal. And now that Mr. Kidd has done with the "best poet of the grove," the nightingale, I am induced to trouble you with a line respecting that enchanting songster. I have had no experience in the keeping of nightingales myself, consequently I can offer no opinion of my own. I am, however, very much interested in all that relates to them, and was, therefore, no little concerned when, two or three weeks ago, Mr. Kidd sent forth a *fiat* that we must expect to part company with the nightingale, after a three years' confinement. I confess that, as "love and song is all its pleasing care," three years is a period of no mean servitude in that little bird; and sorry indeed should I be to say anything that might tend to prolong, unduly, its confinement. But we never consent to part with the company of a dear friend one moment sooner than is necessary; and it appears to me that there are instances in which nightingales have been kept a very long time. The following I take to be well authenticated proof of this, which many may be glad to read, and, perhaps, none more so than Mr. Kidd himself:—"It is very generally supposed that the nightingale will live but a very short time in confinement. Our own experience, however, proves the contrary; having kept one upwards of three years in a cage, which delighted us with its song during eight months of the year. It was regularly feed with mealworms, as well as with boiled eggs and raw meat, chopped very fine. But this is nothing to what Dr. Weissenborn relates; he says, that a nightingale, which had been caught in Germany, in its adult state, lived nearly 30 years confined in a cage. One of the bird's owners, a tradesman at Weimar, who kept it for 16 years, paid great regard to the bird's cleanliness, and always fed it on *pupæ* of ants, either fresh or dry, according to the season." The quotation is from Maunder, who, I admit, is not "an authority" in such matters, but I adduce the passage as being simply so much disinterested testimony. *Thomas B. Ryder, Warrington.*

*Orchids.*—In the report in the *Gardeners' and Farmers' Journal*, p. 453, of the Liverpool Horticultural Society, held on June the 20th, it is stated that "the collection of Orchids comprised some rare plants, such as Kalosanthes miniata, Stephanotis floribunda, Saccolabium guttatum, Crassula miniata, all of which were well grown."—Query: Are Kalosanthes miniata, Stephanotis floribunda, and Crassula miniata, Orchids? *G. H., London.* [Not that we are aware of.]

*Parrots.*—It is said that when a parrot picks its feathers, it is from a craving for raw meat. *Anon.*

*Aquatics.*—I am assured by an eye-witness that the double white Nymphæa is now full of blossom in the parsonage garden at Navestock, near Romford, in Essex; having been planted there by the late incumbent, Mr. Ford. I wish the fact could be verified, lest my informant (no great florist) should be committing any mistake. Iris ochroleuca proves a most vigorous aquatic. Hemerocallis fulva, which I put in the water last October, continues in health. *A. H.*

*Watering a Flower Garden* (see page 438).—I quite agree with your correspondent that watering during continued sultry weather, as often so performed, does more harm than good. This is generally the case when an insufficient quantity is given to reach below the roots; dribbling upon the surface is worse than labour lost. The surface, under such circumstances, becomes so caked, that no air can penetrate the soil. But if the latter is well deepened, moisture will rise to enable the roots to supply the leaves with what is lost by them in perspiration; watering properly assists the roots in many ways, but the dribbling system, while it does no good to the lower and principal roots, deprives them also of their previous supply, as watering the surface destroys for a time the power of capillary attraction. Surface watering encourages surface fibres, which are easily scorched by a burning sun; fresh waterings are given, fresh fibres encouraged, and thus the contest goes on between the vitality of the plants on the one hand, and the mistaken kindness of the gardener on the other. Some soils require less watering than others—for instance, where the staple is stiff and heavy it is liable to crack and bind together so hard that it will not permit the first rain to penetrate it; under such circumstances deep stirring will be found most useful, as stiff soil retains its moisture much longer than that of a porous character. *Cymro.*

*Potato Disease.*—I examined carefully all our Potatoes previous to the thunder-storm on Saturday last, and was pleased not to find the least speck or indication of mildew on them; now, however, in less than 48 hours, the accompanying leaf is only, I am sorry to say, a fair specimen; the stems and branches are also blotched and fast going to decay, the tubers seem still unaffected, but they cannot long continue so. I have had the haulm of some of them carefully dusted with fresh slacked lime, a plan I adopted at Merton on a similar occasion two years since with considerable success; it evidently gave a check to the rapid advance of the pest. When the young Potatoes have got to their full size, I intend pulling up the haulm altogether and at once. I understand that all round Uckfield and Newick the air is quite tainted with the effluvium of the decaying haulm. *James Bruce, Highlands, Framfield, Sussex.* [This is a true case of Potato disease, and one of the very few that we have hitherto seen.]

*The Cuckoo.*—Your correspondent, Mr. Henry Doubleday, has, it appears, read some remarks in a publication called "the Naturalist," (reviewed in your Paper on the 12th inst.), about the cuckoo. I too, in consequence of Mr. Doubleday's observations, have had the curiosity to read the article he refers to, and give full credence to its truth. Indeed, I have perused it with much interest. I must confess my surprise—a surprise which will be shared in common with most of your other readers—*why* your correspondent should, in a paper bearing so high a character as the *Gardeners' Chronicle*—and in such unmeasured terms, too!—fall foul of a writer who, while giving his name and address, very modestly relates of this, and another bird, no more than he is prepared to verify. Mr. Doubleday asserts, or to use his own strange language, "positively states," that the cuckoo "*never* feeds its own young!" In making this positive, but rash and erroneous assertion, he has greatly exceeded the bounds both of prudence and of courtesy; for it is a fact patent to most ornithologists that the cuckoo has been *seen* in the act of assisting in feeding her offspring—I say assisting, because where there is no necessity for her aid in this matter, she never interferes. The hedge-sparrow and the robin* are the two principal birds delegated to officiate on these occasions. They are wisely selected by the cuckoo to be the custodians of her eggs, inasmuch as they are best adapted, from the nature of the food they eat, for the task of feeding her young, when hatched. A few years since, the sight of a redbreast feeding a young cuckoo, assisted by the old cuckoo, was witnessed by a most truthful and worthy ornithologist, a friend of mine, now no more. His animated countenance is even now before me, whilst relating minutely, and with intense interest, the singular and ridiculous disparity observable between the natural and the putative parent. The description he gave me of their joint occupation in cramming the lubberly, ill-favoured young cuckoo, was too vivid for me easily to forget it. The manner of the relation, too, apart from my friend's known veracity, carried with it the most perfect conviction of its truth. Nor is this by any means a solitary instance of the (latent) natural affection of the cuckoo, implanted by Nature, and called forth under peculiar circumstances; for, let me add, the physical strength of small birds is, occasionally, totally inadequate to the heavy duties of filling the maw of so voracious a *gourmand* as a young cuckoo. Like "Oliver Twist," of workhouse notoriety, his constant cry is,—"More! More!!" and greedily impatient is he till he gets it. I would remark, in conclusion, that it is as unfair as it is unwise for your correspondent to try and put down so brusquely, by empty assertion, what is advanced upon the most respectable authority. It is the direct way of preventing those useful additions to our knowledge, which it should be our endeavour, as much as it is our interest, always to encourage. In so saying, I speak but the sentiments of *all* true lovers of Nature. *William Kidd, Hammersmith.* —Perhaps the following facts may not be uninteresting. A few days ago a person brought me a young cuckoo, almost ready to fly, which he had found in a small nest on the ground. I asked him to accompany me back to the place with the cuckoo, which I put down on the Grass within a few yards of the nest, and in less than 15 minutes it was surrounded by upwards of 10 or 12 little birds of the whitethroat kind, all of which commenced, one after the other, to feed the cuckoo. I may add that the little fellow was reared in the nest of a whitethroat. I, as well as three other individuals, were within 10 yards of the cuckoo at feeding time, and we distinctly saw one bird after another drop the insects or larvæ into its mouth. *C. E. Bodorgan, Anglesea.*

*Grape Mildew.*—I beg to send you a specimen of the kind of mildew which has infested Vines both in houses and in the open air, in the vicinity of Paris during these three years past, and principally in the gardens of Versailles, Suresne, and Ferrières. In these places, all possible means have been employed to avert the malady, but without success. Sulphur, tobacco smoke, tar water, and lime water, have been used, but the parasite makes new progress every day, and the Grapes are rendered uneatable. I hope you will be able to furnish us with some new expedient for combating the epidemic. *F. Bergman, jun., Gardener to Baron James de Rothschild, at Ferrières, near Paris.* [You had better provide yourself with one of the modern sulphurators. Sulphur applied early enough, and persevered in, is a certain cure in this country. But you *must* persevere, and you *must* attack the enemy when *he first appears.*]

* The nest of the robin, I would observe, is sometimes built in situations quite as accessible as tempting to the cuckoo. I has been so in my own garden; and two years since, early in the morning, I observed a cuckoo very busily watching the movements of a robin, then about to sit. My avocations, however, at that time—for I was constantly away from home—prevented my witnessing what I have since imagined might have taken place.

## Societies.

HORTICULTURAL, *July* 19: GARDEN EXHIBITION.—If any one portion of this in all respects excellent July exhibition can be said to have attracted more attention than another, it was the fruit, of which there was an extensive and grand display. Pine-apples were numerous and handsome. Black Grapes were generally well coloured, and quite ripe; but as much can hardly be said of all the white Grapes; those, however, to which the first prizes were awarded were not only perfectly ripe, but beautiful both in bunch and berry, exhibiting that fine golden colour which is so much prized in the Muscat and other white kinds. Peaches and Nectarines were large and well swelled, and there were some beautiful dishes of Strawberries and Black Circassian, Elton, and Bigarreau Cherries. Melons were plentiful and unusually good.

No less than three collections of fruit were produced on this occasion. The best was furnished by Mr. Spencer, gr. to the Marquis of Lansdowne, at Bowood. It consisted of four well ripened Providence Pine-apples, two Queen ditto, Black Hamburgh and Sweetwater Grapes, a dish of Noblesse Peaches, 2 ditto Royal George, a dish of Elruge Nectarines; Blackall green-fleshed, Danesbury Park, and Beechwood Melons; two dishes of Kitley's Goliath Strawberries, and a dish of Bigarreau Cherries.—Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, to whom the 2d prize was awarded, had two beautiful Pine-apples of the Queen and Ripley Queen kinds, Trentham Hybrid and Hybrid Dampsha Melons, a dish of Pope's Hamburgh Grapes, famous Royal George and Noblesse Peaches, a dish of Nectarines, one ditto Moor Park Apricots, May Duke Cherries, and White Ischia Figs.—The third collection was contributed by Mr. Munro, gr. to Mrs. Oddie, of Colney House, St. Alban's, Herts. It comprised Black Hamburgh, White Frontignan, and White Muscadine Grapes; Grosse Mignonne Peaches; Violet Hative, Elruge, and old white Nectarines; Eleanor, White Bicton, King, Elton Pine, Chieftain, and Paten's Seedling Strawberries; Snow's Green-fleshed, Wood's Persian Hybrid, and Brown's Superb Melons; making 17 dishes in all of very good fruit.

Among PINE-APPLES, Mr. Jones, gr. to Sir J. Guest, Bart., had a Queen finely swelled and ripened, weighing 5 lbs. 12 oz.; Mr. Frost, gr. to E. Betts, Esq., the same variety, weighing 5 lbs. 5 oz.; and Mr. Higgs, gr. to J. Barchard, Esq., sent one weighing 4 lbs. 4 oz. Mr. Jones also contributed an Enville, 8 lbs. 9 oz.; Mr. Bray, gr. to E. Lousada, Esq., a smooth Cayenne, 6 lbs.

9 oz., and Mr. Chapman, gr. to J. B. Glegg, Esq., of Withington Hall, Knutsford, a small, but nicely shaped Black Jamaica, 3 lbs. 12 oz. Among Providences, Mr. Jones had the heaviest fruit; but it was not so well formed or ripened as one from Mr. Briddon, gr. to W. O. Gore, Esq., which, on that account, received the first prize. The latter weighed 9 lbs. and Mr. Jones's fruit 10 lbs. Mr. Moffatt, gr. to the Duke of Newcastle, had a fair example of this kind of Pine weighing 7 lbs. 12 oz. The above were what received prizes.

Other Pine-apples consisted of some nicely-swelled Queens, a Providence, and an Enville, 8 lbs. 9 oz. from Mr. Jones; a Queen from Mr. Jervis; a Queen and an Enville from Mr. Constantine; a Queen, Providence, and a Prickly Cayenne, 6 lbs. 2 oz., from Mr. Bray; a Queen from Mr. Drummond; an Enville from Mr. Watson, gr. to Mrs. Tredwell; the same variety from Mr. Harrison, Oatlands Palace; two Providences from Mr. Moffat; the same kind of Pine from Mr. Jay, gr. to Mrs. Colston; and a Providence, 6 lbs. 15 oz., from Mr. Patterson, gr. to the Baroness Wenman; Mr. Dixon, gr. to Mrs. Villebois, showed a fair sized Queen, in a 7-inch pot.

GRAPES.—Among private growers the best Black Hamburghs were contributed by Mr. Stent, gr. to W. Herbert, Esq., Clapham; the second best by Mr. Henderson, gr. to Sir George Beaumont, Bart.; and the third best by Mr. Umpleby, gr. Mrs. Benyon, Roundhay, near Leeds. Among market gardeners, Mr. Harrison, of Oatlands, was first; Mr. Spary, of Brighton, second; and Mr. Davis, of Oak Hill, third. Other exhibitions of this kind of Grape were communicated by Messrs. Williams, Meredith, Constantine, Smith, Newman, Elliott, Williamson, Davey, Gould, Russell, Munison, and Bucktront. The best examples of Black Prince were shown by Mr. M'Qualter, gr. to Col. Challoner; and Mr. Turnbull, gr. to the Duke of Marlborough; and Mr. Hill, gr. to R. Sneyde, Esq., had good specimens of this kind of Grape, as had also Mr. Rust, gr. to J. Maclaren, Esq., and Mr. Martin, gr. to Sir H. Fleetwood, Bart. By far the best White Muscadines were exhibited by Mr. Rust — not that they were larger either in size of bunch or berry than some of the others — for this was not the case; but they were beautifully ripened and coloured. Very good examples of the same kind of Grape came from Mr. Wood, gr. to S. Murray, Esq.; and Mr. Williams, gr. to C. B. Warner, Esq. Mr. Bucktront, Mr. M'Qualter, Mr. Tillyard, gr. to Lord Southampton, and Mr. Steers, of Teddington, also showed Muscadines. Excellently ripened Muscats were produced by Mr. Taylor, to whom the first prize was deservedly awarded; and beautiful fruit of this variety came from Mr. Campbell, of Darlington; Mr. Davey, gr. to Mrs. Smith, and Mr. Mitchell, of Brighton. The latter obtained the first prize in the market gardeners' class. Other Muscats were from Mr. Williams, gr. to C. B. Warner, Esq.; Mr. Rust, Mr. Turnbull, Mr. Carpenter, gr. to Sir E. Scott, Bart, Mr. Bignall, gr. to Mrs. Tomkinson, and Mr. Davey, gr. to Mrs. Smith. Very fine Chasselas Musqué were furnished by Mr. Leonard, gr. to J. Cox, Esq., who also sent examples of Josling's St. Alban's; and excellent Grizzly Frontignans came from Mr. Carpenter and Mr. Henderson. Mr. Elliott, gr. to Mrs. Boothby, had Frontignans and Syrian. Three specimens of Black Hamburgh Grapes, in pots, with from four to five well coloured bunches on each Vine, were contributed by Mr. Smith, gr. to S. Ricardo, Esq.

Mr. Elphinstone, gr. to the Right Honourable the Speaker, at Heckfield, received an extra prize for three beautiful bunches of Black Hamburgh from Vines that had been grown in pots. Along with the fruit, Mr. Elphinstone furnished the following memorandum concerning its production:—"The Vines, from which the Grapes exhibited were taken, were struck from eyes, potted in February, 1850, and grown in pots."

PEACHES.—Mr. Snow, gr. to Earl de Grey, sent very fine Violette Hative; Mr. Turnbull, Early Purple; Mr. Munro, gr. to the Earl of Clarendon, Royal George; and Mr. Wilson, Warwick, finely swelled specimens of the same variety. Mr. Robertson, gr. to Lady Emily Foley, sent Late Admirable; Mr. Collinson, gr. to the Marquis of Westminster, Bellegarde; Mr. Meredith, Royal George; and Mr. Constantine, and Mr. Bucktront, the same kind; Mr. Martin and Mr. Busby, grs. to S. Crawley, Esq., produced Noblesse; Mr. Tillyard, Royal George, finely swelled and coloured, and Mr. Elphinstone, Grimwood's Royal George and Noblesse.

NECTARINES.—Excellent examples of Elruge were communicated by Mr. Tillyard, gr. to Lord Southampton, and Mr. Martin, gr. to Sir H. Fleetwood, Bart.; Mr. Turnbull and Mr. Wilson, of Warwick, had also good specimens of this kind of Nectarine, as had also Mr. Meredith; Mr. Elphinstone sent Red Roman, and Mr. Busby, gr. to S. Crawley, Esq., Violette Hative.

FIGS.—Mr. Elphinstone showed Brown Ischia and Turkey.

CHERRIES.—Beautiful dishes of Black Circassian were contributed by Mr. Marcham, gr. to J. Smith, Esq.; Mr. Busby, Mr. Myers, and Mr. Gainsford; and Elton and Bigarreau by Mr. Snow; Mr. Elliott, gr. to Mrs. Boothby; and Mr. Myers, of Brentford.

STRAWBERRIES.—Large and finely ripened British Queens were shown in the Amateurs' Class by Mr. Elliott, gr. to Mrs. Boothby; and Mr. Eckford, gr. to C. Child, Esq.; and in the Market Gardeners' Class by Mr. Beach, of Isleworth, and Mr. Lydiard, of Bath. Other exhibitors of this kind of fruit were, Mr. Terry, gr. to Lady Puller; Mr. Rust; Mr. Turner, gr. to S. George, Esq.; Mr. Busby; Mr. Valentine, gr. to T. Clarke, Esq.; Mr. Grant, gr. to E. Simons, Esq.; Mr. Tillyard; Mr. Russell, gr. to J. Ames, Esq.; and Mr. Wilson, of Warwick. Of other kinds of Strawberries, Messrs. Parsons, Lydiard, and Wilson showed Myatt's Eleanor; Mr. Wood, gr. to S. Murray, Esq., Downton Pine; Mr. Eckford, Keens' Seedling; Mr. Rust, Elton; Mr. Turner, Myatt's Mammoth; and Mr. Valentine and Mr. Elphinstone, Eleanor. We also remarked Myatt's Goliath and Bicton Pine. The latter is a white Strawberry. Mr. Elliott, gr. to Mrs. Boothby, showed a collection of British Queens in pots, and along with them two specimens of the same kind in very large pots, in order to show what this Strawberry will become under pot cultivation in rich soil and plenty of room. The plants were very robust, and well fruited.—Mr. Seymour had a seedling bearing considerable resemblance to Myatt's Eleanor.

RASPBERRIES.—Examples of the Fastolff came from Mr. Martin, Mr. Smith, and Mr. Elliott.

MELONS.—The 1st prize was awarded to Mr. Brown, gr. to H. Minton, Esq., for a Trentham Hybrid; the 2d, to Mr. Munro, gr. to the Earl of Clarendon, for a Persian Green-fleshed; and the 3d to Mr. Grant, gr. to H. Simons, Esq., for Bromham Hall. Other varieties consisted of Hybrid green-fleshed, Sidcup green-fleshed, Golden Perfection, Scarlet-fleshed; Bowood, Egyptian green-fleshed; Black Rock, Snow's Hybrid, Munro's ditto, Stowe Hybrid, Colney Hatch ditto, Pitt's ditto, Napoleon green-fleshed, Emperor, Fish's Hybrid, Cole's ditto, Marcham's ditto, Victory of Bath, and others.

Among other kinds of fruit we observed a very fine red Currant, called Mammoth, from Mr. Jackson, of Kingston; a red Grape Currant, from Mr. Harrison, of Oatlands; some Apples from Mr. Beer, gr. to B. Sharpe, Esq.; and Oranges in pots, from Mr. Watson, gr. to Mrs. Tredwell.

In collections of 20 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. Cole, gr. to H. Colyer, Esq., Dartford. At the back of this group stood a very fine Allamanda cathartica, beautifully grown and flowered; and supporting it were Dipladenia splendens covered with blossoms, a rare occurrence with this fine species, Dipladenia crassinoda, equally handsome, a good bush of Crowea saligna, perhaps hardly sufficiently in bloom, a fair Clerodendron Kæmpferi; the Scarlet Ixora, in admirable condition; Erica ferruginea, quite 4 feet across, and scarcely less in height, loaded with flowers; a spreading Everlasting; the Scarlet Kalosanth, a brilliant plant at this season of the year; a small example of Roella ciliata; the bright-coloured Æchmea fulgens, with nine flower spikes; Jackson's variety of the Three-coloured Heath; a small but finely managed plant of Ixora alba, whose heads of snowy blossoms contrasted well with those of the saffron and red species; Phænocoma proliferum, the pretty Cape Heath called infundibuliformis, the Red Leschenault and Crowea elliptica.—Mr. May, gr. to Mrs. Lawrence, was placed second on this occasion; but his plants were scarcely inferior to those just described. The collection contained a noble Allamanda cathartica, finely bloomed; Stephanotis floribunda, a little bare at bottom, but a very good specimen, and thickly covered with flowers; Kalosanthes miniata, a worthy rival, in point of beauty, to the scarlet species; the best variety of Aphelexis macrantha, the blue Sollya linearis, a magnificent bush of Ixora javanica, the "crown head" of the collection, literally covered with orange scarlet blossoms; the clear yellow flowered Allamanda grandiflora, Clerodendron Kæmpferi, with two spikes of glowing scarlet flowers; the lovely Dipladenia crassinoda, the larger variety of Crowea saligna, the rose-coloured and white Vincas, Kalosanthes miniata, a large Erica Irbyana, the Chinese Indigofera decora, the rose-coloured variety of Erica Parmentieri, an Everlasting, and Gloriosa superba.—A third group was contributed by Messrs. Fraser, of Lea Bridge-road. It consisted of a large Allamanda grandiflora, the rosy-flowered Dipladenia crassinoda, the sweet-smelling Stephanotis floribunda, huge bushes of Epacris miniata, Allamanda cathartia, and the white Schubertia graveolens; also Kalosanthes miniata, Crowea saligna, hardly sufficiently in bloom; the Oleander-leaved Tristania, the sweet-smelling Sphenotoma gracilis, the white Vinca, Clerodendron fallax, the beautiful Lisianthus Russellianus, Wilson's variety of Erica tricolor, Ixora coccinea, and Roella ciliata.—Mr. Stanly, gr. to H. Berens, Esq., also showed a group of 20 small plants, among which the most conspicuous were, Euphorbia splendens, a white-flowered Cape Heath, Kalosanthes miniata, the Saffron Ixora, Phænocoma proliferum, the white variety of Vinca rosea, the pretty Cereus called Mallesomi, and Chironia glutinosa.

In collections of 15 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. Green, gr. to Sir E. Antrobus, Bart., of Cheam. In this group we remarked well managed specimens of Allamanda cathartica, Dipladenia crassinoda, Ixora coccinea, Pleroma elegans, a charming hardy greenhouse shrub, with bluish purple blossoms as large as a crown piece; Rondeletia speciosa, the pretty Cape Heath called Savileana, the Baxter and Red Leschenaults; a variety of Erica tricolor, two Everlastings; afinely flowered and cultivated plant of Lisianthus Russellianus, Kalosanthes miniata, and Ixora aurantiaca; the latter insufficiently in bloom.—The next collection, from Mr. Taylor, gr. to J. Coster, Esq., of Streatham, contained a charmingly blossomed Ixora coccinea, Allamanda cathartica and Schottii, the truly beautiful Dipladenia crassinoda, Pleroma elegans insufficiently in flower, Phænocoma proliferum, the Red Leschenault, Polygala oppositifolia, the well-known Hoya carnosa, Kalosanthes miniata, a small example of the blue Sollya linearis, one of the many varieties of Erica tricolor, and the sweet-smelling Gardenia radicans.

TEN STOVE and GREENHOUSE PLANTS were furnished by Mr. Speed, of Edmonton, Mr. Croxford, Stamford Hill, and Mr. Carson, gr. to W. F. G. Farmer, Esq., of Cheam. Mr. Speed's plants, which were beautifully grown and flowered, consisted of Allamanda Schottii and cathartica, Leschenaultia Baxteri and splendens, the white variety of Vinca rosea, Clerodendron fallax, with a fine head of bloom, a spreading Kalosanthes miniata, and a beautifully blossomed Dipladenia crassinoda. Mr. Croxford, whose collection was little inferior to the above, had a finely bloomed Clerodendron fallax, Allamanda cathartica, Stephanotis floribunda, a large Kalosanthes miniata, a nice Roella ciliata, an Everlasting, a brilliantly coloured Æchmea fulgens, Phœnocoma proliferum, and a small Erica ampullacea. Mr. Carson contributed two fine Allamandas, the Showy Rondeletia, Æschynanthus Lobbii, Leschenaultia formosa, Kalosanthes miniata, Pavetta caffra, the Scarlet Ixora, the neat white flowered Sphenotoma gracilis, and Dipladenia crassinoda.

Collections of SIX STOVE and GREENHOUSE PLANTS were numerous. The best group was furnished by Mr. Pamplin, of Lea Bridge-road, Leyton. It consisted of the yellow Allamanda cathartica finely grown and flowered, the white Stephanotis floribunda, Erica ampullacea, Roella ciliata, the useful Franciscea angusta, and Kalosanthes miniata.—Mr. Kinghorn, gr. to the Earl of Kilmorey, whose group was next in point of merit, had Allamanda Schottii, a fine variety; the rosy-flowered Vinca, Leschenaultia formosa, the Jasmine-flowered Heath, the showy Kalosanthes coccinea, and an Everlasting.—Mr. Bunn, gr. to — Richards, Esq., of Edmonton, sent Tetratheca verticillata, Stephanotis floribunda, the showy Clerodendron fallax, Sollya linearis, the Hoya-like Cyrtoceras reflexum, and Kalosanthes miniata.—Mr. Over, gr. to W. M'Mullen, Esq., of Clapham, communicated Hoya carnosa, the gay Kalosanthes miniata, Sollya linearis, the useful Allamanda cathartica, the brilliant Epacris miniata, and a green-flowered Cape Heath (Erica viridiflora.)—Mr. Watson, gr. to Mrs. Tredwell, sent a variety of Erica tricolor, the white variety of Vinca rosea, Allamanda cathartica, the blue Sollya heterophylla, the rosy Dipladenia crassinoda, and Clerodendron fallax, the latter a good deal past its best. Mr. Hamp also showed in this class.

HELICHRYSUMS were exhibited by Messrs. Taylor, Green, and Watson. The varieties consisted of Aphelexis sesamoides, S. purpurea, S. superba, S. rosea, humilis, macrantha purpurea, spectabilis, and its large flowered variety.

ORCHIDS.—Of these universal favourites there was a large and fine display. In collections of 20 species, Mr. Mylam, gr. to S. Rucker, Esq., was first. His group contained a noble Vanda Batemanni, with two glorious spikes of lovely blossoms, Sobralia macrantha with nearly a dozen flowers on it, Aerides Larpentæ with six spikes, a plant apparently the same as Acineta deusa, the exceedingly handsome Cattleya superba, Dendrobium formosum; Brassia Lanceana, finely grown and flowered; the lovely Barkeria spectabilis; a small plant of Aerides maculosum; Cattleya violacea, beautifully bloomed; the large-flowered White Butterfly-plant (Phalænopsis grandiflora); Oncidium Lanceanum, the charming Saccolabium guttatum, the yellow-blossomed Mormodes citrinum, a pyramidal Aerides odoratum, nearly 6 feet high, regularly flowered from bottom to top; the pale lemon-coloured Mormodes luxatum; Phalænopsis rosea, considerably past its best; the twisted Dendrobe (D. tortile); Aerides crispum, a mass of highly-coloured flowers; and the lilac-blossomed Epidendrum verrucosum.—Mr. Franklin, gr. to Mrs. Lawrence, of Ealing Park, was second. The best plants in this collection were Sobralia macrantha, with upwards of a dozen highly coloured flowers on it; the large variety of Oncidium ampliatum, still in good condition, although it has been in flower nearly all the season; Oncidium luridum guttatum; O. leucochilum, O. Lanceanum, and two other Oncids; the yellow-blossomed Clowes Angulos; Barkeria spectabilis, the rich orange scarlet Epidendrum vitellinum, Aerides odoratum, rather past its best; Epidendrum cochleatum, Odontoglossum grande, and hastilabium; Cattleya citrina, a thinly-flowered Miltonia spectabilis, and Brassia Wrayæ.—Mr. Williams, gr. to C. B. Warner, Esq., sent the best variety of Oncidium Lanceanum, with 5 flower spikes; the larger White Butterfly-plant (Phalænopsis grandiflora), a fine Cattleya crispa, middling well flowered; two Oncids, Cattleya Loddigesii, the purplish lilac Calanthe Masuca, Epidendrum cochleatum, with some 14 flower spikes; examples of the Bearded and Low Lady's Slippers (Cypripedium barbatum and Lowei), Gongora maculata, the singular Cycnoches ventricosum and Loddigesii; a small Miltonia spectabilis, Brassia Lanceana, the tailed Angrec (A. caudatum), and the brown Paphinia cristata.

Collections of 15 ORCHIDS were shown by Messrs. Veitch and Rollisson. The former had the rare and very beautiful Cattleya Aclandiæ, the Blume Saccolabe in charming condition, Cypripedium Lowei, the scarce Aerides quinquevulnera, hardly suffieiently advanced in bloom, the pretty little Dendrobium transparens, the rare and curious D. Veitchianum, the white Butterfly-plant (Phalænopsis amabilis), the greenish yellow flowered Epidendrum aromaticum, the orange and

white Dendrobium formosum, the Bearded Lady's Slipper (Cypripedium barbatum), the yellow and brown blossomed Oncidium cornigerum, Saccolabium guttatum, and a promising new Cape Angrec.—Messrs. Rollisson contributed a good plant of the White Phaius, a large mass of Sobralia liliastrum alba, a well flowered example of the Dove plant (Peristeria elata), Stanhopea tigrina, the handsome S. Devoniensis, a beautiful variety of S. oculata called Meleagris, the Green-tailed Dendrochilum filiforme, Miltonia spectabilis, the Blume and spotted Saccolabes (S. guttatum and Blumei), the White Butterfly-plant (Phalænopsis amabilis), the spotted variety of Oncidium luridum, Acineta Barkeri, with two fine spikes of yellow blossoms, Calanthe furcata, and Aerides quinquevulnera.

Groups of 10 Orchids were furnished by Mr. Blake, gr. to J. H. Schröder, Esq., and Mr. Carson, gr. to W. F. G. Farmer, Esq., of Cheam. Mr. Blake had a finely blossomed Phalænopsis grandiflora; an equally good Oncidium pulvinatum; Aerides purpurascens in good condition; Epidendrum cinnabarinum, with four spikes of rich orange scarlet flowers; the singular Acropera Loddigesii, the Tailed Angrec, Cattleya violacea, very highly coloured; a small plant of C. crispa, and an excellently flowered Galeandra Baueri.—Mr. Carson sent a large Sobralia macrantha, a beautifully blossomed Oncidium Lanceanum; Cœlogyne speciosa, the Blume Saccolabe, the yellow Acineta Barkeri, Saccolabium guttatum, with two long racemes of flowers; Stanhopea tigrina, the Tailed Angrec, a nicely bloomed Miltonia spectabilis, and Oncidium luridum guttatum.

Collections of 6 Orchids were produced by Mr. Green, Mr. Kinghorn, and Mr. Wooley, gr. to H. B. Ker, Esq., of Cheshunt. Mr. Green sent a large Aerides odoratum, a very fine Oncidium Lanceanum, Stanhopea tigrina, bearing four flowers; Miltonia spectabilis, Gongora maculata, insufficiently in bloom; and a good Cattleya crispa.—Mr. Kinghorn showed a small but well-flowered Miltonia spectabilis, Cattleya crispa, Dendrobium Calceolaria, the larger variety of the Blume Saccolabe, a luxuriant Brassia maculata, and the larger flowered White Butterfly-plant (Phalænopsis grandiflora).—Mr. Wooley produced Dendrobium moschatum, the White Phaius, small plants of Miltonia spectabilis, and Oncidium Lanceanum; also Dendrobium chrysanthum, and a well-flowered Oncidium pulvinatum.

Specimen Orchids consisted of a noble Aerides odoratum, beautifully flowered, from Mr. Mylam, a large example of the Chinese Renanthera coccinea, from Mr. Falconer, gr. to A. Palmer, Esq., of Cheam, and a nicely-blossomed Oncidium pictum, from Mr. Hamp, gr. to J. Thorne, Esq., South Lambeth.

Mr. Williams, gr. to C. B. Warner, Esq., contributed several variegated Orchids.

Pitcher Plants.—Messrs. Veitch again showed a magnificent collection of these highly interesting subjects. The sorts were the same as those produced at the June exhibition.

Cape Heaths were numerous, and in capital condition. Collections of 10 were furnished by Mr. Smith, gr. to W. Quilter, Esq., of Norwood; Mr. Cole, and Mr. May. Mr. Smith had large and fine plants of inflata alba, retorta major, Rollisson's variety of tricolor, Juliana, infundibuliformis, Parmentieri rosea, Holford's tricolor, Irbyana, and the larger varieties of ampullacea and jubata. In the Nurserymen's Class, Messrs. Rollisson, Fairbairn and Fraser, produced good plants. Messrs. Rollisson had gemmifera, ferruginea, Juliana, Cavendishiana, Candolleana, jasminiflora alba, Parmentieri rosea, ampullacea fusca, tricolor Holfordiana, and jubata rosea. The plants in 11-inch pots were beautifully grown and flowered. In this class Mr. Smith showed the variety of tricolor called elegans, Juliana, the rose-coloured variety of Parmentieri, infundibuliformis, the larger variety of retorta, Irbyana, Savileana, eximia, sanguinolenta, and jasminiflora alba. Mr. Taylor was second, and Mr. Cole third. Among Nurserymen, Messrs. Rollisson were first, and Messrs. Fairbairn second. The former sent tricolor Holfordiana, eximia, obbata, Cavendishiana, gemmifera, infundibuliformis, ampullacea major, tricolor elegans, miniata, and ampullacea hirsuta. Mr. Smith and Messrs. Rollisson had the best varieties in 8-inch pots. The former showed the larger variety of tricolor, Parmentieri rosea, obbata, the larger variety of retorta, Rollisson's tricolor, and eximia. Messrs. Rollisson sent tricolor Leeana, T. Holfordiana, T. impressa, metulæflora, retorta amabilis, and eximia.

Roses (cut) were shown in abundance, and as they retained their freshness and beauty well throughout the day, they were highly attractive, and much admired. Prizes were awarded for 50 varieties, to Messrs. Lane, Paul, and Francis; and for 25 varieties, to Messrs. Terry, Rowland, Carter, and Parsons. Among the different collections we remarked excellent blooms:—*Moss:* Crested, Lancel, large rose; Lanei, fine rosy crimson. *Provins or Cabbage:* Madame Henriette, large rosy pink; Cristata, bright rose. *Gallica:* Bizarre Marbré, mottled crimson; Boule de Nanteuil, reddish crimson; Kean, brilliant carmine; grandissima, bright crimson; Latitie, mottled crimson; Shakspeare, shaded deep crimson; Triomphe de Jaussens, bright crimson. *Alba:* Duc de Luxembourg, white, with a blush centre. *Hybrid China:* Brennus, bright carmine; General Jacquimot, large shaded lake; Lady Stuart, blush. *Hybrid Bourbon:* Chénédolé, dark crimson; Comtesse Molé, pink; Comtesse de Lacepède, blush; Coupe de Hébé, pink; Great Western, red; Paul Perras, pink; Paul Ricaut, deep carmine. *Damask:* Ismène, white; Madam Zontman, creamy white. *Hybrid Perpetual:* Amandine, pink; Baronne Hallez, fine crimson; Baronne Prevost, very large pink; Dr. Marx, rosy carmine; Caroline de Sausal, beautiful blush; Clementine Seringe, large shaded blush; Cornet, bright pink; Duchess of Sutherland, beautiful blush; Earl Talbot, deep rosy pink; Géant des Batailles, nearly scarlet; General Negrier, blush; Jacques Lafitte, pale carmine; Lady Frances Waldegrave, rosy pink; Comte de Paris, pale crimson; Madame Trudeaux, beautiful carmine; Miss Pepin, large delicate pink; Queen, rose; Robin Hood, rosy pink; Soleil d' Austerliz, carmine; William Jesse, crimson, tinged with lilac; Comte Robrinsky, bright crimson. *Bourbon:* Souvenir de la Malmaison, creamy white, with a blush centre; Acidalie, French white; Bouquet de Flore, rose; Souchet, deep crimson; Dupetit Thouars, ditto; Leveson Gower, carmine; Paul Joseph, purplish crimson. *Tea:* Adam, salmon buff; Devoniensis, creamy white; Niphetos, pale lemon; Souvenir d' un Ami, delicate salmon; Vicomtesse des Cazes, yellow; Bougère, rose; Elise Sauvage, yellow; Saffranot, fawn. *Noisette:* Lamarque, pale lemon; Aimée Vibert, white; and Solfaterre, sulphur.

Single Specimens.—The best consisted of a magnificent Erica Shannoni, from Mr. Salter, gr. to T. Yeels, Esq.; a fine bush of the beautiful E. metulæflora bicolor, and Ixora salicifolia, from Messrs. Veitch; the larger variety of E. retorta, from Mr. Smith, gr. to W. Quilter, Esq.; a splendid example of Lisianthus Russellianus, from Mr. Constantine; Dipladenia splendens, from Mr. Cole; the charming Hoya bella, from Mr. Over, Kalosanthes miniata, from Messrs. Fraser, and a tolerably well-flowered Fuchsia Thompsonii, from Mr. Cooper, gr. to Miss Sim. The latter was in the shape of a tree, at least 15 feet high, growing in a tub about 2 feet across and 15 inches deep. The same grower also showed two fine Yuccas.

New Plants.—Those to which prizes were awarded were the lilac-flowered Hemiandra pungens, a very pretty greenhouse shrub, and Gordonia javanica, from Messrs. Henderson; Epidendrum replicatum, a handsome species from Mr. Mylam; the Leopold variety of Cattleya granulata, from Messrs. Rollisson; and a small flowered, pale greenish-yellow Hoya, with a dark centre, from Manilla; and a yellow Capsicum from Peru, from Messrs. Veitch. Among others were Cycnoches stelliferum from Mr. Blake, gr. to J. H. Schröder, Esq.; a Warrea Wailesiana from Messrs. Rollisson; an Epidendrum which appeared to be verrucosum, from Messrs. Jackson; and one or two less important plants.

Miscellaneous Subjects comprised a collection of New Holland Protaceous plants, from Mr. Henchman, of Edmonton; new hardy shrubs and trees, whose names will be found at page 422, from Messrs. Standish and Noble; Petunias, from Messrs. Salter and Henderson; and a small collection of Alpine plants from Messrs. Turner, of Holloway and Barnet; together with beautiful cut flowers of Gladioli, from Messrs. Bass and Brown, of Sudbury.

Hothouse Ferns.—Collections were shown by Messrs. Williams, Wooley, Carson, and Masters. The following are the names of Mr. Williams' plants:—Blechnum Braziliense, Adiantum formosum, trapeziforme, pubescens, macrophyllum, and cuneatum; Acrostichum secundens, Cheilanthes spectabilis, and Asplenium nidus; the latter stood 7 feet high, and measured 12 feet across.

Mr. Williams also showed the following Lycopods:—Cordifolium, plumosum, Wildenovum, cæsium, cæsium arboreum, denticulatum, Schottii, Louisianum, apothecum, stoloniferum, umbrosum, apodum, and Brasiliense. Both collections were in charming order.

Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Sion, had a very fine set of miscellaneous plants, consisting of two Palms (Latania borbonica and Ceroxylon andicola, or the Wax Palm), the striped Calathea zebrina, Pothos acaulis, three species of Caladium, viz., the purple-stemmed C. esculentum, the two-coloured, C. bicolor, and a fine large green-leaved sort sometimes called C. distillatorium; also large plants of Mimosa pudica, the sensitive, and Desmidium gyrans, the moving plant; Mussænda frondosa, with curious white bracts and orange flowers; Croton pictum, the pretty-leaved Dracæna ferrea; Gastonia rubra, and Aspidistra lurida, together with the curious and silvery Espeletia argentea, Curcuma Roscoeana, Æchmea fulgens, Platycerium alcicorne, the comparatively new Bejaria Lindeniana, Achimenes longiflora alba, a specimen of the plant in flower and fruit from which the carpet brooms of America are made, viz., Sorghum saccharatum.

Variegated Stove Plants were exhibited by Messrs. Lee, of Hammersmith (1), and Messrs. Henderson, of Pine-apple Place (2). The names of most of these are given in our report of the Royal Botanic Society's Show at p. 422.

Statices.—A collection was furnished by Mr. Watson, gr. to Mrs. Tredwell. It contained macrophylla, arborea, Gmelini, Smithii, and mucronata.

Achimenes.—Groups were contributed by Mr. Godfrey, gr. to R. Dawson, Esq., of Tottenham; Mr. Munro, gr. to the Earl of Clarendon; and Mr. Godfrey, gr. to J. Lester, Esq., of Tottenham. The first exhibition consisted of grandiflora, longiflora, and its larger variety; l. alba, patens, and a variety of coccinea called intermedia.

Pelargoniums were well cultivated and flowered. Mr. Gaines had 12 varieties in 8-inch pots, consisting of Grenadier, Ariel, Virgin Queen, Lord Stanley, Alderman, Star, Electra, Ariadne, Roselind, Pictum, Centurion, and Governor. The same grower had also six "fancies," whose names were Lady of the Lake, Elegans, Parodii, Mignonne, Ellen, and Orestes. Mr. Turner, of the Royal Nursery, Slough, exhibited a neat collection of dwarf well-grown plants, not for competition; among them we remarked, Ajax, May Queen, Nandee, Mont Blanc, Rowena, Alonza, Prince of Orange, Alderman, Hero of Surrey, Formosa, Statiuski, Princess Maria, Galitzan, Orphelia, Gaiety, Perfection, and Madame Rosati.

Cape Pelargoniums were shown by Mr. Stanly and Mr. Parker. The sorts consisted of tripinnatifidum, Blandfordianum, ardens, quinquevulnerum, tricolor, and elatum.

Fuchsias.—Mr. Salter, of Hammersmith, had plants trained in the form of parasols, which had rather an interesting effect. The varieties were, Exoniensis, Comte de Beaulieu, and another kind. Mrs. Lawrence sent Chevalier, Dr. Jephson, and Corallina; and Messrs. Fraser, Kossuth, splendens, and Corallina.

Carnations were shown in pots with cards, and with admirable effect. 12 varieties—Amateurs: 1st, Mr. Lochner, Paddington, with Ariel, Paul Pry, Lady Ely, Caliban, Comte Pauline, Prince Albert (Puxley), William IV., Lord Rancliffe, Edgar, Squire Trow, Sarah Payne, and President; 2d, Mr. Newhall, with Mercutio, Great Northern, Flora's Garland, Lydia, Rainbow, Game Boy, President, Queen Victoria, Henry Kirk White, Lord Rancliffe, Twyford Perfection, and William IV. Nurserymen—12 varieties: 1st, Mr. Norman, with Duncan, Flora's Garland, Prince Albert, Queen Victoria, Telemachus, Beauty of Woodhouse, Comte Pauline, Hero, Thomas Hewlett, Queen Victoria, Sir J. Reynolds, and Lord Rancliffe; 2d, Mr. Bragg, with True Briton, Flora's Garland, Comte Pauline, Hotspur, Prince de Nassau, Duncan, Sarah Payne, Squire Trow, Defiance, Queen Victoria, Earl Grey, Earl Spencer, and Prince of Wales; 3d, Mr. Willmer.

Picotees.—12 varieties—Amateurs: 1st, Mr. Lochner, with Isabella, Lady H. Moore, Venus, Amethyst, Lady Dacre, Regina, Rosalind, Lord Nelson, Leader, Portia, Ann Page, and Mrs. Barnard; 2d, Mr. Newhall, with Lady A. Peel, Isabella, Miss Rosa, Mrs. Bevan, Venus, Leader, Alfred, Lord Nelson, Gem, Mrs. Norman, Proconsul and Jessica. Nurserymen—12 varieties: 1st, Mr. Norman, with Regina, Elizabeth, Leader, Prince of Wales, James II., King of Purple, Mrs. Norman, Alfred, Queen Victoria, Venus, Mrs. Barnard, and Lord Nelson; 2d, Mr. Bragg, with Amethyst, Enchantress, Lord Nelson, L'elegant, Mrs. Norman, Leader, Regina, Lady Chesterfield, Miss B. Coutts, Mrs. Buckland, Portia, and Mrs. Bevan; 3d, Mr. Willmer.

Seedlings.—Mr. Turner, of Slough, had two light and three dark varieties. Of the former class, Honeybell has a stout pure tube, with purple corolla, and graceful and free in habit; while Diadem promises to become a favourite among the dark kinds. Mr. Robert Fellowes exhibited a full-sized, good, heavy-edged, purple Picotee.

## Notices of Books.

*The Poultry Yard.* By Peter Boswell. 18mo. New Edition. Pp. 200. Houlstoun and Co.

The wise man has said—"Of making many books there is no end." The remark applies specially to books on "poultry." Treatise succeeds treatise, with an astounding, an alarming rapidity, and nearly every month "the cry is still they come!" There could be no possible objection to this, if one were an improvement upon the other, or if it brought under our notice any new facts; but it is far otherwise. For the most part, foregoing errors are repeated and perpetuated, *ad nauseam*, and the old standing *materiel* is merely "hashed-up" in a new and vapid form, more unpalateable than before, inasmuch as it is still more palpably obscure.

From this sweeping censure we are most anxious to rescue the modest and unpretending little volume before us. It professes to be, what it really is, "A Practical View of the best Method of Selecting, Rearing, and Breeding the Various Species of Domestic Fowl." In an unassuming preface, neatly constructed, Mr. Boswell says:—"We have had our own boyish experiments, and the philosophical trials of our manhood, on many of the systems which we have since seen detailed in the writings of the learned. It is to the result of a combination of what we have found successful in each of these, that we would wish, in this little volume, to turn the attention of those who have either the prospect or the power of keeping a poultry-house, a dove-cot, or a rabbit-hutch."

The task which the author has undertaken, he has very ably performed. Still, we recommend yet another more careful revision before it is again reprinted; for the most trifling error or mis-statement is open to comment by an enemy; and an ill word, as we all know, sticks closer than a good one. We particularly commend the author's remarks on cleanliness, and the general ordering of a poultry yard. He is wrong, however, in recommending the yard to be paved with stone, tiles, and bricks. This always superinduces gouty symptoms. Nothing can be better than common earth, old mortar, small gravel, and the *débris* of an old wall, well pulverised. This can be "turned up" every now and then, and the walk kept sweet. It would be advisable, too, to dispense with the minute particulars of "caponising;" nor need Cuvier's remarks on the capon

be again quoted, for they are apocryphal "facts" in modern times. The capon can be located but for a *very* little season with the hens, before he is "found out," and "served out." With regard to placing eggs under a hen about to sit, Mr. Boswell says, "never use any without having first examined them by candle-light, to know whether they be fecundated, and *of what sex* the bird that is forthcoming will be." We feel quite sure that no oracular opinion can be safely deduced from this silly operation. Sometimes a tolerable "guess" has been made—nothing more.

The advice with respect to young chickens is worth recording at this season: "Beware of superfluous moisture, whether external or internal. It is *death* to chickens; therefore all slop victuals should be rigourously avoided. The *utmost cleanliness* is necessary, and a dry gravelled layer is most proper." The author's remarks on the diseases of poultry are also worthy attention; only let us add, that when a sick fowl does not quickly show signs of amendment, the "knife" is the most, and *only*, efficient remedy. If poultry were properly attended to, and their wants carefully provided for, illness would be of rare occurrence. We speak from long experience.

As for clean water, given fresh once *at least* daily, this is INDISPENSABLE. Strange to say, neglect in this matter almost universally prevails; and hence the numerous "questions" unnecessarily and continually put by "correspondents." Mr. Boswell has spoken well, and truly, on a multitude of useful topics connected with his subject, and in so saying we give him but his due.

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

PELARGONIUMS which have done blooming should be cut down, and the old plants set in an open place till they have begun to break, when they should be shaken out and re-potted in smaller sized pots. Cuttings should be taken of the best varieties, as they will strike now, in the open ground, with greater freedom than they will at any time during the year, if coddled up by bottom heat and so forth; besides which, the plants they produce are healthier, more robust, and form handsome specimens in a shorter space of time. Proceed by loosening the soil of a south border, and by mixing a little sand with it if required; after which insert the cuttings 3 inches apart, fastening them well with the thumb and fore finger. If very dry weather occur, it will be necessary to water them occasionally; but, if possible, defer this till their bases are cicatrised over. As soon as they have made a few fresh leaves, they can be taken up, potted into 3 and 4-inch pots, and placed for a few days in a close frame; after which they may be gradually exposed to the sun and air. The watering of Chrysanthemums which are being prepared for early winter flowering should be carefully attended to, or they will lose their lower leaves, by which the appearance of the plant will be spoiled, and the production of useless suckers encouraged. Old plants which were planted out for the purpose of layering, should now have the points of the shoots pegged down; after this preliminary operation, the points will re-erect themselves, and in a week's time they may be layered in small pots, plunged immediately under the bent portion of the shoot. Attend to the repotting of the established plants, as often as they require it. Nothing is so bad as to allow the roots to become cramped in the pots. The situation in which Chrysanthemums are set should be perfectly open to the sun and a free circulation of air; and the roots may be kept in a more equable state, by plunging the pots to the rim in fine coal ashes

### FORCING DEPARTMENT.

VINERIES.—Early Vines which have completed their growth, ripened their leaves, and are showing an evident desire to go to rest, should have as much air as possible, lest the summer heat should induce them to start again into growth. The side, front, and back upright ventilators, should always remain open; and when a sufficient amount of ventilation is not attainable by these means, the lower ends of the sashes should be propped up, so as to ensure a free circulation of air through the house. In very wet weather also, this plan is preferable to that of sliding down the top sashes, as it is not less essential to keep the soil dry, tahn it is to keep the atmosphere cool during the season of rest. To this end, the outside border should from this time be covered with a tarpaulin, or some other contrivance during rainy weather.

PEACH-HOUSES, APRICOTS, AND CHERRIES.—Let no exertion be spared that will contribute to keep the foliage healthy and clean as long as possible, by maintaining a cool moist atmosphere. Take care that the soil of the borders inside the house does not get too dry, or this will cause the plants to shed their leaves prematurely; and, on the other hand, do not allow it to get too wet, or the half-ripened buds will burst. Where the fruit is not yet gathered, a somewhat drier atmosphere should be preserved on its account. FIGS.—Where these are now ripening, the house must be kept somewhat drier, but at the same time the state of the soil must be carefully watched, lest it get too dry, and cause the fruit to drop off. Beware of red spider, which is particularly apt to establish itself at such a crisis, when the swelling fruits are making so large a demand upon the energies of the plants, and are thereby checking in some measure their vigorous growth. This is an evil which must be carefully guarded against.

### FLOWER GARDEN AND SHRUBBERIES.

At this season there is always abundance of work requiring immediate attention, which can only be done by concentrating all available force upon it, and proceeding with it in a progressive manner; taking care, by vigilant superintendence, that each portion is finished before another is commenced. Numberless plants are demanding additional staking and tying, to prevent them from breaking down. Many beds and patches of early flowering annuals are now past their prime, and should be removed, filling their places with the gayest things that can be selected from the reserve garden. These matters should not be neglected even for a day, as a garden should at all times, if possible, present a scene of progressive beauty, to which end every effort should be made to conceal or alter anything which would give it a declining or fading appearance. Advantage should be taken of favourable weather to do many jobs in the reserve garden, such as thinning and transplanting young annuals, biennials, and perennials, and various plants which stand too close together in their seedling beds. The propagation of half-hardy plants for next season, should be commenced as soon as that of the hardier species mentioned in former week's Calendars is completed. The propagation of many plants, of which a great quantity is required, is sometimes rendered difficult by their tendency to produce nothing but flowering shoots; by closely cutting in a few of the plants, this difficulty will be obviated, as they will thereby be induced to throw out strong young shoots, which strike with the greatest facility. This hint applies to some kinds of Calceolarias, Lobelias, Petunias, Delphinium grandiflorum, and many other plants of a similar character. While the shoots of these are preparing, operations may at once commence with scarlet Pelargoniums, which should be propagated early, to allow them time to become established and hardened before winter. They are easily propagated in any situation from a slight bottom heat to the front of a south wall. The latter method is of course the best at this season, as they never fail to strike, and there is no trouble with them until ready for potting. About London, some thousands of Geranium cuttings are struck in the open ground without protection.

### FLORISTS' FLOWERS.

Let us advise all those amateurs who are anxious to improve the already beautiful races of Carnations and Picotees, to try what they can do in the way of cross breeding; now will be a good time to perform the operation. Some varieties are more prolific in pollen or farina than others; the anthers or male organs which produce it are low down in the calyx, and will have to be sought there. Flowers to be hybridrised should not have their pods tied round with thread, for a split calyx is rather convenient than otherwise, and free exposure to the sun and air is conducive to their well doing. The two "horns," as they are improperly called, which are the female organs or pointals, are the parts to be fecundated, and this must be done, by extracting the anthers with a very thin pair of ivory tweezers, and applying them covered as they are with farina to these parts; a little practice and observation will soon enable the amateur to seize the right time, as the sooner the farina is applied after the anther has burst the better, and we may also observe, that warm and sunny weather in the middle of the day will be found the best period for the operation. Much improvement has taken place of late years in these flowers, but there is yet abundant room for improvement in some of the classes. Take especial care that the aphis or plant louse does not congregate on the points of the Dahlias; brush them off on their first appearance, much after labour will thus be saved; should dry weather set in, regular watering is imperative. Stake out, disbud and thin as the plants may require it.

State of the Weather near London, for the week ending July 24, 1851, as observed at the Horticultural Garden, Chiswick.

| July. | Moon's AGE. | Barometer. | | Temperature. Of the Air. | | | Of the Earth 1 foot deep. | Of the Earth 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | | | | |
| Friday.. 18 | 19 | 29.950 | 29.893 | 72 | 39 | 55.5 | 59½ | 57½ | N.W. | .00 |
| Satur. .. 19 | 20 | 29.970 | 29.806 | 71 | 52 | 61.5 | 59 | 57½ | S.W. | .31 |
| Sunday . 20 | 21 | 29.775 | 29.708 | 72 | 50 | 61.0 | 59½ | 58 | S.W. | .00 |
| Monday 21 | ( | 29.979 | 29.950 | 72 | 42 | 57.0 | 60½ | 59½ | W. | .00 |
| Tues. .. 22 | 23 | 30.036 | 29.806 | 76 | 58 | 67 0 | 60½ | 59½ | E. | .08 |
| Wed. .. 23 | 24 | 29.737 | 29.550 | 71 | 57 | 64.0 | 61 | 59 | E. | .70 |
| Thurs... 24 | 25 | 29.553 | 29.473 | 60 | 53 | 56.5 | 61 | 58½ | S.W. | .28 |
| Average .. | | 29.887 | 29.742 | 70.5 | 50 1 | 60.3 | 60.1 | 58 5 | | 1.37 |

July 18—Very fine; cloudy and fine; cold at night.
— 19—Fine till noon; rain; heavy rain at 6 P.M.
— 20—Fine: densely clouded; fine.
— 21—Very fine throughout; cold at night.
— 22—Dry haze; very fine; clear at night.
— 23—Rain; dull and hazy; thunder; constant heavy rain.
— 24—Heavy rain; overcast at night.
Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending August 2, 1851.

| July and August. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 27 | 74.6 | 51.6 | 63.1 | 9 | 0.56 in. | 1 | 3 | 3 | 1 | 2 | 6 | 6 | 3 |
| Mon 28 | 76.7 | 53.8 | 65.3 | 11 | 0.32 | 2 | 1 | 2 | 2 | 1 | 8 | 6 | 3 |
| Tues. 29 | 75.6 | 51.4 | 63.5 | 11 | 0 31 | 1 | 2 | 4 | 1 | 2 | 8 | 4 | 3 |
| Wed. 30 | 73.5 | 51.2 | 62.3 | 13 | 0.88 | 3 | 3 | 3 | 1 | 1 | 7 | 6 | 1 |
| Thurs. 31 | 74.6 | 50.6 | 62.6 | 10 | 0.66 | 2 | 3 | 2 | — | 3 | 6 | 7 | 2 |
| Friday 1 | 75.4 | 51.2 | 63.3 | 11 | 1.23 | 1 | 2 | 5 | 2 | 3 | 6 | 6 | — |
| Satur. 2 | 74.8 | 53.4 | 64.1 | 13 | 0.65 | 1 | 3 | 2 | — | 7 | 7 | 3 | 2 |

The highest temperature during the above period occurred on the 1st August, 1846—therm. 92 deg; and the lowest on the 29th, 1828 and 1845, and 1st August, 1842—therm. 42 deg.

## Notices to Correspondents.

BIRDS: THE GOLDFINCH: *Dolorosus.* The grief you express for your little friend in his sickness will be increased, when we tell you that his case is hopeless. Asthma in its worst form has worn him out. He is fast wasting away. You are wrong in imagining that by putting his head behind his wing he is getting rest and relief. On the contrary, these are fatal symptoms of his being on the very confines of the grave. It were an act of mercy, if he still lives, to shorten his days and end his sufferings by putting him for a few moments under water. A few struggles, barely observable, will set his spirit free, and make your conscience easy. When it has become impossible for us to alleviate pain, the sooner the sufferer is taken away the better. *W. K.*—THE ABERDEVINE: *Margaretta.* The trick your bird has of picking out his feathers and otherwise disfiguring and injuring his little body, is one to which cage-birds are occasionally subject, and one which is not always very easily cured. Let him fly about the room every morning, after first carefully closing the windows; and place a saucer, half filled with water, on the table. He will, as as he is so tame, soon take pleasure in splashing himself all over; and the arranging of his feathers, when he retires from the bath, will distract his attention from his usual bad habits; from which, by degrees, you may in this simple way divert him. A little hard-boiled yolk of egg, and some ripe Chickweed, now and then; these, and any other variety in his diet, will, let us hope, turn him from the error of his ways. We are no advocates for daubing birds over with nauseous unguents, when milder measures will answer the purpose infinitely better. *W. K.*—THE JENNY WREN: *Observer.* The remarks you make about the heavy duties imposed upon the mother bird are quite correct. The very same circumstances have attended a nest of young wrens recently hatched in my garden. The mother appears to me to have built the nest as well as laid the eggs, and sat the whole allotted period; this, as far as my observation goes, quite unassisted by her mate. She feeds them, also, most assiduously; and it is curious to observe how indefatigably she forages about to procure them all the delicacies of the season. Her tameness is surprising, for she goes in and out of her nest while I am standing by and admiring her activity. Instinct, doubtless, teaches her that, as I knew her hiding place—a most cunning one it is—from the time of her selecting it, and left her unmolested until now—she may safely complete what she has so auspiciously begun. By the way, she *has* a mate living, for I can frequently hear his voice, though I seldom get a peep at him. *W. K.*

FENCES: *G M L.* You may cut Laurel hedges now with safety.

GRAPES: *κ τ λ.* The Eschcolata superba is, we believe, not different from the Muscat of Alexandria. It is a white Grape, but we suspect that other kinds pass under the name.

INSECTS: *W P L.* The larger single caterpillar upon the Turnip leaves is that of the common green veined white butterfly, and the small ones are those of Cerostoma parrectella or Xylostella, a small moth. From their small size, and the fact of their feeding on the underside of the leaves, any application of dry lime or soot on the upper side of the leaves could hardly be efficacious. We would recommend rather the lime or soot to be made into a thick liquid by the help of gas-tar water or soap-suds, and the plants to be dressed with this mixture several times, which, if they are in drills, will not be difficult. *W.—H R B.* We found a single specimen of three different minute insects on your Turnip leaves, the very young caterpillar of some moth (probably Agrotis segetum), that of a small beetle, and an aphis. Not knowing which of these is the chief cause of the mischief, we can only refer you to the preceding answer. *W.—A M C.* The little beetles hatched out of the oval membranous cases are the water betony weevil (Cionus scrophulariæ), and the cases mistaken for seeds are their cocoons. (See the history of this insect in *Gard. Chron.* p. 228—1849.) *W.*

NAMES OF PLANTS: *Erzeroum.* 785, Argyrolobium; 313, Medicago sativa.—*A Young Botanist.* Trifolium arvense and the male of the common Hemp, wretched specimens.—*R J C.* 1, Triticum repens; 2, Agrostis alba; 4, Agrostis vulgaris; 5, Agrostis canina; 6, Holcus mollis; 7, Bromus sterilis; 9, Aira cæspitosa; the rest such bad specimens that they cannot be determined.—*A B.* Quercus coccinea.—*E S D.* The common Silver Fir, Picea pectinata, or Abies Picea.

ORTHOGRAPHY: *C E.* The name is Aërides; where do you find Dr. Lindley spelling it Ærides?

ROSES: *A Lady.* Your Rose is the old Double yellow Rose. The reason why it is so little grown is, because it seldom expands its flowers. We are informed by Messrs. Lane that they have had this Rose in their nursery for 35 years, and that it only bloomed once during that time.‡—*S H F.* Nearly all the Hybrid Perpetual Roses will grow from cuttings, either in pots or in a border. They may be made in a similar way to Geranium cuttings.‡—*L B S.* What you term blight is a very common deformity of the Rose, but in an excessive state. The parts which, under ordinary circumstances become carpels (seed-vessels), have all grown into little Roses. It is in this way that the truths of Morphology become demonstrated. Cause unknown.

SHRUBS, &c: *Y Z.* The following have been found to withstand the sea-breeze satisfactorily, viz., Tamarisk, Leycesteria formosa, Spiræa ariæfolia, common Hydrangea, Aucuba japonica, Arbutus procera, Berberis aquifolium, Persian and common Lilacs, Garrya elliptica, Hippophae rhamnoides, Fuchsia Ricartonii, Ribes sanguineum, Araucaria imbricata, the Deodar, Pinus insignis, P. pinaster, Quercus Ilex, Cerris, and sessiliflora; Alnus cordata, Ulmus rubra, nigra, and stricta; and the different varieties of Cratægus.‡

THE CUCKOO: *J M I.* Mr. D. is a gentleman and a man of science, and we cannot permit him to be addressed in such terms as you have employed, which are not suitable to the columns of any respectable paper.

TREE ONIONS: *J S* asks to be informed how to manage the cultivation of the Tree Onion; those he has planted bear on the bottom, in place of the top? On inquiry of the person from whom he had the plants, he said "J. S." had forced them too much, in planting them in too rich soil. "J. S." has tried them in poor soil, but they still bear at bottom. He is quite satisfied it is the right plant, and asks for an explanation of the cause of his failure.

WATERING: *W N.* Watering should always be done as late in the day possible; the evening is the proper time. It is useless to water at 3 o'clock in the afternoon in hot weather.

ZINC LABELS: *E.* See p. 287 of our advertising columns for the present year.

### SEEDLING FLOWERS.

CALCEOLARIAS: *J P.* Spoiled in coming through the post.*

FUCHSIAS: *G C.* A nice dark variety, and apparently a very free bloomer. Worth cultivating.*—*J P.* Two very large blooms, but the tube and sepals are not white enough. Although showy, the variety is altogether too coarse, we fear, to become a favourite.*—*S J T.* A neat small light kind; tube and sepals pure white, corolla bright crimson.*

PELARGONIUMS: *S J T.* Too much shrivelled up to enable us to offer any opinion on it.*

PETUNIAS: *J M.* The dry cotton wool in which they were packed had absorbed all moisture from the blooms, which were quite shrivelled up when they reached us. They should have been wrapped in damped brown paper.*

*.* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

# The Agricultural Gazette.

*SATURDAY, JULY* 26, 1851.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, July 30—Agricultural Society of England.
THURSDAY, — 31—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, Aug. 6—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Soc. of Ireland.

WE understand that in some parts of Cornwall the Turnips, instead of being carried off as usual by the Turnip-fly, have been attacked by a new enemy to the farmer, which has come into the field in the shape of a tiny ash-coloured moth, not unlike the common clothes moth, but smaller. The rows of Turnips are said to swarm with them, and the underside of the leaves is covered with their grubs, which commit great havoc. In some instances they have cleared the ground as effectually as the black caterpillar did some 15 years ago. Have any of our correspondents observed a similar case in this, or previous seasons?

WE endeavoured, in a recent article, to direct attention to the advantage which British agriculture would derive from extending the cultivation of Flax, instead of pursuing an *ignus fatuus*, by attempting to raise the products of the tropics in these latitudes. The advice appears to have fallen on a good soil; for we have recently received an application from an extensive tenant farmer for personal aid in such an undertaking. "I have," he says, "a large tract of rich alluvial soil, on which, notwithstanding all I can do, the crops will lodge. I wish to grow something that will 'take the shine out of it,' and be at the same time a more remunerating crop than Wheat at its present price. Flax appears to be likely to answer my purpose; but I know nothing of its culture, or of the mode of preparing it for market. Will you make yourself master of both, and assist me with your advice?"

Having assured our friend that he may rely on our hearty co-operation, we proceed to fulfil our promise, by requesting those Flax-spinners who may peruse this article to favour us with their opinion respecting the relative merits of the two rival methods by which it is sought to dispense with the tedious, troublesome, and noxious process of steeping, which has hitherto been followed from time immemorial.

The two processes to which we allude are those patented respectively by SCHENCK and CLAUSSEN. SCHENCK's method consists in steeping the Flax straw in tanks heated by steam. It has been ascertained, experimentally, that under the old method, a temperature of 70 degrees, which is rarely attainable in the open air, in our climate, is the most effective; and many who follow SCHENCK's plan are of opinion that it is disadvantageous to raise the temperature of the water above 80 degrees. Flax, steeped in water of that heat for 60 hours, is said to yield 20 per cent. more fibre from a given quantity of straw, than can be obtained by steeping in the ordinary way in ponds and brooks. CLAUSSEN's process is divisible into three stages. The first is that by which the woody portion of the stem is removed mechanically, by passing it between rollers; the second is that by which the fibres, thus partially cleaned, are freed from the gum, gluten, and resin, which cause them to adhere together. This is effected by boiling the Flax, either in the condition in which it comes from the field, or in a partially cleaned state, in water containing about one-half per cent. of caustic potash, followed by immersion in slightly acidulated water, containing 1 of sulphuric acid to 500 of water. The third and last stage of the CLAUSSEN process is that which destroys the tubular structure of the fibre, and breaks it up into ribbon-like filaments with jagged edges, thus assimilating it to the fibre of cotton, and rendering it capable of being spun upon cotton, wool, and silk machinery, either alone or mixed with those substances. This object is attained by steeping the Flax, cut by machinery, either before or after the boiling process, into short lengths, in a solution of common soda (sesqui-carbonate of soda) till the liquid has entered completely into the tubes. The expansive force of the carbonic acid liberated, when the Flax thus saturated is immersed in a solution containing 1 of sulphuric acid to 200 of water, tears up the tubes into the filaments described above. The first two stages of the process may be adopted independently of the third. M. CLAUSSEN states, that the Flax prepared by the first is so reduced in bulk, as to render it capable of being conveyed advantageously to distant markets; that in this state it is capable, without further preparation, of being spun as long fibre on the ordinary Flax machinery for the manufacture of the coarser fabrics, such as canvas, sail-cloth, nets, bags, ropes, standing and running rigging, &c.; that it is susceptible of further preparation for the finer fabrics for which long fibre is required, either by steeping according to SCHENCK's plan, or by the boiling in a solution of potash, which forms the second stage of his own method, or that, lastly, by continuing his process to the third stage, Flax may be rendered capable of use as a substitute for cotton.

The Royal Flax Society of Ireland patronise SCHENCK's system, under which there are about 20 steeping and scutching establishments in operation, capable of preparing the produce of 6000 acres, or about one-tenth of the average breadth of Flax at present cultivated in Ireland. They discountenance all attempts to dispense with steeping in some form or other; but M. CLAUSSEN intimates that their vigilance and care in this respect have been so great, that when a new process is brought before them, having this object in view, they avowedly decide against it first, and investigate its merits afterwards. Whether SCHENCK's or CLAUSSEN's plan is to be generally adopted, it appears desirable that a division of labour should be established, under which the attention of the farmer may be confined to the cultivation and harvesting of the crop, leaving to others the preparation of the fibre for the spinner. In Belgium this division of labour has been adopted with great success; and in Ireland, where the introduction of the spinning of Flax by machinery has effected a complete revolution in the linen trade, the necessity for it has become obvious, and the Flax Society are endeavouring to promote it by the establishment of hot water steeperies attached to scutching mills. There is one disadvantage attending SCHENCK's system, that it requires numerous establishments of this kind, to obviate the inconvenience of transporting the Flax crop to a distance in the bulky state of straw; whereas, if the woody portion can be separated on the farm mechanically, as CLAUSSEN contends it can by one of his machines, which cost only 10l., and can be used without payment of license or royalty, it will give the Flax-grower a great advantage by simplifying the operations by which his crop can be rendered marketable.

The questions, therefore, on which we request information from Flax spinners are these:—Have they any experience of Flax so prepared? Will there be much demand for it in this state, for the coarser kinds of manufacture; and does their experience justify the conclusion, that if the grower sends it to market in this state, it can be prepared for the manufacture of finer fabrics, in which long fibre is required, either by steeping it in hot water, on SCHENCK's system, or by boiling in a solution of caustic potash on CLAUSSEN's? And lastly, to which of these methods would they give the preference? The value of CLAUSSEN's process, in its third and final stage, beautiful and ingenious as it is, appears to depend greatly on the existence of a price for cotton, higher than its ordinary level. We would conclude, however, by warning our agricultural friends that while they are dreaming of making their fortunes by growing Sugar and Tobacco, the energetic Anglo-Americans of the Northern States appear to have taken up that part of CLAUSSEN's plan warmly, and to anticipate obtaining a large share in the growth of Flax, to be consumed in England as a substitute for the slave-grown Cotton of the South. In cultivating a crop, of which 60 per cent. of the value consists of labour, the farmers of the United Kingdom will have a decided advantage over those of America, where wages are so high; and it will be their own fault if they let the supply of any increased demand for Flax, which the CLAUSSEN process may occasion, fall into other hands. The following is M. CLAUSSEN's estimate of the value of Flax and Hemp imported into the United Kingdom, both of which might be grown there:

| | |
|---|---|
| Flax fibre ... ... ... ... | £5,000,000 |
| Seed for crushing ... ... ... ... | 1,800,000 |
| Seed for growing ... ... ... ... | 200,000 |
| Oil-cake ... ... ... ... ... | 600,000 |
| Hemp ... ... ... ... ... | 1,500,000 |
| | £9,100,000 |

These facts we commend to the serious consideration of those who deem the importation of any article, which our soil is capable of producing, a national loss; and we commend it to the attention of those who, maintaining such views, prepare leases in which clauses are inserted prohibiting the cultivation of Flax and Hemp.

THE experiments of Mr. LAWES on Turnips are not so satisfactory as those on Wheat. Many of the deductions which he has so extensively drawn will not stand the test of experience; for he has generalised too freely on local and special results, and applied these to explain and regulate the whole principles of manuring, where the circumstances were totally different. Sooner or later the interpretation of Mr. LAWES's experiments will be made matter of discussion. Mr. PUSEY has brought Mr. LAWES's opinions forward with great prominency in his recent admirable summary of the "Progress of Agricultural Knowledge;" and although he has rather given offence to LIEBIG on some points, the English agricultural public are much indebted to him for concentrating the labours of eight years' work in the science and practice of agriculture. No one knows the wants and requirements of English farming better than Mr. PUSEY, and when such a topic is handled by so able and agreeable a writer, opportunities are afforded for most useful criticism and discussion.

Mr. LAWES found that his Wheat field, which yielded 17 bushels per acre, without any manure, did not produce as many cwts. of Turnips without any application; but a certain weight of superphosphate of lime raised the crop to 12 tons. This was a very interesting result; but practically the question and matter for discussion by farmers is, how the Turnip crop can be increased from 12 to 20 tons or upwards. Mr. LAWES has been led by his experiments to believe, that in ordinary farm management carbon must be added to the superphosphate of lime, and that it is the essential and active principle. We suspect, however, that carbon without ammonia is powerless; and, also, that on all soils which are capable of raising 17 bushels of Wheat annually, 20 tons and upwards of Turnips can be raised by applying phosphoric and ammoniacal manures, if common sense and good management in the details are followed. We think Mr. PUSEY has rather got entangled amongst scientific figures, which are only relatively correct. He says, "For Turnips superphosphate, however, is slightly inferior to dung, and the question again arises, as under Wheat, whether this slight superiority of dung for Turnips be due to its nitrogen or its carbon. For Wheat it

was due to nitrogen (ammonia). For Turnips, Mr LAWES *proves it* to be due to carbon, the matter of wood. Carbon appears to be the distinctive acting principle of dung for Turnips. The upshot of the whole (of Mr. LAWES's experiments), is, that practically, so far as artificial manures are concerned, we need not dwell upon mineral ingredients, but must give ammonia to Wheat, and to Turnips phosphorus. Under what circumstances of soil, and whether ammonia ever injures Turnips, remains for further inquiry; *for good farmers give them guano, rape-cake—nay, near Manchester, sulphate of ammonia itself.*" From this last passage, it is quite evident that Mr. PUSEY's mind is still practically open upon this question, and does not very firmly believe what he states Mr. LAWES to have "*proved.*"

No one will deny that phosphorus is just as essential to Wheat as it is to Turnips, and to every other plant which ministers to the sustenance of the human race. We have found phosphate of lime a valuable manure for Wheat, and have had an increase of four quarters of Oats per acre from the same application. On the other hand, on land naturally rich in phosphates, phosphoric manures of themselves do not increase the yield of Wheat; but under certain conditions of soil and atmosphere, they increase the weight of Turnips enormously. This property is not confined to Turnips, but, under certain circumstances, it is seen in some of the other cereals, such as Oats and Barley, as will be afterwards shown. The wild Mustard plant requires a soil somewhat rich in phosphate, and then it freely grows. It is a pretty good practical test that where this weed prevails, the application of phosphate of lime to the Wheat plant will not produce an increase in the yield. Some years ago we recollect dressing with bones, digested in sulphuric acid, part of a field sown with Tares; and so far as this application extended, wild Mustard came up quite thick, and when in flower marked out this application from a great distance. But on soils where Wheat is not increased by phosphates, the vigour of wild Mustard will not be increased by the same means. When growing in a dry atmosphere this weed must have nitrogen, and thus it is a most exhausting plant amongst corn. It is only when Turnips are grown under a moist atmosphere that they can be looked upon as nitrogen-collecting plants. In practice the Turnip is a plant which gives us a beautiful example of the states in which it is able, and which it is not able to appropriate its nitrogen and carbon from the atmosphere. It is both a nitrogen-consuming and a nitrogen-collecting plant, and by overlooking this circumstance much useless refinement of theory has arisen. Let any one who thinks that there is a constitutional difference in the Turnip and the Wheat, so far as manuring matters are concerned, sow Turnips early in spring with superphosphate of lime, on land which is only capable of growing 17 bushels of Wheat, and the results would immediately dispel the delusion. There will then be no tendency of manure rich in nitrogen to produce an "unprofitable habit" in the Turnip. What says Mr. CUTHILL on this subject in his thoroughly practical articles on Market Gardening?—"The reason why a farmer cannot raise Turnips like a gardener, is owing to the poverty of the land; so small a seed wants immediate and available nourishment the moment it vegetates. *Late* Turnips are not cultivated on the *dear* land about London, they generally come from 10 to 12 miles off. Early and forced Turnips fetch 2*d.* or 3*d.* a-piece in Covent Garden Market." In market-gardening no one believes that the value of the manure applied to the Turnips depends upon its phosphates and carbon alone, both are no doubt essential; but they are quite as powerless in growing a Turnip *against* a cold dry atmosphere, as they are in increasing the yield of Wheat, or any other crop grown or matured in the same circumstances. The conditions under which Turnips, with the aid of phosphates, have the power of collecting nitrogen from the atmosphere, depend upon their being grown as an autumn crop. The moist atmosphere, and the day constantly shortening, encourage growth in the bulbs, and counteract any tendency which the plants would have had when grown with a small quantity of manure in the early part of the year to run to seed. If we wished to raise 12 tons of Turnips in the first part of the year, a much larger quantity of *nitrogenous* manures would be required, than at a later period. In fact, the quantity would diminish as the season advanced, until we arrived at a certain time when ammoniacal manures would be hurtful as far as bulbing was concerned; for in the words of Mr. LAWES they would "tend to an unprofitable habit in the plant." On land that would be capable of raising 17 bushels of Wheat without manure, we have no hesitation in saying, that this period would closely approximate in ordinary seasons to the 20th June, in Scotland, and perhaps about 12 days later in England. The weight of bulbs would then be rather diminished than increased, by adding ammoniacal manures to the superphosphate of lime. Guano is well known to promote an undue growth of the stems of *late* sown Turnips in moist seasons, and in this case superphosphate is much preferable. The conclusions which Mr. LAWES has arrived at, in regard to the effects of nitrogenous manures on Turnips, cannot be defended on any other grounds than that his experiments were made at a season too far advanced to give the nitrogenous dressings the necessary conditions to increase the weight of bulbs. This supposition appears to us to afford the only way of escape from the dilemma about which so much ingenuity has been wasted. *R.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

DIVISION I. MISCELLANEOUS IMPLEMENTS USED IN AGRICULTURE.—We have not been very strict in our classification of the great assemblage of implements, so that we find in our note-book scarcely any articles which can be said to belong to this head. One useful article that we have not yet noticed, is an "irrigator, liquid-manure pump, garden and fire-engine," invented, manufactured, and exhibited by E. Weir, of Oxford-street. It consists of a lever pump and air-vessel, upon wheels, and is for the purpose of pumping fluid direct from the tank or reservoir, and distributing it at once on the land by means of a branch pipe and spreader. With the power of one man at the pump, and another to direct the nozzle of the pipe, it will throw 25 gallons per minute through any moderate length of pipe, without a considerable rise in the ground between the site of the tank and the part to be irrigated; so that by its use, land in the vicinity of the supply may be irrigated to the extent of some hundred feet in all directions. It may be of great use also as a farm fire-engine, as it will throw more than 20 gallons a minute to a height of 40 feet from the end of the nozzle, which would enable it to reach every portion of the usual farm-buildings, ricks, &c. The whole of the fittings are of brass, and there is no leather or other matter which will decay from alternations of moisture and dryness, or be injured by the acids and salts of the manure. The delivery-pipe is of the best canvas, lined with gutta percha; the suction-pipe is of gutta percha; and should this meet with any accident, be cut in two by a cart-wheel passing over it, or any other mischance, a farm labourer, with a pail of hot water, can repair as strongly as if sent back to the manufacturer. This maker also exhibits a draining-level, perhaps unequalled for simplicity and cheapness, combined with accuracy.

Though bee-management belongs more to the horticultural than the agricultural portion of this Paper, and the probability that the "Temple Bee-hive," and various others will be there noticed, we cannot help saying a word about one bee-hive, which struck us as right in its principle, and most simple in its construction. It is called the "Multiple Box Hive," and was invented by W. Keene, of Harpur-street, Bloomsbury. These hives are merely cubical wooden boxes, having a slit for entrance on one side near the top, below which is a sloping ledge passing all round the outside. A hive ought to allow the bees access at points convenient for the labour to be performed; the work always begins from the top, and natural hives chosen by bees have generally the entrance from the top. The common hive gives the bee labour in carrying his load upwards; it has been found by experience that when the bees enter at the top, the hive fills much more rapidly with comb and honey. In the multiple hive all the boxes are alike; when one is filled, another is added—the bees taking to it because just like the other; swarming being thus prevented.

The last division of Class 9, viz., "J., GARDEN ENGINES AND TOOLS," appertains to the other side of this newspaper. Hitherto we have scarcely mentioned the portable steam-engines, though they might, perhaps, have been considered under the head "Barn Machinery." We will offer a few words respecting these next week.

## ON AGRICULTURAL CHEMISTRY,

ESPECIALLY IN RELATION TO THE MINERAL THEORY OF BARON LIEBIG; BY J. B. LAWES, OF ROTHAMSTEAD, AND DR. J. H. GILBERT.

(Read in Section B., in part on Monday, July 7th, and concluded on Tuesday, the 8th.)

ABSTRACT.—Mr. Pusey had, in a recent article in the Journal of the Royal Agricultural Society, on the progress of agriculture during the last eight years, quoted the experimeuts of Mr. Lawes and Dr. Gilbert, as being conclusive against the "mineral theory" of Baron Liebig, which asserts that the crops upon a farm rise and fall according to the supply within the soil of the mineral constituents indicated by an analysis of the ashes of the plant. To these observations by Mr. Pusey, Baron Liebig has replied at some length in the new edition of his "Letters on Chemistry," just published; and in doing so, has asserted that the experiments alluded to are without value, and that the statements of the authors could only be made in ignorance of the rationale of agricultural practices on the large scale. The question at issue was an important one, for Baron Liebig, in the new edition of his "Letters on Chemistry," says of the agriculturists of England, that "sooner or later, they must see that in this so-called 'mineral theory,' in its development and ultimate perfection, lies the whole future of agriculture."

The authors have therefore given, in the present paper, an outline of their investigations in agricultural chemistry, comprising an extensive series of experiments in the field, on the growth of the principal crops entering into a rotation, as well as upon the chemistry of the feeding of animals, and that of the functional action of plants generally, in relation to the soil and atmosphere; in connection with all of which branches much laboratory labour has constantly been in progress, since the commencement of the experiments themselves, in 1843. The results selected by Mr. Lawes and Dr. Gilbert, in justification and illustration of their views, were those of the field experiments on Wheat, grown continuously on a previously exhausted soil, for the last eight years, and in each season, by means of many chemical manures, by the side always of one or more plots unmanured, and one manured continuously by farm-yard manure.

Some of the results thus obtained were illustrated by a diagram, from which it appeared that mineral manures had scarcely increased the produce at all when used alone, whilst the effects of ammoniacal salts were very marked, even when repeated year after year upon the same space of ground from which the entire crop (corn and straw) had been removed. Indeed in this way a produce had been obtained, even in the sixth and seventh successive years of the experiment, exceeding by nearly two-thirds that from the unmanured plot. It was thus shown that the mineral constituents of the soil continued to be in excess, relatively to the nitrogen available for them from natural sources. The history of several plots was then traced down to the last harvest (1850), and it was argued that the statements assailed by Liebig, namely, that ammonia was specially adapted as a manure for Wheat, was fully borne out when speaking of agriculture as generally practised in Great Britain. In other words, that in practice it was the defect of nitrogen rather than of the mineral constituents which fixed the limits to our produce of corn.

The authors next called attention to the fact of the exhalation of nitrogen by growing plants, as proved by the experiments of De Saussure, Daubeny, and Draper, and they referred to some experiments of their own, with the view of showing that there is more of the nitrogen derived from manure given off during the growth of the cereal grains, than by leguminous and other crops; and hence might be explained the great demand for nitrogenous manures observed in the growth of grain. The authors suggested that here was an important field of study, and that we have in the facts alluded to much that should lead us to suppose that the success of a rotation of crops depended upon the degree in which the restoration of the balance of the organic constituents of the crops was attained by its means, rather than on that of their mineral constituents, according to the theory of Liebig; while the means adopted to secure the former were always attended with a sufficient supply of the latter.

Again, Professor Liebig has quoted the processes of fallowing and liming, as being in their known results inconsistent with the views of Mr. Lawes and Dr. Gilbert; but these gentlemen considered that the experiments of Mulder, and of Mr. Way, on the properties of soils, justified them in supposing that the processes of fallowing and liming owed their efficacy more to the accumulation of nitrogen in the soil from natural sources, than to that of available mineral constituents; the latter did, however, undoubtedly accumulate by these processes; and this fact should give us more confidence in views which, on independent evidence, supposed that they were not so easily liable to be found in defect in relation to other necessary supplies.

It was next shown, by reference to what happens in actual practice, as generally followed in Great Britain, where corn and meat constitute almost the exclusive exports of the farm, that the mineral constituents of the crops taken collectively—that is, as shown by the analysis of their ashes—could not be considered as exhausted. Of these, however, phosphoric acid was lost to the farm in much larger proportion than the alkalies, whilst the latter would generally, by the combined agencies of disintegration of the native soil, and import in cattle food, be liable to a diminution in but a very insignificant degree, if not in some cases to accumulation. Practical agriculture had, indeed, decided that phosphoric acid must be returned to the land from sources external to the farm itself, viz., by bones, guano, or other means; but on the other hand, artificial alkaline manures had generally been found to fail in effect. Indeed, taking into careful consideration the tendency of all experience in practical agriculture, as well as the collective results of a most laborious experimental investigation of the subject, both in the field and in the laboratory, it was the authors' deliberate opinion that the analysis of the crop is no direct guide whatever as to the nature of the manure required to be provided, in the ordinary course of agriculture, from sources extraneous to the home manures of the farm—that is to say, by artificial manures.

Reviewing, then, the actual facts of practical agriculture, the authors could not agree with Baron Liebig, when he asserted that our grand object should be to attain an artificial mixture to substitute for farm-yard manure, which he admitted to be the universal food of plants. The very practice of agriculture itself, as followed in this country, necessitated the production of farm-yard manure; and all our calculations should be made on the supposition of its use. That it was not a

substitute but an adjunct that was the great desideratum, and this would never be attained by theoretical considerations, in which no distinction was made between those constituents which are only taken from the field to be returned to it in due course by the home manures of the farm, and those which are actually sent off the farm. This distinction was, however, seldom, if ever, made by chemists unconnected with practical agriculture; and to this cause may in great part be attributed the reiterated recommendations to imitate in artificial manures the composition of the ashes of the plants to be grown.

In conclusion, then, if the mineral theory of Professor Liebig simply implied that the growing plant must have within its reach a sufficiency of the constituents of which it is to be built up, the authors fully and entirely assented to so evident a truism. But if, on the other hand, he would have it understood that, in the ordinary course of agriculture in Great Britain, it is in relation to the mineral constituents found in their ashes that the soil would be exhausted, they did not hesitate to say that they were in ignorance of a single fact to favour such a view. On the contrary, they believed that nitrogen is the constituent most exhausted, relatively to other constituents; that of the minerals, phosphoric acid is exhausted more than the alkalies; and, further, that the apparent demand for an artificial supply of mineral substances for the production of crops in agricultural quantity (itself an artificial process) is frequently greater than can be accounted for by the mere idea of supplying the actual constituents of the crop. If, then, we would attain, by the aid of science, a rational system of agriculture, the actual facts of the art itself, together with a study of the functional actions of plants and animals, must receive a due share of our attention. In fact, chemistry alone will do nothing for practical agriculture.

## ON THE CULTURE OF RAPE.

The Rape was cultivated in England before the introduction of Turnips, and is even supposed to have been used by the ancient Romans, in alternation with the crops of grain. It is certain that they had some plant of the leafy Cabbage kind, but the particular vegetable is unknown. Rape is more palatable than Turnips to the taste of animals, grows more readily and abundantly on a variety of soils, produces a larger crop of leaves, and yields a much greater quantity of seed. But the value is almost wholly obliterated from the page of agriculture, by the want of the bulbous root, which constitutes the chief excellence of the Turnip, and which is not, in any degree, formed by the Rape plant. The leaves are more hardy than those of the Turnip, and better withstand the cold of winter.

Rape has been much cultivated on the pared and burned land of the Fens of Lincolnshire, and on the alluvial grounds of Essex. In these cases, it is sown by hand in broad cast, at the rate of 3 or 4 lbs. on an acre, and stands to carry a crop of seed, and is thought to make a good preparation for a crop of Wheat. The broad and spreading leaves do certainly smother and kill the weeds—but the stems, and the formation of the seeds extract much nutriment from the soil, and much more than the formation of leaves and fleshy bulbs. This condition is now granted, and the growing of Rape seed is interdicted in some leases. The seed is very unequally ripened, the upper and lower pods being wide apart in the season of maturity. In wet harvests much seed is lost; and without much attention, a loss is sustained in any season. The crop should be cut when the dew is on it, and moved as little as possible. If the weather permits, it is threshed out on a cloth in the field, and as many threshers are employed as can be conveniently collected, that no time may be lost when the weather is fair. The seed is spread out on the floor of a granary, that it may not heat, and is turned over frequently. It is then sold to the crushers, who express the oil. The pods and small branches broken off in threshing are much relished by cattle. When the oil has been pressed out from the seed, the residue, which contains a portion of starch and mucilage, not changed into oil, and the husk of the seed forms a hard cake, known by the name of rape-cake, which is a manure of very considerable value. It is reduced to powder, and drilled with the seeds: or it may be spread on the surface of the ground, and covered by a ploughing. When drilled, it is best mixed with ashes, or any porous earth, which prevents the too rapid decomposition. The Flemish feed cows and pigs with it, and mix the powder in the urine pits, where an excellent manure is formed. An application of it very much promotes the growth of Flax, and may greatly assist the action of saltpetre, and the nitrate of soda, where these salts are applied. An average crop of the seed of Rape is about 30 bushels on an acre.

As a feeding crop, Rape is grown on lands prepared for Turnips, and sown in August, on drills 1 foot apart. If the crop grows very forward before winter, it may be fed off by sheep, but, in general, it is best to let it remain untouched till spring. It affords a very agreeable food to ewes and lambs, in March and April. When it begins to flower, it must be immediately removed, when the land is sown with Barley and Clover. Rape is a valuable substitute for Turnips, on lands that are too wet and heavy for that root. It is more succulent than the Turnip, the stem is not so hard, and the soft pith which it contains is much relished by every kind of live stock. The writer of this article witnessed a most decisive proof of this superiority on a Turnip field in Northumberland, where two drills of Turnip and Rape were sown alternately, and on which the sheep that consumed the crop on the ground eat every leaf and stem of the Rape, before a single blade of the Turnip was touched. But this predilection is unable to compensate for the want of the bulbous root.

In the case of poor lands, that do not produce an adequate supply of farm-yard dung, and in remote situations where the access of auxiliary manures is difficult, or the circumstances inconvenient, Rape is very advantageously used in being sown in August, on the fallowing of the land, when it affords a very useful provision of green food in the early spring, and is consumed in time for sowing the land with Barley. When sown at this season, on good land, the crop is eaten on the ground, to admit the sowing of Wheat in November, and then the strong crop of fibrous stems proves very inconvenient in the ploughing and harrowing, and is best pulled by hand, and removed before the ploughing commences. On good lands, the tendency is very great to yield stems rather than leaves. The plant rises high, and the stems are correspondingly enlarged. On poor soils, the leaves are more abundant in proportion to the stems, and this circumstance forms the value of the plant for the special purpose of yielding food for sheep, and through the animals' excrements a good manuring to the land. The plant is more hardy than the Turnip, and grows more readily, and also more abundantly, and, in some cases, affords more utility. But these instances are comparatively few in number, and remote in the application. But they do occur.

Rape is very usefully mixed with the seed of winter Tares, that are intended to be used for feeding sheep in the spring. The mixture is very agreeable to the animals, as the juice is more concentrated than that of the Vetch plants, and helps to correct the very watery quality of the Tare, in the earliest growth. There is no better use of Rape than in this way, which has been long followed by the flockmasters of South Britain, where the climate allows the cultivation of winter Tares. The woody growth of the stems is prevented by the early rise in the spring, and the leaves of the previous autumn afford a quantity of food that proves very serviceable to the sheep.

Rape may be sown in the spring with one furrow, on the clean ground of Barley or Oats; and the crop being consumed on the land by sheep, Wheat is sown in the end of autumn with one furrow of ploughing. In this way, Rape constitutes a catch crop, and very usefully, in some cases—but it never enters a stated crop into a systematic rotation of the use of land.

The value of a full crop of Rape for feeding, is estimated at 30*s.* to 40*s.* per acre. *J. D.*

## Home Correspondence.

*Beer for Labourers.*—Your Paper has been put into my hands these two weeks, and I am thankful to say I can just read, having had a smattering of education at a national school. I have read with much pain the severe remarks of "Falcon" upon beer and cider drinking. I can only wish that he was along with me, or us, just now. We begin at 3 o'clock in the morning, and leave off at 9 in the evening. Eighteen hours very hard work; would "Falcon" have the hardheartedness to deny us several pints of beer during the day? We breakfast at 6, "Falcon" breakfasts at 10 likely, just at the time I am having my second beer, and after losing, by perspiration, much of my strength. Water may do for an idle man, but never for a hard-working labourer of any sort; above all us, working under a burning sun. I allow it is very disgusting for "Falcon" to ride out after a famous night's rest and a jolly good breakfast of ham and eggs, and sit two hours over it, to see us in a field sitting down for a few moments over our drop of beer, or cider, a piece of bread and hard cheese. "Iron constitutions" eh! our constitutions would suffer much more were we to drink cold water. I only wish I had half the nourishment in my body in the course of the day that "Falcon" has. Compare a glass of port to a pint of beer; talk about bringing us back to a sense of duty; confirmed drunkards on 9*s.* a week! Why we are slaving from morning to night now, and if we are seen enjoying our pipe and a pint just before going to bed, this "Falcon" thinks wrong too. What do we live for? Why a jolly good laugh after a hard day's toil with a pipe and a pint is all we can expect; and our masters are just as kind now as they were 20 years ago, and we are just as good servants. "Falcon," I am told, has been in all countries; he is a sort of Captain Grouse,

"Taking notes, and faith he 'll prent 'em."

but taking notes against the too oppressed already, is no great credit to any one, and more especially as "Falcon" does not live by the sweat of his brow; but I have strong reason to think that he is a landlord, half afraid of his rents lowering, or he must be living on the sweat of his country. I trust you will in fairness give a poor man the same chance as "Falcon," by printing every word; for, considering my small learning, I am not ashamed. *A Labourer.* P.S. Mind do not mix me up with the beer-shop idler and poachers. If "Falcon" were to help in destroying the Game-laws, he would, indeed, be a benefactor to his country. ["Falcon" and "A Labourer" will be very good friends when they understand one another better. "Falcon's" remarks will be endorsed by many who are, both by desire and in fact, the best friends of the labourer.]

*Description of a new Subsoil Grubber.* — As your columns are at all times open to descriptions of new or improved methods of performing agricultural operations, I may beg a place for the following. Under the Earl of Bradford, at this place, I have had to contend with various soils and substrata, particularly those where moorband, as it is known amongst farmers, abounds. In these I have tried three subsoil ploughs, with a view to break these crusts and obtain a deeper staple. Not any of these have proved satisfactory for that purpose, however useful in general; nor did a powerful trench plough, got up under my own inspection, succeed any better, as I was still necessitated to have men stationed with picks at these barriers, to loosen up those parts where the plough passed over. The plough thus gliding out where most wanted, led me to turn my attention to the invention and construction of a machine which should answer the purposes of the subsoil plough where it works well, and should supply its deficiencies where it fails. This I have accomplished, and it works well. The machine consists of a large wheel, mounted in a frame moving on three smaller wheels, such as are used with ordinary cultivators. The wheel is 5 feet in diameter, and the tire iron is 8 inches wide; it is fitted with two rows of mattock-pointed, case-hardened teeth, set alternately, 8 inches asunder, along each edge of the tire. The teeth are 8 inches long, and 2½ inches broad at the point, and fastened by wedges in the same manner as a plough coulter, so that they can at any time be easily removed for repairs, or for a longer and differently constructed set of teeth, which I intend to have made. The weight of the wheel is about 11 cwt., and upon this its effective working depends. The front wheel of the frame is on a swivel, for convenience of turning, and is fixed 8 or 9 inches lower down than the two hinder ones. The front wheel runs in the furrow after the plough, and is followed by the grubbing wheel, which it guides. When the machine meets with boulders or rock which it cannot penetrate, the beds of the wheel are so constructed as to allow it to rise without the frame; and when it is required to be turned, by a powerful lever a man can raise it 16 inches if necessary. I have used it sufficiently to be quite satisfied of its efficacy, as it has never missed anything except downright rock; and I think when known it will be admitted to be a step in the right direction. I have had many advisers to send it to the Hyde Park Exhibition, or to the agricultural show at Windsor, but I am not yet satisfied with it as to the materials and workmanship of its construction as to let it stand as the Earl of Bradford's subsoil grubber. When your leading article of June 21st appeared, by "C. W. H.," on a toothed wheel being the grand principle to be embodied in the steam cultivator, it was suggested to me that I ought immediately to make my toothed wheel known, lest it should be supposed that I had committed plagiarism on his ideas. When compared, however, they are found very different, both in principle and working. My bantling, in the hands of some of our eminent implement makers, may be much improved, and brought out at such a price as will enable farmers having a team of six horses, to avail themselves of it; that is, two horses to draw the common plough, and four for the grubber. Unlike subsoil ploughs, it does not mix the bad soil with the good; but I must now conclude, having already trespassed too long on your space. *Alexander Davidson, Weston, Shifnal, Salop, July* 13.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Continued from page* 74.)

Sheep.—We again present the history of the later Sheep Shows in a Tabular form, for which, see next page.

At Northampton, 1847, were 45 exhibitors of sheep, from 23 counties; at York, 1848, 45 exhibitors, from 18 counties; at Norwich, 1849, 35 exhibitors, from 16 counties; at Exeter, 1850, 41 exhibitors, from 19 counties; and at Windsor, 1851, the sheep have been furnished from different localities, as follows:

| *Counties.* | *No. of Exhibitors.* | *Counties.* | *No. of Exhibitors.* |
|---|---|---|---|
| Bedfordshire | 2 | Brought forward | 28 |
| Berkshire | 2 | Norfolk | 4 |
| Buckinghamshire | 2 | Northamptonshire | 1 |
| Cambridgeshire | 1 | Northumberland | 2 |
| Cumberland | 1 | Nottinghamshire | 3 |
| Devonshire | 4 | Oxfordshire | 2 |
| Essex | 2 | Somersetshire | 1 |
| Gloucestershire | 4 | Staffordshire | 1 |
| Hampshire | 1 | Suffolk | 1 |
| Hereford | 1 | Surrey | 1 |
| Hertfordshire | 1 | Sussex | 10 |
| Huntingdonshire | 1 | Westmoreland | 1 |
| Kent | 2 | Wiltshire | 1 |
| Lancashire | 1 | Worcestershire | 1 |
| Leicestershire | 2 | Yorkshire | 5 |
| Lincolnshire | 1 | Scotland | 2 |
| | | Shetland | 1 |
| Carried forward | 28 | | |
| Total Counties, &c., 32. | | | 65 |

Instead of entering into a detailed description of the animals which more particularly attracted our notice, it will, perhaps, be more correct, as well as concise, to give *verbatim* the notes jotted down while perambulating the show-yard; and these being just the kind of remarks that a breeder was likely to make, will convey to every farmer's mind an idea of the special merits or demerits of the sheep here characterised. It must be remembered, however, that the following epithets are merely intended to guide the terms of a regular description, and are necessarily very imperfect.

Leicesters.—Class I. *Shearling Rams.*—The following numbers were noticed among those exhibited by Mr. T. E. Pawlett, of Beeston, near Biggleswade, Beds. 507, a pretty, long-legged sheep, back not well covered, wool straight, and purse bare. 509, rather deeper mutton, of slight form, back not good, small, wool varied. 508, more substance and larger frame, but not first-rate mutton. 510, rather deeper made, but too small. 512, a pretty, but very little sheep, with thin neck.

TABLE I.—Indicates the progress in numbers.

| | NORTHAMPTON, 1847. | YORK, 1848. | NORWICH, 1849. | EXETER, 1850. | WINDSOR, 1581. |
|---|---|---|---|---|---|
| LEICESTERS | 73 Rams, 12 pens of Ewes. | 118 Rams (14 being also for the local prizes).<br>16 pens of Ewes, (5 also for the local prizes). | 88 Rams, 14 pens of Ewes. | 65 Rams, 14 pens of Ewes. | Class I.—Shearling Rams 68<br>,, II.—Rams of any age 53<br>Rams ..... 121<br>,, III.—Shearling Ewes, pens ..... 15 |
| SOUTHDOWN | 60 Rams, 11 pens of Ewes. | 42 Rams, 4 pens of Ewes. | 62 Rams, 17 pens of Ewes. | 73 Rams, 7 pens of Ewes. | Class I.—Shearling Rams 68<br>,, II.—Rams of any age 44<br>Rams..... 112<br>,, III.—Shearling Ewes, pens ..... 20 |
| LONG-WOOLS | 26 Rams, 3 pens of Ewes. | 32 Rams (6 of them also for the local prizes).<br>5 pens of Ewes (2 of them for the local prizes). | 24 Rams, 5 pens of Ewes. | 27 Rams, 3 pens of Ewes. | Class I.—Shearling Rams 15<br>,, II.—Rams of any age 9<br>Rams..... 24<br>,, III.—Shearling Ewes, pens ..... 5 |
| Relative Totals | 159 Rams, 26 pens of Ewes. | 192 Rams, or without the "local" ones, 172.<br>25 pens of Ewes, or without the "local" ones, 18. | 174 Rams, 41 pens of Ewes. | 165 Rams, 24 pens of Ewes. | Total—257 Rams, 40 pens of Ewes.<br>MOUNTAIN SHEEP.<br>Class I.—Rams of any age 13<br>,, II.—Shearling Ewes, pens ..... 4<br>,, III.—Ewes of any age, pens ..... 2<br>Grand Total—270 Rams, and 46 pens of Ewes. |

TABLE II.—Exhibits the progress of the best Rams in size.

| | YORK, 1848. | | | | NORWICH, 1849. | | | | WINDSOR, 1851. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Age. | Girth. | Length. | Height. | Age. | Girth. | Length | Height. | Age. | Girth. | Length. | Height. |
| LEICESTERS. | | | | | | | | | | | | |
| Class I. | Months. | Ft. in. | Ft. in. | Ft. in. | Months. | Ft. in. | Ft. in. | Ft. in. | Months. | Ft. in. | Ft. in. | Ft. in. |
| 1st Prize | 14 | 4 6½ | 3 7½ | 2 6½ | 16 | 4 10 | 3 10 | 2 6½ | | | | |
| 2d do. | 16¼ | 4 4 | 3 6½ | 2 5½ | 16 | | | | | | | |
| Class II. | | | | | | | | | | | | |
| 1st Prize | 27 | 5 2 | 3 9 | 2 5½ | 28 | 5 2 | 3 9½ | 2 6½ | | | | |
| 2d do. | 28 | 5 0 | 3 6½ | 2 7 | 40 | 5 6 | 3 10 | 2 6 | | | | |
| SOUTHDOWNS. | | | | | | | | | | | | |
| Class I. | | | | | | | | | | | | |
| 1st Prize | 16 | 4 1 | 3 7 | 2 3½ | 16 | 4 4½ | 3 10½ | 2 4½ | 17 | 4 3½ | 3 9 | 2 3 |
| | | | | | | | | | 16 | 4 3½ | 3 8 | 2 2½ |
| 2d do. | 16 | 3 8½ | 3 7½ | 2 2½ | 16 | 4 1 | 3 8 | 2 2 | 3d prize | | | |
| | | | | | | | | | 16 | 4 2 | 3 6 | 2 2½ |
| Class II. | | | | | | | | | | | | |
| 1st Prize | 29 | 4 6 | 4 1 | 2 4 | 39 | 4 6 | 3 10 | 2 5½ | 3d prize | | | |
| 2d do. | ... | ... | ... | ... | ... | ... | ... | ... | 29 | 4 9½ | 3 7½ | 2 2 |
| LONGWOOLS. | | | | | | | | | | | | |
| Class I. | | | | | | | | | | | | |
| 1st Prize | 16 | 5 1 | 3 8½ | 2 6½ | 16 | 5 2 | 4 1 | 2 7 | 16 | 5 1 | 4 1½ | 2 8½ |
| 2d do. | 16 | 4 8½ | 3 6 | 2 6 | 16 | 4 10 | 4 0 | 2 7½ | 16 | 4 11 | 4 1½ | 2 8 |
| Commended | 16 | 4 9½ | 3 7 | 2 6 | ... | ... | ... | ... | 16 | 4 9½ | 3 10½ | 2 6 |
| | | | | | | | | | 16 | 4 10½ | 4 0 | 2 6 |
| Highly commended. | 16 | 4 8 | 3 7½ | 2 5½ | ... | ... | ... | ... | 16 | 4 10⅝ | 3 9 | 2 5½ |
| Class II. | | | | | | | | | | | | |
| 1st Prize | 40 | 5 7 | 4 0½ | 2 9½ | 64 | 5 6 | 4 4 | 2 9 | 40 | 5 10½ | 4 2 | 2 8½ |
| 2d do. | 52 | 5 7½ | 4 1½ | 2 8½ | 52 | 5 10 | 4 5 | 2 10* | 40 | 5 7½ | 4 3½ | 2 9½ |
| Commended, &c. | 28 | 5 4 | 3 11 | 2 7½ | ... | ... | ... | ... | 28 | 5 8 | 4 2 | 2 8 |
| | | | | | | | | | 40 | 5 6 | 4 1⅛ | 2 7⅞ |
| | | | | | | | | | 40 | 5 7 | 4 2⅜ | 2 8½ |

* This is the largest sheep shown during these three years.

Nos. 514 and 515, belonging to Mr. W. Simpson, of Kirby, Grindalyth, Sledmere, Yorkshire; two odd ones, in bad taste; 514, a pretty good sheep, measuring, girth 4 ft. 5 in., length 3 ft. 3 in., height 2 ft. 4 in. As to the fine animals of Mr. W. Sanday, of Holme Pierrepoint, near Nottingham, the observations are: To my taste these are very good in form and appearance, but rather too small; the wool is much what I like, though too light; docks thin. 520, the prize sheep, of very good form and good curly wool, chine first-rate, countenance fine, plate well set, chest full, rump short and hips rather near, good legs, and fine offal. 521, second prize; a very pretty form, capital chine, head very pleasing, chest full, plates good, hips too near, wool rather short and varied; a nice sheep. 518, third prize; beautiful chine, not good loin, rump defective and short, hips too near, wool thin set, but pretty good; plates good, chest wide. 519, a well-formed forequarter and good top, rump short and narrow, too small, good curly wool. 522, 524, 525, and 527, shown by Mr. G. Turner, of Barton, near Exeter; a good lot, and much alike; their backs all defective in mutton, longer than last lot, but not so good in form; bodies longer, as well as legs. Mr. Abraham, of Barnetby-le-Wold, near Brigg, Lincolnshire, shows three sheep with much more substance, and altogether larger, with more wool, and their mutton good, certainly more to my taste; wool thickly set, but not straight, countenances very pleasing. 528 measures, girth 4 ft. 5½ in., length 3 ft. 6½ in., height 2 ft. 5 in. 529, girth 4 ft. 7½ in., length 3 ft. 6 in., height 2ft. 5 in. 530, girth 4 ft. 6 in., length 3 ft. 6 in., height 2 ft. 7 in. Three sheep exhibited by Mr. T. Carter, of Scales, near Richmond, Yorkshire, are noted as a good lot. 532, a large sheep, long and high standing, with heavy fleece, large dock, but bare of wool: the others with good backs, and fair forms, but light of wool underneath. 534, 535, 536, 537, bred by Mr. G. S. Foljambe, of Osberton Hall, near Worksop, Notts; a well formed lot, broad and of fair size, rather low standing, face and legs dark-skinned, backs not quite level. 538 and 539, exhibited by Mr. J. G. Watkins, of Woodfield, near Worcester; two odd ones, both in wool and character. 541, bred by Mr. R. Aylmer, of West Acre, Norfolk, and exhibited by Lord Walsingham; a large good fine mutton sheep, great, light, form not very good, head plain and coarse. 542 and 543, bred by Mr. J. Barton, of Barton-le-Street, near Malton, Yorkshire; two very pretty sheep, small, low standing, hips near but legs good, chine good, plates good, rather long faces. 543, chine good. 545 and 546, belonging to Mr. S. Kinsdon, of Thorverton, near Cullompton, Devon; very large high standing long sheep, a fair quantity of curly wool: they would pass for longwools. 547, 548, Mr. G. Radmore's, of the same place; well formed good sheep, but rather low; 547 has a wide chine, chest and plates, wool short. 549, 550, 552, by Mr. C. Wright, of Worsborough, near Barnsley, Yorkshire, bred by C. and S. Wright, of Great Gonerby, near Grantham, Lincolnshire; pretty curly wooled sheep, small, but with excellent mutton: I call them good small Leicesters. 553, 554, by Mr. J. Douglas, of Athelstaneford, New Mains, near Drem, Haddington; small Leicesters, with rather straight wool, and bare under-

TABLE III. is a Synopsis, representing the progress of the sheep in quality—those of long successful breeders being from time to time surpassed by new candidates for fame: this table shows also in what measure preference for the sheep of particular districts influences the awards of the judges.

LIST OF JUDGES AND PRIZE-MEN.

| | NEWCASTLE, 1846. | NORTHAMPTON, 1847. | YORK, 1848. | NORWICH, 1849. | EXETER, 1850. | WINDSOR, 1851. |
|---|---|---|---|---|---|---|
| LEICESTERS. | | | | | | |
| *Judges* | Stone, Leicestershire.<br>Ashdown, Shropshire.<br>Wright, Devon. | Wright, Derbyshire.<br>Harris, Berkshire.<br>Milward, Notts. | .....<br>.....<br>..... | Stone, Leicestershire.<br>Bartholomew, Lincolnshire.<br>Allison, Notts. | W. Torr, Lincolnshire.<br>Barford, Northamptonshire.<br>Hall, Notts. | Allison, Notts.<br>Stone, Leicestershire.<br>Barford, Northamptonshire. |
| Class I. | Turner, Devonshire.<br>Smith, Rutland. | Pawlett, Beds.<br>Pawlett, Beds. | Borton, Yorkshire.<br>Harvey, Norfolk. | Abraham, Lincolnshire.<br>Sandsy, Notts. | Abraham, Lincolnshire.<br>Sanday, Notts. | Sanday, Notts.<br>Sanday, Notts. |
| Class II. | Burgess, Notts.<br>Pawlett, Beds. | Smith, Rutland. | Borton, Yorkshire.<br>Hobbs, Essex. | Sanday, Notts.<br>Hobbs, Essex. | Abraham, Lincolnshire.<br>Sanday, Notts. | Sanday, Notts.<br>Pawlett, Beds.<br>Pawlett, Beds. |
| Class III. | Angas, Yorkshire. | Sanday, Notts.<br>Smith, Rutland. | Sandy, Notts.<br>Sandy, Notts. | Simpson, Yorkshire.<br>Sanday, Notts. | Abraham, Lincolnshire.<br>Sanday, Notts. | Sanday, Notts.<br>Abraham, Lincolnshire.<br>Sanday, Notts. |
| SOUTHDOWNS. | | | | | | |
| *Judges* | Overman, Norfolk.<br>Pope, Dorset.<br>Trumper, Oxon. | Trumper, Oxon.<br>Ladds, Hunts.<br>Etheridge. | .....<br>.....<br>..... | Pope, Dorset.<br>Trumper, Oxon.<br>Boys, Kent. | R. Overman, Norfolk.<br>Trumper, Oxon.<br>Maton, Wilts. | Pope, Dorset.<br>Purves, Hunts.<br>Weall, Surrey. |
| Class I. | Webb, Cambridgeshire.<br>Webb, Cambridgeshire. | Webb, Cambridgeshire.<br>Webb, Cambridgeshire. | Webb, Cambridgeshire.<br>Shelley, Sussex. | Webb, Cambridgeshire.<br>Webb, Cambridgeshire. | Sainsbury, Wilts.<br>Sainsbury, Wilts. | Webb, Cambridgeshire.<br>Webb, Cambridgeshire.<br>Webb, Cambridgeshire. |
| Class II. | Webb, Cambridgeshire.<br>Duke of Richmond, Sussex. | Harris, Berks.<br>Harris, Berks. | Sainsbury, Wilts.<br>Drake, Hampshire. | Hobbs, Essex.<br>Shelley, Sussex. | Rigden, Sussex.<br>Sainsbury, Wilts. | Rigden, Sussex.<br>Webb, Cambridgeshire.<br>Webb, Cambridgeshire. |
| Class III. | Duke of Richmond, Sussex.<br>Barnard, Essex. | Duke of Manchester, Hunts.<br>Barclay, Surrey. | Duke of Richmond, Sussex.<br>Shelley, Sussex. | Shelley, Sussex.<br>Overman, Norfolk. | Rigden, Sussex.<br>Duke of Richmond, Sussex. | Webb, Cambridgeshire.<br>Webb, Cambridgeshire.<br>Rigden, Sussex. |
| LONG-WOOLS. | | | | | | |
| *Judges* | Bateman, Oxon.<br>Stokes, Derbyshire.<br>Clarke, Lincolnshire. | Woodward.<br>Clarke, Lincolnshire.<br>Beman, Gloucestershire. | Cox, Berks (†).<br>Beman, Gloucestershire.<br>J. Clarke, Lincolnshire. | Beman, Gloucestershire.<br>Bateman, Oxon.<br>Clarke, Lincolnshire. | Beman, Gloucestershire.<br>Gillett, Oxon.<br>E. Clarke, Lincolnshire. | J. Clarke, Lincolnshire.<br>E. Clarke, Lincolnshire.<br>Beaman, Gloucestershire. |
| Class I. | Large, Oxon.<br>Handy, Gloucestershire. | Large, Oxon.<br>Faulkner, Oxon. | Hewer, Gloucestershire.<br>Hewer, Gloucestershire. | Large, Oxon.<br>Garne, Gloucestershire. | Hewer, Gloucestershire.<br>Garne, Gloucestershire. | Garne, Gloucestershire.<br>Lane, Gloucestershire. |
| Class II. | Handy, Gloucestershire.<br>Large, Oxon. | Large, Oxon.<br>Handy, Gloucestershire. | Garne, Gloucestershire.<br>Handy, Gloucestershire. | Large, Oxon.<br>Garne, Gloucestershire. | Garne, Gloucestershire.<br>Lane, Gloucestershire. | Hewer, Gloucestershire.<br>Garne, Gloucestershire. |
| Class III. | Smith, Oxon. | Large, Oxon.<br>Large, Oxon. | Large, Oxon.<br>Simpson, Yorkshire. | Large, Oxon.<br>Large, Oxon. | Large, Oxon.<br>Large, Oxon. | Lane, Gloucestershire.<br>Lane, Gloucestershire. |
| MOUNTAIN SHEEP. | | | | | | |
| *Judges* | ..... | ..... | ..... | ..... | ..... | Walker, Gloucestershire.<br>Clayden, Essex.<br>Cox, Berks (†). |
| Class I. | ..... | ..... | ..... | ..... | ..... | Dodd, Northumberland. |
| Class II. | ..... | ..... | ..... | ..... | ..... | Robson, do., Nurcombe, Somerset. |
| Class III. | ..... | ..... | ..... | ..... | ..... | Robson, do., do. |

neath. 555, 556, 557, belonging to Mr. S. Wallis, of Barton Seagrave, near Kettering, Northamptonshire; not good in any sense. 560, one of the lot shown by Mr. W. Ellison, jun., of Low Sizeogh, near Kendal, Westmoreland; a tiny bad thing, with a fattish back. 561 to 566, six sheep by Mr. J. S. Spencer, of Hinckley, Leicestershire; not one good one, the light-made, narrow sort, with necks and rumps thin and bad. 568 to 571, fair sized and good useful sheep, bred by Mr. S. Bennett, of Bickerings Park, Woburn, Beds; legs too long, and frame too narrow. 572, 573, by Mr. J. Hill, of Briston, Norfolk; very small, and not much wool.

Class II. *Rams of any other age.*—578, Mr. Pawlett's 28 months old ram; first prize; head very pleasing, neck well-set and good, chest not very broad, but good and prominent, chine broad, and ribs well-springing, plates very broad and heavy, loin fat and broad, though the hips are not wide, rump fat, rather long but not broad, legs not very good, and twist not wide and full, frame long and good, wool not heavy. 580, 40 months old, by same breeder; second prize; astonishing plates, good back, hips fair, and rump the same; thighs good, chine wide and good, wool fair. 581, 40 months; third prize; similar to last, a little longer, but plates not so good, none of these sheep's docks are first-rate. 575, good sheep, but not so well up. 582, 583, 584, Mr. Simson's sheep; very useful, large, and good, stand badly on their hind legs, the first a very good animal. 589, 590, Mr. Sanday's; very handsome and well formed animals; 590, a very large forequarter, with astonishing plates, their rumps (particularly 589), rather defective. 591, 592, 593, Mr. Abraham's; beautiful sheep; 592, of very good form, excepting rump. 594, 595, 596, Mr. Carter's; large and good, large Leicesters, with frame enough for long-wools. 597, Mr. Foljambe's; fair size and form, but wool very varied, evidently the thighs not fairly shorn. 598 to 603, by Mr. Turner; a very good useful lot, partaking singularly of one character, large, long, good frames, with rather light wool. 604, 605, Mr. Watkins'; much alike, fair size, good mutton, pretty faces, light wool. 606, Lord Walsingham; fair sheep, bare underneath. 607, 608, 609, Mr. Borton's; rather smaller, but nice sheep. 610, 611, Mr. Potter's; light woolled, large framed sheep, with long legs. 612, Mr. Simpson; a large useful sheep, with heavy wool, but bare underneath, stands badly on his hind-legs; I think the largest I have yet seen in these classes. 615, Mr. Wright; rather small, good sheep; I think not quite fairly shorn. 616, Mr. Douglas; a nice form, but light wool. 617, 618, 619, Mr. Wallis, rather small sheep, wool varied. 620, Mr. Ellison; nothing commendable. 621, 622, 623, Mr. Bennett's; useful sheep, but the wool by no means a match. 624, Mr. Hill; small sheep, with south-down looking wool; 625, 626, same breeder; small sheep, of fair form.

Class III. *Shearling Ewes.*—627, Mr. Pawlett; a pen of useful little ewes, not level, wool thin and straight, necks thin. 628, Mr. Burgess; still less, but more wool, though it is not all alike, necks thin. 630, Mr. Simpson; a pretty, smart looking pen, more wool, but varied in sort and quality, rather uneven. 629, same breeder; rather more even, smart and pretty, but smaller than last lot. 631, Mr. Champion; very slight forms, fair heads, and very light offal; thin set, and straight wool. 632, Mr. Sanday; third prize; a very pretty, well-formed pen, the wool not quite alike, rumps short, back of one not well covered. 634, first prize; very good lot, fair size, very nice faces, good wool, but not quite alike; the pen matches well with 632; rumps are too short, thighs good, one or two backs not quite right. 633, same breeder; good, but not so even, necks thin, wool more varied. 635, Mr. Abraham; an even lot of large size, longer and higher standing, almost large enough for long-wools; wool thick-set and short, a very good pen, and deserving of a prize. 636, second prize; certainly not equal to 635; not so even either in wool or looks, rumps rather short, and their whole form more contracted than that of the above lot. 638, Mr. Allen; an ordinary lot, small, with thin necks, and standing-out wool. 637, same breeder; a rather larger lot, but of similar frame, long, high, and narrow, legs not too long. 639, Mr. Foljambe; a very pretty well-formed lot, finely trimmed, with varied coloured faces; form good, frames and wool very equal. 640, Mr. Douglas; a smart pretty little lot, rather too thin and narrow, with set-out wool. 641, Mr. Bennett; a very small lot, thin standing-out wool; nothing good.

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The following is a list of the premiums awarded to exhibitors of AGRICULTURAL IMPLEMENTS in the Great Exhibition, Hyde Park. The awards in other departments will not be made until the close of the Exhibition; but the Commissioners, feeling that the practice of the Royal Agricultural Society in a manner bound them in this matter, and seeing no practical objections or difficulty in the way, have acceded to the request of the agricultural exhibitors for an immediate decision, and we now append the list of successful competitors, with the number in catalogue and subjects included in the award.

GREAT MEDALS.

15. Busby, W., Newton-le-Willows—two or four horse plough, horse hoe on the ridge, ribbing corn drill, and cart.
135. Crosskill, W., Beverley—Norwegian harrow meal mill, cart, clod crusher.
142. Garrett and Sons, Suffolk—horse, hoe, general purpose drill, four-row Turnip drill on the flat, improved hand-barrow drill for Grass seeds, steam-engine, threshing machine.
233. Hornsby and Son, Grantham—corn and seed drill, drop drill, two row Turnip drill on the ridge, oil cake bruiser, steam-engine.

PRIZE MEDALS.

132. Ball, W., Rothwell—two-horse plough.
217. Bentall, E. H., Heybridge—cultivator.
237. Burgess and Key, Newgate-street—improved American churn and Turnip cutter.
37. Burrell, C., Thetford—Gorse bruiser.
242. Clayton and Shuttleworth, Lincoln—steam-engine.
47. Clayton, H., near Dorset-square—tile machine.
216. Coleman, R., Chelmsford—cultivator, expanding harrow.
205. Comes, Barbridge—chaff-cutter.
96. Crowley and Sons, Newport Pagnel—cart.
143 Comins, J., South Molton—horse hoe.
De Claes, Belgium—corn drill and roller.
166. Duchene, J. J., Assche-en-Rifail, Belgium—churn.
129. Gibson, M., Newcastle—clod crusher.
150. Gray and Sons, Uddingstone—cart.
Harwood—meal mill.
149. Hensman and Son, Woburn—threshing machine, four-horse plough, and corn-drill.
241. Holmes and Son, Norwich—threshing machine.
240. Howard, J. and F., Bedford—two horse-plough, four-horse plough, horse-rake.
1299. Lavoisy, A.D., Paris—churn.
124 A. Newington, Dr. (as inventor)—top dressing machine.
50. Nicholson, W. N., Newark-on-Trent—oilcake bruiser.
169. Odeurs, Marlinne, Belgium—plough.
124. Ransome and May, Ipswich—drop drill.
108. Reeves and Bratton, Westbury — water drill, liquid manure distributor.
185. Samuelson, B., Banbury—Turnip cutter.
228. Scragg, T., Tarporley—tile machine.
Smith, Stamford—haymaker, chaff-cutter, and horse-rake.
1. Stanley, W. F., Peterborough—Linseed and Barley crusher.
271. Tuxford and Son, Boston, Lincolnshire—steam engine.
220. Wilkinson, T., 309, Oxford-street—churn.
151. Williams, W., Bedford—light and heavy harrows.
239. Whitehead, J. Preston—tile machine.

*Note.*—The awards for foreign implements are not yet completed.

## Farmers' Clubs.

LONDON.—The following is an abridgement of Mr. Nesbit's address at a late meeting of the club, on *The Adulterations of Artificial Manures, and the best practical Means of Detection:*—

The time is past when farmers were compelled to depend for their manures solely upon those articles which they can produce upon the farm. By practical analyses of the manures used in cultivation, it has been found that certain substances constitute the chief ingredients which are capable of giving fertility to the soil; and, as you are well aware, numerous other substances, either obtained from our manufacturers or brought from abroad, such as nitrate of soda and guano, are used for the purpose of agricultural improvement. It is of immense importance that the articles thus brought to your doors should be received by you in a state of integrity, that they should not be adulterated, and that if they are adulterated, you should have in your hands means of detecting adulterations, and of avoiding the consequent loss. Now, in what consists the value of manure? I need not tell you that the value of a thing depends on the difficulty of obtaining it. If diamonds were found scattered about the road, their value would be no greater than that of flint or granite. It is the difficulty of obtaining them which raises their value to such a large amount. Now, you have in farm-yard dung a large amount of water. The common dung which is put upon the farm, and which is so highly prized by the farmer, contains 70, 80, and, in some cases, 90 per cent. of water, and the more wet manure is, the less valuable it is. Well, to go a little further, what is the next ingredient? We must take next the carbonaceous matters, or mere woody matters. These are absolutely required when you are proceeding on a large scale; and in putting on 20 or 30 loads of dung per acre, you put on a sufficiently large amount of these carbonaceous substances to be of telling value in the field; but to mere organic or woody matters, then, I say, we cannot properly attach any considerable value. Again, there is common salt found in farm-yard dung. We may, perhaps, find half or one per cent. of common salt; but that is too small a proportion to be highly valued. I might go through various other ingredients; but if I did so it would all resolve itself into this—that it is the ammonia and the phosphate of lime, or bone-earth, that constitute the chief value of artificial manures. We shall find very easily, by a little consideration, that with certain limitations, in proportion to the amount of phosphate of lime and of ammonia contained in artificial manures is the value of those manures. Now, in farm-yard dung, as far as I am able to judge—and I have been corroborated by many others—there is seldom one per cent. of ammonia. In the case of the dung of animals which have been highly fed, you may get a little more; and hence it is that you require to put so large an amount of such unconcentrated manure on the land. There are other manures which contain a much larger proportion; for example, guano, various kinds of night-soils, and urines. Now, Professor Way, in the "Journal of the Royal Agricultural Society," gives 17 per cent. of ammonia as the result of his analysis of a great number of samples. I have analysed a great number of specimens, and I cannot say that all mine have come up to that. A few of them may have done so, but that was by no means the general result. The samples which I have analysed have not come direct from the ship, and many causes have led to deterioration. But be this as it may, I have found 14 or 15 per cent. to represent the ammonia in the guanos which have principally come under my notice. Well, now, ordinary Peruvian guano has likewise from 18 to 22 per cent. of phosphate of lime. Phosphate of lime is exceedingly valuable. It is, as you all know, in the shape of superphosphate of lime, one of the best materials for the Turnip crop. You may redeem the price of ammonia in guano and other substances, at 6*d.* per lb. Professor Way, and other chemists, have shown that 6*d.* per lb. will represent the value of ammonia; so that if you only have an analysis of guano, and divide the number of pounds of ammonia per ton by 2, you will get the price in shillings; and you will thus obtain the actual value of the ammonia. Now, the value of phosphate of lime may be stated at about ¾*d.* per lb.; it may in some cases be a little more; but, if any person should buy phosphate of lime at about ¾*d.* per lb., he would, I think, be doing pretty well. Now, take the other constituents of guano. It is very easy likewise to ascertain their value. We all know what is the price of salt in the market. If, then, we find that a certain manure contains four per cent. of salt, it is very easy for us to calculate its value. It cannot be necessary that I should dwell upon this point. Sulphuric acid also is contained in guano, and other manures. It is easy to calculate the value of that. We must not, however, take the price of the highest compounds when we would estimate its value, but take some substance containing sulphuric acid—as sulphate of lime or gypsum, which has a low price in the market. Gypsum is from 20*s.* to 28*s.* per ton; so that the small quantity of sulphuric acid in guano cannot be of great value. Without the slightest difficulty, we can therefore form a tolerably accurate estimate for commercial purposes of any ordinary manure. I do not say absolutely accurate, but sufficiently so for the purpose required, the composition being known; for, of course, without such knowledge it is impossible to tell the value. Bones, again, are valuable for the same two reasons—on account of the phosphate of lime they contain, and on account of the nitrogen which becomes ammonia as the bone decomposes in the soil. Some chemists assert that bones contain 6 per cent. of nitrogen. That has not been the result with all the bones that I have analysed; probably one-half would be nearer the mark. I may as well mention the adulteration of bones at once. I shall afterwards proceed to speak of guano. Bones are not received by you in their original and entire state, because they would then be of little use to you. As practical farmers you do not possess mills for the purpose of grinding bones, and you are therefore obliged to entrust other persons with the grinding of them, in order that they may be reduced to a proper state for the land. Now, it would be well if parties who ground bones ground nothing else; but it does so happen that a great many other things are ground up with them, in order that farmers may buy an adulterated article at a much less apparent price, but in reality at a much greater cost than they could buy a genuine one. I speak this evening from my own personal experience. I assert that the bones ground in London, and in many other places, are often mixed in large quantities with oyster shells. These oyster shells have the property of splitting up into nice fragments, and unless a gentleman takes out his glass and examines curiously with the view of discovering a bit of mother of pearl, he will often not discover that he has bought a fraudulent article. There is frequently from 20 to 25 per cent. of this adulterating material, and, of course, so long as farmers will patronise dealers without reference to character, and make price the sole consideration in purchasing, so long must they expect to get oyster shells instead of bones. But this is not the only thing which is used for adulteration. Soap-boiler's waste, and sandy and earthy matters, are also introduced. Now, the oyster shell and soap-boiler's waste contain large quantities of carbonate of lime. If, therefore, the farmer makes his own superphosphate of lime, he will experience a double loss, for until all the carbonate of lime has been acted upon by the acid, no superphosphate is formed. Now, as carbonate of lime or chalk takes about its own weight of sulphuric acid to drive off the carbonic acid, it follows that bones adulterated with 25 per cent. of oyster shells or waste, would require five cwt. of extra acid to neutralise the lime before any superphosphate could be formed. I will now speak of the nature and extent of the adulterations to which guano and other substances are exposed. We have seen clearly that the value of guano and other artificial manures depend pretty much on their ammonia and phosphate of lime; it cannot depend on a given amount of sand or loam, or brick-dust or ground tiles, or any article of that kind which may be mixed with it; and it is a main object of my lecture to bring palpably before any practical farmers here some view, though it must be very inadequate when compared with the reality, of the fearful extent to which adulteration is now carried. I feel perfectly incapable of showing one hundredth part of the actual extent of this evil. Gentlemen, you are robbed systematically. It is not simply that a little country dealer goes and buys his 10 tons of guano, mixes some foreign matter with it, and then sells it as genuine—there are men who make hundreds and thousands of tons of materials for adulterating guano, which materials are sold in the market for the express purpose of adulteration. It is a general system, which begins in the metropolis and extends over the whole country. Even the country cheaters are themselves cheated in turn. The men who come to London to buy their manures very often get an adulterated article; the article passes through the hands of half a dozen parties before it reaches the farmer; and when at last it does reach him, it is in an extraordinary state of adulteration, very little comparatively of the original matter being found therein. Guano ought not to contain more than 1½ to 2½ per cent. of sand; besides this, there should be 20 per cent. of phosphate of lime, from 14 to 17 per cent. of ammonia, and a considerable quantity of organic matter. Now you can buy guano in the market containing from 17 per cent., which is a good genuine article, down to others containing only a trace of ammonia. It grows—

"Small by degrees and beautifully less,"

till you have got a thing which contains but little less than our good Essex marl, from the Wanstead Flats, or some other place, with a little damaged guano mixed with it to give it the right smell. I have specimens of this kind of guano on the table before me. Genuine guanos are sold in the market in different degrees of purity; they are sold as guano, and as damaged and double damaged; they are known among the trade as D's and double D's. Now, would you imagine that the adulterators have the sagacity not to buy the best guano? They never get a fragment of that; they buy the D's and the double D's, and by a proper mixture of these with the materials for adulteration they bring out an article which is sold at nearly the price of the original guano: the D's and DD's themselves fetch a heavy price from their use as giving the adulterated manure its smell. I have lately seen an advertisement for the sale of 1200 tons of damaged guano, by Gibbs and Co., at an auction mart. I have it on tolerably good authority that the double D's sold at 7*l.* 5*s.*, and the D's, or damaged, at about 8*l.* 5*s.*, whereas the very best is only from 9*l.* 5*s.* to 9*l.* 10*s.*; and this (the best) does not go into the market mixed with powdered bricks, and so on. There are hundreds of farmers who have used ground tiles or marl with a little double D mixed with it, and then expected to see a good Wheat crop in consequence. Many fraudulent dealers buy the D's or the double D's for the smell, and the guano is preferred to the best article because it is sold at a cheaper rate. They are not even content with selling these as good guano, but they mix them with other more worthless materials; for example, with burnt pantiles in order to give it the beautiful colour of Peruvian guano. The locality, Bow, from whence that comes is well known in the trade. They also mix red marl from the Wanstead Flats, in Essex. The whole system, in fact, of the adulteration is so well devised that, without analysis, it is almost impossible for the farmer or the ordinary country dealer not to be imposed upon. In some cases it has been known that the buyer has seen his guano taken from the ship's side, and has congratulated himself and believed that he at least was too cunning to be taken in; but, unfortunate man that he was, he had quite overlooked the Essex marl or ground tiles concealed in the barge to be well mixed with his guano as it went up the river to the appointed wharf. Other parties have three or four wharfs for shipment in various parts of the river, and the same adulterated material is often sent even to the same buyer as two or three separate guanos at different prices. Of course those purporting to be different are shipped to the buyer from different wharfs. The two following analyses will give some idea of the adulterations in the manure market:—

No. 1, came into the London market, per ship, from Liverpool. It was offered for sale by sample in some places, as Peruvian guano, at 6*l.* 10*s.* to 7*l.* per ton; in others, as Saldanha Bay guano, containing 60 per cent. phosphate of lime, at 4*l.* to 5*l.* per ton. The samples were contained in bags of blue paper, purporting to come from some ship from Valparaiso. About 150 tons were brought into London, the greater part of which found its way to the farmers of Hampshire, no doubt to their great edification and benefit. No. 2 was offered for sale as Saldanha Bay guano, at 3*l.* or 4*l.* per ton.

| No. 1.—Guano? | | No. 2.—Saldanha Bay Guano? | |
|---|---|---|---|
| Gypsum ... ... | 74·05 | Sand ... ... ... | 84·81 |
| Phosphate of Lime ... | 14·05 | Phosphate of Lime ... | 10·21 |
| Sand ... ... ... | 2·64 | Gypsum ... ... | 5·81 |
| Ammonia ... ... | 0·51 | Chalk ... ... ... | 22·73 |
| Moisture and loss ... | 8·75 | Moisture ... ... | 12 44 |
| | 100·00 | | 100·00 |

Now I want to exhibit here a few of these samples of counterfeit guano, observing that the way in which they are got up for sale is really very ingenious. I want an opinion as to which of these samples is the best. [The chairman having selected the one which he conceived to be the best, the lecturer

continued.] Well, now, this which our chairman has selected as the best guano, contains, in fact, a very large proportion of insoluble materials. [The lecturer then exhibited in a bottle the proportion of sand to genuine guano in the two samples, showing that in the guano which the chairman had considered the best, the sand and other worthless insoluble materials constituted more than one-half of the whole.] In the guano our friend thought the best, there are 264 grains of sand in 500 grains of the substance sold as genuine. The method of mixing in this sample is really good. The sand and damaged guano is not mixed and ground well together; but the whole is worked so carefully, that the small of the guano is well mixed with the marl, and then the unbroken large lumps of guano are carefully added so as not to break them. The whole, therefore, has very much the appearance of good guano, for the lumps in the mixture are merely the damaged guano unadulterated. There is another specimen (exhibiting it), in which, out of 500 grains, I found 257 of insoluble matter. Let me now show you the proportion of insoluble matter which is contained in genuine guano. This contains only 9 grains in 500. Remember, gentlemen, in future, that the strongest smelling guano is not always the best. You cannot tell whether or not it is genuine either by the smell or by the colour. In fact, the only means by which you can ascertain is analysis. I will, however, show you one mode of detection, which will serve your purpose so long as the adulterators continue to act upon the present system. They now adulterate with a heavy article. If you take 500 grains of the best guano and 500 of an adulterated article, and put each into a tube of the same size, you will find the adulterated article much lower in the tube than the genuine one. The presence of the sand is shown at once by the comparative smallness of the space which it occupies. I intend to bring out a little apparatus for use in the market, one which will enable you, under existing circumstances, to detect adulteration. But I believe this would not long serve the purpose for which it is designed: the adulterators would soon get over that difficulty, by using lighter and more flocculent matter. I must now show you "THE ARTICLE" itself—the material for adulteration—for it is shown in the trade as "THE ARTICLE." You can buy the article in the trade for the purpose of adulteration from 20*s.* to 60*s.* per ton. There may perhaps also be 10 or 20 per cent. off for cash. I hold in my hand, gentlemen, 500 grains of the article. [The lecturer here exhibited in one tube 500 grains of the article, and in a similar tube 500 grains of genuine guano.] You see the article presents a very sorry appearance by the side of the genuine article. Observe the amount of silica which it contains, and then judge what is the extent of adulteration. I must, if possible, compel the attention of all present to this wholesale system of adulteration. It is not, you see, confined to one or two small houses, but the trade in this article is as regular a branch of business in the metropolis as the trade in guano itself. Possibly, there is as much of this adulterated article sold, as of the genuine guano from abroad. How does this arise? Whence comes all this adulteration? It is partly owing to the fact of the farmers nibbling and haggling to get the last penny of profit out of the dealer's hands. He has thus been compelling those who would perhaps otherwise be honest, to sell an article like that which I have been exhibiting.—A MEMBER: It is the result of free trade.—Mr. NESBIT: This is not buying in the cheapest, but in the dearest market. Let me here observe, that it is quite impossible for persons who have once begun to adulterate, to do so to a small extent. No man can adulterate merely to the extent of 10 per cent. It would not pay. In the first place, an article has to be purchased and worked up, and made to look something like guano; then there is the mixing of this article with the guano, which also costs money. The whole process is expensive, and every particle of this expense, in addition to a large profit, must be paid by the farmer, who buys the adulterated article instead of the genuine. These adulterated manures are sold, some for 5*l.*, some 6*l.*, some 8*l.*, a ton. The least adulterated is adulterated more than 40 per cent.; and in many cases the adulteration is as much as 50 or 60 per cent. It remains for you, gentlemen, to attempt to put a stop to this imposition. I can scarcely offer any other practical means of detection than that which I have just mentioned—that of observing and comparing the different degrees of specific gravity, or bulk of the samples. Not being accustomed to chemical operations, of course, you cannot be expected to arrive at the truth by means of analysis; but I would advise you, under no circumstances, to buy manure without an analysis, or from any other than a first-rate party. I must confess that I see no effectual security except that which consists in your having samples of the bulk you buy analyzed. Now, other manures are adulterated in similar ways. Nitrate of soda is now mixed with a well-prepared sulphate of magnesia, or Epsom salts, whose crystals are almost undistinguishable by the eye from the crystals of nitrate of soda. Sulphate, and other salts of ammonia, are also much adulterated. The cost of the analysis of these manures is, however, only a few shillings, so that the farmer ought in no case to receive the bulk of them without having a sample analysed. There are, in fact, a thousand and one ways of adulterating manures; and you can scarcely ever be sure, under present circumstances, that you are applying to your land a really genuine article. Supyose parties to buy this or that manure. Take super-phosphate of lime. If you don't buy from a genuine house you will have large mixtures. Fifty per cent., and in some cases 75, of worthless material is mixed with the genuine. I must now mention another matter, which is really so supremely ridiculous, that I hardly know how to mention it. I mean the fertilising of seeds. Many years ago it was proposed to steep seeds of various kinds in solutions of manure, or to roll them in some manuring powder, which, adhering to the seed, would render good service in quickening its germination, and promoting its early growth. There is nothing unreasonable in this, and in many instances some good has been done by the process. But within these few years, both here and in France, parties have come forward to do away altogether with ordinary manuring, and to give such a coating to seed as will carry them well through the harvest. But now for the analysis of this precious manure, for which I paid at the rate of 20*s.* for 4½ lbs., or at the moderate and unassuming price of 497*l.* 15*s.* 6½*d.* per ton! The very first thing which presented itself was 55 59 per cent. of carbonate of lime—or common chalk. I will give you the full analysis.

*Composition of a sample of Fertilising Powder, at the price of 20s. for 4½ lbs.*

| | |
|---|---|
| Silica ... ... ... ... ... | 6.45 |
| Moisture ... ... ... ... | 4.91 |
| Organic matter ... ... ... | 25.79 |
| Nitrogen ... ... ... ... | 1.47 |
| Carbonate of lime ... ... ... | 55.59 |
| Potash and soda ... ... ... | 0.92 |
| Sulphate of lime ... ... ... | 1.71 |
| Iron not determined ... ... | — |
| Phosphate of lime ... ... ... | 0.96 |
| | 97.80 |

We must all believe that the article is too dear at the price. (Laughter.) I have letters from various gentlemen, including Professor Calvert, of Manchester, and Professor Anderson, of Edinburgh, all corroborating the fact of the immense adulteration of artificial manures. They have analysed samples of guano which have been highly adulterated. I have received a letter from Professor Calvert this morning, in which he informed me that he had analysed some which contained from 70 to 80 per cent. of sand. Now, gentlemen, I have thus brought before you the nature and extent of adulteration. My main object this evening was, that the reality should go forth to the agricultural world. I believe, in fact I know, that there are parties in London who are making their two or three thousand a year by adulterating manures. The names of these men are scarcely known in the market, but yet that which they manufacture finds its way to the land. It is not such gentlemen as yourselves who are chiefly exposed to this evil; you take care to protect yourselves; but there are many of the poorer class of farmers who are continually imposed upon without knowing it, because these gentlemen endeavour to buy 2 tons of guano for 10*l.*, instead of being contented with 1 ton at 10*l.* I have placed the matter before you because I think it ought to go forth to the agricultural world that farmers are being systematically and regularly cheated; that they are imposed upon in this matter; that they are constantly buying sand for guano, and oyster shells for bones; that they are not merely cheated here and there, but that parties make it their business to manufacture THE ARTICLE for no other purpose than that of mixing it with manure. When all this is known, the remedy will lie in your own hands. In the first place, you will deal only with men who have a character to lose, men who are stable and who will not risk their position by anything like deception. In the second place you should not neglect to avail yourselves of the security afforded by analysis.

## METEOROLOGICAL REPORT.—JULY.

(*Continued from p.* 461.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| July 15 | 3 p.m. | 29.73 | ... | WSW. Brisk; sunny. |
| * | 6.5 p.m. | ... | 29.72 | |
| 16 | ... | ... | ... | Bar. steady; light airs N. |
| 17 | 7.45 a.m. | ... | 29.73 | Light airs N. and NE. At 1.15 thunder and heavy rain throughout the afternoon. |
| | 2.30 p.m. | 29.75 | ... | |
| 18 | 6.55 a.m. | ... | 29.79 | Moderate breeze N. and NW. Cloudy. |
| | 10.45 p.m. | 29.89 | ... | Evening, gentle breeze westerly. |
| 19 | 8 a.m. | 29.86 | ... | S. all day. 8.15 commenced raining, with increasing wind; barometer falling steadily; cold. |
| | 11 p.m. | ... | 29.66 | P.M. blowing very hard. |
| Sun. 20 | 7.15 a.m. | 29.61 | ... | SSW. Blowing hard, and quite overcast; at 7.30 sun-gleams. |
| † | 1.25 p.m. | ... | 29.60 | |
| | 4.40 p.m. | ... | 29.60 | At 6.40 wind moderated and veered to WSW., and barometer rose rapidly. |
| | 10.15 p.m. | 29.73 | ... | A.M. NW. Gentle. Bright and sunny. |
| 21 | 7.15 a.m. | ... | 29.86 | P.M. WSW. Brisk at times. |
| | 10.55 p.m. | 29.91 | ... | A.M. bright blue sky; gentle SE. breeze, and barometer steady till noon. |
| 22 | 7 a.m. | 29.92 | ... | |
| | 10.45 a.m. | 29.92 | ... | |

* A storm coming from westward, and crossing England to the eastward.

† An unusually violent storm for the season. It came from the westward, probably from the St. Lawrence, travelling slowly, and was of large extent, and went towards the north of Europe.

Dorchester, July 24th. *F. P. B. M.*

(*To be continued.*)

## Notices to Correspondents.

NAILS: *An Old Subscriber* asks any correspondent who may have experience in the matter, to tell him the most durable and economical kind of nail to use in roofing with slate.

PROVINCIALISM: *Mediensis. Alsike* Clover, named at page 427, is Trifolium hybridum, introduced from Sweden, whence its name, which cannot be called a provincialism, is derived.

POULTRY ADDRESS: Will "Clericus Derbiensis" kindly inform "Clericus Landavensis" whether his Poland pheasant fowl is procurable under the name of either of Mr. Dixon's named varieties. Another clerical correspondent asks for the address of "Clericus Derbiensis."

SUPERPHOSPHATE OF LIME: *M G H.* Three cwt. per acre is a fair dressing for Turnips.

THE CHEMISTRY OF AGRICULTURE: *W Parker.* The subjects you have named have all been frequently discussed by lecturers on the chemistry of agriculture; and satisfactory reasons, based on the doctrines of chemistry and physiology, have been given for almost all the facts which come within the range of the subjects you name. The composition of gas water, and its value as a manure, on account of the ammonia it contains, have long been perfectly well known to scientific and practical men.

WEEDS: *A Young Farmer.* It is the Oxeye Daisy, Chrysanthemum leucanthemum; a perennial not easy to remove from land it has once occupied. The only way is to pull it up by hand, unless you plough up the field and so destroy it. Drilling and hoeing will not remove it. It is a symptom of very bad farming to allow it to take possession of land, as appears to be your case.

# Markets.

## HOPS.—FRIDAY, July 25.

Messrs. Pattenden and Smith report that the accounts from the plantations still continue to come worse. The market is improving, and the duty is estimated at 90,000*l.*

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 24.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | Clover ... ... ... | 75*s* to 95*s* |
| Inferior ditto... ... | 55 70 | New do. ... ... ... | 60 80 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 28 32 |
| New Hay ... ... | 55 70 | | J. COOPER. |

The supply short, but quite equal to the demand.

CUMBERLAND MARKET, July 24.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78*s* to 84*s* | Inferior ... ... ... | 68*s* to 80*s* |
| Inferior ditto... ... | 58 70 | New Clover ... ... | 68 80 |
| New Hay ... ... | 58 70 | Straw ... ... ... | 28 33 |
| Old Clover ... ... | 90 98 | | JOSHUA BAKER. |

### SMITHFIELD, MONDAY, July 21.

There was again a large supply of Beasts; however, the demand has increased, and consequently the top quotations were more freely given, and in a few instances exceeded. Sheep and Lambs were not nearly so plentiful as on Monday last, but the number was still large, and trade slow, although prices were rather better. Trade was heavy for Calves, at Friday's rates. From Holland and Germany there are 945 Beasts, 4000 Sheep, and 286 Calves; from France, 66 Beasts; and 200 from Scotland.

| Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|
| Best Scots, Herefords, &c. .. | 3 | 4 to 3 | 6 |
| Best Short-horns | 3 | 2 — 3 | 4 |
| 2d quality Beasts | 2 | 4 — 3 | 0 |
| Best Downs and Half-breds ... | 3 | 10 — 4 | 0 |
| Ditto Shorn ... ... | | | |

| Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|
| Best Long-wools . | 3 | 6 to 3 | 8 |
| Ditto Shorn ... ... | | | |
| Ewes & 2d quality | 2 | 10 — 3 | 4 |
| Ditto Shorn ... ... | | | |
| Lambs ... ... | 4 | 0 — 4 | 8 |
| Calves ... ... | 2 | 4 — 3 | 6 |
| Pigs ... ... | 2 | 8 — 3 | 4 |

FRIDAY, July 25.

The supply of Beasts is larger than the demand; in consequence it is difficult to effect a clearance at Monday's quotations. We have a large quantity of middling Lambs on offer, which make but little money. Choice ones are about as of late. The supply of Sheep is not very large, and they make fully as much as on Monday last. Calves are again plentiful, and inferior quality unsaleable. From Germany and Holland we have 170 Beasts, 1490 Sheep, 348 Calves, and 40 Pigs; from Spain, 730 Sheep; from Scotland, 80 Beasts; from Norfolk and Suffolk, 200; from Leicester and Northampton, 200; and 132 milch cows from the home counties.

| Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 4 to 3 | 6 |
| Best Short-horns | 3 | 2 — 3 | 4 |
| 2d quality Beasts | 2 | 4 — 3 | 0 |
| Best Downs and Half-breds ... | 3 | 10 — 4 | 0 |
| Ditto Shorn ... ... | | | |

| Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|
| Best Long-wools . | 3 | 6 — 3 | 8 |
| Ditto Shorn ... ... | | | |
| Ewes & 2d quality | 2 | 10 — 3 | 4 |
| Ditto Shorn ... ... | | | |
| Lambs ... ... | 3 | 8 — 4 | 8 |
| Calves ... ... | 2 | 4 — 3 | 6 |
| Pigs ... ... | 2 | 8 — 3 | 4 |

### COVENT GARDEN, JULY 26.

Peaches and Nectarines have been but sparingly supplied during the past week, but Pines and Grapes are still abundant. Strawberries are beginning to get scarce. Cherries are still furnished in large quantities, and they are excellent in quality. West Indian Pines fetch from 2*s.* to 5*s.* each. Oranges and Lemons are scarce. Nuts remain nearly the same as quoted last week. Carrots, French Beans, and Peas are received in quantity. Potatoes may be obtained at 1*d.* to 8*d.* per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Pinks, Moss and Provins ROSES.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4*s* to 7*s* | Almonds, per peck, 6*s* |
| Grapes, hothouse, p. lb., 2*s* to 5*s* | — sweet, per lb., 2*s* to 3*s* |
| Peaches, per doz., 10*s* to 20*s* | Lemons, per doz., 1*s* to 2*s* |
| Nectarines, per doz., 10*s* to 20*s* | Oranges, per doz., 9*d* to 2*s* |
| Cherries, per lb., 6*d* to 2*s* | — per 100, 6*s* to 14*s* |
| Melons, each, 4*s* to 8*s* | — Seville. p. 100, 7*s* to 14*s* |
| Strawberries, p. pottle, 6*d* to 1*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Gooseberries, per half sieve, 2*s* to 4*s* | Nuts, Barcelona, p. bsh., 20*s* to 22*s* |
| Currants, per hf. sieve, 3*s* to 5*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| | Cobs, per 100 lbs., 50*s* to 55*s* |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 6*d* to 1*s* | Shallots, per bunch, 3*d* to 4*d* |
| Cauliflowers, p. doz., 1*s* to 2*s* | Garlic, per lb., 4*d* to 8*d* |
| French Beans, per half sieve, 3*s* to 5*s* | Artichokes, per doz., 1*s* to 2*s* |
| Beans, per sieve, 2*s* to 2*s* 6*d* | Lettuce, Cab., p. score, 4*d* to 9*d* |
| Peas, per sieve, 2*s* to 4*s* | — Cos, per score, 3*d* to 1*s* |
| Rhubarb, p. bundl., 9*d* to 6*d* | Small Salads, p. punn., 2*d* to 3*d* |
| Potatoes, per ton, 90*s* to 200 | Horse Radish, p. bundl., 1*s* 6*d* to 6*s* |
| — per cwt., 4*s* to 8*s* | Red Beet, per doz., 1*s* to 4*s* |
| — per bush., 1*s* 6*d* to 3*s* | Mushrooms, p. pot., 1*s* to 2*s* |
| Turnips, p. bunch, 2*d* to 4*d* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Cucumbers, each, 3*d* to 1*s* | Fennel, per bunch, 2*d* to 3*d* |
| Radishes, per doz., 6*d* to 9*d* | Savory, per bunch, 2*d* to 3*d* |
| — Turnip, p. doz., 8*d* to 1*s* | Thyme, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 2*s* | Parsley, per doz. bun., 2*s* to 3*s* |
| Carrots, per bunch, 4*d* to 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Spinach, per sieve, 1*s* 6*d* to 2*s* | Mint, green, per bunch, 4*d* to 6*d* |
| Vegetable Marrows, per doz., 1*s* to 2*s* | Basil, green, p. bunch, 6*d* to 9*d* |
| Onions, p. bunch, 2*d* to 6*d* | Marjoram, green, do., 6*d* to 9*d* |
| Leeks, per bunch, 3*d* to 4*d* | Watercress, p. 12 bunch., 6*d* to 9*d* |
| | Corn Salad, p. hf. sieve, 1*s* to 1*s* 6*d* |

### COAL MARKET.—FRIDAY, July 25.

Carr's Hartley, 13*s.* 6*d.*; Eden Main, 13*s.* 6*d.*; Tanfield Moor, 12*s.* 9*d.*; Wallsend Lambton, 14*s.* 6*d.*; Wallsend Tees, 14*s.* 9*d.*—Ships at market, 71.

### MARK LANE.

MONDAY, JULY 21.—The supply of English Wheat to-day was short, and was taken slowly on the terms of this day se'nnight. Foreign could only be disposed of to necessitous buyers in small quantities, and at somewhat reduced prices for Dantzic qualities, which was only acceded to by holders having vessels on demurrage.—Barley is a free sale at our quotations.—Beans and Peas are dull.—Oats are in fair request, at an improvement of 6*d.* to 1*s.* per qr. upon the prices of this day se'nnight.—There were a few samples of new Rape and Caraway seed at market; some of the former was disposed of at 24*l.* per last, but for the latter we heard of no sales.—There is no alteration in Flour.

| PER IMPERIAL QUARTER. | *s.* | *s.* | | *s.* | *s.* |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | —45 | Red ..... | 36 | —40 |
| — — fine selected runs...ditto | 44 | —47 | Red ..... | | —42 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | | — |
| — Foreign ..... | 35 | —50 | | | |
| Barley, grind. & distil., 22*s* to 25*s*...Chev. | 27 | —32 | Malting . | 24 | —27 |
| — Foreign... grinding and distilling | 22 | —26 | Malting . | | — |
| Oats, Essex and Suffolk ..... | 18 | —21 | | | |
| — Scotch and Lincolnshire...Potato | 22 | —25 | Feed ..... | 20 | —22 |
| — Irish ..... Potato | 19 | —23 | Feed ..... | 19 | —21 |
| — Foreign .....Poland and Brew | 20 | —22 | Feed ..... | 18 | —21 |
| Rye ..... | 24 | —26 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..26*s* to 30*s*.....Tick | 27 | —31 | Harrow . | 27 | —31 |
| — Pigeon.....28 — 34... Winds | — | | Longpod | | — |
| — Foreign .....Small | 21 | —29 | Egyptian | 23 | —24 |
| Peas, white, Essex and Kent.....Boilers | 28 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26*s* to 28*s* .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 20 | —23 | Per sack | 28 | —34 |

FRIDAY, JULY 25.—The supply of foreign Wheat this week has been moderate, and of other grain small. To-day's market was thinly attended, and the business transacted in Wheat has been less than on the previous days; in prices, no alteration.—Barley meets a fair demand at former rates.—Beans and Peas as last quoted.—Although the supply of Oats is short, the trade is not brisk, but prices remain as on Monday.—We have rather more inquiry of Flour.—There is nothing doing in floating cargoes from the Mediterranean.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS |
|---|---|---|---|---|---|---|
| June 14..... | 39*s* 11*d* | 24*s* 6*d* | 20*s* 1*d* | 26*s* 1*d* | 30*s* 10*d* | 28*s* 6*d* |
| — 21..... | 40 7 | 24 4 | 21 4 | 28 0 | 30 5 | 27 6 |
| — 28..... | 42 4 | 25 2 | 22 3 | 28 11 | 32 1 | 29 2 |
| July 5..... | 43 5 | 25 2 | 22 5 | 27 6 | 31 8 | 28 10 |
| — 12..... | 43 6 | 25 8 | 22 0 | 22 5 | 32 6 | 28 8 |
| — 19..... | 42 7 | 25 6 | 21 11 | 38 2 | 31 5 | 28 6 |
| Aggreg. Aver. | 42 0 | 25 1 | 21 8 | 28 6 | 31 6 | 28 6 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

LIVERPOOL, TUESDAY, JULY 22.—At this day's market there was a fair attendance of the town and country trade, who purchased to a moderate extent of Wheat and Flour, at about the prices of this day week. Oats and Oatmeal were firmly held at late rates, but the demand was limited. Barley, Beans, and Peas met with a slow sale, at rather lower prices. There was only a small show of Indian Corn, and holders were enabled to realise 27*s.* 6*d.* per qr. for prime yellow American, and 26*s.* 6*d.* to 27*s.* for mixed.——FRIDAY, JULY 18.—The weather is fine, and buyers on the grain market take merely as much as suits their present purpose. Accordingly the business at this morning's market was rather limited, but there was no positive change in the prices of Tuesday last. Indian Corn opened at 6*d.* per quarter decline, but this was recovered before the market closed, and a few sales were effected into the interior of this country, giving indication of a prospective larger English demand for cattle and pig feeding than we have been accustomed to.

TO NURSERYMEN, GARDENERS, &c.

MR. B. ANDREWS, AUCTIONEER AND VALUER, begs leave to announce that he is instructed by the proprietor to dispose of the Valuable LEASE of an old established NURSERY, containing about three acres, inclosed within good Walls, to which is attached a good Dwelling House, and all necessary erections; it is situate in a highly respectable neighbourhood, within three miles of London Bridge, on the Surrey side. The Stock to be taken at a valuation.—Direct, post-paid, to B. ANDREWS, South Grove, Peckham, Surrey.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand.

MAYFIELD, SUSSEX,

TO BE LET, together or separately, on Lease, at Michaelmas next, TWO DESIRABLE FARMS, with advantages for occupation seldom to be met with, each containing about 270 Acres of Arable, Hop, Meadow, and Pasture Land, in the usual proportions. The above Farms have long been celebrated for their excellent growth of Hops, and the present plantations are in their prime. They will be let tithe free; are close to an intended Railway Station; and a good Tenant will meet with every encouragement from the Landlord. Hares and Rabbits not preserved.

For further particulars, and to treat for the hiring, apply to Mr. WILLIAM EVANS, the Gate House, Hurst Green, Sussex.

TO FLORISTS AND AMATEURS.

TO BE LET, one of the most complete Amateur Gardens of its size in England. A square half acre, laid out in beds, walled round, Propagating House, Stove, large and small greenhouse, well stocked, hot-water apparatus complete, House of 10 good rooms, outhouses, stable, poultry-yard, &c. Rent, 50*l.*, coming in about 150*l.*, within a 6*d.* ride of the City and West-end. A Florist would find it a first-rate business concern, or, if inclined for a Partnership, would be met liberally by the owner, who has an appointment which will cause his absence. Letters, with real name and address, to A. B. C., Eyre's Advertising-office, Bouverie-street, Fleet-street, London.

PATENT GARDEN NETS.—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60*s* net. Other sizes, in proportion. Orders promptly attended to.—J. and W. STUART, Patent Net Factory, Musselburgh, July 26.

IMPROVED GRASS CUTTING AND ROLLING MACHINE.

ALEX. SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their Improved GRASS CUTTING AND ROLLING MACHINE for Lawns. The Machine performs three different operations at one time, viz., mowing, rolling, and collecting the Grass, and works with perfect ease, producing a most beautiful smooth surface, and attended with an enormous saving in abridging labour. The complete success which has attended the introduction of his improved machine has gained for it the praise and admiration of numerous noblemen, gentlemen, and gardeners, and of the Curators of the principal botanic gardens in the kingdom. Unexceptionable testimonials can be produced on application.

A. S. and SON also respectfully silicit notice to their Improved and newly-invented Chaff-cutting Machine, cutting upwards of 400 stones of straw or hay per day.

Machines on view at the Great Exhibition, Class IX., No. 67.

Further particulars and a list of prices may be had on application to the makers, or to their agents.

AGENTS FOR

LONDON—Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith.
HERTFORD—Mr. George Folkard, Ironmonger.
LIVERPOOL—Messrs. Charles D. Young and Co., Castle Buildings, Derby-square.
SHEFFIELD—Mr. J. Law, Curator of the Botanic Gardens.
CHESTER—Messrs. F. and J. Dickson, Nursery and Seedsmen.
GLASGOW—Messrs. Charles D. Young and Co., 32, St. Enoch-sq.
EDINBURGH—Messrs. C. D. Young and Co., 48, North Bridge.
PERTH—Messrs. Dickson and Turnbull, Nursery & Seedsmen.

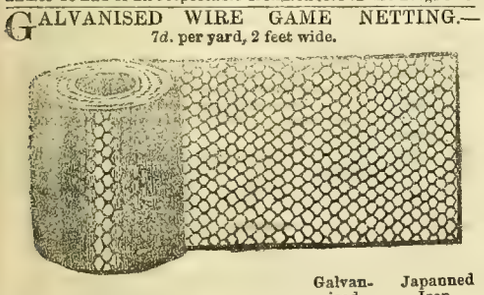
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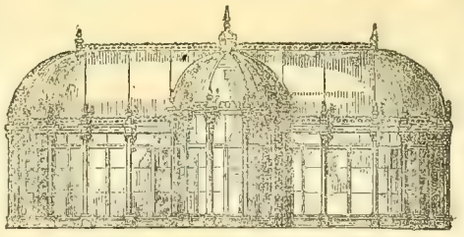
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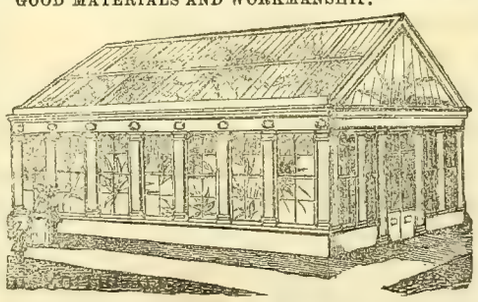
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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 26, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 31—1851.] SATURDAY, AUGUST 2. [PRICE 6*d.*


INDEX.


Agricultural Society of England —Meeting at Windsor ..... 492 *a*
Agricultural Improvement Soc. of Ireland ..... 493 *b*
Aquatics ..... 485 *c*
Botanical Society of Edinburgh ..... 486 *b*
British Association ..... 484 *a*
Calendar, Horticultural ..... 488 *a*
Cattle show, Irish ..... 489 *b*
Crystal palace ..... 484 *c*
— implements in ..... 490 *a*
— prizemen at ..... 490 *b*
Cuckoo, the ..... 485 *b*
Drainage expenses ..... 492 *a*
Exhibition in Cheshire ..... 483 *b*
Farmers, Mr. Mechi's meeting of ..... 493 *c*
Fraser's (Messrs.) nursery .... 487 *b*
Fuchsias, tall ..... 486 *b*
Guano ..... 491 *b*
— adulteration of ..... 490 *b*
Hops ..... 491 *b*
Iron, paint for ..... 485 *a*
Larks, Irish ..... 484 *c*
Law of overhanging boughs .. 483 *a*
Manure, peat ashes as ..... 491 *a*
National Floricultural Soc. .. 486 *b*
Nightingale .. ..... 486 *b*
Orchids for the Million..... 483 *c*
Paint tar ..... 485 *a*
Peach tree blight..... 486 *a*
Pigs, Berkshire. ..... 491 *b*
Pink showing ..... 485 *c*
Potatoes in New Zealand..... 486 *a*
Royal South London Floricultural Society.....486 *b*—487 *a*
Salting walks ..... 484 *c*
Sandwich Islands, pic nic in .. 487 *c*
Steam engines ..... 490 *a*
— — Reid on, rev .... 487 *a*
Strawberry..... 485 *a*
Tar paint..... 485 *a*
Turnip moth.... 484 *a*—489 *b*—491 *c*
— culture..... 489 *b*
Victoria Regia ..... 485 *c*
Violets..... 485 *a*
Walks, to salt ..... 484 *c*



EDWARD GEORGE HENDERSON is now receiving orders for the following choice seeds, which will be ready to send out in a week or ten days:— Per pkt —*s. d.*
CALCEOLARIA, from choice fine formed flowers ... 5 0
GERANIUM (fancy) do. do. do. ... 2 6
Do. do. from very choice varieties, best flowers 5 0
Do. (show varieties) from good varieties ... 2 6
PRIMULA FIMBRIATA ... ... ... 2*s.* 6*d.* and 5 0
E. G. H. has now to offer
CINERARIA SEED, from choice flowers ... ... ... 2 6
CALCEOLARIA SEED, from strong store varieties ... 2 6
WELLINGTON NURSERY, St. John's Wood, London.

C. TURNER has a few packets of choice CALCEOLARIA, CINERARIA, PRIMULA, and PANSY SEED now ready for delivery, which may be had, through the Post, at 1*s.* 6*d.* and 2*s.* 6*d.* each.—Royal Nursery, Slough, Bucks.

THE BLACK PRINCE STRAWBERRY will be sent out on Monday, 18th of August, at 6*s.* per 100, box included; it has proved itself to be the earliest round London these five years, good in flavour, and a tremendous bearer, and the best for preserving; has taken six prizes. The Keens and British Queen 5*s.* per 100; same time, a pamphlet of 36 pages on "Market Gardening round London," explaining everything. Price 1*s.* 6*d.*, or by post, 1*s.* 8*d.*; also, a pamphlet of 56 pages containing, the "Belgian Prize Essay on the Potato and 12 other first-rate Fruits and Vegetables;" price 2*s.*, or by post, 2*s.* 4*d.* Post-office orders on Camberwell—JAMES CUTHILL, Camberwell, London.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Wandsworth Road, Surrey, are now sending out the best sorts of CHRYSANTHEMUMS. Fine bushy plants, in 48 sized pots, for flowering this autumn, at 12*s.* per dozen; good sorts, for planting out, 50*s.* per hundred. A printed List may be had. Post-office Orders payable at Kennington Cross.

CAMELLIAS.

G. PRESS, of Prospect Place, Hornsey, London, begs most respectfully to announce to the nobility and gentry that he has on sale upwards of 1000 CAMELLIAS, of the best varieties, plants, from 1 to 10 feet in height. The price will be reasonable, and the plants in good condition.

G. P. having been a successful grower and raiser of Camellias for many years, prides himself in having some first-rate specimens.—The Premises are situated within a quarter of a mile of the Hornsey Station of the Great Northern Railway.

BRITISH QUEEN STRAWBERRY RUNNERS.—Having taken several prizes for the largest and best British Queens, thousands of them weighing upwards of two ounces, and many three, I have now a large stock of strong healthy Runners, fit either for Potting or for Planting out, at 5*s.* per 100. Can be had at Mr. SOLOMON'S, Sen., Covent Garden; or Mr. MOSES'S, Gracechurch-street, City; or at my Grounds. Post-office Orders on Isleworth.

THOMAS BEACH, Market Gardener, Worton, Isleworth, Middlesex.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER begs to inform the public that his unrivalled collection of this magnificent Flower is now in bloom, and free to the inspection of all Visitors on any day, Sundays excepted; also W. C. is now exhibiting some fine specimens of this Flower in the Crystal Palace.

Saffron Waldon, Essex, Aug. 2.

THE FINEST NEW ROSE OF THE SEASON,

"PAUL'S QUEEN VICTORIA."

This, the finest light Perpetual Rose ever offered for sale, is expected to be in bloom at the Cheshunt Nurseries, with few intermissions, from the present time to November. It is a Seedling from the Rose "La Reine," of which it is so exact a copy, *in every respect save colour*, that it has been designated by some a "WHITE LA REINE." The ground-colour is white, overlaid with the most delicate hue of pink, *perfectly wax-like in appearance, and distinct from every other.*

Plants, in November, 10*s.* 6*d.* each, with the usual discount to the trade when Six Plants are ordered at once.

"PAUL'S ROBERT BURNS;" flowers light vivid crimson, occasionally edged with purple, large, colour equal to that of Chênédolé, like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour. Plants, in November, 7*s.* 6*d.* each.—A. PAUL and SONS' Nurseries, Cheshunt, Herts.

EDWARD GEORGE HENDERSON is now prepared to send out good plants of the following CHRYSANTHEUMS, viz.:— Each.—*s. d.*
CHINESE MINIATURE OF 1851, new ... ... ... 2 6
Do. do. previous year ... ... 1*s.* and 1 6
LARGE FLOWERED VARIETIES OF 1851, new ... 2 6
Do. do. previous year, 1*s.* and 1 6
ANEMONE ... ... ... ... ... ... 1 0
Wellington Road, St. John's Wood, London.

NEW EARLY STRAWBERRY, "TROLLOP'S VICTORIA."

JAMES TROLLOP (who raised "Princess Alice Maud Strawberry," let out in 1843), now offers to the public his Seedling "VICTORIA," and is confident that it combines qualities which no other kind at present in cultivation does possess; being very early, a dwarf robust grower, and free bearer, throwing strong trusses of fruit (above the foliage), which is of a large size, globular form, and good colour, and possesses such a flavour as no other early Strawberry can boast of.

Fruit has only been exhibited four times, viz.:—

June 27, 1850. North Wilts Horticultural Show, held at Devizes, 1st Prize.

June 24, 1851, Royal South London, held at the Royal Surrey Zoological Gardens, 1st Class Certificate.

June 25, 1851, North Wilts Horticultural Show, held at Devizes. 1st Prize.

July 2, 1851, Royal Botanic Society, held in Regent's Park, 1st Class Certificate.

Fruit has likewise been sent to Professor LINDLEY, and to Mr. E. BECK, of Worton Cottage, Isleworth, for their opinions, for which see *Gardeners' Chronicle* of July 5, 1851, and "Beck's Florist, Fruitist, and Garden Miscellany, for August, 1851." The above opinions and awards will be considered sufficient proof of the superior quality of the Strawberry as an early Fruit, and as to its habits and productive properties, see the following Certificate, from persons who have seen the Plants growing:—

"We, the undersigned, being practical Gardeners and Strawberry Growers, have seen and examined the plants and fruit of a Seedling Strawberry, called 'TROLLOP'S VICTORIA,' and we hereby certify, that we consider the said Strawberry to be a first-rate early variety, and that the plants are dwarf robust growers, and productive bearers.

JAMES KITLEY, Lyncombe Vale Nursery, Bath.
DANIEL BUTLER, Widcombe Nursery, Bath.
THOMAS COLES, Gardener to William Vaughan Jenkins, Esq, Combe Grove.
WALTER LYDIARD, Gardener to Mr. G. Clarke, Bathwick Hill."

Strong well-rooted healthy Plants will be ready on and after the 8th of September next, at 4*l.* per 100, or any less quantity (not under 25 plants), at 1*s.* per plant.

All Orders to be sent to JAMES TROLLOP, Limpley Stoke, near Bath; or to his Agent, GEORGE DIKE FISHER, at Mr. Butler's, Widcombe Nursery, Bath. Post-office Orders, payable at the Bath Post-office, to JAMES TROLLOP, will be expected from unknown correspondents, on the arrival of the plants.

N.B. JAMES TROLLOP having forced a few of the plants, can with confidence recommend them as a first-rate forcing variety.

Limpley Stoke, August 2.

GRAND EXHIBITION OF CARNATIONS AND PICOTEES.

YOUELL AND CO.'s extensive and well known collection of the above is now in bloom, and will continue about a fortnight. Trains from Shoreditch Station three times a day, and by steamers from London-bridge every Wednesday and Saturday afternoons, at 4 o'clock.

Royal Nursery, Great Yarmouth, August 2.

IMPORTANT DISCOVERY.

CLARKE AND CO., GARDENERS, SEEDMEN, and FLORISTS, are now prepared to send out, in quart sealed stone bottles, secured for travelling, on receipt of 5*s.*, a mixture (which is both a remedy and preventive) for destroying those grievous pests, the white mealy-bug, scale, thrip, and all other insects, without injury to the plants. Each bottle will make 1 gallon of mixture sufficiently strong; and it corked down after use, will retain its efficacy for any length of time.

Directions for use sent with each bottle, which will be delivered free at any of the London Stations, or Carriers' Offices.

Post-office orders payable at Brompton.

Percy Cross Nursery, Walham-green, Fulham, Aug. 2.

CHEAP GLASS.

W. HICKSON, 46, Long Acre, begs to draw the attention of gentlemen and others to his Sheet Glass, which can be had at 2*d.* per foot, averaging 14 oz., 16 oz., do. (stout) 2½ and to any size up to 44 in. long. Small sizes, in quantities not less than 100 ft., at less price. Plans and estimates for every description of Horticultural Buildings (with or without hot water) complete, forwarded. Terms, cash.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... ... | ... | 10*s.* 0*d.* |
| 7 ,, | 5 and 7½ by 5½ | ... ... | ... | 15 0 |
| 8 ,, | 5 and 8 by 5½ | ... ... | ... | 15 0 |
| 8 ,, | 6 and 8¼ by 6½ | ... ... | ... | 17 6 |
| 9 ,, | 7 and 10 by 8 | ... ... | ... | 20 0 |
| 12 ,, | 10 and 13 by 9 | ... ... | ... | 20 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d.* | per foot. |
| ,, ,, 35 | ,, ..... | 8*d.* | ,, |
| ,, ,, 50 | ,, ..... | 9½*d.* | ,, |
| ,, ,, 75 | ,, ..... | 12*d.* | ,, |

Milk Pans, 2*s.* to 6*s.* each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 3*s.* 6*d.* each.

| | | |
|---|---|---|
| 4½ by 3 ... | 5 by 2½ ... | 6 by 2½ ... 6 by 3½ inches. |
| 4½ by 3 ... | 5 by 3 ... | 6 by 3 ... 6½ by 3 |
| 4½ by 3½ ... | 5½ by 3 ... | 6½ by 3 ... 6½ by 3½ |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes.—Inches. | | | | Per foot. | Per 100 feet. |
|---|---|---|---|---|---|
| | Under 6 by 4 | at | 1½*d.* | is £0 12 | 6 |
| From 6 by 4 | ,, 7 ,, 5 | ,, | 2*d.* | ,, 0 16 | 8 |
| 7 ,, 5 | ,, 8 ,, 6 | ,, | 2¼*d.* | ,, 0 18 | 9 |
| 8 ,, 6 | ,, 10 ,, 8 | ,, | 2½*d.* | ,, 1 0 | 10 |
| 10 ,, 8 | ,, 12 ,, 9 | ,, | 2¾*d.* | ,, 1 2 | 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* to 7½*d* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

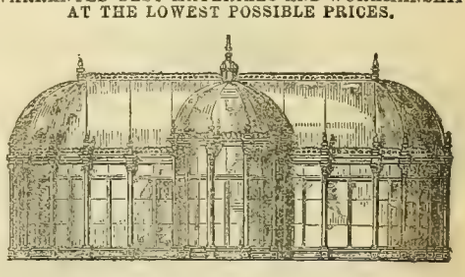
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea. Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GLASS. GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— | s. d. | s. d. |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| Or 20 „ „ 50 „ 70 „ ... ... ... ... ... ... ... ... ... | | | |
| IN SQUARES, cut to the sizes ordered :— | | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 „ 14 by 10 ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 „ 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. „ 3 „ or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 „ „ 4 „ „ 20 „ 30 „ ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 „ „ 5 „ „ 30 „ 35 „ ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 „ „ 6 „ „ 35 „ 40 „ ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 „ „ 8 „ „ 40 „ 45 „ ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 „ „ 10 „ „ 45 „ 55 „ ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 „ „ 12 „ „ 55 „ 70 „ ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 „ „ 15 „ „ 70 „ 85 „ ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 13 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

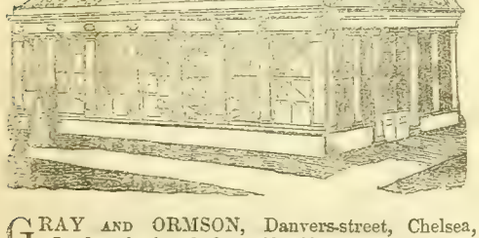
*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

---

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

---

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long by 13 feet wide, 9*l.*; 21 feet long by 13 feet wide, 50*l.*; 12½ feet long by 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

---

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, Inventor, Patentee, and Sole Manufacturer, King's-road, Chelsea. Hothouses and Greenhouses built and heated, and warranted to defy all competition, both as to quality, durability, and price, in every respect. Patent Hothouses built on the premises, of the very best materials and workmanship, with superior strong glass 3 feet long by 1 foot or 2 feet wide, carefully marked, and taken down, delivered free to any Wharf or Railway at the following prices, cash—12 feet 6 ins. long, 9 feet wide, with 10 feet rafter, 5 feet 6 in. high in front, 10 feet high at back to the ground, two doors and ends, 285 feet, at 1*s.* 2*d.* per foot superficial, 16*l.* 12*s.* 6*d.*; 16 feet 6 in. long, 10 feet 8 in. wide, 12 feet rafter, 400 feet, 23*l.* 6*s.* 8*d.*; 20 feet 6 in. long, 13 feet 4 in. wide, 15 feet long rafters, 580 feet, 33*l.* 16*s.* 8*d.* Two of these Houses are erected at the western open space of the Great Exhibition. The sash being the same materials as the Electric Telegraph Wires, not required to be painted, and every House is warranted, and not one has ever failed in any way whatever.

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TO GARDENERS AND FLORISTS.

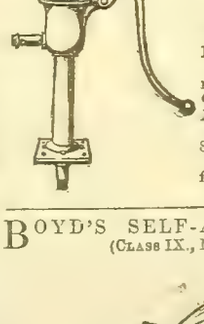
TO BE LET.—An extensive WALLED GARDEN. Apply on the Premises, Manor House Paddington-green, London.

---

PATENT GARDEN NETS.—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60*s* net. Other sizes, in proportion. Orders promptly attended to.—J. and W. STUART, Patent Net Factory, Musselburgh, August 2.

---

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

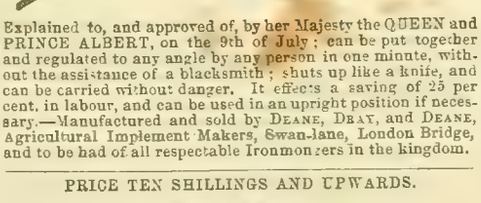
JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

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BOYD'S SELF-ADJUSTING SCYTHE

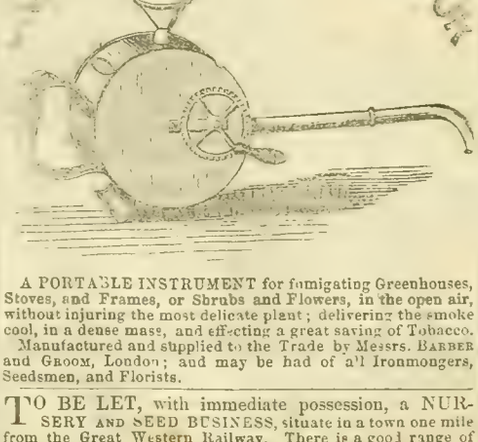
(CLASS IX., No. 199, EXHIBITION),



Explained to, and approved of, by her Majesty the QUEEN and PRINCE ALBERT, on the 9th of July; can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary.—Manufactured and sold by DEANE, DRAY, and DEANE, Agricultural Implement Makers, Swan-lane, London Bridge, and to be had of all respectable Ironmongers in the kingdom.

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PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

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TO BE LET, with immediate possession, a NURSERY AND SEED BUSINESS, situate in a town one mile from the Great Western Railway. There is a good range of Glass in the Nursery, and the usual stock of Trees, Shrubs, Plants, &c. Satisfactory reasons can be given for the present proprietor leaving. Further particulars may be obtained on application to A. B., care of Messrs. NOBLE, COOPER, and BOLTON, Seed Merchants, 152, Fleet-street, London.

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FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

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MAYFIELD, SUSSEX.

TO BE LET, together or separately, on Lease, at Michaelmas next, TWO DESIRABLE FARMS, with advantages for occupation seldom to be met with, each containing about 270 Acres of Arable, Hop, Meadow, and Pasture Land, in the usual proportions. The above Farms have long been celebrated for their excellent growth of Hops, and the present plantations are in their prime. They will be let tithe free; are close to an intended Railway Station; and a good Tenant will meet with every encouragement from the Landlord. Hares and Rabbits not preserved.

For further particulars, and to treat for the hiring, apply to Mr. WILLIAM EVANS, the Gate House, Hurst Green, Sussex.

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IRELAND—MAYO.

TO ENGLISH AND SCOTCH AGRICULTURISTS.

TO BE LET, on LEASE, at very low rents, several extensive TRACTS OF LAND, of excellent quality, admirably adapted for Grazing purposes, and capable, at a moderate outlay, of growing Flax, and Cereal Crops of every description. The Land, being on the Sea Coast, affords every facility for disposal of the produce, and abounds with Coral-sand and Seaweed, the natural and most effective manures for this description of soil. They are within easy distance of the Market towns of Newport and Westport. There is excellent Salmon and Trout Fishing on the property; and the neighbouring mountains abound with Grouse and other Game.

For particulars and farther information, apply to Messrs. ROOPER, BIRCH, INGRAM, and WHATELY, 68, Lincoln's-Inn-Fields, London; or to SIDNEY SMITH, Esq., Westport, Mayo.

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LAURENCE HILL NURSERY, BRISTOL.

TO BE LET, and entered upon at Michaelmas next, the above compact NURSERY, situate in the immediate vicinity of Bristol. Connected with the Nursery is a Dwelling House, with a Stable and other convenient Outbuildings. Any person taking to the above, may have the option of renting a Shop, centrally and eligibly situated in Bristol, calculated for the carrying on of a good Seed business. The Nursery Stock, Greenhouses, &c., to be taken to at a valuation.

For particulars, apply to Mrs. VERNEY, Laurence Hill; or No. 1, Wine-street, Bristol.

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TO BE LET, from Michaelmas next, a FARM, in the County of Hants, containing about 430 Acres of strong Arable, and about 70 Acres of good Grazing, Land. The Farm is Tithe free, is near a Market town, and has easy Railway communications with London.

Further particulars may be known by applying to Messrs. C. and H. TRIMMER, Solicitors, Alton, Hants.

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CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24 000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

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DR. NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS.—These Patents having been withdrawn from a firm under the name of DUFAUR and Co., in consequence of the unsatisfactory manner in which the inventions have been carried out, and the imperfect state in which the implements have been manufactured, have been assigned to Mr. GABRIEL, C.E., &c., of the Surrey Chambers, Arundel-street, Strand, London; agriculturists are informed that specimens of the Implements viz.—The Hand Cultivators, Dibbles, Hand and Horse Drills, Manure Distributors, single-horse Ploughs, &c., can be seen there, as well as in the Agricultural Implement Department in the GREAT EXHIBITION, HYDE PARK. N.B. The Patent Dibble obtained the Prize awarded by the Royal Agricultural Society at Norwich, in 1849. Improvements have recently been made in the Drill Drills and Manure Distributors; they are lighter, can be turned round with ease, and there is a contrivance for stopping the escape of the seed at pleasure.—Catalogues, with engravings of the Implements, and numerous Testimonials, can be obtained upon application at the Surrey Chambers, Arundel-street, Strand, London.

TURNIP HOEING.—A man can hoe 2 acres per day with the Cultivator, and it is used for all other crops.

Dr. S. NEWINGTON'S patent Manure Distributor has just gained the prize awarded by the Judges at the Great Exhibition.

DR. HOOKER'S NEW INDIAN RHODODENDRONS.

WILLIAM HUSSEY begs to offer several Species of the above beautiful RHODODENDRONS, Seedlings of this year, well established, in small pots, at 7*s.* 6*d.* each, or 80*s.* per dozen.—For description of the above, see the *Gardeners' Chronicle*, March 15, 1851. Also the under named :—

| | |
|---|---|
| Mitraria coccinea, per dozen ... ... ... ... | 6*s.* |
| Camellias fine plants, per do. ... ... 24*s.* to | 30 |
| Ericas, fine plants, per do. ... ... ... ... | 9 |
| Oxalis elegans, per do. ... ... ... ... ... | 6 |
| — major, per do. ... ... ... ... ... | 6 |
| Calceolaria grandis, per do. .. ... ... ... | 6 |

Horticultural Gardens, Norwich, August 2.

JOHN HENCHMAN begs to state that his choice CALCEOLARIA SEED is now ready for delivery in packets at 2*s.* 6*d.* and 5*s.* each. The Seed should be sown immediately.

A few packets of choice CINERARIA SEED at 1*s.* and 2*s.* 6*d* ; MIMULUS RUBINI at 6*d.* per packet.—Edmonton, August 2.

HOLLYHOCKS.

LUCOMBE, PINCE, AND CO., respectfully inform the Public that their superb collection of HOLLYHOCKS is now finely in BLOOM, and is well worthy the inspection of those who admire this noble flower, which, owing to the vast improvement in its form and colour, is rapidly and justly rising in public estimation. It consists of the finest varieties carefully selected from the collections of the most celebrated growers, together with many very excellent ones of their own raising.

L. P. and Co. have now ready to send out strong healthy seedling plants, which will flower finely next season, at 15*s.* per 100, package included. These Hollyhocks are warranted by L. P. and Co. as having been raised from seed carefully saved by them in the autumn of 1850 from the very finest named flowers.—Exeter Nursery, August 2.

**The Gardeners' Chronicle.**

*SATURDAY, AUGUST 2*, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Aug. 5—Horticultural ..... 3 P.M.
THURSDAY, 7—National Floricultural ..... 3 P.M.
COUNTRY SHOWS.—Tuesday, Aug. 5. and Wednesday, Aug. 6: York Floral and Horticultural.—Friday, Aug. 8: Darlington Horticultural.

FEW questions are of more importance to those having farms and gardens than that raised in the case of *Martin* v. *Boyes and another*, tried the other day before Mr. Baron PLATT, and reported in the daily papers of last week. We mean the question, "In what cases is a person whose trees project beyond the boundaries of his own property liable to have them lopped, and by whom?" In the case now referred to, it appeared, from the opening of the learned counsel, that the plaintiff had a house in the principal street of Beverley, with 7 acres of ground attached to it. In front of the house, facing the street, were some very fine Elm and Chestnut trees, which overhung the wall bounding the plaintiff's grounds, and extended over the street, forming a great ornament to the town, shading and protecting the house, and acting as a shade and shelter to the inhabitants during sunshine and rain. One of these trees intercepted the view of the King's Arms' sign on an adjoining tavern, the landlady of which complained that her sign could not be perfectly seen on the market days, and sent a notice to the plaintiff to lop these branches. The plaintiff appeared not to have paid attention to this notice, and the landlady made her complaint to some of her friends in the town-council, of which two of the defendants were members, Mr. BOYES and Mr. CRUMP. The town-council decided that the branches of the trees overhanging the street must be lopped. Accordingly, the town-clerk sent the plaintiff a notice to this effect, and some correspondence ensued, which resulted in the plaintiff, by his attorney, threatening to bring an action against any one who damaged his trees. Before the terms of this notice had expired, on the 26th of February, early in the morning, a number of men, under the direction of one WOOD, a market-gardener, who it appeared acted under the direction of the two defendants already named, came to the grounds of the plaintiff, and severed the large branches of 15 trees which overhung the wall. Thirty large branches were severed from 2 to 30 inches within the wall. This was the act of which the plaintiff complained. The defence set up was that the road belonged to the corporation; that the trees were a nuisance, both public and private; and that the corporation had a right to lop them. The jury, however, returned a verdict for the plaintiff, with 300*l.* damages.

Now it is, we apprehend, perfectly clear, on the one hand, that there are cases in which trees projecting beyond the boundaries of their owner's property may be lopped with impunity; and that, on the other hand if a person, not legally entitled so to do, interferes with another's property in the above summary manner, he will deservedly be compelled to pay a large sum of money by way of damages, and perhaps be held to come within the malicious injuries to property act (7 & 8 Geo. IV., c. 30), which would entail still more serious consequences. It is, then, of great importance that the public should know under what circumstances trees may or may not be lopped by persons other than their owner.

Trees which project beyond the boundaries of their owner's property are considered as a nuisance. If they project over a public highway, so as to interfere with the free traffic thereon, they are a public nuisance; if they project over the land of a private person his rights of property are interfered with, and the trees are a private nuisance. In the first case, *i. e.* where the trees *interfere with the free traffic on a public highway*, they may, it would appear, be lopped by any one who has been thereby prevented from enjoying his free use of the way, but no other injury he may sustain will justify him in taking such a course. To quote the words of the present Chief Justice of the Court of Queen's Bench:* "It is fully established that if there be a nuisance in a public highway, a private individual cannot of his own authority abate it, unless it does him a special injury, and he can only interfere with it as far as is necessary to exercise his right of passing along the highway; and without considering whether he must show that the abatement of the nuisance was absolutely necessary to enable him to pass, we clearly think that he cannot justify doing any damage to the property of the person who has improperly placed the nuisance in the highway, if, avoiding it, he might have passed on with reasonable convenience." Although, therefore, the trees in the case of *Martin* v. *Boyes*, intercepted the view of the King's Arms sign, still, as they did not obstruct the free traffic on the road over which they hung, the defendants were not justified in lopping them.

In the second case, where the trees overhang the private property of another, it seems clear that the owner or tenant of such property may lop them, if the owner of the trees refuses so to do, after notice; *sic utere tuo ut alienum non lædas*, is a well-known legal maxim, and no person has a right to plant trees so near the boundary of his own land, as to cause them to overhang the land of his neighbour, and to interfere with the vegetation, or obstruct the light from it. Our readers must, nevertheless, take care how they lop their neighbours' trees; they must not forget that lapse of time may give a person a right to continue that which was at first only permitted; and that, although upon the principle which makes every continuance of a nuisance a new nuisance, giving a fresh cause of action, it would seem that the mere fact of the trees having overhung another's land, affords no reason why they should continue so to do; yet, in a case which occurred some time ago, where a person being sued for a nuisance, occasioned by the manufactory of candles, defended himself upon the ground that three years before the plaintiff became possessed of his property, the defendant had lawfully enjoyed his factory, and carried on the trade of a chandler there. Mr. J. PARK said, "20 *years' use would legalise the nuisance.*"† They should also be quite sure that the trees do overhang their land; they must be careful to ascertain where the boundary of their property is, for nothing is more common than for a person to suppose that his boundary is where, upon strict inquiry, it turns out not to be.

That every one should know as much law as will enable him to keep himself clear of it, is an old saying, in the wisdom of which we have no doubt that these defendants by this time fully concur.

THE GREAT EXHIBITION in London has given rise to a small one in Cheshire, concerning the prospects of which we hear such favourable accounts that we think it desirable to draw attention to it.

In the heart of Cheshire, about five miles south-east of Chester, in the midst of a large agricultural district, is the park of what is still called Tarvin Hall, now used as a school, under the management of Dr. BRINDLEY, a man of talent, energy, and spirit. In this place it is proposed to hold a great meeting at the end of the present month, for the display "of the products of the garden, the field, and the cottage, together with all that is useful in the cultivation of the land." The area to be thus occupied will, we understand, be about 10 acres; the principal tent will be a quarter of a mile long; and the other arrangements will be upon a similar scale.

This exhibition (why call it by the Frenchified term exposition?) will include fruits, flowers, and vegetables, agricultural roots, artificial Grasses, Hops, Flax, and corn in the straw; garden tools, ornamental manufactures in rustic wood work, wire work, and stone for garden decorations; domestic and ornamental poultry; the productions of cottage gardeners; with whatever is interesting to the gardener and agriculturist. The whole will be classified, arranged, and catalogued, under the direction of T. C. ARCHER, Esq., a gentleman of great ability, who arranged for the Great Exhibition the highly interesting series of natural products imported into Liverpool.

There will be a cold collation each day, when Papers and Essays will be read by practical men eminent in their several departments. Tents and stages will be erected for each description of produce. An aviary, about 60 by 20 feet, will be provided for poultry and ornamental birds. An acre of ground will be occupied with Dahlias in clumps, and the choicest hardy annuals. Care will be taken to collect specimens of all the known varieties of Potatoes, Turnips, Mangold Wurzel, corn, and Grasses, which are to be classified according to the soil, climate, weight of crop, and time of coming to maturity, proper to each.

Among the managers we observe the names of Mr. ARCHER, of Liverpool; Mr. MAUND, of Bromsgrove; Mr. KNOWLES, of Birmingham; Mr. GLENDINNING, of Turnham Green; Mr. FLEMING, of Trentham; and many others distinguished for their scientific or practical acquaintance with the subjects which the proposed Exhibition is to embrace. It is to these gentlemen, we presume, that visitors are to address themselves in the "Enquiry Tent," where those who wish for information concerning the objects exhibited may obtain it.

From this it will be seen that the Tarvin Hall Exhibition is to be no common affair. We hear that the scheme has been warmly taken up in the neighbouring counties, and we think it promises to be of great local advantage; for, to use the words of a correspondent, "it embraces a great variety of objects, some of them novel, and all calculated to stir up the rather sleepy district in which the show is to be held."

ORCHIDS FOR THE MILLION.—No. X.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

HOT CLIMATE—PLANTS GROWN IN POTS WITH PEAT.

*Dendrobium densiflorum*, flowers continuously from February to May. The flowers are a beautiful bright yellow. It succeeds best in a pot in fibrous peat and good drainage, with a good supply of heat and moisture during the growing season; but it should afterwards be placed at the coolest end of the house, and should receive very little water.

*Dendrobium moschatum.*—Flowers from May to July, but, like the former, it remains only three or four days in perfection at one time. It succeeds best in a pot in peat and sphagnum, with good drainage, and a plentiful supply of heat and moisture while growing.

*Dendrobium aduncum* blossoms in May and June, and remains long in beauty. This succeeds best in a pot in fibrous peat and moss, with good drainage, and plenty of heat and moisture during the growing season; it should afterwards be kept much cooler. These three Dendrobes come from India.

*Sobralia macrantha.* — This charming Guatemala Orchid flowers from June to September; the blossoms are rosy-purple and crimson, very large, and keep flowering in succession from the top of the stems. This succeeds best in a pot in fibrous peat, with good drainage, and a good supply of heat and moisture during the growing season; afterwards it should be kept rather dry: the blossoms only remain two or three days in beauty.

*Sobralia macrantha* (*splendens.*)—This variety also comes from Guatemala, and flowers from June to August. It has darker and finer flowers than macrantha.

*Aspasia lunata*, blossoms in June and July, and remains three or four weeks in perfection. It does best in a pot with fibrous peat and good drainage.

*Epidendrum cinnabarinum*, a fine species from Pernambuco, flowers from May to July. The blossoms are bright orange scarlet, and they remain a long time in beauty. This succeeds best in a pot in fibrous peat and good drainage, with a liberal supply of water during the growing season.

*Epidendrum Stamfordianum*, from Guatemala, blooms from March to May. The blossoms are small, but they are produced in great abundance; they are greenish-yellow, spotted with brownish purple, and they remain in perfection four weeks. It succeeds best in a pot in fibrous peat, placed in a warm part of the house during the growing season; but afterwards it may be kept cool.

*Epidendrum Hamburii.*—This fine species flowers in May and June, and succeeds in a pot with fibrous peat and good drainage; it lasts long in perfection.

*Epidendrum crassifolium*, blooms from February to June, and requires the same treatment as the former one. It will continue to flower three months. It comes from Brazil.

*Epidendrum phœniceum*, flowers from May to July, and lasts three or four weeks in perfection. This plant succeeds best in a pot in fibrous peat and good drainage, and it likes a warm and moist situation, during the growing season.

*Epidendrum macrochilum*, a fine species from Guatemala, blossoms in May and June. The flowers are very sweet, and remain five or six weeks in beauty. It does best in a pot in fibrous peat and good drainage, placed in a warm and rather moist part of the house during the growing season; afterwards it should be kept cool and rather dry for a short time.

*Epidendrum macrochilum (roseum)*, another fine variety, from Guatemala, flowers in May and June; it requires the same treatment as the former; the flowers are very sweet, and remain five weeks in perfection.

* DIMES *v.* PETLEY, 19 L. J. Q. B. 449 N. S.
† BLISS *v.* HALL, or HAY, 4 BING. N. C., 183, and 2 Jur. 110.

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Section D.—Dr. Lankester made a report from the committee appointed to register the *Periodic Phenomena of Plants and Animals*. He stated that during the past year the committee had published in the Transactions of the Association, abstracts of the papers which had been returned to them. They consisted first of a series of observations made in 1849 by James Hardy, Esq., at Penmanshiel, Cockburnspath, Berwickshire. Second, of a series of observations made in 1849 and 1850, by Matthew Moggridge, Esq., at Swansea, South Wales. Thirdly, a small number of observations made from February to July, in 1849, by E. H. M. Sladen, Esq., of Winfield, near Battle, Sussex. He had received this year from Mr. Moggridge and Mr. Sladen, tables filled up to the end of June, 1851, which he hoped would be published in the next volume of the Transactions. Dr. Lankester stated that he had received these papers too late to be able to compare the results with those observed in previous years, but he made no doubt that many of the members present had observations to make on the present remarkable season. He then referred to some observations of Dr. T. Forster, of Brussels, which had been recently laid before the Linnean Society. In Belgium the family of Hirundinæ had been unusually scarce this year, and the house martin had not been seen at all. The winter had been unusually mild, the spring unusually cold.—Mr. Rodwell observed, that he had been in the habit of noting the periodical phenomena of birds, and never recollected so great a scarcity of the swallow tribe as during the present season. Both the cuckoo and the nightingale had been ten days later than usual in making their appearance, as also the ear-wig.—Mr. Peach had seen one swallow on Good Friday last. The swifts were first to appear at Peterhead. He had seen no sand martins, and the house martin was very scarce. These observations, however, were not comparative, as he had not had opportunities of observing these animals at Peterhead in previous years.—Mr. Bunbury had observed that the very early spring plants had all blown unusually well, as the Snow-drop, the Hazel, and the Winter Aconite. During March and April no progress was made. The swallows appeared about the 16th of April. All the tribe of Hirundinæ had, he thought, been as abundant as usual near his residence, in the county of Suffolk.—Mr. M'Andrew observed that the martins and swallows had been in unusual numbers this spring at Malaga, and perhaps this would account for their scarcity in other parts of the world.

## ENTOMOLOGY.

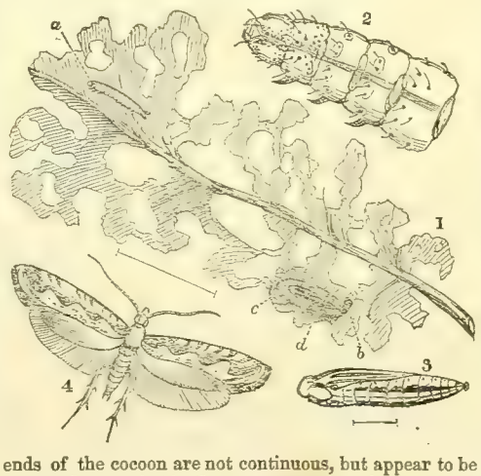
### The Diamond-backed Turnip Moth.

A correspondent in the agricultural portion of this paper of the 26th of July, in the present year, requests information respecting "a new enemy to the farmer," which in lieu of the ordinary Turnip-fly has come into the fields in some parts of Cornwall, in the shape of a tiny ash-coloured moth, not unlike the common clothes moth, but smaller. The rows of Turnips are said to swarm with them, and the underside of the leaves is covered with their grubs, which commit great havoc. In some instances they have cleared the ground as effectually as the black caterpillar did some years ago.

In the course of last week we also received from a correspondent, "W. P. L.," specimens of this small green caterpillar, which was stated to be at that time devastating the Swede Turnip, to the danger of the extinction of the entire crop, in many parts of Nottinghamshire, both on light and strong lands; almost every Turnip leaf being infested by many of these grubs.

These larvæ are not entirely unknown to the farmer, nor, unfortunately, is the present the first season of their appearance. In Mr. Curtis's valuable series of papers on Turnip insects in the "Journal of the Royal Agricultural Society," is to be found a notice of the ravages of this insect; but as Mr. Curtis has not given a detailed account of its preparatory caterpillar and chrysalis states, I have thought it useful to complete the history of the species in the present article. The following account of the ravages of the insects was sent by Mr. J. Weaver, of Petersfield, Hants, to Mr. Curtis, together with a specimen of the moth which he had himself reared from the caterpillars in question, and which had been exciting some surprise in his neighbourhood in the summer of 1837:—"About the beginning of August I was directed to a field of Turnips said to be infested by the 'niggers;' they proved, however, to be myriads of tiny larvæ, averaging, perhaps, half an inch in length each, slender, and somewhat tapering at both ends, and of a green colour when full fed. They were exceedingly active, and on the slightest touch would wriggle themselves off from the leaf on which they were feeding, let themselves down by a silken thread, and remain suspended till the cause of alarm had subsided, when they would regain their former position. So incredible were their numbers, that on a single plant of moderate size, and taken at random, I counted upwards of 240, and before the end of the first week in August every leaf for the space of more than an acre was completely reduced to a parched up skeleton—not a Turnip escaped them; and by the middle of the month you might have looked in vain for the smallest vestige of a green leaf on the field of their depredations, and to this day (Oct. 29, 1837), it is as bare as if nothing had been sown there. Similar patches may be seen in two or three fields in this neighbourhood, where a most excellent crop is yielded in every other part. On the 19th they began spinning their cocoons, which are of the most beautiful net-like texture, some on the dead fibres of the Turnip leaves, and others upon the ground. The perfect insects emerged about the 20th." (Journal of Royal Agricultural Society of England, vol iii., p. 71.) It is some consolation thus to learn that the insect is comparatively partial in its attacks, a circumstance probably owing to the fact that it is not confined to the Turnip, which, indeed, from some unexplained cause or other, seems only occasionally liable to be infested by it. The name of the species, Xylostella, indicates its ordinary food, the upright Honeysuckle, Lonicera Xylosteum, but it also attacks a great variety of culinary plants, especially the Cabbage and Turnip.

The caterpillars which I received from "W. P. L." are not quite half an inch long, cylindrical, gradually attenuated towards the head and posterior extremity of the body, of a delicate pale green colour; the head of a yellower tint, with the minute eyes at the sides of the front of the head black, and marked, especially behind, with numerous small black dots; the segment succeeding the head, instead of being marked with two large dark-coloured patches, as in the majority of these small caterpillars, bears a number of minute black dots, three on each side of the middle line, forming a triangle, and emitting a fine black bristle like hair—others, at the side, also emit similar hairs; the second segment behind the head is marked by a small yellowish, oval, transverse spot on each side of the middle line, each bearing two small black setigerous dots; the third segment is similarly marked to the second; each of these three anterior segments bears a pair of short jointed feet; the fourth and following segments bear three of these black setigerous dots in a triangle, on each side of the middle line, with two placed longitudinally at the sides. There are four pairs of short ventral prolegs, and a pair at the extremity of the body, which are more obliquely exserted behind than usual. Being full grown, the caterpillars sent by "W. P. L." have already spun themselves up in their cocoons, attached to the top of the box in which they were placed. The cocoon is very delicate, being formed of an open net-work of fine white threads, allowing the chrysalis within to be seen. The threads at the




ends of the cocoon are not continuous, but appear to be arranged somewhat in the same manner as in the cocoon of the emperor moth, enabling the insect to perform two important processes in its economy. After the caterpillar has completed its cocoon, it seems to have protruded its body out of the hinder part of the cocoon, and then to have sloughed off its larva skin, withdrawing itself gradually into the cocoon, leaving its old covering on the outside. (Fig. 1 *b*, represents the slough or caterpillar skin, on the outside of the cocoon; 1 *c*, the open work cocoon, showing the chrysalis 1 *d*, through its meshes.) In like manner, the chrysalis, or the newly-hatched moth, is able to protrude itself with less difficulty than in ordinary cases, through the opposite end of the cocoon.

The chrysalis is an interesting object, being of a greyish white colour, with several black streaks down the back and sides; each of the spiracles or breathing pores is protected by a small conical point, and the extremity of the body is furnished with several minute hooks, by which it attaches itself to the interior of the cocoon.

The perfect insect makes its appearance in from 10 to 18 days, and is systematically known under the name of Tinea (Cerostoma) Xylostella. It measures rather more than half an inch in the expanse of the fore wings, which are long and narrow, with several pale spots on the fore margin, and a continuous white or ochraceous stripe on the hinder margin, with several indentions on its fore edge, which, when the wings are closed, form a row of pale diamond-shaped spots down the back; the hind wings are ashy-coloured, with very long fringes. According to M. Duponchel there are two generations of this moth in the year, the first appearing in June, and the second at the end of the summer; but Mr. Curtis considers that in this country there is a succession of broods from Midsummer until the approach of winter, as he had taken specimens in the gardens near London, at the end of June, at Dover in July, in Scotland in August, and frequently amongst the Turnips in September and October, in Suffolk and Essex. It is of course of considerable importance to determine the period of the appearance of the insect in its perfect state, as it seems to me that it is at that time that the destruction of the insect can be most readily accomplished. This must be a matter of difficulty with the caterpillars, their small size and great numbers preventing hand-picking; whilst their habit of feeding on the under side of the leaf prevents the successful application of soot, or lime, or other matters dusted over the plants, which would, of course, rest only on the upper side, and so be prevented from coming in contact with the bodies of the caterpillars. In dry weather, however, I would suggest that the lime, soot, or other similar matters obnoxious to the taste of the caterpillars should be made into a thick liquid by the help of gas-tar water or soapsuds, and that the plants should be dressed with this mixture several times (which, if they are drilled, will not be difficult); by this means the leaves will be rendered unpalatable to the caterpillars. The time of the insects appearing in the perfect state must also be ascertained, and then a net or bag might be drawn over the plants, the under side being covered with pitch or any other adhesive matter; and if one end of the net be raised, the moths will be prevented on taking wing from rising and flying off, but will be caught upon the sticky under-side of the net. An ingenious farmer will quickly discover the best kind of net for effecting his object. *J. O. W.*

## Home Correspondence.

*The Crystal Palace.*—The question is not whether the Crystal Palace shall remain to please either one party or another, but how far it will conduce to the comfort and convenience of the inhabitants and visitors of the metropolis. The alterations in the building, and laying out the gardens, will require a vast outlay, which may be met by the surplus in the hands of the commissioners. If money is forthcoming there can be no doubt the glass case may be converted into a permanent winter lounge. Walking amongst Camellias, Orange trees, Azaleas, Roses, &c., when snow is on the ground, would indeed be an untold luxury, and one that should not be lightly thrown away, having everything within reach, excepting a certainty of the annual expenses for repairs, police, gardeners, &c., which cannot be estimated under 12,000*l.* or 15,000*l.* per annum—a large amount to be collected from visitors admitted at a low rate. The garden should be self-supporting, as the country cannot afford to pay for an immense London conservatory. Government should have nothing to do with the management—their interference would probably ensure a failure. Let the direction be vested in the hands of commissioners; the world's bazaar has flourished under their guidance, and there is every prospect of the garden doing the same. The idea of a second exhibition cannot be entertained; such a gathering must be left for the next generation to call together. Top ventilation will be essential in the conservatory. However, under the superintendence of Mr. Paxton, everything will be well considered, and nothing left undone which ought to be done. The winter garden will rather improve than deteriorate property in its neighbourhood, under stringent regulations. Nothing should be done in haste to be repented of at leisure. Query. Should 3500*l.* of the public money, in these hard times, have been voted for the Victoria Lily? *Falcon.*

*The Use of Salt on Garden-walks.*—There is nothing new in the discovery that an excessive dose of salt, either in solution or in a dry state, will destroy vegetable life; neither is it a novel proposition that the presence of saline matters in a slight degree is favourable to the healthy development of Grass and weeds. Many years ago the subject underwent a good deal of discussion in the "Gardeners' Magazine;" the letters of the facetious "Agrenome" upon that subject will, doubtless, be remembered by many of my gardening friends of that day. From these papers it may be inferred that salt was then considered a valuable stimulant. Admitting fully the sterilising effects of excessive doses of salt, I hope to be permitted to say that I dissent entirely from those who recommend its appliance in any form to garden-walks. It renders them damp and slippery, from its deliquescent property; it destroys one crop but to reproduce another in greater luxuriance, after a short time; and it destroys seeds, but forms a fit *nidus* for the germination of others, which are wafted by the winds. This is not mere assertion, but fact, as I have proved over and over again. Mr. Forbes, of the Pinefield Nurseries, near Elgin, writing in 1828, gives a table in which he shows, with small exception, that, in proportion to the moderate nature of the saline dressing, the weight of his crops increased, while they decreased in proportion as the quantity was larger. In a lecture upon the use of salt, given by Professor Way a short time since, it was stated that Lord Westminster had tried salt upon a road four miles long, but it was found to reproduce another crop in great luxuriance; the particulars of this experiment would be interesting. Upon such authority it must be considered indisputable. The statement that one dressing is sufficient for a season is an error which I have proved. There are two patches of a court yard here, upon which a strong solution of hot water and salt was poured about two months ago; the weeds then growing were killed, but it has now growing upon it as fine a crop of Poa annua as could be desired. I regret that those who write on the subject, either *pro* or *con*, should not give their names, as their evidence would be of greater value if they had "a local habitation and a name." *Henry Bailey, Nuneham.*

*Irish Larks.*—If Dr. M'Cormac will have the politeness to read my passing remarks upon the "skylark in Ireland," once more,—he will find I spoke of their

frequenting that "strange land" in armies,—*not* of there being none to be found there,—far otherwise. As for their singing "gloriously," I ventured playfully to doubt this on the authority of a worthy contributor to the *Gardeners' Chronicle*, who, under the *nom de guerre* of "A Shilmalier," stated that in Ireland guns were in constant requisition to slaughter them by the million. (Page 203.) Nay,—he even solicited my "kind aid" in inventing some means to annihilate their race altogether, and so save his crops from total destruction. My remark, therefore, that they rose upon the wing with "every disposition" to sing, but *minus* the power, is hardly incorrect,—for the moment they opened their sweet mouths, an explosion took place from below, and great was their fall. *Vox audita perit.* They sang their own requiem in one short stanza. As for your correspondent's shrewd "suspicion" that the nightingale does, though "rarely," visit Ireland,—all I can say is,—let us charitably hope so. Such a voice, in such a country, ought to carry all before it. If otherwise, let us drop on it the tear of "pity." *William Kidd, July* 24.

*Tar Paint.*—Having been in the habit of using tar-paint of different kinds for several years, I venture to send you the result of my experience, for the information of "W. C. E.," and others of your correspondents. I have used the Trentham mixture extensively on wire fencing and hurdles, and found it to answer well; but I find it works better when not quite one part of Stockholm tar to two parts of gas tar are used, and that after it has boiled for a quarter of an hour, it should not be allowed to boil again, but only kept quite hot while being used; otherwise it is apt to become too thick. I have found Hill's fire-barrow indispensable. Good, however, as Mr. Fleming's mixture is, I have for the last year or two discontinued the use of it, having met with a tar-paint which I greatly prefer, although rather more expensive than Mr. Fleming's. It is a patent varnish, sold by Robinson and Co., Rainhill, Prescot, Lancashire, at 1*s.* 6*d.* per gallon. The advantage of it is that it does not require boiling, is more easily and quickly applied, and the iron retains a bright varnished look for a long time afterwards. Whatever kind of tar-paint is used, it is, I find, absolutely necessary to apply it in fine hot weather, when the iron is perfectly dry; and I do not find that the work is the worse afterwards for the iron having been rusty when tarred. *T. W. T., Cheshire.*

*Fleming's Tar Paint.*—In answer to "W. C. E.," I have to give the following replies (just received from the country), to his inquiries. "The wire-fences were not rusty. The wire-fences and wooden gates were quite dry. The weather was cold and windy. The mixture was warmed, and applied warm; not boiled, nor boiling hot. The proportions of mixture were two-thirds gas tar and one-third Stockholm tar." I have not adhered to the original instructions, but I take for granted that the mixture should have been hot, and not used on a cold and windy day. *L. L.*

*Cultivation of the Strawberry.*—Mr. Beach, a market gardener, at Isleworth, having surprised every one this year with his British Queen Strawberries, both in Covent-garden, at Chiswick, and the Great Exhibition, they having been not only extremely large, but fine in flavour, I got an introduction to him in London, and he at once asked me to go down with him to Isleworth, and see his place. He is one of those John Bull ready-witted class of men, dark, and sun-burnt, somewhere about 55 years of age, and looking altogether as if he had spent a month on the south side of the Rocky Mountains. We took the train at the Waterloo station, and turned off by what is called the loop line, at Mortlake, through a large tract of market gardening ground. Mr. B.'s garden lies near the bottom of a gentle declivity, about a mile from Hounslow; there is a large pond at the east end of his land, with about 20 springs continually flowing into it, and this pond affords the means of irrigating the whole of his ground. His Strawberry land, which consists of about 10 acres, forms a parallelogram, whose longest side runs south and north, the south end being about six feet below that on the north, while there is also a declivity from west to east; making it altogether peculiarly suitable for irrigation. When Mr. Beach took this Osier ground, for so it was, about five years ago (and there is part in Willows now), he saw that owing to the springs and the two falls of the ground, as well as the texture of the soil being a sandy, dark, loamy, soapy, vegetable material, that it would answer the purpose to which he has applied it well. He took a lease of it, and the first thing he did was to make a cart-way on the west upper side, throwing up the earth some two feet above the general ground, so that the path where the horse goes is from ten inches to a foot deeper than where the wheels pass along, thus forming water-courses all along. The next thing he did was to form his ground into ridges, about 40 feet wide, running the short way of the square; the centres of these ridges are planted with Pears and Apples, and between with black Currants, all being loaded, especially the black Currants, with crops, such as never were seen before. About three feet from the trees on either side are water-courses, leading to the bottom of the ground, where there is a mill stream, and on the two declivities between the rows of trees are his Strawberries, some five or six rows of which are planted along the sides of the two feet broad ditches, between the ridges. These ditches receive the irrigating water, which percolates under the plants down into them. It is unnecessary to describe the size and strength of the plants, as well as the enormous crops they produce. His heaviest Queens weighed 3 ounces; all his plants stand 2 feet apart each way. The laying out of this ground has cost him much, but it will in time well repay all expenses. Mr. B. was also the first to form Violet ridges, with a sharp declivity, upon a light sandy soil. Russian Violets planted on each side of these long ridges, not only come in early, but bear blossoms in abundance. The ridges are nearly as sharp as a Mushroom ridge. I advised Mr. B. to try Watercresses, which he could grow admirably, on account of the continual flow of spring water which he has at command. *James Cuthill, Camberwell.*

*The Cuckoo* (see p. 496).—I need not say to naturalists, that any opinion coming from Mr. Doubleday is entitled to much consideration; but when he comes forward to prevent the propagation of erroneous statements, he is entitled to both consideration and courtesy. Mr. Doubleday does not say the writer in the "Naturalist" stated that which he did not see, but simply related some facts, which proved that he was mistaken. Natural history is, I apprehend, a collection of facts and observations, and anything which is stated to have occurred contrary to the beautiful laws of Nature is looked upon naturally with a suspicion that the relator may be mistaken. Thus a naturalist may believe that Mr. Kidd is wrong when he states that nightingales pair before they arrive in this country: they may be permitted to doubt the statement of Mr. Kidd that the nest of the blackcap is placed in a "cunningly devised nook," if their experience and their book-lore tell them otherwise. They may be permitted to doubt, if the statement of "C. E., Bodorgan, Anglesea," (see p. 469) did not arise from a mistake, because it is contrary to the laws of Nature for 8 or 10 white-throats to feed a single cuckoo, brought up by two; and reasoning upon this, the naturalist knows that the cuckoo is an object of aversion to smaller birds, and that 8 or 10 white-throats, with food in their mouths for their own young, might fly about a young cuckoo, who would, as a matter of course, open his mouth and expect to receive that which I very much fear he never did—although I do not for the moment doubt that "C. E." believes he saw 8 or 10, instead of the two foster parents, perform this office. Now with regard to the statement in the "Naturalist," contradicted by Mr. Doubleday. Are we to permit statements directly contrary to all experience and to the best authorities, to pass current as true, upon a single observation, which might be erroneous? Surely not. The writer in the "Naturalist" says, that a cuckoo deposited her egg in the nest of the hedge-sparrow in July. Mr. Doubleday states that which is well known: that the cuckoo leaves this country in the beginning of July; and that the hedge-sparrow builds in May. Who can disprove these statements? The writer in the "Naturalist" says that he heard the female cuckoo, having deposited her egg, call "cuckoo, cuckoo." Mr. Doubleday states, and with a truth supported by all experience, and by all authority, that the female cuckoo does not make this cry. And, thirdly, the writer in the "Naturalist" says that the cuckoo fed its young with the larva of the Currant moth, taken from Gooseberry trees; to which Mr. Doubleday rejoins, with great force, that such larvæ do not there exist, and that as the writer has evidently been wrong on so many points, it is a fair inference that he is also wrong in the statement of the cuckoo feeding its young. If such arguments as these are not to be adduced in objecting to what people believe they see, we may as well revert again to the days when "geese came from barnacles," or "vipers swallowed their young." The fact is, we have a great many writers, but very few sound observers; but among these few, the name of Mr. Doubleday will always have a conspicuous place. The following are extracts from some of our best authorities on the habits of the cuckoo, &c: "The voice of the female is different from that of the male, and has been compared to that of the dabchick and the gallinules." (Yarrell.) "Old cuckoos take their final leave of this country the first week in July." (Jenner, in Ph. Transactions.) "The hedge sparrow is one of our earliest breeders, and begins to lay its eggs in March or beginning of April." (Hewitson.) "The note of the female cuckoo is so unlike that of the male, which is familiar to every one, that persons are sometimes with difficulty persuaded that it proceeds from that bird. It is a kind of chattering cry, consisting of a few notes uttered in fast succession, but remarkably clear and liquid." (Jenyns' Obs., p. 158.) "Cuckoo first heard April 27, last heard June 27. Mean of 11 years." (Ibid. Calendar of Periodic Phenomena.) "Hedge accentor hatches April 18." (Ibid.) From these extracts it will be seen that it must (which I fully believe) be rare for the cuckoo to lay its egg in the nest of the hedge sparrow, as it does not perform this act until the middle of May. The most common nests chosen by the cuckoo are those of the meadow pipit and pied wagtail. I have taken the egg out of the nest of the reed warbler (*Sylvia arundinacea*). I have never seen the cuckoo assisting in feeding its young, or met with the eggs of the hedge accentor in July. The difference in the call-note between the sexes is too well established to need a comment. *C. R. Bree, Stowmarket.*—I have great pleasure in being able fully to confirm Mr. Doubleday's statement in every particular; and I may remark that the fact of the writer in the "Naturalist" relating that the female cuckoo uttered the well-known cry of the male, throws a doubt over the remainder of the story; although I am aware a similar statement was made by a young lady who, in a work published some years since by Messrs. Darton and Co., said that she had proved that the female bird did utter the cry of "Cuckoo," as upon opening one shot in the very act, it was found to contain two, and only two eggs. *Chas. C. Browne.*—Having for nearly 20 years paid close attention to the economy of our native birds, I think I ought to know something about them; and my only motive in sending the few remarks about the cuckoo was to disprove the absurd tales which have recently been published by various writers about this bird. No bird is more regular in its time of appearance in the spring than the cuckoo. The male arrives about the middle of April (seldom earlier than the 13th or later than the 20th) in the southern counties; and no dependence whatever can be placed on the accounts of its being seen or heard during the months of January and February, as that is the period of moulting, and it is a well-known fact that birds never sing while that process is going on; besides which, it could not possibly obtain its food at that season of the year. The females do not make their appearance till the beginning of May, and I believe seldom, if ever, deposit their eggs till the middle or latter end of the month. The most usual time is during the first fortnight in June, and the young are hatched early in July, at the very time when the old birds are leaving the country. In confirmation of my statement, I will quote a few lines from the admirable work on British Birds, by my friend Mr. Selby. "Naturalists have been puzzled to account for this bird not performing the office of incubation; but as their researches have principally been directed to the anatomical structure, in which point it does not essentially differ from many others that perform this office, we arrive by these means at nothing satisfactory. The above peculiarity of this remarkable genus must probably not be looked for in any principle of conformation, but must be explained from their habits and economy. Let it be remembered that these birds are migratory, and that the period during which the adults remain with us is very short, but the propagation of the species must be effected during that period. Now as their arrival does not take place till the month of April, and the egg is seldom ready for incubation before the middle of May, there would not be a sufficient length of time for the young to be hatched or (making every allowance) sufficiently fledged, to accompany the old birds at the period of their departure, which seldom or never extends beyond the first week in July. The egg requires a fortnight's incubation, and the young are not able to fly in less than five or six weeks, which facts have been ascertained from repeated observation." The above extract fully confirms my assertion, that the old birds leave the country at the very period when the young are hatched, and it is therefore impossible that they can assist in rearing them. Mr. Kidd does not attempt to defend the ridiculous statement of the female bird uttering the cry of "Cuckoo," which alone is sufficient to excite suspicion as to the accuracy of the rest of the tale. I now take leave of the subject, fully convinced that no one can disprove what I have advanced respecting this bird. *Henry Doubleday, Epping, July* 29.

*Pinks.*—Will you oblige myself and others of your readers in these parts, who wish for information on the subject, by informing me whether split pods, *i. e.*, pods slit down to the sub-calyx, are held to be disqualifications to showing Pinks in the neighbourhood of London. I see that Goliah (Hillyer's), Great Britain, and Narborough Buck, were in the first stand at the Botanic on the 2d of July, the pods of which are so short and round, especially the first named, and the flower so full, that with us they invariably split. Is this to be avoided, and how? *A North Briton.*—[Pinks are not shown about London with pods split down to the sub-calyx. Such sorts as Great Britain, Goliah, Narborough Buck, &c., require considerable care to bloom them "sound;" but in perfection they are beautiful varieties. In order to lessen the difficulty, more buds are left on such kinds, when it would be desirable to disbud such varieties as Criterion to one. Sorts requiring medium treatment, such as Lola Montes, Sappho, Whipper-in, &c., are most easily managed.]

*London Nurseries, Victoria Regia, and the Crystal Palace.*—What an exquisite treat is a visit, at this season, to the nurseries around London, especially to a person like myself, residing far from the metropolis, and consequently but rarely able to command such a pleasure. The great improvements effected within the last few years, in almost all the large establishments, would be scarcely credited by one new to those charming scenes. Especial attention seems of late to be given to the culture of aquatics, the germ of which may be traced to the successful cultivation of the Victoria Regia, at Chatsworth, by the inimitable Paxton. On visiting, the other morning, the old nursery of Messrs. Knight and Perry, at Chelsea,—so rich in exotics—I was equally astonished and delighted with their new aquarium, which, in itself very spacious, and, as it appears to me, admirably adapted for its purpose, is not more to be commended for the *recherché* collection of plants which it contains, than for the beauty of their arrangement, each individual specimen being located so as not only to exhibit to advantage its peculiar beauties, or to contrast with its immediate neighbour, but rather to form an essential part of a grand and beautiful assemblage, worthy to decorate this palace of the Naiades—the great variety and beauty of colour which is here presented to the eye, from the most delicate white to the deepest crimson, the latter in rich abundance, the central group being the Queen Lily herself—I parody a celebrated phrase, used by a great and justly-lamented statesman, and write—"sitting prostrate" among her subjects. The effective shading afforded by the lovely green of the varied-shaped and exquisitely beautifu

foliage, together with the gentle rippling of the water in constant motion, presented, on the morning I saw it, a *coup d'œil*, truly astonishing, far easier to be imagined than described, and evincing, in its whole arrangement, the most consummate taste. In an able review of Fitch and Hooker's correct and elegant work, "Victoria Regia, or Illustrations of the Royal Water Lily," which appears in the last number of the *Athenæum*, an interesting connection between that lovely plant and the Palace of Glass, in Hyde-park, is alluded to, and it is suggested that, as a memorial of the fact, and of a triumph of horticultural art, a space in that building should be devoted to a tank, in which the plant aptly and correctly described as "The Empress of the Waters of the New World," might exhibit its wonderful and beautiful structure. It is in furtherance of this happy idea that I have ventured to address you, and I verily believe that its adoption, on a sufficiently large scale to admit the growth of the Victoria with that of other charming aquatics, and thus afford the effective contrast I have so faintly delineated, would meet with all but universal approval. Nay, I would not despair of including amongst the foremost of its admirers that fine specimen of genuine old English feeling—the honourable and gallant member for Lincoln himself. *B., Gloucester, July* 29.

*Potato Crops at the Antipodes.*—Though the Potato disease appears to have been comparatively mild in its character during the season of 1850, still, from the *Gardeners' Chronicle*, and other papers recently received, it appears to have existed, especially in Ireland and Scotland, to an extent sufficient to have excited serious fears for the safety of the crop. The same vague causes were being suggested, the same innumerable remedies propounded, denoting the same imperfect knowledge of the origin and nature of the disease, which has characterised its progress from the period of its first appearance. On glancing over the numerous reports furnished, it occurred to me that it might interest the readers of the *Chronicle* to learn the state of the crop at the Antipodes, especially, reaching you, as this will, at a season when alternate hopes and fears pervade the mind of everyone interested in the crop of 1851. Not only, then, have the varieties of Potatoes long in cultivation in New Zealand maintained, unimpaired, their primitive vigour, but even those recently brought from Britain have never shown the slightest symptoms of disease; for I had an opportunity of seeing most luxuriant crops, produced from Potatoes brought by the pensioners sent out by Government in 1847. The varieties were English Reds, Scotch Pink Eyes, and Irish Cups, the growth of 1846, a season in which everyone familiar with these varieties knows there was not a single, full-grown, sound Potato obtainable in the United Kingdom. These must, therefore, have contained within them the germs of disease, endured the vicissitudes of climate peculiar to a New Zealand voyage, and were cut, manured, and planted in a soil similar to that from which they came. At first they came forth weakly, but they soon acquired vigour, and ultimately produced an abundant crop, free from the slightest spot or blemish indicative of parental debility. *Wm. Wilson, Gardener, Auckland, New Zealand, April 7*, 1851.

*Peach Tree Blight.*—Last summer two of my healthiest Peach trees were suddenly attacked by a new species of blight. The extreme branches of these two trees, and only where they met each other, lost their leaves; the other parts of the trees remaining in perfect health. Towards the latter end of May, this year, the same parts of these two trees were similarly affected, and the blight extended to a young and very healthy tree which I had planted between them. All these trees had nearly recovered their vigour, and I particularly remarked their flourishing condition on Saturday the 19th of July. On the following Monday the three trees, in the same parts, were smitten as if boiling water had been sprinkled on them; and in four different places of my Peach wall I discovered the same appearance. The leaves in the parts affected have now nearly all fallen off in a perfectly green state, except where the spots appear, and even the points of the branches are dead. The strange part of the story is, that the blight beginning at the top of a high wall, extends quite to the ground in one or two instances, not reaching in width above a foot and a half, the branches on either side remaining as healthy as before; but every leaf, almost without exception, is affected in the course of the blight. I send you two or three leaves, and will only state further that this is now the third time, I have seen exactly similar spots on the leaves, and that in a day or two after the appearance, most of the leaves fall off. Some of the shoots attacked are nearly, if not quite, three feet long, of the year's growth, and no trees can be more free from either aphis or red spider. I have seen the Peach trees in a garden five miles from this place, suffering from the same blight. I ought to add, that a few of the infected leaves, both last year and this spring, remained on the trees, the brown spot in a day or two drying up, and leaving a hole in its place. *J. P. L., Wootton Rectory, Northampton, July* 28. [This curious case is unattended by a trace of mildew. The midribs become brown and dead, and some of the lateral veins are in the same condition, while here and there circular spots also die and become brown, all the rest of the leaf remaining fresh and healthy. The veins proceeding from the brown spots to the midrib are slightly discoloured. All this leads to the inference that the injury is produced by something absorbed by the roots, and carried along in the venous system of the foliage. Such appearances might be produced by poison. Is it possible that these trees have been poisoned, either accidentally or intentionally.]

*Tall-growing Fuchsias.*—I am so pleased with the beauty of Fuchsia corallina, covering a wall nearly 10 feet high, that I wish to learn, through the medium of the *Chronicle*, if any of the new large flowering light varieties are likely to attain the same altitude on a south wall in a mild part of Devonshire. Corallina is, I believe, a cross from Radicans, and, therefore, most robust in its habit, which the pale ones generally are not; as there may, however, be exceptions, will any reader kindly give me the names of three or four of the newest light varieties, which are likely to suit my purpose. I am also anxious to have the experience of some florist as to the capabilities of the scarlet Crassula (Kalosanthes coccinea) as a bedding plant for the garden—is it really effective as regards abundance of flowers and duration in producing them? *A Devonian.*

*The Nightingale.*—I must be allowed to doubt the correctness of the information given to your correspondent "Northwood" as to the nightingale having been heard at Torquay. I have made every inquiry, and can find nobody who can corroborate the statement. I cannot help thinking that the ladies were deceived by the notes of the nightlark, which, I believe, is the woodlark of the eastern counties, which sings most charmingly the whole night through, scarcely inferior indeed to the mellow nightingale. The latter, I believe, is never heard in either Dorsetshire or Somersetshire; assuredly not in Devon or Cornwall; but, then, partly to compensate us for our loss, our blackbirds and thrushes sing more joyously, and earlier and later, than in other parts, from the absence of cold weather. Nor have I ever heard the nightlark sing here as he does in the far west. Our missel thrush (in Cornish vernacular, holm-screech), pours forth its enlivening notes almost in mid-winter. I cannot pretend to account for the absence of the nightingale (though I may pity its taste) any more than I can the absence from Cornwall of the Mistletoe, though it grows sparingly on the borders of Devon and Cornwall; near Launceston (in Tetcott parish), Cowslips are nearly equally rare, though I have found them in the parishes of St. Breoke and St. Minver, and adjoining country; but, then, our Primroses make ample amends, inasmuch that our hedges are in early spring one sheet of delicate yellow, gaily enlivened by Dog Violets, Orchis mascula, the Star of the Woods, the Wood Sorrel, and Wood Anemone. These, with the top growth of the white flowers of the Blackthorn and the golden Furze, complete a floral group worth going a journey to see, while the foliage of the abundant Ferns fills in the spaces in place of the yet unborn foliage. *Chynoweth, Cornwall.*

*Royal South London Floricultural Society.*—At the last exhibition of this Society, there was an extra prize offered for wild flowers, by W. P. Iliff, Esq.; and as a competitor for the award, I beg to claim a few lines in your journal, as I, with many others, do not consider that I was fairly dealt by in the matter, for the opinion was very general that I ought to have had the medal. I would venture to suggest, that in future, the donor, who appears to be also the judge, should state more explicitly what it is he means by the best collection. It is a prize given by a Floricultural Society, and any reasonable man would argue, that it was given with the view of bringing into notice wild flowers, worthy of cultivation; and with such a view, I exhibited a collection, and it was acknowledged that there was not a flower in it that was not worthy of being cultivated. I trust there may be some better arrangement for the future. *J. Powell, Queen's Road, Bermondsey.*

## Societies.

National Floricultural, *July* 31.—Mr. Marnock in the chair. Not the least interesting part of the exhibition on this occasion, was a box of beautiful Seedling Roses from Messrs Paul. Of these, Queen Victoria, a large and very fine Hybrid Perpetual, with the colour of the Celestial Rose, received a first class certificate. A similar award was also made to a climbling Perpetual named Robert Burns. This had the colour of Chenédolé, and being a profuse bloomer must have a very striking effect, more especially on a pillar some 12 feet high, which it was stated to be capable of covering. The other sorts consisted of Prince Albert, a free flowering Bourbon with a good colour, and Washington Irving, a medium-sized neat rosy-lilac Hybrid Perpetual. Mr. Turner, of Slough, was awarded certificates for Victoria Regina, a heavy rose-edged Picotee, and for Duke of Rutland, a heavy purple-edged variety. These are both pleasing flowers, which cannot fail to become favourites. A rose flake Carnation, called Lady Pollock, from Messrs. Wood and Ingram, was recommended to be seen again, as was also Mr. Fellowes' Picotee, No. 51. Mr. Turner's Carnation General Monk, and Picotee Ophelia, were commended. A neat, small growing dark Fuchsia called Nonsuch, from the same raiser, was awarded a certificate for its excellent habit. Mr. Payne sent a mule Pink, which was commended for its bright crimson colour and desirability as a border plant. Mr. Smith, of Hornsey, contributed a rosy purple Verbena, with a white eye. It was named Eliza Cook, and was commended by the censors. Some Hollyhocks were exhibited by Mr. Chater and Mr. Laing; but as they were not shown on spikes, no correct opinion can be given of their merits. Miscellaneous plants were communicated by Messrs. Hendersons, named Picotees and Carnations by Mr. Edwards; Petunias by Mr. Barnes, of Stowmarket; two shrubby Calceolarias, by Mrs. Conway, of Brompton; and striped Pansies, a Phlox, and other plants, by Mr. Salter, of Hammersmith.

Botanical of Edinburgh, *July* 10.—Dr. Balfour exhibited specimens of the following monstrosities: 1. An Arum with a double spathe, the second spathe being alternate with the first. The spadix at the lower end showed the appearance of the adhesion of a second spadix. This specimen was from the garden of Dr. Neill, Cannonmills Cottage. 2. A monstrosity of Antirrhinum majus, presenting a regular flower formed by five personate petals with gibbous bases. 3. Monstrosity of white Digitalis showing the terminal floret composed of several united, and expanding before the other flowers in the raceme. There was thus a mixed inflorescence, partly definite and partly indefinite. A letter was read from Mr. W. Thomson, Lecturer on Botany, King's College, Aberdeen, in which he states: "A few days ago, walking along Dee-side, about seven miles above Aberdeen, I was much surprised to see Prunus spinosa (common Sloe) covered with large handsome fruit of a bright red colour, a pod very like the Capsicum. The Sloe trees grow along the river side, and are of that half-cultivated variety which attains the height of 20 or 30 feet, is straight, and wants spines. The trees were closely tangled along the river-side for the distance of about 100 yards, all covered with this strange monstrosity. On examining the pods a little more closely they proved to be carpels disdaining their usual tardy progress into a drupe, and hurrying into a pseudo-legume. On cutting them open they exposed usually one, sometimes two abortive ovules, attached to a sutural placenta. "This was odd enough; but imagine my surprise, when I came to several trees of Prunus Padus, a little farther on, covered with long clusters of bright green unripe pods of a similar kind. We well know that the Rosaceæ are very prone to eccentricity with regard to their carpels, and to see one tree in that condition would not surprise me, but why all the individuals of Prunus spinosa in that neighbourhood should have gone wrong, and especially why the other species should have joined them, I am at a loss to conjecture." Specimens of the monstrosities in both species were exhibited, and were presented to the Museum at the Botanic Garden.—Dr. Balfour suggested that these teratological appearances might be caused by the attacks of insects, and that they pointed out the connection between Rosaceæ and Leguminosæ, two orders which are chiefly distinguished by the position of the odd sepal.—A Paper was read, "On the Plant Morphologically considered," by the Rev. Dr. M'Cosh, Brechin. In this paper the author endeavours to show that the plant consists of three homotypal parts, the root and its sub-divisions, the stem and its branches, and the leaf, with its veins. He dwelt in an especial manner on the venation of the leaf, which he considers as representing the mode in which the tree ramifies, as well as the angles at which the branches are given off. In the case of woody plants he conceived that the petiole of the leaf may in such cases represent the trunk. Thus the Beech, the Portugal Laurel, &c., which have little or no petiole, send off branches from near the root, while the Sycamore and Cherry, which have distinct petioles, have long unbranched trunks. He thought that this did not apply, however, to herbaceous plants, and he was not prepared to carry out his views in the case of Palms and other woody Monocotyledones, which he had not an opportunity of examining in a normal state. The angles, also, at which the veins are given off, he considered as representing generally the angles of the branches. As the paper will be given pretty fully in an early number of the Journal, it is needless to enter into details here. The author illustrated his remarks by numerous specimens.—Professor Balfour was not prepared to enter into Dr. M'Cosh's views fully, although there were many plausible statements made by him. Dr. M'C. did not appear to apply his views on the same principle throughout. There could be no doubt that there were normal angles at which branches and veins were given off, but it was not an easy matter to get what might be called typical forms. He hoped that Dr. M'C.'s remarks would lead to an investigation of the subject.—Professor Fleming remarked that he was ill qualified to offer any remarks on the interesting paper which had been read, because he had long been in the habit of restraining his imagination in all scientific inquiries. This paper he considered an imaginative one—a hunting after resemblances and overlooking differences, so as to give results by no means to be depended upon. The leaves were organs differing in form, structure, and functions, from the stem and branches, and could not, homologically, be compared with them. The nerves of the leaves did not all diverge at the same angle, neither did the branches. These last were exposed to various influences during the life of a tree, and in consequence diverged from the stem at various angles in the different periods of growth. It was, therefore, a dream of the imagination to hope to determine a typical angle of divergence, when the plant was endowed with a considerable range of variation to fit it for its place in the economy of nature.—Professor Goodsir had listened to Dr. M'Cosh's paper with much interest, on two accounts; first, because it appeared to him that its author had, in endeavouring to reach one of the objects he had in view, embodied another attempt to investigate the laws of organic form by that precise or geometrical method, which can alone ultimately elevate natural history to the platform of the perfect sciences; and secondly, because although he could not admit all the conclusions at which its learned author had arrived, he yet believed the paper to involve a great truth. If he might be allowed to use the expression in reference to a plant, the specific physiognomy of a tree, as a mass, appeared to him to depend upon on the particular bulk, form, and grouping of its constituent

masses. Now, if the form and grouping does not depend upon, it certainly involves, the mode of branching peculiar to the species. Dr. M'Cosh had restricted himself to the investigation of the law which regulated the latter; but he had, and would meet with, that apparently at present insuperable difficulty in all such researches, viz., the variation within certain limits, of the form of parts, or of the whole of an organised body, according to the particular conditions under which that part or that individual has been developed. Prof. G. suggested that Dr. M'C. might be more successful if he would limit his inquiry to the law of ramification of a single judiciously-selected species; and would endeavour to grow that species under such invariable conditions as might afford an approach at least to the typical form of the species. He also believed that before the law which regulates the arrangement of the primary and secondary ramifications of a leaf can be ascertained, attention must be directed to the law of form in the parenchyma itself. —Mr. M'Nab exhibited specimens of Viola stagnina, from Botisham Fen, sent by Mr. Stratton, of the Cambridge Botanic Garden.

ROYAL SOUTH LONDON FLORICULTURAL, *July* 24.—This Society had a very wet day for its fourth show, which was in consequence thinly attended. There was, however, a large number of growers present, both amateur and professional. Collections of miscellaneous plants were produced by the principal London exhibitors, but not being dissimilar from those shown at Chiswick we shall not particularise them. The July meeting being the Carnation and Picotee show, the names of the winning flowers are as follows:—

CARNATIONS, 12 blooms (amateurs).—1st, Mr. May, Sonning, near Reading, with Horsa, Beauty of Woodhouse, Sir H. Smith, Antonio, Earl Spencer, Ariel, Potus, Owen Glendower, Prince Albert (Puxley), Africanus, Rosetta, Squire Trow; 2d, Mr. Lochner, Paddington, with Flora's Garland, Lord Rancliffe, Ariel, Duke of Wellington, Sir H. Smith, Beauty of Woodhouse, Paul Pry, Queen Victoria, Squire Trow, Prince Albert (Puxley), Prince Albert (Hale), Knosthorpe Pet; 3d, Mr. Newhall, Woolwich, with Tipton Hero, Queen Victoria, Flora's Garland, Howard, Princess Royal, Black Diamond, Squire Meynell, Owen Glendower, Lord Rancliffe, Prince Arthur, Twyford Perfection, Dido; 4th, Mr. Edwards, Holloway, with Justice Shallow, Prince Albert Antonio, Regular, Squire Trow, Romeo, Rainbow, Duke of York, Cradley Pet, Lord Milton, Firebrand, True Briton; 5th, Mr. Sandeland's, with Fanny Gardner, Flora's Garland, Prince Albert (Hale), Brutus, Beauty of Woodhouse, Hero of Middlesex, Premier, Fire-ball, Lady Gardener, Iris, Duke of Wellington; 6th, Mr. Hardstone, Foots Cray, Kent, with Prince Albert (Puxley), Conquering Hero, Flora's Garland, Lady of the Lake, Hero of Middlesex, Hugo Meynell, Prince Albert (Hales), Harriet, Majestic, Lord Harding, Earl Spencer, Ringleader.

PICOTEES.—1st, Mr. Lochner, with Prince of Wales, Mrs. Barnard, Prince Albert, Queen Victoria, Portia, Mrs. Norman, Isabella, Gem, Lady H. Thorn, Phœbe, Anne Page, Venus; 2d, Mr. May, with Exquisite, Mrs. Norman, Constance, Portia, Juliet, Isabelle, Fanny (Dodwell), Mrs. Barnard, Venus, Alfred, Mirander (May), Prince of Wales (Marris); 3d, Mr. Edwards, with Mrs. Bevan, Lady H. Moore, Mrs. Barnard, Lady Harwood, Mrs. Norman, Gem, King of Purples, Lilacea, Regina Isabella, Alfred, Venus; 4th, Mr. Newhall, with Lady A. Peel, Lord Nelson, Gem, Sebastian, Amy, Mrs. Barnard, Regina, Miss Rosa, Fairy Queen, Phœbe, Lorina, Venus; 5th, Mr. Hardstone, with Sunbeam, Mrs. Bevan, Lady Douro, Queen, Venus, Mrs. Barnard, Princess Royal (Willmer), Mrs. Trahar, Juliet, Jenny Lind (Edmonds), Prince of Wales, Gem; 6th, Mr. Sandeland with Goliah, Mrs. Barnard, Mrs. Bevan, Mr. Trahar, Isabella, Prince Albert, Miss Desbora, Green's Queen, Unique, Juno, Fanny Irby, and Gem.

CARNATIONS. 12 blooms (nurserymen).—1st, Mr. C. Turner, Royal Nursery, Slough, with Owen Glendower, Victoria (Simpson), South London, Duncan, Madame Sontag, Splendid, Beauty of Woodhouse, Cradley Pet, Admiral Curzon, Lord Milton, Garland, Twyford Perfection; 2d, Mr. Bragg, Slough, with Lord Rancliffe, Flora's Garland, Earl Grey, Ariel, Duke of Bedford, Hotspur, Sarah Payne, Queen Victoria (Simpson), Dido, William IV., Duke of Wellington, Defiance; 3rd, Mr. Ward, Woolwich, with Fanny Gardner, Princess Royal, Prince Albert, Queen Victoria (Simpson), Lady Ely, Admiral Curzon, Squire Meynell, Georgiana, Black Diamond, King of Scarlets, Lord Milton, Lord Rancliffe; 4th, Mr. Frankland, City-road, with Prince Albert (Puxley), Flora's Garland, Brutus, Princess Royal, Lady Rowley, Defiance, Rainbow, Conquering Hero, William Cobbett, Beauty of Woodhouse, Double X., and Georgiana.

PICOTEES.—1st, Mr. Turner, with Portia, James II., Constance, Mrs. Norman, Enchantress, Lord Nelson, Green's Queen, Lady Harriet Moore, Prince of Wales, Mrs. Barnard, Juliet, Venus; 2nd, Mr. Bragg, with Duchess of Bedford, Mrs. Norman, Gem, James II., Prince of Wales, Miss Holbeck, Isabella, Portia, Princess Royal, Lady Harriet Moore, Mrs. Barnard, Queen Victoria (Green); 3rd, Mr. Ward, with Prince of Wales, Lady Dacre, Princess Royal, James II., Regina, Mrs. Norman, Gem, Juliet, Venus, Alfred, Mrs. Barnard, Maid of Athens; 4th, Mr. Willmer, with La Elyant, Goliah, Rival, Sebastian, Isabella, Queen (Green's), Lord Nelson, Regina, King James, Lady Harriett Moore, Venus, and Portia.

Certificates were awarded to May's Falconbridge, Pink bizarre Carnation, a large finely marked flower, the best of its class. Several Picotees were shown; Marris's Victoria Regina, heavy scarlet edge; Fellowes' Ganymede, light purple edge; Hollyoake's Duke of Rutland, heavy purple edge; and May's Ophelia, light purple edge, all possessed considerable merit, and the two former received certificates.

HOLLYHOCKS were contributed by Mr. Turner, of Slough, and Mr. Bragg.

## Notices of Books.

*The Steam-Engine: A Popular Account of its Construction, Action, and History; and a Description of its Various Forms.* By Hugo Reid. Third Edition, Revised and Improved. London: Groombridge and Sons.

IT is with pleasure we announce the republication of this very useful and interesting volume, with a number of well-timed additions which render it increasingly valuable. It is, moreover, now illustrated by 40 neatly-executed engravings on wood.

No subject could excite greater attention at the present moment than the steam engine. Whether we regard the singular ingenuity employed in its construction, or the vast extent and variety of its applications; indeed in whatever light we view it, as an engine of fearful power, it possesses the strongest claims on our attention and admiration. It is gratifying to know that a spirit of enquiry into these scientific matters is becoming very general; and we may thank the "Great Exhibition," and its projectors, for having added to this laudable enquiry in no small degree. "The People" are now not satisfied with merely beholding a machine, and seeing it in daily use; but they really want to know *how* it is made, and the "principle" on which it acts.

For just such enquiring minds as these, is this popular treatise on the Steam-engine intended. There we have fully explained the general laws of heat and pneumatics, on which the action of the engine depends. Next, there is a careful analysis of its construction and mode of action, illustrated by figures; enabling even those who have never before seen an engine, to understand the manner in which it works. A minute description is also given of the different forms into which the engine is thrown, to fit it for its applications.

The arrangement of the various subjects introduced in the volume, is not its least recommendation; nor can we pass over without a word of approval the interesting sketch given by Mr. Reid, of the Origin and Progress of Steam;—a discovery, as he justly remarks, second only to that of printing, in the magnitude of the results which have flowed from it, and far surpassing that operation in the genius displayed in its conception, and the points of interest it offers to the intelligent observer.

In the earlier editions of the work, some of the matter introduced was too minutely elaborate. The present edition has been judiciously condensed, and much new and useful information conveyed in a still more popular form. It is now suitable for the purpose of self-instruction, and forms a good introduction to the study of practical science.

## Garden Memoranda.

MESSRS. FRASER'S NURSERY, LEA-BRIDGE.—Among the many nurseries located in and around London, few better repay a visit than this one. The names of Messrs. Fraser and high plant cultivation have long been associated; and although the finest specimens are continually being bought up and carried away, still the glass houses contain numerous examples of the very best management. In the specimen house a large and fine plant of Dipladenia crassinoda was covered with charming rosy blossoms, which not only come higher coloured in a cool house, but they last much longer in perfection than in a stove. This remark also applies to the beautiful species of Allamanda, the sweet Stephanotis floribunda, and indeed to most stove plants while they are in blossom. We observed here the white Schubertia graveolens, which, although not so handsome as the Stephanotis, is worth the attention of those who wish to have large specimens in a short time for summer decoration, for it is a plant of exceedingly rapid growth. Rhynchospermum jasminoides, a half climbing evergreen shrub, in good hands, promises to be very useful. Its pure white blossoms are very sweet scented, and they are produced abundantly in succession for two months together. Of the showy genus Clerodendron, infortunatum is perhaps the most generally useful, for it will flower well in a sufficiently small state to render it a good drawing-room plant, and it is something different from the ever recurring scarlet Geraniums. Messrs. Fraser have bloomed this plant satisfactorily in a 6-inch pot. Gardenia Fortuni, one of the very best of moist stove plants, was just coming into flower. This blossoms at all seasons; for, like a Perpetual Rose, if it grows, it is sure to flower. Æchmea fulgens is another of those plants whose beauty well repays the little attention they require; it may be grown and flowered, either in a large or small state, according to the accommodation or taste of the cultivator. In the Azalea house, the plants were making fine wood. Messrs. Fraser find that they succeed better when shifted, after they have finished their growth, and set their flower buds, than when disturbed just after they have done flowering, which is generally the time at which they are shifted. The large specimens are moved into fresh pots every other year. The appearance of the blue Leschenaultia is much improved by cutting the shoots back a little way after they have done flowering. This keeps the plant compact and bushy, and it flowers all the better for the operation. We remarked here some nice plants of Gardoquia Hookeri, a handsome hardy greenhouse shrub, which produces gay orange-scarlet flowers late in autumn. All the extra care it wants is a little heat in spring, in order to gently accelerate its growth, and cause it to flower better. In the show house, which was very gay, were some beautiful specimens of Tom Thumb Geraniums. These had been lifted out of the flower-borders last autumn, wintered rather dry under a greenhouse stage or other out of the way place, and brought forward in the spring. Under this treatment they have made large heads this year, and are literally one mass of glowing scarlet flowers. One of them measuring at least 2 feet across was growing in a pot not more than 6 inches in diameter! The small-flowered clear yellow Calceolaria viscosissima also contributed much to the beauty of this house, in which were the larger-flowered Achimenes longiflora, a fine variety; the white Oleander, a showy kind; white Lilies, the black-flowered Lotus Jacobæa, and some of the smaller blossomed Cape Heaths. Among Fuchsias, Kossuth and Don Giovanni are both good; but Ignea appears to be even a greater favourite. The flowers are at least three times as large as those of Formosa elegans, which it closely resembles in colour, the deep violet purple corolla contrasting charmingly with the bright crimson calyx. Among whites, Fair Rosamond is a good sort. In a border in front of the glass-houses were beds of Lobelia maxima, one of the best blue kinds; the white variety of L. compacta, Campanula carpatica, Robinson's Defiance Verbena, one of the best scarlets; La Villageoise, a good blue; and Boule de Neige, a capital white; together with the pale blue Isotoma axillaris, whose only fault, perhaps, is being very late in flowering; and Tom Thumb Geraniums. Old plants of this deservedly favourite variety are found to bloom much better than young ones, *i. e.*, plants having a good proportion of old wood in them. New Verbenas and Petunias have not turned out very satisfactorily here. Among the latter Crimson King, and among the former Iris (blue, with a large white eye) are as good as any. We noticed a white Candytuft with flowers twice as large as the common sort, which, if it can be reproduced from seed, will be an acquisition. Those who are fond of herbaceous Phloxes will find the following worth attention:—Œil de Lynx, Macrophylla superba, of some large delicate lilac, good in habit and general appearance; Dr. Andry, rosy-pink, in its early stage said to be rich crimson, large and round; William Guillot, white, fine habit, and a profuse bloomer; Madame Octave, rose; Nitens, white, with a purple eye, and very delicately suffused with the same colour, a charming sort; Cœlestis, light blue, novel and striking in appearance; and Baron Deschapelles, lighter and larger than Cœlestis. The above will all be found good additions to this class of hardy border plants.

## Miscellaneous.

*A Native Luchou, or Pic Nic at the Sandwich Islands.*—This morning we were all up early preparing for our start to the mountains; a spot being selected by some native chiefs who intended giving a grand feast in return for our previous entertainment of them. Our ship lay lashed broadside on to the jetty; at this time we were living on board, finding it equally convenient as boarding on shore. We had ordered horses for a party of eight to be along-side shortly after day-light, which true to promise, not only were there enough, but some 50 or more were brought down for our inspection; for an hour or two all was bustle and excitement, the natives seeing so many horses along-side the ship, naturally judged something extraordinary was about taking place, and many hundreds came to witness our departure. Having satisfied ourselves as to our horses, as likewise our attendants and guides, who numbered some twelve more, we at length got fairly started. Our road lay, after clearing the town, principally over rugged rock, at times running along precipices extremely difficult for our horses to maintain their footing; the least false step would have hurled us to the depth of several hundred feet! at other times we were in lovely valleys or passing through thickly wooded groves, and then again, wading through rapid streams formed by the constant rush of water down the mountain-sides. After some two or three hours' ride, we arrived at a spot commanding a view of our appointed place of rendezvous; such a sight once seen can never be effaced from memory. The various groups of natives, men and women, who had been invited, dressed in their many coloured and fantastic dress; horsemen appearing in the distance, or every second emerging through the thicket, all bent to the scene of festivity, brought your imagination rather to scenes of romance than of vivid reality. The spot selected appeared as though formed by nature to make man happy, without even the good things that were to grace our board. Adjoining a Grass house placed upon a ledge of rock, and surrounded by high mountain scenery, we spread our mats upon the ground, shaded by the widely spread boughs of innumerable fruit trees, which grew luxuriantly around; having also close along-side a beautiful waterfall, under which, not only foreigners but natives, seemed to enjoy the luxury of a bath after their long ride. Upon our arrival we found the cooks already at their work; holes were dug in the ground, fires made therein and afterwards filled up with stones; these were allowed to get quite hot. The pigs intended for roasting were now prepared in the following manner: they, having been killed and cleaned, were cut open and stuffed with Yams, Bananas, fowls, Cabbages, &c., &c., and finally with hot stones, they were then carefully wrapped up in Plantain leaves and placed beneath the hot stones, in the hole originally dug, and the whole were covered again with the leaves of the Plantain; and to keep up a constant steam, water was from time to time poured over them. In this way cooking by the natives is always performed, and to judge from the manner in which it was served up, streaming upon the wooden platters, and the delicacy of the various dishes, I feel convinced it can scarcely be surpassed by any of the newly invented arts of cookery. Some 50 or 60* in all sat down, and a gayer scene I have seldom met with. We were all seated upon the Grass, each and every one helping himself, frequently five or six men and women twirling their fingers into the same calabash of poey*; however, all came to enjoy themselves, and each did so after their own fashion. But the return home now became the worst part, a heavy shower of rain had fallen during the day, and many parts of the road had become slippery and dangerous. Besides which, the natives, at any time not particularly abstemious where spirits are to be obtained, had on this occasion imbibed an over-share; and as every one had to go home on horseback, many were the unlucky falls sustained; however, we all arrived safe on board, when feeling myself thoroughly tired, from the exertions of the day, I turned in, and soon fell asleep. *North China Herald.*

* Poey is the native name of a dish formed of Tarra, a vegetable similar to the Yam.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Let shading be used less frequently, and for a shorter number of hours, as the season advances. The heat of the solar ray is rarely too powerful now, even if it were the growing season; and as the plants ought now to be ripening their growth, they have need of not only all the daylight, but even moderate sunshine. In the case of Orchids this is especially necessary, that the roots, leaves, and pseudo-bulbs may be thoroughly matured. Those which are already in this state, or nearly so, should be removed forthwith to a cool house. Great care should be taken not to excite such plants into a new growth at this time, as it is much too late to get them properly matured, and the unseasonable draught upon the stored energies of the plants will materially interfere with their next production of flowers. Dendrobiums of the D. nobile character, which are sufficiently advanced in growth, should also be removed to a cooler house, where they should be supplied with a moderate temperature, abundance of air, and scarcely any water, till their stems are ripened and their flower buds formed. Those Orchids which are in a growing state should be placed in the most favourable positions, and encouraged by a high temperature, so long as the strength of daylight will admit of such a course.

FORCING DEPARTMENT.

Pineries.—Maintain a high moist temperature, with abundance of ventilation to Pines which are now swelling their fruits, and a rather drier atmosphere around those which are in flower. In all the stages except that last mentioned, and when ripening, use the syringe freely in very fine weather, when there is a certainty of the moisture evaporating by the heat of the sun; but, on dull days, depend almost entirely upon the evaporating troughs, and be careful to admit air to prevent too great a condensation of moisture. If the syringe is used in excess during this month it is liable to render the soil too wet for the healthy development of the plants. Take care that the bottom heat does not get too strong for plants which have been recently potted or planted. Vineries.—When the late crops have done stoning, the borders, both inside and out, should have a good soaking of liquid manure to assist the swelling of the fruit. Do not allow the process to go on too sluggishly, if they are of kinds adapted and intended for late keeping. Muscats ripened with the aid of the summer sun, by the end of August are infinitely superior, both in appearance, flavour, and keeping, to those which are dawdled on through the next two months. When thoroughly ripened by the end of this month, or the beginning of September, they will keep till the end of February. Vines in a more forward stage, on which the Grapes are just beginning to ripen, should be gradually inured to a freer admission of air, and if it be desired to keep for any length of time those which are quite ripe, they should have the advantage of a slight shading during very hot or scorching weather.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings of Roses should be taken immediately and planted in a close cold frame in a north aspect for three weeks or a month, until they are cicatrised at the base; they should then be taken carefully up, potted in thumb pots, and plunged in a close warm frame with a gentle bottom heat. So treated, they will make nice plants in a very short time, and if kept under slight protection during winter, will fill their pots with roots, and be ready for planting out in April or May. Pink pipings, if put in at the time we recommended, will now be ready for transplanting; and in doing this not a moment should be lost, as they have need of all the rest of the season to establish themselves in such a manner as to prevent the frost injuring them. If the situations ultimately intended for them are vacant, they should be planted in them at once, as they thereby flower much finer; but if these places are occupied for the present by something else, the young Pinks should be planted 4 inches apart, on reserve beds in an open situation, the soil of which should consist principally of light loam, to which has been added some charcoal dust or charred refuse; a little dung mixed with road drift and soot should be added. The rotten manure from an old Mushroom bed answers very well for this purpose, as it encourages a mass of fibres, and produces a healthy but not over gross development of top. Some time ago we promised to remind our readers about making memoranda of the most suitable arrangement for half-hardy plants next season; we are just now doing so ourselves, and we take this opportunity of redeeming our pledge. As an easy method of reducing the thing more completely to a system, a rough plan should be made of the arrangement of the beds, which should be numbered and referred to an accompanying list of the names of the plants with which it is designed to fill them next year, and the quantity required for each bed. By compiling a summary from this list, accurate information is at once obtained of the quantity of plants which must be propagated immediately by cuttings, and both by these and seed in spring. By this simple means redundancy and deficiencies are avoided; disappointment is prevented on the one hand, and waste of time on the other. Whilst the half-hardy plants are in their greatest beauty, a tasteful eye will easily discover the weak and improvable points, and by observing the more satisfactory part, will readily perceive the most desirable future arrangement.

FRUIT GARDEN.

Strawberries.—In places where the work is kept in a forward state, it may be presumed that by this time a sufficiency has been potted for forcing, and that all the new plantations have been properly prepared and planted. As the fruit is all gathered, the old exhausted beds may be at once destroyed, preserving the younger, one or two year old beds, to afford the main supply next season; and it should be an object of especial attention to cultivate these plants in such a manner that they shall produce an abundant crop. As no more runners are required, those which remain should be cleared away; but taking care not to injure the leaves of the plants. Their growth during the remainder of the season should be encouraged by forking some very rich well-rotted manure into the ground about the plants. It is a point of the first importance to preserve the old foliage uninjured; as upon it depends the perfect elaboration of the sap for the production of next year's crop.

KITCHEN GARDEN.

In northern or cold situations no time should be lost in sowing the main crops of winter Spinach in good rich ground, deeply trenched, avoiding thick sowing in all cases. The rows should stand about 16 inches apart, to allow a free passage for forking, cleaning, and gathering the crop. At the first gathering every other plant should be drawn out; thus giving additional space to those which are to produce the late winter and spring supply, and which should ultimately stand 6 or 8 inches apart. Some strong, well-curled plants should be selected from the spring sowing of Parsley, carefully lifted with large balls, and planted at the foot of a south wall. A quantity planted in boxes proves very useful during a long continuance of severe weather in winter, if placed in a cool Peach-house or similar situation; or a spare light or two may be devoted to the protection of the finer Parsley for garnishing. Let the early kinds of Potatoes be got up as soon as the tops are ripe enough; and let particular pains be taken to pick out all the tubers, as those left in the ground are very annoying in future years. Let the produce be sorted, and if of an approved kind, let all the small and moderate sized tubers be carefully preserved in dry sand or charcoal dust. Be at a little trouble also to test the different varieties, and do not allow your number of sorts to exceed half a dozen, selecting those only which are most liked on table, free croppers, early in coming to perfection, and least liable to be affected with disease. Many of the medicinal and pot herbs, commonly cultivated in gardens, will require gathering this month; the proper time is just when they are in full flower. They should be cut quite clean on a fine warm day, tied in small bunches, and hung up in an airy room till they are perfectly dry; after which they should be put into tin canisters, glass bottles, or paper bags, to preserve them from dust. Either of the former contrivances are preferable to the latter, as they guard the herbs against damp, and prevent the escape of their delicate aroma; along with which their virtues are in a great measure evaporated. Continue, as time and space occur, to plant Cauliflowers and Coleworts. Make a sowing of Onions rather thick, and of some good sort of Cabbage, for spring use. Pull Shallots, and lay them on a gravel walk, or on dry ground, for a few days before removing them to the store-room. Onions, also, will require attention. Plant out some stout plants of early Cabbages for winter use, 6 inches apart, and a foot between the rows; this will give room enough for the best dwarf kinds, as every other one can be removed while young, and thus leave room for the rest to grow larger.

State of the Weather near London, for the week ending July 31, 1851, as observed at the Horticultural Garden, Chiswick.

| July. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth 1 foot deep. | Of the Earth 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 25 | 25 | 29.883 | 29.469 | 71 | 51 | 61.0 | 60½ | 58 | N.E. | .00 |
| Satur. .. 26 | 26 | 29.749 | 29.636 | 69 | 44 | 56.5 | 61 | 59 | W. | .01 |
| Sunday . 27 | 27 | 29.914 | 29.898 | 72 | 37 | 64.5 | 60 | 58½ | S.W. | .02 |
| Monday 28 | 28 | 29.895 | 29.803 | 69 | 57 | 63.0 | 61 | 59 | S.W. | .06 |
| Tues. .. 29 | 1 | 29.790 | 29.788 | 75 | 49 | 62.0 | 61 | 59 | S.W. | .03 |
| Wed. .. 30 | 2 | 29.973 | 29.857 | 73 | 55 | 65.0 | 62 | 60½ | N.W. | .52 |
| Thurs.. 31 | 3 | 30.000 | 29.886 | 73 | 62 | 67.5 | 62 | 60 | S.W. | .01 |
| Average . | | 29.887 | 29.759 | 72.0 | 53.5 | 62.7 | 61.1 | 59.1 | | .65 |

July 25—Overcast; very fine; cloudy.
— 26—Very fine; cloudy.
— 27—Cloudy and fine; slight showers in the evening.
— 28—Cloudy; rain; densely clouded, with some large drops of rain occasionally; fine.
— 29—Fine; showers, with hot sun at intervals; very fine; cloudy.
— 30—Foggy; very fine; heavy rain 6—S rain, cloudy.
— 31—Hazy; overcast; fine; slight shower; overcast.
Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending August 9, 1851.

| August. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 3 | 71.2 | 51.6 | 62.9 | 11 | 1.03 in. | 3 | 3 | 2 | 1 | 2 | 9 | 4 | 1 |
| Mon 4 | 73.4 | 52.3 | 63.8 | 14 | 0.85 | 1 | 2 | 1 | 3 | 3 | 10 | 4 | 1 |
| Tues. 5 | 71.2 | 53.1 | 63.8 | 12 | 0.43 | — | 2 | 3 | 2 | 3 | 9 | 3 | 3 |
| Wed. 6 | 73.8 | 52.2 | 62.5 | 10 | 0.58 | — | 5 | 1 | 1 | 3 | 6 | 7 | 1 |
| Thurs. 7 | 74.6 | 51.0 | 62.8 | 6 | 0.7 | — | 2 | 2 | — | 4 | 5 | 2 | — |
| Friday 8 | 73.4 | 4[illegible]6 | 62.5 | 9 | 0.40 | 2 | 3 | 2 | — | 4 | 10 | 4 | — |
| Satur. 9 | 7[illegible]9 | 51.4 | 63.7 | 9 | 1.06 | 1 | 3 | 1 | — | 5 | 10 | 5 | — |

The highest temperature during the above period occurred on the 9th, 1835—therm. 89 deg; and the lowest on the 6th, 1833—therm. 36 deg.

## Notices to Correspondents.

Birds: *A Liverpool Sub.* We cannot at present answer your question. When the series is ended, we shall be better able to judge; most likely not.—The Bullfinch: *C H.* Your bird is suffering from too close confinement, which has brought on this peculiar and troublesome disease. His departed vivacity and constant inactivity prove there is something radically wrong in his constitution. The first step towards his recovery will be to give him amusement, and so distract his attention; for you must ever bear in mind that animals, like ourselves, occasionally require and must have "a change." I should recommend your devoting a small chamber to his use, and letting him have the entire range of it, with the use of a bath. He will never get thoroughly well, but you may contrive to prolong his existence for a short period longer. His feathers will be replaced when he moults. The corns on his feet will be "fixtures." At his age, they cannot be removed. All you can do is, to cosset him, and vary his diet as much as possible. These are most affectionate birds, and will amply repay you, in the best way they can, the anxiety you exhibit for their welfare. *W. K.*—*M W.* The illness of your favourite bullfinch is greatly to be regretted; the more so, as no reasonable hope can be held out for his recovery. If he has attained the age of 11 years, he is the Methuselah of bullfinches. They rarely exist longer than four years in a cage. The swelling has attacked your bird in a place and in a manner which will necessarily prove fatal. Every exertion he makes, adds to his torture. Violent inflammation may be expected shortly to supervene; when even the use of one leg, which he now has, will forsake him. All you can do is, if you have not the fortitude to "remove" him prematurely, to place his food and water readily within his reach. Beyond this, one kind office *only* remains to you,—to bury him, and "let fall a tear on his little grave" *W K.*

Celery: *Constant Sub.* You may tie up your Celery plants as proposed, with advantage; but do not tie them too closely, or you will do injury.

Diseased Grapes: *J S.* It is a curious case, and is under examination ‡

Figs: *Anon.* Seedling Figs do not require fertilisation, nor do any others. The old notions about caprification were founded on imperfect observations and false inferences.

Fuchsias: *S N F.* Your plant does not flower, because it is too luxuriant. Cut its roots, or cramp them in a smaller pot; keep it in a hot dry place, and do not prune it. In this way you will throw it into flower.

Fuchsia spectabilis: *S E C.* You will find a good article on its treatment at p. 758 of last year's volume. ‡

Glazing: *J W P.* We much prefer *Hartley's* rough plate glass to all others for horticultural purposes; but you must take care that it has sufficient play between its edges and the rebates into which it fits. Take care, too, that it is well annealed. All glass will break if the laps are not puttied, unless there is so much space left between the two laps as will render capillary attraction impossible, or unless the laps are *very narrow*. You had better putty them, since you have plenty of ventilation elsewhere.

Grapes: *Inquirer.* Your glass house will ripen good Grapes without fire heat, and if Peaches and Nectarines are trained near the glass and not shaded, they would be forwarded three weeks or a month, by carefully husbanding the sun's heat. You might put a variety of things in your house during February and March, such as boxes filled with Seakale, Salad, &c.; but we would not advise you to try too many things, until your experience becomes more mature. Your trees have suffered from too much confinement; wall trees do best when the covering is removed during fine weather, and this may very simply be done by means of lines and pulleys. The season has had something to do with your Champion Peas all ripening at once. You should have sown once a fortnight till the middle or end of June for a succession.—*K E C.* They are covered with mildew, for which sulphur applied early enough is a certain cure. See p. 469 of last week's Number.‡

Heating: *W A Crousaz.* If you stop the flow of water, no return will be possible. Keep your house damp when the Vines are growing, and you will have no red spider. As for what is there now, when the wood is ripe and quite hard, scrape off all the loose bark, and wash the branches with a mixture of lime and sulphur. At the same time whitewash all the walls and places where insects can harbour.

Insects: *J C M.* The Turnip leaves were so crushed by the post that it was impossible to determine by which of the different insects which attack the Turnip the various holes had been made, as no traces of insects were to be perceived. We however refer you to our article on the Diamond-backed Turnip moth in this week's number. *W.*

Mr. Myatt's address is Manor Farm, Deptford.

Names of Fruits: *Baldock.* The Pear is supposed to be the Beurré Diel; and the Apple the Hawthornden ‖

Names of Plants: *T S D.* Medicago maculata.—*J B.* Cerastium incanum.—*A Subscriber.* It is the curled Witch Elm, Ulmus montana crispa—an accidental monstrosity propagated by grafting or layering.—*J S, Newport.* Myrsine africana.—*Aline.* Stephanotis floribunda.‡—*L B.* Cuscuta epithymum.—*P P.* Lotus tetragonolobus.—*Ruby* It appears to be a leaf of Quercus tinctoria.—*C E S.* A deciduous Cypress.—*T S.* The Gladiolus is Antholyza æthiopica; the other looks like a morsel of Bryum ligulatum.—*W.* It is a starved specimen of Epipactis latifolia; E. palustris invariably grows in bogs.—*Ch. M—l.* Cattleya granulosa *var.* Leopoldi; Stanhopea Lindleyi; Gongora maculata *var.* citrina; the Pleurothallis is not determinable, it looks more like a Bolbophyllum; the Oncidium withered before we could make a sufficient examination of it. Perhaps we may name it hereafter.—A few enquiries stand over for further consideration.

Peas: *Anon.* The large flat pod you sent is the Sugar Pea, *Pois Sans Parchemin*, the pods of which are eaten in a young state, like those of French Beans. The other is the Auvergne, a very excellent and prolific variety. ‖

Ridge Cucumbers: *Anon.* Your plants are rotting in consequence of being exposed to too much wet, and at the same time a low temperature. The late weather has been extremely unfavourable to ridge Cucumbers. Cannot you put frames over your plants till fine weather returns?

Strawberries: *A Constant Subscriber.* The Downton is one of the best sorts we have, and can be procured by any respectable nurseryman.

Turnips: *T T.* They are attacked by what is called "Fingers and toes," a disease reported, at p. 573 of our last year's volume, to be prevented by a liberal application of the scrapings of roads mixed with calcareous gravel. A good dressing of wood-ashes also tends to obviate the evil. ‡

Vines: *A B., Hoddesdon* Luxuriant growth and a damp atmosphere have caused the small green excrescences to appear on your Vine leaves. They do no harm. ‡—*J H.* The leaf you have sent is covered with Torula fumago or Smut Fungus. It arises from damp and bad ventilation.—*J M.* Your Frontignan Grapes are shanking because their roots are in too cold a soil; perhaps too far off the surface. The Frontignans are delicate varieties, and cannot bear a cold bottom. Glad to hear that you have cured mildew with sulphur. It is a certain remedy applied in time and with perseverance.

Violets: *J E.* Grow them in ridges as Mr. Beach does. See our Home Correspondence of to-day.‡

### SEEDLING FLOWERS.

Calceolarias: *T B.* Your blooms had all become detached from the stalks when they reached us, and therefore we are unable to particularise them according to the numbers. They are for the most part large, rich in colour, and beautifully marked, but they all want what florists call smoothness. A few of the best of them might however be retained, and tried another season.*

Pansies: *P P.* Not worth naming. It is too coarse.*—*W D.* Dried up. This is not a good time of year to pass opinion on them. Send them again in September.*

Pelargoniums: *R. N.* Apparently a nice variety, which we should like to see again; for the bloom sent was considerably injured by travelling. *

Picotees: *T M S.* Of no value whatever, except as showy border varieties, and they are not so good for that purpose as many already in cultivation.*

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# The Agricultural Gazette.

*SATURDAY, AUGUST* 2, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | |
|---|---|---|
| TUESDAY, | Aug. 5 | Yorkshire Agricultural Society's Annual Meeting at Bridlington. |
| WEDNESDAY, | — 6 | Agricultural Society of England. |
| THURSDAY, | — 7 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, | — 13 | Agricultural Imp. Soc. of Ireland's Annual Meeting at Dublin. |

WE last week mentioned the singular and formidable appearance of a swarm of moths and their caterpillars in the Turnip fields in Cornwall, and in another column we print some observations upon this case. We have now to record a similar misfortune in Ireland, near the bay of Tramore, in the east of Waterford. Some insect, a moth also, though probably not the Cornish one, has produced there swarms of caterpillars, that have already all but destroyed one-third of the Turnip crop; and as the caterpillars are only just hatched, will probably make an end of the whole. They prey upon one side only of the leaves, and rapidly sweep off all before them. The Turnip crop on Lord FORTESCUE'S property, reported to have been in a beautiful state, has been thus ravaged, and the fields are now said to look as if devastated by a swarm of locusts.

The small size and injured state of the caterpillars that have been sent us, render it impossible to name the insect, until we receive further particulars. In the meanwhile, we would solicit information from our correspondents as to the appearance of this new pest in other parts of the country, if unfortunately it has appeared.

FEW events have attracted more interest in the sister country of late than the approaching GREAT NATIONAL CATTLE SHOW of its Agricultural Society, which we perceive, by our advertising columns, is to take place in Dublin on the 13th of August. In whatever way we may regard this meeting, we must consider it one of great importance, both as regards the social state of Ireland generally, and its connection in an industrial way with the inhabitants of this country.

We are glad to perceive that the Council give every encouragement to strangers from all quarters to exhibit, and the Great Challenge Cup is in itself sufficient to induce numbers to cross the Channel to contend for it. This prize was won last year at Cork, by Mr. WILSON'S celebrated heifer, "the Lady of Brawith," and in 1849, in Dublin, as a yearling; but having failed to prove in calf, she forfeited the cup, which is now in the possession of the Hon. Mr. NUGENT, and is open to be challenged again this year.

We are also happy to see that the Council fully appreciate the value of agricultural machinery, and not only give large sums in prizes for the purpose, but also undertake to carry them from Liverpool to Dublin free. We trust that this accommodation will be sufficiently appreciated, and that most of our English exhibitors will avail themselves of the facility, and show large lots in Dublin. There is nothing, in fact, that the Irish people want more at present than good farming implements, to reclaim the country from the state of nature to which it is in many parts reduced; and all the new proprietors of the Encumbered Estates know this, and are striving hard to obtain them. The tenant farmers of England and Scotland are also beginning to find their way over, and these are the men who will not set to work unless they have proper tools for the purpose.

On the whole, we wish the meeting every success; coming as it does one month after the Windsor Show, it cannot fail to attract thousands.

LET us now advert to a few of the circumstances which render the cultivation of Turnips somewhat different in the north and south parts of Britain. Twelve years ago, the greater part of the Turnip crop in the north was dressed with bones, or a little dung in addition. The season of sowing seldom commenced until the 10th June, and was generally terminated about the 25th. This practice was perfectly correct and proper according to the circumstances, because, when the crops were early sown, the warmer season hastened on the crop to a premature ripeness, and a small weight of bulbs. In dry seasons, when the crop had not a supply of nitrogenous manures the yield was light. Since the introduction of guano, and the extension of extension of the feeding of cattle, a great advance has been made, for Turnips are now sown much earlier, as the nitrogenous element forces the plants to expand its leaves in the early part of the season, and its vitality as well as its nitrogen-collecting functions are by this means maintained in the end of the season. The common varieties of Turnips, however, did not stand the frosts of winter well when early sown; but the Swede has now become a most invaluable variety, as it admits of being sown in the early part of May, at least on all soils moderately retentive of moisture. In Lothian, for instance, a favourable season after the 1st of May is not suffered to pass, but seized upon to put in the crop. The great advantage of the Swede in Scotland is, that it admits of early culture; but this can only be done when it is well dressed with nitrogenous manures. Mr. LAWES entirely reverses the climatic action of ammonia; for if the following passage has any meaning at all, there is a double fallacy in it:—"Peruvian guano, which contains a large quantity of ammonia, as well as phosphates, is found to be a much more certain manure for Turnips in Scotland, where the fall of rain is large, than in those parts of England where it is much less." The superiority of the seasons in Scotland over England, for the growth of the Turnip, depends more upon a lower temperature in the early part of the season than any slight difference in the amount of rain. It is in dry seasons that ammonia is most required, and it is in moist seasons, and on the west coast of Scotland, where superphosphate is a favourite and successful manure. Last season (1850) was characterised by a much larger fall of rain in autumn, on the west coast of Scotland, than on the east. In the west the Potatoes suffered from disease, but they almost escaped in the east, where the Oat crop was remarkably light, in consequence of the drought. In a conversation which the writer had with Mr. KENNEDY, Myremill, in Ayrshire, he stated that he had 7 tons of bulbs more per acre where superphosphate of lime was applied along with the farm-yard manure than with guano, for the latter manure had developed the Swede stems to a most injurious extent, whereas superphosphate promoted the early formation of bulb. But the case was very different on the east coast, where the season was so dry. Mixtures of phosphate of lime and ammoniacal salts produced excellent late sown crops, where superphosphate of lime was little else than a failure. Mr. HOPE, of Fentonbarns, writing the report of the crops of East Lothian in *Scotsman* of 1st October, says, "The effect of guano in promoting vegetation in dry weather has this season been rendered strikingly visible; where dissolved bones, coprolites, and artificial mixtures have been applied to the Turnip crop, *along with a portion of farm-yard manure*, the drills (ridges) done with Peruvian guano stand up on each side of them like a strong fence, and are an excellent crop; the former are scarcely yet the shape of Turnips." We would almost think this would satisfy any one on a subject which is practically well understood and acted upon, but where mere theorising on isolated facts tends to mysticism and misunderstanding.

The chief advantage which the Scotch farmer has over the English, in regard to the growing of Turnips, is, that the lower temperature in the north admits of a longer period of growth, and the nutritive qualities of the crop are superior; hot, dry seasons more frequently happen in England than in Scotland, and thus ripen the crops and impair their nutritive constituents, and when they have been liberally dressed with nitrogenous manures they are liable to decay in the store pits. The English farmer has Mangold Wurzel to substitute for early Turnips; and, according to the best authorities, he can as easily grow 30 tons of this root as the Scotch farmer can raise 30 tons of Swedes.

The habits of our cultivated plants are very different, but there is a great analogy in many of them, in their greater or lesser reliance on the soil for their organic food. This, in practice, determines their exhausting qualities; for example, we observe many points of resemblance in the exhausting effects of Wheat and Turnips when they are grown beside each other, through the dry, cold months of spring. A great many of the crops which are grown in our rotations possess like properties, and have been naturally looked upon as exhausters or restorers of fertilisers, according to the different states in which we have placed them. Barley can be grown side by side with the Swede; in Scotland they may both be sown in the end of May, and produce excellent crops. Under these circumstances Barley will be much less exhausting than it would be when sown on the 1st of March. This functional resource of the plant, when it becomes less dependent on the soil for organic constituents, is mainly atmospheric. It is totally independent of the mere quantity of rain or amount of heat. It evidently depends on temperature and the watery vapour existing in the atmosphere. We shall, there-

fore, be compelled to diverge a little, and consider the effects of temperature on our cultivated crops, taken in conjunction with the amount of watery vapour which is so variable a component in the elastic medium which surrounds our globe. *R.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. XII.—Of the dozen Portable Steam-engines in Class 9, we can say little; we content ourselves with pointing out a few peculiarities in those which seem to be the most pre-eminent. Garrett's engine is noted for having its fly-wheel axle and crank at one end of the boiler, and the cylinder at the other; so that by a great length of connecting-rod, the usual friction against the guide-bars is much diminished. The force pump, worked from the crank shaft, is attached to a cistern in such a way that the foot valve is below the water, thus insuring a regular and unfailing action of the pump. The waste steam passes through a box inside the water-tank; and from this box the steam which is condensed is drawn off by a tap. All the working parts are so low as to be easily oiled and adjusted from the ground.

Clayton, Shuttleworth, and Co., of Lincoln, show two of their celebrated Prize Steam-engines, with horizontal cylinders on the top of the boiler, and fitted with improved governors. Their nine horse-power threshes out, clean, from 70 to 80 quarters of mown Wheat in nine hours, consuming 8 to 9 cwt. of coal: their seven horse-power, from 50 to 60 qrs., consumption of coal from 6 to 7 cwt.; and their five horse-power, from 30 to 40 qrs., consumption from 5 to 6 cwt.

The Patent House Steam-engines of Tuxford and Sons, Boston, have vertical cylinders enclosed, with their connecting-rods, cranks, &c., in a case at one end of the boiler. The wearing parts are thus effectually protected when at work from grit and dust, and at all times from the weather; and they well deserve the appellation of "safety engines," their working parts being secured from mischievous interference under lock and key. The vertical position of the cylinder is considered superior to the horizontal; as the weight of the piston in the latter case tends to wear the cylinder oval. The boilers are made upon an improved principle, having fire boxes with water space flues leading from them, and returning through lap-welded iron tubes over them. The consumption of coal for a six horse-power engine is about 4 cwt. per day; and this engine is extremely portable, being a moderate load for two horses on good roads. One of the engines exhibited has an oscillating cylinder, and in the other it is fixed.

Hornsby's steam engine we should think to be not only a first-rate agricultural engine, but one of the best high-pressures ever constructed for any purpose; for at its trial we believe the amount of coal consumed during two hours and four minutes, at six horse-power, was only ¾ cwt.; or 6¾ lbs. per horse-power per hour. This extraordinary economy of fuel seems principally owing to the cylinder's being enclosed and kept hot in the steam chamber immediately above the fire box. All the working parts can be easily reached, as they are not cased in; and the piston may be easily got at for packing, notwithstanding the cylinder being within the boiler. Besides effecting a great saving in fuel, this peculiar construction is a certain preventive against injury from frost affecting the condensed water in the cylinder, or pipes connected with it. The engine, simple, elegant, and light—weighing little more than 2½ tons, is mounted upon four strong carriage wheels, which being of wood are particularly adapted to rude farm roads, and being large and near together are of comparatively light draught. The hindermost, or cylinder and fire-door end of the boiler is supported upon springs. The governor is on an improved plan; gun-metal caps being so placed as to receive the heavy iron balls when not at work, and prevent them from swaying about when travelling.

Ransome and May exhibit a portable engine fitted with one of Penn's patent trunk engines, in which a small sliding cylinder within the fixed one, takes the place of the usual piston rod—the connecting rod being attached by a joint to the centre of the inner tube. We are unacquainted with the peculiar merits of this form of engine.

We will now complete our notices of articles in Class IX., before proceeding to a general account of some among the many objects interesting to agriculturists distributed through the various departments of the Crystal Palace. And first of all we have to ask the reader's attention again to the subject of steam culture; for scanty as we may have thought inventions toward this end, we find that, once touched upon, this is not a subject to be easily got rid of. Steam is resolved to try its skill in the mole and rabbit line; and inventions of machinery for doing tillage work are crowding so thickly into the present period that, depend upon it, alluvial land without stones means to get ploughed, dug, forked, or otherwise comminuted and upturned before the 20th century arrives. We have now to describe in a word or two a "digging machine," which seems more likely to be useful than any other steam cultivator in the Exhibition; but we question whether, even before this model has got manufactured on a large and ultimate scale, it has not been already eclipsed by a machine just invented we hear somewhere in the north; a machine which tears the ground up with tines or teeth arranged upon a revolving bar. As we have before said, something of this sort, that shall pulverise the soil fine enough for a seed-bed, yet not so fine as to be unduly liable to "strike" and run together with a little rain, appears to us most likely to accomplish the desired object. The machine in question is a working model of a digging-machine, invented and manufactured by J. Parsons, of Craven Farm, Stamford-hill, Middlesex. This model has eight spades (or rather seven spades and a fork, to show that the form of the tools may be varied), attached to a bar in such a way that each spade can be turned, as it were, on its axis. This bar is raised and lowered by means of two large wheels at right angles to it, one at each end, carrying peculiarly shaped grooves. The bar is also partially turned, so as to set the lower edge of the spades backwarder or forwarder; and this motion is effected by a lever and connecting rod working in a groove in another large wheel. This groove is of peculiar form, and occasions an oscillating motion of the spades in their descent, and moves forward their lower or cutting edges as they rise. In planning this machine the inventor has kept in view the movements communicated to a common spade in working by hand; the oscillation of the spades in descending into the ground is intended to ease them into it; as the spades rise they slope forwards, so as to take up the spits of earth upon them; and when they reach a certain height they are simultaneously turned round one quarter of a revolution by an inclined curve and rod for the purpose, so as to turn the spits upside down as they fall from the tools. A steam-engine, which can be used for other purposes on the farm, is to be placed upon the platform of the machine, which is stationary while the spades are loosening, raising, and turning over the soil, but moves forward a little, to the distance required, before the spades again enter the ground. According to calculation, about a quarter of a horse steam power ought to lift one acre of ground 1 foot in thickness 2 feet high, in the course of 10 hours; a small engine, therefore, might work, if well arranged, 8 or 10 spades very easily, and not make a very weighty machine. On soft ground the inventor proposes to have four planks; the machine to be working upon two of them whilst the attendant is taking up the other two from behind, and laying them down in front. This would be necessary, we imagine, as the carriage wheels on one side would have to travel over the dug land; if the wheels are not made so wide apart, the planks would be in the way of the spades. The machine is thus to advance by successive steps upon a sort of temporary tram line, or on the bare ground, as the case may be; leaving a breadth of some 8 or 10 feet dug over behind it.

Digging is preferable to ploughing; and if this engine can accomplish what it promises, no farmer need care in future for either tariff or hariff; he will prosper without a corn duty, and will have plenty of hands for cleaning and weeding. We cannot tell, of course, how the mechanism will answer in the field; but we have certainly misgivings as to the oscillatory motion of the tools as they enter the ground; perhaps experiments may have proved such a movement possible, but we should not think it likely that these spades would do other than break directly they entered the earth, which, as far as our personal experience in delving informs us, stoutly resists any other than a straightforward, downward movement of the inserted blade, except a certain prising motion, the leverage of which seems indispensable, in penetrating hard ground, and which does not exist in this machine. A spade, we think, ought to be thrust straightly into the ground, or, if it be necessary to ease it a little, let the prising be done by moving the bottom of the spade slightly away from the un-dug land, for the square or spit of soil to be dug will yield to such a movement; but it seems impossible to move the bottom of the spade towards the hard and undug ground (as must be the case with an oscillating tool) where an advance can only be made by an actual compression of the soil. We do not know whether our meaning is clearly expressed; but with this exception (a fault which, if needful, may be easily remedied) we are of opinion that this digging machine is very well calculated for performing what we wish. *I. A. C.*

### SUPPLEMENTARY LIST OF PRIZES awarded in Class IX., Agricultural Implements.

| Catalogue. | Name of Exhibitor. | Subjects included in the Award. |
|---|---|---|
| 128 | Barrett, Exall, and Andrews, Reading. | For their steam-engine, threshing-machine, and patent gear and Linseed and corn-crusher. |
| 510 | Delstamhe P., Brabant, Belgium. | A plough. |
| 74 | Jenken, W., Utrecht. | A plough. |
| 404 | Prouty & Mears, Boston, United States. | A plough. |
| 1028 | Talbot, Brothers, near Bourges, France. | A plough. |
| | Vichon, Lyons. | A seed and corn separator. |
| | HONOURABLE MENTION. | |
| 28A | Fowler, J., Bristol. | Draining plough. |

J. A. LLOYD, Special Commissioner, Deputy
July 31. in charge of Jury IX.

## NEFARIOUS SYSTEM OF ROBBERY.—ADULTERATION OF GUANO.

THAMES POLICE STATION.—Philip Long, a lighterman and barge owner of Bermondsey, and Thomas Pickering, described as a merchant, who is the occupier of large waterside premises in Narrow street, Ratcliffe, near the Regent's Canal Docks, were brought before Mr. Yardley in custody of Superintendent Evans, of the Thames police, and Daniel Forrester, of the City police, charged, the former with stealing 220 bags of guano, value 200*l.*, the property of Messrs. Antony Gibbs and Co., of Lime-street, and the other with feloniously receiving the property, well knowing it to be stolen.

The investigation created an unusual degree of interest in a crowded court, and it may be necessary to state that the officers engaged in it have discovered that large quantities of guano had been improperly disposed of on its way from various ships in which it was imported, to the farms or premises of the buyer, and other stuff of no value substituted. The manner in which this has been done, is explained by the following:—

Mr. Hobler, solicitor, who appeared for the prosecution, said, that Messrs. Antony Gibbs and Sons were agents for the Peruvian Government, and shipowners and importers of guano, and they considered it their duty to come forward for the protection of themselves and the public, and to expose a nefarious system of fraud. He could not produce much evidence that day, but he should put such facts before the magistrate as would justify a remand both of the alleged thief and the receiver.

Mr. George Drory, the master of the sloop Albion, a coasting vessel, stated that, on the 15th of May last, he delivered to Long an order, which he received from the house of Messrs. Gibbs, to receive 220 bags of guano from a ship in the West India dock. Long was directed at the same time to bring the guano in his barge alongside the Albion at Cotton's Wharf, Tooley-street, near London-bridge, as soon as possible. On receiving the order, Long said he had a barge already in the West India dock to take in the guano, and gave him to understand he would bring it alongside the Albion on the following day. The barge did not come alongside the Albion till the following Monday morning, the 18th of May, at 5 o'clock. Witness asked Long the cause of the delay, and he stated that he did not load the guano till Saturday night, and believing that it would not be taken on board the sloop on Sunday, he thought it was of no use to bring his barge out of the dock till Monday morning. The bags of guano were hoisted up from the prisoner's lighter, and witness observed to Long they were not the same description of bags as those in which another freight of guano were deposited on a former voyage. They were very different bags indeed. Long said he was not aware there was any difference. 221 bags of guano were brought on board the sloop, the order from Messrs. Gibbs and Co. was only for 220. When they were all out he spoke to Long, who said, "They have given you one over," and witness observed it was a thing he had never known before. He paid Long 14*s.* for lighterage, and asked if there were any other charges, to which he replied in the negative. The prisoner's barge was called the Old Soul. The guano was carefully stowed away in a room distinct from the rest of the cargo, and never interfered with until it was unshipped at Goole, and delivered on the farm of Mr. Robert Scofield, adjoining the river there. Some of it was immediately taken into the field, and it was discovered that it had been most extensively adulterated, and that it was, in fact, quite a different sort of stuff from the guano which was not adulterated, and which he had taken down to the same farm on Messrs. Gibbs' account a few weeks previous. The bags were also different, and the weight of them less than the first cargo. The adulterated guano was heavier in weight, did not have the same appearance in the shovel as the real guano, and he had since understood that its fertilising properties were very small. Mr. Scofield's bailiff recommended him to take back a bag of the adulterated guano, which was sealed up, and delivered it to Messrs. Gibbs' office in London, and he did so. The bag was opened by Messrs. Gibbs' people in the City, and he was directed to take a sample of it to Professor Way, at the Royal Agricultural Institution, in Cavendish-square, for the purpose of being analyzed. The analysis had not been completed. He had not seen Long since he had delivered the 221 bags of mock guano on board the Albion until that day. In cross-examination by Mr. Pelham, who defended the prisoner, Mr. Drory said half a score of the bags were opened on Mr. Scofield's farm. The stuff in all of them appeared to be the same.

John Parsons, a labourer, said he was living in Legg's-buildings, Bow-common, and had been employed on Mr. Pickering's wharf. He recollected the Saturday previous to the Epsom race week there were two barges alongside Pickering's wharf. He heard they both came out of the West India Dock. He was not sure of the names of either of them. Could not say whether one was the Old Soul. He had been often employed in loading and unloading barges for Pickering, both in the Lea-cut and the river Thames. He could not say whether either of the barges moored alongside the premises contained guano. He did not know what guano was.

Mr. Yardley.—Then you are the only man in London that does not. Mind, sir, how you give your evidence. Do you know the smell and colour of guano?

Parsons.—Oh, yes, sir; I know the smell and colour—I should say the two barges contained guano. We began our work between three and four in the afternoon. We worked one barge out, and then began the other. We carried the bags of guano to a place under cover, on Mr. Pickering's wharf. We cleared one barge that night, and got a few bags out of the other. We went to work again on the Sunday morning. We often worked for Mr. Pickering on Sunday. We were turning stuff over. I don't know whether it was guano or not—it was something or other.—Mr. Hobler put some other questions to the witness, which he answered evasively.

Mr. Yardley (indignantly.)—You seem not to be aware that you are sworn to speak the truth, the whole truth, and nothing but the truth. You are giving your evidence in a way that makes me believe you are concealing the truth.

Parsons.—I am telling the truth as far as I know.

Mr. Yardley.—No, you are not; attend to the questions, sir.

The Witness, who gave his evidence very unwillingly, and seemed anxious to screen the prisoners, continued at great length. His evidence amounted to this: that Long was on his master's premises on Saturday, the 17th of May; that he told him and others to go to work; that they were engaged in unloading barges containing guano, turning over stuff resembling guano, filling bags, and loading the barges, both on Saturday and Sunday. He took the bags out of the scales in which their contents were weighed, into the barges. He did not see where they were brought from. He could not say he loaded the barges with the same stuff that he brought out of them. Some of the bags taken out of the barges were carried up-stairs and some below. He would not be sure the Old Soul was one of the barges he saw alongside the wharf.

Mr. Hobler.—You were more accurate this morning. You told me you saw the Old Soul.

Mr. William Knowles said he was employed by the East and West India Dock Company to take the weights of guano landed from vessels there. On the 17th of May he delivered into the barge Old Soul, to the order of Messrs. Gibbs and Co., 220 bags of guano, containing 14 tons 6 cwt. 1 qr. and 11 lb. He saw it taken out of the ship Invermore, and delivered over the side into the barge. Long was on the deck of the Invermore while the barge was being loaded. He believed Pickering's brother was with him—he could not say. The guano was delivered into the Old Soul between the hours of 1 and 2 o'clock. Long said he was very anxious to get out next tide, and some beer was sent for and given to the labourers, to expedite the work. All the bags containing the guano were numbered from 6102 to 6201, inclusive. The dock company provided the bags. A sample of guano was taken from every cargo, and preserved in the dock.

Mr. Drory recalled, said the bags containing the adulterated guano or earth, brought on board the Albion, were not numbered at all. His sloop was lying at St. Saviour's dock, Horsleydown, on Saturday, the 17th of May. The tide flowed till 5 o'clock that afternoon, and there was ample time for the barge to be navigated from the West India Dock to his vessel, before the tide began to fall.

Mr. Yardley said it was evident the bags delivered on board the barge Old Soul, were not those put on board the sloop. He appealed to Mr. Evans, superintendent of Thames Police, if

there was time for the prisoner Long to have reached the sloop on the same afternoon.

Mr. Evans.—Yes, sir, ample time, if the tide flowed till 5 o'clock. The sloop was at Dockhead, Horsleydown. It would only take him one hour from the West India Dock to Dockhead.

Mr. Pelham put in the Watermen and Lightermen's Company Tide-table, which showed that it was high water at London-bridge, on the 17th of May, at 19 minutes past 3.

Mr. Evans.—Then, if he was not loaded till 2 o'clock, he would not have time to reach Dockhead, because it would take him some time to get his barge out of the West India Dock. He then went on to state that he was with Forrester, the city officer, when the prisoners were apprehended together at Mr. Pickering's house, or a public-house near it. On reaching the station-house, Long made a statement which he took down in writing, and it was signed by the prisoner. It was to the following effect:—"Philip Long states that on Saturday the 17th of May, two barges were loaded with guano at the West India Dock from Gibbs'. I brought up one, and my man brought up the Old Soul; and, to the best of my belief, he delivered the same guano as he took in out of the ship on board the Albion, Captain Drory, off St. Saviour's Dock. The barge that I brought up I took to Pickering's Wharf, by order, where the guano was landed, part on Saturday night, and part on Sunday morning, and was re-loaded on Sunday for Deptford terminus of the South Coast Railway. PHILIP LONG."

Mr. Samuel Taylor, superintendent of the guano department, East and West India dock, recollected the loading of 14 tons of guano from the Invermore into the Old Soul. The loading was completed between one and three o'clock, and the Old Soul was taken out of the dock half an hour afterwards. Other evidence was given to prove the Old Soul and another barge called the Ann were both lying under Pickering's wharf on the 17th of May, that Long was owner of both craft, and that he was also in the habit of hiring barges. Some documents were also put in by Mr. Rucker, clerk to Messrs. Gibbs.

Mr. Yardley said that some of the papers handed to him did prove that Long's statement was true, and that two of his barges were loaded with guano on the 17th of May.

Mr. Hobler said the barge Ann was not loaded on account of Messrs. Gibbs and Co., and that the guano delivered on board the Old Soul was taken out, and rubbish of little value substituted. He could not complete the case that day, but he laid the foundation for a remand.

Mr. Yardley said the case at present was rather weak, particularly against Pickering, and that he would remand them for a week on bail.

Mr. Pelham.—On their own recognisances I hope, sir?

Mr. Yardley.—No; it's a very serious case. What are the means of the prisoners? The officers represented both prisoners were in good circumstances, and that Pickering was opulent.—Pickering.—Yes, and I have several vessels.

Mr. Yardley said he would take bail for Pickering, himself in 400*l*., and two sureties in 200*l*. each; and for Long, himself in 200*l*., and two housekeepers in 100*l*. each, to appear on Wednesday next.

Mr. Pelham.—It is late: we cannot provide bail to-night.

The prisoners were then sent away in the van to Clerkenwell prison. The officers, in the course of their inquiries, ascertained that a load of guano put on board the Ann was removed, and rubbish substituted and sent into the country.

JULY 30.—These defendants surrendered this day, when Mr. Ingham ordered them to be kept in custody, remanding them until Wednesday next to the Clerkenwell House of Detention.

## MANURES.—No. II.

PEAT ASHES.—The greater part of vegetables when consumed goes off into the air, the residue being chiefly composed of inorganic matters—chiefly potash, as when wood is burned—or a mixture of clay, silica, and the alkalies, in the case of peat, partly derived from the subjacent soil, and the inorganic remains of plants. Peat ashes are deficient in many saline compounds, from the action of water washing them away, and, hence, why less soluble matters, as clay, lime, and silica generally predominate. Peat ashes are transient, yet very stimulating in their action; their effects are more marked when sulphate of lime is present, as in the case of the peat ashes of Berks and Wilts; much more so when phosphate of lime abounds. Ashes are generally obtained from the combustion of turf where employed as fuel, or from the reclamation of bog or fen lands where paring and burning are resorted to; the red ashes are more fertilising than the white, the former containing sulphuric acid and soda, the latter clay and lime. The turf ashes obtained from the marshes in Holland are very valuable, from the large quantity of gypsum they contain; they are imported into this country at present but in small quantities, under the name of Dutch ashes. Coal ashes are procured from the burning of coal—a mineral of vegetable origin. They are well suited for top-dressing Grass lands (when applied at 45 to 70 bushels per acre) and in increasing the porosity of stiff clays; they contain gypsum, silica, magnesia, oxide of iron, and alumina. Wood ashes are procured from the burning of wood—the denser woods, as the Oak and Ash, yielding the greatest amount of potash; an alkali very caustic in its nature, and a good corrective of acidity in the soil. Wood ashes prove very beneficial when applied at the rate of 5 or 7 cwt. to Lucerne, Peas, and Beans; applied to Grass it destroys moss, and, like lime, promotes the growth of Clover; 7½ cwt. of ashes and 6 cwt. of bones are employed per acre with success in raising Turnips. Owing to the causticity of wood ashes they should be cautiously applied to the soils, and never mixed with fermenting manure. In addition to potash they contain carbonate of soda and Glauber's salts. Soot is produced from peat, varying in quality according to the material employed. It consists of charcoal finely divided—the acetates of ammonia (acetic acid or vinegar being a product of vegetable incineration). It is suited for all soils, those of a light nature particularly, and should be applied in moist weather, so that the ammonia in the soot, to which the causticity of the latter is owing, will not produce injurious consequences, or its volatile parts be dissipated. Rye-grass is much benefited by an application of soot, as is also sickly Wheat, the colour of which it improves to a deep green, and induces the plant to litter. Drilled in with Turnip seed, soot excites them to a rapid growth, or strewn along the drills when the plant appears above ground, it checks the ravages of the fly. Mixed with salt in equal proportions, it forms an invaluable top-dressing for Carrots and Parsnips. It is applied at the rate of 12 to 30 bushels per acre. Wood charcoal is not employed directly as a manure to any great extent; from its great absorptive powers it is generally employed in the preparation of manures, as urate, &c. Tanners' bark is slow in fermenting—the latter is hastened by making the bark into a compost with lime, earth, or dung, then applying it to stiff ground. Sea-weed is a manure procured from marine plants, and largely employed in maritime counties for manure. The best sea-weed is taken up in deep water, the plants being more luxuriant, and containing a greater amount of saline ingredients in their organism. It is employed as a top-dressing for meadow land when rotted with peat mould and liquid manure; it is mixed in layers with weeds, to hasten their decay; spread in drills in the planting of Potatoes; mixed up with farm-yard dung, or what is the very best way of using it—ploughing it fresh and dripping into the soil. It is used also when incipient decay has set in, for the production of Cabbages and Turnips; if put freshly into the drills, it heaves up—subsides—displacing the clay, and exposing the seed, owing to the large quantity of salt it contains giving off its moisture to the atmosphere at one time, and absorbing it again at another. Sea-weed is applied at the rate of 30 and 40 tons per acre, a ton conveying to the land 123 lbs. of mineral matters. It leaves, according to the age and species of the plant, from 13 to 26 per cent. of ash when burned, consisting of common salt, sulphate of soda, magnesia, with a little lime. Its organic part amounts to 13 or 20 per cent., consisting of soluble glutinous matter. *Libra.*

## Home Correspondence.

*Guano.*—If you will take the trouble to read a letter from me in the *Mark Lane Express* of this week, you will understand my views on the subject of guano. The truth is, that the *Times* inadvertently reported me to have said, that "if the *duty* on guano were reduced from 10*l*. to 5*l*.," instead of which, it should have been "that if the *price* were reduced from 10*l*. to 5*l*." This will show you how (very naturally) you were led to make the remarks in your Paper of last week. *Thomas Alcock, Kingswood, Epsom.*

*Hops.*—As this delicate plant is peculiarly liable to the destructive attacks of vermin at this season of the year, the process of fumigation is required for the annihilation of the enemy, so fatal to the advancement of vegetation. No chemical means have been found more efficacious for this purpose than common gunpowder, ignited after moisture. The combined action of sulphur and carbon, in a state of combustion, proves invariably successful in killing the insects, and when used in the manner proposed, becomes remarkably diffusive and pervading. By pursuing the course recommended, whole gardens may be cleared at a trifling cost, without any detriment to the crop, or risk of failure. *T.*

*Berkshire Pigs.*—The *Times*, in speaking of the Windsor Cattle Show, expresses some surprise there were not more of that useful breed of pigs, the Berkshire, exhibited, particularly as the show was in their immediate neighbourhood. As many of your readers may not be aware of the cause of so few being there, allow me to say that there never will be a good show of Berkshires so long as the present classification of pigs into the two descriptions of large and small pigs continues. Berkshire breeders generally will not bring their pigs into a class where the only chance of a prize seems to be enormous size, without consideration as to quality, profit, and general usefulness. It would be invidious, so immediately after the show, to make any remark on the immense white pigs which were favoured with prizes, I only hope their owners find them profitable in their own locality; but where we can only sell bacon at the best price, at a dead weight not exceeding nine score pounds, they are not adapted. I know there are great difficulties in arranging a new mode of classing pigs, not the least perhaps, that every one now who makes a cross or two of any kind gives his pigs a new name, till the breeds are almost innumerable; and you often see pigs possessing the same characters exhibited in each class, and also pigs possessing very different character classed under the same name, and this is likely to be the case so long as the present system of crossing continues; it requires a series of years to establish a breed of pigs which can be relied on as possessing decidedly distinguishing characters, the tendency of all breeding animals is to revert to their ancestors. You last year remarked that the Berkshire were too small for the large breed, and too large for the small; now we have all heard from our cradles of the happy medium as the most desirable course in life, may not this extend to the swinish multitude? and it is probable the Berkshire are as well, if not better adapted than any other breed to meet these depressed times—I believe they are the oldest breed now extant; they have been greatly improved as our short-horns and sheep are, their offal has been reduced, hair softened, a superior quality of flesh established, early maturity and great aptitude to fatten increased, while the robust constitution of their forefathers has been retained. As the new classification in cattle has answered so well, a little change in pigs might prove advantageous. I have been a breeder of Berkshire for many years, and I am quite satisfied in this locality they are the pigs to cultivate, but I am by no means blind to the excellence of Mr. Fisher Hobbs' and other descriptions; and if the council would decide on extending the classes to some of the most distinguished breeds, it might tend to the advantage of all. I think, although crosses are often attended with success, it is of the first importance to give encouragement to pure bred animals of all kinds. I trust you will not suppose these remarks are dictated by my feeling any annoyance at not having prizes for my Berkshires at Windsor. I feel nothing of the kind. The judges highly commended my pig, and I am perfectly satisfied with the result of the meeting; hoping to show again whenever I conveniently can, for the best of all reasons, because I have found it answer my purpose as a breeder.—I see you allude, in your Paper of Saturday, to an insect which is eating the leaves of the Turnips. The whole of the Swedes in this district are sadly eaten by a small green caterpillar, and also another smaller insect, under the leaf. We have had very growing rains during the last week or ten days, or the crop would have been permanently and very seriously injured. I have heard of farmers who have ploughed up many acres after they had been hoed and singled, but we have not any so bad as that very near us, although most of the crops have a very seedy appearance; they are, however, now looking rather better than they were two or three days ago, and I hope where the land has been well managed the check they have received will not be of any material consequence. I will enclose a specimen of the blight. *Edward Bowly, Cirencester.*

*The Turnip Crop.*—I send you a specimen of damaged Turnip leaves, with a few grubs and insects. The mischief done to the Turnips over a wide and extensive district in this county (Derby), is serious and irreparable; and no remedy at present known appears to remove or destroy them. Soot and lime have been tried without any effect. The insects chiefly lodge on the underside of the leaf, and have more or less dissected hundreds of acres. It is a new enemy to the Turnip, and more formidable than the fly, attacking them when the plants are 7 or 8 inches high. Of the history of this pest, I am entirely ignorant, never having seen it before. Some of the grubs are green, some of a light grey colour. When green, they seem to attain the largest size, and then take wings, jumping like the fly or grasshopper. It is a serious evil, and any information concerning it will be most acceptable. *J. Jephson Rowley, Rowthorne, near Chesterfield.*——The Swedes and Turnips in this neighbourhood are in some cases almost destroyed by a small green palmer. About three weeks before they made their appearance there were large quantities of small light brown moths in the Turnip fields, and I have no doubt that the green palmer is the larva of this said moth. I observed to a neighbour of mine that I thought some evil would result from these moths, and I am sorry to say that my neighbour has a field of 30 acres of excellent Swedes and Turnips nearly spoilt by the palmer; they appear very much like the palmer that ate the leaves of the Oak trees for acres together here this spring; they suspend themselves by thread-like cobwebs from the leaf of the Oak and Turnip, and strip the forest of its leaves. The Swedes, although looking well up to the time of their appearance, are in some cases wholly destroyed, and others so much injured that they will never recover. It appears a new enemy to the Turnip crop, and I fear, from what I have heard and seen, their ravages extend a long way. The Oak trees that looked like winter a short time ago have now burst into leaf again; this cannot be the case with the Turnips, as their hearts are eaten out. *J. Eames, Beck Farm, Beaulieu, Hants.*——As you ask for any information respecting the injury done to the Turnip crop by caterpillars this season, I write these few lines to tell you, that in this part of the country a great amount of damage has been inflicted. It seems to have arisen thus:—About three weeks, or perhaps a month since, vast numbers of small whitish moths were observed in the Turnip fields, by myself and labourers, and a few days after the leaves of early Turnips and Swedes and Rape were seen to be pierced with small low holes; nothing was to be seen on the outside of the leaf; but on examining the under surface, very small light brown and green caterpillars were discovered in great numbers; on being touched they made a sort of jump, about twice their length. The plants here, when attacked, were from 4 to 8 inches high, and quite strong and healthy, and were being hoed. The havoc made was very extensive and very rapid, and the result will be the destruction of at least half, and very probably two-thirds of the above-named crops. The later sown Turnips (Dale's and Sutton's Hybrids), now in strong rough leaf, have come up very well, and have as yet no appearance of any disease. I think, for the last four or five days, the crops attacked have been beginning to look better again, and where they had not been already hoed, and the plants consequently very thick, there is a prospect of half a crop; but where they had been thinned out, the devastation is very complete, and the ground must be sown over again. I tried several remedies, but whilst the insect was in vigour and in such multitudes, nothing could be of the least use. One of my labourers counted 137 on one plant. The same caterpillars subsequently made their appearance in the gardens, my own, and many others, and greatly injured the Cabbage plants. Some also found their way to the Brugmansias in the flower-garden. The Mangold Wurzel has not been touched; in some of mine, a single Swede had found its way, and was covered with the insects, the Mangold Wurzel on all sides remaining quite free. I imagine that (here) the injury is now over. The insect is now in small numbers, feeble, and passing into its next stage. I have heard of the same kind of injuries being done 10 or 12 miles north, and as many west of this place. It was altogether a new kind of enemy—to us at least. *J. H. Calcraft, Kempstone.*

*Drainage Expenses.*—I do not observe that your correspondent, Mr. Shelley, gives an answer to my enquiries, which you noticed in your leading article, respecting the particular charges to be incurred beyond the labour and materials required for the purpose of draining land. A proprietor or tenant can easily calculate their cost per acre, according to the width he means to adopt between the drains, but he wants other information, as stated in my former letter. The Government Commissioners charge 6½ per cent. for 22 years, which clears principal and interest. Mr. Shelley's company extend the time for 50 years, and lend money for buildings and roads, as well as for drainage, and I think I have heard the charge would amount to 8¼ per cent. for 50 years. This may answer the purpose of some "Tenants for Life," but what any one writing on the subject should do, either to assist agriculturists generally, or to induce them to apply to his company in particular, is to state the charge which he has paid beyond labour and materials; or if coming from a company, what per centage they would charge on the loan demanded for their expenses. This would simplify the thing, and strip it of the mystery there is in all undefined expenses, for advertising, inspecting, &c., &c. A reference to the company's office might or might not satisfy an enquirer, an explicit statement in your *Gazette* would meet the eyes of thousands. I do not say a company would be useless, but I could almost venture to state that if it is to thrive, the borrower must pay nearly 10 per cent. for their services. Of a very different cast is the reply from your correspondent Mr. Lawrence, who kindly meets the difficulty by informing that 3 per cent. on the Commissioners' loan will cover their charge for surveying, inspecting, advertising, &c. Now will Mr. Shelley guarantee this also? so that if 100 acres of land would require 500*l.* to drain it, we should have to add 15*l.* besides; and our annual interest to discharge the loan of 515*l.* in 22 years, at 6½ per cent., would be 39*l.* 19*s.* 6*d.* Here is the simple fact, a borrower wishes to ascertain, although there may be more difficulty than supposed of obtaining money from a banker than Mr. Lawrence supposes, because if death happens to the borrower before the performance of the draining is approved by the commissioners' inspector, and should not be approved finally, who is to pay the expense of it? The difference between borrowing money of the Government and a company is, that the former seeks merely reimbursement—the latter adds a profit, and must require security for so much more; and it seems from Mr. Shelley's prospectus that his company must have the sanction of the commissioners before they can proceed, hence I presume another inspector's survey and opinion are involved. *A Tenant for Life.* [We have to apologise for the delay which has attended the publication of the above.]

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Continued from page* 477.)

South Downs or other short-woolled sheep. Class I. *Shearling Rams.*—643, exhibited by Mr. J. Williams, of Buckland, near Farringdon, Berks; head thick, neck short, chine very broad, twist and flank good, wool good, back bare; a rather small fair-made sheep. 645, by Mr. W. Rigden, of Hove, near Brighton, Sussex; head pretty, neck and chine well connected, a nice form but small; measures in girth 4 ft. 2½ in., length 3 ft. 6¼ in., height 2 ft. 2 in. 646, same breeder; head good, neck long and up, chine defective, plate and chest deep, loin wide and well-set, rump short, thighs good, wool thick; the sheep stands well. 649, Mr. J. V. Shelley, of Maresfield Park, near Uckfield, Sussex; head pretty, neck good, well formed body, wool fair; measures, girth 4 ft., length 3 ft. 5 in., height 2 ft. 2 in. 651, Mr. H. Lugar, of Hengrave, near Bury St. Edmonds, Suffolk; somewhat heavy countenance, ears short, chine broad, back rather bare, offal fair; of a pretty good length. 653, same breeder; head and ears common, neck thick, chine good, and chest deep; a rather large sheep, with poor but straight back. 652, same breeder; fine animal, head or crown too high, neck and breast good, long but well-proportioned sheep, ribs too far from hip, fair thighs; measures, girth 4 ft., length 3 ft. 7 in., height 2 ft. 2 in. 656, Mr. E. Boscawen, of Mereworth Castle, near Maidstone, Kent; fine face and eyes, neck long and up, a long and fairly-formed sheep, his round and highish hips are his chief feature. 658, Mr. W. Sainsbury, of West Lavington, near Devizes, Wilts; a well-formed and deep body, with high-standing thick neck, and rather thick head; measures, girth, 4 ft. 2½ in., length 3 ft. 5 in., height 2 ft. 1½ in. 659, same breeder, a beautiful sheep; head, neck, chine, ribs, hips, plates, and chest, very good; loin, perhaps, a little too narrow, wool good; measures, girth 4 ft. 2¾ in., length 3 ft. 6 in., height 2 ft. 2¼ in. 660, same breeder; head good, neck thick, and well set to chine, which is good and broad, and well-springing; back level and straight, and well formed, hips wide, rump short and light, thighs and plates very good, wool thick and fair; measures, girth 4 ft. 2 in., length 3 ft. 6½ in., height 2 ft. 2½ in.. 664, Mr. T. Ellman, of Beddingham, near Lewes, Sussex; a long high sheep, but too thin everywhere. 666, Mr. J. Gillett, of Brize Norton, near Whitney, Oxon; a very good sheep, a cross from Cotswold and Down. 665, same breeder, same cross; good, but not equal to 666. 667, same breeder, same cross; a very good sheep, neck rather thin, worthy of all commendation. 669, Mr. F. Robinson, of Burton-on-Trent, Staffordshire; a very useful and fairly-formed sheep. 670, same exhibitor, bred by Mr. Rigden; a pretty, nicely-formed animal, with a good fleece. 671, ditto, ditto; a good head and neck, chine defective, ribs and loin fair, rump and hip, and also legs and flank rather light; a good sheep. 672, 674, and 675, Merinos, bred by Mr. T. B. Sturgeon, of Gray's Hall, near Romford, Essex; thin made, very queer-looking horned rams, no good point about them, excepting their beautiful wool, shown in boxes. 676, Lord Walsingham; a rather clumsy head, nicely-formed sheep, with capital twist and thighs, altogether a good sheep, but with light wool; measures, girth, 4 ft. 1 in., length 3 ft. 7 in., height, 2ft. 2½ in. 677, same breeder; a good head, a well-formed sheep, perhaps the ribs rather too distant from hips, loin and rump very good. 678, Mr. Jonas Webb, of Babraham, Cambridge; a useful but not well-formed sheep. 679, ditto (highly commended); a good, well-made sheep, body rather large, wool good. 680, ditto; a well-formed sheep, back rather low, rump short, and body large. 681, ditto (1st prize); a very fine, good animal, with plenty of wool, long, well thrown out in nearly all parts, perhaps back not wide enough, but deep chest, and good plates and purse (I think the best yet seen in passing); it measures, girth 4 ft. 3¾ in., length 3 ft. 9½ in., height 2 ft. 3 in. 682, Mr. G. Drake, of Manor-farm, East Tytherley, near Stockbridge, Hants; a very pretty little short-woolled sheep, with good thighs and short rump, pretty face and ears. 683, ditto; beautiful sheep, and well-proportioned throughout. 684, Mr. H. P. Hart, of Beddingham, near Lewes, Sussex; dark head, thin neck, fair chine, large body, short rump, narrow hips, twist ditto. 685, ditto; a good animal, but nothing worthy of remark. 686, Earl of Chichester; a beautifully-formed animal, with light wool, girth defective. 687, ditto; a light-woolled fair sheep, rather large body, back rather defective. 688, ditto; a small, useful sheep, of pretty countenance. 692, Mr. J. Webb; a rather large useful sheep, fair chest and rump, head or crown high; it measures, girth 4 ft. 2 in., length 3 ft. 6½ in., height 2 ft. 2¼ in. 693. ditto; a beautiful sheep, though small. 694, ditto; highly commended; a good head, rather high shoulder, body low, of fair form. 695, ditto; a beautiful sheep, more recently shorn, a first-rate animal, fine head and countenance, good neck, wide shoulder, and deep through the chest, fine level back and wide, hips and flank good, and legs very slightly defective, its face a little discoloured, and considered a defect; it measures, girth 4 ft. 5¾ in., length 3 ft. 10 in., height 2 ft. 3 in. 696, ditto; highly commended; a very useful, well-formed, and good-woolled sheep. 697, ditto; a well formed, but rather small, good-woolled sheep. 698, ditto; a fairly-formed animal, but with dropping body. 699, ditto; a very nice sheep, with short wool, and pretty countenance. 700, ditto; second prize; rather high on back, and dropping body, otherwise well-formed and good throughout; it measures, girth 4 ft. 3½ in., length 3 ft. 8 in., height 2 ft. 2½ in. 701, ditto; a beautiful and well-proportioned animal, rather light wool, measures, girth 4 ft. 2 in., length 3 ft. 7 in., height 2 ft. 3 in. 702, ditto; a well-formed but rather small sheep, good wool and looks, but legs not straight. 703, ditto; a finely-formed, and very handsome sheep. 705, ditto; third prize; a very good sheep, somewhat defective in appearance, wants inspection, proves well on touching; it measures, girth 4 ft. 2 in., length 3 ft. 6 in., height 2 ft. 2½ in. 706, Duke of Richmond; a good straight back, and well-formed, head a little high or crown, body too large. 707, ditto; a fair-formed sheep, rather small, but good. 708, ditto; head rather high, back straight, body low, good as a whole.

Class II. *Rams of any other age.*—710, Mr. J. Williams, 28 months old; good rump, head, and neck, defective chine and loin, good twist. 711, Mr. Rigden, 28½ months; first prize; a pretty, well-formed sheep, with good wool. 712, Mr. Shelley, 28 months; a fine hind-quarter, but defective forward. 713, Mr. Lugar, 29 months; good heavy-made sheep, with light wool, mutton of good quality. 714, ditto, 29 months; finely formed top, small, light wool. 715, ditto, 29 months; rather narrow back, body low. 716, ditto; a good long sheep, perhaps not breadth enough. 717, Mr. R. Boys, of Eastbourne, Sussex, 40 months; highly commended; a prettily formed hind-quarter, and good looking. 719, Mr. Sainsbury, 29 months; a broad, well-formed, though low-standing sheep, and good quality. 720, ditto, 29 months; a compact sheep. 721, ditto, bred by Mr. J. Beaven, of Gore Farm, Market Lavington, Wilts, 42 months; highly commended; a noble animal, with fine proportions, measures, girth 4 ft. 6½ in., length 3 ft. 9½ in., height 2 ft. 4¾ in. 722, Prince Albert, 28 months; apparently shown in store condition. 723, Mr. Ellman, 40 months; showy little sheep. 724, ditto, 40 months; a heavy good sheep, body too low, measures, girth 4 ft. 6 in., length 3 ft. 7 in., height 2 ft. 4 in. 725, ditto, 40 months; a very pretty and well-formed sheep. 726, ditto, 28 months; compact, body out, rump short. 727, ditto, ditto; a fair woolled sheep of good size. 728, 729, 730, Mr. Gillett, three extraordinary sheep, Down and Cotswold, very large and well made, fine wool and mutton, and good throughout, perhaps none in the yard more profitable in all respects. 728, measures, girth 4 ft. 11 in., length 3 ft. 10 in., height 2 ft. 7½ in.. 729, measures, girth 5 ft. 0½ in., length 4 ft. 1½ in., height 2 ft. 5 in. 732, Mr. Robinson, 89 months old; good old sheep. 733, ditto, 27 months; very useful. 735, 736, 737, Mr. Sturgeon, three horned Merino sheep; their beautiful fleeces were shown in boxes. 739, Mr. Overman, 28 months; highly commended; a useful sheep, low back, broad through shoulders. 738, Mr. Drake, light two shear. 740, Mr. Robinson, 52 months; small and compact. 744, Mr. J. Webb, 29 months; second prize, rather low, but a fine sheep, broad and well set, chest and chine remarkably good, plenty of wool, body sadly down; measures, girth 4 ft. 9½ in., length 3 ft. 7½ in., height 2 ft. 2 in. 745, ditto, ditto; a fairly formed, useful sheep. 746, ditto, ditto; very useful, but narrow shoulders. 747, ditto, ditto; a good fleece, and fair sheep, legs bent. 748, ditto, 40 months; third prize, fore-quarter very large and full, body let down, plenty of wool. 749, ditto, ditto; useful, but body sadly wrong. 752, Duke of Richmond, bred by Mr. A. Pinnix, of West Dear, near Chichester, Sussex, 64 months; a very good sheep, standing well, noble in appearance, rather light wool, body rather out; measures, girth 4 ft. 3 in., length 3 ft. 8½ in., height, 2 ft. 3¼ in. 753, ditto, 28½ months; body a little wrong, otherwise well proportioned.

Class III. *Shearling Ewes.*—754, Mr. Williams; rather small, but very pretty lot, shape and wool good. 755, Mr. Rigden; 3d prize; a superior lot, faces a little varied, frames compact, countenances pretty, wool good, very fine *hand.* 758, Mr. Lugar; a very good lot, equal to most, but their faces perhaps too speckled, and necks rather thin. 757 (highly commended), Mr. Shelley; a very complete lot, and in form equal to any, their faces too varied in colour. 759, Mr. R. Woodman, of Glynde, near Lewes, Sussex; useful, but form not perfect, necks thin. 760, Mr. T. Beards, of Stowe, Bucks; a good pen, but not even, wool light. 761, Mr. H. S. Hayward, of Folkington, near Willingdon, Sussex; not very good, but heavy wool. 762, Prince Albert; pretty ewes, evidently shown in store condition. 763, Mr. Boscawen; very pretty lot, small, brown legs, and faces a little speckled. 765, Mr. S. King, of Hayward Farm, near Hungerford, Berks; Hampshire downs, larger than some, but not well formed, black faces and legs, considered an imperfection. 766, Mr. Sturgeon; Merinos; very small, not quite without wool. 767, Lord Walsingham; very pretty form, and light wool. 768, Earl of Chichester; pretty, rather light fore-quarters, faces and legs good colour. 769, Mr. Overman (highly commended); very good lot, though not very even in size. 773, Duke of Richmond; a good lot, necks a little too long and thin, and one or two bodies denoting bad conformation of rib. 771, Mr. Webb; rather higher-standing than 773, and contains one or two very pretty animals. 772, Mr. Webb; 1st prize; a very beautiful lot, truly models of the best form, with countenances as pleasing, and colour of legs and faces, to please the most fastidious. 770, Mr. Webb; 2d prize; a very prime lot, certainly not so perfect as 772, though perhaps more wool, but of first-rate form and looks.

Long-Wools. Class I. *Shearling Rams.*—774, Mr. C. Large, of Broadwell, near Lechlade, Gloucestershire (commended); a pretty sheep, of beautiful form, very fat, well-proportioned, but rather small, with rather thinly set curly wool; measures, girth, 4 ft. 9½ in., length, 3 ft. 10¼ in., height 2 ft. 6 in., live weight 320 lbs. 775, same breeder; nicely formed, good loin, neck a little too long and thin, fair quantity of wool; girth 4 ft. 10 in., length 3 ft. 9½ in., height 2 ft. 6¼ in. 776, ditto; a pleasing-looking curly woolled sheep, neck rather thin, and not well set; girth 4 ft. 7 in., length 3 ft. 9 in., height 2 ft. 6 in. 778, Mr. W. Garne, of Oldsworth, near Northleach, Gloucestershire; a pretty light-coloured face, with rather long thin neck, and chine not well out, back and rump good, plates and flanks good, leg and twist slight; girth 4 ft. 11 in., length 3 ft. 11¾ in., height 2 ft. 7½ in. 779, ditto; 1st prize; head noble and handsome-looking, and well held up, neck good and forward, chine rather wanting, but still fine, chest very good, plates good, and back, loin, rump, flank, legs well proportioned, full, and good; a splendid sheep, grand and good-looking, purse uncovered, and wool, perhaps, too straight and thin; girth 5 ft. 1 in., length 4 ft. 1¼ in., height 2 ft. 8½ in. 780, Mr. T. Carter, of Scales, near Richmond, Yorkshire; a slightly formed long-wool, but looks thin and ill; girth 4 ft. 10½ in., length 3 ft. 10½ in., height 2 ft. 6½ in. 781, Mr. G. Hewer, of Ley Gore, Northleach, Gloucestershire; a very useful sheep; girth 4 ft., length 3 ft. 9 in., height 2 ft. 5½ in. 782, ditto; a good head, with light-coloured face, chine rather narrow, chest and plates fair, loin, rump, and flank good, and well proportioned, with fat back, heavy fleece, but unequal; girth 4 ft. 9½ in., length 3 ft. 9½ in., height 2 ft. 6 in. 783, ditto, commended; this is a well-proportioned and good sheep; his head, hand, and general appearance denote somewhat of the Leicester character; wool good, stands rather queerly on his hind-legs; girth 4 ft. 10¾ in., length 4 ft., height 2 ft. 6 in. 784, ditto; a speckled face, though fine, neck thinnish, chine narrow, plates good, loin, rump, and flank good, and well proportioned, fine offal, wool thin and curly; girth 4 ft. 11 in., length 4 ft., height 2 ft. 7½ in. 785, Mr. W. Lane, of Eastington, near Northleach, highly commended; this is a well-proportioned, very compact, and capital sheep; his hand first-rate, wool good, though not so noble in appearance; we question if his equal is in his class; he denotes much of the Leicester character; girth 4 ft. 10½ in., length 3 ft. 9 in., height 2 ft. 5½ in. 786, Mr. Lane; second prize; head rather heavy-looking, neck not thick, rather narrow chine for so fine a sheep, fat back and loin, and good rump, legs, flank, and offal very good, wool fair and good; altogether a very good animal; girth 4 ft. 11 in., length 4 ft. 1½ in., height 2 ft. 8 in. 787, Mr. Lane; a light-coloured face, level back, good fine legs, fair quantity of wool; his confor-

mation, as a whole, is too slim and narrow; girth 4 ft. 8½ in., length 3 ft. 10 in., height 2 ft. 8 in. 788, Mr. R. Daintree, of Hemingford Abbots, near St. Ives, Hunts; a defective animal anywhere.

Class II. *Rams of any other age.*—789, Mr. Large, 28 months, commended; a beautiful head and neck, good, deep, and prominent chest, with broad chine, and ribs well sprung; good loin, rump rather short and slightly defective, good offal, curly wool; a very fine animal, and well deserving commendation; girth 5 ft. 8 in., length 4 ft. 2 in., height 2 ft. 8 in. 790, Mr. Garne, 40 months; second prize; a handsome noble fellow; fine head and looks, deep chest, full and pointed, a fine well-formed rump, good plates, but thin flank and thighs, back fat and good, fair quantity of wool; altogether a beautiful sheep; girth 5 ft. 7½ in., length 4 ft. 2½ in., height 2 ft. 9¼ in. 791, Mr. Garne, 40 months, commended; a beautiful countenance, fine ears, hand very superior; he is a well proportioned and beautiful sheep, with plenty of wool; girth 5 ft. 6 in., length 4 ft. 1½ in., height 2 ft. 7¾ in. 792, Mr. Carter, 28 months, a very useful and superior sheep, with curly wool, very wide chine, and beautiful countenance; bare purse. 794, Mr. Hewer, 40 months, first prize; a noble animal, fine ram's head, thick neck, well set, full chest, broad chine, finely sprung ribs, good fat loin, large broad rump, good legs and twist, and, for such a heavy sheep, offal fine; his hand firm, wool heavy and well set; altogether he is a noble fellow; girth 5 ft. 10½ in., length 4 ft. 2 in., height 2 ft. 8½ in., living weight 420 lbs. 795, same breeder, 40 months, commended; a good head, and standing well up, neck thick, and well set to chine, which is good; ribs well sprung, deep chest, loin full, flank deep, rump and hind-quarters, altogether very good; offal fine, and wool well set; a fine and splendid sheep; girth 5 ft. 7½ in., length 4 ft. 2½ in., height 2 ft. 8¼ in. 796, Mr. C. Dorrien, of Sennicots, near Chichester, 41 months old; a large Merino ram. 797, Mr. H. P. Cotton, of Quex Park, near Margate, Kent. bred by Mr. Large, 52 months; a fair old sheep, just shorn—why shown?

Class III. *Shearling Ewes.*—798, Mr. Large, very useful and large animals; but uneven as a lot in shape, size, and quality, and equally so in their wool. 799, ditto, very good ewes, not matching truly well, but each animal in itself good; but in hand rather loose. 800, Mr. Alban Bull, of Hanwell, near Banbury, Oxon, pretty animals, but rather slim in make, with straight thin-set wool. 802, Mr. Lane, first prize; very fine ewes, nearly all beautiful animals; high standing, good firm backs, wide, well-proportioned, and rather heavy fleeces of good wool. 801, same breeder, second prize; rather smaller, but more compact and regular in appearance and form; certainly the most equal and symmetrical pen in the class; their rumps and hind-quarters well formed and full; one or two possessed ears not to our taste—rather large and drooping.

Mountain Sheep. Class I. *Rams of any age.*—803, 804, Mr. J. Nurcombe, Hopcott Farm, near Minehead, Somersetshire, two Exmoor horn rams, small sheep, fair frames, hardy-looking, ample wool. 805, Mr. J. Dodd, of Catcleugh, near Otterburn, Northumberland, first prize; a very good Cheviot; fore-quarters rather defective, long tail, good wool. 806, same breeder, somewhat smaller sheep, of similar peculiarities. 809, Mr. R. Kirklys, of Colt House, near Hawkshead, Lancashire, a Herdwick ram, fair shaped mountain sheep, unshorn, and coloured red. 811, Mr. J. Robson, of East Kielder, near Bellingham, Northumberland, second prize; small sheep, fair frame, short wool. 812, Mr. W. Pooke, of Tinner Hill, near Watford, Herts, a Spanish and Welch ram; thin made and ill-shaped. 813, Mr. Dorrien; a Merino and Ryland ram, partaking much of Merino character, wool fine. 814, Mr. J. Linklater, near Lerwick, Shetland; a very little black mountain sheep. 815, Mr. W. Tod, of Elphinstone Tower, near Tranent, Haddington; fair mountain sheep, with short wool.

Class II. *Shearling Ewes.*—816, Mr. Nurcombe; prize; five Exmoor horned ewes, well-made animals; well adapted to a cold country. 817, Mr. T. Drewitt, of Piccard's Farm, near Guildford, Surrey; five Merinos, form imperfect, wool very fine. 818, Mr. Dorrien, Merino and Ryland ewes, fine wool. 819, Mr. Linklater; small, light-made, active-looking Shetlanders.

Class III. *Ewes of any age.*—820, Mr. Nurcombe; five good and useful Exmoor ewes. 821, Mr. Robson; prize; five very useful Cheviot ewes, rather light forms. The mountain sheep formed a very interesting class, from their singularity and variety; they are no doubt well adapted to their respective uses, but their points are such as no modern breeder can admire.

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The Show of Horses at Windsor has well sustained the reputation earned by this department of live stock at the previous country meetings of the Society. There were no less than eight classes allotted to horses, amongst which were distributed 15 prizes, amounting in the whole to 270*l.*, being nearly double the amount distributed at Exeter. Notwithstanding this profusion of rewards, there was no class allotted to three-year-old stallions, which were consequently obliged to be brought into competition with their more matured rivals, thereby rendering the decision of the judges much more difficult. We cannot help thinking that the omission of this class at the last four meetings of the Society has been a great mistake, in proof of which we have only to call attention to the fact that at each of these meetings there have been quite as many three-year-olds as of any other age entered as competitors in the first class, whilst it is very rarely or ever the case that a horse of this age has received a prize when *thus* matched against older animals. At Windsor there were no less than six three-year-old horses in Class I., being two more than of any other age; and at Exeter and the other meetings referred to, there were nearly as many. We also find there were three prizes given to the two-year-olds, and only two to Class I., which comprehended all ages above two.

Comparing the show of horses at Windsor with that at Exeter, we are of opinion that in Class I. the Windsor show was decidedly the best, whilst the two-year-olds at Exeter were superior, as well as the fillies, and also the mares and colts, always excepting, however, that peerless animal, No. 484, belonging to Mr. Sheppard, to which the first prize was very deservedly awarded at the Windsor meeting. Class I. exhibited some magnificent animals, which we believe have never been surpassed at any former meeting. The prize horse was certainly a very perfect animal, not loaded with fat as when exhibited at Norwich as a three-year-old, but displaying great strength and beautiful symmetry. Very beautiful specimens too were the Duke of Manchester's (the sire we believe of the prize horse) as well as Mr. Crisp's, No. 408. The massive animal of Mr. Barthropps, No. 401, and a bay Suffolk, No. 392, Mr. Frederick Barlow's, as well as a fine grey stallion, No. 397, belonging to Mr. Matthews, were also very worthy specimens. All these animals, we think, were well deserving of the commendations which the judges might have bestowed if they had pleased. We find in this class a two-year-old colt, No. 386, entered probably in mistake, which was commended by the Judges, and which we think would have deserved a prize if exhibited in its proper class. The two-year-old class was well filled, the prize animal, No. 420, probably got by the prize horse at Northampton, was a fine colt, though not equal in excellence to the two-year-old shown at Exeter by the same exhibitor, and bred, we opine, from the same family.

Class III. Dray Stallions.—The show in this class we do not think was first-rate. We could not discover the sires of the best specimens of the London dray horses, and the prize horse, though an animal of great strength, was rather too coarse.

Passing to horses of a lighter breed, we find a goodly show of superior animals in the class for hunters—a class not exhibited either at Exeter or Norwich, but which at the York meeting afforded even a better display than the present. Our attention was greatly struck with a horse (No. 1), belonging to Mr. Dobito, an animal of immense strength and superior symmetry, such as many of our heavy weights would prize beyond measure, and search England through to find. We were sorry to find this noble animal did not meet the approbation of the judges, because, as our dealers well know, the great desideratum in breeding hunters, and for which most money will be given, is an animal that can carry heavy weights over a stiff country at a good pace; and such cannot be produced if we depend entirely on eastern blood. The introduction of such a stallion as that in question into a breeding district, effects a vast deal of substantial benefit. Flyers for light weights can always be obtained from the refuse of our racing stables. These observations, however, are made with all deference, as none but the judges have an opportunity of ascertaining the existence of certain excellencies and defects, more particularly those relating to action. The prize animal in this class was a thorough-bred, No. 449, possessing much symmetry, with beautiful loins and quarters; but we fancied the forehand somewhat below perfection. In this class we noticed a beautiful grey horse that had gained a prize in another class at Exeter, No. 446, belonging to Mr. Poulton; a horse that, if we mistake not, has proved his merits as a hunter, "many a time and oft," in the hunting field.

The Class for Carriage Horses (No. V.), though not equal to that at York, was yet very respectably supplied, the first prizes being very properly awarded to No. 467. A fine Yorkshire horse, belonging to Mr. Thomas Holtby, in which breeding, substance, and symmetry, was very well combined. Yorkshire also carried off the second prize, although no less than six other counties engaged in the competition; a fact, however, which tends to show the extension of improvement in the breeding of this valuable animal.

Class. VI., Roadster Stallions, was very well filled, there being eight animals exhibited. The prize was taken by the same exhibitors as in the class for hunters, a six-year-old horse possessing many excellencies, but the shoulders not quite so perfect as we could wish. No. 477, a brown horse belonging to Mr. Cubit Wells, appeared to us to possess the qualifications of a hack in great perfection, and No. 475, too, was a most promising young animal; and if his action is equal to his good looks, bids fair to perpetuate the good qualities he derives from his sire, the prize roadster stallion at Norwich.

The Class for Two-year-Old Fillies (No. VIII.), displayed some very promising animals, though not so numerous as the profusion of prizes in this class would lead us to expect. The honours were divided amongst Mr. Browne, Mr. Barthropp, and Lord St. John, amongst whom the competition was very good. We should like to see one or two prizes taken from this class, and that for two-year-old stallions, and the amount given to three-year-old horses.

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Agricultural Improvement of Ireland: *July 3.*—There was a monthly meeting of hte council this day—Lord Castlemaine in the chair. Letters were read from D. J. Wilson, Esq., and John Hall Maxwell, Esq., secretary to the Highland Society, relative to the definition and admission of tenant farmers as members of the Society, on payment of 10*s.* annually, and on being proposed and seconded in the usual manner—and the subject having been taken into consideration by the council, to whom it was referred at the last general meeting to inquire and report upon—it was resolved, that they should recommend to the next general meeting, to admit *bona fide* tenant farmers as members, on payment of an annual subscription of 10*s.* each, provided that they be also members of some local farming society in connection with the central one, and paying towards its funds a similar sum per annum; and that the class of tenant farmers so admissible should be defined to be "Farmers holding not more than 150 statute acres of land, in their own possession, and living entirely by husbandry." The secretary then read the following Report on providing the services of an Agricultural Chemist for the members of the Society:—

"The council having been directed, at the last general meeting, to secure the services of a competent person to act as chemist to the Society, and to afford the benefit of chemical analysis and advice to the members, on satisfactory terms, a deputation was appointed to wait on Dr. Apjohn, the professor of chemistry in Trinity College, for the purpose, and, after a personal interview with him, the basis of an agreement was entered into, of which the following is the substance:—That the services of the chemist should be remunerated, partly by a fixed yearly salary, and partly by fees, according to a scale of prices to be agreed on; and that Dr. Apjohn be appointed chemist to the Society, at a salary of 100*l.* a year, to date from the 1st of July: a certain tariff or scale of fees be adopted, which has been framed in accordance with the corresponding tables of Professors Way and Anderson, chemists to the Royal English and Highland Agricultural Societies. While the privilege of securing Dr. Apjohn's services is thus reserved to the members of the Society alone, it is to be clearly understood that the arrangement will by no means interfere with Dr. Apjohn in his professional avocations, either as chemist or otherwise, with those who are not members of the Society, and who may seek his assistance or advice. All members of the Society requiring analyses or other assistance from the chemist, shall transmit a statement of what they require to the secretary in Dublin, and such samples or specimens, carriage paid, as they may think necessary for the purpose; and the same shall be submitted to the committee, and the proper price affixed, according to the tariff, which must be paid to the secretary before the same are submitted to the chemist for investigation. In all cases when the terms and conditions have been agreed on, and the fees required paid, the matters sent for analysis shall be transmitted by the secretary to Dr. Apjohn, and the result, as reported by him, afterwards returned to the party making the application. By these means, it is hoped that much time and trouble will be saved to all parties, in promoting the objects they have in view, and the interests of those in particular residing at a distance from town considerably benefited—while the Society will alone be answerable to Dr. Apjohn for his fees, without any communication on this point between him and other parties. That all analyses and investigations thus made by the chemist shall be placed at the disposal of the Society, with power to make such use of them, by publication or otherwise, as they may think advisable."

The following is the tariff, or scale of fees, agreed on:

Scale of Fees to be charged to members of the Royal Agricultural Improvement Society of Ireland, for chemical analysis, and other objects, by James Apjohn, Esq., M.D., chemist to the Society.—Laboratory, Trinity College.

| | £ | s. | d. |
|---|---|---|---|
| 1. A complete analysis of a plant, including ash ... | 3 | 0 | 0 |
| 2. Do. do. of the ash of a plant ... ... | 2 | 10 | 0 |
| 3. A complete analysis of a soil, or marl ... | 1 | 10 | 0 |
| 4. An analysis of limestone, including carbonate, phosphate, and sulphate of lime, magnesia, with sand and clay, &c. ... ... ... ... ... | 1 | 0 | 0 |
| 5. Analysis of limestone, ascertaining proportion of lime and magnesia ... ... ... ... ... | 0 | 7 | 6 |
| 6. Do. of lime or magnesia separately ... ... | 0 | 5 | 0 |
| 7. Partial analysis of a soil, giving the general characters, such as sand, clay, organic matter, and carbonate of lime ... ... ... ... ... | 0 | 10 | 0 |
| 8. Examination of a tile clay ... ... ... ... | 0 | 10 | 0 |
| 9. Do. of a soil for lime ... ... ... | 0 | 10 | 0 |
| 10. Do. of sea sand ... ... ... ... ... | 0 | 10 | 0 |
| 11. Quantative determination of any one ingredient in in a soil ... ... ... ... ... ... ... | 0 | 7 | 6 |
| 12. A complete analysis of guano or any other special manure ... ... ... ... ... ... ... | 1 | 10 | 0 |
| 13. General analysis of do., sufficient for commercial purposes, such as ascertaining the determination of nitrogen (ammonia), and the earthy phosphates, &c. ... ... ... ... ... ... | 0 | 10 | 0 |
| 14. Complete analysis of an ore ... ... ... ... | 1 | 10 | 0 |
| 15. Analysis of an ore, sufficient to ascertain its commercial value ... ... ... ... ... ... | 1 | 0 | 0 |
| 16 Analysis of oil or rape cake ... ... ... ... | 0 | 10 | 0 |
| 17. To determine the quantity of carbonate and sulphate of lime, in any given specimen of water ... | 1 | 0 | 0 |
| 18. Examination of the products of vegetation, or of the dairy ... ... ... ... ... ... ... | 0 | 7 | 6 |
| 19. Answering any letter seeking for chemical advice on any one subject ... ... ... ... ... ... | 0 | 5 | 0 |
| 20. Do. on more than one, in proportion ... | 0 | 7 | 6 |

The above report of the managing committee was then unanimously adopted by the council. The secretary stated that he had received communications from the Great Southern and Western Railway, and from the City of Dublin Steam-packet Company, stating that they would comply with the request of the deputation that had waited on them for the purpose, and would would bring all stock and implements, regularly entered for exhibition, free to the show, in Dublin, on the 12th of August, on producing a proper certificate from the secretary to that effect. That the deputation had also waited on the Midland Great Western Railway Company, to afford them similar accommodation, the result of which would be communicated without delay. A letter was also read from the Chevalier Claussen, from London, stating that he was prepared to exhibit his new process of preparing Flax, and making Flax cotton, at the Dublin Cattle Show, and that he would avail himself of the offer of the Council to give him every facility for the purpose in the show-yard.

## Miscellaneous.

Mr. Mechi's Annual Gathering.—On Thursday, July 24th, there was a large gathering of agriculturist

at Mr. Mechi's farm at Tiptree, Essex. The reunion this year derived peculiar interest from the circumstance that some of the most important agricultural implements at the Exhibition were to undergo their trial in the presence of the visitors at Tiptree-hall-farm. Expectation was especially directed to some reaping machines, the probable fate of which, as articles of use in this country, has already been much discussed. The award of the Exhibition prizes in this department hung upon the result of the trial; and the jurors attended the farm for the purpose of forming their judgment. The names of the jurors are as follows:—Col. Challoner, for Great Britain; Baron de Mertens, for Belgium; Col. Johnson, for the United States; Mr. W. F. Hobbs and Mr. Amos, consulting engineer of the Royal Agricultural Society, were present in the capacity of assistants to the jurors. The general company present by invitation included the following gentlemen:—Prince Frederick of Holstein; Viscount Ebrington; the Hon. Dudley Fortescue; T. Alcock, Esq., M.P.; W. Pinney, Esq., M.P.; the Hon. — Neville; Col. Challoner; — Laurie, Esq.; W. F. Hobbs, Esq.; W. F. Dickson, Esq.; Dr. Partridge; Dr. M'Lean; Dr. Maddy; Dr. Taylor and Son; J. Hudson, Esq., Castleacre; C. W. Hoskyns, Esq.; B. P. Johnson, Esq., Secretary to the New York State Agricultural Society; Rev. R. Ainslie; James Beadel, Esq., Chelmsford; Hewitt Davis, Esq.; R. Corbet, Esq., Secretary to the London Farmers' Club; George Grove, Esq., Secretary to the Society of Arts, &c. The trial of the reaping machines was made upon a crop of Wheat at a short distance from the homestead of Tiptree-hall; and notwithstanding the extreme unfavourableness of the weather, the rain descending at a sharp pace during the whole time, it took place in the presence of a crowd of spectators. The first machine put to the test was of American origin, but constructed by Mr. Garrett, of Saxmundham, from a model or description. It consisted of a low platform of wood, about 5 feet wide, with a row of cutters extending over the same width, and was drawn by two strong Suffolk horses. To the right of the platform was a box, which formed at once a covering for the wheels and a seat for a man, who, with rake in hand, was stationed on the box for the purpose of throwing aside the Wheat as fast as it could be reaped. The cutters somewhat resembled a pike head, and at intervals of about two inches were small clippers to catch the corn and bring it within range of the cutters. The experiment was made first across the ridges, and afterwards along the ridges, and, whether owing to the rain or not (this was indeed generally believed to be an unfavourable circumstance) it was a decided failure. In each case for two or three yards the Wheat was cut down tolerably clean; but the cutters then got clogged, and, after some slovenly and very incomplete work for a few yards further, the machine came to a dead stop. The result was in every case the same. The second machine was completely successful. Its construction differed from that of the first in two or three important particulars, though in other respects, and in general appearance, there was much similarity. The cutting part of the apparatus consisted simply of a long knife very finely serrated; and there were several broad flaps turned round by the machinery in front, so as to prevent the Wheat from falling before the machine, and to bring it up to the knife. As in the former case, there were small projections at short intervals, but they were not in the nature of clippers, and somewhat resembled a spear point. The moment this machine set off, its success was indisputable. It proceeded right on, without any stoppage, for at least 50 yards, left behind nothing to complain of as regarded the character of the work, and, in spite of the rain, showed no disposition to clog. At the close of the experiment three cheers were given by the company. The inventor of this machine, the practicability of which was thus established, is Mr. M'Cormick, a citizen of the United States. It was stated that in America it has long been in extensive operation. Its cost is from 20*l.* to 25*l.*, and it is said to be capable of reaping, under ordinary circumstances, about 20 acres a day.

## Notices to Correspondents.

CLAY FARMS: *Sir J S, per W T.* We know of no work specially on the management of clay land. If you will look at "Clay" in the index at the end of the ninth volume of the Journal of the English Agricultural Society, you will be referred to a great deal of useful information on the subject, scattered over the previous eight volumes.

LUCERNE: *L B.* When very young it had better be cut a day before it is given to the cow, and allowed to wither somewhat. It *is* good food for cows.

MODEL OF FARM BUILDINGS: *J Baxter.* They shall be noticed. Excuse a little unavoidable delay.

PEAT CHARCOAL: *x.* It will *retain* ammonia—and so will peat crumbled down, but uncharred. Charcoal made from resinous wood is perfectly suitable for agricultural purposes.

REPORT OF MYREMILL: *D F F.* We have inquired, and will inform you.

ROTATION: *B A. London-street* 1, Wheat; 2, Clover; 3, Vetches mown, manured, ploughed, and transplanted with Cabbages; 4, Mangold Wurzel—is a singular rotation. You put the produce at 40 bushels of Wheat, 3 tons of Clover hay, 10 tons of Vetches, 10 tons of Cabbages, and 20 tons of Mangold Wurzel per acre. We should expect from the land, "strong sandy loam," 40 bushels of Wheat, 40 to 50 cwt. of Clover hay, 12 tons of Vetches, 10 to 15 tons of Cabbages, and 30 tons of Mangold Wurzel. The rotation will enrich the land; it is singular merely from its growing but one seed crop in four years.

TANK WATER: *G P.* You will find that to dilute it abundantly with water will diminish or destroy its smell.

TURNIP CUTTER: *Messrs. Burgess and Key.* It appears our reporter was wrong in his description of the Turnip cutter manufactured by this firm. The gratings mentioned in his report are for the purpose of carrying off earth and stone—not for allowing the slices to pass through. We cannot place crossed writing in the hands of the printer.

SUNDRIES: *J S S.* We should not like to pay 10*s.* a ton for dung, though laid upon the field. We should prefer the operation of digging 18 inches deep at 3*l.* 10*s.* per acre, to twice subsoiling (once a crop) at 4*l.* 8*s.*; but we do not choose to accept the responsibility of advising either, in ignorance of the soil. If you have stiff clay land, having drained it, we would rather advise you to be satisfied with deep, but ordinary, ploughing for a year or two. Burn the soil, the clods of it, to the extent of 30 or 100 cubic yards per acre, you will find that to pay as well as anything. Meadow land will need draining just as the arable land does. Grass likes a current of air and water by its roots, just the same as Wheat or Turnips do. You may carry wood-ashes four miles, and spread 20 or 30 bushels per acre over the Grass with good effect.

## METEOROLOGICAL REPORT.—JULY.

(*Continued from* p. 478.)

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| July 22 | 10.45 a.m. | 29.92 | ... | SE. Gentle; fine day. |
| | 4.30 p.m. | ... | 29.84 | Evening, gloomy and overcast. |
| 25 | 6.30 a.m. | 29.65 | ... | Moderate southerly breeze, and cloudy day. |
| | 11.5 p.m. | ... | 29.49 | Evening, WSW. Close, overcast. |
| * 24 | 6.10 a.m. | ... | 29.46 | 6.10, barometer apparently rising. Nearly calm, but scud moving from north. |
| | 11.30 a.m. | 29.46 | ... | Towards noon, brisk breeze SW., barometer falling again. Fine sunny, pleasant day. Evening, breeze increasing; overcast. |
| | 11 p.m. | ... | 29.43 | |
| † 25 | 6.30 a.m. | ... | 29.37 | A M, calm; densely overcast. |
| | 12.45 p.m. | ... | 29.28 | P.M., cloudy; very heavy appearance to southward. Wind light at nor.h. |
| | 2 p.m. | 29.40 | ... | |
| ‡ | 5.40 p.m. | ... | 29.42 | 5 40 P M., wind sprung up at SSW., but barometer continued to rise slowly, though evening overcast and rainy. |
| | 9.40 p.m | 29.47 | ... | |
| 26 | 7.30 a.m. | ... | 29.56 | Gentle NW. breeze. Cloudy thundery day. |
| | 10.50 p.m. | 29.74 | ... | |
| Sun. 27 | 8 a.m. | ... | 29.79 | SW., light. Sunny morning. |
| | 1 p m | 29.83 | ... | |
| | 1 p.m. | 29.83 | ... | At 1 P.M. barometer had ceased to rise, and wind increased; a little rain beginning to fall, wind and rain increasing till night. |
| ¶ 28 | 10.30 p.m. | ... | 29.83 | |
| | 6.3 a.m | 29.80 | ... | The most thoroughly soaking day since 1850. Sun totally obscured, and wind south all day. |

* A storm coming from south, having its centre to the west of these islands, and travelling northward.

† This storm crossed the south of England from the west, travelling eastward.

‡ A storm coming from the westward across England, but moving more to the northward, being deflected from its course on overtaking the previous storm.

¶ This was the storm which accompanied the eclipse, and came from the westward, crossing Scotland; *but although the sun was totally invisible throughout the day here, I conceive that in Norway the storm had not commenced, and that to the westward, say 30° of west longitude, it had concluded, so that in both these positions it will be found that observers had a very favourable view.*

Dorchester, July 31st. F. P. B. M.

(*To be continued.*)

# Markets.

## COVENT GARDEN, Aug. 2.

Peaches and Nectarines are only sparingly supplied, but Pines and Grapes are still abundant. Strawberries are nearly over for a season. Cherries from standards have been much spoiled by the late heavy rains, but those from walls are exceedingly good. Ripe Apricots and Greengage Plums are imported from the Continent in considerable quantities. West Indian Pines fetch from 2*s.* to 5*s.* each. Oranges and Lemons are scarce. Nuts remain nearly the same as quoted last week. Carrots, French Beans, and Peas are received in quantity. Potatoes may be obtained at 1*d.* to 3*d.* per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotisfloribunda, Carnations, Pinks, Moss and Provins Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4*s* to 7*s* | Apples, kitch., p. hf. sieve, 2*s* to 3*s* |
| Grapes, hothouse, p. lb., 2*s* to 5*s* | Almonds, per peck, 6*s* |
| Peaches, per doz., 10*s* to 20*s* | — sweet, per lb., 2*s* to 3*s* |
| Nectarines, per doz., 10*s* to 20*s* | Lemons, per doz., 1*s* to 2*s* |
| Cherries, per lb., 6*d* to 2*s* | Oranges, per doz., 9*d* to 2*s* |
| Melons, each, 2*s* to 6*s* | — per 100, 6*s* to 14*s* |
| Strawberries, p. pottle, 6*d* to 1*s* | — Seville, p. 100, 7*s* to 14*s* |
| Gooseberries, per half sieve, 1*s* 6*d* to 4*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Currants, p. hf. sieve, 2*s* 6*d* to 5*s* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Plums, per punnet, 1*s* to 2*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| | Cobs, per 100 lbs., 50*s* to 55*s* |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3*d* to 1*s* | Shallots, per lb., 3*d* to 6*d* |
| Cauliflowers, p. doz., 6*d* to 3*s* | Garlic, per lb., 4*d* to 6*d* |
| French Beans, per half sieve, 1*s* to 2*s* | Artichokes, per doz., 1*s.* to 2*s* |
| Beans, per sieve, 1*s* 6*d* to 2*s* | Lettuce, Cab., p. score, 4*d* to 1*s* |
| Peas, per sieve, 1*s* 9*d* to 3*s* 6*d* | — Cos, per score, 3*d* to 1*s* |
| Potatoes, per ton, 90*s* to 200 | Small Salads, p. punn., 2*d* to 3*d* |
| — per cwt., 4*s* to 8*s* | Horse Radish, p. bundl., 1*s* 6*d* to 6*s* |
| — per bush., 9*d* to 3*s* | Red Beet, per doz., 1*s* to 2*s* |
| Turnips, p. bunch, 2*d* to 4*d* | Mushrooms, p. pot., 1*s* to 2*s* |
| Cucumbers, each, 1*d* to 1*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Radishes, per doz., 6*d* to 9*d* | Fennel, per bunch, 2*d* to 3*d* |
| — Turnip, p. doz., 3*d* to 1*s* | Savory, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Carrots, per bunch, 4*d* to 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Spinach, per sieve, 1*s* 6*d* to 2*s* | — Roots, p. bundl. 9*d* to 1*s* |
| Vegetable Marrows, per doz., 6*d* to 1*s* | Mint, per bunch, 1*d* to 2*d* |
| Onions, p. bunch, 1*d* to 5*d* | Basil, p. bunch, 3*d* to 4*d* |
| Leeks, per bunch, 1*d* to 2*d* | Marjoram, do., 3*d* to 4*d* |
| | Watercress, p. 12 bunch., 4*d* to 6*d* |

## COAL MARKET.—FRIDAY, Aug. 1.

Hollywell, 14*s.*; Eden Main, 14*s.* 3*d*; Cowpen Hartley, 14*s.*; Wallsend Haswell, 15*s.* 6*d.*; Wallsend Hetton, 15*s.* 6*d*; Wallsend Lambton, 15*s.* 3*d.*; Wallsend Stewarts, 15*s.* 6*d.*; Wallsend Tees, 15*s.* 6*d.*—Ships at market, 125.

## HOPS.—FRIDAY, Aug. 1.

Messrs. Pattenden and Smith report that the accounts from Sussex and Kent come worse. The market is improving. Duty 85,000*l.* to 90,000*l.*, but very few in favour.

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 31.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | Clover ... ... ... | 75*s* to 95*s* |
| Inferior ditto .. ... | 55 70 | New do. ... ... ... | 60 80 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 27 32 |
| New Hay .. ... | 60 72 | | J. COOPER. |

CUMBERLAND MARKET, July 31.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 78*s* to 84*s* | Inferior ... ... ... | 65*s* to 84*s* |
| Inferior ditto... ... | 58 70 | New Clover ... ... | 65 84 |
| New Hay ... ... | 58 70 | Straw ... ... ... | 28 33 |
| Old Clover ... ... | 90 98 | | JOSHUA BAKER. |

## SMITHFIELD, MONDAY, July 28.

Although the number of Beasts was large, there was a considerable falling off in the weight of beef; in consequence, choicest kinds were rather dearer, but 3*s.* 8*d.* is an extreme quotation. We were again abundantly supplied with Sheep and Lambs; however, the consumption was great, and prices remain about the same as of late. Calves were not so plentiful; trade was brisk, at a small advance. From Holland and Germany there are 994 Beasts, 4360 Sheep, 185 Calves, and 100 Pigs; from France, 80 Beasts; from Scotland, 200; from Norfolk and Suffolk, 440; and 1500 from Leicestershire, Northamptonshire, and Lincolnshire.

| | Per st. of 8 lbs.—s | d | s | d | | Per st. of 8 lbs.—s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 8 | | Best Long-wools | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 6 | | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | | Ewes & 2d quality | 2 | 8 | — 3 | 0 |
| Best Downs and Half-breds | 3 | 8 | — 3 | 10 | | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | | Lambs ... ... | 4 | 0 | — 4 | 8 |
| | | | | | | Calves ... ... | 2 | 8 | — 3 | 8 |
| | | | | | | Pigs ... ... | 3 | 0 | — 3 | 6 |

Beasts, 3930; Sheep and Lambs, 33,090; Calves, 313; Pigs, 410.

FRIDAY, Aug. 1.

The number of Beasts is large; trade is dull, Monday's rates can scarcely be supported for the best kinds, and several inferior remain unsold. We have rather a smaller supply of Sheep and Lambs, but it is fully adequate to the demand; prices remain unaltered, with a slow sale. Trade is cheerful for good Calves, but we cannot quote any advance. From Germany and Holland we have 252 Beasts, 1770 Sheep, and 317 Calves; from Scotland, 190 Beasts; and 125 milch cows from the home counties.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | ... | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | — 3 | 6 |
| Best Short-horns | | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | | 2 | 4 | — 3 | 0 | Ewes & 2d quality | 2 | 8 | — 3 | 0 |
| Best Downs and Half-breds | ... | 3 | 8 | — 3 | 10 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... | | ... | | | | Lambs ... ... | 4 | 0 | — 4 | 8 |
| | | | | | | Calves ... ... | 2 | 8 | — 3 | 8 |
| | | | | | | Pigs ... ... | 2 | 8 | — 3 | 6 |

Beasts, 989; Sheep and Lambs, 12,820; Calves, 620; Pigs, 405.

## MARK LANE.

MONDAY, JULY 28.—The supply of English Wheat by land carriage samples to-day was small from Essex, and good from Kent; fine qualities were disposed of on the terms of this day se'nnight, but some quantity remained unsold late in the day; the market was badly attended, and the amount of business transacted in foreign was very small; prices are quite nominal. —Barley is a free sale at late rates.—In Beans and Peas there is little doing.—The arrival of Oats being large, buyers hold off, and we must reduce our quotations 6*d.* per qr.—Flour is in improved demand at former rates, and the turn is in favour of the sellers.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 40 | —45 | Red ..... | 36 | —40 |
| — — fine selected runs...ditto | 44 | —47 | Red ..... | | —42 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 35 | —50 | | | |
| Barley, grind. & distil., 22*s* to 25*s*...Chev. | 27 | —32 | Malting . | 24 | —27 |
| — Foreign... grinding and distilling | 22 | —26 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 18 | —21 | | | |
| — Scotch and Lincolnshire...Potato | 22 | —25 | Feed ..... | 20 | —22 |
| — Irish .....Potato | 19 | —23 | Feed ..... | 19 | —21 |
| — Foreign .....Poland and Brew | 20 | —22 | Feed ..... | 18 | —21 |
| Rye ..... | 24 | —26 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ...26*s* to 30*s*.....Tick | 27 | —31 | Harrow . | 27 | —31 |
| — Pigeon.....28 — 34... Winds | — | | Longpod | — | |
| — Foreign .....Small | 21 | —29 | Egyptian | 23 | —24 |
| Peas, white, Essex and Kent.....Boiler | 23 | —26 | Suffolk... | 26 | —28 |
| — Maple.....26*s* to 28*s* .....Grey | 23 | —24 | Foreign . | 24 | —31 |
| Maize ..... .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —34 | Norfolk . | 27 | —34 |
| — Foreign .....per barrel | 20 | —22 | Per sack | 28 | —34 |

FRIDAY, AUG 1.—The supply of English corn during the week has been moderate, but the arrivals of foreign are considerable. To-day's market was thinly attended; Wheat must be noted a slow sale at Monday's prices, holders showing no inclination to force sales, and buyers being reluctant to pay present rates.—Barley is unaltered in value.—In Beans and Peas there is little doing.—The Oat trade is very slow, at a decline of fully 6*d.* per qr.—Flour is difficult of disposal.—There being a good many vessels arrived on the coast, floating cargoes are offered rather cheaper. Polish Odessa Wheat, 33*s.* 6*d.* to 35*s.*, and Galatz Maize, 26*s.* to 27*s.* f. o. b., including freight and insurance.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS |
|---|---|---|---|---|---|---|
| June 21..... | 40*s* 7*d* | 24*s* 4*d* | 21*s* 4*d* | 28*s* 0*d* | 30*s* 5*d* | 27*s* 6*d* |
| — 28..... | 42 4 | 25 2 | 22 3 | 28 11 | 32 1 | 29 2 |
| July 5..... | 43 5 | 25 2 | 22 5 | 27 6 | 31 8 | 28 10 |
| — 12..... | 43 6 | 25 8 | 22 0 | 22 5 | 32 6 | 28 8 |
| — 19..... | 42 7 | 25 6 | 21 11 | 28 2 | 31 5 | 28 6 |
| — 26..... | 42 5 | 25 7 | 22 0 | 27 0 | 32 3 | 28 7 |
| Aggreg. Aver. | 42 6 | 25 3 | 22 0 | 28 8 | 31 9 | 28 6 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | JUNE 21. | JUNE 28. | JULY 5. | JULY 12. | JULY 19. | JULY 26. |
|---|---|---|---|---|---|---|
| 43*s* 6*d* | ... | ... | ... | ... | ... | ... |
| 43 5 | ... | ... | ... | ... | ... | ... |
| 42 7 | ... | ... | ... | ... | ... | ... |
| 42 5 | ... | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |
| 40 7 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, JULY 29.—The arrivals of grain and Flour from Ireland and coastwise this week have been trifling, and at the same time the imports of Wheat and Flour from abroad have been good. The weather has been very unsettled, but has not affected the trade to any extent. Fair quantities of Wheat, Flour, and Barley have been moved into the interior at steady and full prices. This morning's market had scarcely so much tone in it as on Friday last, still we had a few buyers of Wheat and Flour from the interior, and prices of both were much the same as on this day se'nnight. Oats and Oatmeal were fully as dear as last week. The market is exceedingly bare of all descriptions of feeding stuffs, now that the season is approaching. Barley, Beans, and Peas command very full prices. There was no change in the value of Indian Corn. ——FRIDAY, JULY 25.—The weather has been unsettled, wet, and cool, and the growing crops of grain are not much more forward than they were 10 days ago. Still the corn trade the last two days has been merely steady with a moderate demand. The country demand for Wheat and Flour, which has been in abeyance for three or four weeks, returned to us to-day, and altogether we had a good healthy business, at very full prices, for every article of the grain trade.

*Just published, considerably enlarged, price 5s. 6d., the Third Edition of*

# RURAL CHEMISTRY:

AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c., &c.

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"In accordance with numerous suggestions, very considerable additions have been made to this little book, in preparing it for a new edition; several important practical matters, not treated of in any former editions, having been introduced. Brief descriptions of the more important of the domestic arts, such as Wine and Vinegar Making, Brewing, the Manufacture of Spirits, Baking, Cheese-making, Cookery, &c., have been added, together with some account of the Scientific Principles involved in those arts. Numerous recent analyses of agricultural crops have likewise been given, and the whole has been carefully revised and corrected."

**CONTENTS OF THE VOLUME.**


Absorption of manure
Acetates
Acetic acid
Acetic fermentation
Acids
Acids, organic
Acids, test for
Action of plants on the air
Active principles
Adulterated guano
Affinity, chemical
After-damp in
Air [mines
Air contains ammonia
Air contains carbonic acid
Air contains water
Air, inflammable
Air necessary to life
Air, composition of
Air resists compres-
Air, weight of [sion
Alabaster
Albumen
Albumen, vegetable
Alcohol
Ale
Alkali, test for
Alkali, volatile
Alkalies
Alkalies, vegetable
Alloys
Almonds
Alum
Alumina
Alumina absorbs ammonia
Alumina in soil, use of [of
Alumina, phosphate
Alumina, silicate of
Alumina, sulphate
Aluminum [of
Aluminum, oxide of
Ammonia
Ammonia absorbed by alumina
Ammonia absorbed by charcoal, &c.
Ammonia, carbonate of
Ammonia, fixing of
Ammonia in air
Ammonia in rain-water
Ammonia, loss of
Ammonia, muriate
Ammonia, phosphate
Ammonia, salts of
Ammonia, sulphate
Ammonia, urate of
Analysis
Animal heat
Animal manures
Animal principles, proximate
Animal substances
Animals, breathing of [of
Animals, fattening
Annotta
Apple jelly
Aquafortis
Argol
Arrack
Arrow root
Arteries
Artichoke, Jerusa-
Ashes [lem
Atom
Attraction
Azote
Balloons
Bamboo
Barilla
Barley
Barley-straw
Barley sugar
Barm
Barometer
Base
Basting-meat
Batatas
Bay salt
Bean, field
Bean straw
Beans, kidney
Beech ashes
Beech nuts
Beer
Beer, Bavarian
Beet
Beet-root sugar
Bell metal
Bile
Binary compounds
Biphosphate of lime
Bitartrate of potash
Bittern
Bleaching by chlorine
Bleaching by sulphur
Blonde
Black Currant jelly
Blood
Blubber
Bones
Bran
Brandy
Brass
Bread
Bricks
Brimstone
British gum
Bromide of magne-
Bromides [sium
Bromine
Brown stout
Buckwheat
Buds
Burning
Burning lime
Burning of plants
Burnt clay
Burnt sugar
Butter
Butter, clarified
Butter, how coloured
Butter, melted
Butter, salt
Butyric acid
Cabbage
Cabbage, red
Calamine
Calcium
Calcium, chloride of
Calomel
Camphor
Candles
Candle, burning of
Cane
Cane sugar
Caoutchouc
Caramel
Carbon
Carbon in plants
Carbonate of ammonia
Carbonate of iron
Carbonate of lead
Carbonate of lime
Carbonate of magnesia
Carbonate of potash
Carbonate of soda
Carbonates decomposed by acids
Carbonic acid gas
Carbonic acid gas necessary to plants
Carbonic acid gas, decomposition of
Carbonic oxide
Carburetted hydro-
Carcases [gen
Carrot
Caseine
Caseine, vegetable
Castor oil
Caustic potash
Cellars, foul air in
Cellulose
Chalk
Chamomile
Changes, chemical
Charcoal
Charcoal absorbs ammonia [of
Charcoal, burning
Charcoal, disinfecting powers of
Charring
Cheddar cheese
Cheese
Cheltenham salts
Cherry-tree gum
Cheshire cheese
Chestnuts
Chlorides
Chlorine
Churning
Chyle
Chyme
Circulation of the
Cider [blood
Cinnabar
Citric acid
Clay
Clay, burnt
Clay iron ore
Climate, differences
Clover [of
Coagulation of al-
Coal ashes [bumen
Coal-gas
Coal-tar, naphtha
Cocoa-nut oil
Cognac brandy
Cohesion
Coke
Colophony
Colour of soils [of
Colours, changing
Colours, vegetable
Colza
Combination
Combination, [by changes produced
Combining weights
Combustion
Combining numbers
Combustion, results
Common salt [of
Composition of animal matter
Composition of organic matter
Composition of plants
Composition of soils
Composition of stones
Compounds
Contagion
Contagious matter
Cookery
Copper
Copper in plants
Copper, oxide
Copper, pyrites
Copper, salts of
Copper, sulphate of
Copperas
Coprolites
Corn
Corrosive sublimate
Cotton
Couching
Cream
Cream cheese
Cream of tartar
Crops, rotation of
Cubic nitre
Cultivated land
Curd of milk
Currants
Daguerreotype
Dahlia
Death of plants
Decay [lime
Decay, influence of
Decay, like burning
Decay of humus
Decay of plants
Decay, results of
Decay, under water
Decomposition
Decomposition, induced [rocks
Decomposition of
Decomposition, spontaneous
Deliquescence
Dew
Dextrine
Diamond
Diastase
Digestion [ment of
Digestion, derange-
Diseases of plants
Distillation
Ditch scrapings
Double salts
Dough
Drainage water
Draining
Dunder
Dung
Dutch rushes
Dyeing
Earth
Earth nut
Earths
Earths, alkaline
Earthy matter in the air
Earthy silicates
Earthy substances in plants
Effervescence
Egg, white of
Elaine
Electricity, influence on plants
Elements
Embryo
Epsom salts
Equivalent
Excrement [fowl
Excrements of sea
Exhaustion of soils
Expansion [damp
Explosion of fire-
Faints, distiller's
Fallowing
Farm-yard dung
Fat
Fat of animals
Feathers
Feeding off with
Ferment [sheep
Fermentation
Fertility
Fibre, woody
Fibrin, animal
Fibrin, vegetable
Finings
Fir-ashes
Fire
Fire-damp
Fish, refuse
Fixed oil
Fixing ammonia
Flame
Flax
Flesh
Flint
Flooring malt
Flour
Flour, damaged
Flowers
Flowers, their effect on the air
Fluorides
Fluorine
Food of animals
Food, chemical use
Food of plants [of
Formation of seed
Formation of soils
Foul smells
Freezing, effects of
Freezing of water
Fruit
Fruit, ripening of
Fuel [chlorine
Fumigating by
Fumigation by sul-
Fungi [phur
Fur from water
Galvanised iron
Game, preserving
Gas
Gas coal
Gas, inflammable
Gas, manufacture of
Gas liquor
Gas liquor, strength
Gas tar [of
Gastric juice
Gelatine
Geneva
Germination
Germination accelerated
Gin [lerated
Glass
Glauber salts
Gliadine
Gloucester cheese
Glue
Glue, refuse
Gluten
Glycerine
Gold
Gold, chloride
Gold of Pleasure
Gold, mosaic
Gooseberries
Grain of Wheat
Grains, spent
Grape sugar
Grapes
Grass
Gravity
Gravity, specific
Greaves
Green manures
Green vitriol
Growth of plants
Guano
Gum
Gum arabic
Gum, British
Gum, cherry-tree
Gum, formation of
Gum, resin
Gun cotton
Gunpowder
Gutta percha
Gyletun
Gypsum
Hair
Hard water
Hartshorn
Hay
Heat
Hedges, foul
Hemp-seed
Hollands
Honey
Hoofs
Hops
Hordein
Horn
Humates
Humic acid
Humus
Hydrogen
Hydrogen, carburetted [of
Hydrogen, lightness
Hydrogen, sulphu-
Ice [retted
Iceland moss
Indian corn
Indian rubber
Indigo
Inflammable air
Inorganic matter in plants
Inorganic manures
Inulin
Iodides
Iodine
Iodine in sea water
Iron
Irrigation
Isinglass
Ivory
Juniper
Kelp
Kidneys
Kiln-drying
Kirschwasser
Lactic acid
Latent heat
Lead
Leather
Leaven
Leaves
Leaves, fall of the
Leaves, office of
Lees of wine
Legumine
Lemons
Lentils
Lettuce
Light, effects of
Light, influence on plants
Lighting a fire
Lignin
Lime
Lime, action on soil
Lime and salt
Lime, biphosphate
Lime, burning [of
Lime, carbonate
Lime, caustic
Lime, citrate
Lime, hydrate of
Lime in plants
Lime, muriate of
Lime, nitrate of
Lime, oxalate of
Lime, phosphate of
Lime, silicate of
Lime, slaking
Limestone [sian
Limestone, magne-
Lime, sulphate of
Lime, superphosphate of
Lime, when useful
Lime, when not to be used
Limes, juice of
Linen
Linseed
Liqueurs
Liquid manure
Liquid manure
Litharge [tanks
Liver
Loss of manure
Lucerne
Lungs of animals
Macaroni
Magnesia
Magnesia, carbonate of
Magnesia in plants
Magnesia, muriate of
Magnesia, phosphate of
Magnesia, silicate of
Magnesia, sulphate of
Magnesian limestone
Magnesium
Magnesium, chloride of
Magnesium, oxide of
Maize
Malt
Malting
Malic acid
Manganese
Manganese in plants
Manganese in soils
Manganese, oxide of
Mangold Wurzel
Manures
Maple sugar
Maraschino
Marble
Mark of Grapes
Margarine
Marl
Mashing
Mead
Meat boiling
Meat roasting
Medicines, action of
Mercury
Mercury, chlorides
Mercury, oxides of
Mercury, sulphuret
Metallic alloys [of
Metallic oxides
Metallic salts
Metals
Milk
Millet
Minium
Mixture
Mixture of soils
Molasses
Mordaunts
Mortar
Mosaic gold
Mould
Mouldering
Mouldiness
Mucilage
Muriate of ammonia
Muriate of lime
Muriate of magne-
Muriate of soda [sia
Muriates
Muriatic acid
Muscle
Muscovado sugar
Musk
Must
Mustard
Naphtha
Nascent state
Natural vegetation
Nightsoil [fected
Nightsoil, disin-
Nitrate of lime
Nitrate of potash
Nitrate of soda
Nitrate of silver
Nitrates
Nitrates, in plants
Nitre
Nitre beds
Nitre, cubic
Nitric acid
Nitric acid in ma-
Nitrogen [nure
Noyeau
Nutrition of plants
Nutrition of ani-
Oak ashes [mals
Oats
Odours of plants
Oil
Oilcake
Oil, castor
Oil of cloves
Oil, cocoa-nut
Oil, dregs
Oil, drying
Oil, fat
Oil, fixed
Oil, linseed
Oil, mustard
Oil of lavender
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Oil, olive
Oil, poppy
Oil, rape
Oil, rock
Oil seeds
Oil, volatile
Oleine
Opodeldoc
Ores, roasting of
Organic acids
Organic manures
Organic matter
Organic substances in soils
Organic transformations
Organised matter
Oxalate in lime in
Oxalic acid [plants
Oxalis
Oxide, carbonic
Oxide of copper
Oxide of iron
Oxide of lead
Oxide of manganese
Oxide of mercury
Oxide of silver
Oxide of tin
Oxides, metallic
Oxygen
Paint, white
Palm juice
Paper bleached by
Paring [chlorine
Parmesan cheese
Parsnip
Paste
Pearlash
Peas
Peat ashes
Pectine
Per-oxides
Perry
Persalts
Petre
Petre, salt
Pewter
Phosphates
Phosphoric acid
Phosphoric acid in plants
Phosphoric acid in bone [water
Phosphoric acid in
Phosphorus
Pickling cabbage
Pine-apples
Pipes, bursting of
Pitch
Plants, composition
Plants, death of [of
Plants, decay of
Plants decompose carbonic acid [air
Plants, effect of, on the
Plants, elements of
Plants, food of
Plants, growth of
Plaster of Paris
Plaster stone
Pouga, subsoil
Plums
Polenta
Pond mud
Poppy seed
Porter
Potash [of
Potash, binoxalate
Potash, bitartrate of
Potash, carbonate of
Potash, caustic
Potash in plants
Potash in the soil
Potash, muriate of
Potash, nitrate of
Potash, salts of
Potash, silicate of
Potash, sulphate of
Potashes
Potassium
Potassium, chloride
Potato [of
Potato haulm
Potato spirit
Potato starch
Potato, sweet
Pottery
Principles, active
Proportions
Protein
Proto-salts
Protoxides
Proximate animal
Pruning [principles
Putrefaction
Putrefaction, influence of lime in
Putrefying animal matter
Putrid fermentation
Putrid urine
Putty powder
Pyrites
Pyrites, copper
Pyroligneous acid
Pyrolignites
Pyroxylic spirit
Quartz
Quaternary com-
Quicklime [pounds
Quicksilver
Rain water
Raisins
Rape seed
Rape vine
Red cabbage
Red lead
Refuse of gas works
Rennet
Resins
Respiration [tion
Results of combus-
Results of putrefac-
Rhubarb [tion
Rice
Ripening of fruit
River mud
River water
Road drift
Rock salt
Rocket [tion of
Rocks, disintegra-
Roman vitriol
Roots
Rotation of crops
Ruby
Rum
Rushes, Dutch
Rust of iron
Rye
Rye straw
Saccharine matter
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Salt
Salt and lime
Salt bay
Salt, common
Salt in sea water
Salt, rock
Salt, spirit of
Salt, sea
Salt, solution of, in
Saltpetre [water
Salts
Sand
Sapphire
Sawdust
Schiedam
Sea fowl, excre-
Sea-water [ments of
Sea-weed
Seeds
Seed, formation of
Seeds, germination
Seeds, steeping [of
Semolina powders
Selection by roots
Semolina [of plants
Shell sand
Shells
Silex
Silica
Silica in plants
Silica in soil, use of
Silicate of alumina
Silicate of lime
Silicate of magnesia
Silicate of potash
Silicate of soda
Silicates
Silicic acid
Silicon
Silk dyeing
Silver
Silver, chloride of
Silver, nitrate of
Silver, oxide of
Silver, salts of
Silver, sulphuret of
Size
Size, resin
Skimmed milk
Skin
Slaking of lime
Slag
Smells, foul
Smoke
Straw ashes
Straw of barley
Straw of buckwheat
Straw of lentils
Straw of maize
Straw of oats
Straw of rye
Straw of vetch
Straw of wheat
Strong manures
Sub-salts
Subsoil
Subsoil ploughing
Substratum
Suffocation from
Sugar [charcoal
Sugar, barley
Sugar, candy
Sugar, formation of
Sugar of lead
Sugar of milk
Sugar, refining
Sugar refiners' waste
Sulphates
Sulphur
Sulphur in plants
Suphuret of iron
Sulphuret of lead
Sulphuret of silver
Sulphurets
Smelting
Soap
Soap-boiling
Soap, decomposi-
Soap, soft [tion of
Soap, transparent
Soap, yellow
Soapmaker's ash
Soda
Soda, carbonate of
Soda in rocks
Soda in plants
Soda in soils
Soda, muriate of
Soda, nitrate of
Soda, silicate of
Soda, sulphate of
Sodium
Sodium, chloride of
Soft water
Soil
Soils, analysis of
Soil, colour of
Soils, composition of
Soils, exhaustion of
Soils, formation of
Soils, mixture of
Soils, nature of
Solder
Soot
Sorrel
Soup
Specific gravity
Spices
Spirit proof
Spirit, pyroxylic
Spirit of salt
Spirit of wine
Sponge
Spring water
Springs
Stall feeding
Starch
Steam
Stearic acid
Stearine
Still
Stilton cheese
Sulphuret of tin
Sulphuretted hydrogen
Sulphuric acid
Sulphurous acid
Sulphurous acid checks fermenta-
Sunflower [tion
Sunflower seed
Super-salts [lime
Super-phosphate of
Super-tartrate of
Swedes [potash
Tabasheer
Tannin
Tanning
Tapioca
Tar
Tarnish on silver
Tartar
Tartaric acid
Tartrates
Teeth
Ternary compounds
Tests, vegetable
Thermometer
Thunderbolt
Tiles
Tin
Tin oxide of
Tin plate
Tin, sulphuret of
Toast
Toasted cheese
Tobacco
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Treacle
Tropical countries
Tubers
Turf-ashes
Turmeric
Turnips
Turpentine
Turpentine, oil of
Urate of ammonia
Urea
Uric acid
Urine
Use of leaves
Use of plants
Usquebaugh
Vapour condensed by cold
Vapour in the air
Vegetable alkalies
Vegetable manure
Vegetables, boiling
Veins [of
Vermilion
Vetch
Vinegar
Vinegar distilled
Vinous fermenta-
Vitriol, blue [tion
Vitriol, green
Vitriol, oil of
Vitriol, white
Volatile alkali
Volatile oil
Walnuts
Wash, distillers'
Water
Water, action on
Water, air in [lead
Water, composition of
Water, freezing of
Water, hard
Water, impurities in
Water, mineral
Water necessary to plants
Water, New River
Water, phosphoric acid in
Water, pure
Water, rain
Water, sea
Water, soft
Water, spring
Water, Thames
Water, well
Wax
Weed-ash
Weeds,
Weeds, burning of
Weeds, putrefaction
Weeds, spread of [of
Wheat grain
Wheat straw
Wheat starch
Whey
Whiskey
White lead
White of egg
Wine
Wine, brandy
Wine, domestic
Wine, fermentation
Wine, fining of [of
Wine, pricked
Wine, ripening of
Wine, vinegar
Wood ashes
Wood spirit
Woody fibre
Wool
Wool dyeing
Wool, mill refuse
Wool rags
Wool soap
Wort
Wort, foxiness of
Xyloidine
Yeast
Yeast as manure
Yeast, artificial
Yeast, bad
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Zinc
Zinc, chloride of
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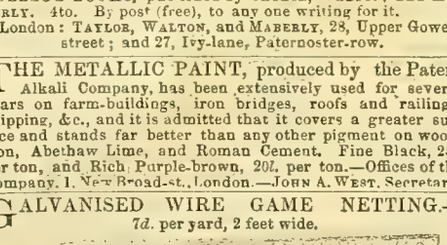
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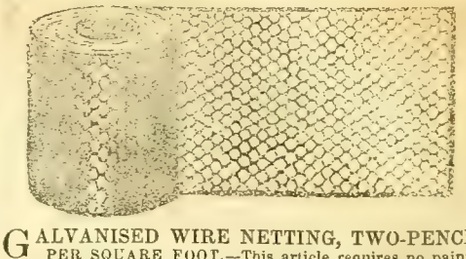
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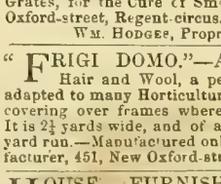
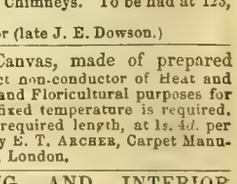
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Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s each. Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness Prince Albert.
President—The Right Hon. Earl Bathurst.
Vice-President—The Right Hon. Earl Ducie.
The COLLEGE will RE OPEN, after the Summer Vacation, on MONDAY, AUGUST 11TH, for Agricultural and general education. Lectures by professors of ability and experience, in Chemistry, Geology, Botany, Zoology, Veterinary Medicine and Surgery, Surveying and Civil Engineering, &c., are combined with practical instruction in Agriculture, and the several branches of a good education. Agricultural analysis will be undertaken in the Laboratory of the College at a low rate of charges.
For prospectuses and information respecting the course of studies, terms, &c., for in and out students, apply to the Principal, the Rev. J. S. Haygarth, M.A.

GIDNEY'S IMPROVED PRUSSIAN HOE.—This is an exceedingly useful hand-tool, both for the Flower and Kitchen Garden; it will do twice the work with half the labour of any description of hoe now in use; and it not only cuts and destroys the weeds, but leaves the ground perfectly level without the use of the rake. To the farmer it will prove of great utility, not only in eradicating all kinds of weeds from crops, but in clearing Grass land of Thistles, &c.
Extract from the Cottage Gardener, July 24, 1851.—"Now we can say of this report, what cannot always be said of a proprietor's laudatory statement, every word of it is truth. We have tried the hoe, and we say, without any reservation, that it is the best weeding implement for garden borders, beds, and smooth side paths, that we ever employed. The blade is set at such an angle that it shaves down the weeds, just below the surface, and leaves them uncovered; whereas the old hoe covers up the fallen weeds, and thus aids them to root afresh. The Improved Prussian Hoe reduces the amount of labour, being worked with the greatest ease, and from the position of the blade keeps itself sharp; and is in this also superior to the common hoe, which is worked at an angle constantly rounding off its edge; and for working upon soft beds, and smooth paths, no one, whether a professional, amateur, or lady gardener, but will thank us for inducing them to try it."
Manufactured only by J. W. Gidney, Ironmonger, East Dereham, Norfolk, and sold by all ironmongers in the kingdom. Made from the best Steel, with a neat Ash handle, price 1s. 6d. each. Also may be had, the Norfolk Bloomfield Hoe. See "Cottage Gardener" July 24th, 1851.



MARBLE CHIMNEY-PIECES, GRATES, and FENDERS, of the newest designs. Also Cundy's Patent Ventilating Stove, improved Kitchen Range, and Register Grates, for the Cure of Smoky Chimneys. To be had at 123, Oxford-street, Regent-circus.
Wm. Hodges, Proprietor (late J. E. Dowson.)

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2½ yards wide, and of any required length, at 1s. 4d. per yard run.—Manufactured only by E. T. Archer, Carpet Manufacturer, 451, New Oxford-street, London.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, Oxford-Street, London.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2s. 6d. per yard.—Damask Curtains, 10d. per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8s. per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2s. 3d. per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

Printed by William Bradbury of No. 13, Upper Woburn-place, in the parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be addressed to the Editor.—Saturday, August 2, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 32—1851.] SATURDAY, AUGUST 9. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Analysis of guano | 510 *a* | Larch, rot in | 501 *a* |
| Aquatics | 501 *b*—502 *b* | Leaves, floating | 501 *a* |
| Araucaria imbricata | 501 *a* | Manures | 505 *c* |
| Australia, flora of | 503 *b* | Melons, sexes of | 499 *b* |
| Bee-hives | 504 *c* | Mildews | 502 *a* |
| Birds, British song | 500 *c* | National Flori. Society | 502 *c* |
| Blight | 501 *c* | Nightingale | 501 *c* |
| Botanical names, old | 502 *b* | Orange trees, French | 503 *b* |
| Calendar, Horticultural | 504 *a* | Orchids for the million | 500 *a* |
| Carnation and Picotee show | 502 *c* | Paint tar | 502 *b* |
| Church leaseholds | 509 *b* | Peat charcoal | 509 *b* |
| Clod crusher | 509 *b* | Plants, grafted | 501 *c* |
| Corn ricks | 508 *a* | — old names of | 502 *b* |
| Crops, state of the | 505 *b*—506 *a* | Potato disease | 501 *a* |
| Crystal palace, gardening and farming contrivances in | 499 *b*—508 *a* | Poultry | 509 *a* |
| Crystal Palace and Victoria Regia | 501 *a* | Reviews, miscellaneous | 503 *a* |
| Draining, deep | 509 *a* | St. Petersburgh, news from | 500 *a* |
| Garden gleanings, foreign | 500 *a* | Shrubs, new | 501 *b* |
| Grafting | 501 *c*—504 *c* | Sparrow, hedge | 502 *b* |
| Guano, "normal" | 508 *a* | Swallows | 501 *b* |
| — Peruvian | 508 *c* | Tar pai t | 502 *b* |
| — analyses of | 510 *a* | Turnip moth | 499 *a*—508 *b* |
| Horticultural Society | 502 *b* | Victoria Regia | 501 *a* |
| Iron, paint for | 502 *b* | Walks, asphalte | 501 *c* |
| Labourer, condition of | 505 *a* | — salt | 502 *a* |
| | | Weather, the | 510 *a* |
| | | Walsingham Farmers' Club | 509 *c* |



DAHLIAS.—THE GREAT WEST OF ENGLAND DAHLIA EXHIBITION will be held in the grounds of Colonel BAKER, in Salisbury, on Wednesday, the 27th of August next. Thirty money prizes are offered. Full particulars on application to JOHN KEYNES, Hon. Sec.—Salisbury, August 9.

DAHLIAS AND HOLLYHOCKS.

GRAND FLORAL AND MUSICAL FETE at Colne-park, near the Chapel Station of the Colchester and Stour Valley Railway, Essex, on TUESDAY, August 26. The Halstead and North Essex Floral and Horticultural Society offers the following EXTRA PRIZES (open to all England), namely—For the best 24 dissimilar Dahlia Blooms, 2*l.*; 2d, 1*l.* 10*s.*; 3d, 15*s.* And for the best 18 dissimilar Hollyhock Spikes, 1*l.*; 2d, 15*s.*; 3d, 10*s.* Entrance Fee, 2*s.* 6*d.*
Halstead, Aug. 9. G. P. ARDEN, Hon. Sec.

UNDER THE SUPERINTENDENCE OF THE COMMITTEE OF THE ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

A GRAND EXTRA FLOWER SHOW, open to all Exhibitors, without entrance fee, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on Wednesday, the 13th August 1851, to commemorate the opening of the Establishment, when Gold and Silver Medals will be awarded for Collections of Miscellaneous Plants, Cape Heaths, Fuchsias, Cut Flowers, Dahlias, and Hollyhocks. In addition to the above, the large Gold Victoria Medal, presented by J. Coppock, Esq., will be awarded for a Collection of Miscellaneous Plants. Lists of the Prizes, and the Rules of the Exhibition, may be had of the Secretary, at the Surrey Zoological Gardens, and at the Horns Tavern, Kennington.—JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham.

TROWBRIDGE, WILTS.
Under the distinguished patronage of the High Sheriff, Members of Parliament, and other Gentlemen of the County.

THE ANNUAL HORTICULTURAL AND FLORAL EXHIBITION (open to all England), will be held on WEDNESDAY, the 20th of August, in several splendid Marquees, in the grounds adjoining the Railway station. Silver Cups and other Prizes will be awarded for Flowers, Fruits, and Vegetables.—Particulars will be given in the Schedule, which may be obtained of Mr. JOHN GRAHAM FOLEY, Honorary Secretary, The Parade, Trowbridge.

TO ORNAMENTAL PLANTERS, &c.

OSBORN AND SONS (late WHITLEY AND OSBORN), of the FULHAM NURSERY, near London, respectfully solicit their patrons and others to an inspection of their collection of TREES and SHRUBS, comprising more than SIXTEEN HUNDRED distinct species and varieties; all of which may now be seen in healthy condition in their nurseries.

Also their large collection of FRUIT TREES, for which this Nursery has long been celebrated, may be seen in vigorous health, including the famous STANWICK NECTARINE, strong and healthy plants of which will be for sale the ensuing autumn.

N.B. OSBORN and SONS have always for sale a choice collection of STOVE and GREENHOUSE PLANTS, HERBACEOUS PLANTS, DUTCH FLOWER ROOTS, RUSSIA MATS, and all sorts of GARDEN and AGRICULTURAL SEEDS.

BRITISH QUEEN STRAWBERRY RUNNERS.—Having taken several prizes for the largest and best British Queens, thousands of them weighing upwards of two ounces, and many three, I have now a large stock of strong healthy Runners, fit either for Potting or for Planting out, at 5*s.* per 100. Can be had at Mr. SOLOMON'S, Sen., Covent Garden; or Mr. MOSES'S, Gracechurch-street, City; or at my Grounds. Post-office Orders on Isleworth.
THOMAS BEACH, Market Gardener, Worton, Isleworth, Middlesex.

AZALEA INDICA "VESTA."

LUCOMBE, PINCE, and Co., will be ready to send out on the 10th of September next, fine healthy grafted Plants of their beautiful new Seedling INDIAN AZALEA "VESTA."

It is decidedly the finest of all the white varieties, being of great substance, snowy whiteness, and good shape, with neat glossy foliage and compact habit, flowering very profusely; it has been admired greatly by all who have seen it, and extensively ordered, so that early applications are respectfully solicited.

L., P., and Co., in recommending "AZALEA VESTA" to cultivators of this beautiful tribe, beg leave to point with feelings of pleasure to their two previous Seedling Azaleas—"DUKE OF DEVONSHIRE" and "AURORA" which have been so greatly approved of, and they are certain that "VESTA" will give as great satifaction as these have done.—Price 21*s.* each. Discount to the Trade when three are ordered.—Exeter Nursery, August 9.

JOHN HENCHMAN begs to state that his choice CALCEOLARIA SEED is now ready for delivery, in packets at 2*s.* 6*d.* and 5*s.* each. The Seed should be sown immediately.

A few packets of choice CINERARIA SEED at 1*s.* and 2*s.* 6*d.*; MIMULUS RUBINI at 6*d.* per packet.—Edmonton, August 9.

DUTCH FLOWERING BULBS.

JAMES CARTER, SEEDSMAN and FLORIST, No. 238, High Holborn, begs to announce the speedy publication of his new and extensive Catalogue of Bulbs. It will be forwarded gratis, and prepaid, to all his customers, and may be had on application as above.

*** *For the convenience of those who wish to have very early flowers, he begs to say that his first importation will be received in a few days, consisting of Hyacinths, Tulips, &c., for early forcing.*

CHOICE CALCEOLARIA SEED.

LUCOMBE, PINCE, AND Co., can now supply a few packets of very fine CALCEOLARIA SEED, saved from the best shaped and highest coloured varieties of this season, in sealed papers, warranted by them, at 2*s.* 6*d.* each, postage free; if sown immediately, the plants will flower strongly next season. L., P., and Co, have also a few packets of their choice CINERARIA SEED still on sale, at 2*s.* 6*d.* each; should be sown immediately. The usual allowance to the trade.
Exeter Nursery, August 9.

HURN'S LARGE EARLY CABBAGE.—Every person connected with Market Gardening round London, probably is aware of the superiority of the above variety of Cabbage, grown for the London Market by Mr. Thomas Hurn, Market Gardener, of Peckham; it is early, fine mellow flavour, does not grow coarse, is very large, and handsome shape.

Beautiful Cabbages of this variety have been exhibited by the subscribers, within this last month, weighing 21 lbs each. Too much cannot be said in its praise, as it is perfection in all respects. The undermentioned having secured from the grower a quantity of the true Seed, they are induced to offer it at 8*s.* per lb.; and sample packets, containing one oz., forwarded, post free, for 12 stamps.

CLARKE and Co., Seedsmen, 86, High-street, Borough of Southwark London.

THE FINEST NEW ROSES OF THE SEASON.

HYBRID PERPETUAL QUEEN VICTORIA (PAUL'S) This is unquestionably the finest New Rose of the season; it is a Seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly waxlike in appearance, and distinct from every other.

Plants, in November, 10*s.* 6*d.* each, with the usual discount to the Trade when three are ordered ot once.

CLIMBING PERPETUAL, ROBERT BURNS (PAUL'S). Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedole in colour; like it, not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants in November, 7*s.* 6*d.* each

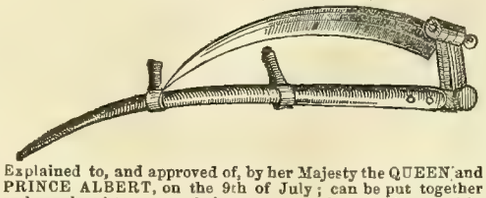
N.B. Each of these Roses has obtained a first class certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.
A. PAUL and SON, Nurserymen, Cheshunt, Herts.

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Manufactured only by J. W. GIDNEY, Ironmonger, East Dereham, Norfolk, and sold by all ironmongers in the kingdom. Made from the best Steel, with a neat Ash handle, price 1*s.* 6*d.* each. Also may be had, the Norfolk Bloomfield Hoe. See "Cottage Gardener" July 24th, 1851.

BOYD'S SELF-ADJUSTING SCYTHE
(CLASS IX., No. 199, EXHIBITION),



Explained to, and approved of, by her Majesty the QUEEN and PRINCE ALBERT, on the 9th of July; can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary.—Manufactured and sold by DEANE, DRAY, and DEANE, Agricultural Implement Makers, Swan-lane, London Bridge, and to be had of all respectable Ironmongers in the kingdom.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

MAYFIELD, SUSSEX.

TO BE LET, together or separately, on Lease, at Michaelmas next, TWO DESIRABLE FARMS, with advantages for occupation seldom to be met with, each containing about 270 Acres of Arable, Hop, Meadow, and Pasture Land, in the usual proportions. The above Farms have long been celebrated for their excellent growth of Hops, and the present plantations are in their prime. They will be let tithe free; are close to an intended Railway Station; and a good Tenant will meet with every encouragement from the Landlord. Hares and Rabbits not preserved.

For further particulars, and to treat for the hiring, apply to Mr. WILLIAM EVANS, the Gate House, Hurst Green, Sussex.

PARADISE NURSERY, HORNSEY ROAD, ISLINGTON.

THIS Desirable NURSERY TO BE LET, or the LEASE TO BE SOLD in consequence of the Proprietor being about to retire from the Nursery Business. With immediate occupation. The whole may be taken at a valuation, or by private contract.—Apply personally, or by letter, to W. J. PAMPLIN, on the premises

PARTNERSHIP.—WANTED a PARTNER in the NURSERY and SEED BUSINESS, where a good trade is carried on; any person with a small capital would find this an opportunity seldom to be met with.—For further particulars, apply, by letter, to J. G., Office of this Paper.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO., beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | | Packed in Boxes of 100 feet each. | £. | s. | d. |
|---|---|---|---|---|---|
| 16 ozs. | 3*d.* to 3½*d.* | 6 by 4, 6½ by 4½ | 0 | 13 | 0 |
| 21 do. | 3½*d.* to 5*d.* | 7 by 5, 7½ by 5½ | 0 | 15 | 0 |
| 26 do. | 5*d.* to 7½*d.* | 8 by 5, 8 by 5½ | 0 | 16 | 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2½*d.* per foot. | | 8 by 6, 8½ by 6½ | 0 | 17 | 6 |
| | | 9 by 7, 10 by 8 | 1 | 0 | 0 |

Foreign Sheet Glass, in cases of 200 feet, and in sizes from 40 by 30, to 44 by 32, 2*l.* per case.

Milk Pans, from 2*s.* to 6*s.* each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

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| 6 inches by 4 and 6½ by 4½ | ... | ... | ... | 10*s.* | 0*d.* | |
| 7 ,, 5 and 7½ by 5½ | ... | ... | ... | 15 | 0 | |
| 8 ,, 5 and 8 by 5½ | ... | ... | ... | 15 | 0 | |
| 8 ,, 6 and 8½ by 6½ | ... | ... | ... | 17 | 6 | |
| 9 ,, 7 and 10 by 8 | ... | ... | ... | 20 | 0 | |
| 12 ,, 10 and 13 by 9 | ... | ... | ... | 20 | 0 | |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

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| In sizes under 15 inches | ..... | 6*d.* | per foot. |
| ,, ,, 35 ,, | ..... | 8*d.* | ,, |
| ,, ,, 50 ,, | ..... | 9½*d.* | ,, |
| ,, ,, 75 ,, | ..... | 12*d.* | ,, |

Milk Pans, 2*s* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR PIT FRAMES, HOTHOUSES, &c. in Boxes of 100 feet, 8*s.* 6*d.* each.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4½ by 3 | ... | 5 by 2½ | ... | 6 by 2½ | ... | 6 by 3½ | inches. | |
| 4½ by 3 | ... | 5 by 3 | ... | 6 by 3 | ... | 6½ by 3 | | |
| 4½ by 3¼ | ... | 5½ by 3 | ... | 6½ by 3 | ... | 6½ by 3½ | | |

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

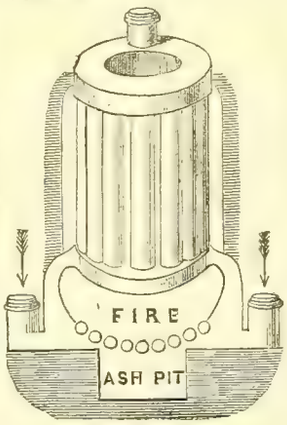
PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

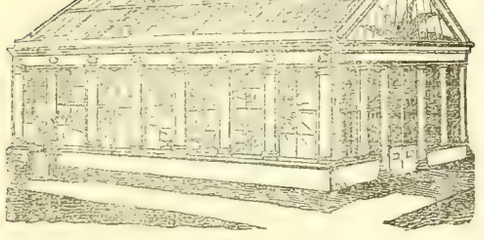



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, London, challenge the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

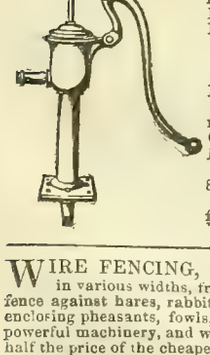
Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.
J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

CHERRIES AND WALL-FRUIT. — TANNED GARDEN NETTING, for protecting the above from birds, or as a fence for fowls, pigeons, &c., can be had from JOHN KING FARLOW'S Fishing Tackle and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½*d.* one yard wide, 3*d.* two yards, or 6*d.* four yards wide. Forwarded carriage free on all orders over 20*s.*, accompanied with Post-office order or stamps.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
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| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.

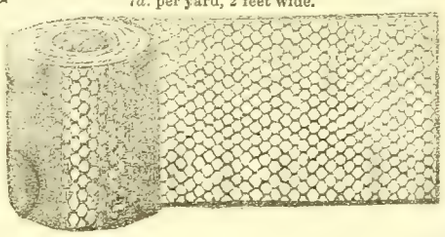
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

WIRE FENCING, 6¾*d.* per square yard, painted, in various widths, from 6 feet to 15 inches, an effectual fence against hares, rabbits, cats, dogs, sheep, deer, &c., for enclosing pheasants, fowls, &c. This Wire-work is made by powerful machinery, and worked in oil, and is little more than half the price of the cheapest article in the market. Wire-work 4 feet high, including iron standards and expense of fixing, 1*s.* 6*d.* per yard. Wire to fix on existing fences or walls, to prevent the incursions of prowling thieves.—R. RICHARDSON, 21, Tonbridge-place, corner of Judd-street, London. N.B. Wire to protect corn stacks from rats, 3 feet high, 1*s.* 6*d.* per yard, or narrow width in proportion.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned, Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch | strong ... | 9 | 6½ |
| 2-inch | extra strong ... | 12 | 9 |
| 1¾-inch | light ... | 8 | 6 |
| 1¾-inch | strong ... | 10 | 8 |
| 1¾-inch | extra strong ... | 14 | 11 |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

PATENT GARDEN NETS.—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60*s* net. Other sizes, in proportion. Orders promptly attended to.—J. and W. STUART, Patent Net Factory, Musselburgh, August 9.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President—The Right Hon. Earl BATHURST.
Vice-President—The Right Hon. Earl DUCIE.

The COLLEGE will RE-OPEN, after the Summer Vacation, on MONDAY, AUGUST 11TH, for Agricultural and general education. Lectures by professors of ability and experience, in Chemistry, Geology, Botany, Zoology, Veterinary Medicine and Surgery, Surveying and Civil Engineering, &c., are combined with practical instruction in Agriculture, and the several branches of a good education. Agricultural analysis will be undertaken in the Laboratory of the College at a low rate of charges.

For prospectuses and information respecting the course of studies, terms, &c., for in and out students, apply to the Principal, the Rev. J. S. Haygarth, M.A.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

IRON HURDLES — GREAT REDUCTION.—For Sheep, 6 feet long, 3 feet high, 5 bars, 3*s.* 4*d.* each; for Cattle, 6 feet long, 3 feet 3 ins. high, ditto, 3*s.* 9*d.* each; Strained Wire Fence, 3 feet 6 ins. out of ground, with 6 wires and strong uprights 6 feet apart, 1*s.* 1*d.* per yard; Ditto with extra strong uprights, 1*s.* 3*d.* per yard; Wove Wire Netting for excluding Hares, Rabbits, Poultry, &c., of various widths, from 1*d.* per square foot and upwards; superior Oat and Bean Bruisers, with strong iron frame and hopper, brass bearings, regulating screw, &c., 4*l.* 4*s.*; Chaff Engine with iron framing, 2 knives on fly wheel, to cut 16 bushels per hour, 4*l.* 4*s.*; Wrought and Cast-iron Palisading, Gates, &c., Garden or Stable Pumps, Rollers, Iron Wheelbarrows, &c.

STEPHENSON and PEILL, 61, Gracechurch-street, City. Manufactory, 17, New Park-street, Southwark, London.

DURABLE OUT-DOOR PAINT.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London. No Agents.—All orders are particularly requested to be sent direct.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.
PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in Dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

EXHIBITION, CLASS 9, No. 89 (SOUTH SIDE.)

GARDEN ENGINES, MACHINES, & SYRINGES, on the most improved principle. Manufactured only by RICHARD READ,
Instrument Maker (by special appointment) to Her Majesty, 35, REGENT-CIRCUS, PICCADILLY, LONDON.

M'CORMICK'S PATENT AMERICAN REAPER, will be exhibited, in operation, at Mr. Mechi's Farm, Tiptree Hall, Essex, on Monday and Tuesday next, at 11 a.m.; at Mr. W. Dray's Farm, Farringham, Kent, on Wednesday next, at 11 a.m.; and on Thursday next, at 11 a.m., on the Farm of Rose D. Mangles, Esq., M.P., near Guildford.

HOSE! HOSE!! HOSE!!! Improved Canvas Hose, Lined and Coated with Gutta Percha for Liquid Manure, Fire Engines, Garden and Farm purposes.—This Hose is greatly improved. The rigidity of seam avoided, the flexibility increased, the waterproof qualities extended, the price more reasonable. Much research and trial by the Manufacturers has enabled them to arrive at what they consider a perfect Hose. Improved Gutta Percha Union Joints of all sizes. Gutta Percha in all its branches.—Apply to Messrs. MITCHELL and Co., 98, High Holborn, London; International Depot for Patented and other Inventions.

IMPROVED GRASS CUTTING AND ROLLING MACHINE.

ALEX. SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their Improved GRASS CUTTING AND ROLLING MACHINE for Lawns. The Machine performs three different operations at one time, viz., mowing, rolling, and collecting the Grass, and works with perfect ease, producing a most beautiful smooth surface, and attended with an enormous saving in abridging labour. The complete success which has attended the introduction of this improved machine has gained for it the praise and admiration of numerous noblemen, gentlemen, and gardeners, and of the Curators of the principal botanic gardens in the kingdom. Unexceptionable testimonials can be produced on application. A. S. and SON also respectfully solicit notice to their Improved and newly-invented Chaff-cutting Machine, cutting upwards of 400 stones of straw or hay per day. Machines on view at the Great Exhibition, Class IX., No. 67.—Further particulars and a list of prices may be had on application to the makers, or to their agents.

AGENTS FOR LONDON—Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; SHEFFIELD—Mr. J. Law, Curator of the Botanic Gardens; HERTFORD — Mr. George Folkard, Ironmonger; LIVERPOOL—Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; CHESTER—Messrs. F. and J. Dickson, Nursery and Seedsmen; GLASGOW—Messrs. Charles D. Young and Co., 32, St. Enoch-square; EDINBURGH—Messrs. C. D. Young and Co., 48, North Bridge; PERTH—Messrs. Dickson and Turnbull, Nursery and Seedsmen.

CHESTER AND HOLYHEAD RAILWAY.
ROYAL IRISH NATIONAL CATTLE SHOW,
In Dublin on the 13th, 14th, and 15th inst.

LONDON TO DUBLIN in 13 Hours per Express Train.

Through Tickets will be issued at Euston Station by the 9.30 a.m., and 5.0 p.m., and the 8.45 p.m. Trains.

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| 1st Class Single Tickets ... ... ... ... | £3 0 0 |
| 2nd Class do. ... ... ... ... | 2 0 0 |

Return Tickets at a fare and a half, available for 14 days, either per the Chester and Holyhead Company, or City of Dublin Company's Boats.

LONDON TO CORK.

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| 1st Class ... ... ... ... ... ... | £3 15 0 |
| 2nd Class ... ... ... ... ... ... | 2 15 0 |
| Return Tickets, 1st Class ... ... ... | 5 0 0 |
| Do. 2nd Class ... ... ... | 4 0 0 |

LONDON TO KILLARNEY AND BACK, to return within Three Weeks.

| | |
|---|---|
| 1st Class ... ... ... ... ... ... | £6 0 0 |
| 2nd Class ... ... ... ... ... ... | 5 0 0 |

1st Class Tickets only issued per Express Trains between London and Chester.

By order, J. O. BINGER.
Superintendent's Office, Chester, 6th August, 1851.

BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2¼ yards wide, and of any required length, at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.
CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

JUDAS'S RICHMOND VILLA BLACK HAMBURGH VINE

JOHN ANDREW HENDERSON AND Co. have the pleasure of informing their patrons and friends that it is their intention to send out this very excellent new Grape on the 1st Sept. next, at 21s. each.

Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval, and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orlean Plum; when fully ripe are a fine deep black, having a fine rich flavour, and very juicy.

It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape posseses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware-road, London.

HOLLYHOCKS.

LUCOMBE, PINCE, AND CO., respectfully inform the Public that their superb collection of HOLLYHOCKS is now finely in BLOOM, and is well worthy the inspection of those who admire this noble flower, which, owing to the vast improvement in its form and colour, is rapidly and justly rising in public estimation. It consists of the finest varieties carefully selected from the collections of the most celebrated growers, together with many very excellent ones of their own raising.

L., P., and Co. have now ready to send out strong healthy seedling plants, which will flower finely next season, at 15s. per 100, package included. These Hollyhocks are warranted by L., P., and Co. as having been raised from seed carefully saved by them in the autumn of 1850 from the very finest named flowers.—Exeter Nursery, August 9.

THE BLACK PRINCE STRAWBERRY will be sent out on Monday, 18th of August, at 6s. per 100, box included; it has proved itself to be the earliest round London these five years, good in flavour, and a tremendous bearer, and the best for preserving; has taken six prizes. The Keens and British Queen 5s. per 100; same time, a pamphlet of 36 pages on "Market Gardening round London," explaining everything. Price 1s. 6d., or by post, 1s. 8d.; also, a pamphlet of 56 pages containing, the "Belgian Prize Essay on the Potato and 12 other first-rate Fruits and Vegetables;" price 2s., or by post, 2s. 4d. Post-office orders on Camberwell—JAMES CUTHILL, Camberwell, London.

C. TURNER has a few packets of choice CALCEOLARIA, CINERARIA, PRIMULA, and PANSY SEED now ready for delivery, which may be had, through the Post, at 1s. 6d. and 2s. 6d. each.—Royal Nursery, Slough, Bucks.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER begs to inform the public that his unrivalled collection of this magnificent Flower is now in bloom, and free to the inspection of all Visitors on any day, Sundays excepted; also W. C. is now exhibiting some fine specimens of this Flower in the Crystal Palace.

Saffron Waldon, Essex, Aug. 9.

SPLENDID COLLECTION OF CAMELLIAS.

J. HENRY, SEEDSMAN, FLORIST, and FRUITERER, 6, Market-place, Guernsey, begs to inform the public, that he has a beautiful collection of that splendid flower, the "CAMELLIA JAPONICA," from 3 to 8 feet in height, well grown, and promising well for bloom, and suitable for a nobleman's conservatory. Amongst the collecton will be found a splendid plant of the Marchioness of Exeter; also a fine collection of Yellow Picoteees, Gladiolus, Ixias, Belladonnas, Guernsey Lilies, Hot and Greenhouse Grapes, Chaumontel Pears, and trees. Orders promptly and honourably attended to.—August 9.

**The Gardeners' Chronicle.**

*SATURDAY, AUGUST* 9, 1851.

MEETING FOR THE ENSUING WEEK.

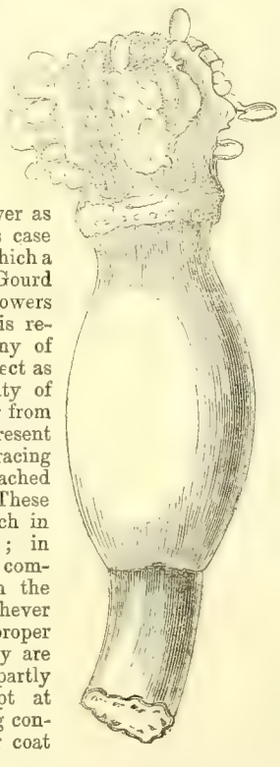
TUESDAY, Aug. 12—London Floricultural.....6 P.M.

THE numerous accounts we have received from various districts of England and Ireland, relative to the destruction of the Turnip crop, by myriads of the small green caterpillars of the Diamond-back Turnip moth (which we also find is at present in such profusion round London, as to be a perfect pest to the Entomological collector), induces us to publish an excellent suggestion of one of our correspondents, W. J. BRUCE, of Castle Martyr, county Cork. After trying applications of hot lime, soot, salt, &c., without success, he finds the greatest benefit to arise from the starvation system, namely, "by pulling up every green blade left standing in fields, of which the Turnips have been destroyed; since, by leaving a few straggling plants, the insects are kept alive, till the second sowing makes its appearance above ground; whereas, the plants sown after this treatment has been adopted are escaping with little damage." He adds, moreover, that within the last few days the insects are not so active, and many of them are wrapping themselves up in their cocoons, and pass into a chrysalis state. Now, as this is effected either upon the ribs of the destroyed leaves, or upon the ground, it is evident that the treatment of Mr. BRUCE can only be rendered effectual by removing and burning the withered remnants of the destroyed crop, and then by ploughing up, or perhaps better, by rolling the surface of the ground with a very heavy roller or crusher.

Another correspondent, "J. H. C." has also just sent us specimens of the caterpillars of this insect, from Kempstone, Notts, where they have made sad havoc with the Turnips; they have also attacked different kinds of young Cabbage plants, Gilly-flowers, Wallflowers, and Mustard and Cress. Even during the transit of the box by post, one of the moths was developed, so that we would again strongly recommend the use of a pitched bag being drawn over the fields, as soon as the moths appear, or there will be but little chance for the second sowing. From a notice in the "Entomologische Zeitung," of Stettin (1843, p. 281), we find that Zeller has proposed the name of Plutella cruciferarum for this insect, in order to avoid the confusion produced by the name of Xylostella, as it appears that Linnæus had confounded two distinct species together, namely, the present insect, to which his description of Xylostella refers, and Pl. harpella, to which the name and economy is applicable: the latter being the species which feeds on the Honeysuckle. *W.*

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IT is a very common circumstance in Melons and other Cucurbits, though the sexes are normally contained in distinct flowers, for more or less imperfect stamens to alternate with the stigmas. The pollen is sometimes perfected in such flowers, and, very fortunately for the cultivator, impregnation thus takes place, naturally, where all attempts at artificial fecundation have been baffled. Thus, for instance, in Melons, after many a vain attempt, when the plants have been left in despair to take their chance, good and abundant fruit is set, mainly, as it should seem, by the agency of such stamens. Be this however as it may, a very curious case is now before us, in which a large white-seeded Gourd presents a majority of flowers in which the pollen is replaced by ovules, many of which appear so perfect as to make the possibility of their impregnation far from hopeless, though at present we have failed in tracing any pollen grains attached to the micropyle. These stamens vary very much in number and position; in some flowers they are completely confluent with the corolla or calyx, whichever may be the more proper term; in others they are partly attached, and partly altogether free, except at the very base, as being continued from the outer coat of the ovary.



In the specimen selected for our figure five stamens are developed, three of which alternate with the stigmas, unconnected with the floral envelope, and very much thickened at the base, and two smaller opposite to them, closely combined with it, and evidently belonging to another series. All are irregularly excavated on the outer side towards the top, and have ovules over the whole of the cavity. There can be no doubt as to the mode of placentation in these plants, and therefore the argument which might be derived from this circumstance, if an attempt were made to show that the mode of placentation is in accordance with the views of of DECANDOLLE and WIGHT, must be presumed to be fallacious, and that the leaves, of which the stamens are a modification, are so distorted as to present nothing like their ordinary transformation into carpels. All the male blossoms seem to be in their usual condition, except some slight variation in the number of stamens. *M. J. B.*

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FEW things in the CRYSTAL PALACE have excited more surprise than the little evidence it affords of improvement in GARDEN STRUCTURES. While the columns of newspapers are crowded with advertisements relating to all manner of horticultural contrivances recommended for their novelty, the Exhibition in Hyde Park is nearly a blank, so far as they are concerned. Mr. FLEMING's salting machine already noticed, and a few others, occupy a nook among the agricultural implements; there is also a gaudy (should we not say tawdry?) flower-stand in the transept, intended, we presume, to decorate some mediæval hall, and fortunately half concealed by Mr. FERGUSON's flowers; and after these some WARD's cases, one of them a beautiful example, from Mr. COOKE, a couple of models of greenhouses at the west end, side by side with the magnificent coal and granite exhibitions, and some others from Messrs. WEEKS, very nearly complete the list, with the exception of fountains and vases, concerning which we may have something to say on another occasion.

All the models in question have their own claims to novelty, and demand some notice at our hands. The first (No. 61 of the Official Catalogue) is a pair of greenhouses "by DENCH, on a new construction," that is to say, the iron sashes are galvanised; galvanised sheet iron, corrugated, is employed outside under the cills, instead of brick-work, and plain galvanised iron inside; some of the wood-work is covered over with galvanised iron, and some is left plain. We can find nothing peculiar in what can be called the construction of these houses, so that the novelty is limited to a combination of galvanised iron and wood, and to the use of the same material in lieu of brickwork. Until we shall have the experience of a hot summer and a hard winter, to guide us in forming a judgment of the value of galvanised iron thus applied, we must forbear expressing a positive opinion respecting it. But it is to be feared that a house so constructed would be difficult to manage, on account of the degree as well as rapidity with which the metal sides would cool or heat under extreme temperatures—to say nothing of other faults.

A second is No. 62, provisionally registered, and represents a new mode of glazing greenhouses, invented by ALFRED KENT, Chichester. The inventor says:

"The chief points of novelty are,—1. That by the peculiar construction of the lights, and the selection made in the materials to be used, putty and all other adhesive composts are entirely avoided. 2. That the glass can be put in or removed with such facility, that the bars and frame can be painted, the glass cleaned, and the whole effectually repaired at an immense saving upon the old system. 3. That it will not require such frequent repairs as ordinary greenhouses. 4. That in the event of a fracture, it will not be absolutely necessary to wait for the assistance of a glazier to repair the same; the simplicity of the contrivance enabling any one to become his own glazier. 5. That leakage, a universal complaint in the old system, is here guarded against, by a peculiar grooved bar, which likewise assists to carry off evaporation, and renders ventilation more complete. 6. That the glass being moveable, persons can erect greenhouses upon the property of others, and remove the same securely at the expiration of lease or rental terms."

In reality the novelty is limited to the manner of glazing; for the "peculiar grooved bar" spoken of by the patentee, with its concave top and furrowed sides is almost identical with that forming the trussed troughs employed in roofing the Crystal Palace itself. The method of glazing, which is alone new, may be thus described:—Suppose two squares of glass, each 2 feet long, are laid flat, edge to edge, on the grooved sash-bars; then about 3 inches from each end of the square, a small copper bolt is driven through the bar from the underside; the edges of the squares are brought up to the sides of the bolts, and a strip of vulcanized India-rubber, about three-quarters of an inch wide and the length of the square, is carried along the joint so as to cover it; on the top of this India-rubber is placed a strip of thin iron the same length as the square; and, finally, the whole is secured by screwing a copper nut upon the copper bolt. It is to be observed that this nut is necessarily made of copper, otherwise, being on the outside, in four or five years' time, when such a house would want painting, there would be no getting the nuts unscrewed, as must be done, it being necessary to remove all the glass previous to painting the bars. The principal objection that we perceive to this mode of glazing is its cost, which must be higher at first than ordinary glazing. On the other hand, it certainly possesses some advantages, especially in repairs, the whole process of unputtying and puttying being done away with. It will, however, be indispensable that due provision be made for the expansion and contraction of the iron straps which house in the glass joints; otherwise the straps will cockle or the copper bolts break, and the roof become leaky, or be blown away.

In addition to these, we must direct attention to No. 248 A, in Class 9, where will be found an ingenious and practicable method of ventilating, exhibited by Messrs. WEEKS and Co., of the King's-road. This is effected by means of a sloping roof-sash, worked upon the principle of a parallel ruler, placed edgewise. Let the rafter be represented by the lower half of such a ruler, and the sash itself by the upper half; it is evident, that if any movement of elevation is communicated to the sash, the immediate result will be the withdrawal of the sash from the top or wall-plate, and the opening of a space all round, while at the same time the sash itself remains pretty nearly over its own bed. The elevating and depressing movement is produced by a crank, a wheel, and a horizontal bar, so that any number of sashes can be elevated or depressed at the same instant. This has all the appearance of being a contrivance of much practical value. Indeed it is only just to Messrs. WEEKS to add, that most of what they exhibit does them credit. They have, among other things, a pedestal formed of upright pipes, and also a stack of pipes, both intended for warm-

ing buildings with hot-water, which are well worth the public attention. The pedestal would probably be found more convenient than an Arnott's stove, in many places, even if the Arnott stove is well managed, which is not very often the case.

## ORCHIDS FOR THE MILLION.—No. X.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

Hot Climate—Plants grown in Pots with Peat.

*Cymbidium giganteum*, blossoms in January, and lasts long in perfection; it succeeds best in a pot in fibrous peat and good drainage, and requires a good supply of peat and moisture during the growing season.

*Cymbidium Mastersii*.—This beautiful plant comes from India, and flowers in November. The blossoms are white, with a yellow centre, and they last long in perfection. It should be treated like C. giganteum.

*Trichopilia tortilis*, from Mexico, flowers at different times of the year; the sepals and petals are yellowish white, spotted or marbled with brown; the lip is nearly white. It succeeds best in a pot well drained and filled with fibrous peat. It should be grown at the coolest end of the house, and, when at rest, it should be kept rather cool; the flowers remain in perfection three weeks.

*Peristeria elata*, from Panama, usually flowers from July to September; the blossoms are white and remain long in beauty. This grows best in a pot filled with fibrous peat and leaf-mould; it likes plenty of heat and moisture during the growing season, but afterwards it should be kept rather dry.

*Ansellia africana* is one of the few Orchids we have from Fernando Po; it flowers from January to March. The blooms are green, spotted with chocolate, the lip being pale yellow: they remain long in perfection. It succeeds best in a pot in fibrous peat, with plenty of heat and moisture during the growing season, but afterwards it may be kept rather cool, till it begins to grow, when it should be placed in heat again.

*Mormodes luxatum* comes from Mexico, and flowers in October and November. It has large pale lemon-coloured blossoms, which remain long in beauty. It grows best in a pot in fibrous peat and good drainage, and it should be placed at the coolest end of the house, where there is only a moderate supply of moisture.

*Brassia Wrayæ*, from Guatemala, flowers in May and June. The sepals and petals are yellowish green, with a few brown blotches on them: the labellum is broad and yellow, tinged with green and blotched. The flowers last a long time in perfection. It succeeds best in a pot in fibrous peat and good drainage, with a good supply of heat and moisture during the growing season.

*Brassia caudata*, from Guiana; flowers in May and June, and lasts long in perfection. The kind of treatment that suits the last will also suit this.

*Brassia verrucosa* (*major*), from Mexico; blossoms in May and June. The sepals and petals are pale green, the lip being white, marked with green warts; it lasts long in perfection.

*Brassia Lanceana*, from Surinam; blooms in May and June, and keeps in beauty many weeks.

*Brassia macrostachya*, from Demerara; flowers at different times of the year; the blossoms are yellowish green, dotted with dark brown; they last five weeks in perfection.

*Zygopetalum Mackayi*, from Brazil, flowers from October to December; the blossoms are greenish yellow, spotted or striped with brown and lilac, and they remain five weeks in beauty. It grows most satisfactorily in a pot, well drained, with fibrous peat; and it likes a good supply of heat and moisture during the growing season, afterwards it should be kept cooler.

*Zygopetalum crinitum cœruleum* comes from Brazil; it flowers in October and November, and lasts a long time in perfection. It succeeds best in fibrous peat.

*Zygopetalum rostratum*.—This fine species, from Demerara, blooms three times a year. It lasts five or six weeks in perfection.

*Zygopetalum maxillare*, from Brazil, flowers in August and September, and lasts long in perfection. These all require nearly the same kind of treatment.

## FOREIGN GARDEN GLEANINGS.

(St. Petersburgh.)

Private Gardens.—Alexis Bobrinski.—We now have to give some account of a horticultural establishment, which will, no doubt, have a great and salutary effect on gardening in Russia; this garden is but a year old, but the power of wealth has made it the most perfect model, as well as the most magnificent production of modern horticultural art. Not only has Count Alexis Bobrinski devoted all his leisure moments to horticulture, but his whole family has taken a zealous part in the same pursuit, and it may be confidently expected that from their exertions great progress will be made in this science: to show that this expectation is not unfounded, we may state that Count Bobrinski and Prince Basile Cochoubet were among the first to introduce into private gardens climbing Roses, budded standard high. In 1846, the latter nobleman obtained a collection from M. Verdier, which we saw in full flower, whilst the former is now in possession of 7000 grafted specimens of the most beautiful and still rare species. We may here observe that it would be very profitable if French and Paris gardeners could with economy retard the period of flowering, and then bring it on suddenly, as is done in Russia. No less than 800 Rose-tree stocks belonging to the Count were sent by M. Van Houtte, who had them laid by the heels in the month of March; from the establishment of the last-named gentleman they were sent, with their roots exposed, on the 28th to London, where they remained some time, and did not arrive in St. Petersburgh until the end of May, after being detained for five or six days in the snows at Cronstadt. We were there when they arrived, and helped to unpack them; their roots were immediately moistened, and we again laid them by their heels, where they remained until the 12th June. They were then potted, but showed no signs of life, yet on 20th of the same month, under the genial influence of a sun which remained 20 hours above the horizon, all the eyes were developed, and soon succeeded by flowers. This appeared so astonishing that many people came from a distance to see these plants, which had, as it were, been suddenly brought to life. It would be a great improvement, in our opinion, if, instead of mutilating our Roses by pulling off their leaves, we could keep their vital powers dormant, and excite them whenever convenient to ourselves. We leave to other more experienced persons than ourselves the task of accomplishing this desired end.

The care bestowed by the Count on his Roses does not cause him to neglect Hyacinths, Amaryllids, Tulips, and Lilies. The plants generally come by thousands from Haarlem, and we have seen the most beautiful specimens in his town garden, in the open air. The cultivation of these plants, perfect as it is, would be still better if the bulbs were not placed so deep in the ground, which retards their flowering. In this same garden is the finest Chestnut in St. Petersburgh. In this rigorous climate the young shoots are annually nipped off by the cold, which leaves nothing but a withered stick to extend the stems and branches. To the same generous nobleman is due the introduction of a great number of flowering plants, cultivated for the purpose of internal decoration. In the garden of his neighbour, Prince Woconsky, we were surprised to see a gigantic pyramidal Oak which cost no less than 500 roubles.

Finland.—The Horticultural and Agricultural Institution of Finland is situate a few wersts from St. Petersburgh. The soil is flat, light, sandy, like that in most parts of the country, and capable of sustaining but few plants. The farm is divided into seven parcels, and upon each one are cultivated those plants which are the most fitted for it, and to the real wants of the place. Early cereals, such as spring corn, Buckwheat, the black Oat, &c., the nutritive qualities of which are so celebrated, are in greatest abundance; the winter cereals may be said to be reduced to Wasa Rye, which grows pretty well on the sandy soil of Finland. We, however, saw, to our great astonishment, a field of bearded corn, which had, for the first time, resisted the intense cold of the winters. Amongst the edible roots, we may mention Raves d'eau and Finland Turnips; Potatoes are much cultivated, and we were shown no less than 250 varieties of them, collected from all parts of the globe.

The course of education consists of four years' practice, theory being looked upon as of secondary importance, and introduced by way of illustration only. The grand object seems to be to turn a set of thorough *practicals*. The pupils are taught for two years all necessary mechanical operations: the third and fourth years are occupied in the same way, with the addition, however, of two weekly lectures, in which theory is a little gone into. The principal farming operations are performed by the pupils in turn. The dairy is especially attended to and uncommonly well managed. Here we saw the fine breeds of Holgomor, Berne, Styria, Leicester, Caucasus, and Tyrol. The milk from the last breed is remarkable for the large quantity of cream obtained from it. The best breed of pigs is that of Jutland, and of sheep that of Caucasus. In addition to the art of managing land, woods, and gardens, each pupil is taught all useful accessory branches of knowledge, such as carpentry, masonry, shoemaking, &c., so that he is always able to turn his hand to anything such a person can be reasonably expected to do.

The art of cheese-making is by no means neglected, and indeed the *brie* cheese is so well imitated that the best connoisseur might be deceived by it. To this establishment is attached a museum, both horticultural and agricultural, which is continually augmented by gifts from the Government and the pupils; everything is to be found there, from the most simple to the most complicated and improved instruments. We were much struck with the collection of ploughs, 54 in number, representing the 54 governments of the empire. There is also a remarkable collection of Chinese agricultural implements. Threshing machines are here in great perfection; there was one, invented by a pupil of the establishment, costing about 24*l*. or 28*l*., requiring only two men to look after it, and capable of threshing a large quantity of grain daily. We were much pleased, too, with the fine collection of different Russian textile threads, and of other articles manufactured from the textile plants of the empire.

After four years of study each pupil is examined; the examination, which is at once simple and satisfactory, takes place as follows: When two pupils have finished their apprenticeship they are furnished with two ploughs, two horses, two cows, a house and a piece of ground proportioned to their means; they have, moreover, 20*l*. in money, some seeds, &c., advanced to them, to enable them to set to work. From this moment nothing more is given them, and for two years they have to provide for their own wants, and those of their establishment. At the end of this time they are called upon to account for what they have done, to return to the school whatever was advanced them from it, and if they do this satisfactorily they receive their title of agriculturists.

In this way the whole empire is continually furnished with a constant supply of good practical men, who thoroughly understand their business. *Masson's Report.*

## BRITISH SONG BIRDS.

(Cage Birds No. 24.)

No. XL.—We have now entered on the month of August, which has brought with it the usual amount of heat, drought, and languor. Now:—

> "Half in a blush of clustering Roses lost,
> Dew-dropping Coolness to the shade retires;
> There, on the verdant turf, or flowery bed,
> By gelid founts, and careless rills to muse;
> While tyrant Heat, dispreading through the skies
> With rapid sway, his burning influence darts
> On man, and beast, and herb, and tepid stream."

Animals, where they have it in their power, retire to pools of water, or the shade, and avoid the sun's scorching rays; whilst our little friends, the birds, seek the thickets, and for a season become lost to sight. Their tiny voices, too, are now silenced, and they are, unobserved by the human eye, quietly undergoing that annual change, which Nature in her wisdom has deemed necessary for their welfare,—"moulting."

It is beyond all question true, that in the moulting season, when intense heat brings on a slow fever which partially consumes and entirely disorganises the whole system of the feathered tribe,—each little sufferer banishes himself, as if by mutual compact, from the place of his former rendezvous, and conceals himself artfully from the eye of man, until decked in his new and becoming apparel. Equally true is it, that he feels himself "unclean" until such change shall have become effected; and that by an unerring instinct, he submits in solitude, and with patience worthy of imitation, to the many little nameless ailments and trying sicknesses which are inseparable from this annual visitation. You shall walk the fields "from morn till noon, from noon till dewy eve," at this season, and find "all silence."

There are, of course, some solitary exceptions to this general rule,—as in the case of the yellow-hammer, for instance, whose monotonous but far from disagreeable song may be sometimes heard very late in the season. *He* loves pre-eminence, when he can obtain it; and seems to be in his element, when he is left master of the field. A sky-lark may also be occasionally heard "trying" his voice in a subdued tone; and a few indistinct twitters are just audible among the brushwood. In all other respects, the month of August, as regards vocal melody in the woods and fields, is a blank,—an "aching void." All nature is in a state of lassitude; and inactivity prevails on every hand.

Until now, the black-cap has been heard singing, early and late; and his mellow, joyous voice, occasionally responded to by some happy warbling blackbird, seated on the summit of a distant tree, has afforded the lover of nature an exquisite treat. Within the last few days, we have listened—but in vain, for his flute-like strains; and tried to catch a glimpse of his neat, trim little person; but alas! "he has gone from our gaze," and we shall see him no more till he has donned his new livery. By the way, he is one of the very few warblers, who, having recovered from his moult, treats us with an occasional renewal of his song before taking his final leave of our country. He likes to have "the last word,"—and he shall have it!

A more thoroughly domesticated bird than the black-cap, there cannot be. Never did bird evince greater reluctance to quit the land of his birth than does he; but his tribe being gregarious in the autumnal season, and instinct teaching them to keep together when about to decamp, he sacrifices all to the necessity of the occasion. As for his return in the spring,—I can speak to a point about that. I have noticed the arrival of the *same* birds, and have seen them take possession of the same territories, year after year. I have recognised them by the singularity of certain notes,—observable in them, but not in their tribe generally; and by their peculiar mode of giving utterance to the notes to which I particularly allude. I have made similar accurate observations with respect to the nightingale. A knowledge of these pleasing facts causes me always to look forward to the month of April with real delight. The *réunion* with such lovely visitors, is a treat worth waiting for.

The male black-cap is distinguishable from the hen, by his hood, or cap, being jet black. The hen has a brown cap, and has altogether a more dingy appearance than the male, who always makes "the most of himself." The plumage of these birds is so delicately fine, its texture so silky,—that when caught wild, and placed in a cage, they often disfigure themselves sadly, and can only be valued for their song. Their natural food consists of flies, gnats, spiders, caterpillars, and insects generally.

Like the nightingale, these birds never breed in confinement. It would be contrary to nature, were they to do so; but their innate disposition is so joyous, the resources of their "minds" are so inexhaustible, that I consider it, of the two, far less cruel to keep them in cages. They feel happy any where,—are cheerful, and of amiable habits; and if "petted," which of course they should be, are staunch in their attachments.

Thus have I prefaced the natural history of our hero. I have not given him a false character, nor shall I attempt to do so. I shall have much to say of him; and if I only tell one half what I know, I shall obtain him a ready entrance into all families who can estimate his value. *William Kidd.*

## Home Correspondence.

*The Crystal Palace and the Victoria Regia.*—Your correspondent, "B.," Gloucester, in his remarks on the Victoria Regia, as grown by Messrs. Knight and Perry, forgot to mention the intense surface heat in which it is growing there, the average being from 90° to 100.° Had this high temperature been required it would have effectually precluded its cultivation in the Crystal Palace; but at the nursery of Messrs. J. Weeks and Co., Chelsea, the plant is to be seen in luxuriance, covered with flowers, in the open air; on inquiry I was informed that the whole pond was heated at the trifling expense of six pence a day! a small boiler being used for a range of houses, and likewise for the pond, in which is breeding an innumerable multitude of gold and silver fish. The waste water is collected in a tank, and, being warm, it is always applicable for watering plants, &c., with. Therefore what an admirable place the Crystal Palace would be for its growth! It is hardly possible to conceive a more magnificent, novel, or interesting sight than this Lily would present, surrounded by all the species of Nymphæaceæ in one noble central aquarium, if the idea is carried out of making a winter-garden of the Crystal Palace. *A Constant Reader.*

*Potato Disease.*—Late Potatoes are more healthy in appearance here, since the late rains, than in any month of August since 1845. The early varieties, however, are not so well spoken of in some districts in Essex. *Hardy and Son, Maldon.*—The disease is very prevalent in this neighbourhood, and has wrought great havoc among the earlier crops. Late-planted Potatoes, too, though still green, have become affected. The withered aspect of the Potatoes, in the gardens of the working classes, is truly deplorable; and, night after night, the evil increases; as a cottager remarked, it comes on like a scorching fire. *B., Arundel, Sussex.*

*Araucaria imbricata.*—Can any of your correspondents inform me where the tallest Araucaria imbricata is to be found in England. That at Kew is the largest one of which I have any knowledge. As I have had some little dispute respecting the matter, perhaps some one will kindly set me right. *A. Buttersfield, Under-Gardener.*

*Floating Leaves.*—It has been pointed out by those who are skilled in aquatics, that it is important to let the leaves of petiolated aquatics float. To what extent, and under what circumstances, is this true? For, firstly, the seed dropping to the bottom of the water produces an infant plant submerged to the entire depth of the water, and incapable of reaching the surface for (I should suppose) two years. And, secondly, in rivers you may see the Nuphar and other water plants carried down the course of the stream *foliis secundis*, and precluded from reaching the surface. What do you take to be the *rationale* of the rule concerning floating leaves? *A. H.* [The rule is, that submersed leaves, properly so called, have no skin, while leaves exposed to air have a true skin. The skinless species can never live exposed to air even for a short time; on the other hand, those with a skin can live under water for a certain time without injury. We are unacquainted with the habits of seedling Nymphæas. What we have seen have always had floating leaves; but the plants have been in small tanks, and similar artificial reservoirs.]

*Rot in Larch.*—I have been glad to see this subject noticed in your journal, but I cannot attribute it to the effect of bad drainage. I have Larch in various situations, and in two different soils, and I find the timber rotten in many instances on both the soils in question. Some Larches are growing upon the sloping side of a limestone hill, eminently favourable to the growth of all kinds of trees and shrubs, except those that require a deep soil. The hill faces the south. Again, another plantation grows upon a deep sand of a warm nature, overlying a kind of pennant, where there are strata of coal. The situation is a hill side, facing the north; I need not say there is no want of drainage here. The only assignable cause of the decay consists in the fact that the Larches are intermixed with Scotch Fir, and that, too, thickly. Occasionally an Oak or Ash also intrudes. I suppose whatever is unfavourable to the health of this tree, tends more or less directly to bring about the internal decay in question. I do not know whether the nature of the decay is the same in every instance reported. This may need investigation. I still go on planting Larch, as I am disinclined to believe the disease is, so to say, an inherent infirmity, but rather a visitation which may be warded off by ordinary good management of the plantation. *A. H. E., Bristol.*—I have for some years observed with interest some Larch plantations growing on the Wolds (chalk), near the east coast of Yorkshire. The chalk rock is extremely dry; indeed, no draining could make it more so. The soil upon it is, in many places on the hill sides, very thin, but what there is is often of a clayey nature, and might be somewhat retentive of wet. The plantations grow in various situations, and on considerable variety of soil, and extend over land where alluvial beds of sand and clay of some depth overlie the chalk, none of which are drained; in all these plantations I have found Larch of from 30 to 40 years old liable to be rotten in the middle for several feet from the ground, but they are worst where nearest to the chalk, and where the soil is thinnest. I had observed this before I read the remarks on the subject in "The Forester." I have no doubt of the accuracy of Mr. Brown's observations; as far as I am able to judge there is more truth and sound judgment shown in his remarks on the subject of planting than in any other that I have yet met with; and in this instance I have seen Larch plantations in Cumberland suffering precisely as he describes, in those places, and those only where stagnant water is to be found in the soil. The remark is only incorrect when applied generally to all situations; and on the Wolds, I believe that Larch plantations of from 30 to 40 years of age, where the soil on the chalk is thin, are almost universally rotten at the heart; but it is not only the Larch that are so, the Spruce are generally even worse than the Larch. In them the evil is frequently very evident before the tree is cut down, the butt of the tree and the large roots appearing of an unnaturally large size, and being in fact mere shells; in both kinds of tree the disease is usually accompanied by an apparently unhealthy constitution in the leaves, and especially in the young shoots all over the tree, the latter, even at the top of the tree, not reaching more than a few inches in length. In the Larch it is not unusual to see in the summer a considerable number of the smaller branches dead, whilst those that are living make vigorous and healthy shoots. This I have been accustomed to attribute to late frosts or cold winds when the leaves first appear. I have seen the same thing in several other trees, especially the Wych Elm (U. montana), Apricot, and Lucombe Oak. I was lately shown some Larch trees in a high exposed part of the hill above Titsey, in Surrey, which seemed to be suffering in this manner, but I have not been able to discover that this symptom is particularly connected with the heart rot. In the plantations where the Larch are unsound, the heart wood appears to be very imperfectly matured; trees of 25 years' growth sometimes show scarcely any of the red wood, and what there is is very irregular; and by no means (as in a really well grown trees), leaving a margin of sap of nearly uniform width. It is not so easy to distinguish heart wood from sap wood in the Spruce, but I have thought in these that I have sometimes more distinctly traced the decay as beginning in more central roots, and spreading from thence to the tree itself. In the same plantations the Silver Fir is invariably quite sound, and especially in wet places, and attains a large size, and grows very vigorously. The Scotch Fir does not become hollow like the Larch and Spruce, but it nevertheless does not thrive in general. The wood, instead of becoming hard and red, as the heart wood of Scotch Fir ought to be, is frequently spongy and soft, and very little of the wood turns into heart wood, and the trees not unfrequently die at from 20 to 40 years old. The question of the heart rot in Larch seems to be part of a more general one. What are the causes which favour or hinder the proper maturing of the heart wood in different kinds of trees, especially the Larch? Perhaps those of your correspondents who are interested in the subject would therefore observe also, besides soil and situation, the times of thinning the plantation, the height of the trees at these times, their thickness, and the height to which the branches were dead; thus, by including treatment, with soil and situation, we might hope to have information respecting all the external circumstances by which a tree can be affected, which might lead to some generally useful conclusions. *C. W. Strickland.*

*New Shrubs, &c.*—An elegant tree that has lived out three years and grown rapidly is the Mida salicifolia angustissima; Melicytus, which stands by it, was killed to the ground the first winter, but has shot up and stood well since. Cassinia rosmarinifolia and Aster aculeatus make pretty shrubbery plants, with their profusion of white flowers. Agave saponaria is growing most beautifully; it approaches in leaf another rare species I have out of doors, A. virginica; they have a tendency to cast their leaves in winter, except the shoot, like hardy herbaceous perennials, and look more like plants of Asphodel or Phalangium than anything Bromeliaceous. Actual cultivation in open ground and air puts plants in in such a new light I wonder it is not oftener practised, as a mere experiment, without reference to permanent hardiness—some are hardly to be recognised. *S., Dorsetshire.*

*Swallows.*—As your correspondents are occupying themselves with ornithological matters, perhaps they will not object to informing me whether the transmarine migration of swallows is established by any direct evidence of recent times, or remains where Adamson left the question. An answer on the fact, as well as a reference to the best recent authority, will oblige *A. H.*

*Aquatics.*—I am glad to inform "A. H.," who appears to be an experimenter like myself on bulbs and aquatics, that Hemerocallis fulva has stood for three winters in a pond here. The crown is just beneath the average surface height of the water. It thrives, and is very handsome and effective. This year I am trying the yellow one, which I have long had planted round the edge, where it makes a perfect fringe of gold, as seen from a boat. I have also planted in the water Siebold's Funkia and the common one. I fear the lovely subcordata will be too tender. I can only flower it in perfection in the stove. Alpinia does not move, though it was growing fast in the greenhouse when I put it out, and had stood several degrees of frost last autumn. I shall try Canna and Hedychium. It is said that the most noble of all aquatics, Thalia dealbata, will stand our winters. I saw it in the south of France, where it was as hardy as a Bulrush. The plants damped off in the greenhouse last winter, so they had better be wintered in the stove, and not put into water the first season, but grown on rapidly, like a Canna. I also had Iris ochroleuca in my mind, but could not lay my hand on a plant. There is a newly introduced sort, of very much the same habit, but larger and handsomer. I don't know the name. Arundo Donax should be tried. *Micklewell.*

*Asphalte Walks.*—Having observed in your columns several plans and attempts to keep down weeds on walks, I beg to state that I have tried for 40 years to cure this disease, which is more prevalent in this county, owing to the constant rain from the Atlantic, than in any part of England; in fact, a fallow becomes a green sward in a few months in Pembrokeshire. A gardener, who came to me from Mr. Denison, of Ossington, about two years back, said that the mixing the gravel (which should be sharp, and with as little earth mixture as possible) with gas tar, is a certain cure for weeds. I confess at first I could not bring my mind to think of the horrid smell this substance emits, but I tried it. I got gravel from a river, mixed it with coal or gas tar, and put the black compost on an extent of walk, perhaps 3 or 4 inches thick—less would do. I rolled it and sifted soft sand or gravel over the surface, to make it the colour wished. It smelled rather badly for about a month or so, and none after that, now nearly two years. Not a blade of any description dare show his face; and if the tar gets a little dark, from being washed with rain, a slight covering cases it: but I beg to say I have only had occasion to do this once since the trial. I intend to do all my walks with it. The Duke of Rutland has used it with great success, having seen it at his son-in-law's. P.S. A carriage can go over the walk without marking it, and the expense is trifling. *Wm. Edwardes.*

*Blight.*—Seeing a notice in your Paper of the appearance of the Potato disease, I wish to mention a few facts respecting a similar disease which has suddenly attacked other plants in this neighbourhood. On the 15th inst., we had a very severe gale of wind, which lasted about 24 hours, but no rain; two or three days afterwards, plants which previously appeared perfectly healthy, began to look sickly; brown spots appeared on the leaves and stems, and some were so much affected, that they perished. A few rows of Carter's Victoria Pea, which before the 15th were in vigorous health, were attacked with the disease; the blossom stems decayed, and the greater part of the young seed-pods dropped off; those which remained being covered with brown spots. The blossoms which have since appeared look healthy, and seem to be doing well. Schizanthus retusus, Phlox Drummondi, Brachycoma iberidifolia, and many other plants, were more or less affected. I am not aware that any of the Potatoes in this neighbourhood are diseased. *Henry Doubleday, Epping, July 28.*

*The Nightingale.*—In reply to Mr. Wait, I would observe that I found no better way of taming my nightingales than by paying them constant personal attention,—hanging them moderately low, and *continually* tempting them by the exhibition of some luxury in which they delighted, such as a meal worm, or some ants' eggs. Those birds which I found too wild to be tamed, I got rid of; for it was painful to listen to the noise they made, whilst dashing about their cages. To avoid this, I should recommend that "branchers" and "nestlings" *only*, should be kept. Some old birds, when fresh caught, are timid, and *cannot* be quieted. With respect to the silence of these birds in confinement, simultaneously with those performing the duties of incubation in a state of freedom,—this is readily accounted for. The joyousness they evince when first they come over, soon ceases in a cage. They sing, and get no reply from their mate. This breaks their spirit, and soon they become silent from grief. The male bird, whilst occupied with his nest, stops his song from prudential motives, fearing lest the enemy should discover his whereabouts, and deprive him of his local habitation. *W. Kidd, July 30.*—It has been stated that the nightingale has never been heard in either Dorsetshire or Somersetshire, but in the preceding year a nightingale, not only "poured through the gloom her weeping song," but even built her nest, and reared her young in some low bushes, not more than 200 yards distant from the house in which I was then residing. I frequently saw the old birds, and am therefore quite confident. "It may be an exception to the general rule" that the nightingale *does* visit Dorsetshire. *P. P., Dorset.*

*Grafted Plants.*—Among the improvements in modern gardening one of the commonest, and one which is daily becoming more common, is the great facility with which most shrubby plants, hardy as well as tender, are multiplied by the different methods of grafting, budding, &c. The advantages of this system are, the ready increase of new or rare plants, whose seeding is not to be depended on; the saving of time in procuring a ready made plant, instead of awaiting the precarious and slow maturity of a seedling or cutting; and the greater perfection, in some instances, of the plant produced. In the case of rare species, of which seeds or seedlings are seldom to be obtained, we must take what we can get in the way of increase, or some most interesting plants would be lost to the country. But the grafting system has its disadvantages. There are, 1st, the dying off of the graft or bud; 2d, that which is often the cause of the 1st, viz.: the shooting of branches or suckers from the stock; 3d, the consequent necessity of buying your plant a second or third time from the nurseryman; 4th, in hardy plants, the not having a shrub or tree on its own roots. Can you therefore recommend to growers of new Roses, Camellias, Rhododendrons, and grafted plants in general, any washing or other practice which shall destroy or check side shoots and suckers without injuring the health of the graft? *S.* [No other than the usual practice of removing them by knife or hand.]

*Mildews.*—The observations at p. 467, upon the two genera "Oïdium and Erysiphe" are entirely at variance with my own experience, although I have devoted much time to the investigation of this particular subject, for the express purpose of clearing up the doubt in which their connection was involved. I have examined a great number of specimens on various plants in every stage of growth, making drawings of the Oïdium from each plant on separate pieces of paper, and afterwards comparing them. The result clearly showed that at some one time every peculiarity of form observable on one plant might be also found on all the others, the joints of which the moniliform stems are formed varying from one to seven. All the joints, when mature, contain sporules, which I have sown and propagated on the leaves of other plants than those from which I took them. The prostrate threads connected with the upright stems are at first few and far between, but soon increase, and form a close-felted coating, not equally close on all plants, but rendered more dense and indistinct by the falling of the upright stems upon it, which collapse, and being glutinous make it a compact mass. To attempt to obtain the true characters of the Oïdium at this stage is mere labour in vain, as I know to my own cost; but after examining fresh specimens continually, and propagating the species from the Vine, or the Pea, Verbena, Enchanter's Nightshade, and several other plants, I felt myself justified in reducing several species hitherto considered distinct, under the general name "Oïdium commune," and I have seen no reason since to alter my statement. I now come to the Erysiphe, which has been confounded with the Oïdium in my opinion with very little reason—the principal one being, that it is found amongst the felted threads of the Oïdium, on some plants, though never on others, which is of much importance.—On the Vine, Peach, Verbena, Circæa lutetiana, and several others, I have never found it, though clothed with the felted mildew Oïdium—very rarely on the Cucumber, more frequently on the Hop, and commonly on Sorrel, Aquilegia, Plantain, Burdock, &c., and that most elegant species E. penicillata on the Gooseberry leaf (now abundant). It seldom appears until after the Oïdium has finished its growth, and formed a felt. It then originates in small whitish globules which turn yellow, and brown when mature. At first they have few or no fulcra, or supporting threads; soon, however, these are thrown out on all sides to the number of 8 or 10, which attach themselves like Ivy to the epidermis; these are thicker than the prostrate threads of the Oïdium, their extremities being divided into a palmate form. When quite mature the fulcra seem to contract, and are lifted up from the leaf, and become dispersed; so that a leaf dotted all over with them may be in a few days without a specimen. Each peridium contains four or five asci, shaped like a Grape stone, containing sporules. Other species of Erysiphe are not so easily detached from their matrix, in consequence of their being more tightly strapped down, by the threads of the Oïdium in company with them, which sometimes entirely cover the peridium of the Erysiphe; although it usually contrives to thrust a portion of its surface through the matted threads. I have not seen Dr. Plomley's drawing, but can easily conceive the peridium of an Erysiphe thrusting itself through a collapsed joint of the Oïdium, without arriving at the conclusion that there exists a natural connexion between them; several fungi absolutely grow out of other fungi, but the species are not thereby rendered identical. In the case referred to, however, I apprehend the Erysiphe must grow through the Oïdium; not out of it, as if it were giving rise to an anomalous and heterogeneous offspring; for as each plant contains distinct sporules of different forms; the one in upright stems, and the other in round sessile peridia, it would be departing from all recognised laws to suppose that the seeds of one plant should produce the other; and though some strange stories of transmutation of plants may gain credence with some people, I confess that I am not one of them, nor do I think 'M. J. B." ever will be. *F. J. Graham.*

*Salting Walks.*—In a paragraph at p. 484, Mr. Bailey states that it is an error to think that one dressing of salt is sufficient for a season; but from the experience I have had, I think it is quite sufficient, if it is put on at a proper time. Last season two walks were salted here at two different times; the one application proved effectual, and the other a failure. The first walk was salted on a very hot and dry day, and with the desired effect up to May last. There was not a weed to be seen on it, nor at the present time, but it was nevertheless thought advisable to give it another dressing this year. The other walk was done on a wet day, and, as already noticed, was a complete failure; so that, as far as my judgment goes, salt is the best and most economical remedy for weeds that can be used. It has answered so well here, that it has been employed to a very great extent, so much so, that it is intended to have all the walks dressed over with it. Those that were done in the spring are quite clear from weeds and moss, but those which were not salted have been picked over three times. A yard at this place was covered over with Moss, but a dressing of salt has cured it. It is applied here at the rate of 1 bushel to the rood (8 square yards); and it is my opinion, that if it is applied in dry weather, it will be found a sure remedy against those two troublesome things, weeds and moss. *Chester.*

*Incubatory propensities of the "Hedge Accentor."*—Having examined attentively the article "Cuckoo," I beg to state, for the benefit of your ornithological perusers, that I have just now, in a close-clipped Holly-bush, a hedge-sparrow's nest with three unfledged young ones in it. On Wednesday last it had three eggs in it. On Saturday it contained three naked young birds. This morning (Monday) I have just inspected the nest, with the three little hedge-sparrows in it. They gaped for their breakfast, and seemed to be doing very well. Men of science now call this sweet warbler the "Hedge Accentor," but here, in Yorkshire, amongst us rusties, it always goes by the name of Dicky Dunnock. Should any of your readers remark, with Cervantes, that one swallow does not make summer; "Una golondrina no hace verano." I will further add that, the year before last, in the last week of August, I found a Dicky Dunnock's nest here, in a thick Yew bush, with four eggs in it. *Charles Waterton, Walton Hall, near Wakefield, Aug. 4.*

*Fleming's Tar Paint*—In your last number you have printed "adhered to" instead of "at hand," which I believe I wrote, though perhaps illegibly. Perhaps you may think it worth while to correct the error. *L. L.*

*Depth of Water for Water Plants.*—They talk of Calla living in 1½ feet of water, and not living in 1 foot, and so forth. What does this mean? The ball of a large pot of Calla is more than 6 inches deep. Do they count the depth they state, from the base of the roots and bottom of the pot, or from the crown of the roots, which is the top of the pot? Without that explanation the words "foot," or "18 inches," are of no definite meaning. *A. H.* [The depth ought to be calculated from the top of the pot.]

*Old Botanical Names.*—Which is the true Statice armeria? which the true Cactus Opuntia? which the true Canna indica? Similar questions might doubtless be asked of many of the Linnean genera and species. Modern accuracy has, by the results of close investigations, cut up these old species into many new ones, some of which will presently be enumerated. *Statice armeria.*—Under this name botanists formerly included—1st, the dwarf British cæspitose plant, with harsh curly leaves, short downy scape, pink or white flowers, not rare on our coasts, so truly maritime that it is hardly to be found even on the inland slope of the hills which it covers towards the sea. 2d, the common German sort, with grassy leaves, long smooth wiry scape, pink flowers, native of the sandy meadows near the Elbe, as high up as the Duchy of Anhalt; and 3d, the larger Italian kind, with long soft grassy leaves, smooth or scabrous (not pubescent) scape, and pink flowers, growing in mountain pastures high among the Apennines. Statice (various species), is common on the Mediterranean coast, but not armeria, of any species. Have these plants been well discriminated by any author? the trivial names might well be A. maritima for the British, pratensis for the German, montana for the Italian. *Canna indica.*—It is difficult to know what is the species that first bore this name. A tall, branching, three petaled, crimson-flowered Canna, is usually called by that name in the south of Europe; while a dwarf variety, scarcely differing in the flower, is distinguished as Canna coccinea. The species of Canna and Musa seem capable of flowering at various stages of growth and stature. The tawny, or buff flowered Canna, seems to be the hardiest species. *S.*

## Societies.

Horticultural, *Aug.* 5.—W. W. Salmon, Esq., in the chair. Mrs. Lawrence, of Ealing Park, sent an interesting collection of Orchids, in which were three species of Cattleya, two Oncids, Vanda Roxburghii, the tailed Angrec, Epidendrum phœniceum, the beautiful rich crimson variety of Dendrobium secundum, introduced by the Society a few years ago; Stanhopea insignis, and a new Cycnoches, bearing a pendent chain at least 15 inches long, of very singularly formed blossoms. A Knightian medal was awarded for these. A similar award was also assigned to Mr. Smith, gr. to W. Quilter, Esq., of Norwood, for six excellently grown Cape Heaths, consisting of two varieties of tricolor, Ewerana superba, Irbyana, the larger variety of retorta, and infundibuliformis. The latter, on account of its beauty and nice form, attracted especial attention. Mr. E. G. Henderson of the Wellington-road Nursery, St. John's Wood, produced small examples of Æchmea miniata and discolor; the cream-colored Pitcairnia suaveolens, and a good specimen of Tillandsia carnea. The latter bore a nice head of pink flowers, and although, perhaps, in general appearance, too much like a Pine-apple, it nevertheless promises to be a plant of considerable value. A Banksian Medal was awarded it. A flower of a seedling Fancy Pelargonium called Negro Boy, apparently a free blooming variety, a small punnet of Black Prince Strawberry to show that it is not only very early, but also very late, and a dish of Lapstone Kidney Potatoes, were furnished by Mr. Cuthill, of Camberwell. The latter were produced to prove that Potatoes wintered on Cuthill's plan are free from disease, while those not so treated, and growing in his immediate neighbourhood, were stated to be more or less affected by the prevailing epidemic. It was mentioned, that although this plan of wintering might possibly not ensure sound Potatoes under all circumstances, yet, that the produce of seed so treated would be more likely to escape disease than that from mismanaged sets.—Mr. Rivers, of Sawbridgeworth, sent Cherries, Plums, Pears, and Peaches, in the shape of small trees in pots, bearing (except the two latter), ripe fruit. Although many of the Cherries and Plums had dropped in travelling from Sawbridgeworth to London, still enough remained to show that very small plants of these kinds of trees in pots will bear heavy crops of fine fruit. They were stated to have been produced in what Mr. Rivers terms an "Orchard House," *i. e.*, under a glass roof, with a Beech hedge for a back wall, and a Yew hedge for the front. The pots had been standing on a raised border, and were open at the bottom, in order to allow the roots to pass into the bed below. Two or three were covered with Haythorn's muslin net, to show how late Cherries may be preserved in the autumn; for, being under glass, autumnal rains do not injure them. Late Plums may also be preserved in the same manner: they shrivel, and become very delicious. Some of the pots were painted round with chopped horse-hair, tar, and salt, which has been found to be a capital bar to the snail tribe. A Banksian Medal was awarded.—Mr. Markham, gr. to the Hon. R. Clive, M.P., of Hewell, received a Knightian Medal for a beautifully ripened Moscow Queen Pine-apple, weighing 4 lbs. 2 oz., and for a Providence, 9 lbs. 10 oz. Mr. Price, gr. to W. Thompson, Esq., M.P., had a very fine Queen, weighing 5 lbs. 8 oz., for which a Banksian Medal was awarded; and Mr. Jones, gr. to Sir J. Guest, Bart., sent two Queens, one 6 lbs., the other 5 lbs. 12 oz., and an Enveille, 7 lbs. 11 oz. A Banksian Medal was awarded for the heaviest Queen. Mr. Markham produced a dish of Black Hamburgh Grapes, large both in bunch and berry, and finely-coloured, for which a Banksian medal was awarded, and Red Hamburgh and Black Hamburgh were furnished by Mr. Martin, gr. to Sir H. Fleetwood, Bart, Hill House, Windsor Forest. Some are of opinion that Red Hamburghs are only badly coloured Black Hamburghs, but Mr. Martin's exhibition went to prove that this is not the case, for one Vine in the centre of his Vinery bore the large Grapes exhibited, which had the colour of an Orleans Plum, though they were quite sweet and ripe, while those growing on either side of it produced jet black fruit, which was otherwise different from the red kind. A Certificate of Merit was awarded for the latter. The same grower also produced the Windsor Prize Melon, a small, netted, green-fleshed kind, excellently flavoured, and Mr. Markham sent a Cabul Melon, weighing 13 lbs. 15 oz. The latter was not cut, and therefore no opinion of its merits can be given; it was stated that four of such Melons weighed collectively 35 lbs. They had been grown in a rudely constructed temporary pit, merely by way of experiment. Mr. Martin received a certificate of merit for very fine Morello Cherries.—From the Garden of the Society came five different kinds of Orchids; three varieties of Achimenes; the Rock Abelia (A. rupestris), an all but hardy evergreen shrub; two Cape Heaths, the old-fashioned Arduina bispinosa; the ever-flowering Lyperia pinnatifida; Kalosanthes miniata; the sweet-smelling Rhynchospermum jasminoides; the beautiful Bauera rubioides; and Boronia viminea, together with Seymour's Golden Perfection Melon, a very good variety, and the following Vegetables:—*White Paris Cos Lettuce.*—Seeds of this have frequently been distributed to Fellows of the Society, as the very best summer Cos Lettuce. The specimen exhibited was grown on the top of the ridge between rows of Celery. The entire plant weighed 4 lbs., but some in perfection a week ago weighed 4 lbs. 5 oz. The leaves hood over each other at the top, so that tying up for blanching is scarcely necessary. It is a fortnight or three weeks longer than any other Cos in running to seed. *Early White Scolloped Gourd.*—This is the name under which the seeds were received from America. It is sometimes called the *Crown Gourd*; and it is the *Patisson*, or *Bonnet d'Electeur*, of the French. The plant forms a round bush, not *running* like most of the tribe; and the fruit is produced very close to the stem. *Egg or Apple Squash.*—So named from its shape, colour, and size, resembling that of an Orange. In size it certainly forms a very great contrast with the Mammoth Gourd. *Chou-rave blanc Hâtif de Vienne* and *Chou-rave Violet de Veinne*; both Turnip-rooted Cabbages, with much finer flesh than the common Kohl Rabi, which is used for cattle. *Pois Sans Parchemin*, or Sugar Pea, the sort the pods of which are cooked like those of French Beans. It is much used on the Continent.

National Floricultural, *Aug.* 7.—Mr. C. P. Lochner in the chair. A first class certificate was awarded to a variegated scarlet Pelargonium, named Mountain of Light, from Messrs. Lee, of Hammersmith. Several plants of it were shown, all dwarf and bushy. The foliage is beautifully variegated, the truss good, and the flowers bright scarlet. Mr. Costar's Picotee, called Christabel, received a certificate. Mr. Holland had a promising heavy purple variety, named Countess of Wilton.—Mr. Edwards sent collections of Carnations, Picotees, and Dahlias.—Messrs. Henderson Phlox Mayii, the tall purple Lobelia, called Aurora, and the pretty Gloxinia tricolor. Hollyhocks in spikes, Carnations, Picotees, and Dahlias came from Mr. Bragg, of the Royal Nursery, Slough; a Hollyhock, called Purple Perfection, from Mr. Laing, of Twickenham, and a nice exhibition of Marygolds from Mr. Barnes. These constituted the principal subjects exhibited on this occasion.

National Carnation and Picotee Society, *Aug.* 4.—The first meeting of this new Society, took place in the grounds of the Royal Nursery, Slough. There was great competition, and the blooms were large and well coloured. Carnations (Amateurs): 1, Mr. M. May, Sonning; 2, Mr. J. Edwards, Holloway; 3, Mr. Newhall, Woolwich. Picotees: 1, Rev. A. Matthews, Weston-on-the-green; 2, Mr. M. May; 3, Mr.

Lochner, Paddington. Carnations (Open Classes): 1, Mr. C. Turner, Slough; 2, Mr. Bragg, Slough; 3, Mr. Willmer, Sunbury. Picotees: 1, Mr. C. Turner; 2, Mr. Bragg; 3, Rev. A. Matthews. Yellow-ground Picotees: 1, Mr. Bragg; 2, Mr. Turner; 3, Mr. Hoyle, Reading; 4, Mr. Willmer. Several seedlings received certificates. We have thought it better to give the names of the most conspicuous flowers exhibited in each class, than to give the entire lists, and in doing this we have included some new varieties growing in Mr. Turner's collection of Carnations; in Scarlet Bizarre, Admiral Curzon, Lord Lewisham, Lord Ratcliffe, and Bolingbroke, were in good order. Crimson Bizarres were very numerous and good. Lord Milton, Duncan, Jenny Lind, Owen Glendower, Black Diamond, Puxley's Queen, and Queen of Trumps, were in excellent condition, as were also Puxley's Favourite, and General Monk, the latter having the best white in this class, and otherwise good. In Pink Bizarres May's Falconbridge stands high, being large and well marked. The old but favourite flower, Puxley's Prince Albert, was very fine, and had but few equals. Sarah Payne, Twyford Perfection, and Henry Kirke White, were also shown. In Purple Flakes, Beauty of Woodhouse, Premier, Squire Trow, Poins and Perfection were the favourites. Scarlet Flakes were represented by Cradley Pet, Simpson's Queen, Puxley's Standard, and Africanus. Of Rose Flakes, Puxley's Princess Royal, Flora's Garland, May's Ariel, Poor Tom, Lorenzo, Antonia, and Wood's Haidee, were the best. Picotees: these advance towards perfection much faster than Carnations: do. Foremost in the heavy red-edged class was Mrs. Norman; a full-sized variety, of first-rate properties, fully maintaining the opinion we gave of it last season; Prince of Wales, King James, Hogarth, and two of Mr. Fellowes' Seedlings were good; also an intermediate variety, between red and rose. Costar's Christabel is a neat pleasing flower, of good properties, without the slightest bar. Light red, Youell's Gem, Duchess of Sutherland, Miss Holbeck, and Dodwell's Mary; the latter is good in size, and very evenly marked. Heavy purple, Dodwell's Alfred, Lord Nelson, Portia, Lady H. Moore, Prince Arthur, Viola, and Duke of Rutland, the latter a fine constant flower, were in the best possible order. In light-edged purple, Matthew's seedling was the best; it is a superb flower. In this numerous class, the following were good: Ophelia, Ganymede, Willoughby, Circe, Jupiter, Juliet, and Fellowes' seedling 51. Heavy rose and scarlet—the most attractive class of all—was represented by Venus, Green's Queen, Princess Royal, Marris' Victoria Regina, a bright fine flower, and Marris' Grace Darling, a flower similar to Princess Royal, but wider in the petal; Unexpected is a medium-sized neat variety; and Jeannette has a fine petal, but is rather thin. Light-edged rose; Mrs. Barnard, as usual, stood at the head of this class; and Countess Howe is a pleasing bright variety.—The meeting for 1852 will be held, we believe, at Norwich.

## Notices of Books.

During the last few months a pile of good, bad, and indifferent works has accumulated upon our table, of some of which we must now give a short account.

Among the good ones, we should in the first place mention "*Latham's Ethnology of the British Colonies and Dependencies*," (12mo, Van Voorst), a highly interesting and useful work, with which all well informed persons, especially those interested in the British colonies, should become acquainted. Dr. Latham's object is to trace the origin of nations, to show their ancestral connection, and to make out the changes by which a common stock has branched into ramifications of language, manners, or customs, now bearing no evident relation to each other. Thus he shows that the Germans in Germany are not Germanic, that there are no absolute descendants of the ancestors of the English in their ancestral country of Germany, and that the Frisians are their nearest representatives. He shows that Australia was certainly peopled from Timor or Rotti, notwithstanding the "hasty but accredited assertion of the Australian language having nothing in common with those of the Indian Archipelago;" Belooches (Bilúch) are shown to be Persians, not Arabians, although they may be Arabites; and so on through above 250 pages. The subject of Dr. Latham's learned volume is too foreign to our pages to justify us in mentioning it more at length.——Much more popular in their subject, and better suited for the general reader, are Messrs. Longmans' cheap reprints, in shilling numbers, under the title of the "*Travellers' Library*," where we have admirable essays by Macaulay, M'Culloch, and other first-class writers, reproduced in a form that renders them accessible to everybody.——In the same rank with the last, as cheap works of great utility, must be named Knight's "*Curiosities of Industry*," one number of which, price 6*d*., containing Glass and Iron, by Mr. Dodd, is now before us: it adds another subject to the "*Historical Half-hours*," "*Pictorial Half-hours*," and similar good publications, which have given Mr. Knight so high a reputation among the purveyors of cheap literature. ——Under the name of "*Drops of Water*," (Reeve and Co.), Miss Catlow has introduced to the reader some of the common forms of animal life, which can only be seen by the aid of a good microscope. The work is illustrated with characteristic figures of remarkable animalcules, and will be found a useful popular aid to young persons who desire to make themselves acquainted with the living wonders of the waters. We may take this opportunity of mentioning that a costly instrument is not required for this kind of study, nor indeed for any elementary inquiries in natural history. A stand and tube, fitted with one good eye-glass, and one objective magnifying 250 diameters, is amply sufficient for all preliminary purposes.——"*Gilbert's Visitors' Guide to London*," tells a stranger as much of our metropolitan maze, and as well, as can be expected for 1*s*. 6*d*.——In like manner the mysteries of the Crystal Palace are explained as well as they can be explained in a summary manner, by Mr. Hunt's excellent "*Hand-books*," and Jerrold's "*How to see the Exhibition*."——That those who interest themselves in compelling the sun to furnish them with pictures, such as the human hand cannot produce, will find very useful and complete information upon "*Photogenic Manipulation*" in Mr. Bingham's excellent little work under that name (Knight and Sons, Foster-lane), which we are not surprised to see has reached its 8th edition.

## Miscellaneous.

*Orange Trees.*—Workmen are employed at present in repairing the cases containing the Orange trees of the Tuileries garden. These trees are of great age, some going back as far as 700 years, and the youngest 300. Every 20 years the earth in each case is changed, and during the three following years they appear sickly. They then acquire fresh strength, and throw out an immense quantity of blossoms. It is this periodical change of nourishment which has led to their longevity. —*Galignani.*

*On the Character of the South Australian Flora in general; by Dr. H. Behr. (Translated from the German in Schlechtendal's "Linnæa," Bd. xx. Heft 5; by Richard Kippist, Libr. L. S.)*—The flora of South Australia, and with it the physical character, may be divided into two widely separated forms, that of the Grass-land, and that of the Scrub. In the hill-country, and the plains lying to the westward of it, the Grass-land prevails: yet so that extensive tracts, as well as small portions, of the other form of vegetation, likewise occur commonly enough. In the east, the Scrub predominates to an extent that is only interrupted by the formation of the fertile Grass-land in the flats (pastures) of the Murray, and in the marshes of the lower part of its course, together with those of its estuary. The Grass-land resembles for the most part European pastures in its physical character, as do also the individual plants which constitute its turf resemble corresponding European ones. A rather thick meadow-carpet is the essential characteristic of these regions, with which is associated, in most cases, a light park-like forest of gigantic Eucalypti, whose crowns, however, are never in contact with each other. Their smooth stems, robbed of their outer bark, stand at measured, and often very regular intervals; so that the idea involuntarily presents itself, that the whole must be the park of some landed proprietor, enthusiastically devoted to the quincunx of Cicero. Where the soil is poorer, Casuarinas make their appearance here and there, whose brown-green crowns contrast strangely in spring with the sap-green of the turf. They reach the height of 20, or at most of 30 feet, and stand like twigs among the Eucalypti. The gummiferous Acacias, retinoides and pycnantha, belong, likewise, to this form of vegetation. Acacia retinoides reaches the height of the Casuarinas, and grows in a more isolated manner; Acacia pycnantha is usually little above the height of a man, yet of a very decided arborescent growth. It forms an umbrella-like crown, and often constitutes little forests. But few shrubby species occur, and only where the poorer soil forms a transition to the Scrub vegetation. Among the commonest plants is the Bursaria. One variety of the Grass-land is the pit-land ("Bay-of-Biscay-land") consisting of undulating plains or gently inclined slopes, which resemble a sea suddenly frozen during the beating of the waves. The depressions are pit-formed, and surrounded by circular elevations; yet, even in the most strongly-marked form, the distance between the bottom of the cavity and the level of the surrounding ring scarcely amounts to 5 feet. The continual change of level produces a very broken surface, which, however, becomes effaced in the course of a few years under the plough. The flora of these districts has some peculiarities. Whilst in other tracts which I have visited, Grass-land, destitute of trees, is comparatively rare, these districts show a decided aversion to the elsewhere almost universally prevalent Eucalyptus, which here seldom occurs, except as a border to the ravine-like water-courses, and even then only as a less robust species, Eucalyptus odorata, Schldl. Casuarina is a more common shrub, but the commonest is Acacia pycnantha, which here evinces an unusual tendency to unite in groves. Bursaria is also characteristic of these localities, together with the creeping bushes of a few Grevilleas. The generally treeless ground is peculiarly rich in Syngenesious plants; but, with the exception of the Grasses, poor in Monocotyledons. Orchideæ it does not produce at all. A second variety of the vegetation of the Grass land is afforded by the beds of rivers when dried up in summer. The stems of the Eucalypti on the banks attain here to incredible dimensions; trunks of eight feet diameter being by no means uncommon. Crowded together in the actual bed of the stream, is a flora of principally European forms, which, hitherto retarded by the water flowing over them, first develope their flowers when all others are withered. The bed is often likewise filled up with bushes of Melaleuca or Leptospermum. Reeds and brushwood, hanging from the tops of these bushes, then mark the height to which the water rises in winter. This form affords the transition to another—that of those shady ravines, which, during the whole year, are more or less supplied with water. Here is found a vegetation whose herbaceous representatives generally remind us of Europe, even more strongly than those of the dried-up creeks and of the remaining Grass-land; but whose arborescent and fruticose forms assume the habit of the Scrub-land. But as this flora occurs for the most part in the transverse valleys of the upper course, seeds, rhizomes, &c., are carried down during the winter rains, and enrich the originally different flora of the ill-watered lower course. The Scrub differs from the above-described forms of vegetation by the utter want of a turf; at least, I do not think that the most imaginative colonist could construct a turf out of the few scattered Stipas and Neurachnes. This almost entire want of herbaceous plants is compensated, however, by an endless profusion of bushes and small trees. Here is the especial source of those plants which for some dozen years past have been the ornament of our greenhouses. The general impression produced by this district is nevertheless not an agreeable one. Heath-like foliage, or vertically-placed leaves, crowd about mossy compactly grown spherical bushes, or but sparingly conceal the nakedness of long rods which jut out from hideously lanky bushes. The prevailing colour of the leaves is a dead blue-green, but in this respect Nature lays little restriction upon herself, the Ragodia bearing white leaves, other bushes brownish-red; the most conspicuous, because in such company the most unnatural, being the lively May-green of Cassia and Santalum. Pinnate or otherwise divided foliage is rare; the only example that I can remember is a species of Cassia. In other respects, the greatest possible variety is found among the rigid leaves, from rotundo-ovate, through the lanceolate form, to the mere bristle; from the most dense crowding, through every possible shade, to the bare leafless twig. Moreover, plants belonging to very different families coincide so completely in habit, that only flowers or fruit afford a safe criterion. The bushes and trees of the Scrub regions are of very different heights; many species of Eucalyptus rivalling those of the fertile land. One variety of these forest districts is distinguished by the colonists under the name of "Pine-forests." Except the frequent recurrence in such places of the Callitris ("Pine" of the colonists), I should scarcely be able to point out any characteristic which would distinguish the Flora of the Pine-forests from that of other Scrubs. The Callitris itself never forms a wood; it grows always singly, intermixed with the Scrub, and I have never met with it as the predominant tree. The "Sand-plains" are more evidently distinct from the true Scrub. The brush-wood of these districts does not reach to the height of a man, and although differing but little in habit from the other Scrub districts, it nevertheless continually afforded me new species. In the hills and in the western plains such tracts are very rare; in the east they form a principal constituent of the Murray Scrub. It will readily be understood that transitions are to be found between the two forms of vegetation—that of the Grass-land and that of the Scrub; for example, as above stated, there are found intermixed the forms usually occurring in the vegetation of dried-up water-courses, as the seeds and rhizomes of different regions are here brought together by means of the winter rains. In most cases, however, the differences are sufficiently well marked to strike the most inexperienced cockney. The same dichotomy which prevails locally in the approximating floras of the country, manifests itself also with respect to time, in the change of seasons. The names of the European seasons have, indeed, been imported to South Australia, but there are in truth only two, a dry and a wet, that can readily be distinguished. The gradual cessation of the rainy season can as little be compared with our spring, as its tardy entrance with our autumn. The beginning of the winter rains, which in most districts may be assumed as April, elicits from the soil, changed by the dryness of the summer months to ashes, its earliest green, which glimmers forth from under the dead stems, and is only to be readily perceived on the lands which have been wasted by fire. Except the flowers of a few Eucalypti, which are developed at this late season, the Grass-land shows only the stems, and the hard leathery leaves of its trees and few bushes, its yellow haulms, or the ground wasted by fire. Soon, however, under the influence of the winter rains, the soil becomes covered with fresh juicy turf, interrupted by larger or smaller pools of water. Beautiful Droceras and the dwarf Oxalis cognata form the vanguard of a host of lovely flowers, which in the course of a few weeks emerge rapidly from the soil. The bright sunny days which now and then interrupt the rainy season, towards the end of August become more and more frequent, and a profusion of flowers, which in many places almost conceals the turf, is rapidly developed upon the land, strengthened by the summer rest, and fertilised by continued rains. The Orchideæ, Melanthaceæ, and Asphodeleæ, in equal variety and beauty, and often disposed in figures resembling parterres, shine forth pre-eminently from the smiling green. Stackhousias fill the mild spring air with their honey-like scent, and creeping Kennedias, with glowing red blossoms, lurk beneath the overarching culms, above which the fine-stalked Bell-flowers swing, and Buttercups wave their yellow heads. A crowd of European kinds entwine themselves in the series of genuine Australian forms, just as the entire surface of the country, with its light park-like groves of Eucalyptus, reminds us of the meadows at home. New forms are now developed in quick succession; every week offers fresh flowers. The pools of water are dried up; but clear rivulets and brooks yet meander through the land, fed by the rain which at this season still falls occasionally. The turf becomes a luxuriant meadow, in which Syngenesious plants of many different species are produced, and form, as with us, the last act of the beautiful drama. The turf, of which the Stipaceæ forms no small proportion, now ripens its seeds, which, in conjunction with the prickly fruit of Acæna, put him, whom business or inclination leads through the tall-grown Meadow-Grass, to no trifling inconvenience. The ground, which a little earlier had been of a rich green, now resembles a ripe, but very thinly-sown corn-field; and the number of plants in flower diminishes daily, till, at last, all vegetable life is reduced to the peculiar form of vegetation of the now dried-up rivers and brooks. This epoch arrives at different times in different localities; but, as far as my observations reach, never before the end of November,

and never after the beginning of February. From this time I have never found herbaceous plants in flower on the Grass-land, with the exception of Lobelia gibbosa, which, although wild only in a few districts, springs from the dried-up soil, with its leafless, fleshy stems. On these forms of vegetation, altitude seems to have but little influence. Mount Barker (2000 feet above the level of the sea) is regarded as the highest mountain of the colony. I have climbed to its summit, and found nothing there, which I have not met with, either before or since, at the foot of the mountain. Xanthorrhœas and Epacrideæ certainly seem to prefer the mountain; yet rather on account of the stony soil than of the elevation, since I found nearly all the alpine species on the coarse gravelly soil of the plains also. The species of the western plains, on the contrary, and those of the eastern (Murray Scrub), are almost always different. The fertile land in the Murray valley also possesses many peculiarities, which, however, without entering too much into detail, I am unable to notice further here. But the character of its vegetation differs in no respect from the corresponding districts of the west. A peculiar vegetation occurs only in the immediate neighbourhood of the sea, in the woods upon the beach overflowed by the tide, which consists of a Rhizophorea—I believe, Ceriops. This tropical form has a very distinct boundary-line on the side of the Scrub, commencing with a shrubby Salicornia, which has taken up its position on those parts of the strand farthest removed from the sea. A much greater influence than that of elevation above the sea level, is exercised by the neighbourhood of man, especially that of a cattle-dealing population. Annual plants seem to be among the first to yield before the foreign influx. I was informed of a pretty flower, from the description, probably, an Argyrophanes, which had formerly covered whole plains of the upper district of the Oncaparinga, and had now entirely disappeared. The Anthistiria, which in the hilly lands formed pastures, is now supplanted in many places by new Grasses; the original vegetation of the more cultivable Scrub districts, in the neighbourhood of the town, lurks timidly and secretly about the hedges which separate it from the reclaimed districts, and views with terror the destructive progress of the merciless intruders. The Australian flora has been but little enriched by any European plants, except cultivated ones. We find, indeed, here many that are identical with European plants, but the native home of most of them is a very critical point; while the Australian burgher-right of others is beyond all doubt. As might naturally be expected, my researches upon this point have not led to any certain results; the following plants, however, appear to me unquestionable immigrants, viz., Lolium temulentum, Centaurea Cyanus (rare), and Capsella Bursa.—*Hooker's Journal of Botany.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

As in spring, a progressive increase of heat and moisture to keep pace with the advancing season, was the course pursued, so now an opposite or retrogressive one must be adopted. The healthy state of the plants during their winter or season of rest, depends very much on their management during the autumn. They must be gradually hardened by exposing them to an increased circulation of air, and a lower temperature, admitting all the light possible. We have frequently urged the necessity of thoroughly watering plants when they need it, in preference to giving a little and often, according to the too common practice. Let it be the rule then, only to give water when it is required, and then to give plenty. These remarks apply more particularly to hard wooded plants, which, to ripen their growth, require a longer season than those of a more herbaceous character, which will continue to grow and flower some time longer. Remember the value of liquid manure for plants which are flowering freely, and others which it is desirable to invigorate to the utmost. We have scarcely a more beautiful or more elegant plant for conservatory decoration in April and May than the Schizanthus; for this purpose the seeds should now be sown, and at the same time the different kinds of Lisianthus for next autumn's display. Neapolitan and tree Violets should now be lifted, and potted in 4 or 5-inch pots for winter flowering. As this is a flower which everybody loves, nothing can be more acceptable at that comparatively flowerless season.

FORCING DEPARTMENT.

Peach-houses.—As soon as the crop is entirely removed, any of the trees which exhibit too gross a tendency in their tops should be partially root-pruned, by forking down, at a safe distance of from 2 to 3 feet, according to the age of the tree, and shortening some of the strongest roots. Any tree which is very gross should be carefully undermined, to ascertain if any roots have descended into the subsoil. If such is found to be the case, they should of course be cut away; and, to prevent a recurrence of the same, the tree should be lifted out entirely, and the bottom of the border made impervious, by means of concrete. The trees should be frequently examined, to prevent the establishment of scale, red spider, or other insects. Melons.—Keep up a good bottom-heat, or shanking and canker will be a natural consequence. We are very careful that the proper temperature is maintained, and by this means disease is prevented amongst the latest crops. Keep the plants sufficiently thin to allow the air to circulate freely amongst the leaves, and to act upon the surface of the soil. Thin the weak shoots, and let all the fruits be properly supported upon some hard dry substance, as a tile or smooth piece of board.

FLOWER GARDEN AND SHRUBBERIES.

The roots of the Iris, Narcissus, Lilies, and other spring-flowering bulbs, with few exceptions, succeed best if not taken up too often; and except for the purpose of dividing them to increase the stock, or to plant them in a new situation, they had better remain undisturbed. When any are taken up for the above purposes, they should be replanted again as soon as possible, that they may firmly establish themselves before winter, as they remain a very short time in a dormant state, before they begin to form new roots. These are all deep-rooting plants, and require that the beds should be deeply trenched. The manure should be placed in the bottom of the trench to encourage the downward progress of the roots, and thereby render them more independent of the watering-pot during the scorching months of June and July. The Tiger-Lily is very ornamental at this season; it is very showy, when planted in straight lines, or amongst the promiscuous masses of large clumps. In the axils of the leaves, if the plants are now examined, small bulbs will be found, which should be carefully collected and planted, about an inch asunder, in boxes of light soil. Many annuals and perennials have now ripened their seed, which should be gathered immediately in fine dry weather, and spread out in a cool airy shed.

HARDY FRUIT GARDEN.

Let the young and advancing shoots of Peach and Nectarine trees be regularly laid in every ten days or a fortnight, taking care not to crowd the foliage, and leaving a space between the shoots, so that the rays of the sun may reach some portion of the wall. It is impossible that the fruit buds can be strong and capable of resisting early spring frosts, when light and air are excluded from them during the summer and autumn. The shoots of Pears, Plums, and Cherries, should now be regulated and neatly tied in, both for the sake of the wood ripening better by contact with the wall, and to let the present crop have the benefit of free exposure to light, without which it must be deficient in flavour. Standard fruit trees and those on trellises must also be gone over, the useless wood shortened, and that required for extending the tree and filling up empty spaces tied neatly in. Fruit trees having no crop upon them may still be root pruned; and if the soil around them is very dry, it should be well watered, first to prevent check to the tree, and facilitate the operation of opening the trench to get at the roots. Proceed determinedly with the destruction of mildew or any other pest upon your trees, for which purpose we find Epps's sulphurator exceedingly useful.

KITCHEN GARDEN.

If our advice relative to the making of new Strawberry-beds very early in the season has been attended to, a portion of the old ones may be destroyed. Such ground, having been several years almost undisturbed, should be deeply trenched, dunged according to its requirements, and planted or sown with some useful winter or spring crop. Tripoli Onions for future transplanting should now be sown, and Endive for a late crop. Continue to make successional sowings of Cos Lettuce, and make the first sowing of Hammersmith Cabbage Lettuce to transplant into warm borders for late autumn use. The last sowing of Early Stone and White Globe Turnips should be made this week. A considerable share of attention should now be directed towards securing an adequate supply of salads and other small matters for winter use. Encourage the growth of the Chicory already planted, by hoeing and loosening the soil. The finer the roots, the greater the produce of leaves when forced in spring.

State of the Weather near London, for the week ending Aug. 7, 1851, as observed at the Horticultural Garden, Chiswick.

| August. | Month Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. | 1 4 | 29.817 | 29.830 | 78 | 62 | 70.0 | 63 | 60 | N.W. | .02 |
| Satur.. | 2 5 | 3 .020 | 29.989 | 79 | 60 | 69.5 | 64 | 61½ | S.W. | .00 |
| Sunday. | 3 6 | 30.065 | 30.063 | 78 | 54 | 66.0 | 65 | 61½ | S.W. | .00 |
| Monday | 4 7 | 30.170 | 30.142 | 81 | 57 | 69.0 | 66 | 63 | E. | .00 |
| Tues.. | 5 8 | 30.237 | 30.226 | 71 | 53 | 62.0 | 66 | 62 | E. | .10 |
| Wed. .. | 6 9 | 30.234 | 30.173 | 67 | 53 | 60.0 | 64 | 62 | E. | .00 |
| Thurs... | 7 10 | 30.056 | 30.014 | 75 | 55 | 65.0 | 63 | 61 | N.E. | .00 |
| Average | | 30.093 | 30.056 | 75.5 | 56.3 | 65.9 | 64.4 | 61.5 | | .02 |

Aug.
— 1—Overcast; cloudy and fine; slight showers.
— 2—Very fine; exceedingly fine; densely clouded at night.
— 3—Cloudy and fine; very fine; slightly clouded.
— 4—Clear and very fine throughout.
— 5—Fine; very fine; clear at night.
— 6—Overcast, fine; densely clouded.
— 7—Overcast; fine; clear; lightning at night.
Mean temperature of the week, 1½ deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending August 16, 1851.

| August. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 10 | 75.5 | 53.2 | 64.3 | 12 | 0.36 in. | 1 | 1 | 2 | — | 2 | 13 | 5 | 1 |
| Mon. 11 | 75.9 | 51.7 | 63.8 | 13 | 0.34 | 1 | — | 2 | — | 3 | 12 | 6 | 1 |
| Tues. 12 | 74.8 | 51.2 | 63.0 | 11 | 0.21 | 2 | 1 | 1 | 1 | 4 | 7 | 8 | 4 |
| Wed. 13 | 72.6 | 50.2 | 61.4 | 11 | 1.14 | — | 2 | 2 | 2 | 3 | 10 | 2 | 4 |
| Thurs. 14 | 72.0 | 51.0 | 61.5 | 7 | 0.61 | — | 6 | 5 | 1 | 2 | 6 | 4 | 1 |
| Friday 15 | 72.9 | 51.2 | 62.0 | 12 | 0.71 | 3 | 3 | 4 | 1 | 3 | 5 | 2 | 5 |
| Satur. 16 | 73.4 | 52.1 | 62.7 | 9 | 0.55 | — | 2 | 2 | 1 | 3 | 7 | 7 | 3 |

The highest temperature during the above period occurred on the 10th, 1842—therm. 93 deg; and the lowest on the 13th, 1839—therm. 32 deg.

## Notices to Correspondents.

Bees: *Northwood.* It is to be regretted that wooden hives are used at all, as the frequent want of success with them does much to prevent the more general keeping of bees among amateurs. They are not employed by "the best bee keepers," though they may be by parties who consider themselves to be such. Bees will not work in the glasses or caps until the cells in the stock hive are filled with brood or honey; perhaps your hives are too large for your stocks and pasturage. If you are determined to rob the bees of a part of their store, you can smoke them and remove two or three combs from each side; but under proper management there would be no occasion for such hazardous and desperate proceedings, which most probably will cause the destruction of the stock during the following winter and spring. *Y.*

Birds—The Cuckoo: *Rusticus.* By an oversight, your letter was not noticed last week. You will, however, be a gainer by the delay, for we have since written you, privately, at considerable length. A letter awaits you at the "Post-office, Northallerton." We shall always be most happy to hear from you on this subject, or, indeed, any other of interest. *W. K.*—The Woodlare: *S C F.* The cause of your bird's song so suddenly ceasing is, most probably, his being about to moult. Try the effect of a little liquorice root, sliced, and placed in the tin which holds his water. This is sometimes a means of prolonging their song. *W. K.*—The Grey Parrot. Will the gentleman from Nottingham, whom we accidentally met at the "Great Exhibition," on Wednesday last, and with whom we conversed about his aviary, kindly oblige us with his name and address? The heavy pressure of such countless numbers as then thronged around us, quite prevented any profitable talk. On hearing from him, we will gladly give him any advice he may require touching certain of his "pets" who are sick. *W. K.*—The Canary: *Fanny B.* The cause of the ill-behaviour (we cannot call it by a milder term) of your two young birds and their stolcal mother, arises most probably from your nest-box not being properly enclosed. It should be placed in a small inner chamber; and the entrance for the parents should be through a circular aperture from without. We sympathise with you on your loss; but such dearly-bought experience will prevent similar consequences for the future. We refer you to our articles on "The Canary." Therein, you will find all such casualties foreseen, and provided against. When young birds once leave their nest, farewell to their return. *W. K.*

Chamomile Flowers: *Reader.* They should be dried quickly and in the shade.

Double Yellow Rose: *J. Ferme.* Many thanks, but we do not find anything of the slightest interest in the remarks by Mr. Murray, who seems to know nothing whatever about the subject.

Glazing: *P G.* We recommend Hartley's rough plate. You may have it of any size; but you must take care, if you use large squares, to secure plenty of ventilation. In the majority of plants shading is needless under this kind of glass; it would be well for all if a brisk motion of air could be maintained in the stove.

Grafting: *E R L.* It is not possible to bud or graft the Lilac and Laburnum together.‡—*T G.* Common T budding will answer your purpose. The plan is fully described at p. 196 of the current year's volume ‡

Insects: *J B.* We beg to refer you to the articles headed the Diamond-back Turnip moth, *ante* pp. 484 and 499. *W.*—*J F.* Ditto.—*T D (Waterford).* The Turnip leaves received last week had one of their surfaces alone eaten, and the very minute caterpillars were all crushed to death, so that we were unable to determine their species; some were, however, much more hairy than the full-grown larvæ of Tinea xylostella (or, rather, cruciferarum). The leaves sent this week have holes gnawed entirely through them, and the insects are certainly the caterpillars of that species. It is possible that the young caterpillars adopt the former mode of attack, which they change as they increase in size. If not, we have two different species of small moths, engaged in the destruction of the Turnip crop at the present time. *W.*—*J O.* Your account of the young of the earwig being brought forth in pairs, from the centre of each segment of the abdomen from the tail to the throat, must be erroneous, the young of that insect being produced in the ordinary way; most probably you have mistaken some parasite for the young. We shall be obliged to you for the specimen. *W.*—*J H C.* The caterpillars on the Cabbage are identical with those on the Turnip. One of them has already produced a moth of the Tinea xylostella, so that it is quite time to take measures against this brood of moths. *W.*—*Edinburgh.* We believe the flies found in the Rose trees have been attacked by plethora. *W.*

Kail: *Edinburgh.* Asparagus Kail is the same as Egyptian, Jerusalem, and Buda Kail. They form good tender shoots when blanched like Sea-kail, by placing a garden pot over the plants.

Melons: *G.* Your only remedy against the thrips is fumigation. The leaves are in a bad state, owing to mismanagement of some kind. It is impossible to give plants too much air, provided it is not cold air.

Names of Plants: *W C Alston.* Cattleya crispa.—*Anna H.* Myriophyllum spicatum.—*M S.* Glyceria fluitans.—*X Y.* Cuphea viscosissima.—*Cymraes.* Asplenium (§ Darea) flaccidium, Forst, New Zealand.—*E J T.* Your specimens are in too young a state to be determined satisfactorily; 1 is probably Lastræa dilatata, which when perfect grows to 2 or 3 feet high; 2 is apparently Asplenium lanceolatum. *S.*—A few inquiries stand over for further consideration.

Orange Trees: *J. Abell* If your plant is casting its fruit, it does so because it has more than it can carry. This is not to be objected to. Keep the plant in good health, and let the fruit take its chance. Your tree was probably out of health last year.

Pelargoniums: *Reader.* Damp has no doubt produced the appearances which your leaves exhibit. ‡

Rhubarb: *J. Riley.* The preserve is extremely good, but not better than other well-made samples.

SEEDLING FLOWERS.

Carnations: *E T.* A desirable dark Clove with a strong scent. Well worth preserving.*

Pansies: *J G P.* A very good light ground variety. At present the bottom petal has too much indentation; but the fault may not be permanent.*

Petunias: *G B E.* Box crushed to pieces, and the flowers so much injured in coming through the post that it is impossible to offer any correct opinion of them.*—*J M.* Of your flowers, which are all good, 13 is the most promising, because of its fine colour. It is, however, a little deficient in shape.*

Pelargoniums: *J W.* Your "Fancies" had all dropped to pieces, and the petals had mixed with the moss before they reached us.*

Picotees: *E H C.* Too much faded for us to be able to offer any correct opinion of their merits.*

Roses: *C G W.* 1, a pretty pink Rose, tinged with lilac. It is medium-sized and very sweet. The foliage is good. 2 did not expand with us.*

Tigridias: *M.* Your seedling, named canariensis, is a fine flower, clearer yellow and larger than conchiflora, with the spotting better defined than in that variety.*

Verbenas: *J W.* Erecta, rosy crimson with a white eye, appears to be the best and most distinct. The other is more common.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary enquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9*l.* 10*s.* per ton, or 9*l.* 5*s.* in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

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Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

# The Agricultural Gazette.

*SATURDAY, AUGUST* 9, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| WEDNESDAY, Aug. | 13 | Agricultural Society of England. |
| WEDNESDAY, — | 13 | Agricultural Imp. Soc. of Ire.and's Annual Meeting at Dublin. |
| THURSDAY, — | 14 | Agricultural Imp. Soc. of Ireland. |

HOW TO IMPROVE THE CONDITION OF THE AGRICULTURAL LABOURER is a subject which must interest his master, even were he under the influence of no other than merely pecuniary considerations regarding him. Any farmer who shall reckon up the losses which he has suffered by the stupidity and carelessness of his men will readily admit this. But as it is chiefly for the benefit of the labourer himself that we claim attention to this subject, so we are sure this object alone, and apart from their own interest in the matter, is sufficient inducement with agricultural employers most readily to grant it. Philanthropy and patriotism have often been powerful and efficient motives in employers of "a thousand hands," as many a noble institution in the manufacturing towns can testify: that they have not an equal influence on the minds of the employers of agricultural labour no one dare say; and as they are there associated with all the power of a personal acquaintance with the employed, which is impossible where these are reckoned by hundreds, their effects ought to be even more obvious in rural villages than they are in manufacturing districts. And probably, upon the whole they are—we are not about to draw a comparison between the two: all that we wish at present to contend for is the desirableness of holding at its true value the annual *toast* of "the labourers" at the meetings of our national agricultural societies, and the duty, which rests upon every one who cheers it, of *personal effort* in their behalf.

We would shortly state what appears to us the right policy to be pursued in connection with this subject. We believe that human nature, and society as arising out of it, is so constituted that the general interest is best served when each individual is the most diligently engaged in what we may call an *intelligent* pursuit of his personal interest. The farmer who engages energetically and intelligently in his profession—a strict master, and thorough man of business—is really a better friend to the agricultural labourers in his neighbourhood than the man who, though he may be the patron of his village, is a careless employer, and negligent of his own interest in the management of his affairs. There is not, we are persuaded, any truly beneficial step which can be taken for the interest of his men, which may not be defended on the ground of its being at least as much for the interest of their employer.

It is however, no doubt, proper that any step which can be shown to be useful should be taken on the ground of benevolence, as well as for the attainment of a personal benefit; and as ill-directed benevolence is an abundant source of mischief, a good guide in this matter is invaluable. We wish for no better guide than Mr. BATSON, the author of the pamphlet,* whose title furnishes the heading to this article, and which we cordially commend to the attention of our readers. His plan of "improvement" commences with the labourer in his boyhood: he educates him not only at the desk but in the field—tools as well as books are put into the hands of his scholars—and the body is inured and accustomed to systematic labour, while the mind is being instructed in the ordinary branches of a school education. And on the carrying out of all this Mr. BATSON has attained a profit to himself—not the ultimate profit of the services of intelligent men—but the immediate profit of cheaply executed work. The old experience which asserted that for every boy on the farm a man was needed to look after him, was utterly exploded at Kynaston; a gang of boys was educated, fed, and clothed; and their performances, under the superintendence of their overseer, when set against the expenses of their maintenance, were more cheaply executed than those of men at the same sort of work, whether it was Wheat hoeing, Turnip hoeing, planting Mangold Wurzel, or cleaning Swedes. We do not mean to make any extracts at present from this pamphlet; our readers should procure it, and study it for themselves. We would especially commend it as a proof, that though many do waste their breath in useless talk, on the relations of masters and servants, asserting principles without practising them, there are individuals among us *at work* for the benefit of the agricultural labourer, and there are localities where his children are growing up into young men, under the best influences which an intelligent benevolence can exert.

WE make no apology for filling so many of our columns with reports of the State of the Crops. The returns were posted on the 1st of this month, and are to be considered as true from that date. Since then, however, we have had a week of fine weather, which has do doubt been as beneficial for the green crops as for the corn. The land was, in most parts of the country, soaked with water by the heavy rains of the latter part of July, and Turnips and Potatoes needed a warm sun as much as the Wheat, Oats, and Barley.

The returns are unanimous on one point, namely, the lateness of the harvest of 1851, and almost unanimous, too, on the unusually small quantity of Wheat remaining in the hands of the farmers. The general character of these reports is encouraging; the crops are not to be as they were last year, extraordinarily productive, but the words "good" and "average" are in the great majority of instances perfectly applicable. Throughout England, for instance, the reader will find, amid considerable variety of description, that the Wheat crop is generally a full average crop, that Barley promises an average yield, and that Oats look well. In Scotland Wheat and Barley are near the average, but Oats decidedly below it. From Ireland the returns speak of good Oats and Barley, the returns regarding Wheat being exceedingly various. On the whole, in the words of one of our correspondents, everything may be considered satisfactory, excepting *prices*. One exception must, however, be insisted upon. The Turnip crop does not in general promise well. It has suffered exceedingly from the caterpillar described in the *Gardeners' Chronicle* last week. We have information of the damage thus suffered, from the west coast of Scotland, from Yorkshire, Notts, Lincolnshire, Worcestershire, Gloucestershire, Berkshire, Devonshire, Surrey, Sussex, Kent, Hants, and Cornwall; the chief injury having been borne by the southern and western counties. From Ireland, too, we have reports of the activity of this caterpillar; but the current agricultural prosperity of that country does not depend on the Turnip crop; it is food for man, and not for beast, about which, a bad season for green crops excites anxiety there; and we are happy to observe that hitherto comparatively little cause for anxiety about the Potato crop appears to have shown itself. From comparatively few localities are there any fears expressed for the safety of the Potato crop. Upon the whole, we have reason to congratulate both our readers and the country generally upon the prospects of the harvest of 1851.

* How to improve the Condition of the Agricultural Labourer; a Self-supporting System, &c. By THOMAS BATSON, of Colley-house, Tedburn, St. Mary, Exeter (late of Kynaston-house, Hereford). GROOMBRIDGE and SON.

MANURES.—No. III.

RAPE-CAKE is the compressed seeds of Rape after the oil is extracted from them in the mill. The cakes generally weigh 4 lbs. each, and are valuable in proportion to the amount of oil they contain. Like oil-cake they are very hard, and require to be moistened by remaining on a damp floor for a little time previous to being ground into dust. The Belgians dissolve the cake in their liquid manure tanks. To dust the cake must be reduced, and in this state is employed for the production of Turnips, and the top-dressing of Wheat; when intended for the raising of Turnips it should be cautiously used, as during the process of fermentation it would likely injure the vitality of the seed. Clay soils, moist or cold weather are the auspices most favourable for bringing out the fertilising action of Rape-dust. Five cwt., or from 8 to 16 bushels (a bushel weighs 45 lbs.) is the quantity applied per acre. Rape-cake broken into small lumps, and strewn upon young Oats attacked with the wire-worm is said to destroy this pest—the worm feeding ravenously upon the cake until a surfeit tends to its destruction. Oil-cake is too valuable as an article for fattening cattle to be employed as a manure, but, like the refuse of other seeds, it abounds in inorganic matter and nitrogenous compounds.

MALT-DUST.—When grain is steeped in the preparation of malt, afterwards permitted to sprout until it reaches a certain stage, and then checked by heating the grain on a kiln, the small rootlets drop off and form the substance, malt-dust, which should be of a brown colour, and the richer if obtained from sound grain. 100 bushels of Barley yield 5 of malt-dust; the latter is employed with success, at the rate of 30 to 40 bushels on cold stiff ground; applied to Turnips previously moistened with liquid manure, to Grass, Barley, and Wheat; to the latter in March, when it should be slightly harrowed in. Malt-dust contains much gelatine and albumen, as also the phosphates of potash and soda. Bran, from its containing much nitrogenous matter and phosphate of lime, is sometimes used when moistened with liquid manure in the production of Turnips, and applied at the rate of 5 cwt. to 6 cwt. Vegetables derive, through the medium of their leaves, water and carbonic acid from the air, substances which contain the elements requisite for forming the major part of plants, as woody fibre, starch, and gum; but plants require in addition, nitrogen to form the gluten, albumen, &c., and the alkaline phosphates to perfect their seeds: these substances the soil must yield. The immediate effect of a vegetable manure depends upon the quantity of nitrogen it contains, and its permanent effect on the kind and quantity of inorganic substances. Vegetable substances, are, however, more generally associated, either directly or indirectly, with animal matter, and in this state applied to the soil with greater advantages.

ANIMAL MANURES.—Animal substances decay more rapidly than vegetable substances; the former containing more nitrogen which, combining with hydrogen, the product of putrefactive fermentation, forms ammonia, an alkali, on the presence of which in the soil the growth of plants is materially influenced. United with carbonic acid, ammonia forms a salt always present where animal substances are undergoing decay, and in the excrements of animals it is found as a muriate and sulphate. The source of animal nutrition is from the vegetable kingdom, hence the bodies of animals must partake of similar elementary principles, as those found in vegetables, though modified and changed by chemical processes. The gluten, casein, and albumen of vegetables are not only nearly identical in composition with each other, but also with the muscle of animals, of which they largely contribute to form; from starch and oil fat is formed and combustion fed; and bones and blood contain phosphate of lime and magnesia, substances which exist in the seeds of plants. The excrements of animals are the rejected remains of the food received into the stomach, after the latter has selected, modified, and appropriated those necessary substances for nutrition. This rejected matter following the law of universal decay resolves itself into the elements of organic matter, again to unite in the formation of new and distinct substances. The excrements of animals form the principal source of animal manures. The food received into the stomach is heightened in value by being mixed up with those secretions which give that stimulus to putrefaction. The value of any digested manure depends upon the description of food the animal is fed with, the age of the animal, the purpose for which it is fed. Green crops and bruised grain produce richer manure than that manufactured by feeding animals on dry hay or straw. Also a mixed system of feeding is not only preferable for the sake of the animal's growth and health, but also for the purpose of manure, since no plant contains all the elements of nutrition in sufficient abundance. Young animals appropriate more of the substances of their food in forming the growing bone and muscle of the system, in addition to keeping in daily repair the machinery of the frame; hence their manure must be less rich than that of full-grown animals. If the animal is intended for the butcher, it receives food abounding in fatty matters, as oil-cake, linseed jelly, &c., to be appropriated by the system, at the least trouble. But those animals in whose dietary flesh constitutes an ingredient, form a manure highly fertilising, because flesh contains, in a concentrated form, the elements of vegetable development

*Libra.*

# STATE OF THE CROPS, AUGUST 1, 1851.

The following Returns are in reply to a Circular asking for the "present appearance" of the Crops in the neighbourhood to which it was sent.

| COUNTY. | WHEAT. | BARLEY. | OATS. | GREEN CROPS. | POTATOES. | STOCK OF OLD WHEAT. | HARVEST TIME. | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|
| SCOTLAND. | | | | | | | | |
| SHETLAND | None | Good and early | Good | Very good | Excellent | ..... | End of September | C. Fleming, Weisdale |
| INVERNESS | Average | Light and short | Light and short | Average | Good | None | Middle of September | J. Mackenzie, M.D., Eilenach |
| | Good average | Generally good | Below average | Various | Very promising | Under average | Early in September | A. Simpson, Beauly |
| ROSS | Full average | Under average | Poor | Excellent | Sound, but not good | Under average | Early in September | K. Murray, Tain |
| ELGIN | Average | Rather light | Rather light | Very good | Very promising | Under average | Early in September | J. Hamilton, Forres |
| PERTH | Average | Improving | Short | Promising | Healthy | Under average | September | W. Ewing, Crieff |
| | Full average | Light | Very light | Backward | Under average | ..... | ..... | C. Playfair, Errol |
| | Average | Light | Light | Poor | Average | Short | End of August | D. Todd, Kinmonth |
| ABERDEEN | None | Under average | Heavy crop | Not vigorous | Fair average | None | ..... | J. Macdonald, Huntley |
| FORFAR | Winter—good | Deficient | Fair | Good | Good | Not average | Early in September | D. D. Black, Brechin |
| | Under average | Under average | Looks well | Good | Very healthy | Not average | 2d week in Sept. | A. Bell, Montrose |
| | Full average | Under average | Looks well | Good | Very healthy | Not average | End of August | R. Colvill, Cairnton |
| | Average | About average | Not average | Superior | Very healthy | Not average | 1st of September | R. Findlay, Kirriemuir |
| FIFE | Scarcely average | Scarcely average | Average | Various | Under average | Not average | 1st of September | J. Haxton, Drumnod |
| | Various | Light | Light | Good | Hurt by frost | Not average | 1st of September | R. Russell, Cupar |
| | Under average | Light | Light | Good | Promise well | Not average | 8th of September | D. Tennant, St. Andrews |
| | Under average | Average | Light | Good | Promise well | Much under average | 1st week in Sept. | R. Barclay, Craill |
| | Average | Full average | Short | Late | Promise well | Much under average | End of August | W. Veitch, Kinghorn |
| MIDLOTHIAN | Average | Average | Under average | Late | Irregular | Under average | 24th of August | J. Melvin, Ratho |
| EAST LOTHIAN | Average | Unequal | Light | Improving | Poor looking | Under average | 8th of August | A. Howden, Preston-kirk |
| | Excellent | Fair | Short | Late | Very good | Under average | 1st of September | J. Russell, Beanston |
| | Average | Good | Under average | Late and irregular | Average | Under average | 1st of September | J. Brodie, Abbey Mains |
| | Average | Full average | Below average | Below average | Growing well | Average of last two years | End of August | G. Hope, Drem |
| STIRLING | Good | Good | Below average | ..... | Uneven | About average | End of August | W. Forrester, Stewarthall |
| | Over average | Over average | Near average | Splendid | Under average | Rather under | 4th of September | R. M'Naughten, Stirling |
| RENFREW | Good average | Average | Good average | Good | Fair | Under average | 1st of September | G. Boyd, Renfrew |
| LANARK | About average | ..... | Very late | Indifferent | Not good | Under average | 8th of September | D. Gairdner, Hamilton |
| AYR | Under average | ..... | Under average | Half an average | Inferior | Average | 1st week in Sept. | J. Dykes, Kilmarnock |
| | Superior | ..... | Average | Injured | Symptoms of disease | Never less | 2d week in Sept. | A. Maccaw, Kirkoswald |
| | Rather thin | ..... | Bulky | Injured by maggot | Light crop | Never less | Middle of September | A. Ralston, Dunduff |
| SELKIRK | Fair average | Fair average | Under average | Scarcely average | Average | Little on hand | 1st of September | J. Stalker, Galashiels |
| BERWICK | Below average | Average | Very light | Average | Very good | Hardly any | 1st of September | T. Hood, Cockburnspath |
| | Good | Good | Under average | Late but healthy | Good | Almost none | 1st of September | J. Wilson, Ayton |
| | Average | Over average | Short | Late—various | Abundant | Almost none | 1st of September | P. Mearns, Coldstream |
| ROXBURGH | Average | Not average | Not average | Not average | Doubtful | Not average | 1st of September | G. Logan, Greenlaw |
| | Average | Average | Under average | Under average | Average | Below average | End of August | J. Thomson, St. Boswell's |
| DUMFRIES | Nearly average | Average | Under average | Average | Various | Below average | 2d week in Sept. | P. Brodie, Lilliesleaf |
| | Spring average—thin | Fair | Various | Various | Various | Below average | 2d week in Sept. | W. Thomson, Dumfries |
| | ..... | Average | Average | Good | Fair | ..... | Middle of September | J. Little, Langholm |
| WIGTON | Winter—fair | Very good | Fair | Backward | Healthy | Below average | End of August | T. Maclelland, North Balfern |
| | Average | ..... | Average | Hurt by insect | No disease | Below average | September | J. Gibson, Glenluce |
| | Average | ..... | Average | Hurt by insect | Some symptoms | Average | 2d week in Sept. | A. H. M'Lean, Stranraer |
| | Good | Fair | Fair | Good—late | Good—symptoms | Average | September | J. Caird, Baldoon |
| ENGLAND. | | | | | | | | |
| NORTHUMBERLAND | Beats 1850 | Tolerable | Bad | Good | Good | Under average | September | T. L. Colbeck, E. Denton |
| | Various | Good | Short | Fair | Good | Under average | September | W. Glover, Newcastle |
| | Under average | Good | Light | Late | Doubtful | Under average | September | —, W. Alnwick |
| | Not average | Fair | Very short | Various | Good | Not average | Early in September | W. Pitlans, Alnwick |
| DURHAM | Light | Little | Bad | Promising | Good | Under average | 28th of August | G. Bell, Durham |
| CUMBERLAND | Backward | Promising | Promising | Late | Good | Average | Middle of September | R. Dixon, Darlington |
| | Average | Good—late | Thin | Various | Very good | Under average | End of August | S. Rigg, Wigton |
| | Short | Good | Good | Moderate | Moderate | Plenty | Late | T. Wilson, Ullswater |
| WESTMORELAND | Very good | Average | Good | Average | Good | Plenty | Middle of September | F. Greeniss, Keswick |
| | Good | Good | Good | Very good | Good | Under average | Middle of September | J. Robinson, Appleby |
| | Over average | Under average | Over average | Average | Good | ..... | August 21 | W. Turner, Kendal |
| | Over average | Under average | Average | Good | Promising | Under average | September 8 | John Croesby, Kirkby Thore |
| LANCASHIRE | Very good | Good | Good | Good | Good | ..... | Early in September | W. Key, Kirby Lonsdale |
| | Good | ..... | Good | Good | Hurt by frost | Average | September | M. Saul, Garstang |
| | Good | ..... | Fair—late | Very good | Middling | Average | End of August | E. Evans, Wigan |
| | Broken by wind | Good | Very good | Not promising | Partly diseased | Under average | End of August | G. Drewry, Holker |
| | Generally light | Good | Various | Not promising | Hurt by frost | None | End of August | F. Twining, Standish |
| | ..... | ..... | Very good | Irregular | Very good | ..... | ..... | W. Wansklyn, Bury |
| YORKSHIRE | Much lodged | Average | Not average | Hurt by caterpillar | Good | Under average | End of August | P. Stevenson, Thirsk |
| | Very good | Good | Rather short | Very good | Good | Under average | In a fortnight | H. Briggs, Wakefield |
| | Deficient | Average | Good | Average | "Complaints" | Never less | End of August | J. Oldroyd, Barnsley |
| | Good | Promising | Quite average | Grow slowly | Very promising | Not average | End of August | H. J. Turner, Richmond |
| | Below average | Below average | Good | Hurt by grub | Good | Quite average | August 21 | M. Milburn, Thirsk |
| | Full crop | Uneven | Under average | Promising | Good | Very light | End of August | J. Hannam, Wetherby |
| CHESHIRE | Very good | Various | Good | Middling | Unpromising | Under average | Middle of August | H. Topping, Warrington |
| DERBYSHIRE | Good but lodged | Average | Excellent | Promising | Very good | Under average | End of August | R. Owen, Tarporley |
| | Full average | Full average | Full average | Backward | Diseased | Under average | End of August | J. W. Ward, Repton |
| NOTTINGHAMSHIRE | Good but lodged | Good | Average | Under average | Excellent | ..... | End of August | A. J. Bernays, Derby |
| | Promising | Very good | Promising | Promising | Excellent | ..... | ..... | E. J. Lowe, Notts |
| RUTLANDSHIRE | Good average | Various | Good | Hurt by grub | Very good | Under average | Middle of August | J. Young, Newark |
| LINCOLNSHIRE | Very good | Good | Good | Hurt by grub | Good | Under average | Middle of August | W. Fancourt, Empingham |
| | Light | Good | Good | Tolerable | Slightly hurt | Average | End of August | E. Darby, Horncastle |
| | Good but laid | Good | Good | Moderate | Partly diseased | Short | End of August | W. B. Wingate, Spilsby |
| | Good | Good | Good | Good plant | Promising | Short | September 1 | W. Martin, Scamblesby |
| | Heavy and laid | Light | Under average | Hurt by grub | Very good | Average | End of August | J. A. Clarke, Long Sutton |
| | Good but laid | ..... | Average | Improving | Bad | Under average | Middle of August | R. Westland, Boston |
| | Good but laid | Average | Under average | Hurt by grub | Look well | Under average | August 20 | F. Sowerby, Aylesbury |
| | Damaged | Hardly average | Nearly average | ..... | Good | Under average | August 20 | T. Wright, Boston |
| SHROPSHIRE | Not average | Average | Not average | Much hurt | Promising | Average | Middle of August | T. Swain, Shiffnall |
| | Average | Deficient | Average | Faulty | Healthy | Under average | September 1 | R. Davis, Little Wenlock |
| | Average | Not average | Average | Partially good | Healthy | Under average | End of August | E. Bowen, Ludlow |
| | Average | Good | Average | Vary much | Doubtful | Under average | August 20 | J. Aston, Market Drayton |
| | Average | Various | Average | Good | Doubtful | Under average | Middle of August | J. Powell, Shiffnall |
| | Average | Light | Average | Promising | Very promising | Under average | Middle of August | G. Gill, Weston |
| | Under average | Light | Very poor | Partial | Very promising | Never less | End of August | W. Minor, Market Drayton |
| | Good | Light | Very good | Very backward | Excellent | Under average | Middle of August | R. Sayce, Bridgenorth |
| WARWICKSHIRE | Under average | Average | Good | Partial | Partly hurt | Not average | Middle of August | Thos. Chapman, Kenilworth |
| | Average—laid | Promising | Fair crop | Generally good | Healthy | Average | August 17 | J. Bendbury, Wootton Grange |
| | Under average | Under average | Under average | Improving | Various | Average | August 11 | Jn. S. Leaven, Strat.-on-Avon |
| | Good | Under average | Promising | Deficient | Promising | Under average | ..... | W. Aitcheson, Berkswell |
| STAFFORDSHIRE | Looking well | None grown | Short and late | Looking well | Partial failure | Under average | Middle of Sept. | E. Cole, Bursiem |
| | Good | ..... | Not good | Looking well | Badly diseased | Under average | End of August | J. Johnson, Newcastle |
| LEICESTERSHIRE | Good—laid | Thin | Pretty good | Various | Good | Under average | August 20 | Thos. Spencer, Knossington |
| | Good—laid | Heavy | ..... | Good | ..... | ..... | ..... | S. H. Stallard, Leicester |
| NORTHAMPTONSH. | Good | Good | Variable | Improving | Healthy | Average | Middle of August | Jn. Whitwell, Peterborough |
| | Various | Not average | Good | Middling | Generally good | Half average | Middle of August | Peter Lowe, Naseby |
| OXFORDSHIRE | Average | Good | Good | Average | Good | Average | Middle of August | S. Collier, Witney |
| HEREFORDSHIRE | Under average | Average | Average | Backward | Promising | Average | Middle of August | J. Scales, Pencraig, Ross |
| | Good average | Hardly average | ..... | Good | Good | Not average | Middle of August | J. Mathews, Blakemore |
| WORCESTERSHIRE | Full average | Average | Full average | Good | Good | Not average | Middle of August | F. Williams, Doddenham |
| | Fair crop | Good | ..... | Average | Very good | Not average | Middle of August | G. Crane, Kidderminster |
| | Fair | Fine | Good | Late | Very good | Not average | Middle of August | R. Smith, Dromwich |
| | Very good | Good | Good | Hurt by fly | Good | Not average | Middle of August | F. Woodward, Little Comberton |
| | Average | Average | Average | ..... | Various | Not average | Middle of August | H. Hudson, Wick, nr. Pershore |
| DORSETSHIRE | Average | Average | Average | Below average | Diseased | Average | Middle of August | W. Voss, Corfe Castle |
| | Good | Good | Good | Fair | Partly diseased | Not average | Middle of August | J. Furmedge, Beaminster |
| | Heavy | Good—late | Good | Late | Hurt | Not average | September 9 | G. Singer, Dorchester |
| MIDDLESEX | Generally good | Good | Good | Good | Healthy | Not average | August 6 | C. Webster, Uxbridge |
| SURREY | Particularly good | Good | Good | Injured by grub | Good | Not average | August 6 | J. M. Paine, Farnham |
| SUSSEX | Over average | Under average | Average | Average | Partly blighted | Not average | Middle of August | J. Brotherton, Robertsbridge |
| | Barely average | Average | Very good | Patchy | Disease showing | Not average | Middle of August | H. E. Sadler, Chichester |
| KENT | Average | Average | Average | Ordinary | Disease showing | Not average | Middle of August | M. Sandford, Dover |
| | Good | Various | Middling | Hurt by grub | Good | Not average | Middle of August | J. Sneed, Margate |
| | Over average | Average | Over average | Very bad | Partly diseased | Not average | Middle of August | R. Matson, Wingham |
| HANTS | Full average | Average | Bare average | Various | Partly diseased | Average | August 4 | J. Blundell, Bursledon |
| | Good | Average | Good | Hurt by grub | Partly diseased | Not average | August 6 or 7 | H. Raynbird, Andover |
| | Average | Pretty good | Under average | Hurt by grub | Partly diseased | Average | August 6 or 7 | W. C. Spooner, Southampton |
| | Below average | Average | Average | Hurt by grub | Partly diseased | Not average | August 6 or 7 | J. Eames, Beaulieu |
| | Average | Not average | Average | Uneven | Promising | Average | August 6 or 7 | J. T. Twynam, Stockbridge |
| | Average | Average | Average | Improving | Doubtful | Not average | August 6 or 7 | J. W. Clark, Romsey |
| CORNWALL | Well "kerned" | Thin | Very good | Hurt by grub | Very promising | Not average | August 14 | J. Michell, Truro |
| | Very excellent | Under average | Good | Hurt by grub | Very promising | Not average | August 14 | J. Mills, Launceston |

THE STATE OF THE CROPS—*continued.*

| COUNTIES. | WHEAT. | BARLEY. | OATS. | GREEN CROPS. | POTATOES. | STOCK OF OLD WHEAT. | HARVEST TIME. | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|
| **ENGLAND.** | | | | | | | | |
| BUCKINGHAMSHIRE | Bulky | Full crop | Average | Late and irregular | Full crop | Under average | Middle of August | A. Frazer, Claydon |
| NORFOLK | Average | Under average | Good | Various | Promising | Under average | August 20 | J. J. Hill, Briston |
| | Abundant | Average | Good | Promising | None | Average | August 20 | J. Warnes, Bolwick Hall |
| | Average | Promising | Good | Indifferent | Healthy | Under average | August 20 | W. Cubitt, Barton Abbey |
| | Average | Not average | Good | Good | Good | Under average | August 20 | C. M. Raven, Stokeferry |
| | Average | Not average | Very poor | Good plant | Promising | Never less | End of August | T. Brown, Denver |
| CAMBRIDGESHIRE | Not average | Good | Good | Improving | Good | About average | Middle of August | Page Howard, Grantchester |
| | Very various | ..... | Average | Good | Very various | Average | Middle of August | A. S. Ruston, Chatteris |
| | Mildewed | ..... | Generally bad | Good | Good | Under average | Middle of August | J. Fryer, Chatteris |
| ESSEX | Average | Not average | Very indifferent | Late | Doubtful | Under average | Early in August | J. J. Mechi, Kelvedon |
| | Average | Average | Bad | Good | Good | Under average | Middle of August | C. Hall, Havering |
| | Good—average | Not average | Below average | A good plant | Doubtful | Under average | Early in August | W. F. Hobbs, Colchester |
| GLOUCESTERSHIRE | Average—laid | Not average | Slight | Deficient | Average | Under average | Middle of August | R. Baker, Writtle |
| | Very good | Fair—late | Good | Injured | Capital | Under average | Middle of August | R. Beman, Morton-in-Marsh |
| | Very good—laid | Good | Average | Promising | Abundant | Under average | Middle of August | J. F. Peacey, Winchcomb |
| | Good—late | Fair | ..... | Good | Partly diseased | Under average | August 18 | S. Taylor, Gloucester |
| | Good—laid | Various | Good | Hurt by grub | Good | Very little | August 18 | J. Kearsey, Cirencester |
| MONMOUTHSHIRE | About average | Average | Average | Good, late | Good | Under average | August 18 | J. Hunt, Almondsbury |
| | Excellent | Very good | ..... | Patchy | Slightly diseased | Under average | August 11 | T. Drake, Monmouth |
| | Generally good | Very unequal | Good | Promising | No disease | Average | Middle of August | W. H. Little, Abergavenny |
| HUNTINGDONSHIRE | Average | Full average | Good | Promising | Generally good | Not average | Middle of August | G. R. G. Relph, Usk |
| HERTS | Heavy—laid | Heavy | Hardly average | Good | Little disease | Not average | Middle of August | R. Beart, Godmanchester |
| BEDFORDSHIRE | Over average | Over average | Over average | Very good | Luxuriant | Not average | Middle of August | C. T. Humbert, Watford |
| | Generally promising | Various | Good | Generally good | Healtpy | Not average | ..... | T. Bennett, Woburn |
| | Over average | Average | Average | Very good | Good | Average | August 8 | W. Lavender, Biddenham |
| BERKSHIRE | Average | Fair | Good | Doubtful | Doubtful | Average | August 10 | E. W. Moore, Farringdon |
| | Fair | Good | Good | Good | Diseased | Average | August 10 | R. H. Betteridge, Abingdon |
| | Good | Average | Good | Hurt by grub | Beats 1850 | Not average | August 4 | J. Williams, Abingdon |
| | Over average | Fair | Look well | Hurt by grub | Promises well | Not average | August 10 | J. Adnams, Newbury |
| SOMERSET | Average | ..... | Average | Very fine | All but safe | Average | August 20 | C. P. Collyers, Dulverton |
| | Much laid | Average | Average | Promising | Very good | Very little | August 10 | R. S. Graham, Butleigh |
| | Light—laid | Very good | Fair | Very fair | Very good | Not average | Soon | H. Cottrell, Congresbury |
| WILTSHIRE | Over average | Fair average | Full average | Good | Disease showing | Average | August 6 | J. Spencer, Bowood |
| | Good | Average | Good | Promising | Tops diseased | Nearly average | August 8 | T. Arkell, Swindon |
| | Good | Good | Good | Backward | Good | Under average | August 4 | G. N. Hulbert, Bradford |
| DEVONSHIRE | Barely average | Under average | Under average | Late | Disease appearing | Under average | Middle of August | T. Michelmore, jun., Totnes |
| | Under average | Under average | Under average | Good | Best year | Under average | Middle of August | G. Langdon, Barnstaple |
| | Good | Good | ..... | Destroying by grub | Slight disease | Under average | Middle of August | S. Cornish, Kingsbridge |
| | Various | Under average | Average | Not promising | Slight disease | Under average | August 6 | G. Turner, Exeter |
| **WALES.** | | | | | | | | |
| CAERNARVONSHIRE | Never better | Never better | Never better | Turnips failed | Very good | Average | End of August | J. Williams, Conway |
| DENBIGHSHIRE | Average | Fair average | Average | Very bad | Good hitherto | Not average | End of August | E. H. Griffith, Denbigh |
| | Moderate—late | Good—late | Good—late | Excellent | Good | Not average | End of August | J. Girdwood, Chirk |
| CARMARTHENSHIRE | Excellent | Excellent | Excellent | Generally good | Haulm going | Not average | End of August | J. W. Lawford, Llandilo |
| | Generally good | Promising | Very good | Generally good | Diseased | Not average | End of August | J. Burnell, Hannelly |
| GLAMORGANSHIRE | Under average | Full average | Average | Under average | Haulm going | Not average | Middle of August | E. W. David, Radyn Court |
| | Average | Tolerable | Under average | Good | Not good | Not average | End of August | W. Edmond, Swansea |
| **IRELAND.** | | | | | | | | |
| LOUTH | Middling | Good | Good | Middling | Very good | Under average | End of August | W. M'Culloch, Dundalk |
| DOWN | Very good | Good | Excellent | Flourishing | Diseased | Very short | End of August | H. E. Boyd, Dromore |
| | Doubtful | Doubtful | Good | Good | Very good | None | Beginning of Sept. | J. Marshall, Donaghmore |
| | Good | Good | Good | Middling | Good | Under average | End of August | J. M'Kee, Comber |
| | Very good | Good | Very good | Various | Symptoms of disease | None | Middle of September | M. Forrester, Castlewellan |
| | Light | Fair | Fair | Backward | Symptoms of disease | Average | September 1 | T. Gracey, Ballyfoner |
| | Various | Good | Good | Middling | Disease appearing | Under average | September 1 | R. M'Cleery, Portaferry |
| | Good | Middling | Fair | Failed | Good | Under average | End of August | S. Simms, Loughbriditt |
| LONDONDERRY | Very good | Very good | Very good | Good | Very good | None | End of August | J. S. Clark, Maghera |
| ARMAGH | Very good | Very good | Good | Very good | Excellent | Under average | 1st of September | W. Paton, Armagh |
| | Looks well | ..... | Fine | Fine | Very good | Hardly any | ..... | G. Greer, Lurgan |
| | Very good | Middling | Good | Middling | Very good | Under average | Middle of September | W. Boyd, Cavanacan |
| | Very fine | ..... | Good | Good | Very fine | Average | End of August | R. B. Hardy, Armagh |
| GALWAY | ..... | Good | Very good | Middling | Very good | None | ..... | James Ellis, Clifden |
| | Below average | Good | Good | Diseased | Good—traces of disease. | None | 20th of September | J. F. Blake, Galway |
| | Late and middling | Good | Good | Good | Good | None | 1st of September | John Sheil, jun., Kilbignet |
| CAVAN | Average | Good | Light | Not average. | Good | None | 10th of September | J. Gibson, Ballieborough |
| | Very good | Good | Good | Very good | Promising | None | Middle of September | J. Nesbitt, Belturbet |
| CLARE | ..... | Generally good | Good | Good | Promising | None | Middle of August | H. Franks, Killaloe |
| | Good | Good | Good | Fair crop | Very good | None | Middle of August | W. Digan, Killaloe |
| | ..... | Good | Very fine | Very fine | Partly diseased | None | Middle of September | R Murray, Miltown, Malbay |
| | Good | Good | Good | Various | Very good | None | End of August | R.A.Stoddart, Kilkishea Ho. |
| | Short | Tolerable | Good | Hurt by grub | Very fine | None | End of August | D. J. Wilson, Belvoir |
| WESTMEATH | Light | Good | Good | Good | Very good | None | Middle of September | R. Bagnall, Tyrrell's Pass |
| | ..... | Very good | Good | Bad | Very good | None | 20th of August | W. Newburn, Gaybrook |
| WICKLOW | Good | Good | Good | Doubtful | Excellent | None | End of August | J.Dickson,J.P.,Sinckelly Ho. |
| | Damaged | ..... | Looks well | Bad | Doubtful | None | End of August | T. De Reuzy, M.D., Carnew |
| | ..... | Excellent | Very good | Very good | Good—traces of disease | None | 1st of September | J. Daly, Enniskerry |
| KILDARE | Fair crop | Fair crop | Fair crop | Various | Good | None | Middle of August | Gordon Lamb, Castledermot |
| COLERAINE | Good | Good | Average | Excellent | Sound | Average | End of August | S. Orr, Coleraine |
| ANTRIM | Good | Good | Very good | Hurt by grub | Very good | Under average | 1st of September | A. M'Kinlay, Bushmills |
| | Good | Very poor | Good | Various | Various | None | Very late | J. Lamb, Belfast [lymavon |
| DONEGAL | Healthy | Good | Good | Very good | Good | None | 1st of September | Hon. L. H. K. Harman, Bal- |
| | Looks well | Looks well | Very good | Good | Traces of disease | Average | 1st of September | J. O'Donnell, Ballyshannon |
| LIMERICK | Light | Good | Light | Bad | Good, but diseased | None | 1st of September | T.J. Atkinson, Ballyshannon |
| | .. .. | Very good | Very good | Very good | Never better | Under average | ..... | P. Haltoran, Miltown |
| CARLOW | Very good | Very good | Excellent | Various | Very good | None | End of August | R.D.Boulton Massy, Galbally |
| LEITRIM | Blighted | Good | Fair | Hurt by fly & grub | Flourishing | None | End of August | P. N. Moss, Rutland House |
| | Fair | Fair | Good | Good | Good—slightly diseased. | None | September | J. Lindsay, Lurgan Bay |
| | ..... | ..... | Good | Promising | Very promising | None | 8th of September | D. Boyd, Roscommon |
| ROSCOMMON | Very good | None | Good | Average | Excellent | None | 1st of September | J. Kelly, Faraher |
| KERRY | Middling | Very good | Very good | Various | Never better | None | End of August | J. Creagle, Tarbert |
| FERMANAGH | Fair crop | Looks well | Luxuriant | Good | Never better | None | End of August | A. Moir, Lisnoskia |
| | Looks well | ..... | Fair | Various | Very good | None | September | J. Patterson, Clemoss |
| TIPPERARY | Good | Very good | Good | Great | Superior | None | End of August | O'Brien Wilson, Nenagh |
| | Very good | Middling | Middling | Hurt by caterpillars | Very good | None | End of August | J.Fennel, Upper Cater Abbey |
| | Very good | Very good | Very good | Not good | Good | None | End of August | W. P. W., Clonmel |
| LONGFORD | Middling | Good | Very good | Good | Never better | None | End of August | E. Morgan, Lisnane |
| TYRONE | Good | Good | Good | Good | Middling | Average | 1st of September | M. J. Buchanan, Ornagh |
| MAYO | Good | Good | Very good | Very good | Very good | Under average | September | W.B.Stony,C.C.K.,Castlebar |
| | Middling | Average | Not average | Full average | Partial blight | None | End of August | G. Hildebrand, Westport |
| KILKENNY | Middling | Average—laid | Fair | Various | Excellent | None | Middle of August | M. Murphy, Goresbridge |
| | Very good | Very good | Very good | Very good | Very good | None | End of August | E. Ryan, Kilfane |
| | Average—blighted | Average | Very fine | Average | Very fine | None | End of August | D. A. Milward, Tullogher |
| | Blighted | Good | Blighted | Very bad | Sound | None | Middle of August | R. Stone, Freshford |
| | Fair | ..... | Very fine | Various | Excellent | None | Middle of August | J. Richardson, Piltown |
| MONAGHAN | ..... | ..... | Looks well | Luxuriant | Sound—good | ..... | ..... | G. Coulter, Castleblayney |
| | ..... | ..... | Excellent | Failed | Very good | ..... | ..... | J. Marrow, Ballibay |
| QUEEN'S COUNTY | Middling | Good | Good | Very good | Prime | None | 1st of September | T. Roy, Rathdowny |
| WEXFORD | Blighted | Very good | Fair, but blighted | Various | Diseased | Under average | End of August | E. Carroll, Castle Bridge |
| | Hurt by midge | Average | Good | Bad | Promise well | None | Middle of August | G. Gordon, Ferns |
| | Looks well | Looks well | Looks well | Good | Looks well | None | Middle of August | J. Dram, New Ross |
| | Bad | Good | Good | Good | Safe | None | End of August | T. Rudd, Ferns |
| WATERFORD | Good | Fair | Good | Bad | Good | Under average | Middle of August | R. T. Barrow, Kilmacthomas |
| | Under average | Very good | Very good | Failed | Very good | ..... | Middle of August | G. Hill, Cappoquin |
| | Middling | ..... | Good | Various | Never better | None | End of August | E. Kennedy, Kilmacthomas |
| CORK | Hurt by wind | Good | Very good | Very bad | Bad | None | 1st of September | D. MacGalway, Clonakilty |
| | Very good | Good | Very good | Destroyed by caterpillars | Very good | None | 1st of September | J. Wilkinson, Cloyne House |
| | Middling | Good | Very good | Various | Very good—traces of disease | Under average | End of August | H. Longfield, Doneraile |
| | Good | Good | Good | Various | Good | None | End of August | S. Piddell, M.D., Kildorrery |
| | Good | Good | Good | Good | Good | Under average | End of August | T. C. Cole, J.P., Innishannon |
| | Good | Average | Middling | Bad | Diseased | None | Middle of August | T. Jenkins, Kinsale |
| | Blighted | Average | Good | Middling | Average | Under average | End of August | F. Twinam, Kanturk |
| | Average | ..... | Middling | Diseased | Diseased | Under average | End of August | J. Y. Kingston, Bantry |
| | Middling | Good | Very good | Very bad | Good, but diseased | Under average | End of August | R. Hudson, Youghal |
| | Middling | Good | Very good | Middling | Good—diseased | None | End of August | D. Barclay, Blarney |
| DERRY | Pretty good | Good | Average | Promising | Good | Not average | 1st of September | C. Pollock, Magherafelt |
| | Good | Not average | Good | Not average | Good | None | 21st of August | J. Moore, Newtown Limavady |

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. XIII.—No. 259, Class 9, is an interesting stand of spades and other tools, exhibited by — Winton, of Birmingham. These tools are each of them completed from one solid piece of cast-steel, without joint or weld, and are quite elastic. They consist of forks, spades, trenching tools, &c.

A model shown by E. Jones, 138, Leadenhall-street, of an "Airish Mow," or Cornish corn-rick, adapted to the preservation of corn in the harvest time of rainy seasons, will perhaps communicate as useful, as novel, a piece of knowledge to the farmers of many districts. Miniature ricks for the storm-threatened harvest field are known in several parts of the kingdom, in Gloucestershire going under the name of "pooks;" but still they are strictly provincial, and their introduction into counties, especially the north-midland, liable to wet harvests, would undoubtedly be a saving of produce in quantity and quality. It is the custom of the Cornish farmers in the neighbourhood of Falmouth, when the weather is showery in the harvest season, to help each other in turn (assisted by their labourers), to save the corn. To effect this, when the grain is ripe, and a bright day occurs, a field of Wheat is cut, tied into sheaves, and made into ricks like the model, between sunrise and night-fall of the same day,—men, women, and children helping. From the peculiar formation of the mow, into the centre of which the air penetrates, there is no fear of the new cut corn becoming heated; and its outward form allows the rain to drip off, without reaching the ears which are inside. The grain may remain for weeks in these ricks, until it can be safely housed. In the month of August, in 1848, during the rainy weather that then prevailed, the coast between Falmouth and Plymouth was crowned with these ricks, and the corn in an excellent state; while, near Bristol, and in many districts between it and London, the corn already cut was lying blackening and spoiling on the ground.

The mow is represented in its different stages of construction by five models in one glass case. No. 1 shows the first centre or beginning of the foundation; consisting of three sheaves set up with their heads together, in the same way that the best workmen commence a stack. No. 2 represents the second round, and consists of nine sheaves placed round and against the first three, leaving spaces between, near the ground, for the air to pass. No. 3, the third round, is composed of 21 sheaves placed obliquely, their heads resting partly over each other, and below those of the preceding course. No. 4 consists of about 32 sheaves, their heads placed below those of the 21; and in this round the sheaves are laid less obliquely than in the last. This round determines the width of the foundation. To complete the rick two men are required, one to place the bundles, the other to pitch them to him. The first kneels on each of the bundles as he places them in a spiral manner as in No. 3. He works always on the outer side of the rick, going round and round on his knees; and gradually diminishes the circle after the fourth outer course. He gradually works himself and the rick upwards, resting his feet on the ties of the bundles, and pressing the straw ends of each new course into the one below it, until he has accomplished 10 rounds; the last six diminishing the rick almost to a point. In the last row he ties each sheaf to the next by raising a handful of the straw end of one bundle and passing it into the tie of the next, at the same time spreading out the straw ends of all the sheaves of this last round to serve as conduits for the drops of rain. The top is covered with a cap of straw, held down with three straw cords fastened with small wooden stakes. As soon as the Wheat is cut, women and children commence tying the bundles, and then carry and place them in large rings on the spaces where the ricks are to be made. The sheaves are not so thick as in other parts of the kingdom; being about a foot wide, and tied at about one-third of their length from the straw end. These ricks contain from 300 to 400 such sheaves of corn; and in a very catching season must be more safe and advantageous, we should say, than the common shocks or stooks, even when the latter are well hooded. As harvest is coming on, and the fickle and anarchic hand of the barometer still wavering at "Change," this description may perchance be of value to some who now look forward with fear to an unpropitious in-gathering of their cereal fruits.

We have now quitted Class IX., although we have unavoidably omitted scores of new and valuable things for want of time and space. We step into Class I. of "Raw Materials," including "Mining and Mineral Products." Here are found many things to interest agriculturists of liberal minds; for besides metals and stones of all descriptions, and the curious, and, we may say, ponderous and Titanic processes by which they are rendered available for our every day employment, are useful geological maps and sections; different soils and rocks; the vegetable substances grown upon them; mineral manures; and likewise productions which have been unavoidably kept out of their proper places—such as the Royal Dublin Society's Hemp and Flax from different localities, alpaca wool grown in Kerry, and samples of prepared manure for different crops from Newcastle.

The chief substance we shall notice is "Normal Guano, a manure prepared from the refuse of the fisheries, as a superior fertiliser;" invented by W. E. Gill, of Truro, Cornwall. Fish is applied with advantage to a great extent of land within the limits of this island; but its use as a manure is the less known as the distance from the shore increases. Of its great intrinsic agricultural value we have direct as well as indirect evidence. Every farmer who can command a supply, uses fish, and is ready to afford direct testimony of its value. This has been fully borne out by the elaborate analysis of Professor Way. Of indirect evidence we have an abundance, did we seek no further than the limits which guano itself points out. For it is clear enough that guano is but digested fish, or fish *minus* a proportional of nutritive matter, which has been assimilated by the sea-bird in the process of digesting the fish, which is its only food. If, then, the chemical treatment which the fish has undergone, in being converted into Normal Guano has not added anything that can be noxious to vegetation, or removed any of the well-known beneficial components of the fish, this manure is obviously of considerable value as a fertiliser; and if it can be economically produced, will prove a great advantage to agriculture. The obstacles that oppose themselves to the extended application of unprepared fish as a manure are at once evident: it is only found in the requisite abundance at the edges of the island; it is bulky, and requires to be applied liberally, so that the carriage is costly; it is only to be found at uncertain periods; its speedy decomposition and consequent offensiveness before the opportunity occurs for using it, renders it a very "hasty" manure, no matter what the season of the year may be. Now if some process, like that of manufacturing the Normal Guano, can prepare and preserve the valuable matter of the fish for cheap transport to the interior of the country, we shall soon be independent of Ichaboe, purchase no longer of exorbitant Peru, nor fetch offensive freights from Bolivia and the African coasts: but we shall obtain immense stores of enriching matter from the sea as a set-off against the vast amount of manure which now drains into it by our rivers. The ocean furnishes us with an inexhaustible supply; and if we can only make use of its bounties, here is at once a new field for the investment of manufacturing capital as well as an addition to the resources of the nation. Professor Way has suggested the subjection of sprats to pressure, in order to express the oil which they contain, and reduce them into a dry and portable mass, rich as guano in Wheat-producing nitrogen. And Mr. Hannam, in Morton's "Cyclopædia," refers to the steaming and drying of the carcases of horses for manure, practised in South America, as applicable to the preparation of fish manure. Normal guano, however, professes to have already effected the object; and we express our hope that it may answer in every respect its high and worthy purpose. This new substance has the appearance of very dark guano; which may be attributable to the oxidation of the oil of the fish, which, of course, has not been removed by sea-birds for their sustenance, as is the case with common guano. This fact may go far to indicate the mild treatment to which the fish has been subjected by this new process; and is, so far as it goes, in favour of the manure. Apart from agriculture, the result of this discovery or application of chemistry may be the means of affording employment to the inhabitants of the towns which stud our long line of coast, as well in Cornwall as in Scotland and in Ireland. A large "take of fish" must be a positive advantage where a certain and hungry market is ready to receive it: at present, the reverse is often the case; for a large supply lowers the price to a toilsomely unremunerative degree, and, in fact, discourages the fisherman in his labours at a point when a little perseverance would considerably increase his freight.

We should think that this Normal Guano could be produced at some of our large fisheries; where a demand may be said to exist already for the better sort or parts of fish, leaving the other or inferior sort to be chemically treated, and for which it may be more fit perhaps than that which would be selected for human food. *I. A. C.*

## Home Correspondence.

*The Turnip Crop.*—I observed with interest the notice in your leading article last week, regarding the reported appearance of a moth and caterpillar among the Turnips. I had myself observed it, being on a visit in this part of the country, and have made diligent enquiry and examination since. It is certain that although the Turnip fly was very busy in some places during the late bright and scorching weather, the plant has been much more extensively injured by another enemy this season, at a later period of its growth. The damage in this neighbourhood has been very considerable, but near Barnstaple, I am informed, the produce of whole acres has been devoured, and when not entirely demolished, the leaves are so punctured and skinned that little or no nourishment can be supplied through them to the plant. The slugs have in some cases been also at work, the want of frost last winter having been peculiarly favourable to insect life, the small green caterpillar of which I send you several specimens, though unfortunately I have lost one, when it was passing into the chrysalis state. I have perceived some aphides also, but few in number. I send a specimen of the moth, though I have no proof of its being actually connected with the caterpillar, except juxta position. The caterpillar has not generally appeared till after hoeing, and the farmers are consequently induced to leave them very late for that operation, though no connection can be traced with it. I hope some of your correspondents may send you more complete details. The visitation of the black caterpillar which you mention is well remembered here. *John Stuart Forbes, Heanton Satchville, Crediton, Devon.*

——I am sorry to say that Cornwall is not the only locality visited by the Turnip pest. Over the whole of West Norfolk (as far as I can hear), the Turnips have been more or less injured and destroyed by a green caterpillar, the produce of the inclosed moth; or, at least, the moth having appeared in his company, it will require very strong testimonials as to character to free him from suspicion of having introduced the invader. *C.F.N. Rolfe, Sedgeford Hall, Lynn, Norfolk.*——I enclose a leaf or two with the caterpillar on it. The damage is extensive in my own and other fields. I never remember a similar visitation to have occurred within the last 40 years, in which time I have grown that crop. The plants do not at present appear to recover themselves at all, or put out fresh leaves. *J. Y., Newton Fenns, seven miles east of Plymouth, on the sea coast, July 28.*——I beg to enclose for your inspection some of the caterpillars which are now so greatly injuring the Swedish Turnips in this and the neighbouring counties. In some instances, I believe, the crops have been entirely eaten up by them, and the land is sown with the common Turnips. I should have sent you these specimens earlier, but waited for the last number of your journal, hoping to find that in it some correspondent, more able than I, had called your attention to this pest, and given you more particulars than I can. It appears to me that the earlier sown Swedes, especially if on land in high condition, are those which have fared best, and next those on good warm land, if in condition to force on the plant rapidly; but where the land is poor, or naturally cold and wet, and the growth of the plant proportionately slow, then the most havoc has been made. Some farmers have left their crops unsingled, in the hope, I suppose, that the greater number of plants would afford more food in proportion to the enemy, and that therefore the individual plants would suffer less; but, I think, in most instances, they will be disappointed, as the crowding together of the plants has prevented their rapid growth, and left them longer tender, and consequently an easier prey to the devastator. I have had quick-lime applied to them, with, I think, some advantage, as there were two dry days after its application; but in other instances it seems to have entirely failed, probably in consequence of the immediate heavy falls of rain; the caterpillar, too, being on the under-side of the leaf, has rendered its destruction difficult. If you can throw any light upon the birth and parentage of this, to me, new pest to the Turnip, which shall enable my unprotected poor clods to wage war successfully against these free-booters, you will be conferring a great boon upon the agricultural community at large; for the loss, or the partial loss of their Turnip crop, is a more serious loss than most of your non-agricultural readers would suppose, and will make them feel more than ever the impossibility of producing cheap corn in so highly-taxed a country, when the most lavish expenditure for those in high places is year by year countenanced by our representatives, and when thousands upon thousands are annually spent upon baubles for our court and its hangers-on. "Cheap Corn and Cheap Government" must be our motto—unless our rulers can help us in a way more palateable to themselves. *W., Hundred of Bassetlaw, Notts.*——I observe in your Paper, of the 26th ult., mention of the Turnip crop, in parts of Cornwall, being attacked by a small ash-coloured moth, the grub of which is to be found on the under surface of the leaf, and is very destructive; and you ask whether any of your correspondents have observed a similar case in this or previous seasons. I am not aware, and cannot learn, that in former years such an insect has been observed; but in this neighbourhood the Turnips have been severely attacked by it this year. I enclose one of the small moths. On walking through my Turnips yesterday, I observed them rising from the leaves and ground in great numbers; and the small green caterpillar, or grub, is to be found in profusion on the under surface of the leaf. My Turnips have suffered severely, and been much retarded in their growth, the leaves being completely riddled by the grub; and unless something puts a stop to the ravages of this insect, I fear the crop will be nearly lost. I do not believe it is confined to this locality. In the neighbourhood of Bandon I heard of the Turnips being similarly attacked in the leaf, and I have no doubt the cause is the same. *F. E. Currey, Lismore Castle, County of Waterford.*——Considerable damage has been done to the Turnip crop throughout this part of the country, and I believe adjoining counties, by a small green caterpillar, which is supposed to have been produced by the "tiny ash-coloured moth," alluded to in your notice of this matter in last Saturday's paper. Immediately the Turnip was up the plants were covered with the moth. *H. W., Collyweston, Stamford.*—I am sorry to say that the Turnips along the north-east coast of Norfolk have suffered precisely as your leading article describes. The fields swarm with a tiny light-coloured moth, and the under side of the Turnip leaves are covered with green grubs, which lodge in a cavity eaten out by themselves in the coating of the leaf. Whether the grub is the offspring of the moth I cannot say, but think the corroborating evidence is almost strong enough to confirm the affiliation. Through a microscope stiff black hairs are seen protruding from the little brute. The "oldest inhabitant" says that "he never saw the like before, they are the *curosest* things that ever he see." *Cromer.*

*Peruvian Guano.*—My attention has frequently been directed towards Messrs. Gibbs and Sons' guano advertisements, wherein they kindly caution the public to be on their guard, when purchasing this useful manure. It appears to me, that they should move a step or two

beyond this caution; establish agents in every market town throughout the kingdom, publish their names, as especially appointed, for the exclusive sale of guano, at the commencement of the season, and send intelligent and independent persons, from time to time, unexpectedly to inspect their stock, and then, in case of any delinquency being discovered, to expose it to the utmost. This, I am of opinion, is the course Messrs. Gibbs and Co. are in duty bound to adopt, to ensure the public a genuine article, and moreover, that it would, if manfully carried out, be an effectual barrier against the extensive frauds now, I fear, practised by parties who, from moving in a respectable sphere, as upright tradesmen, lull all suspicion, and dispose of, with impunity, a doctored, half spurious article, at 11s. per cwt. *P. Kittewum.*

*Draining.*—The proof which Mr. Wilkins has promised to give of the superiority of drains 5 feet deep in all soils, will, no doubt, be interesting to many; and I would suggest that it would probably simplify the matter were he to confine his proof to stiff clay soils, as few now doubt the propriety of deep draining in other soils. There will also be little need to complicate the subject by enlarging on the advantages of a deep and dry soil, the higher temperature thereof, greater scope for roots, &c. It will be sufficient to show that the water can sink freely through the required depth of soil, as no one will dispute that all the benefits derivable from draining will then be ensured. Nor will any one deny that if the water sink equally down to the depth of 4 or 5 feet, the result will be more favourable than if it were arrested at a less depth; 4 feet of dry porous soil is better than 3 feet, and so on. No one doubts it. The only question is how the 4 feet, or even a much less depth, can be best obtained in the stiff soils referred to, for it so happens that practical men who have seen all kinds of draining tried, are of opinion that with the best mode yet known there is some little difficulty in getting the water to sink through even 18 inches of really stiff soil midway between the drains. I would not say that Mr. Wilkins will fail in proving this opinion to be erroneous, and that it is practicable to procure a depth of 4 or 5 feet of porous dry soil out of any subsoil, however stiff it may be. I merely say that such a thing has never yet been proved. Most of the universal deep drainers whose opinions are on record, display a highly becoming zeal in showing the advantage of a great depth of dry soil; but being generally imbued with the old erroneous notion that the drains in any soil, without any particular condition being complied with, will draw off the water and deepen the soil to the level of their bottom, just as the tap of a beer barrel can drain off the liquid within to its own level; they end by proposing a plan which in really stiff soil would leave about two-thirds of the ground exactly as it was before, with the water retained upon, or very near, the surface. The matter is, accordingly, far from being settled, and what the owners and occupiers of stiff soils now require to know is, what they should aim at attaining; in other words, what it is possible as well as desirable to accomplish by draining in their case, that they may direct their labour with the best chance of success, and not lose the solid benefits within their reach by aiming at results which they may find to be unattainable. Mr. Wilkins, it is to be hoped, will succeed in clearing up this point, and to assist him in doing so I would just hint the necessity of avoiding certain fallacious arguments hitherto used, some of which he may find in a pamphlet entitled "Agricultural Drainage, being part of an Essay in the Quarterly Review." I mention it as being one of the latest publications on the subject, and at present will only point out one of the fallacies referred to, which occurs at p. 25 in these words: "We doubt whether, in any natural soil, the friction is so great as to resist a fall of 1 inch in a yard; if we are right on this point we should always attain the object of lowering the water table to 4 feet by 4 feet 6 inch drains, 12 yards apart." This it will be seen is the foundation on which our friend of "The Quarterly," builds, and a pretty one it is, truly. He first assumes that the water will, as a matter of course, sink through any soil to the depth of 4 feet, and next that it will find its way to his drains 36 feet apart, by having a fall of 1 inch in a yard; such reasoning altogether sounds strange to one who has been accustomed to draining and managing stiff clay soils, particularly when the many controversies about open furrows and water sinking down, &c., are considered; and instead of its being a good example of close reasoning, bearing upon the point at issue, and having reference both to the necessities and difficulties thereof, I think Mr. Wilkins, when he reflects on it, will perhaps agree with me that absurdity can go no farther. There is also another line of argument frequently pursued, which should be avoided hereafter, as not being likely to convince any observing man—I mean the argument that tunnels and deep cuttings frequently lay ponds or wells dry, whereas shallow cuttings would not have done so. These are no doubt very interesting facts in themselves, and very useful in illustrating the value of deep drains in porous soils through which water can pass, but they have nothing to do with the drainage of stiff clay soils. It is easy to show why a deep cutting may drain a pond or a well at a distance, whilst the stiff soil between the two points may remain as much in want of draining as ever. Any one with a slight knowledge of strata may soon conjure up a hundred cases of the kind. *J. Donald.*

*Poultry.*—As I think the remarks of "Clericus Derbiensis" are likely to deter many who may wish to keep fowls as an amusement, but who have only a small space to devote to the purpose, I wish to say that the result of my experience is quite different to his. My stock consists of about 100 birds of the most choice breed of Cochin China fowls—they are constantly kept in confinement, but are abundantly fed, and the houses and walks kept perfectly clean. The corn they eat is the best that can be bought in this market; and knowing that they are very fond of Lettuce, I take care to have a constant supply in my garden for their daily use; they also eat a considerable quantity of greaves. The gravel on the walks is frequently renewed. My fowls are always in good health; I do not lose half-a-dozen chickens in a season, and I have a much larger return in eggs than "Clericus Derbiensis" mentions. Yesterday I weighed some of the chickens from broods which are a few days more than three months old, and find the finest weigh 4 lbs. each. You have recorded in the *Gardeners' Chronicle* the dates of incubation of one of my hens which hatched and reared five broods of chickens in one year. I have hens which have never had a day's run in a field, much heavier than others which have constantly roamed over several acres of ground. Should any of your readers wish for more information on this subject I will with pleasure answer their inquiries, and I shall feel much obliged by "Clericus Derbiensis," informing me to what address I can send him a letter. *R. H. Bowman, Rose Vale, Penzance.*

*Poultry.*—I have a bantam hen sitting in my fowl-house, and, according to my usual practice, put a cross with pen and ink on the eggs, in order to recognise them, in case, as sometimes happens, other hens lay in the same nest. In the adjoining compartment of the shelf (about 2 feet from the ground), on which the bantam's nest is, and divided from it by a partition, another hen has been for some days trying to sit without any eggs under her, but whenever found there I have had her taken away, not wishing to have another brood this year. Yesterday morning I found to my surprise that she had taken her usual seat on the chalk nest egg, in addition to which was one of her neighbour the bantam's marked eggs. The latter I restored to its rightful owner, and turned the pilferer out of the fowl-house; but this morning there she was again with two of the crossed eggs from the bantam under her. Now, as the house is locked up, and only myself and my gardener ever go to it, how could the eggs have been removed from one nest to the other? It could only have been done by the hen herself, and in what way could she have done so without injury to them? The nests, as I said before, are divided entirely by a partition, and are only open in front with a ledge an inch or two high to prevent the eggs or chickens, when hatched, falling out. I have mentioned this fact (of the truth of which you may rely), to several friends, who think it so extraordinary that, on their suggestion, I have given you this (rather too lengthy perhaps) account of it, in the hope of some of your correspondents who keep poultry, saying whether they have in their experience met with anything of the same kind? *W. A.*

*Drainage.*—In a letter in reply to "Inquirer," I find that Mr. Wilkins recommends the medium depth of 5 feet for all drains, "but the deeper the better." In the Weald clay of Kent, which is commonly of a very tenacious character on the surface, but milder below, the body of the water naturally passes downwards until arrested by a more retentive stratum, and, therefore, the deeper the drain, the more efficiently they will act. In other parts of the Weald, the soil is compounded of the subsoil or cultivated earth, and of a strong clay, upon which it lies. This soil admits of percolation; but the tenacious clay beneath does not, and, if this clay be at a considerable depth from the surface, there will be little utility in carrying the drains into it. In these strong clays, not subject to springs, drains 2½ feet deep have been found more efficacious than those made 4 feet deep. Again, in the heavy lands of Norfolk, the drains which answer best are 2½ feet deep, and laid at the distance of 22 feet apart. When they are made deeper, in clay in which flint and chalk boulders are found dispersed about, the expence of taking out the lower bed of 16 or 18 inches is very expensive, costing in that county from 6*d.* to 8*d.* per rod of 5½ yards. In the clay lands of Hampshire, the drains made from 30 to 36 inches in depth, and 18 to 24 feet apart, have been found most successful. On the same lands, drains now made 18 to 24 inches deep are found entirely successful. In the neighbourhood of Newcastle-on-Tyne, some clay lands have been drained by drains laid 2½ feet deep and 20 feet apart, with highly satisfactory results. In Scotland, the subsoils of retentive clay have been more completely drained by drains 2½ feet deep and 18 feet apart, than by 4 feet drains laid 36 feet apart. Also in the counties of Worcester and Hereford, the best drains in the clays are those laid from 2 to 3 feet in depth; those made 4 and 5 feet deep being found far less effective. Mr. Tebbit, of Mansfield, near Nottingham, a practical authority of eminence, states that the best way he has adopted on strong clays is putting the drains 14 feet apart and 2 feet deep, while he finds other clays that will draw at 18 to 24 feet apart, and 2 to 3 feet in depth for the drains. *Subscriber, July* 22.

*Peat Charcoal.*—"J. Vivian" will please excuse my not more punctual reply, owing to not having received the *Gazette* of the 19th until yesterday. In making peat-charcoal, I take common sods of turf, 10 inches long by 3 inches in thickness, placing every two together like the letter A, around a burning sod of turf as a centre, until a base is formed 4 feet in diameter. Upon this base every additional two sods of turf are similarly coupled, as above described, until a solid cone is formed, about 3 feet high. The air readily circulates through the interstices of the sods, when in the course of an hour and a half the heap will become one red mass, and the outside sods covered with a little ashes. At this period it is to be extinguished by a few bucketsful of liquid manure thrown upon it; or covering it with damp sods; or an old iron boiler, to exclude the air; a large pot will form a good extinguisher, and the one in general use among country blacksmiths when making peat-charcoal. Charcoal, thus extinguished, should be carefully examined, as the slightest spark would communicate with the whole mass, or set fire to the building in which it might be unfortunately placed, leaving nothing but a wreck behind. *Libra, July* 29.

*Clod Crusher.*—I have to thank your reviewer of agricultural implements at the Great Exhibition for noticing the model of a clod-crusher which I wrote you about. He has, however, made a serious mistake. He says, "but we should fear the peculiar form of the rings is scarcely a substitute for Crosskill's smaller teeth projecting upon each side of the rings." The fact, however, is, that Sillar's roller, which I exhibit and manufacture, *has* the side teeth which he commends in Crosskill's. I may say it combines all the good points of Crosskill's, so far as the difference in principle will admit. *H. Bennett*, 34, *London-street, Liverpool.*

## Farmers' Clubs.

WOLSINGHAM, DURHAM: *Church Leaseholds.*—A rather numerous meeting of gentlemen interested in this question took place in the Town Hall, on Tuesday. W. WOOLER, Esq., was moved to take the chair, in the absence of G. Attwood, Esq.

The Chairman explained that under the present system, which had subsisted for centuries, between the leaseholders and the church, the latter had levied a fine of one or one and a half year's rent in every septennial renewal, which gave it an income calculated upon a 4 per cent. table; and a year and a half fine, just a quarter of the annual rent of the leasehold, leaving the lessee the other three quarters clear to himself. This was therefore the true basis upon which the lessees had purchased, inherited, or settled their property, and upon which they would no doubt have continued, if Parliament had not already interposed, and is now proposing to further interfere with, for the benefit of the lessors. The proposed measure now before the House of Lords will increase the interest of the lessors from a quarter to more than one half of the annual value; whilst, on the other hand, the lessee in effect will have no additional privilege conferred; but insurmountably a heavier blow and a greater discouragement to improving his land, or employing extra labour, than the most unenlightened and uncivilised ages of our history ever inflicted. All that is professed to be additionally conferred upon the lessee is giving him a right of renewal (upon such terms!), a thing which he has been in possession of uninterruptedly from time immemorial. Parliament, in arranging the tithe question acted upon the well-recognised principle that for the interest of agriculture and the country at large, it was indispensable to base the settlement upon a fixed rent-charge, that the beneficial employment of capital and labour might be free and unencumbered by any third party coming in to participate beyond his fixed rightful claim in that which he had not sown. Such also was the eminent importance to the country of the full development of the capabilities of our agricultural resources considered to be, that Parliament and the Government deemed it so national a concern as to pass the Drainage Act, and by it placed the Government in the extraordinary position of a money lender, that the improvement of the land and employment of labour should be stimulated and encouraged, whilst at the same time the country at large was enriched and our climate ameliorated. Lastly, the legislator, influenced by the same enlightened views, passed the Inclosure of Commons Act, and appointed the most enlightened, economical, and attentive commissioners the country possesses, to facilitate and encourage improvements, employment of labour, and amelioration of our climate. Why, there is a very natural question to ask, should Parliament and the Government, which have thus recognised this great and well-established principle, so frequently now have it proposed to them to violate it in so enlarged a manner as the intended episcopal and capitular estates bill would do; and instead of, as the tithes case, by a fixed rent-charge enfranchising the leaseholds upon fair terms, it will impose the law of making fresh valuations take place (virtually by the commissioners' umpire, against which there will no appeal) every 21 years. Therefore, should the proprietor lay out his capital in improving his estate—not a tenth, as with the tithes, but one-half of the actual value of his improvement would be taken by the church as belonging to the moiety to be transferred by this bill from the lessee to the lessor; and at the same time his septennial fine would, for the other moiety, be proportionally increased. This appears so monstrous a violation of the hitherto practice of Parliament, and would impede the proper development of our agricultural resources, that it becomes of national paramount concern; and it is impossible it can be entertained, should the leaseholders only see the danger in time, which is now hanging over the property, and unite in one effort to secure their just claim. On the other hand, it will not benefit the church, as it will prevent the property being made of increased value, the country being the chief loser. There was also one subject which must be of considerable interest to the lessee, and which he begged to name, as it evinced on the part of our diocesan, which at this exigency appeared an especial and kind consideration towards them, and the practice for ages they have enjoyed in always having their leases renewed under the church, and which at this moment merited our warmest acknowledgments, and did much honour to our illustrious prelate. It was well known that a moiety of the salmon lock on the river Wear belonged to the see, that practices have long been pursued there which have met the reprehension of our anglers; and in the opinion of many of our most eminent fishers have driven the true salmon (Salmo salar) from these waters. That the lessee had been solicited by a few spirited gentlemen of the county to let them it at a rental, for the sole purpose of throwing open the lock, and thus greatly benefiting the public at large, by allowing salmon to breed in the upper streams, and again make this river a salmon water; that after this, for the same object, the lessee was highly and influentially memorialised, and other communications held with his agents, but all to no purpose. It was then proposed to indict the lock as a public nuisance, and counsel advised we had a good case. The gentlemen of the county also came forward liberally, whilst Mr. Marshall still with pleasure proffered his able legal services gratuitously at this epoch, it struck him that from the bishop's well-known character, and the pleasure it seems to afford his lordship to have it in his power to confer a public good upon the county, he (the chairman) hoped he was acting in accordance with his lordship's sentiments when he proposed the memorial to the bishop, and thus bringing to his notice the subject; and we cannot too highly honour the sentiment which has declared his lordship's decision, viz., that had every proper means not previously been employed to induce the lessee to listen to fair terms, and consider the public in the matter, the bishop, I believe, would not have been any party in refusing to

renew the lease to the present tenant, which he has very justly done. How different will the lessees as a body hereafter experience between such a lively consideration on the part of a resident prelate inclined to our local sympathies towards an old-established practice of always renewing, and a body of distant commissioners with double screwing valuers, actuary, and secretaries, to whose tender mercies it is proposed to hand us over.—THOMAS CHAPMAN, Esq., brought a case before the meeting. Many years ago he purchased some "life land," and gave 18 years' purchase, and was now willing to take 18 years for it, or give nine to make it freehold. Considering Mr. Chapman's long and intimate experience, his undivided attachment to the church, this opinion is deserving of deep consideration. A committee (to act for the district) of 14 gentlemen was nominated, with chairman (C. Attwood, Esq.), vice chairman (W. Wooler, Esq.), treasurer (John Curry, Esq.), and secretary (George J. Wooler, Esq.). A petition to the House of Lords was read and signed, when the meeting separated.

## Miscellaneous.

*Sale of Guano by Analysis.*—In consequence of the limited supplies of guano, and the high price good guano brings in the market, the cases of adulteration of this useful manure have been multiplied recently to an enormous extent; inferior samples of guano, likewise, have lately been imported into this country, and sold at prices at which the best sorts of Peruvian guano may be had. Coarse, fraudulent adulterations in guano, which now and then occur in the trade, are detected by the experienced, without much skill in chemical manipulations; but the real fertilising and commercial value of the manure can only be determined by chemical analysis. Would farmers avail themselves of the opportunity which is now presented to them, in all parts of the kingdom, at a cheap rate of charge, to have their guanoes analysed, I have no doubt they would, in many cases, realise a great benefit. The following analysis of a Bolivian guano sent to me, for analysis, will show the correctness of this opinion:—

BOLIVIAN GUANO,
Analysed by my pupil, Mr. Whitford.

| | |
|---|---|
| Water ... ... ... ... ... ... ... ... | 11.32 |
| Organic matter and ammoniacal salts ... ... ... | 53.94 |
| Phosphates of lime and magnesia ... ... ... ... | 13.98 |
| Fixed alkaline salts, chiefly chloride of potassium and common salt ... ... ... ... ... ... ... | 6.62 |
| Insoluble siliceous matter and sand ... ... ... ... | 14.50 |
| | 100 36 |

Furnishing on combustion, 11.80 per cent. of ammonia.

Now, compare with this analysis, which has been made from an average sample, taken from the bulk of the cargo, the following analysis, which the dealer supplied to his customers, and which represents, according to him, the composition of the same guano as that were analysed in my laboratory:—

ANALYSIS OF BOLIVIAN GUANO.

| | |
|---|---|
| Organic animal excrements, perfectly preserved, and containing combustible salts, which afford 5 parts of actual, and 19 parts of potential, ammonia: the whole ammonia—on which its fertilifing properties mainly depend—being 24 parts in 100 ... ... ... ... ... | 69.0 |
| Fixed alkaline salts ... ... ... ... ... ... | 4.0 |
| Phosphates of lime, or pure bone-earth, worth twice its weight of fresh ox bones ... ... ... ... ... | 17.0 |
| Moisture, 9½; silica, ½ ... ... ... ... ... ... | 10.0 |
| | 100.0 |

If we remember that the commercial value of guano depends chiefly on the properties of the ammonia, which the organic animal matters furnish in decaying, and, next, on the quantity of phosphates or bone-earth, it will at once become apparent how vastly superior the composition of this guano stated in the analysis, furnished by the dealers, than really the bulk of the cargo actually was. Leaving, however, these great differences out of consideration, and turning our attention merely to the useless matters—moisture and siliceous matter—we find that Mr. Whitford found 14.50 of siliceous matter, and 11.32 of moisture; whereas, the second analysis indicates but 10 per cent. of useless substances, showing a difference of 15.82 per cent. The price of good Bolivian guano is the same as that of the best Peruvian, which is sold at about 10*l.* per ton. A difference of 15 per cent. only, in the quantity of useless substances, therefore, will amount to no less than a difference of 1*l.* 10*s.* in the commercial value of the guano, even granting that the two samples, in every other respect, were identical, which they are not. *Dr. Voelcker, of Cirencester Agricultural College; Belfast Paper.*

## Notices to Correspondents.

ABORTIVE EARS: *H H.* Many causes tend to the abortion of ears—among others, cold and wet weather while the flowers are "setting." A light puffy soil which has been cross-cropped is likely to fail at harvest time, however favourable the weather.

ASHES: *J H Sherrard.* We are unable to say what may be the relative values of the ashes of the wood and the bark of trees; but we should imagine the ash of the spent bark of the tan-yard to be as valuable as ordinary wood-ashes; and if you can procure it at a cheaper rate we should prefer it. Tan by itself, well rotted, will be a useful dressing to clay land, but it is chiefly useful on the farm as a sponge for holding liquid manure. Use it in the bottom of your dung-heap, and then mix all up together—that is the best way of applying it. Lime should be applied in compost to Grass lands in autumn. You had better not apply ashes till February. In reference to your land and its indurated subsoil, it might be well to subsoil a portion—two or three acres, as you propose, by way of experiment, and then you will be able to judge in the course of two years which will be the best course to follow with the rest. If the land is very foul, it should be fallowed, and Tares may then be sown, fed off with sheep in spring, and the land again fallowed for Wheat, after which you may pursue a regular course—say Mangold Wurzel, Wheat, Beans, Wheat, Clover, Wheat, Winter Tares, followed by Cabbage, Wheat. The manure named in your letter of July 19 is not nearly worth the half of Peruvian guano; 58 per cent. of it, namely, sand, lime, and moisture, may be said to be worthless. Your further inquiries will be answered to the best of our ability; at the same time you will find answers to many of those already put, in the Journal of the English Agricultural Society, past numbers of this Paper, and other agricultural works. Consult the Index in vol. ix. of the Eng. Ag. Soc. Journ.

DRILL: *M Powell.* Messrs. Hornsby and Garrett, the former of Spittlegate, near Grantham—the latter of Leiston Works, Saxmundham—both furnish drills capable of sowing either Turnips or corn with guano, and that can be worked with two horses; and the latter has a horse-hoe connected with his drill capable of cleaning the intervals between the rows. Whether either of the machines is suitable for "small holders" in point of price is another thing. Small holders must be satisfied either with spade husbandry or the *hire* of expensive implements. You had better apply to the makers we have named for the information you require.

PEAT CHARCOAL AND GUANO: *B B.* Four or five of the former to one of the latter.

RAPE: *Devoniensis.* We consider there is danger in stocking it with cows. You may give them a few along with other food.

SAMPLES: *T Hind.* We have to apologise for the delay. You shall hear from us privately.

TURNIP CULTURE: *P S.* Gardner's Turnip cutter; and, for a hand chaff cutter, apply to Gillett, of Shipston-on-Stour, and Ransome, of Ipswich, or Ferrabee, of Stroud—according as you are nearest one or other—or to all three, and choose for yourself.

METEOROLOGICAL REPORT.—JULY—AUGUST.

| Date. | Time. | Max. | Min. | WIND.—WEATHER. |
|---|---|---|---|---|
| July 27 | 10.30 p.m. | 29.83 | ... | SW. Increasing. |
| 28 | 6. a.m. | 29.80 | ... | S. Strong driving rain, and |
| | 11 p.m. | ... | 29.72 | densely overcast all day. |
| ¶ 29 | 4.25 a.m. | ... | 29.69 | S by W. Gentle breeze; fine and pleasant day. |
| | 6.5 p.m. | ... | 29.69 | SW. |
| | 11.35 p.m. | 29.72 | ... | Bright, chilly evening. |
| 30 | 8 a.m. | ... | 29.79 | NNE. Brisk A.M., moderating at 5 P.M. Evening heavy; thunder clouds but no rain. |
| | 10.20 p.m. | 29.90 | ... | Barometer rising steadily. |
| 31 | 3.50 a.m. | 29.91 | ... | Calm; dense fog. |
| | Noon | 29.91 | ... | Noon overcast. 3 P.M. Raining. |
| | Night | ... | 29.84 | Showery evening. |
| *Aug. 1 | 7.15 a.m. | ... | 29.80 | SW. Brisk A.M.; fine sunny |
| | 12.30 p.m. | ... | 29.82 | day. |
| | 11.40 p.m. | 29.84 | ... | Night overcast. Rainy. |
| 2 | 7.50 a.m. | ... | 29.90 | Gentle SW. Overcast. |
| | 11 | 30.00 | ... | Barometer rising steadily. |
| Sun. 3 | 7.50 a.m. | ... | 30.00 | Gentle SW. Fine day, barometer steady. |
| | 2.40 p.m. | 30.02 | ... | |
| 4 | 6 a.m. | ... | 30.02 | Gentle SE. breeze. Very hot |
| | 10.35 p.m. | 30.07 | ... | day; barometer rising slowly. |
| 5 | 6.15 a.m. | ... | 30.10 | Brisk east-north-easterly |
| | 11.30 a.m. | 30.11 | ... | breeze, and bright cloud- |
| | 5.5 p.m. | ... | 30.09 | less sky. |
| 6 | 5.50 a.m. | 30.09 | ... | Brisk breeze at N. and NE. |
| | 5 p.m. | ... | 30.04 | Bright sunny day. |
| 7 | 7.20 a.m. | 30.02 | ... | Brisk breeze NE. and fine |
| | 2.30 p.m. | ... | 29.98 | day. |

¶ The storm of the great Eclipse, which came from the SW. and travelled towards Norway. I imagine the thunderstorms of the afternoon of Wednesday the 30th to have been produced by the collision of this and the succeeding storm.

* This storm travelled over Spain and Germany. I conceive that at Madrid the greatest depression would have been on the 1st of August, and over Frankfort on the 6th.

Dorchester, Aug. 7th. *F. P. B. M.*

*(To be continued.)*

## Markets.

COVENT GARDEN, AUG. 9.

Peaches and Nectarines are only sparingly supplied, but Pines and Grapes are still abundant. Strawberries are nearly over for a season. Cherries from standards have been much spoiled by the late heavy rains, but those from walls are exceedingly good. Ripe Apricots and Greengage Plums are imported from the Continent in considerable quantities. West Indian Pines fetch from 2s. to 5s. each. Oranges and Lemons are scarce. Nuts remain nearly the same as quoted last week. Carrots, French Beans, and Peas are received in quantity. Potatoes may be obtained at 1d. to 3d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotisfloribunda, Carnations, Pinks, Moss and Provins Roses.

FRUIT.

Pine-apples, per lb., 4s to 7s
Grapes, hothouse, p. lb., 2s to 5s
Peaches, per doz., 10s to 20s
Nectarines, per doz., 10s to 20s
Cherries, per lb., 6d to 2s
Melons, each, 2s to 6s
Strawberries, p. pottle, 6d to 1s
Currants, p. hf. sieve, 2s6d to 5s
Gooseberries, do., 1s 6d to 4s
Plums, per punnet, 1s to 2s
Apples, kitch., p. bf. sieve, 2s to 3s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Lemons, per doz., 1s to 2s
Oranges, per doz., 9d to 2s
— per 100, 6s to 14s
— Seville, p. 100, 7s to 14s
— — p. doz., 1s to 2s 6d
Nuts, Barcelona, p. bsh, 20s to 22s
— Brazil, p, bsh., 12s to 14s
Filberts, p. 100 lbs., 60s to 75s
Cobs, per 100 lbs., 50s to 55s

VEGETABLES.

Cabbages, per doz., 3d to 1s
Cauliflowers, p. doz., 6d to 3s
French Beans, per half sieve, 1s to 2s
Beans, per sieve, 1s 6d to 2s
Peas, per sieve, 1s 9d to 3s 6d
Potatoes, per ton, 45s to 80s
— per cwt., 2s to 5s
— per bush., 1s 6d to 2s 6d
Turnips, p. bunch, 2d to 4d
Cucumbers, each, 1d to 1s
Radishes, per doz., 6d to 9d
— Turnip, p. doz., 8d to 1s
Celery, p. bundle, 6d to 1s 6d
Carrots, per bunch, 4d to 6d
Spinach, per sieve, 1s 6d to 2s
Vegetable Marrows, per doz., 6d to 1s
Onions, p. bunch, 1d to 5d
Leeks, per bunch, 1d to 2d
Shallots, per lb., 3d to 6d
Garlic, per lb., 4d to 6d
Artichokes, per doz., 1s to 2s
Lettuce, Cab., p. score, 4d to 1s
— Cos, per score, 3d to 1s
Small Salads, p. punn., 2d to 3d
Horse Radish, p. bundl., 1s 6d to 6s
Red Beet, per doz., 1s to 2s
Mushrooms, p. pot., 1s to 2s
Sorrel, per hf. sieve, 6d to 9d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, per doz. bun., 2s to 3s
— Roots, p. bundl. 9d to 1s
Mint, per bunch, 1d to 2d
Basil, p. bunch, 3d to 4d
Marjoram, do., 3d to 4d
Watercress, p. 12 bunch., 4d to 6d

HOPS.—FRIDAY, Aug. 8.

Messrs. Pattenden and Smith report that the accounts from the plantations are very conflicting, but the majority speak of the Hops daily getting worse. Our market is quite firm, with very few new Hops on sale, and old ones are in demand, at 4s. to 5s. advance in prices. Duty, 90,000*l.*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 7.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 73s to 77s | Clover ... ... ... | 70s to 90s |
| Inferior ditto... ... | 55 65 | New do. ... ... ... | 60 80 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 25 30 |
| New Hay ... ... | 63 72 | | J. COOPER. |

A good supply, and trade dull.

CUMBERLAND MARKET, Aug. 7.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Interior ... ... ... | 65s to 78s |
| Inferior ditto... ... | 58 70 | New Clover ... ... | 65 78 |
| New Hay ... ... | 58 70 | Straw ... ... ... | 28 33 |
| Old Clover ... ... | 84 95 | | JOSHUA BAKER. |

SMITHFIELD, MONDAY, Aug. 4.

The supply of Beasts is again large and weather unfavourable for slaughtering; in consequence butchers buy sparingly; prices are rather lower than on Monday last. A few choice Scots have made 3s. 8d. Sheep and Lambs are very plentiful, and consequently rather lower; many plain Lambs remain unsold. Trade is slow for Calves, at late rates. From Holland and Germany there are 1054 Beasts, 4050 Sheep, 314 Calves, and 100 Pigs; from France, 100 Beasts; from Scotland, 200; from Norfolk and Suffolk, 200; and 2400 from the northern and midland counties.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 4 | — 3 | 0 | Ewes & 2d quality | 2 | 6 | — 3 | 2 |
| Best Downs and Half-breds ... | 3 | 8 | — 3 | 10 | Ditto Shorn ... | | | ... | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 4 | 0 | — 4 | 8 |
| | | | | | Calves ... ... | 2 | 8 | — 3 | 8 |
| | | | | | Pigs ... ... | 2 | 6 | — 3 | 4 |

Beasts, 4187; Sheep and Lambs, 31,810; Calves, 438; Pigs, 415.

FRIDAY, Aug. 8.

The number of Beasts is again large, and the demand limited. Our trade is also slow, but Monday's rates are maintained for choice qualities; several of inferior description remain unsold. The supply of Sheep and Lambs is about the same as of late; the trade is, however, more cheerful, and in some instances a small advance in price is realised. Calves are again plentiful; there is a brisk sale, but prices cannot be quoted higher. From Germany and Holland we have 252 Beasts, 1850 Sheep, 363 Calves, and 50 Pigs; from Spain, 670 Sheep; from Scotland, 100 Beasts; 300 from the northern and midland, and 130 milch cows from the home counties.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 4 | — 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 4 | — 3 | 0 | Ewes & 2d quality | 2 | 8 | — 3 | 2 |
| Best Downs and Lambs ... | 3 | 8 | — 3 | 10 | Ditto Shorn ... | | | ... | |
| Half-breds ... | | | | | Lambs ... ... | 4 | 0 | — 4 | 8 |
| Ditto Shorn ... ... | | | | | Calves ... ... | 2 | 8 | — 3 | 8 |
| | | | | | Pigs ... ... | 2 | 6 | — 3 | 4 |

Beasts, 983; Sheep and Lambs, 13,300; Calves, 687; Pigs, 410

MARK LANE.

MONDAY, Aug. 4.—The supply of English Wheat by land carriage samples to-day was small, and sold at a decline of 2s. per qr. upon the prices of this day se'nnight. The arrival of foreign being again considerable, millers were reluctant purchasers of Dantzic at a similar reduction, and very little business was transacted in red, although offered 1s. per qr. lower than on Monday last.—There were a few samples of new Barley, Peas, and Oats at market, which remained undisposed of at a late hour. We quote Barley 6d. and Beans 1s. per qr. cheaper. Peas are unaltered in value. The very large arrival of Oats causes the trade to be exceedingly heavy at a decline of 1s. to 1s. 6d. per qr.—Rape is in good demand.—Foreign Flour is a slow sale at a reduction of 6d. per barrel and 1s. per sack.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 40—44 | Red ..... | 36— | 40 |
| — — fine selected runs... | ditto | 44—46 | Red ..... | 40— | 42 |
| — — Talavera ..... | | — | | | |
| — Norfolk, Lincoln, & York... | White | — | Red ..... | — | |
| — Foreign ..... | | 32—50 | | | |
| Barley, grind. & distil., 21s to 24s... | Chev. | 26—31 | Malting . | 23— | 26 |
| — Foreign... grinding and distilling | | 21—25 | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | | 17—20 | | | |
| — Scotch and Lincolnshire... | Potato | 21—24 | Feed..... | 19— | 21 |
| — Irish ..... | Potato | 18—22 | Feed..... | 18— | 20 |
| — Foreign .....Poland and Brew | | 19—21 | Feed..... | 16— | 20 |
| Rye ..... | | 23—25 | Foreign . | — | |
| Rye-meal, foreign..... | per ton | — | | | |
| Beans, Mazagan ... ..25s to 27s... | Tick | 26—30 | Harrow . | 29— | 30 |
| — Pigeon.....28 — 32... | Winds | — | Longpod | — | |
| — Foreign ..... | Small | 21—29 | Egyptian | 23— | 24 |
| Peas, white, Essex and Kent..... | Boilers | 26—27 | Suffolk... | 25— | 27 |
| — Maple.....22s to 23s ..... | Grey | 23—24 | Foreign . | 24— | 26 |
| Maize ..... | White | — | Yellow ... | — | |
| Flour, best marks delivered ... | per sack | 34—39 | | | |
| — Suffolk ..... | ditto | 27—33 | Norfolk . | 27— | 33 |
| — Foreign ..... | per barrel | 20—23 | Per sack | 28— | 33 |

FRIDAY, Aug. 8.—The arrivals of foreign grain continuing considerable, and the fineness of the weather, induced buyers to refrain from purchasing, and render nearly all attempts to progress with the sales of Wheat futile, even at a decline upon the prices of Monday last.—Barley must be considered the turn lower.—In Beans and Peas there is nothing doing.—The Oat trade is slow, but prices cannot be written cheaper.—A large portion of the Flour lately arrived from New York is sour, and of some the quality is too inferior for sale in this market; the business doing is limited, at a decline of 1s. per sack and barrel. There is very little passing in floating cargoes, and prices are rather lower for both Wheat and Maize; for Polish Odessa 32s. 6d. to 34s. is asked, and 26s. to 26s. 6d. per qr. for Galatz Maize.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2370 | 80 | 50 | 1980 sacks |
| Irish ..... | — | — | 490 | |
| Foreign ... | 18050 | 8190 | 51430 | 960 sack |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS |
|---|---|---|---|---|---|---|
| June 28..... | 42s 4d | 25s 2d | 22s 3d | 28s 11d | 32s 1d | 29s 2d |
| July 5 ..... | 43 5 | 25 2 | 22 5 | 27 6 | 31 8 | 28 10 |
| — 12..... | 43 6 | 25 8 | 22 0 | 22 5 | 32 6 | 28 8 |
| — 19..... | 42 7 | 25 6 | 21 11 | 28 2 | 31 5 | 28 6 |
| — 26..... | 42 5 | 25 7 | 22 0 | 27 0 | 32 3 | 28 7 |
| Aug. 2..... | 42 4 | 25 9 | 22 7 | 25 7 | 31 1 | 28 3 |
| Aggreg. Aver. | 42 9 | 25 6 | 22 2 | 28 3 | 31 10 | 28 8 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | JUNE 28. | JULY 5. | JULY 12. | JULY 19. | JULY 26. | AUG. 2. |
|---|---|---|---|---|---|---|
| 43s 6d | ... | ... | ... | ... | ... | ... |
| 43 5 | ... | ... | ... | ... | ... | ... |
| 42 7 | ... | ... | ... | ... | ... | ... |
| 42 5 | ... | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, Aug. 5.—The arrivals of grain and Flour from Ireland and coastwise this week have been small, but those from abroad good. The weather is very fine, with a settled appearance. At this morning's market there was only a limited attendance of the town and country trade, who, influenced by the fine weather and the depressing accounts from Mark-lane, acted with the greatest caution, and although Wheat and Flour were offered at a reduction of fully 2d. per 70 lbs. on the former and 9d. per barrel and 6d. per sack on the latter article, an extremely small business resulted. Oats being scarce, were firmly held at late rates. Barley, Beans and Peas met with a fair retail sale, at the prices of this day week. Indian Corn was hardly inquired for. —— FRIDAY Aug. 1.—Having but a limited number of millers at our market to-day, the sales of Wheat were altogether unimportant, and Tuesday's rates hardly maintained. Barley and Malt were more saleable, at former prices. Egyptian Beans were held 3d. to 6d. per qr. higher, all other sorts remain unvaried. Oats were taken in small parcels only, without any change in value. Indian Corn moved rather sparingly, and declined 6d. per qr.

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| The Cochin-China Fowl | The Teal and its congeners | The Poland Fowl |
| The Malay Fowl | The White China Goose | Bantam Fowls |
| The Pheasant Malay Fowl | The Tame Duck | The Rumpless Fowl |
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| Budding upon body | Sap-bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
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London: JAMES RIDGWAY, Piccadilly.

A HAND-BOOK OF BRITISH FERNS; containing scientific and full popular descriptions, with Engravings of all the Native Ferns, and instructions for their culture. By THOMAS MOORE, F.L.S., Curator of the Chelsea Botanic Garden. Price 5s., in neat cloth.

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CONTENTS OF THE NUMBER FOR SATURDAY LAST, AUGUST 9, OF

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Archæological Papers.
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**Foreign Correspondence.**—Athens: Discovery of Ancient Greek Manuscripts.

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**Societies.**—Proceedings of Entomological Society.

**Fine Arts.**—The Bridgewater Gallery—Mr. Baily's Statue of Sir R. Peel—Removal of the National Pictures—Decorations of New Palace at Westminster.

**Music and the Drama.**—New Publications—Sacred Harmonic Society—Her Majesty's Theatre—Royal Italian Opera—Drury Lane.

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**Order the Athenæum** of any Bookseller.

ART-UNION OF LONDON.—The Council regret to be compelled to announce that the EXHIBITION of WORKS selected by the Prizeholders of 1851 is POSTPONED from the 11th instant till the 1st September, in consequence of the pictures being retained for Exhibition beyond the usual time by the Royal Academy and other societies. The Tickets already sent to members will be available from the 1st to the 27th September.

444, West Strand, Aug. 9. GEORGE GODWIN, } Hon. LEWIS POCOCK. } Secs.

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| Age when Policy was issued. | Date of Policy. | Sum assured. | Original Premium. | Reduced Annual Premium for the current year. |
|---|---|---|---|---|
| 20 | On or before 14th of May, 1846. | £1000 | £19 6 8 | £10 12 8 |
| 30 | | 1000 | 24 8 4 | 13 8 7 |
| 40 | | 1000 | 31 10 0 | 17 6 6 |
| 50 | | 1000 | 42 15 0 | 23 10 3 |
| 60 | | 1000 | 66 11 8 | 36 12 5 |

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|---|---|---|---|---|---|
| 10 | £1 7 6 | £1 5 4 | 46 | £3 11 6 | £3 3 2 |
| 13 | 1 9 3 | 1 7 0 | 50 | 4 1 9 | 3 13 3 |
| 16 | 1 11 3 | 1 8 10 | 53 | 4 11 6 | 4 2 6 |
| 20 | 1 14 4 | 1 11 6 | 56 | 5 4 0 | 4 14 0 |
| 23 | 1 17 0 | 1 13 8 | 60 | 6 6 0 | 5 12 6 |
| 26 | 2 0 3 | 1 16 2 | 63 | 7 4 0 | 6 9 6 |
| 30 | 2 5 0 | 1 19 9 | 66 | 8 4 0 | 7 10 8 |
| 33 | 2 8 6 | 2 2 10 | 70 | 10 0 4 | 9 7 6 |
| 36 | 2 13 0 | 2 6 4 | 73 | 11 16 2 | 11 2 6 |
| 40 | 2 19 9 | 2 12 0 | 76 | ... | 13 1 9 |
| 43 | 3 5 3 | 2 17 2 | 80 | ... | 15 12 10 |

**Example.*—A Gentleman whose age does not exceed 30, may insure 1000*l.*, payable on his decease, for an annual payment of 22*l.* 10*s.*; and a Lady of the same age can secure the same sum for an annual payment of 19*l.* 17*s.* 6*d.*

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FIRE INSURANCES are also effected by this Company, on the most moderate terms.

Agents are wanted in those Towns where no appointments have been made. Applications to be made to Mr. W. L. NEWMAN, Actuary and Secretary, York; or to Mr. HENRY DINSDALE, 12, Wellington-street, Strand, Agent for London.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

NOTICE IS HEREBY GIVEN, that the usual DIVIDEND of 5 per cent. (less income tax), on the paid-up capital on the shares of the Society, will be PAYABLE at this office, on and after WEDNESDAY, the 20th day of August inst.

ACT OF PARLIAMENT.—In consequence of the powers conferred by an act obtained in the session of 1850, the provisions of which came into operation on the 1st of last month, advantages and privileges will accrue to all persons *now assuring* to an extent greater than can be derived from most other offices. The particulars are set forth in a report, and a new prospectus, to be procured (free of expense), by addressing a line to GEORGE H. PINCKARD, Resident Secretary.

99 Great Russell-street, Bloomsbury, London.

UNITED KINGDOM LIFE ASSURANCE COMPANY, 8, Waterloo-place, Pall-mall, London; 97, George-street, Edinburgh; 12, St. Vincent-place, Glasgow; 4, College-green, Dublin.

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The Bonus added to Policies from March, 1834, to the 31st December, 1847, is as follows:—

| Sum Assured | Time Assured. | Sum add. to Pol. in 1841 | Sum added to Pol. in 1848. | Sum Payable at Death. |
|---|---|---|---|---|
| £5000 | 13 yrs 10 mts | £638 6 8 | £787 10 0 | £6470 16 8 |
| 5000 | 1 year | ..... | 112 10 0 | 5112 10 0 |
| 1000 | 12 years | 100 0 0 | 157 10 0 | 1257 10 0 |
| 1000 | 7 years | ..... | 157 10 0 | 1157 10 0 |
| 1000 | 1 year | ..... | 22 10 0 | 1022 10 0 |
| 500 | 12 years | 50 0 0 | 78 15 0 | 628 15 0 |
| 500 | 4 years | ..... | 45 0 0 | 545 0 0 |
| 500 | 1 year | ..... | 11 5 0 | 511 5 0 |

* EXAMPLE.—At the commencement of the year 1841, a person aged 30, took out a policy of 1000*l.*, the Annual Payment for which is 24*l.* 1*s.* 8*d.*; in 1847, he had paid in Premiums 160*l.* 11*s.* 8*d.*; but the profits being 2½ per cent. per annum on the sum insured (which is 22*l.* 10*s.* per annum for each 1000*l.*), he had 157*l.* 10*s.* added to the Policy, almost as much as the Premiums paid.

The Premiums, nevertheless, are on the most moderate scale, and only one-half need be paid for the first five years, when the Insurance is for Life. Every information will be afforded on application to the Resident Director, at the office, 8, Waterloo-place, Pall-mall, London.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily from 12 to 6 o'clock, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by His Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at 4 o'clock, on every Saturday, until further notice. Admission 1*s.* ON MONDAYS 6*d.*

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Patronised by the Royal Family, Nobility, &c.

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GOOD NEWS FOR THE AFFLICTED.

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Printed by WILLIAM CRADDOCK of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London, and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, August 9, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 33—1851.] SATURDAY, AUGUST 16. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 523 c | Iron, paint for | 518 b |
| Aiton's (Mr.) bequest | 516 a | Larch, rot in | 518 a |
| Aloes hardy | 518 b | Larks, Irish | 518 c |
| Animal and vegetable life | 515 b | London, Murray's, rev | 519 b |
| Aquatics | 517 c | Oak, parliament | 519 c |
| Beer drinking | 522 c | Orchard houses | 518 b |
| Bees, swarming of | 519 c | Orchids for the Million | 517 a |
| Beet, sugar | 521 a | Nightingale | 517 c |
| Birds, British song | 517 a | Paint, tar | 518 b |
| British Association | 516 c | Paulownia imperialis | 519 c |
| Bunny's (Mr.) nursery | 519 c | Pea, new | 519 c |
| Caledonian Hort. Society | 518 c | Peat charcoal | 518 c |
| Calendar, Horticultural | 520 a | Pigs, carcase and living weights of | 523 a |
| — Agricultural | 526 a | Plants and animals, distinctions between | 515 b |
| Cattle, West Highland | 523 a | Potatoes | 518 b |
| Chaff-cutter | 523 b | Potato crop | 521 a |
| College, agricultural | 521 c | Potato disease | 518 c |
| Colonial Magazine, rev | 525 b | Poultry | 523 a |
| Cotton, African | 518 a | Pruning forest trees | 516 a |
| Dahlias | 518 b | Seeds, vitality of | 515 a |
| Draining land to be planted | 518 a | Seedling flowers | 518 a |
| Entomological Society | 519 a | Stove cottage | 518 b |
| Farming examples | 522 b | Tar paint | 518 b |
| Firs, precocious | 518 c | Turnip moths | 523 b |
| Forest pruning | 516 a | Vegetable Marrows | 520 c |
| Fruit crops | 517 b | Walks, to salt | 517 c—518 a |
| Fuchsias, tall | 518 c | Weather, the | 526 a |
| Grass seeds | 523 b | Yorkshire Agricultural Society | 524 a |
| Heating, stove for | 518 b | | |
| Horticultural Society's exhibitions | 517 c | | |



NATIONAL FLORICULTURAL SOCIETY,
21 REGENT-STREET.

Admirers of the HOLLYHOCK, DAHLIA, VERBENA, &c., &c., are invited to attend the MEETING of this SOCIETY, on THURSDAY, the 21st instant, at Three o'clock precisely, when it is expected that some fine collections will be submitted for examination. The Censors appointed are—

| | |
|---|---|
| J. Howard, Esq., Burnham | J. S. Prockter, Esq., Bermondsey |
| Mr. W. Holmes, Hackney | Mr. A. Parsons, Enfield |
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| Mr. G. Smith, Hornsey Road | |

P.S. All Flowers, &c., must be entered, labelled, and staged before One o'clock.

By Order. JOHN EDWARDS, Hon. Sec.

TROWBRIDGE, WILTS.

Under the distinguished patronage of the High Sheriff, Members of Parliament, and other Gentlemen of the County.

THE ANNUAL HORTICULTURAL AND FLORAL EXHIBITION (open to all England), will be held on WEDNESDAY, the 20th of August, in several splendid Marquees, in the grounds adjoining the Railway Station. Silver Cups and other Prizes will be awarded for Flowers, Fruits, and Vegetables.—Particulars will be given in the Schedule, which may be obtained of Mr. JOHN GRAHAM FOLEY, Honorary Secretary, The Parade, Trowbridge.

DAHLIAS.—THE GREAT WEST OF ENGLAND DAHLIA EXHIBITION will be held in the grounds of Colonel BAKER, in Salisbury, on Wednesday, the 27th of August next. Thirty money prizes are offered. Full particulars on application to JOHN KEYNES, Hon. Sec.—Salisbury, August 16.

SPLENDID COLLECTION OF CAMELLIAS.

J. HENRY, SEEDSMAN, FLORIST, and FRUITERER, 6, Market-place, Guernsey, begs to inform the public, that he has a beautiful collection of that splendid flower, the "CAMELLIA JAPONICA," from 3 to 8 feet in height, well grown, and promising well for bloom, and suitable for a nobleman's conservatory. Amongst the collecton will be found a splendid plant of the Marchioness of Exeter; also a fine collection of Yellow Picotees, Gladiolus, Ixias, Belladonnas, Guernsey Lilies, Hot and Greenhouse Grapes, Chaumontel Pears, and trees. Orders promptly and honourably attended to.—August 16.

NEW GERANIUMS OF 1850

BASS AND BROWN'S List of NEW GERANIUMS and other Plants, at reduced prices, is now ready. Copies sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE BLACK PRINCE STRAWBERRY will be sent out on Monday, 18th of August, at 6*s.* per 100, box included; it has proved itself to be the earliest round London these five years, good in flavour, and a tremendous bearer, and the best for preserving; has taken six prizes. The Keens and British Queen 5*s.* per 100; same time, a pamphlet of 36 pages on "Market Gardening round London," explaining everything. Price 1*s.* 6*d.*, or by post, 1*s.* 8*d.*; also, a pamphlet of 56 pages containing the "Belgian Prize Essay on the Potato and 12 other first-rate Fruits and Vegetables;" price 2*s.*, or by post, 2*s.* 4*d.* Post-office orders on Camberwell.

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THOMAS BEACH, Market Gardener, Worton, Isleworth, Middlesex.

NEW EARLY STRAWBERRY—"TROLLOP'S VICTORIA."

JAMES TROLLOP (who raised "Princess Alice Maud" Strawberry, which gave general satisfaction to the public in 1843), now with great confidence offers his seedling "VICTORIA," and is certain that it combines qualities which no other kind in cultivation does possess. Being very early, a dwarf robust grower, and free bearer, throwing strong trusses of fruit (above the foliage), which is of a large size, globular form, and good colour, with a delicious flavour.

Fine well-rooted plants, on and after the 8th September, 1851, at 4*l.* per 100.

For particulars of prizes and opinions, with full advertisement, see *Gardeners' Chronicle*, Aug. 2d, 1851, and "Beck's Florist, Fruitist, and Garden Miscellany," for August, 1851, or "Midland Florist."

N.B. Full particulars may be had free, per post, by applying to G. D. FISHER, at Mr. Butler's Nursery, Wedcombe, Bath.

Limpley Stoke, Aug. 16.

BECK'S SEEDLING PELARGONIUMS OF 1850.

JOHN DOBSON'S Descriptive Catalogue of New and First-rate PELARGONIUMS, can be had by enclosing one postage stamp.—Woodlands Nursery, Isleworth, Aug. 16.

DEUTZIA GRACILIS.—This is a beautiful new Hardy Japan Shrub, sent to this country by Mr. Thomas Lobb. It is a plant of very neat compact habit, producing its pure white flowers in great abundance. It blooms in a very small state, plants not more than 6 inches in height being loaded with flowers. It is well adapted for early forcing, and by bringing plants at various times into the greenhouse, it may be had in bloom several months of the year. It was exhibited at Chiswick on the 3d of May, and again at the Royal Botanic Society on the 10th of May, at both which places it was greatly admired and received a Medal.—Good established Plants, 15*s.* each; smaller ditto, 10*s.* 6*d.* each.—The usual discount to the trade.

VEITCH and SON, Exeter, August 16.

SUTTON'S EARLY SIX-WEEKS TURNIP, and SUTTON'S PURPLE-TOPPED YELLOW HYBRID TURNIP, may both be sown during the month of August with certainty of success. They are by far the largest and most nutritive of Stubble Turnips. Price 10*d.* per pound, or 5*s.* per gallon.

*Carriage free by Great Western, South Western, or South Eastern Railway, except parcels under* 10*s. value.*

Address, JOHN SUTTON and SONS, Reading, Berks.

MESSRS. J. AND H. BROWN offer the following new and choice Plants, which they will forward to any part:—

| | *s.* | *d.* |
|---|---|---|
| 12 Orchides, choice species and good plants, including Stanhopeas, Dendrobiums, Epidendrums, Oncidiums, &c., for | 30 | 0 |
| 50 Choice Greenhouse Plants, one of a sort by name (this collection is highly recommended) | 40 | 0 |
| 24 Choice Ericas, one of a sort, by name | 16 | 0 |
| 12 New Azalea Indicas, one of a sort | 25 | 0 |
| 12 Camellias, choice sorts, set with bloom | 30 | 0 |

Some large Camellias, Orange Trees, and Azaleas for sale.

| | | |
|---|---|---|
| 24 Fine new Fuchsias, do., do. | 10 | 0 |
| 12 Fine new Gloxinias, do., do. | 10 | 0 |
| 12 Fine new Achimenes, do., do. | 10 | 0 |
| Passifloras and Jasminums, Stove and Greenhouse species, each | 1 | 6 |
| Gardenia Florida, Radicans and Fortunii, per doz. | 18 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots | 9 | 0 |
| 12 Climbing do., choice sorts, in pots | 6 | 0 |
| 12 Bourbon Roses in pots, one of a sort | 10 | 6 |
| Cloth of Gold, and Yellow Noisette Roses, per dozen | 10 | 0 |
| 12 Choice Chrysanthemums, new sorts, by name | 6 | 0 |
| 12 New Dwarf Chinese Chrysanthemums, do., do. | 8 | 0 |
| 12 New Perennial German Phloxes, one of a sort | 8 | 0 |
| 12 Ferns, beautiful varieties, in collections, suitable for Glass Cases, Greenhouse, and hardy rock work, each | 10 | 0 |
| Choice Vines, strong plants, from eyes, in pots, per doz. | 15 | 0 |

Strawberry Plants, of all the newest and best kinds, by the dozen or 100.

A fine assortment of Dutch Bulbs for early Forcing.

Calceolaria, Cineraria, Primula, Pansy, Cyclamen, Auricula, and Geranium Seed, by post, each packet, 1*s*

Catalogues of Stove and Greenhouse Plants, Fruit Trees, &c., can be had.

Albion Nursery, Stoke Newington, London, Aug. 16.

HOLLYHOCKS.

LUCOMBE, PINCE, AND CO., respectfully inform the Public that their superb collection of HOLLYHOCKS is now finely in BLOOM, and is well worthy the inspection of those who admire this noble flower, which, owing to the vast improvement in its form and colour, is rapidly and justly rising in public estimation. It consists of the finest varieties carefully selected from the collections of the most celebrated growers, together with many very excellent ones of their own raising.

L., P., and Co. have now ready to send out strong healthy seedling plants, which will flower finely next season, at 15*s.* per 100, package included. These Hollyhocks are warranted by L., P., and Co. as having been raised from seed carefully saved by them in the autumn of 1850 from the very finest named flowers.—Exeter Nursery, August 16.

LILIUM GIGANTEUM.—A few fine healthy tubers of this magnificent Nepaul Lily have been sent to Messrs. VEITCH, by Mr. T. Lobb, who collected them in their native habit, and who speaks of it as the finest of all the Lilies he has ever seen. The flowers are white, of great size, and produced in abundance.

Dr. LINDLEY says, "Lilium Giganteum is a very fine thing, and will perhaps be as hardy as the Japan Lily."

Sir W. J. HOOKER also says, "It is a very fine large flowered species, figured by Dr. Wallich in Flora of Nepaul; the flowers are nearly white and half a foot long, leaves very large and *heart-shaped*."

The Plants now offered are growing luxuriantly and in excellent condition.—Extra strong Bulbs, 63*s.* each; 2nd size ditto, 42*s.* each; Small ditto, 21*s.* each.

The usual discount to the trade.

VEITCH and SON, Exeter, Aug. 16.

TO ORNAMENTAL PLANTERS, &c.

OSBORN AND SONS (late WHITLEY and OSBORN), of the FULHAM NURSERY, near London, respectfully solicit their patrons and others to an inspection of their collection of TREES and SHRUBS, comprising more than SIXTEEN HUNDRED distinct species and varieties; all of which may now be seen in healthy condition in their nurseries.

Also their large collection of FRUIT TREES, for which this Nursery has long been celebrated, may be seen in vigorous health, including the famous STANWICK NECTARINE, strong and healthy plants of which will be for sale the ensuing autumn.

N.B. OSBORN and SONS have always for sale a choice collection of STOVE and GREENHOUSE PLANTS, HERBACEOUS PLANTS, DUTCH FLOWER ROOTS, RUSSIA MATS, and all sorts of GARDEN and AGRICULTURAL SEEDS.

BEAUTIFUL NEW PLANTS.

MESSRS. VEITCH AND SON beg to offer the following very fine NEW AND RARE PLANTS, a Catalogue of which, containing full descriptions, can be had on prepaid application:—

| | *s.* | *d.* | |
|---|---|---|---|
| BERBERIS DARWINII, extra strong | 21 | 0 | each. |
| CANTUA DEPENDENS, fine bushy plants | 21 | 0 | ,, |
| MEDINILLA MAGNIFICA, fine plants | 63 | 0 | ,, |
| LILIUM GIGANTEUM, extra strong tubers | 63 | 0 | ,, |
| Do. do. 2 1 size, do. | 42 | 0 | ,, |
| Do. do. small, do. | 21 | 0 | ,, |
| DEUTZIA GRACILIS, good plants | 15 | 0 | ,, |
| Do. do smaller do. | 10 | 6 | ,, |
| SARDIZABALA VITERNATA | 10 | 6 | ,, |

N B. A beautiful coloured plate of the "Cantua" will be forwarded to persons purchasing a plant, and to persons forwarding six postage stamps. The usual discount to the trade.

Exeter, August 16.

CAMELLIA "QUEEN OF DENMARK."

HUGH LOW AND Co. have pleasure in offering to their Continental Friends, and the Public in general, the above-named fine new CAMELLIA. They are of opinion that the well known, and generally acknowledged, merits of the Camellias they have already introduced to the notice of growers, will be a sufficient guarantee for the excellence of the variety now offered.

| | *s.* | *d.* |
|---|---|---|
| Fine stout plants | 42 | 0 |
| Extra strong do. | 63 | 0 |

Without discount.

Clapton Nursery, August 16.

GRAPE VINES.

J. WEEKS AND CO. beg most respectfully to call the attention of the nobility and gentry to their fine collection of VINES, which are very strong and well grown this season. They are now fit for sending out, both for Fruiting in pots and planting generally. Early orders will oblige, and shall have the best attention.

King's Road Nursery, Chelsea, near London, Aug. 16.

HURN'S LARGE EARLY CABBAGE.—Every person connected with Market Gardening round London probably is aware of the superiority of the above variety of CABBAGE, grown for the London Market by Mr. THOMAS HURN, Market Gardener, of Peckham. It is early, fine mellow flavour, does not grow coarse, is very large and handsome shaped. Too much cannot be said in its praise, as it is perfection in all respects. Beautiful Cabbages of this variety have been exhibited within the last month, weighing 21 lbs. each, by the Advertisers, who have secured from the grower a quantity of the true Seed, which they are induced to offer at 8*s.* per lb.; and sample packets, containing 1 oz., forwarded (post free) for 12 postage stamps.—CLARKE and Co., Seedsmen, 36, High-street, Borough of Southwark, London.

*** We have on hand some warranted genuine White Lisbon Onion Seed, which we can supply by cwt. or oz.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s.* per dozen.—The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place.

SEEDS FOR AUTUMN SOWING.

JOHN CATTELL has again to offer in packets, at the prices annexed, post free, CALCEOLARIA, GERANIUM, CINERARIA, &c, as under, saved from his very superior collections. The satisfaction they have hitherto given, and the increasing demand for them, has induced J. C. to take, if possible, more care in the impregnation, so as to ensure a continuance of the esteem they have so justly merited.

| | *s.* | *d.* |
|---|---|---|
| CALCEOLARIA, mixed, from first-rate sorts, carefully impregnated | 2 | 6 |
| Ditto, saved from a most superb rich golden yellow, beautifully spotted with rich bronzy mahogany, 50 seeds | 2 | 6 |

(Directions for sowing, &c., will accompany each packet of Calceolaria if required.)

| | | |
|---|---|---|
| GERANIUM, Florist varieties, from newest sorts | 2 | 6 |
| Ditto, fancy varieties, from newest sorts | 2 | 6 |
| Ditto, scented varieties, saved from a collection | 1 | 0 |
| CINERARIA, from newest sorts, mixed | 2 | 6 |
| SCHIZANTHUS RETUSUS, 6*d.*, do. RETUSUS ALBA | 1 | 0 |

RHODANTHE MANGLESII, 1*s.*; ESCHSCHOLTZIA ALBA, 6*d.*

NEMOPHILA MACULATA, 6*d.*; this, if sown about the middle of September, in the open ground, will flower beautifully from March till June.

CYCLAMEN PERSICUM, 6*d.*; Do. do. ALBUM, 1*s.*

Fine Bulbs of TROPÆOLUM TRICOLORUM GRANDIFLORUM and do. BRACHYCERAS, worth the attention of the Trade.—Westerham, Kent.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

AYLESBURY DUCKS (White).—The Advertiser has for Sale a limited number of the above, in fine healthy birds, of this season; the breed is warranted pure and of the largest known, weighing, when fattened, 8 lbs. to 10 lbs. each. Price, including package, 8*s.* 6*d.* per couple.

Also a few of the largest breed of NORFOLK GEESE, 12*s.* per couple.—Orders, accompanied by post-office orders or reference, addressed to ISAAC BRUNNING, North-end, Great Yarmouth, will receive prompt attention.

GLASS. GLASS.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| Packed in Crates, for cutting up of the sizes as Manufactured:— | | | |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... | s. d. | s. d. | s. d. |
| Or 20 " " 50 to 70 " ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| In Squares, cut to the sizes ordered:— | | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 " 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 " 1½ feet super., if the length does not exceed 20 inches ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. " 3 " or if above 20, and not above 30 inches long ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 " " 4 " " 20 " 30 " ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 " " 5 " " 30 " 35 " ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 " " 6 " " 35 " 40 " ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 " " 8 " " 40 " 45 " ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 " " 10 " " 45 " 55 " ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 " " 12 " " 55 " 70 " ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 " " 15 " " 70 " 85 " ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12s. per box; 7 by 5 in. and 7½ by 5½ in. 13s. 6d. do.; 8 by 6 in. and 8½ by 6½ in. 15s. do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16s. 6d.

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

Note.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8th, 6d.; 3-16ths, 9d.; ¼ *inch*, 1s. *per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

## GLASS FOR PIT FRAMES, HOTHOUSES, &c.

in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, an every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. Cogan and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. Cogan and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

## GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | |
|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ ... ... ... | 10s. | 0d. |
| 7 " | 5 and | 7½ by 5½ ... ... ... | 15 | 0 |
| 8 " | 5 and | 8 by 5½ ... ... ... | 15 | 0 |
| 8 " | 6 and | 8½ by 6½ ... ... ... | 17 | 6 |
| 9 " | 7 and | 10 by 8 ... ... ... | 20 | 0 |
| 12 " | 10 and | 13 by 9 ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6d. per foot.
" " 35 " ..... 8d. "
" " 50 " ..... 9½d. "
" " 75 " .....12d. "

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

## GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

## GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged

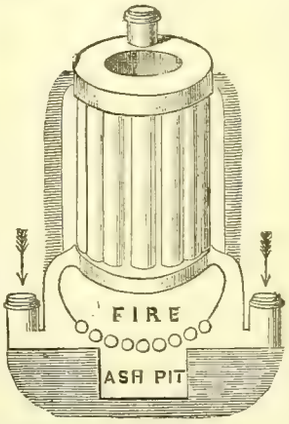
## PATENT GARDEN NETS.

—The Subscribers beg to inform Noblemen and Gentlemen that they have now on hand a large stock of Nets suited for Garden purposes. A Net calculated to cover an area of about 600 square yards will cost 60s net. Other sizes, in proportion. Orders promptly attended to.—J. and W. Stuart, Patent Net Factory, Musselburgh, August 16.

## CHERRIES AND WALL-FRUIT. — TANNED GARDEN NETTING,

for protecting the above from birds, or as a fence for fowls, pigeons, &c., can be had from John King Farlow's Fishing Tackle and Net Manufactory, 5, Crooked-lane, London-bridge, at 1½d. one yard wide, 3d. two yards, or 6d. four yards wide. Forwarded carriage free on all orders over 20s., accompanied with Post-office order or stamps.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

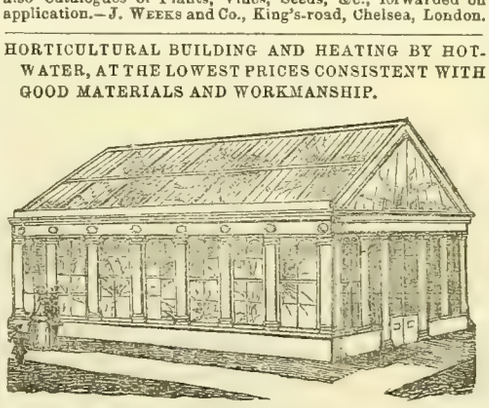



J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Engineers, and Builders. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. Weeks and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their Victoria regia Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

## HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY and ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## GREEN AND HOTHOUSE BUILDER.

—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½d; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d per foot; if glazed with 16 oz. sheet glass of a large size, 4d per foot extra.

J. Lewis, Horticultural Works, Stamford-hill, Middlesex.

## SHALE MANURE.

—The Bituminous Shale Company can now SUPPLY PULVERISED SHALE ASHES in sacks, at 2l. 10s. per ton, delivered at any station or branch line of the South Western Railway, and at the Terminus, Nine Elms.

This valuable Manure is at once cheap, durable, and fertilising, and will be found to be superior to all others for Grain, Grass, and root crops.

A singular property of this Manure is that it entirely prevents the ravages of the fly in Turnip. It is also utterly destructive of the wire-worm.

Orders to be addressed to the Bituminous Shale Company, 145, Upper Thames-street, London, where also testimonials from the first agriculturists of the day may be obtained.

Algernon Pollock, Secretary.

Respectable Agents Wanted in the country.

## THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.

Henry Ker Seymer, Esq., M.P., Chairman.
John Villiers Shelley, Esq., Deputy Chairman.

Empowered by Act of Parliament to execute all works of Drainage (including outfalls through adjoining estates), to erect Farm Buildings, and carry out every kind of permanent improvement upon estates under settlement; to provide the money or to enable the landowner to employ his own capital, and execute the works by his agents; and to secure repayment of the outlay by a charge on the property improved, spread over a number of years.

Applications to be addressed to

William Clifford, Secretary.

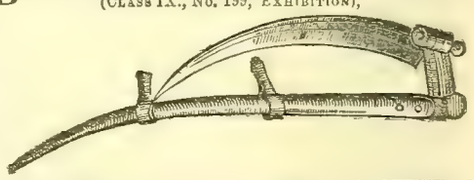
Offices, 52, Parliament-street.

## HOSE! HOSE!! HOSE!!! Improved Canvas Hose,

Lined and Coated with Gutta Percha for Liquid Manure, Fire Engines, Garden and Farm purposes.—This Hose is greatly improved. The rigidity of seam avoided, the flexibility increased, the waterproof qualities extended, the price more reasonable. Much research and trial by the Manufacturers has enabled them to arrive at what they consider a perfect Hose. Improved Gutta Percha Union Joints of all sizes. Gutta Percha in all its branches.—Apply to Messrs. Mitchell and Co., 98, High Holborn, London; International Depot for Patented and other Inventions.

## BOYD'S SELF-ADJUSTING SCYTHE,

(Class IX., No. 199, Exhibition),



Explained to, and approved of, by her Majesty the QUEEN and PRINCE ALBERT, on the 9th of July; can be put together and regulated to any angle by any person in one minute, without the assistance of a blacksmith; shuts up like a knife, and can be carried without danger. It effects a saving of 25 per cent. in labour, and can be used in an upright position if necessary.—Manufactured and sold by Deane, Dray, and Deane, Agricultural Implement Makers, Swan-lane, London Bridge, and to be had of all respectable Iron mongers in the kingdom.

## CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL and Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Sheddling, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

Her Majesty's Woods and Forests,
Honourable Board of Ordnance,
Honourable East India Company,
Honourable Commissioners of Customs,
Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny per Square Foot.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL and CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'Neill and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

## TO NOBLEMEN, LANDED GENTRY, AGRICULTURISTS ROAD AND RAILWAY CONTRACTORS.

WIRE STRAND FENCING, as furnished with all its fittings, by R. S. Newall and Co., having elicited the unqualified approval of practical men, is confidently recommended as the best Fencing for Park and Farm Inclosures, or Subdivisions, for temporary agricultural inclosures (instead of any kind of hurdles), for road-side and all other Fencing.

The PATENT WIRE STRAND FENCE possesses an economy, security, and durability, not to be found in combination in any other Fence hitherto introduced. This Fence, as fitted by R. S. Newall and Co. (after the model of the Fences of this material in the Slopes, and Home-park, at Windsor), has the inherent property of remaining equally tight and rigid under any variations of temperature.

N.B. Estimates given at so much per running yard, for Fencing, fixed complete. Specimens, Sketches, or any other particulars, will be forwarded on application.

Office and Warehouse, 130, Strand, London.

EXTENSIVE IMPORTATION OF DUTCH BULBS.

JOHN SUTTON AND SONS have the pleasure of intimating that they have made very extensive purchases from several of the most celebrated Florists in Haarlem this season, and feel confident their collection will surpass almost every other yet imported. The sorts of HYACINTHS were selected while in bloom, and can be warranted of first-rate quality, at the undermentioned low prices :—

| | s. | d. |
|---|---|---|
| FINEST DUTCH HYACINTHS, by name, per dozen ... | 9 | 0 |
| FINE Do. Do. Do. Do. ... | 6 | 0 |
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And all other Bulbous Flower Roots proportionably cheap.

☞ Early Orders are requested, and will have the preference of scarce sorts.

*Carriage free by Great Western, South Western and South Eastern Railway, except parcels under 10s. value.*

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TO STRAWBERRY GROWERS.

WILLIAM HUSSEY has to offer, in fine strong Plants, the under-named STRAWBERRIES, at per 100 :

| | | | |
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| Black Prince ... ... | 3s. 0d. | Elton Pine ... ... | 2s. 0d. |
| British Queen... ... | 2 0 | Keens' Seedling ... | 2 0 |
| Comte de Paris ... | 2 6 | Princess Alice Maud... | 2 0 |
| Eleanor... ... ... | 3 0 | Caroline ... ... | 2 0 |

Horticultural Gardens, Norwich, Aug. 16.

AZALEA INDICA "VESTA."

LUCOMBE, PINCE, and Co., will be ready to send out, on the 10th of September next, fine healthy grafted Plants of their beautiful new Seedling INDIAN AZALEA "VESTA."

It is decidedly the finest of all the white varieties, being of great substance, snowy whiteness, and good shape, with neat glossy foliage and compact habit, flowering very profusely ; it has been admired greatly by all who have seen it, and extensively ordered, so that early applications are respectfully solicited.

L., P., and Co., in recommending "AZALEA VESTA" to cultivators of this beautiful tribe, beg leave to point with feelings of pleasure to their two previous Seedling Azaleas—"DUKE OF DEVONSHIRE" and "AURORA" which have been so greatly approved of, and they are certain that "VESTA" will give as great satisfaction as these have done. —Price 21s. each. Discount to the Trade when three are ordered.—Exeter Nursery, August 16.

NEW AND RARE PLANTS, &c.

MESSRS. VEITCH AND SON'S catalogues of New and Rare Plants, Orchids, Stove and Greenhouse Plants, Camellias, Ericas, Pelargoniums, &c., are now ready for distribution, on the receipt of two postage stamps.

Exeter, August 16, 1851.

**The Gardeners' Chronicle.**

*SATURDAY, AUGUST* 16, 1851.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY Aug. 21—National Floricultural .....3 P.M.

COUNTRY SHOWS.—Wednesday, Aug. 20: Trowbridge Horticultural.—Saturday, Aug. 23: North Kent Horticultural.

ABOUT sixteen years since a stranger called upon a London naturalist engaged in the study of fossil plants, concerning a discovery he thought he had made. The stranger opened his business in the following manner: "My name, sir, is MACLEAN; I am a dentist, living at Dorchester, and I have brought you some fossil seeds, which I have lately found, in the hope that you may be able to tell me to what plant they belong." He then produced a lump of brown brittle matter, coloured like peat; or, to describe it more correctly, resembling in appearance the preparations of blood which the Neapolitan BROCCHIERI is now exhibiting in the Crystal Palace.* Upon breaking it a number of small grains resembling seeds were to be seen imbedded in the mass. Upon inquiring what the history was of this supposed fossil matter, Mr. MACLEAN proceeded to the following effect: "I was anxious, sir, in the pursuit of my profession of a dentist, to ascertain for myself in what condition very ancient teeth are found, and for that purpose obtained permission to open one of the ancient barrows (*tumuli*), near Maiden Castle, in my county. We were fortunate enough to find a coffin at the bottom of one of these barrows, 30 feet below the surface, containing a skeleton, some coins of the Emperor HADRIAN, and other articles. Amongst the bones I observed a quantity of the substance now produced, lying in what seemed to have been the cavity of the abdomen."

The statement had so much the appearance of truth that the supposed seeds were submitted to careful examination, the result of which was the discovery that they were the grains of the Raspberry. When placed side by side with grains of the fresh Raspberry they could only be distinguished by their surface having been corroded. Specimens of the ancient and recent grains were exhibited at one of the *soirées* of the late Duke of SUSSEX, when His Royal Highness was President of the Royal Society, as it is possible that some of our readers may remember. In the course of the examination of these ancient grains some traces of vitality were remarked, and it was determined to have them sown. This was done in the following manner:—

The season being winter, a garden pot filled with earth was placed in a hothouse, under the charge of a young German, named HARTWEG, in the garden of the Horticultural Society. In this pot six seeds were deposited at equal distances, and the gardener, *who knew nothing of the history of the seeds, or of the object of the experiment*, was directed to report when anything made its appearance. The point where each grain was deposited was carefully marked. In a few weeks four young plants made their appearance at the places where four of the grains had been sown. One of them died shortly afterwards, the others throve, became Raspberry plants, and are still living in the garden of the Horticultural Society.

Some doubt having been expressed, when the result of the experiment was known, as to the good faith of Mr. MACLEAN, he produced what appeared to be satisfactory proof of the truth of his statement, but the nature of which is now forgotten, and the fact was briefly recorded in a work published shortly afterwards.* Since that time, it has remained, we believe, unquestioned, until the late meeting of the British Association at Ipswich, when Prof. HENSLOW pointed it out as a statement requiring confirmation; the experiments that have been made at Oxford, upon the vitality of seeds, not leading to the conclusion that vitality can be prolonged in any such degree. Upon the subject of these experiments, and upon the inferences which can be drawn from them, we shall have something to say hereafter. Our immediate object in drawing attention to this Dorsetshire case, is to obtain, if possible, some testimony respecting it. Mr. MACLEAN is we believe dead; at least letters do not find him, and therefore we must look elsewhere for corroboration of the story. We would therefore ask our readers in the country to make some inquiry into such points as are still ascertainable; as for instance whether any barrow was opened by Mr. MACLEAN near Maiden Castle, about the year 1834-1835—whether any thing, and what was found on the occasion, and also whether there are any fair grounds for questioning his assertion. For ourselves, we have certainly regarded the case as one wholly free from suspicion; the mass of brown matter in which the seeds were found, and which we carefully examined, had no appearance of having been made up for the purpose of deception; the corroded state of the hard shell of the Raspberry itself indicated antiquity; and the manner of the gentleman who produced the specimen, had all the aspect of truth and honesty.

Nor is there anything improbable in the fact of Raspberry seeds having retained their vitality for 1600 or 1700 years. Putting aside mummy Wheat, the statements respecting which have been lately doubted, we have still the unquestionable fact that seeds buried for ages will grow when exposed to the air, as has happened in the railway cuttings and elsewhere, and of which a notable example is given in the "Annals of Natural History," vol. xiii., p. 89, by Mr. KEMP. This gentleman ascertained that seeds of Polygonum Convolvulus, an Atriplex, and a Rumex, found at the bottom of a stratified sand pit, upwards of 25 feet deep, still retained their germinating power. Upon geological evidence Mr. KEMP arrived at the conclusion that these seeds must have been deposited by the Tweed at some remote period anterior to the time of the Romans in Britain. Unless therefore this evidence is also called in question, we can perceive no reason for doubting the high antiquity of other seeds, and of the Dorchester Raspberry more especially.

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THE important services which LIEBIG has rendered to the philosophy of vegetation invest all his writings with a peculiar interest, and render them, however we may differ from him on particular subjects, at least worthy of careful and attentive study. The "Letters on Chemistry," of which an English translation has recently appeared, contain several matters well worthy of consideration; and whilst we may fairly recommend the whole book to our readers generally, as one which cannot fail to instruct and entertain them, from the importance of the matters described, and the agreeable manner in which they are treated, we would point out at the present time one or two scientific considerations relating to the general nature of plants, which fall more immediately within our usual province; for example, in the 19th letter will be found some very curious statements with regard to the growth of fungi, and the distinctions which are generally supposed to exist between plants and animals.

Until within a comparatively recent period, all observations and facts have gone to establish certain great leading distinctions between plants and animals; for though DARWIN, and other writers towards the close of the last century, endeavoured to prove that a very close resemblance in many points existed between the two classes of organised beings, yet, setting aside this apparent resemblance, there were evidently certain plain and unmistakeable differences, which taken altogether formed a broad line of distinction between the two. Without going into detail, it will be remembered, that the existence of nerves in animals, and of starch in vegetables, and certain differences as to the modes of feeding and reproduction, constituted the chief points of distinction. Within the last few years, the soundness of these distinctions have been called in question, and we are now told that plants and animals are all members of one great group of organised beings, differing in minor points, but agreeing in their leading characteristics, and in fact, in some points, not to be distinguished from one another.

Amongst the peculiar differences of plants and animals, it used to be stated, that whilst the former were able to feed on inorganic matter, the latter would only feed upon that which was already organised; so that, whilst plants were able to assimilate the carbon, hydrogen, and oxygen of the atmosphere, animals were unable to do so, but could only absorb those substances, when they had already been absorbed and combined together by plants, and were therefore already converted into organic matter. Again it was stated, as one of the many beautiful facts which science had brought to light, that whilst all animals by their breathing tended to render the atmosphere impure, plants on the contrary were constantly at work to counteract the effects thus produced by animals, and to maintain the air in a uniform and healthy state.

A few years since some experiments were published which appeared to show that some of the lower forms of animal life approached very nearly, in many respects, to the simpler plants; and, in fact, to prove that the old and acknowledged points of distinction could no longer be maintained. These experiments are quoted and confirmed by LIEBIG in a very decided manner, and, as we have just said, his statements are always worthy of respect and attention, though, from the positive manner in which they are sometimes made, and the little evidence which is brought forward to prove them, they must be received with caution, and do not always carry conviction to the reader.

The improvements effected in the microscope in the present century have introduced to us quite a new subject of inquiry, in the multitudes of minute plants and animals which have been brought to light. The labours of EHRENBERG are peculiarly interesting, for he has carefully studied and described a vast number of the minute infusorial animals, as they are called, which live in water; and the remains of which, in countless myriads, are found in various stones and alluvial deposits. Amongst these, there are some which appear to be intermediate in nature between plants and animals, forming as it were the connecting link which unites the two kingdoms of organic being, and which, according to the views of different naturalists, are described either as plants or as animals. It is to some of these questionable animalcules, that attention has of late been in particular directed, and the conclusion arrived at is, that they are true animals, but that they possess the usual characteristics of plants!

The observations on which these conclusions are founded, are by no means new; they were made long ago and forgotten; and it is only now that recent investigations have led to the same conclusions, that the statements of our forefathers are remembered, and acknowledged to be correct. In certain of the Hessian salt pans, a green slimy deposit was observed; and it was noticed that from this green matter bubbles of air continually arise; it was natural, in accordance with all received facts, to presume that this green matter was vegetable—a Conferva, or some similar plant; and consequently that the gas given out was oxygen, which the plants had set free as a result of the decomposition of carbonic acid, and the assimilation of carbon. PFANKUCH and WÖHLER, who investigated the nature of this green matter, found that the gas given out was undoubtedly oxygen; but they also found out that the green matter itself was not a vegetable production, but consisted entirely of infusorial animals. This, presuming the observation to be correct, was certainly a very curious and important fact. It was known that animals which inhabit water, like those which live upon the surface of the earth, absorb oxygen and give out carbonic acid; and it was also known that Confervæ and similar water plants absorb carbonic acid and give out oxygen; the observations of these philosophers, therefore, would appear to show, that certain animals, differing from most others, not only do not give out carbonic acid gas, but, on the contrary, evolve oxygen. This statement has also been confirmed by MORIN and by LIEBIG, who in his "letters" remarks, that he has recently verified the observation of PFANKUCH, having taken a portion of spring water, and filtered it, and then exposed it to the influence of sunshine for a fortnight, in a glass jar; at the end of which time he found that more than 30 cubic inches of air, containing a large proportion of oxygen

* It is a curious fact that the only articles exhibited by Naples are BLOOD PREPARATIONS!

* LINDLEY'S "Introduction to Botany," ed. 2, p. 293, 1835.

gas, had been given off. It must, however, be confessed that this experiment is far from being satisfactory; the mere filtration of water does not by any means insure the total separation of all vegetable matter. Indeed, it is plain, that any mechanical process which does not entirely separate all animalcules from the water, will also most probably leave more or less vegetable matter in suspension.

It is very interesting to read over the experiments on the growth of plants, which were made more than 70 years ago, by Count Rumford and Dr. Priestley, in which precisely these same facts were observed, and the same conclusions arrived at. It was in the year 1771, that Dr. Priestley first observed the influence of carbonic acid on growing plants; he found that air which had become noxious, from the presence of putrifying animal matter, was generally fatal to plants; but that if they were not at once killed by it, then they grew in a manner more vigorously, indeed, than in any other sort of air. This fact, he observes, led him "to conclude that plants, instead of affecting the air in the same manner with animal respiration, reverse the effects of breathing, and tend to keep the air sweet and wholesome." Seven years after this, in 1778, Dr. Priestley discovered, that under some circumstances putrefying animal flesh, when placed in spring water, gradually became covered with a green filmy matter, and then evolved oxygen under the influence of sunshine, in place of merely giving out a mixture of carbonic acid, nitrogen, and carburetted hydrogen. He concluded that this green matter was of vegetable origin, and that the oxygen produced was set free by the growing plants, which, under the influence of sunshine, were able to decompose carbonic acid gas. This view of the subject, was, however, strongly controverted in 1787 by Count Rumford, who published in the "Philosophical Transactions" a number of experiments upon the evolution of oxygen in water by silk, wool, and other fibrous materials. He examined portions of stagnant water with a microscope, and found that at the period when it yielded most oxygen it contained no microscopic plants, but abundance of animalcules. He says, "The colouring matter of the water is evidently of an animal nature, being nothing more than the assemblage of an infinite number of very small, active, oval-formed animalcules."

These statements had been long forgotten, and they have only now been again brought to light by the rediscovery of the fact, or rather by the same conclusion having been a second time arrived at. Analogy would certainly lead us to expect that the same general relation and dependance should be found to exist between the lower forms of animal and vegetable life, as between the more perfect; and we should, therefore, require the most full and satisfactory evidence, before we could receive as a fact, the statement that infusorial animalcules act in air and water in the same way as plants do. It is a subject full of interest, and well worthy the attention of naturalists; for, assuming the fundamental fact to be proved, of the emission of oxygen by these minute animals, it then becomes important to ascertain the source whence they derive it, whether from the decomposition of water, or of carbonic acid. According to the views of the most recent observers, it is the special office of these animalcules to aid in the decomposition of dead animal matter; just as it is the province of the minute microscopic fungi to assist the putrefaction of dead vegetable matter.

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We have much pleasure in announcing that the late Mr. John Townsend Aiton, of Kensington, has, by his will, bequeathed the sum of 100*l.* to the Gardeners' Benevolent Institution, subject to the legacy duty. Mr. Aiton had been a supporter of the charity from its commencement, and had always exhibited much interest in its proceedings. Let us hope that others may be induced to follow so good an example.

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## JOTTINGS ON FOREST PRUNING.

I am not about to write a treatise on forest pruning, nor to attempt to arrange in a systematic manner what I have to say on the subject; but thinking that this particular branch of rural economy is far from being written threadbare, and having various recorded notes and sketches in relation thereto, I shall beg permission to lay them before your readers, with the hope that should they command no other notice, they will at least direct attention to an ill-understood but not the less important subject.

On a casual investigation, forest pruning will be seen to resolve itself into two distinct branches of inquiry—the mechanical and the philosophical. But although the two branches of inquiry may be of an apparently opposite character, they will be found to approximate and meet at the point from which they appeared to diverge, viz., where the effect of the pruning on the health of the tree while living, and on the value of the timber when felled, has to be considered. By the mechanical inquiry, I mean all that relates to the action of weather—drought and wet, heat and cold—on the wounds of the denuded branches, and the consequent destruction of the wood by premature decay, accelerated by rot and parasitical fungi. By the philosophical, I mean that which takes cognizance of the damage which the tree must sustain from the loss of its respiratory organs, inducing an imperfect exhalation of the watery fluids of the sap, with other analogous phenomena to be adverted to more fully hereafter. To the former inquiry belong the visible effects; to the latter, such as for the most part must be taken as the results of calculations from scientific data. I shall first advert to the mechanical part of the inquiry.

Nothing is more common than to meet with fine timber trees, when felled, presenting a hollow bole, without—to an unpractised eye—presenting any external symptoms of such a condition. There can be no question that hollow trunks sometimes do occur, from causes which could not possibly be indicated externally. But I am confident that in numberless instances where faulty timber lies concealed beneath a smooth exterior of bark, a little observation on the comparative external appearance of trees, in relation to the condition of their trunks, will infallibly lead the observer to useful results in his observations.

I could name a plantation—Oak and Spanish Chestnut mixed—of perhaps 60 years' growth, where, from excessive pruning of the lower branches, when the trees were some five-and-twenty years of age, not one-third of them has a solid trunk. It needs no prophet to announce this in the Chestnut, for the woodpecker, in the majority of the trees, has rendered the fact patent to the most casual observers. A word, *en passant*, in vindication of this beautiful denizen of the woods, a bird which every keeper persecutes to the death, whenever an opportunity offers. It is urged, by ignorant woodmen, and persons

Fig. 2. Fig. 1.



of little observation, that it destroys the timber. Who ever saw a sound tree damaged by it? No one. It is not till age or bad management has induced disease and decay, that the woodpecker deigns to pursue his vocation on any tree. It would be useless for him to do so. Insects and their larvæ are his dainties. These, lurking beneath the rotting bark, and in the crevices of decaying wood, he assiduously pursues. Decaying, and not healthy trees, alone offer suitable localities for his useful operations. Every person who has occasion to purchase standing timber should consider the green woodpeckers as his valuable friends.

It sometimes happens that a tree is not sufficiently hollow for the woodpecker to undertake a boring expedition, a fact which instinct enables him quickly to ascertain, although it may be useless or nearly so as timber. There may be no remains of denuded branches to point out the fact of its having been excessively pruned when of an adult age; and to an ordinary observer the trunk may be pronounced sound. I shall endeavour to show how such a tree may readily be distinguished from that which is in reality sound. But we must first see in what way the former became faulty. Some 20 years ago several branches, by way of clearing the plantation and rendering its bole, with that of its numerous companions, a few feet more in length, were cut off nearly close to where they joined the trunk. Some of the wounds thus inflicted may have been 6 inches in diameter. The wet fell upon them and was gradually absorbed. Year after year this was repeated till the tissues of the wood became destroyed. Now numerous fungi insinuated their myceliums, and ramified amid the woody fibres, penetrating the medullary rays, and completing the destruction the water had begun. Meanwhile layer after layer of new wood was being deposited on the exterior of the trunk, and gradually healing over the rotting wounds, concealing them from the eye. Externally all appears fair, and the tree thriving, but what I have described will lead to other inferences. It is no fictitious picture. I know a large Oak which had several of its large branches cut off, because they obstructed a roadway, and it is become so decayed from that very circumstance, that the water after heavy rains percolates through the trunk, and finds an exit at the base. It is needless to say that, as far as timber is concerned, the trunk is useless.

Now for the indication of a pruned and an unpruned tree. The annexed drawings will afford good illustrations of the two conditions. They were sketched from Nature, and are Oaks. Fig. 1 is the pruned one, and, if bought for a sound trunk would doubtless prove faulty; of fig. 2, in its free and unrestrained growth, there cannot be two opinions. *G. L.*

*(To be continued.)*

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## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

*On the Theory of the Formation of Wood and the Descent of the Sap in Plants;* by Dr. Lankester.—The author drew attention to the theory of the formation of wood in plants, and objected to the view that the leaves form the wood, on the ground that the ligneous, like all other tissues, were the result of the growth of cells which were not formed in the leaves, but in all parts of the plant. Wood was formed in all parts of the plant where elongated cells were generated, quite independently of leaves, or the formation of leaves:—as in the lower part of the cut wounds of the stems of plants, in the portions of trunks left when trees were cut down, in the abortive branches formed in the bark of such trees as the Elm and the Cedar, and in other parts of the vegetable structure. He also objected to the theory of the formation of the ligneous or any other secretion, which might be subsequently appropriated by the cells, in the leaves alone. He maintained that all the facts brought forward to support the theory of the descent of the sap might be explained on the known fact of the ready permeability of the tissues of the plant. He related the details of experiments performed on the species of Spurge; in which the fluid was found to exude from the stem and branches in these plants just in proportion of the quantity of fluid contained in the plant above or below the section made, and not in obedience to any law of the descent of the sap. The cells of plants were nourished in two ways:—first, by the sap containing carbonic acid, ammonia, and other substances—and secondly, by materials, as sugar, gum, &c., formed in the cells. These latter were not formed solely in the leaves, but in all cells. He regarded the leaves as organs by which the water of the sap was got rid of, and by this means a further supply of sap from the earth and atmosphere was insured. The way in which the demand for sap was insured might be imitated by a common sponge, on the upper surface of which evaporation went on, and the lower surface being in contact with water would always supply this fluid, as a demand for it was created by the evaporation above. This phenomenon had been attributed to a specific vitality, but it was unphilosophical to speak of vitality as a force, when it could not be demonstrated to exist, and especially when physical forces were capable of explaining the phenomenon.

Prof. Henslow said that he agreed with the views of Dr. Lankester with regard to the theory of the formation of wood proposed by Dupetit Thouars. He thought it was evident that whatever was the function of the leaf, it did not send down the woody fibres which formed the trunk and branches of exogenous trees. The tracing the woody fibres up to the leaf did not prove their origin there. With regard to the descent of the sap, he did not agree with the author of the paper, who, he thought, took too physical a view of the function of the plant. The leaves were not mere organs of evaporation. They performed the function of exhalation, which was independent of heat, and depended on the vitality of the plant. He believed that the leaves did effect a certain change in the juices brought to them, which changed matter was again taken back into the system of the plant, and there being taken up by the cells, produced the results which were found in the deposit of lignine and the other secreted matters of plants.—Mr. Huxley quoted the instance of the rapid growth and great quantity of wood formed by the various kinds of Lianes of tropical forests as instances in favour of the formation of wood independently of the leaves. These plants had all of them a remarkably small number of leaves.—Prof. Asa Gray believed that the theory of the formation of wood, as held by Du Hamel, Dupetit Thouars, and others, was no longer tenable. The formation of vessels from cells could be easily observed, and in exogenous plants there was no vacant space between the wood and the bark for the woody fibres to be sent down through. Even in the spring of the year, when the sap was passing most rapidly between the wood and the bark, the organic connection was complete. Whether matter was elaborated in the leaves and sent down into the plant he was not prepared to say, but further experiments were desirable.—Dr. Fowler quoted some experiments which he thought proved that the materials of the growth of the plant were not prepared in the leaves.—Dr. Lankester replied, and stated that at present it appeared to him that the statement of the preparation of gum or any other secretion in the plant which was found subsequently in any other part of the

plant, was an assumption that required proof. The practice of looking for analogies between the vegetable and animal kingdoms had led to the adoption of theories in vegetable physiology which were quite inconsistent with the simplicity of the structure of plants. In order to advance the science of vegetable physiology, we must fix our attention on the functions of the cell, and discharge all theories which were not compatible with our knowledge of its functions.

## ORCHIDS FOR THE MILLION.—No. XI.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

*Cycnoches Loddigesii*, from Surinam, flowers in June and July. The blossoms are greenish yellow, with a white lip; grows best in a pot, in fibrous peat and good drainage, and it should be placed at the warmest part of the house, and should receive a good supply of water at the roots, when growing; but after it has finished its growth, it should be kept rather dry and cool.

*Cycnoches ventricosum*, from Guatemala, flowers from June to August. It lasts three or four weeks in bloom.

*Leptotes bicolor*, a charming little Orchid, from Brazil, has white and purple blossoms, which last three weeks in beauty. It succeeds satisfactorily in a pot in fibrous peat, with a good supply of heat and moisture during the growing season.

*Phaius albus*.—This stately Indian plant flowers in July and August. The blossoms are pure white, the lip being pencilled with purple. It is a difficult plant to cultivate. I have been more successful than some of my neighbours in its management. My method is to plant it in a well drained pot in fibrous peat. If the plant be in a dormant state, which may be known by its having shed its leaves, it should then be placed in a cool house for the winter, in a temperature of from 50° to 60°, during which time too much water must be guarded against, only giving it sufficient to keep the pseudobulbs from shrivelling; after it has had a rest it will begin to grow, but it should be kept in the cool house until the shoots are about an inch long, it should then be repotted in rough fibrous peat with good drainage, and it should afterwards have a good supply of heat and moisture; it may be freely watered at the roots, and when the plant begins to flower, it should be placed in a cooler part of the house. It remains long in perfection if the blossoms are kept dry.

*Cypripedium caudatum*. — A curious Orchid from Peru, which succeeds best in a pot in peat, with good drainage; it likes a good supply of heat and moisture during the growing season, but it should not be allowed to become dry.

*Promenæa stapelioides* from Brazil; flowers in June and July; it grows best in fibrous peat placed on good drainage. The blooms remain long in perfection.

*Arundina densa*, comes from Singapore. It grows best in a pot, in peat, and good drainage; it should be watered freely when it is growing, and it should never be allowed to become very dry.

*Isochilus carnosiflorus*, from Mexico; flowers in October and November. It succeeds best in a pot, in peat, and good drainage. The blossoms remain but a short time in beauty.

*Arpophyllum giganteum*, comes from Guatemala. It succeeds in a well-drained pot, in peat and leaf-mould. It likes a good supply of water during the growing season, but afterwards it should be kept drier.

*Anguloa Ruckeri*.—Grows well in a pot in fibrous peat and plenty of drainage, with a good supply of water during the growing season. It flowers in June and July.

*Maxillaria picta* (*major*), is a free blooming plant from the Brazils. It flowers from October to December, and remains two weeks in perfection. The blossoms are yellow, spotted with red and purple. It grows best in a pot in fibrous peat and good drainage, with a good supply of heat and moisture during the growing season; afterwards it should be kept cool and rather dry.

## BRITISH SONG BIRDS.

(Cage Birds, No. 25).

No. XLI.—Now, if ever, is the time to be "happy." The sun rejoices in the majesty of his great power; the country, redolent of smiles and serenity, presents us with beauties inexhaustible,—but the joyous, mellifluous voices to which we have been wont to listen in the green fields with ecstacy and delight, are still hushed. An occasional twitter, indeed, falls upon our ear,—but beyond that, all is silence. Yet, it is delightful to court the contemplative mood, and to wander abroad; for, as John Keats warbles,—

> The *poetry of Earth* is never dead:
> When all the birds are faint with the hot sun,
> And hide in cooling trees,—a voice will run
> From hedge to hedge about the new-mown mead;
> *That* is the grassbopper's: *he* takes the lead
> In summer luxury; he has never done
> With his delights; for when tired out with fun,
> He rests at ease beneath some pleasant weed.

It is at such seasons as these, when we are roaming about in a happy frame of mind ourselves, that we feel inclined to ponder upon the question of its being cruel, or kind, to keep our little winged friends in confinement. This requires much consideration, and I fear we are more apt to lean towards our own inclination in the matter, than to consult the happiness of our intended prisoners. Spenser asks, and we shall be puzzled to find more than one rational answer for him:—

> What more felicity can fill a creature,
> Than to enjoy delight with *liberty*,
> And to be lord of all the works of Nature?
> To reign in the air, from earth to yon blue sky—
> To roam midst flowers, and trees of glorious feature?
> And taste whatever food doth please the eye?

We leave, however, each one of our readers to decide the point for themselves; and as we feel sure that very many of them *will* decide against Spenser, we shall at once descend to the old common-place consideration of proper habitations, food, and treatment for birds in confinement; and first, a fitting cage for the black-cap.

This little fellow being for the most part of a cheerful, confiding, companionable disposition, there is no need to have his dwelling made dark. Still, as he loves to be kept warm and snug, both the sides of his cage should be of wood, as well as the back and top; the front being of strong, white tin wire. The proper proportions are,—length of cage, 16 inches; height, 13 inches; depth, 10 inches. The whole must be of mahogany; and if French-polished, it would be all the better. The interior of the cage may be arranged precisely as per instructions given for the nightingale's cage (see "Cage Birds," No. 13). The black-cap, however, will require no green silk curtain to conceal *him* from view; for, seated on his lower perch, his chief delight is to see all that is going forward; nor is he less ambitious of exciting *your* attention, and catching *your* eye. With crest erect, and neck outstretched, the would-be "observed of all beholders,"

> *Venit,—spectetur ut ipse!*

He is, indeed, a bold, familiar fellow,—a true descendant from Narcissus.

The next luxury to provide your little friend is the bath; of which he ought to be dubbed a "Knight!" He is inordinately fond of bathing; and his plumage being fine as gossamer, he loves to have every thread, if I may so speak, thoroughly wetted. When he retires to his cage (drenched!) the bath must be immediately removed; and on no account must it be furnished more than once daily—and then, early in the morning. I have already alluded to his toilet. This ceremonial is with him a "grand study," and I advise you to stand by and watch his movements while so occupied. The whole scene is ridiculously amusing; and be assured he enjoys your company as much as you do the sight of his harmless pleasures.

With respect to the cleanliness necessary to be observed—such as giving him constantly fresh red sand, scouring his tray, &c., &c., these needful instructions have been fully given under the head of the "Nightingale." It is only necessary for me to enforce the propriety of their literal observance. To repeat them here, would occupy valuable space to little purpose; the subject is indivisible, and *all* the papers which have appeared will necessarily be referred to by the amateur bird-fancier. By the way, I must repeat *one* of my early instructions—and that is—see that plenty of clean fresh water is given him, twice daily, to drink. This is important.

His dwelling being constructed and furnished, let us now speak of his diet. Fortunately for his admirers, although he is, when at liberty, an insectivorous bird, yet his constitution is stronger than that of the nightingale, and he will thrive upon less succulent food. The change, however, must be gradual, and he must every now and then be treated to some of his favourite *bonne-bouches*, such as a spider, earwig, wood-louse, or mealworm—so tended, he will live long and happily.

There are two sorts of general food to which he may be accustomed—bullocks' liver, boiled and grated (the "nut" of the liver); and German paste, sweet-bun, and the yolk of egg boiled hard—the whole rubbed fine with the hand. This must be given fresh every morning, and the pans always scalded to keep them sweet and wholesome.

As far as my own experience goes, I much prefer German paste to the bullocks' liver. It sometimes happens that a bird will occasionally partake of both, alternately given; every now and then, too, a little raw, lean, scraped beef, and egg, as recommended for the nightingale, forms an agreeable, as well as a salutary change. Thus much general. Having thrown out a hint or two about what this bird delights in, and regards as luxuries, I feel sure he will get many an occasional "treat" between meal-times—one that is "not in the bill." A loving Mistress, a tender-hearted Master, and an idolising Miss, hardly need to be prompted in the matter of kindness to a "pet." With them it is "native and to the manner born." *O! si sic omnes!*

*William Kidd.*

## Home Correspondence.

*Fruit Crops in Kent.*—I am glad to see a correspondent inquire where the largest Araucaria is to be seen. I imagine that many other useful matters might be settled in a similar way; for instance, where does the largest Yew tree grow, or the largest Oak, &c? But I wish to make another inquiry of a more practical nature, viz., what sort of crop are Peaches, Nectarines, and Apricots, in various parts of England? In this county it is all but a total failure, although there was abundance of blossom, and that, too, apparently perfect. We had no extraordinary frosts during the time the bloom was out to destroy it, but we have no fruit worth mentioning, and the trees fell into such a state of disease, as at one time threatened to annihilate them. They have, however, wonderfully recovered, being no doubt assisted in this by the absence of fruit. Now I wish to ask my brother gardener if such a state of things exists in other localities. I have heard of good crops in the north of England, and perhaps the failure may be confined to this county, in the central and eastern parts of which there is certainly little or no fruit. One grower, in rather an extensive way, informs me that his trees did not average more than a single fruit each; others are equally as bare. I have been thinking that the failure might be owing to the long season of dull weather which we experienced when the trees were in bloom. At that time there was scarcely a gleam of sunshine, and before fertilization was effected some of the sexual parts may have become abortive by long exposure to an unpropitious atmosphere. The more hardy fruits are generally plentiful, small fruits particularly so. Plums certainly are not in every case abundant, but still there is nothing like that total absence of fruit which the more tender kinds of wall trees present. I shall be interested to learn how other districts have fared in this respect. *An Old Gardener.*

*Salting Walks.*—Salt does not only destroy weeds, but also Lichens and other Cryptogams, snails, and worms. It likewise renders the walks firmer to walk upon. I select a dry morning, when the weather appears settled, and make the surface white with it. Nothing more is requisite, and the longer the salt lies on the walks, the more efficacious it is. Our kitchen-garden walks are furnished with tile edgings; consequently, there is no fear of killing the Box, no harbour is afforded for slugs or worms, and no annual clipping is required. We are careful in laying it against turf edgings; for if thrown against them, it renders them gappy and irregular. I need hardly add, that the first application only kills the then existing crop of weeds; another crop, equally numerous and strong, soon makes its appearance. It is the second and third saltings that kill all things on the walks, which become in time so impregnated with salt, that vegetation ceases to exist. I entirely agree with all that Mr. Fleming has advanced in favour of salt; and, no doubt, Mr. Bailey will become a convert, if he will only persevere, and "just touch the walks again and again," with the application. *W. Brown, Merevale Hall.*

*Horticultural Society's Exhibitions.*—You invited your readers to contribute any hints respecting the next year's prizes at Chiswick. I have already suggested that there should be two classes of prizes for Orchidaceous plants; one, as at present, for large well cultivated specimens, and the other for smaller specimens, and perhaps rarer plants. At present the large plants are only those which are exhibited, and these are all now well known, and the exhibitions are yearly nearly the same—all know the plants which are to come; 1st, Mr. Rucker's, all nearly the same as the year before, unless now and then there be a new one. Then comes the ruck, composed of Mr. Warner, Mr. Schröder, and Mrs. Lawrence; and if one or other of these three succeed in buying a large plant or so, such one comes in second in the race. The more distant collectors cannot send to these shows, as a van or two vans for a collection of 25 would be necessary. Mr. Moore, of Glasnevin, at the last Chiswick show, observed to me that the plants were nearly all the same he had seen three years ago, only grown a little larger. The increasing taste for the cultivation of these plants makes it an object that as many different kinds should be exhibited as possible; and for this purpose I would allow collections even of cut flowers of Orchidaceous plants to be shown, by which means many from a distance could be sent without the risk or cost of sending the plants. You will observe that my object is to ensure numbers and variety. I would on no account do away with the existing prizes, which I have no doubt contribute to the great excellence in cultivation which has been obtained by such cultivators as Mr. Mylam, Mr. Williams, &c. There are other points on which, I think, there might be some improvement, viz., not to allow the same plant to be exhibited at two successive shows by the same person, and I think a strict adherence to the rule that the plant should have been for some specified time in the possession of the owner. It is reported—how truly I do not know—that some plants exhibited have been in the possession of the nurseryman but a very short time before the show. I do not know whether prizes for Amaryllis and Gladiolus are given, but I think it would be desirable to revive the cultivation of the former beautiful class of plants, now nearly out of fashion. *Dodman.*

*The Nightingale.*—It has been stated that the nightingale does not make its appearance in Devonshire; but allow me to assure you that it does pay our county frequent visits, and sings most melodiously. In May, 1849, I heard two singing at the same moment in Stoke Wood, 2½ miles from Exeter, about 7 o'clock in the evening. The year before that I heard them in two different parts of the same wood, and Sir Stafford Northcote's keeper killed one here some years since; Atkins, of Exeter, stuffed it. This bird has been heard near Exeter several times this spring by persons well acquainted with its song. *R. C.*——Somebody says, "the nightingale is, I believe, never heard in either Dorsetshire or Somersetshire." I can, however, vouch for its frequenting the latter county. In the neighbourhood of Clevedon, near Bristol, we are every year regularly visited by them, and they sing night and day. They appear about the same time as the cuckoo, and, I believe cease singing with it also. This spring they were first heard about the 22d of April, and continued through July. *H. E., Clevedon, Somersetshire.*

*Aquatics.*—I think most of the evergreen flat-leaved Irides will be found patient of water, at depths proportionable to their stature; especially I. virginiana. I am not sanguine of Agapanthus, and have met with no success in planting out. Having nothing to serve as a stalk, and the foliage recurving itself into the water, the leaves turn yellow and are macerated. On the

other hand, if too shallow, the roots are not secured from frost. I am still trying. It is a pity the Crinum capense is so discolor. And the root-shops take no pains to import the riparium variety with more colour. Few people have it. Having been moved, my two plants have not flowered. Hereafter I will attend to saving the seeds. Crinum revoluto-capense does well in the pond. Having never flowered in the border, I hope in its new situation it may. I fear the handsome Crinum Gowenium, and the cruento-capense raised at Spofforth, are plants no longer in existence. For all such the water is the proper place. I also regret that one cannot procure the species Crinum aquaticum, *alias* campanulatum. For I own myself unconvinced by the argument in "Amaryllidaceæ," page 270, that Burchell must have mistaken a temporary inundation for a permanent pool, because they would not stand "the cold dampness of the winter" in the border, or profuse autumnal watering in a pot. I do not think immersion is either cold or damp, in reference to those alternations of wet and dry, warm and cold, by which many plants are made to rot. Therefore the testimony of Dr. Burchell should, I think, be tried by its own conditions—not by questionable analogies. It is desirable to plant capense and its mules far enough from the edge, that no leaf may rest upon it, and so form a bridge for the snails; for they devour the whole plant eagerly, and the corolla in preference to the foliage. Hemerocallis flava and Tradescantia died in my pond last winter. As some things have turned up quite unexpectedly (such as Hemerocallis fulva), the tubers of herbaceous Pæonies, and the Anemone vitifolia, may be worth the small trouble of the experiment. For chances of success, and for beauty, if you do succeed, plants of some little stature are the best. *A. H.*

*Garden Walks.*—It has always appeared to me that the grand principle of prevention of weeds on walks has been overlooked; and, in a late visit to Shrubland, I put the question to Mr. Beaton, whose experience in such matters is great, and he at once took me to some new walks then making, where a solid bottom of concrete, formed of marl and coarse gravel, was first rammed down hard, before the dress gravel was laid on; after this few or no weeds will grow; and I may observe that my own walks are formed in the same way, and there is scarce a weed to be seen on them. *W. Thorold, Norwich.*

*African Cotton* grows not only on lofty forest trees, but wild, on plants of apparently different varieties. If my memory serves me aright, I saw cotton of a lovely yellow hue. Each year the Cotton tree yields its silky produce. Often have I pulled it from the half yielding envelope. A Cotton tree, after the capsules burst, is a charming spectacle. It looks as if it were covered with a fall of snow! The negroes convert it into a tissue, sometimes white, often dyed blue, from the native indigo. These tissues last many years. The web is not more than six inches in width, and during the simple process of weaving, the warp is often extended from tree to tree. These webs are sewn together, then cut into garments, table covers, coverlets, some of which I have had in my possession for years. *Henry M'Cormac, M.D.*

*Draining Land to be Planted.*—I cannot help thinking that, in your recommendation lately given, to drain land intended for planting, one most important point has been overlooked, which must make such a proceeding a mere waste of money. I mean that, as it is impossible to make drains deep enough to be beyond the reach of the roots, in the course of a few years all such drains would be choked by roots and rendered entirely useless. *B. B. B.* [But suppose the drains are open ditches or cuttings?]

*Rot in Larch.*—The cause of the heart-rot in Larch-trees is, no doubt, very obscure. I have been led to form an opinion (which appears to be just the reverse of yours) viz., that this disease is caused by want of moisture. Any one who has observed the Larch in its native habitat on the flanks of a Swiss mountain, might recollect that such situations commonly abound in moisture, and are as different as possible from the dry sandy commons on which Larch is so commonly planted in England. I believe there is no situation in which the heart-rot has been more destructive than on the dry sands of Cheshire. Sir Charles Menteath had much experience in planting Larch. He found that the disease was very prevalent on the sandy parts of his property, while the Larch on the slaty mountains escaped. *B. B. B.* [But on the flank of a mountain water will not *lodge*.]

*Seedling Flowers.*—Observing the award of a certificate the other day by the National Floricultural Society to Mr. Paul, for "Seedling Roses," and having heard Mr. Paul state openly that he bought these Roses in France last summer, I wish to ask the committee if the above award is to form a precedent, and if it will be allowed as such, in a case as follows:—A makes a journey into Devonshire, and finds a seedling Rose in the garden of B, which he, A, purchases, propagates, and exhibits in the neighbourhood of London; now, according to our present floricultural code, with the above as a precedent, A can take a prize for it as a seedling by affixing his name to it, as in this instance Mr. Paul has done. I do not by any means wish to impugn Mr. Paul's right to do so; I only wish to know the law upon the subject. I remember that when Lucombe and Pince bought the Rosa Devoniensis of the raiser, they named it, but did not call it "Devoniensis (Pince's.)" Such an addition would have implied that they raised it from seed, instead of what is called "buying the stock." Taking this view of the question, Mr. Paul should have exhibited his Roses simply as Queen Victoria, Robert Burns, and Prince Albert, without the addition of "Paul's." A few words on this point, from the officials of the National Floricultural Society in your columns, will be of great interest to many growers, as many florists buy seedlings of amateurs. Mr. Foster, I think, sells his Pelargoniums, but has his name retained as the raiser. *Enquirer.*

*Fleming's Tar Paint.*—I have used it extensively here for these last two years, but I find it will not stand exposure to the sea winds. After it has been on the iron for a few months, it becomes pale and ugly in colour. I have given it up, and have again taken to the antiseptic kind of paint, which has also a great deal of tar in it. *C. E.*

*Dahlias.*—Every grower of this favourite flower will have noticed that some kinds possess a great advantage over others, both by expanding their blooms earlier, and also by throwing them out on extended footstalks from the foliage, so that they may be said to hang pendulous in the air. These advantages are possessed, in a remarkable degree by the Dahlia called Cleopatra; and I should be much obliged by your carefully naming other kinds that possess them in an equal degree. *Cartmel.* [The following throw their blooms well up above the foliage, and are of good habit. There are but few kinds so tall as Cleopatra grown at the present day:

| | |
|---|---|
| Black Prince, crimson | Mrs. Seldon, yellow |
| Box, scarlet | Negro, crimson |
| Charles Turner, crimson | Nepaulese Prince, crimson |
| Duke of Cambridge, lilac | Princess Radziville, white and purple |
| Earl of Clarendon, orange | Roundhead, buff |
| Essex Triumph, maroon | Royal Chancellor, claret |
| Fearless, lilac | Seraph, orange |
| John Edwards, scarlet | Sir F. Bathurst, crimson |
| Leda, buff | Sulphurea pallida, sulphur |
| Model, brown | Sir R. Peel scarlet |
| Mr. Palmer, salmon | Thames Bank Hero, crimson.] |
| Mr. Seldon, lilac | |
| Mrs. C. Bacon, blush | |

*Orchard Houses.*—The following is the temperature of a span-roofed orchard house, 18 feet wide, side and end walls formed by Yew hedges, for the month of June, 1851, taken at 2 o'clock, P.M. The thermometer out of doors is suspended under a tree and over a hedge, 5 feet from the ground; that in the house is well protected from the sun by a bag of moss, so as to hang completely in the shade, 5 feet from the floor of the house:

| | Outside. Deg. | Inside. Deg. | |
|---|---|---|---|
| June | 1...72 | 88 | |
| ,, | 2...70 | 86 | |
| ,, | 3...68 | 86 | |
| ,, | 4...60 | 76 | |
| ,, | 5...50 | 50 | windy & rainy. |
| ,, | 6...54 | 62 | Showery. |
| ,, | 7...60 | 68 | Do. |
| ,, | 8...66 | 72 | Windy, with clouds. |
| ,, | 9...52 | 56 | |
| ,, | 10...50 | 52 | Cloudy with rain. |
| ,, | 11...50 | 52 | Do. do. |
| ,, | 12...— | — | Do. do. |
| ,, | 13...— | — | Do. do. |
| ,, | 14...64 | 76 | Gleams of sunshine. |
| July | 3...62 | 76 | Brisk N.E. wind with sun. |
| ,, | 15..64 | 74 | Do. do. |
| ,, | 16...64 | 74 | Do. do. |
| ,, | 17...64 | 76 | Do. do. |
| ,, | 18...57 | 60 | Cloudy. |
| ,, | 19...70 | 80 | Brisk wind, with sunshine. |
| ,, | 20...72 | 86 | Fierce sunshine |
| ,, | 21...80 | 96 | Do. do. |
| ,, | 22...62 | 74 | |
| ,, | 23...62 | 76 | |
| ,, | 24...64 | 80 | |
| ,, | 25..70 | 82 | |
| ,, | 26...75 | 91 | |
| ,, | 27...80 | 100 | Cloudless. |
| ,, | 28...76 | 93 | |
| ,, | 29...75 | 96 | |
| ,, | 30...76 | 95 | |
| July 4...66 | | 80 | |
| ,, | 5...72 | 90 | |

*T. Rivers, Nurseries, Sawbridgeworth, Herts.*

*Potatoes.*—The following account of 10 rows of Potatoes may be interesting. They were planted early in April, and taken up yesterday (August 12th), as the haulm showed disease to a considerable extent. I found only three tubers affected, all these being in the bone-dust rows: my soil is a poor, hot, sandy material. I am surprised to find that the loam rows are worse than the "no dressing" rows. I tried this small experiment with a view to coming to some conclusion about earthing up or not, but I do not make much of my results:—

| | | | | | |
|---|---|---|---|---|---|
| | STABLE MANURE. | | | | |
| Unearthed | 1 ..... 20 sets | ... | 104 tubers | ... | 16½ lbs. weight. |
| | 2 .....20 ,, | ... | 115 ,, | ... | 17 ,, ,, |
| | NO DRESSING. | | | | |
| Earthed up | 3 .....21 ,, | ... | 113 ,, | ... | 14¾ ,, ,, |
| Unearthed | 4 .....21 ,, | ... | 102 ,, | ... | 12¾ ,, ,, |
| | BURNT REFUSE. | | | | |
| Earthed up | 5 .....21 ,, | ... | 103 ,, | ... | 14¾ ,, ,, |
| Unearthed | 6 .....20 ,, | ... | 97 ,, | ... | 16¼ ,, ,, |
| | LOAM. | | | | |
| Earthed up | 7 .....21 ,, | ... | 68 ,, | ... | 9 ,, ,, |
| Unearthed | 8 .....21 ,, | ... | 102 ,, | ... | 13¾ ,, ,, |
| | BONE DUST. | | | | |
| Earthed up | 9 .....18 ,, | ... | 103 ,, | ... | 17¼ ,, ,, |
| Unearthed | 10 .....20 ,, | ... | 97 ,, | ... | 15¾ ,, ,, |

*C. E. C., Shirley, Croydon.*

*Aloes.*—A specimen of a similar Aloe to that I send you has lived for two years in a limestone quarry, in a crevice of the rock. It is now in flower. It is the Aloe lingue; is it not? Is it not generally considered as tender? *Gallicus.* [This looks more like a morsel of the pearl Aloe, A. margaritifera. In any case, that such a plant should live through two winters, even in Flint-shire, is a very unexpected fact.]

*Cottage Stove.*—Since the drawing and description of my cottage stove appeared in the *Gardeners' Chronicle*, of the 19th of July, I have made several improvements in it; and being fully convinced of its utility, I have, therefore, ordered of Mr. Samuelson, of Banbury, Oxon, some new castings with which to fit it up. In reply to the several persons from whom I have received communications respecting it, I beg to say, that so soon as Mr. Samuelson has made the castings, and it has been fitted up and tried, the price, &c., shall then be advertised in this paper. The price will be as low as possible. To the emigrant, who wishes to take one to New Zealand, I beg to say, that it is applicable for the purposes he intends it. *William Griffin, Eydon, Daventry.*

*Precocious Spruce Firs.*—Is the following instance of monstrous and precocious growths familiar to you? In a clump of young Spruce trees in the grounds of a neighbour of mine, I was struck with the singular appearance which several of the leading and subjacent shoots had assumed, terminating, not in leaf-buds, but in regular and apparently perfect cones, and of a size quite disproportionate to the height of the plants, viz., 2½ and 3 inches, the plants being only about 4 feet high. This appearance was observable on some 10 or 12 of the young trees, and the number of cones varied from two to four or five. The trees had been transplanted last year. Does this anomaly come from their being removed from a poor to a richer soil? *H.* [It has probably arisen from their being stunted in some way.]

*Tall growing Fuchsias* (*see p.* 486).—"Devonian" will, I believe, find the very pretty light Fuchsia Flavescens equal to Corallina in vigour and robustness of growth. *S. S.*

*Peat Charcoal.*—I have tried ½ cwt. of this in one light of a Melon frame, without any apparent effect. *B. B.*

*The Potato Disease* has come on very rapidly in this locality (Eydon) within the last week. The tops of the early varieties in several instances are completely gone off. I saw some taken up the other day, nine-tenths of which were diseased. The late varieties, which a few days ago were looking vigorous and healthy, are now completely covered with the black spot on the leaf. As a preventive, I am pulling the tops off mine, leaving the Potatoes in the ground, on which I intend sowing early Six-week Turnips immediately. The leaf of both the late sown Peas and spring Beans appear to be affected with the same disease. *Wm. Griffin, Eydon, Daventry, Northampton.*——The disease has re-appeared to a very serious extent near Dublin. It first exhibited itself in small patches about two yards in diameter, and night after night, since the 3d inst., the evil has spread rapidly. The sorts which appear to be most affected are the Forty-folds. No manure was used previous to planting, except a sprinkling of soot and salt. *D. Pressly, Gardener, near Dublin.*

*Irish Larks.*—If Mr. Kidd will venture himself in Ireland, though "such a land," having dropped all his "tears," since, thanks to English and Irish management, we do not need to import any, I shall kindly welcome him; and some dewy morning, if in spring, treat him to a concert of Irish larks, that shall ravish his very soul with joy! I forgot to say that the *Pois sans parchemin*, or what I should rather designate the skinless Pea, resembles somewhat the mucilaginous occra of the West Indies and of Western Africa, in its properties of thickening soup. *J. M'Cormac, M.D., Belfast, Aug.* 9.

## Societies.

CALEDONIAN HORTICULTURAL, *July* 5.—There was a good show on this occasion, and the day being fine, a large company attended. The Prize of Two Guineas, offered for the finest four Shrubby Greenhouse Plants, was gained by Mr. Reid, gr. to Professor Syme, with specimens of Epacris miniata, Kalosanthes miniata nitida, measuring 4 ft. 6 in. through, and bearing 250 heads of flowers, Polygala cordifolia, and Pimelea decussata. A second premium was assigned to Mr. Ritchie, gr. to W. M. Innes, Esq., who produced Cantua bicolor, Statice mucronata, Pimelea hispida, and Kalosanthes miniata. The Prize of One Guinea, offered for Cape Heaths, was awarded to Mr. Reid, for E. tricolor, Cavendishii, and Bothwelliana. In the competition for Fuchsias, the best set, which was from Mr. Smith, gr. to J. Mood, Esq., was disqualified, no declaration having been sent with the plants. The prize was therefore assigned to Mr. Young, gr. to T. Oliver, Esq., the varieties being Comte de Beaulieu and Elizabeth. The Society's Silver Medal was awarded as first prize for Stove Plants, to Mr. Reid, for Clerodendron infortunatum, Franciscea angustifolia, Æchmea fulgens, and Allamanda cathartica, the latter forming an excellent specimen about 5 ft. in height and 3 ft. 8 in. in diameter. A second premium was voted to Mr. Ritchie, for Begonia parvifolia, B. albo coccinea, Combretum purpureum, and Cattleya Forbesii. In the competition for Stage Pelargoniums, grown in 8-inch pots, the Silver Medal was awarded, as first prize, to Mr. Cameron, gr. to S. Hay, Esq., for Virgin Queen, Sir W. R. Gilbert, Lallah Rookh, Alonzo, Negress, and Chaplet. A second prize was voted to Mr. Cossar, gr. to Lady Hay, for Crusader, Chaplet, Emily, Rosalind, Rosy Circle, and Lady Clare. The Silver Medal, as first prize for Fancy Pelargoniums, also in 8-inch pots, was gained by Mr. Cossar, with Decorum, Jehu Superb, Queen Victoria and Diadematum superbum. A second premium was voted to Mr. Cameron, for Amelia, Maid of Anjou, Ytolinski, and Queen Victoria. No competitor appeared for the prize offered for the finest grown specimen of any recently introduced perennial herbaceous plant; but a plant of Pentstemon Kellermanni in excellent condition, having been sent for exhibition by Mr. Pender, gr. to D. Anderson, Esq., an honorary award was voted to him. The prize for the best 12 Pinks, cut blooms, was gained by Mr. Henderson, gr. to C. K. Sivewright, Esq., with the following varieties:—Clio, Whipper-In, Harriet, Prince Albert, Double X, Laura, Jenny Lind, Hark-forward, Lola Montes, Alfred Morrison, Sappho, and Honourable Mrs. Herbert. There was no proper competition for the

* Thermometers are frequently placed in the shade, but near some bare path, the reflection from which often makes a vast difference; suspended in the shade over Grass, or, what is better, over a clipped hedge, they give true results.

prize offered for the best three pairs of Pinks, in pots not exceeding 10 inches, only one competitor having appeared, but this set being exceedingly well managed, the prize was awarded to Mr. Henderson, for three pairs of fine healthy plants—bearing 30 flowers in all; the varieties were Harriet, Winchester Rival, and Willmer's Laura. The first prize for Cauliflowers was gained by Mr. Bell, gr. to Lord Mackenzie; and the second by Mr. Thomson, gr. to R. S. Wilson, Esq. The prize of One Guinea, offered through the Society by Messrs. J. Dickson and Sons, for the best 24 named Roses (4 Moss, 4 Provins, 4 French, 4 Perpetuals, 4 China, and 4 Bourbons), was gained by Mr. Adamson, gr. to Mrs. A. Lindsay, with the following varieties:—Devoniensis, Comte de Paris, Yellow Tea, Madame Roussell, Celine Peane, Souvenir de la Malmaison, Coupe de Hébé, La Daphne, Earl Talbot, Clementine Seringe, Louis IX., Geant des Batailles, Anacreon, La Moskowa, Agmade, Queen Adelaide, Unique, Celestine, Jeanne de Urip, Cabbage or Common Provins, Crested Moss, Prolific Moss, Lanei, and Celine. For another excellent collection of Roses, an extra award was made by the Society to Mr. Pender. There was a good display of articles sent for exhibition only. Messrs. Dicksons and Co. produced a large collection of plants, including Selago fasciculata, Sinningia guttata, Campylobotrys discolor, with Pelargoniums, dwarf Lobelias, and other greenhouse plants; also stands of Irises with Sweet Williams, Pelargoniums, and seedling Pansies. Messrs. J. Dickson and Sons contributed Cape Heaths, Leschenaultia biloba grandiflora, a fine plant of Fuchsia Kossuth, and other exotics, together with a collection of cut Roses.—From Messrs. P. Lawson and Son, were a double Pelargonium Emiline, springs of Erica Willmoreana with double flowers, 100 varieties of cut Roses, fine specimens of Humea elegans, Seedling Pansies, &c.—From Mr. Carstairs, came a selection of greenhouse plants.—From Mr. R. M. Stark, Selago fasciculata, Geraniums, Calceolarias, and stands of Irises and Dianthus; from Mr. Methven, Fancy Pelargoniums and Roses; from Messrs. Downie and Laird, Pelargoniums, Verbenas, and Roses; from Mr. Handasyde, Roses; from Messrs. Ballantyne and Son, double Dianthus, &c.; from Messrs. Lawson and Son, Greenock, a seedling Cape Heath, between ventricosa and Savileana, for which an honorary award was granted; from Mr. George Lightbody, 24 fine seedling Ranunculuses, for which a Certificate of Merit was granted; and from Mr. Forrester, stands of Pinks, Delphiniums, Antirrhinums, and a new seedling variety of Lilium monadelphum. From the garden of the Earl Wemyss, there were blooms of the double yellow Rose (Rosa sulphurea). From Dr. Neill's garden, Canonmills Cottage, a collection of exotics and alpines, including a beautiful specimen of Oncidium pulvinatum (bearing 1650 flowers), O. flexuosum, Aerides crispum, Arum Dracunculus, Primula involucrata, Stellaria scapigera, and other plants. An extra Silver Medal was awarded to Mr. Thomson, Dr. Neill's gardener, for this collection. Professor Syme sent a large specimen of the Egg plant grafted on Solanum jamaicense, and bearing 30 fruits of large size. From the garden of Professor Dunbar, there were Cape Heaths and a flowering plant of Justicia carnea.

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Entomological, *Aug.* 4.—J. O. Westwood, Esq., F.L.S., President, in the chair. A considerable number of Entomological works and specimens were presented by the Entomological Societies of Germany and Holland, Drs. Koch, De Gand, Bohemann, Herklots, and other Entomologists. Living specimens of the beautiful Chrysomela cerealis, with its larva, were presented by Mr. Foxcroft. A considerable number of new and rare insects, together with illustrations of the habits and economy of various species, were exhibited by different members; namely, by Mr. F. Bond, some very extraordinary varieties of different species of moths, including a very fine Saturnia pavonia minor, destitute of the eye-like spots on the wings; by Mr. J. F. Stephens, some curious varieties of Abraxas grossulariata, some of which differed in the form of the wings, resembling G. melanaria, in this respect; by Mr. Bedell, a variety of rare Microlepidoptera, recently captured at Mickleham; by Mr. S. Stevens, on behalf of Messrs. Wallace and Bates, some very splendid Lepidoptera and Coleoptera, from the river Amazon; by Mr. Moore, various interesting Lepidoptera, &c., from the neighbourhood of Hastings; by Mr. F. Smith, on behalf of the Rev. Mr. Kuper, specimens of the very rare Ctenicerus castaneus (Elateridæ), captured in Monmouthshire; by Mr. F. Smith, a very fine series of Hymenoptera, including many rare species, from the back of the Isle of Wight; also specimens of both sexes of Hylæus plantaris, a very rare bee, reared from the stems of the common dock; by Mr. S. Stevens, specimens of an apparently distinct species of Silkworm, reared from eggs sent to the Exhibition Building in Hyde-park; also an immense mass of insects of all kinds, which he had captured by thousands on long Grass, on the shore below Gravesend, at 5.30 P.M., on the preceding day, in a situation where, half-an-hour previously, scarcely an insect was to be seen; amongst these insects were several thousand specimens of a species of Haltica, of which very few had previously been collected; the cause of this singular swarm of insects was quite inexplicable; by Mr. Waring, two specimens of the elegant Plusia aurichalcea, from the neighbourhood of Folkestone; by Mr. Augustus Sheppard, Mr. Grant, and Mr. Douglas, specimens of various rare Microlepidoptera; by Mr. Stainton, specimens illustrating the history of a new species of Lithocolletes, which feeds on the nut; by Mr. Mead, specimens of a species of Coccus, with its young, found upon the Alder; and the elegant nest of Theridion callens, of Blackwall (an interesting species of spider); by Mr. Westwood, a living specimen of Hamaticheros Heros, sent from Pembroke Dock-yard by Sir T. S. Pasley; Phibalocera quercana, reared in great profusion from Pear leaves, from the gardens of the Horticultural Society, at Chiswick; various specimens illustrating the ravages of insects (especially Cerostoma xylostella) upon Turnips, from Ireland and various parts of England; various insects which eat the petals and pollen of Roses; a monstrous claw of Astacus fluviatilis, nests of Chelostoma florisomnis made in a straw; and a species of Astyages reared from the Asparagus. He also brought for distribution specimens of Astyages Hemerobiella and nigricella reared in great numbers from Pear leaves. Some notes were read by Professor Kirtland, of the Cleveland University, Ohio, on various Lepidopterous insects of the United States. The President also gave some account of the works of Dr. H. Schaffer, of Ratisbonne, that gentleman being present as a visitor at the meeting.

## Notices of Books.

*Murray's Modern London* (12mo, Murray, pp. 327).—Our country readers will be glad to know that at last there is a guide through London to which they may reasonably trust for accuracy, intelligence, and completeness of subject. Mr. Peter Cunningham, the author of the admirable "Handbook for London," has, in this little volume, looked at his difficult and complicated subject in quite a new point of view; to use his own words, he has endeavoured to place himself "in the position of a well informed guide, seeking to give a stranger visiting London for the first time all requisite information respecting lodgings, eating-houses, places of amusement, &c.; of one whose aim it is to point out those features of the metropolis best worth seeing, with the way in which they may be seen to the best advantage." In this attempt the author has in a great measure succeeded. In a small pocket volume, beautifully printed, and illustrated with numerous maps and plans perfectly adapted to the end they are to serve, a stranger finds himself, after an hour's study, complete master of his situation, and enabled to proceed, without uncertainty or the chance of error, to any point in this vast metropolis. Taking advantage of the principal thoroughfares and squares by which London is intersected or ventilated, and each of which is ingeniously mapped out, Mr. Cunningham is able to carry his reader with the greatest facility from point to point, leaving nothing untold that is worth telling, and omitting everything that is merely interesting to the inhabitants of the metropolis. As an example of this method of conducting a stranger, we give, notwithstanding the sacrifice of some space, the following guide-plan of Fleet-street.

FLEET STREET.
E.

Bride Lane, leading to Bridewell Hospital.
St. Bride's Church. Built by Wren.
Shoe Lane, leading to Holborn.
To Salisbury Square, in which Richardson, the novelist, lived.
Bolt Court. Dr. Johnson died here.
Bouverie Street, leading to Whitefriars and Alsatia.
Crane Court—Scottish Hospital; Old Meeting Room of Royal Society, when Sir I. Newton was President.
Sergeants' Inn.
Fetter Lane, leading to Holborn.
Peele's Coffee-house; Newspapers filed here.
Mitre Tavern. Resort of Dr. Johnson and Boswell.
Church of St. Dunstan's in the West. Here the Fire of London stopped.
Hoare's Banking House.
Chancery Lane. Seven doors up, on the left, lived Izaak Walton.
Inner Temple Lane, leading to Temple Church: at W. corner house (now a confectioner's), Pope and Warburton first met.
Rainbow Tavern. Famous for Stout.
Cock Tavern. Famous for Stout.
Middle Temple Lane.
Child's Banking House. Oldest Banking House in London. Site also of Devil Tavern.

W
Temple Bar.

The above, it must be observed, is not a copy of the page itself in Mr. Cunningham's book, for some typographical errors exist there, but a sketch of the way in which the streets are arranged. Accuracy, however, is so important, that we would recommend the whole of this kind of matter to be revised before the appearance of a second edition.

When we add that there are ten excellent ground plans and maps of public places, including the best "clue-map" which we have yet seen, either for London or any other city, and a very good index, our readers will be satisfied that a crown paid for such a book is one of the best bargains they can make in London.

## Garden Memoranda.

Mr. H. Bunny's Nursery, Stratford.—This place is about half a mile from the Stratford Station on the Eastern Counties Railway. It lies on the side of the Leytonstone Road, which leads to Epping Forest. It possesses a fine range of houses. The first is a greenhouse about 150 feet long, containing many fine specimen Camellias, some of which stand 10 feet in height; they are all in fine health. In addition to the large examples, this house also comprised a promising stock of young plants, which are well covered with flower buds. The *coup d'œil* here during the blooming season must be beautiful in the extreme. The next is a forcing-house, in which there were fine plants of the common Hydrangea, with charming blue flowers, which were very striking. Many of the best varieties of Achimenes, such as longiflora alba, longiflora superba, &c., were in flower here. These two are both fine sorts, and ought to be in every collection. A good plant of Miltonia spectabilis was in bloom in this house, along with Sobralia macrantha and other Orchids, among which were some fine plants of Odontoglossum grande making luxuriant growths; but the latter were not in bloom. Next succeeded a span-roofed house, which has been built expressly for growing Orchids and Ferns in, of both of which Mr. Bunny has very nice collections. Mr. B. has always been celebrated for his success in cultivating Cattleyas. He has a fine stock of nearly all the sorts in cultivation. In the same house were some good variegated Orchids under bell-glasses. Among Ferns were Adiantum macrophyllum, A. trapeziforme, A. formosum, A. cuneatum, Hemionitis palmata, Blechnum corcovadense, Gymnogramma calomelanos, the Silver Fern and G. sulphurea, the Gold Fern, together with Conopteris vivipara, and many others. Conspicuous among Lycopods were Schottii, umbrosum, Willdenovianum, cæsium arboreum, circinale, plumosum, apodum, stoloniferum, &c. In the centre of the house is a piece of water for the purpose of growing the different kinds of aquatic plants in. After leaving this range of houses, a few steps lead to another range, the first house in which is a greenhouse, about 200 feet long, in which were scarlet Geraniums, beautifully in bloom, together with Kalosanthes coccinea, and other showy things. During winter this house is filled with Epacrises, Ericas, and other hard wooded plants. The next house contained Cacti, of which there is here a capital collection. There are about nine other plant houses, besides ranges of frames and pits. The open ground contains a good stock of hardy trees and shrubs, all in a healthy state. The nursery was altogether in good order. *B. S. W.*

Botanic Garden, Vienna.—We are informed that a fine specimen of Paulownia imperialis is now in flower here. The tree is about 30 feet high, and has at least 400 flower spikes, upon each of which can be counted from 15 to 40 flowers. It is truly a magnificent object. If we could succeed to get a large tree to flower in England, this fine plant would redeem its character. The flowers quite perfume the surrounding neighbourhood. At Vienna, during the winter of 1849-50, the specimen which is now in flower endured a cold of 24° Reaumur, or 20° below zero of Fahrenheit. Last winter was very mild, and there was no spring frost there, which was of course very favourable to the development of the flowers.

## Miscellaneous.

*Pois Gros Sucré de Croux.*—The horticulturists of Paris have obtained a new kind of late Pea, which is at present greatly esteemed. It was introduced from Switzerland by M. Croux, of Villejuif, Seine. According to a report upon it, by a special commission of the National Society of Horticulture of Paris, this new late Pea, which they have named in compliment to its introducer, Pois Sucré de Croux, possesses in a high degree the valuable property of flowering and fruiting abundantly late in autumn, and until checked by frost. It is well known that other Peas sown for a very late crop are apt to push long stems which flower only at the tops, and produce badly filled pods. They are, moreover, very subject to mildew, and this, with even a short period of drought in August, renders their produce almost nothing. A new variety which appears to be free from all these disadvantages must be considered an acquisition; and we therefore take the earliest opportunity of directing attention to it. *Journal d'Horticulture Pratique.*

*Bees.*—M. Raveyer announced at a late meeting of the Institute of Paris, that a peasant in the neighbourhood of Vezelise (department of the Meurthe) had discovered the means of compelling bees to swarm when he pleased, even in the winter time. The discoverer proposed to make it known to the Institute, in the persuasion that so useful a process, if approved of by so learned a body, could not fail to be properly rewarded.

*The Parliament Oak.*—Amongst the antique specimens that still adorn Sherwood Forest, there is one silvery grey patriarchal trunk that, ere you reach the ferny glades, at once attracts the eye, standing in a leafy nook by the roadside from Mansfield to Edwinstown. Here is a picture of life and death! It is called "The Parliament Oak." Tradition says, that the First Edward and his retinue were chasing the deer through the entangled paths of this once royal chase, when a messenger arrived bearing intelligence that his Majesty's subjects in Wales were in revolt. The monarch instantly,

under the branches of this deathless type of a nation's greatness, held a council. Where is now King Edward's regal pomp? The tree is supposed to be above one thousand years old; it is now 20 feet high, varying from 27 to 32½ in circumference; and though it be time-tinted, age-hewn, and lightning-topped, it has not yet mingled with the decaying bracken that for ages has been mouldering at its roots. From his ancient trunk started forth two youthful branches. These two branches, in the autumn of 1842, brought forth above 300 acorns. The Parliament Oak stands within the ancient limits of Clipstone Park, the property of his Grace the Duke of Portland, whose regard for this venerable tree has caused it to be braced and supported by poles, a necessary help during its state of transition. Within our notice of this ancient tree, large pieces have been from time to time sawn off, to gratify the spurious taste of snuff-box fanciers and curiosity-mongers. *Notts Guardian, abridged.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

The propagation of greenhouse Pelargoniums should have a due share of attention at this season. The large kinds may be cut down according to the usual practice, and cuttings selected from the shoots so cut off; but with the fancy varieties a different course must be pursued; most of them producing such a profusion of flowers, that if left to their ordinary course, it is impossible to obtain any proper shoots for cuttings. By picking off the flowers as they appear, and encouraging the growth of the plants with rich soil and liquid manure, the extreme points will make cuttings, and the young side shoots will produce cuttings in abundance. Cuttings put into the open ground last month will now be striking: and as soon as they begin to grow freely, the leading shoot should be stopped, to make them bushy.

FORCING DEPARTMENT.

Pineries.—Unless the fruits in progress are supported in some way, they are very liable to lean to one side, by which they are always disfigured, and not unfrequently are entirely broken off. This of course must be prevented, by staking and tying in a perpendicular form before they become too heavy. Vineries.—Where ripe Grapes are hanging, a gentle fire should be used in damp weather, to dry the atmosphere, taking care to accompany it with a due proportion of air, to allow the evaporation to escape. Moisture must be carefully avoided, or some of the thin-skinned varieties will be liable to crack; this is an additional reason for covering the outside borders with a tar cloth, to throw off excessive rain. Let the houses be kept clear of everything calculated to generate damp, especially plants in pots, which frequently require to be watered or syringed; the kinds which generally occupy such places may be very well accommodated with the open air for the next month or six weeks.

FLOWER GARDEN AND SHRUBBERIES.

Everything in this department should now wear an appearance of order and perfect neatness, and this state of things can be effected and maintained only by a systematic perseverance in going regularly and frequently over the whole. Considerable attention is necessary to keep the half-hardy plants and annuals in order, especially in cutting any shoots that overhang the Box or other living edgings by which they are bound; and at the same time tall or straggling growths of plants in masses should be shortened. If this is done with taste, the beds may be made regular and uniform without being formal. At planting out season, for the sake of immediate effect, the beds are generally filled rather thickly; in consequence of which a careful thinning may be useful, especially where over-crowded plants are liable to be injured at the bottom, as is the case in low damp places. Great pains have been taken within the last few years to improve the Hollyhock, and it is now becoming a general favourite. It is admirably adapted for the larger clumps, and especially the light-coloured varieties, for planting along the edges of the evergreen masses, to relieve their monotonous appearance. As no reliance can be placed on the plants which are raised from seeds, they should be proved as to colour and quality before they are planted permanently. The select varieties are easily propagated by eyes from the strong parts of this year's wood. In selecting them, care should be taken to choose those which have an incipient leaf-bud at the base of the leaf, and to reject those which are developing flower-buds only. The cuttings should be prepared by splitting and cutting the stems up into lengths, leaving about two inches below the bud, and paring away the pithy part; they should then be planted about 1 inch deep in a frame of very sandy soil, and carefully shaded; if they can have the advantage of a little bottom heat, so much the better. It is only necessary to mention further, that the operation should be performed as soon as the good and bad varieties are distinguishable. Prick out into nursery-beds all border Pinks that are ready for removing from hand-glasses, &c., and put in Chinese, Noisette, and Bourbon Rose cuttings, in a cold frame, under the shade of a north wall. Manetti Rose Stocks, put in as cuttings in the open quarters last winter, are now being budded. They answer admirably as stocks for the various kinds of Tea-scented, Noisette, and Bourbon Roses.

FLORISTS' FLOWERS.

The cares attendant on most flowers in this class have now in some measure passed away, yet Carnations will want layering, and those already done must be carefully watered. As flowers go out of bloom, those which give evidence of producing seed should have the withered petals extracted; some florists also slit the calyx down, in order to afford a more ready escape for wet. Dahlias are the exception; for now is the most critical time for them. Abundance of water (soft) should be given, with an occasional treat (once or twice a week) of liquid manure. The strong and coarse growers will not require thinning; whilst those of more small and delicate character will require not only judicious thinning, but also frequent disbudding. Amongst other things which are good traps for earwigs, small bundles of sticks have been proved very efficacious. These destructive insects readily harbour in them, so that they can be taken entirely away, untied, and after effecting their destruction replaced, either on the ground, or against a wall or hedge. On the first wet day look over the collection of Tulips; clean them, and commence their rearrangement for another season. This is at all times a most interesting employment to the florist; as he handles each bulb, its good qualities, its summer beauties, are vividly pourtrayed on his mind's eye; in fact, he in memory blooms his flowers over again. The inferior ones are discarded; whilst their place is occupied either by some fresh purchase, or by a "maiden root" from the offset bed. A general supervision of Auriculas and Polyanthuses is of course necessary; and as Pink and Pansy cuttings root, plant out.

FRUIT GARDEN.

It will be well to examine the state of the soil about the roots of Peaches, Apricots, and Figs on the open walls, and especially of those which carry a crop of fruit; in many cases the ground will be found very dry, particularly where overhanging copings are in use; and unless watered, the trees will soon show evidence of the neglect, by casting some of their fruit, or by their diminutive size and absence of flavour. Let the earlier varieties of Pears and Apples be carefully gathered as they ripen. Means must now be taken to preserve the wall fruit from the ravages of wasps, flies, &c., either by covering the fruit with some material to exclude these pests, or by entrapping the latter with something more attractive and more come-at-able than the tough-skinned fruit. The latter mode of dealing with the enemy is preferable, as, by covering, the fruit with any opaque material, it is screened from the sun, and thus deteriorated both in appearance and quality.

KITCHEN GARDEN.

Cleaning the borders, clipping the edgings of Box and Thrift, and weeding and repairing the gravel walks, is now the principal work in hand. If the Cardoon is much in request, and the probable supply deficient, a very good substitute may be produced by cutting the old flower stems of the Artichoke down, thinning the young suckers, and afterwards binding and earthing them in the same manner as real Cardoons. If the ground is good, the strong suckers will be ready for binding with hay ropes and earthing up by the middle of October, and they will be ready for use at Christmas. The earthing up should be done at one operation, for the same reasons as were given in support of similar practices with regard to Celery. Sow some Radish seed of sorts, once every three weeks until the end of September, when a supply will be obtained through the winter. The two last sowings should be made upon a warm south border, along with a small bed of American and Normandy Cress, to stand the winter. Occasional sowings of Corn Salad should be made. Some Spinach should now be sown, and successional sowings of Endive and Lettuce made this week or next. Cauliflowers to stand the winter should be sown about the end of the month, as, if sown too early and kept in over rich soil, they are liable to button.

State of the Weather near London, for the week ending Aug. 14, 1851, as observed at the Horticultural Garden, Chiswick.

| August. | Barometer. | | Temperature of the Air | | | Temperature of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|
| | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 8 11 | 30.018 | 29.684 | 80 | 52 | 66.0 | 62 | 61 | N.E. | 00 |
| Satur.. 9 12 | 30.091 | 29.961 | 69 | 55 | 62.0 | 63 | 61½ | N.E. | .00 |
| Sunday.. 10 13 | 30.095 | 30.075 | 71 | 53 | 62.0 | 62 | 60 | N.E. | .01 |
| Monday 11 | 30.05 | 30.018 | 79 | 52 | 65.5 | 62½ | 61 | S. | .00 |
| Tues.. 12 15 | 30.071 | 30.010 | 83 | 59 | 71.0 | 64 | 61½ | S. | .00 |
| Wed.. 13 16 | 29.944 | 29.841 | 82 | 52 | 67.0 | 65 | 62 | S.W. | .02 |
| Thurs.. 14 17 | 29.9.6 | 29.824 | 74 | 55 | 64.5 | 64½ | 62 | S.W. | .00 |
| Average .. | 30.025 | 29.971 | 76.8 | 54.0 | 65.4 | 63.3 | 61.3 | | .02 |

Aug. 8—Very fine; overcast; clear at night.
— 9—Overcast, fine; ove cast; cloudy.
— 10—Overcast; cloudy throughout.
— 11—D y haze; very fine; slightly clouded.
— 12—L gnrly overcast and fine; very fine; cloudy.
— 13—Cloudy and hot; rain; sultry; cl udy, with lightning in the evening.
— 14—Lightly ov-rcast; fine; clear; lightning at night; cloudy.
Mean temperature of the week, 2 deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending August 23 1851.

| August. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain | Prevailing Winds. N | N.E. | E. | S.E. | S. | S.W. | W | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 17 | 74.4 | 51.3 | 62.3 | 13 | 0.34 in. | 2 | 1 | 1 | 1 | 4 | 5 | 9 | 2 |
| Mon 18 | 74.3 | 52.7 | 63.3 | 12 | 0.33 | 1 | 5 | 3 | 1 | 3 | 6 | 5 | 1 |
| Tues. 19 | 72.7 | 51.1 | 61.9 | 12 | 0.42 | 1 | 2 | 2 | 1 | 1 | 7 | 8 | 3 |
| Wed. 20 | 72.5 | 51.4 | 62.0 | 10 | 0.33 | 1 | 1 | 1 | — | 5 | 5 | 10 | 2 |
| Thurs. 21 | 72.0 | 49.7 | 60.9 | 10 | 0.62 | 2 | 2 | — | 1 | 5 | 7 | 6 | 2 |
| Friday 22 | 70.3 | 51.1 | 60.7 | 11 | 0.58 | 1 | 2 | 1 | — | 4 | 9 | 7 | 2 |
| Satur. 23 | 71.0 | 49.5 | 59.8 | 13 | 0.55 | 1 | 2 | — | — | 3 | 8 | 9 | 1 |

The highest temperature during the above period occurred on the 18th, 1842—therm. 92 deg; and the lowest on the 21st, 1850—therm. 32 deg.

## Notices to Correspondents.

Araucaria: *R W.* We believe that the pruned appearance of the A. imbricata at Kew is owing to the lower branches having died or become unsightly. It is a very old plant, and for years was covered with a moveable roof, the notion being that the plant was tender. A healthy plant should never be pruned. See the beautiful specimens at Dropmore.

Birds—The Piping Bullfinch: *D W.* You have done wisely in asking advice on this matter. This is the wrong season of the year to make such a purchase, and the house you mention is the very last to apply to. It is a repository for parrots, and all the noisy animals which, we regret to say, have become so "popular." No bird, required for song, should ever be purchased at such establishments; as we have before emphatically remarked. This being the "moulting" season, and all birds in a sickly state, you had much better defer procuring the bullfinch till next spring. We will then aid you by our counsel in selecting a bird worth the money. From three to five guineas are demanded for what you are so anxious to obtain! You will never be able to purchase at Aberdeen. London alone can boast *such* rarities. *W. K.*—The Titlark: *Amy.* Your bird's feet are crippled through a want of attention on *your* part. His cage and perches have not been kept thoroughly cleansed. Hence his feet have become clogged with dirt, and disease superinduced by consequence. Take him gently in your hand; and letting his feet pass between your fingers, submerge them in a basin of tepid water. When sufficiently soaked, tenderly remove such of the rough surface as readily peels off, and dry his feet afterwards with a soft linen handkerchief. Repeat this operation, when needful. The necessity for it, ought very seldom to present itself. *W. K.*—The Canary: *Jane.* Give your little favourite a morsel of raw scraped beef, and egg, moistened with cold water. He will soon recommence singing. *W. K.*—The Skylark: *F C W.* Try boiled milk for two days, instead of water; and keep him out of the reach of all draughts. Every lark's cage ought to have *one* side of it boarded. The reason for this is sufficiently obvious. *W. K.*—The Garden Warbler: *J L.* In a fortnight. It will appear August 30. The bird has yet not left us. He is rejoicing in our orchards and kitchen gardens,—and with an appetite undiminished: *W. K.*—Young Cuckoo: *E Walker.* This is an insectivorous bird, and in confinement must be fed on raw beef,—lean, well scraped, and free from fibre. Treat him also to hairy caterpillars, so long as you can procure them; and flies. Both these he regards as "luxuries." Whether he will survive the winter is extremely doubtful. You must beware of dysentery. *W. K.*

Books: *F B S.* 1, Downing's "Landscape Gardening;" 2, Kemp's "How to Lay-out a Small Garden;" 3, Loudon's "Suburban Gardener;" 4, Loudon's "Encyclopædia of Gardening;" 5, Babington's "Manual of British Plants."—*Gallicus* Loudon's "Hortus Britannicus."

Experiments: *B B.* If you place vitriol with salt, and by a red hot coal produce a vapour, in a hothouse, for the destruction of the red spider, you will kill every plant in your house.

Fuchsias: *Anon.* Corallina is, we believe, a garden hybrid. We have always understood that it was raised between F. exoniensis and F. radicans, the latter being a species, the former a hybrid ‡

Insects: *T E.* The young fibres of the roots of the Heliotropes are infested by great numbers of a new insect belonging to the family of plant-lice, Aphidæ, closely allied to the genus Pemphigus, but which seems to require a new genus for its reception. The ants frequent the roots to feed upon the saccharine excrement of the Aphides; we can only suggest that the earth should be carefully moved above the roots, which should then be well drenched with quassia water or tobacco water. *W.—T P H.* The caterpillar found on the Rose-tree is that of the very common vapourer moth Orgyia antiqua. *W.—Middleton.* Your Vines are infested with the common Vine fretter, Coccus vitis; the shells sent are the shrivelled skins of the females, the young of which have a ready escaped from beneath their bodies. *W.—E W M.* We are sorry to learn that the Turnips in the Midland Counties are so much infested with the small green caterpillars of the Tinea cruciferarum (or Xyosteila). See our leading article of last week. *W.*

Names of Plants: *C H.* Trachelium cœruleum.—*J R.* Leucostegia immersa, Presl., *J. Sm.*—a well known Fern, but only recently introduced in a living state. *S.—O P.* The round-leaved plant is Cerasus Mahaleb; the other is Padus; the third seems to be a leaf of Campanula fragilis.—*T Blair.* Rumex montanus, or Monk's Rhubarb, not British.—*L V H.* No known Epipactis has a germen without down. Your sketch is not like anything we are acquainted with. There is an Epipactis ovalis of Babington, with "dark yellow" flowers, but it also has a downy germen. You had better dry a few specimens carefully between paper, and send them to London for examination, when an opportunity offers.—*T. Davidson.* A parently Hæmanthus tenuiflorus.—*J R.* We cannot just now call to mind the seed. We will name it hereafter.—*Frosting.* Nierembergia gracilis.—*Reader, Cork.* 1, no flowers; 2, Hypericum canariense; 3, Melaleuca thymifolia.—*Sub.* Lythrum virgatum, Diplacus glutinosus.—*J M R.* We really see nothing whatever to distinguish your plant from the vulgar Calystegia sepium; the other is Calendula arvensis. Pack your cuttings in thin sheet India-rubber, or in India-rubber silk, and enclose them in a tin box. Try the following climbers—Mandevilla suaveolens, white; Kennedya Marryattæ, red; Hardenbergia macrophylla, purplish blue; Clematis azurea grandiflora; Tecoma jasminoides, white, rosy eye; and Dolichos lignosus, pink.‡—*J N.* Completely baked when received, and quite unexaminable.—A few inquiries stand over for further consideration.

Phormium tenax: *T D.* We believe it has flowered out of doors in the south of Scotland. It was figured some years since in one of Sir W. Hooker's works. No doubt it will be hardy in Ireland, and flower freely enough when of sufficient age. It is nearly hardy near London. Much obliged, but do not cut the flowers for us.

Pits: *An Old Sub.* It is not easy to keep down the steam of tanks. Slate is the best material. Ninety degrees of bottom-heat is much too high; 84° is a maximum, and 75° enough for most things. For Cucumbers 65° are enough. Stop the apertures between the tiles with cement, not mortar, and you will perhaps be relieved.

Salting Walks: *C E F.* 2 lbs. of salt, to every gallon of water, is sufficiently strong to kill any weeds when applied boiling.

Screen: *An Old Sub.* Use Yew or Holly, or Beech or Hornbeam for your screen. For decoration, take Anemones, winter Aconites, Christmas Roses, Hyacinths, and dwarf Tulips.

Strawberries: *J C.* If you will adopt the plan given at p. 483 of our volume for last year, using burrs or stone indifferently, you cannot fail to succeed—*experientia docet.*—*A Constant Reader* is anxious to know where the Downton Pine may be procured.

Vegetable Marrows: *Utilitarian.* We should be happy to write a dissertation about these esculents, if there was anything to say; but in fact you have only to attend to the following rules—1, get seed of a good sort; 2, raise it in a hotbed, and plant out when frost is gone, in any rich soil—a dunghill or good rubbish heap is well suited; 3, gather the Marrows when young and tender; 4, stop the shoots from time to time, and boil the tops as Spinach.

Victoria: *W G.* You had better apply to Mr. Reeves, bookseller, Henrietta-street, Covent-garden.

Woodlice: *R M E* Place a toad or two in your Melon frame, and they will gradually be found to disappear.‡

Misc.: *Rowntree.* The Queen entered at the door in the Transept from Rotten Row. What has that to do with gardening We cannot answer such questions. Mr. Ward invented Ward's cases. Mr. Cooke has only exhibited a very nice one.

## SEEDLING FLOWERS.

Carnations: *J R.* Your rose flake and pink bizarre Carnations are smooth full flowers. They are, however, very deficient in amount of colour, and will not therefore be prized by florists.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

# The Agricultural Gazette.

*SATURDAY, AUGUST* 16, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Aug. 21—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 28—Agricultural Imp. Soc. of Ireland.

WE fear that the 1st of August will prove to have been too early a date for reports on the nature of the POTATO CROP. Since the publication of last week's tabular statement on the state of the crops, we have received letters from many parts of the country, stating that the disease had been suddenly developed. In many parts of the vale of Gloucester we know that it has unmistakeably appeared. In Wexford and Cork, and other counties of Ireland, we are informed of its having suddenly made its appearance, and in some parts of the south-west of Scotland it appears to have shown itself. We shall publish any further evidence on this subject that may reach us from time to time.

WE request the attention of our readers to a few more calculations respecting the cultivation of the SUGAR BEET and its manufacture. In a former article we expressed great doubts whether it would be a profitable speculation, without the aid of a protecting duty in its very worst form. We took for our guide the returns collected by DUMAS for the French Government, and quoted by Sir R. KANE in his "Industrial Resources of Ireland." Those statements were, it will be remembered, to the effect that 26s. 8d. would be the prime cost of the sugar, allowing 16s. 8d. the ton for the Beet, and 12s. the ton as the cost of coals. Twelve tons per acre having been found by experience to be more productive of sugar than heavier crops, it followed that the value of the crop to the farmer would not exceed 10l. the acre, delivered at the sugar works. This is a more favourable statement than some we have since met with, respecting the acreable produce in countries in which the manufacture of sugar from Beet is carried on most extensively. In the Industrial Exhibition, among the produce of the Grand Duchy of Saxony, Prussian Saxony, Brunswick, Anhault, and Thuringia, Beet-root sugar is exhibited, with a notice that an acre will yield 6 tons of Beet, producing 5½ cwt. of sugar. Neither of these statements is very encouraging to the would-be grower of British sugar; and, at the recent meeting of the British Association for the Advancement of Science, a paper was read in the statistical section, by Prof. HANCOCK, "On the Prospects of the Beet-sugar Manufacture in the United Kingdom," which was equally discouraging to the intending manufacturer. He commenced by stating that, some little time ago, the manufacture had been attempted at Maldon by a private company, but that the attempt speedily failed. More recently a manufactory had been established at Chelmsford, and contracts entered into with the farmers for a supply of Beet. What were the prospects of success to this undertaking and the Sugar-Beet Company of Ireland? The answer to these questions depended on the answers to three other questions:—1, What will be the probable price of Beet for a series of years? 2, What will the price of Beet sugar be after 1854, when the differential duty on foreign sugar, which will diminish each year, will cease entirely? and 3, With those prices of the raw materials and the manufactured article, will the manufacture be profitable? With respect to the price of Beet, it appears that it varies from 13s. 11d. the ton, in the north-east of France, to 18s. 5d. the ton, in the north-west; the average for the whole of France being 15s. 1½d. In Ireland the Sugar Beet Company were stated to have contracted with the growers at 15s. 6d. the ton. The contracts in Essex were at 18s. to 20s. the ton. The present prices of the raw material were, therefore, higher for Ireland than the average of France, and higher for England than the average of the highest districts of France. The future price of sugar Professor HANCOCK considers a somewhat difficult question, which we have not at present sufficient data for estimating. He thinks that it will not exceed 28s. the cwt., and anticipates even lower prices from the diminished cost of production of refined sugar consequent on the increased consumption caused by a fall in its market value on the equalisation of the duties, from the removal of the absurd restrictions now imposed upon sugar refiners, and lastly from the competition between cane sugar and Beet-root sugar, should the latter be manufactured to any extent. With respect to the third question, whether it would be profitable to make sugar at the Irish price of 15s. 6d. the ton for Beet, and the Essex price of 19s., the selling price of sugar being 28s. the cwt., the calculations most relied on are stated to be those of Mr. SULLIVAN, chemist to the Museum of Irish Industry in Dublin, and of M. PAUL HAMOIR, of the firm of SERRET, HAMOIR, DUGESNE and Co., the largest manufacturers of Beet-sugar at Valenciennes, dated April 18, 1850. These estimates are given as follows:

Mr. SULLIVAN'S *Estimate for Ireland.*

| | |
|---|---|
| 60,000 tons of Beet at 15s. per ton . . . | £45,000 |
| Cost of manufacture, 9s. per ton of Beet . . | 27,000 |
| Total outlay . . . | 72,000 |
| Produce, 5 per cent. of sugar, at 28s. the cwt. | 93,000 |
| Estimated profit . . . . | 21,000 |

*The same Estimate applied to Essex.*

| | |
|---|---|
| 60,000 tons of Beet at 19s. the ton . . . | £57,000 |
| Cost of manufacture, at 9s. the ton of Beet . . | 27,000 |
| Total outlay . . . | 84,000 |
| Produce, 5 per cent of sugar, at 28s. the cwt. . | 93,000 |
| Estimated profit only . . . | 9,000 |

M. PAUL HAMOIR'S *Estimate for France.*

| | |
|---|---|
| 61,607 tons of Beet at 12s. 11d. the ton . . | £38,400 |
| Cost of manufacture, nearly 13s. the ton of Beet | 39,900 |
| Total outlay . . . | 78,300 |
| Produce, 4½ per cent. of sugar, at 39s. the cwt. | 114,000 |
| Estimated profit for France . | 35,300 |

*The same Estimate applied to Ireland.*

| | |
|---|---|
| 61,607 tons of Beet at 15s. 6d. the ton . . | £46,080 |
| Cost of manufacture, nearly 13s. the ton of Beet | 39,900 |
| Total outlay . . . | 85,980 |
| Produce, 4½ per cent. of sugar, at 28s. the cwt. | 81,430 |
| Estimated *loss* for Ireland . . | 4,550 |

*The same Estimate applied to Essex.*

| | |
|---|---|
| 61,607 tons of Beet at 19s. the ton . . . | £58,527 |
| Cost of manufacture, nearly 13s. the ton of Beet | 39,900 |
| Total outlay . . . | 98,427 |
| Produce, 4½ per cent. of sugar, at 28s. the cwt. | 81,430 |
| Estimated loss . . . | £16,997 |

There are several errors in the above figures, which must be obvious to those who will take the trouble of working them; but as the correction of them would strengthen the Professor's argument, we give them as we find them reported, leaving it to the reader to correct them for himself; and we proceed to the conclusions deduced from them by the author of the paper, which are these; that by introducing into the estimates the Irish and English prices of Beet-root and of refined sugar, the result is so varied, as to turn a profit of 35,000*l.* at the French prices, on a capital of 78,000*l.*, into a loss of 4000*l.*, at the Irish prices, and a loss of 16,000*l.* at the Essex prices. The French estimate, therefore, it is contended, does not, as had been alleged, corroborate Mr. SULLIVAN'S estimate, but shows, on the contrary, how fallacious it is to reason from the success of the manufacture in France, to its success in the United Kingdom, without taking into consideration the different prices of the raw produce and manufactured article in the two countries—the difference in the economic conditions of the two countries being alone sufficient to make that which was profitable in France unprofitable here. The manufacture of Beet-sugar commenced in France when the Continental system of NAPOLEON, and the retaliation of England, had almost excluded cane sugar from every country under his dominion. From that time to the present Beet-sugar has always had the protection of an artificial price; in every country in the world, where it has been successfully produced, it has been under the stimulus of such artificial prices; and it is clear from every calculation yet submitted to the public, that the manufacture cannot be profitably carried on in the British Isles. To these conclusions we are compelled to give a somewhat reluctant assent. We wish, for reasons formerly stated, it were not so; but the laws of Nature, which have assigned certain products to certain climates are immutable, and if

quid
Quæque ferat regio et quid quæque recuset

was a study of importance to the tillers of the soil of sunny Italy, on whom the doctrine was inculcated by the author of the Georgics, it is not to be neglected with impunity by the British farmer of the present day.

## ROYAL AGRICULTURAL COLLEGE.

EXAMINATION PAPER OF JUNE 21, 1851.

[THE following answers are given to the above, at the request of several readers of the *Agricultural Gazette*, in page 458].

*Q.* 1.—*Ans.* The acts of husbandry in field No. 7 have consisted of ploughing and cleaning fallow after Wheat for green crops. A few acres were drilled with Carrots, in rows 18 inches apart. The seed was intimately mixed with 1½ cwt. of guano, and six bushels of turf ashes: the mixture was drilled in the same manner as corn. The remainder of No. 7 was sown with Swedish Turnips upon ridges. One plough formed the ridges for the dung. Four men filled dung, one laid it down, four spread it. Another plough immediately ploughed it in. By this means upwards of four acres were sown per day, with a strength of eight horses, ten men, and two boys, who drove dung carts. The operations in No. 9 have been, preparing the land, and sowing Oats, at the rate of four bushels per acre on one part, and on the other sowing Flax at the rate of two bushels per acre. The Oats and Flax have both done exceedingly well. The operations in Nos. 6 and 10, now one field, have been ploughing after Turnips, and otherwise preparing the land, and drilling Barley, and sowing grass seeds. No. 11, Wheat, was well hand-hoed for the two-fold purpose of destroying weeds and stirring the soil, to promote the growth of the crop. The hoeing appears to have done much good. No. 22 was ploughed up after Turnips, scarified, rolled, harrowed, and drilled with Barley. Sainfoin was sown in this field as the Barley was coming up. Both Barley and Sainfoin have grown well.

*Q.* 2.—*Ans.* The treatment of the sheep has been thus,—the ewes, after lambing, lived on Turnips and hay. During lambing, shelter was provided for the flock. So soon as the lambs were strong enough to follow their mothers, they were drafted off in lots, and allowed to run through skeleton hurdles, to nibble the young shoots of the Turnips. All the breeding ewes and lambs were allowed some bruised Oats for a time, until the Grass was ready to receive them. Those intended for fattening were then fed upon young Clover. The ewes received about a pound of Oats per day each; the lambs nearly as much as they could consume. The lambs have been selling since at prices ranging from 24s. to 21s. each. The ewes are also in good condition. The ewes and lambs intended for stores were turned upon old seeds, without any allowance of artificial food. They have not done nearly so well as the others. Many of the ewes were very old, and brought forth sickly lambs, which no after treatment seems to have recovered. The mortality among the flock was about 3 per cent. The breeding cows were kept upon roots, hay and straw chaff, until they were turned out to Grass. The calves, as dropped, were allowed to suck their dams for a fortnight after being calved. They were then fed upon skim milk and linseed jelly, given warm, with Carrots and hay chaff *ad lib.*

*Q.* 3.—*Ans.* The mare goes with young from 44 to 50 weeks; the cow 40 to 42 weeks; the sow, from 15 to 17 weeks; the ewe, from 20 to 24 weeks.

*Q.* 4.—*Ans.* Beans are usually sown on stiff clays, loams, and alluvial soils. They are sown according as the weather, &c., permits: if of the winter kind, from the beginning of October to the end of November; if spring Beans, from the middle of January to the middle of March. The most common kinds are the winter, or Russian—the Mazagan, horse, and French ticks. The usual methods of sowing them are by hand dibbling, and drilling, depositing the seed in either case at from two to four inches deep. The distance between the rows

ranges from 12 to 30 inches. The crops which they succeed are numerous; usually, however, after Wheat, Barley, Oats, and Clover leas. The crops which succeed them are Wheat, Barley, Oats, Clover, or green crops.

*Q.* 5.—*Ans.* Oats are usually sown after roots in England, after lea in Scotland. When two corn crops succeed each other, which, unless under exceptional circumstances, is not considered good farming, Oats come last. They are sown in February, March, and April. From 3 to 5 bushels of seed is sown per acre. The most prolific kinds are the black and white Tartarian; the most valuable kinds, per bushel, are the Scotch Potato Oat, Early Angus, and such as usually have a full kernel and little husk. They are drilled in rows varying from 4 to 8 inches.

*Q.* 6.—*Ans.* The best months for sowing Barley are usually March and April. The circumstance which determines the time of sowing, on light soils, is the consumption of the root crops on the land by sheep. Barley follows roots, as a rule, but sometimes follows Beans, Peas, and even Wheat. Grass and Clover-seeds are usually sown with Barley—in this case Clover and Grass follow, either for turning into hay, or feeding off. The most common kinds of Barley sown are the Chevalier and Old English. The long-eared Nottingham, and Potter's, are reckoned good kinds on many soils. From 2 to 3 bushels is a good seeding per acre. The soil and season determine very much what quantity of seed should be used.

*Q.* 7.—*Ans.* The three most common kinds of Clover and Grasses are the broad or red Clover the white, or Dutch Clover, and Cow-Grass; they are all of the Trefoil genus. The first, or red Clover, is an annual, the white is perennial, and the Cow-Grass is also perennial. Annual Grass and Clover seeds may be sown for one year; but very frequently perennials are sown also. For one year, 20 lbs. of red Clover seed per acre should be sown; or 12 lbs. of Clover seed, with 2 pecks of annual or perennial Rye-Grass; for two years, 6 lbs. of red Clover, 6 lbs. of white, and from 2 to 4 pecks of Rye-Grass, is a good seeding per acre.

*Q.* 8.—*Ans.* Carrots are sown in good seasons from the middle of March to the middle, or even end, of April. The seed, if drilled with a common machine, should be well rubbed with the hands, to prevent it from sticking together in clusters; it should then be thoroughly mixed with ashes of some kind, previously dried, to insure its regular delivery from the drill. The quantity of seed sown per acre is from 4 to 6 lbs.; if covered an inch deep, that is quite sufficient. The general cost of an acre of Carrots runs from 8*l.* to 10*l.*, including labour, manure, and rent-charges at 2*l.*

*Q.* 9.—*Ans.* Mangold Wurzel is sown in good seasons from the middle of April to the middle of May. The first week in May is the most usual time of sowing. The Orange, or Yellow Globe, has been found generally superior to any other kinds, especially on shallow soils. From 4 to 6 lbs. of seed is used per acre, planted at a depth of from 1 to 2 inches. The seed is frequently steeped in water for 30 or 40 hours before sowing.

*Q.* 10.—*Ans.* The months which Turnip sowing occupy, are May, June, and July. The tankard kinds are first sown; sometimes hybrids. Skirving's and Laing's Swedes are most usually sown; and several purple topped sorts are in great favour. From 3 to 4 lbs. of seed is sufficient per acre. Twenty tons of farm-yard manure is a good dressing per acre; 4 cwt. of guano, 16 bushels of bone-dust, 5 cwt. of superphosphate. An acre of Turnips costs generally from 7*l.* to 9*l.*

*Q.* 11.—*Ans.* An acre of Potatoes, when well manured, seed at 2*s.* per bushel, rent, charges, &c., at 2*l.*, and all labour included, seldom costs less than from 10*l.* to 12*l.* per acre.

*Q.* 12.—*Ans.* Flax is usually sown from the middle of March to the middle of April. About 3 bushels of seed is sown per acre, when the crop is grown for the fibre. When intended for seed, 1½ or 2 bushels per acre is sufficient. Flax succeeds root and corn crops.

*Q.* 13.—*Ans.* Hay-making usually commences about the beginning of June. Clover on ordinary farmed land comes in first. A ton and a half of Clover hay per acre would be a full average. Wheat, Beans, and Oats follow Clover and Grass.

*Q.* 14.—*Ans.* A sheep would consume about a quarter of its own weight, daily, of roots, with 1 lb. of Oats. A two-year-old beast would consume a cwt. of roots per day, with 20 lbs. of hay or straw. At present, a sheep on such feeding would be supposed to cost 3*d.* per week. A beast would cost nearly 6*s.*

*Q.* 15.—*Ans.* The annual cost of a pair of farm horses, allowing them to be worth 20*l.* each, would amount to about 80*l.* That is, including everything belonging to and necessary to work them. The chief items of expense are 25*l.* for manual labour in working them, 40*l.* for their keep, from 4*l.* to 6*l.* for interest of capital employed and annual deterioration of the value of the animals, 3*l.* for shoeing and harness, &c. &c. In addition to these sums there is a risk of losses by death or accident, combs and brushes for grooming, a cart or carts, plough, and other implements necessary for the various operations at which horses are employed. It thus appears that it is no light matter in calculating the cost of farm labour to ascertain how many horses would be necessary to work the farm in question. It is taken for granted that a man works two horses only on an average.

*Q.* 16.—*Ans.* A common iron plough costs from 4*l.* to 5*l.*; a one-horse cart, 12*l.*; a set of iron harrows, 4*l.* to 5*l.*; a two-horse iron roller, 10*l.* to 14*l.*

*Q.* 17.—*Ans.* A hundred acres of ordinary Grass would keep about 70 or 80 full grown beasts during the summer, or about 400 sheep.

*Q.* 18.—*Ans.* If Vetches were cut quite green there would be from 7 to 10 tons per acre, if an average crop. There would be nearly as much weight on an acre of Clover or Grass. From all the observations which have been made, and experiments which have been tried on the relative feeding qualities of green Clover and hay cut from the same extent of ground, it appears that well made hay is equally nutritious with the Grass of which it is composed when cut green. Therefore Grass and Clover lose nothing material for feeding purposes when turned into hay, except when destroyed by wet weather, which washes away the saline, saccharine, and other matters which form the most valuable portions of good hay.

*Q.* 19.—*Ans.* Too simple to require any notice.

*Q.* 20.—*Ans.* A day-book, ledger, and cash-book, are sufficient to keep the accounts of any farm.

*Q.* 21.—*Ans.* About 10 men would be necessary to carry and stack 10 acres of Clover in a day. A man to an acre is the usual calculation, when raking after carts, &c., is included. 10*d.* per square of 100 feet is a common price given for thatching; that is, 10 linear feet each way, which is of course 100 square feet.

*Q.* 22—*Ans.* Corn is ripe when the kernels become moderately hard—when the straw has ceased to afford any nourishment to the corn from the root. The advantages of reaping early are, a better quality of straw invariably; and, frequently, both corn and straw are improved by early cutting. Another advantage of early reaping is, that, on all ordinary farms, when this is delayed too long at first, much of the corn afterwards becomes too ripe. When corn of any kind becomes *dead* ripe, the straw is rendered hard, woody, and unpalatable to all kinds of stock; wet injures it more also than if cut moderately ripe. Dead-ripe Wheat has generally a thick husk, and is not so saleable as that cut early; it also sheds out more readily in harvesting. To Oats the same remarks apply. The average cost of harvesting corn per acre, including cutting, carting, stacking, and thatching, is about 8*s.* per acre. The usual prices paid for threshing Wheat, Beans, Oats, and Barley, per quarter, by flail, are—Wheat, 2*s.* 6*d.*; Beans, 1*s.* 4*d.*; Oats, 1*s.* 3*d.*; and Barley, 2*s.* The average price of threshing, by the College engine, would be about 8*d.* per quarter, including manual labour and coals. If the interest of the machine and repairs were included, that would likely more than double the cost per quarter.

*Q.* 23.—*Ans.* Sheep are usually put upon Turnips in the end of September and beginning of October. 100 acres of Swedish should keep 800 sheep for six months; 100 acres should keep 150 beasts.

## FARMING EXAMPLES.—SIR JOHN CONROY'S.

The lessons a well-cultivated farm offers to practical farmers are most valuable: they speak at once to every understanding and carry conviction, for there is no questioning of what one sees. It is for this reason that, after years of discussion on thick and thin seeding, wide and narrow drilling, horse-hoeing, deep and shallow draining, shed-feeding of stock, trenching as a means of permanently improving shallow land, &c., I would bring to the notice it deserves, the farming of Sir John Conroy, at Arborfield, near Reading, for here the practice of thin seeding, wide drilling, deep draining, trenching, room-feeding, open-field culture, &c., upon a poor farm of 326 acres, may at once be seen to have conduced to a fertility far surpassing what is usually found from land naturally greatly superior. I have been fortunate in seeing this farm at two different seasons—in the winter when I witnessed the process of fattening an amount of stock which has realised 4000*l.* in six months, and in the summer when the growing crops present a promise of an amount of corn which I believe to be equally singular from so small a breadth of land; and I have no hesitation in saying that the systems by which so much stock is kept and so much corn is grown, are most deserving the attention of farmers; and they must not be prevented from benefiting by the practice they may here witness from a feeling that Sir John is a rich man, and may be doing all this without reference to cost and return. Something of this impression I confess to having had before I entered his farm, from what I had heard he had been doing, as related by farmers who had not seen his farm; but this had long vanished ere I left it. I saw nothing that appeared to me to present the appearance of an expenditure without a return; nothing that I could bring myself to believe had not thoroughly answered as an outlay to make a profit, but quite the contrary. Sir John is part owner and part tenant of the land he occupies; for the part he rents he pays 42*s.* an acre. It would be difficult to find land in cultivation naturally of so poor a quality as has been a considerable portion of that which is included in the returns I allude to; and although they are so great, they could have only been gained by the very judicious and spirited means which were at first taken to bring this inferior soil into high fertility. The first operations have been to give this shallow land depth, and remove from it the water which has kept its vegetation weak and backward. It was drained 4 feet deep, and trenched with the spade 2 feet, wherever the impenetrability of the subsoil rendered these necessary; and the next was to provide buildings, to turn to best account the materials it afforded for enriching it. Sir John has carefully studied to make his farm a factory of manure, at least cost and with least waste. He has enclosed two yards with cattle buildings, and covered them in from the inclemency of the weather, with raised sheds. In one of the chambers he fattens his sheep, and in the other his hogs; these have floors, with open planks, so that the urine and manure all fall through into the yards underneath. The urine, after passing through the manure, collects into tanks, from which it is either discharged again on to dry matter, or is taken away. He has a steam-engine by which the corn is threshed, the straw cut into chaff or short lengths, and the cattle food ground.

He has the most improved implements to facilitate the cultivation, and to lessen manual labour, and to turn his produce to best account, so that I was struck with the small amount of labour and the general appearance of economy, as compared with the greatness of the returns. The farm comprises 256 acres of arable, and 70 acres of Grass land. The cultivated land all lies open and principally in one large field, without an interior hedge, or an overshadowing tree. The stock fattened off this land between the 1st January and the 1st July this year, amounts to—30 oxen, 800 sheep and lambs, 350 bacon hogs.

The crops are drilled in rows, none nigher than 13 inches, and the quantity of seed corn, Wheat, Oats, and Barley, sown, is from 2 to 3 pecks per acre. I cannot speak of the returns per acre; for although I could tell by the stacks and the stands that they must have been very large, I did not obtain the exact yield; but this I can say, that the growing corn, when I inspected it in June, presented an appearance I have on no land seen more promising; and the gross sales of stock and corn off this little farm must be over 6000*l.* a year. It is impossible to convey the impression which a sight of this farm creates of the skill and judgment of the individual who at a late period of life, and without any pretence as a farmer, has entered into agriculture, and has arranged, and superintends, and regulates the whole with so much science and success. I came away greatly impressed with the conviction I had been seeing profitable farming—a conviction that those who know me will say, I am generally slow in coming to, upon what is called gentlemen farming.

This farm also presents a lesson of considerable value to landowners, for they may learn from its present state the condition into which a farm must be laid out for a tenant to make the most of it, with reference to draining, removal of hedge-rows and timber, the supply of cattle-sheds and conveniences, and their most economical arrangement, which are matters it is a landlord's business to attend to; and Sir John will also tell them, although a game-preserver, that he cannot afford to have his corn cropped by hares and rabbits. This account would be imperfect if I did not further observe that Sir John has had two advantages which seldom fall to the tenant farmer's lot; he has been uncontrolled in laying out his land by any landlord restrictions, and he has had the necessary capital and spirit to avail himself of every improvement to advance his profits; and I must confess, had he not been so situated in both these respects, Arborfield must have continued but little distinguished from its adjoining farms. *Hewitt Davis, 3, Frederick's-place, Old Jewry, 20th July.*

## Home Correspondence.

*Beer Drinking.*—I regret to see that "A Labourer" cannot write his views of the necessity for beer, in the performance of hard work, without suspecting the motives of your correspondent "Falcon," in introducing the subject of intemperance to the notice of your readers. Any candid mind must give "Falcon" credit for the best intentions towards the labouring classes, but in my estimation he would better consult the interest and happiness of that most important class of the community, if, instead of recommending the moderate use, he had advocated the abandonment of all intoxicating beverages. I could soon prove to him that if we are to have these things used at all, we shall have them extensively abused; all experience proves it, and it is equally clear if we have buyers we must have sellers, with all the admitted evils of public houses, &c. But I will not further illustrate this part of the matter now, as my business is merely to support my former position, in opposition to the mere assertion of "A Labourer," that the most severe labour may be as well or better performed without beer than with it; indeed this question has now been so extensively tested for the last 15 years, that I am almost surprised that any well-informed person should doubt the capability of men to labour without, either in the heat of the fire or the sun, for the fact is not only confirmed by the past, but by the present daily experience of thousands of the sons of toil. Let me mention that of one of them, a workman of my own, who once laboured under the delusion that beer was necessary for agricultural labourers at any rate. He has now had an experience of seven years of entire abstinence from all intoxicating drink whatever, and he assures me he can perform his work with more ease to himself than when he used beer, and certainly I would never wish an agricultural labourer to do more work than he most cheerfully performs. But it may be asked, what does he drink then? and this is not an important question; but I am able to answer it, from having made the enquiry some time ago, without having the least intention at the time of making any use of it. On one of the hottest days this summer, when the thermometer stood at 86° in the shade, my man was mowing. Knowing he was a consistent teetotaller, I had the curiosity to ask him what he drank. "Vinegar and water," was his reply. "What proportion," said I? "About a table-spoonful of vinegar to a quart of water,"

was his answer. "What quantity do you drink in the course of the day?" "About two quarts," he replied, "in addition to my tea in the morning and afternoon." This beverage was so new to me, that I inquired a little further into its merits, and my man answered me that, if he was not a pledged teetotaller, he should use this drink in preference to any other, as he found he could do more work upon it than upon beer or cider; and this had been confirmed by the experience of many others to whom he had recommended it. Any acid is of course very pleasant to drink in hot weather, but, in addition to this, he found it kept his mouth free from that clam miness which is the accompaniment of thirst, and is much increased by strong drink; but, above all, it gave him a good appetite for his food, which is unquestionably the real source of that strength, for which mere stimulation is often mistaken. Now, I can well fancy how many an honest man of the old school will smile derisively at this, and, curling his lip, exclaim, "Vinegar and water, indeed!" Bear in mind, however, that this was the very beverage upon which the Roman soldiers encountered the then tremendous task of crossing the Alps; and, at any rate, it will be wise to put it to the test, before it is denounced as insufficient to enable men to perform all the reasonable labour connected with a farm—which I should hope was not very often at the rate of 18 hours per day, for 9s. per week. *S. Bowley, Gloucester, Aug.* 8.—If "A Labourer" will reduce his allowance of "several pints of beer" per diem, and restrict himself to his "pint and pipe," and will then take the trouble to read "Falcon's" remarks on drunkenness, from beginning to end, he will probably be better able to understand their meaning. The use and abuse of beer and cider are two very different things, which your correspondent appears to have jumbled up together, and no wonder after the account he gives of his usual proceedings. An increase of wages was suggested (instead f drinkings), to enable a man to share his earnings with his wife and family, which would surely be less selfish than swallowing quarts of beer and cider away from home. "A Labourer" says he toils from 3 a.m. to 9 p.m. for nine shillings per week! The writer is not afraid of trusting his character, as a master, to the peasants of the neighbourhood in which he resides. He allows his men 10s. per week without beer; they work 10 hours a day. It may be interesting to "A Labourer" to know that "Falcon" is a very early riser, an abstemious liver, seldom touching either beer or wine, works many hours in his garden, as a healthy amusement, though neither strong nor young; and he is considered a good judge of what an honest workman can do, if he feels inclined; he is not a large landed proprietor, and has travelled rather further than the cellar and stable, and does not intend to be deterred by a few hard words from pointing out to his fellow creatures the curse of drunkenness. The confused notions of "A Labourer" will compel "Falcon" to trespass further upon the columns of the *Gardeners' Chronicle* than was intended. "None are so blind as those that won't see," "None are so deaf as those that won't hear." *Falcon.*

*Carcase and Living Weights of Pigs.*

| No. of Pigs. | Live Weight. lbs. | Dead Weight. lbs. | No. of Pigs. | Live Weight. lbs. | Dead Weight. lbs. |
|---|---|---|---|---|---|
| 4 ..... | 798 ... | 548 | 3 ..... | 651 ... | 476 |
| 2 ..... | 532 ... | 374 | 2 ..... | 515 ... | 373 |
| 4 ..... | 896 ... | 595 | 1 ..... | 410 ... | 319 |
| 1 ..... | 238 ... | 177 | 1 ..... | 347 ... | 255 |
| 2 ..... | 253 ... | 168 | 1 ..... | 299 ... | 223 |
| 4 ..... | 989 ... | 695 | 2 ..... | 381 ... | 284 |
| 4 ..... | 1057 ... | 786 | 2 ..... | 486 ... | 360 |
| 2 ..... | 443 ... | 312 | 2 ..... | 231 ... | 177 |
| 6 ..... | 526 ... | 329 | 3 ..... | 577 ... | 402 |
| 2 ..... | 549 ... | 398 | 4 ..... | 770 ... | 503 |
| 2 ..... | 542 ... | 373 | 2 ..... | 389 ... | 284 |
| 2 ..... | 528 ... | 388 | 4 ..... | 595 ... | 410 |
| 2 ..... | 528 ... | 394 | 4 ..... | 774 ... | 526 |
| 5 ..... | 631 ... | 408 | 5 ..... | 570 ... | 361 |
| 3 ..... | 250 ... | 161 | 3 ..... | 529 ... | 362 |
| 6 ..... | 815 ... | 512 | 3 ..... | 644 ... | 436 |
| 10 ..... | 828 ... | 525 | | | |
| 3 ..... | 640 ... | 434 | 135 ..... | 23,667 ... | 16,357 |
| 4 ..... | 591 ... | 430 | | | |
| 6 ..... | 607 ... | 371 | Average | 176 ... | 121 |
| 4 ..... | 893 ... | 615 | | | |
| 3 ..... | 613 ... | 434 | Proportion, nearly ... | 3 ... | 2 |
| 2 ..... | 168 ... | 109 | | | |
| 10 ..... | 1584 ... | 965 | | | |

—*M. S., Dover.*

*Poultry.*—It may be interesting to some of your readers, who are breeders of poultry, to be made acquainted with a striking peculiarity in a family of the Cochin-China breed, which has lately fallen under my notice. A gentleman in the neighbourhood of Worcester, who was successful in obtaining a prize and silver medal for a pair of a white variety of the breed, at the Birmingham show last year, has now many of that colour; and as I have frequent opportunities of noticing them, it has struck me as very remarkable that, although he has many of very dark colour, that breed promiscuously with the white, none are produced with any dark feathers amongst the white—or any white feathers amongst the dark ones—which I can hardly suppose to be the case with any other of our various domestic breeds. *E. F. W., August* 4.

*West Highland Cattle.*—Supposing, from the extensive circulation of your Journal, it must necessarily fall into the hands of some persons who have a thorough knowledge of the Argyleshire breed of West Highland cattle, I avail myself of it to submit an interrogatory respecting a peculiarity I have observed in some of the families of that breed. A friend of mine has been a breeder of them in Herefordshire upwards of 20 years, keeping entirely to the pure breed, as originally obtained from Lord Strathmore and Mr. Bates, of Heddon-on-the-Wall, near Newcastle-upon-Tyne. In some of the originals, obtained from Lord Strathmore, there was a singular formation of the ear—having an appearance as if the point of it was slit or notched. In other respects, no variation in character from those having ears in the usual form. After breeding the stock so derived for many years, the distinction I particularly point at became almost entirely lost. But within these few years, a bull was obtained out of the North, of the same breed, and in his stock the peculiarity has re-appeared. I wish, therefore, some one of your correspondents, who may be able to give a satisfactory account of it, would, through the medium of your Paper, favour me with some opinion upon it—whether it has been considered to denote any particular strain of blood. That I have taken considerable interest in the Argyle breed, may be ascertained by a reference to the first volume of the "Journal of the Royal Agricultural Society," where there is an article of mine on that breed. I do not dwell on this vagary of Nature as a matter of importance, but from a desire to know what is thought of it in the native district of the breed. *E. F. W., August* 4.

*Grass Seeds.*—I last year had some agricultural Grass seeds from a house in Manchester, to lay down a field in permanent Grass; and as I thought favourably of Cocksfoot (Dactylis glomerata) I stipulated to have nothing but the seeds of this and Clover. This was sowed in July, with about three pounds of Rape seed per acre; but when it came up, thinking the Grass was not what it should be, I called the attention of the seedsman to it, and he assured me it was nothing but Cocksfoot. But this year, when the Grass comes into flower, I find that not one blade in fifty is Cocksfoot, but is principally Rye-grass, Soft-grass (Holcus lanatus and H. mollis) Meadow Fescue, Poa, &c. On this I have demurred to paying for the seeds, as they were guaranteed; but as I wish to do what is right, it has occurred to me that possibly the seeds of these Grasses may have been taken by the sheep that were fed upon the Rape last autumn, and I wish for your opinion as to whether it is probable these seeds would pass through the sheep with their vegetative properties unimpaired; as the land had not been in Grass for 25 years, at least, these seeds could not have been in the soil. *H.* ["Not one blade in fifty" being Cocksfoot, the seed could not have been what it was said to be.]

*The Caterpillar.*—In reading your remarks in your two last Numbers, upon the Turnip moths and their caterpillars, I turned my attention to inspect my Cabbage, Broccoli, Cauliflower, &c., which have the same appearance as all the Turnips in this neighbourhood; previous to your notice of the Turnip I saw the Cabbage tribe looking bad, but thinking that from the wet weather we have had, it was merely our well-known enemies, the snails and slugs, which in this moist climate do great mischief; however, I find the moths and caterpillars as plentiful upon the young Cabbage as upon the Turnips; and I fear we have got another enemy added to our already numerous stock, which if not speedily destroyed will lay waste our fields and gardens. I have dusted my Cabbage this evening with hot lime, in the hope that it may retard their progress. The Turnips are fortunately in a rapid state of growth here, as the weather has been extremely favourable for them, otherwise the new enemy would have probably destroyed the whole crop. I asked a friend last night how his Turnips were looking; he replied that the frost had destroyed them to a much greater extent than he had ever seen. I told him if he would accompany me to the field, I would perhaps show him that it was not the frost, but a caterpillar; accordingly we went, and found the whole field (17 acres) swarming with the pest. I mention this merely to show how careless we often are in searching after the cause of anything new. If any of your correspondents has seen the new caterpillar on Cabbages, and found out the means of destroying it, I shall feel thankful for the information. *A. Matthew, Moore Abbey, County Kildare, August* 4. P.S. My father, in writing to me from Scotland, complains of the frost hurting the Turnips. Probably, by this time, he has found out that it is even worse than frost. [The frost in the early part of July did a great deal of damage in Scotland.]

*Ferrabee's Chaff-cutter.*—Not being sure that my brother sent you the information respecting the chaff-cutter which you asked for, I enclose herewith a descriptive circular with a wood-cut on it. The first of these machines was sent out three years ago last Christmas; it has been almost constantly worked, cutting for a large number of beasts, and has not yet required new knives. Now it is a fair question—Where is a smooth-edged machine of which the same can be said, and who is the maker of it? We know one of the Roy. Ag. Soc. prize machines which has had two new sets of knives in less than half the time mentioned, to say nothing of the constant expence and inconvenience of taking them off to be sharpened. It certainly appeared to us rather strange that the writer in the *Agricultural Gazette* should have overlooked a machine possessing such distinctive properties. Does "I. A. C." or any other writer intend to make any comment on the absence of a system of machinery for threshing, dressing, &c., such being now frequently adopted with improved buildings. We entered very early (no doubt the first among agricultural machine makers), a steam-engine and a complete set of machinery for threshing, dressing, chaff-cutting, grinding, crushing, &c., to be put into motion (if approved), but we have less space than is allotted to makers of wheelbarrows and pitchforks. Does any one know how this arises? *J. Ferrabee, Phœnix Iron Works, Stroud.*—[Mr. Ferrabee's chaff-cutter was not noticed in our report of the Exhibition. The improvements in his chaff-cutter consist in the application of knives, formed to stand obliquely to the mouth of the feed box, whereby the material may constantly advance, for any length of cut, without rubbing against them. Combined with this important advantage is a peculiarly strong form of cutting edge, and, the knives being serrated on their backs, the sharpening is effected without removing them, a simple apparatus being attached to the frame for that purpose. These facilities render the machine eminently adapted for going at a great velocity, and for cutting very large quantities. The whole of the machine (excepting the hay box) is made of metal. There are three knives fixed to the fly-wheel by screw pins and nuts, by which their relative position to the mouth may be separately adjusted, or they may be adjusted altogether by shifting the fly-wheel, which is made to slide on its spindle. The material is drawn forward by two ribbed rollers, and is conducted to the mouth by a smooth roller. The upper roller and the upper portion of the mouth are moveable, to allow for variations in the thickness of feed, a proper pressure being maintained by a lever and weight. Cog wheels are employed for altering the length of cut, and, by changing them, four different lengths for food, and two for litter, can be produced. There is a contrivance for reversing the motion of the feed rollers without stopping the motive power, enabling the attendant to obviate accident from the introduction into the box of anything objectionable. Smooth-edged knives are also applicable to this machine, and are readily attached.]

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

RUSSIAN AGRICULTURE.—The Chevalier de MASSLOW, Secretary of the Imperial Agricultural Society of Moscow, on his visit to England for the purpose of attending the Windsor meeting, was the bearer of the following interesting presents on the part of that body to the Royal Agricultural Society of England: namely—

I. A series of 15 statistical maps of European Russia, in folio size, prepared expressly for the occasion from authentic data furnished by the Government exhibiting to the eye, by means of outline, figures, diagram, and colour, the following important details in amount as well as circumstance:—

1. The different geological characters of the country.
2. The variations of climate in different districts.
3. The average production of corn in the several localities during the last 10 years.
4. Classification of the different provinces according to the average price of corn during the same period.
5. Lines of transport for corn from different districts of the empire, to the metropolis.
6. Distribution of woods and forests.
7. Localities in which Flax and Hemp are grown.
8. Localities in which Tobacco is grown.
9. Localities in which Beet-root sugar is manufactured.
10. Number of sheep in each locality.
11. Number of horses in each locality.
12. Number of cattle in each locality.
13. Lines of transport for cattle from the Southern to the Northern division of Russia.
14. Places where agricultural exhibitions have taken place.
15. Distribution of the agricultural schools of the empire.

II. Sectional drawings on a large scale, of the original and simple, but (for the rich soil of Russia), effective field-implements of Russia, namely:—

1. Four drawings of Siberian ploughs and hoe.
2. Ten drawings of cultivating implements in Lesser Russia, with view of the mode of yoking the draught-oxen.

III. Printed reports, namely:—

1. Report of the Proceedings (in the Russian language), of the Imperial Agricultural Society of Moscow, for 25 years, from the date of its foundation to 1846.
2. Report of Proceedings (in German), from 1846 to 1850, under the following heads:—

1. Results of the Society's Operations.
2. Manufacture of Sugar from Beet-root.
3. Silk Cultivation.
4. Management of Bees.
5. Cultivation of Madder.
6. Education of the Labouring Population.
7. Personal Missions and Travels.
8. Foreign Associations, Journal, and Correspondence.
9. Improvement of Sheep-breeding.
10. Agricultural Schools, Model Farms, and Reading Clubs.
11. Manufactory for Implements.
12. Seed Depots.
13. Rewards, Presents, Communications.

3. Report of Proceedings (in French), of the Jubilee Fête of the Imperial Agricultural Society of Moscow, on the occasion of its 25th Anniversary, in 1846.

IV. Six specimens of Silk, grown with success in Russia, under a higher latitude than that of England; with a supply of Cocoons.

The Chevalier de Masslow, in laying these interesting presents before the Council, on the part of the Imperial Society of Rural Economy at Moscow, stated that both institutions having the same object in view, namely, the prosperity of practical agriculture, and the progress of agricultural science, it was his great wish that they should enter into a continual relation with each other. As a proof of the sincere wish of the Moscow Society to form this communication, they had deputed their Secretary, Chev. de Masslow, to offer these presents for the acceptance of the Royal Agricultural Society of England. He remarked that the first map of the Atlas of Russia then laid before the Council, represented the different qualities of earth in the agricultural districts of that empire, among which the black soil, which formed the foundation of the agricultural wealth of Russia, comprised about 17,000 square miles. The Moscow

Society were preparing, as a further present to the Society, a series of samples of this celebrated soil (to which reference has been made by Sir Roderick Murchison, Journal III., 125), taken in different localities, from the three different beds in which it occurred (of from one to four feet thick, each), with an analysis of the soil from each of these divisions, a memorandum of depth, and a statement of produce resulting in the several crops. These beds of earth constituted a natural stock of most fertile soil, replete with nutritive element, and requiring no manure—the action of the air on the stirred surface-soil calling into active operation the latent energies of this invaluable gift of Nature. It was on this account that their agricultural implements in Russia were so few and unvarying, but at the same time so perfectly efficient. That map also showed the occurrence throughout Russia of other geological circumstances, namely, of clay, sand, loam, peat, and salt; of morasses beyond the limits of grain-cultivation; and of rocky districts still further removed from agricultural localities. He also remarked on the second map, in illustration of the objects for which the atlas had been drawn up for the information of the Society, that it defined the limits of the cultivation of particular plants; showing, in the south, to what extent, northward, Maize might be grown; next, to what limit Vine cultivation extended; then the region for the growth of the Cucurbitæ or Gourd-family; higher up, the range of Rye cultivation; after that, the growth of Spring-wheat; and, most northward, the Barley districts. On each of the maps in succession, similar details of great agricultural interest were given; but as they were written in the Russian language, so little studied in England, the Chev. de Masslow kindly expressed his intention of forwarding to the Society an English translation of these annotations; and also, should it be the wish of the Council, it would give him great pleasure to publish the Moscow Transactions in the English language, as well as in the Russian, German, and French. He then referred to the specimens of silk grown at Moscow, and laid before the Council, which he thought not unworthy of the attention of the Society; as the cultivation of the Mulberry tree in 56° north latitude resolved the question of its capability of being cultivated for the growth of silk, in all the southern districts of Russia, where its production admitted of the greatest extension. When the further presents he had mentioned should reach the Society, along with 300 plants collected by his friend, M. Annenkoff, in the neighbourhood of Moscow, he trusted the Council would receive them also in the same kind spirit as they did those he then laid before them, and "as a proof of the desire of the Imperial Society of Rural Economy at Moscow to enter into friendly relations with the Royal Agricultural Society of England, both having the same noble scope of promoting the knowledge and practice of agriculture, for the mutual well-being of both nations and humanity."

The Council having unanimously agreed to accept these valuable presents, with their warmest thanks, Mr. Raymond Barker, Vice-President, in the chair, communicated this resolution to the Chevalier de Massloff personally, at the sitting of the Council, at which he had favoured them with his attendance.

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YORKSHIRE AGRICULTURAL.—The 14th annual meeting of this important Society took place on Tuesday and Wednesday, the 5th and 6th inst., at Bridlington. Whether we look to the territorial extent of Yorkshire or its character as a breeding county, distinguished alike for several descriptions of stock—short-horns, Leicester sheep, horses, and pigs, the County Society's meeting is entitled to a high position amongst the exhibitions of the year. The fact, however, of the Yorkshire Society's premiums being open to competitions for stock from any part of England makes its meetings of national rather than local interest, as unquestionably the best animals that have been exhibited at the Royal Agricultural show are again met with here, and found in the lists with other stock of local celebrity that has not been exhibited elsewhere. On this occasion, the meeting being held in a locality where the sheep and Turnip husbandry of Yorkshire is seen to the best advantage, the expectations which were entertained of a highly successful meeting were fully confirmed. The following gentlemen acted as judges on this occasion.

For Cattle: Mr. Wm. Hunt, Wortley Hall, Sheffield, Mr. Partholomew, Louth, and Mr. H. Smith, Drax Abbey, Selby. For Sheep and Pigs: Mr. W. Hessletine, Warlaby, Brigg; Mr. J. Bayldon, Hollinghurst, Wakefield; and Mr. D. Briggs, Oxcomb House, Louth. For Horses: Mr. C. Garfitt, Mere Old Hall, Knutsford; Mr. T. Sowerby, Newton Morrell, Darlington; Mr. W. Lacy, Panton Wragby, Lincolnshire. For Poultry: Mr. J. H. Charnock, Stanley; Mr. T. Gibbs, Saundby, Retford; and Mr. R. Pick, Sowerby, Thirsk. For Ground Implements: Mr. P. Love, Naseby, Notts; Mr. J. Almack, Beverley; and Mr. T. Scott, Broom Close, Boroughbridge. For Barn Implements: Mr. O. Wallis, Overstone Grange, Northamptonshire; Mr. T. Cuthwaite, Bainipe, Catterick.

On Tuesday, the implement yard was opened to the public, and the Council dinner took place in the public rooms at Bridlington Quay. Lord Londesborough, the President for 1851, occupied the chair. His lordship was supported on his right hand by Lord Hotham, and on his left by Sir John V. B. Johnston—on which occasion, Mr. H. S. Thompson read his paper "On the best methods of preserving and applying Farm-yard Manure," which was followed by a discussion. We purpose to give a full report of this discussion in another column. After dinner Lord Londesborough presented a testimonial to Mr. Milburn, the Secretary. This consisted of a handsome dinner, tea, and coffee service, and a richly chased salver, bearing the following inscription: "Presented to Matthew Marmaduke Milburn, Esq., by the landowners and occupiers, breeders and exhibitors of stock, at the meetings of the Yorkshire Agricultural Society, as a mark of their esteem, and of the sense they entertain of his unwearied exertions to promote the interest of agriculture. 5th of August, 1851." Mr. Milburn returned thanks in an appropriate speech.

IMPLEMENTS.—Having given so full a description of the machines and implements exhibited in the Crystal Palace, it is unnecessary here to particularise further than to say that the successful competitors on the present occasion are in most instances to be found at their stands in the Great Exhibition. We may observe, however, as a noticeable matter that the steam engine of Mr. Hornsby, which obtained the prize, is an improvement upon his engine which took the highest prize at the trials made by the juries of the Royal Exhibition. This engine we have the authority of Mr. Amos, the engineer of the Society for saying, in its trials at the Yorkshire meeting, performed the same work as Mr. Hornsby's prize engine now in the Crystal Palace, with a saving of 7 per cent. of fuel. We may observe, too, that Mr. Busby, the winner of the great medal for ploughs at the Royal Exhibition, did not put his ploughs in competition for the Yorkshire Society's prizes, and although they were exhibited, they were not tried against those to whom the prizes have been awarded.

The following is the award of prizes for implements—

PRIZES FOR IMPLEMENTS.—Ploughs.—9 inches deep: 1st prize, 5*l*, to Mr. Binks, Catterick; 2d 2*l*., to Mr. Barker, Dunnington, near York. 7 inches deep: 1st prize, 5*l*, to Mr. John Barker, of Dunnington, York; 2d, 2*l*., to Mr. Binks, Catterick. 5 inches: 1st prize, 5*l*., to Mr. Barker, Dunnington; 2d, 2*l*, to Mr. Teale, Leeds. Mr. Crosskill, of Beverley, 3*l*., for Williams's harrows. Mr. Hornsby, of Grantham, 5*l*., for drill for general use. Mr. Crosskill, 5*l*., for Garrett's horse-hoe. Mr. Bellerby, of York, 3*l*., for Norwegian harrow. Mr. Kearsley, of Ripon, 3*l*., for scarifier. Mr. Kirkwood, of Tranent, East Lothian, 3*l*., for drag; 2*l*, for sub-pulveriser. Mr. Bellerby, Silver Medal, for the various improvements in his cart. Mr. C. D. Young, of Edinburgh, Medal, for his improved churn; and 1*l*., for cheese-press, and for his cheap and portable rick-stand. Mr. Meynell, Northallerton, 1*l*, for his improved cradle, fork, rakes, hoes, &c. Mr. Summers, of Wold Newton, 2*l*, for his horse-hoe. Mr. Busbby, of Newton-le-Willows, 5*l*, for one-horse cart. Hill and Co., Dudley, 5*l*, for iron gates, &c. Mr. Crosskill, 1*l*., for liquid-manure cart; 2*l*., for Smith's horse-rake; 3*l*, for waggons. Mr. Richmond, Salford, Manchester, 3*l*., for steaming apparatus. Mr. Crosskill, 1*l*. for his root-washer. Mr. Graham, 1*l*, for washing-machine. Mr. Hornsby, 5*l*., for dressing-machine. Stanley and Co., of Peterborough, 2*l*, for Linseed Mill. Mr. Richmond, 2*l*., for corn-bruiser. Messrs. Clayton and Shuttleworth, of Lincoln, 10*l*., for best threshing-machine, and Silver Medal for their grinding-machine. Messrs. Hornsby and Son, 1*l*., for their steam-engine and Turnip-cutter.

WEDNESDAY—The show of stock on this day fully answered the most sanguine expectations, and the arrangements, with one exception, were highly satisfactory. We allude to the new mode of taking all the prize animals into one ring during the afternoon, and reading the award there. This plan was a decided failure. By drawing the attention of the whole of the spectators to one point, the inconvenience and crushing became very annoying to the spectator. It was not possible for one-tenth of the people present to get a view from the outer edge of the ring, and consequently it was soon broken into, and the arena became a scene of inextricable confusion. In fact, the whole interest of the yard was centred in a ring of 50 yards in diameter, and when the whole of the prize animals were brought into it, it was in vain to attempt anything like a careful inspection of any one amongst the incongruous crowd of horses, sheep, pigs, and cattle; while those parties who were taking a methodical inspection of the several lots were disappointed in finding, long ere they had gone through the whole of the stock, that the prize animals of the several classes were taken from their proper stands into this arena of winners, where it was impossible to get a view of them, much less to compare them with the unsuccessful competitors. We annex the list of the prizes awarded:

SHORT-HORNED CATTLE.—Best bull, 1st prize, 25*l*., to T. Wetherell, Kirkbridge, Darlington, for Earl of Scarborough; 2d, 10*l*., to Charles Towneley, Towneley-park, Burnley, for The Squire. (14 entries.) Commended—Robert Cantley's Eclipse. Best yearling bull, 1st prize, 20*l*., to Charles Towneley, Towneley-park, Burnley, for Garrick; 2d, 5*l*., to Benjamin Wilson, Brawith, for The Squire. (12 entries.) Best bull calf, upwards of six months old, 1st prize, 10*l*., to Wm. Smith, West Rasen, Market Rasen, for Matadore (5 entries.) Commended—Richard Booth's British Boy. Best cow of any age, in calf or milk, 1st prize, 15*l*., to Charles Towneley, Towneley-park, Burnley, for Alice; 2d, 5*l*., to Richard Booth, Warlaby, Northallerton, for Cherry Blossom. (16 entries.) Richard Booth's Plum Blossom, named in consequence of an objection being taken to one of the others. Best three-year-old cow, in calf or milk, and having had a calf, 1st prize, 10*l*., to John Kirkham, Hagnaby, Spilsby, for Songstress. (8 entries.) Commended—Benjamin Wilson's Seriousness. Best two-year-old heifer, in calf, 1st prize, 10*l*., to C. Towneley, Towneley-park, Burnley, for Butterfly; 2d, 5*l*., to Charles Towneley, Towneley-park, Burnley, for Ruby. (5 entries.) Best yearling heifer, 1st prize, 10*l*., to Henry Amble, Watkinson Hall, Halifax, for Miss Frances; 2d, 5*l*., awarded to Wm. Smith, West Rasen, Market Rasen, for Cottage Pride. (14 entries.) Highly commended—Benjamin Wilson's Beauty of Brawith, and Wm. Smith's Infanta. Best heifer calf, upwards of six months old, 1st prize 5*l*., awarded to Benjamin Wilson, Brawith, Thirsk, for Certainty 4th. (6 entries.)

CATTLE OF ANY BREED.—Best cow for dairy purposes, 1st prize, 5*l*., to J. B. Thompson, Anlaby, Hull, for Ellerton. (6 entries.) Best fat ox of any age, 1st prize, 5*l*., to John Simpson, Field House, Hunmanby, Scarborough. (5 entries). Best fat cow or heifer of any age, 1st prize, 5*l*., to Samuel Wiley, Brandsby, York, for Velina. (9 entries.)

LONG-WOOLLED SHEEP.—Best shearling ram, 1st prize, 20*l*., to John Taylor, Burnham, Barton-upon-Humber; 2d, 10*l*., to Wm. Abraham, of Barnetby-le-Wold, Brigg. (43 entries.) Best ram of any age, 1st prize, 10*l*., to John Borton, Barton-street, Malton, for a two-shear, bred by him; 2d, 5*l*., ditto, for a two-shear, bred by him. (27 entries.) Best pen of 5 ewes, 1st prize, 10*l*., to Robert Dawson, Sewerby Field, Bridlington; 2d, 5*l*., to William Simpson, of Kirby Grindalyth, Sledmere. George Walmsley, Rudston, Bridlington, named in consequence of an objection. (6 entries.) Best pen of 5 shearling wethers, 1st prize, 5*l*., to George Walmsley, Rudston, Bridlington, bred by him. (4 entries.) Best pen of 5 shearling gimmers, 1st prize, 10*l*., to George Walmsley, Rudston, Bridlington, bred by him. (4 entries.) Best pen of 5 shearling gimmers, 1st prize, 10*l*., to George Walmsley, Rudston, Bridlington, bred by him; 2d, 5*l*, George Simpson, Marton, Bridlington, bred by him. Highly commended—Wm. Abraham, Barnetby-le-Wold, bred by him. (7 entries.)

SOUTHDOWN SHEEP.—Best Southdown ram of any age, 1st prize, 15*l*., awarded to Lord Walsingham, Merton Hall, Thetford, Norfolk, for a shearling, bred by his lordship. Commended—Lord Walsingham, a shearling, bred by his lordship. (9 entries.)

PIGS.—Best boar — Large breed: 1st prize, 5*l*., to G. E. Taylor, Oatlands, Leeds, for the Dutchman, white, birth April 8, 1849, s. Milo, d. by Little John; 2d, 2*l*., to Fergus Ferguson, Walkington, Beverley, for Colossus. (10 entries.) Best sow, large breed, in pig or milk: 1st prize, 5*l*. to Charles Jackson, Goodramgate, York; 2d 2*l*., to Wm. Abbott, Woodhouse-lane, Leeds (8 entries.) Best boar—small breed: 1st prize, 5*l*., to G. E. Taylor, Oatlands, Leeds, for Wentlock Wiley, black and white, birth May 29 1849, s Old Wiley; 2*l*., to Thomas Wright, Woodhouse Carr, Leeds, for Young Ebor, birth July 6, 1847, s. Black Ebor, by Old Napoleon. (12 entries.) Best sow—small breed, in pig or milk: 1st prize, 5*l*., to G. E. Taylor, Oatlands, Leeds; 2d, 5*l*., to William Shaw, Horton, Bradford. (10 entries.) Best three store pigs, of the same litter, from 3 to 9 months old: 1st prize, 5*l*., to Ayscough Fawkes, Leathley, Otley; 2d, to John Walker, Bridlington. (5 entries)

HORSES.—Best stallion for hunters: 1st prize, 10*l*., to George Holmes, Thirsk, for Mr. Martin, f. 1844, s. Lanercost, d. by Voltaire; 2d, 3*l*., to Robert Blacker, of Ripon, for Theon, br., f. 1847, s. Emilius (10 entries.) Best stallion for coach horses: 1st prize, 10*l*, to John Stilborne, Bishop Wilton, Pocklington, for Protectionist, b., f. 1849, s. Master George, d. by Paulinus; 2d, 3*l*., to John Stockdale Skerne, Driffield, for Protection, b., f. 1846, s. Engineer, d. by Sheriff Catfoss. (18 entries.) Best stallion for roadsters: 1st prize, 10*l*., to James Taylor, Meltonby, Pocklington, for Sir Charles, ch, f. 1845, s. Performer, d by Merrylegs; 2d, 3*l*., to G. Leeman, York, for Performer, ch., f. 1841, s. Phenomenon, d. by Merrylegs. (9 entries.) Best stallion for agricultural purposes: 1st prize, 10*l*., to James Stockdale, Nafferton, Driffield, for Gaylad, f. 1848, s. Gaylad; 2d 3*l*., to James Stead, Bishop Thornton, Ripley, for Hercules, f. 1848, s. Crackwaggon. (14 entries.) Best mare and foal for hunting. 1st prize, 1*l*., to John Fewson, Twire House, Hedon; mare by Sancho, d. by Boradino, foal by Camillus. (8 entries.) Best mare and foal for coaching: 1st prize, 5*l*., to Wm. Bateson, Brigham, Driffield; bay mare, f. 1838, s. Hightborns, d. by Paragon, foal by Retreiver; bred by him. Commended—R. Mathison's b. Peg, f. 1824, s. Admiral, d. by Peerless; bred by M. Monkman. (5 entries.) Best roadster mare and foal: 1st prize, 5*l*., to William Jackson, Garton, Driffield, for ch. m., f. 1837, s. Merry Legs, d. by Dreadnought, (9 entries.) Best mare and foal agricultural purposes: 1st prize, 5*l*., to J. Simpson, Field House, Hunmanby, Scarborough, for Depper, f. 1830, s. Simpson's Bob, d. by Tinker, foal by Little John. (12 entries.) Best three-year-old hunting gelding, 5*l*., to T. Gofton, Thirkleby, Malton, for a br. g. by Delirium, d. by Tancred. (9 entries.) Best three-year-old hunting filly, 5*l*., to Edw. Walker, West Newton, Hull, for a b. f. by Scroggins, d. by Sir Launcelot. (5 entries.) Best three-year-old coaching gelding, 5*l*., to George Walmsley, Rudston, Bridlington, for a b. g. by Brutandorf. (5 entries.) Best three-year-old coaching filly, 5*l*., to John Smith, Marton Lodge, Bridlington, for a b. f. by Brutandorf, d. by Prince Albert. (3 entries.) Best two-year-old coaching gelding, 5*l*., to John Jackson, Molescroft Grange, Beverley, for a b. g. by Cato, dam by Turk. (6 entries.) Best two-year-old coaching filly, 5*l*., to John Smith, Marton Lodge, Bridlington, for Nancy, by Venture, d. by King George. (5 entries) Best three-year-old hackney gelding, 5*l*., to R Botterill, Garton Field House, Driffield, for a b. g. by Emelian, d. by Merrylegs. (5 entries.) Best three-year-old cob gelding or filly, not exceeding 14½ hands high, 5*l*, to George Scott, Market Weighton, for a br. by Fireaway. (2 entries.) Best three-year-old agricultural gelding, 5*l*., to George Simpson, Marton, Bridlington, for a blk. g. by Black Bob, d. by Little John. (3 entries.) Best three-year-old agricultural filly, 5*l*., to Isaiah Burdass, Thwing, Bridlington, for Depper, by Little John. (1 entry.) Best pair of horses, of either sex, for agricultural purposes, worked during the season, 5*l*., to John Simpson, Field House Hunmanby, Scarborough. (5 entries.) Best gelding or mare for agricultural purposes, 5*l*., to John Varley Hunmanby, Bridlington. (9 entries.)

The following prizes were the gift of the Burlington Local Committee:—Best hunting gelding, upwards of four years old, to have been hunted during the season, the Society's Silver Medal, to Henry Owston, Killerby Grange, Scarborough, for a ch. g., f. 1846, s. Sadler, d. by Old President. Commended—Botterill Johnson, Frodingham Bridge, Driffield, for a br. g., f. 1847, s. Emilian, d. by Sandbeck. (14 entries.) Best hunting mare, upwards of four years old, to have been hunted during the season, the Society's Silver Medal, to Henry Owston, Killerby Grange, Scarborough, for a br. m., f. 1847, s, Sadd'er, d. by Old President. (4 entries.)

POULTRY: Best 3 Dorking, male and 2 females; 1st prize, 15*s*, to R. J. Bentley, Eastwood House, Rotherham. (3 entries.) Best 3 Spanish, male and 2 females: 1st prize, 15*s*., to M. A. Irvine, Brompton, Pickering. Best 3 game, male and 2 females: 1st prize, 15*s*., to John Woodhouse, Bempton, Bridlington. Best 3 gold or silver pheasants, male and 2 females: 1st prize, 15*s*, to John Furby, Bridlington. Best 3 bantams of any kind, male and 2 females: 1st prize, 10*s*, to John Bower, Bramston, Bridlington. Commended: C. Forge, R. Taylor, and Dr. Pierson, Bridlington Quay. Best 6 chickens of any breed: 1st prize, 10*s*, to W. Jordan, Caythorpe, Bridlington. Best Spanish cock: 1st prize, 5*s*., to R. J. Bentley, Eastwood House, Rotherham. Best Malay cock: 1st prize, 5*s*. (No entries.) Best game cock: 1st prize, 5*s*., to John Woodhouse, Bempton, Bridlington. Best 3 green geese: 1st prize, 10*s*., to W. Jordan, Claythorne, Bridlington. Best 3 ducks, male and 2 females: 1st prize, 10*s*., to John Walker, Bridlington. Best 3 young ducks: 1st prize, 10*s*., to Mrs. Reynard, Sunderlandwick, Driffield. Best pair of young turkeys, male or female: 1st prize, 10*s*., to the Rev. T. Simpson, Hunmanby. Best pair of Guinea fowls, male or female: 1st prize, 10*s*., to Miss Eliza Creyke. Best 6 fancy pigeons of any kind: 1st prize, 10*s*., to S. Taylor, Bridlington 6 jacobins; 2d, 5*s*., to ditto, 6 nuns. Commended: John Bower, Barmston, Dr. Pierson, Bridlington, and George Auton, High Petergate, York.

EXTRA STOCK.—Four of the society's first class, and four of their second class Silver Medals will be given for extra stock which may be deemed by the judges worthy of their special commendation; two of each description of animals, viz., cattle, sheep, pigs, and horses, the property of members of the Society. Cattle: First, B. Wilson, Brawith, Thirsk, for the Lady of Brawith; second, John Robinson, Leckley Palace, George Simpson, Marton, Bridlington, for three aged ewes and a two-shear we her; second, Robert Crowe, Speeton, Bridlington, for a fat ewe, four-shear. (12 entries.) Pigs: First, Joseph Tuley, Matchless House, Keighley, for Sontag, sow, white; Sally 9th, sow, white. (11 entries.) Horses: First, Richard Stockdale, Skearne, Driffield, for Brilliant, entire horse; second, R. J. Bentley, Eastwood House, Rotherham, for a hunting colt. (17 entries.)

THE SHOW OF HORSES must, on the whole, be considered good, even for Yorkshire, where good horses are not very rare animals. The agricultural classes

were, perhaps, least up to the mark. The district of Bridlington is one where the heavy descriptions of horses are not bred. The several classes of young horses for hunting and coaching were well filled, and the winners were not the only first-class animals to be found. We may particularly mention the three-year-old hunting gelding; also the three-year-old coaching ditto, and the three-year-old hunting filly—the winners in their respective classes, as first-rate animals. The classes of younger horses were well filled. The prize for hunting stallions was awarded to Mr. Holmes' Mr. Martin, and the 2nd prize to Mr. Blacker's Theon. Mr. Martin is a fine powerful thoroughbred; his neck is not, however, exactly the thing for a hunter. Theon is the model of a horse—perfection, so far as symmetry is concerned—thoroughbred, and full of action—but wants size and power. The class was generally good. The prize for agricultural stallions was given to two clever three-year-olds, against a host of aged horses. The best hunting gelding, upwards of four years old, belonging to Mr. Owston, is a noble animal, upwards of 16½ hands high, with all the quality of an Arabian; his shoulder is, however, a little rough; he will scarcely go the pace we like to travel when we go "across country;" he is one of that sort capable of carrying 14 stone creditably, and, what is more, looking quite at home, with rather more than 6 ft. of scarlet and buckskin; for, after all, whether a little horse can or cannot do as much work as a great one, the latter will always command the preference with heavy weights, from the fact that horse and rider, in such cases, "look of a piece," as the song says.

The Short-Horns, though not numerous, were of first-rate character. Mr. Wetherell's Windsor prize bull again deservedly added to his laurels. Mr. Townley's young bull, Garrick, is a very fine animal, and was worthy of his success in the yearling class; his symmetry is excellent, his hair is scarcely up to the mark. Mr. Wilson's 2d prize yearling bull has some extraordinary making about him; he is, however, a little too Scot like, or dumpy, to suit us. Mr. Townley's cow, Alice, has the honour of beating Mr. Booth's Cherry Blossom. It would be invidious to criticise two such animals—such are always worth a prize. Mr. Kirkham's three-year-old cow does credit to the stock from which the Windsor prize yearling bull came. The two prize two-year-old heifers of Mr. Townley, and the prize yearling heifer (Miss Frances) of Mr. Ambler, were the gems of the show-yard. If Miss Frances had better hair she would be almost perfect. She does honour to her sire, Laudable, himself a Yorkshire prize winner at Leeds, and the parent of other prize animals at Windsor.

The Show of Sheep was superior to any we have ever seen. In point of numbers it was greater than the Society has exhibited on any other occasion, and in quality surpassed the meeting of the Royal Agricultural Society at Windsor. Of course we except Southdowns and Cotswolds, and refer merely to the show of Leicesters at Windsor. At Bridlington there were none of the very bad sheep that mingled in the lot at Windsor. As it is well known that the Yorkshire improved Leicester is much larger than the Leicester of the midland counties, has a fine face though not coarse fleece, stands upon a longer leg, has greater length of body, and a more gallant carriage, the fact that the whole of the rams, with five exceptions, in the class of shearlings, and four in the rams of any age, were Yorkshire sheep, will explain the reason of the classes appearing of a more even quality than they did at Windsor. It is a noticeable fact, too, that the Yorkshire Wold sheep-breeders do not shrink from high feeding, but bring out their show sheep in a condition that fully develops their points, however it may influence their qualifications. The prize shearling ram, belonging to Mr. Taylor, Barton-on-Humber, is a strong useful sheep; girth, 4 ft. 8 in, and has a capital back. His wool is of coarse staple, and has not been fairly shorn. If anything, he is light before his shoulder. No. 103, belonging to Mr. Abraham, obtained a 2d prize. He is not so good a sheep as many others to our mind. He has, however, more of the quality of the Leicester than Mr. Taylor's sheep, and it is difficult to imagine how two animals of so totally different styles could be placed next to each other in merit. A preference for one sheep completely disqualifies the other from favour. This sheep has hard loins, and light hind-quarters. Mr. Robinson, of Carnaby, showed some useful shearlings. No. 117 has a wonderful fore-quarter; girth 4 ft. 9 in., but is common behind—rumps down and coarse thighs. There is a want of style in Mr. R.'s sheep, but they are rare mutton makers. Mr. Louley's sheep—108 and 109—are good; necks a little light. Mr. Horsley has a very neat sheep, No. 116, quite to our taste in quality. Mr. Walmsley has two large sheep; girth 4 ft. 10 in., but too coarse in the bone. Mr. Borton's shearling, 128, is all we could wish in wool and style, but he is too small, hind legs too straight, and rather long face. Mr. Carter, Richmond, has some strong useful sheep, good backs, mutton loose, and bare underneath. Mr. Dawson's rams are not equal to his female animals shown in another class, deficient in neck and fore-vein. Mr. Simpson, Field House, Hunmanby, shows a very good lot, have wool, size, mutton, but wanting in style; rumps are anything but fashionable.

We are glad to observe our veteran friend, Mr. Wiley, still in the field, and what is more, not deteriorating, nay, not even standing still, but progressing with the most modern. Three very excellent sheep were in his pens, having all the quality that he has long been famed for, with length of wool, good back, and plenty of size—a point in which he has improved of late years.

*For best Ram of any Age.*—Both prizes were awarded to Mr. Borton. The first prize is a very fine animal, rather less than Mr. Borton usually exhibits. Wool beautiful. How Mr. B. manages to bring his sheep out in the way he does, is one of the mysteries of the age; but certainly his sheep have a fashion about them that few can approach. Whether Rowland or Oldridge have secured Mr. B.'s patronage, we are confident that either the Balm of Columbia, or "Thine own incomparable oil Macassar," would require no better testimonial than the skin of Mr. Borton's sheep would afford, upon which, by some means or other, we see wool which, for evenness of quality throughout the sheep, it is impossible to excel. The 2d prize sheep is not so much to our taste as the 1st; still, having in our eye the qualities of the 1st sheep, we do not see another that is so well entitled to the position. Mr. Abraham's rams in this class were very good. The old Norwich and Exeter prize sheep has some first-rate making, but his head is thrust too much into his shoulder; for although a thick neck is a good point, we are no advocates for a stiff one, and think that a sheep, like anything else, should be able to hold his head up in the world. The staple of wool is also extremely coarse. If wool buyers do not make any allowance for quality, then, unquestionably, as hair is heavier than wool, let our rams be as coarse in the quality as possible, and they will give us extra weight in the fleeces of our stock. Mr. Simpson Spofforth had a sheep in this class. This sheep took the shearling prize of the Yorkshire Society last year. He is perhaps the finest topped animal in the yard, great length, good back, rumps, flanks, &c., capital, but is bare underneath, and stands with his hind legs together. Mr. Carter has two strong useful sheep in this class; they approximate more to the New Oxfords than the Leicesters. Mr. Simpson, Hunmanby, has two good sheep in this class. The same remarks apply to these sheep as to the shearlings of the same exhibitor. Mr. Dawson has two useful sheep—necks deficient. Mr. Wiley has several fine animals; No. 168 we note as splendid hind-quarter and rumps, and altogether a first-class animal.

*Ewes* we must record as a fine class. Mr. Dawson, though unsuccessful in rams, with ewes seldom meets a rival. In this instance he exhibits a pen of the best animals we ever saw—length, girth, flanks, backs, rumps, and wool alike excellent. Mr. Simpson's (Kirkby Grindalyth) are much smaller animals, but beautiful in shape and quality; perhaps slightly deficient in the necks, and light of bone. Symmetry quite equal to Mr. Dawson's, but far behind in size and development of what are termed points. The shearling wethers of Mr. Walmsley, Rudston, well deserved a prize. They are an instance of what the Yorkshire Leicester can attain to at the age of 18 months. The shearling gimmer prize was likewise secured by Mr. Walmsley, beating Mr. Abraham's Windsor prize ewes. The best shearling Southdown ram, belonging to Lord Walsingham, Merton Hall, Thetford, Norfolk, was a creditable animal, as also the second belonging to the same owner. The prize sheep is of good size, girth 4 ft. 1 in., is evenly formed, capital thighs and twist, and rather light of wool.

The show of Pigs was not nearly so numerous as in past years. Boar of large breed, boar of small breed, sow of small breed. 1st prize in all these classes awarded to Mr. Taylor, Oatlands Mill, Leeds. Dutchman, large breed, winner of the first prize at Windsor, is a very fine animal, but a little too coarse even for the large breed.

Some very clever animals in the extra stock department were exhibited; we may particularly mention Mr. Wilson's heifer, Mr. Robinson's (Seckby Palace) heifer, and Mr. Tuley's sow Sontag.

## Review.

*The Colonial Magazine.* Edited by W. H. G. Kingston. J. Mortimer, 141, Strand.

While many are looking to draining and similar improvements for relief—while others are looking to an adjustment of the balance-sheet—and not a few to protection—a writer in the "Colonial Magazine," just published for August, proposes "a colony for our idle surplus." He traces no small amount of our present depression to a surplus stock of young landlords and tenants competing for land, to say nothing of eating off old folks' heads. In short, an over attachment to the mother country is the root of half our calamities.

The article is addressed to farmers and parties interested in colonial affairs, as "a brother's letters from a colony." The arguments of the writer, and the mode of treating his subject, are peculiar to himself, and although sometimes rather speculative for farmers, are yet upon the whole practical, and come home with considerable force; we shall therefore allow him to speak for himself. He introduces his subject thus:—

"My dear Brother,—Your several observations in reply to my last resolve themselves into two important topics—the emigration of your surplus numbers, and their settlement in your colonies. The sons and daughters of Adam, like busy bees, are subject to multiplication; and a healthy hive will swarm in fine weather, let politicians legislate as they may. Cloudy weather, with showers of rain, may protract such a phenomenon for a time—it is Nature's own doings; but a clear sky, and the result is as certain as the noon-day sun in the heavens. To check the progress of the latter in his onward course is just as possible, and much less dangerous than to house the busy surplus of the former, confining them within the narrow citadel of the parent stock for protection. The colonial hive is obviously your safest theory, for here there is plenty of honey for your surplus."

He then notices the effects which an increase of manure and machinery would produce with agricultural improvements generally, but arrives at the conclusion that "however necessary these may be for both landlords and tenants, yet so long as the present competition for estates and farms exists, with some 50 candidates after every good one which appears in the market, a satisfactory settlement of difficulties in this quarter is hopeless. No doubt your manufacturing and commercial interests have triumphed over difficulties almost insurmountable, by means of chemical and mechanical assistance, which otherwise unaided they would have sunk under; but they, while they have been doing so, have also at the same time been extending the sphere of their labours both at home and abroad, which British agriculture cannot do, because the field of her labours is limited within a narrow circle, while her offspring is daily increasing; for between landlords, tenants, and labourers, you have now annually added to the parent stock a large surplus number, without a single estate or farm being added to provide for it. Hitherto you have succeeded in wedging into your manufacturing towns your surplus; but this is no longer practicable, for your manufacturing and commercial classes are now entering the field, your keenest competitors for land, for in every province estates are being bought up by them, and not a few farms rented and farmed successfully!"

There is no small amount of startling fact involved in the above train of argument. An increase of draining, and such like improvements, would certainly give an increase of employment to the labouring classes; but that is not making provision for the surplus sons of landlords and tenants, now numbering something about 6000 annually; and, moreover, the number of labourers on the poor's roll would do all our draining, while steam ploughs, sowing, reaping, and threshing machines have an opposite tendency, as the author justly remarks. After combatting the "quack prescriptions" of our "political physicians," he arrives at the conclusion, "that British agriculture is labouring under two distinct maladies.

"1. You have fallen behind in the march of chemical and mechanical improvement—so much so, that you are unable to enter the market in competition with the foreign farmer. Once you were able to do so—to export corn, and other agricultural produce, and to undersell him in his own market; but now he has turned the table upon you, and is underselling you in the British capital! How do we account for such a change of circumstances? What kind of protection has enabled him to obtain this advantage over you? Obviously, that kind of protection which you yourself now stand in need of, viz., an increase of chemical and mechanical industry; for you are not now sufficiently far ahead to enable you to bear up under your greater load of public burdens.

"2. You have to support an idle surplus population, obviously the greatest public burden you have—a burden not merely composed of idle paupers, but of all who do not support themselves by their own industry. The idle sons and daughters of landlords and tenants are more expensive than paupers in a poor house," and so forth. The writer here goes on to show at some length that we pay more in poor-rates and family bills for our surplus than would settle them comfortably in a colony. "Such, therefore, being the malady of the parent stock, and such the malady of its offspring, your surplus, the cure for each is obvious." He concludes—

"To cure the parent stock you must push a little further ahead of your neighbours in chemical and mechanical industry; and, in effecting this, you will have greater difficulties to encounter than at any former period of your history; for the spirit of the present age is obviously averse to any one being ahead of another." Reference is here made to the effects of railroads, steam-navigation, and even the Great Exhibition itself, where the nations of the world are fraternising for the purpose of bringing "the agriculture of the world to a uniform degree of perfection." In point of fact, the Americans have beat us the other day at Tiptree-hall, while they are now delivering Wheat at Liverpool, at about 2*s.* per quarter of freight, from New York; a barrel of flour or salt-beef at from 6*d.* to 9*d.* M'Cormick's Virginian reaper, which beat Garrett and Son's reaping machine at Mr. Mechi's, with four horses and two men, will cut about 20 acres per day of Wheat, 4 quarters to the acre—80 quarters per day. Hence, during a harvest month, of 20 days, 1600 quarters. In 1849, 1500 machines, and in 1850, 1800 were sold and put in operation in the United States, so that harvest 1851 may see brought into the field 6000 machines, capable of reaping 9,600,000 quarters of Wheat in 20 days. Only think of 10,000 steam-ploughs, 30,000 sowing, reaping, and threshing machines in a prairie, with a railroad to New York. This is the protection which our American friends and agricultural people are pursuing. "The invitation of all nations to the Crystal Palace," as the writer says, "is worthy of the British character, but obviously calls upon our landlords and tenants not to slumber at their posts."

"On the other hand, the industrial resources of your colonial empire is the obvious remedy for your surplus." Steam-ploughs, &c., in a prairie, for instance.

"That landlords, tenants, and labourers, and more than the landlords, tenants, and labourers, of the mother country, are a species of cowards, in reference to emigration, can, we think, very easily be proved; for, if we suppose your colonies, by any supernatural agency, to be placed as near the English coast as the Isle of Wight, Ireland, or the continent of Europe, then the tide of emigration would be very different from what it is at present. Were such a change to take place during night, so that at sunrise our broad and fertile fields, with our inviting rivers, should make their appearance from your shores, then how merrily would the tidings spread over your enraptured provinces, banishing with departing night all the bugbears of a colony. Going out would then become fashionable in every sphere of life, even among old folks themselves, to the annoyance of those of their children left behind. Indeed a colonial estate would be in everybody's mouth, silencing all complaints, so that the angry blast of protection would then cease to blow, while rents would fall to the tenant's liking. In short, the wind which should blow your 3,000,000,000 of colonial acres so near you, would at the same time blow all the bad times from your doors for many a day to come. Now, what is the difference between your colonies situated where they are, and where we supposed them? Obviously only a few days' sailing, for which there is a superior climate, soil, and everything else. Such, therefore, being the facts of the case, the question resolves itself into this—that if old maids and bachelors could jump from shore to shore, as sheep do the ditch which intersects their walk, then parties in early life would pair like the happy birds in spring, and soon find their way into a colony to enjoy the manifold blessings of overflowing plenty; but otherwise, if they are called upon to lose sight of *terra firma*, then farewell to such a tide of prosperity, and welcome all the embarrassments of which you are at present so loudly complaining. Now, if this is not cowardice, it is certainly something not less ignoble."

After disposing of several objections to leaving a good land, to enjoy a better, he thus divides his subject:

"Consequently the grand question at issue resolves itself into the following four problems.

"1. To effect the emigration of the surplus population of the two communities, into which you are divided.

"2. To settle the rural party, or to establish colonial agriculture and the other parent branches of industry.

"3. To settle the urban party, or to invest capital in town lands, roads, railways, &c., in the most profitable manner.

"4. To find capital to accomplish this great work, or to effect the emigration and settlement of the surplus labour and capital of your money branch of industry in a colony."

He first proceeds to "organise" what he terms "the different members of a working system," commencing with the investment of capital in colonial agriculture. The article is not concluded, but is proposed "to be continued"—indeed the writer has no more than introduced his subject.

There are eight other articles in the magazine all less or more interesting to farmers. Indeed, to British agriculturists the "Colonial Magazine" is more interesting than to any other class, and therefore we willingly recommend it to the attention of the readers of the *Agricultural Gazette*.

### METEOROLOGICAL REPORT.—August.

(*Continued from p.* 494.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| *Aug. 7 | 11.20 p.m. | ... | 29.97 | NNE. Gentle. Fine day. |
| 8 | 7 a.m. | 29.93 | ... | NNW. Moderate. Fine day. |
| | | | | 2—3 P.M. Wind dying away, and breeze sprung up at SW. Barometer continued steady all day. |
| | 11 p.m. | ... | 29.93 | |
| 9 | 6 a.m. | ... | 29.94 | Gentle SW. breeze, and barometer steady. Hot sunny day. |
| | 10.40 a.m | 29.95 | ... | |
| | 10.45 p.m. | 29.95 | ... | |
| Sun. 10 | 8 a.m | 29.98 | ... | N. Calm; overcast; hazy. |
| | | | | P.M. Calm, but dark scud at times travelling from SE. to NW. very quickly. |
| | 10 40 p.m. | 29.98 | ... | |
| 11 | 6.35 a.m | 29.99 | ... | SSE. Brisk at times; barometer steady. Fine pleasant day. |
| | 10.30 p.m. | 29.99 | ... | |
| 12 | 6.55 a.m. | 29.97 | ... | A.M. S. and SSE.; gentle. Noon SSE., brisk; overcast and hazy. |
| | 6 p.m. | ... | 29.95 | Evening SSW. Clear and sunny. |
| 13 | 7 a.m. | 29.89 | ... | A.M. S.; almost calm. Fine pleasant day. |
| ‡ | 2 p.m. | ... | 29.87 | P.M. SW. Brisk. |
| | 10.30 p.m. | 29.88 | ... | Evening. Gentle. |

* Continuation of storm, moving northward over the German Ocean.

† A storm coming from the westward and crossing England to the eastward.

‡ A storm coming from the south, travelling northward.

Dorchester, Aug. 14th. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

Dorset Farm, *Aug.* 4.—Hay-making over, and Turnip sowing finished, we have now come to the most interesting season of the year—the commencement of harvest. In many places cutting is begun, and before the end of this week there will be a good deal done; and so far as we in this part of the country are concerned, we have good reason to be satisfied with the crops. They are, for the most part, heavy, and very equally ripened. Although we have had some heavy rains since the middle of July, yet they did little damage to the corn, as it was then past that stage when it is liable to fall; and now, with fine weather, the end of August will find most of it in the rick yard. We have had one of the finest seasons for hay-making that has been for many years, and hardly any bad hay has been made, and the crop in general was good. From the time that we began to carry, we never had a shower to stop us, in clearing off 150 acres; but then the weather that was so very fine for hay was against the Turnip crop; but they are in appearance much better than usual, although at present there is scarcely any prospect of their being an average crop. Many of the first sowings were eaten by the fly; and some of them, after they had on the rough leaf (a period when we think them safe), were destroyed, or, at least, very much damaged, by slugs; but the rains seem to have given them a stimulus that has put a stop to any further attack; and although they all look late, they are now growing. *G. S.*

## Notices to Correspondents.

Carrots: *Damon.* Thin them out to eight inches apart. The thinnings will be good food for the horse.

Cochin China Fowls: *F F.* The Cochin China fowl should have well defined feathers from the thigh to the foot. In many birds they extend almost to the extremity of the toe, but they are constantly destroyed in scratching and the various purposes of the foot; the stubs will however be found on close examination. *J. Tailey*, 113, *Mount street.*

Bread: *Anon.* The bitter flavour which is too apt to prevail in bread made from home-brewed ale, or indeed from purchased table-beer, yeast, can be effectually obviated by washing the ferment repeatedly with pure, very cold, water, suffering the yeast to subside, and then pouring off the water after every subsidence till the washings cease to bring away the bitter flavour. After which the yeast is to be strained through a quantity of good Wheat bran, such as a farmer obtains when he sends his own grist to the mill. This medium does not only correct the alkaloid bitter of the ferment, but adds fresh fermentive principle to it. But a better mode of working bread is to use the genuine German yeast. This substance confers no bitterness, and the required proportion for any batch of flour is estimated at 1 avoirdupois ounce to every pint and half of water, which will be used in making up a dough of sufficient substance to admit of thorough kneading.

Guano: *WE.* Two cwt. per acre, strewed between the rows of Turnips now, might or might not be useful, according as we had or had not rain enough to dissolve it and carry it down to the roots.

Kitchen Grate: *G J C.* We believe the best grate for cottagers, and the cheapest, is that sold by Pearse, in Jermyn-street. We have three of them at work, and they answer admirably.

Liquid Manure: *Subscriber.* Calculate the quantity of liquid manure that will drain into the tank. It ought to be large enough to hold two months' supply. The mode of making depends upon the materials you have at hand, and the nature of the subsoil in which you have to dig them. They must be provided with a pump; and we suppose you will make use of their contents by the water cart.

Mangold Wurzel Seed: *W H M.* When the seed stems are dry stack them up in a dry place, and thresh them in early spring; that is the best way of keeping the seed during winter.

Model Farming: *A Subscriber.* A specimen is given in an adjoining page. There is this difficulty, that we cannot mark out a route and advise your course and the points worthy of examination, without dragging people into what they may regard as a disagreeable publicity.—Can any one tell us the best food for young pheasants, in the absence of ants' "eggs."

Myremill: *J F F.* The discussion regarding the liquid manure system adopted on this farm, is reported in the 2d edition of Mr. Milnes' report on certain farms, which is to be had of T. Boxhill, Esq., Secretary to the Berwickshire Farmers' Club, Eyemouth.

Poultry: *Byron.* We cannot answer questions about dealers and prices without subjecting ourselves to advertisement duty. You must refer to our advertising columns.

Erratum. For 24th August, as the date of harvest near Ratho, Midlothian (see page 506), read 27th August.

## Markets.

### COVENT GARDEN, Aug. 16.

Peaches and Nectarines are still only sparingly supplied, but Pines and Grapes are abundant, and the trade for the latter two kinds of fruit is somewhat heavy. Cherries from walls are exceedingly good. Ripe Apricots and Greengage Plums are imported from the Continent in considerable quantities. West Indian Pines fetch from 2s. to 5s. each. Oranges and Lemons are scarce. Nuts remain nearly the same as quoted last week. Carrots, French Beans, and Peas are received in quantity. Potatoes are good in quality, and, as yet, free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Carnations, Pinks, Moss and Provins Roses.

#### FRUIT.

Pine-apples, per lb., 4s to 6s
Grapes, hothouse, p. lb., 2s to 5s
Peaches, per doz., 10s to 20s
Nectarines, per doz., 10s to 20s
Cherries, per lb., 6d to 2s
Melons, each, 2s to 6s
Strawberries, p. pottle, 6d to 1s
Currants, p. hf. sieve, 2s6d to 5s
Gooseberries, do., 1s 6d to 4s
Plums, per punnet, 1s to 2s
Apples, kitch., p. hf. sieve, 2s to 3s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Lemons, per doz., 1s to 2s
Oranges, per doz., 9d to 2s
— per 100, 6s to 14s
— Seville. p. 100, 7s to 14s
— — p. doz., 1s to 2s 6d
Nuts, Barcelona, p. bsh, 20s to 22s
— Brazil, p, bsh., 12s to 14s
Filberts, new, per 100 lbs., 80s

#### VEGETABLES.

Cabbages, per doz., 3d to 1s
Cauliflowers, p. doz., 6d to 3s
French Beans, per half sieve, 1s to 2s
Beans, per sieve, 1s 6d to 2s
Peas, per sieve, 1s 9d to 3s 6d
Potatoes, per ton, 45s to 80s
— per cwt., 2s to 5s
— per bush., 1s 6d to 2s 6d
Turnips, p. bunch, 2d to 4d
Cucumbers, each, 1d to 1s
Radishes, per doz., 6d to 9d
— Turnip, p. doz., 8d to 1s
Celery, p. bundle, 6d to 1s 6d
Carrots, per bunch, 4d to 6d
Spinach, per sieve, 1s 6d to 2s
Vegetable Marrows, per doz., 6d to 1s
Onions, p. bunch, 1d to 5d
Leeks, per bunch, 1d to 2d
Shallots, per lb., 3d to 6d
Garlic, per lb., 4d to 6d
Artichokes, per doz., 1s to 2s
Lettuce, Cab., p. score, 4d to 1s
— Cos, per score, 3d to 1s
Small Salads, p. punn., 2d to 3d
Horse Radish, p. bundl., 1s 6d to 6s
Red Beet, per doz., 1s to 2s
Mushrooms, p. pot., 1s to 2s
Sorrel, per hf. sieve, 6d to 9d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, per doz. bun., 2s to 3s
— Roots, p. bundl. 9d to 1s
Mint, per bunch, 1d to 2d
Basil, p. bunch, 3d to 4d
Marjoram, do., 3d to 4d
Watercress, p. 12 bunch., 4d to 6d

### HOPS.—Friday, Aug. 15.

Messrs. Pattenden and Smith report that the accounts on the whole come about the same from the plantations. The duty continues steady at 90,000*l.* Market very firm. One pocket of new Hops arrived yesterday from Mr. Henham, of East Peckham, Kent, and is offered at 12*l.* 12s. per cwt., in consequence of being very unripe, and wanting condition.

### COAL MARKET.—Friday, Aug. 15.

Hollywell, 14s.; Eden Main 13s. 6d; Tanfield Moor, 12s. 6d.; Wallsend Gosforth, 13s. 6d.; Wallsend Haswell, 15s.; Wallsend Hetton, 14s. 9d.; Wallsend Stewarts, 14s. 9d.; Wallsend Tees, 14s. 9d.—Ships at market, 44. Market firm.

### HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 14.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 70s | to 75s | Clover ... ... ... | 70s | to 85s |
| Inferior ditto .. ... | 55 | 65 | New do. ... ... ... | 60 | 78 |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 25 | 30 |
| New Hay .. ... | 58 | 70 | | J. Cooper. | |

The supply large, and trade very heavy.

Cumberland Market, Aug. 14.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s | to 80s | Inferior ... ... ... | 65s | to 80s |
| Inferior ditto... ... | 58 | 70 | New Clover ... ... | 65 | 80 |
| New Hay ... ... | 58 | 70 | Straw ... ... ... | 28 | 32 |
| Old Clover ... ... | 84 | 90 | | Joshua Baker. | |

Whitechapel, Aug. 14.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 72s | to 80s | Old Clover ... ... | 90s | to 95s |
| Inferior ditto ... | 63 | 70 | New Clover ... ... | 70 | 76 |
| New Hay ... ... | 63 | 68 | Inferior ditto... ... | — | 60 |
| Inferior ditto... ... | 40 | 50 | Straw ... ... ... | — | — |

### SMITHFIELD, Monday, Aug. 11.

The supply of Beasts is again large; the demand is also considerable; on the average, therefore, prices are not much lower. Sheep and Lambs are also plentiful, but the quality generally is inferior; consequently choice descriptions are fully as dear as of late. Trade is dull for Calves, and it is difficult to maintain Friday's quotations. From Holland and Germany there are 1066 Beasts, 5200 Sheep, 245 Calves, and 65 Pigs; from Spain, 700 Sheep; from France, 80 Beasts and 20 Calves; from Scotland, 100 Beasts; from Norfolk, 100; and 2500 from the northern and midland counties.

| | s. | d | s. | d | | s. | d | s. | d |
|---|---|---|---|---|---|---|---|---|---|
| Per st. of 8 lbs.— | | | | | Per st. of 8 lbs.— | | | | |
| Best Scots, Herefords, &c. | 3 | 4 to | 3 | 6 | Best Long-wools | 3 | 4 to | 3 | 6 |
| Best Short-horns | 3 | 2 — | 3 | 4 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 0 — | 2 | 10 | Ewes & 2d quality | 2 | 8 — | 3 | 0 |
| Best Downs and Half-breds | 3 | 8 — | 3 | 10 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | ... 4 | 0 — | 4 8 |
| | | | | | Calves | ... | ... 2 | 4 — | 3 8 |
| | | | | | Pigs | ... | ... 2 | 8 — | 3 8 |

Beasts, 4209; Sheep and Lambs, 33,000; Calves, 415; Pigs, 410.

Friday, Aug 15.

The supply of Beasts exceeds the demand, and on the average prices are lower. It is only in a few instances that 3s. 6d. is realised. Trade is exceedingly dull for Sheep, at barely Monday's prices, but there is more demand for Lamb at a small advance. Calves are still plentiful; trade is brisk, but prices are lower. From Germany and Holland we have 324 Beasts, 1690 Sheep, 393 Calves, and 68 Pigs; from Spain, 560 Sheep; from Scotland, 60 Beasts; 300 from the northern and midland, and 105 milch cows from the home counties.

| | s. | d | s. | d | | s. | d | s. | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 2 to | 3 | 6 | Best Long-wools | 3 | 4 — | 3 | 6 |
| Best Short-horns | 3 | 0 — | 3 | 4 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 0 — | 2 | 8 | Ewes & 2d quality | 2 | 8 — | 3 | 0 |
| Best Downs and Half-breds | 3 | 8 — | 3 | 10 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | ... 4 | 0 — | 4 10 |
| | | | | | Calves | ... | ... 2 | 4 — | 3 0 |
| | | | | | Pigs | ... | ... 2 | 8 — | 3 8 |

Beasts, 969; Sheep and Lambs, 13,690; Calves, 675; Pigs, 425.

### MARK LANE.

Monday, Aug. 11.—The supply of Wheat from Essex and Kent this morning was small, including a few samples of new (about 70 to 80 qrs.); the quality was coarse and thin; factors were compelled to submit to a decline of 1s. to 2s. per qr. upon the prices of this day se'nnight before sales could be effected; In the foreign trade there is a complete panic, and even at this reduction no progress could be made.—Inferior sorts of Barley are rather cheaper.—In the value of Beans and Peas there is no alteration.—Oats are in good demand, at a reduction of 6d. to 1s. per qr.—Flour is a very dull sale at the prices of Friday last.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk | White | 38—43 | Red | 35 | —38 |
| — — | fine selected runs | ditto 43—45 | Red | 38 | —40 |
| — — | Talavera | — | | | |
| — Norfolk, Lincoln, & York | White | — | Red | — | |
| — Foreign | | 32—48 | | | |
| Barley, grind. & distil., 21s to 24s | | Chev. 26—31 | Malting | 23 | —26 |
| — Foreign | grinding and distilling | 21—25 | Malting | — | |
| Oats, Essex and Suffolk | | 17—20 | | | |
| — Scotch and Lincolnshire | | Potato 21—24 | Feed | 19 | —21 |
| — Irish | | Potato 18—22 | Feed | 18 | —20 |
| — Foreign | Poland and Brew | 18—20 | Feed | 16 | —19 |
| Rye | | 23—25 | Foreign | — | |
| Rye-meal, foreign | | per ton — | | | |
| Beans, Mazagan | 25s to 27s | Tick 26—30 | Harrow | 26 | —30 |
| — Pigeon | 28 — 32 | Winds — | Longpod | — | |
| — Foreign | | Small 21—29 | Egyptian | 23 | —24 |
| Peas, white, Essex and Kent | | Boiler- 22—25 | Suffolk | 24 | —27 |
| — Maple | 25s to 27s | Grey 22—25 | Foreign | 24 | —30 |
| Maize | | White — | Yellow | — | |
| Flour, best marks delivered | | per sack 34—39 | | | |
| — Suffolk | | ditto 27—33 | Norfolk | 27 | —33 |
| — Foreign | | per barrel 18—22 | Per sack | 27 | —33 |

Friday, Aug. 15.—The arrivals of all grain this week have been small, and millers showing little disposition to purchase, prices of Wheat must be considered nominally the same as on Monday.—The business in Barley, Beans, and Peas is stagnant, and the value of either unaltered.—Oats must be written 6d. per qr. dearer than on Monday; the advance checks sales. Foreign Flour is entirely neglected, and to effect sales a reduction of 6d. to 1s. per sack and sour barrel would be accepted.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| July 5 | 43s. 5d | 25s 2d | 22s 5d | 27s 6d | 31s 8d | 28s 10d |
| — 12 | 43 6 | 25 8 | 22 0 | 22 5 | 32 6 | 28 8 |
| — 19 | 42 7 | 25 6 | 21 11 | 28 2 | 31 5 | 28 6 |
| — 26 | 42 5 | 25 7 | 22 0 | 27 0 | 32 3 | 28 7 |
| Aug. 2 | 42 4 | 25 9 | 22 7 | 25 7 | 31 1 | 28 3 |
| — 9 | 42 3 | 25 11 | 21 7 | 28 5 | 31 4 | 28 1 |
| Aggreg. Aver. | 42 9 | 25 7 | 22 1 | 28 2 | 31 9 | 28 6 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | July 5. | July 12. | July 19. | July 26. | Aug. 2. | Aug. 9. |
|---|---|---|---|---|---|---|
| 43s 6d | ... | | ... | ... | ... | ... |
| 43 5 | | ... | ... | ... | ... | ... |
| 42 7 | ... | ... | | ... | ... | ... |
| 42 5 | | ... | ... | | ... | ... |
| 42 4 | ... | ... | ... | ... | | ... |
| 42 3 | ... | ... | ... | ... | ... | |

Liverpool, Tuesday, Aug. 12.—The arrivals from Ireland and coastwise this week have been quite trifling, and those from abroad good. Owing to the continuance of very fine weather our trade has been quite inactive, and quotations must be considered nominal. At this morning's market there was a small attendance of the town and country trade, who evinced little disposition to purchase, and, where business was done, holders had generally to make some concession. Wheat may be quoted fully 2d. per 70 lbs. lower, with a slow sale. Fine Flour was not easier to buy, but inferior was 1s. per sack and 6d. per barrel lower. Oats and Oatmeal being scarce brought full prices. Barley, Beans, and Peas were without change in value or demand. Indian Corn as last quoted.—Friday, Aug. 8.—Having but very few country millers at our Corn Exchange to-day, the sales of Wheat were altogether trivial in amount, and Tuesday's rates scarcely maintained. Barley, Malt, Beans, and Peas, upon a moderate demand, merely sustained their previous value. Oats and Oatmeal, although still scarce, were little noticed, and the turn cheaper. Indian Corn on the spot was taken sparingly again to-day, at a decline of 6d. per qr.

THE ROYAL EXHIBITION.

FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, Potter, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following :—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1¾ in. | 6 | 4¾ in. | 11 | 8¼ in. | 16 | 15 in. |
| 2 | 2¼ ,, | 7 | 5½ ,, | 12 | 9½ ,, | 17 | 16 ,, |
| 3 | 2¾ ,, | 8 | 6¼ ,, | 13 | 11 ,, | 18 | 18 ,, |
| 4 | 3¼ ,, | 9 | 7 ,, | 14 | 12½ ,, | 19 | 20 ,, |
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| Budding upon body | Sap, bud, treatment of | Graft, binding up and finishing |
| Bud, insertion of, into stock | Shape of trees | Grafting, advantage of |
| Bud, preparation of, for use | Shoots and buds, choice of | Grafting, disadvantage of |
| Buds, dormant and pushing | Shoots for budding upon, and their arrangement | Operation in different months |
| Buds, failing | Shoots, keeping even, and removing thorns | Preliminary observations |
| Buds, securing a supply of | Shortening wild shoots | Roses, catalogue and brief description of a few sorts |
| aterpillars, slugs, and snails, to destroy | Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending | Scion, preparation and insertion of |
| Causes of success | | Scion, choice and arrangement of |
| Dormant buds, theory of replanting with explained | | Stock, preparation of |
| Guards against | | APPENDIX. |
| Labelling [wind | | A selection of varieties |
| Loosing ligatures | | Comparison between budding and grafting |
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| Mixture for healing wounds | | |
| Pruning for transplantation | | |

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CONTENTS.

| | | |
|---|---|---|
| African Lilies | Gilias | Plums |
| Agapanthus | Gooseberries | Polyanthus |
| Anemones | Grafting | Potatoes |
| Annuals | Green fly | Pruning |
| Apples | Heartsease | Privet |
| Apricot | Herbs | Propagate by cuttings |
| Auriculas | Herbaceous Perennials | Pyracantha |
| Beans | Heliotrope | Radishes |
| Beet | Hollyhocks | Ranunculus |
| Biennials | Honeysuckle | Raspberries |
| Black Fly | Horse-radish | Rhubarb |
| Books for Cottagers | Hyacinths | Rockets |
| Borage | Hydrangeas | Roses |
| Borecole | Hyssop | Rue |
| Box edgings | Indian Cress | Rustic vases |
| Broccoli | Iris | Sage |
| Brussels sprouts | Kidney Beans | Salvias |
| Budding | Lavender | Savoys |
| Bulbs | Layering | Saxifrage |
| Cabbage | Leeks | Scarlet Runner Beans |
| Cactus | Leptosiphons | Seeds |
| Calceolarias | Lettuce | Sea Deisy or Thrif |
| Californian Annuals | Lobelias | Seakale |
| Campanulas | London Pride | Select Flowers |
| Carnations | Lychnis, Double | Select Vegetables and Fruit |
| Carrots | Marigold | Snails and Slugs |
| Cauliflowers | Marjoram | Snowdrops |
| Celery | Manures | Spinach |
| Cherries | Marvel of Peru | Spruce Fir |
| China Asters | Mesembryanthemums | Spur pruning |
| China Roses | Mignonette | Stocks |
| Chrysanthemums, Chinese | Mint | Strawberries |
| Chives | Mustard | Summer Savory |
| Clarkias | Narcissus | Sweet William |
| Clematis | Nemophilas | Thorn Hedges |
| Collinsias | Œnothera bifrons | Thyme |
| Colewort | Onions | Tigridia Pavonia |
| Cress | Pæonies | Transplanting |
| Creepers | Parsnip | Tree lifting |
| Crocus | Parsley | Tulips |
| Crown Imperials | Peaches | Turnips |
| Cucumbers | Pea-haulm | Vegetable Cookery |
| Cultivation of flowers in Windows | Pears | Venus's Looking-Glass |
| Currants | Peas | Verbenas |
| Dahlias Daises | Pelargoniums | Vines |
| Dog's-Tooth Violets | Perennials | Virginian Stocks |
| Exhibitions, preparing articles for | Persian Iris | Wallflowers |
| Ferns, as protection | Petunias | Willows |
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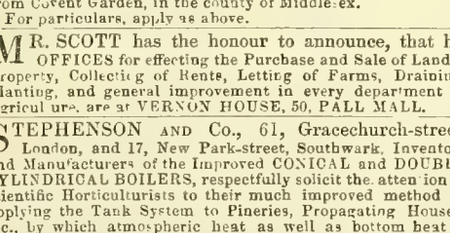
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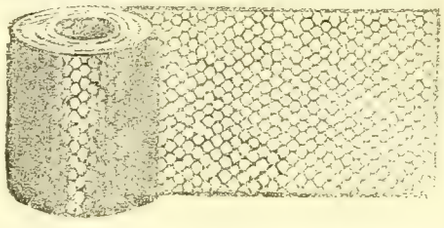


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No. 34—1851.] SATURDAY, AUGUST 23. [PRICE 6*d.*


INDEX.


Agricultural Society of England 539 *a*
Agricultural Improvement Soc. of Ireland ... 541 *b*
Allamandas ... 534 *b*
Aquaria ... 536 *a*
Beans, disease in ... 531 *a*
Bees, robber ... 533 *b*
Beet sugar ... 539 *a*
Birds, British song ... 532 *b*
British Association ... 533 *a*
Calendar, Horticultural ... 536 *a*
Canaries in the open air ... 534 *b*
Crystal Palace, substances used as food in ... 537 *c*
Dahlia show at Vauxhall ... 535 *a*
Farming examples ... 538 *b*
Fleming's salting machine ... 533 *c*
Food, substances as, in the Crystal Palace ... 537 *c*
Flowers, seedling ... 535 *b*
Footscray nursery ... 535 *b*
Forest pruning ... 532 *a*
Fuchsia corallina ... 533 *c*
Gooseberries, prize ... 533 *b*
Horticulture in Canada ... 535 *b*
Ireland, statistics of ... 537 *a*
Lettuces ... 534 *b*
Lime, Prof. Way's lecture on ... 540 *a*
— phosphate of ... 539 *a*
Mangold and Swedes ... 539 *a*
National Floricultural Soc. ... 534 *c*
Nightingale ... 534 *b*
Orchids for the Million ... 532 *a*
— Dr. Wight's, rev ... 535 *a*
Peat, chemical products of ... 535 *c*
Pinuses, rate of growth in ... 534 *b*
Plants, summer treatment of ... 533 *b*
Ponds, green ... 534 *a*
Potato disease ... 531 *a*—533 *c*
Reaping machine, American ... 538 *c*
Royal South London Flori. Soc. 534 *a*
Seeds, vitality of ... 533 *a*
Smithfield a winter garden ... 531 *b*
Strawberry culture ... 534 *a*
Sugar, Beet ... 539 *a*
Tardebigg Cottagers' Show ... 534 *c*
Toad in flint ... 535 *c*
Walks, to make ... 533 *c*
— and Fleming's machine ... 533 *c*
Weather, the ... 542 *c*



THE ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN.—The last EXHIBITION of the above Society this season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, the 3d of SEPTEMBER, 1851 (open to all Exhibitors), when prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Dahlias, Roses, Cut Flowers, Verbenas, Hollyhocks, Antirrhinums, Fruit, &c. In addition to the prizes offered by the Society, extra Prizes are offered by Members for Honey, Hollyhocks, Floral Devices, and Fruit; also by Mr. Domeyer, three Prizes for three blooms of the Queen of the Fairies Dahlia; by Mr. T. Barnes, four Prizes for three blooms of Barnes's George Glenny Dahlia; and by Mr. C. Turner, three Prizes for six Dahlias sent out by himself in 1851.

Lists of Prizes, and the Rules for Exhibitors, may be obtained from JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

SOUTH OF ENGLAND HORTICULTURAL FETE. —The SECOND EXHIBITION will be held (by the kind permission of W. O. COLT, Esq.), in the grounds at ROWNHAMS, near Southampton) on the 5th of September, when a magnificent display of Flowers, Fruit, &c., may be anticipated. Prizes will be competed for to the amount of 40*l.* in money, besides a Lady Patronesses' Subscription Purse, to be given extra to Cottagers within eight miles of Rownhams, and a Silver Cup of 5*l.* by John Colt, Esq. Two Military Bands will be in attendance.

A list of the Prizes, &c., and every particular, may be obtained on application to Mr. W. H. ROGERS, Nurseryman, 130, High-street, Southampton, Honorary Secretary.

THE SHACKLEWELL DAHLIA, HOLLYHOCK, AND MISCELLANEOUS FLOWER SHOW, will be held in the grounds of Grove House, Shacklewell, on TUESDAY, September 9th, 1851. The Prizes for the best SIX NEW DAHLIAS let out this season are 40*s.*, 35*s.*, 32*s.* 6*d.*, 30*s.*, 27*s.* 6*d.*, 25*s.*, 22*s.* 6*d.*, 20*s.*, 17*s.* 6*d.*, and 15*s.* Schedules containing a List of other Prizes, and Flowers qualified to compete for the above Prizes, are ready, and may be had of Mr. C. E. ALLEN, 4, Norfolk-place, Shacklewell, near London.

ROSHERVILLE GARDENS, GRAVESEND.—A GRAND DAHLIA AND LATE FLOWER SHOW will take place on TUESDAY, the 2d of September next. Particulars may be obtained of W. A. COOMBE, Esq., Honorary Secretary, Northfleet, Kent; or at No. 3, Bridge-street, Westminster, London.

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JAMES CUTHILL, Camberwell, London.

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Post-office orders payable at Kennington-cross.

STIRLING CASTLE PINE STRAWBERRY.—The Subscriber begs to intimate that this variety, sent out by him last spring, has fully sustained the character then given as to its superior size, productiveness, and flavour. In support of this he is prepared to furnish the testimony of numerous gentlemen, gardeners, and nurserymen, whom he furnished with plants. Healthy plants may now be had at the reduced price of 5*s.* per 100, or, free by post, 1*s.* per doz.
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GRAPE VINES.
J. WEEKS AND CO. beg most respectfully to call the attention of the nobility and gentry to their fine collection of VINES, which are very strong and well grown this season. They are now fit for sending out, both for Fruiting in pots and planting generally. Early orders will oblige, and shall have the best attention.
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WOOD AND INGRAM have a few fine plants in pots of the above celebrated fruit, abundantly furnished with laterals; and which would, consequently, make fine specimens for Fruiting in Pots; or to the trade, who are now working, they will afford an immediate supply of fine healthy buds. The usual discount to the trade.
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THE FINEST NEW ROSES OF THE SEASON.
HYBRID PERPETUAL QUEEN VICTORIA. (PAUL'S.) This is unquestionably the finest New Rose of the season; it is a seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly waxlike in appearance, and distinct from every other. Plants, in November, 10*s.* 6*d.* each, with the usual discount to the Trade when three are ordered at once.

CLIMBING PERPETUAL, ROBERT BURNS (PAUL'S). Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedole in colour; like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants in November, 7*s.* 6*d.* each.

N.B. Each of these Roses has obtained a first class certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.
A. PAUL and SON, Nurserymen, Cheshunt, Herts.

SUTTON'S DESCRIPTIVE PRICED CATALOGUE OF HYACINTHS AND OTHER BULBOUS FLOWER ROOTS is just published, and will be forwarded, post paid, on receipt of two penny postage stamps.
Best Hyacinths, by name, 6*s.* to 9*s.* per dozen.
Ditto mixed 3*s.* per dozen.
Reading Nurseries, Reading, Berks, Aug. 23.

MILDEW.
EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21*s.*, and upwards. The Trade supplied by Barber and Groome, Holborn, London.

This Machine has been used by the following persons, and the highest testimonials have been received as to its valuable properties, in effectually destroying the Mildew on Grapes, Peaches, Peas, and all other horticultural produce:—Dr. Plomley, F.R.S.; Mr. Ingram, gardener to her Majesty at Windsor; Mr. Smith, Superintendent at the Royal Gardens, Kew; Mr. Iveson, Sion House; Mr. Glendinning, Chiswick; Mr. Thompson, Horticultural Society's Gardens; Mr. W. P. Ayres, Blackheath; Mr. Gaines, Battersea; Mr. Cole, gardener to — Colyer, Esq., Blackheath; Mr. Robson, gardener to Earl Cornwallis, Linton Park; and many other scientific and practical men.—High-street, Maidstone, Aug. 23.

# EXHIBITIONS IN THE GARDEN

OF THE

# HORTICULTURAL SOCIETY OF LONDON,

FOR THE YEAR 1852.

## THE EXHIBITIONS WILL TAKE PLACE ON THE SECOND SATURDAYS IN MAY, JUNE, AND JULY.

## SCHEDULE OF THE PRIZES.

## FLOWERS.

*(Pots are to be measured inside, one inch below the rim.)*

### Division I.—IN WHICH NURSERYMEN AND PRIVATE GROWERS EXHIBIT INDEPENDENTLY OF EACH OTHER.

1. Pelargoniums; in collections of 12 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. GB—SG—CE.

N.B. The collections in which the varieties are most distinct *will have the preference.*

2. Pelargoniums; in collections of 6 varieties, in 11-inch pots. SG—CE—LS.

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.

3. Fancy Pelargoniums; in sixes, in 8-inch pots. SG—CE—LS.
4. Scarlet Pelargoniums; in sixes; in 8-inch pots. *(In July only.)* CE—LS—SK.
5. Roses, in pots; in collections of 12 distinct varieties, in 13-inch pots. GB—SG—CE. *(In May and June only.)*

N.B. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

6. Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the two next numbers, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable. No one can take more than one prize in the three classes of Heaths.

7. Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS.
8. Cape Heaths; in sixes; grown in 8-inch pots. CE—LS—SK.
9. Carnations, in collections of 12 distinct varieties, in 11-inch pots. CE—LS—SK. *(In July only.)*
10. Carnations, in collections of 24 distinct varieties *(in July only)*, in growers' boxes. LS—SK—SB.
11. Picotees, in collections of 12 distinct varieties. CE—LS—SK. *(In July only.)*
12. Picotees, in collections of 24 distinct varieties *(in July only)*, in growers' boxes. LS—SK—SB.
13. Yellow Picotees, in collections of six distinct varieties, in 11-inch pots *(in July only)*. LS—SK—SB.
14. Yellow Picotees, in collections of 12 varieties *(in July only)*, in growers' boxes. SK—SB—C.
15. Pinks; in collections of 12 distinct varieties. SK—SB—C. *(In June only.)*
16. Pinks, in collections of 24 distinct varieties, in growers' boxes. *(In June only)*. SK—SB—C.
17. Calceolarias, in sixes; in 8-inch pots. CE—LS—SK.

N.B. No medals are to be awarded unless the plants are in very high health and extremely well grown. *(In May and June only.)*

### Division II.—IN WHICH NURSERYMEN ALONE CAN SHOW.

18. Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

### Division III.—IN WHICH ALL PERSONS ARE ADMITTED TO EQUAL COMPETITION.

19. Single specimens of very superior cultivation, excluding everything which can be shown singly in other numbers, and plants not in flower. CE—LS—SK

N.B. No one can take more than one prize in this number.

20. Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB.

N.B. Calceolarias, Fuchsias, Orchids, and Pelargoniums are excluded from all the four classes of Stove or Greenhouse plants. Only three species or varieties of the same genus can be allowed in this and the following number, and no two specimens of the same kind.

21. Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG.
22. Stove or Greenhouse plants; in collections of 6 plants, in pots or tubs not less than 20 inches in diameter. GK—GB—SG.

N.B. Only two species or varieties of the same genus can be allowed in this number.

23. Stove or Greenhouse plants; in collections of 6 plants, in pots not exceeding 13 inches in diameter. SG—CE—LS.

N.B. Not more than one species or variety of the same genus can be allowed in this number. No one can show in more than one of the classes of Stove or Greenhouse plants except No. 22.

24. Greenhouse Azaleas in 12 distinct varieties. GB—SG—CE.
25. Greenhouse Azaleas; in 6 of the newer kinds, in 8-inch pots. SG—CE—LS.
26. Greenhouse Azaleas; in 6 distinct varieties. SG—CE—LS.

N.B. No one can show in 24 and 26 at the same time.

27. Indian Rhododendrons, and their hybrids; in 6 distinct varieties. SG—CE—LS. *(In May only.)*
28. Exotic Orchids; in collections of 20 species of superior cultivation. LG—GK—GB—SG—CE—LS—SK—SB—C.
29. Exotic Orchids; in collections of 10 species of superior cultivation. GB—SG—CE—LS—SK—SB—C.
30. Exotic Orchids; in collections of six species. SG—CE—LS—SK—SB—C.

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

31. Exotic Orchids; single specimens displaying *very* superior cultivation. SG—CE—LS.

N.B. No duplicate Medals can be here awarded. No person exhibiting Orchids elsewhere can take more than one prize in this number. The medals will be awarded by the Society's officers, and not by the usual judges.

32. Fuchsias; in sixes, of distinct colours. CE—LS—SK. *(In July only.)*
33. Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. LS—SK—SB.

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.

34. Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*
35. Tall Cacti; six distinct varieties in flower. SG—CE—LS.
36. Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK. *(In July only.)*

N.B. No one who exhibits in this number can also compete in the following.

37. Roses, exhibited as in No. 31, and in 25 varieties. LS—SK—SB. *(In June and July only.)*

N.B. Private growers only can exhibit here. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

38. Helichrysums. CE—LS—SK.
39. Calosanths; in sixes. LS—SK—SB. *(In July only.)*
40. Ferns; very distinct hothouse kinds, not fewer than 10, to be shown intermixed with Orchids. CE—LS—SK.
41. New Hybrid Plants, exclusive of Roses, Rhododendrons Azaleas, and garden cross-breds, such as Gloxinias and the like. SG—CE—LS.

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.

42. Newly introduced or extremely rare ornamental plants in flower, not introduced by the Society. SG—CE—LS.

N.B. These Medals will be awarded by the Society's officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this number. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season*, nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

43. Miscellaneous single plants. SK—SB—C.

N.B. Exhibitors in this class will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded from this and the following Number.

44. Miscellaneous collections of plants, exclusive of Ferns. SG—CE—LS.
45. Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C.

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

46. Pansies; in twelves, in 8-inch pots. SK—SB—C.
47. Alpines; in twelves. SK—SB—C.
48. Cinerarias; in sixes, in 8-inch pots. SK—SB—C. *(In May only.)*

N.B. Prizes will only be given to extremely fine specimens.

49. Seedling Florists' Flowers.

The mode of dealing with these is still under consideration.

## FRUIT.

For the month of May no Schedule is proposed; but Fruit will be rewarded by the Judges according to its merits, and with reference to the following Schedule of Prizes for June and July.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever. No person can take more than one award in each Letter, except in **B, D, H, K L, M, N.**

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

**A** Collections of six Pine Apples, not including more than two of a sort. SG—CE—LS.

**B** Pine Apples, in single specimens:—
1. Queens. CE—LS—SK.
2. Enville, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. CE—LS—SK.
3. Providences. CE—LS—SK.

**C** Grapes in pots; three specimens to be shown. CE—LS—SK.

**D** Grapes; in three bunches for private growers, and six bunches for Market Gardeners:
1. Black Hamburgh. CE—LS—SK.
2. Black Prince, or West's St. Peters. CE—LS—SK—SB.
3. White Muscadines, or Sweetwaters. CE—LS—SK—SB.
4. Muscats. CE—LS—SK—SB.
5. Frontignans, or other sorts, distinct from the foregoing. CE—LS—SK—SB.

**E** Peaches, in sixes. LS—SK—SB.

**F** Nectarines, in sixes. LS—SK—SB.

**G** Figs, in sixes. SB—C.

**H** Cherries, in dishes of 1lb. each:
1. Black. SK—SB—C. 2 White. SK—SB—C.

**I** Strawberries, in pots; six pots to be shown. SK—SB—C.

N.B. They must have grown in the pots in which they are shown.

**K** Strawberries, one dish each:
1. British Queen, and similar kinds. SK—SB—C.
2. Keens' Seedling, and similar kinds. SK—SB—C.
3. Other kinds. SK—SB—C.

**L** Melons, one specimen each, for the best flavoured.
1. Green-fleshed. SK—SB. 2. Scarlet-fleshed. SK—SB.

**M** New varieties of any of the preceding kinds of fruit.

**N** Other kinds of fruit of peculiar excellence and value.

N.B. The medals under this and the preceding letter will be given at the discretion of the Society's officers.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

PARADISE NURSERY, HORNSEY ROAD, ISLINGTON.

THIS Desirable NURSERY TO BE LET, or the LEASE TO BE SOLD in consequence of the Proprietor being about to retire from the Nursery Business. With immediate occupation. The whole may be taken at a valuation, or by private contract.—Apply personally, or by letter, to W. J. PAMPLIN, on the premises.

TO BE LET, a COMPACT FARM of 71 Acres, with good Farm-house, suitable Buildings, and Two Cottages, situate at Pound-place, near Foots Cray, Kent, five miles from the North Kent Railway. Also, to be LET, for Building Purposes, or Cultivation, 12 Acres of Land, at Erith, close to the Abbey Wood Station of the North Kent Railway.—For particulars of the above lettings, apply to Mr. GEORGE GOLDING, Scadbury-park, Chislehurst, Kent.

TO LAND AND HOUSE OWNERS, SOLICITORS, AND OTHERS.

A RETIRED BUILDER wishes to take, on Lease or otherwise, a large ESTATE or HOUSES; and would have no objection to expend 2000*l.* or 3000*l.* in rebuilding or repairs. References of the highest order, and security to any amount.—Address to Mr. Williams, 18 Crescent, Kingsland.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1¼ in. greenhouse lights, 2¼*d.*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 18 oz. sheet-glass of a large size, 4*d* per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

NEW GERANIUMS OF 1850

BASS AND BROWN'S List of NEW GERANIUMS and other Plants, at reduced prices, is now ready. Copies sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CAMELLIA "QUEEN OF DENMARK."

HUGH LOW AND Co. have pleasure in offering to their Continental Friends, and the Public in general, the above-named fine new CAMELLIA. They are of opinion that the well known, and generally acknowledged, merits of the Camellias they have already introduced to the notice of growers, will be a sufficient guarantee for the excellence of the variety now offered.

| | s. | d. |
|---|---|---|
| Fine stout plants ... ... | 42 | 0 |
| Extra strong do. ... ... | 63 | 0 |

Without discount.

Clapton Nursery, August 23.

NEW EARLY STRAWBERRY—"TROLLOP'S VICTORIA."

JAMES TROLLOP (who raised "Princess Alice Maud" Strawberry, which gave general satisfaction to the public in 1843), now with great confidence offers his seedling "VICTORIA," and is certain that it combines qualities which no other kind in cultivation does possess. Being very early, a dwarf robust grower, and free bearer, throwing strong trusses of fruit (above the foliage), which is of a large size, globular form, and good colour, with a delicious flavour.

Fine well-rooted plants, on and after the 8th September, 1851, at 4*l.* per 100.

For particulars of prizes and opinions, with full advertisement, see *Gardeners' Chronicle*, Aug. 2d, 1851, and "Beck's Florist, Fruitist, and Garden Miscellany," for August, 1851, or "Midland Florist."

N.B. Full particulars may be had free, per post, by applying to G. D. FISHER, at Mr. Butler's Nursery, Wedcombe, Bath.

Limpley Stoke, Aug. 23.

**The Gardeners' Chronicle.**

*SATURDAY, AUGUST* 23, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Aug. 26.—London Floricultural.....1 P.M.

COUNTRY SHOWS.—Tuesday, Aug. 26: South Devon Botanical and Horticultural, and Handsworth and Lozells Horticultural.—Wednesday, Aug. 27: Salisbury Dahlia.

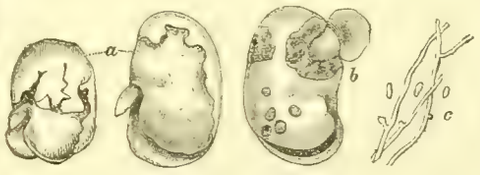
THE progressing season tells us that the POTATO DISEASE is again making progress, and the cry of alarm in Ireland is as loud as if people there were taken by surprise. There can be no doubt that in most parts of this country the symptoms of blight have manifested themselves in the leaves, and have rapidly extended to the stem, just as they always have done; but there is much doubt whether the Potatoes themselves are seriously affected. Such early planted ones as we have examined are in a very small degree damaged up to the present time, and being almost ripe, will possibly resist the affection. Unripe Potatoes may be expected to suffer more.

We advert to this matter once again, although it has nearly lost its interest, for the sake only of repeating the warning we have given for the last six years, that there is no security in a Potato crop, and that there never will be again. It is clear, that the mildew has firmly established itself in our fields, whence no skill can drive it; for if we could suppose that one person were able to do so, his success, unless all his neighbours had the same skill, could, from the nature of the evil, only be temporary. The virulence of the disease is, undoubtedly, much mitigated; that is to say, by better cultivation the Potato is more able to resist mildew than it used to be; and, possibly, by still greater skill, its power of resistance may be further increased. But that is all which facts and analogy justify us in admitting; and, we repeat, that we are for ever saddled with this formidable foe.

This has been pointed out so often, and the uncertainty of the crop has been so fully demonstrated, that we can no longer have sympathy with those who, in defiance of all advice and all experience, still continue to gamble in Potato growing. Their fate is in their own hands, and if they will commit horticultural suicide, why, so they must.

A SINGULAR disease in Beans has just come under our notice, resembling very closely that dreadful scourge of the human race, the small-pox. Its first appearance is that of papillary well-defined pustules, confined in its more normal form to the pods, varying considerably in size, perfectly smooth, and far brighter, and frequently darker, in colour than the portion of plant on which they are developed. These pustules are beautifully transparent and very juicy, and present in their structure nothing to attract particular attention. There is no discoloration of the tissues at first, and no appearance of disease, except that of hypertrophy or excessive development. After a time, however, partial discoloration takes place, as in so many forms of vegetable disease, and the walls of the cells become minutely granulated and reddish brown. This appearance soon extends to the cells at the apex of the pustules, which at length burst through the cuticle, and present the form of a rough black scab, the cells of which are of a dark rich-coloured brown, some inclining to carmine or purple, exactly as in a fatal disease which we described in the Number for June 2, 1849. In many of these cells we have observed bundles of acicular crystals, which we have not detected in the healthy tissue; all trace of chlorophyll is in general wanting, the walls are often wrinkled and torn, and sometimes completely invested with a minute mould, which perfects its spores *in situ*. We cannot refer this to any described species, but suppose that it may be a degenerated state of one of the cinereous group of the genus Botrytis.

In some instances the malady attacks the pods only, without at all affecting the seeds which they contain; but, frequently, the portion of the integument of the seeds which is in contact with the base of the pustules (whether the surrounding tissue be unaltered or not) is spotted and indented, and the general growth impeded, while the cotyledons themselves continue to be developed, one of them being variously lobed and overlapping the other; or, if a perforation has taken place in the integuments, one of the lobes of the margin projecting through the aperture. Sometimes the substance of the cotyledon is unaffected, but occasionally a pustule similar to those on the pods is observable beneath the discoloured spot; we have not seen these pustules assume the second or scabby stage. Two other forms of the disease occur, in one of which the pustules are more defined at the base from the first, and are by no means so transparent or vesicular in aspect, though the ultimate appearance is the same, and another in which the disease is more deeply seated, and neither pustule nor scab is formed, but the tissue in the centre of the patches—for they are no longer well defined spots—becomes dark as that of the surface of the scabs. The disease is probably not uncommon, but we have never seen it assume the aggravated form presented by the plants before us, in which the produce has been materially affected. Many of the seeds which are not deformed by the irregular indented spots, are covered with well defined brown spots like those so common upon the leaves of many plants, insomuch that the sample, when mature, must be saleable only at a very inferior price. In a few instances where the pustule has been formed immediately on the placentiferous suture, the whole pod bursts and the seeds are greatly discoloured.




*a*, diseased Long-pod Beans, from which the integument has been removed, showing the one cotyledon wrapping over the other, and variously lobed. *b*, a Bean on which two sorts of spots are visible, one of which is ruptured, a lobe of the margin of one of the cotyledons having forced its way through the aperture. *c*, a minute mould, with pale brownish spores developed within the diseased cells.

Many of the pustules have been examined in vain, with a view, if possible, to ascertain the presence of larvæ. This, however, was scarcely to be expected, as the appearances assumed by the pustules are so various. There can be little doubt that the disease is due to the marked alternation of drought and wet to which the present season has been subject, and a more highly manured soil than is proper for the healthy growth of Bean crops. *M. J. B.*

MR. PAXTON'S proposal to convert the Crystal Palace into a Winter Garden has produced a rival scheme. Mr. NEWMAN suggests SMITHFIELD as a better site for the purpose than Hyde Park. In an article in the "Phytologist," this gentleman has endeavoured to show that, while there are many objections to Hyde Park, there is none to Smithfield; that the latter is more central, and therefore more convenient; that it offers no local difficulties whatsoever; and that plants will grow just as well in one place as the other.

The disgrace to the City of London being now doomed and irreprievable, its future destiny is a fair subject of discussion; and we are glad to see that the first proposition is, to employ it for the comfort and convenience of the citizens. It has been long enough a nuisance and abomination, and it would be some satisfaction to see it made a place of healthy resort. An area in the heart of London for public recreation would be something; especially as the public would thus be guaranteed against the creation of a second Smithfield, *mutato nomine*, which is by no means an impossible contingency. As matters stand, we know of no security against the area being applied to purposes just as hostile to public health as that of gathering together the brutes now about to be dislodged.

That Mr. NEWMAN, like other advocates, should overstate his case, and disregard obvious difficulties of execution, will excite no surprise. For instance, he insists upon the public safety which the creation of a garden where Smithfield now is would ensure.

"It is but lately" he says, that "an infuriated bullock threw an elderly female into a two-pair window; the shaft of a furiously-driven cab has passed through the body of a man; the brains of a child have been scattered about the street by the wheels of an omnibus. Such cases as these may be rare, but broken arms and legs, from falls occasioned by compulsory contact with horses and carriages, are innumerable; and let it not be supposed the victims are the only sufferers; thousands of timid people have fled in terror from racing omnibuses and goaded cows, and although their bodies may have escaped scatheless, their minds have suffered a deep and lasting injury. From a glazed garden all such perils and thoughts of perils are absent."

We wonder it should not have occurred to Mr. NEWMAN that the street dangers remain just what they were, unless people are to visit his garden in balloons. Few of those who have visited the Crystal Palace will arrive at the conclusion that the creation of a scene of great attraction diminishes the danger of reaching it.

Passing by, however, this and similar matters, the question that really interests the public is whether a garden can be established in the heart of London, and to that we shall confine ourselves. What Mr. NEWMAN proposes is to construct a vast WARD'S case, under which his garden is to be formed. In order that we may do no injustice to his arguments, we must give a few of the most material parts of his proposition in his own words:

"No one, not even nursemaids and children, can go out to enjoy air, which, in our crowded streets, impregnated abundantly with particles of soot and dust, and with the fumes of beer, gin, and tobacco, is not to be enjoyed. The student, the clerk, the schoolboy, the wife, the child, cannot seek the streets as a temporary relaxation or change—cannot expect to find in them even a momentary invigoration; whereas a glazed garden would supply the desideratum, oxygen. That pabulum of animal life is abundantly exhaled by plants during the day; and, not only would the invigorating effects be felt within, but they would extend, though in a less degree, all around. The consumption of oxygen, and its consequent abstraction from atmospheric air, is the main cause of that oppressive feeling which so continually causes fainting, sickness, and all kinds of illness in omnibuses, theatres, and fashionable places of worship. The glazing would serve to arrest the escape of this life-giving principle, not prevent but arrest it, and the invigorating effect of entering the building would be at once manifest.

"The great discomforts of out-of-doors life in London arise from cold winds, rain, intense sunshine, dust, soot, filthy smells, wet muddy ground, incessant noise, &c. Now one and all of these disagreeables would be excluded from a glazed garden; cold winds, rain, dust, soot, smells, and noise, would of necessity be shut out. The roof of green and corrugated glass would effectually obstruct all disagreeable effects from the sun's rays, which, transmitted through such a medium, would not injure the most delicately-sensitive skin; and such glass, unlike all other kinds, would diminish instead of increasing the temperature. The walks, made entirely of comminuted shells, would be always dry, yet never dusty—always fit for the thinnest sole to traverse with impunity and cleanliness.

"The roads now passing through Smithfield might be made to divide the area into six principal compartments. These I would call Europe, Asia, Africa, North America, South America, and New Holland. In each division I would endeavour to place the vegetable productions which are natives of the soil, and in all instances imitate as nearly as possible the natural conditions of the plants themselves; and each geographical district should be further illustrated by stuffed specimens of the quadrupeds, birds, and reptiles for which it is most remarkable; Asia, by its camels, elephants, and tigers; New Holland, by its cassowary, emu, and kangaroos; Africa, its giraffe, elephant, hippopotamus, lion, ostrich, and crocodiles; North America, its bison, beaver, and alligators; South America, its llama, alpaca, vicuna, and its humming-birds; Europe, its wolves, elks, and aurochs. The specimens in all instances should be the best that could be procured, regardless of cost, and should be placed amid the scenery where they once enjoyed life. The stuffing or preservation of animals is an art that has now reached something like perfection, and I would have no creature set up for exhibition unless approved by some competent naturalist. In the centre of each compartment should be a model of the continent whose productions it exhibited, its ascertained mountains, its rivers, seas, &c., displayed in their exact proportionate height, situation, course, length, &c.; and the unknown parts, as the interior of Africa, Australia, China, &c., left a perfect blank, not thickly sown with supposititious cities, as we too frequently see them in our maps. These models should be constructed only under the super-

intendence of men of the highest attainments, the cost being a matter of no comparative importance, and not to be weighed for an instant against accuracy. At each of these models a demonstrator should be stationed, thoroughly qualified to give explanations, and he should hourly give such explanations unasked, in the most simple, intelligible, and unassuming manner, carefully pointing with a light wand to the part to which he was alluding. If a plant or animal of interest was peculiar to either continent, of which there are numerous instances, he should be able to point out in what particular locality it occurred, and every other fact of importance connected with its history. Thus, if asked what species of monkey was found in Europe, and where, he should be able to name the Macacus Inuus; to point at once to the rock of Gibraltar; and to state that this ape abounded there, feeding chiefly on the leaves and tender shoots of the young dwarf Palm (Chamærops humilis). The plan of structure, and of connecting the various continents, need scarcely be discussed, but between continents which are connected only by water, the mode of transmission should represent a ship's deck, and those which join should be united by dry land. Each continent should be further illustrated by some of its aboriginal inhabitants, in the ordinary dress of their respective countries. I imagine there would be no difficulty in procuring the Negro, the Hindoo, the Australian, the Red Indian, or the Indian of the Pampas. This idea has been already pictorially carried out in the 'Physical Atlas,' but only the very rich can see that beautiful work; this practical illustration of the idea every one should, and every one would see."

Our limited place forbids our offering this week an opinion upon these suggestions, which some may think practicable, and others romantic. In our next we shall examine them with the care that such a question demands.

## ORCHIDS FOR THE MILLION.—No. XII.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

Climate hot and damp.—Terrestrial Orchids growing in Pots with Loam, Leaf-mould, and decomposed Cow-dung.

*Calanthe veratrifolia.*—A showy plant from the Indian Islands; flowers from May to July. The blossoms are white, and remain long in perfection, if they are not wetted by the syringe. It is best grown in a pot in loam, leaf-mould, and cow-dung, with good drainage; and when in a growing state it requires plenty of heat and moisture, with a little manure water at its roots; afterwards, when resting, it should be kept much cooler, and have less moisture, but the roots should never be allowed to become too dry.

*Calanthe flava* comes from Java, and flowers in October; it is lemon in colour, and remains long in perfection, if the flowers are kept free from wet. It succeeds best in a pot in loam, leaf-mould, and cow-dung, with good drainage; it requires plenty of heat and moisture when in a growing state; afterwards it may be kept cool.

*Phaius Wallichii,* a stately Orchid from India; flowers from February to June. The blossoms are orange yellow in colour, or buff tinged with purple, and they remain five or six weeks in beauty. This is best grown in a well drained pot filled with loam, leaf-mould, and cow-dung, and when growing it requires a strong heat and abundance of moisture, but after it is at rest it may be kept cool, and supplied sparingly with water.

*Phaius grandifolius* comes from China. It flowers from February to May; it should be treated like the last; but when at rest it should be kept rather dry.

*Cyrtopodium punctatum,* from Demerara; flowers in April and May. This succeeds best in a pot in loam, leaf-mould, and cow-dung, with good drainage. It should be put in the warmest part of the house, and should have a good supply of water at the roots when the plant is growing, but afterwards it should be kept rather dry.

*Cypripedium barbatum,* from Malacca; blooms in May and June, and keeps long in beauty. It grows best in a pot in loam and leaf-mould with a good supply of water during the growing season, and care should be be taken not to allow it to get very dry afterwards.

*Cypripedium venustum* comes from Sylhet, and flowers from February to April, remaining long in perfection. It thrives best in a pot in loam and leaf-mould, and otherwise requires the same treatment as the Bearded Lady's Slipper.

*Cypripedium Lowii.*—This fine species comes from Borneo. It succeeds best in a pot in loam and leaf-mould, with good drainage; it needs plenty of water during the growing season, and it should never at any time be allowed to get very dry.

*Cymbidium eburneum.*—This beautiful Orchid flowers in April and May. It thrives best in a pot in loam and leaf-mould, with good drainage. The flowers are white as ivory, and they remain a long time in beauty.

## JOTTINGS ON FOREST PRUNING.

The references to the woodcuts in last week's *Chronicle,* representing pruned and unpruned trees, are unfortunately misplaced; they should be reversed.

A distinguishing characteristic of the tree which has not been pruned excessively, is in its branches taking a more or less upward direction, immediately at their junction with the trunk. Another certain indication is in the lower branches being as large, and often much larger, than others above them. The reverse of this occurs in a pruned tree, where branches have been reproduced from the bases of those removed—a circumstance which frequently happens, and which is represented in what should be fig. 1 in the woodcut alluded to. If such branches are not produced, the indication of pruning is not the less prominent. Examine such trees, and though many years may have elapsed since their branches were removed, you will detect the effect of the mutilation in the confused organisation of the bark, which being constantly pushed outwards, of course retains the characters it acquired, when surrounding and covering the wounds caused by the removal of the branches. In trees which never cast their bark such indications can never be effaced by natural processes; they remain indelible evidences of the injury the tree has sustained. In the wood-cut representing a pruned tree having produced new branches, the latter are shown as growing in a downward direction. Sometimes they shoot at right angles with the trunk, but they never take an upward position. Why that is, I shall explain. The latent buds existing around the base of the removed branches, or others which are produced from the new alburnum yearly deposited around the wounds, themselves shoot into branches, but as the energies of the tree are mostly directed or appropriated by its upper portions, these young shoots obtain but a scanty supply of nourishment. From the latter cause, coupled with a deficiency of light, they become elongated, without acquiring much diameter. In a few years there arises another and more powerful obstruction to their progress. As layer after layer of new wood becomes deposited around the trunk, in accordance with the law of increase in the diameter of exogenous trees, these young branches, from their occupying a position at variance with the proper organisation of trees (as will be more fully alluded to hereafter), become as it were *choked,* and their yearly increase in diameter is reduced almost to nothing. Wanting the firm basis of naturally produced branches, added to their length and weakness, the weight of their foliage, and other self-evident causes, induces a downward direction, and forms the slow, the sure, although indirect indices of damaged or decaying timber.

An analogous effect naturally occurs in the Silver Fir. The branches of this tree almost invariably take a downward direction, and increase but triflingly in diameter, becoming imbedded in, rather than connected with, the outer portion of the trunk. Carpenters find the timber difficult to "work," from the knots produced by the drooping branches, being contrary to the perpendicular direction of the tree. They complain much of the damage which their planes sustain when working on this wood. *G. L.*

## BRITISH SONG BIRDS.

Cage Birds.—No. 26.*

No. XLII.—The silence of which we spoke last week, still prevails, to a great extent, among the feathered choir in the woods and in the fields. The fine clear note, however, of the "bird with russet coat," heard at early morn, and also at "dewy eve," tells us plainly that autumn is at our doors; and we note his approach to our hospitable dwellings with feelings of real pleasure. Of all birds, we could least spare *him;* for in the gloomiest weather his sweet song brings with it the elements of "comfort."—Availing ourselves of the repose of Nature at this season, we will now speak about the purchase of those unfortunate black-caps whose destiny has placed them at the disposal of the callous, iron-hearted dealers in the Seven-Dials.

The black-cap arrives here about the same time as the nightingale; but being a more shy bird, a few only, comparatively speaking, of the old birds, are made prisoners. The temper of this bird, in the month of April, is very variable. He is frequently sulky and morose when placed in confinement, and refuses to perch—hiding himself at the bottom of his cage and looking doggedly stupid. As in the case of the nightingale—if captured whilst wooing his mate, grief frequently strikes him suddenly dumb.

It would be foolish for you to attempt to buy such birds as these. Observe, therefore, very carefully, which are the most sprightly and cheerful. If you find their crest erect, their plumage trim, and their whole appearance to indicate contentment, you will do well to select such. You may readily recognise the male from the female, by his having a jet-black cap, or crown; that of the female is a rusty brown. Do not be in any hurry to complete the bargain; but call again and again, until you hear a bird sing, and are able to judge of the quality of his voice; for all are by no means alike excellent. This precaution is the more needful, because old birds newly caught, sing for a very short period the first year. If you act foolishly in the matter of your choice, you will entail endless trouble upon yourself and get no adequate remuneration.

The black-cap is by no means so sulky as the nightingale. If you suspend his cage at a moderate height, and use him to your company and that of your household, he will soon become reconciled. He is by nature singularly joyous; and if you make much of him, you will quickly win upon his good graces. Vanity is his besetting sin—but it is vanity most pardonable. After he has had his bath, and finished his toilet, he *is* a noble looking creature. When he sings freely, he will be in motion the whole time; and you will be exceedingly diverted by the consciousness he evinces of his really being "somebody." His voice will be heard early and late; and as for a candle-light songster, "none but himself can be his parallel."

I have before remarked, that unless a man be an enthusiast, he need never be so particular about selecting an *old* bird, newly caught. His well-being depends so much upon close personal attention, that the trouble often exceeds the pleasure. I would recommend, by all means, the purchase of "branchers," clean moulted. These birds speedily become reconciled to a cage, and soon break out in song. Their cost is trifling, and at this season they are plentiful. Some people prefer "nestlings"; because they are tamer; but this is mere fancy, as they are assuredly more difficult to rear.

The advantage you obtain in keeping a black-cap, in preference to a nightingale, consists in the nature of the food they eat. Although both birds are insectivorous, yet the black-cap can, in many instances, do without raw meat. Indeed, several of my very best songsters *preferred* a diet of German paste, sponge-cake, hard boiled yolk of egg, and bruised hemp seed (freed from the husk). Of course, as this is comparatively a dry food, the adjuncts of a mealworm, spider, wood-louse, ants' eggs, and other similar delicacies, should be lovingly tendered them at intervals. Those who are wedded to feeding their birds on raw beef, will find my instructions for its preparation duly recorded in the article on "Cage Birds," No. 13. Much care is requisite in administering this food, as on its perfect freshness depends the health and excellence of your birds.

To cause your birds to warble sweetly, and to keep them in continuous song,—study all their little fancies, and render their homes "happy." Then will their lives be one round of pleasure and delight. I have been one of Fortune's favourites in the matter of the black-cap. Such songsters have I had, as perhaps are very seldom indeed to be met with. And as for their tameness and familiarity,—they could not be exceeded. It is quite true that I loved their company, and that I studied their every want. Of all luxuries, I found them most greedily fond of soft boiled cabbage, green peas, bread and boiled milk, grocers' currants (soaked), and elderberries,—these, and all other seasonable tid-bits, I felt as much pleasure in providing, as my little friends did in partaking of them, when offered. My reward was ample; for their little throats were in a constant state of joyous excitement,—anticipating the treat in the first instance, and gratefully repaying their obligations afterwards.

The longevity of the black-cap, in a state of nature, is supposed to be about 14 years. In confinement, if carefully attended to, the average period is about four years. My advice is, to act with him as with the nightingale,—viz., to give him his liberty at the end of three years. He will then troop off with others of his tribe, renew his youth in foreign climes, and return the very year following to his old quarters,—*not,* let me hope, to be again immured. This would be barbarity indeed!

I have often thought that these innocent little creatures were formed not only for their own happy enjoyment, but to teach us mortals great moral lessons. At all events, of this I am very sure,—I have myself derived much sound wholesome knowledge from the study of their ways. I have found them easily won by kindness from naturally bad habits, and my patience has invariably been rewarded by *some* pleasing success; even in cases which have been pronounced by others to be hopeless. Many persons, I am aware, have smiled at my "vain philosophy;" some have ridiculed my "singularly-droll hobby." With the first of these—unreflecting individuals, I can patiently and cheerfully argue the point; with the last—a merry, harmless tribe—I can afford good-temperedly to exchange a laugh. Others, however, who, from their profession, ought to know better, have not hesitated rudely to express their doubts as to the truth of what I have advanced. These latter, judging only from their own limited observation, or pinning their faith implicitly on what they have read in books,—very good as far as it goes—are not justified in speaking oracularly on what is far beyond their comprehension. To such I would say, "more in sorrow than in anger:"—

> "Let no presuming, cavilling railer, tax
> Creative Wisdom,—as if aught was form'd
> In vain, or not for admirable ends.
> Shall little haughty Ignorance pronounce
> HIS works unwise, of which the smallest part
> Exceeds the narrow vision of her mind?"

A thorough knowledge of Natural History is not to be gained from books only. All who would arrive at an intimate acquaintance with the habits of birds and insects, must rise at early dawn, *live in the woods and fields,* and make Nature *their study.* Every day reveals some new fact to a close observer; and it is the record of such interesting facts that lends so great a charm to Science. Such pursuits as these have been my delight from infancy. Nor am I ashamed to confess it.

I need only add, that although the black-cap's plumage is of a silky and most delicate texture, yet he moults freely in a cage. He must, of course, be kept warm, but not too closely covered up. His cheerfulness will "pull him through" the ailments peculiar to this annual visitation of nature; and he will come forth decked in a suit of new and beautiful apparel. *Au reste*—what we have recommended for the nightingale concerns the black-cap equally.

By the way, you may have one of each bird in the

* Our treatise on "The Black-Cap" is this day completed. The same honour, we may observe, has been paid it, as was lavished on its predecessors—large portions having been transferred to the columns of most of our public journals.

same apartment; but, of course, they should never be allowed to see each other. I have given a fair character to both,—have "nothing extenuated nor set down aught in malice;" therefore, gentle reader—

"Utrum horum mavis accipe!"

It rests with yourself to make a "happy choice." May your little friend do honour to his patron's judgment! *William Kidd.*

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Section D. *Monday, July 7th.—Report on the Vitality of Seeds.*—The report this year consisted of a list of the seeds, and the length of time they had been kept, which had been sown by the committee during the past year. The season was not sufficiently advanced to give any further information. Professor Henslow said, that as one of the committee appointed to report on this subject, he had planted several seeds this year, and out of these two species had grown. They both belonged to the order Leguminosæ, and one was produced from seed 17, and the other from seed 20 years old. On the whole, it appeared that the seeds of Leguminosæ retained their vitality longest. Tournefort had recorded an instance of Beans growing after having been kept 100 years; and Willdenow had observed a Sensitive-plant to grow from seed that had been kept 60 years. The instances of plants growing from seeds found in mummies were all erroneous. Some seeds which had been recently obtained from a mummy tomb, with great care, had been sown, and came up, but turned out to be Maize. This at once showed that some error or fraud had been committed in obtaining the seeds, as the Maize was a plant of the New World. Even in the case recorded by Dr. Lindley, of a Raspberry seed found in the interior of a soldier's stomach who had been buried some hundreds of years, and which had grown, it was now known that the seed had been introduced into the body after its disinterment. —Dr. Lankester hoped that the committee would follow up their experiments by some general deductions with regard to the nature of the seeds which resisted the action of external influences best, as well as the nature of the circumstances which were most favourable to the retention of vitality in the seed. He enquired as to whether the origin of the seeds which produced new plants after the clearing of forests, or the digging up of new ground, was known. —Dr. Cleghorn stated that he did not know how the seeds of new plants were conveyed to the spot, but he had often seen after the burning or clearing a forest in India, new plants sprung up which had not been seen in the spot before.—Mr. Babington related a case in which M. Fries, of Upsala, succeeded in growing a species of Hieracium from seeds which had been in his herbarium upwards of 50 years. Desmoulins recorded an instance of the opening of some ancient tombs in which seed was found, and on being planted they produced species of Scabiosa and Heliotropium. Recently some seeds from Egypt were sown in Cambridge which were thought to have germinated, but on examining them they were covered with a pitchy substance, which had evidently been applied subsequent to their germination, and thus they had preserved the appearance of growth through a long period of time.

## Home Correspondence.

*Vitality of Seeds.*—In your leading article, at p. 515, you say I have called in question the accuracy of a story about a Roman, who seems to have died of a surfeit of Raspberry jam, or, at least, of some complaint for which Raspberries had been prescribed, about 1600 years ago, in Dorsetshire, The record of this fact is supposed to have been preserved by the unimpaired vitality of certain seeds, which were disentombed from the very spot where his digestive apparatus had left them whilst it was passing into decay. I see no objection to admitting the fact, if it has been duly authenticated. Let me, however, correct the statement to which I presume you have alluded, and which is at variance with what I really advanced at a discussion that took place in the Natural History Section of the British Association, at our late meeting at Ipswich. If any one will take the trouble to refer back to the *Gardeners' Chronicle* for 1846, p. 757, he will find an early intimation of my opinion, that the carefully-performed experiment in which a grain of Wheat from the Catacombs of Egypt was supposed to have germinated, is not sufficiently trustworthy, for the reasons there stated. But neither there nor elsewhere have I asserted the impossibility of seeds germinating after a lapse of hundreds or thousands of years. I conceive it to be an unsettled point under what precise conditions seeds may be able to retain their vitality for any lengthened period. Any experiment tending to prove that Wheat from the Catacombs can germinate, ought to be placed above all suspicion. The so-called mummy-wheat has become a marketable commodity; and I believe few persons have now any faith in its parentage having been such as the experiment alluded to would have us believe. It was in alluding to the doubts I had previously expressed on this point, that some one referred to the Raspberry case. I had formerly heard, as well as yourself, that some fraud had been practised, and I merely asked whether any one present was sufficiently acquainted with the particulars of the case to substantiate or to contradict the story. Other cases were mentioned in which buried seeds had germinated long after the period when they must have been deposited in the ground. I am glad you have invited attention to the subject, and I have no desire to regard it as a popular delusion, or to raise any outcry against my over-scepticism by declaring in this case that "seeing is not believing," as in the viper question. *J. S. Henslow, Hitcham, August* 20.

*Gooseberries.*—At the exhibition held in the Surrey Zoological Gardens, on the 13th inst., I noticed an interesting collection of Lancashire Gooseberries, contributed by Mr. J. Holland, of Middleton, near Manchester. It consisted of 36 varieties, including green, yellow, white and red kinds; and as some may be interested in knowing their names, I have ventured to furnish you with them. They were: Queen Victoria, Conquering Hero, Snowball, Dublin, Great Britain, Rough Green, Red Robin, General Moore, Thunder, Broom Girl, Birdlime, Pilot, Overall, Oakmere, Catherina, Freedom, Peru, Slaughterman, Companion, Capt. Cook, London, Lord Middleton, Morton Hero, Wilmslow, Wonderful, Drill, Eagle, Away-she-goes, Tally-ho, Snowdrop, Leader, Ricardo, Lady Leicester, Lightning, White Seedling, and a Seedling. A Medal was awarded them. *A. B.*

*Exposing Plants in Pots to the open Air in Summer.*—Greenhouse plants in pots placed out of doors in summer almost invariably get the foliage spoiled, directly they are exposed. The leaves turn reddish brown in colour, or become covered with yellow or red spots, assuming a very shabby appearance until the plants have time to produce fresh foliage adapted to their new situation. I am speaking of plants set in a sunny place; and if the pots are on boards, or bricks, they are continually being blown down, and the plants bruised, and often broken. If the pots are plunged (which is the best plan of the two), then the roots get through the holes in the bottom of the pots, and must be cut off when the pots are lifted in autumn, and probably worms will have found their way into the pots, with all the precautions taken to prevent them. It may be urged, why not choose a shady place for the plants; but, as they are turned out to harden and ripen, is the shade likely to effect that? I believe that plants are turned out in summer merely because they will live out, and because it used to be the practice to place them out of doors at that season, rather than on account of any real benefit they derive from exposure. At least I must say that I have hitherto been unable to discover any beneficial results from the practice. These remarks do not apply to Pelargoniums, Calceolarias, Fuchsias, and such like things, which no doubt (after flowering) are the better for being out of doors, previously to being cut down; nor to plants in very large pots or tubs, as they are better able to resist the variations of temperature that occur in the open air; such things as these, however, suffer in some degree, but nothing in comparison to choice greenhouse plants in small pots. *Thomas Dowell, Amington Hall.*

*Seedling Flowers.*—Most people are of opinion that they are at liberty "to do what they like with their own," and I know of no good reason for disturbing the long recognised custom. If Mr. A. purchases the stock of a seedling flower from Mr. B., and Mr. B. does not stipulate to the contrary, Mr. A., or rather say Mr. Paul, has certainly a right, both by law and by custom, to add his name to that of the variety, as in the case of the Roses alluded to by "Enquirer" in your last Number. If, however, the raiser sells his stock, with the understanding that his name is to be retained, then few would, I hope, care to break faith. I could enumerate many instances in support of Mr. Paul's position; the well known Pansy, Duchess of Rutland, was raised by Mr. Hale, of Hillingdon, and the stock was purchased by Mr. Thomson, of Iver, but the variety is only known as Thomson's: again, the fancy Dahlia, "Mrs. Hansard," was raised from seed of yellow standard by myself; the parent root was parted with to a firm trading under the denomination of the Metropolitan Union, which by custom assumed the right of calling itself the raiser. But although such cases might be multiplied *ad infinitum*, yet I must admit that it is more truthful and far more complimentary, to retain the raiser's name than to shut him out from a perhaps well merited popularity. I may mention that the above remarks are not offered officially, as required by your correspondent. I imagine that the officers of the National Floricultural Society have no more right to question the exhibitor of a seedling upon the terms existing between buyer and seller, than it would have to ask Mr. Turner whether or not he had paid Mr. Hoyle for the Pelargoniums about to be let out, or whether Mr. Keynes had paid Mr. Dodds for certain Dahlias long since sold out. In the case of the stock of a flower being sold, say to two different parties, however, then the raiser's name should certainly be retained, as any other course might be productive of much confusion. *J. Edwards, Wace Cottage, Holloway.*

*Bees.*—In your Paper of the 18th January this year, a correspondent, under the signature "H. M.," sought for information "how to defeat the attacks of robber bees." I have not seen any satisfactory answer to his inquiry; and as the season when hives are generally attacked is at hand, I venture to offer the following remarks:—"Robber bees" generally attack hives rich in honey, weak in bees. I had a hive which swarmed on the 16th May, 1850, and again ten days afterwards. The swarms were large, and consequently the parent stock was much weakened; but my bees worked busily till the end of August, when I observed they were much disturbed, flying about their hives, but not going off to gather food. I soon detected the presence of "stranger bees" to be the cause of the commotion, and that my bees were occupied in resisting the intruders, and defending their habitations. Hives 2 and 3 were successful in repelling the attack; but hive No. 1 (that which had been weakened by throwing off two swarms), was not so fortunate. The robbers concentrated their attack upon that hive. I rendered my bees assistance by making the entrance of the hive very small; but after several days' hard fighting, the robbers obtained possession of the hive. I never kill my bees for the sake of the honey; but I determined to kill the robbers, and not allow them to lord it over my bees and steal my honey. Anon, the brimstone paper was prepared, the hive lifted from the bee-house and placed over the fatal pit; in a few minutes the robbers in the hive were dead, and I had 20 lbs. of beautiful honey. Observing that other robber bees, which had not been enclosed in the hive, still rushed into the bee-house, I put some honey-comb under an empty hive, into which the robbers immediately rushed; when the rush had ceased, I stopped up the entrance of the hive with clay (I have this autumn zinc slides to cover the entrances of the hives), and put some lighted brimstone paper under it; in a few minutes the entrapped robbers were dead. By the time our trap was again prepared a crowd of bees were thronging around it, and as soon as the clay was removed from the entrance in they rushed, and met the robber's fate. By pursuing this plan for a few hours, we succeeded in destroying all the robbers; the next morning we were free. If robber bees should again attack my hives, I shall remove the hive attacked, close the entrances of all my other hives, and use the trap, and when the robber bees are defeated return the hive to its accustomed place. My two hives have each thrown off a swarm and a cast; the first swarms have filled their hives, and are working for me, and I hope to have several pounds of honeycomb. *C'est Vrai.*

*Fuchsia Corallina.*—I hasten to correct an error I have made respecting the parentage of this truly fine variety, which in my opinion is the very best dark sort that has yet been raised. It is not a cross from radicans, which would have given a coarseness it does not possess. It was obtained from F. Exoniensis, fertilised by montana, which is, I believe, a Brazilian species: this information has been kindly communicated to me by Mr. Pince, who raised the variety. I thank "T. S." for his hint respecting a robust light variety of Fuchsia, Is Sidonia, of which I hear much, likely to suit me also? *A Devonian.*

*Potato Disease.*—Mr. Cuthill's cure for the Potato disease is all a mistake. There is no connexion whatever between the wintering of the sets and that dire visitation. At this place our Potatoes are wintered in large caves scooped out of a sandy bank. On the dry bottom of these the tubers are spread, from 1 to 2 feet thick, according to the quantity we happen to have; and as the arrangement affords ready access to them at all times, they can be sprouted whenever necessary. In spite of these favourable conditions, however, our Potatoes are as subject to disease as our neighbours', and I can only manage to supply a large demand by planting largely such sorts as ordinarily ripen their tubers before the disease sets in. *J. B. Whiting.*

*Fleming's Salting Machine.*—I beg to inform Mr. Bailey that I have had one of these machines in operation 10 days during the present month, and I am highly pleased with the satisfactory and effectual manner in which it performs its work. The quantity of gravel already operated on is nearly two acres; the cost for salt, coal, and labour is—Two tons salt, at 22*s.*, 2*l.* 4*s.*; half a ton coal, at 22*s.*, 11*s.*; man 10 days, at 1*s.* 6*d.*, 15*s.*: total, 3*l.* 10*s.* The extent of walks here, when completed, will be about four acres; and the annual cost for cleaning, according to the above estimate, will be 7*l.* Previously to the employment of this machine they were a perfect turf of weeds and moss, notwithstanding the constant labour of four people on them, viz., three women and one boy. The expenses for nine months cleaning in this manner last year were 29*l.*, and yet the walks were in a discreditable condition. From the foregoing it will be seen that the cost of the machine will be more than doubly counterbalanced in one season, and the weeders here will probably be more profitably employed otherwise. Trentham is universally admitted to be one of the best managed places in the kingdom; but this is only effected by great skill, assisted by Shank's No. 1 Grass-cutting, and, according to Mr. Bailey, Fleming's No. 2 salting machine; the latter is suitable for every description of garden, more especially where the hands are limited. If Mr. Bailey had one in use for a short time, the system of turning walks, which a few years ago was not unknown even at Nuneham, would be obviated, and his present hostility to the unlucky machine, I venture to surmise, would soon vanish. *R. Robertson, gardener to Lady Emily Foley, Stoke Edith Park, Hereford, August* 20.

*Garden Walks.*—Does Mr. Thorold (see p. 518) mean that marl and coarse gravel will make a walk so firm, dry, and hard, that no weeds will grow on it? If so, I must beg to differ from him. Marl is an unctuous substance, anything but sterile, and its exposure to the atmosphere must soon render it as fertile in weeds as pit gravel becomes under such circumstances. I have heard a great deal about concrete walks, but I have never seen them in good working order at all seasons, except when they have been made at much expense; and, even then, it seemed doubtful whether they would be as durable as was expected. Walks formed of the waste material of certain poisonous substances, as copperas, sal ammoniac, soda, &c. (which are only to be had where such

things are manufactured), become in time covered with moss, and ultimately with other weeds; while chalk, which will beat into a fine smooth surface, is disagreeable and slimy to walk on in wet weather; and so retentive of water that I cannot on any account recommend it unless in a very dry situation. Fewer weeds may appear on it than on gravel, but it will produce some; and how it acts in winter, I leave to those to explain who have had experience of it. For my part, I do not like it, every little cavity holding water like a dish, and there is sure to be some inequalities after a time; besides, a concrete walk is expected to have a small quantity of dressed gravel on the top, and if that gravel be not of the most open description (like coarse, gritty sand), it must be very dirty in wet weather, as, resting, as it does, on a hard bottom, whatever rain falls lodges on it. I have not had much experience myself in concrete walks, but those I have seen were anything but satisfactory. Some years ago, asphalte walks were strongly recommended, and some were laid down, but they were not generally liked. There are few subjects on which such diversity of opinion exists as on walks; some, with a great deal of pride, will point out the beauty of their walks on a fine day in summer, telling you they are as hard as a rock, and stamping their heels on them to prove the fact; other walks, having the appearance of an immense quantity of boy's marbles spread on the ground, and almost like a pillory to stand or walk upon, are described as very dry in winter. Of the latter description the south coast towns, as Dover, present us with examples called there "sea beach." Now gardeners are generally compelled to make their walks of such materials as they have, and to make the most or best of such materials at one place as may not be the practice that it is prudent to adopt in another, where the nature of the ground as well as that of the gravel may differ considerably. One of the best improvers of walks is using them a great deal; a walk rarely looks well unless much used, and if in addition to that the adjoining ground be very dry and sandy, &c., the maker of the walk need not claim much credit in the matter; if, on the other hand, however, he forms a pleasant, dry, and useful walk on a stiff, clayey, or wet place, and that little frequented, yet good, then he deserves the approbation of his patron; but the time to judge of a walk is after a frost or slight hazy rain (not a heavy fall, which solidifies it), if it is good then, it is good indeed. *An Old Gardener.*

*Royal South London Floricultural Society.* — The observations in your Paper, of August 2, respecting the prize I have for some years given the above Society in July, for the best collection of indigenous plants, have only just come to my notice, and I will remark that, although Mr. Powell's specimens were exceedingly fine, yet as two, if not three, were very wrongly named, he was not unfairly dealt by, but properly disqualified. With regard to the donor being the judge, all who were present and officially connected with the Society will bear witness to the great reluctance with which I undertook what no one else would do; but the Society having omitted to ask Dr. Young and Mr. Johnson to be the judges, it became imperative on me to decide, and the prize was awarded to a collection correctly named and containing some new and rare specimens. I readily grant that, had the prize been offered for the most showy collection, without reference to correctness, Mr. Powell would have borne the palm; and I advise him to go on in so interesting a pursuit as British botany affords, but at the same time (if his avocations will permit) to look more closely to the cause of failure which, in this instance, has occasioned his disappointment. *W. T. Iliff, Newington, August* 20. [Upon what *principle* do people object to the donor being judge?]

*Green Ponds.*—I have a pond about three acres in extent, varying in depth from to 2 to 18 feet, abounding in tench, perch, and gudgeons, with a few trout. It was made nine years ago, by damming up a small run of water, beautifully clear, and running at all times of the year from a drained bog at the upper end of it. The water in the pond is clear in the winter months, but for the last two or three summers a greenish yellow scum has appeared on the surface of the shallow parts of it. This summer the whole pond is so much discoloured as to give the water the appearance of green pea-soup. On examining it with a magnifying glass, I perceive minute particles (qy. vegetable matter?) suspended in it, and a few animalculæ moving rapidly amongst them. At times an offensive smell arises from the water. Can any of your correspondents account for the change in appearance of the water, or suggest a remedy? *M. H., Elkington-hall, South Lincoln.*

*Two Phases in Strawberry Culture.*—"It is all very well talking about 'laboration of the sap, the functions of leaves, and the 'cumelation of vigour; for my part, I don't understand it, nor I don't believe it. I've cut off the leaves of my Strawberry plants every autumn for 30 years, and well dug up the alleys a spit deep, and old Gregory did it when I was garden-boy. He always had a crop, and so do I; consequently, I acts upon the maxim of let very well alone, and don't see no cause why I should alter old practices." This was addressed to me by a member of the old school, in reply to a hint I had ventured to throw out, as to the propriety of ruthlessly mowing off the foliage of his Strawberry beds, an occupation he was diligently pursuing as I entered his garden on a fine autumnal afternoon. I had seen what he called a crop in the preceding fruiting season. If quantity constituted one, he certainly had it; but that was the only claim. The beds were a mass of tangled foliage, weak and puny from lack of sun and air. The fruit small and ill-formed, a prey to every kind of vermin; but he had "a crop," and that appeared to be the ultimatum of his hopes or desires. On another occasion circumstances led me to visit a garden under the care of a stranger. Our business being settled, a visit to the gardens was, of course, the next thing to be thought of. In due time we arrived at the "Strawberry quarters." I was perfectly astonished. Excellent crops of fruit I had witnessed in many gardens; however all I had seen before was now perfectly eclipsed, and I politely solicited a recital of his mode of culture. It was this—"I make a new plantation every season, destroying a corresponding portion every autumn. As soon as the runners are sufficiently rooted (and I only allow a certain quantity to be produced by each plant), I separate them carefully from the old plants, and place them in a well-prepared and rich soil, carefully attending to them till they are removed to their fruiting beds. The ground intended for them is always well trenched and manured if necessary. To the trenching I attach great importance. Choosing a convenient and favourable period, the young plants are removed from their nursery beds and planted nearly a yard apart each way. At this period of their growth they are fine sturdy plants. I never allow a leaf to be removed, unless it is perfectly decayed, and when it will separate easily from the plant. No weeds are allowed to show themselves, and during their first summer every blossom and runner is carefully removed. As autumn approaches the plants are perfect giants, in the most robust health. When growth is completed, the 'crowns' of the plants, in which are stored up the embryo fruit, are of an immense size, and leave no doubt of future success. In the autumn a dressing of decayed manure is applied, and lightly forked in. I never allow a root to be destroyed, if it can possibly be avoided. I never tolerate anything like digging about the plants. And in hoeing, I merely destroy the weeds, eschewing all deep surface stirring, on the principle of not destroying the roots. Upon a careful treatment of both roots and leaves I consider my success rests." *Fragaria.*

*Canaries living in the open Air.*—I have deferred replying to several interesting inquiries recently made, on the subject of my former communication, until I had paid a second visit to the picturesque domain of Henry Wollaston, Esq., at Welling, in Kent. On Tuesday last, I had the pleasure of again witnessing the fruits of that gentleman's patient labours, which have been crowned, I am happy to say, with the most perfect success. He has bred, during the season, a vast number of very handsome birds; many of which he has liberally presented to various members of his large circle of friends. The remains of no fewer than 18 nests are yet visible in the trees and shrubs; but the season of incubation is over. The colony is in fine, robust health; and I am quite convinced that my former observations on the practicability of "peopling" large grounds, properly laid out, with canaries, is placed beyond all question or cavil. It is worthy of note, that when one of the canaries had, with her infant family, quitted her nest,—a fly-catcher took immediate possession of it,—made good the dilapidations, deposited her eggs, and hatched an interesting brood of young in it. I shall not forget the pledge I have given, in an earlier Number of this Paper, to pursue the inquiry further at a fitting season. *William Kidd, New Road, Hammersmith, Aug.* 21.

*Measurement of some Pinuses at Esher-place, Surrey:*

| | 1849. | | 1851. |
|---|---|---|---|
| | March 1. | July 1. | Aug. 12. |
| | ft. in. | ft. in. | ft. in. |
| Pinus macrocarpa ... .. | 6 2½ | 8 0 | 13 2 |
| Pinus brutia ... ... .. | 3 8½ | 4 6 | 8 3 |
| Larix pendula ... ... ... | 5 5 | 6 6½ | 9 10 |
| Abies Deodara ... ... .. | 7 4½ | 8 0 | 12 6 |
| Cupressus Lambertiana ... | 3 7½ | 4 2½ | 6 10 |
| Cryptomeria japonica .. | 2 4 | 2 9½ | 7 9 |

This year's growth of the Cryptomeria is 3 feet exactly. It is very healthy, and covered with cones. *W. W. Spicer.*

*Lettuces.*—The White Paris Cos Lettuce is not in any respect better than the Green Paris Cos, the only difference between them being a few shades of colour. Two Lettuces, advertised by Messrs. Sutton, of Reading, under the names of Sutton's Superb White and Sutton's Superb Green Cos, are nothing more than the green and the white Paris Cos, as I have proved this season. *J. B. Whiting.* [We do not concur in this opinion, as regards the White Paris Cos Lettuce.]

*The Nightingale.*—The discussion concerning this bird reminds me that I never heard one sing, either in Herefordshire or Yorkshire, in both of which counties I resided some years. Neither did I ever see the swift in the latter county, while in Herefordshire it was common. It would also seem that some common insects are confined to districts, as I do not recollect ever having observed a hornet in Yorkshire. *W.*—Allow me to mention, in reference to the statement that the nightingale does not visit Somersetshire, that I have heard its song in great perfection between Taunton and Wellington, within four miles of the county of Devon. *G. J. B.*

*Allamandas.*—At the last exhibition at Chiswick, I observed some beautiful plants of Allamanda, which in my opinion would have looked much more handsome if they had been left to take their natural shape, instead of being twisted and bundled together round sticks or wire trellises, as they were on that occasion, and which I believe is the common way of growing them; surely the Allamanda is neither a creeper nor a climber, and why should it be made to exhibit the character of these? I have at this time plants of A. cathartica, from 3 to 6 feet high, full of flower, and one stick in the centre is all I use for the tallest one. My plants were started into growth in the beginning of March, on a gentle bottom heat, after being cut back to the last joint, and potted in a mixture of loam, peat, and sand, using a double quantity of loam to that of peat. All the eyes were allowed to burst; and when the young shoots were about 6 inches long, they were thinned out according to the strength of the plant, always retaining the strongest; the plants were kept in bottom heat as near the glass as possible, and allowed but little pot room until they showed the first flowers, when they were removed into larger pots placed in a cooler house, without bottom heat, and exposed to as much light and air as possible. I know of no stove plants that repay attention better than Allamandas, for if well attended to with water, &c., they will continue to produce abundance of flowers, from the beginning of June, to the end of September. *W. S.*

## Societies.

National Floricultural, *August* 21.—Mr. Lane in the chair. Certificates of merit were awarded to the following flowers:—Dahlia, "Nancy," from Mr. Keynes, a dull red and white Fancy of very fine form. Douglas Jerrold, ditto, yellow tipped with red; this possesses the form of a good Andromeda, and although its petals are rather long, it will no doubt become a favourite. Fuchsia, "Nil Desperandum," from Mr. Smith, a dark variety with a good habit. A Larkspur (Delphinium Hendersonii), from Mr. E. G. Henderson. A Hollyhock, named Rosamond, from Mr. Chater. This is a rosy pink flower, full, and well formed, with just sufficient guard petal and no more. The blooms were very thickly arranged on the spike. Erica Marnockiana from Mr. Marnock; a pleasing variety, in the way of retorta, but distinct from that variety. The following were commended: Hollyhock "Meteor," from Mr. Bircham, Ditto "Magnet," from Mr. Chater, Gladiolus National, Psittacinus superbus, and Atro-roseus, from Mr. Wilmore, and Dahlia "Dr. Frampton," from Mr. Rawlings. Mr. Mackintosh, nurseryman, Maida Vale, Edgeware-road, showed a Hollyhock named "Duke of Wellington," which is certainly an improvement on Napoleon, Bicolor, and all of that class; the blooms were, however, unfortunately rather past their best.

Tardebigg Horticultural Show and Cottager's Gardening Society.—The second meeting and show took place in Hewell Park on Friday, the 8th inst. This Society, it will be remembered, was formed by the Hon. Lady Harriet Clive for the purpose of encouraging the cottage inhabitants of the district in an improved system of gardening, and affording them and all classes in the neighbourhood an annual gathering for healthy and innocent recreation. The first meeting, some account of which was given at p. 582 of our last year's volume, was considered to be, under all the circumstances, particularly successful; but the excellence of the competition on this second occasion, and the large attendance of the public, have shown that whilst the Society continues under its present auspices no doubt whatever of its reaching a splendid and permanent prosperity can be entertained. The show was held, as before, on the rising ground near the further lodge from Bromsgrove, on the road to Redditch. Two long tents were erected for the exhibition of the vegetables, and six others for the use of the public, the committee, &c. The hill commanded one of the sweetest prospects the park affords, and as the beautiful gardens around the Hall were thrown open in honour of the occasion, and the day delightfully fine, the 3000 people who had met to take part in the *fete* had an excellent opportunity afforded them for enjoyment, which they did not neglect to improve. Not only the tents, but the gardens were thronged with people, who appeared highly to appreciate the privilege accorded by the envied owners of this agreeable spot. The high order in which the whole of the grounds were kept by Mr. Markham, the gardener, was the theme of continued approbation. In order to complete the arrangements for the due enjoyment of the festivity, the Yeomanry band was posted near the tents, and played at intervals during the day. The visitors appeared to belong to all classes of society except the very lowest. The children of the schools at St. Luke's, Headless Cross, and at Tardebigg were present under the escort of their teachers, and were much pleased with the treat. The show, which was the ostensible cause of this gathering of the people, was highly creditable to all who took part in it. Last year the cottagers appeared scarcely to know what was wanted, and brought big articles as samples of excellence; at this show much more judgment was manifested, and the contest amongst the really meritorious contributions was consequently severe. To aid the display, Mr. Markham filled a table with some of the choicest things from his greenhouse and conservatory, and thus an excellent effect was produced. Miss S. Horton, of Alvechurch, received an honorary prize for admirable examples of wax flowers. Captain Emmott a similar prize for a Fuchsia corymbiflora; Mr. Markham one for a large Providence Pine, another for black Hamburgh Grapes, and a third for Figs. R. Johnson, Esq., Foxlydiate, one for Peaches—the Royal Admirable; Mr. J. Gould, of Redditch, exhibited some fine flowers, and took an honorary prize; so also did Mr. Wheeldon and Miss Mary and Miss Susannah

Walford, the two last for flowers in design. Amongst those who received money prizes for the best collections of flowers was a middle-aged shoe-maker from Droitwich, named Peter Noake. He exhibited a pretty little collection of Cockscombs, Lobelias, Primulas, &c., and actually pushed his favourites before him all the way from Droitwich to Hewell on a truck. We are glad to record that his perseverance was rewarded and his ambition gratified by success. Mr. Smith, gr. to J. H. Galton, Esq., exhibited some excellent specimens of Pines from the gardens at Hadsor. At 4 o'clock the greater part of the company assembled round the rostrum erected in front of the committee's tent, and the business of distribution was proceeded with. The prizes were given away by the Hon. President, assisted by Capt. Emmott. They were in the shape of money, varying from 3*s.* to 5*s.* and for the very best kept gardens, 10*s.* The different exhibitions consisted of—Broad Beans, Dwarf Kidney Beans, Beet, Cabbage, Carrots, Medicinal Herbs, Leeks, Lettuce, Onions, Parsnips, Peas, Potatoes, Rhubarb, Scarlet Runners, Spinach, Turnips, Vegetable Marrows, Baking Apples, Cucumbers, Currants, Gooseberries, Dessert Pears, Dahlias, Flowers in nosegay, Flowers in design, Fuchsias, Geraniums; Collection of Plants in pots, Roses, Wild Flowers, ditto in design; Collection of Flowers, and Collection of Fruit and Vegetables. When the distribution was concluded, the company again dispersed over the grounds. Some of the younger couples betook themselves to dancing in the neighbourhood of the band, and this amusement was kept up till seven, when the National Anthem was played and the people began to retire. We cannot conclude our account without pointing out this as an instance of the power which wealth and a benevolent sympathy with mankind have in advancing human happiness. Here, by the kindly disposition of one family, a whole neighbourhood is stirred up to useful exertion, the condition of the working classes improved, their homes are rendered happier, periodical occasions given when rich and poor can meet together upon equal terms, for enjoyment in one of the sweetest rural retreats that the length and breadth of England can show. We have no doubt that the happiest of all the people assembled at Hewell, on Friday, were Colonel and Lady H. Clive; the purest pleasure which the heart can experience being that derived from the consciousness that we have contributed largely to the welfare and happiness of others. It is pleasing to state, that the kindness which caused the grounds to be thrown open was properly felt by the public, for not a flower was taken, or plant wilfully destroyed. *Abridged from the Worcester Herald, Aug.* 16.

Vauxhall Gardens.—An interesting show was held here on Wednesday evening last. Miscellaneous collections of Stove and Greenhouse Plants were contributed by Messrs. Rollisson, Fraser, Hamp, Stanly, Pamplin, Over, and Hook. Cape Heaths by Messrs. Fairbairn, Rollisson, and Over. Hollyhocks by Messrs. Black, Bragg, Turner, and Parsons. Fuchsias by Messrs. Hayhow, Hill, Vickery, Marshall, Hook, and Holmes. Dahlias by Messrs. Turner, Bragg, Keynes, Hunt, Robinson, Allen, Weeden, Cook, Black, and Bennett. Verbenas by Messrs. Smith, Lochner, Young, and Robinson; and Cut Roses by Mr. Francis, &c. Dahlias were very good for the season, and numerous, 21 stands being contributed by amateurs, and eight by nurserymen. Amongst the varieties exhibited that were sent out last spring, we noticed the following in good condition:—Nil Desperandum, scarlet, very full and large; Roundhead, salmon; Summit of Perfection, purple; Sir C. Napier, vivid scarlet; Admiral, lilac; Nepaulese Prince, maroon; Mr. Herbert, orange; Gem of the Grove, purple; Model, bronze; Leda, orange; Queen of Dahlias, pale lilac; Mrs. Hansard, yellow, tipped with white; Elegantissima, white and bluish purple; and Pretty Polly, red and white. The following old but favourite sorts were shown in good order:—Duke of Wellington, Mr. and Mrs. Seldon, Fearless, Essex Triumph, Richard Cobden, Scarlet Gem, Privateer, Princess Radziville, Shylock, Black Prince, Nonpareil, and Queen of Lilacs. Among the Hollyhocks were good blooms of Charles Baron, Comet, Rosy Queen, Magnum Bonum, Aurantia, Enchantress, Charles Turner (seedling), Susanna, Sir D. Wedderburn, Model of Perfection, Lord Willoughby d'Eresby, Venosa rubra, Nobilissima, Prince Albert, Delicata, Standard of Perfection, Rosea alba, Rosea grandiflora, Elegans, Eclipse, Sulphurea perfecta, Premier, Beauty of Haverhill, Bella Donna, Lady Clark, Bessy Bell, Gen. Bem, Queen of Whites, Andrucana, Queen, Obscura, Napoleon, Caroline, Pitho, Subram, Walden Gem, Mount Etna, Mulberry Superb, Formosa, Bicolor, President, Queen of Lilacs, Snowflake, Princess Alice, Watford Surprise, and Conspicua. Mr. Parsons had some promising seedlings, which we hope to see again. Fuchsias consisted of—*Dark Varieties*:—Eppsii, Exoniensis, Serratifolia, Orion, Prince Albert, Orestes, Inaccessiole, Sir J. Falstaff, Don Giovanni, Magnificent, Exquisite, Kossuth, Sir R. Peel, Corallina, Dr. Smith, Splendida, Clapton Hero, and Nonpareil. *Light Kinds*:—Fair Rosamond, Duchess de Bordeaux, Pearl of England, Queen Elizabeth, One in the Ring, Diana, Dr. Jephson, Globosa alba grandiflora, Napoleon, Purity, and Gem of the West. Roses were generally small and somewhat out of character; but among them we remarked fair blooms of La Reine, Saffranor, Cloth of Gold, Aimée Vibert, Charles Souchet, Mrs. Elliott, General Allard, Acidalie, Bouquet de Flore, Paul Joseph, and other favourite kinds. Verbenas were numerous; but rather past their best. There were also some fruit and cut flowers. The latter were much admired.

## Notices of Books.

*A Volume of Figures and Descriptions of Indian Orchids.* By Robert Wight, M.D., 4to; being Part I., Vol. V., of his Figures of Indian Plants.

The volume for which the above title is invented, the work itself having reached us without one, is among the most valuable additions that have yet been made to Indian botany. Dr. Wight, in carrying out his plan of illustrating all the Indian genera of plants by means of outline figures, has here produced a work of which we can speak in terms of high praise. His artist has evinced a sound knowledge of the structure of the order, and has had his attention carefully drawn to the minute but indispensable characters by which alone the genera and species of Orchids can be distinguished, so that the plates are in no degree inferior to those of Turpin in the works of Humboldt and Delessert.

The purchasers of these plants will find the volume indispensable to them, now that an agency for their sale has been established both at Calcutta and Madras; the names employed by Dr. Wight will undoubtedly correspond with those of the Indian sale lists, and thus a judgment of the horticultural value of the species can be correctly formed. This is the more important, because we learn from Dr. Wight's pages that numerous very fine things are now made known to Europe for the first time; as for example *Coelogyne nervosa*, *Dendrobium Jerdonianum* with the habit of *D. villosulum* but without its hairs, and *album* with large pure white flowers and the habit of *formosum*; *Saccolabium speciosum*, a glorious Malabar plant with long drooping racemes of rose coloured flowers; *Aerides Lindleyanum*, in the way of *crispum*; *Pattonia macrantha*, a very fine plant from Malacca; and *Cyrtopera Cullenii*, a large yellow-flowered terrestrial species.

It is impossible that a botanist, even with the learning and experience of Dr. Wight, away from this country, where alone Orchidaceous plants can be studied critically, should avoid errors and oversights; but they are not such as affect the value of the volume before us as a storehouse of capital figures. The formal examination however of such a work would involve an amount of research for which our available leisure is wholly insufficient. We can therefore only remark for the present that Dr. Wight's *Oxysepala* seems to be very near *Bolbophyllum clandestinum*, his *Aggcianthus marchantioides* is identical with *Porpax reticulata*, published in the Botanical Register in 1845; *Lichenora* seems hardly distinct from *Eria*, notwithstanding its peculiar habit; *Josephia* may be a good genus near *Thelasis*. *Appendicula Hasseltii* is certainly some *Agrostophyllum*; *Pattonia* seems to be the same as *Wailesia*, the gland of the pollen-masses having been overlooked; and, finally, *Cytheris Griffithii* is nothing but *Calanthe vestita*, in which also the pollen gland was missed.

To illustrate the whole of the Indian Orchids, with the aid of the artists employed by Dr. Wight on this occasion, would be a great triumph for Indian botany, and a task worthy the learned and indefatigable author.

## Garden Memoranda.

Footscray Nursery.—This is the great resort of the lovers of English and other hardy Ferns, as the knowledge of Mr. Sim respecting these plants ensures that the purchaser acquires the species he is in want of. The plants seemed in good health, and the collection very complete. The general appearance of this nursery is much improved; and, in addition to the rare and out-of-the-way plants cultivated by Mr. Sim, he has now got a capital stock of Hollyhocks, Sweet-Williams, and some other florist flowers. There were also a white Calceolaria and a blue Myosotis (azorica?) of both of which a good stock is in preparation for bedding out next year. These plants will no doubt both be found very useful for this purpose. Those who are interested in the difficult questions respecting the different species of English Ferns, will reap much information from the papers of Mr. Sim published in Beck's "Florist." *Dodman.*

Horticulture in Toronto, Upper Canada.—No city in North America equals Toronto in the quality and abundance of such vegetables as are in general demand. Market gardeners are numerous, the greater number being proprietors of the land they cultivate. In this neighbourhood land can always be bought on easy terms of payment, in quantities of from 1 to 20 acres. The produce of the market gardens is sent to market in a handsome tasty manner. With a large and rapidly increasing population, the demand is quite encouraging, and the prices remunerative. Labour is more expensive than in England, but rents, taxes, manure, and other things are quite moderate. In this business the last few years has effected a great improvement, both in the quality of the articles and the way in which they are prepared and sent into market. For this change for the better, much credit is due to Mr. Joseph Passe, of Yorkshire, who began business here a few years ago, and whose system of having everything done in the best manner has been generally followed. There are two seed establishments in the city, the proprietors of which import the greater part of their seeds from London. In connection with the seed business, Mr. William Gordon is also a jobbing and contracting gardener, having the care of numerous small gardens about the city, and the formation and laying out of new places. During the working season, he employs between 20 and 30 men, a few of them gardeners, but the greater part labourers. The other seedsman, Mr. J. Fleming, has a greenhouse, and disposes of quite a large number of plants. He has also a garden of moderate extent, in which he cultivates large quantities of hardy Roses, shrubs, minor fruits, Dahlias, and other articles adapted to limited space. His premises are in a fine locality, and his business seems to be rapidly augmenting. The only nursery here, and the most extensive in the province, is owned by Mr. George Leslie. He practically understands and personally superintends all operations in the ground. The extent of nursery ground is 50 acres, two-thirds of which are at present occupied with fruit and ornamental trees, and other nursery productions, and the other third in course of preparation. Standard Apple-trees may be considered the staple article, after which may be named Cherries, Plums, Pears, and Peaches. Everything usually grown in nurseries is here cultivated, and although having to compete with the numerous nurseries existing in the neighbouring State of New York, the demand is greater than there is yet the means of supplying. Seedlings of many descriptions of forest and ornamental trees, shrubs, new Roses and other plants, are annually imported from Great Britain, being raised there with greater facility and at a cheaper rate. The demand is mainly for hardy trees and shrubs, and there is only a small greenhouse on the place at present, a more extensive range having recently been burned down. There exists a great drawback on the profits of the business here, in the severity of the winters, large numbers of young trees being killed with the frost; and in summer it requires constant labour to keep under and destroy the myriads of insects which infest nearly all descriptions of trees. *R. F.*

## Miscellaneous.

*A live Toad in Flint.*—M. Monins states to the Institute, that on the 23d of last June, three workmen digging a well for M. Baston, of Blois, discovered, 20 yards below the surface, in the midst of a layer of flints, one of these stones much larger than the rest. Upon being broken a toad was found squatting in the centre of the flint. The cavity was lined with chalk, and exactly moulded to the form of the toad, and it is thought "infinitely improbable" that the witnesses of this strange fact should have been mistaken. Moreover, the presence of a chalky elevation on which the head of the toad was lying, seems to prove that the cavity was the true habitation of the animal. *Comptes Rendus, July* 21.

*Chemical Products of Peat.*—A report on the chemical products of Irish peat has been presented by Sir Robert Kane, the director of the Museum of Irish Industry. The inquiry was undertaken at the suggestion of Lord Clarendon, in consequence of the numerous applications for information by foreign authorities, and by individuals interested in the welfare of Ireland, consequent upon the announcement of the method patented by Mr. Rees Reece, and the establishment of the Irish Peat Company. The two principal points to be arrived at were the actual nature and quantities of the products that would be obtained, and the economic conditions of the process, so as to determine its importance as a commercial speculation. With regard to the first, namely, the products obtainable; the result of the experiments was to establish the general correctness of Mr. Reece's statements, the comparison of the materials gained by that gentleman with those gained by Sir Robert Kane, being as follows:—

| From 100 parts of Peat. | Statement in Mr. Reece's prospectus. | Average results of Museum Trials. |
|---|---|---|
| Sulphate of ammonia | 1·000 | 1·110 |
| Acetate of lime | ·700 | ·305 |
| Wood naphtha | ·185 | ·140 |
| Paraffine | ·104 | ·125 |
| Fixed oils | ·714 | 1·059 |
| Volatile oils | ·357 | |

With regard to this comparison, Sir Robert Kane remarks: "It is evident that the quantity of ammonia obtained is rather greater than that reported by Mr. Reece; secondly, that the quantity of oils and paraffine may be considered the same; thirdly, that the quantity of wood naphtha expected by Mr. Reece is more than we obtained in average, but not more than was obtained in some Museum trials. That the quantity of acetate of lime expected by Mr. Reece is more than double that which was in average obtained in the Museum, unless the commercial acetate of lime, calculated by Mr. Reece, shall contain such excess of lime, &c., as shall render its weight double that which the pure article calculated in the result of the Museum trials, should have. This latter circumstance may possibly explain the difference. It may therefore be admitted that the statements made as to the quantities of those bodies obtainable from peat have not been exaggerated, and, indeed, are such as should immediately be inferred to be obtainable from a body of its constitution, compared with coal and wood." The amount of produce being thus determined, the report touches upon the other question; namely, the cost of its production. This is described to be so difficult as to preclude the possibility of any absolute conclusions. The facts that the manufacture is of a novel character, involving numerous and complex collateral operations, and that it is to be established in localities and amongst populations unaccustomed to manufacturing industry, are referred to as calculated to have an important influence in augmenting the expense. At the same time also, some strong doubts are expressed as to the practicability, on a large scale, of the mode upon which Mr. Reece relies for an inexpensive supply of the heat necessary for conducting his entire operations, which consists in employing as fuel the gases produced in the blast furnaces, by the distillation of the peat, after all their condensable vapours shall have been secured. On the whole, however, even the conclusions thus arrived at, and which have evidently been framed with all the caution that would be generated by a sense of the responsibility of encouraging extravagant views, are not unfavourable to the hope, that the process, on its introduction, may prove sufficiently profitable, and that, eventually, as the difficulties attending it shall gradually be lessened by experience, it may realise some of the sanguine expectations originally indulged in, regarding its possible influence in the regeneration of Ireland. Subjoined is the final paragraph of the report:—"Although the excessive returns stated by the proposers of the manufacture may not be obtained, it is yet probable that, conducted with economy and the attention of individual interests, the

difficulty connected with so great complexity of operations would be overcome, and the manufacture be found in practice profitable. And, certainly, it must be regarded as of very great interest and public utility, that a branch of scientific manufacture should be established, specially applicable to promote the industrial progress of Ireland, by conferring a commercial value on a material which has hitherto been principally a reproach, and by affording employment of a remunerative and instructive character to our labouring population." *Mechanic's Magazine.*

*Aquatics.*—" A Utricularia, which you will find under No. 1050 (U. uniflora, MS.), is surely the simplest in its structure of all its family. Stems of the size of an ordinary sewing-needle, fixed into the sand by a small cone of radicles, without leaves, but with a minute tubular 2-lipped bract a little below the flower, which is white and comparatively large, complete the description of its outward aspect. I have often been struck with the wonderful contrast in size which is presented here in both the animal and vegetable world. Under a gigantic Castanheira, or a Caryocar, may occasionally be seen an almost microscopic Cyperacea; and the same lake which produces this fairy Utricularia, bears on its bosom the queen of the waters, Victoria regia. Another Utricularia (Coll. No. 1053, U. quinqueradiata, MS.) has a peculiarity of structure to me quite novel, though you may have met with it before. It is a small species, with submerged stems and bladdery leaves, but the pedicels, which are about 2 inches long, have about midway a large horizontal involucre of five rays, resembling the spokes of a wheel. This floats on the water, and supports the upper part of the pedicel in an erect position; the whole recalling a sort of floating lamp I have seen, especially as the large yellow flower may be considered to represent the flame. The rays are half an inch long, clavate, not hollow, but composed of about six series of large diaphonous cellules. The cellules are convex on the surface, giving the rays a papillose appearance, hexagonal, pale green, with pink interstices. The rays are trifid at the extremity; segments short, twice dichotomous, the last divisions capillary, rarely sacciferous."—*Spruce, in Hooker's Journal of Botany.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

That the plants which are intended for various purposes and different seasons may each receive such sort of treatment as is most calculated to make them answer the end for which they are grown, a distinction should be made between those which are designed to keep up the display between this time and the end of November, and those which are to be useful during mid-winter and early spring. A third part will consist of those plants, principally hard-wooded, which are cultivated more especially for their summer services. By reducing the thing to a system, in assembling together those whose season of flowering and required treatment are similar, it is more easy to give to each the special management which its case demands. We are aware that to do this properly, several houses or pits are required; but where such conveniences are not at command, much may be done even in one house, by arranging the plants for the different periods in such situations as may, on consideration of the matter, seem best calculated to ensure them the treatment they require. After this time, the creepers on the roofs of plant-houses should be kept within more moderate limits, and gradually reduced as the season advances, that the plants beneath them may not be deprived of the sun and air, so necessary to mature their growth. Many plants in these houses are now in the last stage of flowering; and if attention has been paid to raising a young stock, the old ones of many quick-growing, soft-wooded kinds may be discarded. By this practice, the remaining plants may be placed farther apart, thereby allowing a freer circulation of air among them. Plants of Gloxinias, Achimenes, &c., which are from time to time removed from the houses, to ripen their growth, should be placed in a dry frame, where they can have plenty of light, but where their supply of water must be gradually reduced; they must not be allowed to get dry all at once, which is too commonly the treatment they receive, and in consequence of which many of them perish entirely.

### FORCING DEPARTMENT.

Melons.—These are now growing fast, and must have regular attention in regard to stopping and thinning. Let the plants have abundance of air, and allow a little to remain on all night, as the flavour of the fruit is much improved by a systematic attention to this point. Let them have an ample supply of water, except when the fruit is ripening. Continual care is necessary at this season, to prevent the establishment of red spider upon the leaves; and another enemy, not less to be guarded against, is the cricket, which eats its way into the fruit both of Pines and Melons, just as they are approaching maturity. The best way of destroying them is to mix some arsenic and crowfig (nux vomica), and lay a little in the bottom of an earthen pan, placing a pan of water near it. The crickets eat the poison greedily until they are driven by thirst to the water, of which they drink till they burst.

### FLOWER GARDEN AND SHRUBBERIES.

Cold frames, handlights, and every other convenience for propagating, will now be put into requisition. Calceolarias, Pentstemons, the best kinds of Lobelias, Senecio, Petunias, &c., when sufficiently struck and gradually hardened, may be taken up and potted. This mode of striking is very much less troublesome than in heated structures; while, at this season, it is equally certain. Prepare for getting the best Cinerarias potted. Let the Carnations and Picotees in pots for winter flowering have every attention, that when placed on the front shelves of the greenhouse stage, in November, their flowering shoots may be strong and numerous. If they have been kept from flowering, and no shoots are now upon them of more than 4 or 5 inches in length, they may be allowed to grow from this time, as they will begin flowering in November, and if the plants are healthy, they will continue through the winter.

### HARDY FRUIT GARDEN.

Wall Trees.—The tying in or nailing of these should now be gone over for the last time this season, that the young wood, from its closer proximity to the wall, may have a better chance of ripening. Now that the fruit of Morello Cherries is gathered, as many of their shoots as space will admit of, without being crowded, should be laid in. Enough has been previously said about Strawberries, and all that is now necessary is to urge the early completion of the work connected with the summer management of this crop, especially in making new plantations, and cutting away the runners, and forking rotten dung about the roots of the older ones. The old Raspberry canes which have done bearing should now be cut away, and the strongest of the young ones tied loosely up in their places, stopping the very luxuriant ones at about 5½ feet high. A little rotten dung forked in amongst them will very much assist the swelling and ripening of the buds for next year's crop.

### KITCHEN GARDEN.

Continue at intervals to earth up some of the earliest Celery a few weeks before it is required for use; but unless in very cold and late localities, it is better to defer the soiling of the general winter crop till the third or last week of September. Let the intermediate rows of Peas, &c., be cleared away as soon as possible after their produce is gathered, that the Celery may have the advantage of the additional light and air. As an extra stimulant for any crops which we wish to grow particularly fine, we have all the dung from the aviary and poultry-yard carefully collected and mixed with three or four times its bulk of charred refuse. The heaps of this mixture are cased over with charcoal dust, and after lying a year in that state, we use it for almost all kitchen-garden crops; considerable care, however, is necessary in this, as it is nearly as strong as guano, and of course an overdose would be dangerous. After the ground is regularly dunged and trenched, a light top-dressing of this mixture is forked or raked in, previous to planting or sowing the crops; and to others in a state of progress, we lay a ring of it a few inches distant round the collar of the plant, and cover it with a slight top-dressing of soil.

State of the Weather near London, for the week ending Aug. 21, 1851, as observed at the Horticultural Garden, Chiswick.

| August. | Month & Age. | Barometer. | | Temperature of the Air. | | | Temperature of the Earth | | Wind. | Rain |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 15 | 18 | 29.973 | 29.893 | 79 | 48 | 63.5 | 64 | 61½ | W. | .00 |
| Satur. .. | 16 | 19 | 29.999 | 29.931 | 77 | 58 | 67.5 | 64 | 64 | S.W. | .02 |
| Sunday . | 17 | 20 | 29.893 | 29.883 | 76 | 54 | 65.0 | 64½ | 62 | S.W. | .28 |
| Monday | 18 | 21 | 30.240 | 30.056 | 70 | 38 | 54.0 | 63½ | 61½ | N. | .00 |
| Tues. .. | 19 | 22 | 30.355 | 30.317 | 72 | 45 | 58.5 | 62½ | 61 | E. | .00 |
| Wed. .. | 20 | 23 | 30.294 | 30.183 | 82 | 50 | 66.0 | 61 | 61 | S.W. | .00 |
| Thurs... | 21 | 24 | 30.119 | 30.003 | 79 | 54 | 66.5 | 63 | 61½ | S.W. | .00 |
| Average | | | 30.119 | 30.033 | 76.4 | 49.5 | 63.0 | 63.2 | 61.6 | | .3 |

Aug. 15—Overcast and fine; cloudy.
" 16—Fine; overcast; rain at night.
" 17—Fine; rapid showers; sunshine at intervals; rain at night.
" 18—Cloudy and fine; clear and cold at night.
" 19—Very fine; slight uniform haze; clear.
" 20—Very fine throughout; cloudy at night.
" 21—Very fine, with hot sun; clear and fine at night.
Mean temperature of the week, 1 deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending August 30, 1851.

| August. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 24 | 71.9 | 47.9 | 59.4 | 11 | 0.23 in. | 1 | 6 | — | — | 5 | 4 | 6 | 3 |
| Mon. 25 | 70.9 | 55.7 | 63.3 | 8 | 0.32 | 2 | 2 | 1 | 1 | 5 | 8 | 4 | 2 |
| Tues. 26 | 72.5 | 48.6 | 60.5 | 8 | 0.31 | — | 2 | 2 | — | 5 | 7 | 5 | 4 |
| Wed. 27 | 72.7 | 50.1 | 61.4 | 7 | 0.40 | 1 | 2 | 3 | — | 1 | 6 | 6 | 6 |
| Thurs. 28 | 72.6 | 51.1 | 61.9 | 12 | 0.20 | 1 | 5 | 3 | — | 4 | 3 | 7 | 2 |
| Friday 29 | 71.4 | 49.4 | 60.4 | 10 | 0.58 | 3 | 3 | 4 | — | 2 | 7 | 3 | 3 |
| Satur. 30 | 71.9 | 49.7 | 60.8 | 6 | 0.92 | 1 | 4 | 2 | — | 4 | 5 | 6 | 3 |

The highest temperature during the above period occurred on the 25th and 30th, 1826—therm. 83 deg; and the lowest on the 29th, 1850—therm. 32 deg.

## Notices to Correspondents.

Arbutus: *Devoniensis.* You may cut them down now; but it would be better in the spring, just before the buds swell. Cut the old ones to within 3 feet of the ground.

Birds.—The Chaffinch: *S E V.* We should advise you not to purchase the bird, however musical his song. His blindness arises, not as has been alleged, from natural causes, but is the result of the most abhorrent, fiendish cruelty. It is a generally received opinion, that these birds in particular sing more steadily and joyously, when deprived of their sight, than they do when they have the use of their eyes. This is, we hardly need observe, a popular and *most* vulgar error. Red-hot needles have been passed before the eyes of this bird. His very tears have become heated, and have combined, together with the agonies attending the operation, to hermetically close his organs of vision for ever! We know much, very much, about these practices; and shall have more to say of them hereafter. *W. K.*—The Java Sparrow: *Sarah N.* The injury inflicted on your little favourite by the remorseless cat, will teach you a salutary lesson. We have spoken till we are weary, of the folly of keeping cats in a house where there are birds. It is an act of thoughtless cruelty; for birds are aware that these vermin are their natural enemies, and always feel timid in their presence. The only atonement you can make to the unfortunate sufferer, who will assuredly die, is to get rid of his destroyer. *W. K.*—The Canary: *Alexis.* It is too late in the season to let your birds go to nest again. Besides, you have been most fortunate in rearing so large a family under such auspices. Young birds rarely thrive when hatched so late in the year; nor is it kind so to tax the unwearied assiduities of the parent birds. A moment's reflection will show the good sense of this. *W. K.*—The Magpie: *D G.* We advise you by no means to *think* of keeping such a bird. It will never repay you for the trouble; and is the very last bird to be made the companion of a young lady. If you are so fond of having a "pet," why not procure a young canary, and lavish your fond affections upon him? Here there will be a "suitable return." *W. K.*—Inflamed Eyes and other Ailments: *W R.* Your series of questions, about so many birds, if answered in this place, would occupy far more space than we can afford to devote to the subject. We will give the matter our best consideration, and write you fully by post. *W. K.*—The Canary: *A Constant Subscriber.* This complaint is peculiar to the season. Give the invalid a little finely-scraped raw beef, moistened with water; and at the end of three days, let his drink be boiled milk (instead of water); this may be discontinued after two days. *W. K.*—The Virginian Nightingale: *An Interested Querist,* who writes from Carshalton, is thanked for his suggestion. We will prepare an article on the subject, for next week's Paper. Meantime, we think it right to tell him, that his views are very correct; and that his wishes may be more easily realised than he imagines. *W. K.*

Broccoli: *G Y H.* Grange's Early White is not to be depended upon in some localities. We have often seen it button or flower prematurely. If you had sown a good kind of Cauliflower in April, instead of the Broccoli, you would have had a better return for your labour; and if sown again in May and June, you would then have a succession until November or December, when the Cape Broccoli comes in.‡

Cape Pelargoniums: *P.* Some of the best are ardens, quinquevulnerum, Blandfordianum, reniforme, crispum, elatum, glaucum, flexuosum, bicolor, elegans, and holosericeum. They will succeed under the treatment usually given to the common florists' varieties. You will find the names of the best fancy and other sorts fully given in our reports of the different metropolitan exhibitions.*

Chicory: *T Moore.* The roots must be ripe, like Parsnips, and cleaned. They are then cut into thick slices, and dried by exposure to the sun, or by artificial means. When wanted for use, the slices are roasted and ground like Coffee. Grocers are the customers for Chicory.

Grapes: *H R.* You cannot be wrong in giving your Grapes plenty of air while they are ripening, and endeavour by all possible means to keep the foliage healthy. If these things are attended to, and your borders dry, open, and in "good heart," you cannot fail to have good crops.‡

Heating: *A Cambrian.* You will readily perceive the impropriety of our recommending one tradesman in preference to another, when skill is equal and the market is fairly occupied. What you ask for has been long since done by the Horticultural Society, and the result published; not always to the satisfaction of the parties concerned.—*J W.* There is little or no difference in the merit of the various boilers now in use. Those are the best which expose the greatest surface to the action of fire. In all of them water must continually be passing through them, the principle of hot-water heating being that cold water is incessantly flowing into the boiler and hot water flowing out. Some last longer than others; but that is a question of workmanship, not of construction. What you suggest has long since been done by the Horticultural Society. The result is what we say.

Hollyhocks: *L B S.* See p. 520 of last week's Number.‡

Insects: *W U.* The caterpillar sent is that of the common elephant hawk moth, Sphinx (Chærocampa) Porcellus. *W.*—*B B.* Your Melon leaves are infested with the red spider. You must fumigate very carefully, and if your frame can be closed very tightly, place a quantity of pounded Laurel leaves in it. *W.*

Names of Plants: *John Walters.* It is not true that Dielytra spectabilis was introduced in 1810. We do not see what you think remarkable in the scarlet Pelargonium.—*J D L.* We do not see how it differs from C. nigra; it is certainly not Jacea.—*Rudolph.* 1, Illecebrum Paronychia, L., now called Paronychia nivea; 2, looks like a bit of Ferula nudicaulis, but, in fact, is not determinable. Umbelliferous plants require good leaves and ripe fruit.—*W F S.* Œnothera dentata, Crassula glomerata. We are unacquainted with the Labiate, and have not yet been able to identify it. Is it annual, or what? what sort of lower leaves has it, and what its habit?—*Erzeroum.* 629, Paliurus australis; 711, Cratægus Pyracantha.—*G S W.* Gomphocarpus fruticosus.—*A C.* Cystopteris dentata; it may be planted on rockwork in a shady place, taking care that it does not suffer for want of water in summer. *S.*—*L B S.* Veronica salicifolia. It is a hardy greenhouse shrub; but it might possibly survive the winter out of doors in a warm situation at Reigate. It strikes readily from cuttings ‡—*T Y P.* 2 and 3, Calluna vulgaris; 4, Erica cinerea; 5, Calluna vulgaris *var.* tomentosa; 1, E. mediterranea (?); 6, not in flower.—*Jos. White.* Aerides flavidum, fine and new.—*L V H.* It is apparently new: we can find nothing like it; but we will mention it again next week.—A few inquiries stand over for further consideration.

Planting: *D S.* We fear you will be disappointed if you plant Pinus excelsa for profit. It is as dear as Deodar, and not nearly so handsome. P. Laricio beats everything in quickness of growth and cheapness. P. excelsa is like a Weymouth Pine; and we do not feel sure that the wood of the former is much better. However it is a very handsome tree, and if you can get it cheap you might plant it mixed with Deodars.

Toads: *H T.* No. 16 of the "Comptes Rendus" for 1851.

Transplanting: *G J B.* If your Pinus excelsa is to be moved, you had better perform the operation in September, and in the way you propose; drenching the soil with water as the earth is filled in, and not treading its roots. But as the habit of the tree is that of the Weymouth Pine, you may prefer to let it form a clean bole by the side of your road. In that case merely pinch off the ends of *all* the lower shoots, so as to force onwards the leader; but do not use the knife until necessity compels you.

### SEEDLING FLOWERS.

Hollyhocks: *J Chater and Son.* Your Queen of England sustains the good character we gave of it about this time last year. It is a fine rosy pink flower. The yellow sort is scarcely distinguishable from Sulphurea perfecta.*

Pansies: *A T.* The result of your experiment, though interesting, has unfortunately amounted to little; for all the blooms sent possess two shades of ground colour, which would be fatal to them as show flowers. The trial may, however, be worth repeating.*

Petunias: *G B E.* All pretty, but we do not find in them any improvement on kinds already "out." The best are 4, 6, 13, and 15; 4 is a purple self, of good substance, but it wants size. The other three are pleasingly veined flowers, and worth cultivating.*

Picotees. *T F.* Your medium-edged red Picotee is a good second class flower; the petals are large, and the edging is tolerably well defined; the colour is, however, somewhat dull; size full.*

Scarlet Geranium: *B B B.* Your seedling is certainly not so good as some of the best sorts now in cultivation. It is much too dull in colour.*

PERUVIAN GUANO.

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EDWARD PURSER, Secretary.

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| | |
|---|---|
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Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

# The Agricultural Gazette.

*SATURDAY, AUGUST* 23, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Aug. 28—Agricultural Imp. Soc. of Ireland.
THURSDAY, Sept. 4—Agricultural Imp. Soc. of Ireland.

OFFICIAL returns of the agricultural statistics of Ireland, for the last two years more particularly, have been recently presented by Captain LARCOM of the Board of Works, and published. These returns show nearly a duplicate increase in the number of holdings above 15 and not exceeding 30 acres, and a triplicate increase in the number above 30 acres, within the last two years. The most marked alteration, from the combined influences of poverty, famine, disease, eviction, and emigration, has been effected in the number of holdings above 1 and not exceeding 5 acres—these having decreased from 310,375 to 91,618 in the course of the last 10 years. The extent of land under crops last year was 214,544 acres above the area in culture in the previous year.

The return for 1850, is as follows:—

| | | |
|---|---|---|
| Wheat | 604,867 | acres. |
| Oats | 2,142,596 | „ |
| Barley | 263,350 | „ |
| Bere | 57,811 | „ |
| Rye | 18,342 | „ |
| Beans and Peas | 62,590 | „ |
| Total of grain crops | 3,149,556 | „ |
| Green crops | 1,317,572 | „ |
| Flax | 91,040 | „ |
| | 4,558,168 | „ |

"These figures (Captain LARCOM observes), indicate a decided disposition on the part of farmers to fall back upon the classes of crops best adapted to the soil and climate, giving the preference to Oats and Flax, the latter crop showing an increase of one-half on that of 1849." A much larger breadth of land has doubtless been under Flax this year.

It may not be uninteresting to compare Ireland in the foregoing particulars, with the north-west division of France, which possesses several analogous features, such as minute subdivision of land, suitableness of climate to tillage and pasture, deficiency of moving capital among the small occupiers, equality of farm labourers' wages, rents and taxes, and we must add slovenliness and ill economy of husbandry in many respects. This division or zone of France is divided for official purposes into 21 departments, and of these 12 are inland, and the remaining 9 maritime. Among the former are some of the richest pasture and corn soils, with a very civilized and intelligent population, and in the latter are included some of the most mountainous and poorest parts of Brittany, where the Celtic natives have the characteristic deficiencies of their congeners on the mountains and bogs of Ireland, and endure similar privations. Each country exhibits parallel extremes of national character, corresponding diversities of soil and climate, and distinctions of wealth and poverty. Some large farms and numerous small holdings, with cattle of varied kinds and qualities, are common to each. The north-west division of France contains about 31,000,000 of English acres, or a third more than the area of Ireland, and deducting 10,000,000 under pasturage, mountains, woods, plantations, and other lands not serviceable for tillage, there remain about 21,000,000 of acres for the purposes of cultivation.

Let us compare the proportions of live stock in each country with those of the same kinds in the other; for which purpose we shall place the reports of Captain LARCOM side by side with those of MM. RUBICHON and MOUNIER, which are also official tables, and though drawn up some years ago, they are probably just exponents of the statistics of the present time.

| | North-West of France. | Ireland. |
|---|---|---|
| Cattle | 3,320,007 | 2,917,949 |
| Sheep | 7,015,194 | 1,676,096 |
| Pigs | 1,115,239 | 927,502 |
| Horses and Mules | 1,192,860 | 548,719 |
| Asses | 81,226 | 123,412 |
| Goats | 100,777 | 201,112 |

Now, we are to bear in mind that the total area of Ireland is one-third less than that of the portion of France under present comparison with her, yet we find that cattle and pigs in Ireland are in much higher ratios, to the extent of land, than in France. In the asinine department, Ireland has absolutely and relatively a large numerical superiority, though, in respect of the more valuable working animals, horses and mules, her deficiency is obvious. Yet, on the other hand, the superabundance of horses and mules in France is indicative of one of the most depressing hindrances to her agricultural prosperity, namely, an excessive population of petty land-occupiers, who are obliged to maintain a number of horses disproportionately great to the size of their farms. When fewer horses are kept in Ireland we shall expect to see a better class of farmers there. With the consolidation of little holdings, to an extent commensurate with the wants and capabilities of the agricultural population, the present uneconomical surplus of horses will necessarily diminish; in very little farms, the spade should be the implement substituted for the plough.

As to sheep, we feel some difficulty in estimating the ratio, because lambs are included in the French tables (the number being more than a million and a-half), but are not separately designated in the Irish tables. Admitting, however, that numerically the ratio of Irish to French sheep is much less than that of two to three, we may assume that in respect of carcase weight, the scale is, on the whole, in favour of Ireland. Any person who has examined the miserable little sheep in France, and compared them with the fine animals that are kept in large flocks by the great sheep farmers in the rich pastures of several counties in Ireland, will have no difficulty in judging that the actual amount of mutton is, on average numbers, greater in the latter country than in the former, where so few flocks are to be seen, though two or three wretched little sheep, fettered together, and badly fed, are to be found there frequently.

We must now advert to the tabular returns respecting the cereal and other most important crops:—

| | North of France. | Ireland. |
|---|---|---|
| Wheat | 3,664,262 acres | 604,867 acres |
| Rye | 1,389,522 „ | 18,342 „ |
| Wheat and Rye mixed | 832,771 „ | —— |
| Barley | 956,412 „ | 321,161* „ |
| Oats | 2,829,147 „ | 2,142,596 „ |
| Buckwheat | 1,099,190 „ | —— |
| Maize | 49,972 „ | —— |
| Potatoes | 477,017 „ | 1,317,572† „ |
| Mangold Wurzel | 38,835 „ | —— |
| Colza (Rape) | 130,495 „ | —— |
| Leguminous crops | 121,245 „ | 62,590 „ |
| Flax | 119,125 „ | 91,040 „ |
| Hemp | 126,785 „ | —— |
| Hops | 440 „ | —— |
| Tobacco | 1,387 „ | —— |
| | 11,828,305 | 4,558,168 |

The artificial Grasses and natural meadows we omit on each side.

We perceive that the total of cereal crops in Ireland (on an area of 13,464,300 acres of arable land, according to the census of 1841) is only 3,086,960 acres, whereas the cereals, on 21,000,000 of arable land in France occupy 10,896,276 acres, or, in round numbers, half the entire area of arable land, whereas, the cereal crops in Ireland occupy but a fraction over one third of the arable area.

As Ireland has, however, decidedly more general capabilities for producing green crops of all sorts than corn crops, excepting Oats, it is pleasing to see that the total of green crops (Clover not included) is already so considerable; and this is but the commencement of a better system. The Potatoes and Mangold Wurzel of the French district under comparison amount only to 515,852 acres. The Potatoes are principally used as human food, and the other crop is partly manufactured for sugar; Colza (which is cultivated for its oil), and Tobacco are scourging crops, requiring much manure, and giving no return to the soil. Of the large breadth of land under the head of root crops in Ireland, we hope that Turnips and Mangold Wurzel (field Beet)—for cattle feeding—fill a considerable space, for it would be grievous to believe that Potato culture, as the principal supply of food to the population, is again increasing to an inordinate degree.

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. XIV.—In Class 3, "Substances used as Food," of course the farmer finds a profusion of things to interest and instruct him. But samples are for personal inspection, not for being read of; and enlarge as we might, we should be able to give but an imperfect idea of the different qualities of grain, pulse, oils, seed, honey, preserved meats, flitches of bacon, "preserved pigs on the mild cure principle," &c.; we shall, therefore, at the present time, mention but a few of the many objects in this class. All farmers must be gratified when they behold Messrs. Gibbs and Co.'s assortment of dried Grasses and seeds, and no less than 598 bowls of Wheat, Barley, Beans, and grain of all kinds, natural and artificial Grass seeds, and the seed of every possible plant likely to be cultivated upon a farm. P. Lawson and Son, of Edinburgh, display in glass cases a remarkable assemblage of all the vegetable products of Scotland; with all agricultural seeds, and specimens of the plants producing them; so that here the farmer may study the appearance of different seeds, and learn to know good from inferior by their looks. Malt and Hops are also here—the latter in considerable variety. R. Golding, of Hunton, near Maidstone, shows a pocket of Mid-Kent Hops, probably the finest, the richest, and most valuable. Jones's are a shorter variety, thus enabling the grower to use the poles which are too short for other kinds. Colegate's are hardy, and suited to poor soils.

James M'Killican, of Piperhill, Cawdor, Scotland, exhibits a sample of white Wheat, which is interesting as being the produce of the first crop from land formerly worthless, manured by 300 lbs. weight of Peruvian guano to the acre. Produce per imperial acre, about 5 quarters; weight per bushel, 65 lbs. 1 oz. J. Kendall, of Treverlin, Truro, Cornwall, shows a sheaf of white Wheat, named the "Giant Straw Wheat," grown by the exhibitor in quantities of 10 to 15 acres for the last 10 years. This Wheat is stated to have produced, on an average, 60 bushels per acre. Its superiority consists in the length, size, and stiffness of the straw, and in its abundant produce. R. Raynbird, of Hengrave, near Bury St. Edmund's, Suffolk, exhibits, among other samples, a specimen of Kessingland Wheat, a productive and new variety. It was grown upon a light soil at Hengrave; the kernels are of remarkable size, as bold and full as

* Including bere. † Including all green root crops.

if they had been swelled by water. Hugh Raynbird, of Laverstoke, Andover-road, Hampshire, exhibits four specimens of Wheat produced by hybridisation; and samples of Hopetown and Piper's Thickset Wheat, from which the hybrids were obtained by fertilising the pistils of the Thickset with pollen from the stamens of the Hopetown Wheat. To effect this, the stamens of the flower of the Thickset were removed before they had reached maturity, by opening each of the glumes and carefully picking out the stamens upon the point of a needle; the pistils being left perfect were a few days afterwards fertilised by dusting them with the pollen from stamens brought from the Hopetown Wheat. This produced a great number of varieties, partaking more or less of the parent stocks. It may be here observed that new seeds are frequently produced in this way for various purposes, capable of giving origin to plants with the combined qualities of the parents; but hybrids closely allied gradually lapse into one or other of the originals, and become extinct. The catalogue describes "specimens and notes of produce of some of the most approved varieties of Wheat cultivated in Great Britain, or elsewhere, arranged by J. Le Couteur, F.R.S., M.S.A., Aide-de-Camp to her Majesty, of Belle Vue, Jersey;" and we cannot refrain from noticing them here, although we could not find them in the Exhibition. White Winter Wheat, 26 kinds. Baltic or Rostock is the best; 18 lbs. of flour producing 23 lbs. of bread. Winter compact varieties, 10 kinds. Elongated winter Wheat, 9 kinds. Downy or hoary Wheat, 10 kinds. Kentish Downy proved the best; yield 55 bushels per acre; 18 lbs. of flour produced 26 lbs. of bread, of excellent quality. Red Wheats, 24 kinds. Spring Wheats, 6 kinds. Bearded Wheat, 19 kinds. Total, 104 specimens. Comparison and Result: the Kentish or Jersey Downy Wheat; in 1847, one quarter, or 463¾ lbs. produced 351¾ lbs. of flour; which produced 482½ lbs. weight of bread. Baltic or Rostock Wheat: in 1847, 454 lbs. of Wheat yielded 312 lbs. of flour, which produced 398½ lbs. of bread. Downy, 482½ lbs., Rostock, 398½ lbs. or 84 lbs. excess over the Rostock of one quarter; or excess on one acre, at 6 qrs. per acre, 504 lbs. of bread—the supply of one person for a-year. The excess of the Downy over some inferior varieties is far greater. Leaving tea, tobacco, coffee, wood, cochineal, indigo, starch, lac, gum, bark, &c., unnoticed, we mention one or two things in Class IV.—"Vegetable and Animal Substances used in Manufactures." The farmer about to embark in a Flax enterprise may here compare samples of French, Flemish, Dutch, Friesland, Archangel, Riga, English, Irish, Egyptian, New Zealand, and other Flax; and nearly as great a variety of Hemp; and Claussen exhibits samples of the fibre in all its stages, from straw to cloth, as prepared by his new process. He shows cloths produced from Flax; Flax cotton, Flax cloths Flax silk, Flax wool; and also Hemp and other fibrous plants prepared either in whole or in part by the same process. This invention seems to open a wide field for Flax culture. Here are to be seen specimens of feathers, of grouse, duck, &c., English, Irish, Russian, Dantzic, &c.; and feathers arranged according to the qualities most used in England. Samples of wool of many different breeds, including that of the black-faced Highland sheep, and of Cheviots grown in a district upwards of 2600 feet above the level of the sea. In a glass case is a stuffed ewe, a pure Southdown, bred and reared by Mr. J. Moore, of Littlecott Farm, Pewsey, Wiltshire. This animal was seven years old, and was never shorn; and what is remarkable is that the length and weight of the wool (viz. 25 inches and 36 lbs.,) on this sheep are not greater than the aggregate length and weight of wool taken year by year from other sheep in the same flock during that period, and that the animal seemed to feel the heat less than those which were regularly shorn.

In Class V.—"Machines for direct use, including Carriages, Railway and Marine Mechanism,"—are several objects likely to be of service to farmers; as for instance, the excellent pumps, for lifting or forcing liquid manure or water, and also some small fire-engines suitable to farmeries. We may notice particularly Aitken's Patent Iron Carts and Waggons, manufactured by Messrs. Brown, Marshall, and Co., of Birmingham. We cannot enter into a description of the patent iron suspension wheels, &c.; but the advantages which are offered in these carriages are—1. Lightness of draught. The self suspending and elastic construction of the wheels neutralising all jar. 2. Great lightness and strength. 3. Cheapness. 4. Great durability, unaffected by the extremes of heat and cold. 5. From the spokes of the wheel being so arranged as to admit, in case of accident, of any one of them being replaced in ten minutes or so, without removal of the tire; the iron wheel, from the principle of its construction, possessing such inherent strength as to render it, in case of accident, capable of being moved along, without the tire, until a convenient place or opportunity occurs for its replacement. 6. Their superiority in being almost incapable of injury from fire. 7. Japanning, with all its advantages, being more easily applied than paint. 8. A light, airy, and elegant appearance.

We now enter amongst the busy thrum of machinery in motion, viz., Class VI.,—"Manufacturing Machines and Tools." Here we have every variety of grinding mill, and flour-dressing and smut machines, which seem to pertain more to millers than farmers. However, a portable flour-mill is a valuable thing for the farmstead, —and there are here plenty of portable and fixture steam-engines for working them. Oil-cake pressers—mills for crushing mineral substances, such as "coprolites," all arrest our attention in this class. Not the least useful invention is the improved gutter, or spout for houses and buildings, the eaves-tiles being formed into the proper shape, and ingeniously joined and secured to the eaves-board, so as to catch all the drain from the roof. The specimen roof exhibited has a stream of water constantly flowing over it. We observed a very ingenious machine for cleaning and screening Wheat, manufactured by Messrs. Spiller and Taylor, Battersea; and though it is adapted for the flour-mill, we think that part of its principle might be applied, perhaps, to our winnowing and dressing machines. The separator, or screen, through which the foul corn first passes, consists of five parallel metal rollers, which revolve the same way, these being just so far apart as to allow the grain to pass between them. All the extraneous matter, larger than the grain, is carried to one end by means of wire worms upon alternate rollers. The spaces between the rollers correspond to the slits between the wires of an ordinary sieve, but with this important difference,—that in one case the wires are stationary; in the other, the rollers continually revolve, and in the same direction, so that the sides of every slit move in contrary directions, the one up, the other down; this causes the grains immediately over the slits to turn and present themselves most favourably for passing through; hence, "this separator will not only screen much closer, but will do twelve times more work than any other in use, with the same amount of surface, and this without the possibility of ever choking." And the kernels cannot be jammed, because the surfaces of the rollers on each side every slit are moving in opposite directions. All the rollers may be opened or closed simultaneously by one motion of a gauge hand; thus giving the power of screening, by a single separator, every size and description of grain. Why might not our winnowing machines be fitted with something of this kind, in place of the present shaking-riddles, with their sets of wire screens for different purposes. At any rate, these rollers would suffice for "finishing;" the large, bold, and good corn passing off at the end of the rollers, while the lean tails dropped through. Perhaps this hint may draw the attention of machine makers to the subject. *I. A. C.*

## FARMING EXAMPLES.

French Farming.—Having lately had a few days' holiday, I thought I could not spend them better than by making a little personal investigation into the agriculture of that part of the continent from which we have unexpectedly drawn our greatest supplies—our old rival, France. As I know your space is valuable, I confine myself to a short description of what I saw and heard in the district La Beauce. It is described as the granary of France, and is an extensive and somewhat elevated plain of good sheep and corn land, lying between Etampes and Orleans, and from 30 to 40 miles south of Paris.

There are very few trees and no fences, and the country is all under cultivation. The land, which is much of the same quality as the lighter (not sandy) soils of Essex and Suffolk, is chiefly held in large farms of from 300 to 700 acres by tenant-farmers. The farm buildings sometimes stand by themselves, near the centre of the farm, but more frequently are in villages at considerable distances from the extremity of the occupations to which they severally belong. The farm-houses and the farmers are in all respects, as regards comfort and intelligence, very much like the same class of large farmers in our English counties. I met with two of them, one occupying about 500 and the other 700 acres. They were very civil, communicating with me readily, and showing their stock, and entering freely into the details of their management.

In so far as I could understand it, their system is to cultivate their land in three divisions, one-third of the farm being every year in Wheat for sale, one-third in green vegetable crops for consumption by stock, and one-third in Oats and forage for the horses. The crops cultivated are Wheat, Potatoes, Beet, Clover, Lucerne, and Saintfoin, and Oats and Barley. The Wheat is generally good, better than the average of England; the green crops are middling, and the Oats universally a poor small crop.

Very few cattle are kept in this district during the summer, but every farm has a regular sheep stock. They are whitefaced, thin-looking sheep, with short close wool, of which they were being shorn in the first week of July. The wool seemed to have been greased, and was unwashed and dirty; but, notwithstanding, fetched 9*d.* per lb. On the 700-acre farm a stock of 900 sheep is kept, the sale sheep of which are parted with at two years old, then weighing from 32 lbs. to 45 lbs., and bringing, fleece and carcass together, about 21*s.* each. Some farmers keep them till they are four years old, when they weigh from 70 lbs. to 80 lbs., and fetch about 36*s.*

For this farm 20 working horses are kept, stout, good-sized, active-looking animals, in high condition. They are fed in a large stable, summer and winter, tied up in stalls, separated from one another by a hanging bar. They are worked two abreast, in plough and harrow, and step out very freely.

The farm buildings are erected and kept in repair at the landlord's expense. They are in good order, and very commodious for the object for which they are intended. The stable is large and airy, the yards well sheltered by lofty walls, and provided with ample shed room, and the barn has two bays, with a threshing space in the centre, fitted with threshing and winnowing machinery, driven by six horses from the outside. All the manure, solid and liquid, is carefully preserved for application to the land.

Thirty labourers are constantly employed on this farm, all of whom get their food in the farmer's house, the families of the married men being supported at their own houses from the husband's money wages. They are engaged by the year, and seldom changed, the rate of wages being from 10*d.* a-day, excluding Sundays, for the lowest, to 1*s.* 2*d.* for the best, with their food, which is of excellent quality, and includes meat and wine every day, the wine being equivalent to our beer. The labourers are active, well-fed men, clothed very much like our own peasantry, and with none of the ragged garments for which our western neighbours are unhappily distinguished.

The rent of this farm is 24*s.* 3*d.* an acre, and the public taxes and rates of all kinds 5*s.* 2*d.* an acre. There is no poor-rate, there being very few poor people, and they are supported by voluntary subscriptions. The rate of rent in this district varies between 18*s.* and 25*s.*, and the taxes from 3*s.* 6*d.* to 5*s.* 6*d.* an acre, or, taking the French terms, the rent is from 50f. to 75f., and the taxes from 10f. to 15f. per hectare. Farms are held on 12 years' contracts, which are renewed without difficulty at greater or less rents, as prices at the time indicate. Within the last 10 years the rent of land in this district is estimated to have increased 10 per cent., the produce increasing very much by improved cultivation and more intelligence among the farmers, who are, on the whole, prosperous and the labourers well employed. The landlords seldom live on their estates, but they transact directly with the farmers, receiving their rents themselves, and paying for such buildings as are necessary for the farm. But their property is small, seldom exceeding two or three farms, more commonly about 500*l.* or 600*l.* a-year, 4000*l.* a-year being a very large rental indeed. Land, remaining amid all political changes secure, is considered the safest investment in France, almost the only safe investment, and, being much in request, it cannot be bought to yield more than 3 per cent.

Small proprietors, of whom there are many, generally cultivate their own land. Their holdings are from 20 to 70 acres in extent, and are considered to be, as a rule, better cultivated and more productive than the land farmed by large farmers.

Such, then, being the state of the farmers and the farming, the rent, taxes, and labour being very much on a par with our own, the corn cultivation and crops as good as ours, and more extensive, though the stock, management, and returns, are greatly deficient, how do the French farmers like the present prices? Quite as little as our own. Free trade with England, they say, has kept their prices from falling disastrously, but, unless prices improve 30 per cent., they declare that the rents must either come down, or they must give up farming. A succession of good Wheat crops, which last year reached their climax, has so overloaded the markets, that the price has been depressed much below the average; and the prospects of the present year give promise of a crop quite as good as the last. A large flour miller at Etampes, informed me, that the average price of a sack of flour was 23 to 32 francs, but during the last year, it had sold for 20 to 22 francs. The farmers declare that they cannot farm to profit with less than that average price, but during the last six weeks, their market has considerably improved, and they anticipated better prices in the ensuing season.

The flour millers with whom I conversed ascribed the superiority of their flour less to the introduction of improved machinery, than to the quality of the Wheat, and the greater attention to details in the process of manufacture. They use English machinery with French stones, and by perfecting their processes as much as possible, they have greatly improved the quality of the flour within the last ten years.

Without trespassing longer on your valuable space, I may say that my short tour, which extended into Belgium, Germany, and Switzerland, has convinced me that our agriculturists are now exposed to a very serious competition, whether as regards the soil, the climate, the industry, or the skill of the foreigner, and that the expectation of Sir Robert Peel will be realised, that the effect of the new law will be "to maintain a range of low prices in average seasons, and to prevent very high prices in seasons of dearth." The benefit which our great population is thereby receiving cannot be over-estimated. But the sooner our landlords and farmers reconcile and readjust themselves to the change, and appreciate its importance, the earlier will they be able to encounter successfully their present difficulties. In so far as regards the wages of labour, the English labourer in most of the southern counties is by no means so well paid as his French competitor. *J. C., in the "Times."*

## Home Correspondence.

*The American Reaping Machine.*—Having visited the Crystal Palace a few times, I was most struck with the American department. Having seen the English horse-power reaping-machine at work, and being acquainted with their construction as well as their operation in the field, I was anxious to see the American machine in operation. The position of the paddles, and their great breadth, made the attentive observer have some doubts whether the corn would be laid evenly in the swathes; and, secondly, if the paddles, in their revolutions, would strike the corn so hard as to cause it to "brit out" of the ears. The machine was simple in construction, and

new in many of its details. Thanks to Mr. Mechi, whose heart and soul seems bent upon every agricultural improvement, a trial of this implement has been most liberally allowed by him at his farm at Tiptree. The result seems to be most successful, as well as gratifying. I confess I saw in this machine some great good to be conferred upon the agricultural world, if it accomplished the task for which it was designed. Has it not done so, Mr Editor? and if so, may we not congratulate one another, and thank the inhabitants of the New World, who, by their genius, have conferred so great a benefit upon the Old World. Very few noticed this wooden-looking implement; its mean attire—the usual garb of genius—attracted no notice. The thoughtful spectator, after inspecting its construction, retired, and seemed to say within himself "I should like to see it tried." When the writer of this said he was most struck by the American department, a lady captiously said, "What, the barrels?" Whether tubs or pistols, she meant, I heeded not—my thoughts dwelt upon the American reaping machine. *A. P. F., Hants.*

*Mangold Wurzel and Swedes.*—These roots have been attacked by the larvæ of moths, called in Hampshire "millers;" they deposit their ova at the roots of the plants: shortly the plant looks sickly, and the leaves wither away; upon removing the earth at the base of the tuber, a hundred and more of little dark caterpillars were found in bunches adhering to the fibres of the tap-root. It is said that many acres of Swedes have been destroyed or considerably damaged by this moth. Never having seen these animals before, nor ever having my crops attacked by them, I communicate the above facts. Swedes are at times infested by these caterpillars, but in Mangold Wurzel I never noticed this occurrence before; and as they did not carry their ravages very far in this crop, I fancy they were deposited there under an error, as they did not destroy many plants, and those only where the larvæ were deposited, nor did they attack the shaws or leaves of this plant—on the contrary they seem to have kept open house amongst the Swedes—a food no doubt they prefer to Mangold Wurzel. This last mentioned root suffered from "the fly," this summer, in an unusual degree; so much so, that a breadth of five acres was totally destroyed and the land ploughed up, and re-sown with white Turnips. *X. Y. Z., Hants.*

*Reaping Machine.*—The effort of machinists will now be to make horse reaping-machines, since the principle has been shown to be practicable. Pray what would be the difficulty of making a hand reaping-machine, similar to a large dust-pan, with a rapid lateral movement to the long toothed knife, worked under long fixed teeth, in front? A woman, accompanying a man, might rake off the Wheat as it falls. Two small and broad wheels, within the breadth of the cutter, might hold up the machine above the ground. The question is, what is the simplest combination in connection with the wheels that would give a rapid lateral movement to the cutter? A man might push it forward with handles, and the breadth of the cutter might be 2 feet. *T. F.*

*Beet-root Sugar from Irish grown Beet.*—The importance of the above subject is now admittedly so great, especially to a country circumstanced as Ireland is, where the farmer's last resource, to use his own words, is "America or the poor-house," will, I hope, be ample apology for my begging of you, as a Christian philanthropist, to avoid throwing cold water on the project in contemplation till the growth of the plant has got a fair trial, which I maintain, as a practical man, it has never yet got in Ireland, at least till this year; and as the results of this year's cultivation cannot be as yet fully known, no man can tell, with any degree of accuracy, the lowest price at which the farmer can afford to deliver it to the sugar manufacturer. My impression, from the present appearance of my own crop, though cultivated with no greater amount of art or science than any ordinary Irishman can bring to bear on it, that the produce will be so heavy as to warrant the Irish farmer in selling at 10*s.* a ton, and by so doing secure to himself a better return than by growing Wheat and selling it at 25*s.* a barrel of 280 lbs., which is 25 per cent. more than any farmer expects for ordinary Irish Wheat at home this year. We Irishmen feel aggrieved enough already by "the brain blow" which Dr. Lindley gave our prospects of Tobacco growing, without having made due allowances for the peculiar circumstances of our ill-fated and badly governed country. *Edward Carroll.* [It is due neither to an ill fate nor to misgovernment that your sun, even on the 21st of June, rises little more than 60° above the horizon. Dr. Lindley could not alter that—and unless he could, he could not help you to cultivate Tobacco. The right policy for Ireland, if she could only be led into it—is that of patient continuance in well doing—trusting to industry and perseverance in the ordinary means for which her climate fits her—not to that fitful energy which seeks a sudden fortune in doubtful novelties.]

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

### AMERICAN PHOSPHATE OF LIME.

The Secretary having been directed by the Council to make inquiries on the subject of the occurrence of mineral Phosphate of Lime in the United States, and in reference to the specimen of that substance which Dr. Daubeny had forwarded to the Duke of Richmond, replies were received from his Excellency the American Minister, Dr. Daubeny, Sir R. I. Murchison, Sir Chas. Lyell, Capt. W. H. Smyth, Dr. Shawe, Prof. Johnston, of Durham, Mr. Johnson, Secretary of the New York State Agricultural Society, and Dr. Cooke, Professor of Mineralogy in Harvard University, and laid before the Council on the 25th of June last. The following results may be deduced from this correspondence:

1. The mineral phosphate of lime has been found in the American States of New Jersey and New York; and there is a great probability that it will be discovered in other States of that Union, as well as in Canada; it is also not improbable, from analogical considerations, that this crystalline substance may be found to exist among the metamorphic masses of the Highlands of Scotland and elsewhere.

2. The specimen from New Jersey, forwarded by Dr. Daubeny to the Duke of Richmond, had the appearance of a remarkable variety of crystalline rock; but the formation in which it occurred was not stated. It was found by Professor Maskelyne to contain 95 per cent. of the phosphates of lime, iron, and alumina. Its importation was made by Messrs. Jevons, of Stamford-place, Liverpool. One vein alone, discovered in New Jersey, would supply the English market for many years.

3. In the state of New York a great mass of this mineral had been discovered, and a shaft had already been sunk to the depth of nearly 30 feet. This vein occurred at Crown Point, near Lake Champlain, in Essex county, and the abundance of the mineral was so great as to lead to the conclusion that this mine contained an inexhaustible supply; the locality was also favourable for facility of transport and ready shipment. This vein consisted of grains and crystals; and on analysis, in America, has been found to contain a much larger proportion than the Jersey mineral, of which some specimens yielded only about 40 per cent. of the phosphate of lime, while the Crown Point mineral gives 80 per cent. of that substance, free from chalk, containing only a small amount of quartz in grains, and of the fluoride and chloride of lime. It is very soft, and pulverises easily, and is more readily dissolved than the Jersey variety. It can be delivered in London, in the rough state, or powdered ready for use, as may be thought most desirable. By single-horse power two tons a day may easily be ground.

4. The price at which the Jersey phosphate was first offered was five guineas per ton; but its interest immediately ceased, in a commercial point of view, when the importers, on fallacious grounds of supply and demand, injudiciously raised the price to 7*l.*, forgetting that there were already other forms of phosphate of lime in this country available to the English farmer. It is now fully believed by moderate and intelligent Americans that the United States phosphate can be afforded in the English market at such a price as will render it a cheap fertilizer; and, as it can easily be reduced to powder, its value cannot be doubted, provided it be treated with sulphuric acid, and thus rendered suitable as a manure for those crops for which phosphate of lime has been found by experience to be advantageous.

5. Professor Johnston, of Durham, to whose personal visit to the United States we probably owe the attention thus paid to this mineral, occurring so abundantly in that part of the world, remarks:—"American farmers in general have not the knowledge to appreciate the value of such a manuring substance as this, nor the ability to purchase it when manufactured into superphosphate of lime; the discovery, therefore, will be a boon, for the present, to both countries. It will make more abundant and cheap the means of fertility which our soils require; while, by supplying a new article of traffic only saleable in Great Britain, it will form a new bond of connexion between our kindred nations."

6. Dr. Cooke and Dr. Daubeny having called the attention of the Council to the information relating to this mineral contained in "Dana's System of Mineralogy," the following abstracts have accordingly been made:—

(1). Localities and Association of Occurrence.

At Rumford, Maine—in the same district with yellow garnet, idocrase, pyroxene, scapolite, graphite.
At Piermont, New Hampshire—with micaceous iron, heavy spar; green, white, and brown mica.
At Bolton, Massachusetts—with scapolite, petalite, sphene, pyroxena, nuttalite, diopside, boltonite, magnesite, rhomb spar, allanite, yttrocerite, cerium-ochre, spinel.
At Boxborough, Mass.—with scapolite, spinel, garnet, angite, actinolite.
At Chester, Mass.—with hornblende, scapolite, zoisite, spodumene, indicolite, magnetic iron.
At Chesterfield, Mass.—with blue, red, and green tourmaline; cleavelandite, lithia, mica, smoky quartz, microlite, spodumene, kyanite, rose beryl, garnet, quartz crystals, staurotide, tin, ore, columbite, variegated copper ore, zoisite, uranite.
At Hinsdale, Mass.—with brown-iron ore, zoisite.
At Lancaster, Mass.—with kyanite, chiastolite, staurotide, pinite, andalusite.
At Littleton, Mass.—with spinel, scapolite.
At Middlefield, Mass.—with glassy actinolite, rhomb spar, steatite, serpentine, feldspar, drusy quartz, zoisite, nacrite, chalcedony, talc.
At Norwich, Mass. (very fine specimen)—with black tourmaline, beryl, blende, quartz crystals.
At Sturbridge, Mass.—with graphite, pyrope, bog ore.
At Williamsburg, Mass.—with zoisite, pseudomorphous quartz, rose and smoky quartz, galena, pyrolusite, copper pyrites.
At Litchfield, Connecticut—with kyanite and corundum, andalusite, ilmenite, copper pyrites.
At Middletown, Connecticut—with mica, lepidolite, green and red tourmaline, albite, feldspar, columbite, prehnite, garnet, beryl, topaz, uranite.
At Crown Point, New York—with garnet, massive feldspar, epidote, Epsom salt, magnetic iron.
At Long Pond, New York—with garnet, pyroxena, idocrase, coccolite, scapolite, magnetic iron ore, blue calc spar.
At Moriah, New York—with zircon, calc spar, actinolite, labradorite, mica, specular iron.
At Diana, New York—with scapolite, tubular spar, green coccolite, feldspar, sphene, mica, quartz crystals, drusy quartz, cryst. pyrites, magnetic pyrites, blue calc spar, serpentine, reusselaerite, zircon, specular iron ore, iron sand.
At Corlaer's Hook, New York—unassociated with other remarkable minerals.
At Two Ponds, in Munroe, New York—with pyroxene, chondrodite, hornblende, scapolite, zircon, sphene.
At Edenville, New York (good specimens)—with chondrodite, hair-brown hornblende, tremolite, spinel, tourmaline, warwickite, pyroxene, sphene, mica, feldspar, mispickel, orpiment, rutile, ilmenite, scorodite, copper pyrites.
At Gouverneur, New York—with calc spar, serpentine, hornblende, scapolite, feldspar, loxoclase, tourmaline, pyroxene, reusselaerite, serpentine, sphene, fluor, heavy spar, rutile, black and copper-coloured mica, tremolite, asbestus, specular iron, graphite, idocrase, mica, quartz, spinel pyrites.
At Rossie, New York (good specimens)—with calc spar, heavy spar, quartz crystals, chondrodite, feldspar, pargasite, pyroxena, mica, fluor, serpentine, automolite, pearl spar, graphite, serpentine, zircon.
At Greenfield, New York—with chrysoberyl, garnet, tourmaline, mica, feldspar, graphite, arragonite (in iron mines).
At Anthony's Nose, New York (good specimens)—with pyrites, calcite.
At West Farms, New York—with tremolite, garnet, stilbite, heulandite, chabazite, epidote, sphene.
At East Bradford, Pensylv.—with green, blue, and grey kyanite.
At Leiperville, Pennsyl. (good specimens)—with beryl, tourmaline, garnet, cryst. feldspar, mica, kyanite, damourite, sillimanite, red garnet, mica; (ordinary specimens) with andalusite, tourmaline, mica, grey kyanite.
At Springfield, Pennsyl.—with staurotide.
At Chesnut Hill, Pennsyl.—with mica, serpentine, dolomite, asbestus, nephrite, talc, tourmaline, sphene, tremolite.
At Germantown, Pennsyl.—with mica, feldspar, beryl, garnet.
At Dixon's Feldspar Quarries, Delaware (good specimens)—with adalaria, albite, beryl, mica, leelite, cinnamon-stone, magnesite, serpentine, asbestus, black tourmaline, indicolite, sphene, kyanite.
At Magnet Cove, Arkansas—with brookite, schorlomite, elœolite, magnetic iron, quartz, green coccolite, garnet.
At Bay St. Paul, Canada East—with ilmenite.
At Goetineau River, Canada West—with calcite, tourmaline, hornblende, pyroxene.
At Grand Calumet Island, Canada West—with phlogopite, pyroxene, sphene, idocrase, serpentine, tremolite, scapolite, brown and black tourmaline, pyrites.

The Apatite, or Mineral Phosphate of Lime, occurs in crystalline rocks. It is often found in veins in gneiss or mica-slate, and particularly those containing tin and iron ore; also in granular limestone. It is sometimes met with in serpentine, and occasionally, as in Spain, in ancient volcanic rocks. Among foreign localities are Ehrenfriederdorf in Saxony; Schlackenwald in Bohemia; Caldbeck Fell in Cumberland; Devonshire; St. Gothard in Switzerland. The greenish-blue variety, called moroxite, occurs at Arendal in Norway, and Pargas, Finland. The asparagus-stone, or spargelstein variety, which is obtained in Zillerthal in the Tyrol, and Villa Rica, Spain, is translucent, and has a wine-yellow colour; it is imbedded in talc. The phosphorite, or massive radiated varieties, are mostly obtained from Estremadura in Spain, and Schlackenwald in Bohemia. The eupychroite variety of Emmons is similar. Magnificent crystal of apatite, or mineral phosphate of lime, are found in St. Lawrence Co., State of New York, in white limestone, along with scapolite, sphene, &c. One crystal from Robinson's Farm, in Hammond, was nearly a foot in length, and weighed 18 pounds. Smaller crystals are abundant, and the prisms are frequently well terminated. Besides the locality in Hammond, fine crystals are obtained about a mile south-east of Gouverneur in a similar gangue, and also in Rossie, with sphene and pyroxene, two miles north of the village of Oxbow. Also on the bank of Vrooman lake, Jefferson Co., in white limestone, fine green prisms from half an inch to 5 inches long; Sanford Mine, East Moriah, Essex Co., in magnetic iron ore, which is often thickly studded with six-sided prisms; also at Long Pond, Essex Co.; near Edenville, Orange Co., in prisms from half-an-inch to 12 inches long, of a bright asparagus-green colour, imbedded in white limestone; and in the same region, blue, greyish-green, and greyish-white crystals; two miles south of Amity, emerald and bluish-green crystals; at Long Pond, Essex Co., with garnet and idocrase; at Greenfield, Saratoga Co., St. Antony's Nose, and Corlaer's Hook, less interesting; fibrous mammillated (eupyrchroite) at Crown Point, Essex Co., about a mile south of Hammondsville. In New Hampshire, crystals, often large, are abundant in the south part of Westmoreland, four miles south of the north village meeting-house, occupying a vein of felspar and quartz in mica-slate, along with molybdenite; some fine cyrstals at Piermont, N.H., in white limestone, on the land of Mr. Thomas Cross. In Maine, on Long Island, Blue-hill Bay, in veins 10 inches wide, intersecting granite. In Massachusetts, crystals occasionally six inches long are obtained at Norwich (north-west part) in grey quartz; at Bolton, abundant, the forms seldom interesting; also sparingly at Chesterfield, Chester, Sturbridge, Hinsdale, and Williamsburg. In Pennsylvania, at Leiperville, Delaware Co.; in Bucks Co., three miles west of Attleboro. Apatite, or mineral phosphate of lime, has also been found near Baltimore, Maryland; at Dixon's Quarry, Wilmington, Delaware, of a rich blue colour; on the Morris Canal near Suckasung, N.J., of a brown colour; in massive magnetic pyrites; also at Perth, Canada.

(2) *External Characters.*—Hexagonally crystalline; also globular or kidney-shaped, with a fibrous or imperfectly columnar structure, and massive, with a granular structure. Lustre vitreous, inclining to subresinous. Streak, white. Colour usually sea green, bluish green, or violet blue; sometimes white; also occasionally yellow, grey, red, and brown; none bright. Transparent—opaque. A bluish opalescence, sometimes in the direction of the vertical axis, especially in white varieties. Cross fracture conchoidal and uneven. Brittle. It is about 3¼ times heavier than water.

(3) *Chemical Composition.*—According to Professor Rose, apatite is composed of—

| | |
|---|---|
| Phosphate of lime (or bone-earth) | 92·3 |
| Fluoride of calcium (or Derbyshire spar) | 7·7 |
| | 100·0 |

The following analyses represent the composition of 100 parts of specimens from Norway, Spain, and the Tyrol, respectively:—

| | From Snarum in Norway. | From Cabo di Gata in Spain. | From Arendal in Norway. | From Greiner in the Tyrol. | From St. Gothard in the Tyrol. |
|---|---|---|---|---|---|
| Phosphate of Lime ..... | 91.13 | 92.066 | 92.189 | 92.16 | 92.31 |
| Chloride of Calcium ... | 4.28 | 0.885 | 0.801 | 0.15 | a trace. |
| Fluoride of Calcium .. | 4.59 | 7.049 | 7.010 | 7.69 | 7.69 |
| | 100.00 | 100.000 | 100.000 | 100.00 | 100.00 |

Rammelsberg makes the composition of 100 parts of an apatite from Schwarzenstein in Zillerthal: Lime 49·66, Phosphoric acid 42·58, with Calcium 4·06, Chlorine 0·07, Fluorine 3·63. In a phosphorite from Estremadura, Dr. Daubeny found 14 per cent. of Fluoride of Calcium. Mineral Phosphate of Lime is infusible when heated alone by means of the blow pipe, but melts without difficulty into a brittle glass when

mixed with bi-phosphate of soda or with common borax: it also fuses when mixed with carbonate of iron. In nitric acid it dissolves slowly, without effervescence. Some varieties are phosphorescent.

(4) *Varieties.*—Mineral phosphate of lime was termed *Apatite* by Werner, from a Greek word signifying "deceptive," in allusion to the mistakes made by the older mineralogists with regard to the nature of its many varieties. It is also known by the terms, spargelstein, asparagus-stone, phosphorite, moroxite, chrysolite, eupyrchroite, augustite, and pseudo-apatite. The variety known as *talc-apatite*, from chlorite slate in Schischimskian Mountains, near Slatoust, contains in 100 parts—Eime 37.50, Magnesia 7.74, phosphoric acid 39.02, Sulphuric acid 2.10, Chlorine 0.91, Oxide of Iron 1.00, insoluble matter and loss 11.73. *Francolite* is an apatite from near Tavistock, in Devonshire. It occurs in small masses of irregular aggregated crystals, having a somewhat mammilated surface. According to the analysis of T. H. Henry, 100 parts are composed of—Lime 53.38, Iron and Manganese 2.96, Phosphoric acid 41 34, Fluorine and loss 2.32.

Professor Jameson gives in the article "Mineralogy," in "Brewster's Encyclopædia" (pages 488 to 495), an interesting statement of the varieties of apatite, and of their localities of occurrence, and respective chemical composition. We have only space on this occasion to glance at a few points selected from that article.

1. *Foliated Apatite* (common variety) occurs in tin-stone veins, and also embedded in talc. It is found in Europe in yellow foliated talc, and along with fluor-spar, in the mine called Stena-Gwyn, in St. Stephen's, in Cornwall; and at St. Michael's Mount, Godolphin-bal, in Breage, in the same county; also in various districts on the Continent. In America it occurs in grains or hexahedral prisms in granite, near Baltimore, in Maryland; in granite and gneiss, along with beryl, garnet, and schorl, at Germantown, in Pennsylvania; in iron pyrites at St. Anthony's Nose, in the Hudson, in New York; in granite at Milford Mills, near Newhaven, in Connecticut; and at Topsham, in Maine, in granite. Klaproth found it to consist of—lime 55, and phosphoric acid 45, with a trace of manganese.
2. *Conchoidal apatite* (asparagus variety), occurs imbedded in gneiss, near Kincardine, in Ross-shire; also in beds of magnetic ironstone, along with sphene, calcacerous spar, hornblende, quartz, and angite, at Arendal, in Norway. In America it is found imbedded in granite at Baltimore; in gneiss at Germantown, and in mica-slate in West Greenland. Klaproth ascertained the composition of two specimens of this variety: one from Zillerthal being almost pure phosphate of lime; while another, from Uto, contained only 92 per cent. of that substance, with 6 per cent. of chalk, 1 of silica, and a trace of manganese.
3. *Common Phosphorite.*—Occurs in crusts, and crystallised, along with apatite and quartz, at Schlackenwald, in Bohemia; but most abundantly near Leigrosan, in the province of Estremadura, in Spain, where it is sometimes associated with apatite, and forms whole beds, that alternate with limestone and quartz.—Pelletier found 100 parts to consist of Lime 59.0, Phosphoric Acid 34.0, Silica, 2.0, Fluoric Acid 2.5, Muriatic Acid 0.5, Carbonic Acid 1.0, Oxide of Iron 1.0.
4. *Earthy Phosphorite.*—Occurs in a vein, in the district of Marmarosch, in Hungary. Klaproth gives its composition as—Lime 47.00, Phosphoric Acid 32.25, Fluoric Acid 2.50, Silica 0.50, Oxide of Iron 0.75, Water 1.00, Quartz and Loam 11.50.

The Council expressed their best thanks to those gentlemen who had favoured them with the letters then laid before them at that meeting, in reply to the inquiries the Council had directed to be made on this important subject.

## LECTURE ON LIME.

A Weekly Council was held at the Society's house in Hanover-square, on Wednesday, the 9th of July, Col. Challoner, Trustee, in the chair; when Professor Way, the consulting-chemist to the Society, favoured the members with a lecture on the agricultural employment of lime.

Prof. Way commenced his lecture by remarking, Lime was an abundant substance in nature, not, however, as lime, chemically considered, and in its pure or caustic state, but in combination with acids, forming chalk, gypsum, bone-earth, and other well-known substances. Caustic or quick-lime for agricultural and building purposes, was generally obtained from the carbonate of lime, either in its purer forms of chalk or marble, or as existing in mixture with other mineral substances in the varieties of limestone. This carbonate of lime contained by weight about 43½ per cent. of carbonic acid or fixed air, which was evolved from the lime in a state of effervescence, by the superior action of other acids, or driven off from it by the application of a red heat. In the latter case, the limestone was placed along with the requisite quantity of fuel in a suitable kiln, and burnt for a proper time, when the gas escaped into the atmosphere, and the quicklime was left behind in the kiln. He remarked, however, that when chalk was heated in a crucible covered with a lid, it became fused, without parting with its carbonic acid; in fact, that the mechanical action of the atmosphere was required to carry off the gas from the chalk as it became gradually released from its chemical union with the lime; for chalk, as long as surrounded by carbonic acid, would be protected from further decomposition, and remain carbonate of lime. On this principle it was that a current of watery vapour was so useful in the lime-kiln in effecting a circulation of air through it, and thus removing the gas; and this was occasioned by using fuel yielding much steam, such as twigs, &c. It was also a common practice to throw water into the ash-pit, with the view of attaining the same object. He himself thought that a jet of steam might with advantage be introduced into the kiln. The lime when taken from the kiln was simply that earth, uncombined with carbonic acid, and freed from moisture; but on exposure to the atmosphere it slowly attracted both water and carbonic acid gas, and assumed its original composition, though not its mechanical form, being reduced to an impalpable white powder. Water being poured over the calcined lumps from the kiln, it is rapidly absorbed, and its latent heat being given out, the lumps crack, become very hot, and steam rises; and the lime having become thus slaked by the absorption of about one-third its weight of water, a definite combination, known to chemists as hydrate of lime, is the result. Lime is always used practically in agriculture in this state; but it was common to cart it from the kiln into the field and leave it in heaps to become gradually converted into hydrate; it was found to yield a finer powder by this exposure to air than by the quicker process of slaking with water. The lime forming these heaps thus changed into hydrate, would, in the course of time, also take up carbonic acid from the atmosphere. It was therefore, he thought, not desirable, when the use of quicklime was the object, to let the heaps lie too long before turning into the soil; else, why burn the lime? It took, however, a long time for the carbonic acid to penetrate into the interior. He referred to examinations of old walls, built centuries ago, the mortar of which contained lime still in its caustic state. To the practical farmer, the qauntity to be applied, the proper time of application, the nature of the soils, and the method of action, were all important topics for their consideration, in reference to this powerful mineral manure. He thought that the action of lime must be regarded as a strictly chemical one, when it was considered how small a per-centage of increase of lime would be made in the soil by even large and constant dressings; in fact, that to impregnate a soil to the depth of 10 inches with one per cent. only of lime, 300 bushels per acre would have to be applied. He considered air-slaking to be more consonant with common sense as well as with theoretical views than water-slaking, as the lime would become more evenly affected by the atmosphere, and in a better state for distribution. He then referred to the relation of lime to animal and vegetable manures. He thought it prejudicial with farm-yard manure, unless immediately mixed with the soil; that liming, in fact, ought to answer when taking place either immediately before or after manure; the ammonia contained in it, set free by the decomposing agency of the lime, and taken up by the absorptive power of the soil, being at once at liberty for the supply of food to plants. He recommended small quantities of lime to be mixed with manure in the soil; but not with manure in the yard. There was no better way of destroying or dissolving animal and vegetable matter than by mixing lime with the soil. With regard to the time of application, lime, if used in small quantities, might be put on immediately before or after the manure, as he had already stated. In South Wales liming took place every season, and is so essential a part of their manuring, that comparatively little care is taken of ordinary animal or vegetable refuse. To such an extent is the conveyance of the lime carried that the Rebecca riots in that part of the United Kingdom had their origin in disputes connected with the tolls levied on lime-carts. It is a question what the peculiar success of the Welsh system of liming arises from. Local customs, he remarked, were generally correct, more or less. As a constant application, lime was no doubt the most powerful agent we could introduce into the land. No substance, he thought, was ever taken up properly, as food, by plants until combined with the soil. The aluminous silicates generally had a great influence in this respect. Boussingault had shown that plants died if placed in solutions of the fixed salts of ammonia, as sulphate or muriate, but lived in vigour when placed in a solution of the volatile carbonate of that alkali. Prof. Way's experiments all tended to show that ammonia unites in a definite form with the soil, such ammonia being either derived at once from the carbonate or from the fixed salts when the alkali is replaced in them by lime; the sulphate and muriate of ammonia, for instance, being converted into the sulphate and muriate of lime, and coming away, while the ammonia remains in the soil. He then ventured to put before the meeting a hypothetical statement of his views on the machinery of this action. He believed that a double silicate of alumina and lime, or something of that kind, existed in the soil. When sulphate of ammonia is applied, its ammonia goes into the double silicate, and lime comes out to form sulphate of lime. When the ammonia is required by the plant, it leaves the alumina and silica, which then require lime, in order that it may be restored to action, and prepared again to exchange that earth for ammonia, which in its turn is given up to the plant, and so on, as long as lime is present on the one hand, and ammonia furnished in some shape or the other. When farmers add lime to their land, they form these double silicates, and, therefore, it appeared to him more rational that they should, with this view, add only small quantities of lime frequently, instead of large doses at once. Perhaps slaked lime with ashes, or lime alone, might be used in the first instance. Lime decomposed animal and vegetable matter, and thus furnished food for plants. It had also been supposed to act on the potash of granitic rocks. Liebig had made much of this setting-free of potash in the soil. Aluminous silicates take up potash, which replaced the lime in them, in the same manner as ammonia had been described as doing. The salts of potash were retained by soils even after having been heavily limed; and he therefore considered that the theory which supposed the lime to act by setting potash free was not well founded. If land was overlimed, ammonia would not be absorbed, but would all be set free. Attention should be paid to liming the land, as well as to arranging, for the absorption of ammonia. One of the most important consequences of overliming is, that the soil is exhausted by setting free and getting rid of that which constitutes its capital, namely, its ammonia; an evil of which the magnitude may be estimated by the means required to repair the loss, namely, the supply of ammoniacal salts to the exhausted land; and by the fact, mentioned by Mr. Lawes, that while only 17 bushels of Wheat were grown without manure, 35 bushels were raised by the aid of ammoniacal salts; the remedy to make good the loss thus marking its extent. He agreed with the Hon. Mr. Clive, that if we knew the true use of lime we should never omit it as an accessory to our manuring operations; but while taking advantage of lime, we should never let them supersede the use of other manures. In conclusion, he remarked, that in small doses of quicklime we had always at hand the ready means of making animal and vegetable manures more available, and also of effecting that decomposition of the silicates which carbonate of lime cannot effect.—Mr. Hamond observed that the more ammonia there was in soils, the more marl they required in Norfolk to secure it: according to their old adage, "more muck, more marl."—Professor Way remarked that when lime as a stimulant in small doses increased the growth of a crop, it did so for a time, if the plant was there to receive it; but that if lime was added in such an amount as to set free at once all the ammonia in a soil, such volatile alkali would be floating about too long, and would be lost to all but the first crop.—Mr. Slaney, M.P., inquired of Professor Way how much lime he would recommend on an average soil—30 or 300 bushels? In Shropshire they were accustomed to lime very heavily, 10 or 12 cart loads, or 400 bushels per acre.—Professor Way thought 400 bushels of lime out of all reason: 30 or 40 would be abundant, in a chemical relation.—Colonel Challoner, the Chairman, remarked that Prof. Way merely gave his results as a chemist; for practical details Mr. Slaney had better court the experience of those of their members present who were most conversant with that particular branch of mineral manuring.—Mr. Thompson stated, that it was the Scotch system to employ large dressings of lime at the beginning of a lease, for instance, to 200 to 300 bushels to the acre, and the effect of these was not found to be exhausted by the termination of the lease. Could Prof. Way reconcile that practice with theory? by one year, or for a great number of years?—Sir Robert Price referred to the old agricultural adage, "lime light," &c.—Prof. Way thought the result would be in a rapidly decreasing ratio; the first crop would benefit largely, but towards the end the land would be worse than when first taken in hand. The plants would get a greater amount of food at the beginning than afterwards. In the case referred to, there was more than we could see; the local circumstances might perhaps constitute it an exception.—Sir John Johnstone considered that it was from practice that we were to glean data on which to frame principles for our guidance in this complicated question. It would be well worth inquiry, whether the rocks of South Wales were of such a nature as to render little animal or vegetable matter requisite in the soils which cover them; and also, whether in the Welsh course of cropping, any deterioration was found to take place. The lime probably set free potash or some other substance, which proved of value as nutriment to plants. If we knew the peculiar conditions of this case, we should ourselves know what to do under similar circumstances.—Sir Robert Price thought, as Professor Way had shown them the theory, and the recommendation founded upon it, to try small doses of lime immediately before and after manuring; it was their own business as practical farmers to put such theory and recommendation to the test of experiment. — Mr. Thompson referred to his own experience of the importance of lime in conjunction with manure, in order to derive full advantage from its application. One of his farms having been over-limed many years ago, had since that time been treated in an opposite extreme, and not limed at all. When he took it in hand himself, there was not a field on it that would grow a crop of white Turnips, or in fact yield any thing else. Lime was considered the best means of restoration. The fingers-and-toes which had come on the Turnips after the lime had been discontinued, gradually disappeared with the new application of lime after the second hoeing: in the first course the effects of the lime did not show themselves, but in the second they were as satisfactory as could be wished. Indeed, wherever a fence had been taken up, the failure where the lime had been omitted was most striking. A square acre was purposely left, on which no lime was applied, but which was in other respects manured as usual. The result was a crop of only two tons, tops and bottoms included, of white Turnips; while the rest of the field, which had received the application of the lime, yielded 20 tons. He had these Turnips analysed closely, and found that their chemical constitution was as nearly as possible the same, except that nitrogen was wanting in the bulbs from the unlimed square acre. The fact then came out. Lime, indeed, had appeared to him to have a most material effect in giving to light soils the power of retaining ammonia, although nothing definite was known as to the exact mode in which it enables soils to act. The farm to which he had alluded was a light fertile soil on the new red sandstone. Sir Charles Monteith refers to this value of lime applied to soils on the same formation, in the following passage (Journal II., 410).

"The farmers of Scotland think that they cannot raise good crops of grain without lime, as the greatest part of the south of Scotland is composed of new red sandstone, grauwacke, and granite, and therefore devoid of lime, which forms a very considerable portion of every fertile soil; indeed it was found that the soil in Dumfriesshire did not produce well-filled Barley crops till the farmers employed lime, which they now do to a great extent, and find it equally useful for Potatoes and Turnip crops, which is amply testified by the farmers purchasing lime to the amount of 3000*l.* annually from my

lime quarry at Close Farm." He also adds, "In Craven, Yorkshire, lime is employed very extensively as a top-dressing, even upon a limestone soil. I have found that cattle feed upon pasture well top-dressed with lime much quicker, and that the meat is much richer and better mixed than upon pastures apparently equally productive of herbage."

Mr. Charnock, of Wakefield, remarked that it was a common practice in the north to mix lime and manure together for the Potato crops, and the growers found the benefit of it on the old-going strong soils of the country. On the magnesian limestone to crop Turnips at all farm-yard manure was required as well as artificial; and without even then obtaining a full return for the outlay. The north-west of Yorkshire was the district of mountain limestone, and there little manure was applied, as the lime itself acted on the soil, which contained a larger proportion of potash than magnesia, on account of which circumstance the soil was maintained in a state of fertility, not seen elsewhere, excepting on the old red sandstone, and the district was distinguished by a luxuriant growth of beautifully green Grass extending to the tops of the hills. In the neighbourhood of Settle they burned their lime and had the most fertile Grasses on the land where they applied it. The lime, however, was not fully burnt. As the limestone in that district appeared to Mr. Charnock to have, in its natural state, a peculiar efficacy, he suggested, at an agricultural meeting held at that place, that the limestone should not be burnt but ground into a fine powder; when an old farmer replied that he had tried ground limestone, and had found its effects on the soils and crops to be more permanent than when applied burnt. Mr. Charnock thought Prof. Way's a very good suggestion, that the lime should be applied with the manure. They were told, however, in Yorkshire that such was a bad practice; but the vigour of plants growing on manure-heaps indicated the excess of ammonia. They had been taught not to set free the ammonia; but he believed that in strong soils it would be beneficial to do so: first lime, then plough and ridge, and lastly manure in the ridges.—Dr. Calvert referred to magnesia and the blue lias. Sir Humphry Davy and others had stated that caustic magnesia destroyed the crop. Dr. Calvert could himself suppose any caustic application to be destructive to vegetation. When ordinary lime and magnesia occurred together, in a calcinal state, he understood the lime first attracted the carbonic acid from the atmosphere, leaving the magnesia caustic until the lime became mild. Magnesian lime on a Clover-lea was said to destroy the weeds, and the magnesia to lose its causticity in the process. In the north of Yorkshire, Lord Feversham applied large quantities of white lime on peaty soil. It is allowed to lie for two or three years, being stirred during that period; and the peat becomes excellent light land, and grows Turnips. He thought it desirable that the real action of lime on peat should be ascertained, as contradictory opinions existed on that point. —Prof. Way remarked, that the active acid qualities of the peat were neutralised by the lime, which also, by its caustic action, brought into play the inert matter which peat contained.—Dr. Calvert considered quicklime to be a powerful digester of vegetable matter. On Grass lands, however, chalk might be applied where lime would destroy. He had found it particularly useful on strong clay land, in promoting the growth of Grass lawns, in those cases of failure where no renewal of turf will permanently effect the object. He had reason to believe that the half-burnt, and also what was called the "rotten" limestone, might in many cases be employed with advantage.—Mr. Charnock could corroborate the utility of these substances. The rotten white lime was a peculiar kind of stone, and yielded a mild lime, which might be used for improving certain soils, at the rate of 4 or 5 tons an acre.—Dr. Calvert observed that the tenantry of Lord Feversham were required to apply to their peaty land 96 bushels of lime every fourth year, after a crop, a fallow, and a green crop. This was considered a full dose, but thought to be too much, notwithstanding the peaty character of the soil. It was a very common practice in Yorkshire to mix manure with lime, for their Potato and Turnip crops. There was, however, something apparently destructive in the Potatoes under this management, for the crop of Wheat was inferior where the Potatoes had been grown. With regard to the Welsh soil, he thought there were some circumstances peculiarly favourable to vegetation; as in the plain of Catania, in Sicily, with which he had in former years been well acquainted, and where white Wheat was grown in successive years. The blue lias limestone contained silica in a fine state of division, and it is so easily fused at high temperatures as to render a mixture of it and the white limestone preferable. The fineness of the silica might probably in some measure account for the effect on Wheat. Mr. Thompson stated that there was the real and the inferior magnesian limestone: where 40 bushels of the former had been applied nothing grew again for four or five years, except here and there weeds and knot-grasses; while from seven to nine bushels of the inferior variety was an excellent application.—Col. Challoner had often had occasion to remark the affinity of Clover to lime; and some years ago his father had drawn his attention to a curious circumstance that had fallen under his observation in connexion with that affinity. A cart having broken down on Bagshot-Heath, a heap of lime was left there for two months and then removed. In the following year, the long heath was found to be destroyed, on the spot where the heap had rested, and a beautiful patch of Dutch Clover had come up in its place. Sir John Sinclair quotes a similar circumstance, as observed by Dr. Fenwick, of Durham:—

"A quantity of very mild lime was laid in a heap, where it remained for some time, and when it was removed, the spot was covered with white Clover. A heap of hot lime was left for the same space of time: no vegetation took place for a considerable period, and the spot was at length covered with Couch-grass. Neither the Clover nor the Couch-grass could be produced by the heaps of lime, but the circumstance is thus accounted for:—The hot lime retained its causticity much longer, and in that state destroyed any seeds contained in the soil; but the Couch-grass, being less easily destroyed, or shooting and spreading from the neighbouring land, soon took possession of the vacant spot. In regard to the Clover's following the mild lime, there is nothing singular; as its seed is very generally diffused, and always vegetates in a calcareous soil."—*Code of Agriculture*, note 225.

Mr. Dyer referred to the injurious effects of liming, where such an application, from the nature and condition of the soil, was not required. He stated the instance of a large landowner who, on removing from Somersetshire into Hampshire, inquired of Mr. Dyer whether he should lime his land or not. Mr. Dyer informed him, that the soil already contained plenty of that earth, and a further supply would not only be useless, but perfectly injurious. A kiln, however, was erected, but it was soon abandoned. On the other hand, chalk was of great benefit, under the same circumstances, in restoring a park, the turf of which was, 40 years ago, underlaid to the depth of six inches with that substance. Mr. Dyer would venture to recommend the proprietor of the lawn to which Dr. Calvert had referred, to take off the turf an inch or two, and apply chalk underneath it.—Mr. Buller, of Dilhorne, thought that the effect of burning limestone was merely to reduce it to an impalpable powder as lime, which it retained on its conversion again into chalk when exposed to the atmosphere.—Professor Way remarked that lime entered into new combinations, which chalk was incapable of effecting.—Mr. J. Mainwaring Paine recommended a trial of caustic lime, ground to powder, in its unslaked state. He could fully corroborate the statement of Mr. Thompson, in reference to the occurrence of fingers-and-toes, on a gravelly soil, which the tenant would not lime, and as a natural consequence had an excellent crop of those vegetable deformities. He was then induced to lime his land, when, after the first course of rotation, he had excellent crops of Turnips.—Mr. Hamond observed, that in Norfolk they never used lime, but grew Turnips without disease. They had, however, clay, chalk, and marl, which they put on all new and fresh lands at the proper time, and in proper quantity.—Mr. Buller thought that circumstance a corroboration of the correctness of his view, that it was not caustic but mild antacid lime that was required.—Dr. Calvert had understood that chalk was most suitable for farm-yard manure and green crops, while lime was best adapted for grain cultivation; according to the remark of Colonel Le Couteur, that Wheat dressed with farm-yard manure was coarse and diseased.

On the motion of Sir Matthew White Ridley, Bart., seconded by Mr Buller, the best thanks of the Council were voted to Professor Way, for his kindness in delivering a lecture before the members on that occasion.

Among the distinguished foreign visitors present, were M. Payen, Member of the Institute, and Secretary of the Central Agricultural Society at Paris; Mr. Johnson, Secretary of the New York State Agricultural Society; M. Nathhorst, Secretary of the Royal Agricultural Society of Sweden; and M. Hedengren, of Stockholm.

The Council adjourned to the 30th of July.

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AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND, *Aug.* 16.—The annual exhibition of this important Society was held on the premises of the Royal Dublin Society, which were liberally granted for the purpose. The gates were opened to the public on Wednesday and Thursday; and on Friday the auction of stock was held in the show yard. On Thursday evening the members of the Society held their banquet at the Theatre Royal.

LIST OF PRICES.

CLASS A.—SHORT-HORNED.

Sec. I.—For the best bull, calved on or after the 1st of Jan., 1846, and previous to the 1st of Jan., 1849, 30*l.*, to the Hon. A. F. Nugent, Pallas, Tynagh, for Bamboo; 2d, 10*l.*, to Thos. Wetherell, Kirkbridge, Darlington, for Earl of Scarborough.

Sec. II.—For the best bull, calved in the year 1849, 20*l.*, to Charles Towneley, Towneley, Burnley, Lancashire, for Garrick; 2d, 5*l.*, to Richard C. Lowndes, Rice House, Club Moor, Liverpool, for Alderman.

Sec. III.—For the best bull, calved after the 1st of January, 1850, 10*l.*, to P. J. Kearney, Miltown House, Clonmellon, Athboy, for Diamond; 2d, 5*l.*, to Captain Borrowes, Gilltown, Kilcullen, for Governor. For the best bull in the above sections, the medal, to the Hon. A. F. Nugent, Pallas, Tynagh, for Bamboo.

Sec. IV.—For the best cow, in calf, or that has had a calf in the year 1851, 10*l.*, to the Hon. A. F. Nugent, Pallas, Tynagh, for the Maid of Killerby; 2d, 5*l.*, to John William O'Meagher, Beaumont, Tullow, co. Carlow, for Primrose.

Sec. V.—For the best heifer, in calf or in milk, calved in the year 1848, 10*l.*, to Charles Towneley, Towneley, Burnley, Lancashire, for Butterfly; 2d, 5*l.*, to A. F. Nugent, Pallas, Tynagh, for Baby.

Sec. VII.—For the best heifer, calved after the 1st January, 1850, 10*l.*, to St. George Grey, Dorrington, Glasson, county Westmeath, for Ellen; 2d, 3*l.*, to Jas. Douglas, Athelstaneford, Drem, Scotland, for Village Belle.

CLASS B.—LONG-HORNED—DEVONS—HEREFORDS—AYRSHIRES—POLLED ANGUS—GALLOWAYS,

*Or any other distinct breed not qualified to compete as Short-horns.*

Sec. I.—For the best bull calved after the 1st of January, 1846, and previous to the 1st of January, 1849, 15*l.*, to Robert Quin Alexander, Acton, Poyntzpass, for his Devon bull, Comrade; 2d, 5*l.* to the Earl of Charlemont, Marino, Clontarf; for his Devon bull, Young Shamrock.

Sec. II.—For the best bull calved in the year 1849, 10*l.*, to Lord Talbot de Malahide, Castle Malahide, for his Devon bull, Young Richard; 2d, 5*l.* to Lord Talbot de Malahide, Castle Malahide, Polled Angus bull, Charlie. For the best bull in the above sections, the Medal to Lord Talbot de Malahide, Castle Malahide, for his Devon bull, Young Richard.

Sec. IV.—For the best cow in calf, or that has had a calf in the year 1851, 10*l.*, to Lord Riverston, Flower-hill, Killimer, for a long-horned cow; 2d, 5*l.* to Lord Plunket, Old Connaught, Bray, for a Devon cow, Dairymaid.

Sec. V.—For the best heifer, in calf or in milk, calved in the year 1848 10*l.*, to Lord Talbot de Malahide, Castle Malahide, for a polled Angus heifer, Jeannie Deans; 2d, 5*l.* to Lord Riverston, Flower Hill, Killimer, for a long-horned heifer.

Sec. VI.—For the best heifer, in calf in or in milk, calved in the year 1849, 10*l.*, to the Earl of Charlemont, Marino, Clontarf, for his Devon heifer, Primrose; 2d, 5*l.*, to Lord Talbot de Malahide, Castle Malahide, for his Devon heifer, Lady Maude.

Sec. VII.—For the best heifer, calved on or after the 1st of January, 1850, 5*l.*, to the Earl of Charlemont, Marino, Clontarf, for his Devon heifer, Rose; 2d, 3*l.* to N. W. Roche, M.D., Carrigabrick, Fermoy, for his Ayrshire heifer.

CLASS C.—WEST HIGHLANDS, KERRIES, OR ANY OTHER MOUNTAIN BREED.

Sec. I.—For the best bull calved after the 1st of January, 1845, 5*l.*, to William Tod, Elphinstone Tower, Tranent, for a Highland bull.

Sec. II.—For the best cow, in calf, or that has had a calf, in 1851, 3*l.*, to William Tod, Elphinstone Tower, Tranent, for a West Highland cow.

Sec. III.—For the best lot of two heifers, 3*l.*, to William Owen, Blesinton, for his two West Highland heifers.

CLASS D.—FAT STOCK—ANY BREED OR CROSS.

Sec. I.—For the best fat ox, of any breed or cross, 5*l.*, to John H. Lawler, Timolin Ballitore.

Sec. III.—For the best fat heifer, of any breed or cross, 3*l.*, to J. O. G. Pollock, Mountainstown, Navan, for his fat short-horned heifer.

Sec. IV.—For the best fat animal in the above class, the Medal, to J. O. G. Pollock, Mountainstown, Navan, for his fat short-horned heifer. For the best of all the prize bulls exhibited at the show, the Gold Medal to Hon. A. F. Nugent Pallas, Tynagh, for his short-horned bull, Bamboo. To the breeder of the best prize bull, the Medal, to the Hon. A. F. Nugent, Pallas, Tynagh, for his short-horned bull, Bamboo. For the best of all the prize cows or heifers exhibited at the show, the Gold Medal, to Charles Towneley, Towneley, Burnley Lancashire, for his short-horned heifer, Butterfly. To the breeder of the best prize cow or heifer, the Medal, to Charles Towneley, Towneley, Burnley, Lancashire, for his short-horned heifer, Butterfly. The Agricultural Challenge Cup, value 100*l.*, given by the late Peter Purcell, Esq., for the best animal in the neat cattle classes, possessing most merit of its kind in the estimation of the judges, to Hon. A. F. Nugent, Pallas, Tynagh, for his short-horned bull, Bamboo.

CLASS E.—HORSES.

Sec. I.—For the best cart stallion, over three years old, and foaled since the 1st of January, 1844, 30*l.*, to John Woolsey, Milesdown, Castlebellingham, for his Clydesdale horse, No Mistake; 2d, 10*l.* to Alexander Binning, Cruigenel Cottage, Linlithgow, Scotland, for his Clydesdale cart stallion, Lively.

Sec II.—For the best cart stallion, foaled since the 1st of January, 1848, 20*l.*, to Edward Collier, The Grange, Chance Inn, Forfarshire, N.B., for his cart stallion, Panmure; 2d, 5*l.*, to Lord Dufferin and Claneboy, Hollywood, for a cross-bred stallion.

Sec. III.—For the best thoroughbred stallion, the Medal, to Henry Baker, Mallow-house, Naul, for his thorough-bred stallion, Jolly Tar.

Sec. IV.—For the best cart mare, in foal, or with a foal at her foot, or having reared a foal in the year 1850, 15*l.*, to William Tod, Elphinstone Tower, Tranent, East Lothian, for his draught mare, Jess; 2d, 5*l.*, to Benjamin Willan, Mitchelstown, Finglas, for his draught mare, Cherry.

SHEEP.

CLASS F.—LEICESTERS.

Sec. I.—For the best shearling ram, 15*l.*, to Frederick F. Hamilton, Windmill Farm, Edenderry, for his shearling Leicester ram; 2d, 5*l.*, to James Douglas, Athelstaneford, Drem, Scotland, for his Leicester shearling ram.

Sec. II.—For the best two-shear ram, 10*l.*, to Thomas Carter, Scales, Richmond, Yorkshire, for his two-shear Leicester ram.

Sec. III.—For the best ram of any other age, 5*l.*, to Thomas Carter Scales, Richmond, Yorkshire, for a Leicester ram.

Sec. IV.—For the best pen of five shearling ewes, 5*l.*, to James Douglas, Athelstaneford, Drem, Scotland, for a pen o Leicester shearling ewes.

Sec. V.—For the best pen of five ewe lambs, 3*l.*, to N. W. Roche, M.D., Carrigabrick, Fermoy, for a pen of five Leicester ewe lambs, four months old.

CLASS G.—ANY OTHER LONG-WOOLLED SHEEP,

*Not qualified to compete as Leicesters.*

Sec. I.—For the best shearling ram, 8*l.*, to Sylvester Rait, Rathmoyle, Edenderry, for a long-woolled ram.

Sec. II.—For the best ram of any other age, 4*l.*, to Richard Perceval, Kilmore Hill, Tallow, co. Waterford, for a two-shear long-woolled ram.

Sec. III.—For the best pen of five shearling ewes, 3*l.*, to Sylvester Rait, Rathmoyle, Edenderry, a pen of five long-woolled shearling ewes.

Sec. IV.—For the best pen of five ewe lambs, 2*l.* to Sylveste Rait, Rathmoyle, Edenderry, a pen of five long-woolled ewe lambs.

CLASS H.—SOUTH DOWNS.

Sec. I.—For the best shearling ram, 8*l.*, to William Owen, Blesinton, a South Down shearling ram.

Sec. II.—For the best ram of any other age, 4*l.*, to William Owen, Blesinton, a South Down ram.

Sec. III.—For the best pen of five shearling ewes, 3*l.*, to William Owen, Blesinton, a pen of five shearling South Down ewes.

CLASS I.—CHEVIOTS.

Sec. I.—For the best shearling ram, 8*l.*, to Col. La Touche, Luggelaw, Newtown Mount Kennedy.

Sec. II.—For the best ram of any other age, 4*l.*, to Colonel La Touche, Luggelaw, Newtown Mount Kennedy.

Sec. III.—For the best pen of five shearling ewes, 3*l.*, to Colonel La Touche, Luggelaw, Newtown Mount Kennedy.

CLASS K.—BLACK-FACED SHEEP.

Sec. I.—For the best shearling ram, 6*l.*, to William Tod, Elphinstone Tower, Tranent.

Sec. II.—For the best ram of any other age, 3*l.*, to William Tod, Elphinstone Tower, Tranent. For the best ram in the above classes, the medal, to Frederick F. Hamilton, Windmil Farm, Edenderry.

Extra.—J. O. G. Pollock, Mountainstown, Navan, a pen o five Leicester ewes, 2*l.* James Douglas, Athelstaneford, Drem Scotland, a pen of three Leicester three and four shear ewes three and four years old, 1*l.*

CLASS L.—SWINE.

Sec. I.—For the best boar, under 18 months old, 10*l.*, to Thomas Skilling, Queen's College, Galway; 2d, 5*l.*, to H. Stanley M'Clintock, Randalstown, for a Berkshire boar.

Sec. II.—For the best boar, over 18 months, and under 36 months old, 8*l.*, to Alexander Montgomery, Kilmer House Ballivor, Athboy, for a black Berkshire boar, large breed; 2d 4*l.*, to Henry Flood, Viewmount, Bagnalstown, for a pure-bred Berkshire boar.

Sec. III.—For the best breeding sow, under 18 months old 8*l.*, to Viscount Monck, Charleville, Enniskerry, for a pure bred black and white Berkshire sow; 2d, ditto, 4*l.*, to Viscount

Monck, Charleville, Enniskerry, for a pure bred black and white Berkshire sow.

Sec. IV.—For the best breeding sow, over 18 months old, 5*l.*, to H. Stanley M'Clintock, Randalstown, for a Berkshire sow; 2d, 3*l.*, to Thomas Wallace, Belfield, Donnybrook, for a Berkshire sow.

Sec. V.—For the best lot of three breeding pigs of the same litter, not more than 10 months old, 5*l.*, to Viscount Monck, Charleville, Enniskerry, for a lot of three pure-bred black and white Berkshire sows; 2d, 3*l.*, to Henry L. Prentice, Caledon, County Tyrone, for a lot of three Berkshire breeding sows.

Extra.—Edward Croker, Ballitore House, Ballitore, for a lot of eight pure-bred Berkshire pigs 1*l.*

CLASS N.—POULTRY.

Sec. I.—Fowl.—For the best cock and hen, or two pullets, 2*l.*, to James J. Nolan, 33, Bachelor's-walk, Dublin, for a Dorking cock and hen; 2d, 1*l.*, to Mrs. Teresa Carton, 16, Halston-street, Dublin, a Malay cock and two hens.

Sec. II.—Turkeys.—For the best couple of turkeys, 2*l.*, to William Tod, Elphinstone Tower, Tranent, a couple of turkeys; 2d, 1*l.*, to Mrs. Farquharson, Portobello, a couple of Norfolk turkeys.

Sec. III.—Geese.—For the best couple of geese, 2*l.*, to Mrs. Yourell, Piercetown House, Clonee, a couple of China geese; 2d, 1*l.*, to Henry L. Prentice, Caledon, a couple of Dyan geese.

Sec. IV.—Ducks.—For the best drake and two ducks, 2*l.*, to Henry L. Prentice, Caledon, an Aylesbury drake and two ducks; 2d, 1*l.*, to William H. Rathborne, Cabra House, Dublin, an Aylesbury drake and two ducks.

CLASS O.—DAIRY PRODUCE—BUTTER.

To the owners of dairies, who shall make and produce the best quality of butter for the London and foreign markets, made on their own farms during the season of 1851, not being less than 1 firkin, of 60 lbs. weight, on the following terms:

Sec. I. For the English or London Market.—1st prize, 5*l.*, to John Cullen, Ballinamona, Redcross; 2d, 3*l.* to Lord Viscount Monck, Charleville, Enniskerry; 3d, 2*l.*, to John Maley, Aidstown, Blesinton.

Sec II. For the Foreign Market.—1st prize, 5*l.*, to John Cullen, Ballinamona, Redcross; 2d, 3*l.*, to Nicholas Hopkins, Newbawn, Wicklow; 3d, 2*l.*, to Daniel Munroe, Drumblane, Moira.

For the best of all the prize butter exhibited at the show, the meda', to John Cullen, Ballinamona, Redcross.

CLASS P.—FLAX.

For the best bundle, not less than 16 lbs., of scutched Flax, being an average sample of the produce of at least half an acre.—1st prize, 5*l.*, to Henry L. Prentice, Caledon, county Tyrone, for a bundle of white Flax and a bundle of blay Flax; 2d, 3*l.*, to W. Owen, Blesiaton, county Wicklow, for a bundle of hand-scutched Flax, 2 lbs. weight, part of a crop of 5 acres.

CLASS R.—IMPLEMENTS.

For the best plough, for the ordinary work of the farm, 2*l.*, to Messrs. Howard of Bedford, for their two-horse wheel plough, No. 3.

For the best plough, for deep trench ploughing, capable of being worked by not more than four horses, 2*l.*, to Messrs. Howard, of Bedford, for their wheel plough, No. 4.

For the best instrument for breaking up the subsoil, capable of being worked by not more than four horses, 2*l.*, to Messrs. Ritchie, of Ardee, for their improved subsoil plough, Lot 3.

For the best grubber or cultivator, to be worked by two or more horses, 2*l.*, to Robert Gray, of Belfast, for his three-horse cultivator.

For the best drill grubber, for green crops, 2*l.*, to J. Wilkie and Co., of Uddingston, for their improved five-tined drill grubber.

For the best constructed seed harrow, 2*l.*, to Robert Law, of Shettlestone, for his iron-angled harrows.

For the best break harrow, or other implement for pulverising the soil, 2*l.*, to J. Wilkie and Co., for their improved Norwegian harrow.

For the best roller or clod crusher, 2*l.*, to J. Wilkie and Co., for their improved metal land roller. The clod crusher of Mr. Crosskill, of Beverley, commended.

For the best horse rake, 2*l.*, to William Williams, of Bedford, for his horse rake.

For the best farm cart, 3*l.*, to Robert Law, of Shettlestone, for his farm cart, with harvest frame.

For the best drill for sowing Turnip seed in one or in two drills, 1*l.* None exhibited worthy of merit.

For the best drill for sowing Turnip seed, &c., with apparatus for distributing light portable manures, 4*l.*, to James Smyth, of Peasen Hall, Suffolk, for his patent three-rowed Turnip or Mangold seed and manure drill.

For the best machine for distributing liquid manure, 4*l.*, to Mr. Crosskill, of Beverley, Yorkshire, for his machine for distributing liquid manure.

For the best machine for drilling grain, 5*l.*, to James Smyth, of Peasen Hall, Suffolk, for his patent nine-coulter corn and seed drill, with improved steerage.

For the best machine for cleaning grain, 4*l.* None exhibited worthy of merit.

For the best machine for cutting Turnips, 3*l.*, to Messrs. Richmond and Chandler, Manchester, for their patent double-action Turnip-cutting machine.

For the best chaff-cutting machine, 3*l.*, to Messrs. Richmond and Chandler, for their patent chaff cutter.

For the best machine for crushing Oats, Beans, or other grain, 3*l.* None exhibited worthy of merit.

For the best apparatus for steaming food for cattle, 5*l.*, to Messrs. Richmond and Chandler, for their improved steaming apparatus.

For the best and most economical root washer, 1*l.*, to Messrs. Richmond and Chandler, for their improved root washer.

For the best threshing machine, suitable for large farmers, and worked either by horse or steam power, 10*l.*, and the medal. The judges feel obliged to withhold their prize, because, although there were machines exhibited which may possess merit, they had no opportunity of testing them in operation, without which any award would be mere guess.

For the best threshing machine, suitable for small farmers, 3*l.* Prize withheld for the same reason as the last.

For the best churn, worked by hand, 2*l.* None exhibited worthy of merit.

For the best churn, worked by power, 2*l.* No merit.

For the best set of smaller utensils of the dairy, such as milk coolers, &c., 2*l.* None exhibited.

For the best set of horse-power gearing, economically adapted to fit machines, churns, threshing machines, &c., 3*l.*, to Messrs. Barrett, Exall, and Andrews, of Reading, for their improved two-horse power gearing.

For the best machine for making drains, tiles, and pipes, 10*l.* and the medal, to Thomas Scragg, of Calvely, Cheshire, for his double-action tile machine.

For the second best do., 5*l.*, to Wm. Williams, of Bedford, for his tile machine.

For the best machine for separating stones, and other extraneous matter, from clay, and bringing it into the fittest state for the manufacture of drain pipes and tiles, 3*l.* None exhibited worthy of merit.

For the best lot of draining tiles, 1*l.* and the medal, to Mr. St. John Blacker, of Tarbet. These tiles are of first-rate quality. There were other lots of tiles in the show yard, but the judges could not find any parties to give information as to price, &c.

For the best assortment of hand implements used on the farm, such as draining tools, spades, sickles, scythes, hoes, rakes, wheelbarrows, sack-holders, &c., 3*l.*, to Henry Sheridan and Co., of Bridgefoot-street, Dublin.

For the best and most economical set of farm harness, 2*l.* None exhibited.

For the best set of swing-trees or draught-bars, 1*l.*, to Robert Grey, of Belfast.

For the best and most economical field gate, on correct principles, of any material, 3*l.*, to Edward Hill and Co., of Staffordshire; for their wrought-iron field gate, with wrought-iron pillars.

For the best and most economical description of portabl shedding, for affording shelter to cattle and sheep upon pasture, &c., 5*l.*, to Mr. Thomas Ball, of Robert's-walk, Malahide, for his shelter for sheep.

For the best assortment of hurdles or other moveable fence, suited for folding sheep on Turnips, 2*l.*, to Edward Hill and Co., Brierly-hill, Staffordshire, for their improved sheep-feeding hurdles, made of wrought-iron.

FLAX.

For the best machine, which shall combine breaking and scutching Flax, 20*l.* None exhibited.

For the best Flax-scutching machine, 5*l.* None exhibited.

For the best Flax-breaking machine, 5*l.* None exhibited of merit.

For the best machine, apparatus, or chemical preparation, to supersed or improve the present warm or cold water pocess, 10*l.* and the medal. None exhibited.

The Judges beg further to recommend to the special notice of the Council, the following Lots, as deserving of merit:—

In Lot 1, exhibited by Edward Hill and Co., of Staffordshire, two well constructed wrought-iron scarifiers. Also, a wrought-iron barrow, with portable furnace for heating coal, tar, &c. Also, a set of stable fittings in iron, consisting of stall, post, rack, manger, and drain.

2. To Messrs. Richmond and Chandler, of Manchester, for their patent sack-holder and barrow combined.

4. To Henry Bennett, of Liverpool, for his model of an improved steaming apparatus. Also, for his improved sack-weighing machine; and for his broadcast machine for sowing Clover and Grass; and also for his Ducie's drag, 2*l.* 2*s.*

8. To Robert Cogan, of London, for Lord Camoy's improved syphon, 1*l.*

9. To C. D. Young and Co., Liverpool, for their improved iron rick stand; also, for their cheese press, 1*l.*

12 To Henry Sheridan and Co., Dublin, for their subsoil and furrow plough, which combines the double properties of an ordinary plough and subsoiler, well suited for small farmers, who can command only one pair of horses, 2*l.*

16. To Thomas Scragg, of Cheshire, for his improved bell-mouth joint for pipe tiles, to supersede the use of collars, making a better joint at a less cost, the medal.

18. To Edward Weirs, of Oxford-street, London, for his saw table, manure pump, irrigation and drain level, 2*l.*

19. To James Kirkwood, of Tranent, East Lothian, for his wrought-iron sheep-fodder rack, 2*l.*

24. To Messrs. Barrett, Exall, and Andrews, of Reading, for their oil-cake crushers, and hay-tedding machine.

32. To Richard H. H. Beecher, of Skibbereen, for his simple and cheap clod-crusher. 1*l.*

33. To J. M'Arthur, of Dublin, for his green-crop trenching fork.

The judges, in conclusion, beg to recommend that, on future occasions, the implements be, as much as practicable, classified and arranged according to the premium list. If this was done, much time would be saved, and the judges thereby enabled to have a trial of such implements as cannot be fairly tested without trial, which they regret they have been unable on this occasion to accomplish. (Signed) Richard Clyburn, John G. Coddington, and Thomas Robertson, Judges of Implements; Edward Bullen, Secretary.

JUDGES OF THE SHOW.

Short-horns and Fat Stock—Messrs. Booth, Torr, and Seymour.

Other Breeds, and Cheviot and Black-faced Sheep—Messrs. Dudgeon, Harrison, and Seymour.

Horses—Messrs. Robert Smith, J. Booth, and W. B. Harris.

Sheep—Messrs. Wiley, J. B. Harris, and Torr.

Poultry—Colonel Shaw, Lord Erne, and George Perrin.

Butter—Messrs. Beaky, Thomas Kent, and G. Lugton.

Flax, Seeds, Roots, Grasses, &c.—Messrs. Skilling and Templeton.

On the whole, the arrangements were such as to give very general satisfaction, and would have been complete, were it not for the scattered way in which the lots of implements were arranged, or rather disarranged. The gates were opened to the public about 2 o'clock on Wednesday; but owing to the lateness of the hour, and the heavy rains, accompanied with thunder and lightning, which set in at an early period of the evening, the attendance, though good, was not so numerous as upon former occasions. The horned stock exhibited, with but few exceptions, were really excellent, the Hon. A. F. Nugent's bull, Bamboo, the winner of so many previous prizes, having beaten Mr. Wetherell's Earl of Scarborough, which obtained the first prize at the last show of the Royal Agricultural Society of England, at Windsor. Bamboo thus wins the first prize of 30 sovereigns, the gold medal, first-class medal, and the Purcell Challenge Cup. Bamboo won the above prizes, also, at Cork, last year. Mr. Wilson's Lady of Brawith, to which the Purcell Challenge Cup was awarded, and that for the second time, too, not proving in calf, the owner of Bamboo claimed, and obtained the cup, and is now its winner, for the second time. In sheep the entries were more numerous than upon any former occasion, though a few lots that were entered were not brought forward in competition. A great improvement has taken place in this class of our domestic stock. The show of swine were, for the greater part, so good as to leave us nothing to wish for on this head; in short, improvement in this department is scarcely to be expected. Of horses, there were some superior animals, Mr. Woolsey, of Milesdown, Castle Bellingham, taking the first prize, of 30 sovereigns, for his Clydesdale horse, No Mistake; and Mr. Tod, of Elphinstone Tower, taking the first prize, of 15 sovereigns, for his beautiful draught mare, Bess.—*Irish Farmers' Gazette.*

## Notices to Correspondents.

Agricultural Statistics: *Subscriber.* You should procure a copy of Spackman's little book entitled "Statistics of the British Empire." The information about the imports of grain during he past six years is, no doubt, given in some parliamentary paper. Apply to Hansard. If we can procure the information we will give it in a future number. About wages, see *Agricultural Gazette*, p. 266, 1850.

Aldernet Heifer: *G W D.* We imagine the heifer must have slipped her calf unknown to her attendants, though it is just possible that it may be dead, and still in her. We would not recommend any specific treatment, but simply to pay attention to her general health. *W. C. S.*

Bacon: *R M E.* The bacon "hoppers" are the maggots of a fly called Piophila Casei. The remedy is to take care that it be well cured.

Beans: *Cottage Farmer.* The specimen is *not* of the Russian or Winter Bean. It seems to be a Mazagan or Longpod. The winter Bean is a small, stout, round sort. Common grey hog Peas may be sown in South Hampshire before winter.

Cattle Feeding: *A B.* Procure the little pamphlet pub ished by Black and Son, of Edinburgh, written by Mr. Harkness, of Dumfries.—The running to seed may be avoided for the future by planting later in the season.

Compost: *X Z.* You had better use at least two of soil with one of guano before you add the seed.

Farm Accounts: *M A.* Your note is sent to "W. F."

Filter: *K* asks for the best domestic filter. Will any one state their experience.

Grass Grass: *Inquirer.* Try a mixture of wood-ashes and common salt upon them. That will generally sweeten these rich spots.

Insurance Company: *X Z.* Apply either to the Mutual Insurance Company, W. Shaw, Esq., Strand, London; or to the Proprietary Insurance Company, 20, Cockspur-street, Charing-cross.

Lime: *C Painter.* Its effect on soils almost exhausted is to exhaust them quite. It brings into use whatever remaining fertility there may be.

Mangold Wurzel: *Inquirer.* They are best thinned by hand; and if transplanted—which they will bear with ease—plants with a bulb already forming are to be preferred.

Peat Charcoal: *B B.* It is of very little use indeed, if it cost 4*l.* 10*s.* per ton.

Sundries: *F C S.* Rotten *tan* is to be had for nothing. Most tan yards are encumbered with it. You had better *char* the tan, not burn it, if you intend to filter gas water through it, but we cannot say how much of the one will remove from a given quantity of the other all its ammoniacal ingredients.—You had better sow 20 perches of land with Cabbage seed, to procure plants for a few acres next spring. The seed of the Early York may be sown in the end of August.

Erratum. For "Wm. B. Wingate," the second signature in Lincolnshire, page 506, read "Wm. Wingate, jun."

METEOROLOGICAL REPORT.—August.

(*Continued from p. 526.*)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Aug. 15 | 7.25 a.m. | 29.87 | ... | SSW. Brisk, frequent showers, overcast; barometer falling steadily. |
| * | 6 p.m. | ... | 29.80 | |
| 15 | 7 a.m. | ... | 29.83 | WSW. Moderate, hot sunny day; barometer rising steadily. |
| | 10.30 p.m. | 29.90 | ... | |
| 16 | 6.15 a.m. | 29.91 | ... | Calm; fine forenoon. |
| | 2.30 p.m. | 29.91 | ... | 1.15, began drizzling from south; moderate breeze, wet evening. |
| | 5.5 p.m. | ... | 29.87 | |
| Sun. 17 | 7.50 a.m. | 29.85 | ... | SSW. A.M., brisk; 10.55 A.M., SW. Overcast. |
| † | 4.30 p.m. | ... | 29.79 | 2.40 P.M., showery. Fine afternoon; very heavy clouds passing along northern horizon. Night calm. |
| | 9.50 p.m. | 29.84 | ... | |
| 18 | 6.15 a.m. | ... | 29.97 | NNW. Very light wind, barometer rising steadily; fine day. Large white masses on a blue sky. |
| | 10.40 p.m. | 30.14 | ... | |
| 19 | 7.10 a.m. | 30.24 | ... | 7.10 A.M., barometer rising. Gentle southerly breeze; bright sunny morning. |
| | 5.40 p.m. | 30.24 | ... | Gentle breeze at south, barometer flat. |
| 20 | 6 a.m. | 30.21 | ... | Gentle breeze SSE., barometer falling steadily; fine day. |
| ‡ | 3 p.m. | ... | 30.15 | |

* A storm coming from the south-west, and probably crossing the extreme north of Scotland.

† This storm crossed England from west to east. I conceive it to have produced an easterly wind in the north of Scotland, as the barometer fell, and a northerly wind as it rose.

‡ This storm is now approaching, with a barometer falling steadily, and the wind veering by the eastward. I apprehend that it is passing to the southward of us, and that we shall have bad weather the end of this week.

Dorchester, Aug. 21st. *F. P. B. M.*

(*To be continued.*)

# Markets.

COVENT GARDEN, Aug. 23.

Peaches and Nectarines have become scarce, but Pines and Grapes are abundant. Cherries from walls are still supplied. Apricots and Greengage Plums are largely imported from the Continent, as are also Pears. West Indian Pines fetch from 2*s.* to 5*s.* each. Oranges and Lemons are very scarce. Nuts remain nearly the same as quoted last week. Filberts are imported from the Continent in quantity, and in good condition. Carrots, French Beans, and Peas are sufficient for the demand. Potatoes are good in quality, and, as yet, tolerably free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Carnations, Pinks, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4*s* to 6*s* | Almonds, per peck, 6*s* |
| Grapes, hothouse, p. lb., 2*s* to 5*s* | — sweet, per lb., 2*s* to 3*s* |
| Peaches, per doz., 10*s* to 20*s* | Lemons, per doz., 1*s* to 2*s* |
| Nectarines, per doz., 10*s* to 20*s* | Oranges, per doz., 9*d* to 2*s* |
| Cherries, per lb., 6*d* to 2*s* | — per 100, 6*s* to 14*s* |
| Melons, each, 2*s* to 6*s* | — Seville. p. 100, 7*s* to 14*s* |
| Strawberries, p. pottle, 6*d* to 1*s* | — — p. doz., 1*s* to 2*s* 6*d* |
| Currants, p. hf. sieve, 2*s* 6*d* to 5*s* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Gooseberries, do., 1*s* 6*d* to 4*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| Plums, per punnet, 1*s* to 2*s* | Filberts, per 100lbs., 55*s* to 65*s* |
| Apples, kitch., p. hf. sieve, 2*s* to 3*s* | |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3*d* to 1*s* | Shallots, per lb., 3*d* to 6*d* |
| Cauliflowers, p. doz., 6*d* to 3*s* | Garlic, per lb., 4*d* to 6*d* |
| French Beans, per half sieve, 1*s* to 2*s* | Artichokes, per doz., 1*s* to 2*s* |
| Beans, per sieve, 1*s* 6*d* to 2*s* | Lettuce, Cab., p. score, 4*d* to 1*s* |
| Peas, per sieve, 1*s* 9*d* to 3*s* 6*d* | — Cos, per score, 3*d* to 1*s* |
| Potatoes, per ton, 45*s* to 80*s* | Small Salads, p. punn., 2*d* to 3*d* |
| — per cwt., 2*s* to 5*s* | Horse Radish, p. bundl., 1*s* 6*d* to 6*s* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Red Beet, per doz., 1*s* to 2*s* |
| Turnips, p. bunch, 2*d* to 4*d* | Mushrooms, p. pot., 1*s* to 2*s* |
| Cucumbers, each, 1*d* to 1*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Radishes, per doz., 6*d* to 9*d* | Fennel, per bunch, 2*d* to 3*d* |
| — Turnip, p. doz., 8*d* to 1*s* | Savory, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Carrots, per bunch, 4*d* to 6*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| Spinach, per sieve, 1*s* 6*d* to 2*s* | — Roots, p. bundl. 9*d* to 1*s* |
| Vegetable Marrows, per doz., 6*d* to 1*s* | Mint, per bunch, 1*d* to 2*d* |
| Onions, p. bunch, 1*d* to 5*d* | Basil, p. bunch, 3*d* to 4*d* |
| Leeks, per bunch, 1*d* to 2*d* | Marjoram, do., 3*d* to 4*d* |
| | Watercress, p. 12 bunch., 4*d* to 6*d* |

Hops.—Friday, Aug. 22.

Messrs. Pattenden and Smith report that the accounts from the plantations, on the whole, are more favourable, still there is a steady trade doing at late prices. Duty 165,000*l.*

COAL MARKET.—Friday, Aug 22.

Hollywell, 14s.; Eden Main, 13s. 9d.; Cowper Hartley, 13s. 6d.; Wallsend Gibson, 13s.; Wallsend Haswell, 15s. 9d.; Wallsend Lambton, 14s. 6d.; Wallsend Stewarts, 14s. 9d.; Wallsend Tees' 14s. 9d.—Ships at market, 82.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 21.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 55 65 | New do. ... ... ... | 60 77 |
| Rowen ... ... ... | — 66 | Straw ... ... ... | 24 30 |
| New Hay ... ... | 55 70 | | J. Cooper. |

CUMBERLAND MARKET, Aug. 21.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 65s to 73s |
| Inferior ditto... ... | 55 70 | New Clover ... ... | 65 78 |
| New Hay ... ... | 55 70 | Straw ... ... ... | 28 32 |
| Old Clover ... ... | 84 92 | | Joshua Baker. |

SMITHFIELD, Monday, Aug. 18.

The number of Beasts was about the same as last week; trade is very heavy, and although a few choice things are readily sold, many middling ones cannot be disposed of; notwithstanding, there is a disposition to take less than we quote. Sheep and Lambs are also plentiful, and make no more money; yet trade is cheerful, and almost all are sold. Calves still meet with a dull sale, and cannot be quoted higher. From Holland and Germany there are 1224 Beasts, 4700 Sheep, and 236 Calves; from Spain, 750 Sheep; from Scotland, 50 Beasts; and 2500 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 8 | — 3 | 0 | Ewes & 2d quality | 2 | 8 | — 3 | 0 |
| Best Downs and Half-breds | 3 | 8 | — 3 | 10 | Ditto Shorn ... | | | ... | |
| Ditto Shorn ... | | | ... | | Lambs ... | 4 | 4 | — 4 | 10 |
| | | | | | Calves ... | 2 | 6 | — 3 | 6 |
| | | | | | Pigs ... | 2 | 4 | — 3 | 4 |

Beasts, 4267; Sheep and Lambs, 32,930; Calves, 362; Pigs, 380.

FRIDAY, Aug. 22.

The supply of Beasts is large and the demand small. Very little business is done, owing to the hot weather. Our top quotations are realised only in a few instances. Trade is heavy for Sheep, especially big ones; sizeable Sheep make about the same as on Monday. The quality of the Lambs is generally very indifferent; consequently, choice ones are readily disposed of. Trade is very dull for Calves; 3s. 6d. is an extreme quotation. From Germany and Holland we have 623 Beasts, 1660 Sheep, and 370 Calves; from Scotland, 70 Beasts; 350 from the northern and midland, and 102 milch cows from the home counties.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 2 | to 3 | 6 | Best Long-wools | 3 | 4 | — 3 | 6 |
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ewes & 2d quality | 2 | 6 | — 3 | 0 |
| Best Downs and Half-breds | 3 | 8 | — 3 | 10 | Ditto Shorn ... | | | ... | |
| Ditto Shorn ... | | | ... | | Lambs ... | 4 | 4 | — 4 | 10 |
| | | | | | Calves ... | 2 | 4 | — 3 | 6 |
| | | | | | Pigs ... | 2 | 4 | — 3 | 4 |

Beasts, 1211; Sheep and Lambs, 12,700; Calves, 665; Pigs, 395.

MARK LANE.

Monday, Aug. 18.—There was a moderate supply of Wheat at market this morning from Essex and Kent, that from Essex being nearly all new; the quality was good, averaging in weight from 63 lbs. to 64 lbs. White sold from 40s. to 46s.; red, 38s. to 40s.; extra, 41s. to 42s.; the sale was slow, and some remained on the stands at a late hour. Old English and foreign must be written 1s. per qr. cheaper where sales were effected, but in the latter business was exceedingly limited.—There is no alteration in the value of Barley, Beans, or Peas, either English or foreign.—Oats are 6d. per qr. dearer, but the trade is slow at the advance.—There were about 80 qrs. of new Mustard Seed, the best of which was sold at 9s. per bush. The Flour trade is inanimate at last week's prices.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 38 | —42 | Red ..... | 35 | —40 |
| — — fine selected runs...ditto | 42 | —45 | Red ..... | 38 | —42 |
| — — Talavera ..... | | | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —48 | | | |
| Barley, grind. & distil., 21s to 24s...Chev. | 26 | —31 | Malting . | 23 | —26 |
| — Foreign... grinding and distilling | 21 | —25 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 17 | —20 | | | |
| — Scotch and Lincolnshire...Potato | 21 | —24 | Feed..... | 19 | —21 |
| — Irish .....Potato | 18 | —22 | Feed..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed..... | 16 | —19 |
| Rye ..... | 23 | —25 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25s to 27s.....Tick | 26 | —30 | Harrow . | 26 | —30 |
| — Pigeon.....28 — 32... Winds | — | | Longpod | — | |
| — Foreign .....Small | 21 | —29 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boiler | 22 | —25 | Suffolk.. | 24 | —27 |
| — Maple.....25s to 27s .....Grey | 22 | —23 | Foreign . | 24 | —26 |
| Maize .....White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —33 | Norfolk . | 27 | —33 |
| — Foreign .....per barrel | 18 | —22 | Per sack. | 27 | —33 |

Friday, Aug 22.—Since Monday the arrivals of English grain have been small, but those of foreign large. Business to-day was quite at a standstill, and the value of all articles entirely nominal, with the exception of a few sales of Oats at a reduction of 6d. per qr.—There is no demand for Flour either French or American, and even at a further reduction sales would be difficult.—In floating cargoes of Wheat there is nothing doing; Maize is held at 26s. 6d. for Galatz, and 24s. for Ibraila.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| July 12..... | 43s 6d | 25s 8d | 22s 0d | 22s 5d | 32s 6d | 28s 8d |
| — 19..... | 42 7 | 25 6 | 21 11 | 28 2 | 31 5 | 28 6 |
| — 26..... | 42 5 | 25 7 | 22 0 | 27 0 | 32 3 | 28 7 |
| Aug. 2..... | 42 4 | 25 9 | 22 7 | 25 7 | 31 1 | 28 8 |
| — 9..... | 42 3 | 25 11 | 21 7 | 28 5 | 31 4 | 28 1 |
| — 16..... | 41 4 | 26 4 | 21 9 | 27 0 | 30 8 | 27 2 |
| Aggreg. Aver. | 42 5 | 25 10 | 22 0 | 28 1 | 31 7 | 28 2 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | July 12. | July 19. | July 26. | Aug. 2. | Aug. 9. | Aug. 16. |
|---|---|---|---|---|---|---|
| 43s 6d | — | ... | ... | ... | ... | ... |
| 42 7 | ... | ... | ... | ... | ... | ... |
| 42 5 | ... | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |
| 42 3 | ... | ... | ... | ... | ... | ... |
| 41 4 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Aug. 19.—The arrivals into this port during the week have been good, and comprise a moderate increase of English and Irish produce, and a large augmentation of foreign Wheat and Flour. Our market this morning was well attended by the home and country millers and good qualities of British and foreign Wheat were in moderate, but by no means lively request, at a decline of 1d. to 2d. per 70 lbs. from the rates of this day week. Barley and Malt, although in slow demand, remained nominally unaltered in value. Peas and the general runs of Beans were offered on lower terms with little effect. Egyptians only supporting previous rates. Old Oats were 1d. and new 2d. per 45 lbs. cheaper. Indian Corn met a fair inquiry on the terms of this day week.—Friday, Aug. 15.—Having very few home and country millers at our Corn Exchange to-day, and a general disposition evinced to remain inactive, the sales of Wheat were scarcely feasible, and had buyers come forward, somewhat lower terms would have been conceded. Barley, Beans, and Peas, exciting little notice, were the turn cheaper.


GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS and CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | Packed in Boxes of 100 feet each. | £. s. d. |
|---|---|---|
| 16 ozs.... ... 3d. to 3½d. | 6 by 4, 6½ by 4½ ... | 0 13 0 |
| 21 do. ... ... 3½d. to 5d. | 7 by 5, 7½ by 5½ ... | 0 15 0 |
| 26 do. ... ... 5d. to 7½d. | 8 by 5, 8 by 5½ ... | 0 15 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2¾d. per foot. | 8 by 6, 8½ by 6½ ... | 0 17 6 |
| | 9 by 7, 10 by 8 ... | 1 0 0 |

Foreign Sheet Glass, in cases of 200 feet, and in sizes from 40 by 30, to 44 by 32. 2l. per case.

Milk Pans, from 2s. to 6s. each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 8s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. Cogan and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. Cogan and Co., 48, Leicester-square, London.

Glass Shades. Gas Glasses, White Lead, Colours, &c., as usual.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and 6½ by 4½ | ... | ... | ... | 10s. 0d. |
| 7 ,, 5 and 7½ by 5½ | ... | ... | ... | 15 0 |
| 8 ,, 5 and 8 by 5½ | ... | ... | ... | 15 0 |
| 8 ,, 6 and 8½ by 6½ | ... | ... | ... | 17 6 |
| 9 ,, 7 and 10 by 8 | ... | ... | ... | 20 0 |
| 12 ,, 10 and 13 by 9 | ... | ... | ... | 20 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6d. | per foot. |
| ,, ,, 35 ,, | ..... | 8d. | ,, |
| ,, ,, 50 ,, | ..... | 9½d. | ,, |
| ,, ,, 75 ,, | ..... | 12d. | ,, |

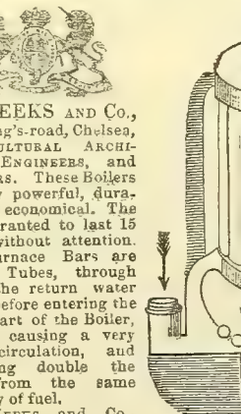
Milk Pans, 2s to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

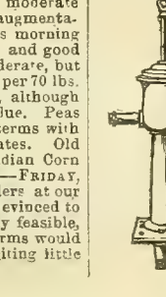



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Patent Pump ... ... £1 16 0

Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

TO GENTLEMEN, GARDENERS, AND OTHERS.

MR. ROWLEY has received instructions from the Executors of the late William Forrester, Esq., to offer for Sale, by Public Auction, on THURSDAY and FRIDAY, September 4th and 5th, on the Premises at Northwood House, near Hanley, Staffordshire, all the very valuable and extensive Greenhouses, Vineries, Forcing-houses with heating apparatus complete, Cucumber Frames, Hand-glasses, Garden Chairs, Wrought-iron Frames for covering Tulips, Iron Garden Chairs and Flower Stands, Greenhouse Plants, 30,000 of the choicest descriptions of Tulip Bulbs, 400 very excellent Dahlias, 3000 very rare Picotees and Carnations, 300 Pinks, and a great number of the best class of Auriculas, Cactuses, Geraniums, Calceolarias, &c. &c.—Also at the same time will be offered a very superior Light Cab Phaeton, with head in front and seat behind, lined with drab cloth, on Collins' patent axles, quite new—a very useful gig; two sets of Carriage Harness, two Saddles and Bridles, Patent Weighing Machine, &c. &c.

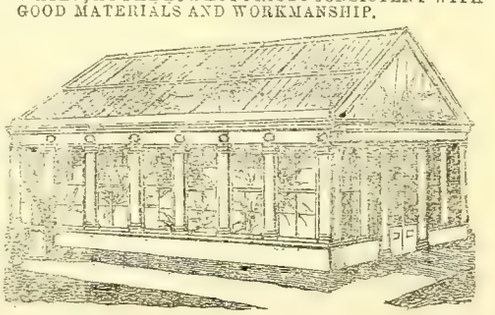
The Auctioneer begs to call the attention of Gentlemen and Connoisseurs to the above, the whole having been selected by the late proprietor with the greatest care, and regardless of expense.—Descriptive Catalogues may be obtained from the George Hotel, Burslem; the Saracen's Head, Hanley; Wheatsheaf, Stoke-on-Trent; Union, Laugton.

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FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY and ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

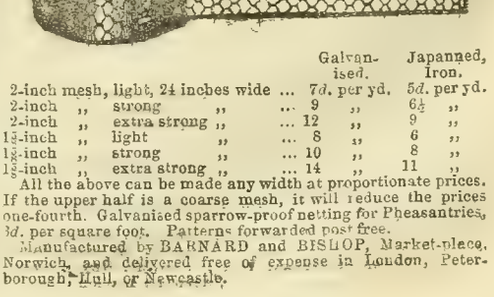
BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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| 2-inch mesh, light, 24 inches wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.

NOTICE IS HEREBY GIVEN, that the usual DIVIDEND of 5 per cent. (less income tax), on the paid-up capital on the shares of the Society, will be PAYABLE at this office, on and after WEDNESDAY, the 20th day of August inst.

ACT OF PARLIAMENT.—In consequence of the powers conferred by an act obtained in the session of 1850, the provisions of which came into operation on the 1st of last month, advantages and privileges will accrue to all persons *now assuring* to an extent greater than can be derived from most other offices. The particulars are set forth in a report, and a new prospectus, to be procured (free of expense), by addressing a line to GEORGE H. PINCKARD, Resident Secretary.

99, Great Russell-street, Bloomsbury, London.

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| Premiums to Assure £100. | | | Whole Term. | |
|---|---|---|---|---|
| Age. | One Year. | Seven Years. | With Profits. | Without Profits. |
| 20 | £0 17 8 | £0 19 1 | £1 15 10 | £1 11 10 |
| 30 | 1 1 8 | 1 2 7 | 2 5 5 | 2 0 7 |
| 40 | 1 5 0 | 1 6 9 | 3 0 7 | 2 14 10 |
| 50 | 1 14 1 | 1 19 10 | 4 6 0 | 4 0 11 |
| 60 | 3 2 4 | 3 17 0 | 6 12 9 | 6 0 10 |

One-half of the Whole Term Premium may remain on credit for seven years, or one-third of the Premium may remain for life as a debt upon the Policy at 5 per cent., or may be paid off at any time without notice.

Claims paid in one month after proofs have been approved.

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EMPOWERED BY SPECIAL ACT OF PARLIAMENT.

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The following table will show the result of the last division of profits, as declared on the 14th of May, 1851, to all persons who had on that day paid six annual premiums, being a reduction of 45 per cent. on the current annual premium. This will be found a most liberal reduction, if the original premiums be compared with those of other offices adopting a similar plan of division of profits:—

| Age when Policy was issued. | Date of Policy. | Sum assured. | Original Premium. | Reduced Annual Premium for the current year. |
|---|---|---|---|---|
| 20 | On or before 14th of May, 1846. | £1000 | £19 6 8 | £10 12 8 |
| 30 | | 1000 | 24 8 4 | 13 8 7 |
| 40 | | 1000 | 31 10 0 | 17 6 6 |
| 50 | | 1000 | 42 15 0 | 23 10 3 |
| 60 | | 1000 | 66 11 8 | 36 12 5 |

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The attention of the public is particularly called to the terms of this Company for LIFE INSURANCES, and to the distinction which is made between MALE and FEMALE Lives.

Extract from the Table of Premiums for Insuring 100*l.*

| Age next birthday. | Whole Life Premiums. A Male. | A Female. | Age next birthday. | Whole Life Premiums. A Male. | A Female. |
|---|---|---|---|---|---|
| 10 | £1 7 6 | £1 5 4 | 46 | £3 11 6 | £3 3 2 |
| 13 | 1 9 3 | 1 7 0 | 50 | 4 1 9 | 3 13 3 |
| 16 | 1 11 3 | 1 8 10 | 53 | 4 11 6 | 4 2 6 |
| 20 | 1 14 4 | 1 11 6 | 56 | 5 4 0 | 4 14 0 |
| 23 | 1 17 0 | 1 13 8 | 60 | 6 6 0 | 5 12 6 |
| 26 | 2 0 3 | 1 16 2 | 63 | 7 4 0 | 6 9 6 |
| 30 | 2 5 0 | 1 19 9 | 66 | 8 4 0 | 7 10 8 |
| 33 | 2 8 6 | 2 2 10 | 70 | 10 0 4 | 9 7 6 |
| 36 | 2 13 0 | 2 6 4 | 73 | 11 16 2 | 11 2 6 |
| 40 | 2 19 9 | 2 12 0 | 76 | ... | 13 1 9 |
| 43 | 3 5 3 | 2 17 2 | 80 | ... | 15 12 10 |

** Example.*—A Gentleman whose age does not exceed 30, may insure 1000*l.*, payable on his decease, for an annual payment of 22*l.* 10*s.*; and a Lady of the same age can secure the same sum for an annual payment of 19*l.* 17*s.* 6*d.*

Prospectuses, with the rates of premium for the intermediate ages, and every information may be had at the Head Office in York, or of any of the Agents.

FIRE INSURANCES are also effected by this Company, on the most moderate terms.

Agents are wanted in those Towns where no appointments have been made. Applications to be made to Mr. W. L. NEWMAN, Actuary and Secretary, York; or to Mr. HENRY DINSDALE, 12, Wellington-street, Strand, Agent for London.

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| Sum Assured | Time Assured. | Sum add. to Pol. in 1841 | Sum added to Pol. in 1848. | Sum Payable at Death. |
|---|---|---|---|---|
| £5000 | 13 yrs 10 mts | £638 6 8 | £787 10 0 | £6470 16 8 |
| 5000 | 1 year | ..... | 112 10 0 | 5112 10 0 |
| 1000 | 12 years | 100 0 0 | 157 10 0 | 1257 10 0 |
| 1000 | 7 years | ..... | 157 10 0 | 1157 10 0 |
| 1000 | 1 year | ..... ..... | 22 10 0 | 1022 10 0 |
| 500 | 12 years | 50 0 0 | 78 15 0 | 628 15 0 |
| 500 | 4 years | ..... | 45 0 0 | 545 0 0 |
| 500 | 1 year | ..... | 11 5 0 | 511 5 0 |

* EXAMPLE.—At the commencement of the year 1841, a person aged 30 took out a policy of 1000*l.*, the Annual Payment for which is 24*l.* 1*s.* 8*d.*; in 1847, he had paid in Premiums 160*l.* 11*s.* 8*d.*; but the profits being 2½ per cent. per annum on the sum insured (which is 22*l.* 10*s.* per annum for each 1000*l.*), he had 157*l.* 10*s.* added to the Policy, almost as much as the Premiums paid.

The Premiums, nevertheless, are on the most moderate scale, and only one-half need be paid for the first five years, when the Insurance is for Life. Every information will be afforded on application to the Resident Director, 8, Waterloo-place, Pall-mall, London.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 35—1851.] SATURDAY, AUGUST 30. [PRICE 6*d.*


INDEX.


Agricultural Society of England 555 *c*
Animal substances, to preserve 552 *a*
Australia, emigration to ..... 550 *c*
Baily's America, rev. ..... 551 *b*
Birds, British song..... 548 *b*
British Association..... 548 *c*
Calendar, Horticultural ..... 552 *a*
Canna, to grow in water ..... 551 *a*
Clover failure ..... 556 *a*
Cuthill's Market Gardening .. 551 *c*
Dahlia showing ..... 548 *a*
Draining .. ..... 554 *c*
Drainage companies ..... 554 *a*
Flax, culture of ..... 556 *c*
Fruit crops..... 549 *c*
— tarts ..... 551 *a*
Grape blight.....547 *b*—551 *c*
Guano trade ..... 547 *c*
Highgate Floricultural Society 551 *a*
Manure, management of ... .. 557 *b*
Mildews .... .....547 *b*—551 *c*
Orchids for the Million..... 549 *a*
Paint..... 558 *b*
Phosphate of lime ..... 555 *c*
Plants, greenhouse, to expose.. 550 *c*
Potatoes, to winter..... 550 *a*
— Waxy..... 550 *c*
Potato disease ..... 551 *a*
Raspberry case..... 549 *b*
Reaping machines, 553 *b*, 554 *b* 555 *b*
Rose, old double yellow ..... 550 *c*
Sea monsters ..... 549 *c*
Seedling flowers ..... 550 *a*
Smithfield winter garden ..... 547 *a*
Sweetwilliams, monstrous .... 550 *a*
Tarts fruit ..... 551 *a*
Turnip moth ..... 553 *a*
Vegetables, to preserve..... 552 *a*
Victor a Regia, scent of ..... 549 *c*
Vitality of seeds ..... 549 *b*
Walks, garden ..... 550 *a*
Weather, the..... 558 *b*
Wilts Hort Society ..... 551 *a*
Yorkshire Agricultural Society 557 *b*


NATIONAL FLORICULTURAL SOCIETY
21, REGENT STREET.

The Hour of Meeting on THURSDAY, the 4TH of SEPTEMBER, is TWO O'CLOCK. All DAHLIAS, HOLLYHOCKS, VERBENAS, LILIUMS, PANSIES, FUCHSIAS, ROSES, ANTIRRHINUMS, &c., &c., must be entered, labelled, and staged at least two hours before the time of meeting. Any subjects submitted after 12 o'clock will be disqualified from examination by the CENSORS:—

| | |
|---|---|
| Mr. W. P. Ayres | Mr. Harrison |
| Mr. Bragg | J. Howard, Esq. |
| H. W. Collison, Esq. | J. S. Proctor, Esq. |
| Mr. Cook | Mr. John Salter |
| Mr. Dodds | Mr. G. Wyness |
| Mr. Gaines | Mr. Kimberly |

By Order. JOHN EDWARDS, Hon. Sec.

THE ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN.—The last EXHIBITION of the above Society this season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, the 3d of SEPTEMBER 1851 (open to all Exhibitors), when prizes will be awarded for the following productions, viz:—Miscellaneous Plants, Dahlias, Roses, Cut Flowers, Verbenas Hollyhock, Antirrhinums, Fruit, &c. In addition to the prizes offered by the Society, extra Prizes are offered by Members for Honey, Hollyhocks, Floral Devices, and Fruit; also by Mr. Domeyer, three Prizes for three blooms of the Queen of the Fairies Dahlia; by Mr. T. Barnes, four Prizes for three blooms of Barnes's George Glenny Dahlia; and by Mr. C. Turner, three Prizes for six Dahlias sent out by himself in 1851.

Lists of Prizes, and the Rules for Exhibitors, may be obtained from JOHN TAYLOR NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.

The next EXHIBITION of this SOCIETY will be held in the VIVARY PARK, TAUNTON, under their splendid MARQUEE, on WEDNESDAY, the 17TH of SEPTEMBER next.

The Society offers a handsome SILVER CUP to be competed for by Nurserymen (open to All England), for the best stand of DAHLIAS, 24 dissimilar blooms.

Competitors for this Prize will be required to pay an entrance fee of 2*s.* 6*d.*, and give four days' notice of their intention to exhibit, to the Hon. Secretary, Mr. J. KINGSBURY, Canon-street Cottage, Taunton.—August 30.

NEW GERANIUMS OF 1850

BASS AND BROWN'S List of NEW GERANIUMS and other Plants, at reduced prices, is now ready. Copies sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

HYACINTHS, NARCISSUS, TULIPS, CROCUS, GLADIOLUS, JONQUILS, RANUNCULUS, ANEMONES, IRIS, IXIAS, LILIES AND ALL OTHER ROOTS

WILLIAM HAMILTON, 156, Cheapside, London, begs to announce the arrival of his annual importation of the above in the finest possible condition, and assures all who may favour him with their orders that they may rely upon having them executed with Bulbs of the very best description.

A Catalogue of his prices, which will found very moderate, will be forwarded on application.

NEW EARLY STRAWBERRY—"TROLLOP'S VICTORIA."

JAMES TROLLOP (who raised "Princess Alice Maud" Strawberry, which gave general satisfaction to the public in 1843), now with great confidence offers his seedling "VICTORIA," and is certain that it combines qualities which no other kind in cultivation does possess. Being very early, a dwarf robust grower, and free bearer, throwing strong trusses of fruit (above the foliage), which is of a large size, globular form, and good colour, with a delicious flavour.

Fine well-rooted plants, on and after the 8th September, 1851, at 4*l.* per 100.

For particulars of prizes and opinions, with full advertisement, see *Gardeners' Chronicle*, Aug. 2d, 1851, and "Beck's Florist, Fruitist, and Garden Miscellany," for August, 1851, or "Midland Florist."

N.B. Full particulars may be had free, per post, by applying to G. D. FISHER, at Mr. Butler's Nursery, Wedcombe, Bath.

Limpley Stoke, Aug. 30.

IMPORTANT DISCOVERY.

CLARKE AND Co., GARDENERS, SEEDSMEN, and FLORISTS, are now prepared to send out, in quart sealed stone bottles, secured for travelling, on receipt of 5*s.*, a mixture (which is both a remedy and preventive) for destroying those grievous pests, the white mealy-bug, scale, thrip, and all other insects, without injury to the plants. Each bottle will make 1 gallon of mixture sufficiently strong; and if corked down after use, will retain its efficacy for any length of time.

Directions for use sent with each bottle, which will be delivered free at any of the London Stations, or Carriers' Offices.

Post-office orders payable at Brompton.

Percy Cross Nursery, Walham Green, Fulham, Aug. 30.

BECK'S SEEDLING PELARGONIUMS OF 1850.

JOHN DOBSON'S Descriptive Catalogue of New and First-rate PELARGONIUMS, can be had by enclosing one postage stamp.—Woodlands Nursery, Isleworth, Aug 30.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s.* per dozen.—The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place.

DICKINSON'S ITALIAN RYE GRASS SEED is now ready for delivery—7*s* per bushel.

No. 7, Curzon-street, May Fair, London.

PINE PLANTS.—For Sale, Succession and good Suckers of the best known kinds, warranted clean. Price 6*d.* to 1*s.* each.—Apply to RICHARD NEWMAN, Stedham Hall, near Midhurst, Sussex.

T. LOCKHART, FLORIST, 84, Fleet-street, has published a LIST OF FLOWER ROOTS for the present season, which he will forward free by post, on application.

The BULBS have arrived in the finest condition.

GOLIATH STRAWBERRY.—A Post-office order for 5*s.* will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4*l.* per 100, and any of the old varieties at very low prices The usual allowance to the trade.—JAS KITLEY, Lyncomb Vale Nursery, Bath.

STANWICK NECTARINE.

WOOD AND INGRAM have a few fine plants in pots of the above celebrated fruit, abundantly furnished with laterals; and which would, consequently, make fine specimens for Fruiting in Pots; or to the trade, who are now working, they will afford an immediate supply of fine healthy buds; price 21*s.* each. The usual discount to the trade.

Huntingdon Nurseries, August 30.

CUTHILL'S PRINCE OF WALES STRAWBERRY.—J. CUTHILL begs to inform all who have tasted and admired the above variety (which is as tall as the Elton Pine, but superior in flavour, and a certain and tremendous bearer; cone shaped, bright scarlet, with yellow seeds) that it cannot be sent out this season.—Camberwell, London.

HAMILTON'S NEW SUPERB PEA, "THE NOVEMBER PROLIFIC."

WILLIAM HAMILTON, 156, Cheapside, London, in submitting to the notice of the public this new variety of PEA, confidently recommends it for its superior qualities, in several most important particulars. It is the best of all Peas for November Sowing; for, being standing severe weather it comes in with the earliest sorts, yielding a crop of extraordinary abundance, and of the richest flavour. It supersedes all other Peas for succession crops, as the short time it takes to come to maturity carries it through the wet months, when others would altogether fail. It may be sown every three weeks from November to July, with every chance of not one crop missing. Its habit renders it the least troublesome of all the rich-flavoured Peas, and when prepared for table, is of delicate appearance. The stock will be ready early in September, price 2*s.* 6*d.* per quart. A liberal discount to the trade.

DUTCH FLOWER ROOTS.—The Undersigned have great pleasure in announcing to their patrons and the public, that their annual importation of the above has just arrived in excellent condition. The roots are of the best quality, and will be sold at as reasonable prices as by any respectable house in London. Catalogues may be had on application.

Clapton Nursery, London, Aug. 30. HUGH Low and Co.

JOHN AND CHARLES LEE'S Catalogue of STOVE and GREENHOUSE PLANTS is just published, and may be had post free on application, enclosing two postage stamps.

Nursery, Hammersmith.

HOLLYHOCKS.

WILLIAM BALLANTYNE AND SON respectfully inform the public that their superb collection of Double Hollyhocks is now finely in bloom, and consists of the finest varieties in cultivation, which are well worth the inspection of those who admire this noble and majestic flower. Free admission every day, Sunday excepted, to their Nursery grounds.

Catalogues of the named varieties may be had on application.

W. B. and SON have 2000 strong healthy SEEDLING Plants, of 1850, all double, and in fine bloom, which they offer at 30*s.* per hundred, or 6*s.* per dozen.—Dalkeith Nurseries, Aug. 30.

NEW FUCHSIAS, VERBENAS, PETUNIAS, AND CANTUA DEPENDENS.

GEORGE SMITH begs to offer the following new varieties of the present season as above, viz.:—VERBENAS (Smith), British Queen, Enchantress, Exquisite, Grandis, Othello, Shylock, King, Eliza, Voltigeur, Prince of Wales, Wonder (Young's), Lady of the Lake, Model of Perfection (Turner's), Beauty, Admirable, Compacta, Marchioness of Cornwallis. French varieties:—Blanche de Castle, Jean Bart, General Bedeau, Eugene Sue; the above good plants at 12*s.* per dozen. The following New FUCHSIAS, at 21*s* per dozen:—Smith's Sedonia Alpha, Psyche (Banks), Voltigeur, Madame Sontag, Brilliant, Princess, Loveliness, Conspicua, Henderson's Madame Sontag, Resplendens, Prime Minister, Expansion, Elect (Knight's), Duchess of Kent (Batten), Clapton Hero, Pagoda (Story's), Attraction, Prince Arthur, Devoniana (Tiley's), Koh-i-Noor (Miller), Longipes, Mazeppa, Admirable, Madame Liboies, Louise Miller.

PETUNIAS:—Young's Attraction, Crimson King, Rosy Circle (Smith's), Striata (Parson's), Grandis. HELIOTROPE REPTANS, at 1*s.* each. CANTUA DEPENDENS 3*s.* 6*d.* each.

A Descriptive Catalogue will be forwarded on receipt of one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London.

THE BLACK PRINCE STRAWBERRY is now ready, price 6*s* per hundred, box included; it has proved itself to be the earliest in the neighbourhood of London these five years, good in flavour, and a tremendous bearer, and the best for preserving; has taken six prizes. The Keens and British Queen 5*s* per 100; same time, a pamphlet of 36 pages on "Market Gardening round London," explaining everything. Price 1*s.* 6*d*, or by post, 1*s.* 8*d.*; also, a pamphlet of 56 pages containing the "Belgian Prize Essay on the Potato and 12 other first-rate Fruits and Vegetables;" price 2*s.*, or by post, 2*s.* 4*d.* Post-office orders on Camberwell.

JAMES CUTHILL, Camberwell, London.

NEW PELARGONIUMS.

CHARLES TURNER strongly recommends the following NEW PELARGONIUMS; it will be sufficient to observe that he has the entire stock of those beautiful varieties raised by E. FOSTER, Esq., and G. W. HOYLE, Esq., which obtained 9 extra prizes, and 20 Certificates, during the past season. Strong plants will be ready the first week in October. The usual discount to the Trade. If the Set is taken, a liberal allowance will be made.

ARIADNE (FOSTER).—Rosy purple bottom petals, rich dark top, with narrow margin of rose, clear white centre, free bloomer, large truss, and fine substance; good early exhibition plant; 31*s* 6*d.*

BEATRICE (HOYLE).—Neat smooth constant flower, bottom petals mottled rose, top petals rich black, even margin of dark carmine, free bloomer; 15*s.*

CELIA (HOYLE).—Beautiful orange lower petals, tinged towards the centre with violet, top petals bright orange, medium spot shaded with scarlet, free and early bloomer, but curly in top petals; 15*s.*

CHIEFTAIN (HOYLE).—Rose crimson, with dark shaded blotch on upper petals, fiery, narrow margin, large, very stout, good habit, rather inconstant; 21*s.*

CHLOE (HOYLE).—Lively bright rose, white centre, medium-sized dark spot shaded with scarlet, good grower and free bloomer; 10*s.* 6*d.*

COLONEL OF THE BUFFS (HOYLE).—Novel bright orange, large and very attractive, constant, and free bloomer; 31*s.* 6*d.*

CRISTINE (HOYLE).—Delicate warm rose, with deep spot on upper petals shaded with orange, large and very free, a fine cheerful flower; 21*s.*

ELISE (HOYLE).—Deep warm orange pink shaded with delicate lilac, light centre, medium-sized spot, surrounded with orange, margin of orange pink, smooth, constant, and free bloomer; 31*s* 6*d.*

ENCHANTRESS (FOSTER).—Rosy crimson bottom petals, rich crimson blotch on top petals, with margin of bright crimson, white centre; the shape of Gipsy Bride, but twice the size, free bloomer, and good habit; 31*s.* 6*d.*

EURYDICE (FOSTER).—Deep crimson bottom petals, top petals dark maroon, narrow margin of bright crimson, free bloomer; 15*s.*

GANYMEDE (HOYLE).—Very round, smooth, and cupped, warm lilac colour, white centre, dark top petals, very evenly shaded with purplish carmine margined with the ground colour; 31*s.* 6*d.*

HERALD (HOYLE).—Mottled light pink bottom petals, top dark blotch, with narrow margin, white centre, good shape, and constant, very dwarf, good habit; 7 h prize; 21*s.*

ILLUMINATOR (TURNER).—Bright mottled crimson bottom petals, rich dark crimson top, narrow bright margin, very showy and attractive, being nearly as free as the Fancies; 10*s.* 6*d.*

LABLACHE (FOSTER).—Orange rose, with dark blotch on the top petals, large white centre, good substance, very attractive variety; 21*s.*

LAVINIA (FOSTER).—Purple, similar in colour to Alonzo, but of finer form, rich dark top petals, with bright margin, good habit, and fine bloomer; 21*s.*

LITTLE NELL (TURNER).—Rosy lilac bottom petals, maroon top petals, narrow margin of rose, white centre, very free, early bloomer, good plant for exhibition; 10*s.* 6*d.*

LORD MAYOR (BLACK).—Bright crimson scarlet bottom petals, mottled, black blotch on the top petals, shaded off to the margin with scarlet crimson, very showy, and free bloomer; 15*s.*

MAGNET (HOYLE).—A high-coloured scarlet crimson, large black blotch varying towards the margin on a scarlet crimson ground, without being lighter on the edge, very profuse bloomer, and constant, very striking flower; 42*s.*

MOCHANNA (HOYLE).—Lower petals warm rose, white centre, top petals large dark blotch, shaded and mottled with scarlet, margin of ground colour, large fine shape, free, smooth, bold, attractive flower; 21*s.*

MONTEITH (FOSTER).—Bottom petals crimson purple, dark blotch on top petals, shaded off to the margin with crimson; 21*s.*

PLANTAGENET (TURNER).—Crimson bottom petals, dark maroon top petals, narrow margin of bright crimson, free bloomer; 1*s.*

PULCHRA (FOSTER).—Lower petals salmon rose, large rich dark blotch on top petals, with margin of bright rose, white centre; free bloomer, good habit; 21*s.*

PURPLE STANDARD (FOSTER).—Bottom petals rich purple, black top petals, with narrow, even, fiery margin. This flower possesses fine substance, shape, and very smooth; much the best purple; 31*s.* 6*d.*

REMUS (HOYLE).—Deep rose lower petals, with dark blotch on upper petals, shaded with scarlet; smooth, and fine shape; 21*s.*

RUBENS (FOSTER).—Crimson, with dark maroon blotch on top petals, narrow margin of bright crimson; good substance; 21*s.*

SHYLOCK (FOSTER).—Bottom petals deep rich mottled purple, black top petals, a wire margin of scarlet; medium size, free bloomer; the darkest variety raised; 31*s.* 6*d.*

VANDYKE (TURNER).—Bottom petals bright scarlet crimson, dark blotch on top petals, scarlet margin; very striking, but not a good shape; 10*s.* 6*d.*

VONDEL (HOYLE).—Lilac rose, with dark blotch on top petals; 15*s.*

A selection of older varieties at moderate prices. A Descriptive List may be had on application.

Royal Nursery, Slough.

GLASS. GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | 1/8th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured:— 3 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... | s. d. 0 6 | s. d. 0 8 | s. d. 0 10 |
| IN SQUARES, cut to the sizes ordered:— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12s. per box; 7 by 5 in. and 7½ by 5½ in. 13s. 6d. do.; 8 by 6 in. and 8½ by 6½ in. 15s. do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16s. 6d.

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 18 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8th, 6d.; 3-16ths, 9d.; ¼ inch, 1s. per foot, net.

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

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MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

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4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3¼ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | |
|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... | ... | ... | 13s. 0d. |
| 7 ,, | 5 and 7½ by 5½ | ... | ... | ... | 15 0 |
| 8 ,, | 5 and 8 by 5½ | ... | ... | ... | 15 0 |
| 8 ,, | 6 and 8½ by 6½ | ... | ... | ... | 17 6 |
| 9 ,, | 7 and 10 by 8 | ... | ... | ... | 20 0 |
| 12 ,, | 10 and 13 by 9 | ... | ... | ... | 20 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6d. per foot.
,, ,, 35 ,, ..... 8d. ,,
,, ,, 50 ,, ..... 9½d. ,,
,, ,, 75 ,, .....12d. ,,

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR CONSERVATORIES, &c.

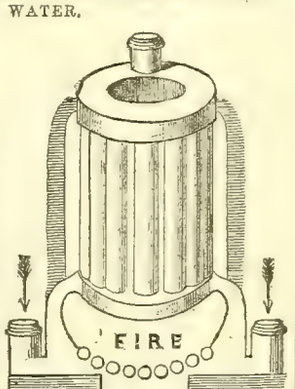
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See the *Gardeners' Chronicle* first Saturday in each month.

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J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

TO BE SOLD, a Cheap and Substantial Built GREENHOUSE, 36 feet long, by 12 feet wide, with Flues and Stage, or without.—Apply to THOMAS STREACY, near the Station, Church-street, Hackney, near London.

WANTED, to Purchase, a SPAN-ROOFED GREENHOUSE, in good condition, from 20 to 30 feet long, and proportionally wide—heated by Hot Water.—Address, prepaid, with price and particulars, to X. Y. M., Wall's Library, Richmond, Surrey.

CHINA AND HALF-BRED CHINA PIGS.—SOWS of either of the above breeds, Black or White, carefully bred for the last ten years, with a view to getting the most hardy kind of Pig, that will fatten upon the least food, and always keep in condition, may be had of any age.—Apply to Mr. DUTTON, Delamere Rectory, Chester.

AYLESBURY DUCKS (WHITE), BLACK BOTANY BAY DUCKS, BLACK NORFOLK TURKEYS, LARGE NORFOLK GEESE, AND COCHIN CHINA FOWLS.—The Advertiser has for sale a limited number of the above in fine strong healthy birds of this year, warranted of the purest breed, which he offers at the following prices: Aylesbury Ducks, of the largest breed known, weighing when fattened 8 lbs. to 10 lbs. each, 8s. 6d. per couple; Black Botany Bay Ducks, very handsome, and the flesh superior to Teal, 21s. per couple; Black Norfolk Turkeys, 21s. do.; Norfolk Geese of the largest breed, 12s. do.; Cochin China Fowls (pure) from a pair imported direct from Shanghae, and well feathered to the toes, 42s. per pair.—Orders accompanied by Post-office orders or reference, addressed to ISAAC BRUNNING, North End, Great Yarmouth, will receive prompt attention.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 13s. 6d. Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

THE ROYAL EXHIBITION.

FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, POTTER, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following:—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1¾ in. | 6 | 4¾ in. | 11 | 8¾ in. | 16 | 15 in. |
| 2 | 2¼ ,, | 7 | 5¼ ,, | 12 | 9¼ ,, | 17 | 16 ,, |
| 3 | 2¾ ,, | 8 | 6¼ ,, | 13 | 11 ,, | 18 | 18 ,, |
| 4 | 3¼ ,, | 9 | 7 ,, | 14 | 12¼ ,, | 19 | 20 ,, |
| 5 | 4 ,, | 10 | 8 ,, | 15 | 14 ,, | 20 | 22 ,, |

Saucers and Seed Basins the same width as the Pots.

Persons visiting the Royal Exhibition can inspect CHARLES PHILLIP 's Pottery, &c., in the Model Greenhouse, situate at the West Entrance of the Crystal Palace. C. P deems it superfluous to laud either the quality of his Clay, or the style in which his goods are manufactured, but confidently refers those parties who have not yet patronised him to the Royal Gardens at Frogmore and Kew, and to the principal Nurserymen in London, Slough, Reading, Oxford, Swindon, Cirencester, Stroud, Worcester, Gloucester, Cheltenham, Bath, Bristol, Taunton, Tiverton, Exeter, Torquay, Tornes, Plymouth, North and South Wales, &c., &c., for the quality of the articles which he has had the honour of supplying them with. All orders for the above Goods will be promptly forwarded, CARRIAGE FREE, to any Railway Station within 150 miles of the Manufactory, either in dozens, casts, hundreds, or thousands. Every description of Red Ware, Sewerage, Piping, Closet-Pans, Chimney-Pots, Land Drain Pipes, Seahale Pots, Vases, Tiles, Bricks, &c.

Lists of Prices, Terms, &c., forwarded to any address.

Manufactory, Locking Road, Weston-Super-Mare, Somerset, ESTABLISHED 1836.

MILDEW.

EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21s., and upwards. The Trade supplied by Barber and Groome, Holborn, London.

This Machine has been used by the following persons, and the highest testimonials have been received as to its valuable properties, in effectually destroying the Mildew on Grapes, Peaches, Peas, and all other horticultural produce:—Dr. Plomley, F.R.S; Mr. Ingram, gardener to her Majesty at Windsor; Mr. Smith, Superintendent at the Royal Gardens, Kew; Mr. Iveson, Sion House; Mr. Glendinning, Chiswick; Mr. Thompson, Horticultural Society's Gardens; Mr. W. P. Ayres, Blackheath; Mr. Gaines, Battersea; Mr. Cole, gardener to — Colyer, Esq., Blackheath; Mr. Robson, gardener to Earl Cornwallis, Linton Park; and many other scientific and practical men.—High-street, Maidstone, Aug. 30.

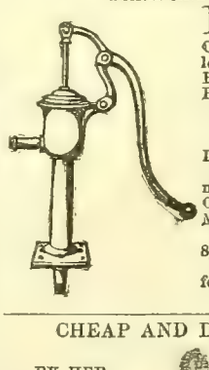
EXHIBITION, CLASS 9. No. 89.

GARDEN ENGINES, SYRINGES, &c.—RICHARD READ, Instrument Maker (by Special Appointment) to Her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable improvements in his Garden Engines and Machines, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent.

MANUFACTURED ONLY AT 35, REGENT CIRCUS, PICCADILLY, LONDON.

CAUTION.—As instruments of the commonest description are extensively circulated throughout the country and sold as "READ's," please observe that none are genuine except stamped with the ROYAL ARMS and the words READ'S PATENT.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0
Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c.

The usual allowance to the Trade.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

MESSRS. JEYES AND CO.'S Collection of CINERARIAS during the last spring was acknowledged by all parties who saw it to be the finest they had ever seen.

Seedlings from the above will be sent by post, secured in tin boxes, at the rate of 2s. 6d. per dozen. Payments can be made in postage stamps.—Nurseries, Northampton.

CAMELLIA "QUEEN OF DENMARK."

HUGH LOW AND Co. have pleasure in offering to their Continental Friends, and the Public in general, the above-named fine new CAMELLIA. They are of opinion that the well known, and generally acknowledged, merits of the Camellias they have already introduced to the notice of growers, will be a sufficient guarantee for the excellence of the variety now offered.

| | s. | d. |
|---|---|---|
| Fine stout plants ... ... | 42 | 0 |
| Extra strong do. ... ... | 63 | 0 |

Without discount.

Clapton Nursery, August 30.

SEEDS FOR AUTUMN SOWING.

JOHN CATTELL has again to offer in packets, at the prices annexed, post free, CALCEOLARIA, GERANIUM, CINERARIA, &c., as under, saved from his very superior collections. The satisfaction they have hitherto given, and the increasing demand for them, has induced J. C. to take, if possible, more care in the impregnation, so as to ensure a continuance of the esteem they have so justly merited.

| | s. | d. |
|---|---|---|
| CALCEOLARIA, mixed, from first-rate sorts, carefully impregnated ... ... ... ... ... ... ... | 2 | 6 |
| Ditto, saved from a most superb rich golden yellow, beautifully spotted with rich bronzy mahogany, 50 seeds ... | 2 | 6 |
| (Directions for sowing, &c., will accompany each packet of Calceolaria if required.) | | |
| GERANIUM, Florist varieties, from newest sorts ... | 2 | 6 |
| Ditto, fancy varieties, from newest sorts ... ... | 2 | 6 |
| Ditto, scented varieties, saved from a collection ... ... | 1 | 0 |
| CINERARIA, from newest sorts, mixed ... ... ... | 2 | 6 |
| SCHIZANTHUS RETUSUS, 6d., do. RETUSUS ALBUS | 1 | 0 |
| RHODANTHE MANGLESII, 1s.; ESCHSCHOLTZIA ALBA, 6d. | | |
| NEMOPHILA MACULATA, 6d.; this, if sown about the middle of September, in the open ground, will flower beautifully from March till June. | | |
| CYCLAMEN PERSICUM, 6d.; Do. do. ALBUM, 1s. | | |

Fine Bulbs of TROPÆOLUM TRICOLORUM GRANDIFLORUM and do. BRACHYCERAS, worth the attention of the Trade.—Westerham, Kent.

**The Gardeners' Chronicle.**

*SATURDAY, AUGUST* 30, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 2—Horticultural ... ... 3 P.M.
WEDNESDAY, — 3—Royal South London ... 1 P.M.
THURSDAY. — 4—National Floricultural ... 2 P.M.

COUNTRY SHOWS.—Tuesday, Sept. 2: Rosherville Gardens.—Thursday, Sept. 4: Liverpool.—Friday, Sept. 5: Durham, Newbury, and Southampton.

FROM the extracts published in last week's *Chronicle*, it will be seen that Mr. NEWMAN proposes to place SMITHFIELD UNDER A WARD'S CASE, within which are to be found live plants of all nations classified geographically, dead animals of many kinds stuffed so as to look like life, together with natives of all regions to tend them. An area of three acres is not much for an operation like this, and, after what we have seen in Hyde-park, the execution of it demands no superhuman exertion. Messrs. FOX and HENDERSON would make it a week's work; so that the corporation might afford to carry out a plan which is so largely to contribute to the health, and comfort, and instruction of the citizens of London. Only imagine Ruffian's Hall, as Smithfield used to be called, converted into a paradise, wherein the perfumes of the Orange and Myrtle would replace the odours heretofore peculiar to it, and whence carbonic-acid-breathing beasts are expelled to make room for oxygen-forming Palm trees (see Mr. NEWMAN'S paper, p. 243). And all this under a WARD'S case.

Do our readers know what a WARD'S case is? A WARD'S case is a glass box, the joints of which are made as nearly air-tight as is practicable; it holds earth in which plants can grow, and an atmosphere maintained constantly damp. The essential principle of a WARD'S case is, that it shall be kept as nearly air-tight as possible, so that there shall be no escape outwards of the air and moisture it may contain. The water it originally included, when raised in the form of vapour, condenses on the sides of this glass box, and runs back, again and again to be raised into the atmosphere in the form of vapour. This contrivance is applied to the conveyance of plants from one country to another during long voyages, to the preservation of plants in sitting rooms, and to the protection of them anywhere against the dirt of sooty cities; and an excellent contrivance it is *for such purposes*. Ferns, more especially, and damp-loving plants, are quite at home in it. You may see several sorts of WARD'S cases in the Crystal Palace, at the east end, in the gallery, near the great organ.

It is upon this principle that Mr. NEWMAN proposes to cover the area of Smithfield. We believe the available space amounts to about 3 or 4 acres; from which one-half must be deducted for roads, walks, and other waste; and into the remaining acre and half, or two acres, it is suggested to introduce not only all British plants, which the student may "examine, dissect, and compare," all alimentary, textile, and medicinal plants "in a manufactured, as well as growing state," and the vegetable productions of "Europe, Asia, Africa, North America, South America, and New Holland," but also an imitation "of the natural conditions of the plants themselves," that is to say, rivers, torrents, oceans; rocks, mountains, moors, and corn-fields; primæval forests and alpine meadows; arctic, antarctic, temperate and tropical climates; African deserts and Indian jungles. Was anything so wild ever heard of? or rather, so thoroughly cockneyfied?

But supposing Mr. NEWMAN'S notion of converting Smithfield into a Surrey Zoological Garden in a glass box on a grand scale, were practicable, can any one believe for a moment that plants would grow in his gigantic Wardian case? Is it credible that plants which cannot remain in health without an abundant supply of air, and of air in motion, would live in a prison the very first condition of which is, to keep the atmosphere at rest? Can any one who ever saw a hothouse imagine that, absurdities apart, such a project as this could be realised? Why, in six months the contents of the place would consist of Mosses, Ferns, mouldiness, and wretched spindling ghosts hardly to be known as plants, except by their green colour; as to flowers, there would not be one; for it is notorious that flowers are rarely produced in WARD'S cases, unless the plants have been prepared before-hand. Or, supposing that the plants would thrive, and that these anticipations were not realised, who, let us ask, would go to such a place? It is very well to talk learnedly about plants giving off oxygen gas, and so purifying the atmosphere; but it must never be forgotten that plants when out of health lose this power, more or less, and part with carbonic acid instead; so that, what with the plants, and the "students, clerks, schoolboys, wives, and children," to say nothing of nursery-maids and men from Bartholomew's, we should have as clever a contrivance for slow suffocation as the ingenuity of man could suggest.

To convert Smithfield into a WARD'S case is a chimæra, then. Would it be impossible to make it a great conservatory, on the plan of Mr. PAXTON'S Winter Garden? Perhaps not. There is nothing in London unfavourable to vegetation, except its soot; that removed, plants will grow as well in Cheapside as at Hampstead; but the removal is an affair of extreme difficulty, or rather involves a very heavy outlay for labour; and it may be reasonably questioned whether a Smithfield greenhouse would be attractive enough to pay its expenses. Gardening, such as would there be necessary, is very costly, and we fear that after the first novelty was over a conservatory would have few visitors except from among the race of enthusiasts whose purses are more generally empty than full.

In one respect we quite agree with Mr. NEWMAN. It would be a public misfortune if so great a ventilator as Smithfield is, were closed by blocks of houses. But why not convert it into a great square, in which plants may be cultivated in a manner worthy of modern gardening; not as squares usually are, in a manner that would have been disgraceful to our great grandfathers. Possibly money might be found for such an operation as that, and possibly also there might be funds to defray its annual cost. It will, however, be time enough to discuss this question when the intentions of the corporation of London shall have been made known.

THE GRAPE MILDEW, like the Potato disease, is spreading far and wide. In most parts of France it is committing great ravages; and from a report lately received from M. DE NOTARIS, of Genoa, it appears that scarcely a Vine is free from it in that neighbourhood. The malady has not, however, arrested its progress even there, but has spread with great virulence as far as Naples. It is said to attack principally the white Grapes, but it is by no means confined to them. Happily, in our own country, where in-door Grapes are of most consequence, it is at present confined to the southern districts, and the timely application of sulphur, either in a crude state or in the form of vapour, is a complete remedy. It is pretty certain that the same means, with the help of some such apparatus as we recommended two years since in the case of Hops, and which would be far more easily employed where the Vines are low and distinct, would prove quite as effectual. The Italians, however, do not seem to have heard of the experience gained by English cultivators, and therefore are going through the same round of experiments with lime, potash, and ashes, which proved wholly ineffectual without the admixture of sulphur in multitudes of cases in which these and other chemical agents were tried in England. Water, in which sulphur has been steeped, unless the sulphur is in the form of powder, so as to render the fluid turbid, is perfectly useless, the sulphur being quite insoluble either in hot or cold water.

Our attention has lately been called to what we suppose to be a very virulent case which occurred to one of our correspondents, whose Grapes present the appearance of having been lashed with rods, so as to bruise them in every direction, though he had no reason to believe that any such foul play had been practised. What makes the matter more extraordinary is, that the proper remedies had been diligently used, under which all trace of the mould had vanished, and they seemed perfectly sound the day before, after the *Oidium* had been completely washed away. Indeed we searched every specimen in vain, with a view, if possible, to ascertain the presence of the mould. The tissues presented the ordinary appearance of bruised spots, with a greater or less quantity of mycelium, due, probably, to other mould as well as *Oidium*, and, if we mistake not, some of the cells exhibited abundant yeast globules, the whole fruit yielding a highly Vinous odour. We do not doubt that the decay, though somewhat anomalous, was effected by the *Oidium*, which, though not visible externally, might be carrying on its work of destruction out of sight, and is sometimes so powerful as to cause decomposition even in the tissues of moderately thick branches, and occasionally, we are informed, partially attacks the pith. The same controversy exists in France, with respect to the part the fungus performs in this malady, as prevailed respecting the agency of *Botrytis infestans*. The highest authorities there have failed to trace the mycelium to the inner tissues, but we have seen the origin of the mould within the tissue, and the fertile branches bursting through the stomata, without a shadow of doubt upon the subject. *M. J. B.*

OUR readers have been so frequently warned against the frauds in the GUANO TRADE, that they will have heard without surprise of a man named PICKERING, described as a wealthy merchant, having been sentenced to 10 years' transportation for robbery connected with such proceedings. We have repeatedly reported how largely loam, gas lime, ochre, plaster of Paris, and rubbish of all sorts are employed by what are called *respectable people* in getting up fine-looking samples of guano; and although we know that these warnings have had a salutary effect, and have checked considerably the practices alluded to, yet we are also aware that hundreds of simple-minded honest people thought our statements overcharged. They could not believe that London merchants would be concerned in these nefarious transactions. Evidence produced in court has now, however, shown conclusively that what we announced was within rather than beyond the truth.

The main difficulty which the rogues in guano have to contend with is to procure the genuine article for the purpose of mixing, and setting off the adulteration. Buy it they cannot; for they are known, and the precautions taken by Messrs. GIBBS and Co. are such as to stop effectually all underhand manœuvres to procure it through agents. They have, therefore, no resource except to steal it.

It appeared upon the trial that in the early part of May Messrs. GIBBS received from Mr. SCHOFIELD, a large agriculturist at Howden, in Yorkshire, an order for 220 bags of guano, to be sent down by a coasting vessel. At that time the Invermore, laden with guano, was lying in either the East or West India Docks. The guano, we need not say, reaches this country in bulk, and when sold is sent away in bags, which are filled in the vessel from the bulk, the bags being sown up and marked by some of the dock officers before they leave their charge. The officers also take a sample from each vessel of guano when she is half unloaded, which they carefully keep, with the name of the vessel attached to it, for the sake of reference, should any dispute arise as to its respective property and value. One LONG, a lighterman and bargemaster (included with PICKERING in the prosecution, and eventually sentenced to 12 months' imprisonment), was employed to remove the guano from the Invermore. When the guano arrived in Yorkshire, the bailiff to Mr. SCHOFIELD found it to be of a very inferior quality. A bag was therefore sent up to London, and a sample was analysed, when it was found that it had been adulterated above half with marl, sand, and some other compound. The police were set to work to sift the matter to the bottom, and the evidence they obtained fully established the guilt of both PICKERING and LONG. It appeared that LONG left the Dock on the same day he received the guano, and then proceeded with his barge as far as PICKERING'S wharf. The barge was there unloaded, and the guano taken into PICKERING'S premises, where the bags were opened, emptied of their contents, and filled with the fraudulent mixture. They were then sewed up and marked again by the two prisoners, re-loaded, and thence shipped for Howden.

The defendants endeavoured to make an answer, with the assistance of hard swearing witnesses, two of whom were eventually ordered into custody for perjury.

It will have been seen, that while PICKERING was sentenced to 10 years' transportation, LONG was only ordered to be imprisoned for 12 months. We own we cannot understand upon what principle the learned Recorder passed this sentence. The jury no doubt strongly recommended LONG to mercy.

And the prosecutor stated that he had up to this transaction borne a good character. "The Recorder thought it likely that he had been drawn into this matter by PICKERING; still, *in a port like the city of London, where so much trust was reposed in lightermen,* his offence could not be passed lightly over, and he should therefore order him to be imprisoned for 12 months."

Of course, LONG found witnesses to give him an excellent character, and, therefore, he was let off easily; but the test of character was to be sought in the man's acts, not in the opinions of personal friends, or in suborned testimony. Tried by this test, LONG was as bad as PICKERING, or worse; he was the thief, PICKERING the receiver. LONG committed a scandalous breach of trust, for he not only stole the guano, but he stole that which was confidentially placed in his charge as a lighterman, and he assisted afterwards in a nefarious fraud which could only be carried to a successful conclusion by his agency. We doubt extremely whether the safety of property will be increased by a sentence which lets the worst of two offenders, and precisely the one against whose acts there is the least protection, escape with nothing more than a short imprisonment.

We have viewed this prosecution with great interest, knowing how important an effect it must have upon the scoundrels who infest the guano-market; for, after all, the chance of transportation must have some influence over this class of malefactors, who now see that they are known and watched. We think, too, that the thanks of the public are due to the agents of the Peruvian Government, for the determined and skilful manner in which they have taken up the very first case in which evidence was so conclusive as to render a conviction probable.

## DAHLIA SHOWING.

Now that the Dahlia season may be considered as having fairly set in, I make no apology for offering a few observations on the subject of exhibiting Autumn's King, premising that what I have to say has been elicited by witnessing the opening exhibitions of the past few weeks, at the Surrey Gardens, Vauxhall, Birmingham Horticultural, West of England, at Salisbury, Trowbridge, and Handsworth Societies; at each and all of which faults were glaringly committed, which, by ordinary care, might have been, for the most part, avoided.

Let us begin at packing-up time, previous to departure for the show, after months of toil and watchfulness. In the first place, see that each bloom be securely fixed in its plug, and that each plug perfectly fits the tube, which must contain a sufficient supply of water and no more. The plugs, if made of wood, should have been well soaked in water, otherwise they will absorb that which is placed in the tube, and the bloom will the sooner perish, for the want of moisture. If the tubes are too full, injury is sure to occur after a long journey, to the lower tier of blooms. If you cut and pack up over night, select young blossoms in preference to more fully expanded specimens; for how often do we find a board covered with the petals of a flower on which we had most depended, and the oft-repeated exclamation heard, "Oh! that I had the nice young bloom of this or that variety, which I left behind." Greater attention is necessary to the state of the show-boards generally than is usually given them; no one except those who are censors can be aware of the shifts made to prop the boards up, both behind and before; bricks, tiles, blocks, in fact, every conceivable article but a leg firmly fixed in, is resorted to. On a late occasion, with 21 collections competing in one class, the stands were of necessity moved up and down, here and there, in order that a fair comparison might be made, and by this system only can correct results be obtained. Whenever the board and flowers were moved, out fell the apology for a leg, and in replacing the board on the table, over it went. These neglects alone injure the unthinking competitor.

Arrangement of colour is a subject little considered by exhibitors, and yet this is a point of the greatest importance. Then again how often do we observe the largest flowers in front. Always place the best specimens at the corners. Why? simply because they are seen more than their neighbours, and therefore they are more criticised. Look to good centres. By good I mean tight unexpanded petals well elevated; these should form a close, compact, and well regulated mass, not less than the size of a sixpence; then gradually opening, tier by tier, until the shoulder of the flower be formed of fully expanded and symmetrically arranged petals. The fresher the back of the flower the more it will be prized; for although face and centres hold high positions, that flower must be considered far from perfect that has a withered or defective back. Confused and sunken centres are mostly the results of over bloomed specimens; that is, the centre petals are too much expanded, a circumstance as much to be avoided as a green eye.

Much misconception exists as to the proper elevation of show-boards, and the general instructions given fail to remove them. I was told first by the late metropolitan, and afterwards by other societies, that the legs should be 6 inches in length at the back, and 3 inches in front; but I was not informed how they were to be fixed, hence no uniformity can be obtained. I would recommend that the upper side or face of the show-board be 6 inches at the back and 3 inches at the front; with this carried out all stands would be the same height, and have the same inclination. The size of boards and distances from bloom to bloom are generally well known; still, however, we now and then find some one or other placing his flowers contrary to regulations, but such mostly pay the penalty, and rightly: for exhibitors should be the last to infringe rules and regulations which are mostly carefully framed with a view to their ultimate benefit.

Never refrain from pointing out disqualifications in the collections of your neighbour; remember that one good turn deserves another, and who can tell how soon it may be your own case to require such service. If you are required to attach names to the collections set up, have them fairly written: much interest is created by a well-written list of names, which should be secured by some means to the board either by a wafer, a tin tack, or pin, for in judging, as before observed, the stands get moved about and the lists often become misplaced. A small tin or black tack would secure both list and number card, and cause little or no injury to the board. By a little forethought and attention to these trifles, the working out large meetings is made easy and pleasing, divesting the affair of much difficulty, and realising those ends for which exhibitions are established, viz., the advancement of the pursuit, the rewarding the aspiring exhibitor, and the general gratification of a sight-seeing public. *J. Edwards, Wace Cottage, Holloway.*

## BRITISH SONG BIRDS.

(CAGE BIRDS No. 27.)

No. XLIII.—Marvellous indeed is the change which has "come o'er the spirit" of all Nature within the last few days! Some two weeks since, we were gazing from the hills upon the yellow hues of harvest, and viewing the well-filled heads of Wheat gracefully bowing to the lightsome breeze, as they were reflected on the slopes,—"like golden shields cast down from the sun." These have now all fallen beneath the vigorous efforts of the reaper, who, under a cloudless sky, and a vertical sun, has been pursuing his avocation, here and all over the country, with unceasing toil. All hail to a happy "harvest-home," say we!

Meantime, weary of the din and smoke of a noisy city, all who are blessed with the means and the leisure have fled coastwards, to luxuriate in the pleasures so peculiar to this season,—a season when nearly all the world are of "one mind":—

> "O, for a glimpse of Ocean, the wild roar—
> The fluttering breeze, like breath of distant lands;
> The waves' glad riot on the rocky shore;
> The calm blue stretch of far-reposing strands!
> Oh! the fair scene where livingly expands
> The waste of waters that, with heave and bound,
> Rejoice in their sublimity—the sands,
> Where the wild sea-flocks piping blithe are found,
> Or send their lonely cries, blent with the billows' sound!"

Such joys as these being denied to some of us, at this present time,—we will pursue our pleasures, still, among the woods and the fields. Just now, there is a most delightful freshness in the wilderness of green boughs and leaves that surround us on every side. We have a new and glorious moon, too, just four days old; and which, when at the full, will this month shine with matchless splendour. The plentiful rains of July, and the more recent abundant showers of August, have renovated the whole face of Nature; and the varied tints already observable among the foliage of the lofty trees, lend a charm to the season quite indescribable. The Willows are in all their glory; and "no tree," observes Evelyn, "affordeth so cool a shade as this. Here, agreeably hidden, you may often catch glimpses of the habits of the shyer and smaller animals,—traits which have yet, perhaps, escaped the Naturalist, and which may tend to eradicate those ignorant prejudices which are so cruel and oppressive to many of the innocent commoners of Nature."

We may now observe unmistakeable signs of the year's decline. There is a grateful freshness in the morning air, and a delightful coolness at the close of evening, both so peculiar to the season of autumn. With our little feathered friends, the business of incubation is now nearly over; their maternal and paternal cares have for a time ceased. We observe that the migratory symptoms of uneasiness have already partially commenced, and that sundry communications are being made between the several tribes. These "Masonic" signals, although unintelligible to us, are yet most unequivocally understood by the various ornithological "Lodges;" and we can see that they have already given us notice of their intention to quit, at a day not very far distant.

I have already noted, that some few of our choristers, after they have put on their new suit, occasionally treat us to a parting song before they take their final leave. I have recognised several instances of this, during the past week; but the voices of the singers have been weak,—their efforts feeble. Yet have they shown an amiability of disposition in their endeavours to please, that I shall ever bear in lively remembrance. Our resident birds are now in rehearsal, and are fast resuming their spring songs. It is pleasing, too, to observe the various broods of young goldfinches, linnets, and other birds, which are daily making their appearance in the fields.

We come now to speak of the Fauvette (Sylvia hortensis), or what is more universally called the Garden Warbler This little fellow visits us, in these southern latitudes, at the end of April (departing in September), unless the season be unusually chilly. He then defers his visit till May. His personal appearance, like that of the nightingale, is by no means strikingly handsome, but he has a fine roguish eye; his plumage is neat and trim, and his activity and graceful motions abundantly make up for other deficiencies. His qualifications, too, are of no mean order, and he verifies the truth of the remark that "appearances are sometimes deceitful."

I am aware that these birds *have* been kept in a cage so long as three years; but for a bird of his habits, this is an unusually long period. As far as my judgment goes, he is *not* a bird suited for a cage. You may soon make him tame and familiar, I grant; but he is very apt to get sick, and to waste from atrophy. His natural food is,—caterpillars and insects, which he devours most greedily; and his delight is to roam amidst orchards and kitchen gardens. In these localities, his depredations on fruit,—Pears, Strawberries, Cherries, Plums, Apples, and the like, are fearful for a bird of his size. As for his appetite, it is, like an elastic band,—endless.

To compensate for these little naughty, thieving propensities, he pours forth a flood of harmony between meal-times—nearly all the day through!—that disarms anything like anger:—

> "If to his lot some mortal errors fall,
> Listʼ to his *voice*,—and you'll forget them *all*."

His song is both long and loud. It generally begins very low, and is, as Sweet remarks, not unlike the song of the swallow. It rises by degrees, until it resembles the song of the blackbird. When his voice is heard after sunset—a case of frequent occurrence, it falls on the ear with the most pleasing harmony.

The description of cage I would recommend for this bird, should be precisely similar to that I described as best adapted for the black-cap. (See Cage Birds, No. 25.) It may be fitted up, too, in every respect the same. He is equally fond of the bath, I should remark; but being a more tender bird, it should never be administered except in warm and settled weather. The cramp is a fatal enemy to the garden warbler. As a general rule, I should feed him on German paste, hard-boiled egg, and sponge cake; supplying him at frequent intervals with those little delicacies in which he so much delights. In addition to those I have already named, I would particularise Elder, Privet, and Ivy berries; also bread, soaked in boiled milk. Cleanliness must of course be studied with *all* the warblers; but having been already so minute on this, and other needful matters, it is unnecessary here to repeat former instructions.

The proper place to purchase these birds, is the Seven Dials—that great emporium for animals of every kind; but be sure and bear the bird sing before you take him away, and leave a "deposit" on the cage. These delicate creatures should not be handled. July and August are the best months to purchase in. In the winter they must be kept warm; and treated exactly like the black-cap.

The garden warbler is a shy, cunning little fellow, when at liberty; but in a fruit garden, where all his time is spent in gluttony, you will have little difficulty in getting a sight of him; and as there are plenty of leaves to conceal him, he will not feel disturbed in his operations by your close proximity.

At this season, the "agitation" before alluded to, as observable in birds of passage at the spring and fall of the year, will try your patience not a little. The garden warbler being of a very delicate plumage, and his feathers very easily displaced, you must expect to see him occasionally exhibit a ragged front. As there are few of us ignorant of the power possessed by a kind, affectionate, and watchful nurse, to alleviate our sufferings, whilst sick and ailing—let us "take a leaf out of the nurse's book;" and by evincing some of her solicitude, render the sufferings of our little prisoners more endurable, and their incarceration less irksome. 'Tis a pleasing duty. *William Kidd.*

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SECTION D. *Monday, July 7th* (*continued from page 533*).—*Report on the Physical and Economical Effects of the Destruction of Tropical Forests in British India;* by Dr. H. CLEGHORN.—Viewing the question in its physical relations, the author drew attention to the climatic influences of the denudation of the surface of the country; he adverted to the known phenomena of decrease of springs, and the consequent diminution of river supplies, as results of the entire removal of the woods which are collected on the highlands, where such supplies usually originate,—and while distinctly admitting that wherever the wants of an advancing population require the clearance of forest lands, whether for food or the protection of health, such clearance is to be encouraged, he at the same time insisted strongly on the propriety of exercising a careful vigilance, under well-defined regulations, in all cases in which the above-mentioned causes are not in operation. In considering the economic relations of the question, Dr. Cleghorn availed himself largely of the labours of various distinguished and intelligent observers to illustrate the effects of the existing imperfect system of protection and superintendence. He recorded evidence as to the state of the forests in Malabar, Canara, Mysore, Travancore, the Tenasserim provinces, the Indian Archipelago, and the wooded tracts which skirt the base of the Himalayas. From this evidence it appears that neither the Government nor the community derive from the forests all those advantages which they are calculated to afford. There are numerous products of which the value is known and appreciated—but which are collected in

ways so rude and wasteful, that it is doubtful whether more of them are not lost in the process than are brought into commerce. There are others, perhaps more numerous, which are known only to the scientific observer; to these, it has been the endeavour of the committee to direct attention. It is no unauthorised inference, that in the depths of those great forest masses there may still be many substances which only await recognition by instructed eyes to take their places among the valuable agents of manufacturing industry, social comfort, or medical practice. To correct the first, to extend the second, and to discover the third, are the leading points to which the committee would direct attention; and they have endeavoured to furnish to the best of their ability information calculated to advance each of those interesting ends. The general conclusions which appear to the committee to be warranted by the various statements of fact and opinion, may be summed up as follows:—1. That over large portions of the Indian empire there is at present an almost uncontrolled destruction of the indigenous forests in progress by the careless habits of the native population. 2. That in Malabar, Tenasserim, and Scinde, where supervision is exercised, considerable improvement has already taken place in the forests. 3. That these improvements may be extended by a rigid enforcement of the present regulations, and the enactment of additional provisions of the following character—viz., careful maintenance of the forests by the plantation of seedlings in the place of mature trees removed—prohibition of cutting until trees are well grown, with rare and special exceptions for peculiar purposes—in cases of trees yielding gums, resins, or other valuable products, that greater care be taken in tapping or notching the trees, most serious damage at present resulting from neglect in this operation. 4. That special care and attention should be given to the preservation and maintenance of the forests occupying tracts unsuited for culture, whether by reason of altitude or by peculiarities of physical structure. 5. That in a country to which the maintenance of its water supplies is of such extreme importance, the indiscriminate clearance of forests around the localities whence the supplies are derived is greatly to be deprecated. 6. That, as much local ignorance prevails as to the number and nature of valuable forest products, measures should be taken to supply, through the officers in charge, information calculated to diminish such ignorance. 7. That, as much information which may be of practical utility is contained in the manuscript Reports and Proceedings of the late "Plantation Committee," it is desirable that the same should be abstracted and given to the public.—Captain Strachey said he could not agree with those who thought that forests had much influence on climate. It was a notion that they encouraged rain—but it was more probable that rain was the cause of forests. He alluded to districts in India in which the forest vegetation was just in proportion to the fall of rain; being small and diminutive where there was little rain, and abundant and gigantic where there was much rain. In temperate climates forests might produce an effect—but certainly not in the tropics. With regard to the economical question, there could be no doubt that it was foolish to destroy what was valuable, but we had not the power to arrest the present destruction of forests in India. — Mr. Bunbury enumerated several instances where forests did not exist and yet there was much rain, and others, where forests existed and there was little rain. Humboldt was our great authority on this subject, and he had recorded his opinions of the influence of forests on climate. In many districts where forests were cleared and single individuals left, these latter soon died from the want of the influence of their neighbours.—Dr. Lankester pointed out that according to the laws of vegetation, plants must be supplied with water in a liquid or vaporous form for their growth, and that all the facts which have been mentioned, and which at first sight appeared opposed to each other, might be explained. That forests did not always grow in rainy districts, arose probably from the waters accumulating and forming morasses in which forest trees would not grow. In districts where there was not much rain, there might be much moisture in the atmosphere—rain in general supplied only a very small quantity of the water required by plants. Vegetable physiology afforded no explanation of the effects on climate, attributed by some observers to forests.—Dr. Cleghorn, in answer to a question from Dr. Lankester, gave an account of the destruction going on in the forests of Isonandra gutta, the plant which yields the gutta pertsha. The extent of these forests is at present unknown; but the process of collecting the gutta pertsha renders it highly probable that the supply of this article may be very considerably diminished. The supply of this substance is entirely in the hands of native princes, who took no pains to maintain the growth of the trees which yielded it. The tree might be planted, and forests of it might be grown before the present supply failed, if attention was paid to the subject.

## ORCHIDS FOR THE MILLION.—No. XIII.

By B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon.

Climate hot and damp.—Plants growing on smooth Blocks without Moss.

*Phalænopsis grandiflora.*—This magnificent plant comes from Java. It produces pure white flowers nearly all the year round. A bare block with a smooth surface suits it best; the latter should be about 2 feet long, in order that there may be plenty of room for the roots to cling to. The plant likes plenty of heat and moisture during the growing season.

*Phalænopsis amabilis*, from Manilla; flowers as long and profusely as the last-named plant, but the blossoms are not so large. It succeeds best on a bare block, in a warm moist atmosphere.

*Vanda teres.*—This beautiful Indian plant flowers from June to August; the blossoms are large, and red, yellow, and white in colour. It does best on a block suspended in a hot and damp part of the house during the growing season; afterwards it should be kept dry for about two or three months.

*Chysis bractescens*, from Mexico; flowers in March and June; the blossoms, which are pure white, with a yellow centre, remain long in perfection, and are fragrant. It succeeds on a block suspended from the roof, and should have a good supply of heat and moisture during the growing season, but afterwards it may be kept cool, and allowed very little water. This will also thrive in a basket in moss.

*Epidendrum vitellinum*, from Mexico; produces rich orange flowers, which last eight weeks in perfection. It is one of the most beautiful Orchids in cultivation; but it is somewhat difficult to manage. It thrives well on a block, and likes a good supply of heat and moisture during the growing season, but while dormant very little water will suffice. It blooms from October to January.

*Epidendrum bicornutum*, from Trinidad; flowers from April to May. The blossoms are large, white, very fragrant, and last three weeks in perfection. It does best on a block, suspended from the roof, where there is plenty of heat and moisture during the growing season; afterwards it may be kept much cooler and drier.

*Angræcum bilobum*, from Cape Coast; is a good plant, which blooms from October to December. The flowers are white. It succeeds best on a bare block suspended from the roof, in the hottest part of the house; it likes plenty of moisture during the growing season.

*Dendrobium aggregatum.*—This beautiful East Indian Dendrobe blooms in March and April; flowers yellow, with a very broad lip. It grows well on a block, with a good supply of heat and moisture during the growing season; afterwards it may be kept cooler and have less water.

*Dendrobium Jenkinsii*, one of the smallest growing species of the genus; flowers yellow, large, and showy. It blooms in March and April, and if the blossoms are kept dry, they will last in beauty two weeks. It must be placed on a bare block. It will not thrive in a pot, and it should have plenty of water while growing; afterwards kept drier.

## Home Correspondence.

*The Raspberry Case.*—Having read in your leading article of the 16th inst., some remarks about a discovery of some fossil seeds made by the late Mr. Maclean in one of the ancient barrows near Maiden Castle, in the county of Dorset, and being in possession of some facts relating hereto, I have, as soon as the duties of my profession would enable me to do so, addressed myself to the subject of your remarks. I had the pleasure of knowing Mr. Maclean intimately for a period of four years before his death; I attended him professionally during that period, and I am not saying too much for departed worth, when I express my firm belief that he was a man perfectly free from guile or deceit; in fact, that no two meanings or false pretences ever attached to any assertion he made. I have often conversed with him on the subject of the fossil seeds in question, and, in fact, have walked with him over the spot where he told me he had found them at a depth of 30 feet below the earth's surface. I recollect his remarks at the time as perfectly as if they had been spoken only yesterday. "In this barrow, doctor," said he, as we stood upon the partially-filled excavation he had made, "I found the seeds I told you of, and from which were raised the Raspberry plants I have shown you the two dried specimens of, and yet Dr. Lindley, to whom I gave the seeds from which those plants were raised, has never thought it worth his while to mention my name or me as the discoverer of them; this is the way, doctor," he added, "that some of your discoveries may perhaps be treated," &c. "But, my good sir," said I, "you could have easily set that all straight by writing on the subject yourself." To this he replied, "as my object in opening those barrows was chiefly for the purpose of ascertaining the state of human teeth at a very remote period, I did not take the trouble to see after this matter farther than the seeds produced under Dr. Lindley's direction, the Raspberry plants you have seen which I gathered myself in the garden of the Horticultural Society at Chiswick." The facts therefore are these—1. That Mr. Maclean did discover in a barrow, near Maiden Castle, in the county of Dorset, in 1834, a human skeleton, 30 feet below the surface of the earth, from which were taken the seeds of the Raspberry plant in question. 2. That with the skeleton was found a tusk of the wild boar, 6 inches long, which I have myself seen, and which he (Mr. Maclean) considered had been worn as an ornament or trophy, from its having been perforated with a hole for, as he supposed, attaching it to the body. 3. That urns and other matters, which I have also seen, were found in the same barrow, but no coins. The coin of the Emperor Hadrian was found in an adjoining field to that of the barrows, and nearer to Maiden Castle. 4. That Mr. Maclean gave a portion of the seeds found in the skeleton to Professor Lindley, who says in his "Introduction to Botany" published in 1835, "I have at this moment three plants of Raspberries before me which have been raised in the garden of the Horticultural Society from seeds taken from the stomach of a man whose skeleton was found 30 feet below the surface of the earth, at the bottom of a barrow which was opened near Dorchester; he had been buried with some coins of the Emperor Hadrian, and it is therefore probable that the seeds were 1600 or 1700 years old." There is a mistake here, as the coin was not found in the barrow. I have it before me, in Mr. Maclean's own handwriting, that "it was found in a field adjoining Maiden Castle," close to which the said barrow was, so that the seeds in question must date much earlier even than the Romans, probably centuries before; nor can we see any just grounds for limiting their antiquity to 1600 or 1700 years, since the seeds of the mummy-wheat discovered by Sir Gardner Wilkinson during his travels in the Thebold, where he opened an ancient tomb, and found them, after being buried perhaps 3000 years, have produced plants, under the direction of Mr. Tupper, of Guildford, in 1840. We have, moreover, ample proof of the vitality of seeds daily before our eyes, after being in the earth for thousands of years in excavations of various kinds, notwithstanding the experiments of Prof. Henslow would tend to prove the contrary. I must here close this sketch, with a regret that Dr. Lindley should have omitted to give the name of the discoverer of the Raspberry seeds. I have seen a letter of Prof. Lindley, dated 1836, on this subject to Mr. Maclean, and a copy of the letter of the latter in reply, together with a copy of a certificate of the labourers employed by Mr. Maclean, in proof of the facts herein stated; the originals of these were no doubt sent to Professor Lindley. *William Smith, M.D., Weymouth, Aug.* 26.

*Fruit Crops.*—While some are complaining of having such bad crops of wall fruit this season, others are more happily circumstanced. For my part (writing from Northumberland), I never had such a magnificent display of fine fruit as I have this season. It is delightful to look at it, and the trees are in most excellent health. To have Apricots, Peaches, and Nectarines in perfection in this variable climate, they must be favoured with a wall which, in Scotland and the north of England is generally flued, and fire-heat applied, which answers two good ends. First, the protection of the blossom and young fruit in spring; and, secondly, the ripening of the wood in autumn. Or, if it is desirable, ripe fruit may be obtained a month sooner by keeping a little fire on through the spring and early part of summer. We have been gathering ripe Apricots from the open wall since the 1st of July, which is an acquisition, making the Apricot season about three months' duration. In addition to fire-heat in the spring various kinds of coverings are used, among which I prefer canvas, to let up and down when required. With such materials at command, I have little fear of the weather; and if the trees blossom, and are in health, a crop is certain. The weather has been very peculiar this season; and although we had no very severe weather in spring, yet it was sufficient to destroy whole crops of wall fruit where it was not properly guarded; therefore, I attribute the failure of such crops this year in the south of England to the want of protection, which may easily be remedied in after years. *John Grey.*

*Fragrance of the Victoria Regia.*—Could not the essential oil containing the delicious odour which is so powerful in the flower of this plant as to remain in the air for some hours, be fixed and retained, so as to become an essence, and made use of as a scent for the toilet? It might become a fashionable article of commerce under the name "Balm of Victoria," as I am very certain it would be in great request. Perhaps some of your correspondents will kindly answer the question. *An Old Reader.*

*Sea Monsters.*—I was fishing on the 18th inst. in Donegal Bay, when one of my boatmen called my attention to what appeared to be a large fish swimming rapidly along the surface of the sea, with an undulating motion, at the distance of about half a mile. Several whales were sporting in the bay at the same time. About an hour afterwards we were lying at anchor, fishing for hake, with about 40 other boats, when some one called out that there was a shark in the offing: the sea was then perfectly calm, and the same appearance was distinctly visible. It seemed to be a fish of 30 or 40 feet long, partially covered by the water, and swam with great velocity for a couple of hundred yards at a time on the surface. After several distant appearances it rose not far from the boat in which I was, and made directly towards it. I had a rifle ready, expecting to bag the sea serpent at least, when to our surprise we found that the fish, whatever he was, did not show above water at all, and that what we had taken for an undulating body was merely the ripple, or wave, which he threw off by swimming very rapidly near the surface. When he had approached within about 40 yards of the cluster of fishing boats he sank, and did not show again till nearly a mile off. A couple of hours afterwards we were agreeably surprised by a closer view of him. This time he rose about 100 yards off, and came straight towards the boat till not distant more than 20 yards. I was standing on the gunwale, and distinctly saw a fish apparently about 7 or 8 feet long, his body barred or banded with black and white, swimming about a foot below the surface, at the rate I should suppose of 14 or 15 miles an hour. Perhaps some of your readers, skilled in ichthyology, can tell what sort of a "baste" he was. Whilst writing of the finny tribe it may not be uninteresting to give an idea of the quantity of fish now

visiting our coasts. The number of hake (a fish averaging about 10 lbs. weight), caught in one small bay on the 18th inst., was estimated at 400 dozen. A single boat of my own, with a crew of five men, has taken and cured in 20 days 207 dozen, while sprats are so abundant, that from 40 to 60 tons are daily sold at prices varying from 1*d.* to 3*d.* a bushel. *Piscator.*

*Seedling Flowers.*—I have read with pleasure Mr. Edwards' excellent answer to "Enquirer" respecting the awards of the National Floricultural Society to seedling Roses. "Enquirer's" letter is not altogether clear in its statements. He starts by saying that "he does not by any means wish to impugn Mr. Paul's right to affix his name to purchased seedlings," and then he strains every point to prove that "he should have exhibited his Roses without his name." Now, it must be either right or wrong to attach his name to them. We need not appeal to Watts or Whately to decide that. But to the point. I have openly stated at all times that I bought the Roses in question in France, and yet I maintain my right of attaching my name to them, if I purchase the entire stock. Let us take a case, by way of illustration. A builds a house, B purchases it; in whose name does the house pass, A's or B's? A breeds a horse, B purchases it, whose horse is it, A's or B's? And if precedent in the floral world be demanded, as Mr. Edwards justly remarks, Dahlias, Pansies, Fuchsias, &c., have been sent out in numberless instances, and for years past, with the purchaser's and not the raiser's name attached. One word in defence of the National Floricultural Society. "Enquirer" appears to misconceive the aims of that body. The members are not associated to give pecuniary rewards for the production of seedlings, but to certify as to the worth of the thing produced, to protect the public from the successful puffing of an indifferent article. Here is an important distinction. What does it matter to "Enquirer" (except as a matter of history) whether "Queen Victoria" and "Robert Burns" were originated at the Cheshunt Nurseries, or on the Continent? but I apprehend it does matter to him if he thinks of becoming a purchaser, whether they are good, bad, or indifferent. It is on this point the National Floricultural Society sits in judgment. If "Enquirer" thinks it necessary to continue this argument, perhaps he will have the goodness to affix his name to his articles, for it is not very satisfactory to be grappling with a shadow. *William Paul, Nurseries, Cheshunt, Herts.*

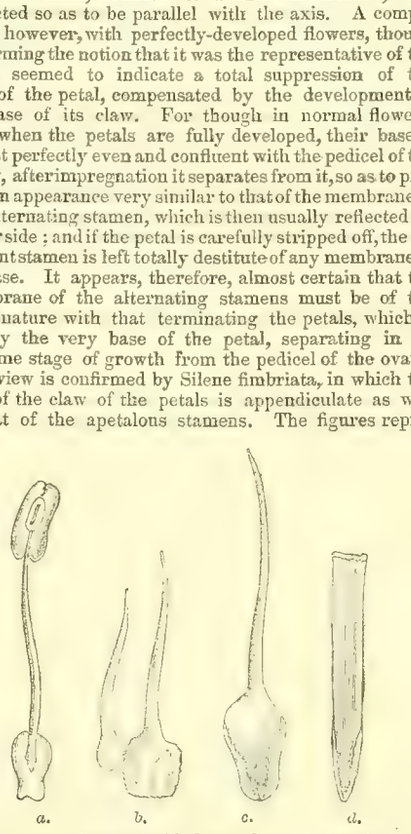
*Cuthill's Plan of Wintering Potatoes.*—It is rather amusing to read the denial by your correspondent J. B. Whiting, of the treatment recommended by Mr. Cuthill towards decreasing the disease of the Potato sets. Mr. Whiting says he has tried it in a case where he has his Potatoes 2 feet deep! If I am not very much mistaken, that is the very treatment which Mr. Cuthill condemns, from the contact and consequent heat and fermentation which must, to a certain extent ensue, and the unnatural growth of the roots from the tuber, occasioned in a great measure from the absence of light and air, which white roots will all be destroyed, either previous to, or while in the act of planting. If I read Mr. Cuthill's pamphlet right (I have not it before me to refer to) he suggests his practice, not as a quack medicine, but merely as a means of preventing the sets from being weakened by the common but very unnatural treatment of packing them close; and after allowing each eye to start a premature growth, to rub off the shoot and plant, often delayed till far too late in the spring. Whether it succeeds entirely or not is a question to dispute; but, at any rate, strengthening the tuber must enable it to resist any attack more successfully than one weakened by the usual treatment; and the success or failure will not be set at rest by anybody writing to say that "it is all a mistake." As I am not aware that I ever saw Mr. Cuthill in my life, I do not object to Mr. Whiting's letter on personal grounds, but simply that any person disagreeing with a practice ought, before he condemns it, to give it a real trial, strictly following the recommendation; and if he then finds it fail, to say so in a more polite style than a mere curt contradiction. *Chynoweth, Cornwall.*

*Garden Walks.*—I wish "An Old Gardener" to understand that I only stated what is true as far as 20 years' experience admits. If "An Old Gardener" will re-peruse the paragraph at p. 518, he will perceive that the marl is to be laid at the bottom, and therefore not at all exposed to the atmosphere; so he has been grappling with a shadow. I will guarantee to have dry gravel walks, and nearly free from weeds in any situation, provided I have the management of them from the beginning; and I am of opinion that most places possess too large an amount of gravel walks for picturesque purposes, which frequently occasions their neglect, on account of the great expense of keeping them in order. Hence the poet says,

> "Prim gravel walks, through which we winding go,
> In endless serpentines, that nothing show,
> Till tired, I ask, 'Why this eternal round?'
> And the pert gard'ner says, 'tis pleasure-ground."

*W. Thorold, Norwich.*

*Monstrous Sweet Williams.*—Amongst a number of seedling Sweet Williams of a very fine dark variety, distributed by the Horticultural Society, a single plant attracted my attention by its paler hue, and afterwards by the very large and swollen calyx, giving promise of something very distinct. To my great surprise, instead of yielding some larger form than the others, which could scarcely be exceeded in brilliancy, the flowers were wholly destitute of petals, and nothing appeared beyond the calyx except a few anthers and the stigmas, which were unusually large. The flowers, however, were still interesting, as possibly capable of giving some information relative to structure. One point only, however, attracted attention, viz., the greater development of the little terminating membrane at the base of the longer stamens, which in normal flowers alternate with the petals, and their projection beyond the others, which, though really less developed in ordinary flowers, still appear longer at the base, in consequence of the elongation of the claw of the petal. In some flowers, however, every stamen equally was furnished with a little lobed or crenate membrane, the origin of which it became a matter of interest, if possible, to trace. The first impression was that it must probably be referred to the limb of the petal itself, reduced to a mere membrane, and deflected so as to be parallel with the axis. A comparison, however, with perfectly-developed flowers, though confirming the notion that it was the representative of the petal, seemed to indicate a total suppression of the limb of the petal, compensated by the development of the base of its claw. For though in normal flowers, even when the petals are fully developed, their base is at first perfectly even and confluent with the pedicel of the ovary, after impregnation it separates from it, so as to present an appearance very similar to that of the membrane of the alternating stamen, which is then usually reflected on either side: and if the petal is carefully stripped off, the attendant stamen is left totally destitute of any membrane at its base. It appears, therefore, almost certain that the membrane of the alternating stamens must be of the same nature with that terminating the petals, which is merely the very base of the petal, separating in its extreme stage of growth from the pedicel of the ovary. This view is confirmed by Silene fimbriata, in which the base of the claw of the petals is appendiculate as well as that of the apetalous stamens. The figures represent, more or less magnified—*a.* One of the alternate stamens from an unopened petalous flower. *b.* The same from an unopened apetalous flower, together with one of the shorter stamens to which, normally, the petal would be attached. *c.* One of the alternate or accessory stamens from an impregnated flower. *d.* The base of a petal from the same, showing the edge of the extremity of the claw separating from the pedicel of the ovary. *M. J. B.*




*Storing Potatoes.*—At the request of a friend, I submit to you my plan of storing Potatoes, conceiving that any attempt to arrest the virulence of the disease is worth the attention of the growers of that invaluable root. Of course, I plant early kinds, and early in the season, in order that the tubers may, if possible, be ripened before the usual time of their being attacked with the disease. The kinds I find most suitable are Gregor's Early Prolific, or the Early Shaw. The tops of my Potatoes are now dead, and the tubers are fit for lifting. The method of storing for the winter, which I have found most successful, is as follows:—I have them brought from the field, and laid in an open shed, about 4 inches in thickness, where they are allowed to remain till they are perfectly dry. A place is then prepared to receive them at the end of an outhouse in the following manner. I place a pole across the shed, about 4 feet high, taking some rough stakes, or staves of sugar hogsheads, and driving them into the ground at the lower end of the pole, and nailing them to it at the top, about 1 foot apart. If possible, some Furze is got, to put in under the pole, its full thickness. Stakes or staves are then placed in the front between each stake that was previously nailed on the inside of the bin, being careful to press the Furze up very tight. The Potatoes are then put in, and being covered very slightly with Furze, they are allowed to remain for six or seven weeks. They are then taken out, and sifted through a sieve with meshes 1½ inch in width, which separate the smaller Potatoes, at the same time taking care to pick out all those that were injured in the lifting. The best Potatoes are then returned to the bin, and covered carefully, first with Furze, and then with straw, to prevent any injury from frost. I have kept Potatoes in these bins till the latter part of April, and even till May, without scarcely a shoot issuing from them, not one being diseased, and their quality most excellent. My neighbours have mostly, from old-fashioned notions, stored theirs on the the ridge or clamp system out of doors; but when they have opened them in the spring, from the sweating in the clamps, the one-half has been diseased, and the entire lot much injured. Furze is preferable to straw, as they prevent the ravages of rats and mice. I have tried four methods in planting this last spring, but those planted according to Mr. Cuthill's plan, viz., with soot and salt, are decidedly the best, the most productive, and entirely free from disease and the attack of insects. The plan above laid down is very simple, and I know most efficacious. I have nearly escaped the visitation of the Potato murrain, from previous preparation, some account of which I shall give you hereafter. *Thomas Rackham, Guilteross, Kenninghall, Norfolk, Aug.* 27.

*Exposing Plants in Pots to the open Air in Summer* (see p. 533).—Though Mr. Dowell has discovered no beneficial results from the practice of exposing his plants in summer to the open air, I am sure it possesses decided advantages over the plan of keeping them in houses, provided necessary precautions are taken to insure success. I would recommend Mr. D. to seek a sheltered shady place, for some of his larger plants, such as Camellias, Azaleas, &c., and plunge the pots to about the middle in a bed of coal ashes (to prevent worms from entering at the bottom), where they may remain till frost is approaching. By this means, the plants are kept free from insects, owing to the rain which falls on them, from time to time. But if they are retained in the houses, green fly and thrip will become rather troublesome. While some plants succeed well in a shady place, others will do better exposed to the sun's rays; as for instance, Heaths, if the pots are plunged where the plants can be protected from strong winds and heavy rains. I often see plants turned out in summer, because they live out; but I should place no plant out of doors until its wood is thoroughly ripened. *Thomas Bowden, Lismore.*

*Old Double Yellow Rose.*—I have succeeded in flowering the double yellow Rose for the last ten years, by planting it on a north border in good sandy loam, watering it well with strong manure water, and thinning out the flower buds. The result of this treatment is, fine large flowers, well opened and perfect, the admiration of all who have seen them, as many can testify. It will not live long on stocks, but will flower freely. *J. U.*

*Waxy Potatoes.*—You have given from time to time in your Journal some good directions for cooking vegetables; and it seems to me likely, therefore, that through the same channel I may hear of a method of boiling Potatoes, so as to render them firm and waxy, as I have a great objection to mealy Potatoes, and also to the bad watery ones usually given me as waxy; it would be an additional favour if I could be informed of the names of the sorts required. The Ash-leaf Kidney is one, I know, but that is early and expensive. *M. D.*

*Emigration to Australia.*—The following letter was received by the friends of J. Ling, in the beginning of last week. J. Ling was a labourer in this parish, and left with two others for Australia last November, where, as the letter shows, he arrived in safety, and is doing well. I consider it is unnecessary for me to make any comments on the subject of emigration, as his experience is, of course, far more convincing than anything I could say in favour of it; I must, however, state that I can fully vouch for the authenticity of the letter, as there are those living in this place who can swear to the hand-writing. *J. R. Markfy, Middleton, near Yoxford, Suffolk, Aug.* 25. The following is a copy, verbatim, of the letter alluded to: "My dear Friends,—I know that our minds is very soon carried away by flattering words and promises, but I hope with God's assistance, we shall be able to overcome them. You wished to know about the country: it is beautiful, and I don't think I ever regret coming here, and a very comfortable home I have got. I have plenty of work, and likely to continue so. I should like to have some of my friends here with me, but I would not persuade any one; let them observe their own mind; whoever comes here and is willing to work might do well, and as for myself, I would not be at home again to work for the same wages on any account. We have no frost, and as yet no snow here, but our winter, which is your summer at home, we have rain and cold winds, yet the sun is very warm, and we can grow all kinds of vegetables. All sorts of fruits are very productive — Grapes and Peaches and Apricots and Melons; and it is beautiful to see the Grapes hanging in clusters; it is altogether a fine country, but when we look at the hills at a distance, they appear like so many white clouds, and the country all around is covered with so many rocks, and they are like bare stone. There is much to amuse people on the voyage; the sea itself is beautiful; I would make a voyage if it was only for the sake of seeing it; the air is fresh and pure, and there are strange fish and strange birds and strange lands, which are passed on the way; and strange people are seen; but what is stranger than all, when people get there, after going that way, it is difficult to persuade themselves that they have not home again; everything is English — English pilots and boatmen, and white English faces, and talking off to the ship. English houses are seen on the shore, and English carts are ready to carry you home; there are English churches, and country houses, and shops, inns, and English clergymen, and magistrates, and English laws, in fact, my friends, those who come here are as much in England as those who stay at home; for every thing that is good to be found in England, is to be found in Sydney, all is English, with this difference, that there is plenty of room, but few to fill it; plenty of land, but few to till it; plenty to do, but few people to do it; plenty of food, but few to eat it; while in England, unhappily, we have not room enough, land enough, work enough, or food enough. We all love England, we all love our home; but this country is as much England, in every thing that make England valuable, as the land we tread

on. And from all that I can hear, those who comes here have every reason to bless the day when they determined that they would establish a home for themselves and their children. Now all the people I speak of are Englishmen, and a very large number have come here from England across the broad sea. Within the last few years a great many have come from the large manufacturing towns, where they were sickly, and weak, and starving with the lowest wages, and now they are strong and healthy, with as much food as they can eat. And a beautiful passage we had, my friends. Weekly rations—beef or mutton, 10 lbs.; flour, 10 lbs.; sugar, 2 lbs.; tea, quarter of a pound; and 16*l.* for the first 12 months, and 1*l.* taken once a quarter. I am at Mr. Chapman's, 6, Rocky Point, George's River, within 12 miles of Sydney, and a good master we have got. And now I must conclude with my kind love to my dear father, and my best wishes to all our friends; and I hope, my dear father, I shall get 20*l.* the next year, and I wish you were with me. *J. Ling, Sydney, April* 26, 1851."

*Potato Disease.*—In your leading article at p. 531, you appear to attribute our partial exemption this year from Potato rot solely to improved cultivation. No one will deny that by selecting proper soil and proper kinds, and by early planting in land not much manured, the disorder may be to a certain degree evaded. But the absence of warm wet weather in June and the beginning of July must also be taken into consideration. Although the primary cause of the rot is a mystery, yet there is little doubt that the agent of destruction is a fungus. Now, it has been observed that whenever we have been exempted from Potato rot there has been a scarcity of Mushrooms, and that when the malady has been severe there has been in the fields an abundance of these fungi. I conclude, therefore, that by a repetition of careful culture we are not to calculate for certain on crops as sound as they have been the last and present year. A warm muggy Mushroom-growing June or July may, and probably would, defeat all our care and skill. *L. Stephenson, Souldern, Oxon.*——In your laudable wish to discourage dependence on the Potato crop, you have, I think, rather overstated the case of the disease. You say that we are "saddled with it for ever"—for ever is a long day. Can you point out any vegetable that, after being established in a country, has become permanently diseased? Is it not more probable that the Potato has become liable to a new disease, but may be often free from it, just as this country is now liable to cholera, but hopes to be generally free from it? *D. C. L., Aug.* 25.——The Potato crop here (the west of Donegal) is much blackened, but the tubers little affected as yet.—Turnips have suffered much from the attack of the small green caterpillar. It seems now to have recovered, the insect being in the pupa state, on the back of the leaf. Grain crops look well, but late. *W. Sinclair, Drumbey, Mountcharles, Aug.* 19.——Disease has shown itself in the haulm generally about here for some time past. All the tops of the early sorts are completely dead; late kinds are more vigorous, but nevertheless seriously injured. The tubers are not extensively damaged, owing, I imagine, to the dryness of the season. I observe that where Potatoes have been planted amongst Gooseberries, Currants, &c., they are not so bad. The soil is various, some very sandy, others of a retentive nature; all have the disease, but it is evidently worst in low and damp situations. *E. Sanders, Egham, Aug.* 19.

*Canna.*—If an attempt is made towards cultivating any of the genus in ponds, I should think it would best be made with such as flower in the summer—not with those which form their blossoms in December and January. Loudon mentions Canna speciosa (a very pretty sort) as blooming in August. *A. H.*

*Fruit Tarts.*—I believe it is generally well known that a mixture of Apple in Damson tart destroys the unpleasant roughness of the latter fruit; but I do not think it is so well known what an excellent tart is to be made of Morella Cherries and Apple; I lately met with it at a friend's house, and can recommend it. *M. D.*

## Societies.

HIGHGATE FLORICULTURAL, *August* 25.—Mr. EDWARDS in the chair. Mr. Cragg produced several seedling Hollyhocks, Mr. Back Antirrhinums, Mr. Edwards a sulphur-coloured Antirrhinum, possessing considerable merit, and Mr. Smith two of Mr. Banks' pretty light Fuchsias. Several new members were elected, and subscriptions received. The Chrysanthemum schedule was discussed and decided on, some important extra prizes contributed, and censors chosen.

WILTS HORTICULTURAL.—The third and final exhibition for the year of this Society was held on the 27th instant, in the grounds of Colonel Baker, of Salisbury, when a fine display of plants, flowers, and fruits rewarded the exertions of a zealous committee, headed by G. Brown, Esq., mayor of the town. The visitors were numerous. In connexion with the Society's show was held the annual West of England Dahlia Exhibition, open to all England, under the stewardship of Mr. J. Keynes. The Dahlia awards were as follows:—Amateurs—12 distinct varieties: 1, Mr. Robinson, Pimlico; 2, Mr. Allen, Shacklewell; 3, Mr. Dodds, Salisbury; 4, Mr. J. Edwards, Holloway; 5, Mr. Cook, Notting-hill; 6, Mr. Rowden, Newbury. 12 Fancy varieties: 1, Mr. Dodds, Salisbury; 2, Mr. James, Stoke Newington; 3, Mr. Rowden, Newbury; 4, Mr. J. Edwards, Holloway. 6 varieties sent out at any time by Mr. J. Keynes: 1, Mr. Robinson; 2, Mr. Edwards; 3, Mr. Dodds; 4, Mr. James; 5, Mr. Cook. Nurserymen—24 varieties: 1, Mr. J. Keynes; 2, Mr. Drummond, Bath. 24 Fancy varieties: 1, Mr. Keynes; 2, Mr. Drummond; 3, Mr. Bragg, Slough. We noticed, as particularly good, specimens of Summit of Perfection (Keynes), Mr. Herbert (Dodds), Nil Desperandum (Turner), Nepaulese Prince (Turner), Mrs. Hansard (Edwards), Barmaid (Holmes), Jullien (Hale), Lady Cathcart (Turner), Magnificent (Keynes), Sir F. Bathurst (Keynes), Snow Flake (Dodds), Duke of Wellington (Drummond), Mr. Sutton (Turner) Princess Radzivile (Gaines) Richard Cobden (Stein), Queen of the Isles (Skynner), Yellow Standard (Keynes), Elizabeth (Procter), Empereur de Maroc (Haidous), and Miss Compton (Liddiard), &c.

## Notices of Books.

*Central America; describing each of the States of Guatemala, Honduras, Salvador, Nicaragua, and Costa Rica.* By John Baily, Esq., R.M. Saunders, 8vo, pp. 164.

*Baily's Map of Central America.* Ditto.

ALTHOUGH a work of no pretension, the book which stands at the head of this notice is one of the most important that has appeared in England for many years. The group of States now called Central America is among the least known portions of the globe, so far as English readers are concerned; if it were not indeed for our own Belize, whence mahogany ships come, for Hartweg and Warczewitz's Guatemala plants, and for the Mosquito shore, the source of political squabbles and Stock Exchange operations, duly reported in newspapers, we should hear as seldom of Central America, as of Golconda or New Guinea. Nevertheless, it is a country within easy reach of our own shores, yielding in fertility to no part of the earth, with hundreds of thousands of acres, awaiting the arrival of emigrants, towards whom the various governments are well disposed. Moreover, it is there that the union of the Atlantic and Pacific oceans is to be effected, if it be effected at all. Cochineal, tobacco, Cacao, Vanilla, magnificent timber, sugar, indigo, coffee, cotton, silk, dye-stuff, and all the other products of tropical agriculture, are cultivable here with the greatest ease.

Lieut. Baily states with clearness and fairness all the material facts which the traveller can need to know. If, on the one hand, he points to the manifold advantages which a settler would find, he by no means conceals the difficulties with which he has to contend; but exhibits both sides of the picture for examination. Take, for instance, the following general view of the productions and agriculture of the region:

"*Productions and Agriculture.*—A soil of very great fertility, with varieties of temperature suitable to the growth of almost every vegetable product peculiar to the tropics, and of many that are natives of the temperate zones, may be expected to abound in, or to be made capable of bringing forth, whatever is useful or advantageous to mankind in any way. Different cereal grains and alimentary pulse, fruits and culinary vegetables and roots, wild and tame animals of most descriptions used as food, cattle, horses, and mules, are in great plenty; so that as far as sustenance is concerned, few countries are more highly favoured with the means of providing an immense population with all the necessaries, and many of the luxuries of life. For the purposes of commerce the catalogue is not less comprehensive; and as principal articles may be enumerated indigo, cochineal, sugar, coffee, cocoa, rice, tobacco, cotton, wool, hides, many dye woods, drugs, balsam and various gums, timber, minerals, and precious metals, with a multitude of less important items, which taken altogether would be a never-failing source of competence and even wealth to many millions of inhabitants. This is not a picture too highly coloured, yet it must not hence be inferred that the country actually is in a position to reap so great a harvest of opulence, or to enjoy all the benefits which its advantageous position and numerous capabilities would confer.

"It is clear that a soil, howsoever fertile it may be, without a population adequate to its cultivation, will remain, at least the major part of it, a beautiful wilderness inviting to industry, but nearly useless without it. Nor can a scanty population, having little agricultural knowledge beyond that of committing a seed to the ground at a certain season, and gathering the fruit which nature has ripened to perfection, derive, even remotely, that amount of profit which the luxuriance of the land, if better treated, would offer to its acceptance. The fruits of the earth become abundant to man in proportion as he applies his knowledge and labour to the tillage of the ground; but if his efforts be not guided by some acquired skill in this most important of all sciences, he will continue in the routine of his forefathers, which will ever keep him from improvement, and low in the scale of civilisation, although he seldom fails to get a reward for his toil more than commensurate with the labour expended. This pertinaceous adherence to antiquated practices, and the want of a moderate degree of science in rural pursuits, prove serious checks in the advance to a better state of things. Indolence, with which the people has been reproached, and it may be not altogether undeserved, causes less injury in this particular than the want of instruction; for habituated to methods which take date from their earliest traditions, they know not that better can be introduced, nor how to get rid of the old ones. Occasionally the working classes are capable of great exertions, are persevering and patient of fatigue, but those good qualities are not seconded by a judicious application of their physical powers. But the husbandman labouring under disadvantages still more serious, in the want of implements suitable to the prompt and easy performance of his work, is consequently but rude in his operations. The plough, the harrow, the scythe, the sickle, are not found on the farm—the hoe and the machete are the only substitutes for them; and as most of the mechanical appliances for diminishing manual labour, and promoting good husbandry, are unknown, they cannot be appreciated, therefore they are not sought for.

"If during a long series of years the practice of agriculture has received no improvement, it may be safely asserted that the study of this most essential art has not yet been introduced into the country; nor does it seem to be thought possible that a given space of ground can, by having recourse to a judicious system of culture, widely differing from the one hitherto practised, be made to produce double or treble the amount it has done by the method heretofore adopted. Experience has proved in other countries that this can be done, and unquestionably similar procedures in this country would not be attended with different results. Such an amelioration can never take place by adhering to old habits, nor can progress in a better direction be looked for, until some men with reformed ideas, with competent means for trying experiments, and repeating processes which have been successful in other regions, shall have acquired practically knowledge for themselves, and be willing to impart it, by example and instruction, to the humble and less favoured classes of their fellow-countrymen.

"Combinations of knowledge with economy in what relates to predial occupations, have not yet migrated to Central America; and proprietors have been contented to accept what the unaided fertility of the soil annually bestows upon them,—which being bountiful, little desire of increasing it is manifested. Hence arises the anomaly that where many staple commodities could be abundantly raised, only three or four make up the general export of the country; while others which would always find an equally ready mart, are grown but in sufficient quantity to supply home consumption."

All these considerations have acquired infinitely more importance than heretofore, on account of the new Californian market, for the supply of which with articles of tropical production Central America must ever be, from its geographical position, the best suited. Sugar and rum are already in rapid demand; and there can be no doubt that the tobacco of Ystepeque and Gualan, not inferior to that of Cuba, will speedily acquire exclusive possession of the Californian market.

Lieut. Baily discusses with skill the question of a water communication between the two oceans; and his map, which is one of the finest ever executed, illustrates his views upon this great modern question. That is, however, a subject which does not come within the scope of this Journal, and we can only thus point out a source where the most ample and trustworthy information can be had respecting it.

Since this was written we see it announced in the *Times* that the passage by Nicaragua has been effected. It appears that the passengers by the Pacific steamer from California landed the other day at a place called the port of San Juan del Sur, on the west side, crossed in 32 hours the 20,000 or 30,000 yards of isthmus, which separate it from the lake of Nicaragua, by way of which the passengers readily reached the Atlantic, and thus proceeded to New York.

*Market Gardening round London.* By James Cuthill, of Camberwell. Hamilton and Adams, and Ridgway, London.

THIS is a republication, in the shape of a small pamphlet of 40 pages, of the excellent articles which appeared under the above heading, from week to week, in our columns, in the beginning of this year. The few trifling errors which, in course of publication, they were pointed out to have contained, have been corrected, and an entirely new article, on Filbert plantations in Kent, has been added. The value of these papers, which, in the first instance, was acknowledged to be great, is enhanced by their assuming a connected form, by which they are more convenient for reference. We heartily recommend their perusal to all who are desirous of gardening profitably.

## Miscellaneous.

*Grape-Blight.*—The *Official Journal of the Two Sicilies* of the 2d publishes some observations taken from a report read on the 24th ult., to the Instituto d'Incorragiamento of Naples on the Grape blight, which has created as much alarm in the kingdom of Naples as in any other parts of Italy. We subjoin a few particulars which have not been mentioned by the agronomists of Turin and Florence, whose opinions on the subject we have already stated. The fungus, which attacks the Vine, is a cryptogamous plant of the family of Torulaceæ—the microscope shows that it consists of articulated filaments, branching out in every direction, spreading upon the epidermis of the fruit without penetrating into it, and representing the root, otherwise called mycelium, in plants of that kind. Other filaments, articulated also, but simple, shoot out vertically from the former, and end in a whitish spore, by which the species is propagated. This plant acts injuriously upon the Grape, by intercepting air and light. This, after some time, causes a disease of the epidermis and parenchyma, which manifests itself by black spots on the surface. In its earlier stage of existence the Grape drops from the stalk; if attacked at a more advanced period its growth is stopped, and putrefaction soon commences. The blight attacks all kinds of Vines, but more particularly those which produce white Grapes. It also attacks the Vitis Labrusca, the fruit of which is much used in Italy to give colour to wine. The appearance of this Torula was first noticed in France last year, as may be seen by a paper on the subject, published by M. Leveille in the *Institut*. It seems to owe its origin to the general state of the atmosphere which has been prevalent this year, and might, it is believed, with some foundation, disappear as

fast as it came, were that state to undergo a sudden change. We may add to the above particulars, that in his fourth letter on the subject, published in the *Genoa Gazette* of the 13th, Professor Cantu announces that a solution of one part of lime in 20 parts of water acts as a preventive, though not as a cure, of the Grape blight. Solutions of potass and of ashes are also recommended as powerful preventives. *Morning Herald, Aug.* 20.

*Murdoch's Improvements in Preserving Animal and Vegetable Substances, Patented Jan.* 30, 1851.—The first part of this invention consists of a method of preserving animal and vegetable substances by exposing them to the action of a current of dry air of a slightly elevated temperature, by which means the veritable preservation of the substances operated on is effected in their normal state. The apparatus employed consists of a fireplace, with horizontal tubes or channels for heating and drying the air; a chamber provided with shelves or ledges, on which the articles may be placed, or rods or bars from which they may be suspended; and a fan or other mechanical contrivance, by which a current of heated air is forced through the chamber to act on the substances contained in it. The temperature of the air, and the continuance of the operation, vary necessarily with the state and nature of the articles to be treated; but a temperature of from 65° to 85° Fahr., and a time of from 24 to 48 hours, is recommended as suitable for most articles—vegetables, such as Cabbages, Cauliflowers, Spinach, Beet-root, Carrots, Potatoes, &c. Fish of all kinds, poultry, game, and animal flesh, may be subjected to the above-mentioned desiccating process, after undergoing, in certain cases, preliminary cleansing and other operations; and they may be subsequently treated in any way that may appear suitable. The second part of the invention consists of a method of composing a saline solution, applicable to the preservation of animal substances; such solution being used alone, or preliminary to the above described system of desiccation, or in conjunction with any other process of preservation. This solution is composed of 10½ oz. of chloride of aluminum, 10½ oz. of chloride of sodium, and 3½ oz. of nitrate of potash, dissolved in 2¼ wine pints of water, and is applied by injection to the carcases of animals, in quantities varying with the size of the animal operated on. The process of desiccation, first described, is recommended as suitable for treating glue, made during the summer months, in order to dry it for preservation. Claims:—1. The exposure of animal and vegetable substances, in suitable chambers, to the action of a forced current of dry air, in order to dry such substances for the purpose of preserving them, and independently of any preliminary or subsidiary processes or methods of treatment. 2. The injection of the carcases of animals with a saline liquid, for the purpose of preserving them, whether such injection be employed alone or in conjunction with the desiccating process above described, or in any other preliminary or subsidiary process that may be deemed advisable." *Mechanics' Magazine.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Stove plants which flower upon the young wood may with propriety be shifted now, as they will thereby be much invigorated; and the blossoms also will give evidence of the advantage, by their superiority in size and colour. Those, on the contrary, which flower upon the ripened wood, must be gradually encouraged to go to rest, as the days decrease in light. We would not pot any plants when they are very near their flowering season. Poinsettias which do not flower until January, we would encourage by repotting, and by supplying them freely with liquid manure, as the floral leaves will be double the size they would be if less liberally treated. We mention this as an instance of our meaning, as it is impossible to enter fully into specific directions within the limits of the Calendar. Amaryllids, in pots, as they show signs of ripening, should be gradually dried off. The Japan Lilies, now coming into flower, should have every encouragement by liberal waterings of clear rich water, and afford a slight shade while in bloom. The Belladonna Lilies in front of the houses, and at the foot of sunny walls, will be benefited by soakings of rich water.

FLOWER GARDEN AND SHRUBBERIES.

Before the season is further advanced, every gardener should calculate, as nearly as may be, whether the extent of his framing conveniences will be sufficient to afford shelter during winter to his stock of half-hardy plants, as well as to those he is now propagating. If his room is deficient, he must either restrict annual propagation within certain limits, or prepare additional pits without further loss of time. Brick pits are of course the most durable, and although expensive in the first outlay, are cheapest in the end. A very common makeshift pit is built of turves, which lasts several seasons and is very warm, but in appearance rather untidy. There is so much glass broken in covering and uncovering, that it soon amounts to the cost of a small boiler and pipes, which would enable us to do without covering of any kind, and thus be the means of keeping our plants through the winter at a less cost; for if we take into account the expense of mats, the time occupied in putting them on and taking them off, and the glass they break, it will be seen that the better plan is also the cheaper one. For beds to flower early next summer, there is no question that the old plants of Geraniums, taken up and preserved in pits, are the best; and if sufficient room is allowed them, they will be nice bushy plants in flower by planting out season next year. In cases where the display of flower is not required to be earlier than August, a sufficient stock to produce the necessary quantity of cuttings by next March is all that need be preserved. The bedding kinds of Geraniums are so useful, and there are so many beautiful varieties, that, to winter all is becoming a serious matter; and timely preparation should be made whenever the demand is great. A sowing of hardy annuals may now be made in the reserve garden, and afterwards transplanted for flowering early in the spring; these will flower as soon as the earlier plants raised in frames next year; and as frame room in spring is generally scarce, it is worth while to economise it.

FLORISTS' FLOWERS.

The routine lately advised may be strictly adhered to. Carnations and Picotee layers will require occasional watering through a fine rose, in order that the soil may not be displaced. Examine the pods, to ascertain whether there are any symptoms of seed; if not, cut the flower-stalks down to the stool or crown of the plant. Continue to plant out Pinks and Pansy cuttings, and mark seedlings of the latter. Pansy seed may likewise be sown now for early spring blooming. Make ready a bed for offset Tulips; this should be well done, for the amateur should recollect that his maiden bulbs, reared on his offset bed, are his *corps de reserve*, from whence his main bed is strengthened. Great care should be made in its preparation; maiden decayed turf, leaf-mould, and river sand, should enter largely in its composition; we think that dung is injurious unless very old indeed, and then it should be used with great care. Dahlias, as we observed last week, are now engrossing almost every care; but we should not let present beauties make us forget old favourites. The Auricula and Polyanthus, for instance, will during the dry weather of the latter part of this month and September require careful watering, with all those little attentions, as to keeping clear from weeds, decaying foliage, and insects, which is so often inculcated, but too often neglected.

KITCHEN GARDEN.

Late crops of Turnip, Parsley, Spinach, &c., should be thinned before the plants begin to intrude upon each other. The earlier sowing of Cabbage Lettuce may be planted on a border with an east or west aspect, reserving the most favourable situations on the south borders for Endive and the later sowings of Cabbage Lettuce. Two sowings more of the latter should be made at intervals of ten days. A main sowing should be made immediately of early Asiatic Cauliflowers, for planting under the handlights, and preserving during winter in frames; and at the same time a little early York Cabbage should be sown for an early spring crop, and a sowing of Red Dutch Cabbage for main crop next. Transplant late sown Cabbages in rows, 8 inches asunder every way; of these, three-fourths will be drawn in a young state, and used as Coleworts, and the remainder will be left to produce heads. Endive, Lettuce, &c., should be transplanted as soon as the plants are large enough to be handled.

State of the Weather near London, for the week ending Aug. 28, 1851, as observed at the Horticultural Garden, Chiswick.

| August. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature of the Air. Max. | Temperature of the Air. Min. | Temperature of the Air. Mean | Temperature of the Earth. 1 foot deep. | Temperature of the Earth. 2 feet deep. | Wind. | Rain |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 22 | 25 | 30.012 | 29.936 | 82 | 57 | 69.5 | 63½ | 61 | S.W. | .00 |
| Satur.. 23 | 26 | 29.878 | 29.849 | 76 | 59 | 67.5 | 63 | 61 | S.W. | .01 |
| Sunday . 24 | 27 | 29.879 | 29.781 | 72 | 46 | 59.0 | 62 | 61 | S.W. | .18 |
| Monday 25 | 28 | 30.160 | 30.044 | 71 | 41 | 56.0 | 61 | 61 | N.W. | .00 |
| Tues. .. 26 | New Moon | 30.104 | 29.887 | 64 | 55 | 59.5 | 59 | 60 | S.W | .11 |
| Wed. .. 27 | 1 | 29.993 | 29.889 | 68 | 52 | 60.0 | 59½ | 59 | S.W. | 1.32 |
| Thurs.. 28 | 2 | 29.739 | 29.669 | 64 | 44 | 54.0 | 59½ | 58 | N.W. | .00 |
| Average | | 29.866 | 29.865 | 71.0 | 50.6 | 60.8 | 61.1 | 60.1 | | 1.62 |

Aug. 22—Very fine; hot, slightly clouded at night.
" 23—Cloudy; uniformly overcast; cloudy and fine.
" 24—Fine; heavy showers, with sunshine at intervals; clear.
" 25—Clear; very fine throughout.
" 26—Uniformly overcast; slight rain: clear at night.
" 27—Fine; overcast and fine; constant and very heavy rain at night.
" 28—Fine; cloudy; clear at night.
Mean temperature of the week, 1.5th deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Sept. 6, 1851.

| August and Sept. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 31 | 70.6 | 49.8 | 60.2 | 13 | 1.31 in. | 2 | 5 | 1 | 2 | 2 | 2 | 6 | 5 |
| Mon. 1 | 70.0 | 48.8 | 59.4 | 13 | 1.50 | 2 | 4 | 2 | 4 | 2 | 6 | 2 | 3 |
| Tues. 2 | 71.0 | 48.0 | 59.5 | 9 | 0.23 | 4 | 5 | 1 | 1 | 2 | 4 | 7 | 1 |
| Wed. 3 | 69.3 | 48.8 | 59.1 | 10 | 0.48 | 1 | 6 | 1 | 1 | 4 | 6 | 6 | 1 |
| Thurs. 4 | 70.0 | 48.1 | 59.1 | 11 | 0.58 | 4 | 6 | 2 | — | 4 | 4 | 3 | 2 |
| Friday 5 | 69.8 | 48.4 | 59.1 | 12 | 0.30 | 2 | 4 | 6 | — | 1 | 4 | 3 | 1 |
| Satur. 6 | 70.2 | 46.7 | 58.5 | 11 | 0.70 | — | 5 | 3 | — | 1 | 9 | 6 | 1 |

The highest temperature during the above period occurred on the 1st, 1843—therm. 85 deg; and the lowest on the 4th and 6th, 1850—therm. 30 deg.

## Notices to Correspondents.

Birds: The Canary: *Sarah P.* You will never rear your favourite bird, unless you at once remove him into a warm cage, closed at both ends. These circular brass cages (as we have before remarked), are fearful engines of destruction to birds that are moulting; exposing them to endless draughts, and inflicting on them colds from which they seldom, if ever, recover. We recommend you to read carefully our "Treatise on the Canary," forming "Cage Birds," Nos. 1 to 11. *W. K.*—The Bullfinch: *Jane L.* It is of very little use for you to try and improve the plumage of your tame little companion. From your own description of the bird, it is most assuredly a hen; and not any treatment that we can point out will change its nature, or alter its colour. You say "it sings;" rest satisfied then that it is "gifted," and that it "hath that *within* which passeth show." *W. K.*—The Goldfinch: *W E R.* Feed very sparingly with Hempseed; and leave off, from this time henceforward, giving him loaf-sugar. It is a barbarous practice, bringing many a fine songster to a premature end. Give him, as a rule, Canary and Flax *only*. *W. K.*—The Linnet: *Anna T. Another* instance of the folly of keeping song birds in open cages! Your bird's lungs are affected, in consequence of his having been hung outside the window, and exposed to the recent winds passing through his cage. We have so frequently raised our voice against this want of consideration, that we fear you have not carefully perused our remarks. We trust it may not, even now, be too late to do so. *W. K.*—The Love-bird: *Julia* Your "pet" is *in extremis*. Nothing can save him. 'Ere you read this, he will have ceased to live. In courtesy, however, we reply to your note. *W. K*—Partridges Pheasants, &c.: *W N R.* We are pleased to hear that the *regime* proposed has been considered so good; still, we recommend you to keep on using the warm milk and water to the eyes. It will displace the *virus*, and induce healthy symptoms generally. Your stock being so extensive, these precautions are highly necessary. *W. K.*—Sky-lark: *Elizabeth.* You must not, with your present limited experience, attempt to rear young sky-larks from the nest. By all means procure young "branchers," clean moulted. With these you will have no trouble. You will do wisely to purchase your larks, or indeed *any* other birds of song, at Mr. Clifford's, 24, Great St. Andrew-street, Holborn. At the same time, provide yourself with a stock of German paste, which Mr. C. makes in a peculiar manner. Larks fed on *this* food, continue in song nearly eight months in the year. Your present food is *bad* Our "Treatise on the Sky-lark" will appear in a few weeks, and will possess considerable interest. Read it by all means. *W K.—A Liverpool Bird Fancier* can only obtain Mr. Kidd's papers by buying the numbers in which they have appeared. We cannot afford to give such things away.

Electrometers: *F.* You can procure what you want of the philosophical instrument makers.

Emigration: *C L.* You had better go to Canada than to the United States. We prefer Toronto to New York, as your capital is small. There are plenty of United States Agricultural Journals; which is best will depend upon where you settle. You will readily learn when you are there. As to books, take Loudon's "Encyclopædia," and Lindley's "Theory." We would not advise you to dip deeper into your pocket than this.

Ferns: *J D.* Seeds of Ferns are often obtained from New Zealand and other countries, and, if carefully sown, in due time young Ferns spring up; but they rarely turn out to be the kinds that were sown. Yours is a case in point, for amongst the eight specimens sent us only one (No. 7) is a native of New Zealand. No. 8 is a native of North America, and the others consist of two common British species, Nos. 1 and 2 are Asplenium Filix-fœmina; Nos. 3, 4, 5, and 6, Lastrea dilatata; No 7 is Goniopteris pennigera; and No. 8 is Polystichum acrostichoides. We should have been glad to have found them to be tree Ferns of New Zealand, as we never have heard that any have been raised from seeds. There is no complete systematic work describing the species of Ferns. When Sir W. Hooker's "Species Filicum" is completed, it will be what you require. Part I. of the second volume has lately been published. *S.*

Gooseberries: *G S.* The Red Champagne is the Manchester Red of some; by others the Red Warrington is called the Manchester Red. The Red Champagne is remarkable for its decidedly upright mode of growth; that of the Red Warrington, on the contrary, is very pendulous.‖

Holly: *J W H.* All plants may be propagated by cuttings, but Hollies are more advantageously raised from seed; or, in the case of variegated kinds, from grafts.

Insects: *S and N, Bagshot.* The insects on the Azalea recently imported from China, are not a species of thrips; they are the small spiny pupæ of a species of Tingis or field bug, hitherto unknown in this country. If you can find any active and winged specimens on the Azalea, we shall be much obliged to you for them. *W.—H S E D.* Your Pear leaves are infested with the slimy larvæ or grubs of the Selandria æthiops, a species of saw-fly. Dusting with powdered lime will destroy them. *W.—A Subscriber.* The moth found among your Strawberries is the common burnished brass moth (Plusia chrysites). The caterpillar is a very general feeder. *W.*

Magnolias: *E B E.* Prune it in April; the flowers come on the end of young laterals, and the effect of spring pruning will be to cause the production of laterals. Certainly, bud your Peach now; it is rather late, but not too late. If the buds take, you will do better than by removing the old tree.

Names of Plants: *R D.* 1. Lomaria spicant, *Desv.*; 2. Asplenium Adiantum-nigrum; 3. Asplenium Ruta-muraria, *L.*; 4. Parietaria officinalis, *S.*—*Felix.* Lomaria lanceolata, *Spreng*, a native of Van Diemen's Land and New Zealand. *S.*—*J. Stollard.* Phalaris canariensis.—*D B.* Rhus Cotinus, Venetian Sumach, or Arbre à perruque.—*O P.* Jasminum gracile, and tender.—*E J W.* Œnanthe crocata, and apparently Hieracium sylvaticum.—*M Bengy.* Some form of Lamium album.—*W T Keith.* No. 2, Corydalis lutea; all the rest are miserable Cryptogamic plants, with which we cannot occupy time. The only one in fructification is No. 3, which is Chara hispida.—*Rusticus.* Brodiæa grandiflora does not grow above a foot high. You are too late in your suggestion; the schedule was settled last week.—*H W Stone.* Wretched morsels; 4, Juncus bufonius; 5, some Marchantia; 6, Thymus serpyllum; 2, Spergula arvensis. We cannot consume time with Cryptogamic plants, having no relation to gardening.—*W.* Oxalis floribunda?—*N W G.* Hypoxis villosa.—A few inquiries stand over for further consideration.

Paint: *F S W.* It is a most excellent material. There is no reason why a saw should be used instead of a knife, except that it is not likely to slip.—*A B C D.* Paint will not answer your purpose. Scrape off the present plaister and substitute Roman cement of fine quality. When that is dry you can paper over it.

Rats: *W B P.* It gives us real pleasure to know that our recipe for the destruction of these pestilential vermin has been so triumphantly successful; both as regards your birds, your pheasants, and also your poultry generally. Your goodly "flock of 49 turkeys" cannot rejoice more at the destruction of the enemy than do we; and under *such* circumstances, your "thanks" are truly welcome. *W. K.*

Rhodothamnus Kamtchaticus: *J W R.* You will find all that you desire to know about this plant, in "Paxton's Flower Garden," Plate 22. No doubt it will flourish at an elevation of about 1000 feet above the level of the sea in the north of England. It is very hardy. ‡

Stocks: *W X.* Apricots are budded on the Muscle. Peaches and Nectarines on the Muscle and Pear-Plum. When worked on the latter they are not so subject to mildew.‖

Strawberries: *D C M.* The Alpine will possibly succeed best on your boggy soil. ‡

Thea: *J W H.* This genus, like many others, belongs equally to different parts of the Linnean classification. It is impossible to say where it can most properly be placed. But why think of this obsolete Linnean classification of plants? Aucuba has small brown flowers, produced in the spring. The male only is in this country.

Vineyards: *W H Wheeler.* No doubt you are rightly informed. In vineyards the Vines are cut back every year to a head near the ground.

SEEDLING FLOWERS.

Gloxinias: *G O.* Handsome; but not more so than kinds possessing the same colours already in cultivation.*

Picotees: *J O.* Your flower, we fear, will not be a favourite with florists. It is too serrated in the edges, and the colour is not laid on solidly enough, or confined sufficiently to the margin of the petals.*

Petunias: *G H.* All finely veined flowers, of good substance and shape. 1 is the best, all things considered; but 2 will possibly be the greatest favourite, on account of its high colour. The others are worth cultivating.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

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THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

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| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
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Office, 69, King William-street, City, London.

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Orders to be addressed to the Bituminous Shale Company, 145, Upper Thames-street, London, where also testimonials from the first agriculturists of the day may be obtained.

ALGERNON POLLOCK, Secretary.

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Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

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ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

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S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London. No Agents.—All orders are particularly requested to be sent direct.

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WILLIAM CLIFFORD, Secretary.

Offices, 52, Parliament-street.

# The Agricultural Gazette.

*SATURDAY, AUGUST* 30, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 4—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 11—Agricultural Imp. Soc. of Ireland.

WHATEVER is to be the fate of the steam plough, we are, it appears, not only to have a REAPING MACHINE, but we actually have it. At the late Tiptree gathering—and these have become to Essex what the Holkham sheep shearings once were to Norfolk—Mr. MECHI, with that chivalrous spirit which prompts him to mount the breach of every agricultural novelty, submitted his unripe Wheat to be experimented on by a reaping machine of American invention, which has been for several years in use on the other side of the Atlantic, and which, on this occasion, is said to have performed its work in a manner which drew forth loud cheers of approbation from the farmers assembled to witness the trial of it. Since then it has been at work in Kent, Gloucestershire, and other counties, and it has given satisfaction everywhere. That such a machine will confer a great benefit on the farmer, by giving him the same power in the securing of his crop which he derives from the threshing mill in the preparation of it for market, there can be no question; but the labourer—what will its effect be on him? The same, it may be replied, which has been produced by the threshing mill in superseding the flail, by the plough in superseding the spade, by the spade in superseding the stick or the bare hands, with which the savage scratches up the edible roots which the forest yields spontaneously, or the Potatoes planted by the colonist who has squatted on his hunting-grounds. Reaping, like threshing, by machinery, will not ultimately displace manual labour; it will give it a different direction, and increase the demand for it. The money saved by the use of machinery on one process will be profitably expended in employing manual labour on new processes. Modern agriculture, with all the formidable array of implements which graces our agricultural shows, employs more hands in the cultivation of a given area, through the hoeing of its numerous green crops and of its drilled Cereals, through its chaff-cutting and its Turnip slicing, and its hundreds and thousands of tons of roots carted to the yard, and through the mixing and turning of its compost heaps, than were employed by the broadcast, unweeded Cereals, and the bare fallows, of the good old system, with its common-fields and permanent pastures.

So sensible have the rural labourers become of this truth in the more advanced districts, where machinery is most used, that threshing mills and drills have lost their unpopularity; and flail threshing is regarded as an unpleasant and unhealthy occupation, to be avoided rather than desired. The fact, however, cannot be denied, that the harvest month constitutes no small item in the ways and means of the agricultural labourer; with its extra wages, and the reaping performed by his wife and family. When astonishment and commiseration is expressed at the scanty pittance doled out to him in some districts, in the form of 7*s.* or 8*s.* a-week, we are told that the harvest pay is equivalent to another weekly shilling. Is he to surrender this boon, such as it is, to the reaping machine, and to wait with patience till further improvements in cultivation have caused such an increased demand for labour as will give him an equivalent for it? There are indications not to be mistaken, that he will be reduced to no such alternative. These indications are to be seen in the progress of emigration. There are few agricultural districts which can gather in their harvest without the aid of some migratory labour. Many have drawn their supply from Ireland, some from the Highlands of Scotland. But there the Potato blight has effected a revolution. The population of Ireland is not so much by 2,000,000 as it would have been but for that mysterious vegetable mania. Its cottiers clung, till of late, to their miserable holdings, with a desperate fidelity. The Potatoes were planted, the turf cut, the cabin was locked up, the head of the family was off to the English harvest—his wife and children to beg till his return. With this class, emigration to the United States has now become a passion. The condition of the Celtic population of the Highlands and Isles of Scotland has, moreover, become so hopeless without the Potato, that the lairds are to be enabled to raise money under the Land Improvement Act, that they may assist their crofters to emigrate. Whether similar aid to the landowners of Ireland would have prevented much of the misery which has fallen on a peasantry, who could or would grow nothing but Potatoes—whether it would have turned the tide of Irish emigration to our own colonies—whether the tide, if so turned, would have been beneficial to the colonies, or the contrary, are questions which it is useless now to discuss; the current has fairly set in towards the United States. It appears likely to flow with accelerated velocity, and there can be no doubt that the Irishman has improved his condition, by transferring himself from Ireland to America. Few of them are established there three months before they begin to make remittances to enable relatives to follow them. Irish emigration is beginning to tell on English harvest work. Irish reapers were so much in demand last year in Lincolnshire, that special trains of them were sent off from Liverpool, as they landed; and we have heard of some more southern districts, in which the native labourers, through the absence of these, to them unwelcome, strangers, were able to exact for reaping prices unheard of since the conclusion of the war. In some districts there, the reaping machine will only replace the lost migratory labour from Ireland. There are others in which the harvest has not been reaped by bodies of roving Irish, but by resident paupers; districts in which the farmer employs, for Turnip hoeing, hay making, and harvest, men whom he consigns to the workhouse, on the approach of winter. The reaping machine, which will supersede some of this pauper labour, has been in some degree anticipated by the practice of mowing Wheat; while the raking, which necessarily follows the mowing, has deprived the poor of the popular but often misused privilege of gleaning. Nothing appeared more improbable, a few years ago, than an extensive emigration of the Irish cottiers, who seemed immovably rooted to the soil. What if the English pauper population, following their example, should emigrate *en masse!* Emigration is already more popular than it was among the labouring classes of England, and the English population exhibits a diminution in the rate of increase, combined with the increased powers of consumption; both indications of physical improvement. When once the labouring classes shall have taken up spontaneous self-supporting emigration in earnest, it may speedily be carried to such an extent as to exercise a sensible influence on the rate of wages in England, and to cause an approximation to the rate of America and Australia. The time may not be far distant, when, with all our agricultural machinery, the complaint of the farmer may be of a scarcity of hands. Then the problem to be solved will be, how to secure to each estate a sufficiency of labour. Then will cease that dismantling of cottages, which the owners of many close parishes are now carrying on to an extent only to be paralleled by an Irish ejectment. We could point out districts where the labourers are driven from the country into towns, from which the farmer draws all his occasional, and much of his permanent labour, the men travelling four and five miles to their work; and whence grown-up boys and girls are conveyed by waggon-loads, under the gang system, for weeding, stone-picking, and Couch gathering. If it were possible to perform all the work of the farm by machinery, it would be better than such a system as this. The system will cease whenever labourers in husbandry shall discover that the true remedy for their grievances consists in diminishing the number of competitors for employment, and when emigration clubs shall be established in every parish, to assist adventurous spirits with loans to enable them to seek their fortunes in Canada and Australia, there to become eventually landowners and employers of labour. Then will those labourers who remain divide, in the shape of better wages, some of that surplus produce (the result of improved cultivation), of which the landowner now gets the lion's share in the shape of 60*s.* rents, with

40*s.* averages. Then will the dismantled cottages be rebuilt, and the cottage-gardens be restored, which were taken away during the period of high prices, high poor-rates, and relief in aid of wages; then will every parish again contain a sprinkling of small occupations, the holders of which will support themselves by their gardens, their orchards, their cows, pigs, bees, poultry, and Flax or Hemp; and by occasional work for the large farmers in hay time, Turnip hoeing, and harvest. The whole system of agricultural labour, permanent and occasional, requires to be remodelled; and it may be remodelled so that improvements in agriculture, and the extended use of agricultural machinery, may be made to minister to improvement in the condition of the agricultural labourer.

## LAND-DRAINING COMPANIES.

Owing to engagements, I have been obliged to delay my reply to the letter of the "Tenant for Life," published in your Paper of August 2, in which fault is found with me, because in my letter, published on the 28th of June, I did not go more into detail as to the various items of expense to be incurred in borrowing money of the General Land Drainage and Improvement Company. The "Tenant for Life" says that I did not give an answer to his inquiries "respecting the particular charges to be incurred beyond the labour and materials required for the purposes of draining land;" but he forgets that the letter of which he complains was called forth by the observations in your Leading Article, referring to the General Land Drainage and Improvement Company, wherein you stated, in reply to the "Tenant for Life," that, "if the existing drainage companies can relieve landowners from the trouble, risk, and uncertainty of obtaining funds for the improvement of their estates, the information would be of quite as much practical value as a detail of the expenses incidental to a Government loan." Agreeing with you fully in this opinion, I abstained from entering into minute details respecting the various items of charges to be made by the General Land Drainage and Improvement Company, feeling somewhat scrupulous as to the space in your columns which would be required; and thinking that in pointing out the office of the Company, where the "Tenant for Life" might obtain an answer to every query, and might have every point of doubt more fully explained, and more effectually than was likely to be the case in a single letter, he, or any one really seeking for information, would, as a matter of course (in these days, when locomotion is certainly not difficult), have made his way as far as No. 52, Parliament-street, Westminster; but it appears that the "Tenant for Life" must have everything ready made to his hand; and, although I have no hope of satisfying him, I will endeavour, if you can afford me the room, to point out where he is in error.

In his letter of the 17th May, the "Tenant for Life" drew a fearful picture of the host of lawyers, inspectors, surveyors, and Government officials, through whom an unfortunate owner of undrained land, without money in his purse, would have to run the gauntlet before he could hope to obtain the assistance required to put his land into a proper state for cultivation; yet in his letter, published August 2, we find the same "Tenant for Life" suddenly enamoured of the Government scheme, in opposition to that of the Drainage Companies, and, without having made any application to the proper source of information, declaring that "Mr. Shelley's Company extends the time to 50 years, and lends money for buildings and roads, as well as for drainage; and, I think, I have heard the charge would amount to 8½ per cent. for 50 years," having previously stated that the Government Commissioner's charge would be 6½ per cent. for 22 years, clearing principal and interest; thus drawing a most unfair comparison between the two. It is much to be regretted that a statement so unfair to the drainage Companies, and likely to be so prejudicial to agricultural improvement, should have been made without due consideration and inquiry. If the "Tenant for Life" will refer to the published tables of the Company, he will find that the annuity for 50 years for the loan is only 5*l.* 17*s.* 9*d.*, and that the Company's commission adds 7*s.* per annum to this amount, making a little over 5⅞ per cent for 50 years, instead of 8½ per cent, as he states. Does he forget the observation in his own letter, "the proprietor having to advance the money and perform the task before remuneration comes, strips the loan of half its value, it being mostly wanted to set the thing going;" and can he not perceive that the companies in question not only advance the money as the work proceeds, but provide practical drainers to carry on the operations? In setting down the charges on a Government loan at 3 per cent., with which the "Tenant for Life" seems to be so delighted, does he imagine that no other expenses have to be incurred, and that having obtained a loan of the Government for 500*l.*, he is correct in proceeding to deal with 515*l.* as the whole cost of the transaction? If so, it is to be assumed that the draining is to be planned, the levels taken, and the work superintended by himself, or his bailiff; that no engineering difficulties present themselves, or that if they do, he or his bailiff can easily overcome them; that no contingency can arise, no failure occur; that the money is ready at his banker's to pay the workmen every week, his deeds in his own strong box, and that he can supply from them, without assistance from a lawyer, all that is required for the purpose of executing the charge; that he is prepared to attend the commissioners in person as often as they may require him; that he has no journey to pay for in the course of the business; that the works will, under his able supervision, be so skilfully executed, that no doubts can be entertained as to the charge being unhesitatingly obtained, and that the visits of Mr. Inspector, which at one time appeared to have such terrors, are, owing to his undoubted skill, limited to only two or three. In short, that he is, fortunately for him, his own surveyor, his own engineer, his own lawyer, his own agent; and, pre-eminent in each capacity, that his time, or his bailiff's, cost nothing; that he loses no interest of his money employed during the progress of the works, and that he spends nothing in expenses, travelling or otherwise, during the time. Until, however, the "Tenant for Life" has proved satisfactorily that he can accomplish so much, I must be permitted to observe that it appears like jesting to present, as the average total cost of drainage, an estimate in which every one of these considerations is omitted, and all such expenses treated as nought. The "Tenant for Life" has called upon me, on behalf of the Company of which I am a director, to omit these items in our calculations; will he, in the first instance, point out to me the individual who ever built a house, drained a farm, or executed any human operation whatever, requiring skill, supervision, and experience, involving at the same time risk and the employment of capital, at the bare cost of labour and materials; in fact, the practical error into which the "Tenant for Life" has fallen is, that such items are either enhanced by the gross estimate, and that the mere cost of labour and materials is something less, or that in every work they must be superadded, and swell the amount really to be paid. The Company's charges, which include every one of the matters above alluded to, are embraced in a commission of 11*s.* 6*d.* per acre, in the case of drainage, and are clearly and distinctly so stated in the printed rules upon which the Company undertake to proceed. It must be for the landowner to use his own judgment as to how much of this sum he might save by executing the works by his own servants, doing all the duties, and running all the risks incidental to the transaction, finding the money as the works proceed, and paying for all the inspections above described; but I have no hesitation in expressing my conviction that, by throwing all these risks and burdens on a company, employing the powers of their act for obtaining outfalls and securing the completion of the works with skill and despatch, landowners will find it more to their interest, and more advantageous, to employ the Company; and I believe it will be found, if every expense necessarily to be incurred is added to the account, even with the advantage of the Government loan at 6½ per cent., that very little difference in cost will be the result. It is difficult to give a statement of expenses applicable to every case, but it is evident from what I have before shown, that the average charge of 11*s.* 6*d.* does not represent the actual profit of the Company, but includes various expenses from which no landowner can escape, even though he be his own surveyor, and employs his own capital, and does not come to the Company at all. As regards the Government loan, one part of the difficulty is to be found in the fact alluded to on a former occasion by the "Tenant for Life," namely, that money cannot be advanced until a portion of the works have been executed, and the certificate obtained; and, as want of capital on the part of landowners generally obtains, the drainage companies, by advancing the money to set the works going, do remove one great obstacle to agricultural improvement; but where the landowner can obtain the required funds elsewhere, the companies are prepared to lay it out for him to the best advantage.

I have already trespassed at too great a length on your columns, and will conclude by advising the "Tenant for Life" to seek for any information which cannot be given in any letter of reasonable dimensions at the office of the Company. *John Villiers Shelley, Maresfield Park, Sussex, August* 11.

## THE AMERICAN REAPING MACHINE.

Royal Agricultural College, *Aug.* 22.—This celebrated machine was exhibited at work on the College farm, in cutting down Wheat, Barley, and Oats, under a diversity of circumstances, such as unlevel ground, laid, and standing corn. The machine performed its work well on standing corn, both on level and undulating ground; but where the corn was laid, or much twisted about, the work was imperfectly performed. The *principle* of the implement, however, seems to be perfectly correct, and no doubt but the details of adjusting to all kinds and conditions of crops will soon be effected. The reaper, as it now is, is capable of cutting down 15 acres a day, with two horses and two men, of ordinary standing crops; and thus would affect a saving of 1*s.* per acre upon the average prices of the country, for reaping by either sickle, hook, or scythe. The machine would be improved if constructed so as to deliver the corn from the *cutters*, without manual labour. It would also be of greater value if rendered more portable for being removed from place to place through gateways of ordinary width. It might also be improved if the working part rested upon wheels of a much greater diameter, instead of upon the very small wheels now in use, which get clogged up occasionally with straws, Clover, &c. Moreover, the draft of the machine would also be easier. How these improvements are to be effected we do not presume to enter upon; but doubtless our enterprising implement manufacturers will soon find out how to correct every easy-to-be-seen defect. Without the least doubt, and without the least claim to prophecy, we feel assured, that reaping machines will soon become as common as corn drills, and that they will be constructed of all sizes to meet all wants. It is well known that the stooping, consequent upon reaping in the ordinary way, is more than half the labour. Then how important it must be that manual power should be applied with the greatest efficiency by a man working in an upright position. It may appear excessively speculative, when we venture to assert that reaping machines will ere long be constructed to go by manual and horse labour; and that it will be as common to see a person driving his ox or his ass in a reaping machine, as to see men, women, and children now, stooping in an unnatural position, reaping with the sickle which has been handed down to us from the remotest ages.

The advantages of reaping machines are too numerous to discuss. The celerity of performing so much labour in so short a time, at so little cost, with so few hands, is enough to recommend every agriculturist's attention to the subject. To attempt to meet the objections of those who carp about machinery destroying labour, would be useless. We would just remind the most prejudiced, that every innovation upon old plans has met with extreme opposition, and that the great and indispensable necessity of many improvements has only forced them onwards. Within the last century, within the last few years, how many generally admitted improvements in crops, and by machinery affecting agriculture, have been introduced? It is not 20 years ago since mobs of labourers collected in various parts to destroy threshing-machines. What is the opinion generally of threshing-machines now? Within the last 20 years, drilling and draining have become common. Within the past 30 years, the power of steam has become known. Within the past 20 years railways have established themselves. Within the past 12 years artificial manures have been generally introduced; and within the next half-a-dozen years, we may expect steam reaping-machines, and steam-ploughs!

The college has been visited latterly by many foreigners of distinction interested in agricultural progress. Among these the most prominent, Baron Liebig, the celebrated Giessen chemist, honoured the college with a visit on Wednesday last. Shortly before 2 o'clock Baron Liebig arrived at the college, attended by Dr. Daubeny and several friends (of the Oxford Professor's), and was received by the Principal, the Rev. T. T. Haygarth, and the Professors. After having partaken of some luncheon at the Principal's house, the company inspected the college buildings. The laboratory and lecture theatre engaged Baron Liebig's first attention, who expressed himself highly satisfied with both, particularly with the capacious and well furnished rooms of the first. The natural history museum and anatomical collection, which are so favourably progressing, were next inspected by the Baron, and met with his approval. Mr. Vallentine, the farm manager, then conducted Baron Liebig to the farm-buildings and some of the adjoining fields, and explained to him, as much as it was possible in the short time which the Baron could devote to his visit, the system of management of the fattening stock, the course of cropping followed on the farm, and the use of several agricultural implements, which are brought in operation on the farm with much advantage. At about 5 o'clock Baron Liebig left the college, with the intention of calling at the college boarding-house, in order to inspect some Roman antiquities collected by Prof. Buckmann.

The Duke of Bedford, Earl Bathurst, Earl of Jersey, Earl of Suffolk, Lord Forrester, Lord Andover, and many other distinguished noblemen, interested in agriculture, examined the college farm and M'Cormick's reaping machine, on Friday last, and were very highly pleased with all they saw. Count de Gourcy; Huson Komers, Councillor of Agriculture, Prague; Dr. Stoeckhardt, Professor of Chemistry, R. A. College, Tharaud, in Saxony; Lord Kinnaird, and several other scientific gentlemen and practical farmers have paid special visits to the college, during the past few weeks. In every instance, after a careful examination into the constitution and working of the establishment, the visitors have expressed astonishment at the amount of information to be obtained by students at so moderate a charge. The general management of the college farm, as it is now going on, combining neatness with economy, and the trial of experiments, without expense, commends itself forcibly to the notice of those who wish to learn to become either intelligent landlords, practical and scientific agents, or farmers. There is, we feel convinced, no other establishment which embraces so many professorships so ably filled; and the great surprise only is, that the advantages here offered are not more generally appreciated.

## Home Correspondence.

*Draining.*—Mr. Wilkins is no doubt just now too much engaged in the practical part of agriculture to attend to the theoretical; but I have no doubt he will notice the two challenges contained in the *Agricultural Gazette*, No. 32, relative to deep draining on stiff clays. In case this meets his eye before he again takes up his instructive pen, let me once again remind him that the simple question is this—How is the water to get through so great a depth of solid clay down to the drains? It is notorious that if you dig a hole, and fill it up again, what you replace therein will, if possible, become firmer than before. If he reply that you must refill the drains with loose penetrable matter, then I say he surrenders the entire question. I would suggest to him to show

why a 2½ or 3 feet drain does not answer every purpose, arresting the water from below before it can approach the surface so as to starve the soil, and carrying off the water from above after it has duly performed its beneficial duties on and below that surface, at which depth it will run from the tile as well filtered as the purest rock water. And now a word on another subject. Will one or more of your many intelligent readers enlighten the public in the following case. Timber has been, from time immemorial, nursed and fostered on an estate; periodical falls have taken place, but at this time the quantity of young healthy growing timber is very considerable in the hedgerows. To thin it would be doing little, as the lateral branches would soon close up the space. For its own sake this is necessary. But it is in reality timber *versus* land. In some places the land is good, in others bad. Should it be cleared away where the land is good, and more mercifully dealt with where the same is bad? The timber is Elm, and the expenses of cutting down, cording, and faggoting would be little more than covered by the sale of the wood. It is now more advantageous to buy deal than to fell and convert one's own Elm timber. I desire to have the opinion of some among your readers on the question, what is the best thing to do—to act on a sweeping system, or to so far admit the possibility of a future revolution in prices as to consult the interests of children by only moderately warring on the obnoxious timber. *An Enquirer.*

*The Turnip Caterpillar.*—Although a severe sufferer from the late caterpillar, over an extent of 60 acres of Turnips, a great part of which were totally consumed, I look forward to another season of a similar calamity with comparative indifference, being perfectly satisfied, from the experience of the last two months, that by proper attention this new evil may be greatly overcome, and which, in my own case, will be followed out thus. Sow Swedish, as usual, in the end of May and beginning of June, assuming the moth to appear at the same time (middle of June) as it did this—by the end of the month the eggs are matured, after which a few days will determine whether the crop is to be destroyed; if so, pull every green blade, and carry off the field, say by the 6th or 8th of July, allow the ground to remain so for four or five days, which, with three or four days more, before the second sowing makes its appearance, will be sufficient to deprive the caterpillar of life, and allow the second sowing to go forward. Should the moth appear, the first sowing of Purple-top and other varieties will be purposely kept back, and the ground occasionally disturbed until the first week of July, the egg-depositing season being then over; but, for the perfect success of this plan, the thorough cleaning of the ground is necessary, as even a few wild Mustard plants is sufficient to keep as many insects alive as will consume a second and third sowing in succession. The only loss that can be sustained is the substitution of Purple-top Yellow for that of Swedish; but of course this system can only be carried out in a climate like the south of Ireland, where Turnip sowing can be carried on with perfect success up to the 20th of July. I may give you a curious instance of their powers of locomotion—a field, partly planted with Mangold, and partly sown with Purple-top in the end of June, had no sooner made their appearance than the drill next the Mangold was eaten down; another and another followed in succession, with the nicest regularity, for a period of 10 days, when they had crossed over a distance of no less than 114 yards, when their havoc all at once ceased. I may remark, the Mangold had a few blanks filled up with Turnip, which first disappeared, and to which in this case must be traced the damage that ensued; if the instinct of the parent moth is so unerring, as never to deposit her eggs but upon those plants which shall be the support of her future offspring, as the Mangold remained untouched. The Potato fields, I regret to say, present the appearance of October, being quite black, the result of a severe attack of blight about the 20th of July; the tuber, however, yet remains safe, but as the growth is now over, I fear, under the most favourable circumstances, a return of more than 50 or 60 per cent. of an average crop cannot be looked for. With the failure of the Turnip crop this is a most serious matter, for it is a fact, though a melancholy one, that a large proportion of the population now exists upon the latter esculent for three months out of the twelve. *J. Bruce, Castle Martyr, County Cork.*

*Green Caterpillar, Flies, and Slugs on Turnips, to destroy.*—Lose no time to dredge fresh slaked lime over Turnips infested with green caterpillars, flies, or slugs; apply it at day-break, while the dew is upon them, it will then adhere to the plants. About three bushels to the acre will suffice. If rain come on, it may be repeated. If duly applied it will prove effectual in extirpating the pest, and will doubly repay the cost, as it is also a fine fertiliser of the soil. *Hardy and Son, Maldon, Essex.*

*Deep Drainage.*—I am very glad to find Mr. Donald has put the question of deep draining in the shape he has, and I hope Mr. Wilkins, and those who are led to enter upon the discussion, will confine their remarks to the description of soils to which he refers, stiff and dense clays of retentive quality, resisting all percolatory action. No one who has given any attention to the subject doubts the advantage of increasing the staple and temperature of soils to the greatest serviceable depth by judicious deep draining, but I find many sensible and unprejudiced persons doubt the wisdom of an indiscriminate law, forbidding any drainage less than 4 feet deep. As I acknowledge myself to be one who advises and adopts as deep drainage as is consistent with the nature of the soil to be dealt with, Mr. Wilkins will pardon my putting to him one or two cases upon which practical men will be glad of information. Will he oblige us by stating the depth and distance he has found answer best on the yellow clay of the coal formation in the county of Cumberland, where the fall of rain is about four times as much as it is in Essex. Again, let him take him the millstone grit of the Northumberland Hills, or the Oxford clay of Huntingdonshire; will his minimum rule of depth and distance apply there in the same way as he would apply it to the marly loams of the red sandstone or lias formation of Lincolnshire, or the Weald of Kent? I think he will agree with me on reflection that some consideration is due to climate, and that a district subject to a rain-fall of 40 inches must be dealt with somewhat differently to one subject only to 20 inches fall. *J. Bailey Denton, Gravely, Stevenage, Herts, Aug. 9.*

*Mr. Garrett's Reaping Machine.*—A report having inadvertently been circulated by one or two of the London journals, and thence through the provincial press, that at the trial of corn reaping machines, at Mr. Mechi's farm, at Tiptree, on the 24th of July, the one of our make was tried, and proved a failure; whereas it was never even taken into a corn field at Tiptree on that day; we trust you will permit us, through the medium of your columns, to give the result of our experience with the machine in question during the last few days. We have been using the reaping machine on our own farm every day during the past week, and have much pleasure in declaring our full satisfaction at the result, which, as a first attempt, has proved not only most successful, but far beyond our expectations; indeed it performs its work so perfectly, cutting the corn with such ease and regularity, and leaving the stubble so even and regular, and so far superior to manual labour, that it is altogether impossible to form an adequate idea of its capabilities without seeing it in operation. We have worked it on lands ploughed on the flat as well as in stetches, both length-ways and across the furrows, and in every case the result has been equally satisfactory. As such an important revolution in harvesting operations is likely to be brought about by the introduction of this machine, and considerable interest appears to have been manifested as to the result of these trials, we beg to say that a machine similar in construction to the one now exhibited by us at the Crystal Palace (with some further improvements which practice has suggested), will be at work a portion of every day on our farm, near the works at Leiston, cutting the different crops, until Monday the 25th inst., and that it will afford us great pleasure to show it to any agriculturist who will favour us with a visit, and may be desirous of seeing it in operation. *Richard Garrett and Son, Leiston Works*, near *Saxmundham, Suffolk, August* 14.

*Reaping Corn by Machinery.*—The implement referred to is of American invention. The plan of it was first suggested to the manufacturers by the Hon. Thomas Tollemache, M.P. for Cheshire, who had seen one at work in America, and from whose accurate description they were enabled to proceed with the construction of one for trial. Prior, however, to its completion, a machine was procured from America, through Mr. Tollemache's instrumentality, which served still further to enable the makers to render the one they were constructing, efficient and complete. It was entered for exhibition in the Crystal Palace, in April last, since which time a great deal of attention has been bestowed upon it, with a view to have it ready for trial during the present harvest, and R. Garrett and Son have now no hesitation in affirming that, as a new implement, it has far exceeded their expectations, and is everything that could be desired. It will cut Wheat, Barley, Oats, or Beans with great facility, and in a manner far superior to that done by hand; the corn being cut more regularly, and the stubble left more even and perfect. Two horses, a man, and lad, will do about an acre per hour, but with a change of horses and long days, a much larger space might be gone over if necessity required. The Wheat is delivered in heaps of a proper size for a sheaf, and laid even, so as to be as easily tied up as it could be from the sickle. It is most easy of management, and almost impossible to put it out of repair, the shape of the knives being such as to keep them always in good cutting condition, and to work for a whole season without even requiring to be sharpened. It has been tested on lands ploughed flat, as well as on stetches or ridges, both lengthways and across the furrows, and in every case the result has been perfectly satisfactory. The construction of the machine is very simple. The corn is cut by a series of triangular knives, placed on a horizontal sliding bar, intersecting or working between a like series of iron tines, which are fixed to a wooden platform, provided to receive the corn as it falls. Motion is communicated to the knives by means of a crank shaft, worked by the revolution of the travelling wheel of the machine. As the implement proceeds in its work, the corn is received and cut between the knives and tines, and falls on the stage, from which it is raked off at intervals by the man in attendance for that purpose. R. Garrett and Son have been very desirous that the machine should be publicly tested during the present harvest, and for this purpose have had it at work daily on their farm adjoining the Works, at Leiston, cutting the different crops. The following is a copy of the certificate signed by those gentlemen who have witnessed its performance up to the date of this circular: "Leiston Works, near Saxmundham, Suffolk, August 23rd, 1851,—We, the undersigned, have seen Messrs. Garretts' Corn Reaping Machine at work, at their farm, near the Works at Leiston, and are perfectly satisfied with its operation." Signed by upwards of 80 gentlemen and farmers of Suffolk.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Wednesday, the 30th of July. Present: Col. Challoner, trustee, in the chair; Baron Mertens, Hon. and Rev. Richard Carleton, Mr. Raymond Barker, Mr. Hodgson Barrow, M.P., Mr. T. Bishop, Dr. Calvert, Mr. Dunne, jun., Mr. Dyer, Mr. Gadesden, Mr. Fisher Hobbs, Mr. Law Hodges, M.P., Mr. Hurd, Mr. Kinder, Mr. Rowlandson, Professor Simonds, Mr. T. E. Thomas, Professor Way, and Mr. J. L. Wright.

### AMERICAN PHOSPHATE OF LIME.

The Duke of Richmond forwarded to the Council a specimen of American phosphate of lime received from Mr. Johnson, along with the following letter:—

"No. 10, Bury-street, St. James's, July 9, 1851.

"I have the honour to present to your Grace, for the Royal Society, a sample of phosphate of lime received by me by a late steamer from the United States. This specimen is from a deposit on the banks of Lake Champlain, in the town of Crown Point, Essex county, New York. The vein of pure phosphate is from 2 to 8 feet wide; and a shaft has been sunk between 25 and 30 feet, and the vein continues pure, and is a true vein, having its regular walls. It has been uncovered for several hundred feet, I understand; and there is an abundant supply for all time to come. It has been analysed in the United States; and contains, I am informed, from 80 to 90 per cent. of phosphate of lime. It is found in a trap-dyke formation, which contains a portion of iron and alumina. It has been applied to crops in the United States, and has proved beneficial, and marked by excellent effects. An application was made upon Wheat last autumn. It was prepared with 20 lbs. of sulphuric acid, with an equal quantity of water, and 100 lbs. of the phosphate of lime. The Wheat upon which it was applied presented a manifest improvement over the other portions of the field. It had a darker green, with a strong growth of leaves and much more vigour; and continues still to manifest the same improvement. I trust it will be analysed by the excellent chemist of your Society, Professor Way, and the result communicated to the Society; and should it be found valuable, as I believe it to be, I shall take great pleasure, in behalf of Messrs. Emery and Hammond, the proprietors of the mine, in introducing it into this country, at a price which will bring it within the reach of all the agriculturists of Great Britain.

"(Signed) B. P. Johnson,

"*Secretary New York State Agricultural Society.*"

The Council received this communication with their best thanks, and referred the specimen to the chemical investigation of Professor Way, the Consulting Chemist of the Society, who has made the following report on the subject:—

"August 20th, 1851.

"The specimen transmitted to me for examination was a mass of perhaps 10 or 12 lbs. weight, and of tolerably uniform character throughout. When broken it exhibited an uneven fracture of a dull green hue, interspersed with lines of a chocolate colour. Layers of quartz intersected it in various directions, and the outlines, or casts of shells, were in places tolerably numerous. The specific gravity of the mineral is 3·02. For the analysis, several pounds of the mineral, taken from all parts of the specimen, were broken up and reduced to powder, so that a fair average result might be obtained. The composition in 100 parts was found to be as follows:—

| | Per-centage composition when dried. | |
|---|---|---|
| Bituminous matter, and combined water, expelled at a red heat | ·69 | |
| Matter insoluble in acids, consisting chiefly of sand | 16·79 | |
| Silica, soluble in acids | ·65 | |
| Phosphoric acid—mean of four determinations, 29·50, 30·33, 29·77, and 31·23 | 30·20 | Bone-earth Phosphate. = 68·27 |
| Lime | 40·10 | |
| Peroxide of iron | 6·47 | |
| Magnesia | 1·08 | |
| Chloride of sodium | ·08 | |
| Soda | ·20 | |
| Potash | ·25 | |
| Sulphuric acid | trace | |
| Fluorine | 2·41 | |
| Loss | 1·08 | |
| | 100·00 | |

As the coprolites of the crag formation contain, on an average, phosphoric acid equal to about 56 per cent. of bone-earth phosphate, and as the objectionable admixture of carbonate of lime with them, which reduces the effective strength of sulphuric acid with which they are treated for manure, is about counterbalanced by the equally objectionable existence of fluoride of calcium in the New York mineral, I should estimate the commercial value of the latter, as compared with our own mineral sources of phosphate of lime, in the relation of their relative proportions of phosphate of lime, which, practically speaking, are very nearly the same.

"(Signed) J. Thomas Way."

### TURNIP FLY AND INSECT.

The following communications were received on this subject:—1. From Sir Charles Lemon, Bart., M.P., the following extract from a letter addressed to him by Mr. Booth:—

"Carclew, 20th July, 1851.

"The crops of Mangold Wurzel and Turnips wanted rain much. Instead of the latter being carried off as usual by the Turnip flea-beetle, a new enemy to the farmer has come into the field, in the shape of a tiny ash-coloured moth, not unlike the common clothes-moth, but smaller. The rows of Turnips swarm with them, and the underside of the leaves are covered with their grubs, which commit sad havoc. In some instances they have cleared the ground as effectually as the black caterpillar did some 15 years ago."

2. From Mr. Fuller, M.P., two letters, from which the following extracts are taken:—

"London, 24th July, 1851.

"I have just heard from Anglesea that large yellow grubs, about a quarter of an inch long, are destroying every Swede Turnip in that island."

"28th July, 1851.

"I have received from my bailiff at Rose Hill, in Sussex, the following account of the grubs attacking our crop in that county, and which seems to be different from the yellow grubs in Anglesea:—'I have enclosed a few of the insects we have been plagued with on the Swedes and Drumhead Cabbages. You will find maggots, caterpillars, and I call the small ones lice; they have done the most mischief, as they get into the heart of the Turnip and Cabbage, and will very soon kill them, if not prevented. When I saw them first in our Cabbages, I noticed the Cabbage got yellow, and I examined them, and found the heart full of the small and some

of the large insects amongst them; I got some quick lime and put it in the heart of the Cabbage, and that very soon destroyed them. I am glad to say the Swedes get nearly clear of them; the late fine showers have nearly washed all the vermin off, and the Turnips are growing very fast."

3. From Ireland, the following account of the destruction of the Turnip plant in that part of the United Kingdom:—

"During the last fortnight samples of Turnip leaves, infested with insects, have been forwarded to this office from so many districts, and so distant apart, as to leave no doubt of these pests being very widely and generally diffused, and their ravages being of a more destructive character than have yet occurred in Ireland. Last week the specimens came to hand so dried and bruised in the carriage, that, even with the aid of a high magnifying power, we could only hazard a conjecture, that the mischief was caused by the larvæ of the Phytomiza nigricornis (one of the Turnip-leaf miners), or that of the Cerostoma xylostella (Turnip diamond-back moth). This week the specimens came to hand in so fresh and perfect a state, as to leave no doubt on our mind that our conjecture was right. There are two different insects, which go by the name of Turnip-leafed miners: one is the Drasophila flava, which is found under whitish blisters on the upper side of the leaf: the maggots are covered by the upper cuticle, while they feed on the surface beneath, but no trace can be observed on the under side. The other (Phytomiza nigricornis), on the contrary, inhabits the under side of the Turnip leaf, burrowing and eating its way in long crooked galleries, inside the lower cuticle, and are not visible on the upper side. These insects are also essentially different, in both pupa the and perfect state. But, as the injury caused by them is not of a very serious character, we proceed to describe that which does the most mischief; and in some seasons, from its vast numbers, sweeps whole crops away. This is the larvæ or caterpillar of the Cerostoma xylostella (Turnip diamond-backed moth). They breed so fast and plentifully, that on a small Swede Turnip leaf, sent us from the county Sligo, inclosed in a small box, 2½ inches long, half an inch wide, by one-fourth inch deep, we counted over 100. These caterpillars are slender, about half an inch long, and of a greenish colour when full fed, and yellowish when not, with a grayish head, and have 16 feet. They locate themselves chiefly on the under side, but are sometimes found on the upper side; they are exceedingly nimble, and upon the least alarm, let themselves down by a thread, like a spider, and climb it again when the alarm is over. When about to assume the pupa or chrysalis state, they spin a beautiful net-like cocoon upon the remains of the plants, and also on the ground, in which they pass the season of rest; when the perfect insect comes forth—a small brownish, white, and yellowish moth, the colours forming on the back when at rest and the wings are closed, diamond shapes. Turning poultry through the crop, in sufficient numbers will thin them; but dusting the plants and the ground plentifully with quicklime, twice or thrice, early in the morning or late at night, while wet with dew or after rain, will destroy vast numbers of them, but very little good will be effected by dusting them when the plants and ground are dry. As they keep closely to the under side of the leaf, it will be necessary to adopt some method of gently turning up the leaves before the duster: this may easily be done by a person gently dragging the back of a hay-rake along the rows. As by this mode only one-half of the foliage is exposed, by reversing the action the other half can be similarly treated. As these pests let themselves down by their silken threads upon the least alarm, and quickly ascend again after that is over, it is necessary that the ground be well strewed with the quicklime while damp. Where there are liquid manure carts, to which a contrivance may be applied to turn up the leaves, lime water and salt may be applied. So numerous are these insects this season, that whole fields are covered with them, in almost every quarter, having this week received numerous parcels from Cork, Kerry, Sligo, Meath, Kildare, the neighbourhood of Dublin, &c. Their appearance is quite new to our best cultivators, and the greatest fears are entertained for the safety of the crop. The remedy we have proposed we found effectual in 1849, and if applied as directed, while the plants are wet, so that the lime will slake and stick, we can recommend with great confidence; but no dry application, however caustic or pungent, when applied while the plants are dry, will have any effect. Other remedies may suggest themselves, such as lime water and pearl ashes, or alkali of any sort, vitriolic acid and water, &c., but none is so generally had, or so easily applied, as fresh lime." *Dublin Irish Farmers' Gazette*, Aug. 2.

"We regret to say that our accounts state that the destruction of the Swede Turnip crop, by the larvæ of the Cerostoma xlyostella, is complete in too many districts in Ireland as well as England. The rough-leaved varieties have escaped. Transplants of Mangold Wurzel, Swedes, and Cabbages, should be substituted at once, when they can be obtained; when they cannot, globe and early stone Turnips, or Rape, should be substituted without delay, first partially levelling the drills, and re-forming them with the double mould-board plough." *Ibid*, Aug. 9.

Suggestions for the removal or destruction of Insects affecting the Turnip Crop will be found in Mr. Curtis's Papers (Journal, II., 211—12, 386—88; III., 74—77, 320—21; IV., 133—37); in the *Gardeners' Chronicle* for August 2 and 9, 1851; in the *Gardeners' Journal* for August 16, 1851; and in the *North British Agriculturist* for August 20, 1851.

## CLOVER FAILURE.

Mr. Murcott, of Leamington, having favoured the Council with microscopic specimens and the following communications relating to them, they have been referred to the investigations of Professor Simonds, whose report on the subject is appended.

"May 6, 1851.

"The slide contains specimens of an undescribed miscroscopic animal occurring in the substance of the broad Clover, and most probably the hitherto unrecognised cause of the frequent failure of that plant on light land. It will be observed to have a great resemblance to the grain-worm of Wheat, but appears to be a different species, and perhaps Vibrio Trifolii may be considered an applicable name. The preservative liquid in which the specimens are contained (Goadby's fluid) has somewhat injured their natural appearance; but when compared with the grain-worm, the shortness of the young individuals, and the tapering sharp-pointed tails of all, will readily distinguish them. The present specimens were obtained from a field of light land at Offchurch, in this county, where the frequent loss of Clover plant had particularly engaged my attention, and induced me to attempt to discover the cause. The poisonous excretory theory of Decandolle, and the ash mineral theory of others, were opposed by hostile facts that continually came before my notice, and could neither of them be applied to an explanation of the mystery in question. On proceeding to a field of broad Clover at Offchurch, a few weeks ago, I remarked some extensive bare patches, where no Clover at all remained; in other parts of the field the Clover presented a flaccid appearance, while in the rest the plants appeared vigorous. I stumbled upon one plant where the enemy of Clover had killed its victim, and each plant close around was evidently far injured. The flaccid appearance of the foliage, and the radiating character of the mischief in the last instance, seemed to point out some minute fungus growth, or some microscopic animal (so small as to have escaped the close scrutiny of previous observers), in effecting a hindrance to the sap flow from the soil to the leaves by destroying or choking the carrying vessels. I took up a quantity of flaccid plants, and found many of them that gave no visible indication of any cause of mischief, and conveyed them home for minute microscopic inquiry. While the above were lying by, awaiting examination, I had occasion to observe a specimen of Duckweed that had been imprisoned in my herbarium from either 1842 or 1844, when it was originally severely dried by chloride of calcium. On placing the plant in water, a polyp which had been attached to it completely recovered the active liveliness of movement that had interested me in one of the years before mentioned. This reanimation after seven or nine years, coupled with the evidence of several observers that the grain-worm did actually sustain privation of food and movement for six or seven years, and would bear moistening (and living) and drying thoroughly, and again exhibit active movements (which I have myself witnessed) by reimmersion in water, led me to expect to find in the interior of the Clover plant an animal of similar capabilities and rapid in the multiplication of its species; limited in its life to within that period (eight years) beyond which experience has shown that Clover may be repeated on light land subject to Clover sickness, if planted in a shorter rotation, and when consequently the whole swarm of animals might have died of starvation. Accordingly, every specimen that I examined of the diseased plants supplied me with numbers of Vibriones, and that from the root, from the stem, and from the leaves of the plants. They seemed to have penetrated every part, and to have multiplied in their interior. My acquaintance with the Vibriones has been too brief for the actual demonstration of my assumption, that they can subsist six or seven years without food; but I have clearly ascertained that it possesses the character of the grain-worm and the polyp in recovering its animated movements after it had been roused by moisture, and again lulled to rest by complete drying. I have not yet proceeded to inquire what substance shall be most conveniently poisonous to the Vibriones; but it is self-evident that the compression of loose Clover lands, by Cross-kill's toothed roller, must necessarily render the emigration of these parasites from their parent home to the surrounding plants more difficult, and so partially imitate those stiffer lands where Clover has not been usually sick."

"Leamington, August 4, 1851

"I have the gratification of informing you, that the assumption in my previous communication of Clover failure on light lands being attributable to the attacks of an undescribed Vibrio, is borne out by a continuation of the inquiry, and I now regard the question as decided. I have to apologise for the indifferent character of the specimens that were forwarded, but shall be able to supply the Society with better specimens, illustrative of the various phases of the animal, and abundant in number. On referring to my memorandum of the letter I wrote to you, I perceive an expression relative to the ash mineral theory which would probably be misunderstood; I intended to exclude the Red Clover plant only from the application of the theory in explanation of Clover sickness, but not for an instant to be understood to doubt the importance of mineral food to plants, and the varying importance of different supplies to different plants. I may mention that I have now examined Red Clover plants in several stages of growth, and have witnessed the attack of the Vibrio from the first erosion of a minute bit of cellular tissue at the neck of the plant, and their single and multiple penetration into the interior of the neck (where in one plant so young as to have expanded but one true leaf, I extracted from the axis, where the neck is situated, 23 Vibriones in the ⅓ inch). The further destruction of the bundle of vascular tissue, and death of the plant in consequence, up to the deposit of eggs in larger plants that had escaped an early attack, and the destruction of full-grown plants, more than 12 months old, on land the very highest in the scale of fertility, and where I had noticed the Wheat which was seeded down as the most productive I had noticed in last year's crop. I have also had occasion to notice the total absence of the Clover Vibrio from a field of particularly excellent Clover, although I found in the same sample of soil numerous Wheat Vibriones readily distinguishable from the other by the ½ inch object-glass, while in every sample of soil from land that was Clover-sick, I have met with the Clover Vibrio in direct quantity to the amount of failure of the plant. I have also to remark that I have met with a third species (which I propose to call V. Faba, and will take care to forward you specimens) in the Bean plant, and so fatal to part of a Bean field as to cause it to be ploughed up; while in the standing remainder, I found in July Beans in pod dying off daily. I examined the soil of the ploughed-up part, and met with abundance of the V. Faba, as found in the root of those Beans dying. This appears to be not a single instance, as I observed, in many fields, in travelling by rail, about the third of a good crop, and the same external evidence of disease as in the before-mentioned. To prove beyond the possibility of doubt, that the Wheat and Clover are attacked by different species of Vibriones, and that the recurrence of Clover failure was unconnected with the Wheat Vibrio, I boiled a quantity of infested soil in water for two hours and-a-half, together with three flower-pots; and filling the pots with the boiled soil, planted in each 20 seeds of red Clover, and added to one pot several hundred active grain-worms, to another about 12 or 14 Clover worms, selected under the microscope, and let the third free, for the sake of comparison. At present, the grain-worm and the free plants look equally well; but in the Clover wormed soil only one plant has shown above the surface, and that one has several scars of bites on its seed-leaves, which are not yet expanded; the termination of the experiment, will, of course, give a decisive result. I lately contrasted some of the eggs of the two sorts, and find those of the Clover worm only two-thirds of the size in length of those of the Wheat worms. I must also remark, that the attenuated extemely sharp tail does not seem invariable, although I have not, in one instance, found a difficulty in referring an animal met with in samples of soil. I have not yet met with Clover seeds containing Vibriones; although, it seems probable, from the habits of the grain-worm, that such do exist, and are a very frequent cause of recurrence of Clover failure on land where all existing Vibriones might be supposed killed by caustic lime. The easiest preventive and the surest destructive are still under consideration."

(Signed) "J. J. Murcott."

## PROFESSOR SIMOND'S REPORT.

"July 21st, 1851.

"I have carefully examined the slide containing some fragments of the leaves and stalks of diseased Clover plants. The examination was first made with an object glass of an inch focus, by which I readily detected numerous worm-like bodies, having a pointed extremity, and varying considerably both in length and size. Many of these were separate from, while others were attached to, the portions of the plants, which they crossed in a variety of directions. On subjecting these bodies to the magnifying power of a quarter of an inch object glass, it was at once seen that they were the natural hairs of the vegetable, being bulbous at the end originally attached to the plant, and tapering from this to a beautifully fine point. As is the case with the hairs of many animals and vegetables removed from the same individual, some of them have an internal series of cells, forming a hollow tube like structure, running through their centres parallel to their length, while others appear to be solid and free from such an arrangement. To a superficial observer, who regarded them as worms, these internal cells might be confounded with an intestinal canal. With this exception, I failed to detect anything in the slide at all similar to vibrines. I subsequently showed the preparation to several microscopists, and among them to my friend Mr. Quekett; they all agree with me that it contains no worms, nor anything similar to them excepting the hairs, which it is possible may have been mistaken for worms. If, therefore, these creatures existed when the preparation was made, they must have undergone decomposition before it was submitted to my notice, or have been destroyed by the Goadby's liquor employed to place them between the slides. Under these circumstances, I would suggest that the Council take steps to procure fresh specimens of the plant in its green state, for further investigation. (Signed) "Jas. B. Simonds."

## MOUNTAIN FLAX.

Professor Simonds has also reported on the specimens of Mountain Flax transmitted to the Council by Captain Rushout, M.P., along with a communication of the evil effects of that plant on the animals which had eaten it in pastures in Worcestershire. Prof. Simonds remarked that this plant was well known, as growing in dry pastures, and producing, when eaten by animals in small quantities, relaxation of the bowels, and in large ones death. It acted, 1, as an irritant of the intestinal canal; 2, as a disturber of the system; and 3, as a vegetable poison. The extirpation of the plant from the pastures ought to be effected if possible; and the animals suffering under its influence ought, 1, to have a cathartic given to them; and 2, diffusible stimulants and tonics to remove the sedative effects induced.

## FLAX MANAGEMENT.

Baron Mertens laid before the Council a sample of Flax, prepared in a new and superior mode by a Dutchman, who kept the secret to himself. The Baron thought this sample very peculiar and instructive for Flax-growers, and accordingly was desirous to take the earliest opportunity of calling the attention of the Council to the subject. The sample itself possessed to the eye all the beauty and general character of silk, and altogether appeared so extraordinary a manufactured production, that he hoped it would be taken-into consideration.—Mr. Rowlandson thought, from an inspection of the sample of Flax then laid before the Council, and a consideration of its peculiar condition, that it had been prepared by a process analogous to one which, from experiments he had made some years ago, he believed would prove very efficacious, and which he had himself long meditated to employ; namely, the adoption of the warm-water method in combination with an alkali. This he fully believed might be practised without an infringement of any existing patent; although Schenck had patented a process claiming the right of using warm water only; others, warm water and acid; others still, warm water and alkali. He thought it unfortunate that not one of these methods was complete and perfect within itself; but he fully believed that the great object would be attained by the union of them all, according to circumstance, employing as much of each as any particular case was found to require. No doubt the Dutchman in question had adopted some plan of this description. The great difficulty was in the separation of the long woody tissues. This was effected perhaps the best, Mr. Rowlandson thought, by the putrefactive process, which was as efficient as required if it only acted uniformly through the Flax and could be stayed at a certain point; but when bundles were retting, they were not affected alike throughout their mass, and acquired a dirty colour, which it was difficult afterwards to get rid of. Specimens of Flax from Belgium and Ireland, in the Great Exhibition, exhibited this discoloration. The only process Mr. Rowlandson thought likely to be successful was that in which acids were employed in certain cases and alkalies in others, with warm water and rapid putrefaction. Flax was not, however, he remarked, to be grown, and at once, without thought or trouble on the part of the farmer, to be shipped off. There was no royal road to a knowledge of this preparative manufacture, any more than it had been found for ages there was to mathematics. The farmer could accomplish all possible things; but he must not forget in the case of Flax, as of others, that he could only attain his object by the hard, up-hill course of learning his business. The Dutch specimen had probably been prepared by maceration alternately in warm alkaline water, and in warm acidulated water. In reply to an inquiry of Baron Mertens, whether he had ever seen any finer Flax than that now submitted to the Council? Mr. Rowlandson said that he had seen much finer; the fibre had not escaped injury. A great deal depended on the original fineness of the Flax itself; and in separating the woody fibre from the gum and extraneous matters. The great merit of Claussen's method consisted in the successful manner in which he broke the Flax into fine fibres.—Colonel Challoner asked Mr. Rowlandson whether he would kindly draw up and submit to the Council a brief statement, instructing farmers what it was best for them to do with their crop of Flax fibre after having taken the seed from it for their cattle.—Mr. Rowlandson expressed the pleasure it would give him to find that any experience of his own could be rendered available to other members of the Society. We accordingly insert in this place the statement which Mr. Rowlandson has had the goodness to furnish, agreeably with Colonel Challoner's request.

"Brompton, 6th August, 1851.

"The following is a brief account of what I consider the best course for those farmers and landed proprietors to pursue who have grown Flax this year experimentally—generally for seed—but who are unacquainted, or, rather, unpractised, in the preparation of the fibre; the latter, under any circumstances, being the most valuable portion of the crop. It may be well here to remark, that the

most difficult part of Flax preparation is the preparation of the fibre after being steeped; the steeping of Flax may be disagreeable and troublesome, but is by no means difficult, the subsequent processes requisite to make the article marketable, are, however, of a rather complex character, and can never be learned properly but by example and experience. Respecting any published or patented methods of preparing Flax, none are singly of a character to aid the farmer, whilst many are utterly delusive. That improvements can be made I am quite prepared to admit, and I am further confirmed in this opinion, by witnessing the sample produced at the last meeting of the Council, by Baron Mertens. But I wish here particularly to remind farmers that if the most perfect system of management was devised to-morrow, enlisting the most refined aids of chemical and mechanical science, it would not the less prevent the necessity of care, thought, and trouble, on the part of the farmer; for of any system of Flax management which may be adopted, the farmer cannot derive the utmost amount of benefit from the crop, unless the major part of the labour connected with its preparation is done at the farmstead. The commonest calculation ought to convince any one of the above fact; for, taking the value of Flax straw to be 4*l.* per ton, and the produce two tons per acre, this straw could not be carted and forwarded by sea, 400 to 500 miles, at a less cost than 2*l.* per ton; add to which, there are so many chances against the success of any mode of preparing the fibre of Flax for general manufacture, other than some modification of the newest mode. It is certainly surprising that so many persons have thrown the Flax straw away, seeing, that under the worst management of steeping, it will always be of value for making sacking, bags, and other coarse kinds of textile fabrics, in common use for husbandry purposes. Reviewing the whole case of Flax culture, so far as it relates to the experimental attempts made by various parties this year, I am induced to recommend the following course, viz, to scutch out the seed, which may be done by knocking the heads against a board or barrel, on a cloth, and subsequently carefully stacking the straw, for a spring retting; care must, however, be taken that the Flax straw is well thatched; it is not necessary even to thrash out the seed at the cropping time, as it may be stacked and thatched down, for spring threshing and retting. In the latter case, however, the greatest care must be taken that the Flax is quite dry when placed in the stack; and also that not the smallest particle of rain can obtain access to it, otherwise it will be utterly ruined. The stacking for spring threshing is a system, however, not to be recommended, except in cases where the quantity of Flax grown is large. In the course of last year I published an account of preparing Flax in the *Illustrated London News*; and in the months of January and February of the present year a series of 10 letters on the subject appeared in the *Morning Post*, in which the most approved methods known up to the present time were fully detailed. Notwithstanding the above remarks, I am strongly of opinion that further improvement can be made on Flax preparation; but I wish to be emphatically understood, that these would not be of any material benefit to the farmer, unless he attends to and executes them himself; and for this purpose he must undergo a course of attentive special self-education; even under the *worst* possible management of steeping, &c., a crop of 2 tons of Flax straw will realise, for common manufactures a greater sum of money than 8*l.* per acre. Let, therefore, experimenters on Flax growing proceed first to secure the seed, then carefully stack the straw as they would any other crop, and during the leisure of the inclement season of winter make themselves as practically acquainted with the mode of steeping and dressing this crop as their circumstances will permit them. This is the most cautious, and, under all the circumstances, the best advice which I can give them; ultimately, the successful Flax grower must rely on self-dependence and personal skill—the latter only to be practically acquired.

"(Signed) T. Rowlandson."

Mr. Thomas, of Glan-môr, near Swansea, informed the Council that the mountain farmers in South Wales were in the habit of growing coarse Flax, the fibre of which was made by Carmarthenshire workmen into sacks, and it was used for that and other farm purposes. A friend of his grew three acres of Flax, and found it answer well, as a market was found for it among the workmen connected with the great iron foundries of that district. But generally the difficulty was to know what to do with the Flax fibre when the crop had been grown. —Mr. Rowlandson recommended stacking it, after taking off the seed. The seed was in the greatest quantity when the crop was grown on strong land; but the fibre, on the contrary, was the most inferior in such cases. It was, at all events, always worth Hemp price.

APRIL WHEAT.

Mr. Thomas inquired whether a Wheat introduced into South Wales, from Scotland, and grown with success on the Black Mountains of that principality, was known to any of the members then present. He had sown it broadcast, after Turnips, in the first week of May, on three acres of very poor gravelly soil in good condition, and had obtained 86 marketable Winchester bushels. The wind could not blow the grain out of the straw (which was similar to that of Rye), and it was difficult to be threshed out by the flail. It was an excellent nurse for Clover. The grain became ripe in August, as soon as Barley, and fetched as high a price in the market as other kinds of Wheat. It was a red-bearded Wheat, with a small grain. This Wheat made the best bread Mr. Thomas had ever tasted, of that light moist texture and branny flavour which were generally so much liked.—Mr. Fisher Hobbs had frequently grown the Wheat referred to by Mr. Thomas, when the season was favourable, but it would not answer in Essex when the summers were dry.—Mr. Dunne, jun., was also well acquainted with this late variety of Wheat, which was grown in Shropshire, as the Barley crop.

MOVEABLE BRIDGE.

Mr. Mathew, of Wern, in Carmarthenshire, transmitted to the Council the model of a simple and ingenious contrivance for crossing wide ditches, with the following communication explanatory of its construction and advantages:—

"Wern, July 9, 1851.

"I have taken the liberty of forwarding to you a model of my 'marsh land bridge.' This is a little simple contrivance of mine, and which I have found most useful and convenient in my low meadows. You are aware that in this district, in particular, we are much annoyed by the mountain sheep, and to fence against them it is necessary to have the ditches so wide as to make it difficult for the farmer or his men to get from field to field without the aid of common bridges; and these often afford the means by which these locusts (for such I call them) trespass beyond their proper bounds. To prevent this, and at the same time to facilitate the means of walking over my farm with ease and security, I contrived this simple bridge; and I hope it may be found useful in general, but to farmers in particular. With me these bridges are made out of Larch poles 5 inches square, and of sufficient length to span the ditch they are intended to cross; and after being squared, they are sawn corner ways, so as to make two triangular pieces, which are fastened together with two, three, or four common iron butt hinges, according to the length of the bridges; and at each end are two handles, for the purpose of opening and shutting as you pass over. This simple contrivance offers, when open, a foot bridge of about 14 inches wide, and when shut up prevents all animals from crossing; even a dog will find the greatest difficulty in doing so, and at the same time the one rail forms a protection to the other from the weather, by means of its sharp edge being uppermost. If these bridges should be adopted in England, I should say the five-inch 'Norway die' is the best material to make them from. In designating my humble contrivance as a 'portable bridge,' I do not mean that a man is to carry it under his arm from ditch to ditch, but that it might be removed with ease from place to place without being taken to pieces; and as they can be made for a mere trifle, I should recommend a number to be laid down where they are most likely to be required.

"(Signed) Nathaniel Mathew."

The Council accepted this present, with their best thanks to Mr. Mathew, for his attention and trouble in forwarding it to them.

CATTLE PROBANG AND TROCAR.

Mr. D. Hunting, of Loddon, in Norfolk, transmitted to the Council his hollow probang, for relieving the contraction of the œsophagus, or gullet, without injuring the passage, and for relieving a hoven bullock, by allowing the air to escape from the stomach of the animal," which, along with the trocar accompanying it, was referred to Professor Simonds, for the favour of his report on these instruments.

The Council then adjourned to the 6th of August.

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Yorkshire Agricultural.—H. S. Thompson, Esq., opened the discussion for the evening, the subject being *the Management of Manure.*

He said: The subject naturally divides itself into three parts; the making, the preserving, and the applying of manure to the land. In considering the first I have no hesitation in stating my opinion that one of the best modes of making manure is in boxes, and that such manure is both well made and easily preserved. The great solidity produced by the trampling of a heavy animal in a small space, and the preservation from rain water, at the same time that the manure is always kept moist, form a combination of circumstances highly favourable to the making of first-rate manure. Where boxes are well littered, there is no unpleasant smell perceptible; but if a fork full or two be removed from the surface it will be found that there is considerable decomposition going forward, as shown by the ammoniacal vapours which immediately arise. It is clear, therefore, that even in boxes a certain amount of waste takes place, as ammonia flies off abundantly directly the manure is stirred, and if ammonia escapes even from glass bottles, unless well corked, it is clear that though much checked by the solidity of the manure, it cannot be altogether prevented. With a view to diminish this loss, I beg to suggest the use of salt. I have not tried it sufficiently to be able to speak with any certainty of its effects, nor of the quantity that would produce the best result. I have ascertained, however, without a doubt, that salt has a very decided effect in checking the decomposition of nitrogenous compounds, of which I will say more when I come to speak of liquid manure; and I have also found that after disturbing the manure in a box until the smell of ammonia was most pungent, strewing a couple of stones of salt on the surface had an immediate effect in diminishing the smell. Considerable doubt exists whether the application of salt as a manure has much effect in increasing the produce of corn, but the majority of those who have used it say that it makes the straw brighter and stiffer, and this is an undoubted advantage to those who farm highly, and are consequently liable to heavy loss from their crops being laid. Now box-feeders generally farm highly, so that I do not hesitate to recommend them to make experiments on the use of salt as a preservative of manure. The next mode of making manure that I will mention is where cattle are fed in stalls. The ordinary mode of treating the manure in such a case is to remove it daily into some adjoining fold-yard, where it is exposed to the weather and doubtless suffers loss. I have for the last three winters adopted a plan which I can safely recommend. The animals are littered with cut straw, and the soiled part is whee ed away daily to a compost heap, where it is immediately mixed with soil. In this way the manure is perfectly preserved, which cannot be said of any other method of managing manure that I am acquainted with. This soil and manure is thrown up in a ridged form till a few weeks before it is wanted, when it is turned over, and has been found very useful for drilling in with the Turnip seed. If guano, bones, or other hand tillage is used for Turnips, it can be conveniently mixed with this compost at the time it is turned; and from the manure being mixed with chopped straw, it is always in a state to be evenly distributed by any good Turnip-drill. The soil for mixing at any spare time during the year consists of road-scrapings, cleaning of ditches, charred earth, decayed Couch, and if a sufficient quantity is not obtained from these sources, soil from any field that is in fallow may be taken here and there without injury, as it is restored to the different fields when under root crop. The ordinary mode of making manure in yards must now be considered. The importance of having all buildings spouted that dip into a fold-yard has been so often insisted on, that I should not think of repeating it here, did I not observe that this unpardonable waste is still, in too many instances, allowed to go on; and I do not hesitate to say that any man who thus allows his manure to be spoilt, rather than incur the small expense of spouting his buildings, is quite unfit to be trusted with the management of a farm. The next most important point to attend to in fold-yards, is to gain the utmost solidity that is practicable. Every farmer knows that he may walk across a midden in dry weather and perceive no smell, but that if he takes a fork and lightens it up, a most pungent and offensive vapour is immediately given off; it was previously confined by the pressure of the manure. The vapour contains a certain amount of ammoniacal gas: it is also charged with sulphuretted and carburetted hydrogen, but is chiefly deprived of its oxygen, and thus the decomposition of the manure, which cannot go on without a continual supply of oxygen, is checked. On disturbing the heap, the gases above-mentioned are suffered to escape, and fresh air, containing oxygen, takes their place, which causes decomposition to go on more rapidly. Water passing through the heap has a similar and still more prejudicial effect, as it displaces in its descent the foul air which occupied the interstices of the manure, and if suffered to escape it leaves room for a fresh supply of air, which follows the water down, and occupies its place, thus giving fresh activity to the combustion. It also robs the heap, by carrying with it the ammonia and other salts produced by decomposition. To make the manure keep solid and to keep it undisturbed, should, therefore, be the great objects of the farmer, and with this view he should insist on having any manure that is thrown out of stables, cowhouses, &c., thoroughly spread over the yard, instead of being thrown out carelessly and left in a heap. He should also frequently have the dry straw from the barn door, and from under the racks or other foddering places, spread over the yard, which will enable the cattle to tread the manure more evenly, and therefore more firmly. These hints are the result of observation and practice, and confirmed by theory. I am now come to the second division of my subject, viz., the best mode of keeping manure, and the principal question that arises is regarding the comparative advantages of having covered or open manure pits. No one can be more alive than I am to the great loss arising from manure being wasted by rain, but I am nevertheless quite opposed to covered manure pits under ordinary circumstances, because I am persuaded that great solidity is indispensable to the preservation of manure. A heap of manure contains a large amount of carbonate of ammonia, or, technically speaking, the hydrated sesquicarbonate of ammonia, which is the exact substance sold in the shops as smelling salts. Every one knows how rapidly it escapes from an uncorked bottle, and if nothing but hay or straw could be found to cork it with, it would be necessary to twist it up as tightly as possible. A manure heap must be treated like a gigantic smelling bottle without a cork, and it must be trodden as firm as possible, or if in the field, covered with soil to keep the ammonia in. Now this firmness would not, in ordinary cases, be obtained in a covered manure pit, as it would be difficult to arrange so as to have it frequently carted over, or to keep cattle upon it, to tread it firm. In very moist climates, such as hilly districts of the West of England, where two or three times as much rain falls as with us, it becomes a choice of difficulties, and the only way of escaping them appears to me to be by having fold-yards entirely roofed over; and I feel persuaded that those who live ten years longer will see buildings of this kind more numerous than is now thought profitable. A yard of this kind would be protected from rain, and have the solidity arising from the treading of cattle, and if thoroughly well ventilated would, I doubt not, be of advantage to the cattle as well as the manure. I hoped to have been able to introduce to the meeting to-day a Prussian friend who has acted as a brother juror at the Crystal Palace, and who would have described to you how, during the severe winters of Central Germany, their flocks of sheep are kept in huge barns, from which the manure is never removed, and accumulates to such a height, that in a late spring the sheep are sometimes nearly up to the roof. Until, however, we have got these covered yards, we must make the best use of the means at our disposal, and a great deal may be done by carefully covering our heaps in the field and keeping that in our yards as solid as possible. I have not yet said anything on the subject of tanks, but I cannot agree with those who think tanks unnecessary. No precautions short of covering in the whole yard will prevent the necessity for providing an outlet for superfluous water in a wet season, and the more care we take to prevent any unnecessary water from entering the yard, and to allow the manure to accumulate to such a thickness as to absorb any moderate quantity of rain. The more precautions, in short, that we take to prevent any escape of drainage from the yard, the more valuable does the drainage become, and the more necessary is it to prevent its being wasted. Several substances have been used in tanks as fixers of ammonia. I have myself tried several, but I believe that the one which may be used with most advantage is common salt. The first time I ever heard of its being used in this way was from Sir Tatton Sykes, who told me several years ago that he had put a quantity of salt into his liquid manure tanks, and that he was convinced that the practice had been attended with good results. I could not at that time understand how salt in a tank could produce any beneficial effect, as the chemical affinities were decidedly opposed to the supposition of any decomposition of the salt taking place, and I therefore supposed that it would come out of the tanks unchanged. Some facts, however, that have lately come under my notice induced me to request Mr. Spence, the Society's analysing chemist, to try some experiments to determine this point, and the results have been most conclusively in favour of the use of salt in tanks. He mixed salt with one portion of urine, and set aside a similar portion without salt, and found, whilst the unsalted urine became unbearable in a few days, that mixed with salt had scarcely any smell at all, and, on analysis, it was found that a very considerable quantity of muriate of ammonia had been formed, which not being a volatile salt, would safely remain in the tank for any length of time. I consider this a very valuable fact, of which all owners of tanks would do well to avail themselves. The third division of the subject is the application of the manure to the land, and the most important question connected with this part of the subject is the state of decomposition in which it is most desirable to use it. Science and practice both agree that old rotten manure is in the best state for affording nourishment for plants, and if we could keep manure for a length of time without loss, there would no longer be any doubt on the subject, and old short manure would be universally used. As, however, all ordinary methods of keeping manure are subject to more or less loss, the wisest way seems to be to apply the manure to land in a moderately fresh state, but to supply the young Turnips with ready prepared food for its early growth, either by the use of guano or dissolved bones, or in the form of compost, such as I have already described, where manure is mixed with soil from day to day, and may then be safely kept for any length of time. I had a good illustration of the comparative effects of old and fresh manure last year in a field of Swedes, where the manure which had been heaped some months previous fell short, and two or three acres were treated with manure fresh from the yards and boxes. No guano or bones was used, and for about eight or ten weeks the fresh manure could easily be detected by the want of vigour in the Turnip plant. Before Christmas, however, no difference could be perceived, and ultimately the Turnips grown with fresh manure were considered the best in the field, though the same number of loads of each kind of manure was used per acre, and the Turnips in all other respects were treated exactly alike. This result might have been reversed had not the autumn and winter been remarkably favourable for Turnips that had got a bad start; and it is undoubtedly desirable, where fresh manure is used, to supply some other tillage to force forward the young plant. I will not now trespass longer on your patience, but I wish before I sit down to say that though the management of manure has been discussed and written upon oftener than any other farming question, it is far from being an exhausted subject, or one in which our practice has been brought into a satisfactory state. We boast of our British agriculture, and in some departments, especially that of agricultural implements and some other matters, we have reason to be proud of our position amongst the farmers of the world, but honesty compels us to state that, as a nation, our management of manure is worse than that of any continental nation I have visited, and it is for this reason that I have paid a good deal of attention to the least inviting of farming topics. I am addressing those whose leading position as landlords or leading farmers, gives them considerable influence in their respective neighbourhoods; and if we wish to be of use to our brother farmers at a time when they certainly want all the aid that can be given them, we must not be deterred from giving a word of advice even upon an unpleasant subject, and I am confident there is no one point on which there is so much to be done and so much that lies in every man's own power as by paying greater attention to the management of his manure.—Sir Tatton Sykes, Bart., of Sledmere, was received with loud cheering. The worthy baronet observed that Mr. Thompson, in his introductory remarks, had done him the honour to allude to him.

A few years ago that gentleman had paid him a visit to Sledmere, and he had then named the benefit to be derived from nitrate of soda. He (Sir Tatton) had mentioned the subject to a medical man, who had informed him that if he provided himself with some salt, and put it into his tanks it would produce nitrate of soda immediately. He consequently tried the experiment, which answered to some extent, but afterwards he used guano instead of salt, and that answered a great deal better.—Mr. H. L. Maw, of Tetley, said if it were true that that man who made two blades of Grass grow where only one grew before, was a benefactor to his country, it might be fairly inferred that those who improve the quality of those roots and vegetables upon which man and beast are fed should also be looked upon as benefactors to their country. And he thought he might properly say that amongst these, few persons have done more than Mr. Thompson. It was peculiarly the characteristic of some gentlemen, that while they showed great capabilities for carrying on large concerns and governing large bodies, they were not ashamed to apply themselves to practical purposes such as the one now before them. He would not undertake to say he agreed with everything which Mr. Thompson had advanced, but he certainly felt they were all placed under great obligations to him for the practical advice which he had given them. He considered that the subject of boxes for feeding was a very important one. He had had doubts of their usefulness, and for more reasons than one. The first objection was as to the expense of boxes, where there was a large stock; and then there was the ventilation that is necessary, but which it is not always possible to secure. Another objection was, he found the animals more liable to filth. However, he thought that in the case of feeding animals, boxes might be useful, inasmuch as the manure would be of greater value. Mr. Maw next proceeded to notice the application of salt. Some years since, he was recommended to apply salt, and he did so to a considerable extent. He had generally employed it by tons, but recently he had in some degree changed his opinion respecting it. He had tried salt upon one field in particular, that was a field which was in seeds, but is now in swarth, and although it had not grown so much as others, he had no doubt when it does come it will be of better quality. There was one fact which he would here give, and it was this—a friend of his said that all his cows had slipped their calves, except one, and he attributed that to the fact of his having used salt on his Grass land. He was very much inclined to think it was so. The friend he had referred to was a very intelligent man, and he thought his observation might be relied on.—Sir Tatton Sykes: I am certainly opposed to shutting up an animal in a box in the manner described, as it seems to me much like shutting up a human being in a water closet.—Mr. Maw then went on to speak about the making of compost, and thought it would be very difficult to carry out the plan proposed by Mr. Thompson. As to the spouting of buildings, he really thought that manure might be kept too dry, and it seemed to him that the admixture of a little water might be of advantage. With respect to fresh or old manure, he thought that it would depend very much upon the soil, and the kind of crop to which it had to be applied.—Mr. John Wells, of Booth Ferry, Howden, regretted that amongst so great a number of eminent agriculturists as he saw around him, it should have devolved upon him, so young a man, to represent the tenant farmer in this discussion. He cordially agreed with many of the statements made by Mr. Thompson, and he could assure them, from his own experience, the next to drainage he considered the management and application of farm-yard manure as one of the principal points connected with good farming. He would not take up the time of the meeting by discussing the relative advantages of box or stall feeding. It had long been a controverted point, and having tried both he preferred the latter, since it was essentially necessary for the formation of good manure the tenant should be provided with good buildings, and it was clearly a landlord's question to place him in that position. It was likewise necessary that all the eaves of the building adjoining the fold-yard should be spouted. The expense of such spouting was an arrangement to be effected by either landlord or tenant; if by the former, the tenant ought to pay 5 per cent. for the outlay; if at the expense of the occupier, it should be treated upon the same principle as drainage, viz., allowing the tenant 20 per cent. per annum of the expenditure for every year that he may enjoy short of five years the improvement effected. Upon the land he occupied, which was two distinct farms containing about 400 acres each, he had the advantage of good buildings and well spouted. The fold-yards were constructed in a dish shape, running to about 5 feet in depth in the centre, and would contain, when filled, 1000 tons of good manure each. There was no outlet drain allowed, so that all the rain which fell on the area of the fold was absorbed by the manure. The rain water, after filling the tanks for the cattle in the yard, was let off by a waste pipe. When the manure has risen to the level of the threshold of the buildings, so that the drains will not work, a hole two feet square is cut against each outlet and covered with a piece of board, and every morning the urine therein contained is emptied over that portion of the fold-yard lying nearest the barn, or wherever the quality is not likely to be so good as that which is contiguous to the shed and boxes. The young stock are allowed to tread over it during day, but no stock whatever on either farm is suffered to be out at nights during the winter season. Upwards of 100 head in each place are nightly housed, and the fact that at the appointed hour the cattle come of their own accord to be fastened up is a sufficient proof of the correctness of the system. The manure is never held or allowed to remain on the land unploughed in. One whole year's manure being a fit state to lay out of the folds immediately after harvest, spread upon the stubbles and ploughed in, with the exception of about six inches on the surface, which is usually thrown back on the bottom of the fold. There is no use for tanks where this system is adopted, as the manure absorbs all the moisture. He had tested the tank system, but found it not generally beneficial, owing to local disadvantages. In respect to hand tillages, he invariably tried all that were recommended, but with the exception of nitrate of soda and guano they had to him proved valueless. He gave the preference to guano, especially for Grass land and cereal cropping. He annually consumed about 50 tons of best Peruvian. If farmers would adopt his mode of making manure they would find it both practicable and inexpensive. He did not mean to say it was a perfect system, but it was a much better one than he usually saw adopted in his neighbourhood.—Mr. George Legard wished to offer a few remarks with respect to the use of salt, upon which subject inquiries were now going on, touching the properties of that commodity, which he hoped would be productive of the most beneficial result. He now lived near Chester, where salt is largely manufactured, and he was glad to tell the farmers that salt was never cheaper than it was just now. Agricultural salt is at present selling at 4*s.* or 4*s.* 6*d.* a ton; therefore it might be made use of for the purposes already mentioned, at all events at no great cost. *Abridged from the York Herald.*

## Notices to Correspondents.

Ants' Eggs: *J H N* says: I have been very successful as an amateur in raising gold and hybrid pheasants, and am accustomed, after they are a week or 10 days' old, during which time they are fed on ants' "eggs," to feed them with meat maggots kept for a day or two in bran or earth. They can easily be procured from the butchers' when they clear out the fat for the tallow chandlers.

Black Barley: *Q Y.* It may be sown in October. It will not replace Chevalier and other productive white Barleys.

Peat Charcoal: *Constant Reader.* If we had a lot mixed with night-soil we should keep it under cover till next spring,

Reaping Machine: *W E.* It will probably be used all harvest time, and will go north, we imagine, as harvest finishes in the south; but we do not know its movements.

The Dairy: *A Subscriber.* "The Cowkeeper" by C. W. Johnson. Two imperial gallons of milk yield a pound of butter. In the case of an extended experiment, 112 imperial gallons of *cream* yielded 263 lbs. of butter.

Woodwork, out of Doors: *H B C.* When the timber of which such sheds are constructed is perfectly seasoned, it is best preserved by being well painted with white-lead in oil, care being taken, of course, that the timber contains no moisture when the paint is applied. If the crudeness of pure white is objected to in the last coat, it may be toned to a stone or buff colour, but white affords the best protection against the action of the sun's heat by its non-absorbent property, and any toning or colouring is a deterioration of the body paint—the white-lead. White zinc has been for some time used. It possesses valuable properties, but whether it has body enough to act as a protective coating remains to be evidenced by time. If the wood contains any of its natural juices, or has absorbed moisture, and is painted in that condition, the painting, in place of being a protection, will, as you justly observe, hasten its decay. *J. N.*

METEOROLOGICAL REPORT.—August.

(*Continued from p.* 542.)

| Date. | Time. | Max. | Min. | Wind.—Weather. |
|---|---|---|---|---|
| Aug. 19 | 5.40 p.m. | 30.24 | ... | Gentle breeze at south, barometer flat. |
| 20 | 6 a.m. | 30.21 | ... | Gentle breeze SSE., barometer falling steadily, and very fine day. Evening, SSW. |
| | 10 p.m. | ... | 30.11 | |
| 21 | 7 a.m. | 30.05 | ... | A.M. WSW.; evening, westerly. Gentle, day hot and fine. |
| | 10 p.m. | ... | 30.00 | |
| 22 | 6.5 a.m. | 29.96 | ... | SW. Stiff breeze P.M.; fine day, but white scud in evening. |
| | 10.20 p.m. | ... | 29.88 | |
| 23 | 7.30 a.m. | 29.81 | ... | SSW. Brisk; densely overcast, and raining all forenoon. |
| * | 10.55 a.m. | ... | 29.80 | |
| | 6.35 p.m. | ... | 29.81 | P.M. SW. Clearing up towards sunset, and barometer rising. |
| | 10.30 p.m. | 29.83 | ... | |
| Sun. 24 | 8 a.m. | 29.82 | ... | Brisk SW. breeze, at times blowing hard and squally, with heavy showers. At 4 P.M. clearing off, and barometer rising. |
| † | 1 p.m. | ... | 29.73 | |
| | 4 p.m. | ... | 29.73 | |
| | 10.20 p.m. | 29.80 | ... | |
| 25 | 7.30 a.m. | ... | 29.95 | NW. Gentle A.M., heavy clouds in eastern horizon. |
| | 10.30 p.m. | 30.08 | ... | P.M. wind veering to westward, barometer rising steadily. |
| 26 | 7.30 a.m. | 30.01 | ... | Blowing hard from SW., with heavy rain all day. Evening, veering to west, and clearing off. |
| ‡ | 6 p.m. | ... | 29.84 | |
| | 9.50 p.m. | 29.86 | ... | |
| 27 | 7.15 a.m. | ... | 29.94 | WSW. Brisk. Afternoon hot; barometer falling, and heavy thunder showers along northern horizon. |
| | 11 a.m. | 29.96 | ... | |

* This storm came from the south-west, over Spain and the Bay of Biscay, and then travelled northward.

† This storm came from the westward, and crossed England to the eastward.

‡ This storm came from the south-west, travelling northward.

Dorchester, Aug. 28th. *F. P. B. M.*

(*To be continued.*)

# Markets.

COVENT GARDEN, Aug. 30.

Peaches and Nectarines from open walls are now coming in fast, and prices are beginning to fall. Excellent samples may be bought for 8*s.* and 10*s.* a dozen, though the very best are much dearer. Pines and Grapes are abundant. Morello Cherries are still supplied. Apricots and Greengage Plums are largely imported from the Continent, as are also Pears. Oranges and Lemons are still very scarce. Nuts remain nearly the same as quoted last week. Filberts are imported from the Continent in quantity, and in good condition. Carrots, French Beans, and Peas are sufficient for the demand. Potatoes are good in quality, and, as yet, tolerably free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms are dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Carnations, Pinks, Moss and Provins Roses.

FRUIT.

Pine-apples, per lb., 4*s* to 6*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*
Peaches, per doz., 10*s* to 20*s*
Nectarines, per doz., 10*s* to 20*s*
Apricots, per doz., 4*s* to 6*s*
Cherries, per lb., 6*d* to 2*s*
Melons, each, 2*s* to 6*s*
Currants, p. hf. sieve, 2*s* 6*d* to 5*s*
Gooseberries, do., 1*s* 6*d* to 4*s*
Plums, per punnet, 1*s* to 2*s*
Figs, per doz., 2*s* 6*d* to 4*s*
Apples, kitchen, p. bsh., 1*s* to 1*s* 6*d*
Pears, dessert, p. doz., 2*s* to 5*s*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Lemons, per doz., 1*s* to 2*s*
Oranges, per doz., 9*d* to 2*s*
— per 100, 6*s* to 14*s*
— Seville, p. 100, 7*s* to 14*s*
— — p. doz., 1*s* to 2*s* 6*d*
Nuts, Barcelona, p. bsh, 20*s* to 22*s*
— Brazil, p. bsh., 12*s* to 14*s*
Filberts, per 100 lbs., 55*s* to 65*s*

VEGETABLES.

Cabbages, per doz., 3*d* to 1*s*
Cauliflowers, p. doz., 6*d* to 3*s*
French Beans, per half sieve, 1*s* to 2*s*
Beans, per sieve, 1*s* 6*d* to 2*s*
Peas, per sieve, 1*s* 9*d* to 3*s* 6*d*
Potatoes, per ton, 45*s* to 80*s*
— per cwt., 2*s* to 5*s*
— per bush., 1*s* 6*d* to 2*s* 6*d*
Turnips, p. bunch, 2*d* to 4*d*
Cucumbers, each, 1*d* to 1*s*
Radishes, per doz., 6*d* to 9*d*
— Turnip, p. doz., 8*d* to 1*s*
Celery, p. bundle, 6*d* to 1*s* 6*d*
Carrots, per bunch, 4*d* to 6*d*
Spinach, per sieve, 1*s* 6*d* to 2*s*
Vegetable Marrows, per doz., 6*d* to 1*s*
Onions, p. bunch, 1*d* to 5*d*
Leeks, per bunch, 1*d* to 2*d*
Shallots, per lb., 3*d* to 6*d*
Garlic, per lb., 4*d* to 6*d*
Artichokes, per doz., 1*s* to 2*s*
Lettuce, Cab., p. score, 4*d* to 1*s*
— Cos, per score, 3*d* to 1*s*
Small Salads, p. punn., 2*d* to 3*d*
Horse Radish, p. bundl., 1*s* 6*d* to 6*s*
Red Beet, per doz., 1*s* to 2*s*
Mushrooms, p. pot., 1*s* to 2*s*
Sorrel, per hf. sieve, 6*d* to 9*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, per doz. bun., 2*s* to 3*s*
— Roots, p. bundl. 9*d* to 1*s*
Mint, per bunch, 1*d* to 2*d*
Basil, p. bunch, 3*d* to 4*d*
Marjoram, do., 3*d* to 4*d*
Watercress, p. 12 bunch., 4*d* to 6*d*

COAL MARKET.—Friday, Aug. 29.

Hollywell, 14*s.*; Carr's Hartley, 13*s.* 6*d.*; Tanfield Moor, 12*s.* 6*d.*; Wallsend Gasforth, 13*s.* 9*d.*; Wallsend Haswell, 15*s.*; Wallsend Hetton, 15*s.*; Wallsend Lambton, 15*s.*; Wallsend Stewarts, 15*s.*; Wallsend Tees, 15*s.*—Ships at market, 141.

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 28.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70*s* to 75*s* | Clover ... ... ... | 70*s* to 90*s* |
| Inferior ditto ... ... | 55 65 | New do. ... ... ... | 60 78 |
| Rowen ... ... ... | — 66 | Straw ... ... ... | 24 30 |
| New Hay ... ... | 55 70 | | J. Cooper. |

HOPS.—Friday, Aug. 29.

Messrs. Pattenden and Smith report that the accounts from the plantations are not so favourable, the wind having done injury, and the nights are too cold for the late improvement to amount to as much as many have anticipated. There is a steady trade for 1850's, and 1846's and 1847's. Duty 115,000*l.*

| | | | |
|---|---|---|---|
| Mid & East Kents | 100*s* to 130*s* | Sussex ... ... | 90*s* to 105*s* |
| Weald Kents ... | 90 — 108 | Yearlings & old Hops | 20 — 60 |

ENGLISH TIMBER AND BARK.—Aug. 30.

Of English the supply is still good, and few sales can be effected, even at reduced rates. It must be good timber to realise anything over 13*l.* per load of 45 cwt. Import, 79 tons. The demand for foreign continues extremely dull.

| | Round Timber. Per Load. | Plank. Per Foot Cube. | Inch Board. Per Foot Super. |
|---|---|---|---|
| Oak..... | £5 10 0 to £6 10 0 | 3*s.* 0*d.* to 5*s.* 0*d.* | 0*s.* 4½*d.* to 0*s.* 6*d.* |
| Ash..... | 4 10 0 — 5 10 0 | 2 6 — 3 6 | 0 3 — 0 4 |
| Elm..... | 3 10 0 — 4 10 0 | 1 6 — 2 0 | 0 2 — 0 3 |
| Beech... | 2 10 0 — 3 10 0 | 1 6 — 2 0 | 0 2 — 0 3 |
| Lime ... | 3 0 0 — 4 10 0 | 2 0 — 2 6 | 0 3½ — 0 5 |

ENGLISH AND FOREIGN BARK.

| | Per ton | | Per ton | |
|---|---|---|---|---|
| | £ *s.* | £ *s.* | | £ *s.* £ *s.* |
| English Coppice, p. ld. of 45 cwt. | 13 0 to 14 0 | | Antwerp Coppice | 5 0 — 5 10 |
| Do. timber, do. | 12 0 — 13 0 | | — timber ... | 5 0 — 5 5 |

LIVERPOOL BARK MARKET.

| | P. ton of 2400 lbs. | | | P. ton of 2400 lbs. | |
|---|---|---|---|---|---|
| | £ *s.* | £ *s.* | | £ *s.* | £ *s.* |
| English timber... | 6 0 | — 6 10 | Belgian timber . | 4 10 | — 4 15 |
| — coppice ... | 6 10 | — 6 15 | — coppice ... | 5 0 | — 5 10 |

SMITHFIELD, Monday, Aug. 25.

The number of Beasts is very large, and trade dull; consequently our quotations are lower; 3*s.* 6*d.* has been made only in very few instances. We have about the same quantity of Sheep and Lambs as of late; prices remain unaltered, with an active demand. Trade is slow for Calves, at Friday's prices. From Holland and Germany there are 1354 Beasts, 5500 Sheep, 266 Calves, and 30 Pigs; from Spain, 15 Beasts; from Scotland, 50 Beasts; and 2500 from the northern and midland counties.

| | Per st. of 8 lbs. | | | | Per st. of 8 lbs. | | | |
|---|---|---|---|---|---|---|---|---|
| | s | d | s | d | | s | d | s d |
| Best Scots, Herefords, &c. | 3 | 2 | to 3 | 4 | Best Long-wools | 3 | 4 | to 3 6 |
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn | ... | | ... |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ewes & 2d quality | 2 | 8 | — 3 0 |
| Best Downs and Half-breds | 3 | 8 | — 3 | 10 | Ditto Shorn | ... | | ... |
| | | | | | Lambs ... | ... | 4 | 4 — 4 10 |
| | | | | | Calves ... | ... | 2 | 4 — 3 6 |
| Ditto Shorn ... | ... | | ... | | Pigs ... | ... | 2 | 8 — 3 8 |

Friday, Aug. 29.

The supply of Beasts is moderate, and good Beasts are scarce; consequently, we can quote 3*s.* 6*d.* for choice qualities. The majority are of an inferior description, and several of these remain unsold. The number of Sheep and Lambs is considerable; the weather being cool, there is a good attendance of buyers, but prices are not much higher. Trade for Calves is active, at a slight advance. From Germany and Holland we have 463 Beasts, 2380 Sheep, and 365 Calves; from Spain, 250 Sheep; and 115 milch cows from the home counties.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 4 | — 3 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | ... | | ... |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ewes & 2d quality | 2 | 8 | — 3 2 |
| Best Downs and Half-breds | 3 | 8 | — 3 | 10 | Ditto Shorn | ... | | ... |
| | | | | | Lambs ... | ... | 4 | 4 — 4 10 |
| | | | | | Calves ... | ... | 2 | 8 — 3 8 |
| Ditto Shorn ... | ... | | ... | | Pigs ... | ... | 2 | 8 — 3 8 |

MARK LANE.

Monday, Aug. 25.—The supply of English Wheat at market this morning was pretty good, and consisted chiefly of new; it could only be disposed of at a decline of 1*s.* per qr. upon the prices of this day se'nnight. The value of foreign continues entirely nominal, and the little business doing is confined to an occasional forced sale at a reduction of several shillings per qr. —The few samples of new English Barley at market brought 28*s.* to 30*s.* per qr.; business in foreign is limited, at a decline of 6*d.* to 1*s.* per qr.—The value of Beans and Peas is unaltered. —The Oat trade is heavy, and prices 6*d*, per qr. lower.—In Flour there is nothing doing.

| Per Imperial Quarter. | *s.* | *s.* | | *s.* | *s.* |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —42 | Red ..... | 35 | —39 |
| — — fine selected runs... ditto | 42 | —45 | Red ..... | 38 | —42 |
| — — Talavera ..... | — | | | | |
| — Norfolk, Lincoln, & York... White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —48 | | | |
| Barley, grind. & distil., 21*s* to 24*s*... Chev. | 26 | —31 | Malting . | 23 | —26 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 17 | —20 | | | |
| — Scotch and Lincolnshire... Potato | 21 | —24 | Feed..... | 19 | —21 |
| — Irish ..... Potato | 18 | —22 | Feed..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed..... | 16 | —19 |
| Rye ..... | 23 | —25 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25*s* to 27*s*.....Tick | 26 | —30 | Harrow . | 26 | —30 |
| — Pigeon.....28 — 32... Winds | — | | Longpod | — | |
| — Foreign .....Small | 21 | —29 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boiler | 22 | —25 | Suffolk... | 25 | —27 |
| — Maple.....25*s* to 27*s* .....Grey | 22 | —23 | Foreign . | 24 | —30 |
| Maize ..... White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —33 | Norfolk . | 27 | —33 |
| — Foreign .....per barrel | 18 | —22 | Per sack | 27 | —33 |

Friday, Aug. 29.—The arrivals of grain this week have been small, and the attendance at market this morning confined to a few town millers, who evinced more inclination to purchase, thereby imparting more firmness to the market, but without leading to any extent of business. The value of Wheat, Barley, Beans, and Peas may be considered the same as on Monday. The Oat trade is the turn dearer, but not active at an advance. Transactions in Flour are limited, and prices nominal. In floating cargoes of Maize there has been a good business doing, at from 23*s.* 9*d.* to 26*s.* 6*d.* per qr., including freight and insurance.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| July 19..... | 42*s* 7*d* | 25*s* 6*d* | 21*s* 11*d* | 28*s* 2*d* | 31*s* 5*d* | 28*s* 6*d* |
| — 26..... | 42 5 | 25 7 | 22 0 | 27 0 | 32 3 | 28 7 |
| Aug. 2..... | 42 4 | 25 9 | 22 7 | 25 7 | 31 1 | 28 8 |
| — 9..... | 42 3 | 25 11 | 21 7 | 28 5 | 31 4 | 28 1 |
| — 16..... | 41 4 | 26 4 | 21 9 | 27 0 | 30 8 | 27 2 |
| — 23..... | 39 10 | 26 8 | 20 11 | 27 1 | 31 2 | 25 11 |
| Aggreg. Aver. | 41 9 | 26 0 | 21 10 | 27 2 | 31 4 | 27 9 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Liverpool, Tuesday, Aug. 26.—The weather during the last two or three days has been broken, a great deal of rain having fallen last night and this morning. The supply of Irish produce has been trifling during the last week, while at the same time we have received very liberal quantities of Wheat and Flour from the United States. The supply of Indian Corn is limited, but quite adequate to the demand. The trade during the past week has been steady, our present quotations attracting a large country demand. There was a good healthy demand for Wheat and Flour at our market this morning, by holders accepting the rates of Friday last, which were a shade easier than this day week. Indian Corn was in good request, at 6*d.* per qr. advance. Oats and Oatmeal were scarce, and commanded full prices. Grinding and feeding articles command a good sale.—Friday, Aug. 22.—Continued fine weather is enabling our farmers to gather in their early crops of grain in the finest possible condition. The trade for the moment is consequently apathetic, and at this morning's market the business in any article was limited to retail quantities, at prices not properly lower, but weaker than on Tuesday last.

## SALES BY AUCTION.

ISLINGTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the proprietor to offer to public competition, by Auction, early in October, on the premises, in consequence of the land being Let for building, the whole of the valuable NURSERY STOCK, comprising several thousand Scarlet, White, and Hybrid Rhododendrons, Ghent and other Azaleas, Variegated and Green Hollies of various sizes, in considerable quantities, several thousand Aucuba japonica from 1 to 4 feet, a large quantity of fine Mulberries of different ages, many of which are fine bearing trees, &c. Further particulars in future Advertisements.

American Nursery, Leytonstone, Essex, August 30.

ON THE PREMISES—GREENHOUSE PLANTS, GREENHOUSES, &c.

MR. J. C. STEVENS will Sell by Auction, on the Premises, No. 9, Benlomond-place, Park Crescent, Stockwell, on TUESDAY, 2d Sept., at 12 for 1 o'clock, a Miscellaneous COLLECTION OF GREENHOUSE PLANTS, consisting of Cacti, Camellias, Orange Trees, &c.; the Erection of two Greenhouses, Beehouse, &c. May be viewed the day prior and morning of sale; and Catalogues had on the Premises, and of Mr. J. C. STEVENS, 38, King-street, Covent Garden.

CHELSEA.—IMPORTANT FINAL SALES, IN CONSEQUENCE OF THE EXPIRATION OF THE LEASE.—TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY has received instructions to submit to public competition, on the premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY, September —, and following days, at 12 o'clock, by order of Messrs. Dennis and Co., the STOCK OF GLASS, comprising the erections of several large Greenhouses and Pits, with Stages, Flues, Furnace Work, and Sheds, Garden Frames and Lights; also a large quantity of Greenhouse Plants, consisting of Geraniums in pots and store pans, Azalea, Camellia, Aloes, Cacti, &c., with other Miscellaneous Nursery Stock, including large Scarlet Rhododendrons, extra large specimen Yuccas, Evergreens, Roses, Jasmines, Ivies, and other Climbers, in pots.

D. A. R. begs to call the attention of the public to this and the following Sales, as, in consequence of the Lease expiring at Christmas next, and the ground being required for building purposes, the Stock must be positively sold without reserve. The other Sales will take place in October and November, and comprise the remaining Nursery Stock, including the largest and finest collection of Mulberry Trees in the country, choice Gooseberries, Evergreens, and other Miscellaneous Stock, of which due notice will be given.—May be viewed prior to sale, and Catalogues had, on the premises; at the principal Seed Shops; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

TO GENTLEMEN, GARDENERS, AND OTHERS.

MR. ROWLEY has received instructions from the Executors of the late William Forrester, Esq., to offer for Sale, by Public Auction, on THURSDAY and FRIDAY, September 4th and 5th, on the Premises at Northwood House, near Hanley, Staffordshire, all the very valuable and extensive Greenhouses, Vineries, Forcing-houses with heating apparatus complete, Cucumber Frames, Hand-glasses, Garden Chairs, Wrought-iron Frames for covering Tulips, Iron Garden Chairs and Flower Stands, Greenhouse Plants, 30,000 of the choicest descriptions of Tulip Bulbs, 400 very excellent Dahlias, 3000 very rare Picotees and Carnations, 300 Pinks, and a great number of the best class of Auriculas, Cactuses, Geraniums, Calceolarias, &c. &c.—Also at the same time will be offered a very superior Light Cab Phaeton, with head in front and seat behind, lined with drab cloth, on Collins' patent axles, quite new—a very useful gig; two sets of Carriage Harness, two Saddles and Bridles, Patent Weighing Machine, &c. &c.

The Auctioneer begs to call the attention of Gentlemen and Connoisseurs to the above, the whole having been selected by the late proprietor with the greatest care, and regardless of expense.—Descriptive Catalogues may be obtained from the George Hotel, Burslem; the Saracen's Head, Hanley; Wheatsheaf, Stoke-on-Trent; Union, Langton.

The Sale to commence each day at 1 o'clock.—Auction-office, Waterloo-road, Burslem, Staffordshire.

MR. EDWARD WYATT is honoured with instructions from his Grace the Duke of Richmond to sell by Auction, on TUESDAY, September 2, at 1 o'clock, near the Drayton Station of the South Coast Railway, 1½ mile from Chichester, 230 two-tooth, four-tooth, six-tooth, and full-mouthed Southdown Ewes, and 14 Rams, and 12 choice Rams for hire for the season; also the superior herd of 35 Hereford Cows and Heifers, and 3 Bulls, 6 young and active Cart Horses, Waggons, Dung Carts, Harness, Harrows, Rollers, &c. The Sheep will maintain the established reputation of the Goodwood Flock, and the Cattle will be found well worth the inspection of breeders. The South Coast Railway Company have kindly consented to stop their trains at the Drayton Station for the accommodation of persons attending the sale. The Ewes, Rams, and Beasts may be seen at Goodwood one week previous to the sale, and Catalogues had of THOMAS BALMER, Esq., Goodwood; or of Mr. E. WYATT, Chidham, and East-street, Chichester; or will be forwarded to applicants by post.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET, a COMPACT FARM of 71 Acres, with good Farm-house, suitable Buildings, and Two Cottages, situate at Pound-place, near Foots Cray, Kent, five miles from the North Kent Railway. Also, to be LET, for Building Purposes, or Cultivation, 12 Acres of Land, at Erith, close to the Abbey Wood Station of the North Kent Railway.—For particulars of the above lettings, apply to Mr. GEORGE GOLDING, Scadbury-park, Chislehurst, Kent.

TO BE LET, a FARM, of 219 acres, chiefly arable, with Family Residence, and two Cottages, within three miles of a railway station on the Brighton Railway, with Shooting; in a singularly beautiful and healthy situation. The house contains eight chambers, two sitting rooms, and offices. The farm buildings are remarkably good, and mostly new. The fields lie together and open, and the land has had the benefit for the last seven years of a very large outlay in draining and other permanent improvements. Altogether it offers an eligible opportunity for farming, with ready communication with London and Brighton; superior family accommodation.—For particulars, and cards to view, apply to Messrs. Davis and Vigers, Land-agents, 3, Frederick's-place, Old Jewry, London.

PARADISE NURSERY, HORNSEY ROAD, ISLINGTON.

THIS Desirable NURSERY TO BE LET, or the LEASE TO BE SOLD, in consequence of the Proprietor being about to retire from the Nursery Business. With immediate occupation. The whole may be taken at a valuation, or by private contract.—Apply personally, or by letter, to C. and H. TRIMMER, Solicitors, Alton, Hants.

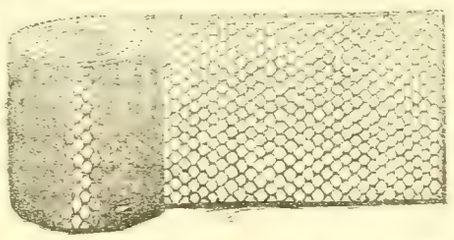
TO BE SOLD, the valuable LEASE of an old-established NURSERY, commandingly situated within two miles of London, consisting of about Two Acres, and 18 Glass Erections, viz., Houses and Pits heated with hot-water apparatuses, with a fine stock of various plants, &c. Any person possessed of 400*l.* will find this worth attention. For cards to view, apply at the Office of this Paper.

EXHIBITION OF 1851.—Supplementary List of Awards recommended by the Jury of Class IX., AGRICULTURAL IMPLEMENTS, granted and confirmed by the Council of Chairmen.

No. IN CATALOGUE, 73. } COUNCIL MEDAL. AMERICA. CYRUS HALL MCCORMICK.—REAPING MACHINE.

August 21, 1851. J. A. LLOYD, Special Commissioner.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

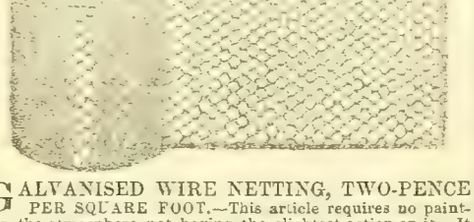


| | | Galvanised. | Japanned, Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " | ... | 9 " | 6½ " |
| 2-inch " extra strong " | ... | 12 " | 9 " |
| 1½-inch " light " | ... | 8 " | 6 " |
| 1½-inch " strong " | ... | 10 " | 8 " |
| 1½-inch " extra strong " | ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 " " | 4½*d.* " | 36 " " | 9*d.* " |
| 14 " " | 6*d.* " | 48 " " | 1*s.* " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2½ yards wide, and of any required length, at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for Softening, Improving, Beautifying, and Preserving the SKIN, and in giving it a blooming and charming appearance, being both a most fragrant perfume and delightful cosmetic. It will completely remove Tan, Sunburn, Redness, &c., and by its balsamic and healing qualities render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2*s.* 9*d.*, with directions for using it, by all Medicine Vendors and Perfumers.

AGRICULTURAL EDUCATION.—Several Noblemen and Gentlemen, advocates of combining Science with Practice, and convinced of the importance of early Education for those intended for Agricultural pursuits, have subscribed a FUND to Educate a limited number from each County. They will be instructed in all the Sciences connected with Agriculture, free of every cost, excepting Books and Chemicals. Parents may secure Board and Lodging in the village, or the Pupil may be accommodated in the house of the Head Master, on payment of a moderate sum.

The Presentations will be distributed on the 23rd of September, and particulars furnished on application, by letter, addressed "Agricultural Education," Messrs. DAWSON and SONS' Advertising Offices, Abchurch Yard, and 74, Cannon-street, City, London.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25*l.* per ton, and Rich Purple-brown, 20*l.* per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

TRAVELLERS AND VISITORS TO THE SEA-COAST would do well to provide themselves with a bottle of ROWLANDS' AQUA D'ORO. This fragrant and spirituous perfume refreshes and invigorates the system during the heat of summer, and will be found an essential accompaniment for the opera, the public assembly, and the promenade. In all cases of excitement, lassitude, or over exertion, it will prove of great advantage taken as a beverage, diluted with water. Price 3*s.* 6*d.* per bottle.

ROWLANDS' KALYDOR will also prove a most refreshing preparation for the complexion, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasing sensation attending restored elasticity and healthful state of the skin. Freckles, Tan, Spots, Pimples, and Discolorations are effectually prevented and eradicated by its application; and in cases of sunburn, stings of insects, or incidental inflammation, its virtues are universally acknowledged. Price 4*s.* 6*d.* and 8*s.* 6*d.* per bottle.

Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

☞ Beware of SPURIOUS IMITATIONS. The genuine article has the words "ROWLANDS' KALYDOR" on the wrapper.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER. 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND,

Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 physicians and surgeons of the greatest eminence, as well as from many officers of both army and navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

Prepared by JOHN FOX, in boxes, 1*s.* 1½*d.*, or three small boxes in one for 2*s.* 9*d.*; and to be had, with full directions for use, of all wholesale and retail Medicine Vendors in town and country. The Genuine has the name of "JOHN FOX" on the Government Stamp. A 2*s.* 9*d.* box cures the most obdurate Corns. Ask for "Paul's Every Man's Friend."

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newberry, St. Paul's; Sutton, Bow Churchyard; Johnston, 68, Cornhill; Sanger, 150, Oxford-street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 39, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Watts, 106, Edgeware-road; and retail by all respectable Chemists and Medicine Vendors in every Town in England. Wholesale Agents for Ireland and Scotland. Messrs. J. and R. RAIMES and Co., Druggists, Edinburgh.

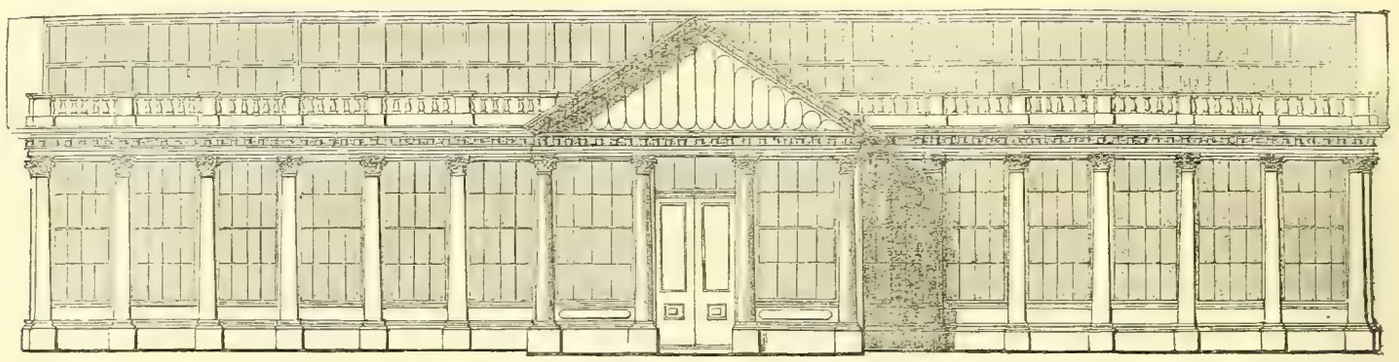
GOOD NEWS FOR THE AFFLICTED.

DR. ROBERTS'S CELEBRATED OINTMENT, called the "POOR MAN'S FRIEND," is confidently recommended to the Public as an unfailing remedy for Wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples in the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow Vaccination. Sold in pots, at 1*s.* 1½*d.*, and 2*s.* 9*d.* Also, his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are useful in Scrofula, Scorbutic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 22*s.* each. Sold wholesale by the proprietors, BEACH AND BARNICOTT, at their Dispensary, Bridport, and by the London houses; retail by all respectable Medicine Vendors in the United Kingdom. Observe—No medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott's, late Dr. Roberts, Bridport," is engraved and printed on the stamp affixed to each package.

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ART-UNION OF LONDON.—The Exhibition of Works selected by the Prizeholders of 1851, postponed by the arrangements of the Royal Academy, will be open to Members and their friends, at the SUFFOLK-STREET GALLERY, from MONDAY next, the 1st of September, till SATURDAY, the 20th; and to the Public, without Tickets, from MONDAY, the 22d, to SATURDAY, the 27th, from 10 till 6 each day.

The Print of "An English Merry-making in the Olden Time" will be ready for delivery on payment of the subscription, on and after September 1.

444 West Strand, Aug. 26 GEORGE GODWIN, } Honorary LEWIS POCOCK, } Secretaries.

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# THE GARDENERS' CHRONICLE
AND
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**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 36—1851.] SATURDAY, SEPTEMBER 6. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Society of England | 572 *a* | Mitchell's nursery, Brighton.. | 567 *b* |
| Antennaria Stephensii | 563 *c* | National Floricultural Soc. .. | 566 *c* |
| Atmosphere | 569 *b* | Neill (Dr.) death of | 567 *b* |
| Beet, sugar | 571 *a* | Nightingale, Virgilian | 566 *b* |
| Birds, British song | 564 *c* | North Kent Horticultural .... | 567 *b* |
| British Association | 564 *b* | Orchids for the Million | 561 *b* |
| Calendar, Horticultural | 568 *a* | Plants, to expose | 566 *b* |
| — Agricultural | 574 *a* | Plants, direction taken by .... | 567 *b* |
| Crystal Palace ..... 570 *a*– | 571 *b* | Plantains, Mexican | 563 *a* |
| Farming, Continental | 572 *a* | Potatoes, waxy | 566 *c* |
| Farm produce | 572 *a* | Potato crop | 570 *b* |
| Fairy rings | 568 *c* | Potato disease | 566 *a* |
| Floriculture | 564 *a* | Pruning forest trees | 566 *b* |
| Fruit crops | 566 *a* | Pumps | 570 *a* |
| Fungi on Lemons | 563 *b* | Rape | 571 *c* |
| Garden gleanings, foreign .... | 565 *b* | Raspberry case | 565 *c* |
| — engines | 563 *b* | Roses, Cloth of Gold | 566 *c* |
| Harvest in Hants | 571 *c* | Royal South London Flori. Soc. | 567 *a* |
| Hornets in Yorkshire | 566 *a* | Seeds, vitality of | 565 *c* |
| Horticultural Society's Journal, contributors to | 564 *a* | Sugar Beet | 571 *a* |
| Horticultural Society | 566 *c* | Swifts in Yorkshire | 566 *a* |
| Labourer, the | 572 *a* | Syringes | 565 *b* |
| Lemon fungus | 563 *b* | Temperature | 569 *b* |
| Manchester Agricultural Soc. Journal | 573 *b* | Trees, forest, to prune | 566 *b* |
| | | Weather, the | 574 *a* |
| | | Wheat, to dibble | 571 *c* |


ERRATUM.—In Mr. PAMPLIN'S Advertisement, "Paradise Nursery, Hornsey Road, Islington," inserted August 30th, the Address is incorrect; it should have been—Apply personally, or by letter, to W. J. PAMPLIN, on the premises.

HORTICULTURAL SOCIETY OF LONDON.—Whereas the following persons, who have been from time to time elected Corresponding Members of this Society, have not communicated with the Society for very many years, and are supposed to be dead,

NOTICE IS HEREBY GIVEN that their names will be removed from the list of the Society, unless some evidence of their existence is received within 10 days from this date.

Affleck, Mr. David John Donaldson, Gloucester.
Ashworth, Mr. Thomas, Springfield, Crumpsell, Manchester.
Balfour, Mr. William, Chivington Wood, near Felton, Northumberland.
Barton, Mr. Thomas, Shenfield, Brentwood, Essex.
Breese, Mr. John, Gardener to Sir Thomas Neave, Bart., at Dagnam Park, Romford, Essex.
Callander, Mr. John, Rotherfield Park, Hampshire.
Chapman, Mr. Andrew, Barlaston, near Stone, Staffordshire.
Chesher, Mr. Charles, Gardener to William Ralph Cartwright, Esq., at Aynhoe, Northamptonshire.
Crozier, Mr. James, Gardener, Alnwick, Northumberland.
Diack, Mr. Alexander, Mill Hill, near Aberdeen.
Gibbons, Mr. William, Killalee, Dublin.
Hay, Mr. James, Totterdown Hill, Bristol.
Hildyard, Mr. Elias, Gledhow Grove, Leeds.
Hosie, Mr. Robert, late Gardener to the Lord Lynedoch.
Hughes, Mr. William, Gardener to the Earl of Digby, Sherborne Castle, Dorset.
MacLeod, Mr. Daniel, Landscape Gardener, 31, Bachelor's-walk, Dublin.
Malone, Mr. Edmund, Gardener to G. S. Foljambe, Esq., at Osberton House, East Retford, Nottinghamshire.
Montgomery, Mr. Duncan, Gardener to the Duke of Montrose, at Mynadoc Castle, Buchanan, Stirlingshire.
Newson, Mr. Henry.
Phelps, Rev. William, A.M., Mere, near Glastonbury.
Robertson, Mr. John, Gardener to the Lord Gray, at Kinfauns Castle, near Perth.
Sibbald, Mr. Thos., Nurseryman, Bishop's Auckland, Durham.
Skinner, Mr. Thomas, Gardener to R. A. Oswald, Esq., at Auchencruve, Ayrshire.
Skrimshire, William, Esq., Wisbeach, Cambridgeshire.
Taylor, Mr. John, Gardener to the Earl of Dunmore, at Dunmore Park, Falkirk, Stirlingshire.
Thompson, Mr. George, Gardener to the Earl Fitzwilliam, at Wentworth House, Yorkshire.
Trench, Mr. John, Gardener to John Broadhurst, Esq., at Cooper's Hill, Egham, Surrey.
Venables, Rev. James, A.M., Buckland Newton, Sherborne, Dorsetshire.
Wheeler, Mr. Isaac, Gardener to Mrs. Wall, at Oxford.
Young, Mr. John, Forester to the Earl of Kingston, Mitchelstown, Cork.

21, Regent-street, London, 6th Sept., 1851.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—A Grand DAHLIA EXHIBITION will be held at St. Andrew's Hall, Norwich, on WEDNESDAY, the 17th September, 1851, open to Amateurs, being members, and Nurserymen, in all England. Prize List, and every information, on application to WILLIAM HUSSEY, Secretary.
Horticultural Gardens, Norwich, Sept. 6.

VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.
The next EXHIBITION of this SOCIETY will be held in the VIVARY PARK, TAUNTON, under their splendid MARQUEE, on WEDNESDAY, the 17TH of SEPTEMBER next.
The Society offers a handsome SILVER CUP to be competed for by Nurserymen (open to All England), for the best stand of DAHLIAS, 24 dissimilar blooms.
Competitors for this Prize will be required to pay an entrance fee of 2*s.* 6*d.*, and give four days' notice of their intention to exhibit, to the Hon. Secretary, Mr. J. KINGSBURY, Canon-street Cottage, Taunton.—September 6.

SCOTTISH GARDENERS' AND LAND-STEWARDS' ASSOCIATION.—At a Meeting for the ELECTION OF THREE PENSIONERS on the general Funds of the Association, held at the Chambers, No. 6, York-place, Edinburgh, on the 28th inst., the following was the state of the Poll at the close of the ballot:—

JOHN COWAN (Kilninver, Argyll), aged 77 ... ... 184 Votes.
ALEX. THOMSON (Aberdalgie, Perthshire), aged 68... 173 ,,
JOSEPH MACKIE (Dailly, Ayrshire), aged 74 ... ... 111 ,,
DONALD SMITH (Kilmodan, Argyll), aged 66 ... ... 81 ,,
DUNCAN M'DOUGALL (Muthill, Perthshire), aged 68 49 ,,

The three candidates, Cowan, Thomson, and Mackie, having the greatest number of Votes, were thereupon declared duly elected. ARCH. SCOTT, Chairman.
Edinburgh, Sept. 6.

MESSRS. JEYES AND CO.'S Collection of CINERARIAS during the last spring was acknowledged by all parties who saw it to be the finest they had ever seen.
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JAMES MAY begs to inform the trade and public that he has at this time now ready a large quantity of first-rate quality, the price of which may be had on application. Highly respectable reference can be given if required.
Munster Farm, Fulham, London, Sept. 6.

FOREST PLANTS IN THE GREAT EXHIBITION.—The Subscribers beg to direct the notice of Planters to their specimens of Forest Plants exhibited in Class IV., No. 1, South-west Gallery, among which are Seedling and Transplanted native Scotch Pines, raised with roots unusually fibrous, adapted for exposed Moorland at a great altitude. The numerous premiums awarded by the Highland and Agricultural Society of Scotland for the cultivation of the true native Scotch Pine, have been awarded to the Subscribers; and their present Stock of this valuable Tree exceeds Ten Millions of Plants. Priced Lists will be furnished on application, and the Trade supplied at the wholesale rate.
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Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval, and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orlean Plum; when fully ripe are a fine deep black, having a fine rich flavour, and very juicy.
It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

MYATT'S NEW SEEDLING STRAWBERRY, "CINQUEFOLIA"—The character of this Strawberry is quite distinct, having generally five leaves on each foot-stalk. The trusses are strong, producing an abundance of large fruit of a fine flavour. For general description, see *Gardeners' Chronicle*, of July 12th, and "Gardeners' Journal," of July 19 h. Plants of this variety 50*s.* per 100; also Myatt's Surprise, 21*s.*; British Queen, Eleanor, Globe, Deptford Pine, Mammoth, Eliza, Fertilised Hautbois, Hooper's Seedling, Keen's Seedling, Swainstone Seedling, Elton Pine, Black Prince, Bicton Pine (white), 3*s.* 6*d.* per 100. Kitley's Goliah, 5*s.*; Jackson's Britannia, 5*s*—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 6.

DUTCH FLOWER ROOTS.
WILLIAM E. RENDLE, Plymouth, NURSERYMAN and FLORIST by royal permission, to HER MOST GRACIOUS MAJESTY THE QUEEN, has much pleasure in announcing that he has just received a large collection of DUTCH FLOWER ROOTS, in most excellent condition, from one of the first establishments in Holland. The HYACINTHS are particularly large and handsome.—Descriptive Catalogues can be obtained, for two penny stamps, on application to WILLIAM E. RENDLE, Nurseryman, Plymouth.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

STIRLING CASTLE PINE STRAWBERRY.—The Subscriber begs to intimate that this variety, sent out by him last spring, has fully sustained the character then given as to its superior size, productiveness, and flavour. In support of this he is prepared to furnish the testimony of numerous gentlemen, gardeners, and nurserymen, whom he furnished with plants. Healthy plants may now be had at the reduced price of 5*s.* per 100, or, free by post, 1*s.* per doz.
Edgebill Nursery, Dean, Edinburgh. ROBERT M. STARK.
Agents in London, Messrs. Hurst and M'Mullen, 6, Leadenhall-street.
R. S. has received, in good condition, his annual supply of imported DUTCH BULBS, of which, with a selection of New and Interesting Plants, Florists' Flowers, &c., a list may be had on application.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—
PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.
PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.
PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.
Copies supplied on application, published complete with the newspaper stamp, to go free.
Seed and Horticultural Establishment, Sudbury, Suffolk.

SAFFRON WALDEN.—SUPERB DOUBLE HOLLYHOCKS.
WILLIAM CHATER begs respectfully to inform the public that his Price Catalogue is now ready, and may be had by enclosing a postage stamp. Strong and vigorous Plants are now ready to send out, and the greatest care is observed in packing; also Plants gratis to recompense for long carriage. Early orders will insure obtaining desired sorts, as it frequently happens that some particular varieties are sold out before the end of the season.
W. C. has also a fine collection of Roses, Pansies, Carnations, Chrysanthemums, &c., &c., of which Lists may be had on application.—Saffron Walden, Sept. 6.

NEW FUCHSIAS, VERBENAS, PETUNIAS, AND CANTUA DEPENDENS.
GEORGE SMITH begs to offer the following new varieties of the present season as above, viz.:—VERBENAS, (Smith), British Queen, Enchantress, Exquisite, Grandis, Othello, Shylock, King, Eliza, Voltigeur, Prince of Wales, Wonder (Young's), Lady of the Lake, Model of Perfection (Turner's), Beauty, Admirable, Compacta, Marchioness of Cornwallis. French varieties:—Blanche de Castle, Jean Bart, General Bedeau, Eugene Sue; the above good plants at 12*s.* per dozen. The following New FUCHSIAS, at 21*s* per dozen:—Smith's Sedonia Alpha, Psyche (Banks), Voltigeur, Madame Sontag, Brilliant, Princess, Loveliness, Conspicua, Henderson's Madame Sontag, Resplendens, Prime Minister, Expansion, Elect (Knight's), Duchess of Kent (Batten), Clapton Hero, Pagoda (Story's), Attraction, Prince Arthur, Devoniana (Tiley's), Koh-i-Noor (Miller), Longipes, Mazeppa, Admirable, Madame Liboies, Louise Miller.
PETUNIAS:—Young's Attraction, Crimson King, Rosy Circle (Smith's), Striata (Parson's), Grandis. HELIOTROPE REPTANS, at 1*s.* each. CANTUA DEPENDENS 3*s.* 6*d.* each.
A Descriptive Catalogue will be forwarded on receipt of one postage stamp.
Tollington Nursery, Hornsey Road, Islington, London.

NEW EARLY STRAWBERRY—"TROLLOP'S VICTORIA.
JAMES TROLLOP (who raised "Princess Alice Maud" Strawberry, which gave general satisfaction to the public in 1848), now with great confidence offers his seedling "VICTORIA," and is certain that it combines qualities which no other kind in cultivation does possess. Being very early, a dwarf robust grower, and free bearer, throwing strong trusses of fruit (above the foliage), which is of a large size, globular form, and good colour, with a delicious flavour.
Fine well-rooted plants, on and after the 8th September, 1851, at 4*l.* per 100.
For particulars of prizes and opinions, with full advertisement, see *Gardeners' Chronicle*, Aug. 2d, 1851, and "Beck's Florist, Fruitist, and Garden Miscellany," for August, 1851, or "Midland Florist."
N.B. Full particulars may be had free, per post, by applying to G. D. FISHER, at Mr. Butler's Nursery, Wedcombe, Bath.
Limpley Stoke, September 6.

DICKINSON'S ITALIAN RYE GRASS SEED is now ready for delivery—7*s.* per bushel.
No. 7, Curzon-street, May Fair, London.

HYACINTHS, &c.

CHANDLER AND SONS, NURSERYMEN, Wandsworth Road, Surrey, have just received from Holland their BULBS, in good condition.
Fine HYACINTHS, by name, per doz. ... ... 6*s.* to 12*s.*
TULIPS, NARCISSUS, CROCUS, &c., at moderate prices.
CAMELLIAS, well set with flower buds, per doz. ... 30*s.*
CHRYSANTHEMUMS, bushy plants for flowering this autumn, per doz. ... ... ... ... ... ... 12*s.*
Post-office Orders payable at Kennington Cross.

THE FINEST NEW ROSES OF THE SEASON.

HYBRID PERPETUAL QUEEN VICTORIA. (PAUL'S.) This is unquestionably the finest New Rose of the season; it is a seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly waxlike in appearance, and distinct from every other.
Plants, in November, 10*s.* 6*d.* each, with the usual discount to the Trade when three are ordered at once.
CLIMBING PERPETUAL, ROBERT BURNS (PAUL'S.) Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedole in colour; like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants in November, 7*s.* 6*d.* each.
N.B. Each of these Roses has obtained a first class certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.
A. PAUL and SON, Nurserymen, Cheshunt, Herts.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s.* per dozen.—The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place.

SUPERB NEW PEA, "THE NOVEMBER PROLIFIC," supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2*s* 6*d* per quart; to be had from W. HAMILTON, Seedsman, &c., 156, Cheapside, London.
*** A liberal discount to the Trade.

HYACINTHS TULIPS, CROCUS, NARCISSUS, &c.

JAMES CHARTRES, SEEDSMAN, &c., 74, King William-street, City, London, begs most respectfully to inform ladies and gentlemen about to purchase their annual supply of the above, that he has a splendid collection, all selected bulbs, which he can strongly recommend. Orders above 1*l.* forwarded, carriage paid, to any part of the kingdom.
A catalogue may be had on application.

CUTHILL'S BLACK PRINCE STRAWBERRY (TRUE).—The undersigned having a very superior Stock of the above favourite new variety of STRAWBERRY, the Stock originally obtained from the raiser, and the Plants very strong and well-rooted, they are induced to offer them to the public at 4*s.* per hundred; also very strong Myatt's Eliza, 3*s.*, and Myatt's British Queen Strawberries, 2*s* 6*d.* per hundred, packages included.
CLARKE and Co., Seedsmen and Florists, 86, High-street, Borough, London.
EARLY FLOWERS, FOR FLOWERING IN WINTER.
First-rate Hyacinths, for in-door culture, 6*s* p. doz. Dutch roots.
Due Van Thol Tulips ... ... ... 9*d.* do. do.
Crocuses, mixed, all colours ... ... 1*s.* per hundred do.
And everything else in the root way.

BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

COCHIN CHINA POULTRY.—A few valuable Birds for Sale.—Apply to C. M., Office of this Paper.

SHANGHAE CHINA FOWLS.—An Amateur has a few pairs of this Gigantic Breed of Poultry for sale. Truly bred, of great size, and good colours. Price 30*s.* per pair.—Direct to E. ALNER, South-street Malthouse, Gosport.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.
BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1*l* quarts, 17*s.* 6*d.*; 7 quarts, 15*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.
BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1*s.* 6*d.*

GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 8*s.* 6*d.* each.
4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½
Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.
Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.
Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.
PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.
Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.
For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.
Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | | Packed in Boxes of 100 feet each. | £. | s. | d. |
|---|---|---|---|---|---|
| 16 ozs. ... | 3*d* to 3½*d.* | 6 by 4, 6½ by 4½ ... | 0 | 13 | 0 |
| 21 do. ... | 3½*d.* to 5*d.* | 7 by 5, 7½ by 5½ ... | 0 | 15 | 0 |
| 26 do. ... | 5*d.* to 7½*d.* | 8 by 5, 8 by 5½ ... | | | |
| In Crates of 300 ft., 16 ozs. to the foot, 2¾*d.* per foot. | | 8 by 6, 8½ by 6½ ... | 0 | 17 | 6 |
| | | 9 by 7, 10 by 8 ... | 1 | 0 | 0 |

Foreign Sheet Glass, in cases of 200 feet, and in sizes from 40 by 30, to 44 by 32. 2*l.* per case.
Milk Pans, from 2*s.* to 6*s.* each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.
HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

FERN GLASSES.

J. PHILLIPS AND CO. have succeeded in making a very neat style of Shade, with glass bottom (or stand), expressly for the growth of Ferns, which will be found much more ornamental than any previously made for the same description of plant.

PRICES.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 inch diam. | 13 high | 3*s.* 0*d.* | 11 inch diam. | 22 high | 7*s.* 8*d.* |
| 7 ,, | 15 ,, | 3 6 | 12 ,, | 24 ,, | 9 1 |
| 8 ,, | 16 ,, | 4 1 | 13 ,, | 27 ,, | 12 0 |
| 9 ,, | 19 ,, | 5 3 | 14 ,, | 28 ,, | 16 6 |
| 10 ,, | 21 ,, | 6 6 | 15 ,, | 29 ,, | 18 6 |

The Glass 3-16ths of an inch thick.
Horticultural Glass Warehouse, 116, Bishopsgate-street, Without, London.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... | ... | ... | 13*s.* | 0*d.* |
| 7 ,, | 5 and | 7½ by 5½ | ... | ... | 15 | 0 |
| 8 ,, | 5 and | 8 by 5½ | ... | ... | 15 | 0 |
| 8 ,, | 6 and | 8½ by 6½ | ... | ... | 17 | 6 |
| 9 ,, | 7 and | 10 by 8 | ... | ... | 20 | 0 |
| 12 ,, | 10 and | 13 by 9 | ... | ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses.
Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.
ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d.* | per foot. |
| ,, ,, | 35 ,, | ..... 8*d.* | ,, |
| ,, ,, | 50 ,, | ..... 9½*d.* | ,, |
| ,, ,, | 75 ,, | .....12*d.* | ,, |

Milk Pans, 2*s* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

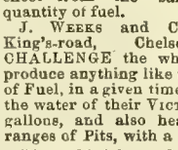
HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes.—Inches. | | | | | | Per foot. | | Per 100 feet. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Under | 6 by 4 | at | 1¼*d.* | is | £0 | 12 | 6 |
| From 6 by 4 | ,, | | 7 ,, 5 | ,, | ,, | 2*d.* | ,, | 0 | 16 | 8 |
| 7 ,, 5 | ,, | | 8 ,, 6 | ,, | ,, | 2¼*d.* | ,, | 0 | 18 | 9 |
| 8 ,, 6 | ,, | | 10 ,, 8 | ,, | ,, | 2½*d.* | ,, | 1 | 0 | 10 |
| 10 ,, 8 | ,, | | 12 ,, 9 | ,, | ,, | 2¾*d.* | ,, | 1 | 2 | 11 |

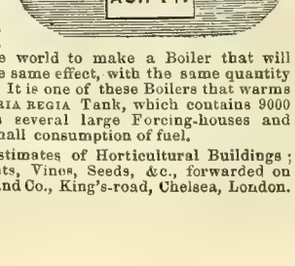
Larger sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* to 7½*d.* ,, ,, ,,
PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

WANTED, for Fruiting in Pots, a quantity of BLACK HAMBURGH VINES.—Address, stating price, &c., to J. T., Post-office, Sevenoaks, Kent.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



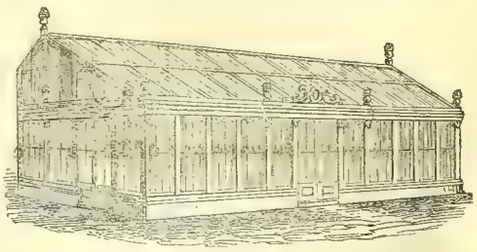
J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.




J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet glass of a large size, 4*d* per foot extra.
J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

HOTHOUSES AND CONSERVATORIES.

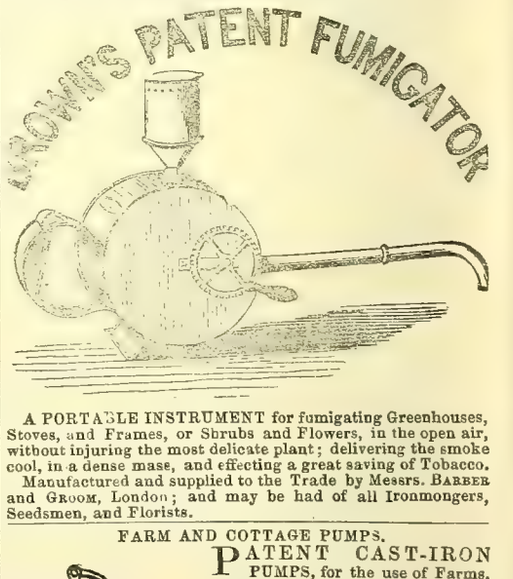


HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the kingdom, warranted best material. Garden Lights of every description, at JAMES WATTS', HOTHOUSE BUILDER, CLAREMONT-PLACE, OLD KENT-ROAD. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

MILDEW.

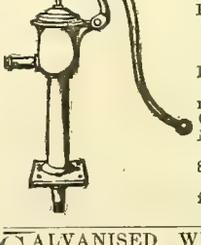
EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21*s.*, and upwards. The Trade supplied by Barber and Groome, Holborn, London.
This Machine has been used by the following persons, and the highest testimonials have been received as to its valuable properties, in effectually destroying the Mildew on Grapes, Peaches, Peas, and all other horticultural produce:—Dr. Plomley, F.R.S.; Mr. Ingram, gardener to her Majesty at Windsor; Mr. Smith, Superintendent at the Royal Gardens, Kew; Mr. Iveson, Sion House; Mr. Glendinning, Chiswick; Mr. Thompson, Horticultural Society's Gardens; Mr. W. P. Ayres, Blackheath; Mr. Gaines, Battersea; Mr. Cole, gardener to — Colyer, Esq., Blackheath; Mr. Robson, gardener to Earl Cornwallis, Linton Park; and many other scientific and practical men.—High-street, Maidstone, Sept. 6.

PRICE TEN SHILLINGS AND UPWARDS.




A PORTABLE INSTRUMENT for fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.
Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

FARM AND COTTAGE PUMPS.

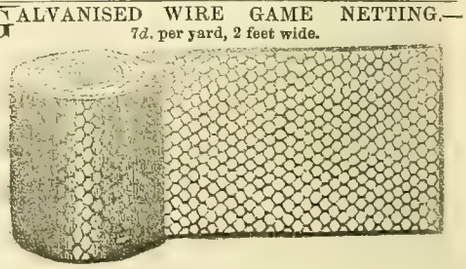


PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | | |
|---|---|---|
| Patent Pump | ... | ... £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing | ... | ... 2 12 0 |

Larger sizes if required.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.
JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.
Every description of Machinery for Raising Water, Fire Engines, &c.
The usual allowance to the Trade.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | | Galvanised. | Japanned, Iron. |
|---|---|---|---|---|
| 2-inch mesh, | light, 24 inches wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, | strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, | extra strong ,, | ... | 12 ,, | 9 ,, |
| 1½-inch ,, | light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch ,, | strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch ,, | extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

NEW PELARGONIUMS.

CHARLES TURNER strongly recommends the following NEW PELARGONIUMS; it will be sufficient to observe that he has the entire stock of those beautiful varieties raised by E. FOSTER, Esq., and G. W. HOYLE, Esq., which obtained 9 extra prizes, and 20 Certificates, during the past season. Strong plants will be ready the first week in October. The usual discount to the Trade. If the Set is taken, a liberal allowance will be made.

ARIADNE (FOSTER).—Rosy purple bottom petals, rich dark top, with narrow margin of rose, clear white centre, free bloomer, large truss, and fine substance; good early exhibition plant; 31*s.* 6*d.*

BEATRICE (HOYLE).—Neat smooth constant flower, bottom petals mottled rose, top petals rich black, even margin of dark carmine, free bloomer; 15*s.*

CELIA (HOYLE).—Beautiful orange lower petals, tinged towards the centre with violet, top petals bright orange, medium spot shaded with scarlet, free and early bloomer, but curly in top petals; 15*s.*

CHIEFTAIN (HOYLE).—Rose crimson, with dark shaded blotch on upper petals, fiery, narrow margin, large, very stout, good habit, rather inconstant; 21*s.*

CHLOE (HOYLE).—Lively bright rose, white centre, medium-sized dark spot shaded with scarlet, good grower and free bloomer; 10*s.* 6*d.*

COLONEL OF THE BUFFS (HOYLE).—Novel bright orange, large and very attractive, constant, and free bloomer; 31*s.* 6*d.*

CRISTINE (HOYLE).—Delicate warm rose, with deep spot on upper petals shaded with orange, large and very free, a fine cheerful flower; 21*s.*

ELISE (HOYLE).—Deep warm orange pink, shaded with delicate lilac, light centre, medium-sized spot, surrounded with orange, margin of orange pink, smooth, constant, and free bloomer; 31*s.* 6*d.*

ENCHANTRESS (FOSTER).—Rosy crimson bottom petals, rich crimson blotch on top petals, with margin of bright crimson, white centre; the shape of Gipsy Bride, but twice the size, free bloomer, and good habit; 31*s.* 6*d.*

EURYDICE (FOSTER).—Deep crimson bottom petals, top petals dark maroon, narrow margin of bright crimson, free bloomer; 15*s.*

GANYMEDE (HOYLE).—Very round, smooth, and cupped, warm lilac colour, white centre, dark top petals, very evenly shaded with purplish carmine margined with the ground colour; 31*s.* 6*d.*

HERALD (HOYLE).—Mottled light pink bottom petals, top dark blotch, with narrow margin, white centre, good shape, and constant, very dwarf, good habit; 7th prize; 21*s.*

ILLUMINATOR (TURNER).—Bright mottled crimson bottom petals, rich dark crimson top, narrow bright margin, very showy and attractive, being nearly as free as the Fancies; 10*s.* 6*d.*

LABLACHE (FOSTER).—Orange rose, with dark blotch on the top petals, large white centre, good substance, very attractive variety; 21*s.*

LAVINIA (FOSTER).—Purple, similar in colour to Alonzo, but of finer form, rich dark top petals, with bright margin, good habit, and fine bloomer; 21*s.*

LITTLE NELL (TURNER).—Rosy lilac bottom petals, maroon top petals, narrow margin of rose, white centre, very free, early bloomer, good plant for exhibition; 10*s.* 6*d.*

LORD MAYOR (BLACK).—Bright crimson scarlet bottom petals, mottled, black blotch on the top petals, shaded off to the margin with scarlet crimson, very showy, and free bloomer; 15*s.*

MAGNET (HOYLE).—A high-coloured scarlet crimson, large black blotch varying towards the margin on a scarlet crimson ground, without being lighter on the edge, very profuse bloomer, and constant, very striking flower; 42*s.*

MOCHANNA (HOYLE).—Lower petals warm rose, white centre, top petals large dark blotch, shaded and mottled with scarlet, margin of ground colour, large fine shape, free, smooth, bold, attractive flower; 21*s.*

MONTEITH (FOSTER).—Bottom petals crimson purple, dark blotch on top petals, shaded off to the margin with crimson; 21*s.*

PLANTAGENET (TURNER).—Crimson bottom petals, dark maroon top petals, narrow margin of bright crimson, free bloomer; 15*s.*

PULCHRA (FOSTER).—Lower petals salmon rose, large rich dark blotch on top petals, with margin of bright rose, white centre; free bloomer, good habit; 21*s.*

PURPLE STANDARD (FOSTER).—Bottom petals rich purple, black top petals, with narrow, even, fiery margin. This flower possesses fine substance, shape, and very smooth; much the best purple; 31*s.* 6*d.*

REMUS (HOYLE).—Deep rose lower petals, with dark blotch on upper petals, shaded with scarlet; smooth, and fine shape; 21*s.*

RUBENS (FOSTER).—Crimson, with dark maroon blotch on top petals, narrow margin of bright crimson; good substance; 21*s.*

SHYLOCK (FOSTER).—Bottom petals deep rich mottled purple, black top petals, a wire margin of scarlet; medium size, free bloomer; the darkest variety raised; 31*s.* 6*d.*

VANDYKE (TURNER).—Bottom petals bright scarlet crimson, dark blotch on top petals, scarlet margin; very striking, but not a good shape; 10*s.* 6*d.*

VONDEL (HOYLE).—Lilac rose, with dark blotch on top petals; 15*s.*

A selection of older varieties at moderate prices. A Descriptive List may be had on application.

Royal Nursery, Slough.



# The Gardeners' Chronicle.

*SATURDAY, SEPTEMBER* 6, 1851.


MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 9—London Floricultural.....6 P.M.

COUNTRY SHOWS.—Tuesday, Sept. 9: Shacklewell Dahlia. Falmouth and Ashford Horticultural.—Wednesday, Sept. 10: Maidstone and Wallingford Horticultural.—Wednesday, Sept. 10, and Thursday, Sept. 11: Hexham Floral and Horticultural.—Thursday, Sept. 11: Ipswich, Bath, and Cheltenham Horticultural.—Friday, Sept. 12: Beccles Horticultural.

IN the year 1834 Capt. COLQUHOUN, of the Royal Artillery, communicated to the Society of Arts some specimens of the dried Plantain fruit of Mexico, with the following account of it.

"The sample was brought from Mexico, being prepared in the hot country (*Tierra caliente*) of Jalisco and Mechoacan, whence the fruit is sent to the higher parts of Mexico, the temperature of which is too low for the successful cultivation of the Plantain.

"The mode of its preparation is as simple as possible. The fruit is gathered when fully ripe, and is laid on light cane frames exposed to the sun. When it begins to shrivel, the outer skin is stripped off,* and then the drying is completed. During this process it becomes covered with a white mealy efflorescence of sugar, as the Fig does under similar circumstances. For convenience of transport, it is pressed into masses of about 75 lbs. each, and is wrapped in Plantain leaves. It is evident that the fruit in this state bears precisely the same relation to the fresh Plantain that the Raisin and dried Fig do to the fruits from which they are prepared, and may be expected to keep good as long as either of them."

The sample in question was described by the Secretary of the Society of Arts as being, when it came into the possession of the Society, about two years old, sufficiently moist, of a consistence and flavour between the Date and the Fig, and very sweet, without any acidity: there were no seeds, the whole of the fruit being eatable.

A portion of the very same sample, which had been transferred to a baggage warehouse at Woolwich, and left there since 1835, and which is consequently now *nineteen years old*, has been placed by Col. COLQUHOUN in one of the galleries of the Industrial Exhibition in Hyde Park; and, with the single exception of having become rather dry, is in as good a state as in 1834. It is not acid, its taste has undergone no change, it does not indicate a trace of mites, and it is in every respect fit for consumption, not only as a wholesome, but as an agreeable article of food, far better than the Dates or four-fifths of the Figs that are sold in the London market. The only alteration that deserves notice is the spontaneous separation of many of the cells containing what seems to be uncrystallisable sugar, in the form of brown granulations; but these are just as good in flavour as the more solid parts.

What have we in the market, let us ask, that can be compared with these Mexican Plantains? After lying in a baggage warehouse for nineteen years, Raisins would be bitter and woody, Dates would be little better, and as for Figs, the mites would have destroyed what was originally eatable, leaving their leathery jackets to nourish dry rot, or to resolve themselves into a kind of sawdust. We all know indeed that none of the dried fruits consumed in this country are eatable at the end of a year, with the single exception of Dates.

This striking fact raises the very important question, whether dried Plantains cannot be made a profitable commercial article. From British Guiana, as well as Jamaica, Trinidad, Barbados, and other West India islands, an unlimited supply might be furnished. We have learned from the example set by Lord HARRIS what may be expected from the West India islands, when under the administration of enlightened governors. If Trinidad can enter advantageously into competition with the world with her Tobacco, her Cacao, and her Spices, why should she not add as yet another article of produce with her dried Plantains?

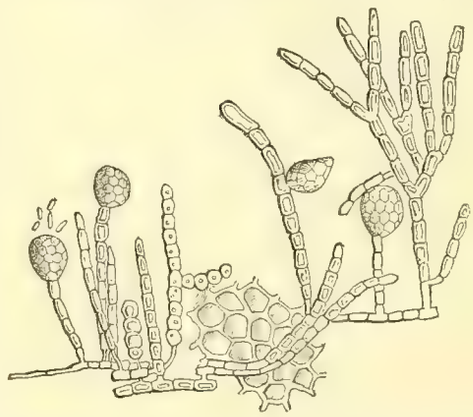
The quantity of similar fruit imported last year was as follows:—Figs, 33,964 cwt.; and Raisins, 276,312 cwt.

According to Col. COLQUHOUN, in 1834, the dried Plantain may be expected to be imported from the West Indies, all charges paid, but exclusive of duty, for about 28*s.* per cwt., or 3*d.* per lb., including 10 per cent. of profit to the grower. This price, it is true, was calculated on the production of Demerara, where the soil is richer than in the islands; but, on the other hand, the charges are also higher than in the latter.

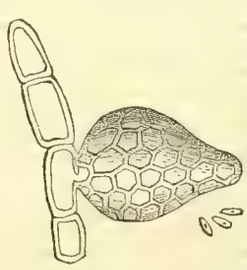
If this was so, and it is not improbable that the price remains without much alteration, it is clear that dried Plantains might enter into direct competition with Figs, and similar produce; and if admitted duty free, as our colonies would be entitled to expect, their low price, better quality, and admirable keeping property, would cause them to be much more generally consumed. It would, however, be necessary for the colonists to be careful how they prepared them, because samples have come under our observation formerly which were very inferior to those produced by Col. COLQUHOUN.

SOME slices of the skins of Lemons were forwarded to us in the summer of last year, by Mr. STEPHENS, of Bristol, which on the unpacking of a chest were found to be nearly covered with a thick black felt, and consequently quite unsaleable. It is well known that of late years the crops of Oranges and Lemons in the Azores and other fruit islands, like the Coffee plantations of Ceylon, have been dreadfully affected with a smutty fungus, which either greatly impairs the vegetative powers of the trees, or totally destroys them. It appears that in every such case the disease is preceded by an insect, the excrements or secretions of which form a nidus on which the fungus is developed. The first thing, then, is to destroy the insects, if possible; for if these once gain a head, the eradication of the mould is quite impracticable. Its growth is evidently extremely rapid, and the creeping mycelium extends with the greatest ease from the little soiled spots on which it was first developed. It is quite beyond belief that the Lemons could have been packed in a state such as would render their rejection certain on being unpacked; the greater part of the growth, therefore, must have taken place in the course of the short passage to England.

The substratum of the curious mould consists of a single layer of angular cells closely applied to the surface of the fruit, and following all its inequalities. From this arise a quantity of creeping threads, which are at first very slender and sometimes inarticulate, two or more being frequently so closely incorporated as to make their separation very difficult. Some of the articulations increase rapidly in thickness, and are often more or less swollen; they are quite smooth externally, and contain occasionally one or two minute nuclei. From the creeping



threads others are given off which are erect, sometimes simple, but frequently more or less branched, and occasionally distinctly and repeatedly forked.



The fruit is generally formed by a metamorphosis of the terminal joint of the simple flocci, but sometimes is formed laterally on one of the joints. Though varying in form from globose to pyriform, the structure is the same in either case. The wall consists of a single stratum of angular cells, and the cavity is filled with a mass of minute, oblong, or obovate oblong spores, which frequently contain a single nucleus, and which escape from the apex, which is either perfectly obtuse or papillæform. The species, like most of the genus, is but ill defined, but may be distinguished by its smooth threads, which vary from cylindrical to moniliform, and the mostly terminal sporangia. In some specimens the *Antennaria** is mixed with *Capnodium Citri*, BERK. and DESM.

This, indeed, like that of *Erysiphe* and *Oidium*, is one of the curious instances in which one genus of fungi is so constantly attendant on another, both perfecting their fruit. It was not intended in our observations on the genera just named, to intimate that one species of plant is ever converted into another; but it is very possible that one species should present two forms of fruit, both of which are capable of propagation. So many instances of such intimate connexion between fungi of very different characters occur, as to make some such diversity in the vegetation of the same species highly probable, and the more so as the matter is placed beyond all doubt in the animal kingdom.

Some surprise has been excited by our assertion, in a recent number, that the greater part of the Epiphyllous species of *Oidium* are merely a form of so many species of *Erysiphe*. The subject is certainly one of some difficulty; for even though it be proved on repeated observation that the *Erysiphe* does spring from the thread of the *Oidium*, a question may arise whether it be a peculiar form of the species, or merely a parasite. Now, if Dr. PLOMLEY's observations are correct, we conceive the case is decided, for the conversion of a single cell of one species into a sporangium of another species, without the slightest appearance of mycelium, seems altogether untenable, especially when the analogy of *Antennaria* is taken into the question. We wish, however, at present, to point out two very curious cases of very different fruit upon the same plant, where there can be no question of parasitism. Having examined both, we speak, not merely from report, but from personal observation. The first, and perhaps least striking case of the two, is

* The stripping off the skin is a very essential part of the process, as it acquires an unpleasant flavour by drying.

* The species may be characterised—*Antennaria Stephensii*; n. s. filis sterilibus repentibus fertilibus erectis, articulisque glabris polymorphis; sporangiis ut plurimum globosis ex articulis enatis, quandoque lateralibus mamillatis.

that of an extremely pretty mould, figured by CORDA under the name of *Discophora elegans*, which we have had the good fortune to find in some abundance; the terminal vesicle is subglobose, as in most species of the genus, and traversed by a large pyriform columella, between which and the walls are seated a large number of oblong or narrowly elliptic sporidia; towards the base of the vesiculiferous stems, tufts of branchlets spring, regularly forked from six to nine times, each ultimate division being surmounted by a minute globular sac, without the slightest trace of columella, and containing from one to four broadly-elliptical sporidia. In this case the terminal vesicle is the normal fruit; the lateral cysts not agreeing in structure with the character of the genus; but as there is a perfect continuity of the threads which produce the two kinds of vesicles, there is not a shadow of doubt that these are two kinds of fruit co-existing on the same flocci.

The other still more remarkable case is that of *Agaricus racemosus*, a species unfortunately of very rare occurrence. The stem is here terminated by a pileus, with proper gills, as in other species of the genus; but through its whole course it is studded with short branchlets, each of which, instead of bearing a pileus, terminates in a little moist sporiferous head, exactly resembling in structure that of a *Stilbum*. In this case, equally with the former, there is no possible question of parasitism, though the two forms of fruit, both of which are doubtless capable of propagating the species, are as decidedly different as the deciduous spores of the *Oidium* and the sporangia of the *Erysiphe*. And if it should be replied that the structure in the two instances alleged does not present anything so technically different as naked spores and inclosed sporidia on the same plant, it may be replied that in a paper lately presented by M. TULASNE to the Academy, and in one by Messrs. BERKELEY and BROOME, read at the last meeting of the British Association, it has been shown that there is great reason to believe that in a multitude of instances asci are capable of transformation into naked spores, and that naked spores and fertile asci occur sometimes within the same perithecium. We do not wish to speak by any means dogmatically on a very difficult subject, but merely to show that we have not formed our conclusions without a careful consideration of the premises. *M. J. B.*

THE gentlemen who propose to contribute communications to the next Number of the JOURNAL OF THE HORTICULTURAL SOCIETY, are requested to do so without delay. It is not perhaps generally known that the authors of papers which appear in this Journal receive *gratis* a copy of the whole volume for the year.

## FLORICULTURE.

I do not know how long I may continue to address my floricultural friends, through the pages of the *Gardeners' Chronicle*, but I wish it to be known that I enter the garden of floral literature, as its curator, with a full knowledge of the varied and important duties which must of necessity devolve upon me.

Floriculture is, I may say, the only branch of domestic gardening not treated of in the *Gardeners' Chronicle*: I can bear testimony to the fact that no distaste for the pursuit has caused its all but omission; the question has long been, "Who's to do it?" At length my answer has been "I'll try," yet I must rely on and look to my floral friends for that assistance and support which, by joint efforts, shall make floriculture at least an interesting feature, if not an important one, in the pages of the periodical in question. I need hardly state that temperate and kindly discussions will alone be admissible; querulous—to say nothing of abusive—matter will be thrown aside; the pursuit is much injured by this kind of writing, even in its mildest form; personalities must be perseveringly avoided; our study must be to benefit the many without sacrificing the interests of the few; come one, come all, and let us cheerfully foster that good feeling and reciprocity of kindly sentiment now being made manifest throughout the width and breadth of the land.

Our advertising columns, I need hardly say, offer to florists a medium of giving publicity to novelties, alike valuable to buyer as to seller; let me, therefore, direct attention to them. The "lists of meetings for the ensuing week" may be increased, if secretaries will but furnish the dates of their respective exhibitions. Our remarks shall, as occasion requires, be made to touch coming and passing events; the "Home Correspondence" offers the medium through which will be registered our ideas practical and scientific, and will afford the means so long wanting of holding that intercommunication between distant growers by which all may be enlightened. Under the head "Societies" will be found notices of those meetings which, on account of their importance, require to be made permanent; this, we take it, will not prove unacceptable to the present readers of the *Gardeners' Chronicle*. Notices of Books (on Floriculture) will be given, if not ably, at least honourably; and finally, such "Answers to Correspondents" made as the merits of questions seem to demand. *John Edwards, Wace Cottage, Holloway.*

## ORCHIDS FOR THE MILLION.—No. XIV.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

CLIMATE HOT AND DAMP.—PLANTS GROWING ON SMOOTH BLOCKS WITHOUT MOSS.

*Saccolabium miniatum*, from Java; produces orange coloured flowers in March and April, and they last long in bloom. It does well on a bare block, and it should have plenty of heat and moisture during the growing season; it needs very little repose.

*Vanda Roxburghi*, a pretty Indian species, flowers in May and June; though it will succeed in a basket, it does best on a block suspended from the roof where there is plenty of heat and moisture, during the season of growth; afterwards it should be kept less moist, but equally warm, as it needs little rest: the flowers remain three or four weeks in perfection.

*Oncidium crispum*, from the Brazils, blossoms in October and December: the flowers are large, of a rich copper colour, and last in beauty three or four weeks, if kept in a cool place. This is a fine species, but rather difficult to cultivate; it does best on a block in heat and moisture while growing, afterwards it may be kept cooler and have less moisture.

*Oncidium Cavendishianum.*—The flowers of this Mexican species are large and yellow, mottled with brown. It blooms from January to February: it will thrive in a pot with peat, but it succeeds best on a large block suspended from the roof; it likes plenty of heat and moisture while growing; afterwards it should be kept much cooler, and have less water. It keeps in perfection six weeks, and is a most useful winter plant.

*Oncidium curtum*, blooms in July. It grows well on a block of wood, and requires the same treatment as the last named plant.

*Oncidium bicolor*, from the Spanish main, is a fine species, which blooms in September. The lip is very large, of a deep yellow on the upper side, and almost white underneath, the sepals and petals are yellow, spotted with crimson. It grows best on a block suspended from the roof. The flowers last long in pefection.

*Oncidium Papilio*, the butterfly Orchid, from Trinidad, flowers in succession nearly all the year round; it requires the same kind of treatment as species already mentioned.

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SECTION D. *Monday, July 7th* (*continued from p. 549*). —*On the Monstrosity of the Common Wallflower* (*Cheiranthus Cheiri*); by Professor ALLMAN.—In this plant, which had been gathered at Dublin, the stamens were converted into carpels. The carpels were however not in the form of the ordinary carpels of Cruciferæ, but presented two stigmas, each of which had two horns. This the author regarded as the normal form of carpel in the family of Cruciferæ. If this was the case then we could only explain the usual position of the stigmas in Cruciferæ, by supposing that the two contiguous horns of opposite stigmata had united.—Dr. Lankester referred to the infrequency of the conversion of stamens into carpels. From an examination of some monstrous specimens of Brassica oleracea and Brassica napus, which he had laid before the British Association, at its two previous meetings, he had been led to adopt Dr. Lindley's theory of the structure of Cruciferæ, as the most correct. The tendency to form horns to the stigma in abnormal cases was no proof that the ordinary stigma of Cruciferæ was formed by the union of two horns.—Mr. Babington referred to the researches of Mr. Howell, on the structure of the fruit of Papaveraceæ, and also the view taken of the structure of the fruit of Cruciferæ, by Mr. Brown, which was that now maintained by Professor Allman.

SECTION C. *Tuesday, July 8*: *On Agricultural Chemistry, especially in relation to the Mineral Theory of Baron Liebig*; by Mr. J. B. LAWES and Dr. J. H. GILBERT.—In a recent article in the Agricultural Journal, Mr. Pusey had quoted the experiments of Mr. Lawes and Dr. Gilbert as being conclusive against the "Mineral Theory" of Baron Liebig, which asserts that the crops on the farm rise and fall according to the supply within the soil of the mineral constituents indicated by an analysis of the ashes of the plant. To these observations of Mr. Pusey, Baron Liebig has replied at some length in the new edition of his "Letters on Chemistry," just published, and in doing so, has asserted that the experiments alluded to are without value, and that the statements of the authors could only be made in ignorance of the *rationale* of agricultural practices on the large scale. The authors have therefore given in the present paper an outline of their investigations in Agricultural Chemistry; comprising an extensive series of experiments in the field on the growth of the principal crops entering into a rotation, as well as on the chemistry of the feeding of animals, and that of the functional actions of plants generally, in relation to the soil and atmosphere: in connection with all of which branches much laboratory labour has constantly been in progress since the commencement of the experiments themselves in 1843. The results selected by Mr. Lawes and Dr. Gilbert, in justification and illustration of their views, were those of the field experiments on Wheat, grown continuously on a previously exhausted soil for the last eight years, and in each season, by means of many chemical manures by the side always of one or more plots unmanured, and one manured continuously by farm-yard manure. Some of the results thus obtained were illustrated by a diagram, from which it appeared that mineral manures had scarcely increased the produce at all when used alone, whilst the effects of ammoniacal salts were very marked, even when repeated year after year on the same space of ground from which the entire crop—corn and straw—had been removed. Indeed, in this way, a produce had been attained even in the sixth and seventh succeeding years of the experiment, exceeding by nearly two-thirds that from the unmanured plot. It was then shown that the mineral constituents of the soil continued to be in excess, relatively to the nitrogen available for them from natural sources. The history of several plots was then traced down to the last harvest (1850), and it was argued that the statements assailed by Liebig, viz., that ammonia was specially adapted as a manure for Wheat, was fully borne out when speaking of agriculture as generally practised in Great Britain. In other words, that in practice it was the defect of nitrogen rather than of the mineral constituents that fixed the limit to our produce of corn. The authors next called attention to the fact of the exhalation of nitrogen by growing plants, as proved by the experiments of De Saussure, Daubeny, and Draper, and they referred to some experiments of their own, with the view of showing the probability that there is more of the nitrogen derived from manure given off during the growth of cereal grains than by leguminous and other crops; and hence might be explained the great demand upon nitrogenous manures observed in the growth of grain. The authors suggested that here was an important field of study, and that we have in the facts alluded to much that should lead us to suppose that the success of a rotation of crops depends on the degree in which the restoration of the balance of the organic constituents of crops was attained by its means, rather than on that of their mineral constituents, according to the theory of Liebig; whilst the means adopted to secure the former were always attended with a sufficient supply of the latter. Again, Prof. Liebig has quoted the processes of fallowing and liming, as being in their known results inconsistent with the views of Mr. Lawes and Dr. Gilbert; but these gentlemen considered that the experiments of Mulder and of Mr. Way on the properties of soils justified them in supposing that the processes of fallowing and liming owed their efficacy more to the accumulation of nitrogen in the soil from natural sources, than to that of available mineral constituents; the latter did, however, undoubtedly thus accumulate by those processes, and this fact should give us more confidence in views which, on independent evidence, supposed that they were not so easily liable to be found in defect in relation to other necessary supplies. It was next shown, by reference to what happens in actual practice as generally followed in Great Britain, where corn and meat constitute almost the exclusive exports of the farm, that the mineral constituents of the crops, taken collectively,—that is, as shown by the analysis of their ashes, could not be considered as exhausted: of these, however, phosphoric acid was lost to the farm in much larger proportion than the alkalies; whilst the latter would generally, by the combined agencies of disintegration of the native soil, and import in cattle food, be liable to diminution in but a very insignificant degree, if not in some cases to accumulation. Practical agriculture had, indeed, decided that phosphoric acid must be returned to the land from sources external to the farm itself,—viz., by bones, guano, or other means. But, on the other hand, artificial alkaline manures had generally been found to fail in effect. Indeed, taking into careful consideration the tendency of all experience in practical agriculture, as well as the collective results of a most laborious experimental investigation of the subject, both in the field and in the laboratory, it was the authors' deliberate opinion that the analysis of the crop is no direct guide whatever as to the nature of the manure required to be provided in the ordinary course of agriculture, from sources extraneous to the home manures of the farm,—that is to say, by artificial manures. Reviewing, then, the actual facts of practical agriculture, the authors could not agree with Baron Liebig when he asserted that our grand object should be to attain an artificial mixture to substitute for farm-yard manure, which he admitted to be the universal food of plants. The very practice of agriculture itself, as followed in this country, necessitates the production of farm-yard manure, and all our calculations should be made on the supposition of its use.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 28.)

No. XLIV.—We are now gradually and gently gliding from the intense heat of summer, into the delightful, refreshing coolness of autumn. Never was the month of September heralded in more gladly than now; for the weather has been oppressively sultry, the bills of mortality have been heavily swollen, and the sun's scorching rays overpowering both to man and beast.

This is just the season for enjoying the beauties so peculiar to our climate at this particular time of the year. Every temptation is now before us to rise at break of day, and view the glories of the rising sun:—

> "Arise thou child of nature, rise!
> Arouse thy slumbering spirit now!
> The autumn sheaves are on the hill,
> And solemn are the woods and still,
> With clustering fruits on every bough."

Nor are there any inducements wanting to call us forth at the cool of evening, to watch the rapidly-increasing orb of the lovely, bright "harvest" moon, now within a few days of her attractions being at their height.

The autumnal crops, too, are now nearly housed, and the fields are beginning to show new signs of life in the

return of their former inhabitants—the birds. It is a pretty sight to view them in all the pride and majesty of their new and becoming plumage, and no less pleasant is it to listen to their song. It seems to savour, by its energy and sweetness, of gratitude and thankfulness to the Creator for this renewal of His great power. At all events, we may harmlessly imagine so.

It is with regret we have to record, as faithful historians of what is passing in the field, that with the advent of September man's better nature has, as usual, yielded to the overpowering seductions of the gun, which is now heard loudly recording its butcheries. Partridges, which have hitherto been luxuriating with their happy families in the corn, and enjoying the prescriptive privileges of freedom unmolested, are now savagely and unceasingly hunted from morning till night; and their lives either taken by a well-aimed shot (merciful, this!), or their limbs are shattered by some cockney sportsman, who has accidentally contrived to bring some part of their extended person within the radius of his well-spreading and heavily-charged gun barrel:—

"See! in the sun the circling covey bask
Their varied plumes, and, watchful every way,
Through the rough stubble turn the secret eye.
Caught in the meshy snare, in vain they beat
Their idle wings, entangled more and more;
Nor on the surges of the boundless air,
Though borne triumphant, are they safe; the gun,
Glanced just, and sudden, from the fowler's eye,
O'ertakes their sounding pinions; and again,
Immediate, brings them from the towering wing
Dead to the ground; or drives them, wide-dispersed,
*Wounded*, and wheeling various, down the wind."

Manly sport this, truly; especially when we reflect upon the very many maimed sufferers which escape, and which groan out their final agonies under cover of the brushwood!

But, as our own THOMSON sweetly sings, when bewailing the ravages made by these boasting, blood-thirsty Cossacks—

"*These* are not subjects for the peaceful Muse,
Nor will she stain with such her spotless song;
Then most delighted, when she social sees
The whole mix'd animal creation round
Alive and happy."——

Let us then at once resume the thread of our discourse, and speak of our little hero the white-throat.

This bird, commonly known in our southern parts as the Peggy White-throat, somewhat resembles the black-cap in its appearance; but it has a longer tail and shorter wings. Its head, too, is dissimilar, being of an ashy grey colour. Its throat and under parts are of a greyish white colour (sometimes a clear white), and its legs are pale brown. The hen differs little from the male; she is, however, of smaller proportions, less sprightly, and her colours are more dingy.

The white-throat (Sylvia cinerea) visits us about the middle of April, and at once takes up his quarters in our hedges, fields, and coppices. He is a familiar little fellow, and very soon after his arrival he sets about the one great business of his life—the building of a house, and the rearing of a family. He generally selects, as the most convenient site for his nest, a quiet, lone, or unfrequented field. Here, in a thick, low bush, he sets his architectural ingenuity to work, and constructs a local habitation of the fibres of roots, goose-grass, and moss; the interior being lined with horse-hair. The nest, I should observe, is very slight, and rather useful than elegant. As regards the provision made for warmth, the architect seems to leave *this* to the sun. The eggs vary in number from four to six; they are of a whitish colour, inclining to green, and are marked with delicate spots of olive green.

These birds are seen to far more advantage when at large, than when they are confined in a cage. They are of a lively, joyous disposition; and whilst singing, they rise on the wing, describe a circle in the air, and again resume their seat upon the bush from whence they started. Their notes, though of moderate compass, are very sweet, and rapidly uttered, and when you are near enough to them to judge of their vocal abilities, you will pronounce them first-rate. They seem quite aware of their excelling powers, and take a proud stand among the other orchestral performers of the grove.

I have had, from time to time, many of this tribe in confinement, and can give them good characters for temper, willingness to please, and sincere affection,—this latter being always evidenced in a grateful, graceful song, for all favours conferred, and all attentions paid. I should recommend their being placed in a cage, similar in every respect to that of the black-cap; for they love plenty of room, and also to see what is going forward. Hang them moderately low, and feed them on German paste, boiled egg, sweet bun, and bruised hemp-seed. Let their cages be kept particularly clean and sweet; and bear in active remembrance how they love a mealworm, spider, earwig, or woodlouse. All these luxuries you should, as occasion offers, bring mysteriously under their distant observation. You will be highly diverted to see how they will strain their little necks to keep the mealworms in view, while the latter are creeping along upon the table; nor will you be less pleased to note their affectionate gratitude, in return for any little favour you may confer in the way of such a treat.

Being a delicate bird, you must keep them snug and warm whilst moulting; and I should recommend their being fed during this ailment on liver gentles, of which they are very fond. Their time for leaving this country is about the middle or end of September. They will, at this season, be found very restless in their cages; but a few weeks will restore them to their usual serenity, and before Christmas they will be in song.

The proper place to purchase these birds, is that great ornithological emporium, which we have already immortalised—the Seven Dials. You must, whilst selecting your little prisoners, exercise the same discretion as I have before recommended. Always choose leisurely, and never decide until you have had ample opportunities for forming a correct judgment. Whether you will procure old birds, or "branchers," it is for yourself to determine. It must of course depend much upon circumstances.

As with the black-cap, you will find the "bath" a luxury looked for, and highly appreciated by the white-throat; nor are his gambols, whilst bathing, one whit less diverting. He must not, however, enjoy himself in this way oftener than twice daily, in the summer; in the winter, *never*. Cramp would follow such an ill-judged indulgence, and his career would speedily terminate.

When I whisper that Elder berries, boiled milk and bread, soaked grocers' currants, a soft roasted Apple, and occasionally a little piece of raw, scraped beef, are amongst the delicacies in which this bird delights,—I feel sure he will be accommodated with each and all in turn. Then can we, with the more pleasure, solace *ourselves* with the luxuries of the season,—all so tempting! 'Tis now

"——— The sunny wall
Presents the downy Peach, the shining Plum,
The ruddy fragrant Nectarine; and dark
Beneath his ample leaf, the luscious Fig."

Never has Nature, in her bounty, shown herself more lavish of these grateful gifts to man, than at the present time of writing. *William Kidd.*

## GARDEN SYRINGES AND ENGINES.

FEW things are of more importance in gardening than good syringes and garden engines. We have seen and had experience of many, but we presume it would be difficult to find more efficient implements of the kind than those exhibited in Class IX., No. 89, in the Great Exhibition, from Mr. Read, of Regent-circus. The improvements in "Read's engines" consist in a peculiar arrangement of the valves, leverage, &c., by means of which the power is considerably increased. The tubes, which are made either of vulcanised India-rubber, or of metal, with universal joints, are more durable than any hitherto invented.

His syringes have likewise been greatly improved by the addition of a new angle branch (or universal joint), turning in all directions, for the purpose of washing the under surface of the leaves of plants, &c., which will be found of much value in freeing them from insects.

The only objection that we have ever heard made to Mr. Read's syringes, &c., is, that they are expensive. They are, however, the best that can be manufactured; and many think that their durability and economy in working prove them to be cheapest in the end.

## FOREIGN GARDEN GLEANINGS.

REVEL (ESTHONIA).—Market gardening is carried on at Revel on a large scale; most of the gardens are situate in the Faubourg des Maréchaux, and are very well kept. We were sorry that we were unable to examine them properly.

The park and chateau of Revel deserve attention; like all other places founded by the Empress Catherine II., the palace and gardens are very magnificent. Long avenues of Lime and Horse Chesnut trees, of a large size, cross each other continually, and wide borders edged with Hemerocallis flava, Campanula, Aster, and other perennials, produce a very pretty effect. The park is a fashionable Sunday promenade in the fine season.

RIGA GARDENS.—The city of Riga contains several fine private gardens; there is no botanic garden, but at a short distance from the city gates there is a fine establishment belonging to Mr. Henry Wagner. The plants which are most commonly cultivated are of an ornamental description; there is, however, a fine collection of the best sorts of fruit trees taken partly from the rich nurseries of M. Jamin. Nearly all the trees are grown in tubs, like Orange trees. They are all bushy, and were, when we saw them, loaded with fruit; plants 6 to 8 years old sell for 30 to 40 shillings. We were shown a collection of 100 sorts of Gooseberries, which are grown for the houses in the north. Dahlias are cultivated upon a large scale here, as in most other Russian gardens; many of these plants are also sent to the north, where the fine season lasts but three months. In order to obtain early flowers, a stronger sort than the common one is cultivated. They are multiplied in autumn, kept through the winter in pots under sheds, and at the beginning of the fine season, they are sent away ready to flower.

Fuchsias and Pelargoniums are plentiful; Camellias, Rhododendrons, Azaleas, and other showy plants, are cultivated with nearly as much skill as with us. Some genera are even better represented, and are grown with greater simplicity and ease than is usual in our own gardens. Calceolarias, for example, which we torment so much, are grown here in the open ground. We saw a collection of herbaceous tree Pæonies of the best sort; the indigenous yellow flowered-variety, Pæonia Wittmanniana, of Hartwiss, which is rare with us, is here found in great abundance. Lilium lancifolium, and fine Japan Lilies, especially L. longiflorum, are grown in large quantities; Ericas, too, are common.

There is also a large assortment of choice herbaceous plants, classed according to their importance, and grown in beds from one to two yards square, according as they are little or much in demand. The plants from New Holland and temperate climates are arranged in stages round a large mound of earth, so that each species can receive the requisite quantity of light and air. Orange trees are common.

Nurseries occupy a large space, although they contain only the rarest and most beautiful plants; those, for example, with large flowers, variegated foliage, deeply-cut leaves &c.; the weeping Lime, Service tree, double-flowered Peach. In a good collection of Conifers, we saw Abies Pichta, which deserves a place in all landscape gardening. Hothouse plants occupy a considerable space; many specimens of Cycads and Musads were very fine. The Date Palm is in considerable demand, from the use made of it in Jewish religious ceremonies. In this establishment we found some of the finest tree Roses we ever saw. There are many with stems two or three yards in height, and two or three inches in diameter; when we were there, these plants were the object of much attention.

From Messrs. Wagner brothers may be obtained seeds of all the Conifers, and of the Haricot Beurre, which is cultivated very largely.

The country between Riga and Vindau is nothing but a series of sandy plains, enlivened here and there by a few white Willows, but where the country becomes slightly hilly, the dreary red or golden appearance of the sand is replaced by beautiful verdant prairies.

The isle of Gothland is for the most part covered with Pine forests, of wild appearance, and so far as we could judge, apparently thinly peopled. It is far otherwise with the island of Bornholm, a little to the south of the last; here there is a fertile soil bearing heavy crops of all descriptions, but more particularly of corn. The island is inhabited and cultivated by Danes.

From Bornholm to Pomerania the passage is short, but the vegetation again changes, especially near Colbert and Stralsund, where great skill is shown by the inhabitants in the decoration of the outsides of their houses by plants of all sorts. The favourite plant for this purpose is the common European Bindweed.

The small river Suiwmun leads from Colbert to Stettin; the whole of the southern slopes of the hills near this town are covered with Plum trees to such an extent that one might imagine some Armenian forests had found a natural zone in the North of Europe. *Masson's Report.*

## Home Correspondence.

*The Raspberry Case.*—Having read the article on the subject of seed discovered in opening a barrow or tumulus in this neighbourhood (Wareham) with considerable interest, I hasten to forward my recollections of the circumstance, which may perhaps satisfy you that no imposition was practised by the gentleman who supplied you with the account at the time of the discovery. I was acquainted with many persons who took a deep interest in the matter at the time, among whom was the late Mr. John Sydenham, of Poole, then residing at Dorchester, and connected with the *Dorset County Chronicle*, whose deep research and accurate acquaintance with all such matters are too well remembered to render any passing tribute to his memory necessary. A barrow was, at the period named, opened on Ridgeway Hill, near the very ancient British hill fort, Maiden Castle, and seeds of the description named, found, some of which I saw at the time; and I then, as I do still, placed implicit faith upon the account which my friend gave me of the discovery. Some time afterwards I was informed that the experiment of trying whether the seed would vegetate, was conducted with great care, and the result had been that of producing the common Blackberry plant, upon which, in all probability, the warrior had breakfasted, and, ere the stomach had had power to act upon the seed, been slain on some neighbouring battle field. Being curious in such matters, I find I have preserved the *Dorset County Chronicle* of the period named, and from which I transcribe the following:—"It is a remarkable fact connected with the remains in this tumulus, that amongst the bones of one of the persons interred was found a portion of the contents of the stomach in an undecomposed state; and on examination this was found to contain a great number of small kidney-shaped seeds, in all probability the contents of berries which constituted part of the food of the tribe. The seeds are in fine preservation, and contain the entire pulp in which the vegetating principle resides." As connected with the present subject, I may perhaps be permitted to remark, that no part of England is more rich in relics of our aboriginal ancestry than Dorset, and the counties immediately surrounding it; but, it is a source of daily regret that the hand of the improver (!) should so ruthlessly destroy that which the withering hand of time has scarcely altered through a period of more than 2000 years. In the neighbouring Isle of Purbeck, there are parts of Druidical circles scattered about, some of which have, in my own memory, been split into fragments and employed to construct a drain on a bye-road across the heath, within a mile of the very ancient British fastness from which I now address you, Wareham, whose earthen ramparts, though so unique, are shamefully and wilfully destroyed; a barrow was opened not long since, solely for the purpose of using the materials to repair the turnpike roads—millions of loads of excellent gravel lying at the same moment nearer at hand, for the trouble of digging it. In this barrow upwards of 30 urns full of calcined bones and ashes were deposited, and most of them recklessly destroyed. Speaking of the length of time that the germs of vegetation may be retained in seed—have not bulbous roots been found in the hands of mummies, buried thousands of

years, which, on being planted, have grown and been found to be identical with the Onion or Leek of the present time? [No.] The Mummy Wheat is another case in point; and, it is a well-known fact that chalk taken from great depths in Fordington-field (which reaches to the rings of Maiden Castle, above referred to) will spontaneously produce the well-known Charlock, with which that field, to the annoyance of the farmer, is so richly coloured every year. *Chas. Groves, Wareham, Dorset.*——I am pleased to be able to afford some information in reference to the seeds of the Raspberry, furnished by Mr. McLean. I happened to meet that gentleman, with his friends and some labourers, upon their return from opening the tumulus; the circumstances were detailed to me, and upon my appearing interested in the matter, we proceeded together to the Inn at Dorchester, where the proceeds of their labour were displayed; they consisted of some coins (one silver, of the Emperor Hadrian), the tusk of a boar, which was pierced, as if it had been suspended, and the friction had worn the hole into an oval form, and a quantity of dark-coloured substances full of seeds! I asked permission to break off a small portion, which I separated in a glass of water, and throwing it upon a paper for examination, stated it to be Raspberry seeds; this was, however, questioned, and it was then proposed that it should be sent to yourself: this induced offering my card to Mr. McLean, and requesting the favour of his communicating the result of his inquiry; this was fulfilled, confirming my opinion; upon my asking for a small portion, for the purpose of testing its vitality, it was given under a promise that I should communicate the result to that gentleman at Weymouth. The seeds were sown in a pot and placed in my propagating house. The visits and inquiries of my neighbours respecting them were numerous, and a short time afterwards Mr. McLean and a friend called upon me here, and left a further small portion of the substance. Ten weeks and four days elapsed ere they exhibited signs of vegetation, when up sprang 109 young Raspberry plants. This was immediately made known to Mr. McLean, and at frequent intervals, up to about four years since, plants have been either furnished to that gentleman, or sent to parties at his request. These circumstances are known to many of my neighbours, and I perfectly recollect, that about a year after my first meeting Mr. M., I was at Smedmore House, in the Isle of Purbeck, when Mr. Manse produced the *Courier* newspaper, with an account of the affair, and my then stating that I was the party who raised the seeds. When the statement was given to me, there was not any mention of coffins, skeletons only; an adult and a youth were described as being found. *W. B. Page, Southampton.*

*Fruit Crops.*—I have been glad to learn (see p. 549), that my old friend Mr. Grey has a good crop of fruit in his northern climate (Northumberland). Mr. G. will be pleased to hear, that in the North Riding of Yorkshire, I, too, have a fine crop of wall-fruit. My Peaches and Nectarines have been planted about six years, and the average number of fruit on each tree is six dozen. I should think I took as many off after stoning, and they have borne equally well in the two previous years, and are in excellent health. Mr. G. has an advantage over me, *i. e.*, I have no fined walls. I consider canvas coverings to be of no advantage, and I never use them. I gave my mode of protection, recorded at p. 214, in your volume for last year, a fair trial, and I have insured a crop. I have heard great complaints made in this district, about wall-fruit. Apples are more plentiful. *William Culverwell, Thorp Perrow, Bedale.*

*Swifts and Hornets in Yorkshire.*—A correspondent remarks that he has not seen the swift or hornet in Yorkshire. I have seen a pair of swifts for the last three years in this neighbourhood; and in the north of Yorkshire, where I was spending a few days in the beginning of last month, I saw them almost daily. I have also seen the hornet's nest suspended in a Gooseberry tree; but it very much depends upon the heat of the summer whether we have any quantity of hornets or wasps. This summer I have not seen a hornet, and I think not half a score of wasps, while in hot summers they abound. *T. S., Holmfirth.*

*Potato Disease.*—I find in our *Worcester Journal* a quotation from the *Gardeners' Chronicle*, in which you have made some remarks on the prevailing Potato disease. I do assure you that no "mildew" can possibly produce the effects but too well known in this district. Not only is the absence of terrestrial electricity felt in the diminished vitality of the maturing Potato crop, but many other very juicy plants, and even trees, are suffering from it. Some Walnut trees, loaded with fruit, are looking as though they had been scalded or frost-bitten. The Dahlias, Parsnips, Celery, &c., are also exhibiting the exanimate appearance. When the philosophic mind shall receive the plain truth, that electricity is the *anima mundi*—the agent of all life, both animal and vegetable—the cause of all crystallisation—the polariser of the "great globe itself," and in the hand of the Great Author of All, his working agent, then some of the puerilities of modern materialism will perish. When naturalists learn that the nervous apparatus of the Sensitive Plant is as perfect as that of the gazelle, and that all its functions are regulated by as perfect a susceptibility, then they will see the beauty of that creation which is endowed with electric telegraphs—nerves—to carry out the laws of life given to the economy of each creation by the Maker. The brain is the positive battery; the ganglionic centres are the batteries of the negative or vital electricity, and between these, regulated by the vital imperishable spirit, all operations called life proceed in their destined course. *E. A. Turley, M. D., Ivy House, Worcester.* —— Disease has appeared in Gloucestershire, but as yet, I think, we are more frightened than hurt. It would be advisable that any curious facts should be noted, between this and storing time, to be forwarded to the *Chronicle*. *Falcon.* —— As disease is becoming rife, permit us again to recommend cutting off the shaws or tops as soon as they are infected, with the view of saving the tubers. Every year's experience convinces us of the utility of this practice; of course, it only applies to such as are forward enough to have produced tubers sufficiently large for use. It is presumed that few have ventured the cultivation of late varieties this season; we have, however, a few under peculiar treatment, on which the fatal spot has not yet appeared. *Hardy and Son, Maldon.*

*Exposing Plants in Pots to the open Air in Summer.*—Finding that a correspondent (see p. 550), has experienced such a decided advantage in placing his plants in the open air in summer, over keeping them in houses, I beg to offer the following remarks, in addition to what I formerly stated on this subject. Since he does not place any plant out until the wood is fully ripened, I presume he exposes them with a view to rest them, which, no doubt, in some cases is very useful, provided the plants can be kept from making a second growth. I find that insects are rather troublesome on plants out of doors as well as in houses, but they may be more easily destroyed in houses than in the open air. All kinds of plants are more or less affected by having the sides of the pots fully or even partially exposed to the open air. *Thomas Dowell, Amington Hall, Sept.* 1.

*The Virginian Nightingale.* — Your correspondent, "An Interested Querist" (p. 536), writing from Carshalton, thus speaks, among other remarks, of the Virginian nightingale:—"I have heard it asserted that these birds *will* breed, and might be acclimated HERE; but I want more tangible information. Will Mr. Kidd be so kind as to give us the benefit of his knowledge or experience on the point?" I will at once confess, that I have myself had no practical experience of the habits of this species, as it never formed an inmate of my aviary. Naturally interested, however, in acquiring a correct knowledge of the peculiarities of such a beautiful bird, I have, through the great kindness of Henry Taylor, Esq., of Belinda-terrace, Canonbury-square, obtained an insight into what must prove a most interesting study. Mr. Taylor is, like myself, an amateur; and all his observations are minute. Nothing daunted by repeated failures, and bitter disappointments — our common lot! — he has pursued his investigations with a constant assiduity, and unremitting perseverance, that have overcome every difficulty. Whether therefore as an apiarian—for he stands "alone" in his practical and most extraordinary discoveries in the economy of the beehive—or as an ornithologist, his "authority" is unquestionable. In the matter of the Virginian nightingale, he has succeeded to admiration. He has found out their habits to a nicety; and, by a long course of observation, remarked that, under certain circumstances, they will pair, lay eggs, sit, and *hatch*; this, even in confinement. When I mention that these several pleasing facts have, one and all, been over and over again proved in Mr. Taylor's conservatory, and that he is perfectly master of the interesting subject, I have stated enough for our present purpose. I understand he is himself about to communicate to the world, very shortly, the particulars with which he has become acquainted whilst devoting himself to the study of these birds. He is decidedly of opinion that they *can* be acclimated here, and he has a public site in view which he considers undeniably adapted for the purpose of their domestication. Beyond this simple statement of facts, I feel it would be unfair for me to venture. The matter is in good hands, and I shall watch its progress with much anxiety. Should we number among our native choristers so lovely a bird as the Virginian nightingale, and see him disporting in our parks and shrubberies, it will indeed be something of which we may proudly boast. *William Kidd, New Road, Hammersmith, August* 28.

*Pruning Forest Trees.*— I observe that this much vexed question is still open, and I now address you, because the one simple principle, upon which the whole art of safely pruning depends, is seldom brought forward in sufficiently explicit terms. The principle is, that whenever a branch is cut off, it must be done in such a manner that water cannot lodge in the wound. Now the only way of effecting this is to cut off the branch close to the stem of the tree. When this is done, new bark gradually forms over the wound and completely closes it, before decay can progress to any injurious extent, and as soon as the bark has thus covered the stump, no further decay takes place, and it is as safe as if hermetically sealed. If, on the contrary, a tree is pruned in such a manner that water can lodge in the wound, that wound will never heal, decay proceeds rapidly, and communicates by degrees into the heart and down to the very roots. Your correspondent "G. L." (p. 516), states that decay progresses in the interior, even where the wound has been completely covered with new bark; on this point I am at issue with him, I maintain exactly the reverse. The very example that he gives is in my favour, for he says that the branches of the decayed tree had been cut off "nearly close" to the trunk—that is, leaving short snags, which is the worst possible plan of pruning, and, I agree with "G. L.," infallibly ruins the timber. If the branches had been cut off quite close, I doubt not, no damage would have ensued. When a short snag is left it always dies, and as it decays, forms a sort of pipe which conveys water into the interior of the tree, to the ultimate destruction of the timber. *Expertus.* [We still say, with the utmost possible respect for our correspondent, and all other Experts, that the true principle of forest pruning is, not to "prune" at all.]

*Waxy Potatoes.*—Permit me to inform your correspondent "M. D.," that any Potato can be made waxy by the following plan, which is recorded in my pamphlet on the Potato. I cut the haulm off every alternate row, in order to allow sun and air to act on the soil, the Potatoes being previously about three parts grown. These rows were not dug up until the others were quite ripe. The cut down ones lost very much in weight, and the Potatoes would have just suited "M. D." They boiled firm, but were very waxy; in fact, what I call bad Potatoes. The sort was the famous Lapstone Kidney, a variety raised by a shoemaker in Yorkshire. When ripened properly, this sort is the best flavoured, and most floury Potato cultivated, and it is a great bearer. This late kind, wintered upon my plan, was dug up on the 9th August, and as usual I offered 2*d.* for every diseased one that could be got among them, but none was found. *James Cuthill, Camberwell, London.*

*The Cloth of Gold Rose.*—I have seen several stands of Roses at some of the different exhibitions of the season, and I have also searched your reports of the same, but nowhere could I see or find mention of the above variety, to my thinking, the "Queen of Roses." How is this? Is there greater difficulty in its culture, or is there only a particular soil that suits it? Having heard of parties who have found difficulty in flowering it, I thought I would just furnish you with the history of a magnificent specimen of it growing in this neighbourhood. The second week in June I visited the gardens of T. B. Western, Esq., of Felix Hall, and was there shown by his gardener, Mr. Bowie, a tree of it covering 10 feet of ground, upon which we counted 150 blossoms then open and opening, some of them measuring four inches over, an inch and a half in the cup, and beautifully perfect in shape; many of the blossoms were the size of hens' eggs just opening. Last week I saw the same tree, and counted 86 blooms then upon it, with the prospect of many more for the after part of the season. It has made shoots of this year's wood from 5 feet to 6 feet in length; it is growing in a moderately heavy loam; but I learned that formerly there was an old Asparagus bed near where this tree now stands, and I concluded that it was this that has made it what it is in four years, proving that it is richness of soil that it requires to make it successful; and I am sure, could Rose growers have seen this specimen in the perfection in which I saw it, instead of its being generally discarded from our lists, no one would think his collection complete without the Cloth of Gold. *R. R. W., Kelvedon.*

## Societies.

HORTICULTURAL, *Sept.* 2.—E. BRANDE, Esq., in the chair. Messrs. Lane, of Great Berkhampstead, produced two small imported Stanhopeas, and an example of Warczewicz's Achimenes Margarettæ, a new kind, with just sufficient flowers on it to show what a fine thing it might become under good cultivation. The blossoms are pure white, and approach in size those of longiflora.—Mr. E. G. Henderson, of the Wellington-road Nursery, sent young plants of Æchmea fulgens and the new sort called Æ. miniata discolor; Gesnera zebrina and an improved variety of it named splendens; Vriesia splendens with a gay spike of scarlet bracts at least a foot in length; Clitoria braziliensis; and the scarlet Isotoma triflora.—Mr. Summersby, gr. to Major Martyn, had a plant of Azalea fulgens scarcely an inch high, with three large flowers on it. This was obtained by taking off the flowering point from an old plant, and striking it; and it was stated that the blooms were larger and finer on the cutting than on the parent. The same grower also contributed examples of Goliath Plum, and a Netted Cantaloup Melon.—Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, communicated an old Queen Pine-apple, weighing 7 lbs. It was an exceedingly handsome fruit, but hardly sufficiently ripe. A Knightian Medal was awarded it. —From Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim, came some Noblesse Peaches, one of which weighed very nearly 11 oz. They had, we believe, been ripened under glass. A Certificate of Merit was awarded them.—Mr. Martin, gr. to Sir H. Fleetwood, Bart., sent dishes of Muscat and Black Hamburgh Grapes; and some Raspberries were furnished by Messrs. Lane, of a sort known at Great Berkhampstead by the name of Victoria. The fruit shown was gathered from canes which were reported to have been in bearing from the beginning of the season until the present time.—From the Garden of the Society came eight varieties of Achimenes, the pretty yellow annual called Eucnide bartonioides, a small flowered Oncid, a fine plant of the gay Æchmea discolor, the rock Abelia (A. rupestris), the useful Babingtonia Camphorosmæ, two Cape Heaths, Cyrtoceras reflexum, the larger variety of Rondeletia speciosa, Gloriosa superba, and the following fruits, some account of which will be found in another column: Impératrice Nectarine, Pucelle de Malines, and Malta Peaches; Reeves's Muscadine Grape, Denyer's Victoria Plum, transparent Codlin Apple, and Reeves' Egg-shaped Gourd.

NATIONAL FLORICULTURAL, *Sept.* 4.—Mr. PERRY in the chair. Some good Seedling Dahlias were shown on this occasion. A certificate was awarded to Mr. Noakes,

for Phantom, a bright buff, well-formed flower, of considerable depth, and having a good centre. Mr. Keynes received a first class certificate for Triumphant, a ruby-red medium sized kind, of fair outline and average depth, centre firm; Ditto to Laura Lavington, from the same raiser. This is a dark salmon-brown with light tip, and desirable in shape, size, and centre. Mr. Rawlings was assigned a first class certificate for Dr. Frampton, a light-shaded purple, mottled flower, which we have mentioned before. Mr. Turner had a label of commendation for Morning Star and Globe, both promising sorts. In Hollyhocks, Mr. Bragg, of Slough, received a certificate for King of Roses, a fine kind, which probably would have had a higher award, had it not been injured by travelling. The same raiser was also voted a first class certificate for Swansdown, well shaped, a paper white. Labels of commendation were given to King of Yellows, Joan of Arc, and Safranot, from Mr. Parsons. The first of these would have received a higher reward if a spike had been shown instead of blooms. Some good Gladioli were communicated by Mr. Wilmore, who received a first class certificate for Miss Wilmore; a pleasing variety, and certificates for Josephine and Wellington, both good sorts, which cannot fail to find places in every collection. Mr. Mackintosh, of Maida Vale, Edgeware-road, showed a nice clear yellow shrubby Calceolaria, with the habit of Kentish Hero.

ROYAL SOUTH LONDON FLORICULTURAL, *S-pt.* 3.—The fifth and last exhibition this season took place on this occasion, and was nothing behind its predecessors in attractiveness. In miscellaneous collections of 15 Stove and Greenhouse Plants, the Small Gold Victoria Medal was awarded to Mr. Hamp, gr. to J. Thorne, Esq.; 2d, Gold Albert Medal, Mr. Over; 3d, Mr. Stanly. Among Nurserymen, Messrs. Rollisson received the Gold Albert Medal; 2d, Messrs. Pamplin; 3d, Mr. Hook. Cut Flowers were numerous and fine, and proved an attractive feature of the show. Dealers' Class: 1st, Messrs. Rollisson; 2d, Mr. Clark. Collections of Cut Roses were produced in high character, for freshness and fragrance: in Mr. Paul's group, which was first, were Therese Margot, Etendard de Marengo, Pius IX., Angeline Boccella, Comte de Montalivet, Julia de Fontanelle, Jean of Arc, Comte Bobrinsky, Ophrie, Chereau; Mr. Francis sent Cloth of Gold, Elise Sauvage, Princess de Modena, Leveson Gower, Augustine Mouchelet, Gonda, Maria de Beaux, Géant des Battailles, and Vicomtesse de Cazes. Hollyhocks, both in spikes and detached blooms, contributed largely to the general effect, and were greatly admired: Messrs. Chater, 1; Bragg, 2; and Paul, 3; each had spikes—among the sorts were Aurantia, Rosy Queen, Rosamond, Elegans, Sulphurea perfecta, Spectabilis, Magnum Bonum, Delicata improved, Surprise, Coccinea, Rosea grandiflora, Bella Donna; Mr. C. Baron, Model of Perfection, Enchantress, Walden Gem, Noblissima, Sulphurea perfecta, Sir W. de Eresby, Standard of Perfection, Susannah, and Sir D. Widdeburn, the last four being Scotch varieties. Some nicely-arranged Bouquets were exhibited by Mrs. Cuthill, of Camberwell. Verbenas were well represented by Mr. G. Smith, 1; and Mr. Stewart, 2; likewise by Mr. Lochner, 1; Mr. Young, 2; and Mr. Robinson, 3: from the Tollington Nursery were Macrantha, Defiance, Laura, St. Margarets, Surprise, Model of Perfection, Voltigeur, King, Heroine, Exquisita, Wonder, Vergrets, British Queen, Reine Hortense, Lady of the Lake, Figaro, Iphigene, Perfume, Aspasia, Minerva, Desdemona, Shylock, and Othello; Mr. Lochner's dozen were St. Margaret, British Queen, Reine Hortense, White Perfection, Voltigeur, Lady of the Lake, Exquisite, Enchantress, Ninon de l'Euclos, Laura, and Pochye. Messrs. Rollisson contributed some nice Orchids. An interesting group of 60 Alpine and variegated plants, in pots, were furnished by Mr. Wood. Dahlias: Of private collections there were 5 twenty-fours, 17 twelves, 6 six fancies, and 5 six new sorts. Dealers, 11 twenty-fours, and 5 twelve fancies. To these must be added several for extra prizes, together with many seedlings, three only of which, however, received Certificates, viz., a Fancy, Laura Lavington (Keynes), a dull red tipped white; Attraction (Jeffries), a fancy of but little merit; and Dr. Frampton (Rawlings), a small but meritorious flower, having the colours of Princess Radziville. Amateurs, 24: 1st prize, J. Edwards, Esq., with Sir C. Napier, Whale's Elizabeth, Summit of Perfection, Negro, Fearless, Mr. Palmer, Regina, Snowflake, Grenadier, Mr. Herbert, Duke of Cambridge, Duke of Wellington, Queen of Lilacs, John Edwards, Yellow Standard, Jullien, Thames Bank Hero, Earl of Clarendon, Cobden, Admiral, Miss Herbert, Roundhead, Gen. Faucher, and Baltic; 2d, Mr. Weedon, Hillingdon, with Beeswing, Mr. Edwards, Mr. Seldon, Earl of Clarendon, Coccinea, Anticipation, Toison d'or, Shylock, Magnificent, Bathonia, Scarlet Gem, Elizabeth, Roundhead Richard Cobden, Duke of Cambridge, Sir F. Bathurst, Admiral, Model, Seraph, Grenadier, Negro, Jullien, and Psyche; 3d, Mr. Hopkins, Brentford; 4th, Mr. White, Chelmsford. 12 Blooms,—1st prize Mr. J. Robinson, Pimlico, with Queen of Lilacs, Mrs. Seldon, Thames Bank Hero, Lady St. Maur, Earl of Clarendon, Mr. Seldon, Duke of Wellington, Cobden, Fearless, Essex Triumph, Sir C. Napier, and Sir F. Bathurst; 2d, Mr. Black, gr. to E. Foster, Esq., Clewer, with Leda, Model, Barmaid, Black Prince, Duke of Wellington, Queen of the East, Essex Triumph, Mr. Seldon, Mrs. Seldon, Earl of Clarendon, Sir C. Napier, and Cobden; 3d, Mr. James, Stoke Newington, with Earl of Clarendon, Mrs. Bacon, Duke of Wellington, Negro, Mr. Seldon, Sylph, Sir F. Bathurst, Admiral, Summit of Perfection, Hon. Mrs. Ashley, Essex Purple, and Sir C. Napier; 4th, Mrs. Mosley, Maida Hill; 5th, Mr. Bennett, Dulwich; 6th, Mr. Allen, Shacklewell; 7th, Mr. Kirkpatrick, Camberwell; 8th, Mr. Harris. Fancy varieties, six blooms: 1st prize, Mr. Black, with Empereur de Maroc, Raphael, Princess Louisa, Jenny Lind, Mrs. Hansard, and Pretty Polly; 2d, Mr. Edwards, with Mrs. Hansard, Rachael, Pretty Polly, Jenny Lind, Lady Grenville, and Elizabeth; 3d, Mr. Pope, with Highland Chief, Triomphe de Magdeburgh, Jenny Lind, Mrs. Hansard, Reizende von Elsthal. New Flowers: 1st prize, Mr. Black, with Model, Leda, Barmaid, Roundhead, Sir C. Napier, and Nepaulese Prince; 2d, Mr. James, with Nil Desperandum, Napoleon, Jullien, Roundhead, Admiral Napier, and Nepaulese Prince; 3d, Mr. Robinson, with Regina, Nil Desperandum, Roundhead, Sir C. Napier, Duke of Rothesay, and Nepaulese Prince. Nurserymen, 24 varieties: 1st prize, C. Turner, Slough, with Cobden, Barmaid, Model, El Dorado, Princess Radzivill, Beeswing, Queen of Lilacs, Mr. Seldon, Fearless, Thames Bank Hero, Magnificent, Black Prince, Earl of Clarendon, Gem, Nepaulese Prince, Duke of Cambridge, Sir C. Napier, Mr. Herbert, Duke of Wellington, Blanchfleur, Princess Louisa, Essex Triumph, Mrs. Seldon, and Sir F. Bathurst; 2d, Mr. Keynes, Salisbury, with El Dorado, Queen of Lilacs, Duke of Wellington, Seraph, Magnificent, Mrs. Seldon, Earl of Clarendon, General Faucher, Sir F. Bathurst, Yellow Superb, Essex Triumph, Gem, Beeswing, Miss Chaplin, Fearless, Snowflake, Mr. Seldon, Nonpareil, Madame Gouberts, Mr. Herbert, Princess Radziville, Frederick Jerome, Sir Robert Peel, and Negro; 3d, Mr. Barnes, Stowmarket, with Magnificent, Princess Louisa, R. Cobden, Fearless, Grenadier, Earl of Clarendon, Ambassador, General Faucher, Mr. Seldon, Mr. Palmer, Fame, Miss Chaplin, Seraph, Yellow Superb, Negro, Duke of Wellington, Queen of the East, Summit of Perfection, George Glenny, Uranus, Mrs. Williams, Thames Bank Hero, Charles Turner, and Sir F. Bathurst; 4th, Mr. Bragg, Slough; 5th, Mr. Drummond, Bath; 6th, Mr. Legg, Edmonton. Nurserymen, 12 Fancies: 1st prize C Turner, with Empereur de Maroc, Rachael, Elizabeth, Mrs. Willis, Pretty Polly, Mrs. Hansard, Lady Grenville, Jeannette, Mrs. Labouchere, Jenny Lind, Gasparino, and Floral Beauty; 2d, Mr. Keynes, with Princess Charlotte, Comic, Lady Grenville, Conspicua, Mrs. Hansard, Madame Wachy, Striata perfecta, Empereur de Maroc, Rainbow, Admiration, Jenny Lind, and Flying Dutchman; 3d, Mr. Barnes. For three blooms of Geo. Glenny: 1st, Mr. Black; 2d, Mr. Cook. In class showing, seedlings, the best Dahlia was Dr. Frampton (Rawlings); the best fancy, Laura Lavington (Keynes); the best Fuchsia, Nil Desperandum (G. Smith); the best Hollyhock King of Roses (Bragg); 2d, no name (Black); 3d, Satisfaction (Bragg). The best Verbena, National (G. Smith); 2d, Koh-i-noor (do.); 3d, Orlando (do.).

NORTH KENT HORTICULTURAL.—This meeting took place in the Gravesend, or rather the Rosherville Gardens, on the 2d inst. Dahlias were the prominent feature, and a fine display they made. We give the awards. Collections of 24: 1st prize, Mr. Turner, Slough; 2d, Mr. Bragg, Slough; 3d, Mr. Bennett, Dulwich; 4, Mr. J. Edwards, Holloway. Collections of 12: 1st prize, Mr. Turner, Slough; 2d, Mr. Hunt, Paddington; 3d, Mr. Bragg, Slough; 4th, Mr. Bennett; 5th, Mr. J. Edwards. Collections of 12 Fancies: 1st, Mr. Turner, Slough; 2d, Mr. Bragg; 3d, Mr. Hunt; 4th, Unknown; 5th, Mr. Bennett, Dulwich; 6th, Mr. Edwards. Collections of 6 Fancies: 1st prize, Mr. Turner; 2d, Mr. Hunt; 3d, Mr. Bragg; 4th, Mr. Bennett, Dulwich; 5th, Mr. Edwards. To give the names of the varieties exhibiting would be, for the most part, a repetition of those enumerated at the Royal South London Floricultural Exhibition, reported in another column. Mr Rawlings received a Certificate for his Seedling "Dr. Frampton," noticed in our account of the late meeting of the National Floricultural Society. 15 Miscellaneous Stove and Greenhouse Plants: 1st prize, Mr. Cole; 2d, Mr. Stanly. 6 Heaths: 1st prize, Mr. Cole; 2d, Mr. Stanly. Fuchsias: Mr. Stanly. Many other prizes of less importance were awarded.

## Garden Memoranda.

MR. MITCHELL'S, KEMP-TOWN, BRIGHTON.—The garden here contains about 5 acres within the walls; it occupies a cold bleak situation near the South Downs and the sea-coast, and is divided into squares by cross walls. In one of the Vineries there had been some well-swelled Black Hamburgh Grapes which had been remarkably well coloured; from long experience Mr. Mitchell has found that the art of colouring Grapes well rests entirely in judiciously admitting air when the house is opened, and he attributes his success solely to this system. The houses are mostly heated with common flues, and the Vine leaves were perfectly healthy and free from insects. In one of the Vineries an excellent second crop of Black Hamburghs was just beginning to colour. Muscats, except a late house, were all cut. Heliotropes and scarlet Geraniums cover the back walls, from which flowers can be gathered nearly all the year round, and half-hardy plants are wintered on the floors of some of the houses, which are paved with bricks for the purpose. Peaches on the open walls have borne no fruit here this year; and in some instances the trees themselves have been nearly killed. They are never summer pruned; the young shoots are permitted to grow out from the wall during the summer months, and are afterwards nailed and pruned at the same time, in the proper season, that being all the management they receive. The young wood is left untouched, in order to protect the fruit from the sea breeze. Some idea of the bleakness of the place will be gleaned when we state that dwarf Kidney Beans are protected in squares by hedges of Scarlet Runners, and tall varieties of Peas, which are secured by firm tying. A large bed of Fuchsia Riccartoni was one mass of crimson flowers, which it produces every year without more attention than that of cutting the plants down before frost comes, and covering the stools with ashes or similar protection. Some masses of mixed Verbenas were also exceedingly gay. A new Camellia house, having a north aspect, has lately been erected. In one half of it the large specimens are planted out in sunken brick tubs filled with prepared soil. They were moved into these last May, and the lifting has caused many of them to come prematurely into bloom. In the other half of this house there is a stage for young plants in pots. One or two greenhouses were gay with Balsams, the pretty blue Lobelia ramosa, scarlet Geraniums, and other summer occupants; and the place altogether was in excellent keeping, without a weed to be seen. On a north wall were some very fine Morello Cherries, which were fetching 2*s.* 6*d.* a lb.

## Miscellaneous.

*Death of Dr. Neill, of Edinburgh.*—We regret to announce the decease of this amiable gentleman, which took place at his residence, Canonmills, on the 3d inst., at a very advanced age. During a large portion of the past century he was the steady friend of gardeners and gardening; he was himself an enthusiastic horticulturist, and his writings on the subject possessed much merit. He was also a well-known British botanist; and we believe was the principal means of making the discoveries of the late Mr. George Don, of Forfar, known to the public.

*On the Direction taken by Plants.* By MM. Macaire and A. De Candolle.—In the number of the "Bibliothèque Universelle de Genève" for December, 1849, is a notice of Macaire's paper in the Philosophical Transactions for 1848, on the "Direction taken by Plants," accompanied by observations from Prof. A. De Candolle. Macaire had previously published researches on the Curling of Tendrils. In these new investigations he chiefly occupied himself with the tendency of the stem and leaves towards the light, rejecting the old explanation by a curling of the stem, as given by De Candolle and Dutrochet, and sought to make out whether or not light exerts an attraction. He placed some Duckweed in a longish glass vessel of water, covering one-half of the glass with black paper, so as to darken it, and then fixed a partition between the light and dark halves, reaching nearly down to the water. The Duckweed in the dark half was bleached, but did not change its position to approach the light. Peas, Beans, and Mustard-seeds were placed on little floats of cork in the dark part; they germinated and even flowered, the stem elongating towards the light, but the cork floats were not moved. When the stem projected above the partition, it took an upright direction and became green. Peas were placed upon floats in an upright glass covered with black paper, with only a single slit in it to give passage to light, also in a blue glass in like manner, but the floats did not approach the slit where the white light was very strong. Macaire's observations, according to which these experiments seemed to show that white light caused the production of rootlets on the side of the root turned towards it, and blue light on the side turned away, appear, from subsequent observations of M. Clos, to have been accidental phænomena, since the rootlets always shoot out in longitudinal rows, alternating with the fibres of the woody mass of the root. Macaire demonstrated the incorrectness of Dutrochet's assertion that the cause of the curvation is to be found in the modification of the endosmotic process by the influence of light; he also denies that heat exercises an influence on the endosmose, so that the ascent of water into an endosmometer filled with one and the same solution of sugar is equal at 65° and 10° Centigrade, if the expansion of the glass be taken into account. This leads De Candolle to propose that new and most careful experiments should be made, since he has observed that the endosmose goes on much more rapidly in an endosmometer kept in a warm room, and in summer, than at a lower temperature. Macaire further states that light has no influence upon endosmose; and since light and heat are such powerful promoters of vegetation, he concludes that endosmose is not an important operation in the growth of plants. He also does not believe that a fluid can rise by endosmose through several membranes. He closed the ends of three tubes of different diameters with bladder, placed them one within the other, filled them with syrup, and then put the whole into pure water, which only rose into the first tube. The same occurred in experiments made with other fluids, such as gum, alcohol, &c. De Candolle repeated the experiment, by filling with syrup an endosmometer, closed with double bladder, on the upper end of which was attached a bladder also filled with syrup, the whole being placed in pure water. At the end of four hours the bladder was distended, and not only had the water penetrated into this but into the tube, through the double bladder. Macaire has also confirmed the statement that the position of leaves depends upon light. When, for example, he lighted a leaf from below, and threw shade over the upper face, it turned round. He reversed twigs, and observed, as Bonnet did, a twisting of the leaves, remarking at the same time that in leaves which had the two surfaces of very different colour, the twisting was effected more quickly than in other cases; for instance, Bramble and Raspberry leaves twisted round in less than two hours. According to Macaire the twisting takes place sometimes in the blade of the leaf and sometimes in the stalk. Leaves of Lilac and Polemonium cæruleum twisted back by a spiral curling of the limb; leaves of Beans, the Raspberry, Chestnut, Maple, Geranium, and Cercis, by the petiole. If the same leaves were reversed under water and the petiole fastened in a hole, they turned over by the lamina. A leaf deprived of its stalk and laid upon water, the under face turned toward the sun, rolled itself together like a ball, to expose its under face to the light and hide the other surface. When the leaf was placed under water on a float the reversal was effected without displacement. Thus the light does not attract any part of the leaf towards itself. In order to try which of the rays of light were the agents in the production of this phænomenon, Macaire laid leaves under red, blue, green, yellow, and violet glasses, after having accurately determined which rays were actually transmitted through the glass. When only the red rays passed through, there was no turning over of the leaves; under blue glass, which transmitted also some red, and violet, which transmitted red and blue, the leaves turned over, more readily under the latter. Macaire also instituted experiments in order to determine the effect of light on the evaporation of water and the decomposition of carbonic acid. When the lower face of a leaf received light, the evaporation of water was stronger. With leaves of the Chestnut the difference in the two first hours amounted to a proportion of 13·6 to 11·2. As the leaf dried, the difference diminished and disappeared. Detached leaves with their stalks placed in water, and receiving their light on what is properly the under side, showed an evaporation twice or three times as strong as when the light shone upon the upper face. Hence why the turning over of the leaf is so injurious; it causes them to wither. Under coloured glasses the strongest action was with the blue, then with the violet and the green rays. Sometimes blue light produced stronger evaporation even than white, while yellow light always displayed less power. The decomposition of carbonic acid and excretion of oxygen only take place in cellular tissue which has not been disorganised. A leaf of a Rochea stripped of its cuticle and placed beneath water containing carbonic acid, evolved oxygen, which however scarcely came from the cells of the surface. An equal quantity of cellular tissue squeezed down and placed in like manner

under water did not give off any oxygen. Thus it is not the green substance, but only the organised cellular tissue which possesses the power of decomposing. When the epidermis remained this was stronger. Leaves hung up in bell-glasses filled with water containing carbonic acid, and lighted, sometimes upon the upper, sometimes upon the under face, the side of the bell turned away from the light being covered with black paper, gave off twice or thrice as much oxygen when they received the light, as usual, upon the upper side; and the difference became more and more evident the longer the experiment was kept in operation. When the leaves of Camellias are wetted, the stomates close; the evolution of air then takes place from the petiole, and the bubbles may readily be collected while arising from this part; experiments made with these showed that when the light was received on the upper side a quantity of bubbles came forth, while when the under side was illuminated very few were produced. Thus leaves which are lighted from below evaporate less water and decompose less carbonic acid. How this acts on the turning over of the leaves is still a mystery. The evaporation cannot act in this, for it is prevented under water, and yet the leaves turn round in such a condition. The excretion of oxygen is not arrested by the submersion of the leaves in water; this, as well as the revolution of the leaf, occurs under the influence of light. It must therefore be through the distention of the tissue by oxygen and the fixation of the carbon, that the leaves bend, curl or twist upon their petioles. The cause is evident, but we do not know how it acts. *Botanical Gazette.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

MANY of the plants intended for winter flowering have now filled their present pots, and are still growing fast; but unless they are very small, it will be better not to pot them again this season, but to assist them with occasional waterings of liquid manure. The size of the flowering pot must always be regulated by the purpose for which the plants are grown. In most cases, a supply of flowering plants is required for conservatory and drawing-room decoration; and as many of these will be required to fit various ornamental vases, it is necessary to practise the small shift system, by making the soil as rich as the plants will bear it, and keeping the pots as small as possible in proportion to the size of the plants; and should any further stimulant be required, it must be applied in the shape of liquid manure. These remarks, of course, apply to quick-growing things which are cultivated for a particular purpose, and are afterwards of very little moment.

FLOWER GARDEN AND SHRUBBERIES.

About a month since we recommended all those who are anxious to make the finest display of flowers next summer, to take notes of the most effective plants for the purpose, and of the habits and peculiarities of each. We would recommend that such a review be carefully repeated, and the present state of the plants noted also, marking particularly those which at that time made a creditable display, but which have now become shabby or indifferent. The object of going over them several times is to distinguish those kinds which commence early in the season, and continue in the greatest perfection to the latest period; that in future arrangements these may be generally if not exclusively used, to the rejection of all those whose beauty is short-lived. In making arrangements of this kind, it is not necessary to include an immense variety; as the symmetrical relationship between the parts not only admits of repetition, but demands that the corresponding parts should be similarly furnished. The object should be to make the *tout ensemble* perfect; and in almost every case this may be done best by a small selection. For example, if a gardener has of each distinct colour, and of the most useful intermediate shades, a few suitable plants of different heights, he may with proper taste make the arrangement of his masses as perfectly beautiful as a thing of the kind can be. The best way to proceed then is to make a list of desiderata, filling it up for the present with the things which approach most nearly to his standard, and substituting other and better things as soon as they come under his notice. One very important point to be attended to in the selection of plants for bedding purposes is the proper balance between flower and foliage, and especially amongst the bright warm colours; a mass of inflorescence is all very well in the distance, when the proper complementary colours also come within the angle of vision from the same point; but those flower-beds which are intended to please upon close inspection, must be plentifully interspersed with green foliage, to relieve the eye from the unpleasant sensation produced by gazing on an intense colour. We would wish to see the principle of methodical arrangement carried far beyond the parterre, that every clump of shrubs may give evidence of the reign of good taste, in the disposition of shades and colours. Many of the finest and most showy herbaceous plants are now in their beauty, and by studying the effect they produce in different situations, it is more easy to decide where they may be introduced with the greatest advantage. The dark masses of Rhododendrons and other evergreen shrubs, stand particularly in need, during the summer and autumn months, of some flowering plants, such as Phloxes, Aconites, Chinese and Noisette Roses, Hollyhocks, &c., planted amongst them; and the latter cannot be placed in a more favourable situation for displaying their charms, than with the deep glossy green of the Rhododendron for a ground colour.

FORCING DEPARTMENT.

PEACH HOUSES.—The trees in the early houses having matured their growth, the foliage is gradually falling off, notwithstanding the care that was taken to preserve it as long as possible. To prevent the littery appearance produced by the falling leaves, a birch broom should be passed gently up the branches every second or third day, to bring down all the leaves which are ready, that they may be removed, instead of being allowed to keep the house in an untidy state. As soon as the leaves are all off, the trees should be untrained, and the shoots washed over with a solution of sulphur and soft soap, taking care to perform both this operation and that of removing the leaves without injuring the young fruit or wood-buds for next year. The glass should be well washed, and the whole of the woodwork of the sashes and rafters either washed very clean or painted; the latter is of course preferable, if circumstances permit. The front trellis and the back wall should be painted with oil paint. All this may be done by the ordinary labourers, and is therefore not so expensive as at first might be thought, while it gives the house a respectable appearance, and effectually smothers every insect, in any stage, which may be lurking about the trees or their supports. As much of the effete soil as the roots will allow should be scraped away from the surface of the border, and replaced with fresh mellow loam, mixed with fine charred refuse, which all plants are fond of. No animal manure should be applied, as the trees can be stimulated to any required extent by using it in a liquid state during the growing season. The concluding operation will be to give the borders a good soaking of clean water, which will keep them sufficiently moist during the dormant season.

KITCHEN GARDEN.

Preparations should now be made for planting out the young Cauliflowers raised last month. A shallow trench should be formed sufficiently wide to receive the hand-lights, removing the soil to the depth of about 6 inches, and laying it on the edges in a similar manner to a Celery trench. The bottom should then be manured and dug, and spaces the size of the handlights marked out, planting only every alternate space, and reserving the intermediate ones for setting the tops of the hand-lights upon when not required over the plants. The strongest of the young Cauliflowers should then be planted about 4 inches apart, and the handlights, having first been put into repair, should be placed over them. The tops, however, should never be left on, except in case of frost or heavy rains, and even in the latter case air should be admitted. Early Celery should be earthed up as required, but the main crop must still be deferred till it has arrived at its full growth, as there is yet time. It is scarcely necessary to say that fine weather should be chosen for this operation, and that the soil should be as dry as can reasonably be expected at this season.

State of the Weather near London, for the week ending Sept. 4, 1851, as observed at the Horticultural Garden, Chiswick.

| August and Sept. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature of the Air. Max. | Temperature of the Air. Min. | Temperature of the Air. Mean | Temperature of the Earth. 1 foot deep. | Temperature of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 29 | 3 | 29.902 | 29.707 | 59 | 45 | 52.0 | 58½ | 56½ | N. | .07 |
| Satur.. 30 | 4 | 30.180 | 30.024 | 63 | 35 | 49.0 | 56½ | 57 | N. | .00 |
| Sunday . 31 | 5 | 30.240 | 30.178 | 68 | 51 | 59.5 | 55½ | 55 | W. | .00 |
| Monday 1 | 6 | 30.219 | 30.136 | 76 | 58 | 67.0 | 56½ | 57 | S.W. | .10 |
| Tues. .. 2 | 7 | 30.093 | 30.067 | 73 | 59 | 66.0 | 59 | 57 | N.W. | .00 |
| Wed. .. 3 | 8 | 30.127 | 30.072 | 72 | 51 | 61.5 | 61 | 58½ | N.E. | .00 |
| Thurs. .. 4 | 9 | 30.049 | 30.029 | 69 | 46 | 57.5 | 60 | 59 | N. | .01 |
| Average | | 30.114 | 30.030 | 68.5 | 49.3 | 58.9 | 58.0 | 57.1 | | .18 |

Aug. 29—Clear and cold; showery, hail in afternoon; overcast.
— 30—Light clouds and cold; very cold for the season at night.
— 31—Cold; cloudy throughout.
Sept. 1—Cloudy and fine; very fine; overcast.
— 2—Hazy; cloudy; very fine; overcast.
— 3—Hazy; fine; very fine; clear at night.
— 4—Hazy; overcast; very fine; cloudy.
Mean temperature of the week, 1 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Sept. 13, 1851.

| Sept. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 7 | 68.9 | 48.3 | 58.6 | 14 | 0.55 in. | 1 | 3 | 3 | 2 | 4 | 9 | 2 | 1 |
| Mon. 8 | 68.4 | 48.3 | 58.4 | 10 | 0.65 | 2 | 4 | 1 | 2 | 4 | 9 | 2 | 1 |
| Tues. 9 | 68.2 | 49.6 | 58.9 | 11 | 1.09 | 1 | 3 | 1 | 1 | 5 | 7 | 6 | 2 |
| Wed. 10 | 69.5 | 48.4 | 58.9 | 14 | 1.27 | 1 | 1 | 2 | 1 | 6 | 6 | 8 | 2 |
| Thurs. 11 | 68.2 | 47.3 | 57.8 | 9 | 0.46 | 2 | 3 | 1 | 1 | 4 | 5 | 7 | 3 |
| Friday 12 | 66.8 | 45.2 | 56.0 | 8 | 0.49 | 3 | 4 | 1 | 2 | 1 | 4 | 10 | 1 |
| Satur. 13 | 67.0 | 44.1 | 55.8 | 11 | 0.49 | 2 | 2 | 5 | 1 | 2 | 5 | 5 | 3 |

The highest temperature during the above period occurred on the 12th, 1841—therm. 84 deg.; and the lowest on the 12th, 1848—therm. 31 deg.

## Notices to Correspondents.

BALSAMS: *F B H.* If you do not allow your plants to expend their strength in forming flowers, they will do so in forming shoots. The removal of a few flower-buds strengthens others; but that is very different from destroying all the flower-buds.

BEANS: *J H G.* We do not recognise the variety from description. Can you furnish us with a specimen of it? ‡

BEES: *Ravenswood.* The only mode of getting rid of the wild bees will be by unroofing the place, removing the honey and combs, and destroying the bees, taking care in replacing the roof to leave no holes for any bees that may escape to return to. It is next to impossible to "seduce them into hives." *Y.—S L.* A thatch of straw or reeds over the weather boards would be the best for the purpose. It is not desirable to have so many hives in such close proximity as your present "bee-house" will hold; if you could conveniently divide it into two it would be better. Your aspect (south) is not proper. West, by south or north (the latter to be preferred, if equally convenient), is far better. *Y.*

BIRDS—THE FLY-CATCHER: *Sarah K.* This is a sprightly, graceful bird, when at liberty; and you may well be delighted with the rapidity of his movements. Although so tame, on no account take possession of his little person. If immured in a cage, his death would be the penalty paid for his confidence in your friendship. These birds are purely insectivorous. *W. K.*—THE NIGHTINGALE: *J L.* The value of the birds you describe is, at this season, about 7*s.* each. You could not purchase at a better time. *W. K.*—THE BLACKCAP: *J B.* We have, at your earnest solicitation, selected for you a bird and cage. The former is a young gentleman of good promise, and will, we trust, do honour to our judgment before Christmas. He waits your directions as to "how and when" he is to be forwarded to you. Mr. CLIFFORD will take charge of him in the interim; write him all the particulars. *W. K.*—THE CANARY: *Amanda.* The cause of your bird so disfiguring himself, by picking out his feathers, and showing so many symptoms of uneasiness, is the red insect you speak of. This terror of all chamber birds has taken up its residence in his cage; and at night it creeps forth, to prey at leisure upon his devoted person. At once *destroy* the infected cage,—unguents and detergents are of little avail in such cases as these. Let the *new* cage be made on the model already recommended, and of mahogany. None of these *Thugs* will then force themselves in, and your bird will speedily recover. Before removing him into his new quarters, take him carefully in your hand; and by blowing gently on his feathers (below the breast) you will soon discover if there be any latent enemy. It there be, the point of a fine needle will assist in his ejectment. *W. K.—G B.* Your bird has either injured his leg by straining it between the wires of his cage,—or he has the cramp. If his claws be of an undue length, we imagine he is suffering from the former. In such case, with a pair of sharp scissors, remove the cause of offence, being careful not to cut *too* closely. If he has the cramp, keep his cage covered over, and remove him to a warm situation. To remove the constipation, give him immediately a small portion of finely-scraped raw beef, moistened with water; or some warm boiled milk. He will soon rally, and the raw beef will accelerate his return to song. When he is better, let him fly about the room for an hour or two. These birds like exercise, and love to bask in a sunny window. *W. K.*—SONG BIRDS GENERALLY: *C P.* We will give due consideration to your proposition. At present, all is in good time. You cannot do better than read our remarks carefully, in their serial form, from week to week. Directions for the destruction of RATS and MICE, in aviaries, have been minutely given in the early numbers; as you will find on reference. *W. K.*—GOLDFINCHES, &c.: *J C Ewan.* Feed your young birds on bruised Hemp seed, Canary and Flax, for the present; also give them some of the GERMAN PASTE recommended last week. Leave off giving them Hemp seed altogether, in another month, gradually; and confine them to Canary and Flax seed only. Feed them yourself; and if you hang them up in a quiet place, they will soon become familiar. We shall have to treat on "BREEDING GOLDFINCH MULES" long before you will require the information sought for. Your Goldfinches will *not* be injured by the company in which you propose to place them. Quite the contrary. All the back numbers are at present in print, and your other request has been attended to. *W. K.*

BOOKS: *A Rural Dean.* We do not understand what is meant by "gardeners' flowers." Pray enlighten us.—*Sub.* No work can enable you to identify fruits by description only. Lindley's "Guide to the Orchard" is the best.—*D C.* If you will refer to page 520 you will find that your question has been answered. ‡

FAIRY RINGS: *A Sub.* These are caused by the underground spawn of fungi—usually of the Agaricus oreades. The spawn spreads regularly from a centre, and produces fungi at the outside of the circle thus formed. By degrees the circles wear out or become blended together. We know of no means of destroying them without also destroying the Grass itself.

FOREST TREES: *R F.* You had best transmit seeds. Gather them as they ripen, dry them well in the sun, and send them loosely in canvas bags. ‡

GRAPES: *J F.* There are many sorts of Hamburgh Grapes, differing in colour, quality, &c. It almost always happens, however, that what are called Red Hamburghs gain their red colour *either* because they have not air enough, *or* because their roots are too deep. Vine roots should always be near the surface. But their being near the surface may itself be injurious, unless means are provided to keep off cold rains and frost. In dry ground frost does them no harm; but in water-logged ground it is highly injurious. Vines *must* be rested somehow.—*W H.* You must maintain a high temperature during the day, or they will not ripen with you. Let it fall at nights ‡

INSECTS: *P J N.* The large caterpillar is that of the common elephant hawk moth, Deilephila Elpenor. *W.—S S.* The grubs in your kitchen garden are those of the common cockchaffer, Melolontha vulgaris. We know of no better plan of destruction than to dig up the ground and collect the grubs; or of prevention than by employing children to catch and kill the beetles when they appear in numbers in the summer. *W.*

KALMIAS: *S H F.* They are propagated by layers or by seeds. The seed should be sown as soon as ripe in peat and sand, under a north wall; the seeds should be mixed with the sand and scattered over the peat. Hand-glasses should be placed over the place. They *may* be struck from cuttings, in which case they must be treated like Heaths and other hard-wooded plants.

LILIES: *N M.* You must replant them. ‡

MUSHROOMS: *Cymro.* It does not matter, so far as Mushroom growing is concerned, how you feed your horses. The droppings will be equally available for that purpose, whether they are fed on hay or on corn and Grass. ‡

NAMES OF PLANTS: *Inquirer.* Yes; it appears to have been growing in a warm place. *S.—R S.* 1, Pteris aquilina; 2, Polystichum lobatum; 3, Polypodium vulgare; 4, Asplenium Adiantum nigrum; 5, Scolopendrium officinarum. *S. —G Bloon.* It is the common state of the Chilian Potato, and is regarded as the first stage of the plant from a state of nature. It is well known, and of no value, except as a curiosity.—*F Masters.* We never heard of the plants you mention. Depend upon it they are either in cultivation or not worth cultivating.—*F B.* Pancratium maritimum; the Sea Moss, is not a plant, but a conglomeration of animal spiculæ of some sort.—*Alpha.* We cannot name specimens having neither flowers nor fruit.—*Jungermann.* Nostoc commune.—*B L.* Ditto. The cause of its appearance here and there is unusual dampness and shade.—*E J T.* 1, Sedum Telephium; 2, Daucus Carota. *E K L.* Eupatorium cannabinum.—*A B.* 1 and 2, Pinus hispanica; 14, judging from the morsel sent, is the same thing, with sharp pointed buds. The compact habit of the plant may be induced by soil or situation. ¶—A few inquiries stand over for further consideration.

RATS: *W D, Z, A C,* and a host of other "Anxious Enquirers," have our very best sympathies in their respective cases of cruel grievance. They will have their wishes complied with next week. *W K.*

SCARLET RUNNER: *W N.* Very large and tender. ‡

STRAWBERRIES: *Constant Reader.* We believe that the Downton Pine may be obtained, true, of Mr. Page, Nurseryman, Southampton.—*N M.* The Alpine is the very latest, and may possibly answer your purpose. ‡

WEEDS: *J B H.* Lime will not kill Coltsfoot, but encourage its growth. If the soil is shallow and gravelly, you can extirpate it by repeated forking. The best time of the year for cutting Ivy from a wall, so as soon to sprout out again, is the month of March.

SEEDLING FLOWERS.

ROSES: *Anon.* Your Rose is certainly a fine variety, but we are overdone with rose-coloured Bourbons; if it had been scarlet it would have been worth a little fortune: it ranks among the finest of the rose-coloured Bourbons, and will, perhaps (although doubtful), increase in size when budded.*

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer, as under, CORN MANURE, most valuable for spring dressing—Concentrated Urate, Superphosphate of Lime, Nitrate of Soda, Sulphate of Ammonia, Fishery and Agricultural Salts, Gypsum, Fossil Bones, Sulphuric Acid, and every other Artificial Manure; also a constant supply of English and Foreign Linseed-cake. Peruvian Guano, guaranteed the genuine importation of Messrs. A. Gibbs and Sons, 9l. 10s. per ton, or 9l. 5s. in quantities of 5 tons and upwards.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

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|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

SHALE MANURE.—The Bituminous Shale Company can now SUPPLY PULVERISED SHALE ASHES in sacks, at 2l. 10s. per ton, delivered at any station or branch line of the South Western Railway, and at the Terminus, Nine Elms.

This valuable Manure is at once cheap, durable, and fertilising, and will be found to be superior to all others for Grain, Grass, and root crops.

A singular property of this Manure is that it entirely prevents the ravages of the fly in Turnip. It is also utterly destructive of the wire-worm.'

Orders to be addressed to the Bituminous Shale Company, 145, Upper Thames-street, London, where also testimonials from the first agriculturists of the day may be obtained.

ALGERNON POLLOCK, Secretary.

Respectable Agents Wanted in the country. Reference to a Country Banker or London House, required.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analysis of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

HOSE FOR LIQUID MANURE, Fire-engines, and agricultural purposes, made of canvass, lined and coated with gutta percha; it is about one-third the price of leather or india-rubber, will convey liquids of all kinds under a heavy pressure; it is extensively used at the Government public works, also by the navy, and amongst agriculturists, giving universal satisfaction. Testimonials and prices may be obtained of Messrs. Burgess and Key, 103, Newgate-street, sole manufacturers.—London Agents: Messrs. Deane, Dray, and Deane, Swan-lane; Messrs. Tilley, Blackfriars-road.—Country Agents: Messrs. Ransome and Parsons, Ipswich; Messrs. J. and S. Johnson, Liverpool; Messrs. Dickson, Hull; Mr. S. Wilson, Agent for Scotland.

ANTHONY'S PATENT AMERICAN CHURN has obtained a Prize at every Agricultural meeting at which it has been exhibited; and the Proprietors have sold upwards of 2000 in one year, and received from all parts of England the highest testimonials in its favour, both as to the short time required, the quantity and quality of the Butter made, a copy of which testimonials, with prices, will be forwarded on application to BURGESS and KEY, 103, Newgate-street, Sole Agents to the Proprietor.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK (sole Licensee and) Manufacturer, Goswell Road, London.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in Dwelling-houses for conveying Hot or Cold Water to Baths, &c.

Testimonials and prices may be had on application to the Manufactory.

N.B.—Vulcanised India Rubber Garden Hose, fitted up with Roses, Jets, and Branches complete, with union joints ready to attach to pumps or water cisterns.

All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

DURABLE OUT-DOOR PAINT.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-poor Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London. No Agents.—All orders are particularly requested to be sent direct.

THE METALLIC PAINT, produced by the Patent Alkali Company, has been extensively used for several years on farm-buildings, iron bridges, roofs and railings, shipping, &c., and it is admitted that it covers a greater surface and stands far better than any other pigment on wood, iron, Abethaw Lime, and Roman Cement. Fine Black, 25/. per ton, and Rich Purple-brown, 20l. per ton.—Offices of the Company, 1, New Broad-st., London.—JOHN A. WEST, Secretary.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

President for the Year—The Right. Hon. the EARL of WILTON.

The ANNUAL SHOW of Cattle, Implements, Seeds, Vegetables, &c., will be held at MANCHESTER, on TUESDAY, the 7th of October, on a commodious plot of land near the Stretford New-road, in Hulme; the land is well walled round on all sides, is upwards of three acres in extent, and belongs to Samuel Brooks, Esq. The trial of Land Implements will take place the day before the Show, in a field near the Show-yard.

PRIZE LISTS containing the Rules of the Society, Regulations for the Show, &c., may be had by applying to the Secretary, or to the Collector of Subscriptions for the Manchester district, Mr. Wood, 23, Princess-street, Manchester.

Warrington, Sept. 4. HENRY WHITE, Secretary.

# The Agricultural Gazette.

*SATURDAY, SEPTEMBER* 6, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 11—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 18—Agricultural Imp. Soc. of Ireland.

THE atmosphere is composed chiefly of oxygen, nitrogen, and carbonic acid, in mechanical mixture. Recent discoveries have added ammoniacal vapour. It is generally admitted that these gases, and water, are the primary elements from whence the whole mass of vegetable and animal matter on the surface of the earth has been formed. The relative proportions of these gases in the atmosphere are not subject to much change. The opposite functions of animal and vegetable life maintain the equilibrium, with the aid of the natural forces of combustion, putrefaction, and decay. Aqueous vapour is another constituent in the atmosphere which affects the whole range of circumstances that influence vegetable growth. Unlike the permanent gases, it varies greatly in amount in the various seasons and countries over the globe; from its peculiar properties it is liable to be deposited by changes of temperature, and thus it is the means of spreading fertility over wide continents which, without this continual circulation of water, would be arid wastes. It was long supposed that the gases of the atmosphere had the power of dissolving water, but DALTON demonstrated, in the clearest manner, that water in the invisible state existed as a gas, and possessed all their physical properties, so long as the temperature at which it was at first given off was maintained. Aqueous vapour can exist in the elastic state at all temperatures, and mixes and diffuses itself amongst the other gases by virtue of its particles mutually repelling each other, in the same way as they would act in a vacuum. Air does not dissolve water, but water can dissolve a small quantity of all the gases in the atmosphere when it loses its aeriform condition. The amount of vapour which can exist in the air is regulated by the temperature. When the heat of the air is lowered to 20° it is still capable of maintaining about 1½ grain of vapour in a cubic foot, but when raised to 80°, rather more than 10 grains. In both these cases the air is said to be saturated with moisture, because the constituent temperature of the vapour and the temperature of the air correspond. If a reduction of temperature takes place, in either case, part of the vapour would be precipitated.

It is well known that all fluids absorb a large amount of heat when they assume the gaseous state, but which they again give up when reduced to fluidity. Water evaporates very slowly, and takes heat from all bodies which are in contact with it; but when its vapour mixes with the atmosphere, it acts as a reservoir of heat, because the temperature of the air cannot sink below the dew-point of the vapour without freeing a large amount of latent caloric. In this manner the humidity of the atmosphere in a great measure regulates the night temperature. The mean minimum temperature and the dew-point of the vapour coincide pretty closely with each other. For some time we have suspected that the markings of the register thermometer would convey a pretty accurate test of the hygrometry of most countries at a short distance from the sea. However, we find that we have been long anticipated in this relation in an elegant paper by the late Dr. ANDERSON, in the 14th volume of the "Edinburgh Philosophical Transactions," to which we refer those who may be curious in these matters. It appears rather singular that this paper should have got so long out of sight: we are glad to see that Dr. FLEMING has so far disinterred it, the other day, in his admirable little volume on the "Temperature of the Seasons."

It is in consequence of the large amount of moisture with which our south-west winds are laden, that our winters are often so mild. The sun has little power of heating them during the short days, but the long nights have as little power in cooling them by radiation. When the moisture extends to a considerable height in the atmosphere it is remarkable to observe how a high dew-point of the vapour suspends the night temperatures when the sky is without a cloud, and the dews of January may then fall as fresh as those of June.

But it is the greater proportion of moisture in the air during the summer season that allows the night temperatures, as a general rule, to increase in our latitude with the increase of the day heats. Heat and humidity thus act and react on each other; because, however high the thermometer may rise through the day, the surface of the ground and lower strata of the atmosphere will rapidly transmit their heat into space as soon as the sun sinks below the horizon, and this reduction of temperature will only be checked when the dew-point begins to be reached. As an extraordinary instance of the rapidity of the loss of heat in the absence of the sun, it is recorded that the shade thermometer sunk 5° at Koningsberg during the short period (three minutes) that the sun was totally eclipsed; it could not have sunk a single degree had the air been saturated with moisture. In all countries, however hot the days may be, the nights will be cold in proportion to the dryness of the atmosphere. For this reason France and Italy are very subject to spring and early summer frosts, when the air is dry. In other countries much nearer the Equator, Egypt, Palestine, India, &c., during certain seasons the nights are cold when the air is deficient of moisture. Mr. INGLIS, in his interesting tour through Spain, remarks: "I could not but observe the remarkable changes of temperature to which Granada is subject. Walking up the sunny side of the mount, I many times blessed the friendly shade of the Prickly Pear, and the enormous leaves of the Aloe, so scorching was the sun; and yet, under the wall, on the shaded side of the mount, the hoar frost was lying; and this same evening, I found it so cold in the hotel that I drank tea, and received some visitors in bed."

The moisture in our atmosphere is the only protection that we have, which prevents the temperature during summer or winter sinking to the freezing point every night. This aqueous atmosphere is generally confined to a very limited range in our sky. In the more northerly parts of the island, its cloudy plane of precipitation appears like a good umbrella over one's head, when contrasted with the loftier expanse which it occupies in the lower latitudes of the sunny south. Frosts break into the midst of our summers when this element is deficient, for it is then that

> **The parching air burns frore,**
> **And cold performs the effects of fire;**
> **Hoary-headed frosts**
> **Fall in the fresh lap of the crimson Rose.**

A remarkable instance of summer frost occurred in the early part of July last, which was felt over the whole of the eastern and northern parts of Britain, and it may not be out of place to record its effects on vegetation. The last days of June were very warm, and the thermometer stood at 80° on the 1st of July; the wind changed to the N.E. on the 2d, and towards night the air became remarkably dry and parching; shortly after midnight the thermometer sunk to 32° in the shade, where it stood till sunrise. A thermometer exposed on the Grass marked 21°. On the 3d, the sun shone out through the day, without a cloud, but the maximum shade temperature did not rise above 61°. From the dryness of the atmosphere, one could anticipate another night of frost as a matter of physical certainty. Accordingly the thermometer again made its minimum at 33°. We observed the top of the Furze scathed as with fire in hollow situations on the heaths of Suffolk, and the Potatoes were considerably affected in many situations through the eastern counties. In Lancashire and Cumberland, the Potatoes in the valleys were also blackened. Over the whole extent of Scotland the frost was severely felt, and caused a vast amount of mischief to the growing crops in hollow and basin-shaped localities, where the air readily became stagnant and cooled down. In such places, the Potato stems were completely killed to the ground, and hundreds of acres of grain crops, Turnips, &c., were destroyed. In the latter cases, a few circumstances seemed to influence the destructive effects of the first. Grain crops were only in-

jured on weak mossy soils, or where the subsoil was irony and unfriendly to vegetation. The dry state of the ground when the frost occurred, as well as the dry and exhausting droughts which succeeded, seemed to have been so far prejudicial to the crops. When the soil was somewhat open, dry, and mossy, the destruction to the green Oats was complete; they literally "rotted ere their youth obtained a beard." But where they had a plentiful supply of moisture at their roots, they escaped uninjured. Young Turnips which were ready for the hoe were altogether destroyed on moss, but did not suffer in the least on clays and good gravels. As a curious instance of crops being constitutionally weak, where they are grown under certain conditions, whereby their vitality and vigour may be impaired; but, at the same time, they may fulfil the required ends of the cultivator, except in instances as the present, where such severe trials make the weak go to the wall. On a field of 16 acres of mossy land, which was all dunged with farm-yard manure in autumn, and ploughed in, a coating of siliceous gravel was applied over one-half of the field. The whole was sown in the end of May, with Rape, and a fine equal plant was obtained, which almost covered the land by the 1st of July, but the frost killed every plant where the ground was not dressed with gravel, while the other half of the field escaped with very little injury. Could a mineral manure not be got to supply the place of the gravel?

It has been our object, at present, to draw attention to the influence of the amount of moisture in the air, so far regulating the night's temperature, as to afford an easy and pretty correct estimate of the hygrometry of our seasons, by observing the lowest depression of the thermometer. Owing to the continual variation of the winds, this is liable to many exceptions, when individual instances are taken. We have known the moisture of the air vary 36° within 12 hours in winter; but in general, if the dew-point is taken during the maximum heat of the day, the minimum range of the thermometer will be anticipated for the succeeding night if the wind does not change. A protected thermometer will generally fall about 2° lower than the mean dew-point. *R.*

## REPORT ON THE AGRICULTURAL SECTION OF THE GREAT EXHIBITION.

No. XV.—Appold's centrifugal pump, which keeps up such a continual cascading in Class 6, is well adapted for the purpose of draining fens and irrigating flat land. We do not anticipate, however, that it will quickly supplant the scoop-wheel, for the duty performed by this pump is 70 per cent. of the power employed, scarcely equal, we believe, to the duty effected by the best fen scoop-wheels. But still its cheapness, simplicity, and extraordinary lightness are great points in its favour; and we should not be surprised if, after a time, the wheel, 2 or 3 feet in diameter, spinning at a rapid rate, with but little friction, should be found preferable to the massive wheel of 30 or 40 feet diameter, slowly circumvolving with many tons weight of water bearing upon its axle. In this pump the water rises by the momentum it acquires from passing through a rapidly revolving drum, divided by radial blades, just on the same principle that wind is urged by the fan of a winnowing-machine. As there are no valves in action, this pump is not liable to wear or derangement from sand, mud, or other matter in the water. It is, therefore, well calculated for raising the waters from stagnant drains. It is particularly well adapted for a tide pump; that is, when the "head" of water in the receiving river varies considerably at short intervals. Of course the higher the lift the less quantity is raised by the same amount of power; and in order to regulate the power of the engine to the height of the tide, where the fen waters are raised into a tidal stream, requires both constant attention and considerable delay. In some cases lift pumps are obliged to be employed, although inferior in general efficiency to scoop-wheels; or if the latter are used, two trains of gear-work are necessary in order for the engine to do its full duty, the wheel being thus turned slowly when the head is high, and quickly when it is low. But the centrifugal pump regulates itself; it preserves the same speed, no matter what may be the variations in the height of the head, always allowing the engine to exert its full power, though, of course, raising more or less water, according to the elevation to which it is lifted.

A pump in Class 5, Gwynne's patent balanced centrifugal pump, recommended by testimonials from America, professes to out-miracle Mr. Appold's. Its principle is essentially the same; but the duty it performs, according to the exhibitor's hand-bill, is equal to 90 per cent. of the driving power. We do not understand the items given respecting its capabilities. The bill states that 84 horse-power, with one of these pumps, will raise 10,500 gallons of water 30 feet high in one minute; whereas, according to the usual calculation 84 horse-power can raise only 9240 gallons to that height in that time; so that, instead of the duty being 90 per cent., this statement makes the engine do more than it possibly can. Again, the bill says that with 7 horse-power 1500 gallons have been raised 22 feet in one minute; but, according to the general notion, that a horse's power means 33,000 lbs., raised 1 foot high in one minute, and that 1 gallon of water weighs 10 lbs., it would require 10 horse-power to lift 1500 gallons to the height stated. There seems to be some mistake; we should like to have it explained.

Class 16. Leather, saddlery, and harness; skins, fur, and hair, contains objects of importance to the farmer; and our cart harness, generally speaking, needs improvement.

Class 21. Cutlery, edge, and hand tools, exhibits many specimens of improved tools for agricultural purposes; but we close, for the present, our task of inspection, merely mentioning that, in other classes beside the manufactures from glass, gutta percha, &c., the farmer may find many new things calculated to assist him in his lesser labours. We must not forget to name the models which are to be seen here and there, such as that of Danhill's design for a suburban metropolitan cattle market, with accommodation for 6000 oxen and 40,000 sheep; Spurin's model farm, Mechi's farmstead, and others in which all the machinery is shown in motion; and likewise Mr. Dawn's model of a Somersetshire decoy for entrapping wild fowl.

In conclusion, we remind our readers that we have done little more than describe the more interesting of the English implements and agricultural machinery; our animal and vegetable productions have received but a scanty criticism, and all the foreign and colonial implements and products remain yet to be noticed at some future time. *I. A. C.*

## THE POTATO CROP.

In the counties of Longford, Leitrim, Cavan, and Westmeath, the Potato fields are now very generally blackened, and it is a very common complaint that the disease is extending to the tuber, with greater rapidity than it did last year, having respect to the time of its appearance on the leaf. The leaves seem to be more withered than in former years, before the blotches appeared on the stems; yet the peculiar smell of the fields is as powerful as ever, a positive indication of disease.

To Ireland, there is not a more interesting subject of discussion than the fate of the Potato; her whole well-being, her only hope, rests on the recovery of it, or in such an extension of its culture as will restore to her the ability to export 12 or 13,000,000*l.* worth of produce, as well as render her independent of foreign supply, for the food of her people. It is sheer folly to talk of her losing her dependence on it; she must depend on it, and, bad as her expectations may be from it, it still constitutes her only, her forlorn hope; her perseverance in the culture of it is not the desperate resource of the gambler—it is the noble, hopeful, continued energy of the sailor in the storm and the tempest—it is his longing look for the clearance of the clouds, and the cheering sight of the sun.

And this hope will not be vain. It is in the very nature of an epidemic, to be of only temporary continuance. It is in the very nature of all abnormal production to sink back to its original normal amount, when that which conduced to its increase has ceased to operate. It is in the very nature of all excessive force to exhaust itself. We lead nature into magnificent, beautiful monstrosities if you please, but vast enlargements; we remit our attentions, and these artificial developments fall back to their original insignificance—if Nature, in any of her works, can be insignificant.

We have the authority of the wisest that there is nothing new under the sun; we have no right to suppose that since the day of the present creation aught new has been brought forth. The seed of the Potato fungus must have existed since first was recorded the sabbath of the great Creator; and whether its present vast development arise from extraordinary influences of the fluids of our atmosphere, or whether from any predisposing susceptibility in the Potato, whether it be a cause of decay or a feeder on vitiated sap, it may be expected that, ruled by those conservative laws which, steady in their course, govern the ever-varying modes of created matters in their march, its present exuberance will become reduced to its ordinary innoxious condition.

In the consideration of the probabilities of the continuance of this disease, we are not, however, confined to our knowledge of the usual course of nature; the ever changing features of the disease in its progress give us a reasonable expectation that the Potato will not prove an exception in the rule of general conservative Providence, which, hating nothing that it has made, has never allowed aught that it has created to perish. For seven long years the grain crop of Egypt and of the land of Canaan, possibly of all Asia, of all the then inhabited portion of the globe, was not. In modern times the grain crops of Europe have been as deficient as the Potato crop now is. The Turnip crop is frequently more destroyed by the fly and droughts, and now the diamond moth has began ravages which may be continued and extended in future years to its total destruction. An insect unknown before to feed on vegetable products, either from a deficiency of its usual nutriment in the soil or from some other cause, has been taught to feed on Mangold Wurzel—my ducks from being accustomed to feed with young turkeys on food in which green vegetables largely entered, when turned into the garden no longer sought for slugs, their usual animal food, but destroyed my young Peas and my Lettuces. The earlier sown Wheat has, in Ireland, for the last three or four years, been so deficient, from not filling, as to induce many to discontinue it. Yet are we to abandon the culture of all these crops, or be stigmatised as reckless gamblers? An Englishman, a Mr. Alsop, some years ago steward to the Marquis of Thomond, told me he got four quarters and a half of Wheat on middling land, and that if he had other land in that neighbourhood he could obtain five and a half quarters from it, and such products do not appear uncommon, after Potatoes. On old Grass land, two years ago, a magistrate in this neighbourhood had 7 quarters to the acre, on about two acres of land. From the neighbourhood of Portumna, in the county of Galway, I have seen a sample of brown-chaffed white Wheat far exceeding my imported English seed. Yet we have been congratulated on a diminished breadth of this crop in the last year, as being unsuitable to our humid climate.

The progress of the disease is favourable to a belief of its eventual discontinuance. It has been changing from the first; in the year 1845 the crop, an abundant one, appeared uninjured (at least no indication of disease was observed in the leaf and stem) until it was stored, when almost the whole of the Potatoes rotted. In the year 1846, far less abundant in tubers than in 1845, the leaves and stems decayed very early, the tubers rotted in the ground and generally when stored, and those that survived were excessively deficient in flavour. From that year to the present, though the leaves and stems have prematurely decayed, with all the signs of disease, yet the tubers have suffered less, been more abundant, and have progressively improved in keeping and in flavour; indeed, those that have arrived at maturity, or nearly so, have now recovered all their former gratefulness; and although the regularity of the annual alternate late and early appearance of the disease may be indicative of a lengthened continuance, it is not unfavourable to a belief of its eventual disappearance, for it furnishes a sufficient proof that it is produced by some external causes, and not by a constitutional depravity in the Potato. This latter has been fondly supposed and unwittingly attributed to a too stimulated growth, while a high abnormal development of all other vegetable, as well as animal productions, is not supposed to bring similar results, and when the disease has been universal, while the means of forcing a large production has been restricted to a few favoured countries. In Ireland, where, comparatively to the breadth of Potato culture, little stock was kept, and that stock wholly depastured, much of it even through the winters, and no artificial manure employed, nor oil-cake, nor meals used for feeding, the manure little else than rotted straw and bog mould, no over luxuriance, no excessive stimulation could have vitiated the plant. Neither can improved tillage of the Potato have produced here any mitigation of disease, for its tillage and treatment has continued precisely the same as heretofore.

The Potato is not more appreciated in Ireland than it ought to be, and we are not therefore to be surprised that the continuance of the disease is met with general wailing. It was in the fulness of the crop that the small farmer expected to render the rest of the produce of his farm available to the other demands upon him; he could grow nothing else to effect this purpose. It was in the fulness of the crop that the labourer expected the stronger farmer would have the means of employing him; he has no other. The resource of all is now to seek across the Atlantic a future existence in labour, or in the employment of the little capital they can rescue from a general ruin which they knew not how otherwise to avoid. What think you? The amount of this years' poor rate in one electoral division (Scrabby) of the Union of Granard—Granard is not in Connaught, but in Leinster—amounts to 17*s.* in the pound, while in another (Mullahoran) it is 9*s.*

But in our disappointment are we to abandon the culture of a vegetable most closely approximating in its qualities to a cereal production, because its yield is not so great as it would be were it not subject to this disease, which still exceeds, in its most deficient state, in food value any of our cereal crops, while it doubles them in money value.

For the last three or four years the Potatoes saved have on an average exceeded half a crop, they have amounted to it in the worst of these years. A half crop of well tilled Potatoes, at the average market prices of these years, was worth 16*l.* the acre. It is a very prime acre of Oats that would bring 5*l.* A half crop of such Potatoes would give an amplitude of food to a man for 640 days. Such an acre of Oats would not feed him for more than 450 days. Supposing by increased production the market value of Potatoes were reduced one half, which would be somewhat near their value before the appearance of the disease, the acre would be worth 8*l.*

But with increased production we should revert to the conacre system of paying labour, which, while it afforded a great facility to the employer in paying the labourer, and consequently enabled him to employ to an amount now unthought of, gave to the labourer an equivalent to near double the amount of his present wages. The common price at which the manured acre of land for Potatoes was let was 5*l.*; this he laboured on spare hours, and valuing its produce even so low as 8*l.*—I have sold an ordinary good acre for 12*l.* in the ground—he would have a profit of 3*l.*, together with about 2*l.* for a pig fed on the refuse.

It is, then, the yet limited cultivation of the Potato that keeps us poor. We should make up in the breadth of land under the crop the deficiency of acreable produce; it would then, in spite of the disease, still constitute the cheapest as well as the best food of

the labourer, one on which he can work hard without the stimulant of strong drinks, and which, in its inherent moisture and mildness, does away even with the necessity of weaker drinks, for there is no doubt that a man living exclusively on Potatoes requires very little, if any, drink. A labourer of mine some years ago assured me that he frequently never drunk anything for a week together, not even water. It is also a common assertion that hunger does not so soon come on again after a meal of Potatoes as after one of Oatmea lporridge.

Again, it is no contemptible proof of the value of the Potato that, in the much vaunted report of the farm of Auchness, the result brought about so favourable to the views of Mr. Caird were in consequence of, and wholly dependent on, the very great and disproportionate breadth of Potato tillage on that farm, and the high acreable value of this crop. *J. M. Goodiff, Granard, August* 29.

## THE SUGAR BEET.

In a late Number of the *Agricultural Gazette* you have inserted an article on the proposed manufacture of Beet Sugar in Ireland, such article being founded on the paper read by Professor Hancock, at the meeting of the British Association. Dr. Hancock was bent on *writing down* the movement, and his remarks were chiefly directed to Mr. Sullivan's pamphlet, the statements in which, by a one-sided effort, he sought to controvert. As you have given the substance of Dr. Hancock's remarks, you will of course, in a spirit of fair-play, give Mr. Sullivan's reply, a copy of which I herewith enclose. When I tell you that the crops of sugar Beet now growing in Ireland far exceed in luxuriance those of Mangold Wurzel, you will admit that the prospects of the manufacture in Ireland are not what Dr. Hancock seeks to represent them. Some existing interests here will be affected by the production of indigenous sugar ; and hence the secret of the opposition which has been raised in certain quarters against it. As you can of course have no object in view but the dissemination of truth regarding it, I feel assured you will readily give a place to the enclosed reply of Mr. Sullivan, who, in addition to a profound knowledge of chemistry, is well acquainted with the manufacture of sugar on the continent, where he resided several years. Mr. Sullivan's information is not therefore of a speculative character. *John Sproule, Superintendent of the Beet Sugar Company in Ireland. Dublin, 87, Marlborough-street, August* 23.

The following paper is an abridgment of the one referred to above by Mr. Sproule.

A short time since an abstract of a paper, entitled, "On the Prospects of the Beet Sugar Manufacture in Ireland," by Professor Hancock, appeared in your Paper, in which he comes to the conclusion, that it is impossible to manufacture sugar in this country with any chance of success. Now, as I came to precisely the opposite conclusion in the pamphlet upon the same subject which I published some months ago, and which Dr. Hancock has done me the honour of drawing nearly all his calculations from, there evidently must be error somewhere. I examined the subject from five principal points of view—1st, the unsuitability of Ireland to be a great corn-growing country ; 2ndly, its adaptation to be a root-growing one ; 3dly, that it is profitable to grow Beet for the manufacture of sugar ; 4 hly, that the per centage of sugar contained in Irish-grown roots was at least equal to that contained in those pro duced on the continent of Europe ; and 5 hly, that the manufacture of sugar from Beet would be profitable in Ireland, even when exposed to the competition of all the tropical sugar-growing countries. I shall now proceed to examine how far Dr. Hancock has observed both rules in his criticism of the five points which I have put forward. Now, how does he meet the four first propositions already stated ? Does he show that the climate of Ireland is unfavourable to the growth of Beet ? Does he show that it is less profitable to grow it at the price which I have assumed than the usual crops ? Does he show by experiment that Irish-grown Beet contains less sugar than French ? No ; and will it be believed, his arguments are reducible to a few phrases, which may be represented thus ? No investigation had been made to show whether the circumstances of production resembled the north-east or the north-west of France, and the sugar Beet had been so little grown in Ireland, there were no statistics of prices to refer to. This mode of arguing a question possesses the rare merit of originality, and shows that the writer, if he has not studied the question upon which he has written, has at least studied the human nature of those with whom he wished to have the character of an oracle. As he has left these four points out of the five advanced by me untouched, I shall imitate him by dismissing the subject with one or two phrases. Dr. Hancock asks, "What was the price of Beet-root likely to be for a series of years in Ireland ?" And as nobody answered him, why has he not favoured us with his notions upon the subject ? I need scarcely tell my readers that it will mainly depend upon the price of corn, and upon the competition between the farmers in the neighbourhood of a sugar works. I have shown that to grow Beet is more profitable than to grow Wheat, a fact which is well known on the continent. Thus, in France, which may be considered a good corn country, the farmers estimate Beet at 13 f. per 1000 kilogrammes on a par with Wheat at 14 f. per hectolitre, and as the farmers receive in many parts of the north of France 18 f. per 1000 kilogrammes for their Beet, and only 13 f. per hectolitre for their Wheat, they very rationally consider the Beet the better of the two crops. Now, it does not require to be a political economist to find out that farmers will in every country seek their own interest, and cultivate that crop which pays them best, and that an active competition will spring up between them for a share of the larger profit to be derived from growing Beet, which must keep the price down. Now I come to the doctor's grand point of attack—Is it profitable to make sugar from Beet in Ireland ? I do not know really whether I ought seriously to endeavour to answer this part of the doctor's paper, as it is, in fact, a distorted picture of the whole subject. At page 41 of my pamphlet I give a statement of the probable cost of manufacture of Beet-root sugar, in which I endeavour to make out the most unfavourable case possible for the manufacturer. Thus, I take the price of Beet at the average of France, or very nearly ; I charge 9*l.* as the expense of manufacturing one ton of sugar ; I take the produce at only 5 per cent., the fixed capital at double what I am in a position to prove is now required, the price of the sugar at the lowest sum which it is likely to reach for many years, and the price of the residual pulp at one-third the price stated by one of the first authorities in France (Dumas) ; and, finally, I assume that the manufacturer gets no return for an entire year for that portion of his capital embarked in cost of raw material and expense of manufacture, and yet I have shown a profit. Now, why is it that Dr. Hancock did not take this estimate ? Could he tax it with exaggeration ? I shall tell him why he did not take it. Because it did not suit him as well as the one which he has in part taken, for he very cunningly avoided taking the whole. At page 43 I gave an estimate by M. Paul Hamoir, of Valenciennes, in which the produce is calculated at five different rates—thus, at 4½, 5, 5½, 6, and 6½ per cent., the object intended being to show among other things the influence of an increase in produce of ½ per cent. on the manufacturer's profit. Now, it is very singular that Professor Hancock took the lowest calculation—that is, 4½, the produce obtained 20 years ago. It is no wonder, therefore, that under free trade, where the price will fall to 28*s.* or 30*s.* per cwt., such a yield would not pay. I shall tell the doctor a fact, namely, that in the time of Napoleon the Beet sugar could not compete with foreign sugar, although it paid no duty, and sugar was 6 f. the lb. Had he lived in those days, he would have laughed at the man who would venture to assert that it would one day or other drive it from the market. Is Professor Hancock aware of the fact that 6 to 6½ per cent. of refined sugar can be obtained at present from the Beet, not by any new untried processes, but by processes in full operation in many continental establishments—thus, for instance, in the establishments of Messrs. Serret, Hamoir, Duquesne, and Co., who supplied the comparative estimates relied upon by the professor, 7 per cent. of raw sugar, equivalent to at least 5½ per cent. of refined sugar, is obtained. In the Beet-root sugar manufactory of Gotha, according to the statement of the director, Herr Matthai, the produce for the years 1840—1848 was 6.3, 6 8, 7.4 per cent. In the Baden establishment at Waghausel, one of the best conducted in Europe, according to official statements, the mean produce has been 8 per cent. of raw sugar. Now let us give the doctor's calculation, substituting a produce of 6 per cent. instead of 4½, and we shall have as follows :—

| | | | |
|---|---|---|---|
| The price of 61,607 tons of Beet, at 15*s.* 6*d.* per ton | £46,080 | 0 | 0 |
| Cost of manufacture ... ... ... ... ... | 39,900 | 0 | 0 |
| Making a total outlay of ... ... | £85,980 | 0 | 0 |
| The produce would, at 28*s.* per cwt., short price, sell for ... ... ... ... ... ... | 108,488 | 0 | 0 |
| Giving a balance in favour of the manufacturer of... ... ... ... | £22,508 | 0 | 0 |

But there is really no necessity of arguing the question in this way, and Dr. Hancock knows it too well. The simplest way to show the mode in which he has distorted the question, and the total absence of any numerical facts of his own, is to state that 15 tons of roots yield 1 ton of sugar, and that upon that supposition the following estimate would represent the profit:

| | | | |
|---|---|---|---|
| To 15 tons of roots, at 15*s.* per ton ... ... ... | £11 | 5 | 0 |
| Cost of manufacture, say at 9*l.* per ton ... ... ... | 9 | 0 | 0 |
| Total cost ... ... ... ... ... | £20 | 5 | 0 |
| The produce would be 1 ton of sugar, at 28*s.* per cwt. | 28 | 0 | 0 |
| Deduct expenses ... ... ... ... ... ... | 20 | 5 | 0 |
| Giving a balance of profit of ... ... | £7 | 15 | 0 |

In this estimate I have not included the pulp or molasses, and have assumed the cost of production per ton at the very highest sum paid in any manufactory in Europe, and yet there remains the very handsome profit of 7*l.* 15*s.* per ton ! I shall now leave the public to judge how far Dr. Hancock has succeeded in proving the impracticability of establishing a great branch of industry in this country.

It may not be unimportant to notice here a few facts relative to the present condition of the sugar manufacture in tropical countries. According to the enemies of native industry, one would imagine that the manufacture of cane sugar was in the most primitive condition, and that as soon as the processes were improved by which it was extracted the price of sugar would fall to such an extent that no indigenous sugar could be profitably produced, unless under the most extraordinary protection. There can be no greater mistake. Although it is true that the cane sugar producers have done very little to improve their processes, yet, by borrowing from the Beet-root sugar manufacturers, the manufacture of cane sugar has arrived at nearly as great a state of perfection as that of Beet sugar. Eighty-two per cent. of the juice of the cane can now be obtained, and it is by no means probable, from the nature of the canes, that it will ever pass that per centage with economy. Most of the sugar-growing countries are now provided with the most approved apparatus. The one firm of Derosne, Le Cail, and Co., of Paris, have put up, since 1837, apparatus in Bourbon, Guadaloupe, Martinique, Cuba, Surinam, Demerara, and Java, capable of manufacturing 480,500 cwt. of sugar. And, since 1831, the great firm of Pontifex and Co., of London, and many other English houses, have been occupied in setting up similar apparatus in the British colonies. It is, threfore, a great mistake to imagine that the price of sugar can fall in future years to such an extent as to render it impossible to manufacture sugar in Europe, especially when it is recollected that the Beet sugar, from which has originated all the improvements in the manufacture of cane sugar, is itself very far from having reached its limit of perfection. At a moment like this, when it is the duty of every Irishman to assist, as far as he is able, all legitimate attempts to encourage the establishment of manufactures in this unfortunate country, is it not lamentable to find men using the position and the influence which they possess to damage a great enterprise ? There is a wide difference between the man who points out errors, into which the most careful may fall, and who endeavours to supply new facts, in order to prevent the money of the country from being squandered, and those who, to gain a cheap reputation, take the most inopportune moment to throw discredit upon the statements of others by a system of special pleading, and with the air of a prophet. *William K. Sullivan.*

## Home Correspondence.

*The Exhibition.*—Harvest over, now is the leisure time of farmers. If anyone is disposed to lend a hand to the more deserving young men of his village, who are no doubt desirous of seeing the Exhibition, perhaps my experience may be of use to him. I went up with five others, paid for their return tickets, and found them lodgings. We lodged at the chambers of the Metropolitan Association, in Albert-street, Mile-end. We were away from Monday morning till Saturday night ; the whole cost to me, including all my own expenses and those I have mentioned of the others, together with occasionally the cost of the whole party in seeing shilling sights, was 6*l.* 10*s.* The return excursion tickets cost 9*s.* 8*d.* each ; and we were comfortably lodged. Contrast this with my experience of the next week, when my expense from Tuesday morning till Friday night, to the Cattle Show at Windsor and thence to the Crystal Palace again, were exactly 6*l.* 10*s.* for myself alone, owing to the higher charges of first-class hotels and ordinary trains. Let any one then deny himself the luxury of 3*s.* beds and 5*s.* dinners, and he will be the gainer of enough to frank a number of his men to London. *M. S.*

*The Harvest in South Hants.*—Wheat : an average crop, but much "tailing," caused by the gales of the 26th and 27th of July, which knocked the Wheat about at a very critical period of its growth. Barley : not such a promise as last year ; three weeks' heavy rains retarded sowing, and when in the milk, dry weather set in, rain followed, and it recovered, but the crop will be short. On "shaly" lands it looks red and dried up, rather than ripened. Oats : the crops of this cereal very fine in most places. The heavy dews at night during the earlier stages of its growth improved them much ; whereas Barley did not derive the same corresponding benefit—the reason is obvious to a farmer. Beans and Peas : the former "bloomed" well, but West and South-West gales stripped the haulm and blighted the crop ; in other places the plant was green and vigorous, but the yield is not great, either of the winter or spring varieties. Peas were, and are, a very fair crop, the earlier sown particularly, but the pods contain a maggot. Mangold Wurzel : in some places the fly or "flea" injured the young plant ; but three weeks' drought in July gave this crop the hardest blow. The April sown look best, and some sown late in May, upon sandy loams, are getting on, contrary to expectation. But the crop for the most part is a failure. Swedes : the early sown look the best ; and where they had the advantage of storms look very fine—but in many places the Swedes after "brairding" were carried off by the fly, which has been more busy this year than ever was known. The late sown are a regular plant, and if properly hoed and attended to after harvest may, in these warm and southern climes, prove a fair crop. Potatoes : early sown good and free from disease—late sorts unquestionably stricken. *X. Y. Z., Hants.*

*Wheat Dibbling.*—In the first week of September last I dibbled a plot of ground with Wheat, at the rate of about 2 pecks per acre, on a strong soil in good heart, after Potatoes ; the distance between the rows was from 10 to 12 inches. On account of the ground being very dry and rough it came up irregular, but so soon as rain came it changed its appearance, and before winter it tillered out into large tufts, running horizontally on the ground, or spreading out on all sides. Through the winter and spring it looked healthy and vigorous, and was admired by all who saw it ; but I did not altogether like its appearance, on account of its being too thick, and before it came into ear it became too luxuriant and flaggy ; and when the late heavy rains came it fell, but on account of the stiffness of the straw it is not fallen so close to the ground as to take damage ; it has heavy long ears, and looks equal to 6 quarters to the acre. In the second week of October last I dibbled a piece of ground adjoining the other with Kessingland Wheat, at the rate of 2 pecks per acre, and 12 inches between the rows ; it came up very well indeed, but many of the plants were eaten off by the slugs, &c., and it looked so miserable during the winter, that it had more the appearance of a fallow field than a piece of young Wheat. In the spring, so soon as the ground became dry enough, I stirred the soil between the rows ; it immediately began to improve, and after being well hoed three or four times, it soon covered the ground, and was the surprise of all who saw it. I never saw a finer crop than it now is. The ears are very heavy, and most of them measure from 5½ to 6½ inches long. It has the appearance of yielding at the rate of 6½ qrs. to the acre. The Kessingland is more prolific and stouter of the straw than the sort with which I dibbled the other piece. There is also another incident which I wish particularly to mention respecting the two crops, *i. e.*, the crop dibbled the first week in September was dibbled dry ; the crop dibbled the second week in October was vitrioled. The September sown is free from blight and smut ; the October sown has in it about 3 per cent. smut ears ; the two pieces are side by side, and how to account for the one piece being smutty and the other not, I do not know, except it be the difference in the time of sowing. There are several crops of Wheat in this parish dibbled with your machines, all of which I have inspected ; they are all good except one, which was dibbled at the rate of 2 bushels per acre. The others are stiff of the straw, less lodged, better headed, and are altogether decidedly better than the drilled and broadcast sown. I grew Barley in the year 1849 at the rate of 80 bushels per acre ; I believe my crop this year is nearly as good. My winter Beans were dibbled in October ; they are very good. I have proved your cultivator to be a very superior implement to be used amongst all crops sown in rows. I have this year frequently used it in stirring the soil between my Potatoes, Swedes, &c., to the depth of 7 or 8 inches. I find that from frequently stirring the ground, it greatly improves the crop. *William Griffin, Eydon, Daventry : To Dr. S. Newington, 36, Wellington-square, Hastings.*

*Rape.*—It was my practice to grow yearly a few acres of Rape for sheep feed, on land intended for Wheat ; it answers two purposes—first, feed for sheep, and secondly, the Wheat crop is much the better for it ; but it requires caution on the part of the shepherd, or the sheep will be blown. I have generally had it mown in the morning (and sometimes sprinkled with salt), what was intended for the sheep to feed on in the evening, but I think with every attention there is some danger in feeding off Rape—if the crop is good, more particularly. I have been led to make these remarks on reading "J. D.'s" communication on the culture of Rape,

which is very good ; but I think persons who have never fed off Rape need a caution. *George Dyer, Islington.*

*My own Farm.*—Extent : 465 acres. Soil : stiff red clay marl, under-drained and manured :

| Crops. | Acres. | Estimated Produce. |
|---|---|---|
| Wheat | 104 | 52 acres, 40 to 50 bushels per acre. 52 acres, 25 to 36 bushels do. |
| Oats | 77 | 60 bushels per acre. |
| Beans | 34 | 24 to 36 bushels per acre. |
| White Peas | 26 | 20 to 36 bushels per acre. |
| Red Clover | 7 | 44 acres very good. |
| Other seeds | 37 | |
| Fallow, Rye, Vetches, and the roots after them | 58 | Looking well. |

All except the price quite satisfactory. I trouble you with this note and sample of the 52 acres of this sort of winter-sown Wheat on the land longest in hand, on which Wheat is grown every other year. *F. E. Williams.*

*The Labourer.*—In your Paper of the 9th inst., I noticed an article on the Improvement of the Condition of the Agricultural Labourer. This subject has long since been forced upon my mind, by witnessing the state of the peasant in France and the Duchy of Baden, Switzerland, &c. In those countries a certain quantity of land is attached to each cottage, sufficient to afford sustenance for the family, there being very little demand for labour. The effect of most families having a property at stake, is to render them above committing petty thefts, as they do in this country. Fruit remains by the road-side untouched, and grain threshed out is left for weeks in the open field without any fear of pillage. The rapid improvements and inventions for lessening the employment of labourers, which are daily progressing, must, at no very distant time, force the system above alluded to upon us ; and it is much to be desired that noblemen and gentlemen of large estates should commence a plan of rewarding their cottager tenants, according to their degrees of merit, for faithful services as farm labourers. The plan I suggest would be to have three different classes of cottages, with land attached to each ; the first class should have 3 acres, the second class 2 acres, and the third class 1 acre, to be divided and cultivated on the Swiss plan. These cottages should be let at a farm rent, to those labourers on each farm who may be recommended by the occupier thereof. I entirely agree with you on the second part of this article, viz., that the first and grand step towards raising the condition and value of the farming servant, is the plan Mr. Batson has adopted ; and the necessity for bringing up the rising generation of labourers on a system commensurate with the advance of steam power, as applied to farming purposes, and the expensive implements they will have to manage, must be evident to every one who gives the subject a thought. If, on selfish principles, these plans recommend themselves, how much more ought they not to do in a moral point of view ? The farm labourer remains now the same ignorant, brutal, thieving, Sabbath breaking ruffian he was 40 years ago [This is a desperate character. Of what district or county is it true ?] but there are obvious reasons why he should not be continued in this state. *J. P.*

*Farming on the Continent.*—Will you, Mr. Editor, or any of your correspondents, be kind enough to give me your or their advice under the following circumstances ? I have two farms—one is heavy land, the other loamy—worth from 20*s.* to 30*s.* rent, if they were 50 miles from London. Oats here are 1*s.* 3*d.* per bushel, Barley 1*s.* 9*d.*, and Wheat 4*s.* My difficulty is the same as most farmers in England, how to grow Wheat at the least expense, only greatly aggravated — other corn being here worth so little. You will say, grow Wheat every other year, and buy Barley and Oats to feed with. Good ; but then meat is only 2½*d.* per lb., and the breed is so bad, that they will not lay on flesh, to repay, at these prices. Cows pay better, milk being 4*d.* per gallon ; but even they give very little milk. Labour is cheap, particularly horse ; so that I reckon a naked fallow, with three ploughings, will only cost, rent and all, 1*l.* ; I therefore fancy that tillage is the cheapest means of fertility. I forgot to mention that I have nearly the same number of acres in rough pasture that I have in arable—for nothing ; so what system or what rotation can I follow to grow most Wheat ? The latitude is 57° ; the summer hotter, and the winter colder and longer than in England ; but the Wheat bears it well. I can grow roots, but they are too late to fallow with Wheat. Will winter Beans or Tares do here ? Without Turnips, I can only manure once in six years. What think you of fallow, Wheat, Tares (manured), Wheat, Beans or Clover, Wheat ?—I send you my address, in case any gentleman may wish to favour me with a line, instead of through your columns. *G.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held on Wednesday last, the 6th of August : present—Mr. Raymond Barker, V.P., in the chair ; Lord Camoys, Sir Robert Price, Bart., M.P., Colonel Austen, Mr. Barnett, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Mr. W. G. Cavendish, M.P., Mr. Hamond, Mr. Fisher Hobbs, Mr. Kinder, Mr. Milward, Professor Sewell, Mr. Shaw (London), Professor Simonds, Mr. Simpson, and Mr. Smith (Exmoor).

Thomas James Agar Robartes, Esq., M.P., of Lanhydrock House, Bodmin, Cornwall, and Porchester-terrace, Hyde Park, was elected a Governor of the Society.

The following new members were elected :—

Hamilton, Capt. Arch. Rowan, Killyleagh Castle, Co. Down.
Culliford, William, South Hayling, Havant, Hampshire.
Williams, Michael, Trevince, Truro, Cornwall.
Coombs, Thomas, jun., Dorchester, Dorsetshire.
Moysey, Henry G., Batheaston Court, Wiveliscombe, Somers.
Willacy, Richard, Penwortham Priory, Preston, Lancashire.
Leonard, Mark S, India-buildings, Fenwick-st, Liverpool.
Call, William Berkeley, Whitfield House, Callington, Corn.
Groves, Captain J. R., Governor of the Milbank Prison.
Harrison, John Thornhill, Frocester Court, Gloucester.
Akers, Richard, Bourton-on-the-Hill, Moreton, Gloucester.
Bell, William Edward, Gorleston, Suffolk.
Devincenzi, Giuseppe, 50, Upper Berkeley-street, Portman-sq.
Chanter, T. B., Bideford, Devonshire
Tweedy, William Mansel, Truro, Cornwall.
Tilsley, Edwin, Moreton-in-Marsh, Gloucestershire.
Champion, William, Calcot, Reading, Berks.
Smith, Abel, jun., Woodhall Park, Ware, Herts.
Durham, Makin, Thorn, Yorkshire.
East, Sir Gilbert Bart., Hall-place, Maidenhead, Berks.
Pardoe, Henry, the Yew Tree, Ombersley, Worcestershire.
Hargraves, George, Penbedw Hall, Mold, Flintshire.
Moore, George, 68, Oxford-terrace, Hyde Park.
Foster, John P., Bolton House, Seven-Sisters'-road, Holloway.
Bortier, J. P., Lapanne, Furnes, Belgium.
Vaux of Harroden, Lord, Highams, near Bagshot.
Wilson, Joseph Henry, Gillets, Henley-on-Thames.
Coote, Eyre (11th Hussars), West Park, Fordingbridge, Hants.

Finances.—Mr. Raymond Barker, as Chairman of the Finance Committee, then laid before the Council the Report on the accounts of the Society to the end of the previous month ; from which it appeared that the current cash balance in the hands of the bankers in London and in Windsor, to meet the payments on account of the Windsor meeting, amounted to 4664*l.* The Council confirmed this report, and adopted the recommendation of the committee that the sum of 1010*l.* should be invested in the public funds, in the name of the Trustees of the Society. The Chairman then laid before the Council the usual quarterly statements, showing the financial state of the Society under different heads of income and expenditure, and of assets and liabilities.

Fat Cattle.—The Duke of Richmond transmitted to the Council an official letter addressed to him on the 16th of July last, by the Earl of Hardwicke, one of the Vice-Presidents of the Society, and an exhibitor of Short-horns of the Wimpole variety of breed at the Windsor Meeting, of which the following is the substance :

"I regret that I am not able from domestic circumstances to be present at the Show at Windsor. I am informed by competent persons that the class which six in-calf heifers of mine are shown in, namely No. 4, the animals that have won prizes are fat animals. I am informed that they have been regularly put up and fatted on various kinds of food, and are now shown as competing stock. I have always understood, and have myself conformed to the rule, that this show was expressly for lean and breeding stock. Had I been aware that it was allowed to show fat stock with a prospect of success, I should certainly have abstained from sending six heifers to the Show. I write this letter now, in order that the attention of your Grace and the Council may be called on the spot to this statement, for the purpose of verifying or disproving what I now state ; as, if true, it will form a fit subject for further proceedings."

One of the earliest objects of the Royal Agricultural Society of England having been to encourage improvements in the quality of the breed of live-stock for agricultural purposes, the Council have constantly had under their consideration the best means of promoting this desirable object, in contradistinction to the express object of the Smithfield Club, which is stated to be—"the supply of the cattle markets of Smithfield and other places with the cheapest and best meat ;" the animals exhibited at the Christmas shows of the Club not being required to be either of pure breed or qualified by circumstance for the reproduction of their species, or to be restricted in their mode of feeding. The following instructions have accordingly been constantly included prominently among those given to the judges of stock of the Royal Agricultural Society at its country meetings :

"The Council desire the attention of the judges to be most particularly called to the following instructions for their guidance, namely,

"1. As the object of the Society in giving the prizes for neat cattle, sheep, and pigs, is to promote improvement in breeding stock, the judges, in making their award, will be instructed not to take into their consideration the present value to the butcher of animals exhibited, but to decide according to their relative merits for the purpose of breeding.

"2. In the classes for stallions, mares, and fillies, the judges, in awarding the prizes, will be instructed, in addition to symmetry, to take activity and strength into their consideration."

As complaints have, however, been continued to be made to the Council, that some of the animals to which the Society's prizes have been from time to time awarded have been rather "dressed up" as fat stock in the results of high feeding, than exhibited in those natural developments of breed and sound condition which ought to distinguish animals intended to promote improvements in the breeding-stock of the country, the Council have this year still further pressed upon the judges the responsibility of this distinction in their awards of the Society's prizes. In their report to the last general meeting they referred still more strongly to the subject in the following passage :—

"The Council have taken measures for obtaining a greater number of nominations from which to select the Judges for the Country Meetings ; but they still feel the imperfection of all plans hitherto adopted for their appointment. The Council duly appreciate the great importance of a strict and impartial adjudication of the Society's prizes by men not only disinterested in themselves, but fully qualified by their abilities and experience for the arduous task confided to them ; and the Council will esteem it a favour if the members of the Society at large will from time to time transmit to them any suggestions that may tend to promote this desirable object, and essentially to give effect to that competition for excellence which the Society, by its premiums, evinces so great a wish to excite. They have already referred it to the Judges, as part of their duty, to ascertain and report to the Council any failure in the due shearing of the sheep, or any excess in the market condition of the animals inconsistent with their character as breeding stock. They consider that the higher the character of their Judges becomes, the more powerfully will they be able to aid the Council in repressing many of the abuses alleged to take place in the competition for prizes. They also hope that the time is not far distant when the judgments given in the Show Yard in the case of Live Stock will be founded on well-defined and acknowledged principles, having reference, in each class, to some assigned standard of excellence ; and that these judgments, although formed on less distinct and constant data than in the case of implements, may gradually approximate in some degree to uniform and consistent results, that may prove, like those in the Implement Yard, satisfactory at the same time both to the Judges and competing exhibitors ; and thus tend to establish those points of form, development, and quality which constitute perfection of breed in the different classes of animals adapted for agricultural purposes."

In order, too, that no false estimate might be made by the Judges in distinguishing between those developments of condition which result naturally from the healthy genial tone and finely-bred qualities of an animal, and that mere fatness which is occasioned by special feeding, the Council included in each of the letters of appointment to the Judges for the Windsor Meeting the following notification :—

"In order to aid the Judges in carrying out the wishes of the Council, in reference to the healthy condition of the animals as breeding stock, and to their soundness and freedom from infectious or contagious disease, the Council have appointed Professor Simonds, the Veterinary Inspector of the Society, to act as Referee to the Judges at the Windsor Meeting."

The Council have already received from Professor Simonds some interesting information connected with his general inspection of the animals in the Show-yard, and his particular examination given of those points to which his attention was specially drawn by such of the Judges as availed themselves of his professional opinion ; which they have reserved for consideration at a future meeting.

Mr. Fisher Hobbs gave notice of his intention to move the following resolution at the Special Council in December, when the prizes for Live Stock at the next Country Meeting shall, agreeably with the bye-laws, be taken into consideration :—

"That in future, before the Judges sign their awards, Professor Simonds shall be directed to make an accurate inspection and investigation of the animals to which the Judges intend to give the Prizes of the Society."

Imperfect Animals.—Mr. Matthew Smith, of Longbrow, near Hexham, having addressed a letter to Prof. Simonds, as the Veterinary-Inspector of the Society, inquiring whether he had certified that one of the bulls to which a prize had been awarded at the Windsor Meeting, and which had an imperfection as a breeding animal, could be considered a safe stock-getter : this letter was laid before the Council. Prof. Simonds stated that he had inspected the bull referred to, and remarked the circumstance to which Mr. Smith made allusion, but not having been called in as referee by the Judges of that division, he had not been required to give any professional opinion. At the same time, he might remark that nature had with wise foresight endowed animals with duplicates of some of the most important organs of the body, as, for instance, in the case of the eye and the ear. On the particular point to which Mr. Smith referred, he considered, that although the circumstance in every such case ought to be well examined, the particular bull to which the prize had been awarded at Windsor was not essentially deficient for the purposes required.

Cart-Stallions.—Mr. F. Leyborne Popham, of Littlecote, near Hungerford, Berkshire, having received by mistake from the office of the Society a form of Certificate for "Agricultural Stallions of any age," instead of the one he required for "Agricultural Stallions of two-years-old," he had not perceived the mistake when filling up that certificate for a two-years-old pure cart stallion he intended to exhibit at the Windsor Meeting ; nor was the circumstance noticed under the subsequent stages of the arrangements in the show-yard, until the Judges had completed their awards and "highly commended" Mr. Popham's colt, in competition with horses of "any age." Mr. Popham therefore suggested to the Council that the heading of the form of certificate should be altered in the case of stallions of any age by the addition of the words, "over two years old."—On the motion of Sir Robert Price, the Council directed that the question of limiting the class of stallions of any age, as proposed by Mr. Popham, should be referred to the Special Council in December, when the prize-list of next year would come under consideration ; but that the following annotation should in the meantime be placed under the announcement of commendations at the Windsor Meeting, to be published, as usual, in the next part of the Journal, namely, "In consequence of a mistake in respect to the certificate, this horse was placed in class 1 instead of in class 2 ; and thus was precluded from competing with the horses of his own age."

Prize Essays.—Mr. Pusey, M.P., chairman of the Journal Committee, having addressed to the council suggestions on the subject of prizes to be offered for next year's essays, the council took the subject into their consideration, and agreed to the following schedule of prizes, the essays competing for which are to be sent to the secretary on or before March 1, 1852 and 1854 respectively :—

PRIZES FOR ESSAYS : 1852.

| | | | |
|---|---|---|---|
| On the Farming of Cumberland ... ... | £50 | On the Manufacture of Sugar from Beet Root ... | 30 |
| On the Farming of Herefordshire ... ... ... | 50 | On Management of Underwood ... ... ... | 20 |
| On Diseases and Defects of the Horse and the Ox, either known to be or likely to become Hereditary (those of the Sheep and the Pig being reserved for consideration in a future year) ... | 30 | On the Management of Clover seeds, &c., and remedy against Clover sickness ... ... ... | 20 |
| | | On any other agricultural subject ... ... ... | 20 |
| | | | £220 |

PRIZE FOR 1854.

| | |
|---|---|
| On the Geographical Distribution and discovery of new sources for the supply of guano; accompanied with samples ...£50 | |

Country Meeting Committee.—On the motion of Mr. Brandreth, the following General Lewes Committee was appointed:—The Duke of Richmond, chairman; Mr. Villiers Shelley, vice-chairman; Colonel Austen, Mr. Raymond Barker, Mr. Brandreth, Colonel Challoner, Earl of Chichester, Mr. Darby (of Marklye), Sir Edward C. Dering, Bart., Mr. Ellman (of Glynde), Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Law Hodges, M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. Jonas, Mr. Milward, Mr. Pusey, M.P., Sir Matthew White Ridley, Bart., Mr. Shaw (of London), and Sir Henry Shiffner, Bart.

Agricultural Implements and Machinery.—Colonel Challoner, Chairman of the Implement Committee, transmitted to the Council the following Report of the committee:—

"The Implement Committee, having had referred to them by the Council the question of offering prizes at the Lewes Meeting for fixed steam-engines and threshing-machines, with an instruction that the Committee would at the same time make to the Council any suggestions or recommendations connected with the prizes generally for that meeting, before the final arrangement of the prize-sheet at the Monthly Council, in August next, beg to make the following report accordingly:

I. They submit to the Council an arrangement of the Prize-sheet, in which the prizes already proposed by the Council are included, along with those which the committee recommend for adoption, namely, prizes for portable and fixed steam-engines and threshing-machines, dynamometer for ploughs, and instruments for hand use in draining; and in which the conditions of competition and general regulations for exhibition and trial are stated.

II. They recommend that the following articles be ordered:
1. A second brake, at a charge not exceeding 50*l.*
2. Two single-horse trucks for two tons; and six hand-trucks, of three different sizes, for less weights.
3. Three leather belts of proper length, with buckles, and punched with several holes, at small distances apart.
4. Six hand-spikes, or levers, of different sizes, shod with iron.

III. At the request of the Committee, Mr. Amos, the consulting engineer, has expressed his willingness to take charge of the arrangements for the trial of horse-gear.

IV. The Committee have considered the question of ascertaining the weight of the steam-engines competing for prizes; and they have decided that the judges, in forming their decisions, will not require a knowledge of the actual weight of such engines, in addition to the aid which their judgment always receives from the estimation of the eye, and the calculation of mechanical power in relation to the wear and tear of material. (Signed) C. B. Challoner, Chairman

This report was unanimously adopted by the Council, and the following schedule of prizes agreed to:

IMPLEMENT PRIZES: 1852.

| | | | |
|---|---|---|---|
| Plough for general purposes | £7 | Subsoil pulveriser ... ... | 5 |
| Plough for deep ploughing | 7 | Corn dressing machine ... | 10 |
| One-way, or turnwrest plough ... ... ... | 7 | Grinding mill for breaking agricultural produce into fine meal ... ... ... | 10 |
| Paring plough ... ... | 5 | Linseed and corn crusher... | 5 |
| Drill for general purposes | 10 | Chaff cutter, to be worked by horse or steam power | 10 |
| Steerage corn and Turnip drill ... ... ... ... | 10 | Chaff cutter, to be worked by hand power ... ... | 5 |
| Drill for small occupations | 5 | Turnip cutter ... ... | 5 |
| Cheap small-occupation seed and manure drill, for flat or ridged work ... ... | 5 | Oilcake breaker, for every variety of cake ... ... | 5 |
| Turnip drill, on the flat ... | 10 | One-horse cart, for general purposes ... ... ... | 10 |
| Turnip drill on the ridge .. | 10 | Light waggon, for general purposes ... ... ... | 10 |
| Drop drill, for depositing seed and manure ... | 10 | Draining tile or pipe machine ... ... ... | 20 |
| Manure distributor (broadcast, moist or dry) ... | 5 | Instruments for hand use in draining ... ... | 3 |
| Portable steam-engine, not exceeding 6 horse power, applicable to threshing or other agricultural purposes ... ... ... | 40 | Heavy harrow ... ... | 5 |
| Second best do. ... ... | 20 | Light harrow ... ... | 5 |
| Fixed steam-engine, not exceeding 8 horse power, applicable to threshing or other agricultural purposes ... ... ... | 20 | Cultivator, grubber, and scarifier ... ... ... | 10 |
| Second best ... ... ... | 10 | Pair-horse scarifier ... | 5 |
| Portable threshing machine, not exceeding 2 horse power, for small occupations ... ... ... | 10 | Horse-hoe, on the flat ... | 10 |
| Portable threshing machine, not exceeding 6 horse power, for larger occupations ... ... ... | 20 | Horse-hoe, on the ridge ... | 5 |
| Portable threshing machine, not exceeding 6 horse power, with shaker and riddle; to be driven by steam ... ... ... | 20 | Horse-rake ... ... ... | 5 |
| Fixed threshing machine, not exceeding 6 horse power, with straw-shaker, riddle, and winnower, that will best prepare the corn for the finishing dressing machine; to be driven by steam ... ... | 20 | Horse seed dibbler or depositor (not being a drill) ... | 10 |
| | | Gorse bruiser ... ... | 5 |
| | | Cheap steaming apparatus, for general purposes ... | 5 |
| | | Dynamometer especially applicable to the traction of ploughs ... ... | 5 |
| | | Silver medals for miscellaneous awards and essential improvements ... | 20 |
| | | Any new implement (such sum as the Council may think proper to award). | |
| | | Mr. Slaney's prize for plough to fill in the soil cast out of drains, with not more than four horses, two and two abreast ... ... | 10 |
| | | | £449 |

Sainfoin Machine.—Mr. Hamond, as one of the Stewards of the Implement-yard for the Lewes Meeting, hoped that by all means some of the implement makers who were preparing machinery for that occasion would not fail to take advantage of the great interest and importance connected at the present time with the cultivation of Sainfoin, by inventing a machine for "kusking" the seeds of that crop; which was in many parts of the country rapidly superseding that of Rye-grass; he therefore hoped to find in the miscellaneous department at Lewes some such machine as that to which he alluded, and which was much required.

Miscellaneous Communications.—Letters from Mr. Mechi and Mr. Astbury on arrangements connected with the Society's Show-yard. Mr. Curtis's offer on his return from the Mediterranean, to inspect any specimens of insects infesting agricultural crops. Mr. Michelmore's statement of occurrence of pleuro-pneumonia; and Prof. Simonds's reply. Fieldbook showing the crops for many years on the estate of Captain T. Martin, R.N. Eight coloured Drawings showing the improvements in progress on the Blakesware Farm of M. H. Gosselin, Esq., and plans of the farm buildings, by Captain W. S. Moorsom, C. E.—Samples of Guernsey Butter, of very fine, rich quality, from Major Le Beir, Sec. of the Agricultural Society in that island.—Further statement from Mr. Bryant, on his system of cultivation.—Further papers on Flax Cultivation, from Mr. Hill Dickson.—On manufacture of Flaxen Ropes, from Mr. Donlan.—Communications on the theory of atmospheric and other natural phenomena, from W. Stevenson, late Lieut. of Revenue Police.

The Council having ordered their thanks for these communications and the numerous presents made to the Society, adjourned over the autumn recess to the first Wednesday in November.

## Review.

*Journal of the Manchester and Liverpool Agricultural Society.* Haddock and Son, Warrington.

It is a pamphlet of 50 pages, containing the rules and prize list of the Society, and the report of the committee of 1850—from which we learn with pleasure that the now united societies of Manchester and Liverpool are in prosperous circumstances—and lastly, the award of premiums at the last annual meeting: and it is to this part of the work we would direct the attention of our readers. The Manchester and Liverpool Agricultural Society is distinguished amongst provincial societies by the number of premiums offered by it for the best cultivated farms, and the following extracts are interesting, as showing that energy, enterprise, and intelligence are not confined to the manufacturing or commercial classes in the neighbourhood of the two great towns of Lancashire.

"(Four claimants.) To Mr. Robert Birch, Netherton, near Liverpool (tenant to the Earl of Sefton), principally dependant upon farming, for the best cultivated farm of not less than 150 acres, 12*l.* *Inspectors' Report.*—This farm is 250 acres, of light black soil on sandy subsoil, and held on yearly tenure. The cultivation is as follows:—Pasture, 12 acres; Clover and seeds, mown, 54 acres; meadows (irrigated), 38 acres; ditto (not irrigated), 17 acres; Wheat, after Potatoes, 28 acres; ditto, after Turnips or other green crops, 22 acres; ditto, after other crops, 7 acres; Oats, after Wheat or other crops, 18 acres; Barley, 13 acres; Potatoes, 27 acres; Turnips, 5 acres; Mangold Wurzel, 5 acres; orchard and gardens, 1 acre; homestead and roads, 3 acres; total, 250 acres. *Rotation of Crops:*—1st, Potatoes or Turnips; 2d, Wheat; 3d, Barley or Oats, and seeded down, to remain three or four years in Grass. *Stock* on this farm:—Farm horses 10, coach ditto 2, bulls 1, dairy cows 12, heifers 16, rearing calves 8, pigs 12; total, 61. The cows are fed in summer with Grass or mown Clover, and in winter on Turnips, hay, Mangold Wurzel, with some oil-cake: the horses on green food in summer, with a little corn, and in winter on hay and steamed roots; to these a little corn is added. From 350 to 400 tons of manure is made in the farm-yard annually, which is applied to green crops. Liquids from the house and farm are all made available. The claimant buys 900 tons of cow and horse dung annually, which is mostly used for Potatoes; he also buys 300 tons of night-soil annually, which is used as a top dressing for Grass. The cow and horse manure cost him 4*s.* per ton, and the night-soil 2*s.* per ton, cartage not included. He has marled 30 acres with 2 'roods' (of 64 cubic yards per rood) of marl per acre, within the last — years. He has also made a new road through the middle of the farm, 918 yards long, which is substantial and durable: it is paved, and the landlord found stones for it. Claimant has eradicated 8560 yards of old fences, filled up the ditches, drained several pits, and by these improvements he has gained nearly 8 acres of land. He has planted 7966 yards of quick thorn fences, cut an open drain, or sewer, 816 yards in length, 9 feet wide at the top, 2 feet broad at the bottom, and 7 feet deep. He has laid 96,000 lineal yards of drains on his farm. The cost of these improvements, exclusive of materials found by the landlord, the claimant states to be 754*l.* *Crops.*—Some portions of the Wheat crop on the lighter land of this farm would not yield a heavy produce, but was healthy in appearance. On a portion of the heavier land the Wheat was as good as any we have seen this year. The Oat and Barley crops were good, and the Potatoes vigorous and clean. Turnips were clean and uniform, and the bulbs the largest we had seen up to the time of inspection. Mangold Wurzel were thin of plant, the seed having vegetated badly; such however as had vegetated had produced large bulbs. All the fences on this farm—most of which are new—are well kept, are very clean, and had evidently had great attention paid to them. The gates are such as we rarely see on any farm for size, strength, and neatness. Occupation roads good, and the farm yards, house, and garden, particularly neat.

"To Mr. Richard Dobell, Leftwich, near Northwich, Cheshire (tenant to the representatives of the late John Adamson, Esq., John Tollemache, Esq., and others), principally dependent upon farming, for the next best cultivated farm of not less than 100 acres. The Medal (an extra prize.) *Inspectors' Report.*—This claimant's farm is 102 acres. It is held on lease for a term of 14 years, seven of which are unexpired; but the claimant has lived upon it all his life (50 years perhaps.) The soil is a light loam, and mostly of good depth, lying on a subsoil of grey sand and 'foxbench.' The surface is undulated, with a western exposure, is in a good climate but far too much crowded by hedge-row timber trees. There is plenty of fall for drainage on this farm, and it is cropped as follows:—about 25 acres of old pasture, and 25 acres of pasture of from one to six years old, making 50 acres in pasture; 10 acres of old meadow, 16¼ of Clover and seeds, mown, and of from one to three years old; 3½ acres of Wheat after Turnips and other green crops; 2 acres of Barley after green crops; 3 acres Oats after Leys, 1 acre Rye, 1 acre Vetches, consumed whilst green by cattle and horses; 4 acres Potatoes; 3¼ acres Turnips; 2 acres Beet; ¼ acre Carrots; 2 acres Cabbages and other green crops; total green crop, 12¼ acres; 2½ of orchards and gardens, and 2½ of homesteads, occupation-roads, &c. The customary rotation is, 1st, Oats after Leys; 2d, green crops; 3d, Wheat or Barley sown with Clover and other seeds; 4th, Clover and other seeds mown twice; 5th, Grass mown once, then pastured several years. The stock consists of two farm horses, two colts, one bull, 26 dairy cows, 16 heifers, five rearing calves, 94 ewes, 70 lambs, and 10 pigs; total stock, 226 head. The horses are kept on green food in summer, and on hay, corn, and Carrots in winter. Cows depastured on Grass in summer, in winter fed on straw and Turnips when out of milk, and on hay, corn, and Beet, when in milk. Stirks and calves pastured in summer, and have straw and Turnips in winter. The sheep pastured in summer and winter, with the addition of Turnips and Beet in the latter season. The quantity of manure made on the farm every year is nearly 200 tons, which is chiefly applied to the green crops. The whole of the liquid manure is made available. During the first three years of the present term, claimant manured the whole of his farm with boiled bones, at the rate of one ton per acre, and at a cost of 4*l.* 10*s.* per ton, exclusive of labour. He has since purchased annually two tons of boiled bones, at 4*l.* per ton, which is applied to the Turnip crop; also four tons of raw bones, at 6*l.* per ton, applied annually to the Clover and seeds, and one ton of guano applied to Turnips and Beet. The whole of the farm has been drained within the last seven years, from 3 to 4 feet deep, at various distances, according to the nature of the subsoil. The whole done with tiles on slate soles, and at the claimant's own expense. He has marled 45 acres within the same period, with 100 cubic yards per acre; has also spent 200*l.* in repairing and improving the farm-house and outbuildings, and in a new stable, dairy, and kitchen. Has expended 15*l.* in filling up old pits. The landlords have been at no part of the expense of improving either the land or buildings. The claimant has also within the last three years made two liquid manure tanks entirely at his own expense; one of these, to receive the urine from the shippons and stable, is 14 feet long, 6 feet wide inside, and 9 feet deep, and will contain 756 cubic feet; it is built of brick and cemented; there is a recess at one end for retaining any sediment; the tank is arched over, and has a pump fixed at one end. To this tank there are covered tile drains from the entrances to the various buildings, where the liquid manure passes through grids into the drain. The other tank is a circular one, situate behind the house from which it receives the wash, as well as the urine from the petty and piggeries; it is 8 feet diameter, and 10 feet deep; is made of bricks, and cemented inside; it is not covered at the top, but fenced off. This tank will contain 502 cubic feet. The claimant purchases ammoniacal water from a neighbouring gas-works, which he carts to this tank, and mixes with the urine and wash in the proportion of about one-sixth of the former to five-sixths of the latter; and when well mixed together, is carted to the meadow-land, and answers very well. This farm is all perfectly drained, and the ditches and out-falls kept clean and open. Potatoes mostly got up and sold, when inspected (21st Aug.), and the land left in a clean state. The crop of Turnips and Beet were, generally, very good, clean, and healthy. One acre of Turnips, after a crop of Vetches cut green, were very badly diseased with 'fingers and toes,' and part of them were not very clean. The Cabbages were the best and heaviest crop we ever saw; and the land on which they grew had been well fallowed the autumn before, and a good dressing given it at the same time, of liquid manure and ammoniacal water. There was not a weakly plant in the whole lot (about one acre and a-half.) Wheat, a good healthy, clean crop, and would average about 40 bushels per acre. Oats very much down, had they not been so, they would have exceeded 70 bushels per acre. The Rye was a second crop, the first having been cut green in May and given to cattle. This second crop would be ripe about the 1st of September, and will be a fair crop, near 50 bushels. Clover and seeds very clean and good, both first and second crops. Old meadow, good thick herbage and in high condition. Some parts of the pastures (about half) very good, the remainder in fair condition. Fences properly trained and kept in proper bounds; they are old ones with ditches, and, as before stated, are sadly too full of timber trees. There has been but a small length of old hedges eradicated, or new ones planted. The gardens and orchards are well stocked and well cultivated. The whole premises are kept very neat, and the outbuildings are well arranged. The house and dairy very clean. The whole of the milk is converted into cheese, which appeared to be of first quality; the cheese-room was well stocked."

There are several other reports of prize farms, of which we may hereafter give extracts—meanwhile we recommend those interested in the agriculture of Lancashire and Cheshire to procure the Journal of the Society, and consider the propriety of assisting an institution which appears to be so active in pointing out and rewarding local energy and skill.

METEOROLOGICAL REPORT.—August—September.
(*Continued from p. 558.*)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Aug. 27 | 11 a.m. | 29.96 | ... | WSW. Brisk. Dull and cloudy. Heavy rain all the evening. |
| | 10 p.m. | ... | 29.70 | |
| * 28 | 6.35 a.m. | ... | 29.68 | AM. NW., P.M. NNW. Brisk. A cold comfortless day; barometer rising steadily. |
| | 10.20 p.m. | 29.77 | ... | |
| 29 | 7.30 a.m. | 29.70 | ... | Brisk NW. wind, with heavy showers all the forenoon; P.M. barometer rising rapidly, and fine pleasant afternoon and evening, with wind moderating. |
| † | 11.30 a.m | ... | 29.67 | |
| | 2.15 p.m. | ... | 29.68 | |
| | 10.30 p.m. | 29.86 | ... | |
| 30 | 6.15 a.m. | ... | 29.97 | N. A.M. Brisk breeze; fine pleasant day. |
| | 10.35 p.m. | 30.10 | ... | NNW. P.M. |
| Sun. 31 | 8 a.m. | 30.15 | ... | WNW. — WSW. Nearly calm; barometer steady; fine beautiful day. |
| | 10.15 p.m. | 30.15 | ... | |
| Sept. 1 | 7.40 a.m. | 30.15 | ... | WNW. Almost calm; fine. |
| | 5.50 p.m. | 30.12 | ... | WSW. Scud moving slowly; night densely overcast. |
| 2 | 7.50 a.m. | 30.05 | ... | A.M. WNW. Brisk; fine pleasant day. |
| ‡ | 5.10 p.m. | ... | 30.03 | P.M. NW. Do. |
| | 10.20 p.m. | 30.04 | ... | |
| 3 | 6.45 a.m. | 30.05 | ... | N.—NNE. Hot; thunder clouds; fine day. |

* A storm of considerable dimensions passing from west to east, the centre lying to the north of Scotland, from the extreme degree of cold which accompanied it.

† A storm passing from SW. to NW., but at a considerable distance to the west of Ireland.

‡ A storm of small dimensions coming from the westward, and crossing England to the eastward.

Dorchester, Sept. 4. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### SEPTEMBER.

Lammermuir Sheep Farm, *Sept.* 1.—Circumstances having prevented us sending a report for July, our present must include two months. The principal business of the first was sheep shearing, which was completed under favourable circumstances, there being little or no rain to interfere with the work. Where the stock, as on such farms, is numerous, the shepherds would require a long time to get through them without assistance. To avoid this, two plans may be followed, either to hire extra hands, or procure assistance from the neighbouring farms. Both have their advantages and disadvantages, though the latter is the almost universal practice of this district, and that which we prefer. When men are hired, the work may certainly be better done, as a bad hand can be paid off at once. But as with us, where the population is thin, men are difficult to procure, and as they must be fed and lodged by the farmer, this inconvenience is greatly aggravated in the event of wet weather, when, of course, they must be idle. When you depend upon your neighbours for assistance, this cannot occur, as they can always judge on the appointed day whether to come or not; and, we must say, we have seldom had occasion to find fault with the way in which the work was done. We have indeed heard of cases, where both the sheep and the wool were seriously abused, but no wonder when the men were supplied with spirits *ad libitum*. Of course they get their meals in the farm-house, and let them have plenty of substantial fare, but give them neither whiskey nor beer. We have frequently been surprised that, in our border districts, there should scarcely—so far as we know—be such a thing as a regular wool-house attached to the farm steading, the wool being stowed away in barns, byres, or some such place equally dirty, damp, and unsuitable. This is certainly a grievous want, when the great importance of a carefully-managed clip and the large item in the returns arising from it are considered. We believe that the tenants are the principal parties to blame, long habit having reconciled them to what is so manifestly against their interest. But, surely, the landlord should look to this glaring want, and either at his own expense or with the assistance of the tenant (who, in most cases, will drive the materials at least) erect the necessary convenience. Our idea of such a building is—a house large enough to contain the clip without unnecessary packing and trampling, divided by moveable wooden screens into one or more compartments (according to the different kinds of wool, such as ewe, wether, and hogg), within which the fleeces can be neatly built up, with plenty of room and light to show it off to advantage, and enable buyers to examine it minutely. Some apparatus for assisting the packing will also be necessary; but, above all things, let it be perfectly dry. Wool may be and frequently is seriously damaged from damp, but never from being kept dry. Contrary to previous expectation, Cheviot wool is lower priced than last year, few mixed clips bringing above 1s. per lb. Blackfaced, on the other hand, is from ½*d.* to ¾*d.* per lb. higher. In our own case, the Cheviot is ½*d.* per lb. below, and the Blackfaced, ¾*d.* higher than last year; while the whole clip has weighed better than usual. On the arable part of the farm, the labourers have been very busy amongst the Turnips and haymaking. Having a considerably larger breadth of the former than usual, with about the same number of hands, it was no easy matter to get them thinned out in time; however, this was managed by the beginning of August. They are now being ploughed and horse-hoed, the workers following, cutting up weeds, removing double plants, and loosening the soil. Although only to a partial extent in this place, we had observed the depredations of the same caterpillar which has been working so much devastation in different parts of the kingdom. The frequent showers and lower temperature we have had of late, appears to have arrested their progress, besides causing the plants to grow amazingly fast. At present we have the prospect of a good crop. The weather has been very unfavourable for hay-making during the past month. We have still a good deal of work before us in this department, and will have a hard push to get through—light though the crop be—before harvest commences, which will hardly be until the 10th, being fourteen days later than last year. *A Lammermuir Farmer.*

## Notices to Correspondents.

Agricultural Statistics: *A Subscriber* should procure a small pamphlet, being a reprint from the *Economist*, entitled the "Price of Wheat in Europe: the Past a Test for the Future; and present Prices and present Stocks of Wheat in Europe. 1850." I think he will find in it the information he requires; should he not be able to procure it, I will send him one on receiving his address. *Thos. Davies, Snetherton, Lynn, Norfolk.*

Alsike Clover: *Cymro.* It is a hybrid perennial Clover.

Fenton Wheat: *C J W* may obtain it from any Edinburgh corn-dealer. Apply to Mr. C. Shirreff, corn-factor, Edinburgh. It is a short-strawed productive sort, fit for rich land.

Italian Rye Grass: *M H J.* In the second year you plough it up again, and grow some other green crop—as Tares, followed by Turnips, or Mangold Wurzel, and then it may do to sow Italian Rye Grass again.

Kohl Rabi: *M H.* Kohl Rabi need not be earthed up to the bulb. Raw bones uncrushed cannot be reduced by sulphuric acid alone, nor will they ferment with wet sand and ashes.

Lime: *R S.* Lime will take muriatic acid from the solution of common salt, and that would probably be the result of slaking with sea-water. Your compound would be a very deliquescent and caustic heap.

Peat Charcoal: *Constant Reader.* If we had a lot mixed with night-soil, we should keep it under cover till next spring and use it either on the young Wheat or on the Turnip land. If you must use it now, apply it for winter Beans, or Tares, or Rye, at the rate of 6 or 8 cwt. per acre.

Poultry: *A Sub* The disease of which you complain is roup, and only differs from the usual routine, by the speedy death of the patient, which generally becomes blind, or partially so, and lingers some time. I believe it is seldom cured, and in the latter stages is not worth trying. The best remedy I know is castor-oil given every other day—a dessert spoonful each dose. The fowl should be kept dry and warm, and fed on sopped bread or meal, mixed with some good strong ale. I have known two grains of calomel to do good, but I do not not think any remedy worth trying, after the disease has reached the stage where they become blind and refuse their food. It is very contagious, and sick birds should be immediately removed, or the sound ones will certainly catch it. The fowl in question has caught it from the common hens similarly affected, which would leave the disease behind, though they were removed. *J. Baily*, 113, *Mount-street — Y Y.* You say they have all died, and that the utmost attention was paid to them to no good purpose; but this information does not enable us to point out the cause of the disease.

Sulphuric Acid: *H P.* A brick-built tank will hold manure for being acted on by sulphuric acid. Apply it diluted in the proportion of about 1 to 4 or 5 of water; it will fix the ammonia, and thus destroy one of the principal causes of the smell. There is no information on the ammoniacal composition of manure which will enable us to say what quantity of ammonia yours, a mixture of all sorts, contains. You had better try the thing experimentally until you hit upon the right quantity to add.

Tares: *Anon.* Sow winter Tares in September—3 bushels per acre, in rows 8 inches apart. A good loam in good order will nevertheless pay for manuring. Apply 10 to 15 tons of farm dung per acre if you can.

## Markets.

### COVENT GARDEN, Sept. 6.

Peaches and Nectarines are not very plentiful; the best samples fetch 12s. a dozen. Pines and Grapes are abundant. Morello Cherries are nearly over. Greengage Plums are scarce, as are also Oranges and Lemons. Nuts remain nearly the same as quoted last week. Filberts are imported in quantity. Carrots, French Beans, and Peas are sufficient for the demand. Potatoes are good in quality, and, remain tolerably free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis floribunda, Carnations, Pinks, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Apples, kitchen, p. bsh., 1s to 1s 6d |
| Grapes, hothouse, p. lb., 2s to 5s | Pears, dessert, p. doz., 2s to 5s |
| Peaches, per doz., 6s to 12s | Almonds, per peck, 6s |
| Nectarines, per doz., 6s to 12s | — sweet, per lb., 2s to 3s |
| Apricots, per doz., 4s to 6s | Lemons, per doz., 1s to 2s |
| Cherries, per lb., 6d to 2s | Oranges, per doz., 2s to 4s |
| Melons, each, 1s to 4s | — per 100, 14s to 30s |
| Currants, p. hf. sieve, 4s to 5s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Plums, per punnet, 1s to 2s | — Brazil, p. bsh., 12s to 14s |
| Figs, per doz., 1s 6d to 3s | Filberts, per 100lbs., 55s to 65s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3d to 1s | Leeks, per bunch, 1d to 2d |
| Cauliflowers, p. doz., 6d to 3s | Shallots, per lb., 3d to 6d |
| French Beans, per half sieve, 1s to 2s | Garlic, per lb., 4d to 6d |
| Beans, per sieve, 1s 6d to 2s | Artichokes, per doz., 1s to 2s |
| Peas, per sieve, 1s 9d to 3s 6d | Lettuce, Cab., p. score, 4d to 1s |
| Potatoes, per ton, 45s to 80s | — Cos, per score, 3d to 1s |
| — per cwt., 2s to 5s | Small Salads, p. punn., 2d to 3d |
| — per bush., 1s 6d to 2s 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Turnips, p. bunch, 2d to 4d | Red Beet, per doz., 1s to 2s |
| Cucumbers, each, 1d to 1s | Mushrooms, p. pot., 1s to 1s 6d |
| Radishes, per doz., 6d to 9d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 8d to 1s | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 6d to 1s | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

COAL MARKET.—Friday, Sept. 5.

Carr's Hartley, 13s. 9d.; Wallsend Haswell, 15s. 3d.; Wallsend Hetton, 15s.; Wallsend Lambton, 14s. 9d.; Wallsend Stewarts, 15s.; Wallsend Adelaide Tees, 14s. 3d.; Wallsend Tees, 14s. 9d.—Ships at market, 103.

HAY.—Per Load of 36 Trusses.

Smithfield, Sept. 4.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 70s to 90s |
| Inferior ditto .. ... | 55 65 | New do. ... ... ... | — — |
| Rowen ... ... ... | — — | Straw ... ... ... | 24 30 |
| New Hay ... ... | — — | | J. Cooper. |

The supply short.

Cumberland Market, Sept. 4.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 70s to 84s |
| Inferior ditto... ... | 60 75 | New Clover ... ... | 70 84 |
| New Hay ... ... | 60 75 | Straw ... ... ... | 27 30 |
| Old Clover ... ... | 88 95 | | Joshua Baker. |

Whitechapel, Sept. 4.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 75s to 80s | Old Clover ... ... | 80s to 90s |
| Inferior ditto ... | 60 70 | New Clover ... ... | 70 84 |
| New Hay ... ... | 60 70 | Inferior ditto... ... | 70 75 |
| Inferior ditto... ... | — — | Straw ... ... ... | 22 25 |

HOPS.—Friday, Sept. 5.

Messrs. Pattenden and Smith report that the market continues firm, with no alteration in prices. The duty is estimated from 110,000*l.* to 115,000*l.* About 30 pockets of new Hops have arrived, but being in a very unripe state do not find buyers.

SMITHFIELD, Monday, Sept. 1.

The number of Beasts was large, but the average quality very inferior, consequently a choice bullock made rather more money, and several middling ones remained unsold. The supply of Sheep and Lambs was about the same as of late; trade was brisk, but it was only for a few of the best descriptions that higher prices were made. Trade was somewhat better for Calves. From Holland and Germany there are 1300 Beasts, 4070 Sheep, 233 Calves, and 30 Pigs; from Spain, 700 Sheep; from Scotland, 60 Beasts; and 2540 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 |
| Best Short-horns | 3 | 2 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 |
| Best Downs and Half-breds | ... 3 | 8 | — 3 | 10 |
| Ditto Shorn | ... | ... | | |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools | 3 | 4 | to 3 | 6 |
| Ditto Shorn | ... | ... | | |
| Ewes & 2d quality | 2 | 10 | — 3 | 2 |
| Ditto Shorn | ... | ... | | |
| Lambs ... | ... | 4 | 4 — 4 | 10 |
| Calves ... | ... | 2 | 8 — 3 | 8 |
| Pigs ... | ... | 2 | 8 — 3 | 8 |

Beasts, 4679; Sheep and Lambs, 33,260; Calves, 335; Pigs, 385.

Friday, Sept. 5.

We have a large supply of foreign Beasts. A bad trade at the dead markets since Monday causes a slack attendance of buyers. Prices for all kinds are lower, and a clearance cannot be effected. The number of Sheep is small, sufficient, however, for the time of year; they are making about the same as on Monday. Calves are very plentiful, and are sold lower. From Germany and Holland we have 602 Beasts, 1830 Sheep, 378 Calves, and 34 Pigs; from Spain, 200 Sheep; from Scotland, 20 Beasts; 320 from the northern and midland, and 125 milch cows from the home counties.

| Best Scots, Herefords, &c. | ... 3 | 2 to 3 | 4 |
|---|---|---|---|
| Best Short-horns | 3 | 0 — 3 | 2 |
| 2d quality Beasts | 2 | 4 — 2 | 10 |
| Best Downs and Half-breds | ... 3 | 8 — 3 | 10 |
| Ditto Shorn | ... | ... | |

| Best Long-wools | 3 | 4 — 3 | 6 |
|---|---|---|---|
| Ditto Shorn | ... | ... | |
| Ewes & 2d quality | 2 | 8 — 3 | 2 |
| Ditto Shorn | ... | ... | |
| Lambs ... | ... | 4 — 4 | 10 |
| Calves ... | ... | 2 6 — 3 | 8 |
| Pigs ... | ... | 2 8 — 3 | 8 |

MARK LANE.

Monday, Sept. 1.—There was a fair supply of Wheat (new) from Essex and Kent at market this morning, quality very fine, and disposed of on the terms of this day se'nnight. In the value of foreign we observe no alteration, but the business doing is exceedingly limited.—For Barley, Beans, and Peas, late prices are fully supported.—Oats are in good demand, and in some instances a slight advance is obtained.—The price of Flour is entirely nominal.

| Per Imperial Quarter, | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 38—42 | Red ..... | 35—39 |
| — — fine selected runs...ditto | 42—45 | Red ..... | 38—42 |
| — — Talavera ..... | 44—48 | | |
| — Norfolk, Lincoln, & York...White | — | Red ..... | — |
| — Foreign ..... | 32—48 | | |
| Barley, grind. & distil., 21s to 24s...Chev. | 26—31 | Malting . | 23—26 |
| — Foreign... grinding and distilling | 20—24 | Malting . | — |
| Oats, Essex and Suffolk ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 21—24 | Feed ..... | 19—21 |
| — Irish .....Potato | 18—22 | Feed ..... | 18—20 |
| — Foreign .....Poland and Brew | 18—22 | Feed ..... | 16—19 |
| Rye ..... | 23—25 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..25s to 27s.....Tick | 26—30 | Harrow . | 26—30 |
| — Pigeon.....28 — 32... Winds | — | Longpod | — |
| — Foreign .....Small | 21—29 | Egyptian | 22—23 |
| Peas, white, Essex and Kent.....Boiler | 22—25 | Suffolk... | 25—27 |
| — Maple.....25s to 27s .....Grey | 22—23 | Foreign . | 24—30 |
| Maize ..... .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 34—39 | | |
| — Suffolk .....ditto | 27—33 | Norfolk . | 27—33 |
| — Foreign .....per barrel | 18—22 | Per sack | 27—33 |

Arrivals in the Port of London last Week.

| | Flour, 7775 sks | Wheat, Qrs. | Barley, Qrs. | Malt, Qrs. | Oats, Qrs. | Beans, Qrs. | Peas, Qrs. |
|---|---|---|---|---|---|---|---|
| — | 7913 brls | | | | | | |
| English | | 3025 | 124 | 2928 | 50 | 175 | 173 |
| Irish | | — | — | 30 | 35 | — | — |
| Foreign | | 8297 | — | — | 11460 | — | — |

Friday, Sept 5.—We have been moderately supplied with grain, either English or foreign, since Monday; nevertheless, there was no activity in the trade this morning, and the value of all articles must be written nominally as on that day, Oats being held for a slight advance. There is a little more demand for Flour at late rates. For a cargo of P.O. Wheat arrived on the coast 31s. per qr. has been accepted. Galatz Maize was sold at 26s. 6d. per qr., both f. o. b., including freight and insurance.—The weather during the past week has continued unsettled, preventing much progress being made with the harvest in Scotland and those districts in which the Wheat has not yet been carried. On Wednesday here, as also in Liverpool and some of the northern markets, more disposition than of late has been evinced by the trade to get into stock, where it was practicable on about the reduced terms at which forced sales have been lately effected.

Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 3440 | 100 | 130 | 1790 sacks |
| Irish ..... | — | — | — | |
| Foreign ... | 5010 | 6220 | 14580 | 1220 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| July 26..... | 42s 5d | 25s 7d | 22s 0d | 27s 0d | 32s 3d | 28s 7d |
| Aug. 2..... | 42 4 | 25 9 | 22 7 | 25 7 | 31 1 | 28 3 |
| — 9..... | 42 3 | 25 11 | 21 7 | 28 5 | 31 4 | 28 1 |
| — 16..... | 41 4 | 26 4 | 21 9 | 27 0 | 30 8 | 27 2 |
| — 23..... | 39 10 | 26 8 | 20 11 | 27 1 | 31 2 | 25 11 |
| — 30..... | 39 1 | 25 10 | 20 8 | 26 9 | 30 7 | 26 6 |
| Aggreg. Aver. | 41 3 | 26 0 | 21 7 | 27 0 | 31 2 | 27 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | July 26. | Aug. 2. | Aug. 9. | Aug. 16. | Aug. 23. | Aug. 30. |
|---|---|---|---|---|---|---|
| 42*s* 5*d*— | | ... | ... | ... | ... | ... |
| 42 4 | ... | ... | ... | ... | ... | ... |
| 42 3 | ... | ... | ... | ... | ... | ... |
| 41 4 | ... | ... | ... | ... | ... | ... |
| 39 10 | ... | ... | ... | ... | ... | ... |
| 39 1 | ... | ... | ... | ... | ... | ... |

SEEDS.—Sept. 1.

| | | | |
|---|---|---|---|
| Canary, per qr. .....36s to 38s | | Coriander, p. cwt. ...16s to 20s | |
| Caraway, per cwt. ..32 — 33 | | Mustard, white, p. bush. 6 — 7 | |
| Hempseed, per qr....34 — 35 | | — brown, do..... ... — ... | |
| Linseed, foreign, do. — | | Rape, per last ..... 20*l.*—21*l.* | |
| Clover, red, p. cwt..... — ... | | Cakes, Linseed, p. 1000...9*l.* 5*s.* | |
| — — foreign, do.... — ... | | — — foreign, p. ton, 7*l.* 5*s.* | |
| — white, do. ..... — ... | | — Rape, foreign, do., 4*l.* 5*s.* | |
| — — foreign, do.... — ... | | Tares, per bush,... 4s 0d—4s 6d | |
| Mid & East Kents 100s to 130s | | Sussex ... ... 90s to 105s | |
| Weald Kents ... 90 — 108 | | Yearlings & old Hops 20 — 60 | |

Liverpool, Tuesday, Sept. 2.—There was a fair attendance of both town and country dealers at our market this morning, and a good general demand was experienced for all sorts of bread stuffs. In Wheat, Oats and Indian Corn there was no alteration in price, except in some forced sales of foreign Wheat, upon which a reduction of 1d. to 2d. per 70 lbs. was submitted to. Barley, Beans, and Peas were in good request, but Malt was 1s. per qr. cheaper.—Friday, Aug. 29.—Our supplies coastwise and from Ireland since Monday last are quite insignificant, and the arrivals from abroad very moderate. Notwithstanding the weather still bears an unsettled aspect, no excitement was apparent in any department of the trade at our market to-day. Having no supplies of new Wheat at hand, the sales of that grain this morning were restricted to limited parcels of good foreign, which barely sustained previous rates. Barley, Malt, and Peas, continuing to attract very little attention, were severally rather depressed in value. Beans, including Egyptians, were offered with little effect at a decline of 6d. per qr. Oats, being extremely scarce, were the turn dearer, and Oatmeal fully as dear as before, the stock of old being nearly if not wholly exhausted. Indian Corn on the spot was taken rather sparingly to-day, but maintained late prices.

*SALE BY AUCTION.*

ISLINGTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

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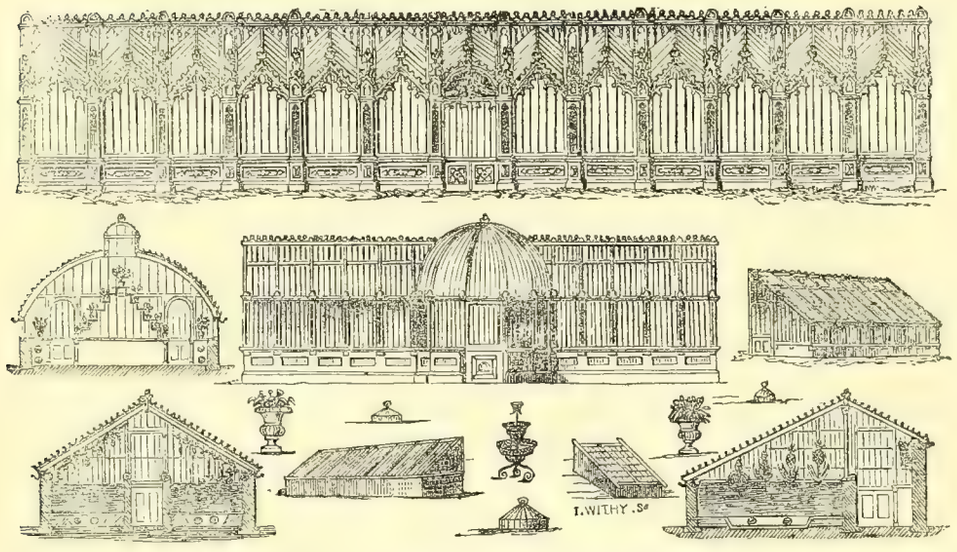
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| Sum Assured | Time Assured. | Sum add. to Pol. in 1841 | Sum added to Pol. in 1848. | Sum Payable at Death. |
|---|---|---|---|---|
| £5000 | 13 yrs 10 mts | £638 6 8 | £787 10 0 | £6470 16 8 |
| 5000 | 1 year | ..... | 112 10 0 | 5112 10 0 |
| 1000 | 12 years | 100 0 0 | 157 10 0 | 1257 10 0 |
| 1000 | 7 years | ..... | 157 10 0 | 1157 10 0 |
| 1000 | 1 year | ..... ..... | 22 10 0 | 1022 10 0 |
| 500 | 12 years | 50 0 0 | 78 15 0 | 628 15 0 |
| 500 | 4 years | ..... | 45 0 0 | 545 0 0 |
| 500 | 1 year | ..... | 11 5 0 | 511 5 0 |

* EXAMPLE.—At the commencement of the year 1841, a person aged 30 took out a policy of 1000*l.*, the Annual Payment for which is 24*l.* 1*s.* 8*d.*; in 1847, he had paid in Premiums 160*l.* 11*s.* 8*d.*; but the profits being 2½ per cent. per annum on the sum insured (which is 22*l.* 10*s.* per annum for each 1000*l.*), he had 157*l.* 10*s.* added to the Policy, almost as much as the Premiums paid.

The Premiums, nevertheless, are on the most moderate scale, and only one-half need be paid for the first five years, when the Insurance is for Life. Every information will be afforded on application to the Resident Director, 8, Waterloo-place, Pall-mall, London.

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UNIVERSAL LIFE ASSURANCE SOCIETY, ESTABLISHED 1834.

EMPOWERED BY SPECIAL ACT OF PARLIAMENT.

1, KING WILLIAM-STREET, LONDON.

For the Assurance of Lives at Home and Abroad, including Gentlemen engaged in the Military and Naval Services.

The principle adopted by the Universal Life Assurance Society of an annual valuation of assets and liabilities, and a division of three-fourths of the profits among the assured, is admitted to offer great advantages; especially to those parties who may wish to appropriate their proportion of profit to the reduction of future premiums.

The following table will show the result of the last division of profits, as declared on the 14th of May, 1851, to all persons who had on that day paid six annual premiums, being a reduction of 45 per cent. on the current annual premium. This will be found a most liberal reduction, if the original premiums be compared with those of other offices adopting a similar plan of division of profits:—

| Age when Policy was issued. | Date of Policy. | Sum assured. | Original Premium. | Reduced Annual Premium for the current year. |
|---|---|---|---|---|
| 20 | On or before 14th of May, 1846. | £1000 | £19 6 8 | £10 12 8 |
| 30 | | 1000 | 24 8 4 | 13 8 7 |
| 40 | | 1000 | 31 10 0 | 17 6 6 |
| 50 | | 1000 | 42 15 0 | 23 10 3 |
| 60 | | 1000 | 66 11 8 | 36 12 5 |

Agents in India: Messrs. BRADDON and Co., Calcutta; Messrs. BAINBRIDGE and Co., Madras; Messrs. LECKIE and Co., Bombay.

MICHAEL ELIJAH IMPEY, Secretary.

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ARGUS LIFE ASSURANCE COMPANY, 39, THROGMORTON STREET, BANK, and 14, PALL MALL.

*Chairman*—Thomas Farncomb, Esq., Alderman.

*Deputy-Chairman*—William Leaf, Esq.

| | |
|---|---|
| Richard E. Arden, Esq. | Rupert Ingleby, Esq. |
| Edward Bates, Esq. | Thomas Kelly, Esq., Ald. |
| Thomas Camplin, Esq. | Jeremiah Pilcher, Esq. |
| James Clift, Esq. | Lewis Pocock, Esq. |
| J. Humphery, Esq., Ald., M.P. | |

*Auditors*—Professor Hall, M.A.; J. B. Shuttleworth, Esq.

*Physician*—Dr Jeaffreson, 2, Finsbury-square.

*Surgeon*—W. Coulson, Esq., 2, Frederick's-place, Old Jewry.

*Consulting Actuary*—Professor Hall, M.A., of King's College.

*Solicitor*—William Fisher, Esq, 19, Doughty-street.

ADVANTAGES OF ASSURING WITH THIS COMPANY.

In addition to a large subscribed capital, policy holders have the security of an assurance fund of Three Hundred and Twenty Thousand Pounds, and an income of Seventy-four Thousand Pounds a year, arising from the issue of upwards of 7000 Policies.

BONUS OR PROFIT BRANCH.

Persons assuring on the Bonus system, will be annually entitled to 80 per cent. of the profits on this branch (after payment of five yearly premiums); and the profits assigned to each Policy may either be added to the sum assured, or applied in reduction of the annual premiums.

NON-BONUS, OR LOW PREMIUM, BRANCH.

The Tables on the non-participating principle afford peculiar advantages to the assured, not offered by any other office—for where the object is the least possible outlay, the payment of a certain sum is secured to the policy holder, on the death of the assured, at a reduced rate of premium.

| | Premiums to Assure £100. | | Whole Term. | |
|---|---|---|---|---|
| Age. | One Year. | Seven Years. | With Profits. | Without Profits. |
| 20 | £0 17 8 | £0 19 1 | £1 15 10 | £1 11 10 |
| 30 | 1 1 8 | 1 2 7 | 2 5 5 | 2 0 7 |
| 40 | 1 5 0 | 1 6 9 | 3 0 7 | 2 14 10 |
| 50 | 1 14 1 | 1 19 10 | 4 6 0 | 4 0 11 |
| 60 | 3 2 4 | 3 17 0 | 6 12 9 | 6 0 10 |

One-half of the Whole Term Premium may remain on credit for seven years, or one-third of the Premium may remain for life as a debt upon the Policy at 5 per cent., or may be paid off at any time without notice.

Claims paid in one month after proofs have been approved.

Loans upon approved security.

The Medical Officers attend every day at Throgmorton-street, at a quarter before 2 o'clock. E. BATES, Resident Director.

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THE YORKSHIRE FIRE AND LIFE INSURANCE COMPANY.

Established at York, 1824. Empowered by Act of Parliament. Capital 500,000*l.*

*Trustees*—Lord WENLOCK, Escrick Park.
G. L. THOMPSON, Esq., Sheriff-Hutton Park.
ROBT. SWANN, Esq., York.

*Bankers*—Messrs. SWANN, CLOUGH, and Co., York.

*Actuary and Secretary*—Mr. W. L. NEWMAN, York.

The attention of the public is particularly called to the terms of this Company for LIFE INSURANCES, and to the distinction which is made between MALE and FEMALE Lives.

Extract from the Table of Premiums for Insuring 100*l.*

| Age next birthday. | Whole Life Premiums. A Male. | A Female. | Age next birthday. | Whole Life Premiums. A Male. | A Female. |
|---|---|---|---|---|---|
| 10 | £1 7 6 | £1 5 4 | 46 | £3 11 6 | £3 3 2 |
| 13 | 1 9 3 | 1 7 0 | 50 | 4 1 9 | 3 13 3 |
| 16 | 1 11 3 | 1 8 10 | 53 | 4 11 6 | 4 2 6 |
| 20 | 1 14 4 | 1 11 6 | 56 | 5 4 0 | 4 14 0 |
| 23 | 1 17 0 | 1 13 8 | 60 | 6 6 0 | 5 12 6 |
| 26 | 2 0 3 | 1 16 2 | 63 | 7 4 0 | 6 9 6 |
| 30 | 2 5 0 | 1 19 9 | 66 | 8 4 0 | 7 10 8 |
| 33 | 2 8 6 | 2 2 10 | 70 | 10 0 4 | 9 7 6 |
| 36 | 2 13 0 | 2 6 4 | 73 | 11 16 2 | 11 2 6 |
| 40 | 2 19 9 | 2 12 0 | 76 | ... | 13 1 9 |
| 43 | 3 5 3 | 2 17 2 | 80 | ... | 15 12 10 |

* *Example.*—A Gentleman whose age does not exceed 30, may insure 1000*l.*, payable on his decease, for an annual payment of 22*l.* 10*s.*; and a Lady of the same age can secure the same sum or an annual payment of 19*l.* 17*s.* 6*d.*

Prospectuses, with the rates of premium for the intermediate ages, and every information may be had at the Head Office in York, or of any of the Agents.

FIRE INSURANCES are also effected by this Company, on the most moderate terms.

Agents are wanted in those Towns where no appointments have been made. Applications to be made to Mr. W. L. NEWMAN, Actuary and Secretary, York; or to Mr. HENRY DINSDALE, 12, Wellington-street, Strand, Agent for London.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, September 6, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 37—1851.] SATURDAY, SEPTEMBER 13. [Price 6*d*.


INDEX.


| | | | |
|---|---|---|---|
| Beet, field | 587 *a* | Horticultural Society's schedule | 583 *b* |
| — sugar | 587 *c* | Lime | 589 *a* |
| Birds, British song | 581 *a* | Manure salts as | 590 *a* |
| British Association | 581 *c* | Mildew. Hop | 582 *b* |
| Broccoli, fungi on | 579 *c* | Newbury Dahlia Show | 583 *c* |
| Calendar, Horticultural | 584 *a* | Onions and Celery | 582 *b* |
| Cattle Show, Windsor | 588 *b* | Orchids for the million | 580 *b* |
| Celery and Onions | 582 *b* | Peat charcoal | 589 *a* |
| Dahlia show at Knacklewell | 583 *c* | Potatoes in Ireland | 588 *c* |
| Dairy management | 590 *a* | — Cuthill's, management of | 582 *c* |
| Draining | 588 *a* | Poultry | 588 *a* |
| Dry rot | 584 *c* | Reaping machine | 585 *b* |
| Entomological Society | 553 *a* | Salt as manure | 590 *a* |
| Farmers, tenant | 588 *b* | Timber preservatives | 589 *a* |
| Farming, alternate culture in | 583 *c* | Tobacco, Irish | 587 *c* |
| Flax Culture by Brown, rev. | 589 *c* | Turkeys | 586 *a* |
| Fruit, wall | 579 *b* | Veitch's (Messrs.), Nursery | 579 *a* |
| Fungi, parasitic | 579 *c* | Village excursions | 587 *c* |
| Gardening news | 582 *c* | Wall fruit | 579 *b* |
| Guano adulteration | 589 *c* | Weather, the | 590 *b* |
| Haddington Farmers' Club | 589 *b* | Wheat, produce of | 589 *a* |
| Hop mildew | 582 *b* | | |



NATIONAL FLORICULTURAL SOCIETY, 21, REGENT-STREET.

The TWELFTH MEETING will be held at Two o'clock on THURSDAY next, the 18th instant. All subjects for examination must be entered, staged, and labelled by 12 o'clock.

A ballot will take place for the election of two candidates—Mr. Drummond, Florist, Bath, and Mr. Wheeler, Nurseryman, Warminster.

The Committee take the present opportunity of reminding some few members who have neglected to forward their subscriptions, that it is important they remit without further delay, so as to save the Honorary Secretary the labour of writing for the same.

By order, JOHN EDWARDS, Hon. Secretary.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—A Grand DAHLIA EXHIBITION will be held at St. Andrew's Hall, Norwich, on WEDNESDAY, the 17th September, 1851, open to Amateurs, being members, and Nurserymen, in all England. Prize List, and every information, on application to WILLIAM HUSSEY, Secretary.

Horticultural Gardens, Norwich, Sept. 13.

MYATT'S NEW SEEDLING STRAWBERRY, "CINQUEFOLIA."—The character of this Strawberry is quite distinct, having generally five leaves on each footstalk. The trusses are strong, producing an abundance of large fruit of a fine flavour. For general description, see *Gardeners' Chronicle*, of July 12th, and "Gardeners' Journal," of July 19th. Plants of this variety 50*s*. per 100; also Myatt's Surprise, 21*s*.; British Queen, Eleanor, Globe, Deptford Pine, Mammoth, Eliza, Fertilised Hautbois, Hooper's Seedling, Keen's Seedling, Swainstone Seedling, Elton Pine, Black Prince, Bicton Pine (white), 3*s*. 6*d* per 100. Kitley's Goliah, 5*s*.; Jackson's Britannia, 5*s*.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 13.

BECK'S SEEDLING PELARGONIUMS OF 1850.

JOHN DOBSON'S Descriptive Catalogue of New and First-rate PELARGONIUMS can be had by enclosing one postage stamp.—Woodlands Nursery, Isleworth, Sept. 13.

NEW ROSES.

WILLIAM WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE OF ROSES is now ready, and will be forwarded to all who have patronised them, and post free to all applicants. Such extensive addition has been made to their Stock, that they are able to execute orders of any magnitude with good Plants and without substitutions.

The above can be obtained in London of Messrs. NIXON, 123, Great Portland-street, Oxford-street; of Messrs. HURST and M'MULLEN, 6, Leadenhall-street; and of Mr. CARTER, 238, High Holborn. And at the Nursery the following: a Catalogue of Ornamental Trees and Shrubs, including a fine collection of Coniferæ and choice Herbaceous Plants; and a Descriptive Catalogue of New and Select Fruits. The Trade Catalogue is also now ready.

Woodlands Nursery, Maresfield, Uckfield, Sussex.

RARE AND UNEQUALLED COLLECTION OF HEALTHY PINE PLANTS.—The whole of the Stock, as at present growing in the Gardens at Blenheim, consisting of One Hundred and Fifty splendid Fruiting Pines. These should produce Pines from 5 to 8 lbs. each, in May and June next, and 300 fine healthy succession Plants. The following are the sorts: Providences, Cayennes, Black Jamaicas, Enville, Antiguas, and Queens.—Application to treat for the same to be made to Mr. TURNBULL, Gardener, Blenheim, Woodstock, Oxon.

BRITANNIA STRAWBERRY.—The combined excellencies of this STRAWBERRY are robust habit, an abundant bearer, good flavour, large size, and of a deep scarlet colour, season of ripening late. See the *North British Agriculturist*, August 8, of last year.—Strong plants of this superb Strawberry are now ready for sale, price 30*s*. per 100, on application to SAMUEL JACKSON, Gardener, Marfleet-lane, Hull. A Post-office order is requested on the receipt of plants. The usual allowance to the trade.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s*. 6*d*. per quart.

York Regent Potatoes, from prepared cuttings, 6*s*. per bush. Cambridge Radical do. (a first-rate second early) 6*s*. do. Early Oxford do., 10*s*. 6*d*. do. Early Ebrington Kidney do., 10*s*. 6*d*. do. Early Ash-leaf Kidney do., 10*s*. 6*d*. do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s*. 6*d*.; two-bushel, 2*s*. 6*d*. Sacks, 2*s*. 6*d*. each.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

DUTCH FLOWER ROOTS.—The Undersigned have great pleasure in announcing to their patrons and the public, that their annual importation of the above has just arrived in excellent condition. The roots are of the best quality, and will be sold at as reasonable prices as by any respectable house in London. Catalogues may be had on application.

Clapton Nursery, London, Sept. 13. HUGH LOW and Co.

WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

| | *s*. | *d*. |
|---|---|---|
| Hyacinths, superior sorts, named, per doz. | 6*s*. and | 9 0 |
| Narcissus, very fine large roots, each | 4*d*. to | 0 8 |
| Tulips, for early forcing, per doz. | | 1 0 |
| Crocus, mixed, for border, per 100 | | 1 6 |
| ,, very fine named, per 100 | | 2 6 |
| Snowdrops, single or double, per 100 | | 2 6 |
| Ixias, of sorts, named, per doz. | 2*s*. to | 4 0 |
| ,, very fine, mixed, per doz. | | 2 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots, for which see his Catalogue.

DUTCH BULBS, OF UNUSUAL FINE QUALITY, FOR EARLY FLOWERING.

WILLIAM DENYER, SEEDSMAN and FLORIST, 82, Gracechurch-street, London.

| | |
|---|---|
| HYACINTHS, distinct bright colours, suitable for either pots or glasses, per dozen, from | 6*s*. to 12*s*. |
| NARCISSUS POLYANTHUS, best sorts, per dozen | 6*s*. |
| TULIPS, early beautiful varieties, per dozen | 2*s*. |
| CROCUS, large Dutch varieties, in separate colours, per 100 | 2*s*. |

W. D. having a very large stock of Flower Roots (*the finest that can be imported*), respectfully solicits the attention of ladies and gentlemen about to purchase their annual supply of Bulbs, feeling assured his prices and quality will give satisfaction.

Where quantities are taken, a liberal allowance made. A Descriptive Priced Catalogue may be had on application.

LILIUM GIGANTEUM.—A few fine healthy Tubers of this magnificent Nepaul Lily have been sent to Messrs VEITCH by Mr. T. Lobb, who collected them in their native habitat, and who speaks of it as the finest of all the Lilies he has ever seen. The flowers are white, of great size, and produced in abundance.

Dr. LINDLEY says, "Lilium Giganteum is a very fine thing; it will perhaps be as hardy as the Japan Lily."

Sir W. J. HOOKER also says, "It is a very fine large flowered species, figured by Dr. Wallich in Flora of Nepaul; the flowers are nearly white, and half a foot long, leaves very large and heart-shaped."

The Plants now offered are growing luxuriantly, and in excellent condition.

| | Each.—*s*. | *d*. |
|---|---|---|
| EXTRA STRONG BULBS | 63 | 0 |
| SECOND SIZE DITTO | 42 | 0 |
| SMALL DITTO | 21 | 0 |

VEITCH and SON, Exeter.—Sept. 13.

NEW EARLY SWEET KERNELLED KAISHA APRICOT.—Strong healthy trees of the above valuable early APRICOT, which we can confidently recommend, as distinct and good, will be ready for sending out this autumn, at the following prices, with the usual discount to the trade:—

| | |
|---|---|
| One year old trees | 10*s*. 6*d*. each. |
| One year trained | 15*s*. ,, |
| Two ditto | 21*s*. ,, |
| Two year trees in pots | 21*s*. ,, |

JAMES VEITCH and SON, Exeter.—Sept. 13.

MESSRS. J. AND H. BROWN offer the following new and choice Plants, which they will forward to any part:—

| | *s*. | *d*. |
|---|---|---|
| 12 Orchidea, choice species and good plants, including Stanhopeas, Dendrobiums, Epidendrums, Oncidiums, &c., for | 30 | 0 |
| 50 Choice Greenhouse Plants, one of a sort by name (this collection is highly recommended) | 40 | 0 |
| 24 Choice Ericas, one of a sort, by name | 16 | 0 |
| 12 New Azalea Indicas, one of a sort | 25 | 0 |
| 12 Camellias, choice sorts, set with bloom | 30 | 0 |
| Some large Camellias, Orange Trees, and Azaleas for sale. | | |
| 24 Fine new Fuchsias, do., do. | 10 | 0 |
| 12 Fine new Gloxinias, do., do. | 10 | 0 |
| 12 Fine new Achimenes, do., do. | 10 | 0 |
| 12 Cinerarias, best sorts, by post | 6 | 0 |
| Geraniums, Show and Fancy varieties, at reduced prices. | | |
| Cyclamen Persicum, flowering bulbs, per dozen | 10 | 0 |
| 12 Tea-scented Roses, one of a sort, by name, in pots | 9 | 0 |
| 12 Climbing do., choice sorts, in pots | 6 | 0 |
| 12 Bourbon Roses in pots, one of a sort | 10 | 6 |
| Cloth of Gold, and Yellow Noisette Roses, per dozen | 10 | 0 |
| 12 Choice Chrysanthemums, new sorts, by name | 6 | 0 |
| 12 New Dwarf Chinese Chrysanthemums, do., do. | 8 | 0 |
| 12 New Perennial German Phloxes, one of a sort | 8 | 0 |
| 12 Ferns, beautiful varieties, in collections, suitable for Glass Cases, Greenhouse, and Hardy Rock Work, each | 10 | 0 |
| Grape Vines, strong plants, from eyes, in pots, per doz. | 15 | 0 |

Strawberry Plants, of all the newest and best kinds, by the dozen or 100.

A fine assortment of Dutch Bulbs, for early Forcing.

Calceolaria, Cineraria, Primula, Pansy, Cyclamen, Auricula, and Geranium Seed, by post, each packet, 1*s*.

Catalogues of Stove and Greenhouse Plants, Fruit Trees, &c., can be had.

Albion Nursery, Stoke Newington, London, Sept. 13.

GUERNSEY AND BELLADONNA LILIES

B. PAGE AND CO. have the pleasure to offer FINE FLOWERING BULBS of the above beautiful Autumnal Lilies.

| | Per dozen.—*s*. | *d*. |
|---|---|---|
| GUERNSEY LILIES | 4 | 0 |
| BELLADONNA DITTO | 4 | 0 |
| EARLY DOUBLE ROMAN NARCISSUS | 4 | 0 |
| LARGEST DOUBLE JONQUILS | 4 | 0 |

B. P. and Co. have received their ANNUAL IMPORTATION of DUTCH BULBS in the finest possible condition, which they are able to offer at greatly reduced rates, priced Catalogues of which may be had upon application to PAGE and Co., Seed Merchants, Southampton.



H. CORSTEN, Florist and Seedsman to her Most Gracious Majesty the QUEEN, and H. R. H. PRINCE ALBERT, 8, Grand Hall, Hungerford Market, begs most respectfully to thank the nobility, gentry, and public in general, for the favours conferred on him last season of purchasing his cases containing a collection of Dutch Flower Roots. He begs to inform his patrons that he has just received his great annual collection of DUTCH and other BULBS, which includes a great many new and rare varieties never before imported to this country.

Boxes at 5*l*. contain 50 named Hyacinths, various colours, double and single, suitable for glasses, pots, or beds; 50 varieties of Tulips, double and single, early or late sorts; 50 Bouquet Narcissus, a great many will produce more than 30 to 40 blossoms; 50 True Jonquils, scented, double and single; 50 Iris Anglica, in all colours, many of the sorts have gained medals and certificates of merit; 50 Iris Hispanica, in beautiful colours; 50 double Anemones, the rare and large blossoms of which have been admired; 50 double Ranunculus, under which are the splendid spotted and striped, white, red, and rose Seedlings; 12 very large crown Imperials, magnificent in their blooms; 50 Hybrid Gladiolus, of which the blossoms have been exhibited at H. C.'s during this month, and have been much admired for beauty and colour; 100 of the new large purple Crocus; 100 do., yellow; 100 do, white; 100 do., striped, in many varieties, and 8 large Bulbs from Naples.

Every Bulb is warranted true to name and colour. Roots given in to defray the carriage.

Half boxes can be had at 2*l*. 10*s*.; quarter box, 1*l*. 5*s*. Early applications will secure the most valuable and rare sorts.—Post-office Orders made payable to HENRY CORSTEN, Charing Cross Post-office, London. A remittance required.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s*. per dozen.—The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place.

JOHN AND CHARLES LEE'S Catalogue of STOVE and GREENHOUSE PLANTS is just published, and may be had post free on application, enclosing two postage stamps. Nursery, Hammersmith.

WINTER CUCUMBER—"LORD KEYNON'S FAVOURITE."—Numerous inquiries, within the last few days, for the above CUCUMBER SEED having been made, EDWARD TILEY begs to inform his Customers that he has some good old Seed of this variety, which surpasses all others for winter cultivation. Sold in packets, at 2*s*. 6*d*. each; or sent post free on receipt of 30 penny postage stamps.

EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Church-yard, Bath, Somersetshire.

CAMELLIAS AND INDIAN AZALEAS WITH FLOWER BUDS.

AUGUSTE VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer to the Trade and Public in general, fine CAMELLIAS, with flower buds, at 6*l*. per 100 and upwards, all good and well shaped flowers. INDIAN AZALEAS, well set with bloom, from 5*l*. to 7*l*. per 100 and upwards. His new Catalogue, just published, may be had on aplication to Mr. R. SILBERRAD, 5, Harp-lane, Great Tower-street, London.

NOBLE NEW EVERGREEN OAK, QUERCUS ILEX MACROPHYLLA.

LUCOMBE, PINCE, AND CO. have now some fine strong plants, well established in pots, fit to be planted out immediately, of their

NEW LARGE-LEAVED EVERGREEN OAK.

It is perfectly hardy, and has a sturdy vigorous habit, with remarkably large, thick, glossy, coriaceous evergreen foliage. It was raised from seed in the Exeter Nursery, and the thorough hardiness of the parent plant, now in the specimen ground there, has been fully proved, and is greatly admired by all cultivators of fine hardy evergreen trees. Price 21*s*. each. Discount to the Trade when three are ordered.

L., P., and Co. are also now sending out their fine Seedling Indian Azalea VESTA, for description of which see their Advertisement in the *Gardeners' Chronicle*, Aug. 9, 1851.

Their stock of Coniferæ, Fruit Trees, Forest Trees, Hardy Evergreens, and Deciduous Trees and Shrubs, is this season more than usually fine; amongst all of which are large specimens capable of producing immediate effect, together with smaller plants, at the lowest prices; Priced Catalogues of which may be had on application.

N.B. Strong plants of Kitley's Goliah Strawberry 3*s*. 6*d*. per 100, or 30*s*. per 1000.—Exeter Nursery, Sept. 13.

THE CHAMPION MUSHROOM SPAWN.

MR. S. CHEESE, of Bayswater, London, returns his sincere thanks to Gentlemen and the trade in general, and begs to inform them that he has now ready a large stock of the above superior article, at the usual price, which has stood the test upwards of 50 years, and in no single instance has been known to fail in producing a crop. Any quantity can be had, safely packed, by applying as above. To prevent disappointment apply early.

## NEW PELARGONIUMS.

CHARLES TURNER strongly recommends the following NEW PELARGONIUMS; it will be sufficient to observe that he has the entire stock of those beautiful varieties raised by E. FOSTER, Esq., and G. W. HOYLE, Esq., which obtained 9 extra prizes, and 20 Certificates, during the past season. Strong plants will be ready the first week in October. The usual discount to the Trade. If the Set is taken, a liberal allowance will be made.

ARIADNE (FOSTER).—Rosy purple bottom petals, rich dark top, with narrow margin of rose, clear white centre, free bloomer, large truss, and fine substance; good early exhibition plant; 31*s.* 6*d.*

BEATRICE (HOYLE).—Neat smooth constant flower, bottom petals mottled rose, top petals rich black, even margin of dark carmine, free bloomer; 15*s.*

CELIA (HOYLE).—Beautiful orange lower petals, tinged towards the centre with violet, top petals bright orange, medium spot shaded with scarlet, free and early bloomer, but curly in top petals; 15*s.*

CHIEFTAIN (HOYLE).—Rose crimson, with dark shaded blotch on upper petals, fiery, narrow margin, large, very stout, good habit, rather inconstant; 21*s.*

CHLOE (HOYLE).—Lively bright rose, white centre, medium-sized dark spot shaded with scarlet, good grower and free bloomer; 10*s.* 6*d.*

COLONEL OF THE BUFFS (HOYLE).—Novel bright orange, large and very attractive, constant, and free bloomer; 31*s.* 6*d.*

CRISTINE (HOYLE).—Delicate warm rose, with deep spot on upper petals shaded with orange, large and very free, a fine cheerful flower; 21*s.*

ELISE (HOYLE).—Deep warm orange pink, shaded with delicate lilac, light centre, medium-sized spot, surrounded with orange, margin of orange pink, smooth, constant, and free bloomer; 31*s.* 6*d.*

ENCHANTRESS (FOSTER).—Rosy crimson bottom petals, rich crimson blotch on top petals, with margin of bright crimson, white centre; the shape of Gipsy Bride, but twice the size, free bloomer, and good habit; 31*s.* 6*d.*

EURYDICE (FOSTER).—Deep crimson bottom petals, top petals dark maroon, narrow margin of bright crimson, free bloomer; 15*s.*

GANYMEDE (HOYLE).—Very round, smooth, and cupped, warm lilac colour, white centre, dark top petals, very evenly shaded with purplish carmine margined with the ground colour; 31*s.* 6*d.*

HERALD (HOYLE).—Mottled light pink bottom petals, top dark blotch, with narrow margin, white centre, good shape, and constant, very dwarf, good habit; 7th prize; 21*s.*

ILLUMINATOR (TURNER).—Bright mottled crimson bottom petals, rich dark crimson top, narrow bright margin, very showy and attractive, being nearly as free as the Fancies; 10*s.* 6*d.*

LABLACHE (FOSTER).—Orange rose, with dark blotch on the top petals, large white centre, good substance, very attractive variety; 21*s.*

LAVINIA (FOSTER).—Purple, similar in colour to Alonzo, but of finer form, rich dark top petals, with bright margin, good habit, and fine bloomer; 21*s.*

LITTLE NELL (TURNER).—Rosy lilac bottom petals, maroon top petals, narrow margin of rose, white centre, very free, early bloomer, good plant for exhibition; 10*s.* 6*d.*

LORD MAYOR (BLACK).—Bright crimson scarlet bottom petals, mottled, black blotch on the top petals, shaded off to the margin with scarlet crimson, very showy, and free bloomer; 15*s.*

MAGNET (HOYLE).—A high-coloured scarlet crimson, large black blotch varying towards the margin on a scarlet crimson ground, without being lighter on the edge, very profuse bloomer, and constant, very striking flower; 42*s.*

MOCHANNA (HOYLE).—Lower petals warm rose, white centre, top petals large dark blotch, shaded and mottled with scarlet, margin of ground colour, large fine shape, free, smooth, bold, attractive flower; 21*s.*

MONTEITH (FOSTER).—Bottom petals crimson purple, dark blotch on top petals, shaded off to the margin with crimson; 21*s.*

PLANTAGENET (TURNER).—Crimson bottom petals, dark maroon top petals, narrow margin of bright crimson, free bloomer; 15*s.*

PULCHRA (FOSTER).—Lower petals salmon rose, large rich dark blotch on top petals, with margin of bright rose, white centre; free bloomer, good habit; 21*s.*

PURPLE STANDARD (FOSTER).—Bottom petals rich purple, black top petals, with narrow, even, fiery margin. This flower possesses fine substance, shape, and very smooth; much the best purple; 31*s.* 6*d.*

REMUS (HOYLE).—Deep rose lower petals, with dark blotch on upper petals, shaded with scarlet; smooth, and fine shape; 21*s.*

RUBENS (FOSTER).—Crimson, with dark maroon blotch on top petals, narrow margin of bright crimson; good substance; 21*s.*

SHYLOCK (FOSTER).—Bottom petals deep rich mottled purple, black top petals, a wire margin of scarlet; medium size, free bloomer; the darkest variety raised; 31*s.* 6*d.*

VANDYKE (TURNER).—Bottom petals bright scarlet crimson, dark blotch on top petals, scarlet margin; very striking, but not a good shape; 10*s.* 6*d.*

VONDEL (HOYLE).—Lilac rose, with dark blotch on top petals; 15*s.*

A selection of older varieties at moderate prices. A Descriptive List may be had on application.

Royal Nursery, Slough.

## BEAUTIFUL NEW PLANTS.

MESSRS. VEITCH AND SONS beg to offer the following NEW and RARE PLANTS, a Catalogue of which, containing full descriptions, can be had on prepaid application.

| | Each—*s.* | *d.* |
|---|---|---|
| Berberis Darwinii, extra strong ... ... ... | 21 | 0 |
| ,, ,, smaller plant ... ... ... | 10 | 6 |
| Camellia "Countess of Orkney," strong plant ... | 63 | 0 |
| ,, "Storyii," ... | 63 | 0 |
| Cantua dependens, fine bushy plant ... ... ... | 21 | 0 |
| ,, ,, smaller plant ... ... ... | 10 | 6 |
| Deutzia gracilis, good plant ... ... ... ... | 10 | 6 |
| ,, ,, smaller... ... ... ... ... | 7 | 6 |
| Lardizabala biternata ... ... ... ... ... | 10 | 6 |
| Lilium giganteum, extra strong tubers ... ... | 63 | 0 |
| ,, ,, second size do. ... ... ... | 42 | 0 |
| ,, ,, small do. ... ... ... ... | 21 | 0 |
| Medinilla magnifica, fine plant... ... ... ... | 63 | 0 |
| Oxalis elegans, strong blooming plant ... ... | 2 | 6 |

N.B. A beautiful coloured plate of the "Cantua" will be forwarded to persons purchasing a plant, and to persons forwarding six postage stamps.

The usual discount to the Trade.

Exeter, September 13.

## GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

WILLIAM E. RENDLE, NURSERYMAN, SEEDSMAN, and FLORIST, by royal permission, to her Most Gracious Majesty the QUEEN, begs respectfully to state that he has this season a very large and well-selected Stock of all the newest and best GERANIUMS, which he is enabled to offer at very reduced prices.—CARRIAGE FREE (see below).

ELLIOTT'S SURPRISE GERANIUM.—This excellent flower was raised by Mr. Elliott, of the Royal Hotel, Plymouth, and was exhibited at the First Exhibition of the South Devon Horticultural Society, held in our Grounds on the 20th of May last. It was much admired, and noticed by the Press in terms of praise. The following is a good description of it:—

*"It is a good round flower, with bright rosy pink under petals, large handsome blotch in the upper petals surrounded by a ray of the brightest rose, terminating with a narrow band of the ground colour, pure white centre with bright pink rays, large and handsome trusser, very free bloomer, and capital habit."*

10*s.* 6*d.*, or 1 over in every 3 to the trade.

RUNDLE'S BEAUTY OF MONTPELIER.—This has proved itself to be one of the best flowers of the day. A large and handsome specimen was exhibited in our Grounds on the 20th of May last, and was universally admired, and plants were purchased by nearly all the Geranium growers who attended the Show.

*"The ground colour is bright pink, with a pure white centre, is an extra sized flower of good shape and substance, short robust habit, and shows its flowers well above the foliage."*

It can be confidently recommended. 5*s.* each.

### FIRST CLASS GERANIUMS.

Purchasers' Selection of 12, from the following List, for 2*l.* 2*s.*, with a PLANT of ELLIOTT'S SURPRISE OVER on every dozen. (See description above.)

RUNDLE'S BEAUTY OF MONTPELIER (description see above); May Queen (Hoyle); Nectar Cup (Hoyle); Ajax (Hoyle); Rubiola (Hoyle); Isis (Hoyle); Flavia (Hoyle); Generalissimo (Hoyle); Gaiety (Foster); Corinne (Hoyle); General Jung Bahadour (Gaines); Lady Peel (Paley's, first time sending out); Candidate; Boule de feu; Village Maid; Cardinal (Hoyle); and Heartsease.

### SECOND CLASS GERANIUMS.

Purchasers' Selection of 12, from the following List, for 12*s.*, or 20 for 20*s.*—Foquette's Magnificent, Topping's Brilliant, Hoyle's Crusader, Arnold's Virgin Queen, Falstaff, Lyne's Forget-me-not, Delicatissima, Rosy Circte, Nourmahal, Desdemona, Hebe's Lip, Centurion, Negress, Cassandra, Sir Robert Sale, Symmetry, Gustavus, Gulielma, Sunrise, Pluto, Duke of Cornwall, Grandiflora, Orion, Black Prince, Mercury, Star of the West, Lady Ebrington, Jenny Lind, Scarlet Defiance, Flora's Flag, and Emilia.

### FANCY GERANIUMS.

Purchasers' Selection of 12, from the following List, for 1*l.*, or 20 for 1*l.* 10*s.*—Perfection, Pilot, Miss Sheppard, Gaiety, Creole, Clown, Jehu, Queen Victoria, Sidonia, Unique, Champion of Devon, Statiiskii, La belle Africaine, Bouquet tout fait, Zelia, Madame Celeste, Nosegay, Beauty of Winchester, Lemon-Scented, Jenny Lind, Radula, Pheasant Foot, Lady Plymouth, Harlequin, Magnifica, Lady Rivers, Alboni, Delight, Dandy, Prince of Orange (a variegated variety).

*If the Selection of Show, Fancy, or Scarlet Geraniums is left to* WILLIAM E. RENDLE, *he will send excellent sorts at 6s., 9s., 12s., or 15s. per dozen, which will insure satisfaction.*

### SCARLET GERANIUMS.

Purchasers' Selection of 12, from the following List, for 15*s.*, or 20 for 20*s.*—Flower of the Day, Excellenco, Glendenning's Perpetual, Magnum Bonum, Queen of Summer, Fire Queen, Royalist, Commander-in-Chief, Resilium, Hendersonii, Monarch, Britannia, and General Tom Thumb

### CINERARIAS.

W. E. R. *has a fine Stock of this beautiful Spring Flower, including all the newest sorts in cultivation.*

Purchasers' Selection of 12, from the following List, for 10*s.*, or 20 for 15*s.*—Coronet, Grand Master, Carlotta Grisi, Bride, Madame Meillez, Othello, Curiosity, Delight, Exquisite, Amena, Angelique, Adela Villiers, Madame Parodi, Attila, Duke of Wellington, Flora M'Ivor, Nymph, Apollo, Angelina, Peri, The Queen, Messenger, Duchess, Ambassador, Speciosa, Desirable, Mrs. F. Millbank, Lady Fellowes, Vernalia, Defiance, Maid of Artois, Maritana, Bijou, Phillis, Newington Beauty, Amanda, Compacta, Election, Cerito, Alboni, and Resplendens.

*Most of these varieties are quite new, and are highly recommended.*

### NEW PLANTS, &c.

| | Each.—*s.* | *d.* | | Each.—*s.* | *d.* |
|---|---|---|---|---|---|
| Gardenia Fortuni ... ... | 2 | 6 | Pimelea Nieppergiana ... | 3 | 6 |
| Escallonia macrantha ... | 3 | 6 | Hibiscus rubra duplex ... | 2 | 6 |
| Viburnum Suspensam (a new and very handsome variety of Laurustinus) | 5 | 0 | Allamanda Schottii... ... | 2 | 6 |
| | | | Begonia muricata ... ... | 2 | 6 |
| | | | Jasminum grandiflorum | 1 | 6 |
| Kalosanthes Louis Napoleon Buonaparte ... ... | 2 | 6 | Æchmea-fulgens ... ... | 5 | 0 |
| | | | Certoceras reflexa ... ... | 2 | 6 |
| Veronica Hendersonii ... | 1 | 6 | Henfreya scandens ... ... | 2 | 6 |
| Gardenia Stanleyana ... | 3 | 6 | Stropanthus Stanleyanus | 2 | 6 |
| Ixora coccinea ... ... | 1 | 6 | Siphocampylus nitidus ... | 1 | 6 |
| — javanica ... ... | 3 | 6 | Burchelia capensis ... ... | 1 | 6 |
| — hydrangæformis ... | 5 | 0 | Lycopodium cæsium ... | 1 | 6 |
| Hoya imperialis ... ... | 5 | 0 | Pimelea Verschaffelti ... | 3 | 6 |
| Pimelea Hendersonii ... | 2 | 6 | — spectabilis ... | 2 | 0 |

*Purchaser's Selection of* 12 *of the above marked at* 3*s.* 6*d.* *or* 5*s. for* 1*l.*, *or* 12 *of those marked* 1*s.* 6*d. each for* 12*s.*

*All Orders above* 2*l. will be delivered Carriage Free to any Station on the Great Western, Bristol, Exeter, or South Devon Railway, or to Cork, Dublin, or Belfast. First Orders will have the preference. All Orders attended to in strict rotation.*

Apply to WILLIAM E. RENDLE, Union Road, Plymouth, adjoining the Terminus of the South Devon Railway.

COCHIN CHINA OR SHANGHAI CHICKENS, of superior breed and quality, price 10*s.* to 15*s.* each, may be seen and selected by applying to TIMOTHY MASON, No. 5, Bear's-place, New North Road, Islington, London, 2 doors from the North Pole Tavern; or sent, on receipt of instructions, with Post-office Order and 1*s.* for basket, &c. Carrier and Fancy Pigeons for sale. Letters requiring reply to enclose stamp. Japan Pea Fowl wanted.

COCHIN CHINA FOWLS.—A few pure bred Cock Birds, hatched early this spring, are for sale at 12*s.* 6*d.* each, including basket for transmission.—Application as to breed, &c., to be made (prepaid), and the price to be remitted by Post-office Order, on Carlisle, to THOMAS KNOX, Gamekeeper, Barrack Park, Carlisle.

BEAUTIFUL NEW CAMELLIAS.—STORYII.—This beautiful Camellia was raised by W. H. Story, Esq., White Hill, Newton Bushell, Devon. It is a flower of large size, and beautifully imbricated; in form equal to the old Double White; colour, deep bright rose, shading lighter to the centre. It is of unexceptionable habit and foliage, and an abundant bloomer. It is undoubtedly a first-class flower; the Seedling Plant was exhibited at the Horticultural Society's Room, Regent-street, on the 21st of March, 1848, when it had seven expanded blooms, and was awarded the Banksian Medal. Strong plants, 63*s.* each.

COUNTESS OF ORKNEY.—This truly magnificent variety is figured in the "Florist" for April, 1848, where it is described as follows:—"Mr. Nicholson, gardener to the Earl of Orkney, Taplow Court, is the successful raiser of the beautiful variety figured in our present Number. Our representation may be depended upon for its correctness. The plant is handsome, the foliage large and bold, of a deep rich green. The specimen from which it was copied measured 4 inches in diameter; the flower is circular in outline, composed of large stout petals, perfectly smooth on the edge; these gradually diminish towards the centre, but as they become smaller their forms are less perfect in outline. They are transparent in texture, of a creamy white, and are striped with two shades of bright rosy pink, clear and well defined. We consider it a valuable addition to any collection, and in the class to which it belongs it ranks with the best. Strong plants 63*s.* each.

The usual discount to the Trade.

VEITCH and SON, Exeter, Sept. 13.

## PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the public that his mixtures of the NATURAL GRASSES and small CLOVERS, gathered under his own superintendence, including every sort necessary to form a Permanent Pasture, on various soils, are now ready; delivered on the South-Eastern Railway, at 1*l.* per acre, allowing three bushels per acre. Also Seeds for Lawns, and for renovating old pastures; the nature of the soil to be sown should be particularly stated. Instructions for sowing will be sent with each parcel. Seeds are this year comparatively scarce; the Advertiser has, however, determined not to raise his prices, considering the ruinous effects of free trade on Agriculture, and depending on the extension of his business for a return of his outlay.

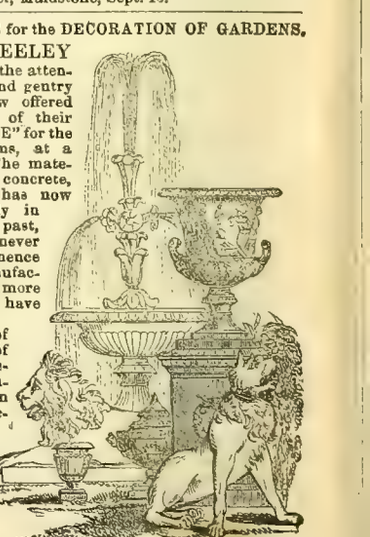
## MILDEW.

EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21*s.*, and upwards. The Trade supplied by Barber and Groome, Holborn, London.

This Machine has been used by the following persons, and the highest testimonials have been received as to its valuable properties, in effectually destroying the Mildew on Grapes, Peaches, Peas, and all other horticultural produce:—Dr. Plomley, F.R.S.; Mr. Ingram, gardener to her Majesty at Windsor; Mr. Smith, Superintendent at the Royal Gardens, Kew; Mr. Iveson, Sion House; Mr. Glendinning, Chiswick; Mr. Thompson, Horticultural Society's Gardens; Mr. W. P. Ayres, Blackheath; Mr. Gaines, Battersea; Mr. Cole, gardener to — Colyer, Esq., Blackheath; Mr. Robson, gardener to Earl Cornwallis, Linton Park; and many other scientific and practical men.—High-street, Maidstone, Sept. 13.

## ARTIFICIAL STONE for the DECORATION OF GARDENS.

AUSTIN AND SEELEY respectfully call the attention of the nobility and gentry to the facilities now offered by the manufacture of their "ARTIFICIAL STONE" for the Decoration of Gardens, at a moderate expense. The material, which is a lime concrete, perfectly waterproof, has now been tried extensively in Scotland for 20 years past, and the fact that they never had a complaint from thence encourages the Manufacturers to recommend it more actively than they have hitherto done.



The Stock consists of an immense variety of objects suitable for detached Garden Ornaments, or for connection with Architectural Erections—such as Balustradings, Porticoes, &c. The more generally useful portion may be enumerated as follows, viz.:—

193 Vases and Tazzas, from 10*s.* to 30*l.*
70 Statues, from 2 feet high to a colossal size.
15 Baskets, with suitable pedestals.
34 Figures of Animals.
12 — Birds.

A collection of Fountains (perhaps unprecedented) from 5*l.* to 400*l.*
Jardinieres, or large Bowls for Masses of Flowers.
Sun Dial Pillars.
Shells from 4*s* to 12 guineas.
Coats of Arms, and Crests for Gate Piers.
Border Edging.
Garden Seats.
Capitals for Columns.
Flower Boxes made to measurement.

☞ Gentlemen wishing for patterns are requested to state, with respect to Fountains, the power of water they can obtain; and with respect to Vases or Figures, the sizes of the pedestals on which they are meant to stand.

Manufactory, No. 1-4, Keppel Row, New Road, Regent's Park, London.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3¾*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

AYLESBURY DUCKS (WHITE), BLACK BOTANY BAY DUCKS, BLACK NORFOLK TURKEYS, LARGE NORFOLK GEESE, AND COCHIN CHINA FOWLS.—The Advertiser has for sale a limited number of the above in fine strong healthy birds of this year, warranted of the purest breed, which he offers at the following prices: Aylesbury Ducks, of the largest breed known, weighing when fattened 8 lbs. to 10 lbs. each, 8*s.* 6*d.* per couple; Black Botany Bay Ducks, very handsome, and the flesh superior to Teal, 21*s.* per couple; Black Norfolk Turkeys, 21*s.* do.; Norfolk Geese of the largest breed, 12*s.* do.; Cochin China Fowls (pure) from a pair imported direct from Shanghae, and well feathered to the toes, 42*s.* per pair.—Orders accompanied by Post-office orders or reference, addressed to ISAAC BRUNNING, North End, Great Yarmouth, will receive prompt attention.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey

SAFFRON WALDEN.—SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER begs respectfully to inform the public that his Price Catalogue is now ready, and may be had by enclosing a postage stamp Strong and vigorous Plants are now ready to send out, and the greatest care is observed in packing; also Plants gratis to recompense for long carriage. Early orders will insure obtaining desired sorts, as it frequently happens that some particular varieties are sold out before the end of the season.

W. C. has also a fine collection of Roses, Pansies, Carnations, Chrysanthemums, &c., &c., of which Lists may be had on application.—Saffron Walden, Sept. 13.

DUTCH FLOWER ROOTS.

WILLIAM E. RENDLE, Plymouth, NURSERYMAN and FLORIST by royal permission, to HER MOST GRACIOUS MAJESTY THE QUEEN, has much pleasure in announcing that he has just received a large collection of DUTCH FLOWER ROOTS, in most excellent condition, from one of the first establishments in Holland. The HYACINTHS are particularly large and handsome.—Descriptive Catalogues can be obtained, for two penny stamps, on application to WILLIAM E. RENDLE, Nurseryman, Plymouth.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FOREST PLANTS IN THE GREAT EXHIBITION.—The Subscribers beg to direct the notice of Planters to their specimens of Forest Plants exhibited in Class IV., No. 1, South-west Gallery, among which are Seedling and Transplanted native Scotch Pines, raised with roots unusually fibrous, adapted for exposed Moorland at a great altitude. The numerous premiums awarded by the Highland and Agricultural Society of Scotland for the cultivation of the true native Scotch Pine, have been awarded to the Subscribers; and their present Stock of this valuable Tree exceeds Ten Millions of Plants. Priced Lists will be furnished on application, and the Trade supplied at the wholesale rate.

JOHN GRIGOR and Co., Nurseries, Forres, Scotland.

GOLIATH STRAWBERRY.—A Post-office order for 5s. will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4l. per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lyncomb Vale Nursery, Bath.


# The Gardeners' Chronicle.

*SATURDAY, SEPTEMBER* 13, 1851.


MEETINGS FOR THE ENSUING WEEK.

THURSDAY. Sept. 18—National Floricultural ..... ....2 P.M.

COUNTRY SHOWS.—Monday, Sept. 15: Surrey Amateur Dahlia (Camberwell).—Tuesday, Sept. 16: Notting Hill Dahlia, County Meath, Hereford, and Whitby Amateur Horticultural.—Wednesday, Sept. 17: Norwich, Montrose, Bristol, and Taunton Horticultural.—Thursday, Sept. 18: Wycombe Horticultural.—Friday, Sept. 19: Northampton Dahlia, and Darlington Horticultural.

IF the reader would wish to know what is doing in this country, in the importation of new plants, he must visit Exeter. Near that ancient city lies a gentle valley, forming the nursery occupied by Messrs. VEITCH and SON, in which alone will be found more new and valuable plants than in any place in Europe, with the single exception of the Royal Botanic Garden at Kew—plants obtained by private enterprise for commercial purposes, and not gathered together by the power of a mighty Government. By means of excellent collectors (two brothers of the name of LOBB), and liberal disbursements, California, Peru, Chili, Chiloe, Patagonia, in the West; and the Khasija hills, the provinces of Tenasserim, Java, Malacca, and the ghauts of Malabar, in the East, have been gleaned, and the result is gathered into hothouses or transferred to the open air in the fertile soil and happy climate of Devonshire. Let us record a few of the species which caught our eye on a recent visit to this wealthy establishment.

First among the new plants is to be mentioned *Saxe-Gothæa conspicua*, a most beautiful evergreen from the Andes of Patagonia, with the aspect of a Yew tree, which H.R.H. PRINCE ALBERT has permitted to bear one of his names. This tree has lived for four years in the open air, and has all the appearance of being as hardy as an Araucaria. From the same country comes *Fitz-Roya patagonica*, another valuable Conifer, with drooping branches, and also the habit of a Yew; with the *Libocedrus tetragona*, an Arbor-vitæ-like tree, having four-cornered shoots; all, we believe, exclusively in the possession of Messrs. VEITCH.

Among other Evergreens, the existence of which in England is unsuspected, is the great Oblique Beech Tree, from Patagonia (*Fagus obliqua*); *Eucryphia cordata*, with hard, heart-shaped leaves, and flowers like a Tea plant; *Castanea chrysophylla*, the Evergreen Californian Chestnut; great bushes of *Philesia*, just beginning to produce their crimson tubular flowers, 2 inches long, in the midst of hard stiff deep green leaves; *Pernettya ciliaris*, with its black-green broad leaves and heaps of dull purple berries, not to mention the other species *mucronata* and *angustifolia*, loaded with pale berries, gay with ruddy tints; *Laurus aromatica*, a Chilian evergreen, whose leaves are much more fragrant than Sweet Bay; *Embothrium coccineum*, with long tufts of crimson blossoms; *Eugenia apiculata* and *Myrtus Ugni*, Chilian Myrtles, the latter with a fruit like a purple Guava; and, finally, the rare and curious *Desfontainia spinosa*, with the air of a Holly-bush and the flower of a scarlet trumpet Honeysuckle. Of this one single flower had been produced upon a cutting in a pot.

Many are the new or little known evergreen Berberries collected here; *B. Darwinii*, growing into a round, glittering, exquisitely beautiful bush; *B. flexuosa*, a handsome shrub, with straggling branches; *B. lutea*, a pretty diminutive thing; and several other species, at present undetermined. *Eurybia alpina*, from New Zealand, here vindicates its claim to hardiness, along with *Escallonia Pœppigiana*, a Peruvian bush, loaded with white flowers early in the summer, and a great stiff-leaved Dracæna, from New Zealand, which may be *Dr. indivisa*.

Nor are deciduous hardy plants less common here. An Indian palmated *Rubus* is loaded with yellow fruit as large as an Antwerp Raspberry; great masses of a *North wall* are covered with the scarlet perennial *Tropœolum speciosum*, which disregards frost but abhors the sun; the hairy-stemmed *Tropœolum Lobbianun* is curling round a rough stake, and decorating it with its vermilion-coloured flowers; and *Pavia Californica*, the Californian Horse Chestnut, has established itself in the open quarters of the nursery. Quantities of the huge Indian *Lilium giganteum* are hastening to prepare for flowering another year, and heaps of rockwork are glittering with *Oxalis speciosa*.

Among plants of home origin, we ought to point out the *Hedera Ragneriana*, a kind of Ivy with monstrous heart-shaped leaves; *Cotoneasters* and such plants worked half-standard high on the common Thorn; a noble looking Holly called *Ilex alta-clerensis*, which seems to have some of the blood of *balearica* in it; a handsome variety of *Arbutus Andrachne*, called *photiniæfolia*, and most beautiful specimens of that noble *Fuchsia corallina*, whose origin has lately been disputed, but which bears unmistakeable evidence of having been derived in part from *F. radicans* or some allied species.

This sketch of the hardy plants that are already saleable in this establishment, renders an account of the tender plants less interesting for the moment. To them we may return hereafter. For the present it is sufficient to name among the new plants *Lapageria rosea*, a climber from Chiloe, with very large crimson blossoms, a fine new Hoya, with long leathery leaves, some most elegant Indian *Sonerilas* with variegated foliage, a Peruvian Begonia, whose leaves are one confused stain of crimson, purple, green, and silver grey; *Cinchona Condaminea*, one of the true Peruvian bark trees, a plant with a most delicious perfume, now flowering for the first time in Europe; and quantities of Indian Orchids, among which the *D. albosanguineum* stands pre-eminent. As to the Orchids, no plants can exceed their health and beauty, unless it be the choicest of Mr. RUCKER'S collection. In short, turn where you will, the eye meets nothing but what is most fine and rare, in this surprising collection of the Messrs. VEITCH.

MUCH disappointment is felt this season that the crop of WALL-FRUIT has generally failed. Last year we heard the same complaints. Apricots are always an uncertain crop, from the early period at which the blossoms appear; but Peaches and Nectarines, blooming later, do not in general suffer so much. Large portions of the best wall in most gardens are occupied with these trees, which, in a favourable season, bear more fruit than most families require, and in unfavourable seasons lead to the disappointment now complained of.

Let those who wish to know how this evil is to be remedied refer to the third volume of the "Transactions of the Horticultural Society," page 17, and they will there find an account of a Noblesse Peach tree which, in the middle of March, in the year 1811, was covered with glass, but there was no flue to afford artificial heat. On this tree 59 dozen were left to ripen, after 412 dozen had been taken off to thin the crop. After that year the crop was limited to 50 dozen, the Peaches weighing from 8 to 12 ounces each. The only attention required was that of keeping the tree clear of insects.

There is another case in which, by similar treatment, the crop of Peaches and Nectarines never fails. A frame is constructed sloping from the top of the wall to the border, and sashes are put on before the blossoms open, and in this way shelter is given from cutting wind and night frost. By this means abundance of fruit is produced from a few trees, and the walls in other parts of the garden are planted with choice Pears, Plums, and Cherries. Now glass is so cheap, this is well worth attention in this uncertain climate. The sashes, when not required for this purpose, may be made applicable to the shelter of other plants, during the winter, or afford protection from autumnal rains; and the table will be supplied with the finest Pears and other fruit for many months, as well as an abundance of Peaches and Nectarines, instead of being dependent only upon an uncertain crop, which lasts but one month.

The experiment might also be tried with Apricots, and some of the finest Plums. The market gardener might find the advantage of it, as well as those who wish to grow the finest fruit, for the supply of their own table.

If the manufacturers of greenhouses were to advertise the price at which walls could be covered by this means, it is more than probable they would find many customers anxious to avail themselves of the information here given.

THE powerful effects of PARASITIC FUNGI in disturbing the ordinary growth of various plants is well known. A curious instance was figured in the "Journal of the Horticultural Society of London," in which the various organs of fructification of a Cabbage, under the influence of *Cystopus candidus* were increased to an enormous size, as may be seen from the figure, which is diminished to a third. In that case, however, the relative proportions and arrangement of the various organs remained much the same, the only change consisting in an hypertrophy of all the parts.

In an instance however, now before us, in which the disease is confined to a single blossom of Walcheren Broccoli, not only is the alteration in size even greater than what was observed in the former instance, but many and curious changes have taken place in the number and order of the constituent organs. The peduncle is greatly swollen above, and though no contortion is visible, it is clear that some must have taken place, as the whole flower has made a quarter of a revolution round its axis—the sepals, that is, which in the ordinary state would be lateral, are now anterior and posterior; and in the place of the solitary stamens, which are usually found in their axils, are two new flower stalks strongly curved inwards, with full sized buds. Within the sepals are two series of petals, each consisting of three, that to the right of the now anterior sepal being deficient in the first case, that to the left in the other. In the first series the petals are only partially yellow, in the second the colour is fully developed, but the limb of that to the right of the anterior sepal is rolled into a cylindrical tube. The stamens, including the two transformed ones just mentioned, are double the ordinary number, the six interior stamens, consisting, as usual, of two pairs and two solitary stamens, are seated on the elongated base of the ovary, without any connection, as far as could be traced, with the petals. The remaining two pairs are, on the contrary, more or less connected with the inner row of petals. There is, however, so much confusion about the bases of the petals and stamens as to make it difficult, except in the tubular petal, and in the two dislocated lateral sepals, to say to which particular division of the flower the individual stamen belongs.



Diagram of flower, in which the outer circle *a*, represents the axis of the plant.

It seems indeed probable that the stamens of the first series of petals are wholly suppressed, as also the series of petals to which the internal set of stamens, which are confluent with the base of the ovary, belongs. All the anthers contain perfect pollen. As regards the ovary, the increase in size is less than in the other parts, but the most instructive circumstance is that the dissepiment is wanting except at

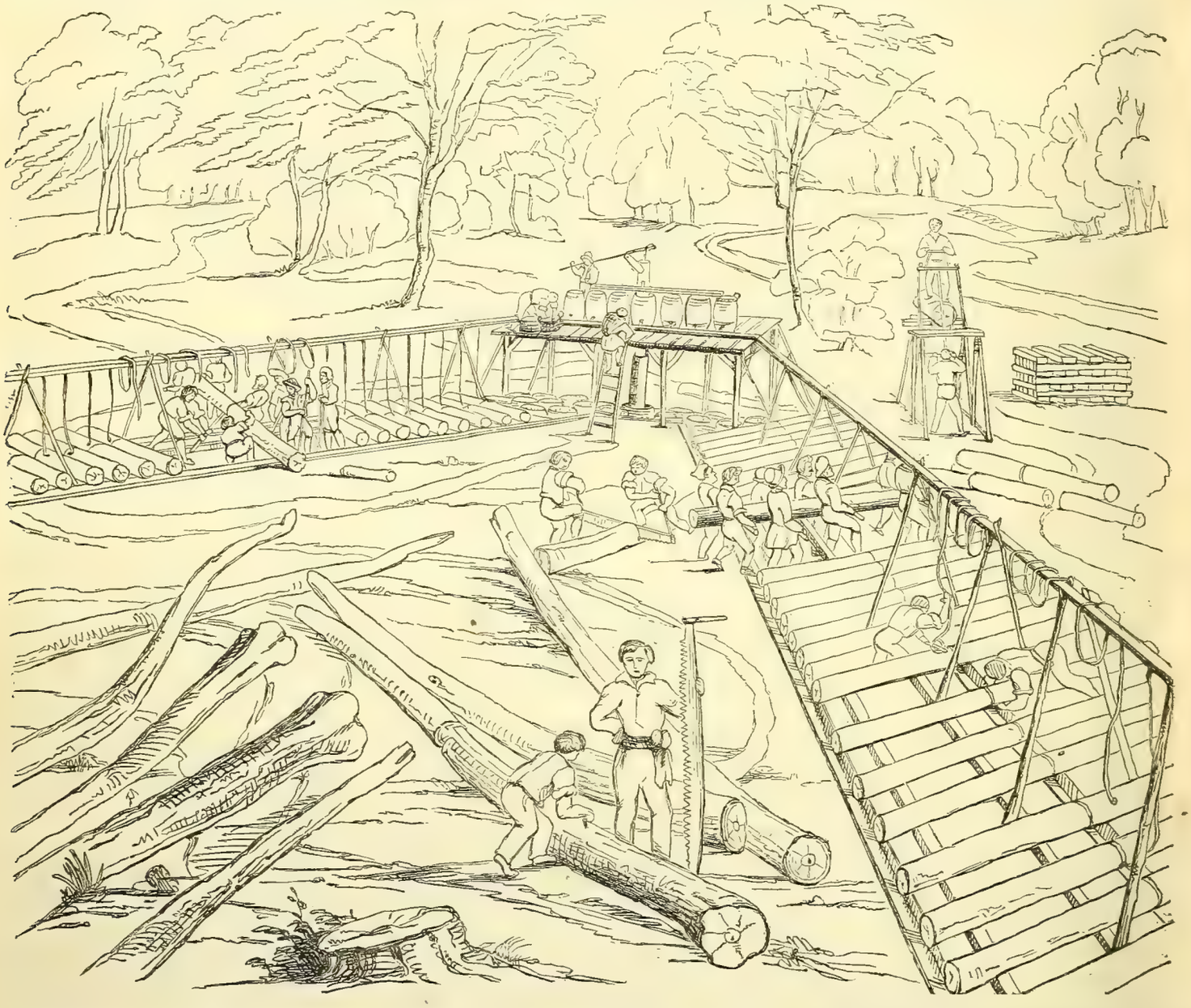
the very base, the placentæ being confined to the suture, clearly showing that the dissepiment is nothing more than a development from either placenta meeting in the middle of the pod. Of the two buds into which the usually lateral stamens are developed, the one is deficient in one of the solitary stamens, while the other has only two sepals and two petals, one of the pairs and a solitary stamen being also wanting. There is not the slightest trace of any glands in any part of the flower. *M. J. B.*

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SEVERAL years since the *Chronicle* drew attention to M. BOUCHERIE's natural methods of charging timber with foreign substances, so as to improve its quality, and to render bad timber valuable. (See our volume for 1841, p. 147.) In this country the processes have attracted little notice; but it appears that in France they have been largely employed. We have now before us a report by some experts appointed by one of the French courts for the purpose of determining whether BOUCHERIE's patent has been invaded by certain parties who have been employing a similar plan of operation. From this report, signed A. CHEVALLIER, J. DECAISNE, and GAULTIER DE CLAUBRY, we gather the following particulars:—

BOUCHERIE's first patent was for "charging the largest timber to its very centre with different preservative, hygrometrical, and colouring ingredients. This power was to be derived by taking advantage of that immense natural force of inhalation by leaves which attends the circulation in plants and causes the rapid conveyance of liquids from the base to the summit of trees." In this way it was stated that the most worthless timber might be rendered durable, brittle timber tough, white timber coloured, and all timber less combustible than usual.

At a later period, viz., July 8, 1840, BOUCHERIE took out another patent, in which, for the inhaling force of vegetation he substituted the displacement and expulsion of sap. For this purpose, he said, it is



only necessary to place the log of timber in a vertical position, to attach carefully to the upper end a waterproof bag, which would act as a reservoir, and to pour into it whatever fluid the operator wishes to inject. As fast as the fluid enters at one end, the sap flows out at the lower, in about equal quantity. The operation is complete when the fluid which runs off at the lower end is nearly the same as it was when poured into the waterproof reservoir. This was a great improvement upon the first plan.

At a later period BOUCHERIE modified his last mode, by placing the timber horizontally, and retaining the waterproof reservoir alone in a vertical position, so as still to gain the pressure required for the expulsion of the sap. And this would seem to have been carried on upon a large scale, judging from a view of the scene of his operations which accompanies the report to which we refer. Unfortunately this view is not accompanied by a detailed description; but from some notes attached to it we learn that it represents a timber-yard in the forest of Compiègne, constructed for the preparation of 60,000 sleepers (*traverses*) of Beech wood, for the Chemin de Fer du Nord. A raised platform is seen loaded with barrels of a solution of sulphate of copper. This platform is connected with gutters running right and left, and supported by struts over a long line of timber placed horizontally, with a saw-cut in the middle of each log, so that they may be operated upon in two directions at a a time. From these gutters flexible pipes descend to the logs, to which they are attached at the saw-cut when the timber is to be charged, and from which they appear to be thrown back over the gutters when the work is complete.

Upon looking at the accompanying copy of the view of the timber-yard, an engineer will have no difficulty in seizing the principle upon which M. BOUCHERIE proceeds, and this may account for the absence of description from the French report. We must, however, add that in the original are excellent representations of details of the process, for which unfortunately we have no room.

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## ORCHIDS FOR THE MILLION.—No. XV.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

CLIMATE HOT AND DAMP. — PLANTS GROWING ON BLOCKS, WITH MOSS.

*Sophronitis grandiflora.*—This beautiful little Brazilian Orchid produces its flowers in February, March, and April; they are orange-red, large for the size of the plant, and they last six weeks in beauty. It succeeds best on a block, with sphagnum, suspended from the roof of the house; it likes plenty of heat and moisture during the growing season, but afterwards it should be kept warm, but not too dry.

*Broughtonia sanguinea*, from Jamaica, flowers from March to July; the flowers are of a dark-red, and remain long in perfection. This plant is best grown on a block, with moss, suspended from the roof, in a moist part of the house; it likes plenty of water during the growing season, but afterwards it may be kept cool and rather dry.

*Brassavola glauca* comes from Mexico; it flowers in February and March; the blossoms are large and white, with red in the centre; they remain two weeks in beauty. It succeeds best fastened to a block, with moss, and suspended from the roof, where it can have plenty of heat and moisture during the growing season.

*Scuticaria Steelii.*—This beautiful Demerara plant flowers at different times of the year. The blossoms are of a dull reddish yellow, blotched with deep purple, and they remain long in perfection. It thrives best on a block with moss, hung up in the hottest part of the house, where there is plenty of moisture; after the growing season is over, it should be kept less moist, but equally warm, as it needs but little repose.

*Renanthera coccinea.*—A charming Chinese Orchid, which flowers in May, June, and July. The blooms, which are orange-scarlet, remain long in beauty. It does best fastened to a large block, with some moss, and it should be suspended from the roof in the hottest part of the house, where there is plenty of light, heat, and moisture during the growing season; afterwards it may be kept dry till it begins to show flower.

*Burlingtonia rigida*, from Brazil; blooms in March and April; the flowers are large and purplish white. It grows best on a block of wood, with sphagnum, and should be hung up from the roof, where there is plenty of heat and moisture during the growing season, but when at rest it may be kept dry.

*Cattleya Aclandiæ.*—This splendid Orchid comes

from Brazil. It has short slender stems; the sepals and petals are brownish green, with deep brown bars across them. The lip is light purple. It grows well on a block of wood, with some moss; it requires a good supply of heat during the growing season, but not much moisture.

*Cattleya Walkeriana*, from Brazil, produces large rosy flowers, at different times of the year. It succeeds well on a block with moss, and requires plenty of heat and moisture during the growing season. The blooms last long in beauty, and are very fragrant.

*Dendrobium heterocarpum* blossoms in December and January. The flowers are pale yellow, very fragrant, and remain four or five weeks in perfection. This plant does best on a block with sphagnum, and it likes a good supply of heat and moisture during the growing season; afterwards it may be kept cool and rather dry.

*Cœlogyne ochracea* is a beautiful Orchid; it flowers in February and March. The blooms are white, and very fragrant, and they will continue in beauty for four weeks. It should be grown on a block where it can have a good supply of heat and moisture while making shoots.

*Oncidium ciliatum* comes from Brazil, and flowers in October and November. The blooms are yellow, and remain long in perfection. It succeeds best on a block, with sphagnum, suspended from the roof, where there is plenty of heat and moisture during the growing season.

*Oncidium concolor*, a yellow flowered kind, from the Organ mountains. Does well on a block with moss, and should have a good supply of water at the roots.

*Epidendrum aloifolium* is a fine species; it flowers in April and May, and succeeds best on a block, with sphagnum. It comes from India.

*Schomburgkia crispa*, from Guiana, flowers at different times of the year, and its blossoms last long in beauty. It will thrive on a block, with sphagnum, suspended from the roof. It likes a good supply of heat and moisture during the growing season.

*Schomburgkia tibicinis*, from Honduras, flowers in May and June. It does well on a block, and requires the same treatment as crispa.

*Schomburgkia undulata* is a Brazilian species, which blooms in February and March, and its blossoms remain three or four weeks in perfection. This will succeed on a block, with sphagnum, hung up from the roof. It likes a good supply of heat and moisture during the growing season, afterwards it may be kept rather dry.

*Cirrhopetalum Thouarsii*, from Mauritius, flowers in October. It requires the same treatment as the last-named plant.

## BRITISH SONG BIRDS.

(Cage Birds, No. 29.)

No. XLV.—This is just the very season for a lover of Nature to revel in delight. Every week, nay, every day brings with it something new—something marvellous to behold; and whilst gazing on the works of Providence as manifested in the Creation, in their daily progress, we are pleasingly constrained to say with the good, the amiable James Hervey—"Even inanimate Nature is all but vocal with the Creator's praise."

The glorious days of harvest are now nearly over. The heavy—thanks be to Providence, the universally heavy—sheaves of corn are carried to the barn, and safely housed; and all is joy and rejoicing with the farmers and their dependants:—

> "There's merry laughter in the field,
> And harmless jest and frolic rout;
> And the last harvest-wain goes by,
> With its rustling load so pleasantly,
> To the glad and clamorous harvest shout."

A right pleasant sight is this; and right welcome are such jocund sounds as they are borne upon the breeze! And see—

> "There are the busy gleaners in the field,—
> The old, whose work is never done,
> And eager, laughing childish bands,
> Rubbing the ears in their little hands,
> And singing 'neath the autumn sun."

And what is better still, our little friends, the birds, are again abroad in their usual haunts; singing, and making melody in their hearts, while these operations of the season are thus cheerfully going on.

'Tis now that the blooming "merrie maidens," and their constant swains, hie forth to the woods and thickets, to gather nuts from off the heavily-laden boughs:—

> "Come, virgins, come! For you their latest song
> The woodlands raise: the clust'ring nuts for you
> The lover finds amid the secret shade;
> And where they burnish on the topmost bough,
> With active vigour crushes down the tree,
> Or shakes them ripe from the resigning husk."

Few pleasures are there greater than this. The remembrance of such sweet pastime carries us back to the "light of other days;"—but we pass on.

Now, too, we observe with sorrow that our summer visitors, the "birds of passage," are beginning to get strangely fidgetty. They seem, one and all, to know that the time for their departure is at hand; and a well-practised eye can see, in their every movement, that very recently they have "resolved themselves into a committee of the whole House; reporting progress, and asking leave to sit again." This final "sitting" will be to decide upon the "great question" of a departure from our shores. An attentive ear can recognise, in the voices of the migratory birds, a note altogether different from any hitherto uttered; nor is it unreasonable to imagine that this "language" of theirs is universally understood by every member of their tribe. This restlessness will continue to increase; and in less than another fortnight, we shall most probably, so far as *they* are concerned, "be left alone in our glory."

To compensate for this great drawback to our pleasures—for we must ever avow our "undying" predilection for the vocal melody of these foreign choristers—many of our native birds come into full song immediately on the departure of the others. Nor is it at all difficult to get through the seasons of autumn and winter, while blessed with the harmony of such sweet voices. The robin, wren, and hedge sparrow are now distinguishing themselves to admiration. The young blackbirds and thrushes, too, are tuning up; and the chaffinch may be heard "pink"-ing merrily in our orchards, and in the fields. As for the tit-mouse—he is chanting *his* merry rigmarole from early morn, throughout the day. The sky-lark, linnet, goldfinch, and many others, are preparing to join the merry throng at no distant period.

We will now discourse of the Babillard (*Curruca garrula*), a little bird of passage, yet with us for a few days longer. Many persons who have not gone closely into the study of natural history, have been in the habit of christening this little chorister, the *Lesser Whitethroat*. It is, however, altogether a distinct species, and takes its name from its garrulous propensities—Babillard being a French word, and its signification a "chatterer."

The babillard is in appearance very like the Peggy whitethroat (Curruca cinerea), which it resembles both in colour and in figure. It is, however, a much smaller and more compactly-formed bird. The bill, too, is shorter; the legs are darker; and from the breast downwards it is of a much whiter plumage. It is also free from the rusty colour on the wings, which is so observable in the whitethroat. Nor does the babillard assimilate much in its habits with the whitethroat. The latter delights in green shady lanes, hedges, and copses, from which it seldom wanders. The former, like the garden warbler, rejoices in our orchards and gardens, where it gives unrestrained license to its appetite. I seldom pass my gooseberry and currant bushes, without finding several of these little visitors "helping the gardener" to clear the branches of their fruit. Some of my neighbours resent these familiarities by the introduction of a loaded gun. Such, therefore, of the poor little innocents as escape assassination from these churls, billet themselves upon *me*; so that I get a double benefit. In the fruit season, my grounds are regarded by our summer visitors as "the refuge for the destitute." I may lose something thereby, it is true, but I gain more.

The babillard arrives among us about the third week in April. He is rather a shy bird in the early part of the season, but he grows more familiar as the trees become covered with foliage. He is a cheerful, merry rogue,—never at rest, but incessantly flying from bush to bush, singing the whole time. His song is hurriedly given, nor can you enter into its merits unless you are close to the performer. It then falls sweetly and melodiously on the ear.

The affection of this bird for its young is very great, and if disturbed, it will very quickly entice its children to quit their nest. Sometimes they disappear long before they are fledged. It is really distressing to listen to the outcries of the parent birds, when they consider their family to be in danger of destruction. Their nest is built not far from the ground. It is slightly constructed, and consists externally of wool and blades of goose grass,—being lined internally with the fibres of roots. It is mostly found in low bushes or young Fir trees. Their eggs vary in number, from four to six. They are of a bluish white colour, with ashy and brown spots at the larger end.

In confinement, the babillard must be treated just like the black-cap, and will speedily become as tame. His food may, for the most part, consist of German paste, hard boiled egg, and sponge cake; but being insectivorous, he must have his usual diet varied with a mealworm, some ants' eggs, a woodlouse, spider, and the like. Boiled milk poured over his sponge cake, and some grocers' currants, soaked, are amongst his choicest luxuries. He is also fond of the bath, which, in summer, he should have administered daily. In winter, it must be altogether dispensed with,—lest the cramp should make its appearance.

The proper cage adapted for this bird is that already recommended for the canary; but it might be an inch larger every way. He must be kept in a warm, snug room, and allowed in winter to catch a glimpse of the fire. He will sing day and night, and come into song in October. He moults freely when kept warm; and during this season he should be treated to Elderberries and Currants.

The babillard is one of those "warblers" whose powers of song can be fully appreciated in a room only. Here he gives "proofs" of his excellence, and he will vie with any song bird of twice his size. With crest erect, you will observe him bid defiance even to a nightingale. He soon ceases to regret the loss of his liberty, when he has a kind master or mistress; and you will find him quite "one of the family" in his expectations. He courts homage; and woe be to you, if you fall short in paying him due respect. He will resent it by "silent" contempt.

In purchasing your birds, select young "branchers," clean moulted, in preference to old birds. The latter are apt to be sulky, wild, and fractious. At this season you will procure them readily; but you must not delay one moment. The sooner they are caged, and domesticated, the better on every account.

I will only add, that if you woo these charming little rogues in the way they *ought* to be wooed, they will soon love you most tenderly. They will take their food from your hand most affectionately, at all times; and lavish on you those numerous unmistakeable endearments in which we all so greatly delight. *William Kidd.*

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Section C. *Tuesday, July 8 (continued from p. 564.)*—*On a Monstrosity of Lathyrus odoratus;* by Dr. Lankester.—This specimen was presented to the section by John King, Esq., of Ipswich, in whose garden it had grown. The Papilionaceous petals were reduced to mere scales, and the calyx assumed a less developed and perfectly regular form. The stamens were no longer diadelphous, but regular, 10 in number, and arranged in two rows. The carpels were reduced to the condition of a single leaf, on which were seated rudimentary ovules. The leaves and branches were not so large, or expanded, as is usual with healthy specimens of this plant.

*Abstract of a Report on the Reproduction of the Higher Cryptogams;* by Arthur Henfrey, F.L.S., &c.—The greater part of the report was taken up by a summary of the facts at present on record respecting the occurrence of the organs termed antheridia and pistillidia in all the higher families of Cryptogamous plants, that is to say, in all those possessing distinct stems and leaves, viz., the Mosses, Liverworts, Ferns, Equisetaceæ, Lycopodiaceæ, Isoëtaceæ and Rhizocarpeæ. The general conclusions at which the reporter had arrived are as follows:—In the facts of which the report gives a brief *resumé*, there are two important points to consider. In the first place, we have to determine how far they suffice to warrant a belief in the existence of a distinction of sexes in these families. In the second place, we have to endeavour to trace the analogies which exist between the different conditions presented by the supposed sexual organs in the different families. These considerations, if we adopt the hypothesis of sexuality, lead to some very interesting questions in reference to the process of reproduction generally. In regard to the first question, that of the existence of two sexes and the necessity of a process of fertilisation, we have several kinds of evidence. 1. The inferences to be deduced from the universality of the existence of two kinds of organs in connection with the reproductive process. In the report it is shown that these exist in all the families at some period or other of the life of the representative of the species. In the Mosses and Hepaticæ they occur on the fully developed plant. In the Ferns and Equisetaceæ they occur upon the cellular structures of frondose character developed from all the spores, which frondose bodies or pro-embryos have an existence of some permanence, especially in the Equisetaceæ. In the Lycopodiaceæ, the Isoëtaceæ, and the Rhizocarpeæ, the pistillidia occur upon very transitory cellular structures produced by one kind of spore, the larger, while the smaller spores at once develope in their interior cellules containing moving spiral filaments, such as occur in the antheridia of the other families.

2. The inferences to be deduced from observations on the development of those spores in which the two kinds of organs occur in distant places, and can be separated. Strong evidence has been brought forward that the dicœcious Mosses, as they are called, do not produce sporangia when the pistillidia are kept apart from the antheridia, by natural accident. The majority of observers state that the larger spores do not germinate, if the small spores are all removed from contact with them; a few counter statements do, however, exist. Again, the majority of authors, and all the recent ones, state, that only the large spores of the Lycopodiaceæ and Isoëtaceæ produce new plants; while some older writers believed that they had seen the small spores germinate.

3. The direct observation of a process of fertilisation, of which we have testimony only from two authors, Suminski and De Merklin, in reference to the Ferns alone, since the assertions of Schleiden in regard to the Rhizocarpeæ have been demonstrated by Nägeli, Hoffmeister, and Mettencies to have been based upon very imperfect observations.

The circumstancial evidence furnished under the first head seems to the reporter very strong, so much so that he is inclined to adopt the idea of sexuality on this ground, as the legitimate provisional hypothesis arising out of our present knowledge, especially when supported so strongly as it is by the negative evidence indicated under the second head. The positive evidence under the third head is certainly very insufficient as yet, considering the extreme delicacy of the investigation. Suminski's other observations on detail points have been contested in many particulars, and De Merklin, the only other observer who asserts that he has seen the spiral filaments within the so-called ovules of the Ferns, describes the conditions differently, and states that he has only been able to observe this positively three times. However, the difficulty of the investigation should make us hesitate in attaching too much weight to the failure of the other observers in tracing a process of fertilisation; moreover it is quite possible that actual entry of the spiral filaments into the canal of the two ovules or pistillidia, is not always, if ever, necessary.

The facts before us, then, appear to the reporter strong enough to warrant the adoption of the views propounded by the latest authors on this subject, and the acceptation of the hypothesis of sexuality in the vascular Cryptogams, as the most satisfactory explanation of the phenomena as yet observed. The question

lies now much in the same condition as that of the sexuality of flowering plants before the contact of the pollen-tubes with the ovules had been satisfactorily demonstrated.

Further arguments may be adduced from grounds independent of the statements furnished in the report, viz., 1. The late discoveries of two forms of organs in the Algæ, Lichens, and Fungi, which, although the inquiry is imperfect at present, lead to the expectation that the analogues of the antheridia and pistillidia of the Mosses so long known, will be found in all Cryptogamous plants. 2. The analogies between the processes of animal and vegetable reproduction, which appear to be offered by these new views of the nature of the phenomena in the vascular Cryptogams. To this last argument the reporter only briefly alludes, as it may be considered to be beyond the special province of the vegetable physiologist, yet when we recollect the imperceptible character of the gradations of the lower forms of the two kingdoms, there seems to be far more solid ground than is admitted by Schleiden, for arguing from apparent analogies between the phenomena presented in the two great kingdoms of nature. Under the second point of view mentioned above, the facts of structure may soon be disposed of, so far as the analogies of form are concerned; the antheridia of the Mosses, Hepaticæ, Ferns, and Equisetaceæ, agree with the small spores of Isoëtes, Selaginella, Pilularia, and Salvinia, in producing cellules in which are developed the moving spiral filaments which constitute the essential character of the organs of the one kind; while the pistillidia of the Mosses and Hepaticæ agree with the so-called "ovules" of the Ferns, Equisetaceæ, Lycopodiaceæ, Isoëtaceæ, Rhizocarpeæ, in general structure, and in the presence of the large central cell, from which the new form of structure originates. The great differences depend on the position, in time and space of the organs, in the different classes, and on the nature of the immediate product of the so-called "embryo-sac," the large central cell of the pistillidia and "ovules." In the Mosses and Hepaticæ, the pistillidia occur upon the plant when the vegetative structure is perfect, and the immediate product of the great cell is a sporangium. If a process of fertilisation take place here, we may regard the antheridia and pistillidia as analogues of the anthers and pistils of flowering plants, the sporangia of their fruits; or, with Hofmeister, we may regard the phenomenon as an instance of an "alternation of generations," when the pistillidia would be looked upon as an "ovule," producing (in the sporangium), a new individual, of totally different character from that developed from the spore (the leafy Moss-plant, in the usual acceptation of the term). In the Ferns and Equisetaceæ, we find the spores producing a frondose structure of definite form, upon which are developed antheridia and pistillidia, or "ovules." Here then we seem to have one generation complete, and the new development from the "ovule" appears as a totally new form, producing stem and leaves, which have a distinct individual form and structure, and produce the spores after a long period upon temporary parts of this structure, on the leaves, and by no means cease to exist, when these are matured. Here we seem to have a real "alternation of generations," and Hofmeister compares the whole permanent plant of the Fern or Equisetum, to the sporangium of a Moss or Liverwort. In all the other families, the Lycopodiaceæ, the Isoëtaceæ, the Rhizocarpeæ, the pro-embryo is a very transitory production, and is developed from a different spore from the spiral filaments. This pro-embryo is clearly analogous to that of the Ferns and Equisetaceæ; and if the existence of sexes be a fact, we have here a dicœcious condition, as contrasted with the monœcious condition in the two families last named. Hofmeister here again assumes that the pro-embryo, developed from the large spore, is an intermediate generation, between the two perfect forms of the plant. It is rather difficult to decide upon the real analogies of these structures with those of the flowering plants. The resemblance is so close between the pistillidia of the Mosses and Hepaticæ and the "ovules" of the other vascular Cryptogams, that they must be regarded as analogues; and then the former could not well be conceived to be analogous to the pistils of flowering plants, but rather to their ovules; if this be the case the sporangium must be considered the analogue of the perfect plant of the Fern, &c., and the leafy stem as the analogue of the pro-embryo of the Fern, &c. The pistillidium of the Mosses could indeed hardly be regarded as analogous to the pistil of a flowering plant, for in that case the spores would be ovules produced long after fertilisation; and on the other hand, if we consider the pistillidium of the Moss as an ovule—which it might be—analogous to that of the Coniferæ, in which a large number of embryonal vesicles or rudiments of embryos are produced after fertilisation, on the branched extremities of the suspensors, then we seem to lose the analogy between the product of the pistillidium of the Moss and that of the ovule of the Fern, unless we consent to regard the entire plant of a perfect Fern as analogous to the ovule of a Conifer. Perhaps the time has hardly come for us to arrive at any conclusion on these plants. The phenomena in the Ferns and Equisetaceæ, as well as in the Rhizocarpeæ, Lycopodiaceæ, and Isoëtaceæ, less strikingly, seem to present a series of conditions analogous to those which have been described under the name of "alternations of generations" in the animal kingdom; and, seeing the resemblance which the pistillidia of the Mosses bear to the "ovules" of the other families, we can hardly help extending the same views to them; in which case we should have the remarkable phenomenon of a compound organism, in which a new individual, forming a second generation, developed after a process of fertilisation, remains attached organically to its parent, from which it differs totally in all anatomical and physiological characters. It is almost needless to advert to the essential difference between such a case and that of the occurrence of flower-buds and leaf-buds upon the same stem in the Phanerogamia, as parts of a single plant, yet possessing a certain amount of independent vitality. These are produced from each other by simple extension, by a process of germination, while the Moss capsule, if the sexual theory be correct, is the result of a true reproductive process. Moreover, we have the analogy to the increase by germination in the innovations by which the leafy stems of the Mosses are multiplied. In conclusion, it is remarked that their anomalous conditions lose their remarkable character to a great extent, if we refuse to accept the evidence of sexuality, which is brought forward in the report. If the structures are all products of mere extension or germination, the analogies which have been supposed to exist between them and the organs of flowering plants all fall to the ground. But, believing that the hypothesis of sexuality is based on solid grounds, the reporter is by no means inclined to allow the difficulty of the explanation of these relations to be urged as valid argument against their existence. He trusts that the present report may be the means of attracting new investigators to a subject which presents so many points of interest and importance.

## Home Correspondence.

*Onions and Celery.*—The following is the plan which I pursue in growing these vegetables:—In the month of September I manure the ground with well-decomposed dung, and dig and plant it with Coleworts for use during winter. As fast as it is cleared, it is ridge trenched, and the manure well incorporated with the soil. In the first week in March (weather permitting), I mark it into beds 4 feet 6 inches wide, with 18 inches for a trench between bed and bed, and the same on the outside of the bed. I then take the soil out of the trench to the depth of 10 inches, and place it equally over the bed. I now rake the surface level, and sow my Onions, casting 1 inch of soil over the seed, treading it and raking it; immediately afterwards, I put 6 inches of rotten manure in the trenches, and dig them, which obviates the necessity of making a second disturbance. I sow my Celery in a cold frame about the middle of February. When up, the plants are thinned out to about 2 inches apart, but they are never pricked out. About the first week in June, they are ready to plant into the trenches. I then cut off the tap roots, but I never cut the leaves. I put two rows in a trench about 6 inches apart, placing the plants triangularly; I plant a row of Cauliflowers 15 inches from the outer trench: these are off before the Celery requires earthing, as I follow the plan recommended in your Paper, of not earthing up my Celery till the end of September, which I find an excellent practice. The Onions are harvested before then, consequently one crop does not interfere with the other, and both arrive at the greatest perfection. *J. Steel, Gardener, Bolton Hall, Clitheroe.*

*The Hop Mildew.*—Having taken an opportunity of carefully examining Dr. Plomley's drawing of the Hop fungus, I cannot concur in the remarks made thereon in your Paper of July 26, p. 467. In the first place, the natural position of the Oidium is not correctly shown, the upright stems being represented, some vertically, others in a descending direction, and all, if I remember rightly, solitary; whereas, their usual habit is to issue in tufts from one to five, or more, nearly at right angles with the matrix, thus. This mistake no doubt originated in the drawing being made by a third party from a *prepared* specimen, as stated, instead of from the living plant. So far from its showing "in the clearest manner the origin of the Erysiphe from the Oidium," by the "swelling out" of one of the joints of the latter, in order to its being converted into the globular peridium of the Erysiphe, this appears to me to be in reality impossible, inasmuch as the joint of the Oidium is four times as large as the young plant of the Erysiphe, and for the greater to swell into the less is against the rules of geometry. The two plants are shown nearly of these relative dimensions by Dr. Plomley, and I cannot for a moment suppose it is intended that a mature joint of the Oidium should become a half-grown Erysiphe, while so many plants in different stages of growth are springing up around it after the order of Nature—some not much larger than the sporidia—others full grown, and bringing forth fruit after their kind. It is true Dr. Plomley's drawing exhibits certain joints of the Oidium of a darker colour than others, and these have been supposed to swell into the Erysiphe, although the supporting threads characteristic of this genus are wanting, and their respective size, shape, structure, and contents differ very materially. It is also admitted by all that some of these joints, at least, contain reproductive spores, and if they do swell into an Erysiphe (which I have not been able to discover) this must in return produce the Oidium. But if we find these dark joints on plants on which the Erysiphe has never been seen—for instance, on the Grape Vine, on which I have frequently seen them bursting and emitting their spores—we must conclude that the two plants are distinct, otherwise the Oidium would have two modes of propagation on some plants and only one on others. Besides, it must be remembered, that the fulcra of the Erysiphe on the Gooseberry, Maple, and Hop differ so remarkably that they are properly considered distinct species. This Oidium therefore, which I am confident is the same on all, must, if the parent of one, be as closely allied to the rest. This would be a very enormous faculty for it to possess; as on the other hand its inability to produce a single Erysiphe on the Grape Vine, and some other plants, would be a most singular restriction. That the Erysiphe should always succeed the Oidium is remarkable, although it is equally common to find three distinct parasites on Rose leaves, namely, Oidium commune, Uredo rosæ, and Aregma mucronatum. This circumstance is, therefore, not of much importance; neither has it ever been attempted to be shown, I believe, before Dr. Plomley's figure, in what way the one plant might be connected with the other; for the Erysiphe and its fulcra are distinctly perfect, without the Oidium, and seldom appear until after the other has passed off, frequently a week or more after the leaf has been gathered. Until some closer tie is discovered, therefore, I must remain of opinion that these two interesting and formidable plants are generically distinct. *Amicus Plato sed magis amica veritas.—F. J. Graham, Cranford, Sept. 8.*



* A joint more highly magnified, containing spores.

*Cuthill's Plan of Wintering Potatoes* (see p. 550).—I have never read Mr. Cuthill's book, but from extracts and remarks upon it which have come under my observation, I apprehend that the principle of his method of wintering Potatoes consists in keeping them dry and cool, and rubbing off the sprouts before they have grown long enough to abstract much of the nutriment contained in the tuber. Now, although Mr. Cuthill's prescription may not have been followed to the letter in the way Potatoes have always been wintered here, yet I maintain that the conditions he insists upon (if I rightly understand them), have been sufficiently observed to warrant my assertion that "there is no connection whatever between the wintering of the sets and the Potato disease;" and, consequently, that a remedy founded upon the assumption that there is such a connection, is "all a mistake." "Chynoweth" also has fallen into a slight error (I trust this expression is not too strong for him), in inferring that because our Potatoes are laid in heaps from one to two feet thick, they must necessarily be injured by fermentation. Nothing of the kind can take place, as they are always dry when stored, never covered with anything to exclude the free access of air, and always sprouted as soon as that process is required; in short, it is scarcely possible for Potatoes to be wintered under more favourable circumstances than they are here, and yet we are equally as subject to the disease as our neighbours. I shall perhaps be told that all this amounts to nothing, inasmuch as Mr. Cuthill's system has not been strictly followed; but will any disinterested person (giving his name and address), come forward and say that by practising Mr. C.'s plan he has preserved his crops from disease? A few authenticated cases of this kind would prove that the mistake is on my part, and not on Mr. Cuthill's. At present, however, I see no reason to change the opinion I have always held—that the cause of the Potato disease is wholly atmospheric. The theory of Mr. Cuthill's remedy, as propounded by "Chynoweth," is, in my opinion, erroneous. By preventing undue exhaustion of the seed tuber, which is all that can be effected by any method of wintering it, we undoubtedly obtain a more vigorous plant; but has it ever been found that luxuriant growth insures freedom from the disease under consideration. On the contrary, I have always observed that the strongest, and consequently the most succulent, vegetation, is the most severely affected when once the poison begins to spread. *J. B. Whiting, the Deepdene.* [We regret to be obliged to observe, with regard to this communication from so respectable a person as Mr. Whiting, that it is unusual to criticise books without reading them, and unfair to condemn any man's practice without having tried it *exactly* as it is described. With regard to the theory of Mr. Cuthill's practice, we must add that it is by no means what Mr. W. supposes it to be. As for atmospheric causes, they are like so-called lunar influences, electrical conditions, and similar expressions—phrases which simply indicate that a *cause is unknown.*]

*Gardening News.*—We learn that Baron Hügel has sold all his plants and houses, &c., to a Russian Prince, who has a fine estate at Florence, where all the plants will be sent. It is considered that the transport alone will cost about 2500*l.* sterling! *A Vienna Correspondent.*

*Cuthill's System of Growing Potatoes.*—Mr. Whiting having offered some remarks on my plan of producing early Potatoes, I shall take this opportunity of endeavouring to make him better acquainted with the subject, for it is evident that he neither understands nor has followed my system, as laid down in my pamphlet on the Potato. I first began to think that Potatoes were badly managed when I lived with the late Mr. Smith, of Deanston. It was customary in those days for poor people in Doune and Deanston to give the neighbouring farmers a small sum of money for a piece of land to grow Potatoes on, the farmer to work the land, and the poor people to find dung and sets. I have often seen in one field 20 or more allotments of this kind, each person using that kind of manure which he thought best, and his own favourite variety of Potato; and even at that time, 30 years ago, I have seen one man's Potatoes come up well, while another's had the curl; some did

not come up at all, and all this in the same field. Now does not this indicate mismanagement of the sets. Weakness and bad treatment of the tubers constituted the cause of failure then, and the same obtains now. The late Mr. Cobbett once informed me that the Potato would be found to be the curse of this country. I considered this assertion too severe as respects our best vegetable, and from that time I paid more attention to it than ever. When at Mistley Hall, in Essex, in 1830, we had a loft, or sort of fruit-room, up a few wooden steps, and here I kept all my early seed Potatoes. Towards Christmas they began to sprout, and it struck me that if we planted them, shoots and all, they would come in earlier. Between 1000 and 2000 small pots were planted, and put into a cold house, where they remained till towards March, when they were planted immediately under a wall (south side), and larger pots were placed over them at night, with a view to protect them from frost. Well, that very year I sent early Potatoes to the Speaker's town house, when they were fetching 3*s.* and 4*s.* a lb. in the market. I also gained a first prize at the Ipswich Exhibition for early Potatoes, being the best and fewest to the pound. Twelve years ago, when I first came here, I made the Potato my principal study, and it has paid me well for my attention. The hagglers (that is the name for those people in Covent-garden, who buy early Potatoes and afterwards sell them at a trifle more to the west-end green-grocers), used to say that Cuthill was come in and the price would soon come down. Even Mr. Fitch (an extensive market-gardener at Fulham) came up to my lads one morning, when they uncovered 200 2-lb. baskets, and said that "Cuthill must have a deal of glass." The only glass covering they had, however, was protecting them during winter upon my plan, which is fully explained in my pamphlet on the Potato, but which is too long to be repeated here. And judging from the numerous testimonials in its favour, from some of the first gardeners in the three kingdoms, I am sure that even Mr. Whiting will lose nothing by reading it, and afterwards strictly following my advice. I have before me, at this moment, a letter from Mr. Milne, then gardener to the late Sir Robert Peel, in which he says that "Sir Robert has read your work on the Potato, and states that it contains a few sensible and concise remarks upon a new method of cultivating early Potatoes, and he has desired me to follow your plan." Mr. Milne adds, "I followed it implicitly, the Potatoes were planted on the 27th of February (1848), and after rising above the ridges six inches they were all cut down by frost about the middle of April; they soon recovered, and were again cut down by the frost. They were longer in recovering this time; but I sent very fine Potatoes to London on the 16th of May, when they were fetching 2*s.* per lb. in the market. Patches not treated upon your plan were in every way later and inferior; the cottagers and labourers hereabouts are so convinced that your practice is perfect, that all intend to adopt it; they propose laying them in cupboards or boxes or lofts, or anywhere, thinly, until planting time." "But," says Mr. Whiting, "what has all this to do with the disease?" I reply, "It has everything to do with it; I do not allow the Potato to sweat, shoot, and waste its substance in premature growths, to be thrown away. All must admit when Potatoes are permitted to grow they empty their cells, not only of the water they contain, but of the other constituent parts necessary to healthy development; and when such sets are planted they produce nothing but succulent shoots, charged with twice as much water as the first shoot; consequently they are less woody and less able to resist the extraordinary vicissitudes of weather which we have experienced during the last six years, and which, in my opinion, have induced the disease." *James Cuthill, Camberwell, London.*

## Societies.

Entomological, *Sept.* 1.—J. O. Westwood, Esq., President, in the Chair. Various donations to the library, and collections from the natural history societies of Munich, Moscow, and Stettin, and from several entomologists, were announced, including a few interesting Coleoptera from Hong Kong, presented by Mr. Bowring, and a series of Hymenoptera, from the Isle of Wight, by Mr. F. Smith. Mr. A. White exhibited a remarkably large specimen of a spider-like Crustacean, Nymphon giganteum of Goodsir (N. Strommii of Kroyer), collected in the ocean near Shetland, at the depth of 20 fathoms, by Mr. Barlee. Mr. White suggested that many of the new forms of Scandinavian Crustacea described by Kroyer would in all probability be found to inhabit the seas of the north of Scotland and adjacent islands. The President announced that a new Part of the Transactions of the Society was ready. Extracts from a letter from Mr. Bowring to Mr. White were read, confirming the accounts of the discovery of a species of moth, parasitic in the larva state, on Fulgora candelaria, the former gentleman having succeeded in rearing another fine specimen, which he had shown alive to Mr. Harrington. Mr. Bowring likewise mentioned the capture of various interesting Coleoptera, in the neighbourhood of Hong Kong. A note was also read from Capt. Hamilton, announcing his intention to send to the Society another collection of Indian insects. Mr. Douglas exhibited various interesting Micro-Lepidoptera, including a new species of Stigmanota, also illustrations of the economy of several species, as well as the nidus of the newly-discovered weevil, Mecinus collaris, within the head of a plant of Plantago maritima. A new species of Gelechia was exhibited by Mr. Grant, as well as various Lepidoptera, from Barnes common. Mr. Smith stated that he had reared Oxystoma Ulicis, from the pods of the common Ulex, as well as a considerable number of parasites belonging to the genus Pteromalus. He also exhibited living specimens of Lamia textor, collected by Mr. Jacques, of Bristol (the President stating that he had received several additional living specimens of Hamaticherus Heros from Sir T. S. Pasley, at Pembroke). Mr. Smith also exhibited a new British Bombus (B. arcticus of Dahlbom), collected by Mr. A. White, at Lerwick, one of the Shetland islands, in the preceding month. He also stated that he had found the cases of the larva of Clythra 4-maculata in ants' nests. A note was also read from Mr. Weaver, confirming the connection between the larvæ of the Cetoniæ and ants, having found the larva of C. ænea in the nests of those insects, and observed that it devoured the ants' eggs. Mr. Douglas also read the translation of a note by Dr. Gensius and Herr Dohrn on the connection existing between the Paussidæ and ants in southern Africa. Mr. Stainton exhibited some Oak leaves, with the burrows of a minute Lepidopterous insect. A note from Mr. R. Spence was communicated by Mr. Spence, on the appearance of the Cicada septendecim in immense swarms in the United States; also a note from Signor Passerini, of Florence, relative to the habits of Denops personatus, one of the Cleridæ. A drawing by the Rev. Mr. Chapman, of a remarkable coloured variety of the Death's-head caterpillar was exhibited by the President, who also communicated a note from Mr. E. Brown on different species of Cecidomyia which attack the Wheat in flower, on a species of Ceratopogon, the females of which hover over water, with a string of eggs an inch and a half long, attached to the extremity of their bodies, and on the flea of the hen-roost. A branch of an exotic species of Fir covered with the eggs of some insect, was forwarded by James Yates, Esq., F.R.S., also communicated by Mr. Spence. The President exhibited the caterpillar, cocoon, and moth of a variety of the silk-moth, the eggs of which were obtained from the province of Cheetiang, in the north of China, by Mr. Parker, during the present season. The silk is extremely white and fine, and is regarded in China as of the best quality, called Tsatlee; the moth is nearly white, and much smaller than the ordinary variety. He also exhibited specimens of Microsetia centifoliella, which he had reared from Rose-leaves mined by the larvæ, and described the transformations of the species.

## FLORICULTURE.

The Horticultural Society's Schedule of Prizes for 1852.—A few comments upon the Schedule of Prizes for 1852, as advertised by the Horticultural Society, August 30, may, perhaps, not be unacceptable to many. I refer to it with satisfaction, because of the liberal and, I hope, welcome movement which has been made, much to the advancement of floricultural pursuits; by results only should we judge, however, but be they what they may, sufficient inducements are held out, I trust, to satisfy the veriest prize hunter for floricultural honours. I am too well known to be challenged with cherishing parsimonious notions; certainly, I am no advocate for the close pruning of by-gone times, a system which has, I trust, worked its own cure. Pelargoniums are again to occupy the tables, and I anticipate their reproduction will be stronger than ever, great preparations are being made to "do battle;" there is already a lively demand for cut-down plants (bottoms), and we may fairly infer that competition will run high in classes 1, 2, and 3, in each of which nurserymen and private growers exhibit independently of the other; the prizes offered in No. 1, are 7*l.*, 4*l.*, and 2*l.* 10*s.*; in No. 2, 4*l.*, 2*l.* 10*s.*, and 1*l.* 15*s.*, the former is for 12 *new* and first-rate varieties, grown in 8-inch pots; the latter for six varieties of larger growth, and which have been actually cultivated in 11-inch pots; so far so good; but allow me to offer a passing remark with regard to the word *new*, as applied in No. 1, for I cannot but think that some better definition here is needed. We all know that *new* is *not* old, but that is not enough, a limit should be fixed so as to determine what new means, for it has seldom happened that the collection which has gained the first prize has not contained something at least as antique as Forget-me-Not. This is, however, no disparagement to the variety in question; but rather the reverse, yet so it has been, and censors get called to account for neglecting, if not misunderstanding, their duty; managers of exhibitions generally cannot be too explicit; much that often proves unpleasant might be easily prevented by a simple foot note, as, for instance, in this case, thus: "By 'new' is meant such varieties as have not been longer in existence than (say) three years from first letting out;" such an explanation no one could misunderstand; our long tried and faithful sorts could not even then charge us with neglect—they are provided for; and such must have been the original intention when the class for 11-inch pots was instituted. In No. 3, fancy Pelargoniums are invited, in collections of six varieties, in (I presume) 8-inch pots, 4*l.*, 2*l.* 10*s.*, and 1*l.* 15*s.* being offered for them. I could have wished a class with 11-inch pots; but for a time, at least, 8-inch pots will prove sufficiently large for the production of well-bloomed and healthy specimens. Proceeding to No. 4, I find that scarlet Pelargoniums are solicited, in collections of six varieties, in 8-inch pots, for July only, and prizes of 2*l.* 10*s.*, 1*l.* 15*s.*, and 1*l.* 5*s.* are offered for them. This I highly commend; it cannot fail to secure due patronage; for, "coming in at Carnation time, a van can as well carry half-a-dozen scarlets as go half empty:" further, if "Tom Thumb improved," be eligible for a place in an exhibition of 18 Miscellaneous Stove and Greenhouse Plants, no objection can surely be raised against a special exhibition of plants of so brilliant a character as scarlet Pelargoniums. *J. E.*

Shacklewell Dahlia Show, *Sept.* 9.—This, the annual exhibition, was far above the average; Dahlias were excellent in character, and abundant. In the Dealers' Class there were six collections, each consisting of 24 blooms, and seven of 12 Fancies; private growers, twenty-one stands of 12 blooms, nine of 6 fancies, ten of 6 new flowers, and five of 4 flowers let out by Mr. Keynes; these with 20 seedlings, of each of which six blooms were required, and some yearlings, made a total of 740 blooms set up for competition. The prizes awarded amounted to 55*l.* Certificates were granted to Dr. Frampton and Sir F. Thesiger (Rawlings); the former has already been noticed; the latter is a lilac of medium size, and of good form; ditto to Triumphant, Laura Lavington, and Nancy (Keynes); to Lizzy (Perry), a flower the exact counterpart of Keynes's Queen of England, but more certain; and to Miss Ward (Turner), a yellow tipped white fancy. Of other novelties, we noticed a seedling scarlet with white tip, named Miss Mathews (Bragg), a valuable addition, and a great improvement in its class, being full, deep, and bright; Wonderful (Keynes), is a flaked flower of fine quality; colours, amber striped with purplish pink; these both received certificates. Among other Seedlings possessing merit, may be mentioned John Davis (Cook), similar to Richard Cobden, Fairy Queen (Turner), Edmund Foster (Turner), Morning Star (Turner), Louisa Glenny (Rawlings); Flora M'Ivor (Keynes), fancy rosy purple and white, fine; Miss Creed (Edwards), pale yellow tipped with white, said to be an improvement on Mrs. Hansard; Globe (Turner). Dealers, 24 blooms: 1st, Mr. Turner, with Mr. Seldon, Duke of Wellington, Princess Louisa, Yellow Standard, Thames Bank Hero, Snowflake, John Edward, Richard Cobden, Queen of Lilacs, Black Prince, Sir C. Napier, Globe (Turner), Fearless, Model, Mrs. Seldon, Shylock, Sir F. Bathurst, Admiral, Andromeda, Summit of Perfection, Nonpareil, Blanchfleur, Essex Triumph, and Elizabeth; 2d, Mr. Keynes, with General Faucher, Negro, John Edward, Queen of Lilacs, Toison d' Or, Snowflake, Richard Cobden, Princess Louisa, Princess Radziville, Mr. Herbert, Mr. Seldon, Seraph, Magnificent, Triumphant (Keynes), Yellow Superb, Duke of Cambridge, and Shylock; Elizabeth, Yellow Standard, Sir F. Bathurst, Douglas Jerrold (Keynes), Duke of Wellington, Fearless, and Sir R. Peel; 3d, Mr. Barnes, whose stand contained, among others, Grenadier, George Glenny, Nil Desperandum, Earl Clarendon, Fame, Uranus, Mr. Palmer, Beauty of Layerthorpe, and Roundhead; 4th, Mr. Legge. 12 Fancies: 1st, Mr. Turner, with Mrs. Willis, Elegantissima, Miss Weyland, Elizabeth, Jeannette, Miss Compton, General Cavaignac, Mrs. Hansard, Forget-me-Not, Duchess of Sutherland, Princess Louisa, and Jenny Lind; 2d, Mr. Keynes, with Empereur de Maroc, Elizabeth, Mrs. Hansard, Lady Grenville, Laura Lavington (Keynes), Miss Compton, Gasperine, Miss Blackmore, Comte de Flandre, Triumphant (Keynes), a sport from a self, Remembrancer, Flora M'Ivor (Keynes); 3, Mr. Legge; 4, Mr. Black; 5, Mr. Barnes. Amateurs, 12 varieties: 1, Mr. Black, with Nil Desperandum, Mrs. Seldon, Thames Bank Hero, John Edward, Duke of Wellington, Sir F. Bathurst, Queen of Lilacs, Richard Cobden, Sir C. Napier, Princess Louisa, Model, and Nonpareil; 2, Mr. J. Edwards, with Nil Desperandum, Mrs. Seldon, Thames Bank Hero, General Faucher, Earl Clarendon, Richard Cobden, Duke of Wellington, Negro, Regina, Fearless, Elizabeth, and Shylock; 3d, Mr. James, with Richard Cobden, Yellow Gem, Duke of Wellington, Sylph, Marchioness of Cornwallis, Admiral, Princess Radzivill, Sir F. Bathurst, Carmina, Hon. Miss Ashley, Gem of the Grove, and Duke of Cambridge; 4th, Mr. Weedon; 5th, Mr. Hunt; 6th, Mr. Cook; 7th, Mr. Allen; 8th, Mr. Holmes; 9th, Mr. Jones; 10th, Mr. Hatchman; 11th, Mr. Prockter; 12th, Mr. Callahan; 13th, Mr. Hopkins; 14th, Mr. Howard. 6 Fancies: 1st, Mr. Black, with Frend Smidt, Mrs. Willis, Mrs. Hansard, Elizabeth, Lady Grenville, and Miss Weyland; 2d, Mr. Allen, with Miss Compton, Forget-me-not, Mrs. Hansard, Elizabeth, Madame Wachy, and Unknown; 3d, Mr. James, with Miss Blackmore, Mrs. Hansard, Miss Compton, Lady Grenville, Elizabeth, and Floral Beauty; 4th, Mr. Bennett; 5th, Mr. Hatchman; 6th, Mr. Edwards. 6 New Varieties: 1st, Mr. Black, with Leda, Queen of Beauties (fine), Carmina, Model, Nepaulese Prince, and Nil Desperandum; 2d, Mr. Holder, with Model, Hon. Mrs. Ashley, Carmina, Mr. Palmer, California, and Sir C. Napier; 3d, Mr. James, with Carmina, Hon. Mrs. Ashley, Nil Desperandum, Admiral, King of Dahlias, and Roundhead; 4th, Mr. Edwards, with Nil Desperandum, Mrs. Hansard, Napoleon, Sir C. Napier, Model, and Regina; 5th, Mr. Weedon; 6th, Mr. Dyson; 7th, Mr. Howard; 8th, Mr. Cook; 9th, Mr. Jones; 10th, Mr. Allen. Extra Prizes offered by Mr. Keynes for four flowers, let out by himself this season: 1st, Mr. Allen, with Mr. Herbert, Nepaulese Prince, Summit of Perfection, and Beauty of Kent; 2d, Mr. James, with the same sorts; 3d, Mr. Black; 4th, Mr. Edwards; 5th, Mr. Pope. Roses were shown by Mr. Francis, to whom a prize was awarded, Messrs. Paul and Son, and Mr. Parsons. Hollyhocks in spikes: 1st, Mr. Parsons; 2d, Mr. Bragg. Cut Blooms: 1st, Mr. Black; 2d, Mr. Dyson. A Certificate was awarded to Hollyhock C. Turner (Black). Liliums were furnished by Mr. G. Bunney; Fuchsias by Mr. James and Mr. Allen. Other subjects, for the purposes of decoration, were largely contributed.

Newbury, *Sep.* 5.—There was a good show on this occasion, and a goodly company. Dahlias: 1st, Mr. Turner; 2d, Mr. Keynes; 3d, Mr. Black; 4th, Mr. Rowden. Private growers: 1st, Mr. Perry; 2d, Mr. Woodley. Six Fancies: 1st, Mr. Perry. Extra prizes for Dahlias let out by Mr. Keynes: 1st, Mr. Black; 2d, Mr. Perry; ditto, let out by Mr. Turner, 1st, Mr. Rowden; 2d, Mr. Black. Certificates for Seedlings were awarded to Laura Lavington and Triumphant (Keynes), to Plantagenet (Turner), a mottled purple, large and full, and to Hollyhock C. Turner (Black), a full-sized crimson, of great brilliancy and of desirable form.

Dahlias: *C E.* It would be a loss of both time and space to give lists of Dahlias now; look to our reports of meetings. We may review the Seedlings at the close of the season. The Hon. Mrs. Ashley (Bragg), is the flower that was rewarded by the Horticultural Society last season. *J E.*

Hollyhock: *C T.* The seedling exhibited by Mr. Black, at the Surrey Gardens, was certainly not named when we made our notes; we also know that the official records were left blank till late in the afternoon. Exhibitors should, at least, attend to their own interests, and then complain if they are neglected by us. *J. E.*

Pansies: *I H B.* These have always been special favourites with us. We are, indeed, thankful for your kind offer, and shall be delighted to receive some at the proper time. We had not forgotten the contract with our Wycombe friend; we hope to meet the case cheerfully, and with every disposition "to do or die." The decision is to be at the Hammersmith Pansy Society, *quality*, not *size*, being the object in view. *J. E.*

Tulips: *J C.* Offsets should be planted by the end of this month; if next, the earlier the better. From an inch and a half to two inches is about the general depth to plant; if the bulbs are strong enough to bloom, they may be placed a trifle deeper; so with the tall growing kinds. Fourth row

flowers require more soil, both above and below, than first row sorts. *J E.*

SEEDLING FLOWERS.

DAHLIAS: *J B L.* Scarcely a second-class flower, the petals being long and of bad substance.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

ALTHOUGH cold weather may now be very soon expected, as a natural consequence of the season, we would for the present, even in less favourable localities, only put the more tender of our greenhouse plants under cover, as we dislike crowding the houses as long as it can be avoided; and there are many plants whose constitutions will allow of their being freely exposed for some time longer. As a familiar instance of this, we may mention the Cytisus, Acacia, &c.; and as the flowers of many such plants are valuable through the winter, the continued exposure will retard their season of blooming. In very cold localities, Chrysanthemums in pots should be placed in a cool house, or under the shelter of a wall, where they can be protected by drawing down a canvas in severe weather. Many plants whose wood is properly ripened may at once be removed to a cool light shed facing the north, or placed beneath the stage of the Geranium house; the situation should however be such, that frost can be effectually excluded without entirely depriving the plants of light. These will include Fuchsias, Hydrangeas, Plumbago capensis, Hibiscus, Brugmansia sanguinea, Erythrina, Bouvardia, Hedychium, Canna, Liliums, and a great many others that have done flowering, and only require protection from frost, and a moderate exposure to the light. By removing these, a greater space will be afforded for plants with healthy foliage. Balsams, Cockscombs, and other annuals which have been cultivated for decorating the plant houses during the summer must give place to the winter occupants, as they require the space.

FORCING DEPARTMENT.

VINERIES.—Admit a free circulation of air through these houses, and attend vigorously to the destruction of insects by the ordinary appliances. Keep the atmosphere as cool as possible, where the wood is ripe, or nearly so; and in all cases stop the growth of laterals, even where a warm temperature is of necessity kept up, for the purpose of ripening the crop; as the leaves produced during this month cannot possibly attain a perfect development sufficiently early to repay the amount of stored up sap, which they have consumed in their formation. Where the fruit is not yet fully ripe, a brisk temperature must be maintained, as the keeping properties of the fruit depends on their being matured before the end of this month. PINERIES.—Encourage the growth of successions by abundance of heat and moisture, as long as the strength of daylight and the fine autumn sun will sanction such a course. Let the bottom heat range from 84° to 87°. Continue to shift any that need it, or that are required to furnish the necessary succession, and place them under the most favourable circumstances of top and bottom heat, shade, and moderate moisture, until they have begun to make roots into the new soil.

FLOWER GARDEN AND SHRUBBERIES.

Propagating must be actively proceeded with, in order to get the cuttings struck, while we have the advantage of genial weather; and that they may have the chance of being fairly established before winter sets in, a strong force should be kept at this work until it is completed. If the cuttings are put in early, they have a much better chance of striking, and have a longer time to establish themselves, so that one early struck well-rooted plant will go as far as two or three weakly things at planting out season; and when we consider the numbers of the latter that dwindle away during the winter, the disadvantage of delay is too obvious to need more comment. Young plants of Campanula pyramidalis, Antirrhinum, and others which require a slight protection, should be placed in a suitable situation. All these arrangements should, as far as practicable, be completed at once, so that the hands may be clear when the weather becomes so severe as to render it necessary to take up and pot the old plants required for another season. To this end, pits, frames, boxes, pots, &c., should be prepared, that when the job commences it may be completed as quickly as possible. No time should be lost in commencing any extensive alterations or improvements which it is proposed to carry out this autumn, as the ground is in a much more workable state now than it will be two months hence, and any shrubs shifted immediately will have time to strike fresh root before winter.

FLORISTS' FLOWERS.

Dahlias are now in their glory; and while the present beautiful weather lasts, the amateur may expect abundant recompense for his care and anxiety, still precautious measures must not relax, and the same destroying insects must be caught, and the same attention as to supporting, shading, &c., must be adopted. We see that Mr. Perry, in the "Midland Magazine of Gardening," has found that rags steeped in treacle, and placed in the little pot for entrapping earwigs, is very efficacious, and we are sure that any hint that will more effectually ensure the destruction of these insects will be gladly adopted by our readers. Polyanthus beds must now be made up for the autumn, defaced or indistinct labels must be rewritten, any vacancies should be filled up, and it will be found that the crowns of the plants, with numerous bare fibres, will require covering. With a small hand fork stir the soil between the plants, and top dress the bed with good, well-sweetened, decayed leaves, and cow manure.—Get ready the soil in which Carnation layers are to be wintered, have it under cover, and repeatedly hand pick it. Good rotten turfy loam, with one-fourth Willow dust or vegetable mould, and one-fourth sharp river sand, will form an excellent compost for this purpose.

HARDY FRUIT GARDEN.

Let the young plantations of Strawberries be well attended to by stirring the soil between the plants, and supplying them with plenty of liquid manure, that they may continue to progress at top, and fully employ their leaves in the elaboration of sap. Promote by any and every means their vigorous growth now, and fine fruit will be the reward next year. Alpine Strawberries should be looked to, to see that they are sufficiently moist, as they will soon be found useful in supplying a desirable addition to the dessert. If they are in a state to receive water, supply it in the shape of liquid manure. Plant a few beds of young runners on a north wall for another year; soil a sandy loam, moderately enriched. Look to the buds of fruit trees inserted in July and the early part of August, and loosen the ties. Proceed with forking dung in amongst fruit bushes and Strawberries, and thereby encourage the production of roots near the surface of the ground; these will materially assist in perfecting the growth of the plant, and preparing it for the healthy and abundant development of fruit. Attend to the gathering of fruit as it ripens; and, if any of the trees are without names, take advantage of this opportunity of ascertaining their true names, and marking the fruit as well as the plants.

KITCHEN GARDEN.

If Cardoons will be required for the use of the kitchen before November, a few should now be earthed. It is a common practice to wind haybands round the stems, to keep the soil out of the hearts of the plants; but there are several objections to the practice, and particularly in very cold or wet ground. In such cases the haybands unavoidably absorb moisture from the surrounding soil, and are thereby decomposed, thus forming a harbour for insects, and a natural conductor, by which the frost is admitted, where the object should be to exclude it. In such ground, we would prefer surrounding the stem with a casing of sand or fine coal ashes. In very dry sandy soils the evil does not exist to so great an extent, and to such ground an admixture of sand or ashes would be injurious; but where it is of a stiff clayey nature, it will ameliorate the texture of the soil, besides being more suitable for the preservation of the crop. In any case do not allow the outer leaves to be stripped off, as they are much hardier by reason of their exposure, and form a natural guard to the more tender leaves within. Where soil is used, let it be as dry as possible, and made fine with the spade before it is placed round the plant. Let any plants be taken up, which, in spite of the rich manure given them, are beginning to run into flower; and as they are of no use when blanched, we generally make use of them by planting them in open spaces about the clumps in the pleasure ground, where, if the ground is properly enriched, they form very interesting and striking objects. The spring sown Onions should now be taken up and laid out to dry thoroughly before being strung and hung up for the winter. As the weather of our autumns is so very precarious, they should, if possible, be spread out thinly in an open shed; but if such a place is not at command, the next best is a hard dry gravel walk, from which the rain can pass freely off. Get them under cover by all means, as soon as possible, but do not allow them to be thick together, nor be in too great a hurry to bunch them up. A quantity of Parsley should now be gathered and dried; it answers as well as the green for every purpose except garnishing, and by securing a supply beforehand the demand of green leaves during winter is considerably diminished. Do not neglect to gather in due season Ridge Cucumbers, Nasturtium seeds, Radish and Bean pods, Chillies, and other matters required for pickling and preserving.

State of the Weather near London, for the week ending Sept. 11, 1851, as observed at the Horticultural Garden, Chiswick.

| Sept. | Moon's Age. | Barometer. | | Temperature | | | | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Of the Air | | | Of the Earth | | | |
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 5 | 9 | 30.209 | 30.151 | 67 | 49 | 58.0 | 60 | 58 | N. | .00 |
| Satur.. | 6 | 10 | 30.373 | 30.296 | 63 | 44 | 53.5 | 59 | 58 | N.E. | .00 |
| Sunday. | 7 | 11 | 30.448 | 30.430 | 66 | 48 | 57.0 | 58 | 57 | E. | .00 |
| Monday | 8 | 12 | 30.498 | 30.465 | 62 | 42 | 52.0 | 57½ | 57 | N.E. | .00 |
| Tues.. | 9 | 13 | 30.465 | 30.449 | 67 | 31 | 49.0 | 57 | 56½ | E. | .00 |
| Wed.. | 10 | 0 | 30.497 | 30.457 | 70 | 33 | 51.5 | 56 | 56 | S E. | .00 |
| Thurs.. | 11 | 15 | 30.481 | 30.381 | 68 | 36 | 52.0 | 55 | 56 | S.E. | .00 |
| Average | | | 30.424 | 30.375 | 65.1 | 40.4 | 53 2 | 57.6 | 56 9 | | .00 |

Sept. 5—Fine; slightly clouded; very fine; clear.
— 6—Fine; cloudy; very fine; cloudy.
— 7—Clear; very fine; cloudy and fine at night.
— 8—Overcast; fine; cloudy.
— 9—Foggy; very fine; clear and frosty at night.
— 10—Frosty; foggy; very fine with bright sun; clear at night.
— 11—Foggy; very fine clear.
Mean temperature of the week, 5 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Sept. 20, 1851.

| Sept. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 14 | 70.4 | 47.0 | 58.7 | 12 | 0.34 in. | 1 | 2 | 6 | 2 | 2 | 5 | 6 | 1 |
| Mon 15 | 66.9 | 46.2 | 56.5 | 12 | 0.63 | — | 4 | 3 | 2 | 5 | 1 | 5 | 5 |
| Tues. 16 | 68.2 | 47.8 | 58.0 | 10 | 0.50 | 1 | 3 | 4 | 1 | 4 | 5 | 4 | 1 |
| Wed. 17 | 68.8 | 47.1 | 57.9 | 10 | 0.50 | 1 | 2 | 3 | 2 | 2 | 8 | 4 | 3 |
| Thurs. 18 | 66.0 | 44.6 | 55.3 | 12 | 0.76 | 1 | 6 | 2 | 1 | 2 | 6 | 4 | 3 |
| Friday 19 | 66.9 | 45.7 | 56.3 | 11 | 0.60 | 3 | 3 | 3 | 1 | 5 | 7 | 1 | 2 |
| Satur. 20 | 66 9 | 45.2 | 56.0 | 11 | 0.45 | — | 4 | 3 | 3 | 3 | 4 | 5 | 3 |

The highest temperature during the above period occurred on the 17th, 1843—therm. 84 deg.; and the lowest on the 17th, 1840—therm. 29 deg.

## Notices to Correspondents.

APRICOTS: *Philo.* You may force them in tubs (the Dutch do so continually), provided you have skill enough. But your suggestion, that they may be grown in a hothouse or on the back wall of a greenhouse, makes us doubt whether your strength is in the way of forcing.

BIRDS—THE NIGHTINGALE AND BLACK-CAP: *J C Ewan.* The questions you have put to us, as to the *prices* of birds and cages, it is quite beyond *our* province to answer. We have, however, referred your note to Mr. Clifford, and he says his charge is 42s. for the one, and 38s. for the other—all fitted up complete as you desire. Now is the proper time to purchase. In future, please communicate with Mr. C. yourself. *W. K.*—THE THRUSH: *Anna C.* You have been wrongly advised to feed your bird on Fig-dust. In the first place, it poisons the cage, from the sour smell it produces; in the next place, it is unwholesome food. Feed with German paste and crumb of bread, to which add a little bruised Hemp-seed. A snail, a morsel of cheese, and some soft bread and butter, kindly given now and then, will keep your bird in rude health. Of course his cage must be cleansed daily, if you wish him to be "happy." *W. K.*—THE VIRGINIAN NIGHTINGALE: *An Interested Querist.* We are glad that our remarks have given you (as they have done many others), so much pleasure. Mr. Henry Taylor, the gentleman we referred to as having made these interesting experiments, is, as you surmise, the author of the popular treatise called the "Bee-Keepers' Manual." You may therefore implicitly rely on anything that emanates from him connected with such subjects. *W. K.*—THE BLACK-CAP: *Miss P C B.* We have written you by post on the subject of your inquiries; and have, *on this particular occasion*, done as you have requested—selected you a bird. We must, however, notify here, once for all, that we can undertake NO MORE "kind offices" of this sort. Our disposition savours of good nature truly; but *our time* is precious. *Verbum sat. W. K.*—THE BLACKBIRD: *J W E.* The same remarks we have already penned to "Anna C.," about the thrush, will apply with full force to the blackbird. Give him, in addition, every now and then, a morsel of raw beef. *W. K.*—THE LINNET: *Sarah W.* Your bird is moulting. He only requires to be kept warm and quiet, and he will soon resume his sprightliness. Give him a few bruised Hemp-seeds twice a week for the next fortnight. *W. K.*—THE CANARY: *Jane L.* Discontinue the Hemp-seed immediately, and discard the loaf-sugar altogether. *W. K.—E H F.* Do not purchase yet, for a month. We should recommend a Yorkshire bird. That their colour is not good, is true: but they are strong, vigorous, and excellent song birds. You may safely deal where I have recommended. Canary, Flax, and Rape seed, are the proper food. *W. K.*—THE GOLDFINCH: *Angelina.* It is a young bird, called a "grey-pate." When it has moulted, its showy colours will be fully developed. Hang him low, to make him tame. We described his proper food in our last week's paper. *W. K.*

BOOKS: *Charles L.* We cannot enter into private correspondence. For Geology, obtain De la Bêche's new work on the subject; for Entomology, "Kollar, on the Insects injurious to Agriculture, &c.;" for Chemistry, "Solly's Rural Chemistry."—*G M G.* Whiting's "Flower Gardening for Ladies," a shilling book.‡

DEGENERACY IN PLANTS: *Working Gardener.* We cannot print the schoolmaster's trash. He ought to know better than to talk such stuff.

DRY ROT: *B G.* This is very much aggravated, if not caused, by want of currents of air beneath a building. It is caused by species of Polyporus, Dædalea, Merulius, &c. Botrytis has nothing to do with it. Corrosive sublimate prevents it and destroys it.

FRUITS: *J N.* You must not exhibit two sorts of Grapes; but the fruit must be wholly different, to satisfy the terms of the schedule. Grapes, Melons, Peaches, Nectarines, Apricots, Plums, Cherries, Figs, Apples, Pears, Raspberries, Strawberries, &c., are distinct kinds, and you may show one dish of eight of them.

GREENHOUSES: *C A L M.* As far we can understand the plan, it is needlessly costly. A double hipped roof is much more expensive and less convenient than a span roof with upright ends, and it has no sort of counterbalancing advantage. Otherwise we see nothing objectionable. The stage is like all stages, ugly, and not more commodious than two or three broad terraces of stone work.

INSECTS: *J P.* The fly captured on a Laurel leaf is the common Chrysis ignita, which deposits its eggs in the nests formed by other hymenopterous insects in old walls, posts, &c. *W.—Bridgewater.* It is quite impossible to offer you any advice without seeing a specimen of the insect, "somewhat resembling an ant," which attacks your Parsnips, Carrots, and Cabbages. *W.—W H W.* The irregular, comb-like material, found in the stump of an old tree, appears to be a portion of the nest of the tree ant, Formica pubescens. *W.—E P.* The small weevils which have devoured the grains of Wheat from the Cape of Good Hope, are the Calandra oryzæ. The little moths reared from the small green caterpillars, which feed upon the berries of unripe Muscat Grapes, are so much rubbed as not to be made out with precision. They are a species of Tortrix, most probably the Cochylis Omphaciella of Audouin's memoir on the insects which attack the Vine. *W.—S and N.* Thanks for the winged specimens, which prove the insect to be a new Chinese species of Tingis, which we will shortly take the opportunity of describing and figuring. *W.—C M.* The mining larva of the Laburnum leaves is most probably a Lithocolletes. We believe, however, that no account of its transformation has been hitherto recorded. *W.—C M.* The white woolly matter on the stem of the Beech is secreted by the females of a small species of Coccus hitherto, we believe, undescribed. The eggs are now hatching, so the tree should be cleansed at once. Can you send us a small portion of the bark with the insects *in situ*. *W.*

NAMES OF FRUITS: *J E.* Your Plum is Cooper's Large Red.‖—*Besborough.* Not known.‖

NAMES OF PLANTS: *Ignoramus.* Bromus secalinus.—*Botanicus.* Calceolaria perfoliata.—*M K.* Two Lichens; the large one is Cladonia uncialis; the smaller, Cladonia furcata. We do not undertake to name Cryptogamic plants.—*D R H.* A, Polystichum aculeatum; B, Lastrea Filix-mas; C, Asplenium Ruta-muraria; D, A. trichomanes; E, Cystopteris fragilis; F, Cornus suecica. *S.—W G.* Escallonia rubra.—A few inquiries stand over for further consideration.

OAKS: *C P, T T.* A leaf-bud has been stopped in its growth, probably by some insect, and its scales have enlarged in consequence, and multiplied, till at last you have a cone. The Vegetable Marrow is attacked by the white mildew, that is so common everywhere in the autumn.

PEACH TREES: *A B.* Your trees have all the appearance of growing in a cold wet subsoil. In all probability the roots are out of the prepared soil. In such cases it is a good plan to concrete the border.

POTATOES: *J Stollard.* There is no security against this disease. Buy Mr. Cuthill's pamphlet, and follow his directions exactly, and you will have as much protection as can be procured. It does not matter where you get your seed from, it will be diseased all the same, if circumstances are favourable. Plant your rotten Potatoes next February as seed, by way of experiment. Ten to one you will have a good crop.

STRAWBERRIES: *Clapham.* If the natural soil of your garden is too light for Strawberries, you must add loam to it. You cannot do better than make the bed for your British Queens half good fresh loam and half garden soil. We presume you will then be successful.‡

MISC.: *A B.* Both the plants you mention are Palms.‡

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Mr. POTTER begs to signify that any orders he is now favoured wi h shall be treated as if given in the spring, and the term of credit reckoned from thence. Price of POTTER'S Guano, 7l. per ton. POTTER'S Superphosphate of Lime, 6l. per ton, bags included and delivery to rail.

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STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

**The Agricultural Gazette.**

*SATURDAY, SEPTEMBER* 13, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 18—Agricultural Imp. Soc. of Ire and.
THURSDAY, — 25—Agricultural Imp. Soc. of Ireland.

THE construction of M'CORMICK'S REAPING MACHINE, which now deservedly excites so much interest and attention, is exceedingly simple; and though not perfect in its adaptation to all the purposes to which it bids fair soon to be applied, it involves a principle which (when investigated, studied, and applied to the requirements of the various circumstances of ridged land and low cutting, and when supplied with a few very easy and desirable modifications and additions) promises to prove a greater acquisition to the farmer than any which has been introduced for a considerable time. Even in its present form it is able and likely ultimately to supersede the application of the scythe, the sickle, and the hook. Nor need the labourer regret his chances of toil and money which appear thus to be abstracted by the introduction of machinery. This is the old cry, and here it is even more unfounded than ever. Railways do not rob coachmen of bread nor horses of Oats, but both are now saved severe journeys and considerable peril. Steamboats require sailors, and the greater number of cargoes afford employment to more men on shore and in safe ports. Farmers, too, will still require their *hands;* but in this case, as in all others, we must overcome the *vis inertiæ*—the disinclination to change—which is inherent in the human mind. We must shape our course to suit the altered circumstances.

Machinery, such as this, will have the usual effect of similar introductions and improvements. Railways increase travelling, steamboats extend seafaring and traffic to the multitude, and steam factories enlarge the production and consumption in their respective lines; so likewise farming machinery, more especially such as tends to expedite harvesting operations, will improve the agricultural produce and resources of the country, by enabling the farmer to employ more labour in saving his grain thus expeditiously and cheaply cut down, and in attending to other crops which universally suffer in harvest from the abstraction of their just share of the labour then necessary. Thus the labourer will be a positive gainer; produce will be increased, and therefore cheapened; while his toils will be alleviated.

The following details of the mechanism of the instrument will enable any one to form as good a notion of its mode of action as can be obtained without actual inspection or by the aid of elaborate and detailed diagrams.

The machine at present is suited to the draught of two horses, attached to a pole as in an ordinary carriage, but there is no reason why single-horse machines should not be made. The horses travel close by the right side of the grain to be cut, and a metal wheel, 2 feet in diameter, receives the end of the pole, carries the machine, and by its motion forward sets the whole instrument in action, conveying regular and equivalent effect to each part of it, proportioned to its own velocity. Every one can conceive how, by a few small and simply adapted cog-wheels and a strap, this mutual operation is obtained and continued; how it may be conveyed from one part of the implement to the other; and how, by a single crank, the circular motion is converted into a longitudinal one, and made to move the cutters across the grain, backwards and forwards, acting as they do in either direction, and thus having only a certain quantity to shear each time as their velocity increases with that of the forward progress. These arrangements and adaptations are common to all machinery, and therefore require no farther comment. We shall merely advert to Mr. M'CORMICK'S ingenious device for cutting the grain, which seems to be tolerably perfect in itself. It is the position and arrangement of it, with the treatment of the grain when cut, which appear to admit of some improvement.

The cutting tool is placed at right angles to the direction in which the horses move. It is 6 feet long, supported at one end by the wheel already alluded to as communicating motion to it, in common with the rest of the machinery, and at the other by a small block wheel, 1 foot in diameter. It is put so as to cut 5 inches from the ground, but by increasing the sizes of the wheels, especially that of the smaller one, which would have an additional advantage in facilitating the draught, and by introducing bent axles admitting of adjustment, it might be suited to cut at any height, and also be adapted to the circumstances of uneven ground or lodged grain.

The edge of the cutting tool is formed like an ordinary sickle, with serrated teeth cut deep on one side of it, so that when broken or worn down they may be brought out again by filing or grinding the other side. It consists, also, of a number of distinct pieces, so that in case of accident or injury to one, it may be replaced. It is fortified by 15 spear-pointed *fingers*, which protect the knife, and a the same time raise and support the grain to the edge, which is waved and has the teeth set in different directions, so as to cut both ways, as it moves 5 inches each way. It thus meets the grain at an angle to the direction of its motion, and shears every thing presented to it, without missing a single straw, unless it is below its reach. Nothing could surpass the beauty and regularity with which some standing corn was deposited by it at its late trial at the Royal Agricultural College at Cirencester.

Some attempts have been made, and may succeed, in bringing even lodged and tossed grain within its scope. Exigencies of this kind, which are, however, exceptional cases, will no doubt be met by some contrivance. All these improvements, however, involve much practical difficulty and complication in detail, which can only be obviated by experience.

The principle is sound, the application a decidedly successful step towards the grand desideratum which many others have failed in attempting to supply; the present praiseworthy effort seems completely successful.

Taking the ordinary speed of a horse (say 2½ miles per hour), and recollecting that the machine, being 6 feet broad, will cut a swathe 5 feet wide, it appears that it will cut more than 15 acres in a day of 10 hours. It requires a man to take away the corn, and a boy to drive the horses. Farmers may therefore judge for themselves of its advantages. We only beg leave to assure them that what we saw cut by it was as neatly and regularly shorn and deposited as it could be done by the ordinary methods. *O.*

## ALTERNATE CULTURE.

W. GRIFFIN, of Eydon, suggests to those who may object to the waste of space in the uncropped alleys, and would like to grow a green crop thereon during the summer months, to fork in manure and plant Early York Cabbages, after the last forking in of the alleys. Mr. Griffin is aware that this would be a departure from Mr. Smith's principle, which is the sufficiency of atmospheric inflow with a thorough comminution of the soil to infuse a fertility sufficient for the production of remunerative crops of grain without manure. To work out this principle the green crop should be sown or planted without manure. And why should it not?

Green crops are introduced in our courses between grain crops, as ameliorative to the soil, being less scourging, from deriving, through the breadth of their leaves, the larger portion of their nutriment from the air; if this is fact, under the treatment to which Mr. Smith subjects his ground, the green crops ought also to be remunerative without manure; if not, all the principles on which the Tullian system, as well as the alternate one rest, are delusive, and our greatest agricultural chemist is in error. The fact that the soil will produce green crops under ordinary tillage without manure, has been often proved by experiments made to ascertain the relative fertility induced by the application

of various manures, in which a section of the experiment ground has been left unmanured. The only questions are whether, under Mr. Smith's treatment, proportionable remunerative results in the green crops may not be obtained. This inquiry may, perhaps, be worth the rev. gentleman's attention; and whether, in every case, the application of manure may not produce such an increase of fertility as will more than repay the cost? In my opinion it will; and so far as I could afford it, I would manure. The obtaining a succession of crops without manure by a wide row tillage, I consider only admissible where from any cause manure cannot be applied; and the great object I have in view, and I doubt not this is Mr. Smith's, is to show that remunerative crops may be so obtained; and if so, that the same treatment will proportionably increase the produce where manure is applied.

If Mr. Griffin expects merely to obtain a stolen autumnal crop, after the removal of a preceding crop of grain, by planting Cabbage as he recommends, he will, no doubt, succeed, though not to the weight he calculates on. In field tillage, I have rarely found an Early York, or Nonpareil, weigh 4 lbs. under every advantage of spring and free culture. They will, I think, only root before the harvesting of the grain; and if they do more, they will be drawn up, and much deteriorated; for if the Wheat grown on Mr. Smith's plan is at all luxuriant, it will quite overshadow the 3 feet alleys. I had proof of this in an attempt to produce a row of Lettuce between two rows of Barley at 3½ feet distance. In my interlining crops, I have, consequently, adopted 4 feet between my grain rows. But in Mr. Griffin's allusions to a green crop during the summer months, and to his crops of Cabbage between rows of Beans, he appears to contemplate a crop of Cabbage simultaneously ripening with a grain crop—not that I believe he proposes to recommend it; in this case I should think he will be certainly disappointed. He seems to apprehend a possibility of the Cabbage injuring the Wheat of the present or after crop; of this he need entertain no fear, it is the taller growth of the Wheat that will injure the Cabbage, and thwart his plan. As innovation ever meets with the most ungenerous opposition, it was remarked, somewhat ungraciously, that Mr. Goodiff would spoil his Wheat by his Cabbage, and his Cabbage by his Wheat; it is now evident to all that neither has received injury from proximity to the other.

On Mr. Smith's plan I would remark, that I feel very sure he would not reap a grain less if he sowed only two rows in his distance of 2 feet. If his Wheat is as luxuriant as I suppose it to be in such deeply tilled land, that is about 6 feet high, I think the centre rows will be so much injured as to be of little value, while they will deprive the outer rows of a portion of their nourishment—I mean rather atmospheric privation than earthy; this is agreeable to our present science and accords with a practical instance which I think it here pertinent to mention. Some years ago I sowed, with a view to ascertain the most desirable quantity of seed to sow, several rows of Barley, at 21 inches apart, one row was omitted, which left two of the rows 3½ feet apart; now, each of these two rows, seeded with the same quantity of seed, yielded more than double the produce of any other of the rows, had a foot more length of straw, and were standing while the others were much lodged. I would beg leave to suggest to Mr. Smith, to compare the produce of his centre rows with his outside ones, and to try the effect, if not too far advanced to produce any, of removing the centre row now, and of omitting it in a part of his next crop.

I have now, in the very ill-conditioned land I have recently taken, near an acre and a half of Wheat, sown at intervals of 4 feet, which my neighbours calculate will yield from 24 to 28 bushels to the acre: I have put it down myself at 20, but whatever it may be I am quite sure, from its present gappy appearance, of a yield next year of more than double, and which I expect, as the land improves, to raise much higher. These 4 feet intervals allow me full space for a row of Nonpareil Cabbage, at 1 foot apart, which are now hearting; on their removal I shall sow in their place Rivers' Stubble Swede. This tillage may, perhaps, meet the view of Mr. Griffin, for I use manure.

The Cabbage is late in hearting, as well as small, and late in growth; but this does not arise from any malinfluence of the Wheat, although it is in some spots over 3 feet high, and with the leaves stretched, upwards of 4 feet. The soil is cold, and retentive of water, and reduced by previous severe tillage and starvation, to what the Irish very expressively term an anatomy (skeleton), and from a necessarily late and badly prepared seed bed, the plants were very small when put out the end of last October; besides which, from the mild and wet winter, and by the previous shelter afforded by weeds, the slugs have attacked them in myriads. As a remunerative crop, I cannot, therefore, this year boast of my Cabbage. There is enough, however, to satisfy me that there is every probability of the interlining plan becoming a profitable one, when the land shall be brought into a fit state for it. There is enough to lead me to expect in future years crops of grain equal, or very nearly so, in rows at four feet intervals, to broadcast crops, while they admit of the interlining of green crops in the spaces between the rows. *J. M. Goodiff, Granard, June* 13.

## THE BREEDING AND REARING OF TURKEYS.

The first point is the choice of the stock. We have found the black (or Norfolk breed I believe) to be the best; they are more hardy, and make the heaviest birds when fat, though they do not look, when alive, so large as the Cambridge; this is owing to the feathers of the black ones lying more closely to the body. I admit that some of the black and white, and more particularly those with bronze spots, are more beautiful; those that are all bronze are really very handsome, but as the object of the farmer is to rear the most profitable sort, I believe that none will be found more so than the black, at any rate it is so here. There should not be more than six hens to one cock, and neither kept after four years old—three is better, at any rate for the male. Each lot should be kept separate if possible; if only one farm-yard, they should be kept in separate houses, and as much as possible from mixing together, as your conveniences will allow. The male birds fight much.

If you are beginning to breed, you will buy your stock before Christmas, or earlier; they do not begin to lay quite so early the first year as after, but this depends in some measure whether they are early birds or late ones; never buy late ones if you can avoid it, as they are never so strong as the early ones. As soon as the hens begin to lay, see that they live pretty well, as they can pick up but little besides what is given them, and when you have got, say, eight eggs, if you have a hen (a common fowl) that is a good sitter, put them under her, for it is of much importance to get them as early as possible, for they are invariably the finest birds; that is if the hen turkey shows no disposition to sit soon. They sometimes keep on laying every other or third day for a long time; as soon as the hen turkey shows a disposition to sit, remove the eggs from the hens, if more than one are set with turkeys' eggs. A hen turkey will cover 16 well; if you have not that number, or they were put under the hens on different days, you may add to eight turkeys' eggs, 12 or 14 common fowls' eggs, provided the turkeys' eggs have not been sit upon more than a week; if not a week, wait till that time, as the chickens and turkeys should both be hatched at the same day, or at any rate within 36 hours of each other.

It is always desirable to let the hen turkey finish the hatching process, if only for one week; she is more steady and quiet in her ways; at the same time the heat, from her greater size, is more regular; during the hatching, the eggs require the same attention that I mentioned for fowls, and the young turkeys assisting in the same way, if they do not find their way out of the shell at the proper time. The young, when hatched, require to be crammed generally for some days with pollard, mixed thick, with a sprinkling of hard boiled egg, chopped fine, and Chives or scallion Onions (the green stalk), cut into small pieces, and mixed altogether. This is excellent food for them, and if fed with it till they pick it up themselves they will grow fast. The egg may be omitted after five or six days. The young turkeys require much attention in feeding till they will pick up the food well by themselves; if you throw it in lumps on the ground they will not eat it, but if you offer it to them in your hand, holding it at the ends of your fingers, you will find that they will eat it with avidity. They require much patience and attention, and for this reason it is useless for lady farmers to bring up poultry. They require most atttention when the weather is wet and cold, therefore have a man or boy who is fond of them. Keep enough to fully employ him always amongst them; they should be put on a pasture every fine day, and the mother confined in a coop, to prevent her from leading them too far away; they find many insects and worms, besides they soon begin to eat Grass. Insects seem to be the natural food of all the feathered tribe in their young state.

As soon as they are two months old, if fine weather, they may be put into a Clover field that you may be feeding off with sheep; this is a good place for them, and you may let the hen loose, taking care to have a rough shed made of a few hurdles, and covered with a little straw. Let your man take every morning all the food they will require during the day, and always feed them in the above-mentioned shed, so that they may be used to run into it whenever there is any appearance of a shower. Nothing is so injurious to young turkeys as a heavy rain. I have known a score killed by one heavy shower; it is best to have a sort of box made on wheels like a wheelbarrow, to carry the food required during the day; it should have a wicker basket to go on the top, about a foot high, similar to those we used to send fowls, &c., to market, and called "flats." This is to carry any of the young turkeys that may be unable to walk. If the field you have them in in the day is any distance from home, they will soon learn to run home at the usual time, if you give them the evening meal in the yard, before going to rest. We generally put the greatest number into a large barn to roost, fixing up temporary perches for them, and always making a rough sort of a ladder for them more easily to reach their perch. Turkeys should never sit more than 4 or 5 feet from the ground at any time; you should take great pains to get them to sit up on their perches, as they always seem to go on so much better when they roost above; no doubt from the better air they breathe when off the ground. They ought to sit up when two months old; when about this age they generally have what is called their red heads This is rather a critical period with them; they require much attention; it is best to separate those that are very bad, from those that are slightly affected; they will soon get over it if the weather is fine and warm. After turkeys have got their red heads they require little besides plenty of food and clean water; they may continue on the Clover field till after harvest; you should change the field as often as convenient—they do better on fresh ground.

As soon as any of the corn fields are cleared, you will, of course, turn them into the stubble. Wheat fields are almost useless, unless it shells very much; you should have them exmained every night, to see if their crops are full; if not so, you should have them well fed, with a mixture of half Barley-meal, and half steamed Turnips or Potatoes or Mangold Wurzel or Carrots; they prefer the fresh root and Swede Turnips, but they will eat any one of them well. I believe that this mixture is better than all meal, particularly when they have a chance of picking up all the corn they require. When you put them into either a Barley or Oat stubble, they will require hardly any feeding; the latter they are very fond of, and do best with.

I will here repeat a lesson I received some years ago, and have practised it ever since. Looking over the estate of a gentleman who is a great game preserver I found a lot of pheasants in a field of Peas that were very much bug eaten (covered with aphides), I asked the gamekeeper why they were put in; his answer was, "If pheasants are going on bad, and you have the opportunity of putting them on either a Pea or Bean field that has the bug bad, they will invariably get on better than by any doctoring you can give them." I then thought, if so good for pheasants, it must be just as beneficial for any of the feathered tribe, and I have found it so, both for young turkeys and chickens. You will of course not put them on in very wet weather, when it would both hurt them and trample your Peas down as well; they do no harm when the Peas are dry, but much good; they will do well on the stubble till a month or six weeks after harvest, or longer if the autumn is mild; but you should see that their crops are full when they come home at night. It is best to sell most of the hens during November or in the early part of December; they generally do best then. They require to be put up to fat for a month; three weeks will do if they have been kept well.

They should be in a roomy place, and let out for an hour or two during the day, not more; it is a good plan to give them a few small Beans when out, strewed on the ground. They should have plenty of mixed food when in the house, any kind of meal, but I think Barley the best; and the last week it should be nearly all meal. See that they have plenty of clean water at all times, as they drink much when shut up. The best thing to feed them in is long narrow troughs, made so that they cannot get into them; they must be covered over, or they will dung into them. Their perches should not be more than 3 feet from the ground when fatting, as they are very liable to bruise themselves in alighting; this spoils the look, as they are a long time before the slightest bruise leaves them. The turkeys should all be hatched before June; those hatched after are never worth bringing up, they are invariably affected with the cramp during the cold weather; and all the April birds are generally the most healthy, but it depends much upon the spring; if cold, the turkeys do not lay so soon. This is the case with all kinds of poultry, but more particularly turkeys.

Many persons in this county never hatch any turkeys themselves, but buy them of the labourers' wives, nearly all of whom keep one or two hen turkeys (the male is generally a joint-stock concern); this is often of much assistance to them, as they almost always have good broods; this is owing no doubt to the additional warmth of their cottages, as they set the turkey in a cupboard or closet near the fire. This adds little to the cleanliness of the cottage; but if fortunate in a good brood, it is of great assistance to them; the price is about 1s., depending upon whether they are early or not. They sell them when a day or two old.

I will say nothing about ducks or geese, as I do not think either pay so well as fowls and turkeys. Geese may do well enough where you have plenty of common land to turn them upon.

I will now say a few words upon what I consider a most important subject, connected with the rearing of poultry. It is perfectly astonishing what a quantity of most excellent manure you accumulate in the year. The best plan I have found is to burn a quantity of earth, generally the top spit round the sides of the fields; this answers two purposes, it keeps the weeds down, and is better than clay dug lower down; this burns well in fine weather, after being dug a day or two, it is then carted to some convenient place adjacent to the farm-yard, it is wheeled into the different places where the poultry is kept; a heap should be kept in one corner of the place, and a few spadefuls sprinkled over the floor morning and night. This is necessary to intimately mix it, as it is apt to get into large lumps if not done so. This will be found to keep the house perfectly sweet and clean. No straw should ever be in any poultry house, except in the nests. This is removed, when it gets a foot or more thick, into a shed, where it is turned over once or twice, when it is in a fit state to drill or sow by hand on any crop that may require it; it has increased so much on this farm, from the greater quantity of poultry kept, that it has led to more roots of all descriptions being grown every year, and necessarily to more stock being kept. This manure is particularly adapted for heavy land. It may not do so well for light land, but in that case I would dig marl or clay (if I could get it), dry and pulverise it, and use it instead of burnt earth.

I have tried this poultry manure by the side of the best guano, and the Turnips came up first, and for some time kept before those manured with guano,

but I think there was little difference at the time they were pulled. I do not mean by this to say anything against guano, for I have found in other experiments that the best results were from guano and poultry manure, being mixed in the proportion of two or three cwts. of the former to a ton of the latter. The cocks sell best about Christmas, but they do not do so well after. There is a very great deal of difference in the price from one market-day to another; sometimes 3*s.* or 4*s.* in the cocks—it is quite a lottery. I consider 15*s.* a pair a fair price, and I have found this about the average during some years.

I have no doubt that the remarks I have made respecting the rearing of poultry will bring forward many criticisms, and some ridicule; but if they induce only one farmer to give it a fair trial and the necessary attention, it will give me all the satisfaction I require. *E. X., near Braintree, May 5.*

## ON THE CULTURE OF FIELD BEET.

The land intended to be planted with Mangold Wurzel must be ploughed in the early autumn, and immediately on the grain being carried from the field. The first ploughing must be deeply done, not less than 8 inches, which may require three horses in the plough to move that depth. The autumn will permit a fallowing of the land, to be done in the common way of ploughing, harrowing, and rolling; and if the process cannot be fully accomplished, the land may be one-half or two-thirds prepared, and in that condition remain over winter, to wait the spring operations. It may be advantageous to gather the land into ridges by the last autumn ploughing, which will keep it drier in winter than when lying in the flat and newly ploughed state, in which it becomes "bleached;" and most certainly receives damage. The first furrow in the spring may reverse the ridges, and by filling the open meetings of the ploughings, a level surface will be again obtained. This one ploughing, accompanied by a severe harrowing in the last week in April, may be sufficient to fit the land to be dunged and planted, if the autumn fallowing was tolerably performed; or a cross ploughing may follow, and will prepare the land very fully, and also favour the drilling, which is best done after a cross ploughing; as the drill plough, in following a longitudinal ploughing, always slips into the furrows that have preceded it. If the land be only ploughed in winter, it must be fallowed in the end of March, and during April, by the common processes of ploughing, harrowing, and rolling, and repeated till the proper clean tilth be produced. The cool atmosphere of these spring months does not admit well the cleaning of grounds, and it forms an objection to Beet-root, that it requires an early, and often an imperfect preparation of the land. This circumstance may be very much palliated by the autumn fallowing of the ground, which much relieves the spring labour, imparts a consistency to the soil, and keeps much moisture to be husbanded for use throughout the summer.

Beet-root is planted during the first two weeks of the month of May, and the quantity of seed used on an acre is 4 to 7 lbs. The land being made ready, either by spring or autumnal fallowing, is made by the common plough into drills of 26 inches of interval, in which the farm yard dung is deposited and spread. The dung must be in the state of an active fermentation, which has been commenced for 8 or 10 days, and provoked by the turning over of the trampled heap in the corner of the field, which has been placed there during winter. It is essential that the dung be covered by reversing the drills immediately on being spread, in order that the gaseous effluvia which arise from the incipient fermentation may penetrate the newly stirred soil, reach the seed, and stimulate the vegetation. For this purpose, the drill ploughs must move close behind the dung carts, and cover the manure as fast as it is spread. The seed is steeped for 48 hours in urinary water, suds, or lyes, and dried with quick-lime, to suit the purpose of being sown. It is deposited on the tops of the drills in holes made by hand dibble, about 15 inches distant from each other. The two drill machines, as Hornsby's drop drill, are provided with cylinder cups, and coulters, which sow the seeds in a continuous stream, and with much accuracy. The quantity of lime that adheres to the moistened seeds has been proved to give a superiority to the crop, arising from the speedy decomposition caused by the lime of the albumen which the seed contains, and which is so very beneficially converted into food for the young germination. And when a plant acquires a superiority at this early stage of growth, it never loses it during the whole season. In either way of planting the seeds, the drills must be rolled without delay, which will level the cloddy surface, press the seed to the dung, and secure the benefits of the fermenting dung, and the exhalations from the newly stirred ground. The drill machine may be the better way of sowing the seed, as dibbling always makes a firmness on the sides of the hole made by the inserted prong, and it may be hurtful to the very young germination.

When weeds are grown, and the plants are risen wo inches high, the intervals of the drills must be ploughed and scuffled deeply and widely, to cut the weeds and move the ground. In the first operation, the cutting down of the sides of the drills is best done by a skeleton or small plough drawn by one horse, which, by going and returning in the same interval, takes a furrow from the drill on each side, and forms a small ridgelet in the centre of the interval. In every case of commencing the working of green crop lands, especially of the stiff-bottomed kinds, the narrow pointed share of the common plough pierces and moves the soil in a very superior manner beyond the knives, tines, or duck-footed shares of any scuffler yet known. But after the land has been "once" ploughed in the intervals, the two-knived scuffler will do well for the remaining work of the summer.

The hand-hoeing follows the scuffling of the intervals of the drills, which thins the plants singly to the distance of about 15 inches, always leaving the most healthy and vigorous growth of stem. At the same time, the hoe moves and breaks the ground between the plants, and cuts every weed. Unlike the Turnip, the Beet-root plant does not thrive by being laid prostrate, and attached to the ground by a small thread; it must stand upright, and be covered with earth to the neck of the young set.

After this process of scuffling and thinning, the Beet-root ground remains till the weeds are again risen, when the scuffler must be constantly employed, and repeated till the weeds are completely destroyed. In dry weather the benefit is very great of moving the ground in the intervals of the drills, as the stirring raises exhalations to be imbibed by the leaves of the plants, which, being broad and succulent, derive a great part of their food from the atmosphere. The scuffling must never be discontinued, except in very wet weather, and the second hand-hoeing will be done during the end of summer, as the growth of the weeds may require. It removes all weeds, singles the plants where two have been left together, moves the soil around the sets, and places them in the proper direction. The scuffling may be afterwards continued, if necessary.

In autumn, the outer leaves of the Beet-root plant begin to droop, and to show symptoms of decay. Some persons recommend that these leaves be gathered, by being stripped from the plant, and given to young cattle and sheep; while others assert, that the future growth of the plant is hurt by the leaves being pulled. But it may be very reasonably supposed, that leaves which are in decay, and which are nearly parted from the stem, have ceased to perform any office, and that the removal of them cannot be hurtful; and this observation has been confirmed by practice. In the end of the month of October, the crop is pulled, the earth and fibres cut away, and the Beet carried to the homestead; where the roots are built into a pile about 6 feet in width at the bottom, and about 4 feet in height, tapering into a narrow ridge at top, with the thick end of the roots outwards on the sides of the pile. The heap of roots is covered with a coat of straw in thatch, which admits the air, to prevent the perspiration of the roots; and severe frosts may be met with a covering, timely applied, of fresh stable dung in the rough strawy state. In this way, Beet-root can be kept in a very fresh condition till May and June of the year after they are grown. The tops and leaves are given to young cattle and sheep, and spread thinly over dry stubble, or lea pasture, where they are eaten greedily by cattle, but with much danger of hovin in moist weather, from the gaseous fluids which they contain. The quantity is to be restricted on that account. The leaves are not much relished by sheep; but to swine they are most particularly grateful; and in the open yard of store pigs, the herbage affords much juicy food, and an ample remnant for manure.

Beet-roots, either in a raw or steamed state, are very beneficially given to milch cows throughout the winter, and are found to increase the quantity of milk very much, but the milk is thought to be thin, and more watery in quality. In a raw state, there is no better food than Beet-root for pigs and young cattle. In the feeding of cattle, opinions differ about the value of Beet-root and Swedish Turnips; the most general opinion prefers the latter; and the experiments made by feeding cattle of equal age and the same breed, on the two different roots, have proved altogether inconclusive—because no two animals of any age or breed can be found to increase in equal weight, in the same time, from a given quantity of the same food. Beet-root is equally grateful to sheep; and in the spring months of the lambing season, it is most assuredly superior to the Swedish Turnip, when milking and not fattening is required. And the preserving of the roots in a fresh state till March and April is a matter of no difficulty.

Beet-root yields a greater weight per acre, both in roots and leaves, than any other root crop yet known, and must be placed near the head of the cultivated plants. But the general utility is inferior to that of the Turnip. The Beet requires a more particular kind of soil, which is of comparatively rare occurrence. The climate must be moist; and the seed is more troublesome in the management than that of the Turnip, and the crop must be wholly protected from the winter's cold. Probably from a lengthened cultivation and a gradually extended exposure, the plant may become acclimated, and withstand the severity of winter, as well as Turnips. This result might be attempted, by planting the roots of the strongest and most vigorous appearance, and by preserving the seed for future propagation, of those hearts that escaped destruction during winter, and bore seed the next summer. By persevering in this way for a period of years, it is very probable that the persistent quality might be conferred. The winter Vetch has been got from the summer variety in the above—chance directs the accidental productions of nature, and observation must adopt the exhibitions. When the land is autumn-fallowed for a crop of Beet it might be tried if the seed will withstand the severity of winter, by dunging the land and sowing the seed in the late autumn, as before directed. It is now proved that Potatoes, planted in autumn, live through the winter, and produce a heavier crop than by the spring-planting; and probably Beet-root might show the same results. The seed being in the ground would produce an earlier crop than the spring sowing.

Einhof states that 18 tons of Mangold Wurzel are equal to 15 tons of Ruta-baga, or 7 tons of Potatoes, or 3¾ tons of good meadow hay, each quantity containing the same nourishment; but then the above quantity of roots can be grown on less than an acre, whereas it will take about three acres of meadow land to produce the equivalent quantity of hay.

It was very early observed that Beet-root was a plant of a very saccharine nature, and that crystallisable sugar was easily to be obtained from the juice of the roots. The manufacture of Beet-root sugar sprung up in France under the superintendence of Chaptal, the eminent chemist, in consequence of the decrees that were issued to exclude the colonial produce of Britain. When the sugar is refined, it cannot be distinguished from the cane sugar, either by the taste or appearance. Five tons of clean roots produce about 47 cwt. of coarse sugar, which give about 160 lbs. of double refined sugar, and 60 lbs. of inferior lump sugar. The rest is molasses, from which a good spirit is distilled. By distilling the juice of Beet-root, after it has undergone the vinous fermentation, a very good spirit is obtained, and also a kind of beer, which is said to be pleasant and wholesome in warm weather.

Professor Lampadino obtained from 110 lbs. of roots 4 lbs. of well-grained white powder sugar, and the residuum afforded 7 pints of spirit. Achard says that about 1 ton of roots produced about 100 lbs. of raw sugar, which gave 55 lbs. of refined sugar, and 25 lbs. of treacle. This result is not very different from that of Chaptal in France.

Another variety of Beet has been lately introduced called the "Turnip-rooted or Orange Beet," from the colour of the root. There has not yet appeared to be any difference in the quantity or quality of that variety of the plant that is deserving of any special notice. *J. D.*

## Home Correspondence.

*Village Excursions.*—The inhabitants of Whitfield and Falfield villages have to thank Prof. Henslow, and his suggestion on this subject, for one of the pleasantest days that ever was spent. On Tuesday last about 80, including some of the farmers of the neighbourhood and their friends, with many of their labourers and their friends, and about 30 of the girls and young men of our village singing class, crossed the Severn, visited Chepstow Castle, Tintern Abbey, and the banks of the Wye, where we found the old echoes answering more merrily and musically than perhaps ever before they had been known to do. Some of us, who could speak of other parts of the island, agreed that no where is there a more delightful spot for the visit of a holiday party; and it was voted unanimously, that if there never was such a place, certainly there never was such a happy party of visitors, nor such a splendid day as they had for their enjoyment. What with gigs and carts and waggons, we reached home at 10 o'clock of a magnificent moonlight night—sang our last songs in the midst of the village, surrounded by those who had not been able to join us, and, after three hearty cheers, bade one another good night. I send you this short notice of our experience, because I think it may induce farmers in other localities to unite with their neighbours in the enjoyment of a holiday after a similar fashion. *M. S., Gloucestershire.*

*The Sugar Beet and Irish Tobacco.*—You are quite right in believing that "it is not due to misgovernment, that the sun in its natural course does not rise much over 60° above our horizon," but quite wrong if you suppose that the sun of Irish prosperity is not lowered by the same cause. Such, at least, is the "idolatry" of 99 out of every hundred men in Ireland capable of judging between right and wrong; and such I believe is the opinion of many Englishmen, too, on both sides of the Channel that divides us. And much as we "idolise" Dr. Lindley, as a great philosopher, we never for a moment supposed his power to be Joshua-like, in the case of the sun over our natural horizon; but we believed, and still believe, he has damaged our cause (unintentionally) in Irish Tobacco growing, which, to be again successful as it has been before, requires no higher sun than that which Nature gave, and still gives us, but of whose benefits man has deprived us by bad, taxing laws. Facts are stubborn things, and here is one out of hundreds which I could give of my own knowledge. We have made from 50*l.* to 60*l.* per statute acre, or from 80*l.* to 120*l.* per plantation acre, of Tobacco grown in this county; nor did we ever, to my knowledge at least, even require Dr. Lindley's aid to enable us to do so. All we required of him was, and is, to throw no obstacle in our way if we attempt to do so again by legitimate means, in the repeal of what we know to be a bad law. And all we require of you is, to suspend your opinion on the subject of sugar manufacturing from Irish-grown Beet, till by our own industry we can enable you to form a more correct idea of what we can do in that respect. If you cannot conscientiously aid our efforts, you can, in my humble opinion at least, without any qualm of conscience, allow us to try our hands at our own risks, without, as I before said, "throwing cold water" on our infantile struggles. I have already told you that Irish-grown sugar Beet delivered to the sugar manufacturer at the clear price to the farmer of 10*s.* a ton, would pay him better than Wheat delivered to the miller at 25*s.* a barrel. I am now better prepared with proofs practical, and mind I am speaking of some of the best ordinary

Wheat growing lands in Ireland at least, and have said nothing of the millions of acres now waste in Ireland that never could be made to grow a good or fair sample of even Irish Wheat as it is, but quite capable of growing sugar Beet, and other crops of a suitable kind in succession, of better quality than could be grown on the best Wheat land in the kingdom. You will please observe I am speaking now from practical experience, not as a mere theorising philosopher. I am "trusting to industry and perseverance in the ordinary means" of our country, "for which her climate fits her—not to that fitful energy which seeks a sudden fortune in doubtful matters," but in "the right policy for Ireland if," not as you say, "she could be *led* into it," but as I say, if she would be *let* into it. You talk very calmly, as you are wont to do, of "patient continuance in well-doing," as if you believed what no other man, if he knows Ireland, can believe, that as things are going on, that any man outside the Government officials can be said to be "well-doing." Will you please turn to our census reports, to our even cushioned poor-house reports, to our emigration reports, to our commercial reports, and have a sharp look-out for the exaggerated agricultural statistical reports, now being made out by our constabulary, look to our poor-rates, look to the "ration aid," now levied off the industrious, for the support of the idle and profligate in high and low quarters, and then ask yourself, are we "well-doing," or likely to do well? Come over amongst us, and judge of us as we are; and trust not to the misrepresentations of interested parties, who would picture us as we are not, and then judge for yourself impartially of what we ought, can, and will be, if even-handed justice be but doled out to us; and such laws given by our governors as will compel us to do justice to one another; for mind, in my enthusiasm, as an Irishman, I am very far from thinking we are more infallible than the other sons of Adam all over the world. All we want is fair play; and if I am not much mistaken in you, you at least will give us that in as far as you are personally concerned. Do us justice, and you will find us good and faithful allies; but if you deny it us, you will, in the end, have ample cause to regret it. *Edward Carroll, Aug.* 27. [Does Mr. Carroll mean to say that it will pay to grow Irish Tobacco for 3*d.* or even 6*d.* a lb., which is its outside value, if *not protected?* Or does he mean that it ought to be protected, in order that the Irish may inundate our markets with a bad article at 10 times its real value?]

*Poultry.*—On reading the article by "E. F. W.," on Poultry, I was much struck with the similarity to my own birds; and perhaps it may bring to light some facts respecting the breed, if persons of experience will state what they know on the subject. I bought a white Cochin China cock and a grey cock, and let them run with some buff-coloured hens and grey hens; and I find all the chickens from the grey and white cocks, with buff hens, are of the different colours quite pure; for instance, the buff chickens have not a white feather; neither have the grey birds a red feather, which I think, with "E. F. W.," is very unusual, as out of 50 chickens some would have shown mixed colours. *W. Turner.*

*Draining.*—I have not forgotten that I owe each of two of your highly respectable correspondents a letter, namely, Mr. Cuthill on Game, and "Inquirer" on Draining, and I have decided to give the latter the precedence; and in order that your readers who take an interest in this discussion may understand the subject, I must beg them carefully to call to mind what has already been said about it, both by "Inquirer" and myself. They will remember that I myself commenced the discussion by an article condemnatory of open furrows, which I showed could only be tolerated as the less of two great evils, namely, where land, from some cause or other, could not be drained, or where it had already been drained imperfectly, or, I might add, injuriously. I also stated that shallow draining was of more injury than benefit to land, and I now state that by shallow drains I mean all drains which are made not to exceed 3 feet in depth; or all such drains as gained the late Mr. Smith, of Deanston, the high reputation he held among farmers, both landowners and tenants, as the king of drainers. Three preliminaries, or I might write four, are necessary preparatives for men to understand why they should drain land, and how to drain it; namely, the nature of caloric, or what chemists call the matter of heat, and the sciences of hydraulics, hydrostatics, and geology. If men in general understood these four branches of the sciences, we should hear no more advocacy of shallow draining, nor should we ever see in the fields those insults to our understandings—open furrows; and as for that twaddle about water not being able to get down into deep drains through stiff clays, which we hear so much of, why that would be annihilated for ever. Some years since Mr. Parkes published in a pamphlet, and which was the only article I ever saw on draining worth reading, some valuable experiments he made with the thermometer by placing it at different depths in drained and undrained ground, to find the different temperatures of it, and to prove the advantages of deep, and the uselessness of shallow draining. The experiments showed Mr. Parkes to have been a philosopher; and I had no sooner read them, than I said to myself, "Here is a wise man, many years in advance of the age in which he lives; his pamphlet imparts sound wisdom, but few or none but the wise will regard it." The wise and great, however, did regard it, for we soon afterwards heard that Mr. Parkes was draining the estates of the Duke of Wellington, and of Sir Robert Peel, two of the most illustrious men that the world ever produced at one time. But, as well as Mr Parkes, I also have for years made many experiments to test the influence which the internal temperature of the earth has on vegetable nature; and I beg to state, that the results have been to me so conclusive, that they have formed the ground-work of many of those articles with which I am aware I have pestered not a few of the readers of the *Agricultural Gazette.* From time to time I placed on boards and on deep and thoroughly drained land, and on land half drained, and on land not drained at all, pots containing Pelargoniums. All the plants were of the same age, and nearly of the same size, and all the pots of the same make and size. The plants placed in the pots on the boards flourished very fast; those on the well-drained land were the next best; those on the ground half drained were the next, and those on the undrained land remained nearly stationary, and some of them actually died. At another time I placed pots of flowers on slates in juxta-position with others on boards, and again those on the boards flourished perceptibly the most. The scientific reader will perceive that Mr. Parkes' experiments with the thermometer confirmed the truths of those of myself; and he will excuse me if I observe to him, that if he be a cultivator of the soil, he is merely groping in the dark if he be not in some measure guided by the truths which these experiments have developed. Cold and wet ground rapidly conducts the caloric from the earth's surface to the colder regions below the surface, and the more stagnant water there is in the ground the more rapidly will the caloric leave the surface to keep up the equilibrium below it. Now, as all vegetation is on the earth's surface, and as the greater the amount of caloric there, the more rapid and luxuriant will be the growth of all kinds of vegetables; it is quite clear that the object of the farmer in draining his land ought to be, and it would be, if he knew what he was doing, to get rid of as much of the cold stagnant water below the earth's surface as he possibly can. But can he do this by shallow draining? No, he cannot; shallow drains can take off the water only which falls on the land from the clouds of heaven, which every wise man would do his utmost to retain. In order to raise the temperature of the ground, and get rid of the cold and noxious water out of it, you must drain deep and well, or your money will be thrown away, and your labour will be in vain; but do this, and you will soon learn to rejoice that you wrote anonymously when you told the world that the top or rain water alone hurt you. I have more to write, but must not occupy too much just now, but trouble you again. I must, however, ask permission to refer again, and without offence, I hope, to your readers, to what in modern phraseology, is called box feeding, as the above reasoning I have made use of is equally as applicable to animal as it is to vegetable physiology. It will be remembered that I have condemned, and in language as strong as I could use, the monstrous novelty in cattle treatment called box-feeding. I still consider it to be a satire upon the age in which we live. But in applying what I have said above to animal physiology, I observe, that in feeding any animal—the ox, or sheep, or pig, for example—the animal should be kept as nearly as possible at a certain temperature; he must be neither too hot nor too cold. If he be too hot he is prevented from fattening by evaporation; if he be too cold, he requires much more food than at a proper temperature, because a part of it, according to the degree of his coldness, is required to keep up the heat of the body. *Geo. Wilkins.*

*Windsor Cattle Show.*—Though our remarks upon this show of stock are offered late, yet we cannot refrain from observing that there were many lots which might have been kept at home by their owners, and only tended to destroy the general character of the mass of superior stock exhibited. These objectionable animals might have remained in their stalls or yards; upon the same grounds many aldermen of the city of London, according to the *Times*, might have refrained from attending the *fêtes* in Paris. There were also numerous pigs, which came from afar, which had nothing to recommend observation, save their ugliness and obesity. We must say that we think no pig, boar, or sow, ought to be candidates for a premium after the age of 18 months; the Society's aim and object being to extend and promote a profitable race of animals—that they should "increase and multiply," not return home to be slaughtered and, in the shape of flitches, be seen at Christmas adorning a bacon rack. Hampshire connoisseurs do not relish bacon of hogs two years old—but then this tough bacon is prize bacon—the silver medal may dangle from the flitch and render it more palateable and sweet. We do not object to see any boar or sow of superior shape being exhibited at all after the age of two years, but they might be shown as "extra stock;" yet they should be handsome, and thus add to the character of the show. The Society cannot divine what creatures are coming. *X. Y. Z., Hants.*

*Relief to Tenant Farmers.*—It is with a considerable degree of satisfaction I read, in a paragraph in your newspaper, the proceedings of an association, formed in the neighbourhood of Ipswich, to obtain relief for the tenant farmer, under the depressed state of agriculture; not by protection, but by a removal of the abuses which exist nearer home. I congratulate my brother farmers that they have at last taken a step in the right road. The five subjects which the association proposes to consider are all highly important, but that of tenant right is as much, if not more so, in my opinion, than any of the others. The repeal of the malt tax would be beneficial, principally by enabling the farmer to use malt as food for stock—a better article than which he cannot obtain for fattening cattle, except it be linseed-meal, given according to Mr. Warnes' system. In any other point of view I cannot see that it is a tax which falls more heavily on the farmer than on any one else; and indeed, in some cases, not so much so as on many others. The alteration of the present tithe system, although very important, is not so much a subject for the consideration of the tenant as the landlord—it being, in fact, a question between the landlord and the tithe owner; and were any steps taken to alter the assessment so as to reduce the tithe, the tenant would, in all probability, find shortly afterwards his rent proportionately increased. The subject of tenant right, as I have stated above, is of all things most important; and I firmly believe that three parts, if not more, of the tenant farmers' difficulties might be traced to the want of it; for what can be plainer than this—that if you prevent a man from making improvements in his business, you materially interfere with his prospering in it. And do not landowners hinder their tenants from making improvements, by refusing to grant leases, and by refusing to make a fair remuneration for permanent improvements, to which a tenant is justly entitled? I say most assuredly they do; and I hope the time has arrived when landlords will see the need of this, and of the importance of giving every facility for a better system of farming, by introducing liberal covenants, instead of the fettering conditions which now disgrace their leases and force men to farm badly. *T. R.*

*Potatoes in Ireland.*—Since my last, of the 4th inst., the disease in the haulm has not only made its appearance here, but has spread with much rapidity, so much so, as to give the fields a blackened appearance, and to be smelt as they are passed by; but the tubers are not as yet much touched, possibly not more than one or two in a thousand. I think it probable that before the middle of next month there will not be a green stem left. Yet some kinds of Potatoes, and some places, are worse than others. Under our present expectations, and if the tubers do not become more affected by the disease than has been usual since the first two years of its appearance, we may reckon on two-fifths of a crop. The alarm, however, has been so strongly excited, that a very great impetus has already been given to emigration, as is evidenced in the rise in the amount of the passage money to America, which, I believe has risen within the last fortnight from 2*l.* 5*s.* to 2*l.* 17*s.* 6*d.* The whole hope of the country rested, and with much justice, on the soundness of the Potato crop; it is the only anchor that can bring up our labouring vessel and its cable parted, and all will be wreck and ruin. No labouring man, no small farmer, no woman of the humbler classes, that can obtain the price of passage to America will remain, and England will long rue the day (while future Governments curse the negligence of the present), that so fine, so intelligent, a labouring people has been driven to expatriate. [National prosperity is just the aggregate of the prosperity of individuals. We do not believe that a society with a more patriotic object could be formed than one to *promote* emigration.] Formerly the labourer and the cottier would, at harvest time, make their way over to England, or to the eastern side of the country, to earn high wages, to pay the conacre Potato rent, or that of the little farm; now it is to make out the means of quitting, as they call it, "this poor unfortunate country." The great object is to send some one of the family that is likely to acquire in America the means of sending for other members of it, and the expedient is rarely unsuccessful. The father leaves his wife and family, the mother her children, the maiden her lover, in the assured expectation of acquiring, by their labour, in that go-a-head country, within a few months, that which will enable them to rejoin them; and the most good-for-nothing here is sure to do well there. [Then why lament that they are going where they will be better off!] It is not more than two years ago that the broken-down, indolent, lame, and weakly occupant of part of the land I hold, left his wife and nine little boys for this El Dorado of the west; he has twice, in that time, remitted small sums to his wife, and has now sent over 11*l.* to defray the charge of sending out his two eldest sons. It is expected by their joint labours they will be able to send for the mother and the other children at an early period next summer. And what is the remark of the poor man who knows this matter? "If Paddy is able to this, who need fear going to America?" Twelve months ago, a man who had gone to America previously, and left his two children with his brother, one of which afterwards died in the poor-house, sent money to his brother to pay for the passage, &c., of his remaining child, and his brother's wife; the woman was not more than six months away when she also remitted sufficient money to take over her husband and her child. These persons were in my employment; and thus of six men and youths I employed, three in twelve months have emigrated. But to return to the Potato; much as the country suffers from the loss of it, the culture of it is not to be abandoned, on account of its liability to disease. It is a question which, I think, may be solved in the affirmative, that the market grower of it suffer no loss by the disease. It is probable that last year's crop was, from the early appearance of the disease, half lost, yet the price of the remainder was highly remunerative; it ranged through the winter in Granard market from 6*d.* to 8*d.* a stone. It was calculated, before the disease came on, that, from the quantity planted, Potatoes would be got for 2*d.* a stone. The case is, however, very different to the poorer farmer, who grows them for his own consumption alone; as, in their failure, he is compelled to consume the grain on which he depended for paying his rent. Their high price also con-

fines their consumption to the more opulent classes, while the lower classes severely feel their loss from the same cause that the smaller farmer does—being compelled to feed on grain. Now as this grain is for the most part Maize, the immense sums drained from the country for the supply of food, and without any other return than that which the emigrant makes, and which for the most part goes into the hand of the Liverpool shipowner, must, added to the use of a higher priced diet, and the daily breaking down of every property and of every interest, soon bring ruin to the doors of every one. Have we turned the corner? I have just learned that in the neighbouring parts of Cavan, the Potato fields, with some very few exceptions, are as withered as at the digging in, and also learn that they are equally as bad in Westmeath. My own and my neighbours' are becoming rapidly diseased in the haulm; daily its progress is seen. *J. M. Goodiff, Granard, August* 19.

*Agricultural Units.*—The enclosed paper seems to illustrate so forcibly the importance of proper cultivation and adequate manuring, that I am induced to offer it to you for insertion in your next Journal. The farms from which the ears of Wheat were taken, are in the same neighbourhood, in Staffordshire, not a mile and a half from each other, forming part of a large district, which was equally affected by blight of the Wheat crop. The ears of Wheat were selected from each field, by the same party going into a part of the crop of average strength and appearance, embracing as large a portion as he could within his arms, and then from that quantity selecting 10 average ears. This was done twice over, with about the same result. The trial, and the result, and its explanation, seems to me to afford a useful lesson to the agriculturist.

| Produce of 50 Ears of Wheat taken from 5 Fields on a farm of good land, but in bad condition:— | | | Produce of 50 Ears of Wheat taken from 5 Fields of inferior land, but in good condition:— | | |
|---|---|---|---|---|---|
| | Berries destroyed by Blight in each Ear. | Perfect Berries in each Ear. | | Berries destroyed by Blight in each Ear. | Perfect Berries in each Ear. |
| Ten Ears taken from Field No. 1. | 3 | 20 | Ten Ears taken from Field No. 1. | 11 | 32 |
| | 3 | 25 | | 8 | 16 |
| | 8 | 4 | | 7 | 26 |
| | 3 | 21 | | 7 | 35 |
| | 7 | 25 | | 8 | 32 |
| | 3 | 25 | | 9 | 19 |
| | 7 | 18 | | 7 | 33 |
| | 7 | 16 | | 5 | 23 |
| | 4 | 26 | | 6 | 19 |
| | 7 | 14 | | 6 | 26 |
| | 52 | 194 | | 74 | 261 |
| Ditto from Field No. 2. | 9 | 11 | Ditto from Field No. 2. | 2 | 32 |
| | 6 | 24 | | 9 | 29 |
| | 10 | 24 | | 2 | 39 |
| | 10 | 33 | | 3 | 33 |
| | 8 | 24 | | 3 | 42 |
| | 7 | 23 | | 11 | 35 |
| | 5 | 14 | | 11 | 36 |
| | 8 | 15 | | 5 | 29 |
| | 4 | 31 | | 3 | 41 |
| | 10 | 14 | | 6 | 20 |
| | 80 | 213 | | 55 | 336 |
| Ditto from Field No. 3. | 9 | 27 | Ditto from Field No. 3. | 3 | 45 |
| | 9 | 23 | | 2 | 19 |
| | 5 | 15 | | 1 | 42 |
| | 8 | 22 | | 1 | 39 |
| | 5 | 12 | | 1 | 43 |
| | 7 | 10 | | ... | 41 |
| | 8 | 24 | | ... | 36 |
| | 10 | 13 | | ... | 35 |
| | 4 | 18 | | 2 | 39 |
| | 7 | 26 | | 3 | 44 |
| | 72 | 190 | | 13 | 383 |
| Ditto from Field No. 4. | 7 | 25 | Ditto from Field No. 4. | 3 | 25 |
| | 6 | 24 | | 3 | 24 |
| | 12 | 18 | | ... | 52 |
| | 9 | 21 | | 2 | 24 |
| | 10 | 19 | | 6 | 30 |
| | 8 | 13 | | 3 | 47 |
| | 9 | 19 | | 10 | 12 |
| | 7 | 20 | | 1 | 30 |
| | 10 | 14 | | 2 | 38 |
| | 7 | 23 | | 5 | 34 |
| | 85 | 196 | | 35 | 316 |
| Ditto from Field No. 5. | 4 | 6 | Ditto from Field No. 5. | 4 | 42 |
| | 7 | 25 | | 8 | 24 |
| | 6 | 17 | | 5 | 27 |
| | 13 | 12 | | 7 | 32 |
| | 6 | 19 | | 7 | 39 |
| | 3 | 19 | | 6 | 19 |
| | 3 | 8 | | 6 | 37 |
| | 4 | 15 | | 7 | 18 |
| | 4 | 22 | | 8 | 35 |
| | 3 | 19 | | 9 | 44 |
| | 53 | 162 | | 67 | 317 |
| Totals Collected. | | | Totals Collected. | | |
| From Field No. 1. | 52 | 194 | From Field No. 1 | 74 | 261 |
| ... No. 2. | 80 | 213 | ... No. 2 | 55 | 336 |
| ... No. 3. | 72 | 190 | ... No. 3 | 13 | 383 |
| ... No. 4. | 85 | 196 | ... No. 4 | 35 | 316 |
| ... No. 5. | 53 | 162 | ... No. 5 | 67 | 317 |
| Total ... ... | 342 | 955 | Total ... ... | 244 | 1613 |

—*H.*

*Irish Peat Charcoal.*—I tried last autumn a dressing of this article, steeped in liquid manure from the farm-yard tank, to winter Beans, and, on an equal portion of land, side by side, a dressing of dung from the yard. The quantity of charcoal applied was at the rate of three tons per acre, costing (without liquid manure, in which it was steeped) 9*l*. The quantity of dung applied (and which was of very moderate quality) was at the rate of 40 one-horse cart-loads per acre, of the value of about 5*l*. Having harvested and threshed the crop, the following are the results, viz.: From the land to which the Irish peat charcoal urate was applied, 40 bushels per acre; from the land dunged, 72 bushels per acre. The land is very light—subsoil, at 20 inches depth, chalk. This experiment shows conclusively that whatever value there may be in Irish peat charcoal, it cannot be compared with ordinary farm-yard manure; the crop was little more than one-half, whilst the cost of the dressing was nearly double. The Beans were sown in rows 30 inches apart. *P. K.*

*Lime.*—In No. 34 of the *Gardeners' Chronicle* appears a lecture on lime by Professor Way, together with a lengthened conversation on the same subject by various other gentlemen then present. I have carefully perused the lecture, and the report of the remarks which it elicited, and I am quite unable to deduce therefrom a direct answer to the following queries. What is the kind of soil more peculiarly benefited by the action of lime? What is the kind of soil where its action is less beneficial, or perhaps negative? What is the kind of soil where its action is injurious? In my neighbourhood there is a great deal of limestone, and the land is mostly clayey, and stiff, on limestone rock. Now the farmers, who are bound to bring on the land manure in the place of hay and straw which they sell, consider that they acquit themselves of this obligation by drawing coal, and getting the stone, and converting the same into lime, with which they dress the stiff land on the limestone. Now it is of consequence to know the action of lime on such land. If you tell them that you doubt its efficacy, they reply that at all events it makes the land work better; meaning that they can get the clods to pieces more easily after a dressing of lime. Permit me also to ask in what manner is lime applied as a dressing to Grass land? The importance of applying science to practice, at a time when Wheat is likely to attain a lowness of price hitherto unknown in England, must be my apology for again intruding upon you. *Enquirer.* [You should read Prof. Johnston's book on the subject. We will give a review of it shortly.]

## Farmers' Clubs.

Haddington.—Mr. William Howden, Stonelaws, the chairman, intimated that the subject of discussion was the *Best method of Harvesting and Preserving Grain.*—Mr. H. Whittingham said:

Having been called upon by the chairman, he would simply give a few remarks to begin the discussion. He had for some years employed bands of men from Aberdeenshire to mow his Oats, which they had done to his satisfaction, at a cost from 9*s.* to 9*s.* 6*d.* per Scotch acre; there was a great saving in food, particularly in wet weather. The general objection against mowing was the number of heads at the bottom of the sheaves, but were the rakings bound up together and threshed separately, this objection would be almost altogether obviated. He and many of his neighbours had tried the scythe with Barley, and found it equally suitable. From some cause or other, during two years, but few Aberdeenshire men had come to the county; but he would particularly recommend the scythe for opening up fields, before the regular band of shearers were taken to it. It would be found much more profitable to send a steady man with a scythe to do this, in preference to half a dozen shearers out of sight of the master. In finishing fields, too, the scythe would be found very advantageous, long or short rigs made very little difference to it; but every one acquainted in the least with the superintendence of shearers knew, that one acre at the close of a field took longer to cut than two or three in the middle of it.—Mr Hope, Fenton Barns, said it was very much to be regretted that some members of the Club did not come prepared to open this, and every other discussion. If they intended to confine it to the conversational mode hitherto adopted, it would be as well at once to take steps to prevent any report of what was said appearing in print. When they looked at the way other clubs discussed subjects, they must be sensible that they suffered grievously by the comparison; and this arose not from any lack of talent, but from carelessness and want of arrangement. Happily, however, the subject at present under consideration embraced so many points, on which there were differences of opinion, that were these points steadily kept in view a large amount of information might be elicited. There was first the degree of ripeness at which grain of various kinds should be cut; for himself he thought this depended much on the season. In warm, sunny weather the straw was ripe before the grain; at all events, it was then necessary to have the straw properly ripened. In some seasons the grain was ripe when the straw was green; it was only then that green cutting merited the praises that were sometimes bestowed on it. In the second place, whether the crop should be cut with the scythe, as recommended by Mr. Hepburn, or the scythe hook or the teethed sickle. He used the scythe hook, and recommended slashing, but if a reaping-machine could be obtained to do the work, it would be the greatest boon that the farmers in this country could obtain. He hoped they were all going to see the Exhibition in London; he would recommend to them to examine minutely the American reaping-machine, which it was advertised would be put in operation in the neighbourhood of the metropolis, as soon as grain was in a fit state for cutting. At present farmers had to lodge in their premises a great many people for two or three weeks, over whose conduct off the harvest field they had but little control. Large numbers of men, women, and children had to sleep in the same apartment, by no means to the improvement of their morals. However anxious farmers as a body or individually might be, it was, he was sorry to say, impossible to remedy this. His only hope lay in an efficient reaping machine, which, if obtained, would be to him a source of the greatest happiness, setting aside profit altogether, though he had no doubt he would obtain that too. When the grain is cut there is the size of the sheaves, the making of the bands, the number of sheaves in a stook. Are head sheaves to be recommended? Then comes the stacking of the grain, the heading of the stacks. The proper period for threshing it follows, whether it is better to thresh all out early and store the grain in granaries, or by the use of rick stands, such as those manufactured by Messrs. C. Young and Co., or those simpler and cheaper, but not more economical in the end, made of wood. It cannot be doubted but a number of the stacks should be retained until near the next harvest, but the greater part should be threshed during winter, or as soon as the grain is in condition. It might then be stored with advantage, that the whole crop might be brought regularly to market. He did not approve of much threshing during summer, when work was abundant in the fields, besides the loss sustained from the straw not being converted into manure is occasionally a consideration. Even for straw to be used during summer, its being previously threshed and stacked was no loss. That was a slight sketch of some of the points into which the subject naturally branched, and by taking them up in the manner indicated, he had no doubt would be found profitable.—Mr. Shepherd, Gleghornie, remarked:—To begin at the beginning of Mr. Hope's sketch, viz., the proper period for cutting grain, it appeared to him that many a good crop had been spoiled from mistakes made regarding it. The late Mr. Brodie, of Scoughall, a man whose opinions deserved every respect, published a paper on the advantages of cutting green, and he (Mr. S.) had followed him particularly last year, from having got a fright with the high winds at the beginning of the harvest, but he would not again cut green Wheat, as it gave it a bad colour, and rendered it difficult to sell. The Wheat at all events should be properly formed before being cut. Beans also should be well ripened, as green cut was very detrimental to the appearance of the sample. So much for the first head of the discourse.—Mr. Davidson, Holynbank, a reed in the main with what Mr. Shepherd had said. He, however, did not think it was generally advisable to wait until the whole crop was thoroughly ripened; a great deal depended on the season. Barley, in particular, he thought should be thoroughly ripe before being cut, as so much of the value depended on its quality. As to the system of housing grain in large barns, he thought it barbarous, and that the English farmers in this case might take a lesson from their northern neighbours, who lived in a more inhospitable climate. He strongly recommended the stances of Messrs. Young and Co., as it did not answer at all to allow grain to remain in ordinary stacks during summer, from the loss sustained by the depredation of vermin; he had seen 36 rats killed in one stack.—Mr. Harvey, Stevenson Mains, observed that it was usual in this county to set up stooks of eight sheaves. In Mid-Lothian they were frequently made of 10 sheaves and two head sheaves; he thought it possible that the head sheaves might frequently prevent Barley being discoloured by mists from the east, which were rather common in this district. The value of Barley depended very much on its colour. He (Mr. H.) thought four shearers enough for one banster; in fact, with a good crop it was impossible for one man to bind to six people, which is the usual number. As a general system he thought Wheat should all be threshed out by the middle of April and stored, unless when preserved by proper stances or otherwise from the vermin.—Mr. Shepherd differed in opinion from Mr. Harvey and from the practice followed in some counties of putting 12 sheaves into a stook, as it was a mighty object to get the grain matured in the shortest possible time. When he first came to the county he was startled by the plan of four sheaves, but he found that they dried much faster, and he highly recommended it, and more particularly near plantations.—Mr. Douglas, Athelstaneford, did not agree with the writers in favour of green cutting, as it destroyed that bright colour which all fine grain has. Potato Oats was the only crop that should be taken sharp; his rule was to cut them when the top pickle was completely white. He had tried all the three modes of cutting. With heavy crops he did not find the scythe suitable, and there was less shake with the hook. At one time he bought teethed hooks for all his people, but he lost patience and went back to the scythe hook. He thought it a good remark by Mr. Harvey that six reapers were too many for one banster; besides, when there were only two people on a rig, each person had to do his own work. He had no objection to learn the people on his own farm to shear, but it was too much to be imposed on by idlers who demanded full wages, and there were often two good shearers on a rig and one bad one. He thought farmers were not strict enough, with regard to the size of the sheaves; they could not be too small, provided they would stand. As to the size of stooks, he did not approve of the four sheaves; they might do in calm weather, but they were easily blown down; not one man in 20 could put them up to stand; a larger number stood better, and were more easily set up again in the same form when blown down. As to head sheaves they were suitable for a wet climate, but not for a dry country like this. He highly approved of bosses and triangles for bringing grain in the stack speedily into condition. He thought a board across the stack with a drain tile upon it very advantageous, as it produced a current of air. When grain was threshed out early, the straw was converted into manure in good time for application to the green crops of the following summer; but, in general, on the farms in East-Lothian there was a sad want of granary room, for which both landlords and tenants were to blame.—Mr. Scott Skirving, Campton, said, tying the sheaves with only one length of straw, completely prevented them being made too large. He highly approved of only two shearers on a rig, and urged its general adoption, as it was exceedingly difficult for one man to do it. Reapers came in bands of three, for the purpose of working together, and unless they were allowed to do so, they would not otherwise engage. He hoped the American reaping machine which had been alluded to would be found suitable, as it might be the means of saving a large expenditure.

## Notices of Books.

*Flax: the Culture and Preparation in Scotland, Ireland, and Flanders, particularly with reference to the Western Highlands and Islands of Scotland.* By Robert Brown, Esq., Hamilton. Pp. 54. Blackie and Son, Glasgow, Edinburgh, and London.

We have noticed many of the pamphlets and works published during the past two years on this subject; and the above is one of the best, as it is also one of the cheapest of them. It gives the most detailed description of the plant, its cultivation and management, in all the stages of its growth, as well as after harvest; its refers particularly to the modes and processes of the Flax grower, both in Ireland and in Flanders; it discusses the modes of preparing the crop for the manufacturer, advocated by Schenck, Donlan, and Claussen; and it applies the information which it conveys especially to the circumstances of North-Western Scotland.

Any one with Mr. Brown's pamphlet in his hands, and a practical knowledge of ordinary farm practice in his head, may start Flax growing next spring, without fear of the result.

## Miscellaneous.

*Adulteration of Guano.*—We see no good reason for the apparent alarm that seems to exist with respect to the late trial of Pickering and Long. It is just one of those cases of glaring fraud which, in numerous businesses, are constantly brought to light by the activity of the police; and the effect of which should be to induce to greater care in the future, as it undoubtedly will in the present instance, on the part of all concerned. But the fact of the fraud discovered, exposed, and punished, is no more an argument against the use of guano, as some seem to think, than the robbery of a bank

parcel, or the forgery of a cheque, would be against the use of banks. On the contrary, the facts furnish a guarantee, that in future no such frauds need be apprehended. On the one side the sellers will take care that such opportunities for adulteration shall not be afforded in future; and, on the other hand, the buyers will be more on the alert as to the condition in which they receive it. To both, the exposure will be at once a useful warning and a guarantee against its repetition. Fortunately the high position of Messrs. Gibbs and Co. in the commercial world is, of itself, a sufficient guarantee that every means will be taken on their part to secure the delivery in a genuine condition; but it will be equally necessary that buyers should exercise a vigilant supervision, in order to secure themselves against similar frauds as that to which we have alluded at any stage of its carriage, and in its examination on arrival. We need not remark upon the necessity of using every possible precaution to obtain this article in its pure state, for it is one of those cases where the consequences of fraud are not confined to the mere loss sustained in the purchase. It leads to a far greater loss in the failure of crops from insufficient fertility, which a genuine quality of guano would have prevented; and after the exposure which has taken place, we cannot too strongly recommend purchasers to use every precaution in their power to prevent adulteration between the delivery from the ship and its arrival on the farm. But while we do so, we can see no greater difficulty in preventing fraud in guano than any other article, if due caution be used. But great as has been the increase in the consumption of guano in past years, the importation of the present year, so far as it has gone, shows a still more rapid increase. A reference to the Board of Trade tables will show that for the first seven months, that is, from January 5th to August 5th, the quantities imported were as follows:—1849, 51,480 tons; 1850, 69,937; 1851, 131,009. Thus showing that the import of the present is proceeding at the rate of upwards of 220,000 tons in the year. *Economist, abridged.*

*Two Tons of Salt per Acre!*—To Mr. William Fair, Aston, near Great Budworth, Cheshire, as tenant and occupier, for the best crop of Swede Turnips, not less than 8 acres, 5*l*. Inspectors' Report: This claimant's farm is 122 acres, of which 14 were in Turnips. The previous crop had been part Wheat, part Oats, and part old Grass. The soil a good deep loam, with a sandy clay subsoil, drained where required, and lays in a good climate. The land was manured with 6 cwt. of guano per acre, and 2 tons of salt per acre had been applied the autumn before. Dickson's (of Chester) "Purple-top" seed was sown from May 15 to June 7; drills 26 inches wide, and the plants 13 inches apart. The crop was even, and the bulbs equal in size, but they had rather coarse roots and longish necks. The land was clean, and in a fair general state of management. Inspected October 22, 1849. Average weight per acre, 40 tons, 4 cwt., 1 qr., and 4 lbs. *From the Journal of the Manchester and Liverpool Agricultural Society.*

*For Improvement in Apparatus for Milking Animals.* Patent dated February 10, 1851. William Edward Newton, of Chancery-lane, civil engineer.—This improved apparatus consists of an air and water-tight bag, composed of india-rubber, gutta percha, or other suitable material, encircled by an elastic strap or band at top, and provided with an aperture at bottom, fitted with a silver tube of a size capable of entering the milk duct of a cow's teat, which tube is provided with a piston also of silver, and packed so as to be air-tight; or the piston may be made of gutta percha, in which case no packing would be required. When using the apparatus, the bag is turned down, so as to expose the silver tube, which is inserted in the milk duct of the cow's teat, and the bag is raised all round, so as to enclose the teat, and prevent the air entering; the piston is then withdrawn, and a free passage left for the milk through the tube into a can placed underneath. The flow of the milk is facilitated by the contraction of the elastic band round the mouth of the sack, and by warmth caused by the exclusion of air between the sack and the cow's teat, which is about equal to that produced by a calf in the act of sucking. Claim: The sack made of india-rubber, or other suitable water and air-proof material, in combination with the strap or band for compressing the teat and neck of the sack, and the exhauster tube and piston, or either one or more of the foregoing parts in combination with a sack for the purpose of milking cows.—*Mechanics' Magazine.*

## Notices to Correspondents.

BARLEY: *J S G.* You may sow winter Barley towards the middle of next month. Any corn sown in early autumn may be very thinly sown. We should prefer sowing Peruvian Barley in early spring. To sow salt on the young corn is said to brighten and strengthen the straw.

BOOKS: *R M.* "Blackie's Cyclopedia of Agriculture," "Stephens's Book of the Farm," "Low's Elements of Practical Agriculture," "Chambers's Work," by Jackson, are all good books.

CORN FOR SHEEP: *A B.* From half a pint to a pint of Barley or Peas a day, apiece, is a fair allowance; the smaller quantity for the smaller sheep. A lamb may consume in three months, after it begins to it, rather more than half a bushel. Your Grass will of course benefit by sheep being fed on the aftermath with artificial food, though whether the loss by an *annual* mowing of the Grass will not exceed this benefit, depends upon the number of sheep thus kept per acre, and the manuring thus given.

FENTON WHEAT. Our correspondent can be supplied with the true Fenton Barns Wheat, from seed obtained from Edinburgh last year, on application to the bailiff, at Chesterton Farm, near Cirencester.

GRASS UNDER TREES: *Diss.* You should not sow more of the nitrate at any time than 1 cwt. per acre. Do so twice in the year, after wet weather, between early spring and midsummer.

NAMES OF WHEAT: *Cambria.* No. 1, not known; No. 2 resembles the "Bristol red."

POTATOES: *F P D.* If they were ripe, or nearly so, when attacked, dig them now, while the land is dry.

POULTRY: *K C H.* It is not at all an unusual thing for a pullet to lay at 22 weeks, if she attain that age in the summer. In the winter she would probably be from a month to six weeks later. I have Cochin China pullets hatched on the 15th March, laying regularly. *J Baily, 113, Mount-street.*

SUMMER FEEDING: *W W.* asks, How many beasts per acre can be kept on old Grass land of medium quality by means of house feeding? [It depends altogether on the size of the Beasts and the quality of the land. The best land in the kingdom will feed one ox and one sheep per acre from May-day till Michaelmas; the former gaining 20 stones, and the latter 40 lbs.] Do milking cows thrive well when kept up all summer? Will beasts feed as fast on mown Grass as they would if grazing on the land which has produced it? Is it expedient to add cake, corn, or Linseed, and in what proportions? Is it practicable to keep a regular supply of Grass fit for mowing, say from May to October? Is the general result of house-feeding in summer on an exclusively Grass farm, such as to make it more expedient than the usual method of grazing out of doors? [Our own experience relates only to Clover and artificial Grasses, and so we publish these questions.]

TURNIPS: *W Bartlett.* They suffer from aubury or "fingers and toes." Lime is said to remove the tendency of soil to produce it.

WHITE MUSTARD: *Constant Subscriber.* The winter frosts will destroy it. Sow in May for your earliest crop.

## METEOROLOGICAL REPORT.—SEPTEMBER.

(*Continued from p. 574.*)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Sept. 3 | 11.15 a.m. | 30.05 | ... | Brisk NNE. breeze. Heavy thunder clouds to eastward in the afternoon. Fine pleasant day, and warm. |
| | 2.55 p.m. | ... | 30.03 | |
| 4 | 8 a m | 30.00 | ... | Brisk NNE. A.M.; P.M. and evening almost calm. Fine pleasant day, barometer steady, evening clear. |
| | 6.35 p.m. | ... | 29.99 | |
| 5 | 8 a.m. | ... | 30.04 | Brisk NNE. breeze. Fine pleasant day, overcast at times; barometer rising steadily. |
| | 11.25 p.m. | 30.12 | ... | |
| 6 | 7.45 a.m. | ... | 30.15 | Brisk NE. Fine and sunny, barometer rising steadily all day. |
| | 10.50 p m | 30.26 | ... | |
| Sun. 7 | 7.50 a.m. | ... | 30.30 | NNE. Gentle A.M., increasing at noon. Fine pleasant day, barometer steady. |
| | 10.50 p.m. | 30.34 | ... | |
| 8 | 6.10 a.m. | 30.35 | ... | NNE. Brisk; A.M. fine and pleasant, barometer steady all day. |
| | 10.30 p.m. | 30.35 | ... | At sunset, sky clouding over and chilly, as of coming rain. |
| 9 | 5.30 a.m. | 30.33 | ... | Wind drawing to NE. and E. Brisk, beautiful morning, fine day, quiet calm evening. |
| | 4.40 p.m. | ... | 30.32 | |
| 10 | 5.15 a.m. | 30.32 | ... | E. Almost calm; bright cloudless morning. |

* This storm is crossing the north of Europe, and is of great diameter; unless the barometer falls very soon, we shall have some sharp frosts.

Dorchester [Sept. 11]. *F. P. B. M.*

(*To be continued.*)

# Markets.

## COVENT GARDEN, SEPT. 13.

Peaches and Nectarines are more plentiful; the best samples fetch 8s. and 10s. a dozen. Pines and Grapes are abundant. Morello Cherries are still furnished in small quantities. Greengage Plums are scarce, as are also Oranges and Lemons. Nuts remain nearly the same as quoted last week. Filberts are imported in quantity. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are good in quality, and, remain tolerably free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms (bushels) are beginning to appear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Moss and Provins Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Apples, kitchen, p. bsh., 1s to 1s 6d |
| Grapes, hothouse, p. lb., 2s to 5s | Pears, dessert, p. doz., 2s to 5s |
| — Lisbon, per lb., 9d to 1s | Almonds, per peck, 6s |
| Peaches, per doz., 6s to 10s | — sweet, per lb., 2s to 3s |
| Nectarines, per doz., 6s to 10s | Lemons, per doz., 1s to 2s |
| Apricots, per doz., 4s to 6s | Oranges, per doz., 2s to 4s |
| Cherries, per lb., 6d to 2s | — per 100, 14s to 30s |
| Melons, each, 1s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, p. hf. sieve, 4s to 5s | — Brazil, p. bsh., 12s to 14s |
| Plums, per punnet, 1s to 2s | Filberts, per 100lbs., 55s to 70s |
| Figs, per doz., 1s 6d to 3s | Walnuts, per bush., 12s to 24s |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3d to 1s | Leeks, per bunch, 1d to 2d |
| Cauliflowers, p. doz., 6d to 3s | Shallots, per lb., 3d to 6d |
| French Beans, per half sieve, 1s to 2s | Garlic, per lb., 4d to 6d |
| Beans, per sieve, 1s 6d to 2s | Artichokes, per doz., 1s to 2s |
| Peas, per sieve, 1s 9d to 3s 6d | Lettuce, Cab., p. score, 4d to 1s |
| Potatoes, per ton, 45s to 80s | — Cos, per score, 3d to 1s |
| — per cwt., 2s to 5s | Small Salads, p. punn., 2d to 3d |
| — per bush., 1s 6d to 2s 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Turnips, p. bunch, 2d to 4d | Red Beet, per doz., 1s to 2s |
| Cucumbers, each, 1d to 1s | Mushrooms, p. pot., 1s to 1s 6d |
| Radishes, per doz., 6d to 9d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 8d to 1s | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 6d to 1s | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

## COAL MARKET.—FRIDAY, SEPT. 12.

Hollywell, 14s. 6d.; Wallsend Gasforth, 13s. 9d.; Wallsend Haswell, 15s. 3d.; Walls-end Hetton, 15s. 3d.; Wallsend Stewarts, 15s. 3d.—Ships at market, 23.

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 11.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 72s to 78s | | Clover ... ... ... | 70s to 90s | |
| Inferior ditto... ... | 55 | 68 | New do. ... ... ... | — | — |
| Rowen ... ... ... | — | 66 | Straw ... ... ... | 24 | 28 |
| New Hay ... ... | — | — | | J. COOPER. | |

CUMBERLAND MARKET, Sept. 11.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | | Inferior ... ... ... | 70s to 80s | |
| Inferior ditto... ... | 60 | 75 | New Clover ... ... | 70 | 80 |
| New Hay ... ... | 60 | 75 | Straw ... ... ... | 28 | 30 |
| Old Clover ... ... | 84 | 90 | | JOSHUA BAKER. | |

WHITECHAPEL, Sept. 11.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | ... | 72s to 80s | Old Clover ... ... | 80s to 90s | |
| Inferior ditto | ... | 60 70 | New Clover ... ... | 75 | 84 |
| New Hay ... ... | 60 | 72 | Inferior ditto .. ... | 45 | 75 |
| Inferior ditto... ... | 45 | 60 | Straw ... ... ... | — | — |

## HOPS.—FRIDAY, Sept. 12.

Messrs. Pattenden and Smith report that about 500 pockets of new Hops have arrived at market, but as yet not ripe enough to tempt consumers to purchase; in this state of things it is difficult to quote prices; a better supply is expected in another week or ten days; good yearlings are selling freely at better prices. Duty 110,000*l.* to 115,000*l.*

## SMITHFIELD, MONDAY, Sept. 8.

The supply of Beasts is very large, but we are not overdone with choice qualities; these, therefore, maintain their prices, and are readily sold. A considerable number of inferior kinds remain unsold. The number of Sheep and Lambs is but moderate; trade is cheerful, at fully late rates; indeed, a few of the choicest kinds make rather more money. Trade is dull for Calves at barely Friday's rates. From Holland and Germany there are 1350 Beasts, 5170 Sheep, 216 Calves, and 220 Pigs; from Scotland, 50 Beasts; and 2750 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 6 | to 3 | 8 |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 6 | — 3 | 0 | Ewes & 2d quality | 2 | 8 | — 3 | 4 |
| Best Downs and Half-breds | 3 | 8 | — 4 | 0 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | 4 | 4 — 4 | 8 |
| | | | | | Calves | ... | 2 | 6 — 3 | 8 |
| | | | | | Pigs | ... | 2 | 8 — 3 | 8 |

Beasts, 4650; Sheep and Lambs, 31,270; Calves, 305; Pigs, 590.

FRIDAY, Sept. 12.

The number of Beasts is large, but the majority is of very inferior quality; consequently, choice ones are as dear as on Monday. Trade is remarkably dull for all other kinds. Good Sheep are not very plentiful; trade is brisk for them at fully Monday's quotations. We have now but a small demand for Lamb, the season being nearly over. Good Calves maintain their price; middling ones are very unsaleable. From Germany and Holland we have 740 Beasts, 2890 Sheep, 380 Calves, and 60 Pigs; from Spain, 59 Beasts; from Scotland, 30; 250 from the northern and midland, and 98 milch cows from the home counties.

| Best Scots, Herefords, &c. | 3 | 4 | to 3 | 6 | Best Long-wools | 3 | 6 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn | ... | | ... | |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ewes & 2d quality | 2 | 10 | — 3 | 4 |
| Best Downs and Half-breds | 3 | 10 | — 4 | 0 | Ditto Shorn | ... | | ... | |
| Ditto Shorn | ... | | ... | | Lambs | ... | 4 | 0 — 4 | 8 |
| | | | | | Calves | ... | 2 | 6 — 3 | 8 |
| | | | | | Pigs | ... | 3 | 4 — 4 | 0 |

Beasts, 1283; Sheep and Lambs, 11,450; Calves, 624; Pigs, 510.

## MARK LANE.

MONDAY, SEPT. 8.—There was a good supply of Wheat by land carriage samples from Essex and Kent this morning, which was freely taken by millers at the terms of this day se'nnight. Foreign met a very limited demand, and its value must be considered nominally the same as last week.—Barley and English Beans and Peas are a ready sale at last week's prices.—The Oat trade is heavy, particularly for Russian, and Monday's quotations cannot be exceeded.—We observe no alteration in the value of Flour, the inquiry is confined to retail buyers.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —42 | Red ..... | 35 | —39 |
| — — fine selected runs...ditto | 42 | —45 | Red ..... | 38 | —42 |
| — — Talavera ..... | 44 | —48 | | | |
| — Norfolk, Lincoln, & York...White | — | | Red ..... | — | |
| — Foreign ..... | 32 | —48 | | | |
| Barley, grind. & distil., 21s to 24s...Chev. | 26 | —31 | Malting . | 23 | —26 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 17 | —20 | | | |
| — Scotch and Lincolnshire...Potato | 21 | —24 | Feed ..... | 19 | —21 |
| — Irish .....Potato | 18 | —22 | Feed ..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed ..... | 16 | —19 |
| Rye ..... | 23 | —25 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25s to 27s.....Tick | 26 | —30 | Harrow . | 26 | —30 |
| — Pigeon.....28 — 32... Winds | — | | Longpod | — | |
| — Foreign .....Small | 21 | —29 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boilers | 22 | —25 | Suffolk... | 25 | —27 |
| — Maple.....25s to 27s .....Grey | 22 | —25 | Foreign . | 24 | —30 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 34 | —39 | | | |
| — Suffolk .....ditto | 27 | —33 | Norfolk . | 27 | —33 |
| — Foreign .....per barrel | 18 | —22 | Per sack | 27 | —33 |

FRIDAY, SEPT. 12.—The arrivals of grain and Flour this week have been moderate. The attendance at market this morning is small, and business in all articles limited. New English Wheat is in request at Monday's prices, but foreign is neglected.—Barley is in fair demand at late rates.—In Beans and Peas there is little doing, but prices are unaltered.—Oats meet a tolerably good inquiry at our late quotations.—Flour is less sought after than it has been during the week.—Floating cargoes of Polish Odessa are offered at 31s. per qr. without finding buyers. Galatz Maize is in demand at 26s. per qr., both f. o. b., including freight and insurance.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Aug. 2..... | 42s 4d | 25s 9d | 22s 7d | 25s 7d | 31s 1d | 28s 8d |
| — 9..... | 42 3 | 25 11 | 22 7 | 28 5 | 31 4 | 28 1 |
| — 16..... | 41 4 | 26 4 | 21 9 | 27 0 | 30 8 | 27 2 |
| — 23..... | 39 10 | 26 8 | 21 11 | 27 1 | 31 2 | 25 11 |
| — 30..... | 39 1 | 25 10 | 20 8 | 26 9 | 30 7 | 26 6 |
| Sept. 6..... | 38 9 | 26 1 | 20 1 | 26 2 | 30 4 | 25 11 |
| Aggreg. Aver. | 40 7 | 26 1 | 21 3 | 26 10 | 30 10 | 27 0 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Aug. 2. | Aug. 9. | Aug. 16. | Aug. 23. | Aug. 30. | Sept. 6. |
|---|---|---|---|---|---|---|
| 42s 4d— | ... | ... | ... | ... | ... | ... |
| 42 3 | | ... | ... | ... | ... | ... |
| 41 4 | ... | | ... | ... | ... | ... |
| 39 10 | ... | ... | | ... | ... | ... |
| 39 1 | ... | ... | ... | | ... | ... |
| 38 9 | ... | ... | ... | ... | | ... |

LIVERPOOL, TUESDAY, SEPT. 9.—There was a full attendance of millers and dealers at our market this morning, some of whom were from a distance in the interior, induced to visit us by our low rates for Wheat and Flour. Both of these articles were in good healthy demand, at full and extreme prices. New Oats are still scarce, and quite as dear as last week; indeed, there was little or no alteration in the general quotations of Tuesday last, and a firmer feeling seemed to pervade the trade generally. There was a middling supply of new Wheat from the neighbouring farmers, and it sold readily at 5s. 9d. to 6s. per 70 lbs. for red and white.—FRIDAY, SEPT. 5.—The arrivals coastwise and from Ireland since Monday last are trivial, and those from abroad very moderate, except Flour, comprising 12,946 barrels. At our market to-day operations in American Flour were to a fair extent, at a decline of 6d. per barrel from Tuesday's rates. French Flour remained steady in value. Old Wheats, both English and foreign, continued in limited demand, and prices the turn lower. Of new Wheat, good qualities were readily sold at 5s. 6d to 6s. 1d. per 70 lbs. Barley, Malt, Beans, and Peas met with a slow limited sale at late rates. Oats and Oatmeal maintained Tuesday's prices. Indian Corn, both on the spot and afloat, was held at late rates.

GLASS. GLASS.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛'th inch thick. | 3-16'th inch thick. | ¼ inch thick. |
|---|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— | | | |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... | s. d. | s. d. | s. d. |
| Or 20 " " 50 to 70 " ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— | | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 " 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 " 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. " 3 " or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 " " 4 " " 20 " 30 " ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 " " 5 " " 30 " 35 " ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 " " 6 " " 35 " 40 " ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 " " 8 " " 40 " 45 " ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 " " 10 " " 45 " 55 " ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 " " 12 " " 55 " 70 " ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 " " 15 " " 70 " 85 " ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities* 62 *by* 18 *inches, for* 10 *feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the* 30*-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

### GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

### GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | |
|---|---|---|---|
| 6 inches by 4 and 6½ by 4½ ... ... ... | 13*s.* | 0*d.* |
| 7 " 5 and 7½ by 5½ ... ... ... | 15 | 0 |
| 8 " 5 and 8 by 5½ ... ... ... | 15 | 0 |
| 8 " 6 and 8½ by 6½ ... ... ... | 17 | 6 |
| 9 " 7 and 10 by 8 ... ... ... | 20 | 0 |
| 12 " 10 and 13 by 9 ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | |
|---|---|---|
| In sizes under 15 inches ..... | 6*d.* | per foot. |
| " " 35 " ..... | 8*d.* | " |
| " " 50 " ..... | 9½*d.* | " |
| " " 75 " ..... | 12*d.* | " |

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

### GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

GREAT EXHIBITION.—New system of GLAZING GREENHOUSES, &c., without the use of putty or other adhesive compost, by ALFRED KENT, Chichester, as shown in a Model at the West End of the Building, outside. The above invention has attracted universal notice amongst Horticulturists and others, and has maintained, under the scrutiny of the public eye, its pretensions to overcome the great evil of all other cheap systems of Glazing, viz., leakage.

A. KENT having made great improvements in manufacturing the parts required in this invention, can now offer his new system at a less cost than as before advertised :—

2½-inch Greenhouse Lights, complete, at 1*s.* 0*d.* per ft., superficial.
2-inch, at ... ... ... ... ... ... 0 10 " " "
1½-inch, at ... ... ... ... ... ... 0 8 " " "

Can be packed securely, and sent to any part of the country.

The saving of repairs effected by this system, over all others, being of paramount importance, A. KENT is willing to reply to any communication (post paid), explaining how such a saving is effected. Estimates given for the entire erection of Greenhouses in any part.

The Inventor is open to co-operate with any extensive Horticultural Builder in London, to Manufacture and carry on the Patent, or to dispose of the Invention entire.

### VINAIGRE DE BORDEAUX.

PURE WINE VINEGAR (preferable to any other) of the finest quality, highest strength, well matured, and in colour and brilliancy like the wine from which it is made.—Sold by Chemists, Grocers, and Wine Merchants throughout the kingdom, whose names may be learnt on application to the importers, W. and S. KENT and SONS, Upton-on-Severn.

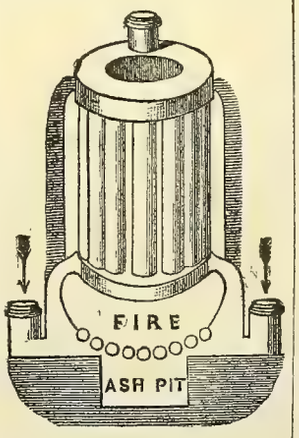
N.B.—Export orders from Bonded Warehouses ex duty. Stores in London, Liverpool, and Hull.

### CONSERVATORY.

WANTED, to PURCHASE, a good CONSERVATORY, or GREENHOUSE, either with or without the Plants.—Address, stating dimensions and other particulars, to Y. Z., care of Messrs. Wilson, Wholesale Stationers, 103, Cheapside, London.

TO BE SOLD, a GREENHOUSE, with Burbidge and Healey's Hot-Water Apparatus complete, with a quantity of Slate Shelves, and a Flower Stage in the centre, made of the best materials. The House is one of the best and most complete that can be made, being 25 feet long and 14 feet wide, with thick sheet glass, and large squares. It is nearly new, and to be sold for merely its value (cost price); price 100*l.* complete. To be seen at 19, Tollington Park, Hornsey Road, near London. The collection of Plants, Camellias, Azaleas, and Geraniums, to be sold with or without the Greenhouse.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.




J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

### THE ROYAL EXHIBITION.
### FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, POTTER, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following :—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1½ in. | 6 | 4½ in. | 11 | 8½ in. | 16 | 15 in. |
| 2 | 2½ " | 7 | 5½ " | 12 | 9½ " | 17 | 16 " |
| 3 | 2½ " | 8 | 6½ " | 13 | 11 " | 18 | 18 " |
| 4 | 3½ " | 9 | 7 " | 14 | 12½ " | 19 | 20 " |
| 5 | 4 " | 10 | 8 " | 15 | 14 " | 20 | 22 " |

Saucers and Seed Basins the same width as the Pots.

Persons visiting the Royal Exhibition can inspect CHARLES PHILLIPS's Pottery, &c., in the Model Greenhouse, situate at the West Entrance of the Crystal Palace. C. P. deems it superfluous to laud either the quality of his Clay, or the style in which his goods are manufactured, but confidently refers those parties who have not yet patronised him to the Royal Gardens at Frogmore and Kew, and to the principal Nurserymen in London, Slough, Reading, Oxford, Swindon, Cirencester, Stroud, Worcester, Gloucester, Cheltenham, Bath, Bristol, Taunton, Tiverton, Exeter, Torquay, Totnes, Plymouth, North and South Wales, &c., &c., for the quality of the articles which he has had the honour of supplying them with. All orders for the above Goods will be promptly forwarded, CARRIAGE FREE, to any Railway Station within 150 miles of the Manufactory, either in dozens, casts, hundreds, or thousands. Every description of Red Ware, Sewerage, Piping, Closet-Pans, Chimney-Pots, Land Drain Pipes, Seakale Pots, Vases, Tiles, Bricks, &c.

Lists of Prices, Terms, &c., forwarded to any address.

Manufactory, Locking Road, Weston-Super-Mare, Somerset.

ESTABLISHED 1836.

### CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S

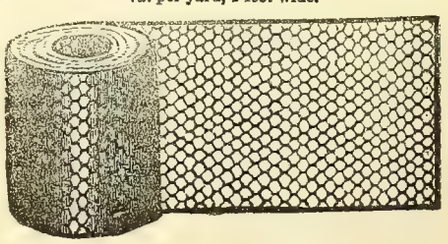
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

### GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

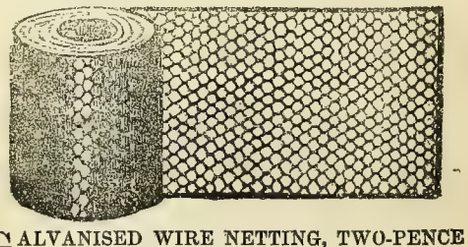


| | | Galvanised. | Japanned, Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| 1⅝-inch " light " ... | 8 " | 6 " |
| 1⅝-inch " strong " ... | 10 " | 8 " |
| 1⅝-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

### WIRE NETTING ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* | per yard. | 30 inches wide 7½*d.* per yard. |
| 18 " " | 4½*d.* | " | 36 " " 9*d.* " |
| 14 " " | 6*d.* | " | 48 " " 1*s.* " |

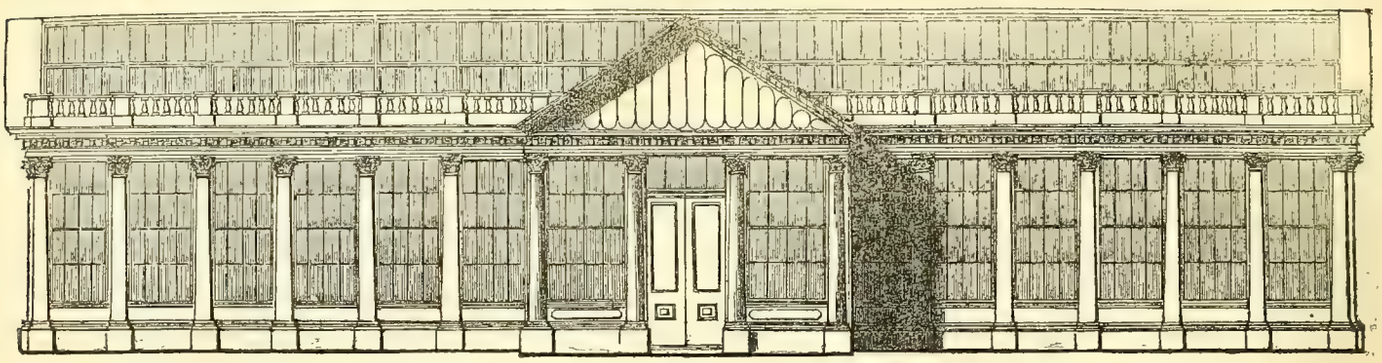
Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

"KNOW THYSELF."—Professor ELLISON continues to give his very peculiar and interesting delineation of the character and qualifications of individuals, discoverable from their handwriting, which have given so much astonishment, instruction, and delight. The mental and moral qualities of yourself or of others in whom you may be interested will be minutely and interestingly described, on receipt of any specimen of writing, enclosing fourteen postage-stamps, and a mention of writer's age, addressed to Mr. E. ELLISON, 151, Strand, London.

# HORTICULTURAL BUILDING AND HEATING BY HOT WATER,

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



## GRAY AND ORMSON, DANVERS STREET, CHELSEA, LONDON,

Having had considerable experience in the construction of Horticultural Erections, which for elegance of design, good materials and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot-Water can be made available.


## *SALES BY AUCTION.*

CAMELLIAS FROM BELGIUM.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-Garden, on MONDAY, September 22, at 12 for 1 o'clock, 1000 CAMELLIAS, from 1 to 4 feet, well set with bloom, consisting of the best varieties, such as Double White, Donckelaari, Fimbriata, Imbricata, &c, also a few plants of Mathotiana, the largest and best red known, and a few of the Marchioness of Exeter. May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-Garden.

AN IMPORTATION OF PLANTS FROM WESTERN AFRICA.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-Garden, on MONDAY, September 22, at 2 o'clock precisely, 12 Glazed Cases of Orchids, Aquatics, Flowering Shrubs, Fruits, and other Plants, collected in Western Africa, by THOMAS WHITFIELD, Esq., by whom they have just been brought over in good health; dried specimens and drawings of many of them will be exhibited at the Sale; they may be viewed on Saturday before the Sale, and Catalogues had.

TO ZOOLOGISTS.—KNOWSLEY PARK, NEAR LIVERPOOL.—NOTICE OF SALE, BY AUCTION, OF THE RENOWNED MENAGERIE AND AVIARY, FORMED BY THE LATE RIGHT HON. THE EARL OF DERBY, K.G., PRESIDENT OF THE ZOOLOGICAL SOCIETY OF LONDON.

MR. J. C. STEVENS is honoured with instructions from the Executors of the late Noble Earl, to sell by public Auction, on the premises, Knowsley, 6 miles from Liverpool, on MONDAY, October 6, and many following days, the whole of the LIVE ANIMALS AND BIRDS contained in the KNOWSLEY MENAGERIE, excepting only the five Eland Antelopes, selected by the Zoological Society of London, and one specimen, or series, to be selected by her Majesty, in pursuance of a desire expressed by the late Earl. This collection is admitted by Zoologists to be the finest extant, it numbers upwards of 1600 examples, including an unique collection of the rarest Antelopes, Deer, Indian Cattle, Zebras, Llamas, Alpacas, &c., which are particularly deserving the attention of Noblemen and Gentlemen, as ornamental specimens for the Park.—May be viewed, by Catalogues (price 5*s.* each), to admit one person, only, to the view, on Monday, the 29th inst., or either of the five following days; these may be had by persons intending to purchase, at the Office, Knowsley Hall; and of Mr. J. C. STEVENS, 38, King-street, Covent-garden London.

CHELSEA.

IMPORTANT FINAL SALES, IN CONSEQUENCE OF THE EXPIRATION OF THE LEASE.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY has received instructions from Messrs. Dennis and Co. to submit to public competition, on the premises, opposite Cremorne Gardens, King's-road, Chelsea on TUESDAY, September 23, and following day, at 1 o'clock, all that very valuable and extensive stock of GLASS, comprising the erections of Greenhouses and Pits, fitted up with Stages and all necessary Heating Apparatus, Garden Frames, Lights, Sheds, &c.; also the justly celebrated collection of Greenhouse Plants, consisting of Geraniums of the most choice varieties, Azalea, Camellia, Aloes, Cacti, large specimen Yuccas, &c., forming a collection rarely to be met with, including large Scarlet Rhododendrons, Evergreens of sorts, Roses in great variety, Jasmine, Ivies, and other Climbers, in pots. The stock of this old-established Nursery needs no further recommendation than the name; and Mr. D. A. RAMSAY, in calling the attention of the public to this and the following Sales, has only to observe, that in consequence of the Lease expiring at Christmas next, and the ground being required for building purposes, the Stock must be positively sold without reserve. The other Sales will take place in October and November, comprising the remaining Nursery Stock, including the largest and finest collection of Mulberry Trees in the country, choice Gooseberries, Evergreens, and other Miscellaneous Stock, of which due notice will be given.—May be viewed prior to Sale, and Catalogues had, on the premises, at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

PARADISE NURSERY, HORNSEY-ROAD, ISLINGTON.

THIS Desirable NURSERY TO BE LET, or the LEASE TO BE SOLD, in consequence of the Proprietor being about to retire from the Nursery Business. With immediate occupation. The whole may be taken at a valuation, or by private contract.—Apply personally, or by letter, to W. J. PAMPLIN, on the premises.

TO BE LET, a Farm, in the county of Wilts.—The Farm comprises a commodious Dwelling-house, extensive Outbuildings, and about 314 acres of Land, for the most part of superior quality, of which about 205 acres are Meadow and Pasture, and 109 Arable. The estate is undergoing thorough drainage. The Farm will be let from Michaelmas next on lease, if desired, for 14 or 21 years.—For further particulars, and to treat for a lease, apply to Messrs. LAWRENCE, Cirencester.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

ELIGIBLE FARM TO LET IN GLAMORGANSHIRE.

TO BE LET, on lease, or yearly tenancy, Lanfa Farm, situated about 3 miles from Bridgend, comprising 410 acres of excellent Meadow, Pasture, and Arable Land. The Farm is now in the occupation of the Proprietor, and is in a good state of cultivation. The extent may be considerably increased, if desired, by the addition of adjoining land. Nearly 70 acres of old Meadow Land have lately been brought into cultivation. Bridgend, from its contiguity to the mineral district, has a good market weekly, for the sale of all descriptions of agricultural produce.—For further particulars apply to Mr. EVAN W. DAVID Radyr-court, Cardiff.

TO FARMERS, MARKET GARDENERS, AND OTHERS.

TO BE LET, close to the Town of Cheltenham, and may be entered upon immediately, 18 Acres of ARABLE LAND, and 15 Acres of PASTURE LAND, with House, Barn, Stables, Cowhouse, and other Buildings.—For particulars, inquire of Mr. DAVIS, Corn Dealer, Winchcomb-street, Cheltenham.

TO FLORISTS AND OTHERS.

AN OPPORTUNITY RARELY TO BE MET WITH.

TO BE LET, with immediate possession, an old established FLORIST GROUNDS, with Greenhouses, and every convenience for carrying on an extensive business; the valuable Stock to be Sold, comprising many new Seedling Flowers never yet sent out, viz. variegated scarlet Geraniums, Mimuli, Fuchsias, &c. Coming in, including Stock, 150*l.*—Apply to Mr. L. JOHNSTON, Auctioneer, King-street, Hammersmith, near London.

TO SEEDSMEN AND OTHERS.

TO BE SOLD, by Private Bargain, the whole STOCK IN TRADE, SHOP FITTINGS, and GOODWILL of the BUSINESS belonging to the Sequestered Estate of OLIVER BROTHERS, Seedsmen, Falkirk. The Stock is well selected, and the Shop Fittings are remarkably handsome. The situation for a Seed Business is one of the best in Scotland, the premises commodious, and to a practical and experienced party such an opening is rarely to be met with. Credit for the price on approved bills may be had. An Inventory of the Stock may be seen either with Mr. A. B. WRIGHT, Seedsmen, Edinburgh, the Trustee for the Estate; or Messrs. RUSSEL and AITKIN, Writers, Falkirk, who will inform as to particulars, and with either of whom offers may be lodged to the 1st proximo inclusive.—Falkirk, Sept. 13.

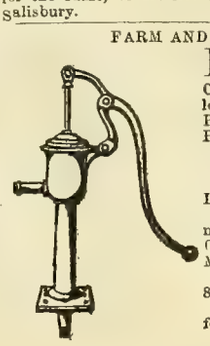
HAMPSHIRE.

EXCELLENT RESIDENCE IN A HUNTING COUNTRY, WITH OR WITHOUT A GOOD FARM.

TO BE LET, with immediate possession, all that capital and highly-desirable RESIDENCE, known as "MARWELL LODGE" (recently put into substantial repair), with a Lawn, walled-in Garden, and about 35 acres of good productive Land, immediately surrounding the House. And also, if required, all that FARM, called "MARWELL FARM," comprising a Farm House, two good Homesteads, and sundry Cottages; and about 420 acres of Land, whereof 360 acres are Arable, 37 acres Meadow and Pasture, and 23 acres Wood Land. Marwell Lodge is pleasantly situate near to Owslebury, four miles distant from the Bishopstoke Station on the South-Western Railway, six miles from Botley, and six from Winchester, and within easy reach of three packs of Foxhounds.

To view the Property, apply at Marwell Hall, and to treat for the same, to Messrs. ATTWOOD and RIGDEN, the Close, Salisbury.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

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| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

M'CORMICK'S PATENT AMERICAN REAPER.—Great Medal, Exhibition, 1851; Gold Medal of the American Institute, 1849; Certified Diploma of the same Institute, 1850; also, on Wednesday last, it obtained the First Premium of the Royal North Lancashire Agricultural Society, 1800 sold last year in America. This Machine will be shown in operation at Carlisle on the 17th and 18th inst.; at the Cleveland Society's Meeting, Middlesborough, near Stockton-on-Tees, on the 25th; and various other places, of which notice will be given.—BURGESS and KEY, Sole Agents to the Proprietor, 103, Newgate-street, London; B. SAMUELSON, Banbury, Sole Maker.

To insure delivery for next season, orders are requested before the 31st of December.

NEW WORK ON THE BREEDING OF HORSES.

Just published, in One Volume, fcap. 8vo, with Frontispiece; uniform with "Harry Hieover's Hunting-Field," &c., price 5*s.*, half-bound,

THE STUD FARM; or, Hints on Breeding Horses for the Turf, the Chase, and the Road. Addressed to Breeders of Race Horses and Hunters, Landed Proprietors, and especially to Tenant Farmers. By CECIL.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Now ready, complete in two vols., cloth, price 3*s.* each; or in 10 Parts, price 6*d.* each.

VOL. II. HUNT'S HANDBOOK TO THE EXHIBITION OFFICIAL CATALOGUES: an Explanatory Guide to the Natural Productions and Manufactures of the Great Exhibition of the Industry of all Nations, 1851. Edited by ROBERT HUNT, Keeper of Mining Records. This work is so arranged that every visitor will be enabled at once to find the article described, and to obtain a correct account of its characteristics.

"The amount of scientific knowledge here compressed into two small volumes is astonishing; and this knowledge is not of an encyclopædian character, such as might be easily compiled from books, but fresh and recent on all subjects, more especially in the departments of science. The most instructive guide to the Exhibition while it is open—we have no doubt that this Hand-Book will become hereafter one of the most popular mementoes and histories of the actual gathering of the nations."—*Athenæum.*

"Useful in the Exhibition, and agreeable afterwards as a reminiscence of what was seen in the Great Year of 1851."—*Spectator.*

SPICER BROTHERS, Wholesale Stationers.
WM. CLOWES and SONS, Printers.

29, New Bridge-street, Blackfriars, at Hyde Park, of all Booksellers, in Town and Country, and at the Railway Stations.

Now ready, price 1*s.* 6*d.*, Part IV. of

BRITISH POMOLOGY; or, the History, Description, Classification, and Synonymes of the Fruits and Fruit Trees of Great Britain. By ROBERT HOGG.

"We can cordially recommend the work to those of our readers who are interested in the cultivation of Fruits."—*Midland Florist.*

London: GROOMBRIDGE and SONS, 5, Paternoster-row; and to be had of all booksellers in the country.

Just published, price 1*s.*,

AN HOUR WITH THE HOLLYHOCK.

By WILLIAM PAUL.

London: W. and T. PIPER, 23, Paternoster Row; or post free from the Author, Nurseries, Cheshunt, Herts, in return for 12 postage stamps.

GOOD NEWS FOR THE AFFLICTED.

DR. ROBERTS'S CELEBRATED OINTMENT, called the "POOR MAN'S FRIEND," is confidently recommended to the Public as an unfailing remedy for Wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples in the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow Vaccination. Sold in pots, at 1*s.* 1½*d.*, and 2*s.* 9*d.* Also, his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are useful in Scrofula, Scorbutic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 22*s.* each. Sold wholesale by the proprietors, BEACH AND BARNICOTT, at their Dispensary, Bridport, and by the London houses; retail by all respectable Medicine Vendors in the United Kingdom. Observe—No medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott's, late Dr. Roberts, Bridport," is engraved and printed on the stamp affixed to each package.

Printed by WILLIAM BRADBURY of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, September 13, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 38—1851.] SATURDAY, SEPTEMBER 20. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Aloe, American | 597 *a* | Oat, the | 605 *c* |
| Beer, sugar | 601 *b* | Onion fungus | 595 *b* |
| Birds, British song | 596 *b* | Orchids for the Million | 596 *a* |
| British Association | 595 *c* | Pea, culture of | 603 *c* |
| Calendar, Horticultural | 599 *c* | Plants, eatable, of Panama | 599 *c* |
| Cattle, to house feed | 603 *b* | Potatoes, culture of | 597 *a* |
| Cement for stone | 599 *c* | — Cuthill's plan of storing | 597 *c* |
| Cinerarias | 599 *c* | — in Germany | 599 *c* |
| Crops, Irish | 603 *b* | Poultry | 604 *b*—606 *b* |
| Cuthill on the Potato | 606 *a* | Pruning forest trees | 596 *c* |
| Dahlia exhibitions | 605 *b* | Rats, to kill | 597 *b* |
| Draining Companies | 605 *a* | Reaping machines | 604 *c*—606 *b* |
| Eatable plants of Panama | 599 *c* | Royal Bot. Soc. Schedule | 598 *c* |
| Fungi on Onions | 595 *b* | Seeds vitality of | 597 *a* |
| Game laws | 605 *a* | Swifts in Yorkshire | 597 *a* |
| Gardeners' troubles | 597 *b* | Temperance | 601 *b* |
| Grass, Doab | 597 *a* | Trees, hedgerow | 604 *b* |
| Hedera Rœgneriana | 597 *c* | — forest, to prune | 596 *c* |
| Hornets in Yorkshire | 597 *a* | Vegetarians | 604 *b* |
| Horticultural Society's garden | 598 *a* | Vetch, culture of | 602 *c* |
| Hunt's Hand-book noticed | 597 *c* | Ward's World and its Work-shops | 598 *a* |
| National Floricultural Soc. | 599 *b* | Weather, the | 606 *a* |
| Newcastle Farmers' Club—Oats | 605 *c* | Weeds | 595 *a* |



NORTH LONDON FLORICULTURAL SOCIETY.—The DAHLIA and MISCELLANEOUS FLOWER EXHIBITION will be held at the Gate House, Highgate on Wednesday next, the 24th inst. All subjects must be staged by 11 o'clock. Open to the Public from 1 till 6 o'clock.

Tickets of Admission may be obtained from any Member, and from the honorary secretary, C. P. LOCHNER,
Warwick House, Paddington.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s.* per dozen.—The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place, London.

JOHN AND CHARLES LEE'S Catalogue of STOVE and GREENHOUSE PLANTS is just published, and may be had post free on application, enclosing two postage stamps.
Nursery, Hammersmith.

DUTCH FLOWER ROOTS.—The Undersigned have great pleasure in announcing to their patrons and the public, that their annual importation of the above has just arrived in excellent condition. The roots are of the best quality, and will be sold at as reasonable prices as by any respectable house in London. Catalogues may be had on application.
Clapton Nursery, London, Sept. 20. HUGH LOW and Co.

SUPERB NEW PEA, "THE NOVEMBER PROLIFIC," supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2*s.* 6*d.* per quart; to be had from W. HAMILTON, Seedsman, &c., 156, Cheapside, London.
*** A liberal discount to the Trade.

WINTER CUCUMBER—"LORD KEYNON'S FAVOURITE."—Numerous inquiries, within the last few days, for the above CUCUMBER SEED having been made, EDWARD TILEY begs to inform his Customers that he has some good old Seed of this variety, which surpasses all others for winter cultivation. Sold in packets, at 2*s* 6*d.* each; or sent post free on receipt of 30 penny postage stamps.
EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Church-yard, Bath, Somersetshire.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—
PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.
PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.
PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.
Copies supplied on application, published complete with the newspaper stamp, to go free.
Seed and Horticultural Establishment, Sudbury, Suffolk.

SELECT CATALOGUE OF PANSIES, CARNATIONS, PICOTEES, AND PINKS.
JOHN SCHOFIELD AND SON have this Autumn to offer to their friends a fine healthy Stock of the above Flowers. Their Autumn Catalogue is now ready, free. Very Select PANSY SEED, 2*s.* 6*d.* per packet.
Knowsthorpe, near Leeds, Yorkshire. Sept. 20.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.
JOHN ANDREW HENDERSON AND CO. have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21*s.* each.
Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval, and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orlean Plum; when fully ripe are a fine deep black, having a fine rich flavour, and very juicy.
It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.
WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

SUTTON'S DESCRIPTIVE PRICED CATALOGUE OF HYACINTHS AND OTHER BULBOUS FLOWER ROOTS is just published, and will be forwarded, post paid, on receipt of two penny postage stamps.
Best HYACINTHS, by name, 6*s.* to 9*s.* per dozen,
Ditto mixed 3*s.* per dozen.
A first-rate collection of Fruit Trees will be seen in Messrs. SUTTON'S Nurseries, as also choice Coniferæ, and the best of the Perpetual Roses.
Reading Nurseries, Reading, Berks, Sept. 20.

NEW AND FIRST-RATE PELARGONIUMS.
J. DOBSON, FLORIST and SEEDSMAN (late Gardener to Mr. E. BECK, of Worton Cottage, Isleworth), begs to inform his friends and the public that he is now settled on his own ground at Woodlands, Isleworth, and has great confidence in recommending the following new and first-rate varieties of PELARGONIUMS, raised at Worton Cottage, Seedlings of 1850, which will be sent out on the 1st of October, packed in the manner that has given so much satisfaction. Package and Carriage Free to London. The Plants are well established in 4 inch pots, and J. D. feels assured that they will give the greatest satisfaction. Early orders to insure the first selections.
AMBASSADOR.—A large good-shaped flower; lower petals lilac, with a dark blotch on upper petals, leaving a narrow margin. Free bloomer and good habit. 1*l.* 1*s.*
ARETHUSA.—Lower petals delicate salmon, with a crimson blotch on the upper petals, shading off with deep rose. Good habit, and very free bloomer; will prove a first-rate variety for all purposes. 1*l.* 1*s.*
CAPELLA.—A flower of good form; lower petals rosy purple, with a white eye; the upper have a tinge of brown in the blotch, which gives it great richness. Good habit and very free bloomer. 15*s.*
COMMISSIONER.—Upper petals a dark chocolate colour, leaving a narrow margin of rose; lower petals a light purple, with dark veins, leaving a white eye. Good habit and excellent bloomer. 1*l.* 1*s.*
EXHIBITOR.—A large flat-sitting flower, deep crimson maroon blotch, leaving a narrow margin of deep rose; lower petals the same colour, with a white eye. Stout habit and free bloomer. 1*l.* 1*s.*
GEM.—A flower of good form; lower petals violet-crimson, with a small black blotch on the upper petals shaded off with orange. Free bloomer and constant; weak habit, 1*l.* 1*s.*
INCOMPARABLE.—Rightly named for its colour, for it has no equal. A good-sized, well-formed flower, of the deepest orange scarlet; the upper petals have a dark blotch veining off towards the edge. Good habit; not a free bloomer. 1*l.* 1*s.* No discount on this variety unless three are taken.
LEADER.—A crimson-purple flower, with dark blotch. Free bloomer and good habit. 15*s.*
PAINTER IMPROVED.—A great improvement on Painter; a novel and striking flower. Free bloomer; excellent habit. 1*l.* 1*s.*

VARIETIES OF 1849.

ROSA.—A bright rose-coloured flower, of great smoothness, and good form; a free bloomer, constant, and of excellent habit. Will prove a first-rate variety for all purposes. 1*l.* 1*s.*
MAJOR DOMO.—A very large rose-coloured flower, with dark clouded top petals; some of the blooms measured 3 inches in circumference. Free bloomer, and of strong habit. 10*s.* 6*d.*
SILK MERCER.—A very close compact-growing variety; free bloomer, and very constant; smooth silky flower, of first-rate quality; ground-colour rose, with deep maroon blotch on the upper petals. 10*s.* 6*d.*
PRINCE ARTHUR.—A medium sized flower, of excellent quality; very constant, and a free bloomer; rosy-crimson ground-colour, with dark well-defined blotch on the upper petals, leaving a bright distinct margin; light centre. 10*s.* 6*d.*
DIANA.—This is very similar to Rosalind, but larger, and is at its best early in the season, whilst the latter variety is not at its best until quite late. 7*s.* 6*d.*
TYRIAN QUEEN.—If the large deep mulberry-coloured top petals of the flower had been matched with as good lower ones, it would have been first-rate; strong robust habit, and a free bloomer. A very distinct and constant variety. 5*s.*

NOW READY, AND SENDING OUT.

The following selection needs no recommendation, as the flowers have been seen in nearly all the winning stands. Twelve of the following first-rate show varieties for 2*l.* 2*s.*, well established in 3 inch pots, and requiring an immediate shift. Package and Carriage to London included in the price.
*Chloe, *Constancy, Constance, Cuyp, Dorcas, Emily, Field Marshal, Governor, Loveliness, Magnificent, Painter, *Purpurea, Pet, Rosalind, Ruby, and Sarah.
N.B. The varieties marked thus * have not been sent out before, but will prove very desirable for all purposes.
Twelve of the following good and distinct varieties for 1*l.* 1*s.*, package and carriage to London included in the price. The plants are well established in 3 inch pots, and are now sending out. Blanche, Cassandra, Centurion, Crusader, Delicatissima, Emilia, Gulielma, Gustavus, Lalla Rookh, Mont Blanc, Ondine, Rosamond, Alonzo, and Star.

STORY'S NEW SEEDLING FUCHSIAS.

J. D. has also much pleasure in saying that he is in possession of the entire stock of those superb Seedling Fuchsias of 1850, raised by W. H. Story, Esq., of Whitehill, Newton Bushel. They are all quite distinct, and will be found a great acquisition. Mr. Story's well-known character as a successful raiser of Seedlings will be a sufficient guarantee that the flowers are first-rate; a full description of them will shortly be given. Strong plants will be ready early in spring.

| | |
|---|---|
| PECULIARITY | AGNES |
| FANTOME | AURORA. |

Also, a choice collection of Verbenas, Chrysanthemums, Pinks, Cinerarias, Phloxes, Hollyhocks, and all other Florist Flowers. J. D.'s Descriptive Catalogue of Pelargoniums, with other raisers' flowers, may be had by enclosing one postage stamp.—Garden Seeds, Bulbs, Mats, &c.
Woodlands Nursery, adjoining the Railway Station, Isleworth, Middlesex.

BEAUTIFUL NEW PLANTS.
MESSRS. VEITCH AND SONS beg to offer the following NEW and RARE PLANTS, a Catalogue of which, containing full descriptions, can be had on prepaid application.

| | Each—*s.* *d.* |
|---|---|
| Berberis Darwinii, extra strong | 21 0 |
| ,, ,, smaller plant | 10 6 |
| Camellia "Countess of Orkney," strong plant | 63 0 |
| ,, "Storyii," ,, | 63 0 |
| Cantua dependens, fine bushy plant | 21 0 |
| ,, ,, smaller plant | 10 6 |
| Deutzia gracilis, good plant | 10 6 |
| ,, ,, smaller | 7 6 |
| Lardizabala biternata | 10 6 |
| Lilium giganteum, extra strong tubers | 63 0 |
| ,, ,, second size do. | 42 0 |
| ,, ,, small do. | 21 0 |
| Medinilla magnifica, fine plant | 63 0 |
| Oxalis elegans, strong blooming plant | 2 6 |

N.B. A beautiful coloured plate of the "Cantua" will be forwarded to persons purchasing a plant, and to persons forwarding six postage stamps.
The usual discount to the Trade.
Exeter, September 20.

FIRST CLASS GERANIUMS.—TWO GUINEA SET.
WILLIAM E. RENDLE, Plymouth, FLORIST to her MAJESTY, will supply Twelve of the following first-rate GERANIUMS for 2*l.* 2*s.*, with a plant of Elliott's Surprise over.
RUNDLE'S BEAUTY OF MONTPELLIER; May Queen (Hoyle); Nectar Cup (Hoyle); Ajax (Hoyle); Rubiola (Hoyle); Isis (Hoyle); Flavia (Hoyle); Generalissimo (Hoyle); Gaiety (Foster); Corinne (Hoyle); General Jung Bahadour (Gaines); Lady Peel (Palev's, first time sending out); Candidate; Boule de feu; Village Maid; Cardinal (Hoyle); and Heartsease.
*Descriptions of* ELLIOT'S SURPRISE, *and* RUNDLE'S BEAUTY OF MONTPELLIER, *will be found in the* Gardeners' Chronicle, *Sept.* 13*th, page* 578.

| | *s.* *d.* |
|---|---|
| Twelve excellent GERANIUMS | 12 0 |
| Twelve excellent Fancy do. | 20 0 |
| Twelve excellent Scarlet do. | 15 0 |
| Twelve excellent CINERARIAS | 10 0 |

*For names of the varieties, see page* 578, *Sept.* 13.
*All Orders above* 2*l. will be delivered Carriage Free to any Station on the Great Western, Bristol, Exeter, or South Devon Railway, or to Cork, Dublin, or Belfast. All Orders attended to in strict rotation.*
*A large Collection of BULBS has just arrived from Holland, which will be offered at very reduced prices.—Catalogues on application.*
Apply to WILLIAM E. RENDLE, Union Road, Plymouth, adjoining the Terminus of the South Devon Railway.

ROSES.—THE DESCRIPTIVE CATALOGUE OF ROSES for the present autumn, by THOMAS RIVERS, is now ready for delivery. It contains a selection only of the choicest Roses, both old and new. Some of the most eligible varieties for beginners are pointed out. Sent free for two postage stamps.
Nurseries, Sawbridgeworth, Herts.

A. PAUL AND SON'S CATALOGUE of ROSES for the present season, containing all the fine new sorts, may be had on application, enclosing two stamps for the postage.
Nurseries, Cheshunt, Herts.—Sept. 20.

NEW EARLY SWEET KERNELLED KAISHA APRICOT.—Strong healthy trees of the above valuable early APRICOT, which we can confidently recommend, as distinct and good, will be ready for sending out this autumn, at the following prices, with the usual discount to the trade:—

| | |
|---|---|
| One year old trees | 10*s.* 6*d.* each. |
| One year trained | 15*s.* ,, |
| Two ditto | 21*s.* ,, |
| Two year trees in pots | 21*s.* ,, |

JAMES VEITCH and SON, Exeter.—Sept. 20.

G. JACKSON, NURSERYMAN, Woking, Surrey (1½ mile from Woking Station, Southampton Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Sept. 20.

NEW PLANTS AT REDUCED PRICES.
HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, begs to state that his Autumn Catalogue of Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Hollyhocks, Carnations, Picotees, and Pansies is now ready, and may be had for one stamp.
H. W. is also prepared to send out strong plants of the yet unequalled dark Pansy, "Jenning's King," 5*s.* 6*d.* each, or four to the trade 15*s.*, for description of which see Catalogues.
N.B. Parties requiring Plants to furnish new Greenhouses, &c., will be reasonably dealt with.

SAMUEL COTTINGHAM, Strawberry Plantations, Rochester, begs respectfully to call the attention of amateur and other Strawberry growers to his select assortment of ONE YEAR SEEDLING STRAWBERRY PLANTS and STRAWBERRY SEED from the best known sorts.
Having been engaged 23 years in the extensive and successful cultivation of Strawberries, he confidently recommends, to persons desirous of obtaining new sorts of first-rate quality, the present as a rare opportunity, the Seed being carefully saved at a great sacrifice of select fruit.
Twenty-four postage stamps forwarded in a letter will insure the return by rail, or other conveyance, of Twelve strong two year Seedling Plants, which will show first bloom next spring; and for Eighteen postage stamps a packet of New Seed, warranted (1851), will be returned by post, with instructions for sowing in the open air.

BEAUTIFUL NEW CAMELLIAS.—STORYII.—This beautiful Camellia was raised by W. H. Story, Esq., White Hill, Newton Bushell, Devon. It is a flower of large size and beautifully imbricated; in form equal to the old Double White; colour, deep bright rose, shading lighter to the centre. It is of unexceptionable habit and foliage, and an abundant bloomer. It is undoubtedly a first-class flower; the Seedling Plant was exhibited at the Horticultural Society's Room, Regent-street, on the 21st of March, 1848, when it had seven expanded blooms, and was awarded the Banksian Medal. Strong plants, 63s. each.

COUNTESS OF ORKNEY.—This truly magnificent variety is figured in the "Florist" for April, 1848, where it is described as follows:—"Mr. Nicholson, gardener to the Earl of Orkney, Taplow Court, is the successful raiser of the beautiful variety figured in our present Number. Our representation may be depended upon for its correctness. The plant is handsome, the foliage large and bold, of a deep rich green. The specimen from which it was copied measured 4 inches in diameter; the flower is circular in outline, composed of large stout petals, perfectly smooth on the edge; these gradually diminish towards the centre, but as they become smaller their forms are less perfect in outline. They are transparent in texture, of a creamy white, and are striped with two shades of bright rosy pink, clear and well defined. We consider it a valuable addition to any collection, and in the class to which it belongs it ranks with the best. Strong plants 63s. each.

The usual discount to the Trade.

VEITCH and SON, Exeter, Sept. 20.

MUSHROOM SPAWN.

WILLIAM GILL, Kensall-green, Harrow-road, London, has a large quantity of MUSHROOM SPAWN, in good condition, for Sale, at 1s. 6d. per bushel, in quantities of not less than 10 bushels. Carefully packed and delivered, free of charge, to any of the Railways around London. Cash on delivery.

NEW PELARGONIUMS.

CHARLES TURNER strongly recommends the following NEW PELARGONIUMS; it will be sufficient to observe that he has the entire stock of those beautiful varieties raised by E. FOSTER, Esq., and G. W. HOYLE, Esq., which obtained 9 extra prizes, and 20 Certificates, during the past season. Strong plants will be ready the first week in October. The usual discount to the Trade. If the Set is taken, a liberal allowance will be made.

ARIADNE (FOSTER).—Rosy purple bottom petals, rich dark top, with narrow margin of rose, clear white centre, free bloomer, large truss, and fine substance; good early exhibition plant; 31s. 6d.

BEATRICE (HOYLE).—Neat smooth constant flower, bottom petals mottled rose, top petals rich black, even margin of dark carmine, free bloomer; 15s.

CELIA (HOYLE).—Beautiful orange lower petals, tinged towards the centre with violet, top petals bright orange, medium spot shaded with scarlet, free and early bloomer, but curly in top petals; 15s.

CHIEFTAIN (HOYLE).—Rose crimson, with dark shaded blotch on upper petals, fiery, narrow margin, large, very stout, good habit, rather inconstant; 21s.

CHLOE (HOYLE).—Lively bright rose, white centre, medium-sized dark spot shaded with scarlet, good grower and free bloomer; 10s. 6d.

COLONEL OF THE BUFFS (HOYLE).—Novel bright orange, large and very attractive, constant, and free bloomer; 31s. 6d.

CRISTINE (HOYLE).—Delicate warm rose, with deep spot on upper petals shaded with orange, large and very free, a fine cheerful flower; 21s.

ELISE (HOYLE).—Deep warm orange pink, shaded with delicate lilac, light centre, medium-sized spot, surrounded with orange, margin of orange pink, smooth, constant, and free bloomer; 31s. 6d.

ENCHANTRESS (FOSTER).—Rosy crimson bottom petals, rich crimson blotch on top petals, with margin of bright crimson, white centre; the shape of Gipsy Bride, but twice the size, free bloomer, and good habit; 31s. 6d.

EURYDICE (FOSTER).—Deep crimson bottom petals, top petals dark maroon, narrow margin of bright crimson, free bloomer; 15s.

GANYMEDE (HOYLE).—Very round, smooth, and cupped, warm lilac colour, white centre, dark top petals, very evenly shaded with purplish carmine margined with the ground colour; 31s. 6d.

HERALD (HOYLE).—Mottled light pink bottom petals, top dark blotch, with narrow margin, white centre, good shape, and constant, very dwarf, good habit; 7th prize; 21s.

ILLUMINATOR (TURNER).—Bright mottled crimson bottom petals, rich dark crimson top, narrow bright margin, very showy and attractive, being nearly as free as the Fancies; 10s. 6d.

LABLACHE (FOSTER).—Orange rose, with dark blotch on the top petals, large white centre, good substance, very attractive variety; 21s.

LAVINIA (FOSTER).—Purple, similar in colour to Alonzo, but of finer form, rich dark top petals, with bright margin, good habit, and fine bloomer; 21s.

LITTLE NELL (TURNER).—Rosy lilac bottom petals, maroon top petals, narrow margin of rose, white centre, very free, early bloomer, good plant for exhibition; 10s. 6d.

LORD MAYOR (BLACK).—Bright crimson scarlet bottom petals, mottled, black blotch on the top petals, shaded off to the margin with scarlet crimson, very showy, and free bloomer; 15s.

MAGNET (HOYLE).—A high-coloured scarlet crimson, large black blotch varying towards the margin on a scarlet crimson ground, without being lighter on the edge, very profuse bloomer, and constant, very striking flower; 42s.

MOCHANNA (HOYLE).—Lower petals warm rose, white centre, top petals large dark blotch, shaded and mottled with scarlet, margin of ground colour, large fine shape, free, smooth, bold, attractive flower; 21s.

MONTEITH (FOSTER).—Bottom petals crimson purple, dark blotch on top petals, shaded off to the margin with crimson; 21s.

PLANTAGENET (TURNER).—Crimson bottom petals, dark maroon top petals, narrow margin of bright crimson, free bloomer; 15s.

PULCHRA (FOSTER).—Lower petals salmon rose, large rich dark blotch on top petals, with margin of bright rose, white centre; free bloomer, good habit; 21s.

PURPLE STANDARD (FOSTER).—Bottom petals rich purple, black top petals, with narrow, even, fiery margin. This flower possesses fine substance, shape, and very smooth; much the best purple; 31s. 6d.

REMUS (HOYLE).—Deep rose lower petals, with dark blotch on upper petals, shaded with scarlet; smooth, and fine shape; 21s.

RUBENS (FOSTER).—Crimson, with dark maroon blotch on top petals, narrow margin of bright crimson; good substance; 21s.

SHYLOCK (FOSTER).—Bottom petals deep rich mottled purple, black top petals, a wire margin of scarlet; medium size, free bloomer; the darkest variety raised; 31s. 6d.

VANDYKE (TURNER).—Bottom petals bright scarlet crimson, dark blotch on top petals, scarlet margin; very striking, but not a good shape; 10s. 6d.

VONDEL (HOYLE).—Lilac rose, with dark blotch on top petals; 15s.

A selection of older varieties at moderate prices. A Descriptive List may be had on application.

Royal Nursery, Slough.

LILIUM GIGANTEUM.—A few fine healthy Tubers of this magnificent Nepaul Lily have been sent to Messrs. VEITCH by Mr. T. Lobb, who collected them in their native habitat, and who speaks of it as the finest of all the Lilies he has ever seen. The flowers are white, of great size, and produced in abundance.

Dr. LINDLEY says, "Lilium Giganteum is a very fine thing; it will perhaps be as hardy as the Japan Lily."

Sir W. J. HOOKER also says, "It is a very fine large flowered species, figured by Dr. Wallich in Flora of Nepaul; the flowers are nearly white, and half a foot long, leaves very large and heart-shaped."

The Plants now offered are growing luxuriantly, and in excellent condition.

| | Each.—s. | d. |
|---|---|---|
| EXTRA STRONG BULBS ... ... ... ... | 63 | 0 |
| SECOND SIZE DITTO ... ... ... ... ... | 42 | 0 |
| SMALL DITTO ... ... ... ... ... | 21 | 0 |

VEITCH and SON, Exeter.—Sept. 20.

HYACINTHS, TULIPS, RANUNCULUS, ANEMONES, AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive collection of the above FLOWERS, which he can supply at very moderate prices. He begs to say that he has received his usual supply of HYACINTHS and DUTCH BULBS in excellent condition, and that his Catalogue will be forwarded by post, on application. This is the best season to make a selection of Bulbs.

THE FINEST NEW ROSES OF THE SEASON.

HYBRID PERPETUAL QUEEN VICTORIA (PAUL'S).—This is unquestionably the finest New Rose of the season: it is a seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly wax-like in appearance, and distinct from every other. Plants, in November, 10s. 6d. each, with the usual discount to the Trade when three are ordered at once.

CLIMBING PERPETUAL, ROBERT BURNS (PAUL'S).—Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedole in colour; like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants, in November, 7s. 6d. each.

N.B. Each of these Roses has obtained a 1st Class Certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.

A. PAUL and SON, Nurserymen, Cheshunt, Herts.

DUTCH HYACINTHS, per doz., 6s. to 12s.

Or an assortment of three dozen, best sorts, for 16s. 6d.

| | | s. | d. |
|---|---|---|---|
| Double Roman Narcissus ... ... ... | per doz. | 3 | 0 |
| Double and Single Van Thol Tulips ... | ,, | 1 | 0 |
| Mixed Tulips ... ... ... ... ... | ,, 1s. to | 6 | 0 |
| Jonquils ... ... ... ... ... | ,, | 2 | 0 |
| Crocus, in variety ... ... ... | per hundred | 2 | 0 |

*And other roots, of which lists may be had free.*

ROBERT HALL begs to advise the arrival of his annual importation of BULBS, in high perfection, especially drawing attention to the double Roman Narcissus, which for early blooming and fragrance is not surpassed.

Also to the following items of Foreign produce, of his own importation, and choice quality, viz.:—

| | s. | d. |
|---|---|---|
| French Liqueur Ginger Brandy, an excellent Stomachique, Anti-Cholera, and invaluable in Spasms, per bottle ... | 5 | 0 |
| Curaçao and Maraschino, per bottle ... ... ... | 14 | 0 |
| French Liqueurs, per bottle ... ... ... ... ... | 14 | 0 |
| Milk Punch, per dozen ... ... ... ... ... | 42 | 0 |
| Old Pale Brandy, per dozen ... ... ... ... ... | 60 | 0 |
| Genuine Dantzic Spruce, per bottle ... ... ... | 2 | 6 |
| Old Cordial Gin, per gallon ... ... ... ... ... | 13 | 0 |
| Old Jamaica Rum, per gallon ... ... ... ... | 18 | 0 |
| Pale Brandy, "old in bottle," per bottle ... ... | 6 | |
| Farantosh Whisky, per gallon ... ... ... ... | 21 | 0 |
| Batavia Arrack, 15 years in bottle, per bottle ... ... | 10 | 0 |
| Kershenwasser, per bottle ... ... ... ... ... | 10 | 0 |
| | | 6 |
| Sardines à l'huile, per case ... ... ... ... ... | 2 | 0 |
| Gorgona Anchovies, bottled abroad, per bottle ... ... | 2 | 0 |
| Honeycomb Parmasan Cheese, per lb. ... ... ... | 2 | 0 |
| New Gruyere Cheese, per lb. ... ... ... ... ... | 1 | 8 |
| Naples Maccaroni, per lb. ... ... ... ... ... | 0 | 10 |

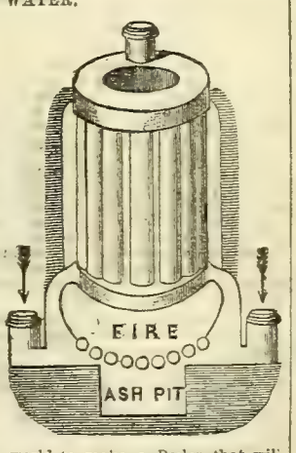
63, South Audley-street.—Sept. 20.

TO NURSERYMEN, GENTLEMEN'S GARDENERS, &c.

EDWARD KEMP respectfully intimates to those friends who have not yet laid in their stock of PEAT, LOAM, &c., that they ought not to delay, as the weather is now very favourable, and cannot be expected to last much longer. He is now getting in some of excellent quality, and respectfully solicits their early orders, addressed to E. KEMP, 16, Ann's-place, East-street, Old Kent-road, London.

N.B. Silver Sand, and all other Soils, as usual.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.




J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

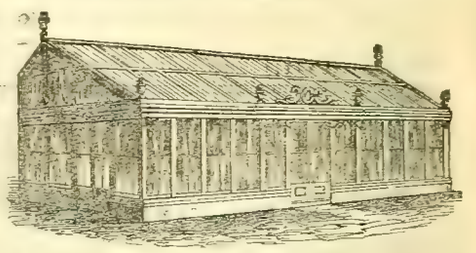
J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the public that his mixtures of the NATURAL GRASSES and small CLOVERS, gathered under his own superintendence, including every sort necessary to form a Permanent Pasture, on various soils, are now ready; delivered on the South-Eastern Railway, at 1l. per acre, allowing three bushels per acre. Also Seeds for Lawns, and for renovating old pastures; the nature of the soil to be sown should be particularly stated. Instructions for sowing will be sent with each parcel. Seeds are this year comparatively scarce; the Advertiser has, however, determined not to raise his prices, considering the ruinous effects of free trade on Agriculture, and depending on the extension of his business for a return of his outlay.

HOTHOUSES AND CONSERVATORIES.

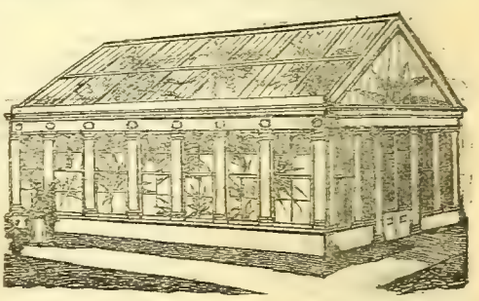


HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the kingdom, warranted best material. Garden Lights of every description, at JAMES WATTS', HOTHOUSE BUILDER, CLAREMONT-PLACE, OLD KENT-ROAD. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1¼ in. greenhouse lights, 2½d.; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d. per foot; if glazed with 16 oz. sheet-glass of a large size, 4d. per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Hearing by Hot Water can be made available.

GREAT EXHIBITION.—New system of GLAZING GREENHOUSES, &c., without the use of putty or other adhesive compost, by ALFRED KENT, Chichester, as shown in a Model at the West End of the Building, out-side. This invention has attracted universal notice amongst Horticulturists and others, and has maintained, under the scrutiny of the public eye, its pretensions to overcome the great evil of all other cheap systems of Glazing, viz., leakage. A. KENT having made great improvements in manufacturing the parts required in this invention, can now offer his new system at a less cost than as before advertised:—24-inch Greenhouse Lights, complete, at 1s. per ft., superficial; 2-inch do., 10d. do.; 1¼-inch do., 8d do.

Can be packed securely, and sent to any part of the country.

The saving of repairs effected by this system, over all others, being of paramount importance, A. KENT is willing to reply to any communication (post paid), explaining how such a saving is effected. Estimates given for the entire erection of Greenhouses in any part.

The Inventor is open to co-operate with any extensive Horticultural Builder in London, to Manufacture and carry on the Patent, or to dispose of the Invention entire.

WANTED, immediately, a small lean-to GREENHOUSE, in good condition, 14 feet clear by 10 feet wide.—Address, with lowest price and particulars, to G., care of Mr. Drewett, House Agent, &c., Walton-on-Thames, Surrey.

TO BE SOLD, a Cheap and Substantially-built GREENHOUSE, 36 feet long by 12 feet wide, with about 20 dozen ACACIA ARMATA, good blooming plants. No reasonable price will be refused, as the ground is required for public works.—Apply to THOMAS STREET, Florist, near the Railway Station, Hackney, near London.

TO BE SOLD, cheap, a second-hand GREENHOUSE (a lean-to), in tolerably good preservation, 18 feet long, 12 feet wide, 14 feet high at the back, and 4 feet 2 inches high in the front, exclusive of the brickwork and stage. To be seen in Mr PARNELL'S garden, Waltham Abbey Essex.

TO BE SOLD, a GREENHOUSE, with Hot-water Apparatus and Plants, together or separate; the Greenhouse is nearly new, with Slate Shelves, Flower-stand, and is heated with Burbidge and Healey's most perfect, simple, and economical Hot-water Apparatus. The Greenhouse is 24 feet long by 14 feet wide, with large squares of 16 oz. sheet glass. The whole to be sold for little more than half price, viz., 100l., all complete, with Vines, &c. The plants in pots Camellias, Azaleas, Geraniums, &c., as well as a choice lot of Roses and other Flowers in the Garden, to be sold by valuation or otherwise.—To be seen at 19, Tollington-park, Hornsey-road, near London.

NEW ROSES.

WILLIAM WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE OF ROSES is now ready, and will be forwarded to all who have patronised them, and post free to all applicants. Such extensive addition has been made to their Stock, that they are able to execute orders of any magnitude with good Plants and without substitutions.

The above can be obtained in London of Messrs. NIXON, 125, Great Portland-street, Oxford-street; of Messrs. HURST and M'MULLEN, 6, Leadenhall-street; and of Mr. CARTER, 238, High Holborn. And at the Nursery the following: a Catalogue of Ornamental Trees and Shrubs, including a fine collection of Coniferæ and choice Herbaceous Plants; and a Descriptive Catalogue of New and Select Fruits. The Trade Catalogue is also now ready.

Woodlands Nursery, Maresfield, Uckfield, Sussex.

BRITANNIA STRAWBERRY. — The combined excellencies of this STRAWBERRY are robust habit, an abundant bearer, good flavour, large size, and of a deep scarlet colour, season of ripening late. See the *North British Agriculturist*, August 8, of last year.—Strong plants of this superb Strawberry are now ready for sale, price 30*s.* per 100, on application to SAMUEL JACKSON, Gardener, Marfleet-lane, Hull. A Post-office order is requested on the receipt of plants. The usual allowance to the trade.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

GUERNSEY AND BELLADONNA LILIES.

B. PAGE AND CO. have the pleasure to offer FINE FLOWERING BULBS of the above beautiful Autumnal Lilies.

| | Per dozen.—*s.* | *d.* |
|---|---|---|
| GUERNSEY LILIES | 4 | 0 |
| BELLADONNA DITTO | 4 | 0 |
| EARLY DOUBLE ROMAN NARCISSUS | 4 | 0 |
| LARGEST DOUBLE JONQUILS | 4 | 0 |

B. P. and Co. have received their ANNUAL IMPORTATION of DUTCH BULBS in the finest possible condition, which they are able to offer at greatly reduced rates, priced Catalogues of which may be had upon application to PAGE and Co., Seed Merchants, Southampton.

CAMELLIAS AND INDIAN AZALEAS WITH FLOWER BUDS.

AUGUSTE VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer to the Trade and Public in general, fine CAMELLIAS, with flower buds, at 6*l.* per 100 and upwards, all good and well shaped flowers. INDIAN AZALEAS, well set with bloom, from 5*l.* to 7*l.* per 100 and upwards. His new Catalogue, just published, may be had on aplication to Mr. R. SILVERRAD, 5, Harp-lane, Great Tower-street, London.

GOLIATH STRAWBERRY.—A Post-office order for 5*s.* will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4*s.* per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lyncomb Vale Nursery, Bath.

MYATT'S NEW SEEDLING STRAWBERRY, "QUINQUEFOLIA."—The character of this Strawberry is quite distinct, having generally five leaves on each foot-stalk. The trusses are strong, producing an abundance of large fruit of a fine flavour. For general description, see *Gardeners' Chronicle*, of July 12th, and "Gardeners' Journal," of July 19th. Plants of this variety 50*s.* per 100; also Myatt's Surprise, 21*s.*; British Queen, Eleanor, Globe, Deptford Pine, Mammoth, Eliza, Fertilised Hautbois, Hooper's Seedling, Keen's Seedling, Swainstone Seedling, Elton Pine, Black Prince, Bicton Pine (white), 3*s.* 6*d.* per 100. Kitley's Goliah, 5*s.*; Jackson's Britannia, 5*s.*—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 20.

**The Gardeners' Chronicle.**

*SATURDAY, SEPTEMBER* 20, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 23—London Floricultural.....1 P.M.
COUNTRY SHOWS.—Wednesday, Sept. 24: North London (Highgate) Dahlia.—Thursday, Sept. 25: Stoke Newington Dahlia, and Oxford Horticultural.

THERE are few gardens in which, at this time of year, you may not find snug places in which Sow-thistle, Dandelion, Groundsel, and the annual Spurges are enjoying themselves, and providing rapidly for the establishment of a nice young family. If you look among the flower borders you will probably find none of them; among the kitchen garden crops they may possibly be wanting; and hence it may be imagined that in such places at least they are missing. We not long since met with an innocent gentleman who pointed with much complacency to his borders and kept ground, intending doubtless that his garden should be looked upon as a sort of model; and he was quite surprised at being told that it was slovenly, because his old Strawberry beds had been forgotten, and were rejoicing in a flourishing crop of weeds. "Oh!" said he, "as to them, there is only a few Groundsels and Dandelions and Sow-thistles, I'll pull them up in a minute;" and sure enough, in less than a minute, a handful or two of these plants had been torn up, and we were in a cloud of their downy seeds.

Only a few Groundsels, and Dandelions, and Sow-thistles! What a speech for a gardener! What a lesson for the young men he was training up! And nevertheless, what an every-day occurrence. It probably did not strike our innocent friend that these plants grow from seed; perhaps he thought that weeds *came of themselves*. And yet we can assure him that they grow like his Mignonette and China Asters that he takes such pains to save the seed of. Nay, more, we will recommend to his notice the following calculation, made on a very low average of cases.

The common Groundsel ripens about 52 seeds in each head of flowers; and produces about 40 heads, or 2080 seeds. The Dandelion ripens about 135 seeds in each head, of which it produces about 20, or 2700 seeds. The Sow-thistle ripens about 230 seeds in each head, and produces about 48, thus yielding 11,040 seeds per plant. The annual Spurges form about 180 seed-vessels, each containing three seeds, and therefore produce about 540 seeds per plant. These are, as we have said, very low averages.

Now, according to this calculation—

| | Seeds. | |
|---|---|---|
| 1 Groundsel producing | 2080 | |
| 1 Dandelion | 2700 | =16,360 plants, |
| 1 Sow-thistle | 11,040 | |
| 1 Spurge | 540 | |

which will cover *just about three acres and a half of land, at 3 feet apart.* To hoe land costs, we will say, 6*s.* per acre, so that the allowing four such weeds to produce their seed may involve an expense of a guinea. In other words, a man throws away 5*s.* 3*d.* a time as often as he neglects to bend his back to pull up a young weed before it begins to fulfil the first law of nature. We know that some well fed folks object to all inflexion or deflexion of the vertebral column—they are generally fond of hard words—but then they also object to its being considered in their wages, which is not exactly fair.

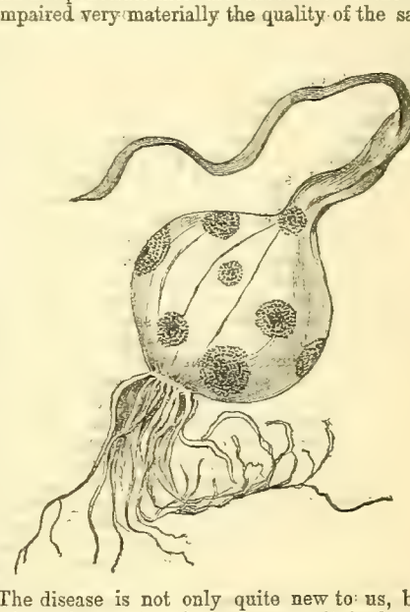
Let us look at the foregoing data in another point of view. Every Dandelion left to flourish unchecked may plant an acre of ground 4 feet apart; every Sow-thistle may do the same 2 feet apart; every Groundsel 5 feet apart, allowing for waste. Supposing a garden to consist of two acres, 16 Dandelions, or 4 Sow-thistles, or 21 Groundsels, or 80 Spurges will cover it with a crop a foot apart. Taking this calculation in their hand we recommend every body afflicted with weeds, or with a gardener whose vertebral column will not bend, as aforesaid, just at this time of year, to count the Dandelions, Groundsels, Sow-thistles, and Spurges upon the first square rod of ground they can measure off.

Seriously, this forgetfulness of the consequences of allowing weeds to seed is a fault of the first magnitude; the more inexcusable, because no skill is required to remedy it; nothing whatever, except industry and foresight, is demanded. It is quite certain that any garden may be thoroughly and permanently cleaned, if the gardener will bestir himself, and if his master will support him. It is quite certain that the cost of once effectually eradicating these things, is as nothing, when compared with the endless charge of hoeing and raking them up. As practised in some places, the gardener reminds us of the gentleman who spent his time in twisting ropes of sand, or of those unlucky daughters of DANAUS, who were condemned to the interesting occupation of pouring water into a sieve. We would even suggest that a weed-neglecting gardener should receive the name and title of a DANAID.

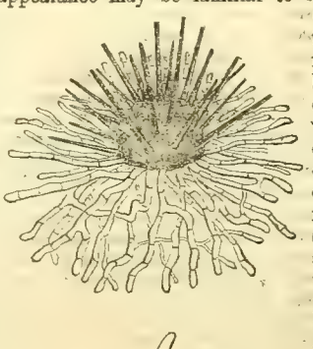
If the true history of the growth of weeds were inquired into, we suspect that our old enemy, procrastination, would be found at the bottom of it. They are so easy to kill, that any time will do. They are so little at first, that they are not worth pulling up. They are so common, that nobody minds them. "It's only a bit of Grunsel, sir," is the common reply to a remonstrance against slovenliness. A man will pass one of these weeds day after day for weeks; he will watch it from its smooth leaves to its rough leaves, then to its flowers; and, at last, to the lovely down which it so plentifully disperses, and when at last he pulls it up, it is just too late, the plant having already distributed its favours over all the neighbourhood. If he would but have stooped once more than usual, he would have destroyed the mother of an acre of nuisances.

One day, after walking very carefully through a nursery in the west of England, we could not help expressing our satisfaction at not having seen one single weed over many acres of highly kept ground. The answer of the proprietor was, "Weeds, sir, are too expensive for us; we can't afford them." What a bitter sarcasm upon the mass of cultivators!

AMONGST the seeds distributed by the Horticultural Society last spring were those of a very beautiful white Onion, called Ognon de Nocera, received from Paris. Nothing can exceed the beauty of its form, and the extreme purity of its snowy whiteness, which excludes every tint of red, brown, or yellow, and makes it the very perfection of pickling Onions. Just, however, before the crop was ready, a disease, if it may be so called, appeared, which completely marred its beauty. Almost every Onion was covered with round black spots, consisting of more or less concentric dots, which, though they did not penetrate into the substance of the bulbs, impaired very materially the quality of the sample.



The disease is not only quite new to us, but the minute fungus, to whose presence it is due, is an extremely pretty object. It is possible that the appearance may be familiar to some of our large Onion growers, though we have not observed it before, and it was confined to the one variety, though others close to it on ground of precisely the same nature, and under exactly the same system of cultivation, were completely free. The species of *Vermicularia*, to which it is due, is certainly undescribed, but should it have occurred elsewhere, we should be greatly obliged for specimens, accompanied by the name of the particular variety on which it has been observed. We are the more anxious for information on the subject, because at present it seems to be a case of a new plague imported from foreign seed, and actual specimens are necessary, because a somewhat similar appearance often occurs on the necks of Onions, and more rarely on the bulbs, caused by entirely different parasites.



The spots consist of multitudes of distinct extremely minute subglobose perithecia, clothed with long rigid black hairs, and sending off in every direction from the base flexuous hyaline articulated often branched or anastomosing threads, which contrast very prettily with the dark bodies seated on them. The spores are oblong, slightly curved, and attenuated at either end, though the very tip is obtuse. Their endochrome is either retracted to either end, leaving a free space in the centre, which looks like a septum, or the whole mass is broken up into several round bodies. The species may be characterised:—

*Vermicularia circinans*; maculis orbicularibus; perithecii concentricis mycelio hyalino articulato radiato insidentibus. *M. J. B.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SECTION D. *Tuesday, July* 8.—*On some facts tending to show the probability of the Conversion of Asci into Spores in certain Fungi*; by Rev. M. J. BERKELEY and Mr. C. E. BROOME.—After alluding to the observations of other botanists on this subject, the authors communicated as follows. The species which have afforded the materials for the following remarks are more especially three, viz. Tympanis saligna, Tode;

Sphæria inguinans, Tode; and Hendersonia mutabilis; Berkeley and Broome. Tympanis saligna scarcely differs from a Lichen, except in the total absence of a crust, and consequently of gonidia. Its apothecia are at first closed, but at a later period of growth, the fructifying disc or hymenium is exposed. On the same twig, in this instance of the common Privet, some specimens exhibited all the characters of Tympanis, and others those of Diplodia. As long as the naked spores occurred only in specimens in which the disc was not expanded, this caused no surprise, as nothing is more common than to find Sphæria and Diplodia on the same matrix, which cannot be distinguished externally, but further examination exhibited the proper fructification of Diplodia in specimens with an open disc, a character quite at variance with that of the genus, and then the same hymenium was detected producing rather large uniseptate naked spores, and broad elongated asci exceeding them many times in length and containing a multitude of minute oblong sporidia. Prof. Fries, in a letter lately received, informs us that he has observed a similar fact in "Hendersonia Syringæ." The circumstance of the constant or occasional occurrence of Uredo and Puccinia, Uredo and Aregma, Uredo and Xenodochus, or two species of the same genus in the same spot, may be adduced as analagous; but where there is no perithecium, the occurrence of two species on the same spot, of the same matrix, is not matter of so much surprise, though suggestive of further consideration. The case, however, of Sphæria inguinans, which we have now to bring forward, is still stronger. This species and Stilbospora macrosperma were extremly abundant on an old Elm at Batheaston, in January last. Not only were they so intermixed as to make it difficult—from the close resemblance of the fruit, that of the one being merely a little more elongated, and in a very slight degree more attenuated at either extremity, with rather a browner tinge—to say at once which was the Sphæria, which the Stilbospora; but the same orifice in the back gave egress both to the sporidia of the one and the spores of the other. At the base of the spores of the Stilbospora, where, seated on their sporophores, from one to three short sheaths were observed, as if the spore had burst through one or more enveloping membranes; but not only was the Stilbospora produced in the same portion of the bark as the Sphæria, or, perhaps, to speak more correctly, in the same stroma; but in one case it was actually developed on the external surface of a perithecium, the inner surface giving rise to perfect asci, with their proper sporidia. In a certain stage of growth the sporidia of the Sphæria are furnished at either extremity with a cirrhiform appendage, but this is not always visible in the ejected mass which surrounds the common orifice of the perithecia. Analogous appendages occur in some other species. The third case to which we invite attention is Hendersonia mutabilis, a species which occurs on twigs of Plane. The main perithecium contains one or more cavities, more or less isolated, which produce far smaller hyaline bodies, and which do not accord with the genus Hendersonia, but rather with Phoma. This is not indeed a case bearing upon the conversion of asci into spores, but is interesting as exhibiting one perithecium within another; and whether considered as a new cell developed within the old one, and consequently containing younger spores, a view at first adopted, but which, on mature consideration, seems scarcely tenable: or as two forms of spores both belonging to the same species, but produced in distinct cavities: or, finally, as two genera united within the same common receptacle is full of interest. We are not prepared, as in the last case, to say that the same wall from its two sides produces different forms of fruit, though in some sections the two fertile surfaces are so confluent above, that it is very probable that the same fact will be found to obtain here also. These instances certainly seem to indicate rather a transformation of organs than any totally distinct productions, a view indeed which is not at variance with the possibility of the transformed organs, being an indication of sexual functions, if we may be allowed to form any inference from known analogies in the animal world. Dr. Hooker, when examining the fruit of Laminariæ on his return from the antarctic expedition, felt convinced of the possibility of the transformation of an ascus into a spore, a view entertained long since by Fries, and which is supported by those instances in Fungi and Lichens, where a single spore only is developed in an ascus. The difference in the analysis of the genus Sphærophorus, as given by Dr. Montagne in the "Annales des Sciences Naturelles," and by Dr. Hooker in the "Antarctic Flora," is probably due to a similar change; the former exhibiting true asci containing sporidia, the latter moniliform threads, breaking up into spores. In earlier times the analysis of one would have been pronounced erroneous, but the present age, with deeper knowledge of the apparent anomalies exhibited by Nature, and consequently a greater measure of diffidence, regards such discrepancies as calls to further investigations, and as the possibly available keys for the solution of difficulties which have been hitherto insurmountable.

At the conclusion of this paper, Dr. Joseph Hooker made some remarks on the forms which he had observed the reproductive cells of Algæ to assume, and urged the necessity of further investigation on this subject.

## ORCHIDS FOR THE MILLION.—No. XVI.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

CLIMATE HOT AND DAMP.—PLANTS GROWN IN BASKETS, WITH MOSS.

*Dendrobium Cambridgeanum.*—This splendid species, from India, flowers in March and April; the colour is a deep orange. It will succeed on a block, but it does best in a basket, filled with sphagnum and potsherds, suspended from the roof with plenty of heat and moisture during the growing season; afterwards it should be kept nearly dry and cool: the flowers last about two weeks.

*Dendrobium macrophyllum*, from the Phillippine Islands, with fine large pink flowers tinged with purple; blooms from February to May. It will thrive on a block, but it does best in a basket, in moss and potsherds; it likes plenty of heat and moisture during the growing season; afterwards it may be kept cool and nearly dry: it last about ten days in perfection.

*Dendrobium moniliforme*, comes from China; it blooms from February to May. It likes plenty of heat and moisture during the growing season; afterwards it should be kept much cooler and rather dry: it remains three weeks in beauty.

*Dendrobium Devonianum.*—A splendid plant from India; thrives well in a basket, with moss and potsherds, suspended from the roof, where there is plenty of heat and moisture; it flowers in May and June.

*Dendrobium Gibsonianum*, from India, flowers in September; the sepals and petals are rich orange, the lip bright yellow, with two dark spots on the upper part. It grows well in a basket, with moss and potsherds, with plenty of heat and moisture during the growing season; the flowers remain long in perfection.

*Dendrobium sanguinolentum.*—This fine Indian species flowers from June to September; it likes plenty of heat and moisture when it is making its growth. It will keep in blossom for two or three months.

*Dendrobium Pierardi* (*latifolium*).—India; it flowers in April and May; the blossoms are white. A basket, with moss and potsherds, suspended, where there is a good supply of heat and moisture during the growing season, suits it perfectly; afterwards it should be kept less moist. The blossoms remain about two weeks in perfection.

*Dendrobium fimbriatum* blooms in March and April; the flowers are a rich yellow, the lip being beautifully fringed. It succeeds best in a basket, with moss and potsherds, and it should have plenty of heat and moisture during the growing season. It seldom lasts more than four days in flower.

*Dendrobium Dalhousieanum.*—This beautiful Indian species flowers in April and May; the blossoms are large, of a pale lemon colour, with a pink margin, and two dark blood-coloured spots in the centre. It succeeds well in a basket with moss and potsherds. The flowers last but a short time in beauty.

*Dendrobium formosum* flowers in August and September. The blossoms are fine white, with a bright yellow centre, and they will last six weeks in perfection, if they are kept dry. It succeeds best in a wooden basket, with sphagnum moss and potsherds, suspended from the roof. It likes plenty of heat and moisture in the growing season, afterwards it should be placed at the cooler end of the house, and receive less moisture; this kind of treatment applies to all the following Dendrobes.

*Dendrobium nobile.*—This esteemed species flowers from February to May. Its flowers will last three or four weeks in beauty, if they are kept dry.

*Dendrobium Wallichianum.*—This beautiful Indian kind has darker and even finer flowers than those of nobile; it blossoms from March to May. It likes plenty of heat and moisture in the growing season, but afterwards a dry cool house suits it best. Its flowers remain four or five weeks in perfection.

*Dendrobium Paxtoni* is a charming species from India. It blossoms in May, and its flowers are of a beautiful orange colour, with a dark centre. It will last two weeks in bloom, and should be kept rather dry when it has ceased to grow.

*Dendrobium chrysanthum.*—An Indian species which flowers at different times of the year. The colour is deep yellow, with a dark red spot on the lip; and it remains two weeks in perfection. Keep it all the growing season in heat, afterwards let it be cool.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 30.)

No. XLVI.—The year is now fairly in its decline. The harvest is over, the barns are well filled, and Nature wears a face that it is truly lovely to look upon. The heat has abated. The winds have been heard whistling loudly in the high trees, the heavy foliage has bent before the blast; and, parted from their parent branches, leaves of every hue lie scattered on the ground. Yet is the weather gloriously fine; and should winter but follow suit with our spring, summer, and autumn,—then will 1851 be recorded as an "*Annus Mirabilis*" indeed!

As for the season of Autumn, in which we are now revelling, the "oldest inhabitant" remembers nothing to compare with it. As a queen she came in; as a queen she reigns, and carries happiness in her train:—

> "She turns with the step of a regal invader,
> And treads the fair gardens where summer has stray'd.—"

Yet is her gentle step so modest withal, and her tread so fairly-like, that she exacts and receives willing homage from all her loving subjects, while she scatters blessings on them at every turn:—

> "The Rose at her coming turns pallid, and folding
> Her pink-vision petals, calls Death to her shrine;
> The Peach and the Nect'rine, her soft eye beholding,
> Blush red with confusion, and melt into wine."

Such is the goddess who now holds her court amongst us happy mortals; but in this our selfishness we are forgetting our little friends,—the birds.

As this is the precise time for parting with our summer visitors—some of them indeed have already taken their leave—we will devote our present thoughts to them *only*; and offer a few observations on their migratory feelings,—whether inherent in such of the tribes as are at liberty, or in those which are in confinement. I propose also, to glance at the instinct which regulates all their motions and habits. First, of the Swallow.

Amongst these happy, social families, there appears to exist an understanding perfectly marvellous; with one accord they assemble, or at a given signal they disperse. Just now, they may be seen hovering over the osiers between Chiswick and Richmond in countless numbers, and they are evidently about to decamp immediately to the palms of Africa, or the Orange groves of Italy:—

> "———Toss'd wide around,
> O'er the calm sky, in convolution swift,
> The feather'd eddy floats: rejoicing once,
> 'Ere t) their winter slumbers they retire;
> In clusters clung, beneath the mouldering banks,
> And where, unpierced by frosts, the cavern sweats,
> Or rather,—into warmer climes convey'd
> With other kindred birds of season: there
> They twitter cheerful, till the vernal months
> Invite them welcome back."

It has been imagined by some speculative minds, that all young birds are under the disposition and guidance of the older ones; and that if young birds *only* were living here, they would, for want of a conductor, perish! This view is absurdly incorrect. All persons who have given the subject anything like attention, must be aware that birds of passage in particular act from an irresistible impulse at certain seasons. Whether Nature operates upon their brain in any particular manner, or not, it is difficult to say; but true to their time, every bird, young or old, would decamp with unerring prescience to his change of quarters, however distant. It is a beautiful provision of Nature to endow all these little foreign visitors with such wonderful powers of locomotion, and to direct them so instinctively in their flights. I imagine there are very few indeed lost by the way, unless it be from illness or other natural causes; and as we see, year by year, the return of certain birds to their former haunts, the "principle" I advocate must be correct. As with the "passenger pigeon," there would seem to exist in all migratory birds, the will and the power to travel to any particular part of the world; and where their *inclination leads them*, thither do they flock.

I have spoken as yet of the swallow tribe only—these, from their large multitudes, being so prominently before the eye. But the same unerring instinct, the same desire to depart, inhabits equally the breast of *every* migratory bird. The smaller and weaker tribes do not, like the swallow, disappear at once. The nightingale, blackcap, garden warbler, whitethroat, and others, travel through our gardens and orchards at an easy rate, until they reach the coast. Here they wait for a mild, quiet, day, and then cross the Channel at their leisure. Having thoroughly moulted in this country, and had plenty of time to renew their strength, their powers of locomotion are, at the time of their final departure, quite adequate for the effort. Once across, by easy stages they gain access to their new quarters. When the winds blow heavily, some of these little fellows are occasionally obliged to take refuge in the rigging of vessels at sea. Here they tarry until the weather moderates; they then renew their flight.

Connected with the subject of instinct, we have so many interesting investigations to make, so many novel observations to offer,—that we feel our task, as we travel gently onwards, will be a most pleasing one. We are assured of the undivided attention of a large and daily increasing auditory. Thus encouraged, we will try to define the nice difference between "instinct" and "reason." No easy matter this, truly; but an inquiring mind, though beset by difficulties, never recognises the ugly word,—"impossibility." It unfortunately still holds a place in our modern dictionaries; but the sooner it is expunged, the better will it be for the world at large. *William Kidd.*

## Home Correspondence.

*Pruning Forest Trees.*—I have been somewhat surprised to find in a late Number, the old subject of "forest tree pruning" revived. I had concluded that it was quite set at rest, since all its former advocates (as far as I know) seemed to have been silenced; whether convinced of their error I cannot tell, but echo sayeth not. I have not seen Mr. G. L.'s lucubration, but it would seem, from the communication of your more recent correspondent "Expertus," that both "G. L." and himself take it for granted that "pruning" is quite proper, and differ only as to the mode in which it should be performed; or whether snagging or close cutting is preferable. Now the best advice that can be offered to both your correspondents, is precisely what you have given the latter, viz., "prune not at all." Yet, with all due deference to "Expertus," I beg to assure him that however the face of a close cut wound may seem "hermetically sealed," when covered with new growth, there is in reality no union. Suppose a tree that was "pruned" by close cutting 30 years ago, and the cut face (say 2 or 3 inches in diameter), were sawn into boards, and the saw passing close by the "hermetically sealed" cut, it would be found just as it was when the sealing process was completed. [To be sure.] I should like to refer all who still hanker after "pruning," to the beautiful examples of its effects in the museum at Kew,—this refers merely to its effects on the timber,—how systematic "pruning" acts on growth is quite another branch of the subject. And

my hope is, that among all considerate proprietors and their agents, systematic "pruning" is now prohibited. More anon. *Quercus.*

*Potatoes.*—Early in February I chose a part of the garden where the soil is very light, and after giving it a good dressing of farm-yard manure, I planted it with Potatoes in rows 2 feet apart and 6 inches deep. They came up very strongly, and I drew the soil up to their stems, to protect them from frost. The first week in August I observed that disease was making its appearance on the points of the leaves. As the tubers had attained their full size, and were all but ripe, I had the haulm pulled up, leaving the Potatoes in the ground, and now I have as fine a crop of clean sizeable Potatoes as any one could wish for, without the least symptoms of disease, while many in this neighbourhood have lost half their crop. *J. Rust, Enfield, Sept.* 10.

*American Aloe.*—A fine specimen of the striped leaved American Aloe is now in flower here. Its height is 20 feet, and it has upwards of 1200 flowers on it. I believe that the plant is between 80 and 90 years old. It has been in the possession of Sir T. G. Cullum, Bart., about 14 years. *Thomas Smy, Hardwick Gardens, Bury St. Edmunds.*

*The Vitality of Seeds* is a subject that ought to engage the attention of the geologist as well as the botanist, for if they were to turn their mind that way, I think they would find almost every soil of recent formation contains some seeds peculiar to it. I have come to this conclusion by observing the vegetation of plants in soil brought from a considerable depth, and exposed to the common influence of our world, under which vegetables live. I imagine that if I were to send you a quantity of carse soil from the neighbourhood of Stirling, although it was dug several feet under the old Roman road, you would obtain a crop of Charlock (Sinapis arvensis). In another locality I have met with the Lepidium arvense, in soil that was newly turned up; it grew for a year or two, and has never made its appearance since, nor was it seen at least for several years before the soil was turned up. There are also some kinds of peat, when brought to the surface, which are sure to produce a crop of Knot-grass and Sorrel. Other plants may be found occasionally, but there are others we are almost sure of at all times. The stomach of man will not kill the life of the seed of the Raspberry in every case. Some years ago a lime-work was opened in a moorland district of the country, where plants of the garden were never cultivated in the memory of man, yet in a small wood adjoining there was seen a nursery of Raspberry, Currant, and Gooseberry bushes, in all probability planted by man after the seeds had been in his stomach. It is the duty and privilege often of philosophers to dispel the mists of ignorance from the world in which they live, but they sometimes overshoot their mark, and meet with signal defeats while they endeavour to clear up "popular delusions." You know steaming over to America was set down as a popular delusion by some mathematicians, and the science of calculation was brought in to show the impossibility of it, and yet one of them lived long enough to see it done experimentally. The "Penny Cyclopædia" tells us that the history of aërolites affords a most useful lesson how cautious we ought to be not to reject too hastily the narratives either of early authors or of living witnesses, however extraordinary they may be, solely on the ground that they are inconsistent with our experience of the laws of Nature. When the official notice from the local authorities of the shower of stones at L'Aigle, in Normandy, in 1803, was received at Paris, it afforded a subject of merriment to the wits of that day, and the newspapers expressed their compassion for the good people of L'Aigle, who were governed by a mayor so silly as to give credit to such nonsense as that stones had fallen from the clouds; and yet, by a series of observations and experiments, not only was the truth of the recent occurrences established, but instances recorded by the writers of past times, which had been rejected as the delusion of a credulous and ignorant age, received so high a degree of probability as to entitle them to be classed among the authentic documents of past events in the physical history of the earth. I am of opinion that the unbelievers in the doctrines of aërolites would have had the infidelity knocked out of their heads had they got a shower of the meteoric stones about their ears which I saw the other week in the British Museum. They would have felt to their experience that seeing is believing, and feeling is the naked truth. *Peter Mackenzie, West Plean.*

*The Doab Grass of India.*—Might not this Grass, which is one of the commonest and most beautiful in the East Indies, be imported into this country with great advantage, as a sole component in the laying down of lawns and kept grounds? In its native country, a natural velvety carpet, of the most beautiful texture, is very speedily formed, by merely chopping it in pieces, and strewing it over the ground prepared for the purpose, which, in an incredibly short space of time, is covered with a verdant sward. The question would perhaps be, would it be sufficiently hardy for our climate? I am not aware that it has been tried; but I should certainly regard it as worthy of consideration as an agricultural Grass, as there is little doubt about its nutritive qualities, considered as the food of animals. *Vile Dulci, Sept.* 8. [If our correspondent will consult Sinclair's "Hortus Gramineus Woburnensis," p. 292, he will find that this plant, *Cynodon Dactylon*, has been already tried, and found unsuited to Great Britain.]

*Swifts and Hornets in Yorkshire* (see p. 566.)—Your correspondent, "T. S.," is perfectly correct in stating that swifts and hornets are to be met with in Yorkshire more especially in the North Riding. I have seen both in this neighbourhood this year, and in very hot summers they may be found in great numbers. I have met with two hornets' nests this season, and I am sorry that I cannot corroborate "T. S.'s" remark with regard to wasps; for with us they are very plentiful, and are doing great injury to wall fruit. *M. W. Whitley, R N., York.*

*Rats,—How effectually to destroy.*—At page 552, occur some remarks having reference to this subject, that have caused us to receive an influx of letters and communications perfectly alarming. We had hoped, after the lengthened discussions which have appeared in this Paper, that the grand panacea for the destruction of the enemy was well known,—its efficacy undisputed. It would however appear that this is not the case. At all events, the subject having for some time slumbered, the remedy seems to have been forgotten. The name of the agent employed for killing these vermin is carbonate of barytes. The best place to purchase it, is at Dymond's, in Holborn. All chemists do not sell it. It must be the *powdered* barytes; and the commoner the better, for the purified article is ineffective as well as costly. A little of this must be inserted in the stomach of a fresh herring, or a soft bloater, and the whole manipulation must be performed with a piece of thin wood. The human hand must be dispensed with altogether, or sinister dealings will be suspected. Your train being laid, a few minutes will decide the matter:

"——— *Quid enim? concurritur: horæ*
*Momento* cita mors venit, *aut victoria læta!*"

If the latter, and the enemy triumph by their cunning (which, if you act with judgment, can hardly be the case), all future measures of *this* kind will be futile. It would be quite impracticable, and indeed unnecessary, to recapitulate here *all* that has before been so fully discussed. By reference to the *Gardeners' Chronicle* of January 12, February 9, and March 16, 1850, the desired information will be readily obtained; and if the principle of action therein recommended be fully carried out, the destruction of the enemy is certain. All I would add is—the necessity that exists for caution in the manner of distributing and preparing the weapons of war. The astuteness of the animal to be destroyed; his instinct, removed hardly one degree from reason; and his extreme wariness,—must be kept prominently in view. If he has cause, however slight, to suspect treachery, farewell to all success with the schemes that may have been concocted for his ruin! Your measures must be well taken, and acted upon promptly. Under no circumstances whatever must you be making any ostensible preparations. Anything out of the usual way would cause the intended victims to "smell a rat," and you would be at once foiled in all your stratagems. Do all in this way, that has to be done, with closed doors; and distribute your little offerings of friendship over the garden with an apparent absence of all design. Thus alone can you hope to triumph. As I have myself, in times gone by, been so truly awful a sufferer by the depredations of these vermin, my sincerity will hardly be doubted when I bid God-speed to the exertions of the intending crusaders in this righteous war. Let it be "war to the knife!" say I,—"and may Heaven defend the right!!" *W. Kidd, Hammersmith, Sept.* 5.

*Gardeners' Troubles.*—The following is a verbatim copy of a letter we have just received, and which we submit to the consideration of our readers:—"Fearing within a few days I may be in a dilemma, and knowing you to be a friend to our profession, and more particularly when deserving your support, I apply to you. I have just acted as a judge at Maidstone Flower Show, and it may happen my judgment may be called in question, or at any rate may open persons' eyes, and raise curiosity to gain a sight of my garden. I must, therefore, deal candid with you, and thereby get your candid answer, for my knowledge in the profession is very limited, as will be soon seen in my garden, as the Red Spider, as they tell me, destroying all my crops, but I have fortunately got a neighbour who has spared me a few Melons; and my greenhouse plants wither and die off as I think from improper soil, and indeed I have not now it is summer, a single plant in it, or Combs, or Balsams, or Achimineas. Now do you hold with giving water to bedding plants? for mine are dead before the late showers; and my Roses, Dwarf and Standards, look queer (all) say 250 sorts, only because I cut them with shears. And last winter I cut down a Laurel hedge with a saw and hatchet, and now it is horrid ugly, as the saw cuts are all turned black, and the wounds of the hatchet gape open and crack, and many stools dead. In fact, I must say the garden is not like the same place since I first came, and my late mistress, being no more, who did not mind spending 15*l.* or 20*l.*, I fear my master will marry again, and I may have then a mistress who knows more about gardening, and lose my place, or some of the curious may now come and call here. Will you please say how, and give instruction, that I may keep it, and avoid exposure, either for myself or the nurseryman who got it for me? I confess I do not know fruits, say Pears, as they seem all alike to me; and what is meant by succulent plants; and please describe colours of flowers, and how to propagate them. I am friendly with many gardeners, and hope to gain knowledge, but I hear behind my back they laugh, and wonder how I have kept my place so long. And our old cook is always grumbling, that she cannot have what vegetables she wants, and yet I get lots of Cabbages given me by cottagers. I could ask and say much more, but I will write again when you have answered this to correspondents. *A.*"

*Cuthill's plan of growing Potatoes.*—About three or four years ago you had a notice of this plan of managing Potatoes in your Paper, which induced me to try the system. I set about measuring the land intended to be planted, in the autumn, and to select the sets required for planting. Having plenty of loft room, well supplied with light, I placed my sets regularly above the floors, with the eye end upwards. They remained there until the beginning of the following March, by which time they had made bold stout eyes, some of them as large as the top of my finger. The tubers were then planted according to Mr. Cuthill's plan, and a more healthy and better crop I never saw. I have continued to prepare as many sets as I have had room for ever since, and I have never had a diseased tuber from those prepared in the manner alluded to. Mr. Whiting is quite mistaken in regard to rubbing off the sprouts before they get long enough to abstract nutriment from the tubers. They are suffered to sprout as little as possible, in order that they may thereby shoot forth more vigorously when planted, and produce an early and healthy crop prior to the usual time in which the disease makes its appearance. I purchased Mr. C.'s pamphlet after the first year's trial, and I found it to contain many useful hints which every gardener ought to put himself in possession of. *B. Fielder, gardener, Arlebury, Alresford.*

*Hedera Rœgneriana.*—Permit me to refer to the notice of Messrs. Veitch's new plants, at page 579, and do justice to Hedera Rœgneriana, by ranking it as a species and not as a home-raised variety. The Imperial Botanic Gardens of St. Petersburgh and Mikita distributed it with other plants indigenous to the Caucasus. *J. N. H., Edinburgh.* [We cannot find this Hedera mentioned in any work on systematic botany; and we should be very much obliged to you for further information. Where is it described?]

## Notices of Books.

*Hunt's Handbook to the Official Catalogues of the Great Exhibition.* 2 vols. small 8vo. London: Spicer and Clowes.

It would have been a great advantage to the visitors to the Crystal Palace, if this excellent guide had been ready when the Exhibition first opened. The difficulties attendant upon the operation having rendered that impossible, we may, at least, congratulate the public upon the completion of the work before the close of the stupendous undertaking. There are still three weeks in which Mr. Hunt's remarks may be profitably studied; and when the Exhibition has finally closed, his terse and instructive pages will form one of the best records of what it contained.

We learn from the preface to the second volume that, in the multifarious subjects treated of in these volumes, Mr. Hunt has received important assistance, Professor Forbes having taken in hand the vegetable and animal kingdoms, Professor Wilson the agricultural implements, Mr. Joshua Trimmer agricultural produce, Professor Gordon machinery, Capt. James military engineering and arms, and many other subjects having been specially written by very competent persons. This gives great value to the work, and renders it an indispensable companion to the Illustrated Catalogue and the jurors' reports. A few examples will show how the editor and contributors have fulfilled their tasks.

"*Pumps.*—There are several centrifugal pumps which, from the splash they make, attract the attention of every one. They are termed centrifugal pumps, but centripetal pumps would be more appropriate, for the water goes from the outside to the inside, or centre, of the bottomless bucketed wheels which form the forcing instrument or pump. These 'centrifugal pumps' are, in fact, inverted turbines—inverted Barker's mills. They produce a very low useful effect, and are only convenient for special application. The Archimedean screw, properly constructed, is the best 'pump' for raising a large quantity of water through a small height, as for engineering purposes, in clearing foundations, &c.; and the solid plunger-pump is the best for raising water to great height, as in mining and in numerous other cases."

"*Corks.*—The Hollow Corks and Combination Stoppers of the same exhibitor are constructed for bottles having a peculiar neck; a ring of cork fits into this, in which is placed a glass or stone-ware stopper. The principle of stopping or closing the orifices of bottles or other vessels with the substance so well known and so universally approved as cork is well understood. Nevertheless, the present method of its application is open to many objections, the enumeration of which will serve to illustrate the superior advantages that the new invention and application of hollow corks present; and as a superior effect is produced, and no new material used, their introduction is not calculated to excite any antipathy on the part of those persons who are in favour of the present or solid corks. The application of hollow corks in reality improves upon the principle of applying solid corks, and it is hoped; that their superiority will remove the disadvantages which have hitherto existed; among which, it will be remembered, that the solid corks are often difficult to extract, and, when pierced with a corkscrew, if only a portion of the contents is required, are with difficulty reinserted, made liable to leak, and no longer effectually exclude the air; in the act of drawing with a corkscrew, they often break in many pieces, and as the fissures in all cork contain dust, its presence and flavour are a disagreeable addition to the contents of the bottle.

"*Canadian Agricultural Produce.*—But though

Canada offers few temptations to embark capital in agriculture with the view of supplying the English market with Wheat, it offers to the small farmer and agricultural labourer the prospect of comfort and independence. The wages of farm labourers are as high in Canada with board as they are in England without it. 'A labouring man,' says the writer we have before quoted, 'may work all his life in the United Kingdom, and never acquire 50 acres of land; while five years of such labour in Canada, if he will avoid spirituous liquors, will enable a labouring man to acquire 50 acres, if not more, with a dwelling.'* Wheat is the first crop which the settler takes after clearing the land. The poorer class of settlers repeat that or some other cereal crop. Those possessed of some capital adopt the better plan of sowing the land down with Timothy-grass, and letting it lie under pasture five or six years, till the stumps are thoroughly rotten, when it may be ploughed and brought under a regular rotation. Turnips are but little cultivated, because of the early period at which the winter sets in, and the difficulty of preserving them in large quantities. The chief dependence, therefore, of the farmer for winter food for his cattle is on hay, of which the Timothy-grass produces about 1½ ton to the acre. Butter and cheese being produced with so much less labour than grain, and containing a much greater value in the same bulk, appear to be the most profitable application of land in countries like Canada, where labour is dear and markets remote. It is probable, therefore, that many of our small dairy farmers, who find great difficulty with present rents and present prices, in making both ends meet, would improve their condition by emigrating to Canada, and purchasing partially-reclaimed farms to be kept chiefly in pasture, and raising only so much grain as might be required for their own consumption. To these, as well as to the labouring classes, the system adopted by the Canada Company offers great facilities for acquiring land."

"*Austrian Percussion Caps.*—The total manufacture of percussion-caps for sporting guns in Europe may be estimated at 1300 millions yearly. Some idea of the importance of this article may be formed from the quantity of copper requisite for its production, viz., 396,000 lbs. weight. The great advantages of the new system have been so generally acknowledged that within the short space of 20 years all kinds of guns with flint-locks have been abandoned, and the percussion system has likewise been extended to muskets for the army. The percussion-caps of their manufactories are distinguished by accuracy and equality of bore, by the malleability of the copper, by the superior quality of the powder, the exact adjustment of the proportions, so as to insure certainty of ignition without danger of accidents, and by lowness of price, when the quality is considered. The percussion-caps coated with varnish may remain in the water for 72 hours and more without losing their power of immediately igniting the powder."

"*Chick Peas* (Spain)—Chick Pea (Cicer arietinum) is a stiff branching plant (see the Lawson collection), about 2 feet high, producing small red or white flowers, followed by bladder-like pods, containing three or four seeds of a whitish colour, about the size of common Peas, globular, and irregularly indented on the surface. When roasted it closely resembles coffee, for which it is often used as a substitute in the south of Europe. A native of countries where the winter is not severe, it is sown in the autumn, but is too tender to endure the rigour of that season in our climate, and scarcely reaches maturity during the summer."

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*Ward's World in its Workshops* (Orr and Co.) is another meritorious guide worth preserving; well written, but with a much narrower scope than Mr. Hunt's, and excluding all notice of raw materials; it, however, embraces a slight notice of agricultural implements, evidently drawn up by some one far from conversant with their use.

## Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—Several matters are now in progress here, which may be worth mentioning. The reserve house in the "private square" has been painted and furnished with a new stage, previous to the reception of plants for the winter. The large curvilinear stove is about to be painted and cleaned. The horse-shoe boiler, two of which have served to warm the "old Pine stove," during a period of 28 years, having become worn out, is now about to be replaced by a boiler of a new description by Messrs. Bailey, of Holborn. The latter is a circular flue boiler, the flues (two), running round it horizontally, being formed by means of the brickwork in which it is set, and of grooves or indentations in the side of the boiler itself, which is hollow, in order that the fire may act in its centre. It is made of cast-iron, with a wrought-iron lid bolted on it. Its presumed advantages are, that it is more economical than other boilers in its consumption of fuel, as a large heating surface is exposed to the fire, not only in its centre, but also in the flame playing round the flues. It is small in size, and, as it therefore contains comparatively little water, it heats speedily. The cover is furnished with a "man hole," and a pipe called "the combustion pipe," for the double purpose of conveying the smoke that passes up the centre of the boiler to the chimney and for creating a draught. It is put in for trial, and there seems no doubt that it will answer well. The small greenhouse adjoining the stove just mentioned has been heated for about eight years with Garton and Jarvis's Exeter double drum boiler, a sort which has given great satisfaction both as regards economy and efficiency. Latterly, however, the hollow legs which supported the drum have given way, and a slight leakage was the consequence. These have been replaced by new ones, the boiler re-set, and it is expected that it will now prove as good as ever it was, and last for many years. This kind of boiler may not perhaps be capable of warming large houses, but for ordinary greenhouses and small stoves, none beats it. In the garden it heats a good-sized greenhouse and a range of pits.

As regards plants, few annual climbers look better than Lophospermum erubescens; and it covers a bare piece of wall in a very short time. It is now beautifully in bloom here on a north wall. Buddlea Lindleyana is in flower on the end of the Orchid house, and near the same spot is the handsome Indigofera decora blooming on rock-work, where it has stood unhurt over three winters; it is however in a sheltered place. Roscoea purpurea, a pretty Indian Gingerwort, which was in blossom in the greenhouse, would probably also succeed on rockwork where the roots could have a little protection in winter, and many other interesting plants at present considered tender, managed in this way might look very interesting. One of the finest greenhouse climbers we saw was Mandevilla suaveolens, which has been producing its snow-white flowers for some time past, and it looked as if it would continue in beauty during the most of September. One of the hardier Passion-flowers related to cœrulea was also in blossom on an adjoining rafter. The large Lælia superbiens in the stove, which has bloomed so finely these two or three years past, is again throwing up flower-spikes, and it promises to be as handsome this year as formerly. In a little frame in front of the Orchid house, where dwarf Cacti thrive and blossom well, Oxalis Bowei is just coming into bloom; and, certainly, few plants look gayer during September and October. Its round rosy flowers, fresh, and larger than a shilling, have a cheering effect, when most things out of doors are hastening to repose, and make it well worth attention. Associated with the Californian Ceanothes in an open frame, was a fine bush of the Evergreen Plum of that country. It is very handsome, independent of what fruit it may produce, and is undoubtedly a great acquisition. The "old Pine stove" alluded to above, is very gay with Achimenes and other plants, which will be soon replaced by Begonias that are coming forward in a pit to succeed them. The latter will keep up a blaze of flower throughout the winter. The Brugmansias in the large conservatory, and some other plants that had attained great size, have been pruned in, and are being painted over with a mixture of clay, tobacco water, soft soap, and sulphur, in order to clear them of insects. The Araucaria Cunninghami here has ripened cones; they are large and very handsome.

With regard to the new flower garden, we understand that Messrs. Waterer's Rhododendrons, which have been so much admired during the past season, will soon be removed, and that it is about to be replanted with flowering shrubs (among which the Rhododendron will still hold a conspicuous place), and herbaceous and other plants, the object being to maintain as much gaiety as possible throughout the whole year. This work will, we believe, be proceeded with as soon as the ground is cleared of its present occupants. The Arboretum is at present in excellent order. The Grass is delightfully short and soft, and the recently formed beds on the east side are quite a blaze of gay flowers. The "Birch clump" is being cleared of its underwood, with a view not only to increase the Grass surface, but also to improve the general appearance. The Hornbeam Hedge which separated the walk and borders, running down past the council-room from the Arboretum, has been removed; the Rhododendrons which have been encroaching too much on the small walk opposite the council-room window, are to be set back, the walk is to be furnished with Grass verges, and the borders are to be lowered in order that water may run off the walk, and thus render the latter dry. The principal walks are everywhere well gravelled, clean and nicely rolled, and the Arboretum altogether appears to be much improved.

Among new plants raised are some from Californian seeds. They consist of a shrubby Spiræa, said to have pink flowers; a Philadelphus, with spikes of white blossoms, said to be fragrant; some purple and white flowered bulbs, a white Lupin, a shrubby Pentstemon, reported to attain a height of 3 feet, the blooms being white and purple, and produced in early spring; a blue Pentstemon (apparently a Scutellaria), Erysimum Arkansanum, stated to reach 3 feet in height, and to be more beautiful than E. Peroffskianum; and some other plants, whose true characters it will require some time yet to prove. A few Russian and New Holland plants have also been raised, to which the same remark applies. Among the former may be mentioned Araucaria Cookii, an interesting kind in the way of, but distinct from, A. excelsa. A quantity of Oaks, said to be evergreen, has been raised from seeds received from Koordistan. They are nice plants, and will soon be ready for distribution.

In one of the Vineries we observed the Chasselas Musqué Grape nearly ripe, but not split, as is customary with it. This is prevented by keeping the border in an equable state. If the latter is permitted to become too dry, and suddenly saturated with water, the fruit is sure to split. The same thing happens with Plum in certain stages of growth, on the occurrence of much wet after drought. Reeves' Muscadine was bearing largely. It is a Cape Grape, of good quality, and a certain bearer. A good crop of Peaches has been secured on the wall, coping boards having been the chief protection in spring. Among the varieties was the Shanghae Peach, introduced by Mr. Fortune. It resembles the Late Admirable, and is very good, but hardly adapted to our cold springs. It is reported to succeed admirably in the climate of Paris. Ripened there the fruit is said to be delicious. The Pucelle de Malines and Malta Peaches are both good kinds. The latter is, however, rather a shy grower. The Impératrice and Balgowan Nectarines are worth attention. If the former is allowed to hang on the tree till it shrivels, it is very rich. Some fruit of the latter, which is like the Violette Hative, measured 8 inches in circumference. We also remarked Denyer's Victoria Plum, which is identical with the Alderton, a place in Sussex, where old trees of it are growing. Apples are a tolerable crop. They are better on standards than on dwarfs. Pears have been much thinned by the spring frosts.

Among Apples in the fruit room, we remarked the summer Golden Pippin, a first class variety; Reinette de Laak, a handsome sort, something like the Golden Reinette, but rather more Pearmain shaped; the Gravenstein, tolerably perfect notwithstanding our cold season; Kerry, Oslin, and Wormsley Pippins; the latter is a good Apple, both for kitchen and table use. Associated with these was also a little-known Apple called Baleborodova, a Russian variety, large, ovate, red next the sun, and bearing a delicate bloom like that of a Plum. It is a fine looking Apple, with an agreeably brisk flavour.

Among vegetables in the kitchen garden we must not forget to notice the Neapolitan Cabbage Lettuce, which many persons consider preferable to the Malta. It is sweet and tender, and very long in running to seed. The Early Ulm Savoy is a nice variety, more especially for small gardens, as it occupies little room. It is very dwarf and compact. It was planted last year on a piece of unmanured ground, and was very fine; but this season the land was manured, and it has not been quite so good, being taller and scarcely so firm. It would seem to prefer only a moderately rich soil. The Enfield Market Cabbage, (some account of which is given at p. 69), is found to be an excellent kind. It resembles a large Vanack, to which it is apparently nearly related. Chou joannet is dwarf, compact, and good; it is as early as the Early York. Chou pointu de Winnigstadt is a good late Cabbage, and very tender. Among Turnips, the Navet jaune de Finlande is an excellent sort. It is thin skinned, and has a very small tap root. The latter is one of its greatest recommendations. Haricot Solitaire will be found useful, on account of its standing dry weather well. It is green, and fit for use now, when other sorts, sown at the same time, are quite ripe.

The reading-room was reopened on the 1st of August. Three prizes having been offered by Dr. Lindley for the best plans and measurement of a piece of ground staked out, the clumps, belts, houses, or principal trees being indicated, they were found to be due to Buchan, 1; Wells, 2; and Williams and Elworthy equal, 3. The prizes consisted of the new edition of "Loudon's Encyclopædia of Gardening," "Annals of Horticulture for 1849," "Babington's Manual of British Botany," and "Johnson on Manures."

It may be worthy of record that a frost on the night of the 10th inst. partially blackened the leaves of the Gourds and Scarlet Runners in the garden. Some other things have also been injured.

## FLORICULTURE.

ROYAL BOTANIC SOCIETY'S SCHEDULE FOR 1851.—My last week's prospective notice of a few divisions of the Horticultural Society's Schedule for 1852 having met with the expressed approval of many florists, I propose this week to "try back," and offer a few remarks on a Schedule of 1851. Who can blame me if I linger among the bygones of a year so memorable as this one, which has proved so gratifying, not only to Englishmen, but to the various civilised nations of the earth. Need I remind my readers how every lover of a garden, and especially of a greenhouse, will look back on 1851 as the bright jewel of the nineteenth century, when the world's architects were defeated, and put to shame by a Paxton, when he who had exerted his talents to provide for the accommodation of the "Queen of Lilies," was enabled to rear a Crystal Palace to admit the contributions of the world, and display them before the admiring gaze of our Queen, her people, and her guests. Lingering, then, I repeat it with pleasure amid the now almost bygones of 1851, I wish to make a few observations on the schedule of the Park for the past season, with the hope that the Council may take into consideration the evil of which I now propose to complain; an evil which is not less prejudicial to the interest of the dealer than it is discouraging to the energy of the private grower, and which makes both parties discontented and dissatisfied. I feel thoroughly convinced that I am but declaring the unanimous sentiments of the whole body of florists, when I state that there was a grievance, an old grievance, in that schedule which needs a remedy. In that schedule separate classes were provided for dealers in, and private growers of, stove and greenhouse plants, of Cape Heaths, of Azaleas, of Orchids, of Pelargoniums, and of cut Roses; yet no such division was made with respect to Pansies, Pinks, Picotees, or Carnations—objects, in

* "The Emigrant to America," Blackwood and Sons.

their way, as attractive and as generally admired as are the finest productions of our stoves and greenhouses; as has been well observed by no mean authority in floricultural matters "even Royalty had been known to dwell in admiration longer over a stand of well selected Pansies, than over the rarest horticultural specimen of an exhibition." I will briefly point out the actual injustice of the case, though it is so apparent, that little comment is needed. By this arrangement of the schedule we have the buyer and the seller brought into an unwise antagonism. Fair competition is the thing to be aimed at in every exhibition, and one would suppose that if it be necessary to separate dealers from amateurs in the productions already enumerated, so as to produce a fair competition, then surely the same necessity must exist to treat our florists' flowers upon the same plan, with such a separation. I am thankful to admit, on behalf of every lover of floriculture, that the schedule of 1852 needs only to be a second edition of that noticed at the head of this article. I am unable to discover any reasonable ground for the continuance of this unnecessary collision between the buyer and the seller; it tends to keep the grower from exhibiting, for fear of disgusting his customer; it tends to keep the purchaser from exhibiting, because he knows that he cannot, for many reasons, attain to the same pitch of excellence as his opponent; nay, more, it will keep many from purchasing and growing flowers which they have no opportunity of bringing forward to a fair competition. It may be said that, what reasons are there why an amateur should not grow as good a stand of Pansies as a dealer? I answer there are many; for instance, the amateur can never have so great a variety to choose from as the dealer, who is obliged to test every variety that is put forth in each year by the principal raisers; it will be hard if from these he does not obtain some improvements on the sorts in the hands of private growers. No amateur can venture to buy everything in this fashion; he must look to the advice and recommendation of one or two growers of note, when they have proved the previous year's lot; this necessary process must always throw the amateur one whole season behind the dealer; reasons such as these might no doubt be multiplied, were they necessary. With this alteration will be seen an increased number of exhibitors. The only reflection likely to arise in the mind of every florist, upon considering this subject, will be one of unmitigated astonishment, that so palpable an evil to the true interest and progress of floriculture should have so long existed. I shall be thankful if what I have written should in any way tend to produce its removal. Let the floricultural motto for 1852 be, "A fair field and no favour." *J. E.*

THE DAHLIA EXHIBITIONS for the season will be pretty generally brought to a close during the coming week; it will be my duty to attend those enumerated in the "List of Meetings," at p. 595, viz., the North London (Highgate), on Wednesday, and the Stoke Newington on Thursday. The usual classes have been instituted at both places; dealers, 24 varieties and 12 fancies; amateurs, 12 varieties and 6 fancies. I also observe that at Highgate, Hollyhocks, Fuchsias, Verbenas, Antirrhinums, and Petunias are invited, together with several classes of extra prizes, making a varied and attractive schedule. I hope to be able to furnish reports which, without being too elaborate or irksome, may yet serve the purpose intended, viz., a record of the leading flowers, together with notices of all novelties, to which undivided attention shall be directed. *J. E.*

## NOTICES OF BOOKS (FLORICULTURAL PORTIONS) FOR SEPTEMBER.

*The Midland Florist* has an article by the conductor, on "How Tulips are judged in the Midland Counties;" "On Auriculas, by Mr. Lightbody," accompanied by a descriptive catalogue of some known high class flowers, and of others little known in the south; and a report of the Midland Horticultural Society's Carnation and Picotee Exhibition. The latter will be found valuable as a reference.

*Beck's Florist* has a plate of, and some remarks on Gladioli. *The Monthly Remembrancer* contains the best information on the culture of Florists' Flowers, and is as it implies, a remembrancer, on which all may rely. "Orion" continues his running comments on "The Progress of the Pelargonium" in the *Floricultural Cabinet*. *The Gardeners' Magazine of Botany* contains a few brief cultural remarks on Floriculture.

# Societies.

NATIONAL FLORICULTURAL, *Sept.* 18.—Several nice Hollyhocks were shown. A first-class Certificate was awarded to Mr. Bircham for Model of Perfection, a pale primrose flower of fine form and texture, guard petals smooth, centre well proportioned. Ditto to Pourpre de Tyre (Bircham), a rosy purple sort, and one of the best of its colour. Certificate to Penelope (Bircham), deep rosy pink, large and fine, guard petals smooth, centre not sufficiently elevated. First-class certificate to Mr. Parsons, Ponder's-end, for Safranot, a desirable pinkish salmon-coloured variety, with buff guard petals. Ditto to Pillar of Beauty (Parsons), a bright rosy crimson flower of fine form. Ditto to Triumphant (Parsons), a pale primrose kind, occasionally tinted with delicate rose. The above were all shown in spikes. Among Dahlias, a first class certificate was awarded to Mr. Turner, of the Royal Nursery, Slough, for Miss Ward, bright lemon, with tips of pure white, a decided improvement on Mrs. Hansard. Ditto to Morning Star (Turner), orange suffused with scarlet, fine in shape, and certainly an improvement on Earl of Clarendon. Certificate to Mr. Keynes of Salisbury, for Una, a good white. Ditto to Mr. Rawlings, for Sir F. Thesiger, a rosy lilac flower, which has been favourably noticed by us on former occasions.

THORNBURY, NEAR BRISTOL.—The Cup, Mr. Turner; 2d, Mr. Sealey; 3d, Mr. Maul. Amateurs: 1st, Mr. Liddiard, Bristol; 2d, Mr. Fisher, Bath; 3d, — Walters, Esq., Gloucester. Mr. Turner's blooms were certainly the finest he has ever put up. Such 18 flowers could scarcely have been selected from the Surrey and Shacklewell, fine even as they were there. They consisted of Sir R. Peel, Queen of Dahlias, Radziville, Thames Bank Hero, Snowflake, Duke of Wellington, Sir C. Napier, Goliath, Lady Cathcart, George Glenny, Mr. Herbert, Mr. Seldon, Fearless, Cobden, Miss Spears (Lamont), John Edward, Andromeda, and Grenadier.

CAMBERWELL AMATEUR DAHLIA, *Sept.* 15.—This is the third year in which this Society has held a show, which is principally supported by Surrey amateurs; the system adopted here is "cut and cut;" viz., Mr. A. sees Mr. B. not only cut the blooms to be shown, but seals up the box, which must only be opened in the presence of Mr. B. Mr. C. does the same thing for Mr. B., and so on by all the members, one to the other. On the present occasion, the exhibition was held in the Lecture Hall. For 12 blooms, Mr. Marshall, Norwood, obtained the 1st prize, with Buffalo Girl, Beeswing, Carmina, Mrs. Shelley, Sir F. Bathurst, Earl Clarendon, Richard Cobden, Privateer, Seraph, Black Prince, Duke of Cambridge, and Captain Warner; 2d, Mr. Noake, Camberwell; 3d, Mr. Connell, ditto. 9 blooms: 1st, Mr. Attrill; 2d, Mr. Kershaw; 3d, Mr. Morris. 6 blooms: 1st, Mr. Larkin; 2d, Mr. Willis; 3d, Mr. Champion; 4th, Mr. Atherton. As an open prize to private growers, a silver cup was presented by Robert Donald-on, Esq., through the Society, for the best 12 blooms. For this 4 collections were produced: 1st, Mr. Hunt, jun., Paddington, with Duke of Wellington, Mr. Seldon, Princess Radzivill, Earl Clarendon, Sir F. Bathurst, Queen of Lilacs, Sir R. Peel, Honourable Mrs. Ashley, Shylock, Louis Philippe, Yellow Standard, and Gem of the Grove; 2d, Mr. James; 3d, Mr. Prockter; 4th, Mr. Black. Mr. Bragg had a large collection of Dahlias, Hollyhocks, Pansies, and other cut flowers; Pansy Pandora (Hunt), and Fancy Dahlia Miss Mathews, were both in good condition. Verbenas, Fuchsias, and other subjects were well supplied. *J. E.*

NOTTING HILL DAHLIA, *Sept.* 16.—This exhibition was held in Ladbroke-square. The day was fine, and the company numerous. First-class certificates were voted to George Villiers (Union), a dark ruby variety of much merit; the specimens were only, however, of moderate growth; to Triumphant (Keynes), a flower formerly noticed by us; to Laura Lavington (Keynes); to Nancy (Keynes); to Morning Star (Turner), deep orange scarlet, bold; to Miss Ward (Turner), a pale yellow, tipped white; to Miss Mathews (Bragg), brilliant scarlet, tipped white. Other seedlings were shown—Una (Keynes), a bold white; Flora McIvor (Keynes); Phantom (Noaks), golden orange; Sarah, mottled lake and white; Duchess of Gloucester and George Long (Trenfield); Malvina (Turner), bold purplish lake, mottled. Amateurs, 12 blooms: 1st, Mr. Weedon, of Hillingdon, with Mr. Seldon, Nil Desperandum, Magnificent, Duke of Wellington, Sir F. Bathurst, Admiral, Snowflake, Anticipation, Elizabeth, Yellow Standard, Grenadier, and Earl of Clarendon; 2d, Mr. Hunt, jun., with Magnificent, Earl of Clarendon, Princess Radzivill, Duke of Wellington, Sir R. Peel, Elizabeth, Mr. Seldon, Sir F. Bathurst, Yellow Superb, Shylock, Fearless, and Yellow Standard; 3d, Mr. Prockter, with Duke of Wellington, Thames Bank Hero, Mrs. C. Bacon, Richard Cobden, Fearless, Snowflake, Purple Standard, Crocus, War Eagle, Captain Warner, Mr. Seldon, and Scarlet Gem; 4th, Mr. J. Edwards, with Snowflake, John Edward, The Hero, Mrs. Seldon, Regina, Thames Bank Hero, Earl of Clarendon, Negro, Richard Cobden, Fearless, Mr. Seldon, and Queen of the Isles; 5th, Mr. Cook; 6th, Mr. Jones; 7th, Mr. Hopkins; 8th, Mr. Chawner. Six Fancies: 1st prize to Mr. Black, with Elizabeth, Rachael, Mrs. Hansard, Miss. Compton, Madame Wachy, and Forget-me-Not; 2d, Mr. Jones, with Miss Compton, Highland Chief, Madame Rose, Floral Beauty, Lady Grenville, and Madame Bresson; 3d, Mr. James, with Miss Compton, Mrs. Hansard, Elizabeth, Gasparini, Madame Wachy, and Mrs. S. Lefevre; 4th, Mr. Edwards, with Mrs. Hansard, Highland Chief, Princess Helena, Forget-me-Not, Kingfisher, and Gasparini; 5th, Mr. Chawner. Six new varieties: 1st prize to Mr. Weedon, with Nil Desperandum, Lady Cathcart, Regina, Admiral, Jullien, and Model; 2d, Mr. Black, with Goliath, Queen of Beauties (extra fine), Leda, Nepaulese Prince, Yellow Superb, and Sir C. Napier; 3d, Mr. Edwards, with Admiral, Leda, Regina, Nepaulese Prince, Napoleon, and Sir C. Napier; 4th, Mr. James; 5th, Mr. Jones. Four new varieties sent out this season by Mr. Keynes: 1st prize to Mr. Black; 2d, Mr. James; 3d, Mr. Edwards; 4th, Mr. Pope; 5th, Mr. Jones: sorts, Yellow Superb, Mr. Herbert, Summit of Perfection, Beauty of Kent, Baltic, and Miss Pope. Four new sorts let out this season by Mr. Turner: 1st prize to Mr. Black; 2d, Mr. James; 3d, Mr. Jones: sorts, Nepaulese Prince, Goliath, Lady Cathcart, Sir C. Napier, Nil Desperandum, Jullien, Regina, Roundhead, Leda, Model, and Mr. Palmer. Dealers, 24: 1st prize to Mr. Legge; 2d, Mr. Bragg; 3d, Mr. Cook. 24 Fancies: 1st prize to Mr. Legge; 2d, Mr. Bragg: the sorts being those already enumerated. Hollyhocks and Pansies were produced by Mr. Bragg; and a neat collection of Roses by Mr. Wilkinson, Western Rose Nursery, Ealing; among the sorts were 18 bunches of that sterling variety Géant des Battailles, also La Reine, Safranot, Paul Joseph, Mrs. Bosanquet, Cloth of Gold, &c. *J. E.*

CALCEOLARIAS: *C J.* The leaves sent were so dry that no traces of the insect were visible. Try tobacco-water, and syringe the plants on the under-side of their foliage. *J. E.*

CARNATIONS AND PICOTEES: *Anon.* These will now be mostly rooted and fit to take off. *J. E.—B V.* It is Hale's Sir H. Smith, S. F.; we know of no other. *J. E.*

CINERARIAS: *A B, and T S.* The notes were made at the several exhibitions which occurred during the season. I have not been a grower of them, yet, like yourselves, I have a disposition that way; further, I have already "had in" a dozen, by way of beginning, and I advise you both to "go and do likewise:" their cultivation is by no means difficult, and from their early season of flowering, they prove valuable and interesting without being expensive. Obtain Adela Villiers, Amy Robsart, Blue Perfection, Carlotta Grisi, Cerito, Clementine, David Copperfield, Effie Deans, Electra, Flora M'Ivor, Jetty Treffz, Ladies Gertrude and Hume Campbell, Lettice Arnold, Madame Sontag, Wedding Ring, &c. Madame Sontag has pale green foliage, without any purple on the under side; Electra is a shade darker, slightly tinged with purple underneath; Lettice Arnold is of a still darker shade of green, but without the purple tinge—its habit is robust; these are also the characteristics of Jetty Treffz; Adela Villiers, Amy Robsart, Effie Deans, and Lady Hume Campbell are each distinctly shaded with purple on the under side of the foliage; Wedding Ring, Cerito, Lady Gertrude, and Carlotta Grisi, are of less robust habit than the preceding, yet all may be advantageously added to every collection. *J. E.*

DAHLIAS (Fancies): *H P.* It is probable that they will resume their proper character, if treated as you propose. At the best of times, Fancies are disposed to sport into Selfs; even those now complained of, as the season advances, and the soil becomes exhausted by their growth, will produce flowers true to their kinds. *J. E.*

FLOWER SHOWS: *Justice.* Yes; the 12 plants in no way interfered with classes; they were set up as "extra," and being considered worthy, were so rewarded, for which Rule 10 especially provides. *J. E.*

TROWBRIDGE SOCIETY: *J K.* Censors should not be biassed by the remarks of a manager or assistant; a casual observer seldom examines the flowers sufficiently to be able to form a correct opinion on their merits. I have, however, every respect for the gentleman referred to; he could not easily be deceived, and would be one of the last to dispute an award if rightly made. *J. E.*

## SEEDLING FLOWERS.

DAHLIA: Scarlet King is brilliant in colour and good in outline; it has the shape of the Duke of Wellington, and colour of John Edward. The specimens were much past their best.*

PANSY: *R B D.* A yellow-ground flower, in the way of Bellona. In its present state it is too coarse for the purposes of exhibition.*

# Miscellaneous.

*Potato Disease in Germany.*—A correspondent travelling in Northern Germany sends us the following:—"I think you will be painfully interested in hearing that throughout the north of Germany the Potato disease has made rapid progress. When I left London, a short time ago, fears were entertained for the crop in Ireland; but, so far as I am aware, no fears were then felt for the crop in the great Potato growing plains of the north of Europe. Within the last seven days, I have passed from Cologne to Berlin, through hundreds of miles of diseased roots, and in many places the decay was so far advanced as to make the atmosphere quite intolerable. Already the effect of the calamity is felt in the market price of food in these countries, and even in England it is next to impossible that its influence should not be serious. Few misfortunes could be greater than another general failure of this great staple; and those who have it in their power to take precaution, should bestir themselves in time. It is already bitterly cold in North Germany, and there is every prospect of a severe winter to aggravate the calamity." *Athenæum, Sept.* 13.

*Cement for Stone Ware.*—Gelatine is allowed to swell in cold water, the jelly warmed, and so much recently-slacked lime added as requisite to render the mass sufficiently thick for the purpose. A thin coating of this cement is spread while warm over the gently-heated surfaces of fracture of the articles, and let dry under a strong pressure. What oozes out is removed directly with a moist rag. *Central-Blatt.*, No. 31; *Chemical Gazette.*

*Eatable Plants of Panama.*—Several spontaneous productions are used as culinary vegetables. The Marathrum fœniculaceum, H. B. K., a plant resembling some of the finer sea-weeds, and growing in most rivers of Veraguas, is esteemed so highly by the inhabitants that they have called it Passecarne, *i. e.*, exceeds or surpasses meat; and, indeed, its young leaf-stalks, when boiled, have a very delicate flavour, not unlike that of French Beans. The leaves of the Nnaja di espina Pereskia Bleo, De Cand.) are eaten as salad either raw or boiled, like the young branches of several Opuntias in Mexico; and in a country where, from the nature of the climate, the rearing of Lettuces is attended with difficulties, they form a tolerable substitute. The foliage of the Jatropha multifida, Linn., affords another culinary vegetable, losing, apparently, as do must Euphorbiaceæ, its poisonous qualities by boiling. The shrub is always found in hedges and around dwellings, which leads us to suppose that it was originally introduced, a supposition to which its vernacular name, Col de Nicaragua, or Cabbage of Nicaragua, gives additional strength. The seeds of the Chigua (Zamia sp.), a plant abounding in the vicinity of Chirambira, after having been boiled and reduced to a mash, are mixed with milk and sugar, and thus eaten. A kind of bread is also prepared from them. As condiments for esculent purposes, divers plants are employed. The red berries of the Malagueto chico, or Malagueto hembra (Xylopia sericea, St. Hil.), are substituted for pepper, especially by the negroes, who seem to have imported the first part of its name from their native country. The fruit of the Vainilla (Vanilla sp.) and Vainilla chica (Sobralia sp.) are valuable spices, much employed in flavouring sweetmeats, chocolate, puddings, &c. The leaves of the Toronjil (Ocimum Campechianum, Mill.), a common annual, are chopped, and serve to replace our Parsley. The most important, however, of all the aromatics to the Panamian cook is the Culantra (Eryngium fœtidum, Linn.). It imparts a flavour difficult for a foreigner to relish; but the inhabitants consider it the *sine quâ non*, and are quite distressed when in the soups and sancoches their favourite herb has by some accident been omitted. *Hooker's Journal of Botany.*

# Calendar of Operations.

*(For the ensuing week.)*

## PLANT DEPARTMENT.

IN addition to making this department as gay as possible at this season, attention to cleanliness and order should be rigorously enforced, as the time is drawing near when this will be looked to as a principal means of affording gratification and enjoyment, in lieu of that which is rapidly disappearing from the open flower garden; and when attention is concentrated more exclusively upon the plant-houses, anything which is untidy or out of order will the sooner attract notice. Some nice good-shaped plants of hardy Rhododendrons, Azaleas, Kalmias, &c., which are well supplied with blossom-buds, should be taken up, potted, and plunged in a bed of ashes, from whence they can be brought forward in succession as they are required. Roses in pots for winter use should be examined, and any that require repotting or top-dressing should be immediately attended to; a little stimulus in the way of rich soil will be of great service to them. Attend to the staking of Chrysanthemums, and stimulate their growth by occasional waterings of liquid manure, removing all suckers as soon as they appear. Encourage the growth of Cinerarias, Primulas, Calceolarias, &c., by repotting them, as often as they require it, into light rich soil; and give them every other attention calculated to ensure a strong sturdy growth.

## FORCING DEPARTMENT.

PINERIES.—As long as the daylight is strong enough to keep the plants in a healthy growing state, great care should be taken to prevent them receiving any check

The night temperature should be kept steadily ranging from 63° to 68°, with a bottom heat of 85°. Examine carefully the wants of the plants, as regards water; avoiding either extreme, and syringing only in very fine weather, and then with water of the same temperature as the pits, taking care not to allow the moisture to accumulate about the stems and hearts of the plants, as considerable injury will be done thereby during very dull weather. Admit air freely in such weather, to assist evaporation, even if extra fire-heat is required to enable you to do so. VINERIES.—Vines intended for early forcing should be pruned as soon as possible, or they will be liable to bleed. The old loose rough bark should be rubbed off, and the whole of the plants washed over with sulphur and soft-soap. The glass should be cleaned, and all the interior of the house painted, taking every precaution to smother effectually insect life in every stage. The old worn-out soil should be removed from the surface of the border, as far as practicable without injuring the roots, and replaced with a rich compost of charred turf, fresh horse or deer dung, and lime rubbish, with a portion of rough bone-dust. CHERRIES.—The forced Cherries will now be losing their leaves, and should, with the house they occupy, be treated exactly as was recommended for the early Peach-houses some weeks back. MELONS.—Unless these can be freely supplied with top and bottom heat, thereby allowing the admission of a free current of air, they will be of little further value; and, as the fruit ripens, they may be cleared out, to make room for various plants during winter. Take care, however, of those growing in pits which are furnished with the necessary facilities for keeping up the requisite amount of heat.

### FLOWER GARDEN AND SHRUBBERIES.

Seeds should now be carefully gathered as they ripen, and due attention given to mowing, rolling, cleaning, &c. Short moderately hardened shoots of Hybrid Perpetual and Bourbon Roses, if taken off at their junction with the preceding growth, and placed in a slight bottom heat, will strike root easily, and if potted in rich soil, will come in admirably for flowering in pots during next spring or the following winter. It is now high time to plant spring-flowering bulbs, and the ground intended for them should be immediately cleaned and prepared for their reception. The soil in which they flourish best consists of a highly-enriched sandy loam. A more cheerful appearance may be given to the beds by interspersing them with some plants of the hardy Primrose or Polyanthus, or with small plants of Erica carnea from the reserve garden. These flower at the same time, and may also be returned to the reserve garden in April or May next. Many of the early flowering herbaceous plants being now in a dormant state, an excellent opportunity is afforded for removing them, if desired, or for increasing the stock by division, as they will commence rooting immediately, and will have time to establish themselves before the ground becomes locked up with frost. If it is intended to take up any of the plants from the open garden, and preserve them for filling the beds another season, it should be done early, that they may have time to start fresh before winter. The lifting will generally be confined to any new or very choice plants, of which there is not a sufficient stock of young ones; and to scarlet Geraniums, which produce flowers more abundantly upon old plants than upon young ones. The latter should be taken up, pruned to within one healthy joint of the old wood, and planted close together in pots or boxes. They should be placed in a moderately warm greenhouse, on a frame of the same temperature; and if the soil is moderately moist at the time of potting, water should be withheld till they have commenced to form new shoots and roots. Other beds may now be cleared of their occupants, wherever these are getting shabby or untidy in their appearance.

### FLORISTS' FLOWERS.

It will be necessary now to put Polyanthuses and Auriculas, grown in pots, into their frames for the winter. The most successful cultivator of these flowers we ever saw, had the whole of his pits made of brick-work, having two small sliding doors in each of the sides; by this means, in boisterous or rainy weather, he could secure a free ventilation amongst his plants, without moving the lights. As they will now be getting to rest, it will be advisable to avoid all undue excitement; in fact, they should be rather too dry than otherwise, giving all air possible, and by no means supposing that these plants are in any way tender, the greatest enemy they have is damp. Repot young plants in good compost, and attend carefully to seedlings. CARNATIONS AND PICOTEES.—Those that were layered early may be removed from the parent plants; if a new variety, it may be worth while to save the latter also; if cut down, they will emit shoots, and often produce a profusion of layers the succeeding summer. The layers which are now removed may either be potted singly in half pints, or two together in a pint; they should then be closely framed for a few days, shading from the sun, giving air gradually till they have emitted fresh roots, when they may be wholly exposed.—Tulips should now be arranged for planting, and offsets got in as soon as possible.

### HARDY FRUIT GARDEN.

WALL TREES.—Any over-luxuriant growth should still be pinched, to prevent any excess of growth in one part of the tree, to the injury of weaker branches. In late situations, Peaches will continue to grow for some time after this, especially if the season should prove wet; and to prevent this, when such a tendency has been observed, we have often at this season cut trenches round the trees immediately after the fruit has been gathered from early kinds. The trenches should be cut at distances proportioned to the size and age of the trees; and all the strongest of the roots cut back with a knife, to check any exuberant growth, and to promote the ripening of the wood. This plan has answered fully. The cut roots soon emit new fibres, and the trees improve amazingly by it. Our borders being concreted below, enables this operation to be more readily performed than it could be if the roots were allowed to descend deeply into the subsoil. The late Peaches cannot be root-pruned till after the fruit is gathered; but all that require it should be attended to as soon as circumstances will permit. The best way to protect fruit from wasps is by means of the hexagonal gauze net, as formerly recommended. Pears and Apples will require frequently examining during the next few weeks, so as to gather the ripe fruit before it falls from the trees.

### KITCHEN GARDEN.

Any crops of Potatoes still remaining in the ground should be got up without delay, carefully sorted, and slightly sprinkled with quick-lime, or the caustic ash produced by charring or burning refuse; a good plan to ensure perfect dryness is to fill up the crevices between them with dry charcoal dust, which will absorb any moisture exhaling from the Potatoes. But as this does not prevent their heating, we prefer to keep them as dry and cool as possible, by passing a current of air through them. Avoid the too common large heaps, in which the Potatoes become very hot, and are much more likely to become diseased. The best way is to store them in small heaps, containing from 8 to 12 bushels in each; and, as an additional precaution against their heating, a few draining pipes may be laid round the edge, pointing towards the centre, by which air will be admitted on all sides; and the egress of the vapour may be provided for by fixing a single pipe upright in the centre of the heaps. They should be formed on the surface of a dry piece of ground, which is much better than to dig pits for them. They should at present be only partially covered, laying over them sufficient straw and soil to exclude and throw off the rain, but deferring their frost-proof casing of soil till the nearer approach of winter. In addition to the rows of Parsley planted at the foot of the south walls, a few boxes should be filled with some carefully selected plants of extra curled, to afford a supply in extraordinary cases during winter, when deep snow or other causes prevent access to the plants in the open ground.

State of the Weather near London, for the week ending Sept. 18, 1851, as observed at the Horticultural Garden, Chiswick.

| Sept. | Moon's Age. | Barometer. | | Temperature of the Air. | | | Temperature of the Earth. | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. 12 | 17 | 30.401 | 30.287 | 74 | 38 | 56.0 | 55 | 54 | N.W. | .00 |
| Satur.. 13 | 18 | 30.319 | 30.301 | 72 | 33 | 52.5 | 56½ | 55½ | N.E. | .00 |
| Sunday.. 14 | 19 | 30.393 | 30.370 | 73 | 40 | 56.5 | 55½ | 55 | S.E. | .00 |
| Monday 15 | 20 | 30.540 | 30.491 | 66 | 38 | 52.0 | 56 | 55 | E. | .00 |
| Tues. .. 16 | 21 | 30.572 | 30.460 | 66 | 52 | 59.0 | 56 | 55½ | N.E. | .00 |
| Wed. .. 17 | 22 | 30.411 | 30.306 | 69 | 45 | 57.0 | 57 | 55½ | N.E. | .00 |
| Thurs.. 18 | ☾ | 30.273 | 30.117 | 66 | 47 | 56.5 | 56½ | 55 | N.E. | .00 |
| Average ... | | 30.415 | 30.333 | 69.4 | 41.8 | 55.6 | 56.1 | 55.2 | | .00 |

Sept. 12—Foggy; very fine; clear at night.
" 13—Foggy; very fine; clear and cold at night.
" 14—Slight fog; very fine; clear.
" 15—Slight fog; cloudy; clear at night.
" 16—Fine, with light clouds; very fine; overcast.
" 17—Overcast; fine; cloudy.
" 18—Fine; cloudy; very fine; clear at night.
Mean temperature of the week, 1½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Sept. 27, 1851.

| Sept. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 21 | 66.8 | 45.7 | 56.2 | 14 | 0.50 in. | 2 | 2 | 5 | 2 | 6 | 4 | 2 | 2 |
| Mon 22 | 67.2 | 46.3 | 56.8 | 12 | 0.40 | 1 | 1 | 7 | 2 | 5 | 5 | 4 | 1 |
| Tues. 23 | 65.8 | 46.2 | 56.0 | 14 | 1.21 | 5 | 5 | 1 | 6 | 5 | 2 | 1 | 1 |
| Wed. 24 | 65.4 | 46.5 | 55.9 | 11 | 0.75 | 2 | 4 | 2 | 1 | 4 | 8 | 3 | 1 |
| Thurs. 25 | 66.0 | 46.1 | 56.1 | 10 | 0.30 | 1 | 4 | 1 | 2 | 4 | 8 | 4 | 1 |
| Friday 26 | 65.9 | 46.3 | 56.1 | 15 | 0.72 | 1 | 4 | 3 | 1 | 4 | 6 | 1 | 1 |
| Satur. 27 | 65.2 | 45.4 | 55.3 | 13 | 0.57 | 1 | 2 | 3 | 1 | 4 | 7 | 6 | 2 |

The highest temperature during the above period occurred on the 25th, 1842—therm. 82 deg.; and the lowest on the 27th, 1823—therm. 24 deg.

## Notices to Correspondents.

A GARDENER: *O P.* On no account whatever alter your position; keep your money, keep your place; for you may depend upon it you are more independent now than you will find yourself if you embark in market gardening or other speculations in this country.

BIRDS—LINNET AND CANARY: *Mary T.* Yes; we advise you to separate them immediately. When separately caged, hang them so that they can hear but not see each other. Your idea that they will again "pair" next season, is founded in reason; seeing how happy they have been in the united state, and how affectionately they have reared their offspring. A bird's memory is tenacious, though sometimes his disposition is capricious. *W K.*—THE ROBIN: *B G L.* You are right. No finer cage-bird exists than a robin—whether for beauty or for song; and if properly fed and attended to, they will sing nearly the whole year through. All they require, beyond their regular food, is a meal-worm now and then; and occasionally a little sliced liquorice root in the tin holding their water. *W. K.*—THE YELLOW-HAMMER: *Jane D.* This is a cheerful bird in confinement; and as you have had him given you, there can be no reason why you should not keep him. He is a bird of handsome presence, but will not sing in a cage till next spring. He will eat German paste as well as Canary seed. *W. K.*—THE NIGHTINGALE: *Penelope.* No; they are yet tarrying with us, being reluctant to depart until compelled by adverse weather. The tame Nightingale, alluded to by us in earlier Numbers, is still with his mate in our garden. They have raised a second brood, which are full fledged; and the papa treated us to a short hurried snatch of song on Sunday last. Surrounded by his family, he was an object of great interest to more than one beholder. *W. K.*—THE WREN: *S P G.* This bird *must* be fed on liver gentles, or live food. It never thrives on German paste only. If so treated it will pine and die. *W. K.*—THE THRUSH: *Ellen A.* You have acted unwisely in placing a cup of water in the cage. All birds of this tribe are mischievous, and upset every vessel within their reach. His sand has become saturated with water, and he has caught the cramp. Being so young, you must keep him in warm quarters, and let him have plenty of small dry gravel for a carpet. *W. K.*—THE GOLDFINCH: *J Y.* You may keep them together while they are so young, but it will be advisable to separate them in about three weeks. All birds sing better and sooner when in "a house of their own." *W. K.*—THE CANARY: *Amanda.* We have no difficulty in divining, from the tenor of your gentle note, that you are a very kind mistress; we therefore give you every hope of your invalid bird soon rallying, and repaying you with a grateful song. We are glad to have in any way assisted you by our advice, so promptly acted upon. Cease giving him green meat, Saffron, and Hempseed. If medicine be at any time needful, administer it in the agreeable and equally efficacious form of (warm) boiled milk. Remove the bird's water, meantime, for two days. *W. K.—Eleanor B.* Your little canary has been taken too early from the breeding cage. You must treat him now like a hot-house plant; place him in a close cage, and keep him warm throughout the winter. Do not attempt to hang him up, as you propose, out of doors—even though "the sun shines." *W. K.*—THE BLACK-CAP: *J B.* Thanks for your note. From what you state, there can be little doubt that your "household gods" will soon be rejoicing in the united harmony of the nightingale and black-cap's notes. It is remarkable that the latter bore the fatigue of such a long journey so well as he did, and that he is already so sprightly. Read carefully what we have written about these two birds, and you will verify to the letter all we have said. The *tone* of your note now breathes "hope" touching the nightingale. Your patient endurance is about to be rewarded. *W. K.—J C Ewan.* One would almost imagine that you judge of character by intuition, or by studying the handwriting of your correspondents. At all events, you have found out *our* "weak point." However, as Othello says, "One more—and *this* the last;" the very last. Your black-cap is chosen; placed in a handsome castle; and looks as happy as he *can* look under such circumstances. He awaits your pleasure at Mr. Cliff rd's. You talk about "compensation." Being non-professional, our "fee" shall be the fee-simple of your thanks. *W. K.*—SONG-BIRDS: *J Read.* We advise you to procure *all* the Numbers of the Paper, referring to "song-birds," while they are in print; and by all means read our remarks week by week. You will then keep pace with us; for our subject increases in interest. *W. K.*

BOOKS: *A B.* Your question is very vague. Loudon's "Encyclopedia of Trees and Shrubs" is probably what you want.

CACTUS: *Isabella.* In all probability your buds are destroyed by the woodlouse or earwigs. No lotions or local applications will keep them off. You must search the mould in which the plants grow, and catch these marauders; traps made with Potatoes sliced, or tufts of moss, or similar contrivances, will be of much service. We take for granted that you have not cockroaches; if you have them, you must have them sought for by night, when they feed.

CINCHONA CONDAMINEA: *W M.* This plant, which is now flowering at Messrs. Veitch's Nursery, Exeter, has not yet been figured in any botanical periodical.

DOGWEED: *Tonbridgensis.* It is propagated easily by layers or cuttings. There is no better manure for Peas or Beans than well rotted farm-yard dung; but not too much of it, or they will run to leaf. In stiff clay, a dressing of plasterers' rubbish has a great effect. As to soot and salt, we never tried them. They might answer.

EGGS: *An Epicure* in salads would be glad to be informed what is the reason some eggs will never boil so as to crumble well in breaking, even with the longest boiling.

MONSTROSITY: *A Subscriber.* When branches grow thus they are called fastigiate. Here is an example of the same kind in a Heath. The cause is unknown.—*J. White.* Your specimen of Cycnoches, with one flower of *pentadactylon* and another of *Lodd-digesii*, on the same spike, is one of those puzzling exchanges of form that occur amongst Orchids, and are unknown elsewhere. Their cause is entirely unknown.



NAMES OF PLANTS: *C L.* Stanhopea Wardii, Maxillaria leucantha(?), Crinum longifolium(?). Wretched specimens.—*X, Salop.* Robinia viscosa.—*E J T.* Your specimens are in too young a state to be determined satisfactorily; 1 is probably Lastrea dilatata, which, when perfect, grows to 2 or 3 feet high; 2 is apparently Asplenium lanceolatum. *S.—M W.* We cannot undertake to name plants not in flower.||—*Anne D.* The spots on the back of the Fern are not an insect, but the fructification of the Fern (*Lastrea Filix-mas*). The cover is called the *indusium. S.—J W R.* Probably seedling fronds of Pteris aquilina; but the specimen is too young and imperfect to enable us to determine with certainty. *S.*

NAMES OF FRUITS: *C R.* Peaches: 1, 2, 3, 4, 5, 7, all Royal George, and probably 6 is the same, but it was bruised. Nectarines: 1, 4, Violette Hâtive; 2, 3, Elruge.||—*B M.* Both your Apples are correct to the names by which you received them: 1 is the new Golden Pippin; 2, Court of Wick.||

POLMAISE HEATING: *J Abell.* We have repeatedly looked for this model, but we can neither find it, nor anybody who knows of it. What is the exhibitor's name, and what the catalogue number?

RATS: *A C*, and the many other complaining sufferers from depredations by these vermin, are informed that the *only* reason for the promised RECIPE being withheld last week, was the want of space. On some particular occasions, one matter of importance must give way to another. No discourtesy was intended by the omission. It appears today. *W. K.*

RHODOLEIA: *Scotia.* This is a very handsome shrub from Hong Kong, with large crimson flowers. It is cultivated like a Camellia, but is more tender.

WEEDS: *G E.* It is Polygonum Hydropiper. You can only destroy it by continually forking it up till it disappears.

MISC.: *Amateur.* M. Victor Verdier, Rue des Trois Ormes, Boulevard de la Gare; M. Eugene Verdier, son of the above, near his father; M. Thomas, St. Denis; M. Duval, à Montmorency; M. Margottin, Rue de Marché aux Chevaux; M. Laffay, à Bellevue; M. Guerin Modeste, Rue des Couronnes, near Père la Chaise; M. Marast, Rue d'Enfer.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

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EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

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These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in Dwelling-houses for conveying Hot or Cold Water to Baths, &c.

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Dr. S. NEWINGTON'S Lecture on Seeding may be had gratis.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

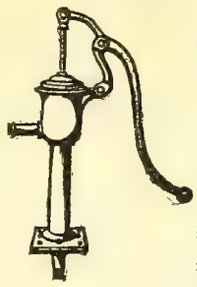
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| | | | |
|---|---|---|---|
| Patent Pump ... ... | £1 | 16 | 0 |
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MILDEW.

EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21s., and upwards. The Trade supplied by Barber and Groome, Holborn, London.

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# The Agricultural Gazette.

*SATURDAY, SEPTEMBER* 20, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 25—Agricultural Imp. Soc. of Ireland.
THURSDAY, Oct. 2—Agricultural Imp. Soc. of Ireland.

MR. SULLIVAN has addressed a letter to the *Advocate* (Irish journal), which his friends consider a triumphant reply to the paper which Professor HANCOCK read at the meeting of the British Association, and which we noticed in a recent Number. He complains, in no very measured terms, of disingenuousness and hostility to Ireland on the part of Professor HANCOCK. He says that he had examined the subject from five principal points of view—1, the unsuitability of Ireland to become a great corn-growing country; 2, its adaptation to become a Beet-growing country; 3, that it is profitable to grow Beet for the manufacture of sugar; 4, that the per centage of sugar contained in Irish-grown roots was at least equal to that contained in those produced on the Continent of Europe; and 5, that the manufacture of sugar from Beet would be profitable in Ireland, even when exposed to the competition of all the tropical sugar-growing countries. He then complains that Professor HANCOCK, instead of replying to the first four of these points, has gone out of his way to show that the business of sugar making is wholly unsuited to a public company; and that he has distorted Mr. SULLIVAN'S calculations, in order to disprove his fifth proposition, that the manufacture can be carried on profitably in Ireland.

We have lately received a copy of Mr. SULLIVAN'S pamphlet, and, as we have contributed to extend the publicity of Professor HANCOCK'S statements, it is but fair that we should do the same by those of Mr. SULLIVAN. We shall therefore endeavour to lay before our readers an impartial abstract of them. Before entering on his first proposition, as above stated, the unsuitability of Ireland to become a great corn-growing country, he asserts, what few will controvert, the importance of a rotation in which root crops shall alternate with the cereals; he urges the obstacles to the consumption of root crops by stock in Ireland, arising from the smallness of the holdings, the absence of the requisite buildings, and the want of capital on the part of the farmers for the purchase of stock. He looks to the establishment of a market for Beet as a remedy for this state of things, contending that the disadvantages of removing the crop from the land will be more than counterbalanced by the farmer having a larger amount of available capital for the working of it, and consequently obtaining larger returns of produce. The unsuitableness of Ireland for the growth of the cereals is shown by reference to the average produce of Wheat in Ireland, England, Lombardy, Germany, Belgium, France, and America. It will be readily conceded that, from the moisture of the climate, Ireland is better adapted to grazing and green crops than to corn growing; though, for reasons into which we cannot enter, we are not inclined to place implicit reliance on some of the averages cited. The adaptation of Ireland to the growth of Beet is proved by a comparison of the average weight of sugar Beet in France, with the average weight of Mangold Wurzel in Ireland. The crop of Beet in France is stated as varying between 8.66 tons and 16.76 tons, the average of 12 departments being 11.32 tons. The average produce of Mangold Wurzel in Ireland is given as varying in eight counties between 15.01 as the lowest, and 22.00 tons as the highest. The average on which he bases his calculations is 15 tons of sugar Beet to the acre. It will be observed that this is higher than the French average by more than 30 per cent.; and the French average given by Mr. SULLIVAN confirms the statement of DUMAS, quoted by Sir R. KANE, of 12 tons as the crop most productive of sugar. Fifteen shillings is assumed as the price per ton of the Beet to the sugar manufacturer. From these data Mr. SULLIVAN has convinced himself that Beet will be a more profitable crop than Wheat, by the following calculations:

ONE ACRE OF BEET.

| EXPENSES. | £ | s. | d. |
|---|---|---|---|
| Two ploughings ... | 0 | 12 | 0 |
| Scarifying ... ... ... | 0 | 1 | 6 |
| Harrowing, rolling, &c. | 0 | 5 | 0 |
| Seed sowing and spreading manure ... | 0 | 10 | 6 |
| 5 bushels of bones ... | 0 | 15 | 0 |
| 3 cwt. of guano ... ... | 1 | 13 | 0 |
| Three hoeings ... ... | 0 | 8 | 0 |
| Pulling, stripping leaves, drawing, &c. ... ... | 1 | 1 | 0 |
| | £5 | 6 | 0 |

| RETURNS. | £ | s. | d. |
|---|---|---|---|
| 15 tons of Beet-root at 15s. ... ... ... | 11 | 5 | 0 |
| 4½ tons of tops at 7s. 6d. | 1 | 13 | 10 |
| | £12 | 18 | 10 |
| Expenses ... ... | 5 | 6 | 0 |
| Balance for rent, taxes, and profit ... | £7 | 12 | 10 |

ONE ACRE OF WHEAT.

| EXPENSES. | £ | s. | d. |
|---|---|---|---|
| Ploughing ... ... | 0 | 5 | 0 |
| Harrowing, rolling seed, sowing, and weeding | 0 | 17 | 0 |
| Reaping & harvesting | 0 | 12 | 6 |
| Threshing & cleaning | 0 | 10 | 0 |
| Cartage, say five miles | 0 | 2 | 6 |
| | £2 | 7 | 0 |

| RETURNS. | £ | s. | d. |
|---|---|---|---|
| 6½ barrels of 20 stones, at 22d. ... ... ... | 7 | 3 | 0 |
| 1½ tons of straw at 15s. | 0 | 18 | 9 |
| | £8 | 1 | 9 |
| Deduct expenses ... | 2 | 7 | 0 |
| | £5 | 14 | 9 |
| Profit on Beet at 15 tons to the acre, grown with guano | 7 | 12 | 10 |
| Balance in favour of Beet ... ... ... ... | £1 | 18 | 1 |

On the Beet-root calculation we would remark, that 1l. 1s. is too little for pulling, drawing, &c., if by drawing is meant delivery at the manufactory. Supposing it distant five miles; this alone, at 6d. per ton per mile, would amount to 1l. 17s. 6d. Again, if we understand Mr. SULLIVAN rightly, he means the leaves to be ploughed in as green manure, and considers them necessary, in addition to the bones and guano, to maintain the fertility of the soil. In that case they have no right to appear among the money returns of the produce. These two items require a deduction of 3l. 11s. 4d.; and if it should turn out in practice that 12 tons is the average sugar crop, instead of 15, we must make a further deduction of three times 12s. 6d. (the value per ton on the land) or 1l. 17s. 6d. an acre, making a total reduction of 5l. 8s. 10d., which will turn the balance between the Wheat and Beet culture in favour of the Wheat.

That the per centage of sugar in Irish roots is at least equal to that in roots grown on the Continent, is inferred theoretically from certain conditions of climate, which it is considered ought to produce such a result; and experimentally by some researches in Mr. SULLIVAN'S laboratory, from which it appeared—though it is admitted the subject requires more accurate and extensive investigation—that Irish sugar Beet, Wurzel, Carrots, and Swedes, actually contain more sugar than the same roots on the Continent!

For the fifth proposition, that sugar can be profitably manufactured in Ireland, Mr. SULLIVAN relies on two estimates; one, of the cost and returns of the manufacture of sugar from fresh Beet; the other, communicated by M. PAUL HAMOIR, of the manufacture of sugar from dried Beet. This is a recent improvement introduced into many Beet-sugar establishments in France, by which a great saving is effected, as the manufacture can be carried on during the whole year, instead of during only 120 days of 24 hours. These are the calculations which Professor HANCOCK is accused of distorting. Let us see what there is to justify the accusation. In the first calculation, Mr. SULLIVAN assumes 15s. per ton as the price of the Beet, and 9000l. as the expense of manufacturing 20,000 tons of Beet. The produce is assumed at 5 per cent. of white sugar, amounting to 1000 tons, valued at 28s. the cwt.; Molasses, 500 tons, at 2s. the cwt.; pulp 1000 tons, equal to 5 per cent. of the roots employed, and valued at 2l. the ton. The total expenses are 24,000l.; the total returns 31,000l., leaving a balance of 7000l. for interest on dead and floating profit. The capital sunk in buildings, machinery, &c., is assumed at 20,000l.; and the floating capital to be turned only

once a year. Interest on 44,000*l.* is therefore charged at 5 per cent., and 5 per cent. is also charged on the same sum for rent, wear and tear, &c., leaving a net profit of 2400*l.* In this calculation the proportion of pulp is assumed, as we have said, at 5 per cent. of the roots employed; and its value at 2*l.* the ton. Sir R. Kane had estimated it, on the authority of Dumas, at 2½ per cent., and its value at 6*l.* 5*s.*, which Mr. Sullivan considers too high. If Sir R. Kane is right as to the proportion of pulp, and wrong as to its value, this would reduce the net profit by 1000*l.* If from the inability of the Irish farmers to purchase stock there should be no market for the pulp, the net profit will be reduced to 400*l.*

By reference to Professor Hancock's version of this calculation, quoted in Number 33, it will be seen that it is substantially the same, except that he gives no credit for the molasses and pulp. M. Hamoir's estimate of the cost and profits of manufacturing sugar from dried Beet, as given by Mr. Sullivan, is for the manufacture of 60,000,000 kilogrammes ("61,607 tons") of Beet, at "16 francs (12*s.* 11*d.* per 1000 kilogrammes, one ton nearly)." The cost of desiccation is put down at 12,300*l.*, and of general manufacture 27,600*l.*, equal together, as Professor Hancock has stated, to nearly 13*s.* the ton of Beet, instead of 9*s.*, as in the preceding calculation. The produce is 2700 tons of refined sugar, which, duty deducted, would be worth about 39*s.* the cwt., according to Mr. Sullivan—in reality, 40*s.* (2700 tons of sugar = 108,000*l.*) Besides this, there is molasses, 1800 tons—3600*l.*, and pulp amounting to 2400*l.*, which is valued only at 9½ the 220 lbs. (100 kil.), because, being made from dried Beet, it is less valuable as cattle food. The total expenses, by this process, are 78,000*l.*, the total returns 114,000*l.*, leaving a balance of 36,000*l.* for interest, wear and tear, and profit. If, however, in this calculation we substitute, as Prof. Hancock has, Mr. Sullivan's own price of Beet, 15*s.*, and his own price of sugar, 28*s.*, leaving the molasses and pulp as they are, a very different result would come out; the total expenses will be 86,105*l.*, the total returns 81,600*l.*, leaving a loss of 4505*l.*, besides interest, wear and tear, &c. In this statement, the produce of sugar is 4½ per cent. of the Beet. Other calculations follow of what the profit would be at 5, 5½, 6, and 6½ per cent. of sugar; and Mr. Sullivan is very angry with Prof. Hancock for fastening on the lower calculation, and not knowing that in the manufactory of Serret, Hamoir, Duquesne, and Co., who supplied the comparative estimates, 7 per cent. of raw sugar, equal to 5½ per cent. of refined sugar, is now obtained. For ourselves we confess to have fallen into the same error—if error it be—as Prof. Hancock, and to have supposed that "April 18, 1850," the date attached to this 4½ per cent. calculation, referred not to the state of things "20 years ago," but to the present time. We thought that this was the actual present produce, and that the subsequent calculations at a higher per centage were hypothetical estimates by Mr. Sullivan himself, just as his estimates of the profit of growing 15 tons of Beet is followed by others, showing what it would be on 20 and 30 tons. "The simplest way," he says, in his letter to the *Advocate*, "to show how Mr. Hancock has distorted the question, in the total absence of any numerical facts of his own, is to state that 15 tons of Beet yield one ton of sugar, and on this supposition the following estimate would represent the profit:—

| Expenses. | | | |
|---|---|---|---|
| 15 tons of Beet, at 15*s.* | £11 | 5*s.* | 0*d.* |
| Cost of manufacture, say 9*l.* per ton | 9 | 0 | 0 |
| | 20 | 5 | 0 |
| Produce, 1 ton of sugar, at 28*s.* per cwt. | 28 | 0 | 0 |
| Profit | £7 | 15 | 0 |

"In this," he adds, "I have not included the pulp and molasses, and have assumed the cost of production at 9*l.* the ton, the very highest paid by any manufacturer." We find, however, by M. Hamoir's statement, 39,900*l.* set down as the cost of manufacturing 2700 tons of sugar, which is more than 14*l.* 15*s.* 6*d.* the ton. This would reduce the gross profit in the above calculation from 7*l.* 15*s.* to 2*l.*, leaving the molasses and pulp to pay interest on capital, &c., as far as they would go. On the whole, we find nothing in Mr. Sullivan's statement, as now explained, to justify the warmth of his tone, or to tempt us to embark either in the cultivation of sugar Beet or in the manufacture of sugar. The question, however, will in a few months be decided by the best of all tests, that of actual experiment. The Irish Sugar Beet Company are, we understand, about to commence manufacturing sugar, from the Beet of 200 acres, as soon as the crop for which they have contracted shall be ready. If the experiment succeeds, their operations will expand. If it fails to yield a profit, or the prospect of a profit, they will dissolve. We wish them all success, and the best hope we see for them is in the statement quoted by Mr. Sullivan, from the "Statistique de l'Agriculture de la France," that the manufacture of Beet sugar has increased in that country, from 51,201 tons in 1840, to 100,000 tons in 1850, notwithstanding the equalisation of the duties on imported sugar and sugar the growth of France, which has been in progress during the interval.

## HOUSE FEEDING AND MARKETING OF STOCK.

A few days since, four large plans were put up in the agricultural department of the Exhibition in Hyde-park, by Mr. Burness, London, connected with the house feeding and marketing of stock. The exhibitor, an experienced agriculturist, has arrived at the conclusion that, to be able to compete with foreign farmers, we must be chemically and mechanically ahead of them. For instance, we cannot compete with the foreign farmer on the natural system, such as pasturage or grazing. The extensive plains of America, and the continent of Europe, yield butcher meat at a less figure than the grazings of England. In the various departments of the Crystal Palace, the majority of our readers before this time will have perceived salted beef in abundance of a superior quality, fit for the supply of our whole shipping interest. That parties are here making wise calculations against us, there can be no mistake. Witness again Mr. Borden's "meat biscuit," of the United States, and the exertions of all the nations in the world to pick up all our chemical and mechanical improvements, for no other purpose than to be able to undersell us in our own corn and cattle markets. We are, in short, cackling for a 5*s.* protection, while we are teaching foreigners how to grow corn 10*s.* cheaper. Mr. Burness, however, proposes artificial means, beyond the reach of the foreign farmer, on the natural system, as auxiliaries for us in our present exigencies.

"Muck is the mother of meal" all the world over; and Mr. Burness proposes manufacturing the whole of the waste offal of cattle, and, indeed, the whole sewage matter of towns, into a comparatively dry and portable manure, and has invented machinery for this purpose, so as to supply us with an abundance of cheap manure, and thus enable us to compete with the foreigner in Mark-lane. On the other hand, again, he proposes an entire revolution in the mode of marketing butchers' meat, conferring upon the home farmer many advantages over the foreigner. To do justice to his scheme, we must discuss it somewhat in detail, and therefore, on the present occasion, shall confine our observations to his mode of managing and marketing fat stock.

House-feeding and box-feeding is no longer mere theory—it is successful practice, and the only practice, as Mr. Burness contends, which will enable us to appear in Smithfield successfully with the farmers of the Continent; and, in Newgate and Leadenhall, with the salted meat and "meat biscuit" of our colonies and the United States. Some two or three years ago, it appears that he laid before the Royal Agricultural Society a paper suggesting various improvements on the feeding box, so as to obviate present objections; but on making some discoveries connected with the marketing of dead meat—then and still under his investigation, the paper was withdrawn, but is now again returned. So far as patentable, he proposes patenting his improvements; for his inventions are provisionally registered, but so far as farmers are concerned, we are given to understand that no charge will be made for anything connected with the feeding box, and even for his other improvements he promises not to ask a single halfpenny until farmers have first received a shilling. His feeding boxes are so constructed that the manure may be removed by carts. This is effected simply by elevating the subdivision gates or bars, the former worked by a rope or chain with a weight on two pulleys; the cart may then be backed into the second box and so forth. Or where parties object to cattle lying on their manure, he provides for its daily removal by wheeling it out with a barrow to the dunghill.

His mode of roofing is different in the framework from that of the Crystal Palace, but so constructed that any number of cattle may be contained under one roof or rather system of roofs. On his plan for a farmer he exhibits a system for 200 cattle, and for a cattle market from 6000 to 7000 oxen, and 30,000 to 40,000 sheep. His principle of roofing is that of a double roof. Interior of the principal roof he constructs a temporary one, so to speak, sufficient to create currents of fresh air during summer, and thus keep the building cool.

He next arrives at the conclusion that what is good for the farmer's ox or sheep, is also good for the butcher's. In other words, that fat stock should be treated by our large commercial and manufacturing towns with the same deference to agricultural science, as they are treated by farmers themselves. If farmers follow the natural system, so may our urban friends—but if farmers adopt the artificial, as we now obviously must, then ought they also to reciprocate with us. The arguments to the contrary lately given before a select committee of the House of Lords—that to drive the fat ox so many miles to the lair of the salesman is advantageous for the health of the ox, after being over fatigued already in standing some 10 or 12 hours on foot in a railway van! go for nothing in the estimation of the exhibitor. He neither concurs with the proposition, that a fat ox is a locomotive engine, nor that the salesman is justified in charging for the natural system of lairage what ought to furnish the artificial. The sum which we now pay for lairage and for driving cattle from the railways to the lairs, and from the lairs to market, Mr. Burness contends, will do more than provide feeding boxes of the kind which he proposes in which cattle may be sold—a conclusion obvious at first sight; for if it is profitable, and will repay the farmer to erect household accommodation, why should it be otherwise in towns or the suburbs of towns? When the ox arrives in the metropolis, for instance, it cannot be in all the corners of it at one time. After it is slaughtered it is subject to subdivision, but previously it can only occupy one space or area of land; consequently, if four acres are provided for it, three of them must always be empty. Now such being a fact—a fact which cannot be controverted, the propriety of travelling it from railway to lair, from lair to market, and from market to the slaughter-house, if not a different lair contiguous, may be questioned; for every removal costs the farmer and the public something more than a reduction in the quantity of butcher-meat. Such may be a convenient system for bankers, butchers, and salesmen, but it neither suits depresssed agriculture nor a heavily taxed public. The area of land required for the lairage of an ox in the metropolis is valuable, and more so at the centre than the circumference. Now as all landlords have a right to charge rent for their areas, and do charge rent for their areas, it obviously follows that one area would be cheaper than four, and that that area would be cheaper at the circumference, so that the difference should be paid by butchers and salesmen. The different areas now under lairage, market, and slaughter-houses exceed that which would be required on Mr. Burness's plan by 400 to 500 acres; hence the result in the item of rent alone when the fee simple of land can scarcely be set down at less, even in the suburbs, than 500*l.* per acre. The city architect, in his evidence before the select committee of the Lords, took credit for part of the present area of Smithfield (some 2 or 3 acres) at 65,000*l.*!! According to Mr. Burness's plan, when the fat ox or sheep arrives at the metropolis or any other large town (supposing a railway leads into the market ground), it is quietly driven into a well-littered box, where it is treated as it had been treated when at home. In this position it can remain ruminating at ease until a few minutes prior to the commencement of the market, when it may be tied up to a ring in its box, and the subdivision gates elevated; and when sold, untied and allowed to lie down at pleasure, the gates having been first lowered. In such a box it can be fed by the butcher until taken to the slaughter-house, which, according to the general practice, would, we believe, be at an early hour in the morning, so that in those cases where private slaughter-houses were used, little inconvenience would be experienced from travelling the streets. His practice is just that of selling the fat ox in his stall—a practice the benefits of which have from time immemorial been appreciated by farmers. Were a farmer to take out his ox from the stall, and to drive it some two or three miles over a flinty road to tie it to stake to sell to a butcher, would he not be set down as a notable fool? and yet does not this practice involve the very principle of the system of separate lairs now in force in all our manufacturing towns, and proposed to be perpetuated in the individual case of Smithfield? Little as such parties may be versed in agricultural science, surely, says Mr. Burness, 1851 demands something more of the British capital, which has invited all the nations of the world to bear witness to its chemical and mechanical ingenuity than this. *X.*

## ON THE CULTURE OF THE VETCH.

The Vetch is one of the most valuable cultivated plants of the farm, and has been long cultivated in Britain. The herbage is peculiarly grateful to horses,* and also to sheep and to swine; cattle also eat it with avidity. The plant delights to grow on strong deep loams, tenacious, and, at the same time, dry and mellow. The soil must be of good quality, and clear of weeds, in good heart, and of firm texture. The land is winter-ploughed, with one furrow, after a crop of Wheat, Barley, or Oats, and sown with four bushels of seed in the end of February, or so soon in March as the weather will permit. A small proportion of the seed of Barley or Oats is very usefully mixed with the Vetches, as the earthy culms tend to convert the watery constitution of the Vetch as food for animals. The land is harrowed, as for Oats, and rolled heavily soon after the seed is sown. After the interval of three to four weeks, another portion of a field is sown with the same seed, and in the same way harrowed and rolled, as above directed; and, after the lapse of three to four weeks more, a third sowing is done, which will finish the seeding of the field, and end the sowing of spring Vetches, about the 25th of April, or even later, and into the month of May, which provides a regular succession of cuttings of the Vetches, for the purpose of summer soiling of animals in the yards.

The first cutting of spring sown Vetches comes into use in June, and succeeds the red Clovers, which are then cut for hay. The work-horses of the farm are fed in the cattle-yards with a quantity of the Vetches that were cut in the forenoon of the previous day, in order that the herbage may be in a somewhat withered state. This work, performed by a spare servant with an old horse or brood mare, will give ample employment on the farms of requisite extent, and which are only put into a systematic rotation of use. The proper

* It is as much *physic* as *food*; so we have heard it described; and so we have found it to our cost in several instances. It should be given with caution to horses when it is young. *Ed.*

quantity of the herbage is placed in the feeding racks in the yards in the afternoon of each day, and the horses are lodged in the yards during the nights, from 6 o'clock in the evening to the same hour in the morning, when they eat a feed of Oats in the stable, and go to work. During the dry periods of summer the milch cows are very advantageously treated with the evening's provender in cut Vetches, and given them in a feeding yard, which adjoins the cow-shed, and in which the greater part of the cows are lodged more comfortably than in the shed, where the closeness of a roofed house produces an over heated atmosphere, from the respiration of the animals surcharged with the gaseous fluids of the succulent Vetch. The open air is the best lodging, accommodated with a shelter shed. This feeding of the cows very much increases the quantity of milk. The store swine and even the brood cows that are not suckling are very economically fed with Vetches, of which they eat the green and leafy part, and tread into dung the under stems that are bare of foliage. Pigs are very fond of Vetches, and thrive well upon the vegetable.

The use of green Vetches for feeding horses, cows, and swine, as above described, will extend throughout the summer to the month of October. During that time a very large quantity of excellent manure will be produced if the very essential provision be made of an ample store of straw for the summer's use, and built into a stack for the special purpose from the spring threshings of the grain.

Animals fed with Vetches render much urine, which impregnates the earthy culms of the straw, and is the best use of liquids that is yet known. The quantity of litter must be sufficient to absorb all the urine, and if this condition be complied with, the yards will be employed in the manufactory of dung in the summer equally as in winter, and the process will never cease throughout the year. This is a grand point of attainment to have a constant fabrication of the vital principle of any agricultural undertaking. The animals will refuse the under stems of the Vetch plant, as they become woody, and bare of leaves, and this residue must be spread evenly over the surface of the yards, in order to get mixed with the straws, and be decomposed together. The level accumulation being evenly wetted with the urine of the animals, will become a mass of much value.

A crop of Vetches must completely cover the surface of the ground, by means of the umbrageous foliage which is intertwined and linked together by the tendrils, or spirally twisted threads on the upper ends of the common footstalk of the leaves. In this way the Vetch resembles the crop of Peas, as both plants belong to one family, and smother and kill every weed, retain moisture, and encourage an incipient decomposition of particles on the surface of the ground, by the exclusion of air and light. Consequently, when Vetches are grown on clayey loams, the land is sown with Wheat, on a single furrow of ploughing, after being scuffled clean of any surface weeds, and in some cases treated with a light dose of farm-yard dung. This last application refers to lands of prime quality, which is in tilth and cleanness to be sown with Grass seeds. In most cases, the Vetch forms a catch crop, and the land is fallowed before being seeded with Clovers. When Vetches are grown on inferior land, the following crop is generally Oats in the spring.

The latest crop of Vetches has been made into hay, which has proved to be the most healthy provender that can be eaten by horses. There are seeds formed in some quantity at that season, and adhere to the haulm; and though, singly, they have proved a very heating food, yet in mixture with the straw they may be the cause of the value of the hay of Vetches.

Winter Vetches constitute a permanent variety of the plant, and has no doubt been got by occasional leavings of the spring-sown Vetches having been observed to live through the winter, and being used in propagation from the seed that was so produced. The winter Vetch is sown on one ploughing of the land after a crop of Wheat, and in two or three successive sowings during the months of September and October, and covered by the usual harrowings. A mixture of Wheat, Barley, and Oats is recommended, and also Rye and winter Beans, in a small ratio, with the Vetch seed; and Rape is much used for that purpose, and very favourably where the crop is intended to be consumed by sheep.

The crop of winter Vetches comes into an early use in the spring, and is cut for soiling the animals of the farm in the yards, and is also eaten on the ground by sheep. In the latter way, the animals are confined in a fold of hurdles that is pitched in a close regularity over the ground, and closely adjoining to the growing Vetches, which are cut by scythe, and placed in racks in the fold. This method is undoubtedly preferable to the old custom of folding the animals upon the Vetches, and thus mixing together the food, urine, and excrements.

The ground from which the Vetches are cut for soiling is manured by folding the sheep regularly over the surface, to which the vegetables are carried from the other parts of the crop, and placed in racks in the fold. In this way a field of land is equally benefited; and when the crop is wholly used, the land is once ploughed in the late June, or early July, severely harrowed, and lightly scuffled, and sown with Turnips, in rows on the flat. It is a good opportunity of using guano, or some finely-pulverised auxiliary manure; and a fair crop of Turnips being obtained, a second manuring will be given to the land, by the Turnips being consumed on the ground, and will thus confer a lasting fertility by two successive feeding crops. On lands that fall below the medium degree of fertility, this mode of using the ground will prove very beneficial, and cannot fail to materially assist the general amelioration of the farm. In cases of superior lands, the crop is used as above described; and after it is consumed, the land is sown with Wheat, on one ploughing, in the month of October. The crop of Vetches defers the fallowing process, but by no means abolishes that indispensable renovator of fertility on all soils that cannot be cultivated by drilled plants.

Vetches, in the two varieties of the winter and summer distinctions, constitute a very valuable link in the chain of green food, which has become an easy attainment, from the plants that are now known in the agricultural world. Rye comes first in the spring as food for sheep, and chiefly for ewes and lambs. Winter Vetches succeed closely, and introduce soiling in the yards, along with feeding in the fields. Red Clover follows, and is succeeded by the spring Vetches, which, in the different sowings, reach the month of October. White Turnips are then ready—green globes succeed; Swedes, yellows, and hybrids are next introduced, which, with the assistance of stored Cabbages and Beet-root, reach the season of the winter Vetches of the next spring. Potatoes render much assistance in feeding swine and the young cattle in the yards, and in being steamed for the work horses. By this arrangement every part of the year is supplied with juicy esculent food, without which animal life must ever be very imperfectly developed. And any farmer who neglects the ample provision of such provender knows not half his business, and is only qualified to degrade the profession, and ruin himself.

When success attends a crop of Vetches, no plant better repays the labour of the farmer—it yields a large quantity of very palatable food, and an immense residue for the dung heap, which is formed both of easily decomposable matter and of a more lasting earthy structure. In this respect the haulm of the Vetch exceeds almost any other plant, both in the quantity and quality of the decomposing residue. Like the Pea, it must be thickly sown, not under four bushels an acre on land of any degree of quality. The writer of this article has had a long and large acquaintance with Vetches on lands of various descriptions, from the very light sandy loams of the new red sandstone, and the iron sands that lie below the gault of Surrey, to the most obdurate and intractable of all cultivated lands in Britain—in the clays of the plastic formation, and the London deposit; and he can very safely state that the above quantity of four bushels is not at all an overseeding of an acre of Vetches. The spring sowing requires more seed than the autumn season, when three bushels will be sufficient. A thin crop of Peas or Vetches is the most pernicious to the land of any growth that is known—the vacant spaces are quickly filled with weeds, which are propagated unchecked both by the root and the seeds. Vetches being cut for use, do not allow the maturation of the seeds so much as the ripened crop of Peas, but of either plant a thin crop should be ploughed without delay, and the land fallowed. Very much of the prejudice entertained against these plants arises from this point of mismanagement.

A use of Vetches has been proposed in allowing the whole crop of the spring sown plants to remain on the ground and die, and rot upon it, and answer the purpose of a manuring. In this way, a good crop of Oats might be obtained by one ploughing of the land, but a year's value of the land will be lost, and the farming will be foul, by reason of the weeds being imperfectly extirpated, and the Vetches would leave many remnants of life to encumber the crop of Oats. Consequently, the intervention of this rotting crop would only lengthen the rotation, and defer the fallowing of the land; and it might form too large a subtraction from the value of the crops of the rotation to have two years idle in the bare fallowing, and the Vetches growing on the land. If the crop of Vetches can be obtained, the rotting of the vegetables on or in the ground might tend to add loam to the soil, which is just what is wanted by clay lands. *J. D.*

## CROPS IN THE COUNTY OF WEXFORD.

Wheats are, I believe, far below an average crop, being in all places, with very few exceptions, blighted in various ways. First, by the rotting of the roots, which caused a simple cessation of further growth in the plants, before the grain became much more than merely "set." Secondly, by the attacks of the Wheat-fly, whose ravages by the larvæ are very extensive in most places. And thirdly, by an unknown cause of blight, which affects one side, and one side only, of most heads, all through each field. Thus far, as regards autumn or winter-sown Wheats. Spring-sown Wheats appear, up to the present, to have escaped the above disasters; perhaps, because of their less advanced state towards maturity, at the periods of occurrence in those more advanced. And it depends now on the favourableness of the month of September, and the latter part of this month, to determine how far spring-sown Wheats may be more successful, as they were in many places last year, than the more early sown crops. Should this anticipation be realised, it will go still further to remove the old objection to Turnip culture,—"the land could not be cleared of the crop in time to sow the autumn or winter Wheats."

Barley is in this locality, and, I believe, throughout this great Barley-growing county, a good crop, much better than of last year.

Oats.—All the white varieties sown in spring severely blighted, nor have the same kinds, though sown in autumn, fully escaped. Such blights are more common in this county than I have ever known in any other county of Ireland; and hence the extensive culture of the Tawney Oats, so called locally because of its colour; but better known elsewhere as the Don, or Dun Winter Oats, which stands the severest winters, and ripens early. The grain is good, though the produce is light, and the straw of little value, except for dung, threshed by a machine, or thatch, when threshed in the ordinary way.

Black Oats.—The Tartarian, more especially, seem to do much better in this county, being less liable to blight than the white kinds.

Beans, on all soils suited to their culture, never did better than they did this year; but within the last ten days they appear to have suffered much from blight in the leaves, and, of course, a cessation of growth in most places. The early sown, or forward crops, will be good; but the late sown, I fear, will be light in quantity, and poor in quality. This should be a lesson to Irish Bean growers to sow early—before Christmas, if possible.

Peas, now becoming again a favourite crop on the poor shingly light soils of this county, never appeared to do better than they did this year, up to the present time; but whether the farmer's hopes will be realised as regards quality in this crop, is yet to be determined; but speaking from long experience in the growth of Peas, it is much to be feared that the showery weather now set in will much favour the ravages of a maggot long known to be highly injurious to the Pea crops in wet harvests.

Flax, now becoming again a favourite crop with the people of this county, wherever fairly cultivated, did very well this year; so much so, that many farmers, hitherto listless in its regard, are already making up their minds on a more extensive cultivation of it next year; whilst those who have establishments for steeping on Schenck's system, with improved dressing appendages, are enlarging their establishments, and new establishments springing up in localities where until lately such had not been thought of; and as home grown seed has been known to produce as good crops, if not better than those produced from imported seed, and as the value of the seed is now becoming so well known in the economy of stock feeding, very many who never before grew Flax, are now seeking to save their own seed both for feeding and future growth.

Turnips.—The ravages of the new pest, the moth, so much complained of in most places, have proved fatal to many of the best Swede crops in this county. The very early and strong Swedes appear to have escaped best, at least, so with me; whilst the late sown rough-leaved varieties are likely to do well, now that the ravages of the pest appear to have ceased.

Cabbages, of all kinds, suffered more or less by the moth in question, especially those young and lately transplanted, whilst the little animal was in full vigour.

Mangold Wurzel, so long so highly prized in this county, has had a narrow escape this season, owing to the attacks of a fly, in character much resembling the "blue bottle," which produces "the jumpers" in bacon, or the fly which produces the "maggots" in sheep. This fly deposited its eggs between the two skins—the upper and under—of the leaf, in large quantities; and as these pests increased in size, and fed through the leaf, actually destroyed its functions; hence it is we now see so many fine crops disfigured by withered leaves, and the crops less luxuriant than under other circumstances they would be.

Sugar Beet, now becoming a favourite crop, not only for cattle feeding, but with the view of obtaining supplies to warrant the establishment of sugar manufactories, suffered in the same degree with the ordinary Mangold Wurzel; but in spite of the ravages of the insect in many places still at work, good hopes are entertained of heavy crops of all the sorts.

Carrots, in some parts, thin in number; the Altringham more especially (with me at least) promising very well. The White Belgian and Long Red Surrey doing much better.

Parsnips, the Hollow-crowned more especially, on all suitable soils well prepared, a successful crop.

Meadows generally good, and hay generally well secured.

Pastures, quality of land considered, very fair, though the produce in butter is light in most dairies, whilst the sale of store and fat Cattle is far from remunerative. The case is quite different with sheep, for both lambs, hoggets, fat sheep, and wool, have in price rewarded the flock-keeper's laborious industry.

Pigs healthy; and though the prices have been low, the sales have been remunerative, owing to the low prices of foreign food and the improved systems adopted in pig feeding on the produce of the farm, despite the repeated Potato failures.

Poultry on the increase, and much improved in character of breeds and quality of marketable specimens.

Whenever varied cropping with such modern improvements have been adopted, and mutual confidence existing between landlords and tenants in this county, the farmer's prospects are by no means so discouraging as in others, where the system of wild extirmination cuts a more prominent figure. But even in this our "model county," we have our "dark spots," and sullen looks of despair, in uttering the fatal words now so common amongst the once happy Wexford farmer, whose destination is "the poor-house or America." *E. Carroll, Beg Erin, Castlebridge.*

## THE CULTURE OF THE PEA.

Peas are sown during the months of February and March on the stubbles of Wheat, Barley, and

Oats, or on Grass layers, as the rotation of cropping may direct. In the broadcast way the seed is scattered on the surface of the winter furrow of the land, and covered by two or three double tines of the harrows, as the tilth of the soil may require. When sown in drills, the land is severely harrowed, drills are opened by one horse and ploughs at the distance of 10 to 14 inches; the seed is sown broadcast, and falls into the furrows, when a tine of the light harrows finishes the process. Or the seed is sown on the pulverised surface by the corn-drill machine, with coulters which make ruts in the ground, that receive and cover the seeds. It is essential that Peas be deposited in a bed of dry powdery soil, and in dry seasons the land may be rolled with advantage.

In the broadcast way the only possible cultivation is, pulling by the hand the tall weeds that arise during the early growth of the crop; and in the advanced stage, a scythe can cut them above the height of the Peas, to prevent the ripening of the seeds. This necessity may not often occur. In the drilled cultivation, both the horse and hand-hoe have been, and are used, to cut the weeds, and pulverise the soil of the intervals, and is continued till the growth of the plants advances over the intervals, and prohibits the operations. On good lands, this hindrance very soon takes place.

An acre of land sown with Peas in broadcast requires three bushels of seed, and two bushels will be sufficient, when the land is drilled in the way that has been mentioned. Peas must be thickly sown, in order that the herbage may cover the ground completely by the interlacing of the leaves and tendrils, and thus exclude droughts and violent heats, and prevent desiccation. A crop of Peas in a thin straggled condition, forms one of the most pernicious vegetable coverings that can grow upon the earth; the vacant spaces are quickly covered with weeds, and no means remain of removing them. The seeding is perfected, and the propagation is largely multiplied. When such a contingency happens, the crop should be ploughed under, the land used for Turnips, or prepared for winter Vetches. On the other hand, a crop of Peas of middling luxuriance, which completely covers the ground, retains moisture, kills the weeds, and encourages putrefaction. The surface of the land is mellowed and fertilised by the agency of moisture and darkness, which prevail during the umbrageous existence of the crop, and the annual weeds are better demolished than by any drilling and hoeing. The roots are fibrous, and do not, like the Bean, descend into the ground in a tap-form, and divide it; but a great benefit is conferred on the land by the shade of the leaves in a close covering. When the purpose is completely effected, the land is found in a good state for being sown with Wheat, with one ploughing, on the stronger soils of clayey loams. Where gravels and lighter lands prevail, crops of Barley or Oats are very profitably used; and in many cases, a clean state of the land is procured for being sown with Grass seeds.

Little or no advantage is obtained by drilling the crop of Peas (?) the intervals can only admit the hand-hoe; the stems are procumbent, quickly fall down, and cover the intervals, by which the hoeing is prevented at too early a period of the season for effecting a pulverisation of the soil or destroying the weeds. The Bean stands upright during the whole season, and it and every plant that is advantageous for the green-crop culture must admit the implements throughout the summer, and the pulling of tall weeds by the hand up to the time of maturity. The natural growth of the Pea plant prohibits these applications, and, consequently, is ineligible in that way.

Peas are a valuable but a very precarious crop, being produced by chance and accident more than by any attention or provident foresight. In the earlier season moisture is required in abundance, to forward the herbage in a due quantity to produce and carry the proper crop of pods, but not to push forward an over duly luxuriant growth of leaves and stems; and in the end of summer heat and sunshine are required to ripen the crop gradually and healthily, but not of an intensity to contract the pods and shrivel the seeds. These two chances seldom occur in one year of the degree and quality to suit the nature of Peas, and hence the crop is rendered more precarious than any other growth of the farm.

The maturity of Peas is shown by the brown colour of the pods and the hardness of the seeds on the under-part of the stems. A general ripeness of the upper pods would incur much loss by the opening, bursting, and shedding of the seeds from the pods that are over-ripened. The crop is reaped by hand-sickle, which partly cuts and partly pulls the stems from the ground; the crop is rolled into small heaps that are tied with a straw rope round the girth, or a twist of the Pea-haulm. The heaps are frequently turned over and exposed, and when sufficiently dried the bulk is carried home and built into ricks or lodged in barns. The threshing of the grain is easily performed, as the attachment is slight between the straw and the pods, and these latter freely part with the seeds, which are as easily winnowed from the chaff. The manufacture is very easy.

The average produce of Peas on an acre may be stated at 24 to 30 bushels. The grain contains much farinaceous and saccharine matter, and is highly nutritious. No other Leguminous plant surpasses Peas in this quality, except the "French Bean." But a certain toughness, which makes them adhere to the teeth, renders the seed of this latter plant disagreeable to be eaten. The meal of Peas has been baked into bread; used unmixed the digestion is difficult, therefore it is better mixed with Oat and Barley meal. Mixed with the skim milk of the dairy there is no better nourishment for young pigs, and for farrowing sows. Such a mixture very much provokes the milking propensity. When pigs are weaned it forms a most proper food for them. It is also given to bacon hogs; and notwithstanding the supposed loss when the grain is used in an unbroken state, the belief yet obtains, that in the last month of fattening the Peas are very useful in that form, for the purpose of imparting a firm consistence to the bacon. It has been proposed to malt the seeds for that purpose, and kiln-dry them slightly, in order to diminish the flatulent property.

The straw or haulm of Peas, when well got, is an excellent fodder for horses and cattle, and especially for sheep, which animals are very fond of the dry pods when the seeds are gone by threshing. *J. D.*

## Home Correspondence.

*Poultry.*—A hen of mine hatched three chickens, and as there were more to be hatched, these three were taken away and put in a basket near a fire. A few hours after they had been put in the basket, the poultry woman returned to look after them. But lo, they were gone. Something must have run off with them, as they were too feeble to run off themselves. Search was made in every direction, when at last they were found at the bottom of a cupboard, under the guardian care of a favourite white cat, who had carried them off in her mouth by the neck (their necks being wet), as a cat does her kittens, and there she was lying on her side with the chickens cuddled up between her legs, in the posture of a cat when suckling her kittens. When they were taken away from her, she evinced the uneasiness and anxiety which a cat usually does when deprived of her young. I must mention that some time ago she had a litter of kittens in this cupboard. She has always lived in the midst of the poultry, and has never been known to devour any, so that I feel sure she took them in order to adopt them as her own offspring. *D. B. B.*

*Vegetarians.*—Certain persons call themselves vegetarians, a term implying abstinence from every description of animal food, but how do they act up to their profession? They consume milk, cream, butter, cheese, lard, dripping, and suet, the very essence of cows, oxen, pigs, and poultry. Surely the name does not admit of such luxurious livers, but more properly belongs to individuals who exist upon bread, oatmeal, Rice, Potatoes, Pulse, &c. There can be no objection to human beings eating what they please, and what agrees with them best, but let things be called by their right names. What difference is there between one man being designated a water drinker, who uses beer and not wine and spirits; and another being considered a vegetarian, who refuses beef, mutton, and pork, yet devours butter, cheese, eggs, suet, cream, &c. It puts one rather in mind of a man fasting upon an excellent dish of fish and Potatoes—a positive treat. *Falcon.*

*Temperance.*—The question between "Falcon" and the "Labourer" seems to require the interference of a fraternising party; the subject to many may seem but a pecuniary one, but yet, if viewed in its proper light, it affects, to an unlimited extent, the moral and social condition of the most important class of the community. Beer for labourers may be deemed necessary, but I fear only by those who, inured to it by habit, would fain always enjoy it. For my part, I should like to have the opinion of a medical authority before I would so emphatically pronounce upon its necessity. Farmers and proprietors in general may aid in putting down drunkenness, by ceasing to give their workmen intoxicating drinks in any quantity, or on any occasion; there are many substitutes much more congenial to the constitutions and natural economy of man; by so doing, they will cease to propagate the seeds of vice, generating to an extravagance almost unimaginable. You who despise this doctrine, as being too hard, go visit the dwellings of some (if not many) of your farm-labourers occasionally, and there behold the miserable poverty of a family, the main supporter of whom is away at a public-house spending his earnings, which belongs to his family by every law of right; go further and visit the dwellings of many mechanics, and there see a wife and children in such a state of wretchedness and poverty as is easier imagined than described. Look around through your country, and view with disgust (as undoubtedly you will) those extensive mansions (the poor-houses) which intoxicating drink and its direful effects has filled with wretched, impoverished, and emaciated inmates. I think I can say, without exaggeration, that from 60 to 70 per cent. of the inmates of poor-houses, in some districts, owe their present condition to the vice of intemperance. These are a few of the many evils emanating from this vice, which the use of malt drink is liable to lead to, commencing with a small portion, and generating to a habit. *E. F., Phœnix Park, Dublin, August 5.*

*Removal of Hedge-row Trees.*—In reference to the desire of "An Enquirer" to receive advice on this subject (see No. 35), I should say if his land is situated in any position not too exposed, and a considerable part is in tillage or will advantageously admit thereof, it would be best to remove all timber and useless fences, with the exception of an occasional tree of the most thriving, ornamental, and innoxious kind, to be left out of the way, and where useful in affording shade and shelter to stock. This would lay the land open for farther improvement, increase its available quantity, and afford a chance of growing good crops at a moderate expense. It would admit air and light, without a due share of which neither crops nor cattle can prosper. On the other hand, if the land is high, or in any way exposed, protection is very important, and may be given by hedges and trees, not growing at random or in too great abundance, but arranged so as best to afford the required shelter, to suit the operations of culture, and all the other circumstances of the case. Belts of plantation judiciously laid out would perhaps be better than hedgerow trees, but so long as these are wanting it would be wrong to dispense entirely with existing shelter. As regards clearing good and bad land, if the circumstances are such as to induce culture at all, I would make it the chief object, and everything else subservient to it. The same with grazing. In both cases let trees and hedges be grown only where useful to divide the fields and afford protection. A superabundance in either case is an evil, but least so on Grass land, where, although not more useful, they are less injurious, and on high exposed land, however managed, a greater number would be required than for low land in the plain. The quality, position, &c., of the land ought to determine the mode of management; and this again should regulate, to some extent, the fencing and shelter required. There is generally too little shelter from the height of 500 or 600 feet upward, and in Scotland this remark will apply to places less elevated. Farms may be seen there on the stormy sides of hills with scarcely a tree or fence higher than a few feet. It is a great want, and entails great loss. Cattle have no shade to retire under during the heat of the day in summer, when they do not graze, and consequently they run or move restlessly about, to the injury of the ground and themselves. The wind, too, at times, sweeps along with much fury, injuring every growing crop in its progress, especially Potatoes and Beans. All this might be prevented by shelter. Even a good high hedge in the proper place, crossing the direction of the storm, is of great service. Additional protection should therefore be encouraged both in the higher and lower parts of Scotland, whilst in England, such places as the Wolds of Lincolnshire and Yorkshire would be much beautified by judicious planting. A small part of the surface would be occupied thereby, but this would be far more than counterbalanced by the general improvement. Necessary protection, however, has nothing to do with the incumbrance of fine land in sheltered valleys or plains. The value of such land as yet is scarcely known, but as intelligence progresses it will be devoted to purposes vastly more important than growing trees. If it were cleared, drained, and all well cultivated, what an immense advantage would follow to the nation, and especially to those most concerned. But are tenants always prepared to take advantage of the removal of impediments? The latter are more a symptom than a cause of bad farming, and their removal will effect but little, unless followed up by a system of management well suited to the place, and directed with energy and skill. It is but fair to suppose that great improvement would in general take place, and improvements of this kind are seldom lost; they rather tend to accelerate the advent of still better things, when, instead of scanty crops or entire failures, the greater part of the land will produce abundant crops of any kind, with almost absolute certainty. That time will assuredly arrive sooner or later, and "An Enquirer" would no doubt consult the interests of his family better by assisting to bring it about, than by continuing to encumber good ground with timber which, according to his own statement, will scarcely repay the expense of preparation for market when grown. *James Donald.*

"*Necessity is the Mother of Invention.*"—Mutability is stamped upon all sublunary objects: change and progress peculiarly mark the present era, and agriculture can no longer be permitted to remain dormant; the farmer must adapt his measures to the requirements of the times in which he lives. The want of hands, the costliness of manual labour, and the uncertainty of the weather, have caused the Englishman to invent a mechanical hay-maker, and the American to construct a corn-reaping machine. The abandonment of protection has already compelled the owners and occupiers of land, and induced their servants, the implement makers, to contrive and adopt many improvements which otherwise would most probably have been neglected, and given such an impetus to agriculture as its sluggish progress required. And it is probable that its late unprecedented progress will go forward with accelerated speed, as each invention naturally prepares for still further improvement. Those farmers who still cling to old prejudices and old practices, and will not advance with the times, will be compelled either to emigrate, or give up farming, and their farms will be occupied by a more enlightened and energetic set of farmers, and the country will be benefited by the change. But it will be a sad result, if the abolition of the Corn-laws should deprive England of its most energetic and enterprising labourers and farmers. This is an evil already commenced, and greatly to be deprecated, for, as the poet says,—

> "Princes and lords may flourish or may fade;
> A breath can make them, as a breath has made:
> But a bold peasantry, their country's pride
> When once destroy'd, can never be supplied."

Such energetic enterprising men constitute the wealth and strength of our country; they can ill be spared, and their loss will be severely felt before it will be properly estimated. If emigration were confined to the helpless and the indigent it might be beneficial to the country; but it seems strange policy to promote it amongst the industrious classes,

those who seek the hidden treasures of the earth, and convert them into substances more valuable than glittering gold or sparkling diamonds. If rents were reduced, and judicious measures adopted without delay, this evil, which must otherwise increase, would be greatly checked. Low as is the price of produce, there is still much land which might be profitably improved by occasional cultivation; and there is much of the land now in cultivation, upon which additional labour might be profitably employed, in its regular cultivation, besides all the extra labour required in more perfect drainage, in subsoiling, irrigation, stubbing up trees and fences and planting fresh ones, making roads, and erecting buildings, &c.; and the Land Drainage and Improvement Company affords great inducements to perform these acts. Besides these known improvements, which are still but comparatively rare, the necessity of present circumstances must compel the farmer to do his part, in discovering other new improvements. The mechanic and the chemist have done, and are doing, much to assist him in this way; but he has done very little for himself. Let him then consider how he can increase the quantity and improve the quality of his produce, and how he can quicken the growth of his crops. Cannot the land be kept more constantly going, never being idle, but producing one crop in wide intervals, while another is coming on in the space between the rows, so as to grow two or three good crops on the same land every year, instead of only two poor ones in three years, according to the old system, which is still practised in some places. Some will say that low prices will not pay for high cultivation. But they certainly will not pay for poor cultivation; land must now be cultivated in the very best way, or else laid down for pasture; good cultivation or none at all, must be the order of the day. *O. F.*

*Land Draining Companies.*—For the sake of brevity I pass over those observations in your correspondent Mr. Shelley's letter, published in the *Gazette*, 30th August, which convey no information. He says afterwards "that his Company's tables will show that the annuity for 50 years on their loan would be 5*l.* 17*s.* 9*d.*, and that the Company's commission adds 7*s.* per annum to this amount, making a little over 5¾ per cent. for 50 years." There may be an error in printing, but to my understanding these sums would make 6*l.* 4*s.* 9*d.* per cent. In another part he says, "the Company's charges, which include every one of the matters above alluded to, are embraced in a commission of 11*s.* 6*d.* per acre in the case of drainage." If the words alluded to point to the sentence preceding them, for the "matters," there we read: "In short that he (the proprietor) is, fortunately for him, his own surveyor, his own engineer, his own lawyer, his own agent, and pre-eminent in each capacity: that his time or his bailiff's cost nothing, that he loses no interest of his money employed during the progress of the works, and that he spends nothing in expenses, travelling or otherwise, during the time." If these are the "matters" included in the 11*s.* 6*d.* per acre, charged by Mr. Shelley's Company, we have only to add the cost of materials, and on draining the 100 acres, the account would be—

| | |
|---|---|
| 500 acres, at 11*s.* 6*d.* per acre ... ... ... ... | £287 10 0 |
| 2500 tiles per acre, at, suppose, 20*s.* per thousand, for 100 acres ... ... ... ... ... ... | 1250 0 0 |
| | £1537 10 0 |

If this be all, I acknowledge it a better contract for the borrower than he can negociate with the commissioners, because 6*l.* 4*s.* 9*d.*, at most 6¼ per cent., is better than 6*l.* 10*s.* or 6½ per cent., to be paid them, and the term for repayment longer; but I fear there will be a labour account to be added. A few words, craving your patience, as to a proprietor executing the work. We are told in that excellent article on Draining, in No. 171 of the "Quarterly Review" (Dec. 1850, I think), and from which Mr. Murray has published a most useful extract of part of the Essay, price only 4*d.*, that the writer, after perusing Mr. Parkes' works on the subject, asked his assistance, having failed in his own attempts. He says "Mr. Parkes brought a foreman, with whom he set out drains and left the work under his superintendence. To this man we paid 20*s.* per week. He understood pretty accurately the prices of work, and dealt fairly between the employer and the labourers. He instructed them in the use of the new tools, he measured up the work, kept the accounts, paid the men, and laid every pipe and collar with his own hands. For these services we pay Mr. Parkes 5*s.* per acre drained, and some travelling expenses." So that one does not see why proprietors having obtained the means, should necessarily fail in the attempt to drain land; for no doubt experienced men may be obtained to superintend and lay the pipes—a most essential part I grant—and the land often lies so well for drainage that no mistake can be made in that respect. In my first inquiry, which you favoured me with insertion in the *Agricultural Gazette*, I simply wished to ascertain the actual expense of drainage by borrowing capital, and having now obtained some insight thereto the purpose is gained, and with none but friendly feelings towards all companies who will assist the needy and be explicit in their mode of doing it, meaning only to acquire the truth, without insidious remarks. *A Tenant for Life.*

*Game Laws.*—I am well aware that I am dealing with a subject equally obnoxious on my side as on that of my reverend opponent, but I have one consolation, I am on the right side. I am also well aware that I have taken the side of common justice; and, moreover, that I have to advocate the cause of those who dare not speak, unless it be anonymously. On this subject I shall take the case of Scotland. Take that of the Carse of Gowrie, where a rent of 3*l.* and 4*l.* per acre is paid. Are there hares and rabbits? Is there any game there? How many game preserves are there in all Scotland, at least as compared to England? In Scotland only a few of the richest noblemen come under the designation. But look into the broad sheets of the *Times*, and there you will see once a year the certificates taken out for England. A 19 years' lease is given, and hares and rabbits left to the mercy of the farmer, without any restrictions. If he chooses to have a few then he cannot turn round upon the landlord. Every farmer is his own keeper. There is no giving back a per centage on account of game, or a bad season; these rest entirely upon his own luck, and he must be regulated by his own judgment, just as the market gardener has no keeper to misrepresent him, just to suit his whim. The worst of all ties are the Game-laws, on account of the temptation they create, and of their suiting the debased and idle habits of the poachers, whom, in many cases, they encourage. I want to know what the Game-laws cost the farmer every year, besides the destruction of his crops, alike as regards charges made upon him and the county, and as regards poachers, their conviction, and the maintenance of their families afterwards?—all which expenses ought to be borne by the game preserver alone. I am not allowed to say a word about crime, but I may say that I have been called out many times at the risk of life, which is the most awful part of it; and if I were to enumerate the destruction of hares and rabbits that takes place, it would not be all the mischief done by poaching—there would still be no end to it. Such things as the eating of corn after the ears or seed stem had begun to grow, the playing and trampling it down for many rods into the field, the making of paths by nipping down the corn on either side, rolling amongst it, keepers walking through, in defiance to the tenant, hunting by horse and foot right across the fields, breaking down gates and fences, destroying whole fields of Turnips, eating up Peas and Beans—in short, there is no end to the grievances; if a farmer were to have his land for nothing, these annoyances, and the expenses of working his land, would be more than he ought to stand. I am told that if a gentleman takes to farming himself, he does not give up game? did Lord Coke do so? did Lord Lyttelton do so? did George Byng do so? does my Lord Stanhope do so? And yet his lordship has as much game as his neighbours; those gentlemen's tenants are proud to save game for such good landlords. There never can be good farming where keepers are kept. I should like to see any man walk over my Strawberry beds! Does a shop-keeper allow any one to take what he likes? Does a manufacturer allow a person to walk over his rooms? Is not a farmer's land his raw material? And after spending his capital upon it, and just when his crops are beginning to show, they are to be destroyed by hares and rabbits. The law of 1848 does not in many cases prevent it; where keepers are, the tenant is still in bondage. I may be asked, why does a farmer agree to take a farm where game is preserved? Why, as population increases, there must be a greater demand for land. Men cannot starve; families increase; sons do not like to remove far off, they risk it for better or for worse, thinking a lease and the Game-laws may one day be done away with. I have not said as yet a word about feathered game, knowing them to be the farmer's best friend (but not in excess), they devour wire worm and all destructive insects; they eat the blade as well as the corn, but they deserve a little, as they are the means of keeping in check all those devouring insects that in time would spread like locusts over whole fields, and devour every green leaf. I have dwelt upon but one side of the picture. Let us now turn for a moment to the other. Spade husbandry and good cultivation must always follow the removal of all bad laws. Vice would diminish. Did any one ever hear of a robbery in the Fulham Fields, where thousands of the poorest of people reside, who are drawn from all countries, and subsist by the sweat of their brow, or hard industry? Will any one tell me that in the best farmed districts of Scotland the farmers have much to pay for the maintenance of idle people? they are unknown. These are some of my reasons for doing away with the Game-laws. A strict game preserver is not satisfied until he sees the hedges of a 5 acre field meeting in the centre: talk of compensation,—take it at 5*s.* per acre, as when game is preserved, will that even pay? does a game preserver allow those 20 feet hedges and ditches which every yard breeds, not only game, but every other description of vermin; every sort of weed thrives and seeds most luxuriantly, shedding the seeds all over every field. I believe those immense breeding hedges are within the measure of the field, and the poor farmer holding 100 acres, actually only has about 85; all those vermin breed in those hedges, and sally out as far as their powers can carry them of a night, devouring everything. Those who do not preserve game, allow the tenant to improve by doing away with those hedgerows, cutting down the ditches, ploughing into the very hedge, and extirpating these game breeding, insect breeding, and weed seeding nurseries, and altogether making the farm much more valuable. Everything goes on pleasantly where game is not preserved; the farmer is proud to send some game to his landlord. I have lived upon six preserving estates, and have never known a farmer well off amongst the whole of them, certainly never independent in either purse or in mind. But until the Game-laws are removed from the statute book, all improvements beside are useless; it is something like putting manure on a clayey undrained field—the goodness will all run off the surface. *J. Cuthill, Camberwell.*

## Farmers' Clubs.

NEWCASTLE, *July.*—MR. HUGH TAYLOR, of Cramlington, read a paper on "*The Oat: Description, Cultivation, Composition, and Uses.*"

All the varieties of the Oat are comprehended in the genus Avena, of which the Oat itself is the type; the genus Avena pertains to the order Gramineæ, or the Grasses. There are many species in the genus Avena, but the following only are cultivated for their seeds:—1st, Avena strigosa, Bristle Pointed Oat, is cultivated as a bread corn in the Orkney and Shetland Islands, and in some parts of the Highlands of Scotland. It is a native of Great Britain. 2, Avena fatua, Wild Oat, is well known as a very troublesome weed. It is sometimes supposed that all the cultivated Oats have sprung from this species, but there appears little foundation for the opinion. It is indigenous to the British islands. 3, Avena brevis, Short Oat, was introduced from Germany in 1804. It grows to the height of only about 9 inches; its seeds are small, but numerous. It is cultivated in the central uplands of France, where it is preferred to every other kind, on account of its early ripening, and of its adaptation to poor soils and exposed situation. 4, Avena nudosa, Naked Oat or Peel-corn, was at one time in general cultivation throughout Scotland and some parts of England; and is supposed to have been the only kind of bread corn known to the ancient inhabitants of Britain. (Rural Cyclopedia.) 5, Avena sterilis, Animated Oat, was introduced from Barbary in 1640; it is only cultivated as a curiosity, and as a bait for salmon. 6, Avena Orientalis, Tartarian Oat, was brought to this country in 1798, and is generally cultivated for horse corn. 7, Avena sativa, common Oat, is the parent of nearly all the varieties cultivated in this country. Every variety in much repute at present has sprung either from the Tartarian or common Oat. From the Tartarian there are the black and white varieties: from the common Oat the Po ato, Poland, Hopetoun, Angus, and others, in all about 40. The varieties of the Oat, then, are very numerous; but as some are adapted to one climate and some to another, it is important that every farmer ascertain the variety best suited to his own locality. The tests by which he may decide are the following: early ripening; produce of meal, grain, and straw; capability of withstanding rain and wind; freedom from disease; strength of straw, to prevent its being lodged; fitness for the soil, temperature, and height above the level of the sea, &c. The introduction of other varieties to this dis rict would, without doubt, prove highly advantageous; for those which have been cultivated for some time in one spot have commonly degenerated from the original sample. The selection of varieties suited to our different soils and situations has been rendered comparatively easy by the many trials recorded in in the agricultural publications of the day. A few of these experiments may be noticed. In a very excellent discussion on Oats, reported in the Highland and Agricultural Society's Journal, Mr. Finnie, one of the best farmers in Scotland, places the varieties in three classes, recommending first, for soils having every advantage of climate, the Potato Oat, Hopetoun, or half of each, the Berlic, Early Angus, Sandy, Black Tartarian, Grey Angus, late Angus, or a mixture of the Hopetoun with the Berlic, Early Angus, Sandy, or Kildrummie; second, for climates of a medium character, Hopetoun, Berlic, Early Angus, Sandy, Early Blainslie, Kildrummie or Dun Oat; third, exposed situations, for which the earliest varieties should always be taken, Early Angus, Berlic, Sandy, Barbachlaw, or Red Oat. In each case the varieties are recommended in the order mentioned, and as best suited to the land as it declines in fertility. Of the produce of the different varieties many trials have been made. On good land, in a favourable situation, Mr. Sutherland, Dalmore, Rossshire, obtained the following quantities:

| | bushels. | | bushels. |
|---|---|---|---|
| From the Dyock | 92 | From the Dun Oat | 73 |
| ,, Berlic | 78 | ,, Early Angus | 68 |
| ,, Late Angus | 77 | ,, Potato | 66 |
| ,, Hopetoun | 76 | ,, Sandy | 62 |

In this experiment the Dyock Oat produced 14 bushels more than any other. The Potato, contrary to what might have been expected, less than any, excepting the Sandy. Mr. Finnie states that in a medium situation he procured, from the same quantity of land, the following produce:—

| | bushels. | | bushels. |
|---|---|---|---|
| Mixture of Hopetoun and Kildrummie | 85 | Kildrummie | 77 |
| ,, Hopetoun and Sandy | 80 | Dun Oat | 76 |
| ,, Hopetoun and Early Angus | 76 | Potato | 74 |
| Early Angus | 77 | Blainslie | 70 |
| | | Hopetoun | 65 |
| | | Sandy | 61 |

In this instance evidence is afforded of the advantage to be derived from a mixture of Oats. The Early Angus gives a greater return than any other variety sown by itself. In Scotland and in the North of England Oats are usually sown on the lea furrow; in some cases, however, a change might be of advantage. On each farm, in this neighbourhood, though the soil be a stiff clay, it is necessary to have a few acres of Turnips, which, it may happen, cannot be carted off in dry weather. Under these circumstances it might be more profitable to sow Oats instead of Wheat on the Turnip land, and to plough early the lea which succeeds, that it may be prepared for Wheat in November. The preparation of the land for Oats should commence so soon as that portion intended for Turnips and bare fallow has been once ploughed; as it is of consequence, more particularly on clay soils, that the land be mellowed by the winter frosts. The lea furrow is considered, both by master and man, the most important ploughing of the year, not only because its good or bad execution is perceptible for so long a period, but because it has a material influence on the quantity and quality of the crop. It is unnecessary to mention the various modes by which the seed-bed may be formed, but I may suggest that, on undrained land, the driest bed, and most certain crop may be secured by gathering up the ridges. For drained land I can recommend, in some measure from experience, a plan in pretty general use in the northern division of this county, but little practised in this district, that of cross ploughing the lea. Four or six weeks previously to ploughing it is marked out at distances of 28 or 30 yards across the ridges. When exposure to air has reduced to powder the soil thus thrown out, it is spread, that no impediment remain to the correct turning of the furrow slice; the land is then ploughed across in the usual manner. An objection sometimes urged, that it is very difficult to turn the land in the old water furrows, and when the ridges are high, can have little weight; as no water furrow should be made on drained land, and as the partial levelling, at least, of the ridges is now considered beneficial. Cross ploughing the lea is preferable, for the following reasons: by the usual methods it is impossible to avoid leaving fast land—a nursery for weeds; but by this, with ordinary attention, none remains. The land is all ploughed at the same depth, or "true ploughed," but this cannot be the case on a ridge set out in the usual manner; a proper distribution of the active soil, which alone promotes vegetation, is maintained over the whole surface—an advantage appreciated by all who have observed the difference between the puny plants of the furrow, in which little soil is left, and the tall well filled Oats of the top ridge, on which has been accumulated more than a fair proportion of active soil. In the northern part of the county the lea is sometimes early ploughed to a considerable

depth, and in spring it is well harrowed, and ribbed across with small ploughs. This method I have found of manifest advantage, the increased produce much more than compensating the excess of labour. The land should not be sown until it is quite dry on the surface, that it may yield readily to the harrow; on the other hand, clay soils must be attentively watched, lest they become too dry. Should the furrow slices not touch other, it is advisable to slightly harrow or roll the land, that the Oats may be placed at the same depth. The seed may be sown either broadcast or by the drill; when by the latter, the land should be well harrowed previously, that it afford an easy passage to the coulters; and the markings of the last "bout" accurately attended to, that a regular distribution of the seed may be obtained. I made use of the drill in a comparative trial with the land ribbed, and with that ploughed in the usual way; and judged only, however, by the eye, that the drilled corn was inferior to both; this result was attributed to the roots being too much crowded together in the narrow rows of the drill. In the experiment the ribbed land carried decidedly the best crop. Oats are sown broadcast, either by hand or by a machine that can readily be adjusted to sow Wheat, Barley, Oats, Peas, or Grass seeds. By the machine the quantity of seed per acre can be regulated with great accuracy; the distribution of the grain is not so much affected by wind; and fewer men are required to sow a given quantity of land. The early or late cutting of the cereal grains has excited much discussion, but it is now pretty generally agreed that the early varieties of Oats should be cut before they are fully ripe, as they suffer much from high winds, and shed their seed easily in the harvest operations; but that, however valuable as fodder the early cutting of late varieties may render the straw, it injuriously affects both the quantity and quality of grain. Great efforts are now being made to diminish, by better methods of feeding, the quantity of Oats necessary for the horse. The object is certainly well worthy attention. It is estimated that a million and a half of horses are employed in Great Britain; supposing that each horse is allowed two bushels of Oats per week, the total quantity consumed is 19,500,000 quarters per annum; worth, at 18s. per quarter, 17,550,000*l*. Assuming it were possible, by improved methods of preparation, to enable the horse to derive as much nourishment from three bushels as he now does from four (and this will subsequently be shown as not impossible) a saving would be effected equal to 4,387,500*l*. per annum. The limits of this paper will not permit a full consideration of the arguments in favour of Oats ground, crushed, boiled, or mixed with chaff; but I may allude to one argument in support of the mixture with chaff, which has not hitherto, I believe, been noticed. Crushed Oats probably pass into the stomach without a due admixture of saliva; ground Oats with scarcely any. But if the Oats, either crushed or whole, are mixed with hay or straw chaff, the proper degree of mastication may be secured. In order to prove that the common methods of feeding do not insure the extraction of all the nutritive matter, I tried the following experiment: The dried fæces of a horse fed in the usual manner were examined by the microscope; they appeared to contain numerous globules of starch; but that conclusive evidence might be afforded of this, the powdered fæces were treated with solution of iodine, when the globules instantly assumed the blue colour so characteristic of the presence of starch. To follow out the experiment, the fæces of a horse fed on Oats mixed with Wheat chaff were examined; the blue colour of the iodide of starch was still exhibited, but the globules were not so numerous as in the first experiment.

## Review.

*Practical Instructions for the Cultivation of the Potato, containing the Competition Essay for the Prize of* 1000 *francs offered by the Belgian Government, &c. &c.* By James Cuthill, Horticulturist, Camberwell. Printed for the Author, and sold by him only.

THE Potato disease seems to be again destroying the produce of the crop. In Gloucestershire, the heaps of "trash," as the unsaleable tubers are technically termed, exceed in number and size those of the marketable crop; and the latter, after a few days, lying together in these heaps, are found to be, at least, one-fourth tainted. Not more than a quarter of the crop appears to be sound.

This will no doubt discourage Potato growers next spring, and induce those who do not intend to be discouraged to take all possible precautions against another failure. For such, Mr. Cuthill's pamphlet is worth many times its cost; and we call attention now to the plans that it proposes, because the present is the period when his treatment of the sets for the future crop commences.

### METEOROLOGICAL REPORT.—SEPTEMBER.

(*Continued from p.* 590.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| *Sept. 10 | 5.15 a.m. | ... | 30.32 | E. to ENE. Almost calm |
| | 10.30 a.m | 30.34 | ... | A.M. Noon, brisk. Hot cloudless day. Barometer steady. |
| 11 | 8 a.m | 30.34 | ... | NE. Gentle. Bright sunny |
| | 11.40 a.m. | ... | 30.33 | day. Barometer steady. |
| 12 | 7 a.m. | 30.30 | ... | A.M. ENE.; P.M. SW. Hot |
| | 4.45 p.m. | ... | 30.23 | bright day. |
| 13 | 6.55 a.m. | 30.23 | ... | A.M. SE.; P.M. SSW. Bright |
| † | 1 p.m. | ... | 30.21 | cloudless day and warm, |
| | 10.15 p.m. | 30.23 | ... | but very foggy; pleasant breeze. |
| Sun. 14 | 7.50 a.m. | ... | 30.27 | SW. Almost calm. Bright |
| | 10.30 p.m. | 30.31 | ... | sunny day. Barometer rising steadily. |
| 15 | 7.40 a.m. | ... | 30.36 | NE. Gentle, bright morning, |
| | 11.30 p.m. | 30.43 | ... | but overcast P.M. in NE. horizon. |
| 16 | 7.30 a.m. | 30.43 | ... | NE. Bright fine pleasant day. |
| 16 | 2.30 p.m. | 30 42 | ... | Brisk northerly breeze. |
| 17 | 1 a.m | 30.35 | ... | N. Brisk. Cold and over- |
| | 11.10 p.m. | ... | 30.23 | cast A.M. Sunny and pleasant P.M. |
| 18 | 8.15 a.m. | 30.22 | ... | NNE. Brisk. Clean and |
| ‡ | 6.50 p.m. | ... | 30.09 | cold. Barometer falling steadily. |

* Continuation of previous storm.

† This storm came from the SW. and brought with it the warm fog which the heat of the preceding days had accumulated on the banks at the entrance of the Channel; having travelled over England eastward, the cold back currents brought fog and smoke from London and the German Ocean, but though the weather was extremely threatening and lowering, no rain fell.

‡ A falling barometer, with a very strong and cold northerly wind is such a very unusual coincidence, that I await the result of the present change with a considerable degree of curiosity.

Dorchester, Sept. 18. *F. P. B. M.*

## Miscellaneous.

*M'Cormick's Patent American Reaping Machine* continues to be exhibited, notwithstanding the lateness of the season, in various parts of the country. Last week it was produced, with the greatest success, at Lincoln and Hitchen before thousands of persons; and on Tuesday, of last week, it was tried at Leicester before a large concourse of agriculturists from every part of the midland counties; the locality was a hill-side, and the crop very much laid, still it performed its work to the admiration of all present. On Wednesday, the 10th, it was exhibited at the meeting of the North Lancashire Agricultural Society at Lancaster, where it obtained the first premium. Messrs. Burgess and Key, the representatives of the patentee, have engaged the well-known implement maker, Mr. Samuelson, of Banbury, to manufacture the reapers in this country.

## Notices to Correspondents.

HORSE-HOEING WHEAT: *A Subscriber.* It should be horse-hoed *previous* to the tillering; but even if so late as April when the tillering has commenced it will benefit the crop, because the stirring thus given to the land will, by the consequent tillering, add to the stems of the future crop more than the accidental destruction of plants will diminish them.

POULTRY: *F* and *P D.* The disease is roup, and there is no real cure for it; but it may be alleviated by adopting the following suggestions:—Remove every bird where the eyes are affected, and destroy them; give food moderately of Oat-meal slaked with strong ale, and Garlic, chopped fine, mixed with it; at other times mix a little meal, and add some pounded peppercorns. Diminish the number of fowls, spread plenty of lime on the ground they use, lime-white their roosting places, be careful they are constantly supplied with fresh and clean water, shelter their roosts from east wind. Select the birds you wish to keep, and wash their eyes and nostrils well with strong soap and water; give each of the birds a tablespoonful of the same, and I believe you will save them; but I s rongly advise you to kill all that swell at the eye, till blind; as nothing will cure them; they are at the last stage, and it is only at the commencement that anything can be done.—*W W.* If you have another cock fit to take the place of the diseased bird, the best and safest plan would be to kill him; if you have not, the best plan would be frequently to take a stiff tail or wing feather, and after stripping the feather from the quill, with the exception of an inch at the extremity, to push it down the throat till it reaches the diseased part; twist it sharply round several times, and pull it out quickly; if nothing adheres to it, give a dessert spoonful of castor-oil; if anything does, I fear it is a hopeless case, and that the disease is incurable; but good may in either case be done by oiling the throat with a feather two or three times every day. I would strongly advise the bird should be kept from the other fowls, as most of these complaints are contagious.—*Emma.* Poultry shut up in a gravel yard require generous feeding, as they lack much they would find if they were at liberty. It is always bad policy to buy bad food, as a smaller quantity of good quality will last longer, and feed the fowls better. It is difficult to say how much four fowls will eat in a month, as it depends much on whether they can get anything besides what is given by hand. In an enclosed yard, nothing is better for the health of fowls than a basket of bricklayers' rubbish thrown down, they pick out pieces of mortar and they roll in the dust, which is essential to them. It is bad to confine fowls to one food, and it is therefore always useful to give them groats from which gruel has been made, bread that has been used for toast and water, occasionally Potatoes, and such other things of like character as are in constant use where there is a family. It is not only an economy, but it promotes health. Early hatched pullets of this year will soon begin to lay. *J. Baily,* 113, *Mount-street.*

RUSSIAN AGRICULTURE: *G.* Will you kindly forward your address? It has been mislaid.

SHEEP: *H B.* You have, say, 230 tons of Turnips; deduct loss by rotten roots, imperfect consumption, and call them 200 tons. An ordinary sheep will eat, out of doors, ¼ cwt. daily, or 25 cwt. in the 100 days between 20th November and 1st March; therefore purchase 160 sheep.

## Markets.

### COVENT GARDEN, SEPT. 20.

Peaches are plentiful, but Nectarines are scarcer; the best samples fetch 8s. and 10s. a dozen. Pines and Grapes are abundant. A few West Indian Pines have again made their appearance. Morello Cherries are still furnished, but in very small quantities. Greengage Plums are scarce, as are also Oranges and Lemons. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are good in quality, and, remain tolerably free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms (bushels) are beginning to appear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 5s | Pears, dessert, p. doz., 2s to 4s |
| Grapes, hothouse, p. lb., 2s to 5s | Almonds, per peck, 6s |
| — Lisbon, per lb., 9d to 1s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 6s to 10s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 6s to 10s | Oranges, per doz., 2s to 4s |
| Cherries, per lb., 6d to 2s | — per 100, 14s to 30s |
| Melons, each, 1s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, p. hf. sieve, 4s to 5s | — Brazil, p. bsh., 12s to 14s |
| Plums, per punnet, 1s to 2s | Filberts, per 100lbs., 55s to 70s |
| Figs, per doz., 1s 6d to 3s | Walnuts, per bush., 12s to 24s |
| Apples, kitchen, p.bsh., 1s to 1s 6d | |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3d to 1s | Leeks, per bunch, 1d to 2d |
| Cauliflowers, p. doz., 6d to 3s | Shallots, per lb., 3d to 6d |
| French Beans, per half sieve, 1s to 2s | Garlic, per lb., 4d to 6d |
| Beans, per sieve, 1s 6d to 2s | Artichokes, per doz., 1s to 2s |
| Peas, per sieve, 1s 9d to 3s 6d | Lettuce, Cab., p. score, 4d to 1s |
| Potatoes, per ton, 45s to 80s | — Cos, per score, 3d to 1s |
| — per cwt., 2s to 5s | Small Salads, p. punn., 2d to 3d |
| — per bush., 1s 6d to 2s 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Turnips, p. bunch, 2d to 4d | Red Beet, per doz., 1s to 2s |
| Cucumbers, each, 1d to 1s | Mushrooms, p. pot., 1s to 1s 6d |
| Radishes, per doz., 9d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 8d to 1s | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 6d to 1s | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

COAL MARKET.—FRIDAY, Sept. 19.

Carr's Hartley, 15s.; Eden Main, 14s. 9d.; Wallsend Riddell, 14s. 6d.; Wallsend Braddyll, 15s. 6d.; Wallsend Haswell, 16s.; Wallsend Hetton, 15s. 9d.; Wallsend Lambton, 15s. 6d.; Wallsend Stewarts, 15s. 9d.; Wallsend Tees, 15s. 6d.—Ships at market, 56.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 18.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 78s | Clover ... ... ... | 70s to 87s |
| Inferior ditto... ... | 55 68 | New do. ... ... ... | — — |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 24 28 |
| New Hay ... ... | — — | | J. COOPER. |

The supply short, but equal to the demand.

CUMBERLAND MARKET, Sept. 18.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 70s to 86s |
| Inferior ditto... ... | 60 75 | New Clover ... ... | 70 86 |
| New Hay ... ... | 60 75 | Straw ... ... ... | 27 30 |
| Old Clover ... ... | 88 90 | | JOSHUA BAKER. |

HOPS.—FRIDAY, Sept. 19.

Messrs. Pattenden and Smith report that the market is now moderately supplied with new Hops, and all good samples sell freely at the following prices:

Weald Kents ... 130s to 140s | Sussex ... ... 120s to 130s

Very choice, higher. Duty 110,000*l.* to 115,000*l.*

SMITHFIELD, MONDAY, Sept. 15.

The supply of Beasts was large, but complaints still exist as to the quality. Consequently, choicest descriptions were disposed of at about late rates; but middling kinds were lower, and many remain unsold. The number of Sheep was larger; trade was very heavy, and prices were lower. Lamb is almost out of season; very little is wanted, at lower rates. Good Calves were rather more in demand. From Holland and Germany there are 1730 Beasts, 4250 Sheep, 175 Calves, and 290 Pigs; from Spain, 520 Sheep; from Scotland, 20 Beasts; and 3000 from the northern and midland counties.

| Per st. of 8 lbs.—s d s d | Per st. of 8 lbs.—s d s d |
|---|---|
| Best Scots, Here- | Best Long-wools . 3 4 to 3 6 |
| fords, &c. ... 3 4 to 3 6 | Ditto Shorn ... ... |
| Best Short-horns 3 0 — 3 2 | Ewes & 2d quality 2 8 — 3 0 |
| 2d quality Beasts 2 4 — 2 8 | Ditto Shorn ... ... |
| Best Downs and | Lambs ... ... 4 0 — 4 8 |
| Half-breds ... 3 8 — 3 10 | Calves ... ... 2 4 — 3 8 |
| Ditto Shorn ... ... | Pigs ... ... 3 0 — 4 0 |

Beasts, 5087; Sheep and Lambs, 34,190; Calves, 280; Pigs, 610.

FRIDAY, Sept. 19.

We have a large supply of middling Beasts and very little trade for them, this description being sold exceedingly low at the dead markets. A considerable number remain unsold. The number of Sheep is large for the time of year; prices are on the average lower. Calves are plentiful and rather cheaper. From Germany and Holland we have 713 Beasts, 1920 Sheep, 357 Calves, and 75 Pigs; from Spain, 7 Beasts and 440 Sheep; 250 Beasts from the northern and midland, and 116 milch cows from the home counties.

| Best Scots, Here- | Best Long-wools . 3 2 — 3 6 |
|---|---|
| fords, &c. ... 3 4 to 3 6 | Ditto Shorn ... ... |
| Best Short-horns 3 0 — 3 4 | Ewes & 2d quality 2 4 — 3 0 |
| 2d quality Beasts 2 0 — 2 6 | Ditto Shorn ... ... |
| Best Downs and | Lambs ... ... 4 0 — 4 4 |
| Half-breds ... 3 6 — 3 10 | Calves ... ... 2 4 — 3 6 |
| Ditto Shorn ... ... | Pigs ... ... 3 0 — 4 0 |

Beasts, 1226; Sheep and Lambs, 8,580; Calves, 569; Pigs, 520.

MARK LANE.

MONDAY, SEPT. 15.—The supply of Wheat from Essex to this morning's market was moderate, and from Kent large; a few samples were disposed of at the opening on the terms of this day se'nnight, but owing to a large quantity offered from Cambridgeshire and Lincolnshire, say 63—64 lbs. Wheats, at 38s. per qr. delivered, the market became heavy, and the stands could not be cleared at a late hour, even at a decline of 1s. per qr. Business in foreign was very limited, and in the few sales effected, slightly reduced rates were accepted.—In the value of Barley, Beans, or Peas, English or foreign, we observe no alteration.—Oats meet an improved demand; fine qualities and Russian must be written 6d. per qr. dearer.—The Flour trade is heavy, and the top price of town made reduced to 37s. per sack.

| PER IMPERIAL QUARTER. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38—41 | Red ..... | 35—38 |
| — — fine selected runs...ditto | 41—44 | Red ..... | 38—41 |
| — — Talavera ..... | 44—48 | | |
| — Norfolk, Lincoln, & York... White | 32—37 | Red ..... | — |
| — Foreign ..... | 30—48 | | |
| Barley, grind. & distil., —s to —s...Chev. | 28—30 | Malting . | 27—29 |
| — Foreign... grinding and distilling | 20—24 | Malting . | — |
| Oats, Essex and Suffolk ..... | 17—20 | | |
| — Scotch and Lincolnshire...Potato | 21—24 | Feed..... | 19—21 |
| — Irish .....Potato | 18—22 | Feed..... | 18—20 |
| — Foreign .....Poland and Brew | 18—22 | Feed..... | 16—19 |
| Rye ..... | 23—25 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... 25s to 27s.....Tick | 26—30 | Harrow . | 26—30 |
| — Pigeon.....28 — 32... Winds | — | Longpod | — |
| — Foreign .....Small | 21—29 | Egyptian | 22—28 |
| Peas, white, Essex and Kent.....Boiler- | 22—25 | Suffolk... | 25—27 |
| — Maple.....25s to 27s .....Grey | 22—25 | Foreign . | 24—28 |
| Maize .....White | — | Yellow... | — |
| Flour, best marks delivered ...per sack | 32—37 | | |
| — Suffolk .....ditto | 26—32 | Norfolk . | 27—32 |
| — Foreign .....per barrel | 17—21 | Per sack | 27—33 |

FRIDAY, SEPT. 19.—The arrival of English Wheat this week has been more liberal than for some time past. Of foreign it was moderate, but of other grain small. The attendance at market to-day was thin, and the English Wheat left over from Monday was held at that day's prices, without finding buyers. The sale for foreign has been limited at nominally late rates. —Spring Corn of all sorts fully maintains its value. There is an increased inquiry for Flour at about Monday's prices.—There has been very little doing in Black Sea Wheat afloat; a cargo of Egyptian made 23s. 6d. per qr. The demand for Indian Corn has fallen off since Monday.

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS |
|---|---|---|---|---|---|---|
| Aug. 9..... | 42s 8d | 25s 11d | 22s 7d | 28s 5d | 31s 4d | 28s 1d |
| — 16..... | 41 4 | 26 4 | 21 9 | 27 0 | 30 8 | 27 2 |
| — 23..... | 39 10 | 26 8 | 21 11 | 27 1 | 31 2 | 25 11 |
| — 30..... | 39 1 | 25 10 | 20 8 | 26 9 | 30 7 | 26 6 |
| Sept. 6..... | 38 9 | 26 1 | 20 1 | 26 2 | 30 4 | 25 11 |
| — 13..... | 38 5 | 26 1 | 19 5 | 25 0 | 28 9 | 27 8 |
| Aggreg. Aver. | 39 11 | 26 2 | 20 9 | 26 9 | 30 6 | 26 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

LIVERPOOL, TUESDAY, SEPT. 16.—Upon a slender attendance of home and country millers at our market this morning, English and foreign old Wheat of all descriptions continued to meet a very slow limited demand, at a decline of 1d. per 70 lbs. from the currency of Tuesday last. New samples, which from the neighbouring growers were rather numerous, receded also 1d. to 2d., but the quality and condition being excellent, a tolerable clearance was made, and the few parcels of Irish at hand were disposed of at a similar abatement. Choice marks of French Flour, though not readily saleable to-day, were held at late prices. Barley, Malt, and Peas move very sparingly at former rates, and Beans of all descriptions decline 1s. per qr. Oats, of which few remain here, nominally supported late prices; Oatmeal, on the contrary, giving way 6d. to 1s. per load. Indian Corn, meeting an improved demand, higher prices were firmly required.——FRIDAY, SEPT. 12.—The weather continues of the most splendid character for the securing of our northern harvest. At our Corn Exchange this morning the business was only moderate. Old foreign Wheat was neglected, and a trifle easier, but American barrel Flour was fully as dear as on Tuesday, the late low sellers having been pretty well relieved, and a large quantity has gone into very extended districts. Oats and Oatmeal were scarce. There was not much demand for Indian Corn, and no change in price.

GLASS FOR CONSERVATORIES,
GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

Cut to order in Panes not above 40 inches long.

| | |
|---|---|
| 16 ozs. ... | ... 3d. to 3½d. |
| 21 do. ... | ... 4½d. to 5d. |
| 26 do. ... | ... 5d. to 7½d. |

In Crates of 300 ft., 16 ozs. to the foot, 2¾d. per foot.

Packed in Boxes of 100 feet each.

| | £. | s. | d. |
|---|---|---|---|
| 6 by 4, 6½ by 4½ ... | 0 | 13 | 0 |
| 7 by 5, 7½ by 5½ ... | 0 | 15 | 0 |
| 8 by 5, 8 by 5½ ... | | | |
| 8 by 6, 8½ by 6 ... | 0 | 17 | 6 |
| 9 by 7, 10 by 8 ... | 1 | 0 | 0 |

Foreign Sheet Glass, in cases of 200 feet, and in sizes from 40 by 30, to 44 by 32, 2l. per case.

Milk Pans, from 2s. to 6s. each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass; Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot; for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... | ... | ... | 13s. | 6d. |
| 7 ,, | 5 and 7½ by 5½ | ... | ... | ... | 15 | 0 |
| 8 ,, | 5 and 8 by 5½ | ... | ... | ... | 15 | 0 |
| 8 ,, | 6 and 8½ by 6½ | ... | ... | ... | 17 | 6 |
| 9 ,, | 7 and 10 by 8 | ... | ... | ... | 20 | 0 |
| 12 ,, | 10 and 13 by 9 | ... | ... | ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6d. | per foot. |
| ,, ,, 35 ,, | ..... | 8d. | ,, |
| ,, ,, 50 ,, | ..... | 9½d. | ,, |
| ,, ,, 75 ,, | ..... | 12d. | ,, |

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 3s. 6d. each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

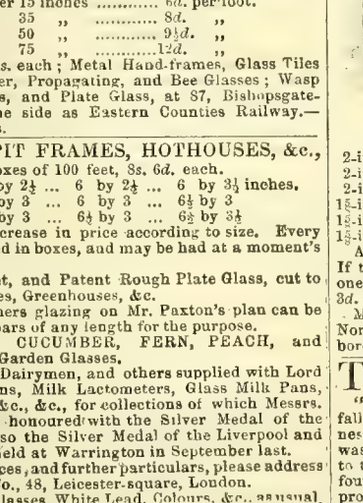
Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

ARTIFICIAL STONE for the DECORATION OF GARDENS.

AUSTIN AND SEELEY respectfully call the attention of the nobility and gentry to the facilities now offered by the manufacture of their "ARTIFICIAL STONE" for the Decoration of Gardens, at a moderate expense. The material, which is a lime concrete, perfectly waterproof, has now been tried extensively in Scotland for 20 years past, and the fact that they never had a complaint from thence encourages the Manufacturers to recommend it more actively than they have hitherto done.



The Stock consists of an immense variety of objects suitable for detached Garden Ornaments, or for connection with Architectural Erections—such as Balustradings, Porticoes, &c. The more generally useful portion may be enumerated as follows, viz.:—

193 Vases and Tazzas, from 10s. to 30l.
70 Statues, from 2 feet high to a colossal size.
15 Baskets, with suitable pedestals.
34 Figures of Animals.
12 — Birds.
A collection of Fountains (perhaps unprecedented) from 5l. to 400l.
Jardinieres, or large Bowls for Masses of Flowers.
Sun Dial Pillars.
Shells from 4s. to 12 guineas.
Coats of Arms, and Crests for Gate Piers.
Border Edging.
Garden Seats.
Capitals for Columns.
Flower Boxes made to measurement.

☞ Gentlemen wishing for patterns are requested to state, with respect to Fountains, the power of water they can obtain; and with respect to Vases or Figures, the sizes of the pedestals on which they are meant to stand.

Manufactory, No. 1-4, Keppel Row, New Road, Regent's Park, London.

COCHIN CHINA FOWLS.—A few pure bred Cock Birds, hatched early this spring, are for sale at 12s. 6d. each, including basket for transmission.—Application as to breed, &c., to be made (prepaid), and the price to be remitted by Post-office Order, on Carlisle, to THOMAS KNOX, Gamekeeper, Barrack Park, Carlisle.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1¼ quarts, 17s. 6d.; 7 quarts, 15s. 6d.; 3 quarts, 13s. 6d. Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

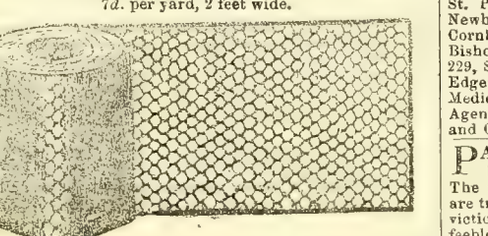
BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shoveller, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

EXHIBITION, CLASS 9, No. 89 (SOUTH SIDE).

GARDEN ENGINES, MACHINES, & SYRINGES, on the most improved principle. Manufactured only by RICHARD READ,
Instrument Maker (by special appointment) to her Majesty,
35, REGENT-CIRCUS, PICCADILLY, LONDON.

CAUTION.—As instruments of the commonest description are extensively circulated throughout the country, and sold as "READ'S," please observe that none are genuine except stamped with the Royal Arms, and the words READ'S PATENT.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



| | Galvanised. | Japanned, Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1⅝-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1⅝-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

THE HAIR.—LOST AND RESTORED.—"Newport, Isle of Wight, Sept. 6, 1848.

"Gentlemen,—Some three months since, finding my hair falling off by nearly handsful, and my head approaching baldness; in fact, being quite bald at the crown and on the sides, I was induced, through my hairdresser, Mr. Beach, of this place, to try your BALM OF COLUMBIA, and after persevering with four bottles, according to your directions, I found a new crop produced, which has now restored my head to its former appearance. As I had apprehended a total loss of my hair, I feel it due to the virtues of your Balm of Columbia thus publicly to bear my testimony. Mr. Beach, who recommended me, is the same who used it successfully in Mr. Wilson's case, whose testimony you have lately published. Mr. B. is a Lymington man; I am also a native of that place, though for the last ten years in practice here as a solicitor.—Yours, &c. H. RICE.

"To Messrs. C. & A Oldridge."

For the strengthening of weak hair, its restoration when thinly scattered, or falling off and consequent general improvement and embellishment, the powers of OLDRIDGE'S BALM OF COLUMBIA are known by the continually increasing numbers who are testing its merits, as powerfully and unfailingly efficient.—Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. Ask for OLDRIDGE'S BALM, and never be persuaded to use any other article as a substitute.

13, Wellington-street North, seven doors north of the Strand.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2s. 6d. per yard.—Damask Curtains, 10d. per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8s. per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2s. 3d. per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2¼ yards wide, and of any required length, at 1s. 4d. per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

GOOD NEWS FOR THE AFFLICTED.

DR. ROBERTS'S CELEBRATED OINTMENT, called the "POOR MAN'S FRIEND," is confidently recommended to the Public as an unfailing remedy for Wounds, of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples in the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow Vaccination. Sold in pots, at 1s. 1½d., and 2s. 9d.—Also, his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are useful in Scrofula, Scorbutic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. each. Sold wholesale by the proprietors, BEACH AND BARNICOTT, at their Dispensary, Bridport, and by the London houses; retail by all respectable Medicine Vendors in the United Kingdom. Observe—No medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott's, late Dr. Roberts, Bridport," is engraved and printed on the stamp affixed to each package.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLOR, Battersea, near London.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily from 12 to 6 o'clock, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by His Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at half-past 3 o'clock, on every Saturday, until further notice. Admission 1s. ON MONDAYS 6d.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND,
Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 physicians and surgeons of the greatest eminence, as well as from many officers of both army and navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

Prepared by JOHN FOX, in boxes, 1s. 1½d., or three small boxes in one for 2s. 9d.; and to be had, with full directions for use, of all wholesale and retail Medicine Vendors in town and country. The Genuine has the name of "JOHN FOX" on the Government Stamp. A 2s. 9d. box cures the most obdurate Corns. Ask for "Paul's Every Man's Friend."

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newberry, St. Paul's; Sutton, Bow Churchyard; Johnston, 68, Cornhill; Sanger, 150, Oxford-street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 39, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Watts, 106, Edgeware-road; and retail by all respectable Chemists and Medicine Vendors in every Town in England. Wholesale Agents for Ireland and Scotland, Messrs. J. and R. RAIMES and Co., Druggists, Edinburgh.

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the World. 30,000 boxes sold weekly.—The fine balsamic and invigorating powers of this Medicine are truly wonderful; a trial of a single dose will carry a conviction that they are all that is necessary to invigorate the feeble, restore the invalid to health, and to do good in all cases. The heads of families should always have them in the house, as they may, with the greatest confidence, be resorted to at any time or in any case. BILIOUS DISORDERS.—These Pills are all-powerful in removing the distressing symptoms attendant upon bilious obstructions, disordered state of the stomach and bowels, such as pains in the head, dimness of sight, sickness, oppression of the chest, lowness of spirits, disinclination for active employment, and various other symptoms at all times troublesome, and not unfrequently dangerous. By taking two or three doses of OLD PARR'S LIFE PILLS, the symptoms above described are speedily removed, an unusual degree of serenity pervades the mind, the stomach and bowels are restored to their natural functions, and returning vigour is the result. None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government Stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions. Sold in boxes at 1s. 1d., 2s. 9d., and family packets at 11s. each.

THE GREAT EXHIBITION.—HINTS TO VISITORS.—Among the tens of thousands who will grace the Industrial Fair, every nation will contribute bright samples of its youth, beauty, and fashion. The frequenters of the Ball, the Public Assembly, and the Promenade, will find both personal comfort and attraction promoted by the use of ROWLAND and SONS' valuable aids; and what better mark of esteem can be offered to their return home, as a memento of the Great Exhibition, than a packet of "ROWLANDS' UNIQUE DISCOVERIES."

ROWLANDS' MACASSAR OIL,
For the growth, and for preserving, improving, and beautifying the Human Hair.

ROWLANDS' KALYDOR,
For improving and beautifying the Skin and Complexion, eradicating all Cutaneous Eruptions, Sunburn, Freckles, and Discolorations, and for rendering the Skin soft, clear, and fair.

ROWLANDS' ODONTO,
Or PEARL DENTIFRICE, for preserving and beautifying the Teeth, strengthening the Gums, and for rendering the Breath sweet and pure. Price 2s. 9d. per box.

BEWARE OF SPURIOUS IMITATIONS.
The only GENUINE of each bears the name of "ROWLANDS'," preceding that of the article on the Wrapper or Label.
Sold by A. ROWLAND and SONS, 20, Hatton-garden, London; and all Chemists and Perfumers.

THE GREAT EXHIBITION.—A valuable, newly invented very small powerful Waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from four or five miles, which is found to be invaluable at the Exhibition, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS. TELESCOPES.—A new and most important INVENTION in TELESCOPES, possessing such extraordinary powers, that some, 3½ inches, with an extra eye-piece, will show distinctly Jupiter's moons, Saturn's ring, and the double stars. They supersede every other kind, and are of all sizes—for the Waistcoat-pocket, Shooting, Military purposes, &c. Opera and race-course Glasses, with wonderful powers; a minute object can be clearly seen, from 10 to 12 miles distant.—In valuable newly-invented preserving Spectacles, invisible and all kinds of acoustic instruments for relief of extreme deafness. Messrs. S. and B. SOLOMONS, Opticians and Aurists, 39, Albemarle-street, Piccadilly, opposite the York Hotel, London.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.
CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

*SALES BY AUCTION.*

AN IMPORTATION OF PLANTS FROM WESTERN AFRICA.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on MONDAY, September 22, at 2 o'clock precisely, 12 Glazed Cases of Orchids Aquatics, Flowering Shrubs, Fruits, and other Plants, collected in Western Africa, by THOMAS WHITFIELD, Esq., by whom they have just been brought over in good health; dried specimens and drawings of many of them will be exhibited at the Sale; they may be viewed on Saturday before the Sale, and Catalogues had.

THE COLLECTION OF RARE AND VALUABLE ORCHIDACEOUS PLANTS AT KNOWSLEY, THE PROPERTY OF THE LATE RIGHT HON THE EARL OF DERBY, K.G.

MR. J. C. STEVENS is honoured with instructions to Sell by Auction, in the Gardens at Knowsley, about six miles from Liverpool, on SATURDAY, 4th October, at 12 o'clock precisely, the Rare and Choice COLLECTION OF ORCHIDS, including most of the popular East Indian, South American, Mexican, and African varieties. The Plants are all well established and in fine health, and may be viewed the day before the Sale, by applying to Mr. JOHN JENNINGS, at the Gardens, Knowsley; and Catalogues had there and of Mr. J. C. STEVENS, 38, King-street, Covent Garden, London. The Huyton Station on the Liverpool and Manchester Railway is about two miles from Knowsley.

TO ZOOLOGISTS.—KNOWSLEY PARK, NEAR LIVERPOOL.—NOTICE OF SALE, BY AUCTION, OF THE RENOWNED MENAGERIE AND AVIARY, FORMED BY THE LATE RIGHT HON. THE EARL OF DERBY, K.G., PRESIDENT OF THE ZOOLOGICAL SOCIETY OF LONDON.

MR. J. C. STEVENS is honoured with instructions from the Executors of the late Noble Earl, to sell by public Auction, on the premises, Knowsley, 6 miles from Liverpool, on MONDAY, October 6, and many following days, the whole of the LIVE ANIMALS AND BIRDS contained in the KNOWSLEY MENAGERIE, excepting only the five Eland Antelopes, selected by the Zoological Society of London, and one specimen, or series, to be selected by her Majesty, in pursuance of a desire expressed by the late Earl. This collection is admitted by Zoologists to be the finest extant; it numbers upwards of 1600 examples, including an unique collection of the rarest Antelopes, Deer, Indian Cattle, Zebras, Llamas, Alpacas, &c., which are particularly deserving the attention of Noblemen and Gentlemen, as ornamental specimens for the Park.—May be viewed, by Catalogues (price 5*s.* each), to admit one person, only, to the view, on Monday, the 29th inst., or either of the five following days; these may be had by persons intending to purchase, at the Office, Knowsley Hall; and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

ISLINGTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the proprietor to offer to public competition, by Auction, early in October, on the premises, in consequence of the land being let for building, the whole of the valuable NURSERY STOCK, comprising several thousand Scarlet, White, and Hybrid Rhododendrons, Ghent and other Azaleas, Variegated and Green Hollies of various sizes, in considerable quantities, several thousand Aucuba japonica, from 1 to 4 feet, a large quantity of fine Mulberries of different ages, many of which are fine bearing trees, &c. Further particulars in future Advertisements.

American Nursery, Leytonstone, Essex, September 20th.

CHELSEA.

IMPORTANT FINAL SALES, IN CONSEQUENCE OF THE EXPIRATION OF THE LEASE.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY has received instructions from Messrs. Dennis and Co. to submit to public competition, on the premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY, September 23, and following day, at 1 o'clock, all that very valuable and extensive stock of GLASS, comprising the erections of Greenhouses and Pits, fitted up with Stages and all necessary Heating Apparatus, Garden Frames, Lights, Sheds, &c.; also the justly celebrated collection of Greenhouse Plants, consisting of Geraniums of the most choice varieties, Azalea, Camellia, Aloes, Cacti, large specimen Yuccas, &c., forming a collection rarely to be met with, including large Scarlet Rhododendrons, Evergreens of sorts, Roses in great variety, Jasmine, Ivies, and other Climbers, in pots. The stock of this old-established Nursery needs no further recommendation than the name; and Mr. D. A. RAMSAY, in calling the attention of the public to this and the following Sales, has only to observe, that in consequence of the Lease expiring at Christmas next, and the ground being required for building purposes, the Stock must be positively sold without reserve. The other Sales will take place in October and November, comprising the remaining Nursery Stock, including the largest and finest collection of Mulberry Trees in the country, choice Gooseberries, Evergreens, and other Miscellaneous Stock, of which due notice will be given.—May be viewed prior to Sale, and Catalogues had, on the premises, at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

STANHOPE NURSERY, GLOUCESTER-ROAD, OLD BROMPTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS ENGAGED IN PLANTING.

MR. J. RAWLINGS has received instructions from Mr. Wm. Siggers to submit to public competition, by Auction, on the premises, as above, on MONDAY, October 6, and following days, at 11 o'clock each day (in consequence of the Lease having expired), the whole of the valuable NURSERY STOCK, consisting of many thousands very fine Aucuba japonica, Laurel, Laurustinus, Yew, Arbor Vitæ, Holly, &c.; Fruit and Forest Trees, American Plants; Standard, Dwarf, and Pillar Roses; Irish Ivy, some very large Camellias and Scarlet Rhododendrons in pots, &c. Also a handsome Chesnut Mare, a capital light Spring Van, with top complete, and other effects.—May be viewed prior to the Sale. Catalogues (6*d.* each, returnable to purchasers) may be had on the premises; of the principal Seedsmen; and of the Auctioneer, 50, Hoxton-square; and Ebenezer Nursery, Shacklewell, London.

N.B. The whole of the Greenhouse Plants, Greenhouses, Utensils in Trade, &c., will shortly be submitted to public competition, of which due notice will be given.

TO NURSERYMEN AND FLORISTS.

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# THE GARDENERS' CHRONICLE
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No. 39—1851.] SATURDAY, SEPTEMBER 27. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Soc. of Ireland | 621 c | Labourers | 617 b |
| Aloe, American | 614 b | Machines, reaping | 621 a |
| Apple, Robson Pippin | 614 c | — mercantile relation | 620 b |
| — Red-streak | 614 c | Manures | 618 a |
| Aquatics | 614 b | Manure tank | 622 a |
| Beet, sugar | 620 c | Mocking bird | 613 a |
| Birds, British song | 612 b—613 c | Nitrate of soda | 621 c |
| British Association | 612 a | Orchids for the million | 611 c |
| British Pomology, rev. | 614 b | Pear charcoal | 621 a |
| Calendar, Horticultural | 615 c | Potatoes | 614 a |
| Corns, cure for | 615 c | Potato disease | 611 a |
| Cotyledon orbiculata | 615 c | Poultry pilgrimages | 618 c |
| Dahlia shows | 615 a | Pruning forest trees | 614 a |
| Draining | 621 b | Rose, Cloth of Gold | 613 c |
| Farm, bull breeding | 619 c | Salisburia adiantifolia | 614 b |
| Farming in North Yorkshire | 621 a | Suffolk Relief Association | 621 a |
| Flax fungus | 611 b | Superphosphate, adulteration | 621 b |
| Fruit rooms | 612 c | Thistles | 621 a |
| Fuchsia Princess | 614 a | Thora, scarlet | 613 c |
| — monstrous | 614 b | Trees, forest, to prune | 614 a |
| Hay-making | 621 c | Vetch the | 621 c |
| Hollyhocks | 615 a | Weather, the | 622 a |
| Horse Training, rev. | 622 a | Weeds | 614 a |



SLOUGH ANNUAL DAHLIA EXHIBITION (open to all England), will be held on TUESDAY, September 30th, in the Nursery Grounds of Mr. W. Bragg, Slough. Admission to view: at 2 o'clock, 1*s* each; at 4, 6*d*. Class 1, Nurserymen and Dealers, 24 blooms, distinct varieties; Class 2, ditto, 12 Fancy Dahlias, ditto; Class 3, Amateurs' and Gentlemen's Gardeners, 12 Show Dahlias, 8 Prizes; Class 4, Ditto, 6 Fancy Dahlias, distinct varieties; Class 5, Ditto, 6 blooms, varieties, let out in 1851, 6 Prizes; Class 6, Ditto, 12 Hollyhocks, varieties; Class 7, Dealers, 24 ditto, ditto; Class 8, Seedling Hollyhocks, 3 blooms; Class 9, Seedling Dahlias, 3 blooms, 1850; Class 10, Ditto ditto, 1 bloom, 1851. The following Nurserymen will subscribe the Prizes for the 6 New Dahlias: Mr. Turner, Royal Nursery, Slough; Mr. Keynes, Nurseryman, Salisbury; Mr. Barnes, Nurseryman, Stowmarket; Mr. Bragg, Star Nursery, Slough; Mr. Mitchell, Nurseryman, Puttdown, Sussex; Mr. Drummond, Nurseryman, Bath. Entrance to Classes First and Third, 10*s*.; Second and Fourth, 5*s* Regulations: 1st, Exhibitors to provide their own stands, which must be the same as those used by the Metropolitan Society; 2d, Cards will be provided and the flowers must be named; 3d, All flowers must be ready for the Judges by 12 o'clock; 4th The Flowers to remain till 6 o'clock; 5th, All Flowers and Fruits of real merit to be rewarded. A Dinner will be provided at half-past 2 o'clock, for the Exhibitors and Friends.

PINES.

TO BE SOLD, a Quantity of SUCCESSION PINES. The plants are perfectly clean and healthy, and may be seen, on application, at the Gardens, Castle Howard, Yorkshire.—Sept. 27.

FANCY PELARGONIUMS.

W. P. AYRES begs to announce that his Descriptive Catalogue of Seedling Fancy and other PELARGONIUMS, CINERARIAS, CALCEOLARIAS &c., will be published in a few days, and will be forwarded upon prepaid application. His Seedling Fancy Pelargoniums will be ready for delivery on and after the 20th of October, but the stock of some of the kinds being limited, early orders are indispensable to insure the collection.

Brooklands Nursery, Blackheath, Sept. 27.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS'S NEW DESCRIPTIVE CATALOGUE OF ROSES for the ensuing season will be ready for delivery on and after Sept. 30th, and will be forwarded gratis on application.

CAMELLIAS.—Fine healthy Plants of CAMELLIAS, well set with flower buds, may be had at CHANDLER and Son's Nursery, Wandsworth-road, Surrey, at 30*s*. per dozen; larger size, 42*s* per doz.

The best sorts of CHRYSANTHEMUMS, bushy plants, for flowering this autumn, 12*s* per dozen.

Post-office orders payable at Kennington-cross.

DUTCH HYACINTHS for Forcing, 3*s*. 6*d*. per dozen; Best do., for Glasses, 6*d*. to 1*s*. each Double Roman and Paper-white Narcissus, 4*s*. per dozen; Single and Double Duc Van Thol Tulips, 2*s*. per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

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|---|---|
| Hyacinths, superior sorts, named, per doz. | 6*s*. and 9 0 |
| Narcissus, very fine large roots, each | 4*d*. to 0 8 |
| Tulips, for early forcing, per doz. | 1 0 |
| Crocus, mixed, for border, per 100 | 1 6 |
| ,, very fine named, per 100 | 2 6 |
| Snowdrops, single or double, per 100 | 2 6 |
| Ixias, of sorts, named, per doz. | 2*s*. to 4 0 |
| ,, very fine, mixed, per doz. | 2 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots, for which see his Catalogue.

SUPERB HOLLYHOCKS.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk, begs to state that his Descriptive CATALOGUE of the above splendid flowers is now ready, containing all the best in cultivation, and including some first-rate Seedlings.

R. B. B. begs to offer strong ground roots, selected when in bloom, from some thousands of seedlings; these are fine double flowers and splendid colours, and will prove a superior class of flowers for the border and shrubbery; 9*s*. per dozen.

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JOHN AND CHARLES LEE'S Catalogue of STOVE and GREENHOUSE PLANTS is just published, and may be had post free on application, enclosing two postage stamps.

Nursery, Hammersmith.

Paris, le 31 Juillet, 1851.

LE PROFESSEUR CLEMENTI a l'honneur de prévenir les Botanistes que, dans le mois de Septembre prochain, il pourra mettre à la disposition des Amateurs la COLLECTION des PLANTES recueillies par lui dans son dernier voyage sur l'Olympe bythinique et en d'autres contrées de l'Orient. Le prix de la Centurie est de 35 francs, y compris un exemplaire du SERTOLUM OLYMPICUM, contenant la description de quelques espèces nouvelles, et des observations sur les plus remarquables. La Collection tout entière a été soigneusement étudiée, et les espèces qui la composent, au nombre d'environ 125 à 150, ont été nommées avec autant d'exactitude que possible, avec le concours des savants botanistes, MM. Gay, Spach, Webb, que tout le monde sait fort habiles dans la connaissance de Plantes de ces contrées.

MM. les Souscripteurs sont priés de s'addresser—A Paris, à M. B. Webb, Avenue de Marbeuf, 15; à Gênes, à M. le Professeur de Notaire; en Angleterre, chez M. R. Heward, 5, Young-street, Kensington.



WILLIAM E. RENDLE, NURSERYMAN and FLORIST, by royal permission, to her MOST GRACIOUS MAJESTY THE QUEEN, his MAJESTY THE KING OF THE BELGIANS, the NEPAULESE PRINCES, who honoured the Gardens with a visit on the 30th of July, 1850.

*The following letter is from Colonel the* Hon. C. B. PHIPPS.

"Buckingham Palace, May 29th, 1851.

"SIR,—I beg to acquaint you that the Plants mentioned in your letter of the 23d inst arrived quite safely, and were much admired by the Queen.—I am, Sir, your obdt. humble servant,

"C. B. PHIPPS."

WILLIAM E. RENDLE, Nurseryman, Plymouth, has much pleasure in stating that he has just received a most extensive collection of DUTCH FLOWER ROOTS in excellent condition from one of the first establishments in Holland.

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| 100 Hyacinths in 100 very fine sorts. Purchaser's Selection | 3 | 0 | 0 |
| 100 Hyacinths in 50 fine sorts, ditto | 2 | 10 | 0 |
| 50 Hyacinths in 50 superior sorts, ditto | 1 | 10 | 0 |
| 50 Hyacinths in 25 superior sorts, ditto | 1 | 5 | 0 |
| 24 Hyacinths in 12 superior varieties, ditto | 0 | 12 | 0 |
| 12 Hyacinths in 12 superior varieties, ditto | 0 | 6 | 0 |

*Where the selection of Hyacinths is left to* W. E. R., *he requests to be informed whether they are intended for water, pots, or the open ground; also whether single or double Hyacinths are preferred. When the choice is left to him, he generally sends about two-thirds double, and one-third single, which gives a greater variety. Purchasers may rely upon really good sorts being selected when the choice is left to him, and he will guarantee to give them satisfaction.*

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12 Jonquils, fine.
300 Crocus, in 6 fine varieties.
100 Turban and other Ranunculus, mixed.
24 English and Spanish Iris, fine mixed.
½ lb. Finest Mixed Anemones.
12 Ixias and Sparaxis, finest named.
12 Superior named Gladiolus, in 6 fine varieties.
2 Lilium lancifolium album, fine.
100 Double Snowdrops.
12 Dog's Tooth Violets, mixed.
24 Mixed Hyacinths, for borders.

*A List of Roots sent in the No. 2 and No. 3 Collections can be had on application.*

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| Scarlet Turban or Romano | 3 | 0 | | | |
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| Per lb.— | s. | d. | Per doz.— | s. | d. |
|---|---|---|---|---|---|
| Extra fine mixed | 8 | 0 | Hortensis Violacea | 3 | 0 |
| Superfine ditto | 6 | 0 | — double red | 3 | 0 |
| Double Scarlet | 12 | 0 | — single red | 3 | 0 |
| Single Mixed | 4 | 0 | | | |

With all the best varieties of Early and Double Tulips—Polyanthus Narcissus, Jonquils, Iris, Dutch Crocus, Crown Imperials, Liliums, Gladiolus, Ixias and Sparaxis, with all the other varieties of Dutch and Cape Bulbous Roots—at prices equally moderate.

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*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

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BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.

Seed and Horticultural Establishment, Sudbury, Suffolk.

A. PAUL AND SON'S CATALOGUE of ROSES for the present season, containing all the fine new sorts, may be had on application, enclosing two stamps for the postage.

Nurseries, Cheshunt, Herts.—Sept. 27.

GOLIATH STRAWBERRY.—A Post-office order for 5*s*. will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4*l*. per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lycombe Vale Nursery, Bath.

WHOMES' Descriptive Catalogue of his NEW PELARGONIUMS may be had on application.

Royal Pelargonium Nursery, Windsor, Sept. 27.

EARLY CABBAGE.—Stout Bedded Plants of superior true sorts, 4*s*. 6*d* per 1000, package included, delivered free of carriage to the Edenbridge station of the South-Eastern Railway.—Address, JOHN CATTELL, Westerham, Kent. Cash or stamps must accompany orders from unknown correspondents.

HYACINTHS, TULIPS, CROCUS, NARCISSUS, &c.

JAMES CHARTRES, SEEDSMAN, &c., 74, King William-street, City, London, begs most respectfully to inform ladies and gentlemen about to purchase their annual supply of the above, that he has a splendid collection, all selected bulbs, which he can strongly recommend. Orders above 1*l*. forwarded, carriage paid, to any part of the kingdom.

A Catalogue may be had on application.

JOHN B. SMITH begs respectfully to inform the Gentry and the Trade that his AMERICAN STOCK is very fine this season, and prices very low. A large and choice assortment of Azalea indica, from 18*s*. to 30*s*. per dozen, and upwards, good strong plants; Camellias, from 21*s*. to 30*s*., and upwards; Tea Roses, 9*s*. to 15*s*. per dozen; yellow Rhododendrons, strong plants, 7*s*. 6*d*. each, of the finest sorts; a fine collection of new hardy Rhododendrons, Lilies, &c.

RHODODENDRON PONTICUM AUREUM, bushy nice plants, 4 years from seed; these Rhododendrons are of vigourous habit, very hardy, and late flowering, having been raised from a fine variety of the Pontic class, carefully fertilised with their best new yellow varieties, several having flowered last season, proves them to be a valuable cross; they were quite novel and beautiful, large and distinct, and much admired, having a strong resemblance to the spotting, tints, and texture of the incomparable yellow class; from 3*s*. 6*d*. and 5*s*. to 7*s*. 6*d*. each. Also good plants of Dr. Hooker's collection of Sikkim Rhododendrons, in 3-inch pots, some of the sorts 4 to 6 inches high, from 3*s*. 6*d*. and 5*s*. to 7*s*. 6*d*. and 10*s*. 6*d*. each. Catalogues may be had by enclosing a postage stamp.

Norbiton Nursery, Kingston, Surrey, Sept. 29.

This Advertisement will not appear again.

CARNATIONS, PICOTEES, PINKS, PANSIES, HOLLYHOCKS, &c.

CHARLES TURNER'S extensive and carefully selected collections of the above are in the most robust health this season. Strong plants are now ready for sending out, including several new varieties that have established themselves as first-class flowers at the principal exhibitions.

| | |
|---|---|
| CARNATIONS, 24*s*. and 30*s*. per dozen pairs. | |
| PICOTEES, | do. do. |
| PINKS, 12*s*., 18*s*., and 24*s*. | do. |
| PANSIES, 12*s*, 18*s*., and 24*s*., per dozen. | |
| HOLLYHOCKS, 20*s*. and 30*s*. | do. |

The selection to be left to C. TURNER.

It should be stated if they are required for exhibition or other purposes, accompanied with a list of the sorts already grown, when a judicious selection may be depended on. A Descriptive Catalogue will shortly be ready.—Royal Nursery, Slough.

J. WEEKS & CO., King's Road Nursery, Chelsea, beg to inform the nobility and gentry that their DUTCH BULBS have arrived in excellent condition, which they can offer at very low prices. They can also supply their new HYBRID PEA at 1*s* 6*d*. per packet. A fine collection of Stove and Greenhouse Plants, Ferns, Seeds, Grape Vines for fruiting in pots, &c., &c. Catalogues forwarded on application.

PELARGONIUMS.—Now ready, 12 of the following for 42*s*., Carriage Free to London:—

Alderman, Alonzo, Constance, Christabel, Cuyp, Emily, Exactum, Florabunda, Gipsy Bride, Goliah, Knight of Avenal, Loveliness, Magnificent, Melissa, Narcissus, Old Story, Pride of the Isles, Prince Arthur (Pontey), Prince of Orange, Rosalind, Rowena, and Virgin Queen.

C. TURNER'S Descriptive Catalogue is now ready, including those fine new Seedling Pelargoniums raised by E. Foster, Esq., and G. W. Hoyle, Esq.—Royal Nursery, Slough, near Windsor.

RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.

WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

NEW PLANTS AT REDUCED PRICES.

HENRY WALTON, Florist, &c., Edge End, Marsden, near Burnley, Lancashire, begs to state that his Autumn Catalogue of Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Hollyhocks, Carnations, Picotees, and Pansies is now ready, and may be had for one stamp.

H. W. is also prepared to send out strong plants of the yet unequalled dark Pansy, "Jenning's King," 5s. 6d. each, or four to the trade 15s., for description of which see Catalogues.

N.B. Parties requiring Plants to furnish new Greenhouses, &c., will be reasonably dealt with.

NEW GERANIUMS, &c., AT REDUCED PRICES, NOW SENDING OUT.

BASS AND BROWN have a large, healthy, and vigorous Stock of the following in 4-inch pots, now ready for immediate re-potting, which will make fine specimen plants for exhibition.

NEW VARIETIES OF LAST SEASON.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Hoyle's Ajax ... | 7 6 | Beck's Major Domo ... | 5 0 |
| — Ocellatum ... | 7 6 | — Silk Mercer ... | 5 0 |
| — May Queen ... | 7 6 | — Prince Arthur ... | 5 0 |
| — Nectar Cup ... | 5 0 | — Diana ... ... | 5 0 |
| — Flavia ... ... | 5 0 | — Tyrian Queen ... | 5 0 |
| — Generalissimo ... | 5 0 | Rouse's Alibi ... ... | 5 0 |
| — Cardinal ... ... | 5 0 | Foster's Knight of Avenel | 5 0 |
| — Heartsease ... | 3 6 | Bragg's Exquisite ... | 7 6 |
| Rundle's Beauty of Montpellier ... ... ... | 5 0 | Walton's Village Maid ... | 5 0 |

*Any* 12 *of the above for* 3*l., or* 12 *of our selection for* 2*l.* 10*s. The set of* 18 *for* 4*l.* 4*s.*

*Any* 12 *of the following best new varieties of the autumn of* 1849 *for* 1*l.* 10*s., or* 12 *of our own selection for* 1*l.* 5*s.*

Alderman, Bragg's
Antagonist, Walton's
Constance, Foster's
Conspicuum, Foster's
Christabel, Hoyle's
Crispina, Hoyle's
Cuyp, Beck's
Emily, Beck's
Falstaff, Bragg's
Field-Marshal, Symon's
Flying Dutchman, Gaines'
Gipsy Bride, Foster's
Governor, Beck's
Lord Stanley, Hoyle's
Loveliness, Beck's
Magnificent, Foquet's
Nandee, Hoyle's
Nonsuch, Hoyle's
Painter, Beck's
Prince of Orange, Hoyle's
Purity, Walker's
Rosalind, Beck's
Rowena, Turner's
Satisfaction, Hoyle's

*Any* 12 *of the following first-rate older varieties for* 1*l., or* 12 *of our selection for* 15*s. Any* 20 *for* 1*l.* 10*s., or* 20 *of our selection for* 1*l.* 1*s.*

Abd-el-Kader, Alonzo, Ariel, Aurora, Belle of the Village, Blanche, Brilliant, Cavalier, Centurion, Cracker, Crusader, Cruenta, Elegans, Emilia, Forget-me-not, Grandiflora, Gulielma, Gustavus, Jenny Lind, Lamartine, Mercury, Mrs. Brock, Negress, Orion, Princess, Pearl, Prometheus, Rebecca, Refulgent, Rolla, Rosamond, Rosy Circle, Star of the West, Sundown, Symmetry, Salamander, Star, Victory, Virgin Queen, and Windsor Castle.

A collection of good older varieties 6*s.* and 9*s.* per dozen.

FANCY GERANIUMS.

NEW VARIETIES OF LAST SEASON.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Ambrose's Belle Marie ... | 5 0 | Henderson's Exquisite ... | 5 6 |
| — Gaiety ... | 5 0 | Sheppard's Miss Sheppard | 3 6 |
| — Delicata ... | 5 0 | — Grace Darling | 3 6 |
| Henderson's Marion ... | 3 6 | — Little Wonder | 3 6 |
| — Prince Albert | 3 6 | [*The Set of* 9 *for* 1*l.* 10*s.*] | |

*Our selection from the following* 9*s. and* 15*s. per dozen, or any* 12 *may be selected for* 1*l., or* 20 *for* 1*l.* 10*s.*

Alboni, Anais, Beauty, Bouquet tout fait, Beauty of Winchester, Clown, Defiance, Fairy Queen, Formosa, Hero of Surrey, Jenny Lind, Jehu, Jehu Improved, La Belle d'Afrique, Lady Rivers, Lady Flora Hastings, Madame Grisi, Magnifica, Maid of Anjou, Mazeppa, Superb, Modesta, Singularity, Statiaski, Village Maid, Wintonia, Yeatmanianum, and Zelia.

NEW PLANTS.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Allamanda neriifolia ... | 3 6 | Hoya Bella, 1*s.* 6*d.*, 2*s.* 6*d.*, to | 3 6 |
| — Schottii ... | 1 6 | — campanulata ... | 2 6 |
| Agalmyla staminea ... | 3 6 | — imperialis ... ... | 3 6 |
| Anguria Warsewiczii ... | 3 6 | Ixora Javanica ... ... | 2 6 |
| Begonia cinnabarina ... | 2 6 | — salicifolia 5*s.* to | 7 6 |
| Capanea grandiflora ... | 5 0 | Jasminum nudiflorum ... | 1 6 |
| Cantua dependens ... | 5 6 | Lobelia Aurora ... ... | 2 6 |
| Cyrtoceras reflexa ... | 2 6 | — thapsoides ... | 2 6 |
| Deutzia gracilis ... ... | 3 6 | Mitraria coccinea, 1*s.* 6*d.* to | 2 6 |
| Dipteracanthus spectabilis | 3 6 | Medinilla magnifica ... | 15 0 |
| Eriostemon scabrum ... | 2 6 | Nematanthus morelliana | 2 6 |
| Escallonia macrantha, 2*s.* 6*d.*, to | 3 6 | Pharbites ostrina ... | 2 6 |
| Gardenia Stanleyana ... | 2 6 | Tropæolum Wagnerianum | 2 6 |
| — Fortuni ... | 2 6 | Tritonia aurea, 2*s.* 6*d.* to | 5 0 |
| | | Veronica Andersoni ... | 1 6 |

*The following strong Plants, fine for Winter and early Spring flowering:—*

12 Stove Plants, for 1*l.*
Aphelandra aurantiaca
— Giesbrightii
Begonia coccinea
— albo-coccinea
— fuchsioides
Centradenia floribunda
Euphorbia splendens
— fulgens
Gesnera oblongata
Hoya bella
Rondeletia speciosa major
Stephanotis floribunda

12 Greenhouse Plants, for 15*s.*
Calceolaria grandis, new,
Cassia corymbosa [shrubby
Chorozema splendens
Corræa magnifica
— Ne plus ultra
— speciosa
— Stockwelliana
Echeveria retusa
Jasminum nudiflorum
Kennedya monophylla
— nigricans [rubra
Siphocampylos microstoma

FUCHSIAS.—Story's, Bank's, and Smith's new varieties of 1851—12 for 20*s.*, or 20 for 30*s.*

PETUNIAS.—Barnes's, Young's, and our own new varieties of 1851—12 for 15*s.*, or 6 for 10*s.*

VERBENAS.—Smith's, Turner's, Barker's, and Chauviere's new varieties of 1851—12 for 12*s.*, or 20 for 18*s.*

NEW CHRYSANTHEMUMS, fine bushy plants, with flower buds, in 6-inch pots, for turning out or re-potting. £ s. d.
12 fine new varieties of last season ... ... ... 0 15 0
60 splendid varieties, including the above ... ... 2 0 0
40 do. do. 1*l.* 10*s.*, 25 fine varieties, 17*s.* 6*d.*, 12 do. ... 0 9 0
10 Lilliputian or dwarf varieties ... ... ... ... 0 7 6

AZALEA INDICA, strong bushy plants for flowering next season:— £ s. d.
20 very fine varieties ... ... ... ... 1 10 0
12 do. do., 18*s.*, 6 for ... ... ... 0 10 0

Our DUTCH BULBS have arrived, and are in the finest condition.—AUTUMN CATALOGUES supplied on application.

Goods Carriage Free to London, or any Station on the Bury or Ipswich Line. With all Orders of 2*l.* and upwards, Plants presented to compensate for distant carriage.

Remittances requested from unknown correspondents.

Post-office Orders to be made payable to

BASS and BROWN, or STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

DUTCH FLOWER ROOTS.

RENDLE'S LIST OF DUTCH BULBS will be found in the columns of this Paper, front page, in the number for September 27, 1851. The prices are very low. Descriptive Catalogues on application to WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

*The Hyacinths are particularly large and handsome. Most excellent kinds can be had at 6s. per dozen.*

CHRYSANTHEMUM TREATISE.

H. LANE AND SON, Great Berkhampstead, can recommend this little Work, by WM. IVORY, Gardener to J. Grout, Esq., Tring Park. It can be obtained by enclosing 13 postage stamps to H. LANE and SON.

ROSES.

H. LANE AND SON'S CATALOGUE, just published, may be had by enclosing two postage stamps.

The Nurseries, Great Berkhampstead, Herts.

NEW FANCY PELARGONIUMS.

W. AMBROSE begs to recommend the following new and first-rate FANCY PELARGONIUMS, many of which have received Certificates at the June and other exhibitions during the season, and will be ready to send out in good strong plants the second week in October:—

CAPTIVATION.—A fine dark maroon flower, of good habit, large, and very smooth. A fine bold attractive flower. Two First Class Certificates. 1*l.* 1*s.*

SUPERBA.—A well formed flower; dark crimson upper petals, margined with pink; lower petals blush, with dark markings of fine substance, and very smooth, equal in shape to any show flower. Two First Class Certificates. 1*l.* 1*s.*

PERPETUA.—A novel and handsome flower; upper petals deep purple, with crimson blotch, and light margin; lower petals blush, with distinct and constant spot of purple crimson; very dwarf, and a profuse bloomer. Second Prize. 1*l.* 1*s.*

RICHARD COBDEN.—A fine formed flower, of good habit; rich dark velvet upper petals, with clear white margin; lower petals rich crimson, large white centre; an abundant bloomer. Second Prize, and two First Class Certificates. 1*l.* 1*s.*

ERUBESCENS.—Upper petals deep rose, with light edging; lower petals blush and blotched; a compact grower and profuse bloomer. A good show flower. 10*s.* 6*d.*

TRIUMPHANT.—A beautiful high coloured flower, nearly approaching to scarlet, with a clear white throat. It received a Prize at the Seedling Exhibition at Regent's Park, in June last, for being the highest coloured flower in cultivation. 10*s.* 6*d.*

FASCINATION.—Upper petals rose-colour, with white margin; lower petals white, with rose markings. A large compact truss, and excellent bloomer. 10*s.* 6*d.*

MISS WRIGHT.—Crimson upper petals, with white margin; lower petals white, with deep rose markings; white centre. A good showy flower, and free bloomer. 7*s.* 6*d.*

SULTAN.—Upper petals deep crimson, with white margin; lower petals blush, marked with crimson. Good form. 5*s.*

NEPAULESE PRINCE.—Upper petals violet crimson, with rose margin; lower petals light, with dark markings. A very striking flower, moderate form. 5*s.*

JOHN BULL.—Upper petals mulberry; lower petals nearly the same colour. A most abundant bloomer, forming a head similar to an Hydrangea. 5*s.*

GRANDIS.—A fine dark maroon flower, very large and free. 5*s.*

W. A. having a few packets of choice Seeds of the Fancy Pelargoniums, begs to offer the same at 2*s.* 6*d.* per packet of 40 Seeds.—Nursery, King-street, Battersea, near London.

NEW ROSES.

WILLIAM WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE OF ROSES is now ready, and will be forwarded to all who have patronised them, and post free to all applicants. Such extensive addition has been made to their Stock, that they are able to execute orders of any magnitude with good Plants and without substitutions.

The above can be obtained in London of Messrs. NIXON, 123, Great Portland-street, Oxford-street; of Messrs. HURST and M'MULLEN, 6, Leadenhall-street; and of Mr. CARTER, 238, High Holborn. And at the Nursery the following: a Catalogue of Ornamental Trees and Shrubs, including a fine collection of Coniferæ and choice Herbaceous Plants; and a Descriptive Catalogue of New and Select Fruits. The Trade Catalogue is also now ready.

Woodlands Nursery, Maresfield, Uckfield, Sussex.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

DUTCH HYACINTHS, per doz., 6*s.* to 12*s.*
Or an assortment of three dozen, best sorts, for 16*s.* 6*d.*

| | | |
|---|---|---|
| Double Roman Narcissus ... ... ... | per doz. | 3 0 |
| Double and Single Van Thol Tulips ... | ,, | 1 0 |
| Mixed Tulips ... ... ... ... ... | ,, 1*s.* to | 6 0 |
| Jonquils ... ... ... ... ... ... | ,, | 2 0 |
| Crocus, in variety ... ... ... ... | per hundred | 2 0 |

*And other roots, of which lists may be had free.*

ROBERT HALL begs to advise the arrival of his annual importation of BULBS, in high perfection, especially drawing attention to the double Roman Narcissus, which for early blooming and fragrance is not surpassed.

Also to the following items of Foreign produce, of his own importation, and choice quality, viz.:— s. d.

| | |
|---|---|
| French Liqueur Ginger Brandy, an excellent Stomachique, Anti-Cholera, and invaluable in Spasms, per bottle ... | 5 0 |
| Curaçao and Maraschino, per bottle ... ... ... | 14 0 |
| French Liqueurs, per bottle ... ... ... ... | 14 0 |
| Milk Punch, per dozen ... ... ... ... ... | 42 0 |
| Old Pale Brandy, per dozen ... ... ... ... | 60 0 |
| Genuine Dantzic Spruce, per bottle ... ... ... | 2 6 |
| Old Cordial Gin, per gallon ... ... ... ... | 13 0 |
| Old Jamaica Rum, per gallon ... ... ... ... | 18 0 |
| Pale Brandy, "old in bottle," per bottle ... ... | 6 0 |
| Farantosh Whisky, per gallon ... ... ... ... | 21 0 |
| Batavia Arrack, 15 years in bottle, per bottle ... ... | 10 0 |
| Kershenwasser, per bottle ... ... ... ... | 10 6 |
| Sardines à l'huile, per case ... ... ... ... | 2 0 |
| Gorgona Anchovies, bottled abroad, per bottle ... ... | 2 0 |
| Honeycomb Parmasan Cheese, per lb. ... ... ... | 2 0 |
| New Gruyere Cheese, per lb. ... ... ... ... | 1 8 |
| Naples Maccaroni, per lb. ... ... ... ... | 0 10 |

ROBERT HALL, 63, South Audley-street, Grosvenor-square.

FIRST CLASS GERANIUMS.—TWO GUINEA SET.

WILLIAM E. RENDLE, Plymouth, Florist to her Majesty, will supply Twelve of the following first-rate GERANIUMS for 2*l.* 2*s.*, with a plant of Elliott's Surprise over.

RUNDLE'S BEAUTY OF MONTPELLIER; May Queen (Hoyle); Nectar Cup (Hoyle); Ajax (Hoyle); Rubiola (Hoyle); Isis (Hoyle); Flavia (Hoyle); Generalissimo (Hoyle); Gaiety (Foster); Corinne (Hoyle); General Jung Bahadour (Gaines); Lady Peel (Paley's, first time sending out); Candidate; Boule de feu; Village Maid; Cardinal (Hoyle); and Heartsease.

*Descriptions of* ELLIOT'S SURPRISE, *and* RUNDLE'S BEAUTY OF MONTPELLIER, *will be found in the* Gardeners' Chronicle, *Sept.* 13*th, page* 578.

| | s. | d. |
|---|---|---|
| Twelve excellent GERANIUMS ... ... ... | 12 | 0 |
| Twelve excellent Fancy do. ... ... ... | 20 | 0 |
| Twelve excellent Scarlet do. ... ... ... | 15 | 0 |
| Twelve excellent CINERARIAS ... ... ... | 10 | 0 |

*For names of the varieties, see page* 578, *Sept.* 13.

*All Orders above* 2*l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railway, or to Cork, Dublin, or Belfast. All Orders attended to in strict rotation.*

*A large Collection of BULBS has just arrived from Holland, which will be offered at very reduced prices.—Catalogues on application.*

Apply to WILLIAM E. RENDLE, Union Road, Plymouth, adjoining the Terminus of the South Devon Railway.

G. JACKMAN, Nurseryman, Woking, Surrey (1¼ mile from Woking Station, South Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Sept. 27.

VICTORIA REGIA.

J. WEEKS AND Co., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

DUTCH BULBS! WHAT CLARKE AND CO. GIVE FOR 10*s.*—The Undersigned, having Imported a very choice assortment of Dutch and other Bulbs, embrace the opportunity of submitting to the notice of the Public in general the following collection at the above price for Flowering in the winter and early spring. Half a dozen best Hyacinths for Glasses (various), half a dozen good Hyacinths for pots, 50 Crocuses, four separate colours, 50 Double Snowdrops, half a dozen Double Van Thol Tulips, half a dozen Early Van Thol Tulips, 1 dozen Double White Sweet-scented Narcissus, half a dozen Double Jonquils, 1 dozen Winter Aconites, 25 splendid Mixed Tulips, 1 dozen beautiful Mixed Double Anemones.

CLARKE and Co., Seedsmen, &c., 86, High-street, Borough, about 30 doors from London-bridge Railway Terminus.

*** The cash will be returned if the bulbs are not approved of.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the public that his mixtures of the NATURAL GRASSES and small CLOVERS, gathered under his own superintendence, including every sort necessary to form a Permanent Pasture, on various soils, are now ready; delivered on the South-Eastern Railway, at 1*l.* per acre, allowing three bushels per acre. Also Seeds for Lawns, and for renovating old pastures; the nature of the soil to be sown should be particularly stated. Instructions for sowing will be sent with each parcel. Seeds are this year comparatively scarce; the Advertiser has, however, determined not to raise his prices, considering the ruinous effects of free trade on Agriculture, and depending on the extension of his business for a return of his outlay.

THE ROYAL EXHIBITION.

FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, Potter, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following:—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1½ in. | 6 | 4½ in. | 11 | 8¾ in. | 16 | 15 in. |
| 2 | 2¼ ,, | 7 | 5¼ ,, | 12 | 9¼ ,, | 17 | 16 ,, |
| 3 | 2¾ ,, | 8 | 6¼ ,, | 13 | 11 ,, | 18 | 18 ,, |
| 4 | 3¼ ,, | 9 | 7 ,, | 14 | 12¼ ,, | 19 | 20 ,, |
| 5 | 4 ,, | 10 | 8 ,, | 15 | 14 ,, | 20 | 22 ,, |

Saucers and Seed Basins the same width as the Pots.

Persons visiting the Royal Exhibition can inspect CHARLES PHILLIPS'S Pottery, &c., in the Model Greenhouse, situate at the West Entrance of the Crystal Palace. C. P. deems it superfluous to laud either the quality of his Clay, or the style in which his goods are manufactured, but confidently refers those parties who have not yet patronised him to the Royal Gardens at Frogmore and Kew, and to the principal Nurserymen in London, Slough, Reading, Oxford, Swindon, Cirencester, Stroud, Worcester, Gloucester, Cheltenham, Bath, Bristol, Taunton, Tiverton, Exeter, Torquay, Totnes, Plymouth, North and South Wales, &c., &c., for the quality of the articles which he has had the honour of supplying them with. All orders for the above Goods will be promptly forwarded, CARRIAGE FREE, to any Railway Station within 150 miles of the Manufactory, either in dozens, casts, hundreds, or thousands. Every description of Red Ware, Sewerage, Piping, Closet-Pans, Chimney-Pots, Land Drain Pipes, Seakale Pots, Vases, Tiles, Bricks, &c.

Lists of Prices, Terms, &c., forwarded to any address.

Manufactory, Locking Road, Weston-Super-Mare, Somerset.

ESTABLISHED 1836.

MILDEW.

EPPS'S SULPHURATOR may be had of all Nurserymen, Seedsmen, and Ironmongers, price 21*s.*, and upwards. The Trade supplied by Barber and Groome, Holborn, London.

This Machine has been used by the following persons, and the highest testimonials have been received as to its valuable properties, in effectually destroying the Mildew on Grapes, Peaches, Peas, and all other horticultural produce:—Dr. Plomley, F.R.S.; Mr. Ingram, gardener to her Majesty at Windsor; Mr. Smith, Superintendent at the Royal Gardens, Kew; Mr. Iveson, Sion House; Mr. Glendinning, Chiswick; Mr. Thompson, Horticultural Society's Gardens; Mr. W. P. Ayres, Blackheath; Mr. Gaines, Battersea; Mr. Cole, gardener to — Colyer, Esq., Blackheath; Mr. Robson, gardener to Earl Cornwallis, Linton Park; and many other scientific and practical men.—High-street, Maidstone, Sept. 27.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

*Carriage free to any Railway Station in the United Kingdom, on orders of 5l. and upwards.*

ROYAL NURSERY.

THE SUBSCRIBERS have much pleasure in announcing that their stock of the under-mentioned is this season unusually strong and healthy, and are now ready for sending out at the following prices :—

ARAUCARIA IMBRICATA, 1 ft., 20s. per doz.
" " 2 ft., 42s. do.
" fine specimens, 3 ft., 21s. each.
CEDRUS DEODARA, 1½ to 2 ft., stout and fine, 24s. per doz.
" " 2½ to 3 ft., " " 42s. do.
20 species of the most ornamental, rare, and hardy CONIFERS for 5l.

CAMELLIAS of all the best kinds, well set with flower-buds, 30s per doz.
" " without buds, 24s. per doz.
ERICAS and EPACRIS, best sorts for autumn and winter flowering, 12s. per doz.
CHRYSANTHEMUMS, newest and best kinds, fine bushy plants, in 5-inch pots, for blooming this season, 12s. per doz.
" Lilliputian varieties of 1849, 1850, and 1851, 9s., 12s., and 18s. per doz.

CARNATIONS, PICOTEES, AND PINKS.

| | | | |
|---|---|---|---|
| 25 pairs of finest first-rate show varieties of Carnations and Picotees | | | £5 0s. |
| 12 pairs | do. | do. | 2 10 |
| 25 pairs of very fine show varieties of | do. | do. | 3 0 |
| 12 pairs | do. | do. | £1 4s. to 1 10 |
| Fine mixed border do.—per dozen pairs | | | 0 12 |
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| Carolina | 3 6 | Myatt's Eleanor | 5 0 |
| " round white | 5 0 | " Globe | 5 0 |
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| Grove End Scarlet | 3 6 | Roseberry | 3 6 |
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| " large flat | 5 0 | Turner's Pine | 5 0 |

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YOUELL and Co., Royal Nursery, Great Yarmouth.

**The Gardeners' Chronicle.**

*SATURDAY, SEPTEMBER 27, 1851.*

MEETING FOR THE ENSUING WEEK.

COUNTRY SHOW.—Tuesday, Sept. 30: Slough Dahlia.

WE should hope that POTATO GROWERS are by this time satisfied of two things—that there is no security whatever against disease, and that the best remedy when the disease arrives is to pull up the haulm.

It seems probable that the loss in the present season will not be less in proportion in the south of England than in 1845 and 1846, although the season has been as dry, and at the same time cool as it is ever likely to be in this country. Since the beginning of August we have had a succession of the finest harvest weather, interrupted by one or two heavy showers only; and yet, now that Potatoes planted with the utmost care are lifted, there are many hills in which there is not more than one or two sound tubers, although the ground is filled with the produce. In common field land, or in heavy clay, or in furrows of decayed leaves, whether set in autumn or in early spring, it is much the same; the destruction is enormous. Luckily we no longer rely upon the Potato as we once did.

Among those which we have had the opportunity of examining, there is, as usual, much difference in the amount of disease in different sorts. One of the worst is a kind called the Chinese, planted in leaf-mould on thoroughly drained land, in January last; of this three in four are rotten. One of the best is the "Russian," planted at the same time, in the same manner, not more than one-fourth being bad *at present*. The best of all is a sort received from Mr. CUTHILL in October, 1850, with the following note:—"Nos. 1 and 2 are the same sort; a late Yorkshire Kidney, very mealy and prolific. On No. 1 the haulm was allowed to grow until ripe. No. 2, haulm cut down July 27th; the two bags are the produce of ten plants. No. 1 weighed 12½ lbs.; No. 2 weighed 10 lbs., being a loss of 2½ lbs. by the removal of the haulm. No. 2 is not near so mealy, nor yet so good in flavour as No. 1. The object in removing the haulm off every alternate root, which I did, was to allow the air free circulation amongst the Potatoes which had the haulm on, thereby giving a better chance of escaping the disease."

It is very remarkable that of these two samples planted side by side on the 7th of October, 1850, No. 1, on which the diseased haulm had been left, was a good deal diseased, while No. 2, from which the haulm had been removed, was almost wholly sound. This looks as if the seeds of the disease had been communicated to No. 1 by the haulm, and then to its produce, when the time came.

We would also observe that the very ground in which all this disease has now shown itself, to the destruction of most of the crop, was also attacked in 1850, but yielded a lot of good sound Potatoes. There was this difference however between the two years, that in 1850 the haulm was pulled up as soon as the disease appeared, while in 1851 the haulm was allowed to remain undisturbed, for the express purpose of seeing the result. We can therefore draw no other conclusion than that the removal of the haulm gives the only real chance of stopping the Potato disease, and that it is better to sacrifice a part of the crop, if necessary, by destroying the stems and leaves, than by preserving them to obtain a large bulk of diseased and worthless produce.

UNDER the present favourable aspect of the manufacture of Flax, and the bright hopes which have been excited by the important discoveries that have lately been made in every stage of its preparation, from the green stalk to the beautiful silky or cotton-like fibre ready for the wheel, everything connected with the growth of the plant assumes a degree of consequence which it did not possess before. A few black spots upon the stems, and capable of resisting the ordinary mode of maceration, which, under other circumstances, might have escaped notice, command at once our attentive examination.

Just before the commencement of summer last year, the Flax stems in the neighbourhood of Cobham were observed by Miss MOLESWORTH to be infested by fungoid spots, which were at first of a dark red brown inclining in parts to orange, and in age acquiring so dark a shade as to appear black. Much attention does not seem to have been paid to them then, but when during the present year the Flax underwent the operation of steeping, the stems, though the external layers of cells had perished, came out still covered with dark swollen patches, which peeled off, together with the Flax fibres,

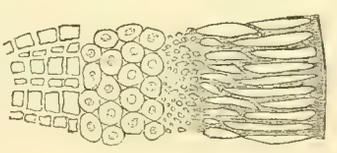


Fig. 1.

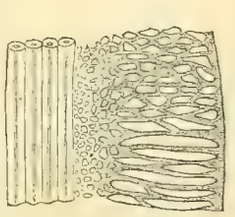


Fig. 2.

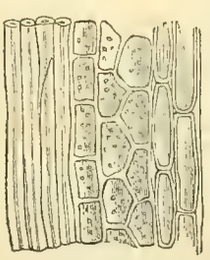


Fig. 3.

after the woody portion was separated. The production, on being submitted to us by Prof. HENSLOW for determination, proved to be one of those anomalous bodies which are referred by authors to *Sclerotium*, and which are, in fact, mere states of certain fungi which have not gone through their normal stages of development. The present is undoubtedly what FRIES calls *Sclerotium herbarum*, and is referable to that form which is described by EHRENBERG as *Xyloma Lini*. This and other similar productions are, we doubt not, mere conditions of several species of *Uredo;* and the present, if fully developed, would probably prove *Uredo Lini*.

The question, however, of interest at present, is, how does it affect the fibres, which are the valuable part of the Flax plant? The process of steeping is intended not only to separate these from the wood, but also to destroy the parenchym, which, if present, would prevent the effective heckling of the Flax. The impression at first would be, from the appearance of the stems when taken from the steeping pool, that the fibres would be most seriously affected. This, however, does not seem to be the case, except to a comparatively small degree. A section made through the spots when the plant is fresh exhibits a total derangement of structure in the layers of cells external to the Flax fibres. In the plant these consist of several layers of short horizontal cells, varying according to their position in the degree of constriction of the articulations, and containing chlorophyl, or a mass of colourless matter. In the dark spots, however, the cells are, for the most part, vertical; those in the centre of the mass being greatly elongated, while towards the thin edges they are shorter and more numerous, but still vertical; both rest upon a delicate minutely divided cellular stratum, which forms a sort of stroma. There is not a trace of the original structure, and the Flax cells upon which they rest are only so far affected that the walls of their narrow cavity are tinged with brown, and minutely granular. Therefore, though the spots, by reason of their compact structure, and the induration of the walls of the cells, in consequence, probably, of some chemical change which has taken place in their constituent parts, resist completely the operation of steeping; and though they are firmly attached to the Flax fibres, yet, not being intimately connected with them, or imparting to any serious extent their peculiar quality, the Flax separates perfectly from them when heckled, and there is merely left a yellowish tinge on the threads, as far as the spots extended; and though this change of colour does arise from the diseased tissues seated above them, the tenacity does not seem to be less in those parts than in the others, nor does the thickness of the fibres suffer there any change. Occasionally, but rarely, instead of a yellow spot being left after the diseased tissues have been removed, the spot is white, which probably would indicate some more serious derangement, if not the death of the blanched portions. We have not, however, had sufficient materials before us to come to any safe conclusion on the matter. We have represented in our figures transverse and longitudinal vertical sections (Figs. 1 and 2) of the spots *in situ*, showing that they are quite distinct from the Flax cells, together with a longitudinal section of the tissues external to the wood in the healthy plant (Fig. 3).

*M. J. B.*

## ORCHIDS FOR THE MILLION.—No. XVII.

By B. S. WILLIAMS, gr. to C. B. WARNER, Esq., Hoddesdon.

CLIMATE HOT AND DAMP.—PLANTS GROWN IN BASKETS, WITH MOSS.

*Maxillaria tenuifolia*, from Mexico, flowers in April and May. It succeeds best in a basket with moss, suspended from the roof of the house, where plenty of heat and moisture can be maintained during the growing season; it lasts in perfection three or four weeks.

*Stanhopea insignis.*—This fine Brazilian Orchid flowers in June and July. It will thrive in a basket with moss and small potsherds. When not growing it should be kept cool; it remains only a short time in flower.

*Stanhopea tigrina.*—This handsome species, which comes from Mexico, flowers from July to September; the blossoms are very large, pale yellow, barred and blotched with dull purplish brown. It does best in a basket in moss and small potsherds; it lasts but a short time in perfection.

*Stanhopea grandiflora*, comes from Trinidad. It flowers at different times of the year. The blossoms are white, and very large. It likes a good supply of heat and moisture while growing; afterwards it should be put at the coolest end of the house, and should be kept rather dry.

*Stanhopea Devoniana*, flowers from July to September. Like the preceding, it should be grown in a basket with moss, and it requires similar treatment. The flowers remain three days in perfection.

*Stanhopea oculata*, comes from Mexico, and flowers from July to September. The blossoms remain in beauty three days.

*Stanhopea Wardii*, from La Guayra; flowers from June to August; it remains but two or three days in perfection.

*Stanhopea tigrina lutescens.*—This is a fine variety from Guatemala; the flowers are brilliant yellow, inclining to orange, and are larger and handsomer than those of any other kind. It requires the same treatment as the former. The flowers last in perfection three days.

*Saccolabium guttatum.*—This, which is one of the most beautiful of Orchids, comes from the hotter parts of India. It blossoms from May to August. The flowers are white, spotted with deep rosy purple. It likes plenty of heat, light, and moisture, during the growing season. When it is at rest it should have but little water. It remains three or four weeks in bloom.

*Saccolabium Blumei*, a charming species, from Java; blossoms from May to August. The flowers, which are nearly the same colour as those of the former, last a long time in beauty. It requires plenty of heat, light, and moisture, particularly during the growing season. It need not have much rest.

*Aerides crispum* is a beautiful Indian species, which flowers in May, June, and July; the blossoms are white, and tipped with pink. It should have a good supply of heat and moisture while growing; it will remain three weeks in bloom, if the flowers, which are deliciously fragrant, are kept dry.

*Aerides odoratum*, from India, flowers from May to August; the blossoms are white, stained with pink, and are very fragrant. They will remain three weeks in bloom. It requires plenty of heat and moisture while in an active growing state.

*Aerides affine*, flowers from May to July; the blossoms are pink and purple, and they remain three or four weeks in perfection. It only requires a short season of rest.

*Aerides maculosum*, comes from Bombay; it is a most

beautiful species, which flowers in June and July. It likes plenty of heat, light, and moisture during the growing season; and it requires but little rest. Its flowers remain long in perfection, if they are kept dry.

*Aerides roseum*, flowers in June and July; and, like other Indian kinds, it requires plenty of heat and moisture while making growth. The blooms remain three weeks in beauty.

*Aerides virens*, flowers in June and July, and the blossoms remain long in perfection.

*Vanda cristata*.—This fine Indian Orchid flowers from March to June. It must have plenty of heat during the growing season; afterwards it should be kept drier. It will keep in flower for six weeks.

*Vanda suavis*, comes from Java. It will succeed on a block, but it does best in a basket. It likes plenty of heat and moisture during the growing season. When in bloom it is one of the most beautiful of the genus.

*Vanda tricolor*, from the same country, is also a fine species. It flowers from May to July, and requires plenty of heat and moisture while growing.

All the above will thrive on blocks, but I am of opinion that they grow best in baskets filled with moss and potsherds, and suspended from the roof.

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SECTION D. *Tuesday, July 8.* (*Continued from p. 596.*)—*Notes on the Botanical Geography of part of the Himalaya and Tibet;* by Major E. MADDEN and Captain R. STRACHEY.—This paper was illustrated by a sectional drawing of the Himalaya mountains, from the plains of India to Tibet, passing through the British province of Kumáon, on which the names of the more striking plants were inserted at the elevations where they were found. The section commencing from the southern face of the mountains first represented the band of forest that skirts their foot, chiefly composed of the trees of tropical India. Ascending, we find forms of temperate climates gradually introduced above 3000 feet. Pinus, Rosa, Rubus, Oak, Berberis, Primula, &c. At 5000 feet the arboreous vegetation of the plains is altogether superseded by such trees as Oaks, Rhododendron, Andromeda, Cypress, and Pine. The first ridge crossed, ascends to a height of 8700 feet in a distance of not more than 10 or 12 miles from the termination of the plains. The European character of the vegetation is here thoroughly established, and although specific identities are comparatively rare, the representative forms are most abundant. On a part of this ridge is found a Palm that on some mountains, not far off, attains a height of 50 feet at an elevation of more than 8000 feet above the sea, where it is every year covered with snow. Passing onwards we enter a zone of less elevation which is comparatively devoid of wood, and is chiefly devoted to agriculture. The climate is not very dissimilar to that of northern India, but not nearly so hot, and many species of tropical plants occur. Crossing another ridge, similar in its vegetation to that first mentioned, we descend into the valley of the Sarjie, one of the rivers that penetrate at a very low level far into the interior, carrying with them a tropical vegetation into the heart of the mountains. This, however, is considerably modified by the height and by the greater humidity. We thus find Pines and Palms, Oaks and Maples, growing with the ordinary trees of the plains, and a similar confusion of the flora of the temperate and torrid zones holds with the shrubs and herbs. From this valley we pass into that of the Pindar, which we follow up from 7500 feet to its source in a glacier at 12,000 feet. From 7500 to 11,000 feet, the region of Alpine forest, the trees most common are Oaks, Horse-chesnut, Elm, Maples, Pines, Yew, Hazel growing to a large tree, and many others. They often grow to a very large size, and the forest is usually far finer than in the lower mountains. At about 11,500 feet the forest ends; Picea Webbiana and Betula Bhojpatra being usually the last trees. Shrubs, however, continue in abundance for about 1000 feet more, about 12,000 feet the vegetation becoming almost entirely herbaceous. On this southern face of the mountains the snow line is probably at about an elevation of 15,500 feet. The constant condensation of vapour on this face causing a very humid climate, the vegetation is very luxuriant, and the great riches of the Himalayan flora are found in this region. As we pass to the north of the great snowy peaks, we leave behind us this wet climate and enter a country that very soon becomes equally remarkable for its extreme aridity. In the valley of the Gori, into which we next pass at an elevation of 11,500 feet, we find that several Tibetan plants have appeared, the flora, however, having become very poor. The gorges that lead to the great passes into Tibet are almost devoid of vegetation. The highest dicotyledonous plant noticed on this route was at about 17,500 feet, probably a species of Echinospermum; an Urtica also is common at these heights. The snow line here recedes to 18,500 or 19,000 feet. In Tibet itself, the vegetation is scanty in the extreme, consisting chiefly of Caragana, Artemisiæ, Astragali, a few Gramineæ, Potentillæ, &c. The plain to the north of the Himalaya is almost a desert, not more than one-twentieth of the surface being clothed with vegetation, and that of the most miserable sort, the bushes seldom rising above a foot in height. The cultivation of Barley extends to a height of 14,000 feet. Vegetation ends at about 17,500 feet, the highest plants being Corydalis, Cruciferæ, Nepeta, Sedum, and some few others.

*On the Botanical Geography of Western Tibet*, by Dr. T. THOMSON.—A section of this country, similar to that which accompanied Capt. Strachey's paper, was also exhibited. It extended on a line nearly north and south from the upper part of the Chenab river to the Kára Korum pass on the Konenlun chain of Humboldt. The chain to the south of the Chenab, rising to an elevation of 15,000 feet, excludes a considerable quantity of humidity from the valley of that river, and the vegetation, though not altogether losing its truly Himalayan character, becomes much modified. Thus the Oaks, Rhododendrons, and Andromeda, so common on the southern mountains, are not found; while fruit trees become more abundant, and the Grape-vine ripens its fruit admirably. Passing to the north the next ridge that is crossed reaches a height of from 20,000 to 22,000 feet, the passes being usually upwards of 18,000 feet in elevation. To the north of this range the climate and vegetation suddenly change, and the Tibetan types are at once established. The general character of the flora is Europeo-Siberian, but much modified by the extreme aridity which almost excludes trees and shrubs; it hardly exceeds 500 or 600 species in all. The chief groups are Borragineæ, Chenopodiaceæ, Cruciferæ, Astragalinæ Leguminosæ, and Artemisioid Compositæ. The few trees consist of a Poplar, confined to the more sheltered ravines, and an occasional Juniper on the hill sides. The more common shrubs are Lonicera, Tamarix, Myricaria, and Hippophaë. The high Alpine herbaceous flora is almost strictly Siberian, and is a little more varied and copious than in other parts of this region, from the additional moisture derived from the melting of the snow. It extends sometimes even to a height of 18,500 feet.—Dr. J. Hooker observed that Captain Strachey and Dr. Thomson had done for the Himalaya what Humboldt had done for the Andes. The district of the Himalaya in which he had travelled was not unlike that just described—it was, however, higher, reaching to 28,000 feet, whilst that first described was only 25,000 feet. In the Sikkim Himalaya the ascents were constantly modified by descents, and there was more rain, and the line of perpetual snow was lower, than in Kumaon. Pines were alike abundant in both regions. The Larch was abundant in Sikkim, but absent in Kumaon. Rhododendrons numbered 36 species in Sikkim, but only six or eight in Kumaon.—Mr. Winterbottom, who had travelled over the same districts with Captain Strachey and Dr. Thomson, compared the flora of the Alps with that of the Himalaya, and pointed out the comparative richness of the latter. Where Firs alone grew on the Alps, a most varied and beautiful vegetation was observed in the Himalaya. There was, however, a great difference in different districts. Where the rains fell and the atmosphere was moist, there the vegetation was most prolific, but where there was a want of moisture the land was sterile and truly disagreeable to behold. Many of the plants were representative of European species.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 31.)

No. XLVII.—We will now resume the thread of our discourse, on the subject of migratory instinct. We have spoken of the inherent power which birds of passage possess to travel long distances; and also of the unerring instinct that directs their flight, and teaches them where to go. This suggests a whole train of thoughts.

In the first place, we will consider what becomes of them immediately on their leaving our shores; and it will be reasonably asked,—how do these birds contrive to live so long as they do, on certain occasions, without food? This has, 'ere now, puzzled me, too, not a little. I resolved the matter by a close observation of the various migratory birds which I kept in confinement, which leads me to a curious part of my subject. These little creatures, when I commenced keeping them, exhibited at certain seasons of the year, and all on a sudden, a very ragged appearance. I observed that some of them had damaged tails; others, ruffled wings; and not a few of them presented a most haggard appearance I was at that time unable to account for this phenomenon; but knowing two gentlemen who were well versed in Natural History, and both of them devoted amateurs in the matter of the nightingale, I applied to them on the subject, and they at once cleared up the mystery.

It appeared that my birds (like their own, which I saw) were suffering from the "agitation," to which I have before had occasion so often to allude. This "agitation," or intense desire to quit the country, is felt by *all* migratory birds, free or otherwise; and if in confinement, they will dash about their cages nearly the whole night through; sometimes throughout the day also. The fever commences in September, and lasts some weeks. This quite upsets the doctrine of those who affirm that young birds are guided in their movements and preparations for migration by the *old* birds. True to the instinct of his nature, every bird, however ignorant, would not be at all puzzled, if set free, to join his companions abroad. I may remark, that this "agitation," in a milder form, is again felt by cage birds in the spring,—the season for the *return* of our feathered friends. But we were going to speak of their being able to live so long without food.

When the season of "agitation" or migration arrives, immediately behind the lower extremity of each bird there is formed a lump of fat. This I have found to continue, more or less, for a month. Whilst this remains, you will find your birds altogether destitute of appetite. Their food, however fresh, remains almost untouched. They sit uneasily and restless on their perches, and cannot be won, even by kindness, to take notice of anybody. From this I infer, that the said mysterious lump of fat in some way supports animal life; and it no doubt materially assists those birds, which, whilst making long passages, are unable to procure their usual food. Such was also the opinion of my two good friends. I may add, that covering your birds up is of little avail. Place them where you will,—do with them what you will,—their restless state of excitement *must* continue until Nature's laws are satisfied.* The visitation over, your birds will soon regain their lost spirits.

A few months since, I promised to speak in due course of the early education of birds, and to show how very much depends upon ourselves in rearing them properly, and making them first-rate songsters. I also promised to notice other peculiarities connected with their instinctive habits. It has been suggested to me, within the last few days, that no better time offers for the fulfilment of my promise than the present. Be it so.

I have on a number of occasions remarked, how very few there are amongst us that have not *some* feathered "pet" in their families. All such must have observed, when entering the shops where song birds are usually sold, the hideous noises uttered on every side by parrots, macaws, and the like monstrosities; these noises, I would again remark, are in many instances imitated by the smaller birds; and in *all* instances they do irreparable injury to *good* birds. This is why I have been so unceasing in giving my advice as to where people should *not* deal; and once more I emphatically say,—let all intending purchasers beware! If, after my repeated cautions, anybody *should be* "taken in," the fault will certainly never be chargeable upon *me*.

So remarkably tenacious is the memory, and so remarkable acute are the ears of some nestlings when only a day or two old, that instances are on record of the note of the parent bird having been heard, at this tender age, and *never afterwards forgotten by the callow offspring*. Knowing this, we have the key to a most important secret. It is many years since I was enlightened on the point; and I have had oft-repeated opportunities of witnessing extraordinary results from a careful study of the subject.

At Birmingham, in particular, is one branch of this secret extensively known; for we there find splendid linnets educated under the wood-lark, and singing the celestial notes of that bird of birds with perfect freedom. So "true," too, are they in their song, that you shall not distinguish by the ear one from the other. This is effected, entirely, by taking the linnets when only a day or two old, and feeding them in a room tenanted by wood-larks *only*. The titlark, I may remark, is an equally good tutor, but not so *recherché* in his music.

On the same principle, if an Englishman and his wife were residing in France, and had children born there—the latter would, naturally, speak the French language as glibly as the natives, if allowed to mix with them from their early infancy. They would, indeed, speak French *and* English—the one as well as the other. There is nothing wonderful in this; but it helps us to an argument, and enables us to reason. When we can do this, good-temperedly, we carry all before us.

I will merely add to the foregoing, that these notable facts, and many others, are not only very curious, but they demand our best attention. It is quite evident that in Nature herself we must seek her laws; it is only when we deviate from them that we encounter difficulties. In my researches after truth, I have employed the whole strength of my reason, "and though," to use the words of the good St. Pierre, "my means have been comparatively feeble, yet I can conscientiously assert that I never passed a single day without collecting SOME agreeable observation. When I commenced these treatises, I imagined I had amassed sufficient materials for a history of Nature; but alas! I was like the child who, with a shell, dug a hole in the sand to receive the waters of the ocean!" *William Kidd.*

## FRUIT ROOMS.

THE following description and plan of a fruit-room, belonging to Josiah Moorman, Esq., Clapham-road, with some remarks by Mr. Robert Thompson, was published in a recent number of the "Journal of the Horticultural Society."

"The supply of fruit in autumn is almost superabundant in favourable seasons, and in varieties there is then an ample choice. Many of these, however, are naturally of so short duration, that they cannot be long kept well under any circumstances. Means may be adopted for preventing their decomposition, but their flavour is frequently deteriorated or completely lost. In general, those kinds that ripen early soon decay; and a large proportion of the fruit cultivated by extensive growers is of this description, because it pays them better to take such at once to market than run the risk consequent on the keeping of later varieties. Hence we find that towards Christmas the quantity of fruit, of Pears more especially, is greatly diminished, and that the choice is reduced to comparatively few sorts. Such favourites as the Marie Louise and Beurré Bosc are not to be had under ordinary circumstances. In January the scarcity becomes greater, and Jersey Chaumontels make their appearance, imported at the high price of, not unfrequently, 5*l.* per hundred; whilst

* These curious facts, showing how completely the heart of all "birds of passage" is in a foreign land, at certain seasons, really *ought* to suggest the question,—"Are we justified in keeping them pent up in cages?"

well matured specimens of the Easter Beurré and Beurré Rance are in request, leaving the greener and less perfect of these, and a few of some other sorts, to make occasionally the appearance of supply during the spring months—quite inadequate, however, to meet anything like a regular demand, such as would certainly be made if Pears could be well kept in abundance till that period.

"The high state of perfection in which fine specimens of Pears have been frequently exhibited to the Society by Mr. Moorman at periods of the season much later than the varieties usually keep, rendered it very desirable to obtain an account of the method by which these were preserved in such admirable condition. On applying to Mr. Moorman he kindly afforded every information with regard to the mode by which his Pears are kept; and he also permitted Mr. Sibthorp, the superintendent of works at the Society's Garden, to make the accompanying drawings, which will give a correct idea of the place.

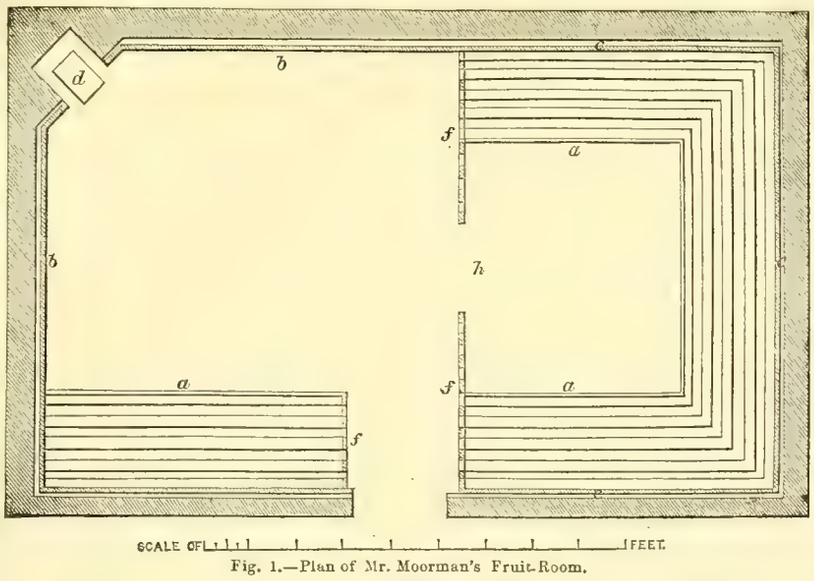


Fig. 1.—Plan of Mr. Moorman's Fruit-Room.

"The room was not originally constructed for a fruit-room; but, by a little adaptation, Mr. Moorman has succeeded in rendering it a most excellent one, as is proved by the prizes awarded for the productions exhibited from it—not in any one year, but repeatedly, year after year. It is a partitioned-off portion of a loft, which extends over a coach-house and stables, and is that part which is above the coach-house. It was originally fitted up for a harness-room, the walls, as is usual in such places, being lined with wood. The roof is slated. The range of building is detached, and faces the south-west.

"It will be observed that there is a cavity, *c*, between the boarding and walls. This, I believe, is an important circumstance, and so is the wooden lining, because air and wood are known to be slow conductors of heat. The ceiling on the north side is double, and the floor is wood above a ceiling. We may therefore conclude that a uniformity of temperature in the interior of the room is insured to a considerable extent.

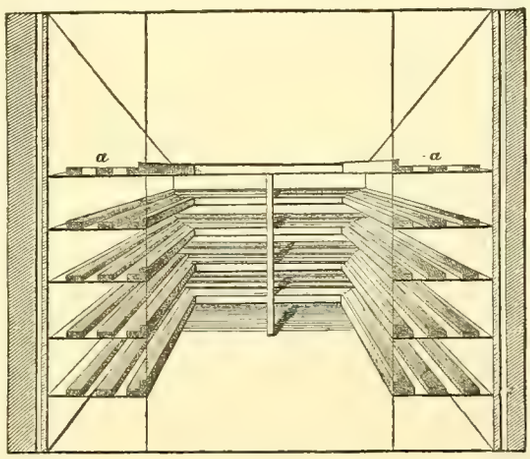


Fig. 2.—Interior View.

"There is the small stove, *d*, but it is seldom used, and never with the view of warming the air of the room, unless the temperature is actually below freezing. The fruit is therefore kept cool. The swing-window, *e*, is occasionally a little opened; but it is at all times covered with a roller-blind, so that the fruit is kept in the dark. A little fire in the stove, air being freely admitted by the window at the same time in a dry day, is useful for speedily removing any damp which may arise from the fruit. The shelves, *a a*, have a layer of clean-drawn straw laid across them, and on this the fruit is placed singly.

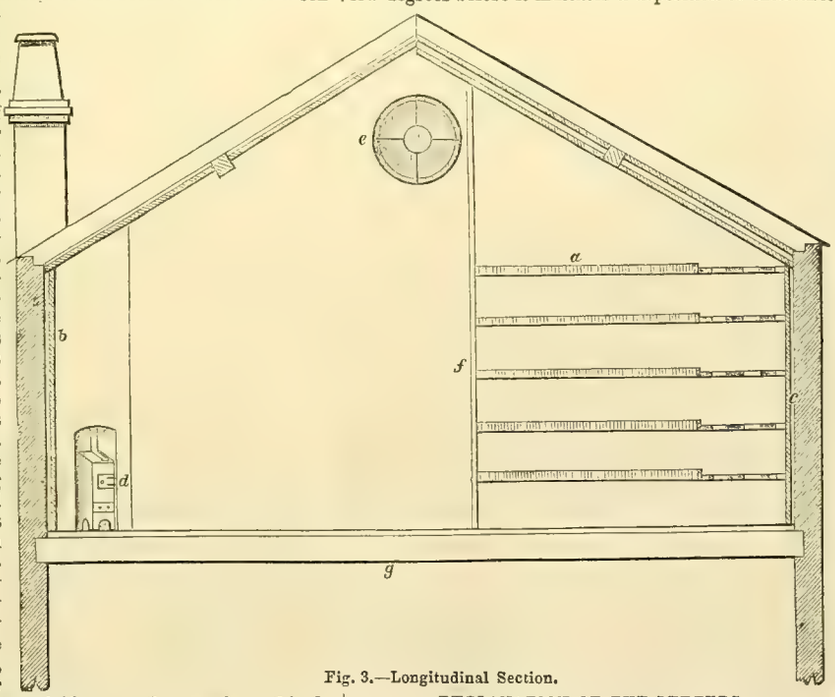


Fig. 3.—Longitudinal Section.

EXPLANATION OF THE LETTERS.

*a*. Shelves made with battens, 1½ inch wide, and 1¼ inch apart.
*b*. Close boarding around the sides of the room.
*c*. Air space between the boarding and the wall. The roof also has an air space on the north side between the two plaster ceilings, as shown on the section.
*d*. Stove.
*e*. Circular window hung on pivots, and fitted with a roller-blind.
*f*. Partitions of open work similar to the shelves.
*g*. Coach-house under fruit-room.

"From a consideration of all the above details it may be inferred, that if a fruit-room be built over a place where there is a free circulation of air, its roof double ceiled, the walls lined with wood, a cavity being left between these two, it will possess the essential properties of the one under consideration.

"The more important principles necessary to attend to, with regard to the long keeping of fruit, are uniformity of temperature, coolness, and darkness.

"If the temperature is uniform, there can be little or no deposition of moisture on the surface of the fruit; but if the air of the room should be, say 10 degrees warmer than the fruit, then the relative coldness of the latter will cause a condensation of the moisture contained in the air in contact with the fruit, just as a cold glass becomes dewed over when brought into a warm atmosphere. If the air is indeed very dry, then a proportionally greater difference of temperature is necessary to produce the above effect; but in winter the hygrometer seldom requires to be cooled more than a few degrees before it indicates a deposition of moisture.

Fruits, with smooth, glossy skins, in close contact with the cold substance beneath them, are those most profusely covered with moisture from the above cause. In russeted varieties their dry, rough coats, serve as non-conductors of heat, and hence less moisture is deposited on them. When the air becomes colder than the fruit, a contrary action—that of evaporation—takes place, and the surface of the fruit becomes dry. But this wetting and drying must prove very injurious; whilst its cause, alternations of temperature, must likewise affect the specific gravity of the juices of the fruit. Mr. Moorman's fruit is not exposed to such vicissitudes; for when the weather becomes frosty, it is several days before the thermometer in his fruit-room is affected as much as one degree.

"It may be remarked that in giving air a period of the day should be chosen when the thermometer outside indicates the same temperature as that in the room. No deposition of moisture can then take place in consequence.

"With regard to coolness, it is well known that this condition is favourable to the long-keeping of fruit; for we act on the contrary when we wish to render any variety fit for use before its usual time. The fruit-room in question must be cooler on an average, than if it had been on the ground, for the latter, under a building particularly, is much warmer than the air in winter.

"Light accelerates the maturity and ultimate decay of fruit exposed to its influence. If the soundest specimens are picked and placed opposite a window, they soon become much inferior in appearance, compared with those from which the light is excluded, all other circumstances being the same. In Mr. Moorman's fruit-room, the light is excluded by a blind, even when air is given.

"By such arrangements as those above detailed, Mr. Moorman keeps the Marie Louise in fine condition till after Christmas. He possesses a selection of the best varieties of Pears, which he grows chiefly on Espaliers, which are well managed by his gardener, Mr. Tucker, in the Clapham-road. He had some remarkably handsome specimens of the Winter Nelis in his fruit-room in January, much larger than that excellent variety usually grows. We have also seen very large specimens of the Marie Louise, grown at his seat at Box Hill, in Sussex. The tree which produced them is trained against the gable end of a barn, about a quarter of a mile from the sea, and this tree is exposed to the strong sea-breezes from the south-west. It was planted in good soil, and a spring below it was discovered when digging the hole for the compost, previous to the tree being planted."

## Home Correspondence.

*Cloth of Gold Rose.*—I see that "A Correspondent" pleads the cause of this Rose. I think that it is supposed to be more difficult to manage than it really is. I have had one now for several years, which has bloomed well and freely. It stands against a south wall, has no other plants against which to struggle intruded upon it, is well fed, and sharply pruned; it grows in a soil which is naturally poor and sandy, but it has a barrow load made up of stable litter and burnt refuse, or of stable litter and loam, given to it each year. I think it possible that Cloth of Gold has got the character of being a shy bloomer from being grown upon its own roots; in that form I do not think it will succeed; at least, I do not know of any plant of it thus grown successfully. Mine is budded upon a Dog-rose, but Celine, I believe, makes a better stock for it than any other Rose does. I have found some of my best blooms come from shoots which I have laid into the ground, after drawing them down from the wall against which my tree grows. Such shoots have thrown other strong fleshy shoots from the point at which the laid shoot comes out of the ground again, and upon these I have had splendid blooms. I believe that Cloth of Gold only requires liberal treatment, and a little patience, in order to secure such a bloom as will amply repay the grower of it. *C. E. C., Shirley.*

*Large Scarlet Thorn.*—In the kitchen garden, at Elderslee House, near Renfrew, in Scotland, is a scarlet flowering Thorn 30 feet high, 39½ feet across the branches, from east to west, and rather more from south to north, the stem being 6 feet 5 inches in circumference, at 18 inches from the ground. Its age is not known. It is about 80 years since the garden was first formed; but before that the old Mansion House of King's Inch stood close to where the kitchen garden now is, and the tree may perhaps have been growing there, and spared when the garden was inclosed. It is in vigorous health, and appears to be liberally availing itself of the good things provided for its humbler associates, the lower branches touch the ground, and in some places, having struck root, are growing vigorously. When in full bloom it is a splendid object. *G. Aitken, Kilmarnock.*

*The Mocking Bird.*—I have often been surprised that none of your correspondents have noticed the wonderful imitative powers of the mocking-bird (Sylvia salicaria), whose notes hit off with such exactness so many of the other small birds. In listening to one, the other day, for about a quarter of an hour, I heard it give the notes of the sparrow, swallow, whinchat, spring wagtail, starling, martin, chaffinch, whitethroat, greenfinch, little redpole, and whin-linnet, besides the notes of half a dozen birds which I did not know; at least I have no right to assert that they were not imitations because I did not happen to recognize them. The alarm notes of other birds are those most frequently imitated; but though this is generally the case, it is not invariably so, for instance, in addition to the alarm note of the swallow "chizzee, chizzee," it also had the "whit, whit," which the swallow uses as it flies about, and the chatter of satisfaction, not the song, which one often hears when two swallows are arranging their plan of operations in a barn in the spring. Again, in addition to the shriek of the martin, there was the note it utters when on the wing, in pursuit

of its food; there was also the chirrup of the greenfinch, and the "whee, whee, whee," which is the climax of the song of a whin-linnet, and which is so irresistible in it as a call-bird, and which appears to bring down the flock, almost in spite of themselves. Although the bird imitated all those I have mentioned, it made much more frequent use of some than of others. The sparrow, the white-throat, the spring wagtail, the starling, the whin-chat, and the swallow, appeared to be its chief favourites; whilst it only touched once or twice on the notes of the greenfinch and whin-linnet; it was also very sparing in its use of the chaffinch's note, until one in the neighbourhood began "twink, twink, twink," then the mocking-bird took it up, and twinked away for 50 times together. Next morning the whin-linnet's note was in much greater use, and it also made much more use of notes with which I was not acquainted. On neither day did it touch upon the notes either of the redstart or pied wagtail, both of which I have heard frequently used by the mocking-bird before. On the other hand, I have not previously noticed the notes of the starling and the whin-linnet, which this bird gave in perfection, and, therefore, though I never heard it make use of the notes of any of the larks or thrushes, I would not be understood to say that this never happens. I shall be glad if what I have said shall draw the attention of any of your correspondents to the bird; for although its song, from the strange mixtures it makes, is not very pleasing, it still shows amazing powers of imitation from the "chue chue" of the sparrow to the climax of the whin-linnet's song. The note of every bird is given with such fidelity of tone and expression, that if it were not interlarded with all sorts of incongruous sounds, I would defy the most practised ear to discover that it was only an imitation. It is perhaps difficult to say whether it has a note of its own which is not used by any other bird; but there is one which it always makes use of when any one approaches the nest (interlarded, however, with the notes of the swallow, whin-chat and white-throat) that is "chur-r-r chur-r-r," prolonging the sound of the *r* in a way that would set up the half of Northumberland. *T. G., Clitheroe.*

*Weeds.*—Trite and commonplace as the subject may be, I am quite sure that the observations in your leader of Saturday last will not only be of much use and benefit among the members of the profession, but will be thankfully acknowledged by many persons, and particularly so by ladies who, like myself, from occasional absence from home, and other causes, cannot pay that regular attention to their gardens which, notwithstanding all the improvements both in the education and circumstances of their gardeners, is too often necessary and required to enforce and preserve habits of order and tidiness, that comprehensive qualification in every servant which, in the assumption of higher recommendations, is too often neglected or forgotten; and the want of which, as you must well know, is a frequent source of dissatisfaction with men not at all deficient in higher qualities and abilities; and although observations upon these points do frequently appear in the *Gardeners' Chronicle*, they seem to receive by no means that consideration which a special and prominent notice occasionally from you is more likely to produce. As you, among others, apply the term profession to the art of gardening I have done the same, but Dr. Johnson tells me that the term craft or vocation would be applied with much greater propriety in this instance, as well as to domestic servants, hair-dressers, tailors, dancing-masters, tavern-keepers, and many other highly respectable occupations, which you as a public authority ought to attend to, and to discourage that which is not only untenable, but ridiculous. *A Lady, Sept.* 23. [We accept Dr. Johnson as an authority in the application of words as understood in his time; but not as an authority in their application now. You will find this point discussed at some length in our columns a year or two ago.]

*Fuchsias.*—Having recently written in praise of Fuchsia corallina, which I still think the finest dark variety in cultivation, it may not be amiss to express my admiration of a descendant, which I have recently been introduced to in the conservatory of the raisers, Messrs. Lucombe and Pince, of Exeter. The seedling in question will be sent out under the name of Princess, and will certainly rank high in the estimation of the admirers of this beautiful tribe. Its colour is clear bright crimson, with a brilliant purple corolla; the flowers are large, and produced abundantly, but its chief characteristic is the peculiar reflexion of its wax-like sepals, which turn back in a manner possessed by no other Fuchsia, and which render it conspicuously beautiful among a host of the rarest varieties. *A Devonian.*

*Potatoes.*—Perhaps the following particulars, remarked by my gardener, respecting the crop of Potatoes here, may interest you:—In the lighter land, there were very few diseased tubers of any sort. In a strong loam, different sorts were very differently affected. A lot of Dublin Apples had about one-half diseased; while a lot of Blue Farmer's Glory adjoining, had scarcely a diseased tuber. In a strong loam, the Manchester Radicals produced a good crop, but nearly one-third diseased, where exposed to the sun and air; whereas, on a part of the ground shaded by a Beech tree, about 16 yards in diameter, the crop was about one-fourth lighter, and the Potatoes smaller; but there was not a diseased tuber, as far as the drip of the branches extended. *L. L., Salop.* [Should we not read *dried* for *shaded?*]

*Pruning Forest Trees.*—You very justly censured a correspondent, a week or two ago, for criticising a work which he had never read. Permit me to say that "Quercus" has laid himself equally open to reproof. He accuses me of being an advocate for pruning forest trees, and founds his accusation on the false inferences drawn by another correspondent in a previous communication. How, from what I have said in the articles to which "Expertus," and after him "Quercus" alludes, any one can accuse me of being an advocate of forest pruning, I am at a loss to imagine. On the contrary, I endeavoured to make apparent some of the glaring injuries which timber sustained under the practice. I am equally as sensible of the ill effects of pruning as "Quercus" can be; and I can assure him that I have examined the specimens in the museum at Kew, to which he alludes, as well as hundreds of others, and he will find some of them figured in last year's volume of the *Gardeners' Chronicle*. Apart from the injustice of criticising a performance without having seen it, no one is desirous of having strictures passed upon work while in a half finished state, and the articles in question were intended as prefatory to some other remarks I had intended to offer on a physiological view of the subject matter. An error in judgment is excusable; it is only indicative of the fallibility of human reasonings; but to condemn without judgment is unpardonable. I shall wait anxiously for the promised communications of "Quercus." *G. L.*

*The Maiden Hair Tree.*—In the gardens of the Duke of Bedford, at Oakley House, is a specimen of this tree (Salisburia adiantifolia), 30 feet high, the same through its branches, with a boll 3 feet in circumference, at 6 feet from the ground. This specimen is a very fine and beautiful one. Allow me to ask some of your correspondents if they are aware of larger specimens of this very handsome tree. *Occasional Tourist.*

*Monstrous Fuchsia.*—One of my neighbours has a Fuchsia which certainly presents a remarkable instance of monstrous growth. I do not know the name of the variety, but it is one of those which have the calyx of a flesh colour. The tube is fully twice the ordinary circumference, and correspondingly long; and its sepals are in the form of twelve distinct segments, only narrower than is common, while all the other parts of the flower and fructification are correspondingly enlarged or multiplied. The petals of the corolla are more numerous than is common; the stamens are 18 or 19 in number, all perfectly formed, and producing the pollen as usual; and the pistil is of a very singular formation, being a kind of club-shaped body, increasing in diameter towards the stigma, which latter is an oblong mass, a quarter of an inch or more across, and presenting numerous blunt projecting points at its extremity, as if to correspond with the multiplicity of the other organs of reproduction. The pericarp or seed vessel is similarly enlarged, and the flower-stalk corresponds in length and thickness with the other details of unusual development. The plant bears numerous other flowers, besides the one more particularly referred to; but excepting it, they are all of the ordinary size and form. The owner proposes to preserve and plant the seed which may be yielded by this monstrosity, in order to see whether the produce will be anything like itself. We are, of course, desirous of knowing, if possible, how the extraordinary formation is to be accounted for. *K., Oxford.* [Such accidental monsters are by no means uncommon in Fuchsias, and are probably the result of excessive vigour.]

*Aquatics.*—What a pity it is that the large sheet of water in front of the noble conservatory in Kew Gardens, should be allowed to remain empty. Not a single aquatic, foreign or English, does it contain. I would suggest that it be heated, which could easily be done, as a great deal more heat is generated than is required for the conservatory, and the whole sheet of water filled with Victoria Regia and other aquatics, which would have a splendid effect, and give great *éclat* to the gardens. There is nothing connected with gardening in which there is more room for improvement than in the way of aquariums. *An Old Subscriber.*

*American Aloe.*—A fine specimen of the Agave Americana is now in bloom here, the flowering of which was looked forward to with considerable interest, the plant having been in the possession of the family for more than 80 years. The flower-stem, which showed itself on the 10th May last, is now 23 feet high, and is surrounded by 27 branches arranged in a pyramidical form with perfect symmetry, each branch containing from 150 to 160 flowers. The first blossoms were developed on the 2d of September. *James Reid, Gardener, &c., Ashton Court.*

## Reviews.

*British Pomology; or the History, Description, and Classification of the Fruits and Fruit-trees cultivated in the Gardens and Orchards of Great Britain; together with a complete enumeration of their synonymes, with their citations, and references to the works in which the different varieties are figured, forming a complete work on the "Systematic Pomology of this Country." Illustrated with numerous engravings.* By Robert Hogg. Groombridge and Sons. Parts 1 to 4; 8vo., to be continued monthly.

THE object of "British Pomology," we are informed, is to supply a want which has long been felt by the cultivators of fruits and fruit-trees, and to furnish those who are interested in their cultivation with a work which shall embrace all the information attainable, regarding the numerous varieties cultivated in this country. All the varieties of fruits which are recorded either in other works on Pomology, or in the nurserymen's catalogues, as existing in this country, are to be minutely described, including, it is stated, the New Belgian Pears raised by Esperen, Bivort, Bouvier, and others, together with the posthumous varieties of Dr. Van Mons. The four parts of the work which are now before us afford good indication that the prospectus will be ably carried out. So far, the enumeration of Synonymes, with their citations, is certainly the most complete and extensive which has hitherto been published. The works of English and foreign authors, ancient and modern, have been carefully consulted. The work, however, is not a mere compilation, for the author has evidently great practical knowledge of the various subjects. It is abundantly illustrated by well-executed outline woodcuts, and, when complete, will form an interesting, and, to gardeners, most useful volume. The two following extracts show Mr. Hogg's manner of treating his subject. Speaking of the Ribston Pippin, he says:—

"There is no Apple which has ever been introduced to this country, or indigenous to it, which is more generally cultivated, more familiarly known, or held in higher popular estimation, than the Ribston Pippin. It has long been in existence in this country, but did not become generally known till the end of the last century. It is not mentioned in any of the editions of Miller's Dictionary, or by any other author of that period; neither was it grown in the Brompton Park nursery in 1770. In 1785 I find it was grown to the extent of a quarter of a row, or about 25 plants; and as this supply seems to have sufficed for three years' demand, its merits must have been but little known. In 1788, it extended to one row, or about 100 plants, and three years later to two rows; from 1791, it increased one row annually, till 1794, when it reached five rows. From these facts we may pretty well learn the rise and progress of its popularity. It is now in the same nursery cultivated to the extent of above 25 rows, or 2500 plants annually.

"The original tree was first discovered growing in the garden at Ribston Hall, near Knaresborough, but how, when, or by what means it came there, has not been satisfactorily ascertained. One account states that about the year 1688, some Apple pips were brought from Rouen and sown at Ribston Hall, near Knaresborough; the trees then produced from them were planted in the park, and one turned out to be the variety in question. The original tree stood till 1810, when it was blown down by a violent gale of wind. It was afterwards supported by stakes in a horizontal position, and continued to produce fruit till it lingered and died in 1835. Since then, a young shoot has been produced about 4 inches below the surface of the ground, which, with proper care, may become a tree, and thereby preserve the original of this favourite old dessert Apple. The gardener at Ribston Hall, by whom this Apple was raised, was the father of Lowe, who during the last century was the fruit tree nurseryman at Hampton Wick."

Each fruit is described in alphabetical order, upon the following plan, the length of the article varying with its importance.

"288.—RED-STREAK. Evelyn.

"IDENTIFICATION.—Evelyn Pom. Worl. Vin. 164. Nourse Camp. Fel. 143. Fors. Treat. 123. Lind. Guide, 110. Pom. Heref. t 1. Down. Fr. Amer. 146.

"SYNONYMES.—Herefordshire Red-Streak, *Hort. Soc. Cat.* ed 3, n 625. Scudamore's Crab.

"FIGURES.—Pom. Heref. t. 1. Brook. Pom. Brit. pl. xciii. f. 4.

Fruit, medium sized, 2¾ inches wide, and 2¼ inches high; roundish, narrowing towards the apex. Skin, deep clear yellow, streaked with red on the shaded side; but red, streaked with deeper red on the side next the sun. Eye small, with convergent segments, set in a rather deep basin. Stalk, short and slender. Flesh yellow, firm, crisp, and rather dry. Specific gravity of the juice, 1·079. A cider Apple, which at one period was unsurpassed, but now comparatively but little cultivated. Perhaps there is no Apple which at any period created such a sensation, and of which so much was said and written during the 17th century, as of the Red-Streak. Prose and verse were both enlisted in its favour. It was chiefly by the writings of Evelyn it attained its greatest celebrity. Philips, in his poem—'Cyder,' says

> 'Let every tree in every garden own
> The Red-Streak as supreme, whose pulpous fruit,
> With gold irradiate, and vermilion, shines
> Tempting, not fatal, as the birth of that
> Primæval, interdicted plant, that won
> Fond Eve, in hapless hour to taste, and die.
> This, of more bounteous influence, inspires
> Poetic raptures, and the lowly muse
> Kindles to loftier strains; even I perceive
> Her sacred virtue. See! the numbers flow
> Easy, whilst, cheer'd with her nectareous juice,
> Her's, and my country's praises, I exalt.'

But its reputation began to decline about the beginning of the last century; for we find Nourse saying, 'As for the liquor which it yields, it is highly esteemed for its noble colour and smell; 'tis likewise fat and oily in the taste, but withal very windy, luscious and fulsome, and will sooner clog the stomach than any other cyder whatsoever, leaving a waterish, raw humour upon it; so that with meals it is no way helpful, and they who drink it, if I may judge of them by my own palate, will find their stomachs pall'd sooner by it, than warm'd and enliven'd.'" The Red-Streak seems to have originated about the beginning of the 17th century, for Evelyn says, 'it was within the memory of some now living, surnamed the Scudamore's Crab, and then not much known save in the neighbourhood.' It was called Scudamore's Crab, from being extensively planted by the first Lord Scudamore, who was son of Sir James Scudamore, from whom Spenser is said to have taken the character of Sir Scudamore in his 'Fairie Queen.' He was born in 1600, and created by Charles I. Baron Dromore and Viscount Scudamore. He was attending the Duke of

Buckingham when he was stabbed at Portsmouth, and was so affected at the event that he retired into private life, and devoted his attention to planting orchards, of which the Red-Streak formed the principal variety. In 1634 he was sent as ambassador to France, in which capacity he continued for four years. He was a zealous royalist during the civil wars, and was taken prisoner by the parliament party, while his property was destroyed, and his estate sequestered. He died in 1671."

## FLORICULTURE.

Slough Dahlia Show.—If there be one locality more floricultural than another, it is Slough. Permit me to direct attention to the forthcoming meeting, which will, as usual, be under the guidance of Mr. Bragg. I have only to refer to the announcement of the meeting in our advertising columns of to-day, to insure a numerous gathering. Flowers ready at 11 o'clock. Dinner at half-past 2. *J. E.*

Hollyhocks.—I have been solicited to give the names of the 12 spikes of Hollyhocks which obtained the 1st prize at the late Shacklewell Show. Notes were made of them at the time, but the length of the report, even condensed as it was, precluded us from giving much that was both interesting and valuable. The varieties in question were as follows:—Rembrandt, Safranot, Enterprise, Dido, Dazzle, Lady of the Lake, Queen of Scots, Picta, Brilliant (seedlings of the exhibitor, Mr. Parsons), Model of Perfection, Enchantress (Chater), and Rosea grandiflora (Baron). I would here observe, that the six spikes exhibited by Mr. Parsons, at the last meeting in Regent-street, even surpassed that grower's former productions; they were, indeed, superb. *J. E.*

## Societies.

Bath Royal United Horticultural, *Sept.* 11.—At the fifth show of the season, which was held on this occasion, there was, in addition to other things, a good display of florists' flowers. Miss Bayly obtained a 1st prize for the best collection of 6 Fuchsias, which consisted of Unique, Don Giovanni, Favourite, Delicata, Carolina, and Penelope; the 2d prize was awarded to Mr. Wheeler, for Fountain, Rosa Quintal, Admirable, Orion, Julia Grisi, and Sir John Falstaff. Scarlet Geraniums, collections of 6 varieties: Miss Bayly obtained a 1st prize for Tom Thumb, Commander-in-Chief, Hero of Bristol, Perpetual Queen, 'Squire Smith, and Shrubland Queen. Balsams: 1st prize, Miss Bayly—the only collection exhibited. Cockscombs: two nice collections—1st prize, Mr. Wheeler; 2d, Mr. G. Fuller. Dahlias—there were two Silver Cups offered for competition: that for Amateurs was awarded to J. M. Yeeles, Esq., whose collection consisted of John Edward, Mrs. Seldon, Sir R. Peel, Nil Desperandum, Beeswing, Snowflake, Black Prince, Duke of Cambridge, Duke of Wellington, Queen of Lilacs, Purple Standard, Nonpariel, Miss Chaplin, Mynn, Lady St. Maur, Sir F. Bathurst, E. Dorado, Seraph, Shylock, Richard Cobden, Atlas, Crocus, Essex Triumph, and Fearless; the Cup for Nurserymen was won by Mr. Drummond, for a collection consisting of Snowflake, Imbricata, John Edward, Sir R. Peel, Mrs. C. Bacon, Mr. Seldon, Beeswing, Queen of Lilacs, Queen of Beauty, Sir F. Bathurst, Shylock, Seraph, Lady St. Maur, Portia, Queen of Whites, Duke of Wellington, Mrs. Seldon, Essex Triumph, Earl of Clarendon, El Dorado, Miss Chaplin, and Marchioness of Cornwallis; in the Amateurs' Class, the 2d prize was awarded to Mr. H. Bush; and Certificates of Merit to J. Edwards, Esq., and Mr. Fisher; in the Nurserymen's Class, the 2d prize was awarded to Mr. Sealey. Nine distinct varieties: there were five collections in this class—Mr. C. Sainsbury obtained a 1st prize for a stand consisting of Sir R. Peel, Bob, Tom, Hon. Mrs. Ashley, Seraph, George Glenny, Marchioness of Cornwallis, Duke of Wellington, and El Dorado. Fancy Dahlias, collections of nine varieties: the 1st was awarded to Mr. Drummond for Mrs. Hansard, Rob Roy, Miss Compton, Elizabeth, Madame Bresson, Gasparini, Striata Perfecta, Elegantissima, and Pompey; 2d, Mr. Griffin. Hollyhocks: in collections of 24 varieties, for Amateurs, Mr. Fisher obtained 1st prize; and A. Brettle, Esq., 2d prize. In collections of 36 varieties for Nurserymen, Mr. Wheeler obtained 1st prize; Mr. Drummond 2d; and Mr. Hooper a Certificate of Merit.

Cheltenham, *Sept.* 11.—The third and last Floral Exhibition of the season took place, as usual, at Pittville, under very favourable circumstances. The following are some of the prizes awarded for floricultural productions. Dahlias were scarce—Collection of 18, distinct varieties: 1st prize, Earl of Clarendon, Thames Bank Hero, Crocus, Purple Standard, the Queen of Lilacs, Drummond's Felix, Richard Cobden, Daniel's Elizabeth, Beeswing, Yellow Standard, Mr. Seldon, Privateer, Grenadier, Marchioness of Cornwallis, Shylock, Rose D'Amour, Miss Vyse, and Scarlet Gem—Mr. Heath; 2d, Mr. Dale. Ditto (Collection of 12, distinct varieties): 1st prize, Lord Mayor, Crocus, General Negrier, Purple Standard, Duchess, Shylock, Imbricata, Privateer, Scarlet Gem, Mrs. Bacon, Fearless, and Felix—Mr. Courtenay; 2d, Mr. Hurlston. The varieties exhibited in both groups were remarkably beautiful—we seldom, indeed, saw more perfect blooms, or the colours of which were so firmly set, than were those of Messrs. Heath and Dale in the collections of 18, or of Mr. Courtenay and Mr. Hurlston in the minor collections of 12. Fuchsias (Collection of 8): 1st prize, Miss M. Phillips; 2d, Mr. Clark. German Asters (Collection of 12): 1st, Mrs. Walters; 2d, J. Webster, Esq.; 3d, Mr. Heath. A rare and beautiful collection of Ferns, exhibited by G. Reed, Esq., of Burnham, was especially commended by the judges, and awarded an extra prize by the committee. Messrs. Veitch also contributed some valuable plants.

Highgate, *Sept.* 24.—Twelve Dahlias (amateurs), 1st prize to Mr. J. Edwards, for Princess Louisa, Mrs. Seldon, Queen of Lilacs, John Edward, Mr. Seldon, Fearless, Snowflake, Richard Cobden, Thames Bank Hero, Miss Chaplin, Admiral, and George Glenny; 2d, to Mr. Weedon, for Mr. Seldon, Psyche, Negro, Earl Clarendon, Nil Desperandum, Essex Triumph, Duke of Wellington, Admiral, Yellow Standard, Sir F. Bathurst, Anticipation, and Snowflake; 3d, to Mr. Prockter, for Mrs. C. Bacon, Princess Louisa, Fame, George Glenny, Essex Triumph, Admiral, Queen of Lilacs, Duke of Wellington, Fearless, and Privateer; 4th, to Mrs. Jeffrey, for Fame, Mrs. Seldon, Thames Bank Hero, Mr. Seldon, Princess Radzivil, Beeswing, Barmaid, Duke of Wellington, Seraph, Essex Triumph, Roundhead, and Fearless; 5th, to Mr. Bennett, for The Hero, California, Mrs. C. Bacon, Queen of Beauties, Queen of Lilacs, Imbricata, Fame, Beeswing, Mr. Seldon, Duke of Wellington, Duke of Cambridge, and John Edward; 6th, to Mr. Hunt, jun., for Fearless, Sir R. Peel, Queen of Lilacs, Earl of Clarendon, Duke of Wellington, George Glenny, Sir F. Bathurst, Duke of Cambridge, Mr. Seldon, Shylock, Nepaulese Prince, and Carmina; 7th, to Mr. Wakeman, for The Hero, Fearless, Mrs. C. Bacon, Mr. Seldon, Richard Cobden, Privateer, Essex Triumph, Imbricata, C. Turner, Beeswing, Duke of Cambridge, and King. There were 11 exhibitors in this class.—6 Fancy Sorts: 1st, Mr. J. Edwards, for Highland Chief, Mrs. Hansard, Miss Compton, Queen of Fairies, Flying Dutchman, and Cantivation; 2d, Mr. Prockter, for Lady Cullum, Madame Wachy, Mrs. Hansard, Lady Grenville, Miss Compton, and Miss Weyland; 3d, Mr. Bennett, for Dandy, Keepsake, Adolphe Dubras, Gasperine, Lady Grenville, and Empereur de Maroc. Six new sorts let out in 1851 by Mr. Turner: 1st, Mr. J. Edwards, with Goliath, Regina, Mr. Palmer, Roundhead, Sir C. Napier, and Nepaulese Prince; 2d, Mr. Prockter, with Goliath, Duke of Rothsay, Jullien, Napoleon, Roundhead, and Sir C. Napier. Dealers, 24 kinds: 1st, to Mr. Bragg, for Mr. Seldon, El Dorado, Fame, George Glenny, Duke of Wellington, Queen of Beauties, Yellow Superb, Mr. Herbert, General Faucher, Essex Triumph, Toison d'Or, Sir R. Peel, Admiral, Barmaid, Earl Clarendon, Queen of Lilacs, Miss Chaplin, Shylock, Queen of Beauties (Mitchell), Privateer, Queen of the West, Sir F. Bathurst, Hon. Mrs. Ashley, and Carmina; 2d, Mr. Hunt. 12 Fancies: 1st, Mr. Bragg, with Highland Chief, Vulcan, Princess Charlotte, Flying Dutchman, Rachael, Mrs. Hansard, Lady Grenville, Miss Weyland, Miss Compton, Gasperine, Queen of Fairies, and Pretty Polly; 2d, Mr. Hunt. Certificates were awarded to Morning Star (Turner); to Ariel (Turner), a bold white; to Malvina (Turner); to Phantom (Bragg) an orange previously noticed; to a fancy without name (Bilmer), for its colour, deepest maroon, with white tips; other seedlings consisted of Miss Ward, Edmund Foster, and Scarlet King; the latter is noticed in "Answers to Correspondents." Hollyhocks were shown by Mr. Bragg and by Mr. Holden. Fuchsias by Mr. G. Smith, 1; Mr. Batten, 2; Mr. Cragg, 3. Also by Mr. M'Ewen, 1. Certificates were granted to Fuchsia, Nil Desperandum (G. Smith), a dark variety; to Verbenas, Ariel, National, and Alba Magna, all from Mr. G. Smith, and prizes awarded to Ariel and National as being the best and second best produced. The former is a full-sized blush white with purple eye; the latter is a neat bright rosy pink, remarkable for the symmetry of its truss. Collections of Verbenas were set up by Mr. Lochner (1), the variety being Desdemona, St. Margaret, Laura, Figaro, Reine Hortense, Buonaparte, Macrantha, Exquisite Beauty, Grandis, British Queen, and Voltigeur. 2d, Mr. Young, who produced his nice seedling, Delight. Six new Verbenas: 1st, Mr. Lochner; 2d, Mr. Young. Dealers; 24 Verbenas: 1st, Mr. G. Smith; 2d, Mr. Steward. Best specimen Fuchsia, for any variety let out this season: 1st, Mr. Batten, with his Clapton Hero. A prize was awarded to Petunia Striata, from Mr. Steward. Charming groups of cut Roses were displayed by Mr. Wilkinson, Ealing.

Southampton, *Sept.* 5.—A Silver Cup, offered to private growers by J. Colt, Esq., for the best 24 Dahlias, was awarded to Mr. Edwards, Holloway, whose varieties were Earl of Clarendon, Richard Cobden, General Faucher, Mr. Seldon, Baltic, Thames Bank Hero, Leda, Beeswing, Admiral, Miss Herbert, Sir F. Bathurst, Barmaid, Nil Desperandum, Duke of Cambridge, Essex Triumph, Duke of Wellington, Elizabeth, Model, Fearless, Yellow Standard, Summit of Perfection, Sir C. Napier, Nepaulese Chief, and Mrs. Herbert.

Taunton, *Sept.* 17.— A Silver Cup was awarded to Mr. Keynes, of Salisbury, for the following 24 Dahlias: Queen of Lilacs, John Edward, Fearless, Mr. Seldon, Duke of Cambridge, Model, Thames Bank Hero, Earl Clarendon, Negro, General Faucher, Princess Radzivill, Shylock, Queen of the East, Lady St. Maur, Miss Vyse, Richard Cobden, Una, Triumphant Miss Chaplin, Magnificent, Beauty of Kent, Douglas Jerrold, Sir F. Bathurst, and Yellow Standard. Certificates were awarded to Una, Triumphant, Nancy, and Laura Lavington; flowers which have well maintained their high positions during a long and trying season.

Wallingford, *Sept* 10.—This was the last show of the season. The Thame band, and delightful weather, brought together a fashionable company. Dahlias were the principal attraction. The Society's handsome Medal, value five guineas, was offered for the best 100 blooms, which brought together four collections. The 1st (medal) was awarded to Mr. C. Turner, Slough; 2d, Mr. Bragg, Slough; 3d, Mr. Willmer, Sunbury; 4th, Messrs. Tyso, Wallingford (perhaps the finest bloom exhibited this season was Richard Cobden, as shown on this occasion). The following were also particularly good: Mr. Seldon, Model, Sir C. Napier, Fearless, Nepaulese Prince, Essex Triumph, Queen of Lilacs, Mrs. Seldon, Summit of Perfection, Mr Palmer, Leda, Mr. Herbert, Fairy Queen, Admiral, Morning Star, Sir F. Bathurst, Princess Louise, Hon. Mrs. Ashley, Blanchfleur, Mrs. Willis, Rachael, Empereur de Maroc, Mrs. Hansard, Miss Compton, Lady Grenville, Elegantissima, Nonpareil, Sir R. Peel, Nil Desperandum, Seraph, and Queen of Dahlias. *J. E.*

Whitby Amateur Floricultural, *Sept.* 16.—Dahlias were exhibited in great variety, and in good condition. 12 varieties: 1st, Mr. S. Anderson, with Sir F. Bathurst, Beeswing, Yellow Standard, Magnificent (Edwards), Snowball, Grenadier, Premier (Leg), Mr. Seldon, Lord Mayor (Edwards), Capt. Warner, Shylock, and Thames Bank Hero. The same exhibitor also obtained the first prize for six varieties, consisting of Lord Mayor, Duke of Wellington (very fine), Seraph, Yellow Standard, and Thames Bank Hero. Mr. Edwards, of York, gave a very beautiful Silver Fish Knife and Fork for the best 6 Dissimilar Blooms, which were obtained by Mr. Anderson, with Lord Mayor, Shylock, Beeswing, Seraph, Sir F. Bathurst, and Duke of Wellington. In class showing, Mr. Edwards, of York, exhibited 24 blooms; among which we noticed California (a good yellow), in excellent condition. The same party also exhibited 24 Fancies. — Mr. Willison, of Whitby, showed a number of Seedlings, among which were some promising flowers. One, named Dr. Young, received a Certificate and a seedling prize; colour rich, deep maroon, outline perfect, and size average. If it proves constant, it will be a useful variety.—Verbenas were good, but there was no novelty.—An extra prize was awarded to Mr. Blake, of the Mulgrave Gardens, for a fine collection of China Asters, some of which in size and proportion were almost equal to the Dahlia.—At a dinner, in the evening, the honorary secretary, Mr. M. Woodhouse, was presented with an elegantly-chased silver tea-pot, in acknowledgment of his services and zeal in promoting the interest of floriculture.

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Auriculas: *Anon.* Dickson and Willmer, south; Holland, north; Lightbody, far north. *J. E.*

Catalogues: Several autumn trade lists have been received; they are all welcome. *J. E.*

Fancy Dahlias: *R C.* It does not appear, judging from your account, that either flower is of the fancy class. *J. E.*

Ranunculus; *Fairford.* Tyso (of Wallingford), on "The Ranunculus, and how to grow it," will answer your purpose. *J. E.*

Stoke Newington Dahlia Meeting: This must stand over till next week. *J. E.*

Stowmarket: *Anon.* The papers have been returned to the secretary; post paid, of course. *J. E.*

SEEDLING FLOWERS.

Asters: *Jacquin.* Les fleurs sont larges et belles, les couleurs d'une beauté extrême. La variété blanche est d'une excellente forme, qui nous rappelle le Chrysanthemum "Veeta." La fleur épanouie d'un pourpre varié des lignes blanches, doit de tout autre (par sa beauté) se trouver favorite parmi les dames; savoir si le semence produit regulièrement la même espèce de fleur?*

Calceolarias: *Sub, Watford.* Packed in dry moss, and so shrivelled that nothing can be said respecting its form. The yellow is of a deep yet brilliant shade.*—*H M.* Pleasing varieties, whose qualifications were freely discussed at the Highgate exhibition, where all were more or less admired.*

Hollyhocks: *P. Baldridge.* Expertus is a cheerful, rosy pink; of good size, but scarcely full enough in the centre. Bicolor grandiflora was too much damaged when received for determination of its merits. Mr. Lunn is dull coloured, and much serrated on the edges. The other bloom is similar in colour to the variety named, but is a bad specimen to judge of size.*

Pansy: *J H B.* An improvement on Mary Jane, being free from the folds in the side petals of that variety; it has, however, its faults, and would not do in a stand of 24 for quality only.*—*A. P.* We have never before seen Pansies sport as yours has done. Seedling raisers, like travellers, see strange sights.*

Pelargoniums: *E Carpenter.* An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite.*

Pines: *J K.* To hand: we await the second delivery.*

Salvia: *Dean.* Flowers large and fine, but apparently not different from those of S. patens.*

## Miscellaneous.

*Cotyledon orbiculata.*—In Mr. Penney's notice of two species of Cotyledon, in your number for the present month, it is stated that Dr. Pappe describes a plant (the Cotyledon orbiculata) of the same genus as the Cotyledon umbilicus, the leaves of which are stated to form an excellent application to hard corns. In this neighbourhood the Cotyledon umbilicus is well known, and is in high repute with the country people as a remedy for corns and warts: many persons have informed me of the entire removal of corns after a few applications; and that the juice of the plant is a useful remedy in inflammatory swellings. The House-leek (Sempervivum tectorum) of the Crassulaceous order, is also famed for its application to corns and warts, and in common use, mixed with cream, for inflamed eyes. *C. Rodgers, of Leominster, in Pharmaceutical Journal.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Many Australian and other plants, which have been set in the open air during summer, but which were thought too hardy to be put under cover in the early part of the month, should now be removed to favourable situations under glass, and there placed as near the light as possible, as the process of ripening goes on much faster than in the open air, while the plants may be protected from our cold autumnal rains. They should, however, have the advantage of a free circulation of air, which should continue night and day, unless the weather is very cold. Oranges standing in the open air should be removed into their winter quarters during the next week, in most parts of England; and as all other greenhouse plants must soon be housed, the necessary preparatory arrangements should be immediately completed. The climbers in the roofs of the houses should be considerably reduced in bulk, reserving a proper selection of shoots for late autumn flowering, and for adequately furnishing the roof next summer. In addition to this means of admitting the light more freely into the house, let the glass be washed, that the plants may have every chance. Let the Geraniums which have commenced growing again, after being cut down, be shaken out and repotted into smaller pots. Be careful to set them where they will have plenty of light and air, so as to keep them dwarf and bushy; and do not give them much water until the pots have become pretty full of roots, when another shift will be necessary. Promote the growth of Gesnera zebrina, Achimenes picta and cupreata, by a strong bottom heat, with a moderate top heat; do not allow the latter to be excessive, or the leaves will be less hardy in their constitution, less durable, and less useful in the decoration of drawing-rooms and conservatories, for which purpose these beautiful plants are admirably adapted. As the Japan Lilies go out of flower, let the pots be laid on their sides for a week or two, in a sunny situation; after which they must be repotted in sandy loam and a little peat, and plunged in a bed of ashes in an open situation. These plants require a very short period of rest; but although the roots are active during winter, the plants should be kept in a cool place until spring, when a few for early flowering may be placed in the greenhouse.

FORCING DEPARTMENT.

Melons and Cucumbers must now have careful attention to continue them in a fruitful state as long as possible. Water judiciously, selecting fine mornings for the purpose; endeavour to keep the pits perfectly clean and wholesome, by admitting at all times sufficient air to ensure a circulation, and let the walls be occasionally washed with lime and sulphur to destroy insects. It is indispensable to keep up a good temperature, top and bottom; and if no better means are at command, this must be effected by dung linings, and by covering with mats and shutters at night. Young Cucumbers for winter forcing, recently planted, should not be stopped until they have reached the top of the trellis, when the point should be pinched out to induce the formation of lateral shoots. Do not allow the plants to be weakened by producing clusters of male blossoms. Give sufficient heat and moisture to induce a vigorous growth, but accompanied by a free circulation of air to ensure a sturdiness of habit; to this end also let the glass be kept perfectly clean, that they may have all the light possible at this season. After planting, a slight shade is necessary for a short period during strong sunshine, but they must be quickly inured to full exposure. Where dung linings are used for forcing pits of any description, means should be taken to secure them from the autumn rains, which check fermentation, and cause the heat to decline at a time

when it is most wanted; this evil involves a continual turning and renewal of the linings. In constructing a frame, in which fermenting material is to be employed as the heating medium, the front wall-plate should never be more than 12 or 15 inches above the level of the path; as by this means it is kept warm with a smaller quantity of fermenting material, and, at the same time, it gives the facility of covering the trenches with wooden shutters, suspended on hinges from the outside wall by one edge, and resting by the other on the wall of the trench. These shutters should be fixed with just sufficient incline to carry off the wet, and they should be made strong enough to serve as a gangway.

### FLOWER GARDEN AND SHRUBBERIES.

The work of this department, though entirely of a routine character, must be strictly attended to at this season, as neglect or untidiness never shows more strikingly than when the flowers which attracted attention in summer have disappeared. Remove annuals and other herbaceous half-hardy plants as soon as they show signs of approaching decay, and let others of more hardy constitution be divested of their decaying flowers and flower stems. Beds for Hyacinths, Tulips, and other early spring-flowering bulbs, should be prepared and planted immediately. They grow and flower in the greatest perfection when planted in a light sandy loam, which has received a liberal dressing of thoroughly decomposed manure; but which should be carefully kept from coming in contact with the bulbs, by placing a little sand round them at the time of planting. As the roots of these bulbs descend deeply into the ground, a good stratum of rich manure should be trenched in about 12 or 15 inches below the surface. In planting Crocus or other bulbs which are liable to be attacked by mice in winter, a little chopped Furze should be placed around them. If the beds where Crocuses are intended to be planted are still full of gay flowering plants, it will be better to plant the Crocuses in a spare bed in the reserve garden, in light sandy soil, where they will root freely, and be ready to remove with nice balls of soil when the summer occupants of the flower-beds are cleared away. Those bulbs left in the soil all the year round commence rooting in July, which is the cause of their flowering so much better than those which are planted late in the season.

### FLORISTS' FLOWERS.

It will sometimes occur, especially in fine autumns, that Auriculas will put up premature heads of flowers. We have known valuable varieties ruined by these trusses being plucked out inconsiderately; the result has been that the lower part of the stem has decayed, communicating its rottenness to the heart of the plant, and thus causing its destruction. The better way is to pull the pips off only. See directly to the offsets of Tulips, and let them be got in without delay. Gather Carnation and Picotee seed when the pods have turned brown; place the pods six or seven together, with a portion of the stalk attached; tie in a small bunch, and insert them in a little silver or other light paper bag; tie the mouth of the bag round the stems, and hang up in an airy place till you wish to rub the seed out for sowing. Dahlias, &c., as last week.

### KITCHEN GARDEN.

Pay particular attention to young crops, by stimulating their growth where necessary, and guarding them from the attacks of insects, by sprinkling a little soot and lime round them. As a general preventive, which is always better than a cure, it is a good plan to work a dressing of soot into the ground, in company with animal or vegetable manure, when the operations of digging, forking, or trenching, are going on. In cleaning the ground, use the fork as much as possible, in preference to the hoe and rake; nothing can be of greater benefit to crops at this season than affording the sun and air every facility for penetrating and permeating the soil. Continue the use of strong liquid manure to such crops as can profit by it; and especially Asparagus, to compensate, in some measure, for the present draught upon its energies by the seeds. Winter Spinach should be thinned out to a distance of 8 to 12 inches apart in the rows; and Parsley should have plenty of space to form fine broad leaves. In both cases, the ground should be well forked between the plants. Sow plenty of Normandy and American Cress, to stand the winter. If the earthing up of the Cardoon be deferred until the middle of October, it will keep sound till March; and as it does not grow much after being earthed, it is well to defer it as long as the plants are safe from frost. Where haybands are used for binding round them, they should be prepared in wet weather, when the men cannot work outside.

State of the Weather near London, for the week ending Sept. 25, 1851, as observed at the Horticultural Garden, Chiswick.

| Sept. | Month & Age. | Barometer. Max. | Barometer. Min. | Temperature of the Air. Max. | Temperature of the Air. Min. | Temperature of the Air. Mean | Temperature of the Earth. 1 foot deep. | Temperature of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 19 | 24 | 30.063 | 30 025 | 66 | 45 | 55.0 | 56 | 54 | — | .00 |
| Satur. .. 20 | 25 | 30.065 | 30.020 | 67 | 42 | 54.5 | 56 | 55 | N.E. | .00 |
| Sunday . 21 | 26 | 30.026 | 29.993 | 65 | 49 | 57.0 | 56 | 55 | N.E. | .00 |
| Monday 22 | 27 | 30.055 | 30.005 | 67 | 39 | 53.0 | 56½ | 56 | N.E. | .00 |
| Tues. .. 23 | 28 | 30.114 | 30.106 | 73 | 54 | 63.5 | 56 | 56 | N.E. | .08 |
| Wed. .. 24 | 29 | 30.118 | 29.939 | 66 | 47 | 56.5 | 57 | 55½ | N.E. | .00 |
| Thurs... 25 | ♎ | 29.815 | 29.647 | 64 | 42 | 53.0 | 57 | 56 | S.W. | .05 |
| Average.... | | 30.036 | 29.962 | 66.8 | 45 4 | 56.1 | 56.3 | 55.3 | | .14 |

Sept. 19—Fine; cloudy; clear at night.
— 20—Cloudy and fine; very fine; clear.
— 21—Overcast; very fine; overcast.
— 22—Overcast; exceedingly fine; clear at night.
— 23—Slight fog; exceedingly fine, with hot sun; overcast.
— 24—Foggy; overcast, foggy; rain at night.
— 25—Slightly overcast; rain; cloudy.
Mean temperature of the week, equal to the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Oct. 4, 1851.

| Sept. and Oct. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 28 | 64.6 | 44.4 | 54.5 | 11 | 0 80 in. | 1 | 3 | 2 | 1 | 8 | 5 | 4 | — |
| Mon. 29 | 64.3 | 45.6 | 55 0 | 14 | 0.35 | 1 | 2 | 3 | 2 | 5 | 8 | 2 | 2 |
| Tues. 30 | 64.3 | 44.3 | 54 3 | 12 | 0.33 | 2 | 1 | 3 | 1 | 5 | 6 | 7 | — |
| Wed. 1 | 63.6 | 46.2 | 54.9 | 12 | 0.53 | 2 | 3 | 2 | 2 | 6 | 6 | 3 | 1 |
| Thurs. 2 | 64.0 | 46.0 | 55.0 | 14 | 0.48 | 3 | 4 | 1 | — | 6 | 5 | 4 | 2 |
| Friday 3 | 63.2 | 45 0 | 54.1 | 14 | 1.01 | 1 | 3 | 1 | 1 | 7 | 8 | 2 | 2 |
| Satur. 4 | 63.6 | 43.0 | 53.3 | 11 | 0.36 | — | 5 | 2 | — | 5 | 9 | 3 | 1 |

The highest temperature during the above period occurred on the 29th, 1832—therm. 79 deg.; and the lowest on the 3d, 1836—therm. 29 deg.

## Notices to Correspondents.

ASPHALTE WALKS: *Lumbricus.* See p. 501 of the current year's volume.‡

BIRDS—THE MOCKING BIRD: *C W H.* As you so frankly ask our opinion of this bird, and whether we advise you to adopt one in your family, we at once say "No!" Mr. Clifford reports the value of such a one as he can recommend, at 5*l.* For this princely sum, you may have fine *song* birds in every room of your house. If, however, you *prefer* unceasing noise and perpetual uproar to harmony and melody, you can yourself give the casting vote. For ourselves, we hold *all* these foreign screeching animals in the most perfect abhorrence; and would gladly sacrifice 20 even of the most costly (if we had them) of the tribe, in exchange for a single canary. *Mais chacun à son goût. W. K.*—THE BULLFINCH: *H B.* We are much indebted to you for writing so long, so full, and so interesting an account of the tricks, manners, habits, and peculiarities of your little winged friend. As you have authenticated the anecdotes, we shall avail ourselves hereafter, whilst annotating on "the bullfinch," of the information so kindly given. The reason of his avoiding the palm of your hand, and refusing to sit on your finger, is his innate timidity. You must overcome this by gentleness, and by never attempting suddenly to catch him. Confidence will spring up, by and by, between you; and you must not abuse it. All is progressing well. Discontinue the use of the bath, henceforward. The food you administer is quite proper; and the Plantain is unobjectionable, so long as he will eat it. Disabuse your mind of the idea that *you* can teach him to "sing." If you were to purchase 20 instruments, and try them *all*, it would be labour thrown away. These matters are conducted in Germany; not in England. We shall explain all about it, in a very few weeks. In conclusion, be sparing of your hemp seed, and keep your bird warm in winter. *W. K.*—THE GREY LINNET: *Eliza C.* A hopeless case. The poor little creature should be killed immediately. *W. K.*—THE BLACKBIRD: *Amelia R.* Nestling birds are *not* the best, though they are oftentimes the tamest. A bat-folded blackbird, who has the true wild note, is far preferable to the other, who sings what is technically termed "rubbish." *W. K.*—THE GOLDFINCH: *Jane W.* Take a pair of long, sharp scissors, and carefully, but resolutely, cut the projecting part of the beak, until the lower and upper portions are equal. There will be no infliction of pain whatever. *W. K.*—THE MISSEL THRUSH: *Anne T.* This is a very handsome bird truly; but we recommend in preference the "song thrush." It is smaller, but its notes are far more sweetly-musical. *W. K.*—THE GREENFINCH: *E Z.* Not worth the cost of his food. Be "generous" to some "friend," and beg their acceptance of him! *W. K.*—THE REDPOLE: *Susanna.* A merry, lively, and pretty little fellow in a cage; but of no rateable value. *W. K.*—THE NIGHTINGALE, &c.: *J H.* The address you require is, "24, Great St. Andrew-street, Holborn." You may safely make your wants known, and may rely on being well used. If you purchase one or both the birds mentioned in your note, be sure and read carefully the "Treatises" we have penned, as to their care and management. *W. K.*—THE BLACK-CAP: *J C Ewan.* You need entertain no fear about the well-being of your little friend. Whether he resides with you in Lancashire or at the "Land's-end," it is all the same to him; "provided always," as the lawyers say, he is kindly treated, and considered "one of the family." Follow our instructions fully, and you cannot go wrong. *W. K.*—*Miss B.* Thanks for your note. We are over-paid by the kind manner in which you express your gratitude for the little service rendered. We mark and admire your good sense in not feeling offended at the rule laid down for our general guidance hereafter. *W. K.*—VIRGINIAN NIGHTINGALE: *H T.* We are obliged by your favour, and shall anxiously await the promised information. Your request, meantime, shall be complied with. *W. K.*—THE CANARY: *Amanda.* Your case is a trying one; and your excess of grief, natural to so sensitive a disposition. As a skilful surgeon uses the knife unsparingly when circumstances demand it, you, too, must take equally prompt measures. *Burn* the cage instantly, and procure *a new one.* Sulphur, unguents, tobacco-water, and the like, are *totally useless*, as we have stated times out of number. Where these blood-sucking vermin abound, nothing short of annihilation can work a radical cure. If you have faith to credit this, and will act at once as we advise, your "pet" will be restored to you—*not otherwise.* When in his new habitation, examine his little person carefully and minutely; rout the enemy from their lurking places with the back of a fine needle; and before letting him settle down, give him, for an hour or two, the free range of your sitting-room; also the use of the bath. This done, we shall expect to hear of another addition to our "list of cures." *W. K.*

BOOKS: *Rural Dean.* You will not find any book that contains many figures of florist's flowers. The periodical called "Beck's Florist" has good figures of some of the novelties in this way, and it will probably meet your wants. In general the representations of these things are more calculated to mislead than to instruct.

CLIANTHUS PUNICEUS: *W S.* It has no common name. You may call it the scarlet Clianth if you please.

FILBERTS: *W S.* In order to keep these for a considerable time, they should be throughly dried, packed in dry casks or new flower-pots, with a slight sprinkling of salt, to prevent mouldiness, and then placed in a dry cool situation. The husks should be allowed to remain on them.‡

FRUIT ROOM: *A Subscriber.* Winter fruit keeps much better in the dark than if exposed to the light, because light produces evaporation and consequently shrivelling, besides inducing chemical changes which end in decay. It should be ventilated, so far as to keep it sweet and to carry off the dampness produced by the natural sweating of fruit, and for this purpose your air-openings ought to suffice.

FRUIT TREES: *J A M.* Your old Peach trees may have been allowed to overbear themselves; and this, with the injury done to the foliage by insects, may have rendered them subsequently unproductive. But your next set of trees grew vigorously; and, of course, the branches would form so many naked stems, almost to their extremities, unless they had been cut back to where shoots were required to furnish the lower part of the tree. It appears that these trees are done away with; but recollect, that the next you plant will behave in the same manner, if not prevented by judicious pruning. They must be cut back in winter, so as to furnish the lower part of the wall. Shoots that are likely to become over-luxuriant, must have their tops cut back to a lateral, and nail or otherwise fasten them to the wall, before the weaker shoots are fastened. Your soil is, doubtless, naturally good and strong; and, therefore, with regard to all your fruit trees, you must use the utmost vigilance, in early and frequently checking in summer the strongest shoots, commencing with the uppermost. Not knowing the exact aspects of your walls, we cannot state what sorts should be planted.‖

GIDNEY'S HOE: We have had this tool tried fairly; its plan is a good one, but the tool is much too slightly made—the shank has no sufficient strength; and upon the whole, as delivered to us, is only fit for light land. It should be improved.

HASHISH: *Mathew.* This is a preparation from the common Hemp plant. It is not sold in this country, being an intoxicating drug, used only by eastern nations. Enquire of the Pharmaceutical Society, where you may no doubt see it. Also look in the Indian department of the Crystal Palace, where you will see what Hemp is like in India. The drug cannot be prepared from Hemp grown in this cold climate.

HEATING: *H S W.* There is nothing so cheap as flues, which are all you want.

HOTHOUSES: *C R W.* Why not apply to the firm in the King's-road, as you have been advised? You cannot do better.

INSECTS: *M C W.* The insect which has attacked your Pinks is the true wireworm. Pull up carefully every plant as soon as it droops, and search for and kill the worm, and also bury in the bed some slices of Turnip, which must be examined every morning, the insects preferring this to the Pinks. *W.—C M.* The Beech bark should be scoured with a hard brush and thick soapsuds mixed with lime. If not, the young larvæ, which are now being hatched by thousands, will attack the young shoots of the tree. Thanks for the Laburnum leaves. *W.—R V K* Your Oats are infested with the Aphis Avenæ, an insect allied to the green-fly of the Roses. They injure the grain by sucking out its juices. *W.—R.* The larva which has gnawed your Carrots is that of one of the smaller species of *swift* moths (most probably Hepialus fuscus), which are in general underground feeders, and against which nothing but vigilance and traps of sliced Turnips or Potatoes will prevail. *W.—M A S F.* The Pinus austriaca is attacked by the caterpillars of the Pine sawfly (Lophyrus Pini or Frutetorum). The branches attacked should be beaten sharply with a thick stick, a white cloth being placed under the tree to catch the caterpillars. This should be done at once, or they will change to pupæ in the moss and dry leaves at the root of the trees, which ought in such case to be removed and burnt. *W.—A K.* The Salsify leaves appear to be attacked by some species of Uredo. The Celery leaves are infested with the mining larvæ of a two-winged fly (Tephritis onopordinis), and others seem to have been infested by an Aphis. The withered leaves should be cut off and burnt. *W.*

KEW: *English.* In our opinion, your complaint is, upon the whole, unreasonable. Why did you not provide yourself with the guide when you first entered the garden? You should have known that a place like Kew, of such intricacy and extent, requires a map as much as a town. Write to Sir Wm. Hooker, make your suggestions, and we will answer for his attending to such of them as are reasonable.

MONSTROUS PEARS: *C Hewson.* They are very curious things. We will take an opportunity of referring to them hereafter.

NAMES OF FRUITS: *Rudolf.* 4, New Rock Pippin; 6, 11, Scarlet Crofton; 21, Golden Pippin; 14, 45, Rymer; 33, Male Carle; 44, Bedfordshire Foundling; 42, Shropshire Damson. The two Pears are small and imperfect; 34 B, is probably Beurré de Capiaumont. The remainder of the Apples are yet too green.‖—*J A.* The Early Harvest Apple.‖

NAMES OF PLANTS: *L R.* 1, Not determinable; 2, Pyrus arbutifolia; 3, Rosa bracteata; 4, Looks like a morsel of Pomegranate; 5, Leycesteria formosa.—*C A.* 1, 2, 3, and 8, Asplenium Adiantum-nigrum; 4, Lastrea dilatata; 5, Asplenium Filix-fœmina; 6, Polystichum lobatum; 7, P. aculeatum. *S.—D H B.* 2 and 3, Polystichum aculeatum; 4, Cystopteris angustata; 5, too small—send it in fructification; 6, Asplenium viride; 7, A. Filix-fœmina. *S.—L B.* If you will send your address we will communicate with you respecting the Fern in question. *S.—B W G.* Pavia lutea. Propagate it by grafting on the Horse-Chestnut; or better, by seeds.—*D.* You will find that the Oak in question has been named at p. 488.—*E J T.* Polystichum lobatum: very common, and quite distinct from any form of Lastrea dilatata. *S.—C A.* Your weed from the bottom of the Thames is not a plant at all, but a fresh-water sponge, with a most atrocious odour. — *T D.* Apparently Pentstemon cordifolius; but we really cannot give names to plants unless the senders will take some little pains to pack them, so that they will arrive in an examinable state.—*A Lady of Devonshire.* Marchantia polymorpha from a wet place, creeping among Moss.—*V W.* Viburnum Lentago and Erica stricta of nurseries; the wild plant has no flowers, and is undeterminable.—*A Scott.* If your plant is not a variety of Diplacus glutinosus it is new.—*M N.* Some Nicotiana in a starved state; perhaps a morsel of N. paniculata. Its seed has accidentally dropped into the mould.—*P B.* Chysis aurea.—*A Lover of Plants.* Indeterminable; *ruined by being packed in cotton wool;* we don't recognise it.

PARTRIDGES: *Micklewell.* Much obliged; 4.

POTATOES: *F Sommer.* The Kelso Eclipse is a very good mealy kind; but it is dark purple, like the old Aberdeen Reds, and these have been so universally blighted here in the south, that they are rarely cultivated, notwithstanding their excellence. In 1845 workmen would not dig them for the sake of the crop.

ROSES: *Temple.* The branches are attacked by white mildew, for which there is now no remedy. Early in the year washing with flower of sulphur mixed with water has proved beneficial. It will go off, but reappear next year towards the autumn. It is not very important.—*A B A J.* Your leaves are suffering from what will one day, we trust, be felt by yourself—old age. They will be succeeded by healthy young leaves when next spring returns.

SILVER FIRS: *J W R* Your tree is attacked by the Hylurgus piniperda, a black beetle that resides in the ends of the young shoots, where he constructs a gallery, and feasts on the tender tissue. You may see the ends of his gallery where the dead pieces are broken off. It is almost impossible to destroy him if he once takes possession of a tree. The best course is to watch the branches in the early summer, and wherever the tips become brown or yellow to break them off and burn them. In that way the insect perishes also.

TREE ROSES: *Eliza G.* There is no reason why the Rose-trees should be unfit for planting, provided they have made good growth this year, and provided also their heads are of the cultivated kinds. But if you mean to say that the trees are fine wild stocks, having "dormant buds" inserted among the branches, then we advise you not to purchase until the dormant shall have been roused into growth for a year. You will see by this answer that we are unfortunate enough not to understand your question certainly.

MISC.: *L L.* It is not uncommon for the Robinia viscosa to have a double blow, in June or July and September, provided the season is long and dry, like the present. Many plants have this year blo med twice; Wistaria sinensis, for instance, unusually well.—*J Kenney.* It was a very good green-fleshed Melon.—*J Welch.* The great conservatory at Chatsworth is constructed of wood. Mr. Chance, of Birmingham, furnished the glass. The other question we are unable to answer.—*S S.* The seeds will grow; one of them *is* growing. The seedlings will flower in six or seven years, if you treat them well.— *M B.* We cannot answer such questions.—*A Country Subscriber.* Mandevilla strikes readily from cuttings in a gentle bottom heat. The climber is Boussingaultia baselloides; give it plenty of room and sun and air. Starve your Fig and it will fruit. The Loquat is common enough, but will not fruit in England in the open air. You must have patience with your Elæagnus; cramp its roots and give it plenty of sun and air.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

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ARTIFICIAL MANURES.—Private instructions in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

TO AGRICULTURISTS.—All applications for Dr. S. NEWINGTON'S Patent Hand and Horse Dibbles, Drills, Cultivators, &c., must be made, only, to Mr. GABRIEL, Surrey Chambers, Arundel-street, Strand, London.

Dr. S. NEWINGTON'S Lecture on Seeding may be had gratis.

BALLINASLOE GREAT SHEEP AND HORSE FAIR, Oct. 4, 6, 8, and 9.

The railway is NOW OPEN from DUBLIN to BALLINASLOE. Through fares, via Chester and Holyhead (including steam-boat fare:—

| From | Single Fares. 1st Class. | 2nd Class. | Return Tickets. 1st Class. | 2nd Class. |
|---|---|---|---|---|
| London ... | ... £3 13 | ... £2 11 | ..... £5 10 | ... £3 17 |
| Birmingham | ... 2 14 | ... 2 0 | ..... 4 4 | ... 3 0 |
| Manchester | ... 2 0 | ... 1 12 | ..... 3 0 | ... 2 8 |
| Liverpool or Chester | 1 15 | ... 1 7 | ..... 2 14 | ... 2 2 |

The London return tickets are available for 14 days after date of issue. Between the others stations for seven days.

Time of journey from London to Ballinasloe, by Express Trains, 18 hours. Departures from Euston Station:—9·30 a.m. Express; 5·0 p.m. Express; 8·45 p.m. Mail.

DURABLE OUT-DOOR PAINT.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London. No Agents.—All orders are particularly requested to be sent direct.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, BREWERS' USE, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND FLEXIBLE GAS TUBING.

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These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, for portable Gas Lamps, and all purposes where a perfectly sound Water-proof and Flexible Pipe is required. Hot Liquors or Acids do not injure them; they are, therefore, much used for Chemical purposes, as they require no oil or dressing when out of use; are particularly suitable for Fire Engines, and are found exceedingly useful in Dwelling-houses for conveying Hot or Cold Water to Baths, &c.

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All Letters or Orders addressed to J. L. HANCOCK, Goswell Mews, Goswell Road, London, will meet with immediate attention.

Waterproof Fishing Boots and Stockings, Portable India-Rubber Boats, Shower and Sponging Baths, Air Cushions and Beds, made all sizes to order.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

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Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

The Agricultural Gazette.

*SATURDAY, SEPTEMBER 27, 1851.*

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 2—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 9—Agricultural Imp. Soc. of Ireland.

CAN the British labourer in the purely agricultural districts live without parish support? And if so, in what degree of comfort? And is his condition retrograding or progressing? These questions are interesting, and yet they admit of no definite solution, as differences in the scale of payment in agricultural districts are so perceptible, and not very easily accounted for—local burdens, imperial taxation, and prices remaining the same. The English workman cannot say with the Persian maid, "East, west, north, south, I care not whither;" as the lot of the northern and that of the southern, if not wide "as the poles asunder," is at least very different. Anxious to ascertain by actual observation if the agricultural labourers in the northern counties be in decidedly better circumstances than those in the midland and southern, and to what causes the difference, if real, may be attributable, we have noted in the first place some of the results of our inquiries as to the present rates of labour in a few of the principal agricultural counties; they are as follows.

In a great portion of Berkshire, and the adjacent counties, the regular wages are, harvest time excepted:

| | | s. | d. | | s. | d. |
|---|---|---|---|---|---|---|
| Men, at ordinary work, ... | per week | 6s. | 0d. | to 8 | 0 | |
| Boys, 10 to 12 years old, tending pigs, &c. | do. | ..... | | 1 | 6 | |
| Carter ... | do. | ..... | | 8 | 0 | |
| Reaping or fagging Wheat, per acre ... | | 7s. | 0d. | to 8 | 0 | |
| Mowing Barley and Oats do. ... | | 2s. | 6d. | to 3 | 0 | |
| Reaping do. do. ... | | 6s. | 0d. | to 8 | 0 | |
| Women* per week ... | | ..... | | 4 | 8 | |

The rents of cottages are about 1s. 6d. a week, and coals (in Berks) usually cost 1s. 2d. per cwt. With these wages and charges, the labourers are in poor circumstances, except in harvest, unless their families be small, or they have grown-up sons and daughters to earn wages for their joint benefit. Indeed, as to the labour of the sons, so little do these regard the spirit of the fifth commandment, that they usually spend exclusively on themselves, when grown up, the whole of their earnings, contributing nothing to the support of the family, except providing their own food, and eating it in selfish solitude under the domestic roof, while they "honour" their parents so far as to occupy a bed at their inconvenience.

Dorsetshire used to be rated as the lowest, perhaps, in regard of the labourer's condition, but we believe that the distinction between it and the other counties under our immediate observation is inappreciable. Meat is a luxury rarely indulged in by the purely agricultural labourers, who have families of young children; and were it not that they make their own bread, and thereby cheapen the already low-priced loaf, they would find it very difficult to subsist on the balance which remains to them, after paying their rent and providing fuel.

Going northward of London, and regretting that we have not opportunities of making notes respecting the labourers' condition in Northamptonshire, where outward appearances appeared to us indicative of solid comforts, we pass on to the less favoured counties of Huntingdon and Cambridge, where we find the rates of labour to be nearly the same as those in the southern counties, and the prospect of further diminution greater in the districts in which the inferiority of the soil and neglect or difficulty of complete drainage renders tillage impracticable (in point of economy) under the existing depreciation of agricultural produce in general. Farms that are dear at from 10s. to 15s. an acre, we may conclude to be intrinsically of value only for grazing, and, therefore, incapable of supplying remunerating employment to the peasant, who, in fact, is thrown out of work wherever grazing is pursued as a system. Even in the immediate vicinity of Cambridge the privations of the labourer are great, and poor rates (the barometrical test of local condition) frequently very high. But let us advance to Lincolnshire, where there is a different state of things.

| | | s. | d. | to | s. | d. |
|---|---|---|---|---|---|---|
| Men, at ordinary work, ... | per week | 9s. | to | 10 | 0 | |
| Boys, from 10 to 12 years old, ... | do. | ..... | | 2 | 0 | |
| Do., from 12 to 16 years old, ... | do. | ..... | | 3 | 0 | |
| Reaping Wheat, ... | per acre | ..... | | 12 | 0 | |
| Reaping Oats, from ... | do. | 8s. | to | 10 | 0 | |
| Carter, if married—with house and garden, 26 st. (of 14 lbs.), of pork, 60 faggots, and 60 pecks of Potatoes—per week ... | | ..... | | 10 | 0 | |

If unmarried, and domesticated in the farmer's house, 10l. a year, with abundant diet, bacon three times a day, if he has stomach for it.)

A female farm servant receives 14l. a year, and a shepherd (with diet during the lambing season), 22l. a year, with Grass and fodder for a cow, a house, garden, and a ton of coals drawn home for him by his employer; which are much higher rates than those in the other counties. In Lincolnshire, broth and bacon are used by the labourers three or four times a week.

Such are the rates, whether in the wolds, the marshes, or the fens of this fertile county. Mr. WINGATE, of Harsby, near the very neat and thriving town of Spilsby, who is partly proprietor, and partly tenant of 2000 acres of wold and fen, or marsh land, pays these wages, as also do the farmers generally, whether of the upland or lowland districts. The rents are from 1l. to 1l. 5s. per acre, on the chalky wolds; and on the fertile alluvial low lands, from 2l. 5s. to 3l. an acre; and the labourers have ample means of living in full comfort, unless (which is sometimes the case in winter), they have not full employment. Those on Lord WILLOUGHBY's estate, at and near Spilsby and Hundleby, have the privilege of occupying allotments of excellent land, at the rate of 2l. an acre. There are, on numerous properties, new and neat cottages moderately rented; and the women (who perform little work out of doors, excepting the assistance they afford to their male relations in reaping and binding corn) are very neat housewives, and find employment enough in making and mending clothes, keeping the house scrupulously clean, and preparing dough for them, which is baked in the baker's ovens at 1d. per stone of flour.

Straws show how the wind blows: and even such a trifle as the manner of gleaning corn in Lincolnshire illustrates, in some degree, the principle of this saying; and exhibits the greater independency of the labouring class.

We have no where seen such a vast extent of fine arable and grazing land, or more marked evidences of a wealthy proprietary and tenantry than there is in Lincolnshire; that picturesqueness of landscape to which we are accustomed may be wanting, but the crops of corn are more luxuriant and heavy on plains of apparently unlimited extent, with little loss from fences, and the neatness of culture strikes the eye. The drainage of the fens and marshes has been, indeed, a wondrous work, and enormously repaid by the acquisition of a deep inexhaustible soil, with marl and silt underneath in many places, and when under Grass, capable of fattening an ox and three heavy sheep to the acre. From 100l. to 120l. has been the price hitherto paid for the purchase of marsh land per acre: but can this price continue, and will even the Lincolnshire farmer be able to employ labourers in future at the present terms, with an average yield of crops? This year is a standard. *He* says no! The tenant farmer, who receives a reduction of 10 per cent. on his rent, declares that he is spending his capital, though he manfully holds on his course of tillage without *as yet* reducing his labourer's wages. If any British agriculturist can weather the storm of the day, it

* For dibbling Beans, they are paid by the gallon of seed sown, and may earn from 1s. 6d. to 2s. a-day.

must be such an one as the owner or occupier of the rich grazing farms of Lincolnshire—combining some tillage with much grazing. He cannot but realise a fair profit while the general prosperity of the kingdom continues to insure numerous consumers of beef and mutton, and butter (producing 12*d.* per lb.), on both sides of their bread. We found a higher price than this for fresh butter in the Boston market, where a remarkably well dressed and respectable looking assemblage of farmers' servants and market-women was disposing of their dairy and poultry-yard produce at decidedly remunerating prices.

In West Cumberland the wages of labourers are at least as high as in Lincoln, and there they enjoy the great boon of very cheap coals. Farm offices are springing up, with due regard to the manure tank system, and bearing out Sir JAMES GRAHAM's declaration, that there are competitors enough for any vacated farm. The labourers there are among the best in circumstances in England. How can it be otherwise, when they usually receive 10*s.* a week, with hardly any expense for coals, and bread on such cheap terms! It is curious that farm wages are now so much higher in the north than in the south of England, though the contrary was the fact 200 years ago. Mr. MACAULAY states that at that period Wheat was 70*s.* a quarter, and labourers earned only 7*s.* in summer, and 6*s.* in winter in the southern counties, and less in the north. The labourer in the north and north-west of England is now certainly as well off in every respect as those of his class have ever been.

The competition for labour in those counties where neither manufactures nor mining (as in West Cumberland) afford employment, will, as far as we can judge, continue, without probability of greater encouragement to the midland and southern farmer to employ labourers. "What is your secret?"—we asked of a West Cumberland gentleman, engaged both in agriculture and commerce. "My secret," he replied, "is, not to waste manures; I buy inferior and damaged Indian Corn and Rice for my pigs; and I sell my best Barley and Oats. Bacon pays me well. Foreigners will send us Wheat in preference to Oats—and I now grow Oats accordingly, which this year are paying well."

We know how the miser saved his starving horse from death—by "trying Oats." We shall do the same ourselves if we can; but *this*, however it might answer as a particular specific for one tenant farmer, cannot be looked upon as a general remedy, or at all calculated to improve the lot of the labourer. We cannot see any immediate prospect of alleviation in his condition, and we should regret to find a *forced* flow of emigration from England become as necessary as it appears to be in Ireland, where the able-bodied peasants are leaving their homes in hundreds of thousands. *M. D.*

## MANURES: CONCENTRATION OR DISTRIBUTION?

IN the *Agricultural Gazette*, of the 14th June last, attention is called under the above heading to the action of manures; and, if it is not matter of indifference how manure is deposited, and we cannot think it is, we owe thanks to Mr. Charles Lawrence for calling attention to the subject, and I did hope his appeal would have awakened more than, by the silence with which it has been received, it appears to have done. I must think it one well worthy of discussion, and of experiment, too, in which latter it appears to have been altogether neglected. Possibly the mode of application should be ruled by the object with which manure is applied; if to promote the rapid and large development of the plant in its first stage of growth, then the concentration will be found of great value, as in that of superphosphate of lime, bones, and dung in the Turnip-drills; but as all roots descend in the ground, almost immediately after the production of their first leaves, to a greater depth than we can suppose the influence of the fresh applied manure to extend, the manure thus concentrated, except in the immediate short lateral fibres, must very soon cease to be operative in the farther development of the plant; and it then lies an inert mass, until distributed through the soil in future tillage, after the removal of the crop. It is a very great error to suppose the concentration of manure will restrain the roots of plants from extending into unmanured space; it is a rule of Nature that they should so extend, they thus secure the stability of the superstructure of the plant, and the more regular and abundant supply of water, so essential to its very existence, that if withheld for a very short period it inevitably perishes. The roots of our cultivated plants, however, not only descend beyond the influence of the concentrated mass of manure, but at very early periods of their growth, beyond that of the manure which has become distributed through the active soil of our cultivation; their roots, either tap or fibrous, will, I believe, where insurmountable obstructions do not exist, or where excess of water does not prevail, generally be found to descend to a depth exceeding the height of the plants above the ground. Governed by this rule the lofty trees of the forest send down their roots to depths beyond what we can conceive to be the reach of aërial influences, and of the regions of organic food, into the magazines of crude inorganic matters.

By the experiments of Wade, we are taught that the dissolving action of water is not sufficient to extract from the aluminous particles of the soil the ammonia of their saturation, and we are thus taught to look for a more powerful elective attraction in the roots of plants; this appears to reside in the spongioles of their extremities. In the first growth of a plant, when its roots are small and few, this attraction, although sufficient for a development of leaf that will ensure the continuance of its kind, may not be, and is not found able to exert a force equal to that abnormal production which our cultivation requires; a mass of vegetable and animal matter, giving out an excess of ammonia over what the circumjacent clay can absorb, will, placed immediately in contact with the roots, give a supply of free ammoniacal and carbonaceous food as will enable the plant to put up an immense development of leaf, far exceeding what it could do were it depending on what its elective attraction could force from the embraces of the particles of clay with which its few weak and minute spongioles could come into contact; neither does a plant at this period of its growth require the inorganic matters of the soil. We see in impoverished soils how much, from this want of a free supply of food, the young plants suffer at the period of their growth when they have used up the food their seeds gave them: their leaves turn yellow, and some unfortunate insect is conjured up to account for this appearance, and for the gaps that starvation has caused. In my land, of its first year's occupation, by me, this is evidently seen—for years wretchedly tilled, unmanured, cold, and wet; nine-tenths of the seed I sowed in it perished; the plants came up so poor and weak as scarcely to be seen—they were starved in their infancy; yet such as survived, when their roots had extended, and had acquired strength and mouths to force from the clay and take in the organic matter it holds, show in their rankness that there is no deficiency of diffused manure.

The Irish are very fond of growing their Potatoes in beds, and contend the produce is greater than in drills, and I verily believe they are right on the average tillage; here the manure is distributed in a thin stratum over the whole bed, and, lying between two layers of clay, it acts upon a large surface of inorganic matters, converting them into soluble salts; and I have heard it contended that the land is even left more fertile than when the dung has been concentrated in drills, and the intervals comminuted by repeated workings. To the small farmer with a weak team, this plan of tillage, however unthinkingly condemned by would-be improvers of the day, has the advantage of a deeper tillage than he could effect under the drill practice, for he digs the furrows to the full depth of the surface-soil, and generally brings up some little of the subsoil. Yet I have had under peculiar tillage far heavier crops of Potatoes in rows than I have seen in beds. Still there are said to be instances, and not uncommon ones, of 12 tons being got from an acre of beds. But Potatoes do not require the same immediate action of manure that seeds do, for in the sets they contain a much larger amount of directly available food; indeed it is a practice that appears very successful, to plant the sets in the beds and not to manure them till they are coming above ground, when the manure is covered from the furrows; it is attended with an advantage in smothering the first growth of weeds, and really helps very much to their future cleanliness, for, with a second dressing of clay from the furrows, when they are breaking through the first, a second smothering takes place, and the growth of the plants then being very rapid, they cover the ground before the third growth of weeds acquire strength. In rich feeding grounds, it is common to grow, on breaking them up, two crops of Potatoes in succession, and three of Oats without manure, and then to leave them to get a coat of Grass again, which they soon do.

In Turnips, on the contrary, from the smallness of the seeds, the food of the young plants they contain is so soon exhausted, that an immediate supply of free organic pabulum is required, and this becomes still more necessary from the very fatal attacks of the fly in their first growth; the concentration of the dung, therefore, immediately beneath the seeds, appears advisable. Yet, as the young plant very soon sends down its roots to a greater depth than we can suppose the influence of this fresh application of concentrated manure to extend—a Turnip, when it attains its rough leaf, has pushed down its root nine or more inches—we must think it will tend to continue the quick growth which we have induced by concentration, to provide for its after food by manure more deeply distributed. I should think that, instead of leaving the farm-yard manure in a body in the drill, as is usual, and with the usual mode of using with it guano and superphosphate of lime, it would promote a large development of the Turnip to work the farm-yard manure into the drill to as great a depth, and to mix it with the undersoil as intimately as possible, so as to form with this soil a rich compost. In clay soils, where the bottoms of the drills are so much consolidated by the carriage of the manure, this breaking of them up must alone be advantageous, by facilitating the development of the root; and by this treatment longer manure may be applied, if it can be worked in, than where the immediate feeding of the seedling is intended. In Ireland, I must think, long or short dung is too indiscriminately applied to Turnips; and this is the more inexcusable, as the long dung seems best adapted to the Potato. Indeed, a correspondent of the *Irish Farmers' Gazette*, who farms very largely, recommends in clay soils the application of unreduced dung. On this subject Mr. Hunter says:—"The best kind of manure, for this subject, is rough farm-yard manure, in its first stage of decomposition; viz., fermentation half over. The more bulky it is to its weight, so much the better is it; for, by its gradual decomposition, the space which it occupied will become more vacant, and the surface soil will naturally sink therein, during which process the soil will be kept open by this imperceptible movement, through which the air will have free access, giving a benefit much to be desired in the raising of a Turnip crop." Mr. Hunter's opinion is deserving of attention, for he not only is an extensive grower of Turnips, but also succeeds in raising large unmissing crops off brick clay soils. Yet with due deference to this opinion, and however desirable it be to keep clay soils open, I think this bulky manure in the shallow drills he recommends would render the drills too dry; perhaps, however, in the dripping climate of Cork this may not be the case. Besides, as it is in the last stages of decomposition that manures supply their nutritious products to plants, the young Turnip in its first growth, when it most requires stimulants, would derive very little benefit from manure in its "first stage of decomposition." Liebig says "Ammonia is the last product of the putrefaction of animal bodies;" "Carbonic acid and water, and ammonia, are the final products of animal and vegetable matter." And again he says, "The nutriment of young plants consists of carbonic acid, contained in the soil in the form of humus, and of nitrogen in the form of ammonia."

The first development of plants, and their future abnormal growth, mainly depends on the earliest enlargement of the organs through which they imbibe their food, is then promoted by concentrating their nutriment within the reach of the young roots, while their after progress is better ensured by a distribution of our manures through the soil, which, in their extreme division will, aided by atmospheric influences, so act on the crude inorganic substances in the soil, as to supply them in greater abundance with matter in a state fit for assimilation, than they would be supplied with, were the action of the manure restricted to their narrow superficies which, placed in a concentrated line in drills, it would expose to the surrounding inorganic particles of the soil. *J. M. Goodiff, Granard.*

## POULTRY PILGRIMAGES.

[I. May 8, 1851.]

DITCHINGHAM PARK skirts the highway leading from Norwich to Bungay, at about two miles north of the latter town, which is just within the borders of Suffolk. It affords the most pleasing prospect which meets the eye of the traveller for many a mile. The first glance over the park-paling gives a hint that the place may have been laid out under the inspiration of the great Genius of Capability; the gentlemanly red-brick mansion, backed by evergreens, the unbroken woods of Elms and Oaks, the broad expanse of pasture sloping from them, and the handsome sheet of water which reposes at the bottom of the valley, bear witness to the historical fact that Brown was the artist here. And this much may be said of his performances, however closely they may be criticised, every one enjoys and admires them. The features that have just been described are visible from the high road, but the perfect point of view is at the hall door of the house. On looking forward, the most distant object is the handsome steeple of Ditchingham Church, rising above the woods, which are continued right and left to the very foreground on each side of the picture; between them is a bright sweep of undulating Grass, divided by what appears a respectable river. In the middle distance of the water is an island of about three-quarters of an acre, modelled on those in the Thames above Richmond. On this is a rustic fishing-house, just conspicuous enough to attract the eye to the right point. The island appears *a trifle* too large for the river which flows past it, but this disproportion will be removed by changing some of the large trees which stand on it for shrubs.

A merit in the Brownean landscapes to our eyes is that ornamental poultry and water fowl are found to give them the last finishing touch. A peacock strutting before one of Brown's mansions is felt to be as appropriate as the high-heeled shoes, silken sacks, and clipped hedges in one of Watteau's garden scenes, where a lady and gentleman are dancing a minuet to the music (which one does not regret being unable to hear), of a pipe and tabor. On the lake there must be swans of course, and besides them whatever water birds in wild plumage and half-familiar, half-independent habits can be induced to continue their residence within the park boundary. Farm-yard things are to be kept out from such scenery, as rigorously as errand-boys with parcels from the Royal Exchange. Mr. Bedingfield tried the experiment of turning some party-coloured tame ducks on his river, but they would not do at all. He formerly had musk ducks, but they avoided the water, and the cook having thrown out the heads of some eels that had been caught by hook, without taking the trouble either to remove the instruments of their capture, or to warn the musk ducks that swallowed them of the danger they incurred, there was soon an end of them. Besides swans and mallards, the great ornaments of the river now are bernicle geese. There is a pair of bean geese; but whatever may be the merits of this species, it has the

misfortune of being the ugliest of its genus. It is not without intrinsic good qualities, though it breeds less freely than most other captive Anserinæ. Mr. Edward Blyth writes us word from Calcutta, that what is said in the "Ornamental Poultry," of the white-fronted goose, applies equally to the bean goose, and also to the grey lag and the pink-footed. The bean goose may be equally amiable, but like Wilkes, it requires a good five-minutes' start in conversation to be placed on the same footing with individuals of average good looks.

On rowing to the island, we had the pleasure of seeing the nests of three pairs of bernicle geese. They were all placed just at the water's edge; their substratum was a slight collection of sticks and rushes, on which was laid a perfectly circular bed of grey down, in which lay the eggs. The quantity of down was so considerable that it looked as if both birds must have contributed to its formation; and there was no waste, no straggling edges, but all nicely packed together within a circumference just sufficient to contain the eggs comfortably. One nest contained five eggs; the other two, four each. From these 13 eggs Mr. Bedingfield hopes to have 10 or 12 goslings. When hatched, they are left entirely to the care of the parents; who are not themselves fed in any way, with corn, or otherwise, but subsist solely on what they find in the park. At about three days old they are caught and pinioned, and then turned adrift again. Otherwise they are apt to fly off, in hard weather, down to the river Waveney; and the chances are that they would cross Bungay Common, around which there are about as many guns as adult males, *once* only. The *facilis descensus* from Brown's river to that which forms the natural boundary between Norfolk and Suffolk, would have a classically *unfacile* return as its consequence. Mr. Bedingfield has no Canada geese now; they are terribly cross to other fowl, and powerful in their crossness. They are also extravagantly voracious. A pair of Canada geese eat nearly, if not quite, as much Grass as a cow. A pair of Brent geese here have not bred, more than elsewhere; but wigeon *have* bred in Ditchingham Park.

Although various poultry are kept on the farm, at the house Mr. Bedingfield adopts the judicious plan of having only one sort of fowl, which the reader will be surprised to hear are silk fowls. These have increased well, lay a sufficiency of eggs, and prove most docile sitters and nurses, both for their own young, and for pheasants and partridges. Some of the hens, I was assured, will submit to be placed on a nest of eggs that may happen to be found in the park, and will take to it at once, and hatch it off without further trouble. They are of course so posted while in the mind to sit. In the hatching boxes is a capital contrivance for preventing the escape of the sitter, and the intrusion of other hens. It is simply a horizontal slide across the opening, not broad enough to exclude air and light, though grosser things are refused admittance. The silk fowls are of the kind sometimes called Hong Kong Bantams, small, short-legged, but slightly furnished with wings and tail, and to my eye very pretty. People condemn a thing seen in a dealer's cage, or an exhibition pen, which they would delight in if they made its acquaintance at a country mansion. Silk fowls are not *show* birds; it was with a struggle that their name was admitted into the last Birmingham List, and this year they have to crow to the tune of "Oh, no, we never mention her!" They will probably be treated as intruders if they presume to present themselves for extra prizes among the "deserving specimens of ornamental poultry." Till the Cochin China epidemic has a little subsided (and the remedy of bleeding of the purse is being boldly practised on patients in the advanced stage of the complaint), the phœnix itself would be "pooh-shoo'd" into the back-ground, and refused all chance of one of Mr. Ottley's beautiful medals.

The silk fowls at Ditchingham have a slight lark-crest as well as comb. They are white, with red combs, yellow with red combs, and white with black or purple combs and skin. They have mostly slight down or feathers on the legs. From the commixture of these, speckled individuals have proceeded, but it is proposed to sort them forthwith. The eggs of the red ones are cream-coloured, of the others white. We do not quite acquiesce in the treatment which silk fowls have of late received from the public; and, therefore, as a great favour to our readers, a few words shall be added respecting them and other little-known fowls. The communications are from gentlemen whose mere names are sufficient to call attention to what they write.

The first is from Mr. Edward Blyth, Curator to the Asiatic Society's Museum, Calcutta. "I still adhere to my opinion respecting the derivation of all the domestic varieties of fowl, from the wild species common in the Bengal presidency and the countries to the E. and S. E. The question is much narrowed in many ways. First, the indigenous geographic range of all the large gallinaceous genera is much limited. Meleagris, for instance, to Africa; Phasianus (verus) to Middle Asia, from N. Persia to China and Japan; the golden and Amherst type to China; and so with Pavo, Polyplectron, Galloperdix, Tragopan, &c., all genera comprising a plurality of species. No grouse nor ptarmigan has its dwelling in the pine-forests, &c., on the snowy heights respectively of the Himalaya, nor, so far as known, on the Hindu Kosh or Altai, but are there severally represented by the Monal, the Tetraogallus, or snow pheasant, and the Serva, or snow partridge. So wild Gallus is restricted in its range to S. E. Asia and its islands (most of the larger), or the Asiatic region of the Monson. Ascending the Himalaya, it soon gives way to Gallophasis (vel Nycthemerus), and this in its turn to genuine Phasianus; but in peninsular India they are the sole representatives of the pheasant group.

"Next, we recognize two wild subgeneric types of Gallus, the Indian and the Malayan. The first resembles the ordinary domestic fowl in its comb and two lateral wattles, and the nuchal hackles; the other has a single throat-wattle, and no neck-hackles (of which I only know G. varius vel furcatus, and, from the figures, G. œneus). Of the first, or Indian type, I know three species, viz., G. Stanleyi (the hen of which is figured by Hardwicke), vel Lafayettii, which is peculiar to Ceylon, and at once completely distinguished from the common fowl by its red-edged yellow comb, and extremely different voice in every note uttered. Many Ceylon sportsmen call it the 'John Joyce,' from its sharply uttered dissyllabic crow, more analogus to the call of a partridge. The form of the comb is again distinctive, and so is that of Sonneratii. This second species is peculiar to S. India, from the Vindhyan mountains southward. The very peculiar plumage of the cock, and every note uttered by either sex, totally separate it from every domestic breed. I have found it, however, easy to render very tame, and Stanleyi also; both interbreeding most freely with picked domestic fowls, and the males quite as salacious as any domestic cock. A G. Sonneratii I had would attack any human intruder into the large aviary in which it was kept, and myself among the rest, and was a fair match for any domestic cock of its weight. A hybrid son of his was equally salacious, but unprolific, and so was a hybrid daughter, however either were matched. This hybrid hen laid many eggs that were all infertile, and so were all eggs that should have been vitalised by the hybrid cock. Lastly, the third Indian species inhabits all suitable districts of the Bengal presidency, with the Burmese countries, Malay peninsula, Java, and, I believe, Sumatra and Borneo; but Malayan specimens are deeper coloured, and so far as I have seen, all from the eastward of the Bay of Bengal want the conspicuous ornament of the pure white cheek lappet of the Bengal Jungle-fowl, in common with the Spanish domestic breed, &c.; and it is curious that this white cheek-lappet is excessively rare among the domestic cocks of Bengal; also, it is remarkable that the delicate mottling or pencilling of the hen's plumage, though common enough in English hens, is hardly ever to be met with in the domestic hens of Bengal. In the neighbouring (formerly Burmese) province of Arekan, many of the tame hens are scarcely distinguishable from the wild, and only by being a little coarser in the leg, with a tendency generally to greater development of comb; and these hens, hardly removed from the wild, are free breeders. Domestic cocks, of various breeds, may often be found to match, feather by feather, with the wild bird, even some of tolerably gigantic dimensions, of which I have had a specimen preserved: and the voice is absolutely that of an English game fowl: this is of importance, as the notes of the two other Indian species are so utterly different. The differences of voice among the races of domestic fowls are as nothing in comparison. Moreover, notwithstanding what you say, the wild hen signifies aloud, after the same fashion as the tame one, her deposition of an egg, and thus it is that the eggs are occasionally found, though not very commonly.

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"The wild common fowl (as I must persist in denominating it) is, in Bengal at least, much less so I believe in the Burmese and Malay countries, of much wilder and more irreclaimable nature than its congeners of S. India and Ceylon. It is a most difficult bird to keep in captivity for any length of time. I never but once succeeded, and that was with three cocks who got into fine condition, with their combs enlarged and erect, and pretty well lost their timidity; but I did wrong in keeping them (for want of better accommodation) together with a G. Sonneratii, who was 'cock of the walk,' and monopolised the two picked common hens; and when the rainy season came on, all three took ill, and died in the course of a few days, to my very considerable regret, as you may imagine. I have often heard of people keeping tame jungle fowls here, but, on inspection, always found them to be the very similar Arekan tame race, coarser-legged, and the male with red cheek-lappets; and I suspect these, and the Malayan bird (perhaps a corresponding tame race) are what have been hitherto taken home for G. bankivus. Some of these tame hens I have now by me for the future crossing with the different wild species. You may rest perfectly assured that there is no wild silky fowl, or feather-legged, or crested, or black-skinned, or gigantic, frizzled, &c.

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"I have not hitherto made the Asiatic breeds of fowls and pigeons much of a study, but will do so forthwith. I have seen no Indian tame fowls with so much of the Jungle-fowl character as the English game fowls. The Indian game cocks are heavy made, coarse-legged birds, with the arched nape of the Chittagong, and a pearly white eye. Cockfighting is in great esteem at all the Musselman courts. The great Chittagong breed is in high esteem for the table. The ordinary Bengal fowls are not large, and a black skin is common enough, with comb, wattles, &c., more or less completely melanised, but so far as I have seen only among females! I have often tried in vain to procure a black skinned cock. The growing chicks are commonly more or less nude, sometimes to a very great extent. These ordinary fowls vary exceedingly in colour, have single or double or complex combs, and more rarely a slight crest of feathers. When I have studied them more I shall be able to say more about them, but the breeding of all domestic animals is here utterly neglected. The feather-legged Burmese Bantams are a very beautiful spangled race; and the only silky fowls I have seen here (*i.e.* at Calcutta) were from China, or Malacca, or Singapore; the latter with single red comb and wattles, the former with complex rose comb (blackish, I think, and very short stubby beak) and a quantity of livid or glaucous blue skin in place of wattles, imparting a most remarkable appearance.

"Oct. 11, 1850.—The foregoing somewhat desultory remarks were written off *currente calamo*. This morning, as luck would have it, a friend dropped in to breakfast from a long journey, who was the man of all others I wished to consult about Indian tame fowls and pigeons. I have not only learned much from him already, but am proceeding with him systematically to work, to collect all the well-defined breeds we can, and this not only from different parts of India and its environs, but also of the Malay countries and China. Two breeds of fowls he mentions are quite new to me, viz., that of the Punjab and Sindh, and that of Affghanistan. The latter is a largely whiskered bird, with remarkably scale-like feathers. The former a moderately large fowl, carries the body very horizontally, and has the middle-tail feathers less arched than in other breeds; the gait also remarkably pheasant-like. These and numerous others I expect to procure ere long, and shall be happy to reciprocate with you in sending living birds."

The second bit of poultry news is from Mr. E. L. Layard, brother of the distinguished Ninevite discoverer. It is dated, Point Pedro, Jaffna, Ceylon; Oct. 30, 1850.

"The rumpless fowl is not a wild inhabitant of this island, in spite of Temminck. It is a rather rare tame introduction from Cochin, I am told. I am sure it is not found wild in these parts. It may appear like boasting, but I can confidently say I am more acquainted with the Ceylon Fauna than any man living, and that if the bird had existed wild, I must have seen it. Wallikikilli is the name for the female of Gallus Stanleyi (Gray), literally Walli Jungle, Kikilli hen. Kukulla is male, Kukullo plural. The name of the Rumpkin is Choci-Kukullo, literally Cochin fowls. The same name, with the addition of the word maha (large) is given to the large Malay breed. Our true jungle cock is a noble bird with fearful spurs, as I have good cause to remember. I trust you will see it some day in Lord Derby's collection. I have been very unlucky hitherto, not more than three having reached Calcutta alive. The hen is much smaller and very differently coloured; the egg is short, obtuse, weighty, and speckled like a turkey's somewhat.*

"The Friesland fowl, called caprikukullo, is found here but rarely; the natives say they came from Batavia originally. This agrees with Temminck.

"We have another beautiful bird which I think would domesticate. It is the Tetrao (Galloperdix) zeylonensis of Gmelin, or the Tetrao bicalcaratus of Pennant—Abankukulla of the Cingalese [a domesticable Tetrao is unique.] It is an inhabitant of the jungles of the *cold* mountainous interior. It is a bird of great 'pluck,' and its two spurs would make it a formidable antagonist. This also I am trying to send to Lord Derby.

"Lastly, the Kallu-mas-kukullo of the natives is, as the name implies, a fowl with *black flesh*: its bones are also black, and on table is a revolting looking dish. But taste it! No other fowl in this country can compare with it for juiciness and tenderness. I never saw this fowl in England; here it is abundant. The prevailing colour of the true breed resembles a white fowl drawn several times through a sooty chimney! the skin of the eye-wattles, legs—in fact all fleshy parts bearing the same *leaden* hues. It is little eaten by the Europeans, on account of its colour. I am, however, glad to get it on *my* table."

## A BULL-BREEDING FARM.

It may, in the first place, be as well to consider what kind of farm would be most suitable for a bull-breeding establishment. It should neither be too small nor too large—about 200 acres of deep black loamy land would suffice, at, say, 2*l.* per imperial acre, which, according to present times and future prospects, would be a fair rent for good land of this description. The number of cows to be kept for breeding will be the next consideration; but, before entering into particulars, it will be necessary to detail the mode of management requisite to support these animals and their progeny, till sold. Forty acres out of the 200 should be laid down to permanent pasture—the land being first thoroughly cleaned, well manured, and sown down with proper seeds;—the other 160 acres to be managed under a five-shift course of husbandry. Under this system, there would be, in

| | Acres. |
|---|---|
| New Grass ... ... ... ... ... | 32 |
| Two-year-old Grass ... ... ... ... ... | 32 |
| Oats ... ... ... ... ... ... ... | 32 |
| Barley and Wheat ... ... ... ... ... | 32 |
| Turnips, Potatoes, and Tares ... ... ... | 32 |
| Permanent pasture ... ... ... ... ... | 40 |
| | Acres 200 |

The number of short-horned cows such a farm would support under a certain mode of management, and selling the calves at certain ages, have next to be considered. In order to make the trade regular and uniform, a certain number must be disposed of annually. If the

* A hen having one-fourth blood of G. Sonneratii lays eggs speckled at the upper end, like a guinea-fowl'.

farm is supposed to be capable of keeping 36 breeding cows, the stock required will be—

12 two-year-olds in milk.
12 three-year-olds, do.
12 four-year-olds, do.

The following calculation will show what amount of capital is required to stock such a farm. Supposing the entry to be at Whitsunday, with sufficient Grass on the farm to keep the stock required; as no sale could take place the first year, the whole must be purchased to commence the system, and prepare for the sale in the following year. The stock of cattle, horses, &c., to be purchased, would be—

| | | | | |
|---|---|---|---|---|
| 12 two-year-old heifers, in milk ... | at £40 each | £480 | 0 | 0 |
| 12 three-year old do.... ... | ... at 40 ,, | 480 | 0 | 0 |
| 12 one-year-old do.... ... | ... at 25 ,, | 300 | 0 | 0 |
| 12 heifer calves do.... ... | .. at 15 ,, | 180 | 0 | 0 |
| 1 yearling bull ... ... | ... at 50 ,, | 50 | 0 | 0 |
| 5 horses ... ... ... | ... at 30 ,, | 150 | 0 | 0 |
| Implements, &c. of all sorts, say ... | ... | 80 | 0 | 0 |
| Guano ... ... ... | ... ... | 40 | 0 | 0 |
| Meal for servants, &c. ... ... | ... ... | 20 | 0 | 0 |
| Other outlays, including servants' wages, seed corn, &c. &c. .. ... | ... ... | 220 | 0 | 0 |
| Capital required ... ... | | £2000 | 0 | 0 |

The above may be said to be too high an estimate; but, in laying the foundation of a stock of this kind, nothing but the highest-bred short-horns must be selected, which can only be procured at high rates. The 220*l.* for incidental expenses will all be required, as there will be no crop on the farm the first year. The 40 acres of permanent pasture should graze the cows, and the 32 acres of two-year-old Grass should suffice for the heifers and horses—the 32 acres of new Grass to be cut for hay, except what may be used for soiling the horses or cows at night, and young calves. The bull calves must be sold in August, say at from four to six months old, and the 15 acres of Turnips should be sufficient for the cows, one-year-old heifers, &c., so that it will leave 17 acres more for other green crops, say

4 acres in Tares.
8 ,, Potatoes.
5 ,, Turnips, to be eaten off by sheep.

The cows should be drafted yearly, and sold in August, along with the bull calves, by public roup, and the cows stinted with high-bred bulls. The cast cows, being then only four years old, would be purchased by the breeders; and making a fair allowance for deaths or other casualties, there would be for sale yearly—

| | | | |
|---|---|---|---|
| 15 bull-calves, at £20 each ... ... ... | £300 | 0 | 0 |
| 12 cast cows in calf, four years old, at £30 each | 360 | 0 | 0 |
| | £660 | 0 | 0 |

Losses, from death by disease or accident, must be guarded against by insurance.

The next calculation will be as regards the crops and other products of the farm. The grain crops should stand nearly thus:—

| | Quarters. |
|---|---|
| 32 acres Oats, say 6 quarters per acre ... ... | 192 |
| For seed ... ... ... 22 quarters. | |
| ,, horses, say ... ... 40 ,, | |
| ,, servants' meal, &c., say 50 ,, | |
| 112 ,, | |
| Leaving 80 quarters Oats for sale. | |
| Two acres Wheat for farmer's use. | |
| Barley, 30 acres, say 6 quarters per acre ... | 180 |
| For seed ... ... ... 15 quarters. | |
| ,, meal ... ... ... 25 ,, | |
| 40 ,, | |
| Leaving 140 quarters Barley for sale. | |

The other items to be sold, besides the stock, should be as under:

| | | | |
|---|---|---|---|
| 140 quarters Barley, at 20*s.* ... ... ... | £140 | 0 | 0 |
| 80 ,, Oats, at 18*s.* ... ... ... ... | 72 | 0 | 0 |
| Milk of 20 cows, from August till, say, 1st Dec. Four cows' milk for the use of farm. | 40 | 0 | 0 |
| Spare Potatoes, say 20 tons ... ... ... | 50 | 0 | 0 |
| 5 acres Turnips, to be eaten by sheep ... ... | 25 | 0 | 0 |
| Proceeds of cows and calves ... ... ... | 660 | 0 | 0 |
| | £987 | 0 | 0 |

RENT, EXPENDITURE, &c.

| | | | |
|---|---|---|---|
| Rent ... ... ... ... ... | £400 | 0 | 0 |
| Rates and taxes ... ... ... | 10 | 0 | 0 |
| Interest on £2000 ... ... ... | 100 | 0 | 0 |
| Insurance of stock ... ... ... | 25 | 0 | 0 |
| Servants' wages, &c. ... ... | 80 | 0 | 0 |
| Seeds ... ... ... ... ... | 20 | 0 | 0 |
| Tear and wear of implements ... | 15 | 0 | 0 |
| Wear of horses ... ... ... | 15 | 0 | 0 |
| Cutting crop ... ... ... ... | 25 | 0 | 0 |
| Cutting hay ... ... ... ... | 5 | 0 | 0 |
| Daily workers ... ... ... | 20 | 0 | 0 |
| Tradesmen's accounts ... ... | 20 | 0 | 0 |
| Incidental expenses ... ... | 32 | 0 | 0 |
| | £767 | 0 | 0 |
| | £220 | 0 | 0 |

The above shows a profit of 220*l.*, which would be rather limited for a farmer so employed; but it will be seen that 100*l.* are set down for interest of capital, with an ample supply of meal, Potatoes, and milk, and two arces of Wheat and garden stuff. He might also keep a few Ayrshire cows, pigs, poultry, pigeons, sheep, lambs, and a small ox for beef, &c., so that the house would be kept in a great measure from the farm. As, on such a farm, young men are to be preferred as servants, the whole of whom should be lodged and victualled by the farmer, the wages are, therefore, set down as under:—

| | | | |
|---|---|---|---|
| Grieve, say ... ... ... ... ... | £15 | 0 | 0 |
| Two ploughmen, say ... ... ... ... | 21 | 0 | 0 |
| Cattle-keeper, say ... ... ... ... | 10 | 0 | 0 |
| A woman or boy assisting ... ... ... | 6 | 0 | 0 |
| One servant girl for house-work ... ... ... | 7 | 0 | 0 |
| Three for dairy and other work ... ... ... | 21 | 0 | 0 |
| | £80 | 0 | 0 |

This is ample enough, even if a few extra cows are kept, as well as those for breeding. An overflowing supply of milk should always be secured, which would cost nothing additional, in summer at least, when there should be plenty of spare Grass.

As every calf is allowed the milk of its own mother, they will be bad milkers if they do not do ample justice to the calves. The heifer-calves may be weaned at three months old, and the bull-calves should get their extra quantity of milk till sold, or, say, from 1st of June till August. This would be increasing their supply of milk in place of reducing it, as is too common a practice with breeders. The bull-calves, when exposed for sale in August, will be in first-rate condition, from receiving this extra supply of milk, more especially if they have been soiled with a little Clover or Tares. This may be thought too high feeding, but it is an erroneous notion; for if calves have been fed on sweet milk, or other nutritious food, in place of slops, they will be strengthened in their constitution, easier kept, and be less liable to disease. Look at calves which have suckled their mothers, how strong and robust they are, seldom being attacked with the diseases generally so common among calves! Little doubt can be entertained of many of these maladies being attributable to feeding with slops.

There is another absurd practice among breeders, of giving Turnip-tops to calves, which is considered a saving; but anything more injurious cannot be imagined, as these vegetables are of a laxative nature. Calves should never taste Turnip-tops. Give them what is natural, viz., sweet milk; and as they advance, provide them some additional nourishing food, of rather a solid nature, but not too strong. When properly nursed and well kept, calves get strong before winter—the severity of which they are thus enabled to withstand, more especially if descended from stocks with plenty of hair. Ill-fed calves, on the contrary, suffer severely in winter, and often fall victims to the parsimony of their owners. An idea is entertained by some breeders, that if all their cows produce calves, they are sure to be well paid; but one good calf is better than three bad ones. Many animals which would have made good oxen, heifers, or cows, are ruined when calves; they may recover, but not when young; so that the early maturity of such animals can never be attained. Every day's neglect in properly feeding calves retards their maturity; while every day's good feeding will tell in the animal's favour. On such a bull-breeding farm as now described, nothing but the best of food must be supplied to the calves, otherwise they will cut a poor figure when exposed for sale. It would be good policy for breeders to have an extra set of cows to suckle the bull calves as they should be, and for four months at least.

If the preceding calculations be correct, a bull-breeding trade will be a safe speculation to those who understand its principles; but it must not be undertaken by men who are not thorough judges of short-horns, and practically acquainted with their management. Such a farm should produce manure for itself; and by leaving every fourth or fifth drill of Turnips to be eaten off by sheep, it will tend to consolidate the land and prepare it for a Barley crop. The Tares and Potatoes could be raised with less manure than what is required for Turnips. The capital required for such a farm is considerable, being 10*l.* per acre; still, this shows five per cent. interest, and a fair remunerating profit. Extravagant profits from farming must not now be looked for; and to a farmer who admires and values good stock, this will be a most agreeable occupation. *Dickson, on the Breeding of Live Stock.*

## Home Correspondence.

*An Agricultural Machine not exhibited in the Crystal Palace.*—This machine is called a "Mercantile Relation Machine," and has been in use in these parts for many years. It has not been exhibited, for some or all of the following reasons. It is of too large dimensions, and would occupy too much room, the entire surface of a farm being embraced within the range of its operations at once. It could not be properly classed as the product of peaceful industry, because it is itself a propeller of industry, and its appropriate field of action is not always one of peace. It has been proposed to call this machine a universal grubber or universal scarifier; but the obvious objections to these names are, that they define only a small portion of the work to which it may be applied. They besides convey no correct idea of the form of the machine. A huge fly-wheel being attached to it, and to this a dredging box, with this it traverses the currents of agricultural prosperity, and effectually removes every obstruction. Occasionally a sinking agriculturist gets into this dredging box, and is tumbled over amongst other useless things. There is also a cairding apparatus attached. By means of this the population of our towns are cairded among the population of our counties. It is truly worthy of admiration, that slow and worm-like process by which the inhabitants of our cities are brought out rich and sent back poor. Universal tormentor is perhaps the most appropriate name by which it might be named. But the objections to this name are, that the tormentor is not so generally known as an agricultural implement as to convey the idea that the machine under consideration has an exclusively agricultural origin as well as application. The mercantile relation machine, although it possesses no very scientific name, is a wonderful machine. It thoroughly grubs, and ploughs, and harrows, and kicks, and knocks, and bruises, and threshes, and grinds, and comminutes to every conceivable degree of fineness. It sows to any required thickness, and thus reminds me that it reaps very imperfectly. As a general rule, it does all sorts of agricultural work in the rough and cruel line with admirable precision, from the pulling down of a house to the beating of a boy. When it is efficiently worked, it makes a fine stir in the country side, and it has been under admirable management for some years. Some of our rustics attribute to it a greater power than they allow to the Pope, and assert that it possesses some mysterious means of grubbing and harrowing the human mind. It is certain that in connection with its operation, men's vices have become small, and their virtues infinitesimal. There is a desideratum in machine making, to which our men of science have not yet attained, and in connection with it, there is a gold mine of prizes in reserve for another generation. I allude to the desirableness of possessing a machine that could spin you off a moral quality. How desirable, for example, would it be to have a machine that would weave a web of charity with which we might invest our clergy, or garments of courage with which to clothe our army. Now, I am not able to assert of this machine that it has attained for us any of these very desirable ends, but this I can affirm—It has weaved for us several patterns of a very durable fabric, and warranted to stand washing, of a web called the "web of hatred." To work this machine, we put some of our most sagacious and best paid labourers. Although the duties required exercise, more the intellect than the arms, these happen also to be the stoutest of their class. These men are known in the district by a peculiar name. The name denotes that their office is by no means of Saxon origin. It is probably from Holland, whence come all our excellencies in the mercantile way; or more likely still, from some of the early settlements of the Dutch on the coast of Africa. This machine works with tremendous impetus, and mutilates in a shocking manner any unlucky individual who may happen to fall within the range of its operations. The first of all duties, therefore, incumbent upon its superintendent, is the duty of self preservation. And in order to this, it is necessary that he acquire such a degree of dexterity in his manipulations that the machine shall not be permitted to bruise his own fingers. This dexterity in course of time is acquired, and it is incredible the amount of work some of our best workmen go through, and return from it quite hearty, and "fresh and clean as a ribbon," as we say in country phrase. PS. The writer of the foregoing is a farmer, and begs the aid of the Editor of the *Agricultural Gazette* to put some moral restraint upon the practice of "rouping" [*i. e.*, letting to the highest bidder] every farm whenever it falls out of lease. *Bastinado, East Lothian.*

*Beet Sugar.*—Taking great interest in the successful introduction of the Beet sugar industry into Ireland, I have watched with some anxiety the progress of your opinions, under the impression that the numerous evidences in favour of its prosecution might induce you to take a rather more extended view of the subject than your various remarks tend to promise. In your impression of May 24th you cite the authority of Sir R. Kane, who takes his information from sources of a comparatively ancient date in the annals of Beet sugar making; for it must always be remembered that it is only within the last few years, while the powerful protection afforded to that interest by the French Government has been gradually withdrawn, that the culture of Beet-root and its highly profitable conversion into sugar, by the compulsory aid of science, has attained such an unexpected rank in the productions of France. And even at the present time, with the total absence of protection, and a duty of 10 per cent. in excess of colonial sugar, the number of refineries is augmenting, and their increased produce will soon tend to give it the mastery of the market, by gradually excluding tropical grown sugar. That Ireland is peculiarly adapted to the perfection of root crops, no unprejudiced mind can for an instant deny. With great depth of soil, rich in vegetable constituents, and a humid climate, so necessary for the full development of the leafy portion of the plant, the influences imperatively required for the production of Beet are abundantly afforded; and no comparison can be made between its culture and that of the Tobacco plant or Sugar-cane, both of which require the powerful action of solar light and heat to bring them to maturity, since the juices of these plants are elaborated above ground, while the sugar yielding principle of the Beet-root requires darkness and moisture for its perfection beneath the soil. And if the general testimony of the numerous cultivators of sugar Beet this year in Ireland is to be credited, no doubt can now exist that with a crop promising from 30 to 40 tons per acre, they can feel disappointment in taking the initiative in an enterprize which opens so wide a scope for Irish industry. The statement made by Dr. Hancock before the British Association, and to which you refer in your Number for August 16th, abounds with such an apparent tissue of illiberal assumptions, that it can only be characterised as the prejudiced views of an agitator for some opposing interest, and I will not occupy your time by a refutation of his mis-statement of facts, as applicable to the present condition of the Beet sugar interest, as you have already admitted in your *Gazette* of the 6th inst., the able and unanswerable reply of Professor Sullivan to which I beg to refer your readers. With respect to the profit attached to the manufacture of Beet sugar, the Association (formed for the purpose of carrying it out in Ireland), assume as their data simply those which are obtained upon the Continent. The process is no secret, and with a raw material confessedly superior equivalent results may be fairly anticipated. The rate of labour is as low in Ireland as in France or Belgium; and fuel, that important item in manufacturing expenditure, abounds in the form of peat, at less

than half their cost, even upon the calculation that two tons are required to raise an equal amount of steam as one ton of coal. Besides, the Irish Beet Sugar Company has patented improvements which materially tend to diminish the first cost of machinery and labour, in the manufacture, by the application of which they are enabled to economise nearly the whole of the saccharine portions of the root, and produce a sugar not only free from the usual disagreeable smell and taste peculiar to Beet sugar, but quite equal in purity, appearance, and sweetening properties, to the cane grown Muscovado, or the English made refined sugar. In justice to our enterprise, which, if successfully carried out, must be eminently beneficial to Ireland, it is to be hoped that you will withhold the expression of opinions founded only upon the absence of a practical acquaintance with the subject, as a few weeks must now determine the important question of the Beet-root industry becoming a great feature in the reviving prosperity of Ireland. *Beta, Sept.* 10.

*North of Yorkshire.*—On paying a visit to this far-famed district, I was surprised to find so much useful land still cultivated in the old-fashioned way, with summer fallows and broadcast corn crops, full of weeds. The Turnips were commonly drilled in the Scotch system, but late sown and sadly neglected in scuffling and hand-hoeing; but still their appearance indicated the goodness of the soil, which seemed worthy of better management. It is strange that so many should still persevere in such management, or rather mismanagement, as is profitless in better times, and ruinous in these days of low prices, especially when they have a few specimens of superior cultivation, such as those exhibited in the well-cultivated farms of Messrs. Outhwaite and Jackson, but such are only the occasional exceptions to the general rule. Hay is better made in this than in most other districts. They have a good practice of putting it into "lap-cock," and of sweeping it up into "pikes," with a well-constructed hay-sweep. But their hay-time is too backward, being thrown into the latter part of July and the beginning of August, in consequence of their ruinous practice of eating their meadows in the spring, and even into May. They also mow much high land, which, though it is good pasture land, is very unsuitable for meadow. Too much reliance is placed on the hay-stack, for the want of more green food, Linseed compound, and the like. Hay is commonly an expensive and a very unprofitable article, and especially so when so many acres of good up-land pasture have to be mown for a small stack, as we frequently see in that district. There is much of useful land that lies too high for corn, except Oats; but it would grow good Turnips and other cattle crops, which should be more cultivated as a substitute for so much hay, and especially the injury done by eating up the meadow land in the spring. The cattle are fine animals for grazing, but not so good as formerly for the dairy. The breed of pigs is wonderfully improved. *J. H.*

*Thistles.*—At this time of the year the extraordinary number of Thistles in full seed, in hedgerows, might lead a novice in agriculture to imagine the plant was a favourite, and useful in the economy of the farm, instead of being one of the most mischievous weeds under the sun, each seed having wings on which it is carried over the face of the country for miles. Thus the industrious man, who cleans his land, is at the mercy of the sloven. In a day's ride sufficient seed may be seen to sow a thousand acres, only waiting for a breeze to disperse it. John Bull abused the Americans for being behind the world at the Exhibition. However, brother Jonathan can teach us how to build a yacht! If our countrymen will take a lesson from the Dutch and Belgians, on the art of keeping land clean, they will be wise. Where a weed flourishes corn will grow. *Falcon.*

*Reaping Machines.*—In a leader of your Paper you suggest that there is no reason why these machines may not be made for one horse. I hope that Messrs. Garrett will take the hint. The experience of all modern improvements show that large profits are to be obtained from large sales. Now large sales depend on prices not being beyond the means of the multitude, and I am satisfied that a good reaping machine, such as I have no doubt Messrs. Garrett and others may make, would be, next year, purchased to a very large extent, if not too costly, or too large. There is a great temptation to supply large farmers and amateur farmers—but in this instance, it is to be hoped that a large demand from all classes of farmers will be an object among the makers of this implement. *T. F.*

*Peat Charcoal.*—As I read the particulars and the result of the experiment of "P. K." I am disposed to apply his resultant figures thus:—As 40 is to 72, so is his ability to conduct an experiment, to what it ought to be. The case stands thus. Beans require heavy land; he puts them on land that is "very light." Dung helped the land to approximate to that state which is most congenial to the Bean crop, by its ability to retain moisture. "Peat charcoal," by way of antithesis, would, if possible, tend to make the "very light" land still more light, and still more uncongenial to the Bean crop. So much for its mechanical effects. The chemical reasons on this matter, I need not enter on. *W. E. Gill, Truro, Sept.* 15.

*The Suffolk Agricultural Relief Association.* — I was much gratified by the favourable notice of the above society by your correspondent "T. R.," in your last week's *Gazette*. It strikes me that "relief to tenant farmers" is a subject which may be most appropriately discussed in your Journal. I will not attempt here to enter into a discussion with "T. R.," as to the wisdom of the course we have pursued in selecting the five "objects of the Association;" I will content myself with remarking upon the present unhappy position of the tenant farmers, and the necessity for the immediate adoption of measures for relief. It is quite unnecessary to dilate upon the distress which we are and have been suffering. Perhaps it is hardly too much to assert, that in districts which depend chiefly upon the produce of corn, the farmers have for the last three years being living upon their capital. What with defective crops and low prices, they have ample cause for complaint. Now, how are matters to be mended? This was the question which set a few of us plain practical people a thinking. We met and meditated on the subject; and resolved, with calm but firm determination, to do all that in us lay to make known our grievances and obtain redress. It is a new thing for tenant farmers to act for and by themselves; we have had many difficulties to contend against, but we have also met with much to encourage us. And, as I hope to show in a future paper, we have already received such expressions of approval and promises of assistance, as have strengthened our resolve to persevere in our great undertaking, bating not a jot of heart or hope. I will conclude with the closing paragraph of the report read at the recent public meeting in the Corn Exchange, Ipswich:—"The committee wish to draw the attention of the meeting to the fact, that they have endeavoured studiously to avoid everything of a strictly party nature. They have endeavoured to frame their association upon a basis upon which politicians of every shade of sentiment may, if they will, unite. They believe that the attainment of their objects would greatly promote the public good, and they invite all who share in that belief, to join them in their efforts to obtain those ends." *N. W. Johnson, Hon. Sec., Ringshall, near Needham Market, September* 17*th.*

*Draining.*—I beg leave to approach the arguments of the Rev. G. Wilkins with the most profound respect, and to differ with becoming diffidence. He has the best side of the argument, and I wish him to maintain it on indisputable grounds. "Cold and wet ground," says the reverend gentlemen, "rapidly conducts the caloric from the earth's surface to the cooler regions below the surface, and the more stagnant water there is in the ground, the more rapidly will the caloric leave the surface to keep up the equilibrium below it." The rationale which I would respectfully submit is this, that evaporation is continually going on when the temperature is higher than 32° F., and thus cools the surface of the earth; and that caloric does not descend [It does not *descend* in water, because water is a bad *conductor* of it], is a well recognised, established fact. Hence the surface gets dried, and then baked into a hard crust, whilst the stagnant water below continues at the same low temperature. By percolation, it helps to augment "the cool refreshing spring," or fills the drain tiles. In a former paper, a correspondent took the pains to twit the reverend gentleman about deep draining his clay land, as if it were impossible to do so; and thus, for practice, was inflating his lungs, in anticipation of a loud laugh at science. "His land," he said, (I write from memory), "was hard in summer and so soft in winter that he could put no animal on it." This is a plain statement, as it should be, and like every plain and complete statement, facilitates the invited reply, if it does not, as in this case, actually suggest it. I have already shown how it became hard in summer, but how did it become soft in winter? Why the rain made it soft, to be sure. How could the rain make it soft, when the ground is so very fine, close, and tight, that deep draining is of no use, and the water cannot get through the land to the drains? But the water does get through, you say, to make it soft, even when baked hard by the summer sun; and if it can get through one inch of such land, why not through twelve inches; and if through one foot, why not five? for the laws of gravity hold good to a far greater depth. If argument fails to convince your "shallow draining" correspondent, let him set experience to work, and cut a five foot drain through such heavy land, if he can afford it, and that one cut will be his best schoolmaster, and teach him how to act in future. *W. E. Gill, Truro, Cornwall, Sept.* 15.

*Superphosphate, Adulteration, and Detection.*—Whilst so much attention is excited to the adulteration of guano, we must not lose sight of another concentrated manure, second to guano only in importance, particularly liable to adulteration and inferiority of quality, and more uncertain, if not more difficult of detection, than almost any other. The same sample, assayed by different methods, will give as many different results, unless we have recourse to precise analysis, which is too costly for practical farmers; so that the assays from different hands, being apt to disagree more or less, destroy the farmer's confidence. In some cases it seems to be adulterated with a direct view to elude chemical detection, the very last sample I assayed having required three different processes to get at consistent and trustworthy results. I have long wished a consistent, and not too complex, formula could be issued by the Royal Agricultural Society or other recognised authority for general use, as has been done for guano and some other matters; but the danger, in this case, is that, like publishing the private mark of a bank note, it might be a guide to the adulterator or low manufacturer, what to use, so as to escape detection. Such a general formula would therefore require extensive opportunities and practice to anticipate and defeat the varied ingenuity of these pernicious malefactors; and (if it cannot be) expected from any of the recognised authorities) would furnish excellent practice for the pupils of a chemical school; *i.e.* the specious adulteration and lowering, by different means and materials; and the attainment of a, not too complex, formula, which should disentangle the phosphoric acid, and its proportion of excess, as well as the alkaline salts and nitrogen, from all the different substances with which it might be speciously adulterated. If personality may be allowed, I would suggest Mr. Nesbitt, who as well as his pupils has already done some useful work in the phosphates, as well-circumstanced, if willing, to render this important service to the farmers; being myself unable, working alone, to devote the needful time to it, without encroaching too much on other occupations. As matters now stand I doubt whether there is any other manure, even guano itself, in which the farmer is, proportionately, so much cheated, as in superphosphate of lime. *J. Prideaux.*

*Nitrate of Soda.*—I have a six-acre field of Italian Rye-Grass. I mowed it for hay in June, and again in July. As soon as the second crop was carried, I top-dressed the field with 2 cwt. of nitrate of soda per acre, and in four weeks I had a better crop than before. When the men mowed it, their shoes and scythe blades were dusted with a reddish brown powder. Unfortunately we have lately had a good deal of rain, and just as the Rye-grass was ready to be carried, it got soaked with rain. When it became fine, we of course turned the "would-be hay" over, and then the men's clothes were covered with a greenish dust, just as if they had rubbed themselves against old park palings. The Rye-grass hay is worthless, from having been so drenched; it smells as ill as old thatch. What I want to know is, does nitrate of soda cause this hay to be so ill-smelling, and to take such great damage from the rain? and is this dust, "of a greenish hue," which is still in this hay, likely to be prejudicial to any animals that I may be fortunate enough to persuade to eat it this winter. If so nitrate of soda will prove a very expensive dressing to me, although the effect of it in the extra quantity of Grass was great. *W. G. D.*

*The Vetch.*—I have read with much interest, in your last Number, the article of "J. D." on the culture of the Vetch. There is one point of value in the cultivation of this legume to which "J. D." does not refer—I mean that of cleaning foul lands. The root of the Vetch is so large and fibrous that it almost honeycombs the soil on which it grows, and gives to the farmer a fine opportunity of cleaning foul land. Some years ago a field of 6 acres came into my occupancy, adjoining the farm which had been cultivated for many years as Potato ground, until the old man, who had previously occupied it for 40 years, had got it into such a state that it produced a glorious crop of wild Marigolds, and very few Potatoes. It came into my possession at Michaelmas "foul as foul." I ploughed it up roughly, sowed Winter Vetch, with a sprinkling of Rye; the Vetch (or as we call it in the midland counties Winter Dill) came up vigorously, and so did the Rye, and so did the Marigolds, and so did all the other weeds, for they were "Legion." About the 20th of June, when the Vetches were coming in flower, and the Marigolds also, I put in the scythe, mowed all down, and, the weather being favourable, made a stack of excellent hay. The men said the cows would not eat it, on account of the bitterness of the Marigold, but they did eat it, and twisted it down merrily, Marigolds and all. As soon as the ground was cleared, I put in the scuffler, tore up every root of every kind, and cross scuffled, then forked out everything that the fork would catch, burned all, and scattered the ashes; ploughed again, sowed stone Turnip, a fair crop; fed off with sheep; ploughed and cleaned again; spread on the 6 acres two waggon loads of magnesian limestone [Qy. *lime*], from Breedon Hill, Leicestershire, and sowed with Barley; I reaped a crop of 8 quarters to the acre and no Marigolds, of any consequence, ever after appeared. I have a high opinion of the winter Vetch as an assistant to the farmer in cleaning foul land; but whatever the weed be, take the depth of summer heat to kill it; one hot day's summer's sun, if you will bring the roots to the surface, will do more for you than you could do in a month otherwise, and at any expense. The soil of this field was light, and the subsoil gravel; as regards cleaning land nothing is so effectual or so cheap as working it well under a hot sun. Magnesian lime is excellent manure moderately used, in excess it is utter destruction; the lias lime may be used on land almost *ad libitum*. *J. C. Mott, Liverpool, Sept.* 21.

## Societies.

ROYAL AGRICULTURAL OF IRELAND.—*Observations on Hay-making.*—The following is the paper read by Mr. BALL at the evening meeting of the above society on Thursday, the 4th inst.

Mr. BALL commenced his observations by stating that the points to be aimed at, in the saving of hay, were—1st, the getting it together for winter use, with all its nourishing saccharine juices in their greatest quantity and perfection; 2d, in preserving the hay in the greatest bulk, consistent with the above; and 3d, in saving it with the least possible cost to the cultivator.

*Time of Cutting.*—New Grass, or first year's crop, should be cut when the red Clover has two or three flowers full blown, and the Italian, or other Rye-grass, just beginning to show flower. Old meadows may stand with advantage till a later period of ripening—that is, till Cocksfoot, the Fescues, and other varieties, are in full flower. It frequently happens that persons, who have heard of the disadvantages of late cutting, fall into the opposite extreme, and lose seriously in the bulk of the crop. Late meadows and bottoms, which throw up but few seed stems, should be cut more with a view to the state of the undergrowth or foliage of the Grass—a matter of no small importance in meadows of this description.

*Treatment in the Field.*—The Grass being cut, should lie as

short a time as possible in swathe; never, unless absolutely prevented by rain, more than one night; still less should it be left, after being once shaken out, in that state all night, but should be wind-rowed, or put into small cocks each night, as much to give the ground the chance of being dried by the sun or wind, as to preserve the colour and sap of the hay itself. A hay-shaker is an excellent implement, and will do its work better than can possibly be performed in any other way.

Col. Hall here stated, that he found it much less expensive, and saved much time, to have the Grass well tedded and spread out at night; and, that in his judgment, the hay thus saved was no way deteriorated in quality, and he wished to have the opinion of more practical men on the subject. On the third or fourth day, under favourable circumstances, hay will be fit to be put together, in cocks of such a size as two men can make standing on the ground, and not on the cock; and in two or three days more may, with safety, be drawn into the rick. Except under very peculiar circumstances of weather and climate, hay should never be made into tramp cocks; but when it becomes necessary to do so, the very first opportunity of fine weather should be seized to draw it home, instead of leaving the hay, as is too often the case in Ireland, two and three months standing in the field—a system that cannot be too strongly reprobated, the loss resulting from tops and bottoms of cocks damaged, ground covered, the second crop destroyed in getting off the first, and the deterioration of the bulk, being fairly estimated at not less than 10 per cent.

*Management of the Rick.*—When hay is legitimately grown for sale, near large towns, and the custom of the market is, as in Dublin, to use it over-dried, with nearly all the nourishing juices extracted, we must only act accordingly, and leave it in tramp cock till it can be put together with little or no fermentation, until the consumers learn better their own interest and advantage. But when grown for home use, and more especially for cattle, hay is improved by taking what farmers call a good sweat in the rick, and a quarter of a hundred weight of common salt to the ton, distributed each course, in the making, will help to preserve the colour, and render it much more palatable and wholesome for all descriptions of cattle. Returning from a digression, he resumed his subject, by stating that the formation of chimneys in ricks was an excellent contrivance for letting off the steam rising from the heating hay, and checking excessive fermentation, when formed perpendicularly, and without lateral flues, calculated to create a draft of air through the rick—this being the most approved way of setting it on fire, if there was a tendency that way.—Mr. Goode then stated, in answer to the Earl of Clancarty, Sir R. Kane, and several other gentlemen, that in making the staddle for the hay-rick, flues both longitudinal and transverse, were formed; and from the point where these intersect each other, upright chimneys were made as the rick progressed in height, and, when those chimneys were sufficiently high, then the cradles were introduced horizontally over the tops of the chimneys—not transversely, but longitudinally—to take the tops of all the chimneys, so that a continual draught was maintained, by the introduction of cold air below, and the escape of the heated and moist air permitted above—which, as far as his experience went, prevented all danger from the rick firing.—Mr. Ball then went on to observe that the body of the rick should be carried up long and square, and the roof short and flat, thereby saving expense in pitching to a great height, and also saving in the thatching. He strongly recommended every farmer to have a rick-cover—it would pay its own cost in one wet season. He stated that hay-barns, where there was a large establishment and a great deal of hay to save, were well worth erecting, particularly where the material could be had at home at first cost from the thinnings of plantations, &c. Mr. Ball concluded his observations by saying that, although it was no part of his subject, the management of hay in consumption was a point upon which there was great room for improvement, and much need of practical instruction, and he trusted the attention of the society might be turned to the subject in the course of the ensuing winter.

## Notices of Books.

*A Practical Guide to the Breaking and Training of the Young Horse.* By Corporal-Major Robert Turner, Assistant Riding Master, Royal Horse Guards. Park, Furnivall, and Parker, Whitehall.

A pamphlet, full of detailed and condensed information on its subject; giving the results of a lengthened experience. The work refers to the horse's "appointments," and the principles of training; and it gives in detail the 12 lessons which are supposed to furnish the education required by the animal. It also refers to the defects and infirmities to which the horse is liable. It is tersely written by a practical man, and is not by any means a case of book-*making*.

METEOROLOGICAL REPORT.—September.
(*Continued from p.* 606.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Sept. 16 | 7.30 a.m. | 30.43 | ... | |
| 18 | 10.20 p.m. | ... | 30.08 | Northerly. Moderate; bright starlight. |
| 19 | 7.10 a.m. | 30.03 | ... | N. Brisk. Fine and pleasant |
| | 11.50 p m | ... | 29.97 | day. |
| ‡ 20 | 1.40 a.m | ... | 29.77 | NNW. Gentle; fine sunny |
| | 7.30 a.m. | 29.99 | ... | day. Barometer steady. |
| | 10.30 p.m. | 29.99 | ... | |
| Sun. 21 | 8 a m | 29.99 | ... | Northerly. Moderate. Foggy |
| | 3 p.m. | 29.99 | ... | at sunrise; clear sunny day. |
| | 6.35 p.m. | ... | 29.97 | |
| ‡ 22 | 7.35 a.m. | ... | 29.97 | Northerly. Gentle. Bright |
| | 10.30 p.m | 30.00 | ... | sunny day; afternoon warm, but very hazy. Barometer rising steadily. |
| 23 | 11.15 a.m. | ... | 30.02 | A.M. S. Cloudy. Overcast with gentle rain, and foggy. |
| | 7.15 p.m. | 30.03 | ... | P.M. SW. Clear and fine; very heavy bank of fog along western horizon. |

‡ Continued from last report. Fine, pleasant, warm sunshiny weather, and the wind northerly, combined with a falling barometer, is so unusual an occurrence: about this time last year we had precisely the same coincidence, which was accounted for by the passage of a very tremendous hurricane over the Cape Verd Islands (Sept. 3d, 1850), from east to west, which drew in the air from the poles towards the equator, but with an intense degree of cold not experienced on this occasion. This storm must therefore have lain a long way off to the northward, I imagine.

† This storm came from the south-west, and is crossing to the eastward over the north of England, or even of Scotland.

Dorchester [Sept. 25]. *F. P. B. M.*

*(To be continued.)*

## Miscellaneous.

*Liquid Manure Tank.* — To Mr. Richard Dobell, Leftwich, near Northwich, as tenant and occupier, for constructing the best tank, *3l.* Inspector's Report: The principal tank is 13 feet long, 6 feet wide, and 9 feet deep, inside measure. The bottom is of bricks set on edge; and the sides, ends, and top (which is arched), is also brickwork, of 9 inches thickness. There is a division inside, also of brickwork, and the whole is cemented. The compartment into which the urine first enters retains all sediment, which can be cleared out at any time. In the other division a pump is fixed, by which the liquid manure is loaded into a properly-constructed water-cart, and so conveyed to the land. From the tanks to the shippon and stable a tile drain is laid, on a brick bottom, with a grid and small cesspool in each building. Behind the house and piggeries, there is another tank for the purpose of receiving the wash and urine from those places. This is a circular one, 10 feet deep and 8 feet diameter. The sides and bottom are cemented brickwork, but the top is open. With the liquid collected from this tank, ammoniacal water from a neighbouring gas works is mixed in proportion of about one-sixth, and carted on the land. By these tanks, 6 to 8 acres of meadow land are kept in a very productive state. *From the Journal of the Manchester and Liverpool Agricultural Society.*

## Notices to Correspondents.

Books: *J H.* The one was noticed last week. The other is the work on agriculture, by Mr. Jackson, published by Chambers of Edinburgh.

Lime and Salt: *Salopian.* Slake 60 bushels of lime with water containing 3 cwt. of salt in solution, and let it lie in a heap for a month—that will be a dressing for an acre; or if you want the salt with only so much lime as will suffice to decompose it, add to 3 cwt. of salt about an equal quantity of lime, and let them be mixed together for some months before use.

Oilcake: *O C.* Give a broken cake or two—say 4 lbs. daily. Break it into small fragments, and place them in the manger. It will make the milk richer: but not better tasted.

Poultry.—The "Sebright Bantam": *R H.* We regret we cannot tell you where to procure this breed (Silver or Gold) perfectly "true." We have long and vainly tried to procure some *small* Sebright cock bantams for ourselves; as also some of the very small hens, but have never been able to succeed. Since the death of the worthy baronet, the breed has "gone back" fearfully. *W. K.*—The Roup in Fowls: *C W H.* In addition to what was recommended in this Paper last week, try small pellets of butter, soot, and chopped Rue. Give the infected birds two of these, morning and evening, and let them have the full range of a dust-heap; also let them scratch among the *débris* of an old wall. If these do not check the disorder, bring "the knife" into instant use. Keep those that are gradually recovering, from the rest; and let them be placed in a warm situation. *W. K.*

Potato Disease: *Navan.* The price of the pamphlet is one shilling. The address of the author was given in the review of his work.

Potatoes: *J M.* As many as 160 sacks have been grown per acre—that is about 17 tons per acre.

Rye and Winter Tares: *J B N.* They are the best things you can sow now for spring food We have had no experience of malt-dust as food for cattle.

## Markets.

COVENT GARDEN, Sept. 27.

Peaches and Nectarines remain nearly the same as last week; the best samples fetch fair prices, but the sale for inferior fruit is heavy. Pines and Grapes are abundant. A few West Indian Pines still make their appearance. Morello Cherries are now all but over. Good Plums are scarce, as are also Oranges and Lemons. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms (bushels) appear but slowly. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Moss and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 5s | Pears, dessert, p. doz., 2s to 4s |
| Grapes, hothouse, p. lb., 2s to 5s | Almonds, per peck, 6s |
| — Lisbon, per lb., 9d to 1s | — sweet, per lb., 2s to 3s |
| Peaches, per doz., 4s to 8s | Lemons, per doz., 1s to 2s |
| Nectarines, per doz., 4s to 8s | Oranges, per doz., 2s to 4s |
| Cherries, per lb., 6d to 2s | — per 100, 14s to 30s |
| Melons, each, 1s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Currants, p. hf. sieve, 4s to 5s | — Brazil, p, bsh., 12s to 14s |
| Plums, per punnet, 1s to 2s | Filberts, per 100lbs., 55s to 70s |
| Figs, per doz., 1s 6d to 3s | Walnuts, per bush., 12s to 24s |
| Apples, kitchen, p. bsh., 1s to 1s 6d | |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 3d to 1s | Leeks, per bunch, 1d to 2d |
| Cauliflowers, p. doz., 6d to 3s | Shallots, per lb., 3d to 6d |
| French Beans, per half sieve, 1s to 2s | Garlic, per lb., 4d to 6d |
| Beans, per sieve, 1s 6d to 2s | Artichokes, per doz., 1s to 2s |
| Peas, per sieve, 1s 9d to 3s 6d | Lettuce, Cab., p. score, 4d to 1s |
| Potatoes, per ton, 45s to 80s | — Cos, per score, 3d to 1s |
| — per cwt., 2s to 5s | Small Salads, p. punn., 2d to 3d |
| — per bush., 1s 6d to 2s 6d | Horse Radish, p. bundl., 1s 6d to 6s |
| Turnips, p. bunch, 2d to 4d | Red Beet, per doz., 1s to 2s |
| Cucumbers, each, 1d to 1s | Mushrooms, p. pot., 1s to 1s 6d |
| Radishes, per doz., 9d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 8d to 1s | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 6d to 1s | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

COAL MARKET.—Friday, Sept. 26.

Hartley, 14s. 9d.; Eden Main, 16s.; Wallsend Lambton, 16s. 3d.; Wallsend Stewarts, 16s. 6d.; Wallsend Tees, 16s. 6d. —Ships at market, 29.

HAY.—Per Load of 36 Trusses.
Smithfield, Sept. 25.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 55 65 | New do. ... ... ... | — — |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 23 28 |
| New Hay ... ... | — — | | J. Cooper. |

The trade very dull.

HOPS.—Friday, Sept. 26.

Messrs. Pattenden and Smith report that the market is well supplied with the new growth, which are selling freely at the following prices:

| | | | |
|---|---|---|---|
| Mid & East Kents | 160s to 252s | Sussex ... ... | 120s to 140s |
| Weald Kents ... | 130s to 160s | Yearlings & old Hops ... | — ... |

Duty 110,000*l.*

SMITHFIELD, Monday, Sept. 22.

The number of Beasts is again very large; the average quality is rather improved. Trade is very heavy, but prices are not much altered. Sheep and Lambs are plentiful; trade is worse, except for choice Downs. We have a large number of middling Calves at market, which make exceedingly low prices. A good one still makes 3s. 6d. There is an extraordinary arrival of foreign Pigs; they much interfere with the sale of second-rate meats. From Holland and Germany there are 1418 Beasts, 6290 Sheep, 176 Calves, and 562 Pigs; and 3000 Beasts from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Here- | | | | | Best Long-wools . | 3 | 4 | to 3 | 6 |
| fords, &c. ... | 3 | 4 | to 3 | 6 | Ditto Shorn ... | | ... | | |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ewes & 2d quality | 2 | 4 | — 3 | 0 |
| 2d quality Beasts | 2 | 4 | — 2 | 10 | Ditto Shorn ... | | ... | | |
| Best Downs and | | | | | Lambs ... ... | 3 | 8 | — 4 | 4 |
| Half-breds ... | 3 | 8 | — 4 | 0 | Calves ... ... | 2 | 0 | — 3 | 6 |
| Ditto Shorn ... | | ... | | | Pigs ... ... | 2 | 8 | — 3 | 8 |

Beasts, 5270; Sheep and Lambs, 32,120; Calves, 269; Pigs, 862.

Friday, Sept. 26.

We have a very large supply of inferior Beasts, and only a few purchasers, even at the low prices we quote. There being but few of the choicest kinds on offer, they are readily sold at late rates. The number of Sheep is by no means large, yet fully adequate to the demand. Monday's prices are with difficulty obtained. Trade is exceedingly heavy for Calves; 3s. 6d. is an extreme quotation; only a few of the choicest reach it. From Germany and Holland we have 670 Beasts, 2370 Sheep, 315 Calves, and 104 Pigs; 300 Beasts from the northern and midland, and 95 milch cows from the home counties.

| Best Scots, Here- | | | | | Best Long-wools . | 3 | 4 | — 3 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| fords, &c. ... | 3 | 4 | to 3 | 6 | Ditto Shorn ... | | ... | | |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ewes & 2d quality | 2 | 4 | — 3 | 0 |
| 2d quality Beasts | 2 | 0 | — 2 | 8 | Ditto Shorn ... | | ... | | |
| Best Downs and | | | | | Lambs ... ... | 4 | 0 | — 4 | 6 |
| Half-breds ... | 3 | 8 | — 4 | 0 | Calves ... ... | 2 | 0 | — 3 | 6 |
| Ditto Shorn ... | | ... | | | Pigs ... ... | 3 | 0 | — 4 | 0 |

Beasts, 1231; Sheep and Lambs, 6,940; Calves, 542; Pigs, 405.

MARK LANE.

Monday, Sept. 22.—The supply of Wheat from Essex to this morning's market was moderate, but good from Kent and the east coast. White must be written 1s. and red 2s. per qr. lower than this day se'nnight. The attendance being chiefly confined to the town millers, transactions in foreign were too limited to admit of our altering quotations.—Fine malting Barley sells readily at last week's prices. Other descriptions are a slow sale and the turn cheaper.—Beans are 1s per qr. lower.—Peas being scarce, sell at an advance of 1s. per qr.—The Oat trade is dull, except for Russian qualities.—In Flour there is little doing.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 38—40 | | Red ..... | 35—38 | |
| — — fine selected runs...ditto | 40—42 | | Red ..... | 33—39 | |
| — — Talavera ..... | 44—46 | | | | |
| — Norfolk, Lincoln, & York...White | 32—34 | | Red ..... | — | |
| — Foreign ..... | 30—48 | | | | |
| Barley, grind. & distil., —s to —s...Chev. | 28—30 | | Malting . | 27—29 | |
| — Foreign... grinding and distilling | 20—24 | | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | 17—20 | | | | |
| — Scotch and Lincolnshire...Potato | 21—24 | | Feed..... | 19—21 | |
| — Irish .....Potato | 18—22 | | Feed..... | 18—20 | |
| — Foreign .....Poland and Brew | 18—22 | | Feed..... | 16—19 | |
| Rye ..... | 23—25 | | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25s to 27s.....Tick | 26—30 | | Harrow . | 26—30 | |
| — Pigeon.....26 — 32... Winds | 30—33 | | Longpod | 24—26 | |
| — Foreign .....Small | 21—29 | | Egyptian | 22—23 | |
| Peas, white, Essex and Kent.....Boiler- | 25—26 | | Suffolk... | 26—28 | |
| — Maple.....27s to 29s .....Grey | 22—25 | | Foreign . | 24—28 | |
| Maize .....White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 32—37 | | | | |
| — Suffolk .....ditto | 26—32 | | Norfolk . | 26—32 | |
| — Foreign .....per barrel | 17—21 | | Per sack | 27—33 | |

Arrivals in the Port of London last Week.

| | Wheat. | Barley. | Malt. | Oats. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Flour, 11034 sks | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. | Qrs. |
| — — brls | | | | | | |
| English ..... | 6565 | 1128 | 4965 | 485 | 805 | 492 |
| Irish..... | — | — | 37 | 1110 | — | — |
| Foreign ..... | 6145 | 4393 | — | 12226 | 1901 | — |

Friday, Sept. 26.—The arrivals of grain and Flour, particularly foreign, have been small this week. This morning's market was badly attended, and the demand for all articles limited. The value of Wheat, Barley, Beans, and Peas must be quoted nominally as on Monday.—The Oat trade is heavy, and new corn is 6d. per qr. cheaper.—Sales of barrel Flour have been effected to some extent at rather reduced rates.—A few cargoes of P. O. Wheat arrived on the coast have been sold at 29s. to 29s. 6d. per qr., including a large one for Antwerp, buyers paying the extra freight and insurance. Maize is inquired for at 26s., but held at 26s. 6d. per qr. f. o. b., including freight and insurance.

Arrivals this Week.

| | Wheat. | Barley. | Oats. | Flour. |
|---|---|---|---|---|
| | Qrs. | Qrs. | Qrs. | |
| English ... | 3010 | 1240 | 130 | 750 sacks |
| Irish ..... | — | — | *2420 | |
| Foreign ... | 1110 | — | 7950 | 2800 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Aug. 16..... | 41s 4d | 26s 4d | 21s 9d | 27s 0d | 30s 8d | 27s 2d |
| — 23 ..... | 39 10 | 26 8 | 21 11 | 27 1 | 31 2 | 25 11 |
| — 30..... | 39 1 | 25 10 | 20 8 | 26 9 | 30 7 | 26 6 |
| Sept. 6..... | 38 9 | 26 1 | 20 1 | 26 2 | 30 4 | 25 11 |
| — 13..... | 38 5 | 26 1 | 19 5 | 25 0 | 28 9 | 27 8 |
| — 20..... | 37 8 | 25 7 | 18 4 | 26 2 | 28 6 | 28 2 |
| Aggreg. Aver. | 39 2 | 26 1 | 20 4 | 26 4 | 30 0 | 26 11 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Aug. 16. | Aug. 23. | Aug. 30. | Sept. 6. | Sept. 13. | Sept. 20. |
|---|---|---|---|---|---|---|
| 41s 4d— | | ... | ... | ... | ... | ... |
| 39 10 | ... | | ... | ... | ... | ... |
| 39 1 | ... | ... | | ... | ... | ... |
| 38 9 | ... | ... | ... | | ... | ... |
| 38 5 | ... | ... | ... | ... | | ... |
| 37 8 | ... | ... | ... | ... | ... | |

Liverpool, Tuesday, Sept. 23.—Except a moderate quantity of Oats and a good supply of Oatmeal, the receipts into this port from Ireland since Tuesday last are small, and those coastwise trivial. At our Corn Exchange this morning no lively proceedings were observable in any department of the trade; importers of foreign Wheat, however, refusing to follow the decline in London yesterday, continued to require last Tuesday's rates, at which, and in partial cases at a slight abatement, sales upon a moderate scale were effected. Of farmers' new Wheat the supply was considerable, and, the quality and condition being excellent, it was taken rather freely at our quotations. Barley, Beans, and Peas were taken very sparingly at former rates. In Malt, no change was apparent. Oats were the turn cheaper, and Oatmeal declined 1s. 6d. per load. We had a moderate demand for Indian Corn on the spot, at full prices. Friday, Sept. 19.—Having a tolerable number of home and country millers at our market this morning, good descriptions of foreign Wheat were held rather firmly by importers, and a fair amount of business was transacted, but our local buyers being inactive, no advance was obtainable. Barley, Malt, Beans, and Peas were difficult of sale, and each slightly depressed in value. Oats receded 1d. per 45 lbs., and Oatmeal 6d. per load, with a limited demand. Good samples of Indian Corn were 6d. per qr. dearer to-day, and several more floating cargoes changed hands.

GLASS. GLASS.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREEN-HOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ¼th inch thick. | 3-16th inch thick. | ⅛ inch thick. |
|---|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— | | | |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... ... | s. d. | s. d. | s. d. |
| Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— | | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7½ | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... ... | | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

6 by 4 in. and 6½ by 4½ in., 12*s.* per box; 7 by 5 in. and 7½ by 5½ in. 13*s.* 6*d.* do.; 8 by 6 in. and 8½ by 6½ in. 15*s.* do.; 9 by 7 in., 9½ by 7½ in., and 10 by 8 in., 16*s.* 6*d.*

*N.B.—The Patent Rough Plate, one-eighth of an inch thick, is supplied in quantities 62 by 16 inches, for 10 feet span ridge and furrow roofs, at a reduced price.*

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*ths*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS.

## THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 inches by 4 | and | 6½ by 4½ | ... | ... | ... | 13*s.* 0*d.* |
| 7 ,, | 5 | and | 7½ by 5½ | ... | ... | 15 0 |
| 8 ,, | 5 | and | 8 by 5½ | ... | ... | 15 0 |
| 8 ,, | 6 | and | 8½ by 6½ | ... | ... | 17 6 |
| 9 ,, | 7 | and | 10 by 8 | ... | ... | 20 0 |
| 12 ,, | 10 | and | 13 by 9 | ... | ... | 20 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS FOR CONSERVATORIES, &c.

## HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

## GLASS FOR PIT FRAMES, HOTHOUSES, &c., in Boxes of 100 feet, 8*s.* 6*d.* each.

4½ by 3 ... 5 by 2½ ... 6 by 2½ ... 6 by 3½ inches.
4½ by 3 ... 5 by 3 ... 6 by 3 ... 6½ by 3
4½ by 3½ ... 5½ by 3 ... 6½ by 3 ... 6½ by 3½

Larger Squares increase in price according to size. Every size kept ready packed in boxes, and may be had at a moment's notice.

Extra Crown, Sheet, and Patent Rough Plate Glass, cut to size for Conservatories, Greenhouses, &c.

Gardeners and others glazing on Mr. Paxton's plan can be supplied with Sash-bars of any length for the purpose.

PROPAGATING, CUCUMBER, FERN, PEACH, and every description of Garden Glasses.

Bailiffs, Farmers, Dairymen, and others supplied with Lord Camoy's Milk Syphons, Milk Lactometers, Glass Milk Pans, Glass Tiles, Slates, &c., for collections of which Messrs. COGAN and Co. were honoured with the Silver Medal of the Dublin Society, as also the Silver Medal of the Liverpool and Manchester Society held at Warrington in September last.

For Estimates, Prices, and further particulars, please address Messrs. COGAN and Co., 48, Leicester-square, London.

Glass Shades, Gas Glasses, White Lead, Colours, &c., as usual.

## WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLOR, Battersea, near London.

FARM AND COTTAGE PUMPS.



## PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

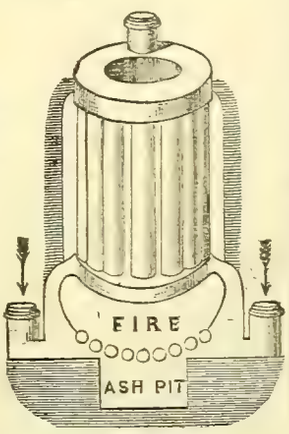
Patent Pump ... ... £1 16 0
Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0
Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

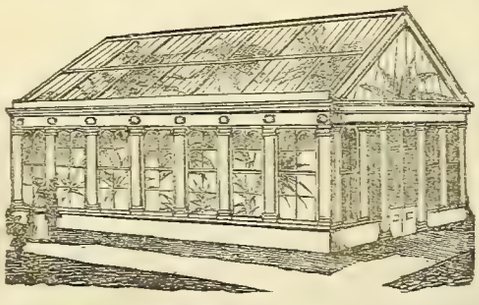



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL, ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## TO BE SOLD CHEAP, a GREENHOUSE, 20 feet by 12 feet; also a WARDIAN CASE, heated by hot water. Particulars to be had of H. COLES, Seedsman and Florist, 43, Cranbourne-street, Leicester-square, London.

H. C. begs to inform the nobility and gentry that he will forward upon application a List of Prices for Greenhouses, Vineries, and Forcing Pits, heated by hot water, at a great reduction in price.

TO NURSERYMEN, GENTLEMEN'S GARDENERS, &c.

## EDWARD KEMP respectfully intimates to those friends who have not yet laid in their stock of PEAT, LOAM, &c., that they ought not to delay, as the weather is now very favourable, and cannot be expected to last much longer. He is now getting in some of excellent quality, and respectfully solicits their early orders, addressed to E. KEMP, 15, Ann's-place, East-street, Old Kent-road, London.

N.B. Silver Sand, and all other Soils, as usual.

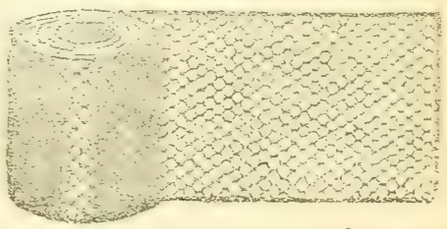
PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

## JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—1½ quarts, 17*s.* 6*d.*; 7 quarts, 25*s.* 6*d.*; 3 quarts, 13*s.* 6*d.* Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of th Dorking Fowls for the Table," price 1*s.* 6*d.*

WIRE NETTING ONE PENNY PER SQUARE FOOT.



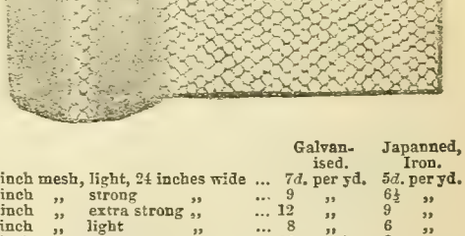
## GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 ,, ,, | 4½*d.* ,, | 36 ,, ,, | 9*d.* ,, |
| 14 ,, ,, | 6*d.* ,, | 48 ,, ,, | 1*s.* ,, |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

## GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | Galvanised. | Japanned, Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily from 12 to 6 o'clock, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by His Highness the Viceroy of Egypt. The Band of the First Life Guards will perform, by permission of Colonel Hall, at half-past 3 o'clock, on every Saturday, until further notice. Admission 1*s.* ON MONDAYS 6*d.*

NEW SHOW ROOMS FOR BEDSTEADS.

## HEAL AND SON have erected some extensive Warerooms for the purpose of keeping every description of Bedsteads. In Iron their stock will include every sort manufactured, from the cheap Stump, for servants' use, to the handsomely ornamented tubular-pillared Canopy, as well as Brass Bedsteads of every shape and pattern; and in wooden Bedsteads their Rooms are sufficiently extensive to allow them to fit up a variety, both in Polished Birch and Mahogany, of Fourpost, Canopy, and French, and also of Japanned Bedsteads—in fact, to keep in Stock every sort of Bedstead that is made; and they have also a general assortment of Furniture, Chintzes, Damasks, and Dimities, so as to render their Stock complete for the Furnishing of Bedsteads as well as Bedding. And without attempting to compete with the prices at which the lowest class of Furniture is sold, and which is fit for no useful purpose, their new Stock will be found to be priced on the same principle by which their Bedding trade has, during the last 30 years, been so successfully extended, and the goods, whether of a plain and simple pattern, or of a handsomer and more expensive character, are of well-seasoned materials, sound workmanship, and warranted.

HEAL and Son's list of Bedding, containing full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post, on application at their Factory,

196 (opposite the Chapel), Tottenham Court Road, London.

## *SALES BY AUCTION.*

FULHAM

TO MARKET GARDENERS, FARMERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Dawes lane, Walham-green, Fulham, on MONDAY, October 6, at 12 o'clock, by order of the proprietor, in consequence of the Land being wanted for other purposes, the whole of the STOCK of a MARKET GARDENER, comprising a large quantity of fine Rhubarb of best sorts, Cauliflower Seed, seven Store Pigs, five Sows and Pigs, 54 3-light Boxes and Lights, 400 Hand-glasses, a useful Black Cart-horse two capital Market Carts, Harness Chaff-box, Corn-bins, large Ware-tub, Iron Tank, Wash-butt on wheels, Wheelbarrows, 36-round Ladder, Water-cans, Baskets, Potato Punnets, and Garden Tools; also a large quantity of Manure, &c.—May be viewed prior to the sale, and Catalogues had, on the premises; of Mr. PRESTON, 2, Rupert-street, Haymarket; Mr. BOTHWICK, 547, New Oxford-street; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HAYES, MIDDLESEX.

TO GENTLEMEN, NURSERYMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS are directed by the Executors of the late Mr. W. Burdett to sell by Auction, on the premises the "Waggon and Horses," Hayes, Middlesex, about a mile from the Southall Station, on WEDNESDAY, October 8th, at 12 o'clock precisely, the whole of the stock of EVERGREENS, a large quantity of fine Standard ROSES, Gooseberry and Currant Trees, Herbaceous Plants, Box Edging, &c.; together with a 7 light Pit, Hand-glasses, seven Hives of Bees, Wheelbarrows, Carpenter's Bench and Tools, a capital 26-round Ladder, Tent Bedsteads, two Portmanteaus, sundry Harness, Baskets, Garden Pots, Tools, and other effects.—May be viewed, and Catalogues had, prior to the sale, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

ISLINGTON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS

MESSRS. PROTHEROE AND MORRIS are instructed, by Mr. G. Smith, to offer to public competition by Auction, on the premises, on MONDAY, October 13th, and three following days, in consequence of the Land being let for building, the whole of the valuable NURSERY STOCK, comprising several thousand scarlet, white, and Hybrid Rhododendrons, Ghent, and other Azaleas, variegated and green Hollies, of various sizes, in considerable quantities, several thousand Aucuba japonica, from 1 to 4 feet; a large quantity of fine Mulberries of different ages, many of which are fine bearing trees, &c. May be viewed prior to the sale.—Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT SALE OF NURSERY STOCK, GREENHOUSES, HOTHOUSES, &c., FAIRFIELD NURSERY, LONDON ROAD, LIVERPOOL.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Thomas Whalley, to sell by Auction without reserve, on TUESDAY, 21st October, and following days, in consequence of the Land being sold to a Building Company, the whole of the valuable NURSERY STOCK, comprising a large quantity of Evergreens, including a great number of Scarlet Hybrid Rhododendrons, very fine specimen plants, Ornamental Trees, Standard and Trained Fruit Trees, Standard and Dwarf Roses, Hothouse and Greenhouse Plants, &c.; also a quantity of well-shaped Beech Hedges, 8 to 10 feet high, which will move with safety; together with large Thorn, Box, Privet, and other Hedges of various sizes. This stock is well worthy the attention of gentlemen or public bodies, intending to plant this season, as it is well grown and in fine condition. Arrangements may be made to leave the purchases on the ground, free of expense, for some time, to suit the convenience of those who may not wish to plant immediately. There is a large Conservatory, three Hothouses, a 9-light Brick Pit, with Flue, &c.; also a quantity of Frames, hand-glasses, &c., full particulars of which will be given in the Catalogue, which may be had on the 6th October, free, by post, on receipt of six postage stamps; at the Nursery; or at the Seed-shop, 14, St George's-crescent, Liverpool; also of the Auctioneers, Leytonstone, Essex. The whole may be viewed any day, except Sunday, from 8 A.M. to 6 P.M.—N.B. The "Old Swan" omnibuses pass the Nursery every half hour.

THE COLLECTION OF RARE AND VALUABLE ORCHIDACEOUS PLANTS AT KNOWSLEY, THE PROPERTY OF THE LATE RIGHT HON THE EARL OF DERBY, K.G.

MR. J. C. STEVENS is honoured with instructions to Sell by Auction, in the Gardens at Knowsley, about six miles from Liverpool, on SATURDAY, 4th October, at 12 o'clock precisely, the Rare and Choice COLLECTION OF ORCHIDS, including most of the popular East Indian, South American, Mexican, and African varieties. The Plants are all well established and in fine health, and may be viewed the day before the Sale, by applying to Mr. JOHN JENNINGS, at the Gardens, Knowsley; and Catalogues had there and of Mr. J. C. STEVENS, 38, King-street, Covent Garden, London. The Huyton Station on the Liverpool and Manchester Railway is about two miles from Knowsley.

TO ZOOLOGISTS.—KNOWSLEY PARK, NEAR LIVERPOOL.—NOTICE OF SALE, BY AUCTION, OF THE RENOWNED MENAGERIE AND AVIARY, FORMED BY THE LATE RIGHT HON. THE EARL OF DERBY, K.G., PRESIDENT OF THE ZOOLOGICAL SOCIETY OF LONDON.

MR. J. C. STEVENS is honoured with instructions from the Executors of the late Noble Earl, to sell by public Auction, on the premises, Knowsley, 6 miles from Liverpool, on MONDAY, October 6, and many following days, the whole of the LIVE ANIMALS AND BIRDS contained in the KNOWSLEY MENAGERIE, excepting only the five Eland Antelopes, selected by the Zoological Society of London, and one specimen, or series, to be selected by her Majesty, in pursuance of a desire expressed by the late Earl. This collection is admitted by Zoologists to be the finest extant; it numbers upwards of 1600 examples, including an unique collection of the rarest Antelopes, Deer, Indian Cattle, Zebras, Llamas, Alpacas, &c., which are particularly deserving the attention of Noblemen and Gentlemen, as ornamental specimens for the Park.—May be viewed, by Catalogues (price 5s. each), to admit one person, only, to the view, on Monday, the 29th inst., or either of the five following days; these may be had by persons intending to purchase, at the Office, Knowsley Hall; and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

NEAR MANCHESTER.

IMPORTANT SALE OF A GENERAL NURSERY STOCK

MESSRS. W. D. FULLALOVE AND BROTHER have received instructions from Mr. T. D. Watkinson, to submit to public competition next THURSDAY and FRIDAY, October 2d and 3d, on the premises, Edge-lane, Stretford, in consequence of the greater portion of his land being sold for building upon, his truly valuable NURSERY STOCK.—Catalogues may be had on application to the Auctioneers, King-street, Manchester.


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MR. J. RAWLINGS has received instructions from Mr. Wm. Siggers to submit to public competition, by Auction, on the premises, as above, on MONDAY, October 6, and following days, at 11 o'clock each day (in consequence of the Lease having expired), the whole of the valuable NURSERY STOCK, consisting of many thousands very fine Aucuba japonica, Laurel, Laurustinus, Yew, Arbor Vitæ, Holly, &c.; Fruit and Forest Trees, American Plants; Standard, Dwarf, and Pillar Roses; Irish Ivy, some very large Camellias and Scarlet Rhododendrons in pots, &c. Also a handsome Chesnut Mare, a capital light Spring Van, with top complete and other effects.—May be viewed prior to the Sale Catalogues (6d. each, returnable to purchasers) may be had on the premises; of the principal Seedsmen; and of the Auctioneer, 50, Hoxton-square; and Ebenezer Nursery, Shacklewell, London.

N.B. The whole of the Greenhouse Plants, Greenhouses, Utensils in Trade, &c., will shortly be submitted to public competition, of which due notice will be given.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40—1851.] SATURDAY, OCTOBER 4. [PRICE 6d.


INDEX.


| | | | |
|---|---|---|---|
| Agriculture in South Australia | 635 a | Highland Society | 635 b |
| Agricultural chemistry | 627 b | Hollyhocks, select | 631 c |
| Blaine's Canine Pathology, rev. | 637 c | Kitchen garden, to crop | 629 c |
| Birds, British song | 629 a | Liebig's mineral theory | 627 b |
| Biscuit, meat | 629 c | Manure manufacture of | 637 a |
| Caledonian Hort. Society | 639 b | Meat biscuit | 629 c |
| Calendar, Horticultural | 641 c | Mildew, Vine | 628 b |
| — Agricultural | 638 a | Milk—quantity a cow should give in a year | 638 a |
| Chemistry, agricultural | 627 b | Paulownia imperialis | 630 a |
| Chicory | 636 c | Pulsaise stove | 628 a |
| Conifers at Bayfordbury | 630 a | Potatoes and beer | 636 c |
| Corn trade | 633 b | Potato disease | 629 c |
| Crystal Palace, farm produce in | 637 a | Potato crop | 634 b |
| Dahlia showing | 631 a | Pruning forest trees | 630 a |
| Drainage | 636 a | Ribston Pippin Apple | 629 c |
| Farm produce in the Crystal Palace | 634 a | Rooks, habits of | 629 c |
| Forest trees, to prune | 630 a | Tomato sauce | 632 a |
| Fruit rooms | 627 a | Trees, forest, to prune | 630 a |
| Fuchsia princeps | 629 c | Turnip culture | 635 b |
| Grape mildew | 628 b | Vine mildew | 628 b |
| | | Weather, the | 638 a |



RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.
WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

ROSE NURSERIES, HERTFORD.
E. P. FRANCIS'S New Descriptive Catalogue of ROSES for the ensuing season is now ready for delivery, and will be forwarded gratis upon application.

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N.B. Each of these Roses has obtained a 1st Class Certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.
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| Turner, Slough. | Wood, The Coppice, Nottingham. |

Edinburgh, Oct. 4.

PINE PLANTS FOR SALE.—The different varieties of BLACKS and QUEENS, warranted clean and well rooted.—Apply to W. DAVIES, Starch Green, Hammersmith, near London.

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J. WEEKS AND Co., King's-road, Chelsea, have just received from their collector a small *sweet scented* Melon, of exquisite beauty, and most delicious flavour, which they purpose calling the ROYAL VICTORIA. Also a very splendid large Melon named the ROYAL ALBERT, which for size, weight, and flavour, cannot be surpassed. Packets of these unique Melons can be supplied at 2s. 6d. each, free by post.

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With every other variety in cultivation. Can be had at J. G. WAITE'S Seed Establishment, 181, High Holborn.

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J. G. WAITE has yet on hand a large quantity which he will supply on better terms than any house in the Trade.
Catalogues to be had on application—181, High Holborn.

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Also, a CATALOGUE of FRUITS, with full descriptions, and many hints for their culture, for four postage stamps.
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CROCUS, DUTCH, mixed all colours, 10s. per 1000.
The above (*which can be confidently recommended*) and every other kind of Bulb, may be had of WILLIAM DENYER, Seedsman, &c., 82, Gracechurch-street, London, near the Spread Eagle. A descriptive priced Catalogue may be had on application.

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TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET (TRUE).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season, by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful Double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the Double Blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets, the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.
E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen, or 1l. per 100. Any quantity of the above will be sent postage and package free.

STRAWBERRY PLANTS.
The undermentioned first-rate varieties are now ready to send out:—
Myatt's Surprise, sent out first time last season, 1l. per 100, or 3s per dozen.
Prince Arthur, do. do, 1l. per 100, or 3s. per dozen.
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Goliah, very fine ... ... ... ... 3s. per 100.
British Queen, do. ... ... ... 5s. ,,
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Black Prince, very early ... ... 5s. ,,
Prolific, very fine and early ... ... 5s. ,,
Cremont's Perpetual, or double-bearing Strawberry, 12s. per dozen, or 4l. per 100.
Trollop's Victoria, 12s. per dozen, or 4l. per 100.
The above are strong and well-rooted plants, such as will insure satisfaction. Any of the Strawberries that are priced, per dozen, can be sent free by post; also those priced, per 100, will be sent package free.
Fine Giant Scarlet Brompton Stocks, Plants that have been all pricked out, 2s. 6d. per 100.
Also, some fine Antirrhinums, all saved from striped and spotted varieties, such as will give every satisfaction, and bloom early next spring, 5s. per 100.
Fine Sweet Williams, such as will bloom next season, saved from 50 distinct varieties (the plants are strong and good), 5s. per 100, or 1s. per dozen. Can be sent by post with any of the above.

WINTER CUCUMBER.
Lord Keynon's Favourite, the best variety for winter cultivation, 2s. 6d. per packet.
A remittance is expected by Post-office order, or the amount in penny postage stamps.
EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

## FANCY PELARGONIUMS.—SEEDLINGS OF 1850.

W. P. AYRES begs to announce to his Friends and the public that, on and after the 20th proximo, he proposes to send out the following SEEDLING FANCY PELARGONIUMS, which he flatters himself will be found distinct and very good.

To test their worth, he is willing to show six of them against any six sent out this autumn, by one person, for 10 guineas, or he will take 10 guineas to five, and allow six to be selected from all the Seedlings to be sent out this season. This challenge to stand open until January, 1852.

W. P. A. also wishes to intimate that, at the Metropolitan exhibitions in June and July, 1852 (due particulars of which will be announced), he proposes to give for the best six Plants selected from the following list, and grown in 6-inch pots,

TWO SILVER CUPS, VALUE FIVE GUINEAS EACH;

the person who obtains the CUP in June not to be eligible to compete in July.

The Plants marked thus * will not, in consequence of the large demand, be ready to send out until April, 1852; but all orders received previous to that time will be executed in strict priority.

⁂* Every purchaser of PELARGONIUMS to the amount of one guinea will receive gratis a copy of the "Fancy Pelargonium; its Origin and Culture" (beautifully illustrated). By W. P. AYRES, C.M.H.S., &c.

*1. ADVANCER.—This variety, to adopt the language of a floricultural critic, "is worthy of its name," and may be described as the finest formed Pelargonium yet raised, the outline being perfectly circular, and the petals of great width and good substance. In colour the upper petals are rich purple mulberry, with a slight light margin; lower petals blush, pencilled with purplish crimson, and a distinct white eye. It is a plant of fine habit and strong constitution, and must become one of the most important show varieties. It obtained a second prize at the Seedling trial Exhibition at the Royal Botanic Society in June, and a First Class Certificate from the National Floricultural Society the following day. 1*l.* 11*s.* 6*d.*

2. ALBONII SUPERB.—A decided improvement upon Albonii, the colour being richer and better defined, the white purer, the flower superior in form, equally profuse, and the plant constitutionally strong. The upper petals are rich crimson purple, with a well-defined margin of white; lower petals white, faintly pencilled with crimson; truss large, and well above the foliage ... ... ... ... ... 10*s.* 6*d.*

*3. BRUNETTE.—A dwarf distinct plant, with remarkably glossy foliage, and produces flowers in such abundance, as, in the early part of the season, and until the plant gets strong, to render it necessary to thin some of the flower trusses out to allow the others to develope themselves. Upper petals, rich brownish chocolate, belted with flesh-colour; lower petals, deep flesh-colour, veined with rich maroon; light centre, and a finely formed and cupped flower of considerable substance. Truss large, and well above the foliage ... ... 10*s.* 6*d.*

4. CALIBAN.—This fine flower is figured in the "Gardeners' Magazine of Botany," vol. 2, p. 137. It is of great substance, and is nearly perfect in form, the flower being very circular and nicely cupped. The upper petals are rich plum colour, with a broad belt of white; lower petals white, spotted and slightly clouded with rich mulberry. The truss is large, and stands well above the foliage. In habit the plant is strong and robust; the foliage clean, and the flowers are constant and produced with great freedom. It obtained an equal second prize with "Richard Cobden," at the trial exhibition of seedlings in the Royal Botanic Garden, in June, 1851, and a certificate from the National Floricultural Society in the same month ... ... ... ... ... ... ... ... 1*l.* 1*s.*

5. CELESTIAL.—This is a plant of remarkably strong habit, and produces in great profusion large trusses of very clean rosy crimson flowers. It is a very late variety, and will be found suitable for late exhibitions. The upper petals are rich rosy crimson, slightly pencilled with pale lilac towards the centre, and margined with white, lower petals veined with rosy purple. A flower of good form, great freedom of growth, and will become a general favourite ... ... ... 1*l.* 1*s.*

*6. CONSPICUUM.—This is perhaps one of the brightest and most distinct varieties in cultivation, producing with remarkable freedom rich masses of rosy crimson flowers distinctly suffused with purple; the lower petals have a belt of crimson purple, and the whole flower has a broad and distinct margin of clear white. It is a plant of excellent habit and produces flowers with great freedom, the flowers hanging on until quite dried up. For decorative purposes it will be found quite worthy of its name, and also a first-rate plant for exhibition ... ... ... ... ... ... ... 1*l.* 1*s.*

7. ELECTRA.—A crimson purple flower of great smoothness, the petals being margined with white and shaded with lilac. Habit strong and robust, and produces flowers with great freedom ... ... ... ... ... ... ... 7*s.* 6*d.*

8. FORMOSISSIMUM.—The leading flower of the season, the same plant having in 1850 and 1851, obtained five first-class prizes, viz.:—in June 1850, a certificate at the Royal Botanic Society, and a certificate at the Royal South London Floricultural Society in the same month. In 1851, a first-class certificate at the National Floricultural Society in May; a certificate at the Royal Botanic Society in the same month, and the first prize in its class at the seedling trial exhibition at the Royal Botanic Society in June. It is figured with No. 3 in the "Gardeners' Magazine of Botany," and also in the "Florists' Guide." It is a plant of compact and luxuriant habit, producing throughout the season a regular succession of very fine flowers. The upper petals are rich crimson suffused with violet, and distinctly and broadly margined with clear white; lower petals white, belted with rosy crimson. It is a flower of large size, fine substance, and first-rate form, and being very constant, may be depended upon at all times. Truss large and well above the foliage. ... ... ... 1*l.* 11*s.* 6*d.*

9. GIPSEY QUEEN.—Though not quite perfect in form, this is a constant and very showy variety, being in every respect superior to "Hero of Surrey," with clearer colour and larger trusses. The habit is good and strong, the flowers very constant, and are produced in great profusion. Upper petals rich plum colour shaded with mulberry, and light lilac margin; lower petals white, spotted and pencilled with purple. Obtained the third prize in the same class with "Caliban," at the seedling trial exhibition at the Royal Botanic Society in June, and a certificate at the National Floricultural Society in the same month. Will be found excellently adapted both for exhibition and home decoration. ... ... ... 1*l.* 1*s.*

*10. KENTISH BEAUTY.—A brilliant scarlet crimson flower suffused with rich violet; lower petals delicate flesh colour, spotted with crimson and margined with lilac. This is a rich and very brilliant flower, perhaps the brightest colour yet to be sent out. The habit is good and the flowers are produced in great profusion, but in the early part of the season; sometimes they do not open freely, especially upon weak plants; therefore remove the flowers to gain strength, and thin a few trusses out occasionally. It is a flower of good form, and doubtless the most brilliant of its class ... ... 1*l.* 1*s.*

11. MIRANDA.—The ground colour of this remarkable variety is delicate rosy salmon, pencilled with lilac, and shaded towards the margin; lower petals a little lighter, and slightly pencilled. The habit of the plant is good and free; flowers clear above the foliage, fine form, good substance, very constant and very distinct. Obtained the second and *only* prize at the seedling trial exhibition at the Royal Botanic Society in June, beating upwards of a dozen varieties, and received a certificate at the National Floricultural Society in the same month ... ... ... ... ... ... 1*l.* 1*s.*

*12. PAINTED PET.—A plant worthy of its name, but, like many other pets, rather more delicate in constitution than is desirable. It is figured in the "Gardeners' Magazine of Botany" with Nos. 3 and 7, and is perhaps the prettiest and most distinct flower of any that I have raised. The upper petals are purplish crimson, shaded with violet and margined with white; lower petals spotted with violet purple, which, late in the season, has quite a blue tinge. The singular satiny texture of this flower gives it a peculiar charm. Flowers of good form and substance, and are very profusely produced, but the habit is slight, and the constitution delicate. As the stock is limited, early orders only will secure plants ... 1*l.* 5*s.*

13. SAMBO.—A plant remarkable for the great profusion with which it produces flowers, from 50 to 60 fully-expanded flowers having several times in the season been counted in a space 9 inches square. The ground-colour is rich purplish crimson, the upper petals being nearly black and of a rich velvety texture. The plant is of good habit and free growth, and will be found an excellent variety for bedding or for the greenhouse stage ... ... ... ... ... 7*s.* 6*d.*

⁂ For every set ordered, a plant of one of the Guinea kinds will be given over.

W. P. A. has also much pleasure in intimating that he has a stock of nearly 5000 plants of the leading named Fancy Pelargoniums, all in vigorous health, and that he can supply strong established plants at from 12*s.* to 100*s.* per dozen—the selection being left to himself.

His Descriptive Catalogue of Seedlings, with cultural hints, is now ready, and will be forwarded upon prepaid application.

Brooklands Nursery, Blackheath, Kent, October 4th, 1851.

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SEED TRADE.

J. G. WAITE begs to inform the Trade generally that he has the largest and best STOCK of SEEDS in the kingdom, which will enable him to supply his friends on better terms than any other house in the trade. Prices to be had on application at the Seed Establishment, 181, High Holborn.

---

NEW PEAS, &c.—EARLY PARAGON, EARLY WONDER, AND CONQUEROR.

FAIRBEARD'S WILL WATCH, fine large Wrinkle Marrow, 4 feet, the best of its class.

NE PLUS ULTRA. Blue Pods.

WAITE'S KING OF MARROWS.

HAIRS' DWARF BLUE MARROW, the best dwarf Wrinkle Pea grown.

And many others will appear in the list of Prices.

FAIRBEARD'S NEW EARLY DWARF PROLIFIC LONG-POD BEANS.

The above to be had at J. G. WAITE'S Seed Establishment, 181, High Holborn.

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RED LODGE NURSERY GROUNDS, North Stoneham; SEED WAREHOUSE and FLORICULTURAL GARDENS, No. 181, High-street, near the Bar Gate, Southampton.

W. ROGERS, SEN., NURSERYMAN and CONTRACTING PLANTER, begs to inform the Public and those interested in Planting that he intends selling at very reduced prices, the fine Stock of FRUIT, FOREST, ORNAMENTAL TREES and SHRUBS (extending over 60 acres of land) in the forthcoming planting season, priced catalogues of which may be had, wherein will be enumerated all the newly-introduced hardy CALIFORNIAN and CHINESE SHRUBS, CONIFERÆ, RHODODENDRONS, and ROSES, which are added to the stock and cultivated as soon as they appear, it being his determination that these old-established nursery grounds shall continue to merit the patronage of the nobility and gentry so liberally conferred upon him for the last 40 years.

A Gardeners' and Land Stewards' Registry is kept at his office in the town, where men of experience and ability may be always obtained.

The following will be found particularly fine, and in great abundance:—Larch (Scotch), Spruce, Pineaster, and Sea Pine, Fir, Hazel, Oak Quicksets, Mahonia (for cover), and Rhododendrons of all sizes, from 4 inches, 40*s.* per 1000, to 2, 3, and 4 feet, 10*s.* to 30*s.* and 40*s.* per 100; Abies Douglassii, 2 feet, 30*s.* per dozen, and 2 to 3 inches, 5*l.* per 100, or 18*s.* per dozen. Double Camellias, 12*s.* per dozen; Single Camellias, fit for working, 30*s.* to 40*s.* per 100; Dwarf Boursault Rose stocks strong), 6*s.* per 100.

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SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

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DUTCH HYACINTHS, per doz., 6*s.* to 12*s.*

Or an assortment of three dozen, best sorts, for 16*s.* 6*d.*

| | | |
|---|---|---|
| Double Roman Narcissus ... ... ... per doz. | 3 | 0 |
| Double and Single Van Thol Tulips ... ,, | 1 | 0 |
| Mixed Tulips ... ... ... ... ... ,, 1*s.* to | 6 | 0 |
| Jonquils ... ... ... ... ... ... ,, | 2 | 0 |
| Crocus, in variety ... ... ... ... per hundred | 2 | 0 |

*And other roots, of which lists may be had free.*

ROBERT HALL begs to advise the arrival of his annual importation of BULBS, in high perfection, especially drawing attention to the double Roman Narcissus, which for early blooming and fragrance is not surpassed.

Also to the following items of Foreign produce, of his own importation, and choice quality, viz.:—

| | *s.* | *d.* |
|---|---|---|
| French Liqueur Ginger Brandy, an excellent Stomachique, Anti-Cholera, and invaluable in Spasms, per bottle ... | 5 | 0 |
| Curaçao and Maraschino, per bottle ... ... ... | 14 | 0 |
| French Liqueurs, per bottle ... ... ... ... | 14 | 0 |
| Milk Punch, per dozen ... ... ... ... ... | 42 | 0 |
| Old Pale Brandy, per dozen ... ... ... ... | 60 | 0 |
| Genuine Dantzic Spruce, per bottle ... ... ... | 2 | 6 |
| Old Cordial Gin, per gallon ... ... ... ... | 13 | 0 |
| Old Jamaica Rum, per gallon ... ... ... ... | 18 | 0 |
| Pale Brandy, "old in bottle," per bottle ... ... | 6 | 0 |
| Farantosh Whisky, per gallon ... ... ... ... | 21 | 0 |
| Batavia Arrack, 15 years in bottle, per bottle ... | 10 | 0 |
| Kershenwasser, per bottle ... ... ... ... | 10 | 6 |
| Sardines à l'huile, per case ... ... ... ... | 2 | 0 |
| Gorgona Anchovies, bottled abroad, per bottle ... | 2 | 0 |
| Honeycomb Parmasan Cheese, per lb. ... ... | 2 | 0 |
| New Gruyere Cheese, per lb. ... ... ... ... | 1 | 8 |
| Naples Maccaroni, per lb. ... ... ... ... | 0 | 10 |

ROBERT HALL, 63, South Audley-street, Grosvenor-square.

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ROSES! ROSES!! ROSES!!!

ARCHIBALD GODWIN respectfully informs his Rose-loving friends, that his ANNUAL ROSE CIRCULAR FOR 1851 AND 1852, comprising the finest selections known, will shortly be ready for distribution, on receipt of one postage stamp in exchange.—The Nurseries, Ashborne, Derbyshire.

---

DUTCH BULBS! WHAT CLARKE AND CO. GIVE FOR 10*s.*—The Undersigned, having Imported a very choice assortment of Dutch and other Bulbs, embrace the opportunity of submitting to the notice of the Public in general the following collection at the above price, for Flowering in the winter and early spring. Half a dozen best Hyacinths for Glasses (various), half a dozen good Hyacinths for pots, 50 Crocuses, four separate colours, 50 Double Snowdrops, half a dozen Double Van Thol Tulips, half a dozen Early Van Thol Tulips, 1 dozen Double White Sweet-scented Narcissus, half a dozen Double Jonquils, 1 dozen Winter Aconites, 25 splendid Mixed Tulips, 1 dozen beautiful Mixed Double Anemones.

CLARKE and Co., Seedsmen, &c., 86, High-street, Borough, about 30 doors from London-bridge Railway Terminus.

⁂ The cash will be returned if the bulbs are not approved of

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | Packed in Boxes of 100 feet each. | *£. s. d.* |
|---|---|---|
| 16 ozs.... ... 3*d.* to 3½*d.* | 6 by 4, 6½ by 4½ ... | 0 13 0 |
| 21 do. ... ... 3½*d.* to 5*d.* | 7 by 5, 7½ by 5½ ... | 0 15 0 |
| 26 do. ... ... 5*d.* to 7½*d.* | 8 by 5, 8 by 5½ ... | 0 16 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2¾*d.* per foot. | 8 by 6, 8½ by 6 ... | 0 17 6 |
| | 9 by 7, 10 by 8 ... | 1 0 0 |

Foreign Sheet Glass, in cases of 200 feet, and in sizes from 40 by 30, to 44 by 32. 2*l.* per case.

Milk Pans, from 2*s.* to 6*s.* each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes.—Inches. | Inches. | Per foot. | Per 100 feet. |
|---|---|---|---|
| Under 6 by 4 | at | 1½*d.* | is £0 12 6 |
| From 6 by 4 ,, | 7 ,, 5 ,, | 2*d.* | ,, 0 16 8 |
| 7 ,, 5 ,, | 8 ,, 6 ,, | 2½*d.* | ,, 0 18 9 |
| 8 ,, 6 ,, | 10 ,, 8 ,, | 3½*d.* | ,, 1 0 10 |
| 10 ,, 8 ,, | 12 ,, 9 ,, | 2¾*d.* | ,, 1 2 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3¾*d.* to 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

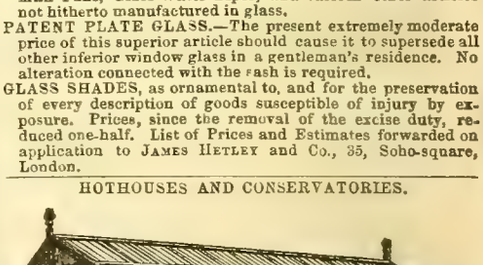
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental as, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

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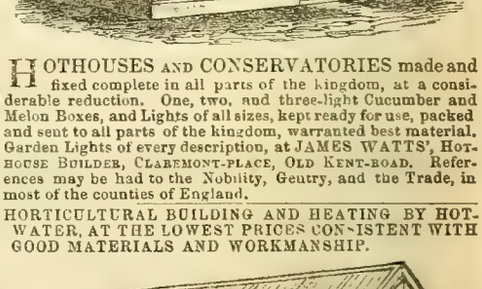
HOTHOUSES AND CONSERVATORIES.



HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the kingdom, warranted best material. Garden Lights of every description, at JAMES WATTS', HOTHOUSE BUILDER, CLAREMONT-PLACE, OLD KENT-ROAD. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

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HORTICULTURAL BUILDING AND HEATING BY HOT-WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GOLIATH STRAWBERRY.—A Post-office order for 5s. will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4l. per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lyncombe Vale Nursery Bath.

DUTCH HYACINTHS for Forcing, 3s. 6d. per dozen; Best do., for Glasses, 6d. to 1s. each. Double Roman and Paper-white Narcissus, 4s. per dozen; Single and Double Due Van Thol Tulips, 2s. per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

SUPERB NEW PEA, "THE NOVEMBER PROLIFIC," supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2s. 6d. per quart; to be had from W. HAMILTON, Seedsman, &c., 136, Cheapside, London.

☞ A liberal discount to the Trade.

WHOMES' Descriptive Catalogue of his NEW PELARGONIUMS may be had on application.
Royal Pelargonium Nursery, Windsor. Oct. 4.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.
Seed and Horticultural Establishment, Sudbury, Suffolk.

VICTORIA REGIA.

J. WEEKS AND Co., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

EARLY CABBAGE.—Stout Bedded Plants of superior true sorts, 4s. 6d. per 1000, package included, delivered free of carriage to the Edenbridge station of the South-Eastern Railway.—Address, JOHN CATTELL, Westerham, Kent. Cash or stamps must accompany orders from unknown correspondents.

FIRST CLASS GERANIUMS.—TWO GUINEA SET.

WILLIAM E. RENDLE, Plymouth, FLORIST to her MAJESTY, will supply Twelve of the following first-rate GERANIUMS for 2l. 2s., with a plant of Elliott's Surprise over.

RUNDLE'S BEAUTY OF MONTPELLIER; May Queen (Hoyle); Nectar Cup (Hoyle); Ajax (Hoyle); Rubiola (Hoyle); Isis (Hoyle); Flavia (Hoyle); Generalissimo (Hoyle); Gaiety (Foster); Corinne (Hoyle); General Jung Bahadour (Gaines); Lady Peel (Paley's, first time sending out); Candidate; Boule de feu; Village Maid; Cardinal (Hoyle); and Heartsease.

*Descriptions of* ELLIOT'S SURPRISE, *and* RUNDLE'S BEAUTY OF MONTPELLIER, *will be found in the* Gardeners' Chronicle, *Sept. 13th, page 578.*

| | s. | d. |
|---|---|---|
| Twelve excellent GERANIUMS ... ... ... | 12 | 0 |
| Twelve excellent Fancy do. ... ... ... | 20 | 0 |
| Twelve excellent Scarlet do. ... ... ... | 15 | 0 |
| Twelve excellent CINERARIAS ... ... ... | 10 | 0 |

*For names of the varieties, see page 578, Sept. 13.*

*All Orders above 2l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railway, or to Cork, Dublin, or Belfast. All Orders attended to in strict rotation.*

*A large Collection of BULBS has just arrived from Holland, which will be offered at very reduced prices.—Catalogues on application.*

Apply to WILLIAM E. RENDLE, Union Road, Plymouth, adjoining the Terminus of the South Devon Railway.

**The Gardeners' Chronicle.**
*SATURDAY, OCTOBER* 4, 1851.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Oct. 7—Horticultural ..... 3 P.M.
THURSDAY, — 9—National Floricultural ..... 2 P.M.

IT is well stated in the extract which we gave last week from the Journal of the Horticultural Society, that the conditions to be observed in KEEPING FRUIT are a uniform temperature, coolness, and darkness. This seems to be the great secret in Mr. MOORMAN'S practice, which it is admitted by every body is the most successful in the neighbourhood of London. When nobody has eatable Apples and Pears left, this gentleman produces his in the highest perfection.

The plans accompanying Mr. THOMPSON'S description of this fruit-room will enable every one to construct a similar place for himself. It is obvious that a spare loft, an empty chamber, or any like place, may be cheaply and rapidly adapted to such a purpose. It is indispensable, however, that certain precautions should be taken, and that the three conditions above referred to be observed in their exact spirit.

The room should *not* be on the ground floor, because it is far more difficult to keep one cool in that position, than if raised into the air. If circumstances render a ground floor indispensable, then the access of warmth from the earth should be cut off by double floors and air passages between them.

It must be ventilated, without the admission of light, except in a very inconsiderable degree. The object of ventilation is merely to carry off the excessive moisture that accompanies fruit when first stored, or such dampness as may otherwise form.

It must be kept as cool as possible, without freezing; that is to say, it must never be warm and never cold. If warmed, the chemical changes that result in the decay of fruit are rendered more active and intense. If frozen, all flavour is destroyed. The way in which frost operates in destroying the flavour of fruit is unexplained; but the fact is certain, as was, indeed, proved in a curious way two or three years ago. A gentleman residing at Boston, U. S., wishing to send to London specimens of the famous Boston Nectarine, packed them in ice. In a very short time they arrived, plump as when gathered, with all the beautiful appearance produced by the rich and glowing colours that only form beneath such a sun as shines in the United States—but they were tasteless. In order to secure a fruit room against frost, the room is lined, and on the north roof even double lined, with wood, so as to have one, or on the north two, layers of air between the wainscoting and the outer wall. The same precaution keeps off such solar heat as would be inconvenient during autumn and winter.

In addition, in case of very cold weather, a small stove is provided, and here no doubt more attention is demanded than in any part of the arrangements. A negligent servant would be almost certain to over-heat the room one day and to let the fire out on another; or, as a matter of course, to light the fire in warm weather, and forget it in a hard frost. It is, therefore, a question whether this fireplace could not be dispensed with by a further casing of wood in the inside of the room. Half-inch boards are so cheap now that it is quite possible that an additional casing would be cheaper than a fireplace, the need of which it would obviate.

We believe no register is kept of the temperature in Mr. MOORMAN'S room, but we can hardly be wrong in saying that 40° and 50° should represent the occasional extremes, 45° being the mean.

A SMART skirmish has lately taken place between Mr. PUSEY, on the one hand, as the champion of practical cultivators, and Baron LIEBIG on the other, as the representative of theoretical men of science. As is usually the case, both parties place themselves a little in the wrong; but as is not always the case, the dispute is instructive and useful to the spectators. Setting aside the mere question of profit and loss, we must say a few words on the subject, treating it as a broad question of vegetable physiology, and the nourishment of plants, for the purpose of placing before our readers what we believe to be the true state of the case.

It appears, then, that the English country gentlemen complain that they have been misled and deceived by the crude chemical speculations of the celebrated German chemist; that they have been taught visionary theories in the place of sound facts, and that, trusting to the weight of a great name, and a high scientific reputation, they have been led astray, even further from the real truth than they previously were, when he first undertook to instruct and enlighten them. It is stated that "the mineral theory of LIEBIG has broken down, and no other has taken its place;" and following out this observation, Mr. PUSEY goes on to say "it is a great mistake to suppose that men can be made farmers by teaching them doubtful chemistry;" and, in conclusion, he remarks, "I should not have said so much, but that the public are sometimes led, by a false estimate of chemistry, to undervalue our real progress in other sciences." At the same time, however, whilst thus condemning the views of LIEBIG, and very properly objecting to the teaching of false science, Mr. PUSEY does not wish to condemn chemistry altogether, but is desirous of drawing a marked distinction between crude speculations or scientific errors, and sound practical facts and well established knowledge.

When LIEBIG'S "Chemistry of Agriculture" was published, a dozen years since, it naturally excited a great deal of interest; the reputation of the author commanded attention and respect, and the decided and plausible manner in which his book was written, soon gained for it plenty of believers and admirers. The agricultural world was divided into two classes, those who obstinately refused to listen at all to such new-fangled doctrines, and, on the other hand, those who, blindly adopting as true all the views put forth, even without attempting to weigh the evidence by which they were supported, received every theory of the great German chemist as an established fact, and believed in the most extravagant results as likely to spring from the application of chemistry to farming. There were some few, too, who neither ridiculed the idea of applying science to practice, nor yet blindly adopted whatever was asserted, but, suspending their judgment for a while, set seriously to work to investigate for themselves; but certainly the loudest voices raised were those of the country gentlemen and rich landlords, who, without much knowledge of science, and certainly without attempting to ascertain the truth of the views put before them, eagerly seized on LIEBIG'S theories as the true key to farming, and lauded his book as the dawn of a new reformation. If the landlords have been misled, it is hardly fair to blame the unfortunate chemist alone, for the fact is, that having let their wishes and hopes far outrun the facts, or their own convictions, they have necessarily fallen into a wrong path, and now, having found out their error, they seek to put all the blame on the man who tried to help them, forgetting altogether how much was caused by their own want of consideration and caution.

It has all along been a matter of regret, that the new chemical theory of agriculture was so very warmly taken up, and so highly praised by some of its supporters; and we must take some credit to ourselves for having from the first objected to such blind hero-worship. At the same time practical men are so slow to receive what is new, and so little inclined to receive favourably a more theoretical probability, that had not LIEBIG'S views been put forth with the utmost decision, and in the most positive manner, they would probably never have excited one-tenth part as much attention as they really did; and, therefore, even though his conclusions were ultimately found to be wholly incorrect, he would nevertheless have done good service, by the impetus which they could not fail to give to farming, and by the effects which must necessarily result from the desire for knowledge which they would produce in practical men.

The fault, then, of LIEBIG in the first instance was, that when he ought to have said, "I think it is probable," he said, "it is an undoubted fact;" and the error of the landlords was, that forgetting for once their usual caution and fear of being misled, they blindly adopted all he taught them, and, not even satisfied with that, imagined a great deal more. That LIEBIG, though in error, was perfectly honest and sincere, is proved by the fact, that he even went so far as to connect himself with a trading speculation, endeavouring to make money by a patent manure, and thus risked his scientific reputation on the pecuniary success of a doubtful, though plausible scheme. As the mere fact of his taking out a patent for the manufacture of artificial manure naturally lowered him in the estimation of many, seeming to convert the high and independent lover of science into the petty money-seeking trader, so the subsequent failure of the patent manure still further tended to bring his views and opinions into discredit.

Mr. PUSEY'S remark, that very little practical service has yet been rendered to agriculture by chemistry, and the manner in which he mentions the failure of LIEBIG'S mineral theory, produced a somewhat angry and hasty reply, published in the second edition of "LIEBIG'S Letters on Chemistry" (p. 479). He begins, by stating, that Mr. PUSEY'S remarks are quite incorrect, which, however, is not to be wondered at, because he is not a chemist "by profession," a fact which he endeavours to *prove*, by observing that on two occasions Mr. PUSEY has made chemical mistakes in his writings. No one imagines that Mr. PUSEY is a chemist, but if a writer is to be condemned because he has made two mistakes, we fear Baron LIEBIG must surrender his own chemical reputation; for it would be easy to show that he too has occasionally made mistakes, perhaps even more serious than those of Mr. PUSEY.

In answer to the complaint of the landlord, the chemist replies:—"We have in the last ten years given you the most complete explanations of the nutrition of plants, and the sources of their food; we have shown you that plants must obtain from the soil, as well as from the atmosphere, certain elements; we have explained the nature of the soil, the effects of liming, rotation of crops, and fallowing; we have given agriculture a scientific basis, which it did not before possess. Besides all this, chemistry has taught the farmer the importance of phosphoric acid, about which nothing was known ten years ago (!); the true source of nitrogen, the value of ammonia, and the modes of fixing it; these and many other practical facts have been discovered during the last ten years."

All this sounds very well; and if only half of it were true, it would certainly make out a strong case for the chemists; but we fear the picture is much too highly coloured, and that the facts themselves do not warrant such a boast. The scientific basis of agriculture is still but a very crude and imperfect theory; and so far from the

nutrition of plants being now thoroughly explained, there is hardly any one part of the subject which is not still, to a great extent, enveloped in doubt and uncertainty. The assertion that the value of phosphoric acid has only been discovered by chemists during the last 10 years, is also one we cannot for a moment admit; indeed Liebig himself, in his "Chemistry of Agriculture," refers to Saussure, to show that the importance of phosphoric acid to plants had long been known; and quotes from his work, published nearly 50 years ago, the remark, "we have no right to suppose that plants could exist without phosphate of lime." Or to cite a more recent authority, we may refer to Sprengel, who says, in 1832, "there is not a single known plant which contains no phosphorus;" and again, speaking of the application of bone as manure, he observes "that the phosphate of lime of bones constitutes their chief value as manure, is proved by the well known fact that burnt bones, which contain no organic matter, act very powerfully on vegetation." He also points out the value of mineral phosphates of lime, such as fossil bones, apatite, &c., and states that all marls which contain phosphate of lime are excellent manures. It would in fact be easy to show, that so far from it being true, that 10 years ago "nothing was known in agriculture of phosphorus, or phosphate of lime" or that "no one knew what it was in the bones which really acted," it has been long known and fully recognised that phosphate of lime or phosphoric acid is essential to the healthy growth of plants; this, therefore, cannot be claimed as a new discovery.

The benefits which it is stated agriculture has derived from the progress of chemical science, during the last 10 years, are so vague and of so general a nature that it is hardly worth while to discuss them point by point very minutely. As regards the food of plants, very little more has been done than to confirm the experiments of older observers; and as for the explanations respecting rotation and fallowing, we are quite at a loss to discover which part is new—it seems that pretty nearly all of this part of the scientific system of agriculture was already known and acknowledged; all that portion which is really new is also, at the same, theoretical and unconfirmed; and we must confess that Mr. Pusey's remark is not in any way really met or disproved by the reply of Baron Liebig. At the same time, having the greatest possible respect for the labours of chemists, we must say that we still look forward to them for much real assistance in all departments of the arts of cultivation, and that even if no very important practical application of chemical science have been made during the last ten years, that is no reason to despair of the most valuable results hereafter. Such experiments as those of Mr. Way on the absorptive power of soils cannot fail in time to lead to improvements in practice, though they may take years to carry out and apply. Mr. Pusey observes very truly, that larger experiments, not conducted merely in the laboratory of a chemist, but carried out in a large scale in the farm itself, and devised and executed by a scientific man, are by far the most valuable contributions which can be made to our knowledge of the phenomena of vegetation; and he quotes the excellent experiments of Mr. Lawes in illustration. As may be supposed these experiments do not meet with the approbation of Liebig, and in his reply to Mr. Pusey, he characterises them as being "entirely devoid of value as the foundation for general conclusions." In the last part of the Journal of the Royal Agricultural Society, Mr. Lawes has published the details of his experiments, and every one is, therefore, able to judge for himself of their accuracy, and the conclusions which he draws from them. We shall reserve a few observations on those experiments for another week.

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Among the matters of horticultural interest in the Great Exhibition, there is a very humble one in a corner of the hardware department, in Class 22, No. 408, which, though late, and only just remarked, deserves to be placed on record. We allude to a model of a heating apparatus, from Mr. Michael M'Sherry, of 3, James-street, Limerick, intended for greenhouses, and similar buildings. The model looks so much like a cubical iron box, that it may be well missed by any one who does not take pains to find it.

The plan of this apparatus is described by the exhibitor in the following manner:—

"To be made of boiler plate iron, with a metal front, for heating by circulation of air. The flame and smoke from the furnace pass under the stove to the extreme end, and then rise at the two sides, return to the front, and get over the top to the chimney, where they do not escape until they pass all round the stove and heat every part of it. The air of the house to be heated is drawn in brick flues under the floor to the under compartments of the stove, passes in them to the extreme ends, then rises to the upper divisions, and finally flows back into the house over a water tank. In addition to this, there is a hot-air box on each side of the fire, through which external air is circulated, as well as through hollow fire bars, discharging the great body of heat (which they usually absorb), into the house, and rendering it available for bottom heat. The stove is to be set in brickwork, and as the outside of it is as hot as any part, much additional heat will be obtained by leaving a space of 2 inches between the stove and brickwork, they bringing external air to act on the two sides, and pass into the house."

We understand that several of these apparatus have been erected with great success, near Limerick, without the hollow fire bars, hot air boxes, or outside casing, which have been late additions. The size of those in use (for houses, 50 to 66 feet), is 5 feet long, 3 feet wide, and 18 inches high; for larger houses it is proposed to make them 6 feet long. Our hothouse heaters will do well to study Mr. M'Sherry's model.

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## VINE MILDEW.—No. I.

The following Observations on the Vine Mildew, by J. H. Léveillé, D.M.,* translated from the French, with remarks by the Rev. M. J. Berkeley, M.A., F.L.S., were published in the last Number of the "Journal of the Horticultural Society:"

The gardeners in the neighbourhood of Paris have, unhappily, too much reason for remembering the damage done to their Grapes last year by the Oidium Tuckeri. Under these painful impressions they are at this very time watching their trellises every instant, and turning up the leaves in search of the baneful mould. Some return from their observations satisfied with the result, but others alarmed, because they have discovered certain spots on the lower surface of the leaves, which they believe to be clearly due to its presence.

It is, I think, useful to destroy this false notion, which is so generally diffused, and which is causing so much anxiety. What is at this moment taken for Oidium Tuckeri, the mould which destroys the Grapes, is merely the Erineum of the Vine, which has always existed, and which has never attracted much attention, because it is not, in point of fact, injurious.

To avoid this mistake it will suffice to call to mind that the Vine Erineum is constantly produced on the lower surface of the leaves, where it forms spots varying in number and extent. It forms a lining to the depressions, which are the counterpart of the blisters which render the upper surface unequal and tuberculated. As soon as it begins to be developed the surface purses up and exhibits a manifest change of colour. It is at first white, rose-coloured, or pale violet; then it assumes a tawny or rusty tint; even with the naked eye it is clearly due to an anomalous development of the hairs, which assume the appearance of threads. To understand their nature perfectly it is necessary to have recourse to the microscope, under which they appear to be elongated, hollow, cylindrical tubes, without any partitions through their whole length, and absolutely empty. The membrane of which they are composed is simple, uniform, without reticulations, and of the same nature with the epidermis, of which it is a continuation. This fact is beyond all doubt, only the true cuticle forms no part of them, because it has been destroyed or perforated by the development of the subjacent cells. This at least seems to be indicated by a little circular line, or a slight irregularity which exists at the base of each of the threads of which the Erineum is composed.

The causes of this anomalous growth of the hairs are entirely unknown. It is regarded generally as the result of the puncture of extremely small insects. This explanation, however, notwithstanding the authority of Professor Fée, has never appeared to me completely satisfactory. Every one knows that when an insect deposits one or more eggs under the epidermis, or in the substance of vegetable tissues, a great activity arises in the vegetation, and an unnatural development of the tissues; when, on the contrary, they are deposited on the surface of the leaves, their tissue is not affected, and they experience no change. When an insect, then, has introduced an egg under the epidermis, we ought to find the egg itself, the cavity in which it is contained, and the modification of the tissues which it has caused. But neither eggs nor cavities are ever observed, and the epidermis alone is modified. It is very true that we find amongst the threads of old patches of Erineum larvæ and their remains, as also mites and plant-lice. But if we examine the upper surface of the leaf, we find no aperture pierced by the insect, in order to escape and live in a state of liberty; the filaments do not present the least solution of continuity in their whole length; their base always rests on the tissue of the leaves, their free extremity is always obtuse and imperforate, and their cavity does not inclose any traces of old skins or excremential substances. Nothing then justifies the notion that Erinea are like galls, bedeguars, &c., the cradles of insects. If, indeed, we meet by chance with insects or larvæ, the species are not so constantly the same as to justify us in referring to them these accidental forms of vegetation. These observations do not rest merely on the Vine Erineum, but have been repeated on those of the Maple, the Sycamore, the Lime, and the Birch. Whether it resemble a tube or a flask, the accidental production differs simply in form; the organisation and mode of development are the same.

Though the Vine Erineum cannot then be attributed to the puncture of an insect with the view of depositing its eggs, may we conclude that it is due to the puncture of the same insect made in the leaves for the purpose of deriving nourishment from them? Certainly not. Every one knows that, amongst insects, it is the Hemipteræ which have the slenderest mouths. But whether they live on animals or vegetables, they do not derange or tear the tissues in the act of suction by means of the different parts of which their mouth is composed; they employ the most delicate acupuncture which it is possible to conceive; and as soon as the proboscis is introduced, the juices ascend simply in obedience to the laws of capillary attraction. May we suppose, however, that at the same time they introduce some irritating fluid? Nothing authorises this supposition; and besides, were it the case, what would be the condition of the foliage of our trees? Not a leaf would preserve its integrity; all would be diseased. Much more must accidental productions bear some proportion to the size of the insects; but this is not the case; and by a kind of eccentricity which is not rare in the human mind, we refer to the most minute causes, the most manifest effects; a locust may pass over without leaving any traces, where those which a plant-louse causes are indelible.

I repeat, then, that the Vine Erineum does not depend on the puncture of an insect, but is an elongation of the epidermal cells, due to some unknown cause, which exists in the plant itself, as is also proved by the fact that the leaves while still rolled up and plaited exhibit traces of the affection.

I have said enough to enable any one to recognise the Erineum, but to prevent its being confounded with Oidium Tuckeri, I think it right to call to mind the description which I gave of that mould last year, before the Société Philomathique (1850, August 3).

The plants on which the mould is developed present the same appearances as others, except that the shoots of the year, the leaves, bunches, berries, and stamens, in a word all the diseased parts, are covered with a very thin white pulverulent down, which is visible at some distance, and which diffuses a very perceptible mouldy smell. It forms on the leaves white circumscribed spots, which resemble those of Erysiphe. This down, when examined under the microscope, is formed of slender branched articulated threads, which creep over the surface of the leaves. From different points of this primitive mycelium spring little erect straight stems, which are transparent, simple, and articulated, and which bear at their extremity three, four, or five oval or elliptic simple hyaline spores, joined end to end like the beads of a necklace, and filled with extremely fine granules. These granules, when forced out by compression between two plates of glass, are spherical, transparent, and endowed with molecular motion.

These characters do not leave room for any confusion. One of these productions is confined to the under surface of the Vine-leaves; it is persistent, and does not disappear when rubbed; the other, on the contrary, attacks every part of the Vine except the old branches and roots; it is only temporary, and disappears on the slightest friction.

In questions of the diseases of the Vine, however, the Erineum seems to bear a certain part. At least this was the case in 1835, when M. Duby communicated to the Natural History Society of Geneva his observations on Torula dissiliens, which occasioned the premature fall of the leaves of the Vines in a great part of the valley of the Leman Lake. M. Vallot, of Dijon, thought that he recognised in this plant the Erineum vitis. MM. Alphonse De Candolle and Duby opposed this view, because they were well acquainted with the Erineum, and had made a particular study of Torula dissiliens. M. Vallot is, to a certain extent, excusable, because he had seen neither the new Torula nor the figure which accompanies the memoir of M. Duby. But the persistence of the Erineum, and the ease with which the Torula disappears, ought to have raised doubts in his mind. It is sufficient to blow strongly on the lower surface of the leaves to cause it to fly away. So much is this the case that M. Alph. De Candolle remarks, in a note, "When I wished lately to re-examine the Torula dissiliens preserved in my herbarium, I found that the act of drying had caused almost all the joints of this microscopic plant to fall. There remains only the diseased leaves of the Vine, marked with traces of the parasite, and some very fine powder."

The Oidium Tuckeri is more easily preserved, and is not dispersed by a mere breath of air; but it is, nevertheless, difficult to recognise its character in dried specimens, because the spores separate with the greatest ease when it is dry, and nothing but the mycelium is left behind, which resembles that of an Erysiphe.

The certainty which has been acquired of the spontaneous development of moulds on some living animals, and especially that of Botrytis Bassiana, on silkworms, has made people believe, though wrongly, that many diseases of vegetables and animals were due to a similar cause. Exaggeration has been pushed a little too far. It is well known now, from the researches of M. Decaisne, that the nematoid mycelium, which we find under the epidermis of diseased Potatoes, Pears, and rotten Apples, &c., is consequent on disease in those productions. It is the same with the Oidium of the Grape. Mr. Berkeley in England, and M. Duchartre in France,

* Recherches sur la Maladie des Vignes, par J. H. Léveillé, D.M. Extrait de la Revue Horticole, No. du 18 Juin, 1851.

think that the mould is the first cause, and the disease its consequence. The researches which I have made do not allow me to participate in the opinion of my honourable friends. M. Decaisne and myself have made vain efforts to discover under the epidermis the least trace of mycelium upon the Grapes, the Vine leaves, and on the branches, when beginning to be diseased. We have satisfied ourselves that all the phases of the vegetation of the Oidium take place on the surface. The tissues are affected first, and when a white spot begins to appear, however minute it may be, the mould is developed; if the finger is simply passed over it, it disappears; and if we examine the spot with a lens, we see at the point which it occupied, and around it, where no malady was suspected, extremely minute black or brown specks upon which the mould is successively developed. The parenchym, which corresponds with these specks, is equally brown and less filled with juice than that which surrounds it; if at this time it were covered with or traversed by mycelium, one ought to find it; but this is not the case. At a later period the epidermis is frayed, the parenchym dries up, and, after having lived some time, the fungus disappears.

When the stalk is diseased through its whole extent, the Grapes entirely perish; when the malady attacks the berries in the first stage of development, they dry up or fall; if, on the contrary, they have acquired a certain size, they are able to resist it; some crack, split, and expose their seeds; others are deformed and arrive at maturity, but they never acquire the size which they would have done had they not been diseased. Like fruits which have been punctured by insects, they appear to me to ripen before other Grapes: but they are rather fleshy than succulent, and they are almost destitute of flavour.

Another question which preoccupies many minds is that of contagion. I avow beforehand that I have no belief in it. According to my views the fungus does not propagate the malady, but the primitive derangement of the tissues of which I have spoken is endemic. It is the same with the Potato disease. It is impossible for us, notwithstanding the numerous researches to which that malady has given rise, to say to what cause it is due. To prove the existence of contagion we ought to be able to produce at our pleasure the disease of the tissues; but we cannot do so. People, to prove contagion, say that they have placed a sound Grape by the side of one which was diseased, and that on the morrow or the day after the two Grapes were equally bad. This experiment, which I have repeated myself many times, and which has always succeeded, may be interpreted in two ways; first, we may have placed by the side of a diseased Grape another in which disease had already commenced, or which was predisposed to contract it; and secondly, the ease with which moulds are developed causes their spores when dispersed to germinate and fructify on almost all kinds of bodies, provided their evolution be favoured by moisture and temperature. In this case the remarkable circumstance is, that the points of the fruit or leaves on which the moulds are developed do not present the brown spots. Those who last year attentively followed the progress of the Vine disease, have remarked that it had an exacerbation which lasted till the 15th of August. This relapse, though real, had no destructive consequence; it was the result of the torrents of rain which fell on the 6th of August; its violence had cleansed the Grapes and leaves, but in the following days the spores which had been disseminated germinated again. As the disease was over before, the Oidium ran through its phases of vegetation, and the Grapes did not cease to grow. Before the storm of which I speak I had already acquired a certainty of the fact that when the leaves were frequently syringed with common water the fungus grew abundantly, and the Grapes were not the more diseased. It is to this protracted mode of propagation that we must attribute the small influence of the malady on a great number of the berries which, though almost entirely covered, arrive notwithstanding at perfect maturity.

These spontaneous recoveries deserve more attention than may appear at first sight; they may take place when some particular remedy is applied; and since it seems to have succeeded, all the advantage is attributed to the remedy. I have never seen these recoveries at the beginning of the disease, that is to say, when the berries were forming; but when they have acquired a certain size the Oidium is then contagious, and may appear two or three times on the same Grape without its being sensibly inconvenienced, because it is superficial, and there has been no primitive disease of the tissues. I am, however, exaggerating a little; its harmlessness is not always so great; when it covers the Grapes with a thick mycelium it stifles the berries; but then they do not crack, they dry up.

## BRITISH SONG BIRDS.

(Cage Birds, No. 32.)

No. XLVIII.—We have now entered on the gratefully-pleasant month of October; and are fast hastening onwards to the last splendour of an autumn, the loveliest ever known. The trees, partly stripped of their graceful foliage, are bowing reverentially before the gales of the equinox, and revealing those hidden beauties which summer had so carefully concealed from sight. We now view their symmetrical proportions with greater facility, and are, or should be, lost in admiration at the minute tracery of their branches. Wander where we may, among the trees—or in the woods,—all is inspiriting, all is delightful.

That fair goddess of light, the moon, is now nine days old; and the evenings are bright enough to call us forth for an admiring stroll. Of all months in the year, commend us to October for this healthy exercise. When the "leaf fades," then is the time

> "To contemplate and worship Him, whose mind
> Stirs in the stilly night-like solitude;
> Or breathes in whispers on the gentle wind
> Through vast cathedral groves,—and leaves a calm behind:"

And viewed by moonlight, we revel in the rich, glowing, and splendid *ensemble* produced by the stately Oak, majestic Chestnut, the smooth Beech, with its lofty head, and the silver-stemmed Birch,—all revealing their natural florid hues of brown, yellow, red, and orange. These, contrasted with the verdure of the trees yet unclothed, afford the lover of nature a treat inexpressible. But we must not let our reflections carry us away from the main subject.

The "birds of passage" being now, all of them, about to take their final and immediate leave of us, till next spring, we shall necessarily have to seek "compensation" for their loss in the best way we can. The woodlark, goldfinch, linnet, robin, and others of our popular favourite song birds are now in full feather—and, what is still better, they are in full song. Such, therefore, of our friends as feel anxious for a fire-side companion, during the approaching winter, should not lose one moment in providing themselves. In every case, let me remind my reader, he should *hear* the bird he selects *sing* before he becomes a purchaser. This prevents any disappointment hereafter, and dissipates all doubt as to the excellence of the performer. It is also more satisfactory to the dealer, for (if *honest*) he is aware that should you be well satisfied with your first purchase, you will come again. Full many, however, I fear, neglecting this precaution, buy *once*,—but never a second time return to the same shop; unless, indeed, it be to complain of their having been "done!"

Now for a word or two on the subject of bird-cages. No opportunity could present itself, more fitting than the present (whilst we are introducing miscellaneous topics) to offer a few remarks on the miserable accommodation provided in this country for the comfort of the little prisoners whom we domesticate in our respective families. In no one respect do we come more behind our neighbours than in this. How is it? Can no ingenuity devise a handsome and *appropriate* dwelling for so interesting and affectionate a little creature,—one which forms so needful an appendage to our "Household Gods?" It is indeed time we awakened to a sense of shame in this matter, for our English bird-cages are a national disgrace. While the "Great Exhibition"* yet remains open—a short week, let us urge some clever workman (if he has not yet done so), to pay it an immediate visit, and admire Austrian skill, as evinced in the department of the Zollverein. There, on a stand in the nave, are exhibited a vast number of elegant, commodious bird-cages, of the most fanciful character, at once a comfort to the inmate, and an object of admiration to the eye. The tin—they are all of tin—is perforated by fitting machinery, and represents filagree work; and no other substance whatever is used in the construction of the cages. Hence, no blood-thirsty vermin can intrude; the article is imperishable, and its tenant rendered "happy for life." The configurations of these cages are beyond all praise; and if our artist-workmen only catch the idea, and work it out, then will the "Exhibition" be held in everlasting honour by all lovers of birds.† Our province does not go beyond *this* limit; else could we be eloquent in elaborating the praise of our "National Workshop." It has furnished ideas, of which, should proper advantage be taken, there is no saying *where* our ingenuity may stop. It brings us nearer than we have ever yet been, to "the Perpetual Motion;" and we *do* hope that, so far as our *protegés*, the birds, are concerned, *they*, at least, will hereafter be partakers of the immensity of benefits accruing therefrom. *William Kidd.*

* As the "Great Exhibition" will be for ever closed to the sight-seeing public in a few brief days, we shall offer no excuse for speaking at the eleventh hour of what is yet to be seen within its walls. We allude to the domestication of four splendid robins (in the spacious refreshment-room of Masters and Co.), whose powers of song joyously put forth in their extensive flight from end to end of the apartment, can hardly be imagined, unless heard. All who doubt what we have so long asserted about the great natural *affection*, the extreme loveliness, and the musical execution of this bird, may now prove our veracity, and for ever satisfy their own doubts. The birds in question have free ingress and egress: but so truly do they love the society of man (and woman, of course), that they are *the last* to quit the building after the bell has rung. The best mode of access to this room is through the eastern entrance of the building. It will be found immediately under the American Gallery, or more properly speaking, under the Gallery of Stained Glass. We, of course, are often "found" here; nor do we consider, though we are no bad hands at "refreshment," that we ever pay "too dear for our *whistle!*"

† It is, perhaps, desirable that I should mention the fact of all these cages having long since been disposed of. No more of them, I am told, can be obtained in this country at any price; but as the "principle" is not patented, the field is open to a skilful artisan, and the speculation would surely be a "safe" one.

## Home Correspondence.

*How to Crop a small Kitchen-garden.*—Believing it to be the wish, as it certainly is the duty, of every gardener to get as great an amount of produce off the garden under his care as possible, I shall endeavour, from time to time, to explain how this is to be effected. The system of cropping which I shall inculcate is founded on that pursued by the market-gardeners round London; slightly altered, of course, so as to suit the requirements of a private establishment. Having been both a gentleman's and a market-gardener for years, I shall recommend nothing but what I have myself experienced to b best. My plan simply consists in having arrangements made for one crop to leave room for another, by which process there is no occasion for the land ever to lay idle (except for a month or two during winter), but often to have two crops on it at one time. In this way as much may be derived from 1 acre as is usually obtained from 1¼ acre, and that without much extra labour or cost. Many will, doubtless, object to my system of rotation, as being contrary to rules laid down in books; but I would have such to understand that the market-gardener observes no such rules, and where is the private one who succeeds better than he does? As during the coming week market-gardeners will be busy getting in their Early Horn Carrots and Lettuces, it may not be out of place if I give in detail here the cheapest and, at the same time, the best plan of growing these vegetables, so as to have them early. I believe that, in some localities, Horn Carrots are sown in the open ground in autumn with the best results. In most places, however, they would be found an uncertain crop; but by growing them in the following manner success is certain. Let some light, rich soil be obtained (that of the garden will do, provided it is light); choose a spot lying well to the winter's sun; mark out a space 8 inches wider than the frame on all sides, lay down 4 inches of stable litter, and on that 4 inches of soil, put on the frame, and fill to within 4 inches with soil, rake level, and sow the Carrots, rather thickly, so as to insure a crop, as it is easier to thin out than put in. Do not sow the Lettuces too thickly, as no great quantity of one sowing is ever required in a private garden; what should be aimed at is a regular succession; let the sort be the White Paris Cos; sift a little soil over the bed, just sufficient to cover the seed, put on the lights, and shut close till the Lettuces make their appearance, then draw off the lights every dry day; if wet, let them remain on, but raise them 6 inches at the back. If frosty, keep close, except while the sun shines on the frame, when air should be given; they require no covering, except the lights, as the chief thing to guard against is damp. Keep thoroughly dry, and success is certain. Thin the Carrots at first to 1 inch apart, the Lettuces to 4 or 5 inches; in March plant out the Lettuce, and take away the frame, if it is required for any other purpose; bank up a little earth round the bed, to keep the rain from washing down the edges; then thin the Carrots to about 3 inches apart. *J. Steel, Clitheroe.*

*Habits of Rooks.*—A friend of mine has a park, in which are several acres of sylvan pasture, the trees being nearly as close to each other as if in a wood. It is protected from the prevailing west wind; in fact, it is a steep bank facing the east. There are no nests, but myriads of rooks come every night to roost from all the rookeries in the neighbourhood. Is this an usual circumstance? Is it the protection from wind or what? The bank is partly gravelly, partly boggy, and full of natural springs. *Gallicus, Mold, Sept.* 30.

*Fuchsia Princeps.*—Allow me to correct a typographical error which has crept into my communication of last Saturday. The fine and striking variety of Fuchsia which I noticed in the nursery of Messrs. Lucombe and Pince, is not named Princess, as printed at p. 614, but Princeps. *A Devonian.*

*Meat Biscuit.*—Among the remarkable novelties of the Exhibition, there are, in the American department, meat biscuits (No. 524), invented by Mr. Borden, of Galveston, Texas, but no notice has yet been taken of them in the public papers. It is known that the preservation of meat has not been practicable except in canisters; and that portable soup has been a mere preparation of gluten. Mr. Borden has attempted, and succeeded, in making a portable soup of meat, and the invention will be one of vast importance to Australia, where bullocks are killed for their fat, skin, and bones, and where the meat is wasted. Mr. Borden boiled down the meat of bullocks to a sort of essence, which was then strained. Enough Wheat flour was added to give it a firm consistence as paste, and it was then cut out and baked as biscuits. From the appearance of these biscuits it would be hard to detect them from fine captain or sea biscuits. Four ounces of biscuit make from a pint to a quart of excellent soup; having, from the meat, the nitrogenous qualities which gluten is deficient in, and having the nutritive vegetable matter of flour. The value of the discovery to exploring parties—to persons going a long inland adventure—to military on a rapid march, at a distance from naval supplies—is exceedingly great. Added to this, it affords to Australia the means of obtaining a new and important article of export. *X. X.* [This is one of the most important articles in the Exhibition. You will do well to consult hereafter the report of Jury No. III., upon Mr. Borden's preparation.]

*The Ribston Pippin Apple.*—It may be interesting to know, that the original tree has this season produced, for the first time since 1835, a few Apples, of the true variety. At present the tree is in a fine healthy condition, measuring about 10 feet in height, and 32 feet in circumference. *G. M., Ribston Hall, Wetherby, Yorkshire, Sept.* 30.

*Potato Disease.*—It is stated at p. 611 that you have found the "Chinese" Potato very much diseased. My experience is, however, very different. I have planted this variety in a strong loam, well dug and manured, for four successive years, and I have never had a single diseased Potato. I have just taken up the produce of this season. It is small, but excellent in quality, and not one of the tubers is diseased. The Russian is equally free from blight, and the produce is greater. *J. Gould,*

*Amberd.*——I have just taken up Potatoes from which I pulled the tops in the second week in August. I had not a score of diseased tubers out of the whole lot, but they were rather small. I have pitted them in the same way I have done before, and kept my sound Potatoes good till spring; that is, by laying alternate layers of Potatoes and mould, bringing the heap to a point, with about 7 or 8 inches of mould on the sides. For an experiment, I left a few with the tops on, the half of which were very badly diseased, but they were much larger than those from which I pulled the tops. *W. Griffin, Eydon, Daventry.*——In the year 1844 I purchased of Messrs. Warner three excellent kinds of Potatoes — the Shepherds, Martins, and Ash-leaved. Finding the two first better in flavour, more productive, and nearly as early as the last, I cultivated them with care; not one has been affected with the disease. This year I again planted a few Ash-leaved, and have had several diseased. When I first had the Martins, they were yellowish and waxy, now they are nearly as white as the Shepherds, which are remarkably so, and so farinaceous, that they require to be boiled with great care. The Martins are larger and more productive than the other. As all rapidly-growing plants, they require well-manured soil; that is, a full and well-prepared supply of "food." Of the rare kinds, the small should be preserved for seed. Five years since, from small Potatoes of these kinds, planted late and very thick, in good ground, I obtained a heavy crop. Of the field Potatoes, the best cultivated here is called "Red Scotch," which is remarkable for its good keeping; a good plan is, on digging them, to reserve apart for seed all those which have a good form and a good colour—colour being a good test of the quality of the Potato. Those ill-shaped are as good for the table, and the small I reserve for the domestic animals. It is injurious to disturb, as many do, the Potatoes stored for planting. *Agricola Cæsariensis.*

*Paulownia imperialis.* — I have found this to be perfectly hardy. A plant raised from a slip six inches long, planted three years since, is now 18 feet high, and the stem is 20 inches in girth near the ground. *J. Gould, Amberd.*

*Pruning Forest Trees.*—The advocates for the practice of pruning forest trees are probably not "convinced" of the error of their doctrine, and are only "silenced" because the controversy can be decided by experience and observation alone, and not by argument. Your correspondent "Quercus" (p. 596), seems to think he has proved his point that pruning is injurious, by the statement (which no one denies), that when a close-cut wound is healed over with new formed wood, there is never any real union over the section: true — but I assert that, for most purposes, it is of no consequence whatever, that there should exist a flat circular space of a few inches in diameter, and of no appropriate thickness, disunited from the layers of sound wood that grow over it. Besides, what is the alternative? either the branch continues to live, and forms a continually enlarging knot, which impairs the value of the timber in proportion to its size; or the branch dies, drops off, and heals over, when you have the same defective union (as in the case of a pruned branch), and you have in addition the remains of the stump of the branch, forming a mass of rottenness of greater or less extent; or the branch rots away, and does not heal over, but allows water to lodge, when the rottenness gradually eats into the heart of the tree and destroys the timber. Every one must allow that there are certain cases in which pruning becomes absolutely necessary, as, for instance, when trees overhang a road; in such cases it is well that the owner should know that the close cutting method may be practised with safety, while the snag method leads to the slow but almost certain destruction of the tree. Of this fact I am so convinced that I am surprised that any one who uses his eyes in the matter can be found to deny it. *Expertus.*

*Conifers at Bayfordbury.*—Having been solicited by several individuals to give the size and growth of certain species of Conifers at this place, particularly those from Mexico, which have been considered tender, but which have stood well here, without the slightest protection, since the first winter they were planted out, I beg to send you a statement of some of the largest trees now growing in our Pinetum, and also of others of the same kind planted as single specimens in the park, and which are now forming fine objects. The latter are fenced round, some with square, and others with triangular guards, with a view to protect them from cattle, &c. The square guards are preferable, as they can be made with one-side hinges, so as to admit of a person getting inside when required; they are cheap, consisting only of four posts and a few rails, &c. They should be made 6 feet high, and 4 feet square, with a space of about 2 or 3 inches between each rail, in order to admit light and air to the plant. There are few lawns sufficiently extensive to accommodate the larger varieties of Conifers, without their being crowded, which spoils their appearance; and as Conifers may now be obtained cheap, both in the London and country nurseries, I would strongly recommend persons wishing to improve the scenery of their parks or pleasure grounds, to plant those mentioned in the following list; some succeed best in a light sandy soil, yet there are many that like a strong loam, or even clayey ground, and some thrive well in moist situations. For instance, the Douglas Fir and Abies Menziesii will grow luxuriantly in damp places, and may be planted within 10 or 12 feet from the side of a lake or pond, while others, such as Abies Morinda, Picea Webbiana, P. amabilis, and P. nobilis, together with Taxodium sempervirens and Cryptomeria japonica, delight in moist places, but not in low situations, as they are likely to be injured by the spring and autumn frosts. For the Pinus tribe, sandy or loamy ground is most suitable, and the varieties best adapted for the park would be the larger growing ones, and the most distinct kinds, such as Pinus ponderosa, P. insignis, P. macrocarpa, P. Laricio, P. Sabiniana, P. Montezumæ, Deodar and Cedar of Lebanon, Pinus Massoniana, P. maritima, and P. hispanica. The last three would answer in high and exposed situations. If clumps are wanted instead of single trees in different parts of a park, &c., I would advise the individual plants to be placed at a good distance from each other; say from 30 to 35 yards apart, and the introduction of the following showy kinds of Thorns would add much to their beauty, such as Crætagus oxyacantha rosea, C. Aronia, C. odoratissima, C. tanacetifolia, C. salicifolia, C. Douglasii, C. nigra, C. oxyacantha aurea, C. variegata, C. Mexicana, C. cordata, C. oxyacantha flore pleno, &c. Many other varieties might be added, together with some of the showy Pyruses, Sorbus, &c., which would tend to form an interesting group when they had attained some size. The following table will convey some idea of the kind of trees I have under my care here.

| Name. | Height when Planted. | Date of Planting. | Present Height, September, 1851. | Spread of Branches. | Circumference of the stem 1 ft. from the Ground. | Native Country. |
|---|---|---|---|---|---|---|
| Pinus apulcensis ... ... | 6 ins. | May 1841 | 18 ft. | 18 ft. 6 ins. | 2 ft. 5 ins. | Mexico, near Apulco. |
| ,, Montezumæ ... ... | 2 ins. | 1841 | 12 ft. 6 ins. | 15 ft. 6 ins. | 2 ft. 7½ ins. | Mexico, Mountains near Ajusca. |
| ,, sp. ... ... | 9 ins. | 1837 | 15 ft. 6 ins. | 19 ft. 3 ins. | 2 ft. 6 ins. | Mexico. |
| ,, Russelliana ... ... | 6 ins. | 1841 | 8 ft. 6 ins. | 13 ft. 6 ins. | ... | Mexico, near Real del Monte. |
| ,, Hartwegii ... ... | 3 ins. | 1841 | 6 ft. 6 ins. | 7 ft. 3 ins. | ... | Mexico, on the Mountain Campanario. |
| ,, macrophylla ... ... | 3 ins. | 1841 | 6 ft. 8 ins. | 8 ft. 4 ins. | ... | Mexico, on the Octillo. |
| ,, Llaveana ... ... | 4 ins. | 1841 | 6 ft. 2 ins. | 8 ft. 6 ins. | ... | Mexico. |
| ,, ayacahuita ... ... | 4 ins. | 1841 | 7 ft. | 6 ft. 2 ins. | ... | Mexico. |
| ,, Teocote ... ... ... | 6 ins. | 1841 | 10 ft. | 9 ft. 10 ins. | ... | Mexico, Real del Monte. |
| ,, patula ... ... ... | 9 ins. | 1845 | 12 ft. | 8 ft. 6 ins. | ... | Mexico, Real del Monte. |
| ,, Laricio ... ... ... | 1 ft. 3 ins. | 1835 | 34 ft. | 19 ft. | 3 ft. 9 ins. | Corsica, Spain, Greece, &c. |
| ,, macrocarpa ... ... | 9 ins. | 1836 | 23 ft. | 21 ft. 6 ins. | 3 ft. 4 ins. | California. |
| ,, Sabiniana ... ... | 1 ft. | 1837 | 18 ft. 2 ins. | 17 ft. 6 ins. | 2 ft. 6 ins. | California. |
| ,, ponderosa ... ... | 1 ft. | 1837 | 25 ft. 6 ins. | 12 ft. | 3 ft. 3 ins. | North-West coast of North America. |
| Abies Menziesii ... ... | 1 ft. | 1836 | 19 ft. 9 ins. | 11 ft. 6 ins. | 1 ft. 11 ins. | North of California. |
| ,, Deodara ... ... ... | 1 ft. 6 ins. | 1836 | 25 ft. 6 ins. | 15 ft. 6 ins. | 3 ft. 2 ins. | Nepal. |
| ,, ,, ... ... ... | 1 ft. | 1837 | 17 ft. 6 ins. | 16 ft. 6 ins. | 2 ft. 9 ins. | Nepal. |
| ,, Douglasii ... ... | 1 ft. 4 ins. | 1838 | 19 ft. 6 ins. | 17 ft. 4 ins. | 2 ft. 3 ins. | North-West coast of North America. |
| Pinus insignis ... ... ... | 9 ins. | 1848 | 18 ft. | 18 ft. 6 ins. | 4 ft. 9 ins. | California, near Monterey. |
| Araucaria imbricata ... | 1 ft. 3 ins. | 1836 | 17 ft. | 10 ft. | ... | The Cordilleras of Chili. |
| Abies cephalonica ... ... | 6 ins. | 1840 | 6 ft. 11 ins. | 6 ft. 2 ins. | ... | Cephalonia, on the Black Mountain. |
| Pinus Brutia ... ... ... | 9 ins. | 1838 | 13 ft. 9 ins. | 16 ft. | ... | Mountains of Calabria. |
| ,, Pythusa ... ... ... | 6 ins. | 1840 | 13 ft. | 11 ft. | | |

—*J. Slowe, Gardener to W. R. Baker, Esq., Bayfordbury, Hertfordshire.*

## Societies.

Caledonian Horticultural, *Sept.* 4. — Professor Fleming in the chair. The chairman, on intimating the death of Dr. Neill, stated that but one opinion prevailed as to the propriety of the course followed by the committee appointed for arranging the details of the general meeting, in abandoning all idea of an anniversary dinner, in consequence of the bereavement experienced. He then stated that, from the origin of the Institution, Dr. Neill had devotedly and successfully discharged the duties of secretary, and by every means in his power contributed to the credit and usefulness of the garden.—On this occasion there was an excellent display of fruit. Grapes, in particular, were very superior; and among flowers, Dahlias and Hollyhocks were fine. The premium for the best two sorts of Peaches was assigned to Mr. Crocket, gr. to Colonel Ferguson, for Bellegarde and Royal George; a second prize was voted to Mr. Ramsay, gr. to Sir D. Baird, Bart., for Noblesse and Royal George; and a third to Mr. R. Melville, gr. to G. Simson, Esq., for Red Magdalen and Noblesse. For the best two sorts of Nectarines, the prize was awarded to Mr. Crocket, for Elruge and Violette Hative; and a second award was made to Mr. Thom, gr. to C. Balfour, Esq., for Newington. For Muscat Grapes, the silver medal, as first prize, was voted to Mr. W. Thomson, gr. to Lord Belhaven, who produced an excellent bunch, weighing 2lbs. 10 oz.; and a second to Mr. Lees, gr. to the Earl of Haddington. For Black Hamburgh, the silver medal, as first prize, was awarded to Mr. Thomson, for a beautiful bunch weighing 3 lbs.; a second prize was voted to Mr. Thom, and a third to Mr. Lees. For Frontignan the prize was obtained by Mr. Crocket. For the highest flavoured bunch, the prize was gained by Mr. Lees, with Chasselas Musqué; and a second award was voted to Mr. Fowler, gr., Smeaton, for the same variety. For the best grown Pine-apple, the prize was awarded to Mr. Smith, gr. to W. L. Paterson, Esq., the variety being Black Jamaica. For Moorpark Apricots, the first prize was awarded to Mr. Ramsay, and the second to Mr. Addison, gr. to the Earl of Wemyss. For Green-gage Plums there were nine competitors, and awards were made respectively to Mr. Mackie, gr., Cally House, and Mr. Thom. For two sorts of Plums (exclusive of Green gage), the prize was awarded to Mr. Mackie, the kinds being Washington and Victoria. For Melons, the first prize was awarded to Mr. Mitchell, gr. to Lady Keith, for Irish Green-fleshed; the second to Mr. Mossman, gr. to J. Hunter, Esq., for Bromham-hall; and the third to Mr. Mackie, for Duke of Bedford. For Jargonelle Pears an award was made to Mr. Addison, Gosford. Dahlias: In the Nurserymen's Class, the highest prize (one guinea) was assigned to Messrs. Dickson and Sons, the kinds being George Glenny, Beeswing, Marchioness of Cornwallis, Duke of Wellington, Mr. Seldon, Crocus, Grenadier, Queen of Lilacs, Sir F. Bathurst, Hon. Mrs. Ashley, Mr. Herbert, Newington Rival, Yellow Standard, Gem of the Grove, Duke of Cambridge, John Edwards, Miss Spears, and Seraph. In the Practical Gardeners' class, the highest premium (one guinea) was assigned to Mr. Oswald, gr., Murthly Castle, Perth, for Crocus, Mr. Seldon, Sir F. Bathurst, Marchioness of Cornwallis, John Edwards, Beeswing, Duke of Wellington, Grenadier, Black Prince, Emperor of Whites, Miss Spears, and Mr. Herbert. The silver medal, as second prize, was awarded to Mr. Addison, for Grenadier, Captain Warner, Fearless, Sir E. Antrobus, Box, Duke of Wellington, Sir F. Bathurst, Mr. Seldon, Queen of Primroses, Purple Standard, Cardinal Ferretti, and King of Dahlias. A third premium was awarded to Mr. Reid, gr. to Sir J. Richardson, Bart. In the Amateurs' Class (*i.e.*, cultivators who manage their own plants) the highest prize was assigned to Mr. W. Cattnach, for Crocus, Grenadier, Duke of Wellington, John Edwards, and Marchioness of Cornwallis; and a second award was made to Mr. Sanderson, for Beeswing, Snowflake, Duke of Wellington, Cleopatra, Shylock, and Beauty of Hants. For Fancy Dahlias the prize was awarded to Mr. Reid, Pitfour, for Empereur de Maroc, Miss Jane, Rainbow, Triomphe de Magdeburg, Forget-me-not, Mrs. S. Lefevre, Pantaloon, Miss Blackmore, Remembrancer, and George Clayton. There were six competitors for Hollyhocks. The first prize was awarded to Mr. Pow, gr., Norton, Ratho, for Napoleon, Sultan, Purpurea perfecta, Queen, Mr. Russell, Robert Burns, Formosa, Rosea grandiflora, Mrs. Berwick, and Lady Clark. A second premium was voted to Mr. Veitch, gr., Melville Castle, whose stand contained blooms of Susannah, Robert Burns, Marchioness of Lothian, Gustavus, William, General Bem, Pyramidalis, Shakespeare, Thunderer, Sabrina, Magnum Bonum, and Clio. A third prize was assigned to Mr. Webster, gr., Ingliston. There was no competition for the prize offered for the four best trained Verbenas; but an award was made to Mr. Crombie, gr. to J. Adam, Esq., who produced four pots of Verbenas, the varieties being Othello, Madame Benzod, Reine Hortense, and Masterpiece. For Vegetables, the first prize was awarded to Mr. Thomson, gr. Woodburn, whose collection embraced more than 70 different sorts; and the second to Mr. J. Pender, gr., Moredun. There were likewise many meritorious extra productions sent for exhibition only (not for competition), and for these honorary awards were made and thanks voted according to circumstances. Messrs. Dicksons and Co. sent a general collection of exotics, embracing fine plants of Lilium lancifolium, punctatum, and speciosum, together with large stands of Dahlias, Pansies, and Clove Carnations. Messrs. P. Lawson and Son contributed stands of autumn-flowering Roses, Dahlias, Hollyhocks, French and African Marigolds. Mr. Carstairs, greenhouse plants; Mr. Handasyde, Dahlias; Mr. R. M. Stark, Asters and Marigolds, with Nemesia tricolor, Veronica, speciosa rosea, &c.; Messrs. Downie and Laird, West Coates, Hollyhocks and Asters; and Messrs. Ballantyne and Sons, Hollyhocks. From the garden of Professor Syme, there were beautifully flowered plants of Erica Macnabiana, eximia, retorta major, and Jacksoni, Roella ciliata and Pleroma elegans; from the garden of S. Hay, Esq., Echinocactus mammillosus in flower, and a fine plant of Primula Stewarti; from the garden of I. Anderson, Esq., a new species of Lilium, raised from seeds received by him, from Colonel Eyre, China; and a new species of Calceolaria, raised from seeds which he had received from Dr. Jameson, of Quito; from R. Girdwood, Esq., seedling Phloxes, and a Musk-scented Mimulus, with large blotched flowers; from J. Adam, Esq., Verbenas and Lobelias in pots; from J. Mood, Esq., Fuchsias (Purity and Sir John Falstaff), a white variety of Campanula pyramidalis, and stands of Dahlias and China Asters; from Mr. Crocket, Cockscombs; from Mr. Laing, gr. to the Earl of Rosslyn, blooms of a white seedling Hollyhock; from J. M. Mitchell, Esq., a fine plant of Agapanthus umbellatus; from G. Ritchie, Esq., China Asters and French Marigolds; from Mr. Veitch, Hollyhocks; from Mr. Grieve, Hollyhocks and Pansies; from Mr. Saddler, Hollyhocks; from Mr. Nicol, Hollyhocks, and an ornamental design of flowers; from J. Finlayson, Esq., a promising seedling Pansy, and stalks of Peruvian Barley; and from Mr. Mackie, and Mr. Gemmell, African and French Marigolds and China Asters. The latter were extremely fine. Twelve new members were elected.

## FLORICULTURE.

Arrangement of Flowers in Stands.—Permit me to offer a few observations on the mode adopted for reporting the names of winning collections of Dahlias, &c. My *début* was only made at page 567 of the present volume, so I shall not require to refer far back for an illustration. Some explanation is however necessary, in order that all may be benefited by the system pursued, for system I hold it to be, and one that must convey important information, displaying, as it does, the relative characters of the several productions, and also giving a tolerably clear idea of the taste employed by the different exhibitors in arranging their flowers. Little difficulty is experienced in placing them according to size, so as to set them off to the greatest advantage; and uniformity, as to distance apart, is also easily preserved; but something more is needed, viz., the producing a happy admixture of colours, and their tints, as viewed from the different angles of the stand, "Oft has it been our lot to mark," the very reverse of an artistic whole, even in the arrangement of a single dozen varieties of this or that flower, say the Dahlia; I have seen Earl of Clarendon side by side with the Iron Duke (Drummond), or Leda near Goliath; Admiral hand in hand with Queen of Lilacs, or his Grace of Cambridge, all alike fearless of consequences. Our hero of free trade has ere now been seen in company with Sir Frederick, and Perfection's Standard. These are but illustrations, given "to avoid," and (if my notions of arrangement be correct) they are "dangerous." I find, however, that I have somewhat run out of the course, so let us return to our starting point. It may occur that I shall have occasion to notice a flower in some particular collection; that flower may be referred to by number, and its position in the stand thus indicated; our custom in reporting the names of winning collections, has been to start from the left hand corner of the back row thus:—

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 |

If the collection be 24, then the back row will number from 1 to 8; the centre row from 9 to 16, and the front row from 17 to 24; if but six flowers are set up, they should stand thus:—

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | |
| 6 | | |

I may remark that the Metropolitan stands, long since enforced by that late society, are *those* now universally adopted, and I am of opinion that all societies should require flowers to be staged in that manner; if of no other advantage uniformity at least would be secured. Twenty-four Pansies are displayed in four rows of sixes; if 36, then four rows of nines, as are Carnations, Picotees, and Pinks; but for these I adopt the Horticultural Society's regulations, in which were given the size of pot, and the distance from bloom to bloom. In reporting I shall in all cases start from the left-hand corner of the back row, and proceed as in reading or writing; and in this way I hope to convey an idea approximating to the general character of the specimens as to their relative sizes; and, as I have stated above, if I wish to refer to any particular bloom, its position in the stand will at once be indicated by adding the number of its place in connection with it. *J. E.*

Amateur Tulip Society.—The half-yearly general meeting of this Society will take place at the Horns' Tavern, Kennington, on Monday the 6th instant, at six o'clock. The meeting, which has been made special, is for the purpose of taking into consideration an alleged case of non-compliance with the rules, on the part of one of the exhibitors. A ballot will take place for C. P. Lochner, Esq., who has been proposed as a member.

London Floricultural Society, *Sept.* 23.—Prizes to Amateurs for Dahlias in Classes—White: 1st, Mr. Noake, for Duchess. Blush Tipped or Mottled: 1st, Mr. Noake, for Mrs. Bacon; 2d, do. do.; 3d, Mr. Weare, do. Rose or Lilac: 1st, Mr. Hunt, for Fearless; 2d, do., for Queen of Beauty; 3d, do., for Fearless. Scarlet: 1st, Mr. Hunt, for Shylock; 2d, Mr. Noake, for Nonpareil; 3d, do., for Scarlet Gem. Yellow: 1st, Mr. Hunt, for Queen of Yellows; 2d, Mr. Noake, for Crocus; 3d, do., do. Maroon and Crimson: 1st, Mr. Hunt, for Sir F. Bathurst; 2d, do., do.; 3d, Mr. Noake, do. Purple: 1st, Mr. Hunt, for Mr. Seldon; 2d., do., do.; 3d, Mr. Noake, do. Orange-buff or Salmon; 1st, Mr. Hunt, for Duke of Wellington; 2d, do., for Seraph; 3d, Mr. Cowell, for Duke of Wellington. Light Fancy: 1st, Mr. Hunt, for Mrs. Hansard; 2d, do., for Florence Dombey. Dark Fancy: 1st, Mr. Hunt, for Gasparine; 2d, do., for Mr. Labouchere; 3d, Mr. Weare, for General Cavaignac. Varieties: 1st, Mr. Noakes, for Fame; 2d, Mr. Hunt, for Buffalo Girl; 3d, Mr. Cowell, for Princess Louisa. Nurserymen's Class.—White: 1st, Mr. Bragg, for Queen of the West; 2d, do., for Blanchfleur. Blush Tipped or Mottled: 1st, Mr. Bragg, for Hon. Mrs. Ashley; 2d, do., for Princess Radziville; 3d, Mr. Hunt, for do. Rose and Lilac: 1st, Mr. Bragg, for Admiral; 2d, do., do.; 3d, Mr. Bushell, for Fearless. Scarlet: 1st, Mr. Bragg, for Sir R. Peel; 2d, do., do.; 3d, Mr. Hunt, for Shylock. Yellow: 1st, Mr. Bragg, for George Glenny; 2d, Mr. Batten, for Crocus; 3d, Mr. Hunt, for Yellow Standard. Maroon and Crimson; 1st, Mr. Bragg, for Gem of the Grove; 2d, do., for Essex Triumph; 3d, do., for Louis Philippe. Purple: 1st, Mr, Hunt, for Mr. Seldon; 2d, Mr. Bragg, for Summit of Perfection; 3d, do., for Mr. Seldon. Orange-Buff and Salmon; 1st, Mr. Bragg, for Duke of Wellington; 2d, Mr. Hunt, for Seraph; 3d, Mr. Bragg, for Toison d'Or. Light Fancy: 1st Mr. Bragg, for Mrs. Hansard; 2d. do, for Miss Weyland; 3d, Mr. Hunt, for Highland Chief. Dark Fancy: 1st, Mr. Bragg, for Lady Grenville; 2d, Mr. Hunt, do.; 3d, Mr. Bushell, for Miss Blackmore. Varieties: 1st, Mr. Bragg, for Fame; 2d, do., Andromeda; 3d, Mr. Hunt, for General Negrier. Pansies—Nurserymen: Selfs: 1st, Mr Bragg, for Lucy Neal; 2d, do., for Ibrahim Pacha; 3d, do., for Cowper. Yellow Grounds: 1st, Mr. Bragg, for Pandora; 2d, do., for Nonpareil; 3d, Mr. Batten, for a seedling. White Grounds: 1st, Mr. Bragg, for Loveliness; 3d, do., for Duke of Wellington; 3d, Mr. Batten, for Hunt's Ellen. Roses—Light: 1st, Mr. Bragg, for Marquis d'Ailsa; 2d, do., for Duchess of Sutherland. Dark: 1st, Mr. Bragg, for Aubernon. Yellow: 1st, Mr. Bragg, for Sulphurea; 2d, do., La Pactole. Hollyhocks—Light: 1st, Mr. Bragg, for Maiden's Blush; 2d. do., for King of Roses: 3d, do., for Princess Alice. Dark: 1st. Mr. Bragg, for Formosa Improved; 2d, do., for President; 3d, do., for Enchantress. A First Class Certificate was awarded to Mr. Bragg for a seedling Dahlia named Phantom; also to the same for a Hollyhock, called Magnifica.

Norwich Horticultural, *Sept.* 17.—For 24 Dahlias, the first prize was awarded to the Rev. C. Fellowes, with Queen of Lilacs, Sir F. Bathurst, Mariella, Magnificent, Duke of Wellington, G. Glenny, Negro, Earl of Clarendon, Richard Cobden, Mrs. Seldon, Meteor, Princess Louisa, King, Fearless, Marchioness of Cornwallis, Mr. Seldon, Queen of the West, Grenadier, Gem, Summit of Perfection, Yellow Standard, Queen of England, Essex Triumph, Andromeda; 2d, Mr. T. Barnes, with Fearless, Negro, Sparkler, Magnificent, El Dorado, Princess Louisa, Snowflake, Duke of Wellington, General Faucher, Baltic, Duke of Rothsay, Earl of Clarendon, Richard Cobden, Queen of Lilacs, Fame, G. Glenny, Queen of the East, Nepaulese Prince, Nonpareil, Thames Bank Hero, Roundhead, Essex Triumph, Shylock, Sir F. Bathurst; 3d, Mr. Turner, with Mr. Seldon, John Edward, Queen of Lilacs, El Dorado, Magnificent, Thames Bank Hero, California, Princess Louisa, Sylph, Richard Cobden, Sir R. Peel, Mr. Palmer, Andromeda, Model, Sir F. Bathurst, Triumphans, Sir C. Napier, Barmaid, Nepaulese Prince, Admiral, Duke of Wellington, Fearless, Earl of Clarendon, and Duke of Cambridge; 4th, Messrs. Widnal and Davis. 18 Sorts: 1st, G. Holmes, Esq.; 2d, Rev. C. Fellowes; 3d, J. J. Colman, Esq.; 4th, Mr. Thos. Walpole. In addition to the varieties noticed above, we remarked Utilis, Beeswing, Princess Radziville, Almanzor, Captain Warner, Mrs. C. Bacon, Purple Standard, Napoleon, Lady St. Maur, Anticipation, Seraph, Privateer, and Cardinal Ferretti. 12 Sorts: 1st, Rev. C. Fellowes; 2d, Mr. Ablett; 3d, G. Holmes, Esq.; 4th, J. J. Colman, Esq.; 5th, Mr. W. Edwards. The sorts shown not already enumerated were, Toison d'Or, Crocus, Mynn, Jullien, and Queen of the Isles. 6 Fancy varieties: 1st, J. J. Colman, Esq., with Mrs Labouchere, Mrs. Hansard, Nihil, Elizabeth, Madame Wachy, and Jeanette; 2d, Rev. C. Fellowes, with Kingfisher, Conspicua, Pretty Polly, Jenny Lind, Rainbow, and Miss Jane; 3d, Rev. C. Fellowes, with Elegantissima, Mrs. Hansard, Frend Schnidt, Miss Elphinston, Elizabeth, and Madame Wachy. 12 Roses: 1st, Rev. J. Burroughes, who sent, among others, Géant des Battailles, Duchess of Sutherland, Jacques Laffitte, Souvenir de la Malmaison, Dr. Marx, Bourbon Queen, Augustin Mouchelet, and Dupetit Thouare; 2d, G. Holmes, Esq. 12 Verbenas: 1st, Rev. T. Burroughes, with Napoleon Buonaparte, Village Maid, Heloise, Eclipse, Defiance, Duchesse de Cazes, St. Margaret, British Queen, Morphee, Annie, Almanzor, and Comte de Serval; 2d, Mr. Edmonds; 3d, J. Gordon, Esq. Certificates were distributed to Dahlias Manilla (Fellowes), and George Villiers (Union), noticed last week; Verbena, no name (Edmonds), a purple with large white eye.

Slough Dahlia, *Sept.* 3.—This was a highly interesting meeting, and the blooms were in capital order. Amateurs; 12 varieties: 1st prize, Mr. Kirkpatrick, with Richard Cobden, Mrs. C. Bacon, Imbricata, Admiral, Sir F. Bathurst, Nil Desperandum, Snowflake, Frederick Jerome, Mr. Seldon, Purple Standard, Fearless, and Earl of Clarendon; 2d, Mr. Weedon, with Nil Desperandum, Model, Admiral, Duke of Wellington, Jullien, John Edward, Snowflake, Earl of Clarendon, Queen of the East, Yellow Standard, Mr. Seldon, and Sir C. Napier; 3d, Mr. Prockter, with Queen of Lilacs, General Negrier, Mrs. C. Bacon, Mr. Seldon, Richard Cobden, Mrs. Seldon, Standard of Perfection, Fearless, Admiral, Utilis, Duke of Wellington, and Princess Louisa; 4th, Mr. Hunt, jun., with Duke of Wellington, Magnificent, Marchioness of Cornwallis, Earl of Clarendon, Queen of Beauty, Hon. Mrs. Ashley, Black Prince, Mr. Seldon, Shylock, Fearless, Scarlet Gem, and Queen of the East; 5th, Mr. Cook, with Earl of Clarendon, Richard Cobden, Abigail (?), Negro, Fearless, Absolum (?), Essex Triumph, Mrs. C. Bacon, El Dorado, Mr. Seldon, Queen of Lilacs, and Sir F. Bathurst; 6th, Mr. Hopkins, with Mr. Seldon, Toison d'Or, Queen of Lilacs, Mrs. Seldon, Scarlet Gem, Beauty of Hants, Duke of Wellington, Beeswing, Yellow Standard, Fearless, Richard Cobden, and Seraph; 7th, Mr. Ford, with Duke of Wellington, Essex Triumph, Mrs. Seldon, Magnificent, Blanchdeur, Mr. Seldon, Earl of Clarendon, Marchioness of Cornwallis, General Faucher, Grenadier, Hon. Mrs. Ashley, and Sir R. Peel; 8th, Mr. Humber, with Princess Radzivill, Snowflake, Fearless, Mrs. Seldon, General Faucher, Scarlet Gem, Negro, Richard Cobden, Hon. Mrs. Ashley, Mr. Seldon, and Mrs. C. Bacon. 6 new varieties: 1st, Mr. Weedon, with Leda, Jullien, Duke of Rothsay, Regina, Admiral, and Gem of the Grove; 2d, Mr. Prockter, with Mrs. Hansard, Napoleon, Admiral, Sir C. Napier, Yellow Gem, and Nepaulese Prince; 3d, Mr. Holder, with General Faucher, California, Sir R. Peel, Hon. Mrs. Ashley, Gem of the Grove, and Admiral; 4th, Mr. Cook, with Sir C. Napier, Jullien, Mrs. Hansard, George Glenny, Miss Herbert, and Regina. 6 Fancies: 1st, Mr. Prockter, with Miss Compton, Gasperine, Highland Chief, Mrs. Hansard, Elizabeth, and Contribution; 2d, Mr. Ford, with Discount, Elizabeth, Lady Grenville, Miss Blakmore, Lady Cullum, and Floral Beauty. Dealers, 24: 1st, Mr. Turner, with John Edward, El Dorado, Mr. Seldon, Leda, Negro, Duke of Wellington, Yellow Superb, Magnificent, Fearless, Black Prince, Queen of Lilacs, Grenadier, Mrs. Seldon, Princess Louisa, Richard Cobden, Mr. Palmer, Sir C. Napier, Beauty of Kent, Andromeda, Snowflake, Mrs. Saunders, Princess Radzivill, Marchioness of Cornwallis, and Jullien; 2d, Mr. Bragg, with Princess Radzivill, Earl of Clarendon, George Glenny, Nil Desperandum, Magnificent, General Faucher, El Dorado, Mr. Seldon, Duke of Wellington, Fearless, Carminia, Hon. Mrs. Ashley, Sir R. Peel, Yellow Superb, Sir F. Bathurst, Mr. Palmer, Victor Boheim, Seraph, Miss Chaplin, Black Prince, Admiral, Essex Triumph, Queen of the West, and Fame. 12 Fancies: 1st, Mr. Turner, with Miss Compton, Jeanette, Highland Chief, Elizabeth, Mrs. Hansard, Dulcinée, Nonsuch, Flying Dutchman, Rainbow, Miss Weyland, King Fisher, and Gasperine; 2d, Mr. Bragg, with One in the Ring, Flying Dutchman, Keepsake, Highland Chief, Miss Pope, Kingfisher, Lady Cullum, Gasperine, Madame Wachy, Forget-me-not, Lady Grenville, Mrs. Hansard. First Class Certificates were granted to Una (Keynes), a bold white, which has been very successfully shown during the season; Malvina (Turner), mottled lake and white; Morning Star (Turner), brilliant scarlet orange; Miss Mathews (Bragg), remarkably bright, full, deep and bold, in every qualification an improvement on Lady Grenville, a variety it much resembles; Flora M'Ivor (Keynes), was shown; Miss Ward (Turner), Absolum (Cook), golden buff. Hollyhocks: 1st, Mr. Dyson, with Magnum Bonum, Bella Donna, Rosy Queen, Queen, Sulphurea, Lady Smith, Subram, Rosea grandiflora, Enchantress, Rosea Alba, Caroline, and Model of Perfection; 2, Mr. Holder. 12 spikes, mostly seedlings of considerable promise, were set up by Mr. Bragg. Pansies were contributed in good condition by Mr. Bragg and Mr. Turner. 36 bunches of Roses were staged by Mr. Wilkinson, of Ealing. Although not floricultural, I cannot help mentioning that two well ripened old Queens, weighing 6 lbs. 12 oz. and 5 lbs. 11 oz, were exhibited by Mr. T. Frost, gr. to E. L. Betts, Esq., of Preston Hall. It would be unfair to permit such fine fruits to pass unnoticed.

Stoke Newington, *Sept.* 25.—No less than 12 collections of Dahlias were staged on this occasion by Amateurs, each with 12 varieties, and 8 were rewarded. The 1st Prize, for 12 dissimilar blooms, was voted to Mr. James, for Mrs. C. Bacon, Danecroft Hero, Queen of Lilacs, Mrs. Seldon, Nil Desperandum, Elizabeth, Duke of Wellington, Admiral, Fearless, Yellow Standard, Sir F. Bathurst, and Shylock; 2d, to Mr. Cook, for Mrs. C. Bacon, Scarlet Gem, Queen of Lilacs, Earl of Clarendon, Fame, George Glenny, John Davis (Cook), Fearless, Essex Triumph, Absolum (Cook), Elizabeth, and Duke of Wellington; 3d, to Mr. J. Edwards, for Goliath, Queen of Lilacs, The Hero, John Edward, Mr. Seldon, Richard Cobden, Mrs. Seldon, Fearless, Miss Chaplin, Snowflake, Duke of Wellington, and Thames Bank Hero; 4th, Mr. Black, for Mr. Herbert, Mr. Seldon, John Edward, Princess Louisa, Thames Bank Hero, Queen of Lilacs, Mrs. Seldon, Fearless, Sir R. Peel, Goliath, Miss Spears, and Shylock; 5th, Mr. Weedon, for Duke of Wellington, Admiral, Nil Desperandum, Earl of Clarendon, Fearless, Essex Triumph, Mr. Seldon, Duke of Cambridge, John Edward, Queen of Beauty (Drummond), Psyche, and Sir F. Bathurst; 6th, Mr. Thurley, for Thames Bank Hero, Duke of Wellington, Mr. Seldon, Princess Louisa, Fearless, Purple Standard, Mrs. C. Bacon, Napoleon, General Negrier, Queen of the West, Scarlet Gem, and Queen of Yellows; 7th, Mr. Holmes, for Frederick Jerome, Mrs. Seldon, Thames Bank Hero, Queen of Lilacs (5?), Fearless (6?), Duke of Wellington, El Dorado, Miss Vose, Shylock, C. Turner, Sir F. Bathurst, and Scarlet Gem; 8th, Mr. Bennett, for Mrs. C. Bacon, Mr. Seldon, Queen of Beauties, The Hero, Thames Bank Hero, Queen of Lilacs, Imbricata, Princess Louisa, Duke of Cambridge, Crocus, John Edward, and Fearless. In the Dealers' Class, for 24 varieties, Mr. Gurney received the 1st prize. 6 Fancies: 1st, Mr. Black, with Highland Chief, Rachael, Miss Compton, Lady Grenville, Mrs. Hansard, and Queen of Fairies; 2d, Mr. J. Edwards, with Miss Compton, Mrs. Hansard, Highland Chief (3), Queen of Fairies, Flying Dutchman (5), and Captivation; 3d, Mr. James, with High-land Chief, Mrs. Hansard, Elizabeth, Miss Compton, Rainbow, and Madame Bresson. Fine spikes of Hollyhocks were staged by Mr. A. Parsons, of Ponder's-end: they consisted of Pilot, Aurantia Superb, California, Hero, Triumphant, and Beauty. These are Seedlings which are wholly in the possession of the Exhibitor: Enchantress, Obscura, Charles Baron, and Model of Perfection, one their origin to Mr. Chater; these, with Delicata and Rosea grandiflora (both Baron's), completed the dozen. First Class Certificates were awarded to Dahlias—Ariel (Turner), a bold and apparently pure white; to Miss Ward (Turner), yellow, with white tip (fancy); to Dr. Frampton (Rawlings), one of the most successful flowers of the year; and to Sir F. Thesiger (Rawlings), a lilac of great promise. Other Seedlings consisted of Morning Star (Turner), Malvina (Turner), Louisa Glenny (Rawlings), deep yellow, and a flower of which the raiser entertains the highest opinion; Defiance (Rawlings), an extra-sized bush white; Sarah (Pink) mottled lake; Lord Lyndhurst, deep maroon, with white tips; Rose of England (Rawlings), cheerful rose pink; Scarlet King (Green), previously described, as was also George Villiers (Union), Miss Merry (Union), fancy. The prizes were handed to the several winners in the course of the evening.

Dahlias: *Uniacke.* Your letter should have been addressed to the secretaries of the different societies which offer silver cups for Dahlias. For my own part, I consider them worthy of all the encouragement they receive. They are certainly everybody's flower; but instead of that detracting from their value, I consider it "heavy odds" in their favour. What would floral meetings be without them curing August and September? *J. E.*

Hollyhocks: *C J S.* Try the following:—Model of Perfection, Walden Gem, C. Turner, Magnum Bonum, Comet, Sulphurea Perfecta, Rosea Grandiflora, Enchantress, Rosy Queen, Napoleon, Sir D. Wedderburn, Lady Clark *alias* Queen of England, General Bem, Obscura, Mr. C. Baron, Spectabilis, Rubens, President, Bella Donna, Waterford Surprise, Susannah, Safranot, Swansdown, and Yellow Model of Perfection. *J. E.*

Pinks: *J K.* The second delivery has arrived. Julia (Young), sent out by Keynes is a flower much in the way of, and an improvement on, Mary Ann (Jelff). *J. E.*

Roses: *J C.* Judging from the appearance of the petals, for the bloom had fallen to pieces when received, the Rose much resembles the variety mentioned; we should like to see it in a younger state. *J. E.*

SEEDLING FLOWERS.

Pansy: *W D.* Withered and past recovery.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Watering is an operation which must at this season be performed with increased caution; and the little that is requisite should be given in the morning, when the ventilation is first increased above the ordinary night quantity. To assist in drying up the damp which is unavoidably engendered both by the watering and the natural circumstances of the season, a moderate fire should be lighted at the same time, except when the sun is itself sufficiently strong for the purpose. The application of artificial heat during the day will render it necessary to open the ventilators wider, to allow free egress for the evaporated moisture. Extremes, however, must in this, as in every case, be carefully avoided, keeping in mind that the object in using the pipes or flues during the day is merely to free the house and its atmosphere from superfluous moisture, and that the existence of the latter is calculated to be injurious. A very arid atmosphere is not less irreconcileable with the well-being of plants which are in the possession of healthy foliage. The medium course must be the one pursued, regulating the amount of air and fire heat, so as to effect the desired purpose by the usual time of reducing the air in the evening, when the heat should be checked by means of dampers in the flues, or stop-cocks in the hot-water pipes. After such treatment during the day, the heat enclosed within the house will generally be sufficient for greenhouse plants at night, as they will endure a much lower temperature when comfortably dry, than under different circumstances. Stove plants require much the same treatment at this season, taking care, of course, that the temperature be proportioned to their natural requirements. If their wood is properly matured, they will stand uninjured in a very low temperature. Ixias, Sparaxis, and other Cape bulbs of that kind, should be repotted, and plunged in a cool frame, or they may be planted out in a frame of prepared soil, and their elegant blossoms used for placing in the glasses. In favourable localities, it is not necessary to use a frame, as they may be planted in the ground in a nicely-prepared border, and left there for several years. It is not by any means a good plan to part these plants too frequently, as they are seldom very productive of flowers the first year after they have been disturbed. If grown in pots, it will therefore be better, unless they are very much crowded, to be content with

carefully removing as much of the soil as can be managed, without disturbing the bulbs, and replacing it by some fresh soil. For the stronger-growing kinds, the compost should be light and sandy, containing a considerable admixture of peat; but for Gladioli, and others of similar growth, a soil somewhat richer and stronger is needed. In all the plant-houses, let most scrupulous cleanliness and neatness prevail, and spare no pains to give them a gay and cheerful appearance; as they may, by good management, be made a luxury, indeed, and will afford pleasure and gratification to their proprietors.

FORCING DEPARTMENT.

As the length and strength of daylight is now so rapidly diminishing, all the glass sashes of the different structures should be washed; and to render the good effects of this ablution as permanent as possible, the mats, &c., which are used for covering at night, should be carefully removed to the sheds during the day, and kept perfectly clean, or the sashes will soon be as dirty as ever. PINERIES.—Montserrat Pines, which are now showing or flowering, will be invaluable in early spring, and should be assisted by every available means. A steady bottom and top heat must be maintained, and the most careful attention paid to watering. Let them have all the light possible, especially while they are in flower, at which time air must be liberally admitted during the day, to dry the atmosphere, and to prevent the monstrous growth of their crowns. VINERIES.—In the Vineries, containing winter Grapes, every exertion must be made to prevent damp. Any faulty places on the roof, which admit drip, should be repaired, and slopping of water entirely avoided. Where there are beds of tan or leaves for plunging plants in during the summer, it is a good plan to surface the beds with dry sand, to keep down evaporation. Any Grapes which are not yet properly ripened should be kept a little warmer during the day; this will at the same time assist to ripen the wood. Let all growing laterals be constantly removed, to allow of the freer admission of light; and in cutting the fruit from spurs, prune back at once to the most promising eye near the base. MUSHROOMS.—Continue to make up successional beds, as the season advances, and spawn and soil the earlier ones, as they are ready. It will be found time and material well bestowed to spawn the beds twice, with an interval of a fortnight between the two spawnings; by this simple means, we ensure a regularity of crop all over the beds, and the supply is more abundant and more permanent. Let the beds be spawned 1 foot asunder, in the first instance, leaving marks where it is inserted; and plant the second lot midway between the first. Keep the floor constantly moist, and the house quite dark. Let the admission of fresh air be from the lower part of the house, through the floor, if possible, and have ventilators so arranged that the evaporation may pass off freely at the top.

FLOWER GARDEN AND SHRUBBERIES.

Little can be done in this department, except in cleaning and removing annuals and half-hardy plants, as they cease to be effective; and as the various masses of these are removed, the beds should be at once filled with their winter and early spring occupants, whether bulbs or dwarf evergreens. In planting the former no time should be lost; but if a press of other work renders it necessary to postpone the latter, let the ground be neatly dug over, to give it a clean and fresh appearance for the time being. Attend to the pruning and training of climbers, and the staking and tying of any plants requiring artificial support. Very great exertions should be made at this season to render the neat and orderly keeping of a place conspicuous, that it may in some degree compensate for the gradually fading beauty. As the leaves of some of the trees are now beginning to fall, it becomes every day a more difficult matter to keep the grounds in order, and renders the most industrious perseverance necessary to maintain them in a creditable condition. Let the necessity of intense exertion be impressed upon the mind of every propagator; every day's delay in putting in cuttings at this season lessens the short time that they would have for striking root and strengthening themselves before winter. Unless this work is already completed, all hands should be brought to bear upon it, as the early summer display for next year depends considerably on the greater part of the stock being propagated in the autumn. Attend to those in progress, by judicious watering, shading, and ventilation; remove all dead leaves, and carefully cut away every attempt at producing flowers. As soon as the cuttings are rooted, let them be gradually but speedily inured to the open air, that they may form sturdy healthy plants before winter. If frames in winter cannot be afforded for the autumn struck Roses, they should be planted in rich soil, in well sheltered borders in the reserve garden, that they may have time to establish themselves. The Tea-scented and other tender kinds should occupy a compartment by themselves, where they can be conveniently protected from frost. Brompton, Queen, and late Ten-week Stocks should be transplanted into light soil, in a warm, dry border, where they can be protected by placing a wooden frame over them during winter. Take advantage of favourable weather for gathering seeds; those of biennials and perennials should be cleaned immediately, and sown in the reserve garden. A considerable time, often amounting to an entire season, is saved by sowing many such plants in autumn.

FLORISTS' FLOWERS.

Rough winds and an early frost have made Dahlias appear rather worse for their influence. We would recommend soil to be drawn round the stems without delay; look the plants over, and gather any seed which is ready; cut away broken shoots, and make the plants as neat as possible under the circumstances. Have some good Deal tallies made and painted, to which stout zinc wire should be attached; these will be ready to label the roots when they are lifted from the ground. PANSY AND PINK Beds should now have their final supervision; fill up any blanks which may have occurred, and stir the soil lightly between the plants. Any stock of late struck pipings or cuttings should also be set out, taking the precaution to hoop the bed over, as the heavy rains of autumn are extremely prejudicial to them. Potting Carnation and Picotee layers ought now to be finished or nearly so. Take care that the plants are not kept in a close frame too long; after a lapse of five or six days the lights must be gradually raised, till they are removed all together, only covering in heavy rain. A slight hotbed of Oak leaves or other material, will be of great service in assisting those which are but moderately rooted. Do not in the multiplicity of other things forget "the Tulip," early planting is advisable, in fact, any time from the middle of the month when the compost IS DRY; that it should be dry is absolutely essential.

KITCHEN GARDEN.

Do not, because the season is far advanced, allow the destroying of weeds to be neglected, as many of them will yet perfect their seeds, and increase out-door difficulties another year. We have sometimes seen a gardener attend energetically to this during the earlier part of the season, but by suffering the autumn weeds to grow and ripen, he had more than his old work to do again the next year. The earthing up of Celery and Cardoon crops had better not be longer deferred, lest they should be injured by frost; the operation should be performed when the ground is dry, finishing the work at one operation. This plan for the late crops is excellent, as both these vegetables are found to keep a month or two later than plants earthed up early; and the work is done at less expense when done at one operation. Take advantage of wet weather to rub seeds out, rope Onions, and twist hay-bands for Cardoons; and let the most useful men help forward with the work in the other departments.

State of the Weather near London, for the week ending Oct. 2, 1851, as observed at the Horticultural Garden, Chiswick.

| Sept. and Oct. | Moon's Age | Barometer. Max. | Barometer. Min. | Temperature Of the Air. Max. | Temperature Of the Air. Min. | Temperature Of the Air. Mean | Temperature Of the Earth 1 foot deep. | Temperature Of the Earth 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. | 26 | 29.694 | 29.605 | 56 | 43 | 49.5 | 55 | 54 | S.W. | .00 |
| Satur. .. | 27 | 29.784 | 29.625 | 57 | 39 | 48. | 54½ | 54 | W. | .01 |
| Sunday . | 28 | 29.790 | 29.665 | 62 | 30 | 46.0 | 54 | 53½ | N.W. | .00 |
| Monday | 29 | 29.705 | 29.601 | 60 | 39 | 49.5 | 54½ | 53 | S. | .14 |
| Tues. .. | 30 | 29.443 | 29.310 | 62 | 46 | 52.0 | 52½ | 52½ | S. | .00 |
| Wed. .. | 1 | 29.290 | 29.012 | 60 | 44 | 54.0 | 53½ | 53 | S. | .35 |
| Thurs... | 2 | 29.383 | 29.238 | 58 | 45 | 51.5 | 53 | 52 | S. | .14 |
| Average.... | | 29.582 | 29.449 | 59.3 | 40 8 | 50 0 | 53 7 | 53 1 | | .64 |

Sept. 26—Partially overcast and cold; clear at night.
— 27—Fine; cloudy; slight drizzling rain.
— 28—Clear and fine; frosty at night.
— 29—Foggy; fine; clear; rain at night.
— 30—Overcast; fine; cloudy.
Oct. 1—Fine; overcast; densely clouded; rain.
— 2—Partially overcast; showery; fine; rain at night.
Mean temperature of the week, 5 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Oct. 11, 1851.

| Oct. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 5 | 63.0 | 41.1 | 52.0 | 9 | 0.57 in. | 4 | 3 | 2 | 1 | 5 | 5 | 5 | 1 |
| Mon. 6 | 61.6 | 43.4 | 52.5 | 13 | 0.78 | 1 | 2 | 3 | 3 | 3 | 8 | 4 | 1 |
| Tues. 7 | 62.6 | 44.2 | 53.4 | 15 | 0.55 | 1 | 4 | 1 | 2 | 4 | 10 | 2 | 1 |
| Wed. 8 | 60.8 | 42.6 | 51.7 | 12 | 0.53 | — | 4 | 3 | 2 | 4 | 6 | 5 | 1 |
| Thurs. 9 | 60.1 | 43.4 | 51.7 | 14 | 0.82 | — | 4 | 1 | 1 | 4 | 9 | 5 | 1 |
| Friday 10 | 61.1 | 43.4 | 52.2 | 12 | 0.63 | 1 | 2 | 3 | — | 7 | 7 | 3 | 1 |
| Satur. 11 | 62.1 | 43.2 | 52.7 | 12 | 0.31 | 1 | 3 | 2 | 2 | 3 | 8 | 4 | 2 |

The highest temperature during the above period occurred on the 5th, 1834—therm. 80 deg.; and the lowest on the 8th, 1850—therm. 28 deg.

## Notices to Correspondents.

BIRDS—THE MOULTING BULLFINCH: *J L.* It is to be regretted that some of our good friends pass over our remarks, week by week, without giving heed to our counsels. They simply read what concerns themselves at the time, and do not lay up store of information for the future. This is obviously wrong. Your bird is infested with vermin; and his new feathers being now about to appear, his invaders torment him sadly by the irritation they produce in his skin. You have acted most unwisely in oiling his extremities, and must never attempt it again. As the case of your sufferer so closely resembles that of "the Canary" (see notice to "Amanda"), prescribed for (p. 616) last week—we refer you to it at once for detailed instructions to effect a cure; but remember, your bird must be put in a new, close cage, and kept warm. *W. K.*—THE MOCKING BIRD: *J T.* Yes; it *was* a singular coincidence, that in the very same paper containing our advice to a correspondent *not* to procure one of these creatures, a notice should appear from another hand detailing his strong points, and showing up his true character and accomplishments. We think, after what has been said by so dispassionate an observer of his powers of mimicry, we hardly need repeat our caution to a lover of birds; unless it be to speak of his additional "excellencies" in copying most faithfully the squeaking of a pig and the cackling of a goose; also of his giving by no means an unsuccessful imitation of the braying of a refractory and salient young donkey. For his size (he is not larger than a small thrush), the mocking bird certainly is a most wonderful creature; and though of a plain and homely presence, yet if noise, incessant uproar, and incoherent jargon be recommendations to favour, then is the palm *his*. By the way, the Uran-utan, at the Zoological Gardens, Regent's Park, is in high favour among the lady visitors there; and this reminds us that ours is "a *one*-sided opinion" only; and that "there is no accounting for taste." *W. K.*—THE GOLDFINCH: *J B.* Your nestling bird being of a nearly black colour, is no detriment to him. On the contrary, an occasional variety of this kind is pleasing. We have had black skylarks, white linnets, &c., &c.; and always found much to admire in them. Their song, as in the case of your goldfinch, has been always fine; and Nature lavish in her additional gifts, to atone for her deviation from a general rule. When your bird moults, it is probable you will observe yet another change. *W. K.*—THE WOODLARK: *Amelia S.* You did wrong to purchase so wild a bird. The legs of these birds are brittle as the finest glass; and if perchance they get caught in the wires, a fracture of one or both is inevitable. Your little friend (we say it in all kindness), *must be* killed. These birds require to be hung moderately high, and kept out of the reflection of all shadows. Their timidity is extreme. *W. K.*—THE BLACKBIRD: *Jane L.* You have purchased one of a late brood. He is suffering from cramp; and unless kept very warm, and cosseted in doors, you will lose him. At this advanced period of the year, you should always procure strong, full-feathered birds. *W. K.*—THE THRUSH. *Ellen A.* For once, you have puzzled us. We cannot, nor can any other person, tell you how to distinguish the male from the female at this season. As the whole three of your prisoners appear equally handsome and sprightly, cage them all off separately. Before Christmas, the males will be loud in song. Such as remain *silent* after this—strange as it may appear!—are *females*. *W. K.*—THE LINNET: *W A D.* He is moulting very favourably; but *must* be kept warm. The prevailing winds search every part of these little creatures' constitution. Give, in addition to what you mention, one or two bruised hemp-seeds twice a week. *W. K.*—THE ASTHMATIC GOLDFINCH: *Isabella W.* Although the account you give us of your pet's calamities is a grievous one, yet there is good hope of our effecting a cure. In the first place, he is over-fat. To remedy this, feed him sparingly; and let him fly daily in a spacious room, where the sun has access through the windows. This exercise will gradually reduce his bulk, and eventually restore his fair proportions. His difficulty of breathing will also be lessened day by day. As he progresses towards recovery, vary his food as much as possible, and give him the use of a bath. At present, living in confinement is quite against all reasonable hope of convalescence; the truth of which, to a reasoning mind, will soon become apparent. You have done wrong in lending your friends so many Nos. of the *Gardeners' Chronicle;* you have thereby incurred much risk of destroying your set, for there is an impossibility of obtaining some particular Nos. *W. K.*—THE CANARY: *Annie J.* The "birds" *have* arrived, in fine preservation, and we shall *prove* our "affection" for them, *D. V.*, on the first leisure day. *W. K.*—THE BLACKCAP: *J C Ewan.* The *spirit* of your bird is at once proved by his sprightliness and vivacity, after travelling so very long a distance. As he shirks the larger bath, this is all the better; as the season is now too far advanced to admit of the daily use of such a dangerous winter luxury. *Cramp* would be the inevitable result of such an indulgence. There can be no objection to his dipping his head into the glass which holds the water given him to drink. We cannot procure for you the first 17 Nos. of our "Treatises on Song Birds," at any price; and this proves THE NECESSITY, as we have before urged, of our readers providing themselves regularly *every week* with whatever number of copies they may require. *W. K.*—[Our accumulating correspondence renders it necessary to postpone all further Answers, on subjects connected with Ornithology, until next week. *W. K.*]

BOOKS: *A B.* "Paxton's Flower Garden" may possibly suit you.

ELDERS: *Sambucus.* It is the white berried kind. A variety of the common black sort, well known to collectors, but not esteemed.

ELEVATION ABOVE THE SEA: *An Old Gardener.* We will inquire and tell you next week.

FAN PALM: *H B.* If your "Fan Palm" is a hardy kind, then it may go along with Agave, and will merely require shelter from *wet* and severe cold in winter. If your contrivance will do this, it may answer.

FIG TREES: *Gallicus.* Starve them, and they will probably fruit with you.‡

FISH-PONDS: *J G C.* We have long been endeavouring to find a contributor upon this subject; but a person really acquainted practically with the subject has never yet turned up. We are still inquiring.

FRUIT: *A Constant Sub.* The columns of last and this week will, we trust, give you the information you desire.

HEATING: *M E B.* An Arnott stove will not answer well. Had you not better inquire about the Limerick stove mentioned to-day in a Leading Article? It is far more likely to suit you.

NAMES OF FRUITS: *Occasional Tourist.* Although the seedling Apple may be, as you state, a good bearer and a good cooking Apple, yet its form and size are not such as would render it desirable for general cultivation.‖—*E W W.* The Pear from a tree 80 years' old is one of those called Sanguinole. It has, doubtless, been originally obtained from France, where it has long existed.‖—*Launceswood.* 1, 9, 12, 13, 14, 24, Hawthornden; 2, French Crab; 3, Dumelow's Seedling; 4, 16, Minchall Crab; 5, Scarlet Nonpareil; 8, 36, Sam Young; 10, Golden Pippin; 11, 25, King of the Pippins; 15, 22, Wyken Pippin; 17, 35, Dutch Mignonne; 18, 19, Spice Apple; 20, White Winter Colville; 23, 38, things apparently worthless; 26, Court of Wick; 27, Dutch Codlin; 31, Northern Greening; 32, Red Quarrenden; 33, Scarlet Crofton; 37, Blenheim Pippin.‖—*H R S.* 3, Loan's Pearmain; 4, 8, Yorkshire Greening; 5, 13, Fearn's Pippin; 6, Wormsley Pippin; 9, London Pippin; 11, Hall Door; 15, Lamb Abbey Pearmain; 16, Jargonelle ‖—*A Constant Reader.* 3, Court of Wick; 5, Rhode Island Greening; 7, Fearn's Pippin; 8, Nonpareil; 9, Beauty of Kent; 11, Downton; 12, Yellow Ingestrie; 16, 27, Hawthornden; 22, Minchall Crab; 23, French Crab; 24, Hollandburg; 25, Pearson's Plate; 26, Court-pendu Plat; 19, Louise Bonne (of Jersey); 21, Beurré Rance.‖

NAMES OF PLANTS: *A Lover of Plants.* By Rogersia is probably intended Rogeria; but your plant does not belong to that genus. It is rather a Sesamum of some sort, and perhaps S. occidentale.—*Leyton.* Dendrobium chrysanthum.—*A E S.* Cupressus macrocarpa. ¶—*R J G.* Lastrea spinulosa. *S.*—*Erzeroum.* 11, Fritillaria tulipifolia.—*A Sub.* Pavicum miliaceum.—*John Hills.* Torenia concolor, a half-stove plant, to be grown in a warm moist atmosphere during summer, and to be kept cool and rather dry in winter. You cannot give Vines a better soil than good calcareous loam, with the grassy turf chopped up with it and half rotted.—*F H M.* Narthecium ossifragum.—*A Constant Reader, Walmer.* They appear to be young plants of the common Henbane.—*A B.* Tacsonia pinnatistipula. A few inquiries are unanswered.

RINGING FRUIT TREES: *Expertus.* The best season for ringing Pear trees which bear no fruit, is when the bark runs in spring.‡

ROSES: *E G.* We should have no fear of the plants. They cannot have made fine heads without making roots also. The land has suited them well, that is all.—*J W.* Your Roses, with dormant buds, may be removed this autumn with perfect safety, if they do not receiveany check; and in that case may bloom next summer.‡

TOMATO SAUCE: *K.* To make this, when the Tomatoes are quite ripe, cut them in two, press out the pulp, and separate the seeds; then put them in a skillet, with some savoury sauce, and a little salt. When of the thickness of Pea-soup, rub it through a coarse cloth, boil it to the consistence of marmalade, put it into jars, and in a day or two after pour over it lard or butter, and tie it down with oiled paper. For further information, see page 653, vol. 1847.‡

VINES: *R Josling.* If your variegated plant is really a Vine, it shows that Vines may become variegated like other plants. The variety is pretty, and we do not recollect having before seen it.

MISC.: *Sencx.* With much deference to the name you assume, we must be permitted to express our own opinions as well as to publish those of others. It is not worth going again over arguments formerly brought forward, on both sides of the question; we shall, therefore, merely add that we see nothing to cause a change in the view we have taken of a very unimportant matter.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

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The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

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THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

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| Clover Manure, per ton ... ... ... | ... | £11 | 0 0 |
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Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

HIGHLAND AND AGRICULTURAL SOCIETY. EDINBURGH VETERINARY COLLEGE.

The Committee of the Highland and Agricultural Society of Scotland, appointed to superintend the Veterinary College, hereby intimate that the Session will commence upon Wednesday, the 5th of November. The Course of Study will be conducted as follows:—1. Zoïatrics, including the Anatomy, Physiology, and Pathology of the Horse, Neat Cattle, Sheep, Pig, and Dog, Stable Management, and the Business of the Forge, by Professor Dick. 2. The Principles of Chemistry and Pharmacy, by Dr. George Wilson, F.R.S.E. 3. General Zootomy and Demonstrations, by Mr. Barlow, V.S. 4. Zootherapeutics, comprising Veterinary Materia Medica, and Dietetics, by Mr. Dun, V.S. 5. Practical Pharmacy, by Mr. Worthington, V.S. By order of the Committee,

Edinburgh, Sept. 27, 1851. JN. HALL MAXWELL, Sec.

SMITHFIELD CLUB, 1851.—CHRISTMAS FAT CATTLE SHOW.—Prize Sheets and Blank printed Forms of Certificate may now be obtained on application to the Honorary Secretary.

The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

The ANNIVERSARY DINNER of the CLUB will take place at the FREEMASONS' TAVERN on the WEDNESDAY of the Show Week, instead of the Friday, as heretofore.

B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon-street, Piccadilly, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

DURABLE OUT-DOOR PAINT.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Wood, Iron, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON and SON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange, London. No Agents.—All orders are particularly requested to be sent direct.

BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17s. 6d.; 7 quarts, 15s. 6d; 3 quarts, 13s. 6d. Drawings and particulars forwarded by post on application.

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MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analysis of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, informs the public that his mixtures of the NATURAL GRASSES and small CLOVERS, gathered under his own superintendence, including every sort necessary to form a Permanent Pasture, on various soils, are now ready; delivered on the South-Eastern Railway, at 1l. per acre, allowing three bushels per acre. Also Seeds for Lawns, and for renovating old pastures; the nature of the soil to be sown should be particularly stated. Instructions for sowing will be sent with each parcel. Seeds are this year comparatively scarce; the Advertiser has, however, determined not to raise his prices, considering the ruinous effects of free trade on Agriculture, and depending on the extension of his business for a return of his outlay.

IRISH FARMS TO LET.

MR. THOMAS MILLER, STOCK AND SHARE BROKER and LAND AGENT, will forward the list of Irish Farms which he has to Let, upon receipt of TWO POSTAGE STAMPS. He will give letters to view the Farms, and makes no charge whatever to parties who take Farms through him. For greater convenience he will immediately open an office in Dublin.

Mr. MILLER having been sanctioned by the Commissioners of the Irish Incumbered Estates Court, to register properties for sale in that Court, parties wishing to purchase properties either publicly or privately, may make application to him.

6, St. Andrew-square, Edinburgh.

BIRMINGHAM CATTLE SHOW, 1851.—The Certificates of Entry for Cattle, Sheep, Pigs, and Poultry, are now ready, and, with the Prize Lists, may be had on application to Mr. EDWARD LATHBURY, at the Office, No. 2, Insurance-buildings, Union-passage, Birmingham. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates, as a separate form is necessary for each Entry.

Birmingham, Oct. 4, 1851. T. B. WRIGHT, Hon Sec

The Agricultural Gazette.

*SATURDAY, OCTOBER* 4, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 9—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 16—Agricultural Imp. Soc. of Ireland.

NEVER at any time or in any country has agriculture afforded a wider or more important range of subjects for discussion than it does in this, at the present moment. It is economic, social, and political; scientific, practical, moral and educational: it is talked from the castle to the cottage, from the palace to the workhouse. It is clerical and yet secular; provincial, and yet fashionable. It has become common ground, on which all men meet. There seems to be but one thing which agriculture is *not*: it is not yet *statistical*: true to its old habit, it *keeps no accounts*. The national character follows the individual. But this may mend perhaps; when Farming Balance-sheets are as "plenty as Blackberries," it is just possible that some green member may startle the House, by moving for 'a Return of the amount of Wheat grown in England, Wales, and Scotland, respectively, in the year eighteen hundred and fifty' something: a very natural thing to wish to know, a very proper thing that 'the House' *should* know: but what a consternation it would make, this green member's motion! Who could supply it? who answer it? who give even a decent guess at it? 'On your oath' Mr. CHANCELLOR of the EXCHEQUER, was the Wheat grown in this kingdom, in the said year, *under* 12 millions of Quarters, or *over* 24!

What a shame this is. While all sorts of absurdly incompatible opinions stare each other boldly in the face, while anybody may say anything, without the least fear of contradiction, or may be contradicted point blank without the least possibility of reply, resource, or reference, upon a subject of such importance in this empire, and in every empire; what a shame this is, that you may cry 'doubles or quits' or give even a wider range of guess-room; and not the cleverest minister of the Crown can put you right—or prove you wrong!

For years that may be counted by hundreds—and you shall hardly know where to stop—this country has been governed by its Landlords: nor do we know any particular reason why it should not be; but look at the result. 'Charity begins at home," but not statistics. We know every bale of Cotton that comes in, every ton of Coals or Iron that goes out; every pound avoirdupois of Tea or Coffee, Sugar or Tobacco that is consumed: but as for Bread or Wheat! we literally know no more what proportion the four millions of quarters we imported last year bore to our home supply, and our average consumption, than we do of the ratio between the Atlantic gales we breathe in November to the Siberian blasts that chafe our lungs in March. Is it not too bad, that up in arms as we are about Protection and Free trade, busy with arguments, earnest in assertion on one side and the other—we are ignorant of the first elements of our lesson. With an import of four millions of quarters in Wheat alone, staring us in the face, we have some of us the hardihood to say that with 'Farming as it should be' we ought to be able to *export*: and this we say, as utterly in the dark as to what may be called the *major premiss* of the whole question, namely the actual ratio of our own produce to our consumption' as if Wheat were one of those immensurable commodities, like air or water, whose value, the economists tell us, lies not in the exchange, but in the use alone.

Yet it takes some trouble to grow our four or five quarters of Wheat on an acre of land; and if we find it so difficult and sometimes so provoking to count the cost, we might at least take the trouble to count *the acres!* Is it so very difficult? Is there any motive for concealment? There once may have been, perhaps. It is just possible that when Wheat was a kind of premium article, selling at a premium price, it might not have been quite so convenient, all things considered, to have a local 'enumerator' poking his nose and his note-book over the farm, jotting down the number of acres and the probable yield, once, or even twice perhaps, in every season. But that time seems gone by: a terrible indifference in this respect has come upon us. The reasons for wishing to know the truth remain; those for concealing it have departed.

It was stated in the Corn-trade reports, not three months ago, that the price of flour in Paris had suddenly risen eight francs per sack. Whence came this sudden convulsion upon the price of Flour in France? France, until within the last three or four years, was a country little heard of in the Corn-trade; for more than a generation it had been, one year with another, an importing country, drawing considerable quantities of corn from Belgium, Westphalia, and the Rhenish provinces on the north-east; and on the south from the nearest Italian Ports, and occasionally appearing even in the markets of England as a buyer. How strange to find it in the year 1850 contributing *one-fourth part* of the whole of the Wheat or Flour imported into this kingdom from abroad. This has been a consummation which Protectionists had not vaticinated, and for which Free-traders were not prepared. It stands by itself, and requires a separate explanation. It has had no small part in producing the longest-continued depression in the price of Corn in England that has been experienced during this century. It has filled with dismay our oldest Corn-dealers in the Baltic, has made the merchants of Dantsic, Stettin and Hamburg anathematise 'Free trade' as vigorously as our own farmers, and submit reluctantly to ship Corn to England at lower prices for a longer period than they had ever done before. It has turned the whole trade topsy-turvy, has puzzled its oldest oracles, destroyed all prospective judgment, and with it all speculation, and added a most provokingly unexpected reality to the forebodings even of the mournfullest prophets. The ghostly figure has arisen that the witch invoked but never expected to appear in such faithful and formidable reality, much less in that particular quarter. It has been one of the most curious episodes which the history of the Corn-trade has ever afforded.

The Revolution in France, in February, 1848, and the expiration of the Corn-laws in England in the same month of the following year, 1849, (both events probably connected with the general scarcity of the year 1847,) have produced consequences upon the Corn-market of Europe, and perhaps of the whole world, the entire features of which have not yet been seen, nor the tale fully told out. It is some years before the *reimbursement*, so to speak, of even a single year of severe scarcity is paid off, in the compensatory balance of natural season; but it is longer still before affrighted Industry is reseated at her manifold task throughout the length and breadth of a country that has been shaken in every joint, and the ramifying and interdependent relations of Trade dislocated by such a course of events as have existed in France for the last three years. Three abundant harvests alighting upon a country in which political circumstances had broken down the market for consumption even of its average produce, and drifting its superabundance into the neighbouring ports of this kingdom newly opened to the world, have placed the agriculture, both of France and England, under a cycle of trial and suffering, such as it may be hoped can scarcely, in the nature of things, occur again. On our side the channel there are no more Corn-laws to abolish; on the other the bitter experience of Revolution has been pretty well drained to the dregs; and if it have not, yet successive years of abundant harvests won't pipe for ever to their dancing.

It has been a peculiar time, of peculiar trial. That it carries, like a long rainy-season or a protracted drought, some ulterior good purpose within itself, may be not the less true, because we are not able at once to see it. Shape their measures as politicians may, or let 'accidents' or coincidences fall out or fall in, as they list, a Higher Hand is at work all the time, and broader and deeper purposes are being accomplished than we are able to read with the mere cotemporary eye. The quick sensitive-

ness of political feeling adds to the confusion and the difficulty; for it operates like a passion, distorting or exaggerating things which, contemplated with a calmer eye, would gradually resolve themselves into more intelligible attitudes of cause and effect, and become clear, at least, to those who had no object to serve in keeping the dust flying, and no aim but to arrive at practical truth.

How long the present depressed state of trade in France may go on, or how soon its cycle of abundant harvests may come to an end, it is impossible to say; but one thing is evident, that her close proximity to our shores, and her hand-to-mouth system, arising both from the total want of corn speculators in that country, and the small-scale farming which is carried on, render her a neighbour whose influence upon our corn market will become more and more important, and whose character in that regard it is very desirable to understand. A country in which the subdivision of the soil is such that the number of its landowners verges upon *six millions*; while in this they scarcely amount to two hundred thousand,—a country in which the principles of commerce are so little understood, that to this day a corn merchant is looked upon as a public enemy, and liable to popular outrage—a country nearer to us than Ireland, and containing six-and-thirty millions of inhabitants, of whom a much larger proportion are engaged in agriculture than in this, and are, both for this cause and many others, liable to much greater fluctuations of cereal produce, and, consequently, of price, than ourselves—must exercise an influence upon our markets, under an open trade, which throws upon us a double reason—as it is difficult to speculate very far-sightedly upon her resources—for ascertaining something about our own.

Never was this necessity more impressive than in the present season. Our harvest weather, and our harvest itself, have been such as to produce all the temporary appearance and effects of a glut. Needy sellers are, as usual, rushing to market, and rushing back again with pale faces, scared at the prices they have themselves produced. They come home bleating out the dismal figures at which corn was offered, as if there was a harvest every month in the year, and the country growing more than it could consume.

But the corn trade has everything yet to learn; the enormous consumption of this country, augmented by a severe winter, may make matters look very different a month or two the other side of Christmas. The late harvests of the north have yet to be reported, and the effects of another diseased Potato-crop yet to be experienced, more severely on the Continent, it appears, than even here. A 'deficient Rye-Crop' is a phrase of portentous meaning, upon that vast area of central Europe which English talkers, but no other, call 'Germany;' and which English dreamers, who dream at home, picture as a *Wheat*-growing soil like their own.

Black-Sea cargoes, freighted for England, have already been turned off, while afloat, for Hamburg, and the Dutch and Belgian Ports. It is pleasant to see how independent our own good harvest has made us, before September is well out, and the winter months began. But the sickle is a tool that requires twelve months' rest, whilst the nether-jaws of our well-employed millions have a way of wagging daily through the year with unabated zeal. The September sellers of new-grown Wheat are scarcely the best appointers of a market-price, or the trustworthiest interpreters or exponents of the future. There may be yet a further lesson for those two-tooth prophets who, forgetful, or never having heard, of the experience of the last century, have set it down impregnably for certain, that 'Free-trade' and the 'curse of over-plenty' are convertible terms. *C. W. H.*

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Among the articles sent to the Crystal Palace, too late to be brought under the notice of the jurors, was a set of samples of agricultural produce, to which we would draw the attention of our readers. It must have been obvious to all country visitors that the Agriculture of Great Britain is scarcely represented in this great industrial meeting, except by implements. Messrs. Lawson's admirable exhibition of Scotch produce is a curious and instructive museum; of Messrs. Gibbs' wooden bowls, the less said the better; and there's an end, with the exception of some fine samples from his Royal Highness Prince Albert, and a few other exhibitors, and some most curious hybrid productions from Mr. Maund and Mr. Raynbird. We are therefore justified in repeating that our own field crops are hardly represented.

Messrs. Wrench have, however, in part supplied the deficiency, by placing on the tables some very beautiful samples of the kinds of Corn, Pulse, &c., which are most important to English growers. As a representation of British wants and capabilities, this leaves little to be desired, the samples showing what can be done by first-class growers with the materials now at their command. If, for instance, a visitor would desire to know what is the best April spring Wheat that England can furnish, he will see it in the sample furnished by Mr. Rowland, of Coulsdon; in like manner the Golden Drop Wheat from Mr. John Killick, of Cranley; the Chidham from Mr. Henry Currie; the Red Kent Oats, the Fullard's Tick Beans from Mr. Fullard, of Thorney Fen, demonstrate, each for itself, what the peculiarities are of every separate kind.

There can be no doubt that this collection, if produced in time, would have met with the most favourable consideration of the jury. As it is, we can only record the names of the articles, of which the following is, we believe, a correct list.

1. Winter Russian Beans, grown in Surrey.
2. Fullard's Tick Bean, grown by Mr. Fullard, Thorney Fen.
3. Dun, or clay Peas, by J. Lewin, jun., Hollesley, Suffolk.
4. Early Haysell grey Peas, grown by the same.
5. Old English Beans.
6. Early Mazagan Beans, grown in Kent.
7. Large grey field Peas.
8. Maple, or Partridge Peas.
9. Sandy Oats, by A. Murray, Esq., Kirkton Boundrie.
10. Potato Oats, grown by Alex. Murray, Hap, Banff.
11. Early Birley Oats, by Jas. Longmore, Esq., Hilton, Banff.
12. Black Tartarian Oats, from Perth.
13. Red Kent Oats, by T. Knight, Esq. Bobbing, Sittingbourne.
14. Poland Oats, from Lincolnshire.
15. Hopetown Oats, by A. Longmore, Esq., Rettie, Banff.
16. Winter Oats.
17. Chevalier Barley, by Wynn Ellis, Esq., St. Ann's Farm.
18. Naked Barley, by Sam. Newcome, Esq, Orsett, Essex.
19. Black Barley, from Surrey.
20. Rye, grown in Kent.
21. Old Kent Wheat, red Burwell, grown by M. Stigwood, Esq., Exning, near Burwell, Cambridge.
22. Wellington white Wheat, by Mr. Fullard, Thorney Fen.
23. Talavera Wheat, by Mr. S. Mitchell, Raynham, Essex.
24. Hoary rough-chaffed, or velvet Wheat, grown by Mr. Goodwin, Coalwood Farm, Herne, Kent.
25. Breton Wheat, grown in Berks.
26. Chiddam Wheat, by H. Currie, Esq., M.P., near Horsley-park.
27. Taunton Dean Wheat, by Mr. D. Knapping, Shoebury.
28. Hunter's Wheat, by Mr. E. Campion, Barking side.
29. April Spring Wheat, by H. Rowland, Esq., Coulsdon.
30. Clover's Wheat, by T. Gardener, Esq., Moulton, Cambridgeshire.
31. White Chaff Red Wheat, grown by Mr. W. Challen, Wisboro' Green, near Horsham.
32. Red Lammas Wheat.
33. Golden Drop Wheat, grown by Mr. John Killick, Cranley.
34. Spalding Wheat, by Mr. Thomas Nicholas, Mountnessing.
35. Rape.—36. Canary grown in Isle of Sheppy.—37. Flax grown in Yorkshire.—38. Trifolium incarnatum.—39. Trefoil.
40. Red Clover.—41. White Clover.—42. Large grey Field Peas.—43. Maple or Partridge Peas.

## THE POTATO CROP.

Whatever the case may be in other places, here certainly the disease in the tuber has progressed with a rapidity and to an extent much exceeding that of the last three or four years; and from a fact I shall presently state, I fear there is some reason to apprehend, after they shall be stored, as great a destruction to the tubers as in the first year of the disease, if they do not, as in the second year, become very generally diseased before they are dug. It is true I have only an isolated fact to state; but the mention of it will draw attention, and may lead to examinations, which, if they corroborate my observation, will give us very serious cause of alarm for the Potatoes that on the digging appear sound. At all events it is one of those curious facts which "Falcon" so judiciously calls for, in page 566 of the *Gardeners' Chronicle*, of this year's volume.

We, who here see the crop perishing before our eyes, find it very difficult to credit the favourable accounts given in other places; and, indeed, are disposed to give them very limited credence. The provincial accounts are most conflicting, but they have always been very much so, which very possibly, and in the end it has generally so proved, arise more from other causes than really from the facts being various. Many take upon them to write from the appearance of the Potatoes at market, from which, as they would injure the sale, the diseased ones have been picked out; and as the people have now a great many more swine than in the earlier years, they find a more beneficial use for them than they did in those years, and when they were consequently glad to sell them at any price in the markets; others give their opinion from having confined their observations to certain sorts of Potatoes and certain descriptions of soils; and this, from the limited location which falls under the observation of each, must necessarily very often occur; and others, again, colour their reports with the temperaments of their authorities. The only facts to be relied on are those founded on the narrow limits of ocular observation, and the still narrower of actual possession. There can be no dispute that in some soils and localities the crop is far safer than in others, so far as the tuber is concerned, or the plague spots on the stems, or in the latter retaining more or less verdure; yet neither the same soils nor the same sorts of Potatoes that have escaped in one year are to be trusted to in another with unlimited confidence; for in the second year of the disease the bog or peat soils were comparatively safe, in the third year these soils did not so generally escape. In after years they were more commonly free, but this year the first instance I heard of some extensive disease was in the neighbouring bog land, and I am told this is not very uncommon in other localities. So in the Potatoes themselves, some kinds are much more seriously affected than others; thus in Donegal a very delicious and universally planted Potato called Cuffs (not Cups) and Downs suffered so much in the first years as to be all but totally destroyed, and were thrown out of culture; while the Rattlers, a despised and ill-flavoured Potato, if ever so slightly exposed to the air after being stored, were so little susceptible of disease as to have become the common crop of the country. In Longford the Cup, a fine hardy Potato, has suffered so severely in the last two or three years that it has nearly gone out of cultivation, and last year and this has been very much superseded by a kind hitherto not known here, called Scotch Downs, the seed being obtained from Connaught, in which province it appears to have obtained some little time previous, and which as yet has been so very little affected with disease; indeed, this was so much the case, that while the Cup seed sold in our markets last spring for 4*d.* a stone, the Scotch Downs fetched from 7*d.* to 9*d.* Indeed common report said (the first time I heard of them) that last year the Scotch Downs had escaped the disease, while many suffered severely by having grown Cups. I was disposed to regard rather too lightly this report, as, from the Cup being a late Potato, I considered the loss to have arisen from their immature state at the period when the disease came on. I am now perfectly satisfied that their loss is to be attributed to their present greater susceptibility; for not only is it everywhere said that the Cups are suffering to an extent equal to the worst years of the disease, but I have positive proof in my own. In the same field, manured in the same way, and in a continuous cropping, I have half an acre of Scotch Downs and half an acre of Cups; the withering of the leaves commenced at the same time, about five weeks back, but the stems of the Scotch Downs are still green and free from spots; they are also a full crop, while those of the Cups are completely mildewed. Of the tubers of the former very few, if any, are diseased, while of those of the Cups not one-half are sound; this I have repeatedly ascertained, by separation of the sound and unsound, as they were daily dug for use; at the same time there is not of sound and unsound more than half a crop of Cups in the ground. I learn this is very generally the case, and that the Lumper is also very severely diseased. Of my Ash-leaved Kidneys about one-third are diseased.

The very general withering of the leaves may with some plausibility be attributed to the absence of terrestrial electricity, or to the greater or less activity of any universal principle which in its excessive or diminished action, may affect the vital principle, which prevents or delays chemical decompositions; but how Dr. Turley (p. 566 *Gardeners' Chronicle*) can reconcile the various and apparently contradictory phenomena, local and particular, that attend the disease, to the unity of action and of effect which so universal a pervading fluid as electricity—the *anima mundi*—must produce, unless he also give it that property which we usually ascribe to pure spiritual essence, of electing by the will, I know not.

In my ignorance, I cannot understand an absence of terrestrial electricity, material or unmaterial; it is so subtle and all pervading a fluid, so necessarily present, as an agent of all life, &c., that its absence must prove fatal, not only to the Potato, but to everything earthly. In my younger days I was taught that it might lie dormant, as in the galvanic battery, but its absence I cannot comprehend, while our telegraphic lines convey our notices, and the magnetic needle guides the mariner. We must indeed advance very far in German mysticism ere we abandon the material deductions which led Bacon and Newton on to truth, for more sublime modes of inquiry into the disease of the Potato or the causes of mortality.

Hardy and Sons, I see, again recommend "cutting off the shaws or tops as soon as they are infected, with the view of saving the tubers." This has been done with doubtful effect by many; and although they may think, and ought to think rightly, that "Every year's experience convinces us of the utility of this practice," yet I think it questionable. When it was first proposed I expressed an opinion that it was too late to cut off the tops when the disease became visible in them, as the circulation of the sap must, before the fungus showed itself in the stalks, have carried the infection through the whole plant and into the tuber; unless, indeed, the external appearance preceded the disease, and which I thought very unlikely, since, in the very first year of the disease, the tops showed none, or very little indication of the disease, it was not observed, and almost the whole crop perished from it after being stored. A fact which has just now occurred confirms very much this opinion, and leads me to dread that we shall suffer to a very great extent this year when we come to store them. The end of last December I planted, for an early crop, about a rood of ground with rough Kemps. I had dug out about half of them before there was any appearance of disease; when the leaves began to exhibit some of the usual withering, I continued to dig for daily use, and had dug the whole with scarcely any indication of disease in the stems, and with only three diseased tubers. In levelling a part of the ground, on the 10th instant, several tubers were found (three or four pounds) of which more than half were badly diseased; these were on a part of the ground which was not dug out till after the leaves had begun to wither. In the part of the ground which had been previously dug out, before there was indication of infection, the tubers found were perfectly sound. I have more of this rood of ground to level, and will give the future result hereafter. *J. M. Goodiff, Granard, Sept.* 16.

P.S. In my paper of the 29th August I stated that the amount of this year's poor-rate in the electoral division of Scrably, was 17*s.* in the pound, and in Mullahoran 9*s.*; at a subsequent meeting of guardians this rate has been revised and very much reduced.

## AGRICULTURE IN SOUTH AUSTRALIA.

In answer to your inquiries respecting the farming operations of South Australia, though I have made inquiries wherever I could, I seem to have learnt nothing worth writing about. From the extreme dryness of last winter, the crops are failures in almost all cases. Wheat has risen to 6*s.* 1*d.* per bushel. The bakers have raised the price of bread from 3*d.* to 4*d.* the 2 lb. loaf, and they say it will be higher still. The average price of Wheat here is 3*s.* 6*d.* per bushel. Hay is now 5*l.* per ton, though half that is the usual price. Meat is now 4*d.* per lb., instead of 3*d.*, for the best joints. I do not at all wonder at the latter article rising, if there are many such tracts of land as we passed over from Adelaide to here—the wonder is how animals are kept alive. You see wretched brutes snuffing with their noses in the dusty ground, and appearing to look in vain for a blade of Grass; but further in the country, and amongst the hills, I am told there is more food than could have been expected from the dryness of the season. My husband told me last night about the daily increasing number of bullocks which were dying from sheer want. The rainy season is anxiously looked forward to, but many think that the fresh Grass will at first kill both sheep and oxen. You see there will be none of the old left to counteract the effect of the new. The last time I went to Adelaide in the car, a farmer's wife gave me an account of their farming. She had been several years in Adelaide, but two of her children died, and they resolved to try a country life. She took a section about three miles from Gawler Town, which had a Pine hut upon it; bought half-a-dozen cows, a dray and four bullocks, and hoped to do well. She said she had built grand castles in the air about her cows, how she would bring butter and milk into Gawler Town. She intended to keep the family with cows and poultry, and all that the farm made was to be saved.

The husband, by working early and late, prepared a dozen acres of land, and sowed it with Wheat. Thirty bushels per acre are considered a good Australian crop on fresh land, but if they had got 20 bushels they would have been satisfied; but in consequence of the drought, the north winds had such an effect on the crop that they did not reap 30 bushels from the whole of the land; and from the cows she had for four months past she had got just sufficient milk from the half dozen to put in her tea night and morning. She said both bullocks and cows must have died from want of water if they had not got it by sinking a well in the bed of the river. I asked her how they had managed to live, and she said her husband had worked with his bullocks and dray whenever he could get employment, and she had been able to rear some poultry. The farmer's wife was just the sort of woman to come here—a strong, hard-working woman, and by no means nervous. A few days before I saw her she told me she was sitting at the door of her hut with her baby, when she heard a rustling close to her, and looking she espied a snake gliding amongst the withered Grass; she dropped the child, and with a wood chopper ran after the reptile, and managed to cut it into five pieces. She said she was terribly frightened at the time, but she knew if it was not killed she dared not stay in the place afterwards. When her son came home he put the pieces together, and found the serpent measured nearly 6 feet.

I was much amused at the opinion of one gentleman who came to Australia determined to be either a sheep or corn farmer. After he had made an inspection of the country in the neighbourhood of Adelaide, he said "Each sheep would require to be mounted on the back of a pony to be conveyed from one blade of Grass to another." The driver of the car told me that the reason there were so many thousands of acres unoccupied between here and Adelaide, was from the exposure of the plains to the hot north winds, which scorch everything up. There is as yet no system of cropping adopted, except taking as many crops of Wheat off the land as it will produce, and then it is fallowed. The first crop after the fallow is generally hay, consisting of Grass and Oats mixed (for the Oats do not ripen here), and then begin again with Wheat. Potatoes are not much grown. We are mostly supplied from New Zealand; the price at present is 6*l.* to 7*l.* per ton. I had just got this far when in came Mrs. K——, the farmer's wife above-mentioned; she could talk of nothing else but the cattle dying. One of her best cows died yesterday, literally of starvation; and a neighbour has lost 14 head of cattle from the same cause. Her husband has been at the Burra mine, and he said that within a stone's throw of one of the water-holes, he counted 100 dead bullocks! Is it not horrible? Every one is looking anxiously for rain, but the weather only seems too settled. To-night there was a most gorgeous sunset; you cannot conceive anything half so beautiful—I wish I could describe it. Fancy all along the western horizon the sky of an exquisite pale green—not blue; then above that, and stretching their arms over towards the eastern horizon, were light fleecy clouds, like branches of trees, of a reddish orange colour, and behind and between these clouds was the deepest blue;—but a description only spoils such a scene. Even the children were delighted, and I could only induce them to come into the house, by promising to hold their hands to enable them to write a letter to England.

The Government price of land is 20*s.* per acre; but as poor people cannot afford to pay, capitalists think it a safe investment to purchase outright, letting the land, on condition of purchase, at 30*s.* per acre in five years; and by this means they will sometimes get 15 per cent. on the outlay. Others again let the land for three years, and for a remuneration get it fenced. Mr. Agges, the Independent minister, has just been in; he has been out on a begging expedition for an Independent chapel, and he spoke with great admiration of the Mount Barker District, the agricultural country of South Australia: it lies about 30 to 40 miles from here. One farmer, with whom he stayed all night, told him that this year he had taken his tenth successive crop of Wheat off the same land, without even putting in a shovelful of manure, and he had got this year above 30 bushels per acre. Another told him that three years ago he bought a section which had been some time in cultivation, for which he had to pay 400*l.*, the payments stretching over three years. From the profits of the Wheat, he has been enabled to pay all off. I fancy these are unusually fortunate cases.

Badly as we have done, I never for one moment wish we had taken a farm, as I think there is as much risk in that as in any other thing. Certainly we hear often about Germans in particular, who, after working and living like slaves for three or four years, have been enabled to become possessors of a section of land; but in most cases father and sons have been able to do all the work, and they have been accustomed to hard work and privations from their cradles.

Just imagine what distress the death of all these bullocks must have caused. Probably many of them belonged to small farmers, who, to make up for failing crops, worked upon the roads, and between the Burra and Adelaide for hire; and what will they do when their bullocks are gone? The price of a working bullock runs from 3*l.* to 5*l.*

My husband was down at the Post-office last night, where he met the emigrant whose wife assisted me with the children during a portion of the voyage. They had made some money at first, but had since been unfortunate; but notwithstanding this, the good woman had actually adopted a poor orphan girl.

I am afraid my letter will be of little service to you, though I hope it will interest you as a practical farmer. I will write to you from time to time, whenever I can gather as much as will fill a letter. *Gawler Town, South Australia, 25th March*, 1851.

## THE CULTURE OF THE TURNIP.

The Turnip plant is most usually inclined to grow on light loams and sandy lands: but the growth of it has been gradually extended to soils of a heavier sort, that have been rendered more friable by the processes of cultivation. The use of it in the fields began in Norfolk, where the soils are favourable, and where the ploughing of land with two horses, yoked abreast, was observed by Mr. Dawson, the son of a Scotch border farmer, who went there for the purpose of acquiring general knowledge. He had seen Jethro Tull's book, in which was propounded the theory of sowing all crops in rows or drills, and he hence conceived the idea of forming drills or ridgelets by the common plough. Mr. Dawson's first attempt near Kelso was unsuccessful on a harsh clay land. But having soon afterwards removed to a very favourable soil of sharp gravelly loam, on the north slope of the Cheviot hills, his success was unbounded, and Turnip farming in the hands of the border farmers, on the very favourable soils of that country, soon raised the cultivation of the plant to the present just pre-eminence which it has there attained. The general field culture of the Turnip may be dated about the year 1760.

Turnips form the second crop in the most approved rotations on light lands, and thrive best after Oats, which are most generally the first crop after Grass, which begins the course. From whatever cause it may arise, the fact is certain, that Turnips thrive better after a crop of Oats than after any other plant, either culmiferous or leguminous. So soon as the harvest is completed, the Oat stubble is ploughed to the depth of 6 to 8 inches, so soon as the early winter rains will have moistened the soil. In this state the land lies till March, or till the dry weather allows it to be cross-ploughed, when the harrows and roll, used alternately, crush the clods and raise the weeds, which are picked by hand, and removed from the field. A similar process of ploughing and harrowing is done in about 14 days after the first operation, when the weeds and stones are again removed. Four clear earths are, at an average, reckoned sufficient to clean lands, and to bring them into a proper state of pulverisation. Lands intended to be sown with Swedish Turnips in May should have received two clear earths by the first of that month, and must get another about a week before the sowing commences; the lands to be sown with common Turnips in June should get two or three earths by the beginning of that month. The ploughing before the drilling of the land should be done across the field, as the drill plough is always inclined to slide into, and follow the longitudinal furrow, and lose the proper direction. By crossing the last done ploughing, it has no inducement to any lateral direction.

The dung from the farm-yard must have been laid in oblong heaps on the headland or near the gateway, and turned over, in order to commence the fermentation about 10 days before the use of the dung is intended. Upon this fermentation being produced at the proper time, and upon its going on briskly at the moment when the dung is deposited in the drills, and the seed placed within the reach of the exhalations and combinations that are happening during the fermentative process, and the recent movement of the soil, the success of the Turnip crop very much depends while in its embryo state of existence. The drills are laid in a direction which will be at an angle with the ploughing of the land for the succeeding grain crop, though in many cases both processes are done in the same direction. On deep light loams the drills are made by a double mould-board plough, which makes a ridgelet by travelling the length of the field, forming two drills in going and returning. This plough is of somewhat difficult management, owing to the double-feathered share gliding upon and not penetrating the bottom of the land, and the two wings or mould-boards resisting a downward tendency, and heaving the plough upwards. The common plough is used in forming drills by going twice in one furrow; and though double time is consumed, the mode is much the most preferable. In the quicker operations of modern times, drills are formed by one furrow of the common plough, and the dung is covered by two; which, however, implies that the soil is a good Turnip loam. In the majority of cases, the common plough is preferable to the double mould-board, especially where the surface of the ground is formed of some number of crumbling clay clods, and when the bottom is clayey, gravelly, or a hard concreted earth. The double mould-board plough is unable to penetrate the stiff bottom, and the wings push together the clods of the surface, which form the top of the drill, and afford to the Turnip seed a bed of dry clods, without moisture or loamy adhesion. The common plough, with the angular pointed share, penetrates the ground, and throws to the surface a fresh moisture raised from beneath, in which the Turnip seed vegetates, and grows rapidly. This superiority is now most decisively established.

Farms of 400 acres and upwards admit the largest arrangement—of two ploughs, forming drills with one furrow, at the average rate of eight acres daily; five or six one-horse carts will bring forward and deposit the dung, three or four men are engaged in filling the dung at the heap, four boys drive the carts to and from the field and the heap, one lad leads the cart, being emptied, along the three drills that receive the dung, a very steady man pulls the dung from the carts into regular heaps of a small size, a man separates the heaps into three parts into the three drills, three women or stout lads provided with light three-pronged forks, spread the dung evenly along the furrow; a very careful man follows the spreaders, places any neglect in the proper place, calls and corrects the spreaders, and sees the work properly done. Three common ploughs follow closely after the spreaders, and cover the dung with two furrows to each drill, and finish one ridgelet in going and returning. The ploughs are provided with main trees of five feet in length, which stretch over two drills, and enables the left hand horse to walk on the top of the drill on the near side, which prevents the feet of the animal from removing or pushing about the dung lying in the hollow, if the horse walked in the interval. In returning, the horses walk in two hollows, with one between, in which the plough moves and throws the earth over the right hand drill, which was covered from the left side by the first cleaving of the ridgelet. The double Turnip drill sower follows closely the covering ploughs, and deposits the seed on the freshly moved soil. Eight acres can be finished in a day by this arrangement.

If the season of Turnip sowing be dry, and the land cloddy, rolling of the drills is very necessary on the day after being sown. In damp weather, and on moist soils, the light roll attached to the sower may be sufficient, or the rut of the coulter may be left entire, as the sides of it protect the young plants which grow in the hollow. But in the case of cloddy soils and a dry season, the quick rolling of the drills is most essential; it breaks the clods, presses the seeds close to the dung, and in imbibing and retaining moisture it acts as a lock and key. Without that operation the seeds lie among dry clods or parched dust, and in many cases never vegetate at all from the want of moisture, and of that degree of pressure which is necessary to attach the tender germination to the soil or future bed.

The most indispensable and essential requisite in sowing Turnips is dispatch or quickness of execution in getting the different processes performed, so as to keep in store for the use of the young plant the moisture that may be in the soil, and to prevent it from escaping. The time of the year is the driest in the whole cycle—the sun is generally hot and parching, and rains are unfrequent, and fall at distant intervals. In such cases—and they are very general, the moisture in the land forms the only dependence, and in order to retain it for the uses of the young plant, a very considerable exertion becomes necessary. After the beginning, the drills must be opened only half an hour before they are closed again, in order to prevent the exposure of the land to drought; the dung-carts must be close upon the drilling ploughs; the covering ploughs working within three drills of the dung being spread, and the seed sowing machine finishes the process of depositing the seed upon every two drills immediately as the ploughs leave them. The multitudinous number of farming implements yet wants a roll for the purpose of pressing the bottom, sides, and top of the drills, and present a very beautiful finish of sowing Turnips on the finer kind of loams. A log of wood must be hollowed into the shape of the drill, and secured by iron hoops at the ends and thick parts. Cast iron has been attempted, but the bottom and sides are not properly pressed. During the want of such an implement, the drills are rolled by a cast-iron cylinder of 6 cwt.

Turnips must be sown thickly, not under 3 to 4 lbs.

an acre, according to the humidity or dryness of the season. When the tender plants stand singly and distant, they grow slowly, and are more exposed to the attacks of enemies. When growing thick together, the plants shoot up much more rapidly, get sooner beyond harm's reach, and attain the fit state for being hoed or singled out. In ordinary seasons, the Turnip plants will have attained a good size in the course of six weeks from the time of being sown, and will show an abundance of large rough leaves. The horse hoes, drawn by one horse, must be first employed to cut the bottoms and sides of the intervals between the drills, and the hoers can enter on the work immediately. Each worker is provided with a hoe made of thin iron, about 9 inches long and 4 inches wide, on the middle of which an eye is attached on the upper edge, into which is fitted a rounded wooden shaft of such a length as allows the wielder of it to stand upright when the hoe rests upon the ground. A steady person is appointed to lead, or go foremost, and the others follow in close succession. Each person stands with a foot on either side of a drill, and hoes or thins the one immediately before him, and the drill which he bestrides is hoed by the person immediately behind. The operation is performed by "drawing and pushing;" the hoe is pulled through the the row of growing plants, and leaves one plant, at the distance of 9 inches, or the length of the blade of the hoe; it is next pushed through the row, and leaves another growing plant as before. The drill is thus formed into a narrow comb with the growing plants attached to the top by a single thread of root, lying on their side, from which position they quickly rise and stand upright. The earth, weeds, and superfluous plants are thrust into the interval of the drills, where the action of the scuffler, two or three times repeated during the summer, kills every vegetation, and pulverises the soil. A second hoeing after the Turnips are grown in the half size, pulls any weeds that have escaped the horse hoe, and any Turnip plants that form two together, from the neglect of the first hoeing. The horse hoes continue the scuffling of the intervals so long as the leaves of the plants, in meeting over the intervals, allow the passage of the implement. Earthing up the drills of Turnips by the double mould-board plough is not now practised, as the contact of earth encourages the shooting of lateral fibres, which render the bulb very bitter and coarse. The crop is left to grow till required in October or November.

The growing of Turnips by artificial manures requires the lands to be prepared as above explained, by the soil being finely pulverised, and the weeds and stones removed. The drills are best formed by a deep heavy furrow of the common plough, at the distance of 27 inches, on which Hornsby's drop drill deposits the manure and seed in mixture, in bulbs, at the distance of 9 inches, which are let go from a cylinder with valves that are opened by a spring. This method saves both manure and seed that are wasted in a continuous stream, and the vegetation of the seed is stimulated and very much assisted by being mixed with the manure, and thus having the food in the readiest preparation, as in the case of bones, which are now heated, fermented, reduced by acids, or prepared by steaming. The intervals of the drills are scuffled, and the plants thinned to one in the distance of 9 inches, as before explained.

The raising of Turnips on the flat ground is practised with much success on the royal farms at Windsor, which are under the management of Major-General Wemyss, a gentleman of a very acute and enlightened mind. The soils are harsh loams, lying on the junction of the clunch clay with the Bagshot sand, and intermixed with the chalk. The finer loams are ploughed with the dung into ridges of 14 feet in width, on which the Turnip seed is sown by the corn drill, and the crop managed as before directed. On the more clayey lands, which are hardly Turnip soils, the land is gathered with the dung into stitches of 6 or 8 feet in width, which are harrowed fine on the surface, and the seed is sown in rows by a machine with lengthened coulters, which covers the narrow ridge by one operation. The crop is managed as before explained. The land is kept dry in winter by the frequency of furrows, which may lose ground for the crop, but renders more safe the ridges that bear it.

As a corollary from this solution of the problem of growing Turnips on harsh clayey loams, it may be supposed that the practice can be extended to clay lands that are thought to be beyond the reach of being used in any way for the growth of Turnips. The land may be reduced as much as possible till the time of sowing—the land ridged with the dung into breadths of 6 to 10 feet—the surface harrowed as fine as possible by horses walking in the furrows and drawing the harrows, which cover the ridge, and which are attached to a tree which stretches over it. The seed is then sown in rows by coulters, and the crop managed in the usual way. It may be doubted if Turnips could be grown in this mode on the clays of marine formation, but the alluvial deposit of that earth will admit a much more extended cultivation.

The only objection to sowing Turnips on the flat ground arises from there being no hollow interval in which the scuffler can move for the purpose of killing the weeds, and pulverising the ground. There is the usual width of interval, but being on a level with the plants, there is wanting the same freedom as is afforded by the hollows of the drill system. But this deficiency is very amply compensated by the advantages that have been mentioned.

Turnips are yet in some places grown broadcast, and on good clean lands very fair crops are produced. But the system is most miserably deficient on weedy lands, and in moist climates.

On pared and burned lands, Turnips are sown in broadcast, as the land being only once ploughed, does not admit the drill by the plough or lengthened coulter. The finely harrowed surface over the ashes receives the seeds, and good crops are obtained. In the case of loamy lands, the ground is wrought and fallowed, and drilled by the common plough. The ashes are thus well mixed with the soil, and produce large crops of roots. Ashes have been spread on pared land where the burning was not done, and little benefit was derived from the application, which shows that the chief benefit arises from the temperature that is given to the land by the heat of the fires, and which remains in the land a longer or shorter time, as the land is constitutionally formed for imbibing and retaining caloric. Hence the very great differences that have been observed from the process of paring and burning.

Turnips are required for use in the end of the month of October, and almost universally by the 1st of November. The fibres and tops are cut by hand-sickle from the bulbs on the ground; the tops are given to young cattle in the yards, or to store sheep on a lea or stubble ground. The bulbs are carried to the homestead, and given to feeding and store cattle, in an entire state, or cut into slices, and placed in cribs, which are best made of wood, having latticed bottoms.

The lambs of the year will require the first use of the Turnip crop, and the most forward growth of the White Globe variety. The whole crop may be consumed by the sheep, or the one-half, one-third, or any part, may be carried away, and the remainder used on the ground.

The most useful varieties of the Turnip are, the White Globe, the Green Globe, and the Aberdeen Yellow. The Swedish Turnip, or Ruta-baga, is the most useful of all, as it resists the hardest frosts without injury. It requires the best lands and heavy manuring, and to be early sown—from the 10th to the end of May. The White Globe is used for consumption from October to January; the Green Globe from January to March, when the Swedes and Yellows come into use, and extend to June, when properly stored.

The chief disease or enemy to which the Turnip is exposed is the fly (the Altica nemorum of entomology), a little insect belonging to the order Coleoptera; they are bred from larvæ deposited in the fields, and there are five or six broods in the summer; they love sunshine, and eat most voraciously the first smooth leaves or cotyledons of the Turnip. No remedy has yet been found against this most destructive insect. The only plausible one consists in having the land and manure in a prime state of preparation, so as to push the young plant into the rough or second leaf, when it is beyond the power of its enemy.

The introduction and the successfully extended cultivation of the Turnip very soon most completely revolutionised the entire circle of British husbandry, by increasing both the quantity and quality of animal and vegetable food, and by insuring a steadier supply of the necessaries of life at all seasons of the year. *J. D.*

## Home Correspondence.

*Drainage.*—After all that has been written on draining, it seems not a little singular to meet with such views as those expressed by Mr. Gill, in the *Gazette* of to-day (Sept. 27). Referring to stiff clay, he says, "If water will sink through 1 foot, why not through 5 feet? for gravity extends deeper." The question would be sensible enough, if the subsoil were equally tenacious above and below, and gravity the only influence required to make it porous and friable; but evaporation or drought is the chief agent in effecting porosity, and all authorities admit that it must operate effectually on clay, before water can sink properly into the drains. Hence the question arises, how deep will its power extend, and what will its effect be at the sides of each drain? This is, in fact, what the whole argument, when divested of verbiage, resolves itself into; yet Mr. Gill, and others, see fit to avoid this point, although the only one now requiring consideration, and the principal one by which the proper depth and distance of drains in clay must be determined. Do they suppose that stiff clay is as porous below as at the surface, or if it were that evaporation would act on it to an unlimited, or even to a considerable depth? If they do, I will only say they have studied and experimented to little purpose, and must be incompetent to judge as to the merits of an argument on this question. The argument, it should be observed again, refers merely to stiff clay soils, for as regards porous soils, all good drainers give in their adherence, not indeed to any particular depth, but to depths of from 3 to 20 feet or more, as the case may require. The point at issue, thus limited, can be understood, and I have been expecting to see Mr. Wilkins grapple more closely with it, so as to bring it to a satisfactory termination, which he must know cannot be done by mere general assertions and truisms. His remarks, as yet, are far from proving to my mind the propriety of draining five feet deep, in tenacious soils. It is very true, as he says, that an acquaintance with caloric, hydraulics, hydrostatics, and geology, is necessary to show why and how land should be drained, and he might have added at least two other conditions, viz., an idea of the depth and distance to which a drain will enable drought to operate; and a sound judgment to bring all these branches of knowledge to bear in the best manner upon any given case, whatever its nature may be. If he had done this, and then shown how he applies the whole to guide his practice, we might have seen how far he is warranted in recommending universal deep drainage, or the treatment of all cases alike. Science, in the abstract, is very good; but what we require is science applied in all its bearings on this case, to found a theory which practice will sanction—one about which there can be neither doubt nor cavil. When this is done the result may perhaps not be as Mr. Wilkins anticipates, for it is quite clear that he and others are not looking at this question in all its bearings, and until they do so I think it quite possible that they may reason falsely and practise imperfectly or uselessly in cases differing from those to which their experience has extended. There is one particular twaddle about water sinking as deep as drought will operate. Most people know that with proper management all the rain will and ought to sink at once through at least 18 inches of any soil, but there are soils respecting which an opinion is entertained, that no management will cause the water to sink much deeper than 18 inches between the drains; and let me assure Mr. Wilkins and those who think with him, that this opinion rests on a basis which all their philosophy will not overturn. It is true the results of experience are not complete, but they are quite sufficient at any rate to show that stiff clay beyond a very limited depth will not be changed from an impervious mass to a fine open filter, merely because a man chooses to cut drains in it at conventional distances, even although the drains be filled with porous matter. Mr. Gill appeals to practice, and says, "Let a 5 foot drain be cut in clay and observe its effect." Very well, let it be cut by all means, and if the subsoil should happen to be a really stiff clay, tilly or indurated in any way, or containing iron or stones to bind it together, or prevent its being readily contracted, the result will be as I have observed many times, that the drain, after reaching the depth of 3 feet, merely affects a few inches of the clay at each side, and procures no additional shrinkage of the mass above, neither extending its width nor increasing its depth, so as to enable water to sink deeper into it. This will be the result of the trial in every instance where the subsoil is a stiff clay, and Mr. Gill will excuse my hinting that he himself might learn a lesson from it with advantage before he again recommends it to others as if it were new. This brings me to say a few words on bottom water, respecting which curious ideas are entertained. These ideas are set forth in the most complete manner in the Quarterly Reviewer's pamphlet, where we have two diagrams, representing the subsoil below the level of the drains as a semifluid mass, or, at least, containing much water. Now, I would ask, is this a common case? Is it the rule, or the exception, or either of them, in well-drained land? Did any drainer ever meet with a case in which, after cutting to the proper depth, he was under the necessity of laying his tiles on a body of water? Doubtless, there are cases where water is retained and fills the subsoil to a considerable depth, but then it is usual to cut to the bottom of the water, if not to carry it off more perfectly at that place, at least to prevent its bursting out somewhere else. Let drainers banish all such ideas from their minds, and endeavour to look at the case as it is; for if a man is not correct in his views and principles, what assurance is there that his practice will be right? I would almost as soon trust a man who works by rule of thumb and can give no reason at all for his operations, as one who founds a system on false philosophy and obstinately insists on applying it under all circumstances however dissimilar. The one has no proper idea either of the object to be attained, or the best means of attaining it. He merely imitates what he has seen, and produces a work more or less deteriorated from the original. The other, it is true, has an idea that a certain effect is to be realised under certain circumstances, and he argues rightly enough as to what the effect should if possible be, but shows great ignorance of the circumstances; consequently the plan he lays down is not more certain or trustworthy than in the other case. *James Donald.*

*Potatoes and Beer.*—Will "J. D.," who has furnished us with a few good articles, give us his experience on Potato culture. Mr. Cuthill, in his teaching, gives us two opposite practices in preparing sets. In his pamphlet, as I understand it, he advises the Ash-leaf Kidney to be planted entire, with its cluster of eyes; but by the process of Messrs. Fitch, which he encloses in his papers on "Market Gardening," we are taught to exterminate all the eyes but one. What I desire to know is, whether, for the early Potato, it is better to have a multiplicity of shoots or stems, or only a single one, resulting from one eye? "Cerevicus," who writes on brewing, perhaps can tell me, whether, in carrying on brewing in hot weather, it would do to take only half of the extract of double strength, and after boiling it, to mix with it cold water? or by adding ice, in order to reduce the heat for fermentation thus:—Suppose I desire to obtain 12 gallons per bushel, I take but 6, and add 6 of cold water to the extract. *A. B.*

*Chicory.*—As the duty upon roasted Chicory is so much higher than upon kiln dried, care is, of course, taken by the foreign growers or preparers that the kiln-drying process is never carried on so far as to char or colour the root so much as to raise a question as to whether it was roasted or merely kiln dried. In preparing home-grown Chicory for the market, the object should be to get it as nearly as practicable into the state and appearance of the foreign kiln dried. There may be trouble in effecting this at first. Experiments on a small scale are easily effected before a kitchen-fire with a Dutch

oven, or something of the kind; and the loss on desiccation is easily ascertainable. The loss on desiccation depends very much on the method that is used; for example, in the common way of roasting coffee, there is a loss of 3 lbs. in 14 lbs. raw. By the improved machinery, the loss is only 9 lbs. in 112 lbs.—

As 14 : 3 :: 100 : 21.4
As 112 : 9 :: 100 : 8.

P.S. Since the preceding notes were written, the whole of the crop of Chicory has been dug out. The season was so dry and unpropitious after sowing, that fears were entertained of the seeds not growing; there has been, nevertheless, a very fair crop. Several roots brought in weighed 15 oz. each. In agricultural products the possible and the probable are to be considered and weighed. Roots in 3 drills to the yard and 5 roots in each drill, might attain 1 lb. each, that is 15 lbs. to the square yard. And calling desiccation 5 raw to 1 kiln dried—which is a full allowance—there would be 3 lbs. of kiln dried from the square yard, and—

| sq. yds. | lbs. | | lbs. | | cwt. | qrs. | lbs. |
|---|---|---|---|---|---|---|---|
| 4840 | × 3 | = | 14,520 | ÷ 112 = | 129 | 2 | 16; |

which, at 30*s.* per cwt., will come to 194*l.* 9*s.* 3*d.*, a possible produce from 1 acre. My gardener is of opinion that the finest roots are produced in strong stiff ground—that is in the comparatively stiff ground which we have here—very different, however, from the stiff clays of England; and as the larger, heavier roots go very deep into the ground, of course it must be important to have the ground well prepared. The leaves from the crop just taken up were in fine full vigour to the last, and very abundant. *W., Ravenswell.*

*Manufacture of Manure.* — In this busy time of harvest, in our late northern climate, and at our high elevation, I have not till now had time to advert to a discussion which took place recently at the Yorkshire Agricultural Society, on the management and application of home-made manure—H. S. Thompson, Esq., being the principal speaker. It is certainly to be regretted that Mr. Thompson publicly reiterates his objections to roofed receptacles for the preservation of farm-yard manure from the vicissitudes of the weather; alternately drenched by heavy falls of rain and snow, and the scorching heats of the noon-day sun. It is true that Mr. Thompson advocates its cartage into the fields, and to be there coated over with soil, until required for use; but we may ask, What protection for preserving its essence from the pernicious effects of the weather had it experienced before being so carted out? and even when deposited in heaps in the fields, how often has Mr. Thompson seen the operation of coating with soil effectually executed? has he not, on the contrary, more frequently observed what is, or rather ought to be, the farmer's main-stay for producing remunerating crops, recklessly permitted to

"Waste its fragrance on the desert air?"

as mentioned above, its ammonia and other fertilising properties evaporated in turns by the heat of the sun, and neutralised by pelting rains, the precious liquid finding its way to the next running stream or stagnant uncovered pond; and if carted out, in this almost worthless state, as recommended by Mr. Thompson, how can the fertilising qualities be restored to it, by undergoing the tedious and expensive operation of coating over with soil, even allowing that this is properly done? This would, indeed, be locking the stable door after the steed is stolen. It is, however, difficult to imagine what Mr. Thompson exactly means by expressing himself so decidedly opposed to protecting manure by a roof, when he in the same discussion strongly advocates the propriety of roofing over the whole farm-yard. In this discussion, Mr. Thompson, in addition to what he asserted on former occasions on the same subject, is reported to have said, "No man can be more alive than I am to the great loss arising from manure being wasted by rain; but I am, nevertheless, opposed to covered manure pits, under ordinary circumstances, because I am persuaded that great solidity is indispensable to the preservation of manure;" and a little below he adds, "In very moist climates, such as hilly districts of the west of England, where two or three times as much rain falls as with us, it becomes a choice of difficulties, and the only way of escaping them appears to me by having fold-yards entirely roofed over. I feel persuaded that those who live 10 years longer will see buildings of this kind more numerous than is now thought profitable." Here is a palpable blowing hot and cold in the same breath. Mr. Thompson recommends the non-roofing of manure heaps, and the next moment advocates the propriety of adopting the opposite plan. In admitting that rain, or too much of it, is prejudicial to manure, does it not occur to Mr. Thompson that exposure to the rays of the sun is injurious? In my opinion they are more so than rain. In the one case, the redundant liquid can be arrested by the tank; but where does the valuable exhalations caused by the sun go? Mr. Thompson speaks favourably of the system of box-feeding, as a means of producing excellent manure; in which opinion I must cordially join him. What is that which is called a box but a roofed receptacle, so far as manure is concerned, which Mr. Thompson himself admits is so conducive to the formation of good manure. True, Mr. Thompson attributes this excellence to the treading of the cattle confined in them; and this to a certain extent may be correct; but when he adds "that great solidity is indispensable for the preservation of manure, and that a manure heap must be trodden as much as possible," I must beg leave to demur, though no chemist, to this doctrine, particularly when the manure is but in an incipient state. That a certain state of consolidation is necessary, cannot be denied; but that the absolute exclusion of any air, from the several appliances which go to the formation of a perfect manure heap, I should be rather inclined to think an agricultural chemist would object to, as detrimental to their decomposition, so essentially deemed necessary, both by theorists and practical men. Mr. Thompson is, doubtless, a great authority, and as he appears desirous of imparting his agricultural knowledge to the cultivators of the soil, it is the more to be deplored, if he be a medium in leading them to wrong conclusions, and addressing them in language which, in the present low scale of education pervading our farmers, ninety-nine out of a hundred of them do not understand. If Mr. Thompson, in place of learnedly speaking to them of the merits of hydrated sesquicarbonate of ammonia, and such other technical phrases, advised them, in plain homely English, to endeavour to persuade their landlords to erect roofs over their manure heaps and stack-yards, and also to sink tanks for the preservation of the liquid manure, to be pumped as occasion required over the general mass, and to erect other necessary appurtenances now much wanted, for the proper management of a farm, the farmer paying even 10 per cent. on the outlay, and the landlords keeping them in repair, he would, it is submitted, be doing a much more essential service, not only to both landlords and tenants, but to the nation at large. If these suggestions were fully carried out in all their details, farming might then be found more remunerating than it is, during the low prices of the present time; and cultivators, whether chemists or not, would find out that hydrated sesqui-carbonate of ammonia, and other chemical combinations, generated by manure so prepared, would unconsciously, whilst they slept—poor innocent souls!—be doing duty to their crops, and that their corn-stacks were secured from the destructive ravages of weather and vermin. I can myself most truly assert, that from a strict adherence to the processes I so strongly urge on the attention of the farming community, I have been enabled, for a series of years, to produce such crops from an ungenial and proverbially sterile soil, situate, some of it, at a no less elevation from the sea than 700 feet, and none of it less than 600 feet, as have much surprised all those best acquainted with the locality. I repeat, I am far from thinking that a certain consolidation is not necessary for the retention of the fertilising substances in farm-yard manure; but I would wish to be understood in saying, that the daily wheeling of it on the roofed heap, from the stables, cow-houses, piggeries, not boxed, together with the sundry ingredients, such as the scouring of ditches, clippings and dressings of hedges, saw-dust, &c., and regularly stratified on its surface, as it accumulates, will in practice be found sufficient compression, admitting just so much air as is necessary to encourage decomposition, but no more. Salt has also been applied for a long time to the manure heaps at Gilgarran, and the contents of the liquid manure tanks regularly pumped over them; these tanks being in existence long before their use was publicly advocated by the press. Mr. Thompson, in recommending covered farm-yards, shrewdly predicts, "that those who live ten years longer will see buildings of this kind more numerous than is now thought profitable." Should Mr. Thompson ever honour this part of the country with a visit, I could show him such a building which has existed nearly since he was ten years younger; and I could also show him covered sheds in grazing fields, affording shelter to outlying cattle in summer from flies and the heat of the sun, in winter from the inclemency of the weather, which, being regularly littered, afford abundance of rich trodden manure, and which would otherwise in a great measure be lost. In conclusion, I beg to take the liberty of recommending Mr. Thompson to call the attention of his agricultural friends to the general adoption of such sheds. *Jas. Robertson Walker, Gilgarran, Cumberland, Sept.* 27.

## Societies.

HIGHLAND AND AGRICULTURAL, *July* 9: *The Chemical Department.*—Mr. MACONOCHIE said:

I am sure that every gentleman that has been in the direction—every gentleman that has had occasion to employ a practical chemist—every gentleman that has witnessed the extreme diligence and activity with which Dr. Anderson has performed the duties entrusted to him, must be satisfied that, perhaps among the whole list of practical chemists in this country, the directors and the Society could not have selected a gentleman more completely fitted for his situation. I am quite sure of this, that there is not a person that has availed himself of the opportunity that has been afforded him for having analyses of the soils of his lands, and of the manures which he employs in their cultivation, that has not been completely satisfied. That these have been of infinite importance to himself in a pecuniary point of view, I speak on that subject with very inadequate means of information, so far as my own experience is concerned. I still, however, have had some experience on the subject, and from that experience, as well as from my general knowledge, I am quite sure that if the farmers of the country, and the landed proprietors, would avail themselves of the opportunity which has been thus afforded them, and at so cheap a rate, of obtaining analyses of their soils, and their various uses, they would secure a hundred times more money in their pockets than what they expend in procuring such analyses. But it does not appear that the proprietary of Scotland are yet thoroughly aware of this, because, from a list in my hand, I can state that the total number of subscribers throughout Scotland to the chemical department of the Society is only 217. I am not exactly right in this statement, for I perceive that 37 of them are not even proprietors; so that of the whole landowners of Scotland there are only 180 who subscribe to this most important branch of the Society's operations. That is the condition of matters throughout the length and breadth of Scotland, as regards the landed proprietors. I believe it is a fact, that many of the gentlemen who are in the habit of practising agriculture are, to a great extent, as ignorant of the nature of the soil they cultivate, and of the manures which they use in that cultivation, as if they had lived 300 years ago, instead of in the middle of the 19th century. That, in short, is the state of the chemical department, in so far as it has hitherto, in a great measure, been supported. The whole amount subscribed amounts to a sum much less than that which the Society has guaranteed to Dr. Anderson; and the question is, whether, in such a state of matters, we are to go on expending this sum out of the funds of the Society—a large sum as regards the finances of the Society, but a sum which I take leave to say is far from adequate to pay the salary of Dr. Anderson as he ought to be paid. I would therefore urge on the proprietary of Scotland who do not subscribe to this department, the great importance of doing so. The directors, after the fullest consideration of the matter, have come to the following resolution, which I have now to propose to the meeting:—"That it is necessary to adopt measures for obtaining increased and more adequate means in support of the Society's Chemical Department, and that, for this purpose, an application should be addressed by the treasurer and honorary secretary to those landed proprietors who have not yet subscribed."—Dr. ANDERSON said he had, at the general meeting of the Society in January, reported so fully as to the state of the laboratory, that perhaps a short report would serve the purpose at present. Since January the laboratory had gone on in the ordinary way; and nothing new or of great importance had occurred to report to the Society. During that period of time the ordinary amount of analyses on general subjects had been made. They had also been engaged with certain investigations, at the instance of the Society, and some of these had advanced to a very considerable extent. One of them—that of the investigation of Turnips—had been partially published in the Society's Transactions; and a larger portion would have been published in the July number had there been space for that purpose; but, of course, what was not inserted would be reserved for another number. He had also published in the Transactions of the Society, several other short investigations; and he might mention that the committee had under consideration an additional series of investigations, namely, in reference to the hay crop under different circumstances, and also in reference to the Clover crop. The analytical part of these investigations had not yet been commenced, although the preliminary steps in connection with them had been taken of growing crops in the proper quantities, and with the proper manures. Another investigation in progress, had reference to the feeding value of different kinds of food for cattle. This investigation was advanced to some extent, but he had not as yet published any part of it, as he considered it preferable to wait until a sufficient number of analysis had been accumulated, to make each determination the average of several, by doing which the table of feeding values would obtain a much greater value, than if it were founded only on single analysis of the different sorts of food.

## Reviews.

*Blaine's Canine Pathology.* Fifth Edition.

THE author of the work before us has been justly regarded as the father of canine medicine. Educated, in the first instance, as a surgeon, and a sportsman from taste and opportunity, he was peculiarly fitted for the study of the diseases of the canine race, and thus he was enabled, after a while, to add the treatment of the diseases of dogs to his general practice as a veterinary surgeon. It may, perhaps, be thought that a man of science and education, like Mr. Blaine, somewhat reduced his *status* by thus directing his attention to the pathological study of an inferior race of animals. We wholly dissent from such an opinion; for, independent of the striking analogy which exists between many of the diseases of the dog and those of the human subject, there was one malady more particularly, viz., "Hydrophobia, or Rabies," the investigation of which was demanded by the interests of humanity, and if no other effects had attended the labours of Delabere Blaine and his partner and successor, William Youatt, that the light they had succeeded in throwing on this dreadful malady, the description of the early symptoms by which it may be known, and the best means for obviating its justly dreaded horrors, these results would have entitled their exertions to the utmost consideration. It was in the earlier editions of the work before us that the correct views of the author on this horrid malady were made public, and which succeeded not only in saving from a dreadful death very many individuals who might have been bitten by a rabid dog, but in saving them likewise from those ordeals which it was the custom to go hrough, under the idea of preventing the supervention of the disease. It was formerly the custom for parties to come long distances to the seaside, and there to undergo the practice of dipping, which indeed was carried to the extent almost of drowning the unfortunate individual. It was in great measure owing to Blaine and Youatt that these vulgar errors were exploded; and to them, and the former more particularly, not only the veterinary but the medical profession and the public at large are greatly indebted for having thrown the mantle of science around the previously neglected study of canine pathology, and rescued it from the clutches of ignorance and prejudice. The respected author of the work has been gathered to his fathers, but his works will long survive him; and now that a new edition of the one before us is demanded, Mr. Thomas Walton Mayer has undertaken the task, and well has he acquitted himself of it. The editor is very favourably known to the veterinary profession and the public, in connection with his late respected father; and he modestly states in his Preface: "In discharging the duty that has devolved upon us in revising this edition, we have been desirous of contributing our mite to the well-being of the canine race, regretting that our literary and professional experience has not enabled us to do greater justice to our subject. We have not, however, been so much desirous of adding new, and possibly, but at best crude ideas of our own, as we have been to give effect to the work of Mr. Blaine, by re-arranging his matter, compressing his facts, with the addition of such improved classification and methods of treatment, as the advanced state of veterinary science has enabled us to supply." The plan here suggested has been very well carried out, and we cordially recommend the work to all interested in the subject.

## Miscellaneous.

*Quantity of Milk a Cow should give in a year.*—In your Paper of August 1st I notice a letter from the clerk to the Carrick-on-Suir Board of Guardians, in which he assumes that 23 cows will yield 140,160 quarts of milk in the year, or over 6000 quarts for each cow. Experienced farmers have informed me, that about 2000 quarts are fair produce from a cow. I have the care of a dairy farm, on which the cows are fed principally on green crops; the average ground for each cow was 1½ acre, and I annex a statement of the milk from each cow in one year.

MILK IN ONE YEAR,

Measured in the cow-house, from the cows; as the weeks closed on Saturday night, some months contain five weeks' account.

| 1850. | A. | B. | C. | D. | E. | F. | G. |
|---|---|---|---|---|---|---|---|
| April ..... | Quarts 226 | Quarts 240 | Quarts, 10 | Quarts, 90 | Quarts. 116 | Quarts 145 | Quarts. 218 |
| May ..... | 349 | 354 | 364 | 42 | 124 | 167 | 321 |
| June ..... | 191 | 203 | 212 | ... | 55 | 64 | 189 |
| July ..... | 234 | 256 | 261 | 223 | 157 | 2 | 107 |
| August ..... | 229 | 250 | 286 | 454 | 306 | ... | 161 |
| September . | 182 | 220 | 223 | 354 | 325 | 295 | 82 |
| October ..... | 219 | 230 | 241 | 466 | 347 | 362 | 3 |
| November ... | 143 | 138 | 159 | 252 | 206 | 218 | ... |
| December ... | 119 | 119 | 129 | 191 | 148 | 166 | ... |
| 1851. | | | | | | | |
| January ..... | 159 | 140 | 154 | 207 | 191 | 191 | 403 |
| February .... | 143 | 145 | 125 | 203 | 145 | 194 | 328 |
| March ..... | 166 | 157 | 115 | 221 | 187 | 220 | 318 |
| Total .... | 2361 | 2463 | 2279 | 2048 | 2397 | 2024 | 2218 |
| Value of Milk ..... | £ s. d. 11 18 1 | £ s. d. 12 7 3 | £ s. d. 11 2 6 | £ s. d. 13 7 6 | £ s. d. 11 19 8 | £ s. d. 10 14 0 | £ s. d. 12 6 2 |

A and B were bought new milk in April; C calved in April; D calved in June; E slunk her calf in June; F calved in August; G calved in January. The new milk being sold in town, the cows producing most in winter paid proportionably better than others. *J. F., Youghal, Aug. 7*; *Dublin Farmers' Gazette.*

METEOROLOGICAL REPORT.—September.
(*Continued from p. 622.*)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Sept. 23 | 10 p.m. | 30.05 | ... | Dense bank of fog in western horizon. |
| 24 | 8 a.m. | 30.04 | ... | S. Gentle. Overcast; barometer falling steadily. |
| | 10.15 p.m. | ... | 29.91 | |
| 25 | 7.50 a.m. | 29.74 | ... | SSW. A.M. Brisk; occasional drizzle, overcast; barometer falling steadily. |
| * | 2 p.m. | ... | 29.59 | WNW. P.M. Brisk; clearing up, and sun coming out. |
| | 5.20 p.m. | ... | 29.62 | 5.20, NW. Brisk; barometer |
| | 10.15 p.m. | 29.68 | ... | rising; fine evening. Night clear, starlight. |
| 26 | 7.10 a.m. | 29.70 | ... | A.M. Stiff NNW. breeze; bright morning. |
| | 11.15 a.m. | 29.69 | ... | Stiff breeze NW., A.M. Fine. |
| | 7.15 p.m. | ... | 29.66 | P.M. Moderate and warm. |
| † 27 | 7.30 a.m. | ... | 29.62 | A.M. W. Moderate breeze, and cloudy. |
| | 10.30 p.m. | 29.74 | ... | Noon, P.M., WNW. Brisk; barometer rising steadily. |
| Sun. 28 | 8 a.m. | ... | 29.83 | Moderate northerly breeze; |
| | 10.30 a.m. | 29.85 | ... | warm sunny day, but air very chilly; barometer steady. |
| | 10.20 p.m. | ... | 29.83 | |
| 29 | 7.5 a.m. | 29.66 | ... | Brisk southerly breeze, in- |
| ‡ | 10.30 p.m. | ... | 29.31 | creasing, with rain, towards nightfall; barometer falling steadily. |
| 30 | 6.35 a.m. | ... | 29.31 | SW. A.M. Strong breeze, with rain; clearing up at 8 A.M. |
| | 8.5. p.m. | 29.35 | ... | WNW. at 3 P.M. Gentle; at 8.5 barometer rising. |

* This storm came from the south-west, and from a warmer latitude; its approach, therefore, produced a warmer afternoon, but having passed over this island to the eastward, the body of the storm being in a colder latitude, the back current caused frost.

As the season is approaching in which frosts occasionally occur, it will be interesting to observe to what extent they coincide with a *rising* barometer; *should this coincidence be found generally to hold good, it may be taken as a confirmation of the theory of rotatory and progressive storms.*

† This storm came from the westward, and passed away to the eastward; but it lay a long way to the northward, or must have been but of small extent.

‡ A storm coming also from the westward, and passing away to the eastward, over the south of England. The central storm's-eye was passing over London about 4 P.M. of the 30th.

Dorchester [Oct. 2]. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

SEPTEMBER.

Dorset Farm, *Sept.* 29.—We have now got the harvest all in, and throughout we have had the weather as favourable as we could have wished; and if we may judge from the appearance of the crops, we must set them down as greatly above an average. But as prices have fallen so much, there is little inducement to bring them to the proper test (the threshing-machine). But whatever the quantity may be, there is no room for doubting that the quality is good. And in looking back on the past five months (to farmers the most important), we must put them down as the best that any one here remembers having seen. The only drawback is the Turnip crop, which is not so good as last year; and under ordinary circumstances, we cannot expect to come up to an average crop. But as there is abundance of good hay, we are not altogether unprepared to weather a storm. We have not yet been able to do much in the way of ploughing for Wheat, as the land is so dry and hard. The general work now is taking up Potatoes, and although they are all a little diseased, yet there are a great many good; and on the whole, they are better than they have been for some years. Grass is beginning to get short, but the price of stock does not fall much, even with little prospect of a heavy Turnip crop Lean pigs have lately fallen in price, which is no doubt owing to the price of Barley keeping up. For with all the Barley good, and selling from 26*s.* to 28*s.*, there is no inducement to buy lean pigs to fat on good Barley, and then fetch only 7*s.* 6*d.* or 8*s.* per score. And we may expect that fat pork will rise a little in price. We have just finished eating the last year's crop of Mangold, on which all our store pigs have fed entirely, and they kept good up to the last. And as the season for taking up the new crop is now approaching, we would urge upon all not to allow the tops to be cut off when they are taken up, but have them twisted off; as we are convinced that the wounds inflicted on them in cutting off the tops are one chief cause of their rotting when stored in heaps. *G. S.*

## Notices to Correspondents.

Peas: *A Ainslie.* Many thanks for your note about our correspondents, by which we shall profit hereafter.—We know of no new winter Pea. Any seedsman here, in the south of England, will provide you with a perfectly safe winter Pea.

Poultry: *E C Hall.* There is no difficulty in breeding between the Muscovy drake and Aylesbury ducks. The produce is a large and rather awkward bird; it requires to be killed younger than other ducks, on account of the strong flavour natural to the drake, which is unpleasant to most palates, if the bird is full grown.—*J J.* Where there is no local market for surplus stock, the best method of disposing of it is to send it to a respectable salesman in Leadenhall market. The difference between buying and selling is always great, and appears greater than it is in reality. A dealer will always buy that of which he stands in need; but in buying live birds he has to calculate the cost of keep, the uncertainty of sale, and the chances of death. Mr. Sorigens, of Leadenhall market, is a very respectable and good salesman *J. Baily*, 113 *Mount street.—R H.* Some of the perfectly true Sebright bantam cocks may be procured, say six or seven, by applying to Mr. Wisbey, Boreham, near Chelmsford, Essex. They are the gold, tipped with black on the feathers.—The Sebright Bantam: *W P.* We cannot tell you the *exact* weight that the thorough bred hens ought to be. We have one, *very* small (thorough bred), and her weight is just ¾ of a lb. We have had her in our possession several years, but can procure none others like her. *W. K.—J O L.* You have been deceived in the strain. If the cock you have purchased has the "flying feather," he is *not* what you represent him to be. *W. K. – S W.* Yes; these birds, if bred "in and in," are very hardy. Ours winter as well as, if not better than, any of the so-called "hardy fowl." We very rarely have a death in the family. *W. K.*

Sea-sand: *D E.* You may store Carrots in dry sea-sand—or without any sand at all. We pile them in heaps, just as we do our Beets and Turnips, and they keep perfectly. We should pit Potatoes in small quantities in a dry place; a dry floor, if secured from frost, is perfect of its kind. But the more laborious methods of Mr. Cuthill will produce a stronger plant.

## Markets.

COVENT GARDEN, Oct. 4.

Peaches are nearly over. Pines and Grapes are abundant. A few West Indian Pines still make their appearance. Damsons are scarce, as are also Oranges and Lemons. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms (bushels) appear but slowly. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Provins Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 4s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Lemons, per doz., 1s to 2s |
| Peaches, per doz., 6s to 12s | Oranges, per doz., 2s to 4s |
| Melons, each, 1s to 4s | — per 100, 14s to 30s |
| Damsons, p. half sieve, 6s to 7s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Figs, per doz., 1s 6d to 3s | — Brazil, p. bsh., 12s to 14s |
| Apples, kitchen, p. bsh., 1s to 1s 6d | Filberts, per 100 lbs., 70s to 90s |
| Pears, dessert, p. doz., 2s to 4s | Walnuts, per bush., 12s to 24s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 3d to 6d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 4d to 6d |
| French Beans, p. h. sieve, 2s to 4s | Artichokes, per doz., 4s to 6s |
| Beans, per sieve, 1s 6d to 2s | Lettuce, Cab., p. score, 4d to 1s |
| Peas, per sieve, 1s 9d to 3s 6d | — Cos, per score, 3d to 1s |
| Potatoes, per ton, 45s to 80s | Small Salads, p. punn., 2d to 3d |
| — per cwt., 2s to 5s | Horse Radish, p. bundl., 1s 6d to 6s |
| — per bush., 1s 6d to 2s 6d | Red Beet, per doz., 1s to 2s |
| Turnips, p. bunch, 2d to 4d | Mushrooms, p. pot., 1s 6d to 2s |
| Cucumbers, each, 1d to 1s | Sorrel, per hf. sieve, 6d to 9d |
| Radishes, per doz., 9d to 1s 6d | Tomatoes, p. half sieve, 3s to 4s |
| — Turnip, p. doz., 1s to 1s 6d | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Leeks, per bunch, 1d to 2d | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

COAL MARKET.—Friday, Oct. 3.

Hollywell, 15s. 6d.; West Hartley, 15s. 9d.; Wallsend Gibson, 15s. 6d.; Wallsend Walker, 15s. 3d.; Wallsend Tees, 16s. 9d. —Ships at market, 11.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 2.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 65s to 72s | Clover ... ... ... | 65s to 84s |
| Inferior ditto... ... | 50 60 | New do. ... ... ... | — — |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 23 27 |
| New Hay ... ... | — — | | J. Cooper. |

The supply large and trade heavy.

Cumberland Market, Oct. 2.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 65s to 75s |
| Inferior ditto... ... | 60 70 | New Clover ... ... | 65 75 |
| New Hay ... ... | 60 70 | Straw ... ... ... | 24 30 |
| Old Clover ... ... | 80 88 | | Joshua Baker. |

Whitechapel, Oct. 2.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 72s to 78s | Old Clover ... ... | 76s to 88s |
| Inferior ditto ... | 60 70 | New Clover ... ... | 70 80 |
| New Hay ... ... | 63 70 | Inferior ditto... ... | 50 63 |
| Inferior ditto... ... | 45 60 | Straw ... ... ... | 21 25 |

HOPS.—Friday, Oct. 3.

Messrs. Pattenden and Smith report that there is a good trade doing in all Hops that are grown free from blight. The portion of the growth already received show the blight much more than was anticipated' Good Hops this season are in small compass.

| | | | |
|---|---|---|---|
| Mid & East Kents | 140s to 252s | Sussex ... ... | 110s to 120s |
| Weald Kents ... | 126s to 147s | Yearlings & old | Hops 95 — 115 |

Duty 115,000*l.*

SMITHFIELD, Monday, Sept. 29.

We have a large supply of Beasts, notwithstanding a considerable number of foreign cattle expected for this market have not arrived in time. However, the choicest descriptions are not plentiful, and we are therefore enabled to quote 3*s.* 6*d.* for them. The number of Sheep is much smaller; the demand is not extensive, this being Michaelmas week; the trade on the average is rather better. Calves are not so numerous, and good qualities are rather dearer. From Holland and Germany there are 1800 Beasts, 4210 Sheep, and 188 Calves; from Scotland, 30 Beasts; and 2750 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. ... | 3 | 4 | to 3 | 6 | Best Long-wools . | 3 | 6 | to 3 | 8 |
| Best Short-horns | 3 | 0 | — 3 | 4 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 0 | — 2 | 8 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 3 | 10 | — 4 | 0 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 3 | 8 | — 4 | 4 |
| | | | | | Calves ... ... | 2 | 6 | — 3 | 8 |
| | | | | | Pigs ... ... | 3 | 4 | — 3 | 0 |

Beasts, 5148; Sheep and Lambs, 27,320; Calves, 249; Pigs, 300.

Friday, Oct. 3.

The number of Beasts is again large; but it chiefly consists of foreign and inferior quality, and including a large number left over from Monday last. There being only few fresh good Beasts on offer, these are readily sold at a slight reduction. Our top quotation is exceeded in a few instances. Purchasers are scarce for inferior kinds, although there is a disposition to sell at reduced rates. The supply of Sheep is small; there is no quotable advance in price. Trade on the average is better for Calves. From Germany and Holland we have 623 Beasts, 2290 Sheep, and 227 Calves; from Spain, 100 Sheep; from Leicester and Northampton, 300 Beasts; and 113 milch cows from the home counties.

| Best Scots, Hereford, &c. ... | 3 | 2 | to 3 | 4 | Best Long-wools . | 3 | 6 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 0 | — 2 | 6 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 3 | 10 | — 4 | 0 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| | | | | | Calves ... ... | 2 | 8 | — 3 | 10 |
| | | | | | Pigs ... ... | 3 | 4 | — 4 | 0 |

Beasts, 1222; Sheep and Lambs, 6790; Calves, 395; Pigs, 460.

MARK LANE.

Monday, Sept. 29.—The supply of Wheat from Essex to this morning's market was small, from Kent fair, with but little offering from the eastern counties: the whole was sold early on the terms of this day se'nnight. Foreign is held firmly, there being a little more inquiry, but sales are still limited, at former prices. Polish Odessa afloat is in good demand at 29*s.* to 30*s.* per qr. cost, freight, and insurance.—Picked samples of English Barley sell at last week's prices; secondary sorts are neglected, and fully 2*s.* per qr. cheaper. Foreign must also be written 1*s.* per qr. lower.—White Peas are 1*s.* per qr. more money; other descriptions unaltered in value.—Beans are 1*s.* to 2*s.* per qr. cheaper.—Oats are a slow sale, and new English declined 6*d.* to 1*s* per. qr.—In Flour, no alteration.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —40 | Red ..... | 35 | —38 |
| — — fine selected runs...ditto | 40 | —42 | Red ..... | 38 | —39 |
| — — Talavera ..... | 44 | —46 | | | |
| — Norfolk, Lincoln, & York... White | 32 | —34 | Red ..... | | — |
| — Foreign ..... | 30 | —38 | | | |
| Barley, grind. & distil., 24*s* to 25*s*...Chev. | 28 | —30 | Malting . | 25 | —28 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | | — |
| Oats, Essex and Suffolk ..... | 16 | —20 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —24 | Feed..... | 16 | —21 |
| — Irish .....Potato | 18 | —22 | Feed..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed..... | 16 | —19 |
| Rye ..... | 23 | —28 | Foreign . | | — |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..28*s* to 27*s*.....Tick | 24 | —30 | Harrow . | 24 | —30 |
| — Pigeon.....26 — 32... Winds | 30 | —33 | Longpod | 24 | —26 |
| — Foreign .....Small | 21 | —29 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boiler | 25 | —26 | Suffolk.. | 27 | —28 |
| — Maple.....27*s* to 28*s* .....Grey | 22 | —25 | Foreign . | 24 | —28 |
| Maize .....White | — | | Yellow ... | | — |
| Flour, best marks delivered ...per sack | 32 | —37 | | | |
| — Suffolk .....ditto | 26 | —32 | Norfolk . | 26 | —32 |
| — Foreign .....per barrel | 17 | —21 | Per sack | 27 | —33 |

Friday, Oct. 3.—There has been an increase in the arrival of French Flour this week; of Wheat, English or foreign, the supply is good, but moderate of other articles. This morning's market was badly attended, and we observe no alteration in the value of English Wheat. Foreign met with some inquiry, but holders were firm, and there was little done.—In the value of Barley, Beans, and Peas there is no alteration.—Oats are a slow sale, and new rather cheaper.—Flour meets a good inquiry at full prices.

Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 5110 | 1550 | 850 | 2690 sacks |
| Irish ..... | — | | 5570 | |
| Foreign ... | 9830 | 6090 | 9410 | 7760 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Aug. 23..... | 39*s* 10*d* | 26*s* 8*d* | 20*s* 11*d* | 27*s* 1*d* | 31*s* 2*d* | 25*s* 11*d* |
| — 30..... | 39 1 | 25 10 | 20 8 | 26 9 | 30 7 | 26 6 |
| Sept. 6..... | 38 9 | 26 1 | 20 1 | 26 2 | 30 4 | 25 11 |
| — 13..... | 38 5 | 26 1 | 19 5 | 25 0 | 28 9 | 27 8 |
| — 20..... | 37 8 | 25 7 | 18 4 | 26 2 | 28 6 | 28 2 |
| — 27..... | 36 7 | 25 0 | 18 0 | 25 4 | 28 8 | 27 0 |
| Aggreg. Aver. | 38 5 | 25 11 | 19 9 | 26 1 | 29 8 | 26 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Aug. 23. | Aug. 30. | Sept. 6. | Sept. 13. | Sept. 20. | Sept. 27. |
|---|---|---|---|---|---|---|
| 39*s* 10*d*— | | ... | ... | ... | ... | ... |
| 39 1 | ... | | ... | ... | ... | ... |
| 38 9 | ... | ... | | ... | ... | ... |
| 38 5 | ... | ... | ... | | ... | ... |
| 37 8 | ... | ... | ... | ... | | ... |
| 36 7 | ... | ... | ... | ... | ... | |

Liverpool, Tuesday, Sept. 30.—The arrivals into this port for the week ending yesterday contain a fair quantity of Oats and Oatmeal, with a few small parcels of Wheat and other produce from Ireland and coastwise. At our Corn Exchange this morning we experienced but a moderate demand for good English and foreign old Wheats, and a limited sale only for other descriptions; holders, nevertheless, refused to accept lower terms, and the quotations of this day week stand unvaried. Of farmers' new Wheat, samples were numerous, and the quality and condition being excellent, attracted the attention of millers in preference to the old. Barley, Beans, and Peas were taken slowly at late rates, except Egyptian Beans, which declined 6*d.* per qr. In Malt, no variation. Oats and Oatmeal were a trifle cheaper. Indian Corn on the spot supported former rates. —— Friday, Sept. 26.—We had a tolerable number of home and country millers at our market this morning, and the demand for old Wheats, both English and foreign, was upon a moderate scale. We have a moderate demand for new Wheats at nearly last week's prices. Barley, Malt, Beans, and Peas were without alteration in value. Oats were in slow request at a decline of 1*d.* per 45 lbs., and Oatmeal receded further again to-day 6*d.* per qr. Cargoes of Indian Corn afloat still command attention; on the spot little business was done to-day, but full prices were paid.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | |
|---|---|---|---|---|---|
| 6 inches by 4 | and | 6¼ by 4½ | ... | ... | 13s. 0d. |
| 7 ,, | 5 and | 7½ by 5½ | ... | ... | 15 0 |
| 8 ,, | 5 and | 8 by 5½ | ... | ... | 15 0 |
| 8 ,, | 6 and | 8½ by 6½ | ... | ... | 17 6 |
| 9 ,, | 7 and | 10 by 8 | ... | ... | 20 0 |
| 12 ,, | 10 and | 13 by 9 | ... | ... | 20 0 |

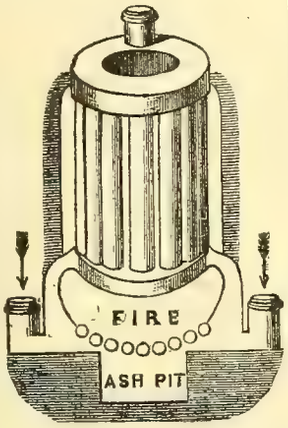
And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅓ in. thick, best manufactured.

| | | |
|---|---|---|
| In sizes under 15 inches | ..... | 6d. per foot. |
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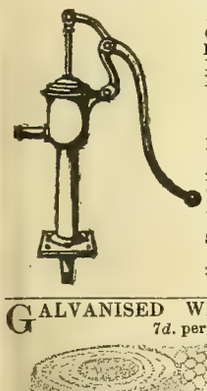
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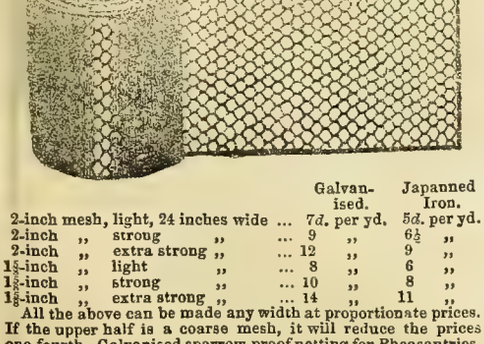
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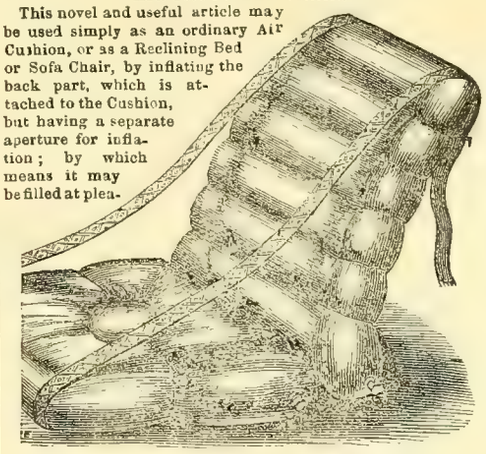
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October 4. R. W. JELF, D.D., Principal.

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HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2s. 6d. per yard.—Damask Curtains, 10d. per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8s. per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2s. 3d. per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2½ yards wide, and of any required length, at 1s. 4d. per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

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THE HAIR.—LOST AND RESTORED.—"Newport, Isle of Wight, Sept. 6, 1848.

"Gentlemen,—Some three months since, finding my hair falling off by nearly handsful, and my head approaching baldness; in fact, being quite bald at the crown and on the sides, I was induced, through my hairdresser, Mr. Beach, of this place, to try your BALM OF COLUMBIA, and after persevering with four bottles, according to your directions, I found a new crop produced, which has now restored my head to its former appearance. As I had apprehended a total loss of my hair, I feel it due to the virtues of your Balm of Columbia thus publicly to bear my testimony. Mr. Beach, who recommended me, is the same who used it successfully in Mr. Wilson's case, whose testimony you have lately published. Mr. B. is a Lymington man; I am also a native of that place, though for the last ten years in practice here as a solicitor.—Yours, &c. H. RICE.

"To Messrs. C. & A Oldridge."

For the strengthening of weak hair, its restoration when thinly scattered, or falling off and consequent general improvement and embellishment, the powers of OLDRIDGE'S BALM OF COLUMBIA are known by the continually increasing numbers who are testing its merits, as powerfully and unfailingly efficient.—Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. Ask for OLDRIDGE'S BALM, and never be persuaded to use any other article as a substitute.

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FULHAM.
TO MARKET GARDENERS, FARMERS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Dawes-lane, Walham-green, Fulham, on MONDAY, October 6, at 12 o'clock, by order of the proprietor, in consequence of the land being wanted for other purposes, the whole of the STOCK of a MARKET GARDENER, comprising a large quantity of fine Rhubarb of best sorts, Cauliflower Seed, seven Store Pigs, five Sows and Pigs, 54 3-light Boxes and Lights, 400 Hand-glasses, a useful Black Cart-horse two capital Market Carts, Harness, Chaff-box, Corn-bins, large Water-tub, Iron Tank, Wash-butt on wheels, Wheelbarrows, 36-round Ladder, Water-cans, Baskets, Potato Punnets, and Garden Tools; also a large quantity of Manure, &c.—May be viewed prior to the sale, and Catalogues had, on the premises; of Mr. PRESTON, 2, Rupert-street, Haymarket; Mr. BORTHWICK, 547, New Oxford-street; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HAYES, MIDDLESEX.
TO GENTLEMEN, NURSERYMEN, FLORISTS, and Others.
MESSRS. PROTHEROE AND MORRIS are directed by the Executors of the late Mr. W. Burdett to sell by Auction, on the premises the "Waggon and Horses," Hayes, Middlesex, about a mile from the Southall Station, on WEDNESDAY, October 8th, at 12 o'clock precisely, the whole of the stock of EVERGREENS, a large quantity of fine Standard ROSES, Gooseberry and Currant Trees, Herbaceous Plants, Box Edging, &c.; together with a 7-light Pit, Hand-glasses, seven Hives of Bees, Wheelbarrows, Carpenter's Bench and Tools, a capital 26-round Ladder, Tent Bedsteads, two Portmanteaus, sundry Harness, Baskets, Garden Pots, Tools, and other effects.—May be viewed, and Catalogues had, prior to the sale, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

ISLINGTON NURSERY.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS are instructed, by Mr. G. Smith, to offer to public competition by Auction, on the premises, on MONDAY, October 13th, and two following days, in consequence of the Land being let for building, the whole of the valuable NURSERY STOCK, comprising several thousand scarlet white, and Hybrid Rhododendrons, Ghent and other Azaleas, variegated and green Hollies, of various sizes, in considerable quantities, several thousand Aucuba japonica, from 1 to 4 feet; a large quantity of fine Mulberries of different ages, many of which are fine bearing trees, &c. May be viewed prior to the sale.—Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

STANHOPE NURSERY, GLOUCESTER-ROAD, OLD BROMPTON.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS ENGAGED IN PLANTING.
MR. J. RAWLINGS has received instructions from Mr. Wm. Siggers to submit to public competition, by Auction, on the premises, as above, on MONDAY, October 6, and following days, at 11 o'clock each day (in consequence of the Lease having expired), the whole of the valuable NURSERY STOCK, consisting of many thousands very fine Aucuba japonica, Laurel, Laurustinus, Yew, Arbor Vitæ, Holly, &c.; Fruit and Forest Trees, American Plants; Standard, Dwarf, and Pillar Roses; Irish Ivy, some very large Camellias and Scarlet Rhododendrons in pots, &c. Also a handsome Chesnut Mare, a capital light Spring Van, with top complete, and other effects.—May be viewed prior to the Sale. Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

FREE TRADE IN BULBS AND FOREIGN PLANTS.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.
MR. J. RAWLINGS has received large importations of Bulbs, Ghent Azaleas, Rhododendrons, &c. The first portion of which will be submitted to public competition by Auction, at the Mart, Bartholomew-lane, on TUESDAY 14th October, 1851, and following days, at 12 o'clock. The stock comprises the finest double and single Hyacinths, Narcissus, Tulips, Jonquils, Crocus, Snowdrops, Anemone, Ranunculas, Gladiolus, &c. Ghent Azaleas and Rhododendrons, beautifully furnished with bloom buds, and in excellent condition for potting; fine Standard, Dwarf, and Pillar Roses, consisting of all the leading varieties; and a quantity of the Scarlet Moss, fine for potting; also the new kinds of Strawberries, such as Myatt's New Early Prolific and Eleanor, Ridley's Goliah, Wilmott's Prince Arthur, &c. The lots will be arranged for the convenience of large and small purchasers. May be viewed the morning of sale, and Catalogues had at the Mart, and of the Auctioneer, 50 Hoxton-square, and Ebenezer Nursery, Shacklewell, London.

WANDSWORTH COMMON.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND PUBLIC COMPANIES ENGAGED IN PLANTING.
MR. J. RAWLINGS will submit to public competition, by Auction, on the premises, Wandsworth Common (five minutes' walk from the Clapham station, and a quarter of an hour's walk from the Wandsworth station, on the South-Western Railway), on MONDAY, October 20, 1851, and few following days, at 11 o'clock each day (by order of Mr. Robert Neal, in consequence of the ground being immediately required for other purposes), the whole of the valuable NURSERY STOCK, consisting of a considerable quantity of very fine Evergreens, Fruit and Forest Trees; New, Ornamental, and Deciduous Shrubs, &c.; many thousands of American plants, comprising fine scarlet and other Rhododendrons, Azaleas, Kalmia, Andromeda, Magnolia, &c.; a fine collection of Pines, Standard and Dwarf Roses, and well-established plants in pots, of Clematis azurea grandiflora and flammula, Irish Ivy, Virginian Creeper, Bignonia, Choisia Camellias, Chrysanthemums, &c. Also a large new 17-light Pit, 12 000 Bricks, a quantity of useful Timber, Paving Stones, and excellent Stone for Building, 400 loads of Rich Mould, a quantity of Garden-pots, &c.—May be viewed prior to sale. Catalogues (1s each, returnable to purchasers), may be had on the premises, of the principal Seedsmen, and of the Auctioneer (post paid on application), 50, Hoxton-square, and Ebenezer Nursery, Shacklewell, London.—The whole of the Nursery Stock is in excellent condition, and having been planted within the last three years, may now be removed with the greatest safety.

PARTNERSHIP.—The Proprietors of an old established, extensive, and increasing business in the NURSERY AND SEED TRADE, in the principal town of the South of England, contemplating retirement, are desirous of taking an active partner; one acquainted with the business would be preferred, and from whom a less premium would be expected. Not less than 2000l would be required, for which an immediate return from the proceeds of the business of the forthcoming season would be guaranteed. None but persons of responsibility need apply, or will be treated with.—Apply to T. M. CATTLIN, Esq., 30, Ely-place, Holborn, London.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.
MESSRS. PROTHEROE AND MORRIS are instructed, by the proprietor, to sell by public Auction, on the premises, Chester Nursery, Kennington (near Walcot-terrace), on FRIDAY, October 17th, at 11 o'clock, the whole of the valuable GREENHOUSE PLANTS, consisting of the newest varieties of Geraniums, Fuchsias, Chrysanthemums, Roses in pots, Camellias, Genistas, Verbenas, &c.; also five newly-erected Greenhouses, 10 Pits and Boxes, together with about 600 feet of capital 4 inch bore Hot-water pipe, three excellent Boilers, Spring Cart, Garden Pots, Compost, and sundry effects.—May be viewed prior to the sale. Catalogues had (6d. each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

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# THE GARDENERS' CHRONICLE

AND

# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 41—1851.] SATURDAY, OCTOBER 11. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Alcock (Mr.) and guano | 649 *c* | Lily Jacobæa | 648 *c* |
| Amateur Tulip Society | 647 *a* | Link's (Prof.) microscopes | 647 *c* |
| Apples for espaliers | 648 *c* | Manures | 650 *b* |
| Birds, British song | 655 *a* | Microscopes, Link's | 647 *c* |
| Calendar, Horticultural | 647 *c* | Mildew, Vine | 643 *a*—644 *a* |
| — Agricultural | 653 *c* | Onions, winter | 645 *c* |
| Carrots, winter | 645 *c* | Onion fungus | 646 *a* |
| Chemistry of vegetation | 643 *b* | Orchids for the million | 645 *a* |
| Crystal Palace | 649 *b* | — sale of | 647 *c* |
| Dahlia shows | 647 *a* | Pansy Society, Scottish | 647 *b* |
| Draining | 653 *b* | Parsnips, culture of | 650 *c* |
| Emigration | 651 *a* | Pears for espaliers | 648 *c* |
| Exhibitions, floral prizes at | 647 *a* | Peas, to keep from mice | 648 *c* |
| Farming, Lord Leicester's | 654 *c* | Plants flower garden | 645 *b* |
| Frames, cold, aspect for | 648 *c* | Rhododendrons, Himalayan | 645 *c* |
| Game | 651 *c* | Salisburia adiantifolia | 646 *a* |
| Gardeners' Benevolent Institution | 647 *c* | Science, be ener of | 653 *b* |
| Geological Observer, rev. | 646 *c* | Seeds Messrs. Wrench's | 646 *b* |
| Guano and Mr. Alcock | 649 *c* | St. Quivox Club at Myremill | 653 *b* |
| Horticultural Society | 646 *b* | Strawberries, classification of | 648 *c* |
| Judas tree, to remove | 648 *c* | Turnip caterpillar | 650 *a* |
| Labourers, agricultural | 652 *b* | Vegetation, chemistry of | 643 *b* |
| Lambs on Carrots | 652 *c* | — Himalayan | 646 *a* |
| Lawes' experiments | 643 *b* | Vine mildew | 643 *a*—644 *a* |
| | | Weather, the | 653 *c* |


AMATEUR TULIP SOCIETY.—At a Special General Meeting of the above Society, held at the Horns Tavern, Kennington, on Monday, 6th October, 1851, S. SANDERS, Esq., of Staines, in the Chair, it was unanimously resolved—"That the sincere thanks of the Society are eminently due, and are hereby tendered, to the under-mentioned gentlemen, for the judgment, patience, and scientific knowledge exercised by them as Censors at the several Exhibitions of the Society; and also for the generous and effective support the Society has on all occasions received at their hands."

| | |
|---|---|
| Mr. W. Smith, of Albany-road. | Mr. Willmer of Sunbury. |
| ,, H. Goldham, of Isling on. | ,, R. J. Lawrence, of Hampton. |
| ,, Jas. Dickson, of Acre-lane. | |

Signed on behalf of the meeting, S. SANDERS, Chairman.

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CHOICE PELARGONIUMS, &c.

THOMAS DAVIES AND CO. beg to offer the following new and first-rate Pelargoniums, which are now ready for sending out in strong plants:—

| | | *s.* | *d.* | | | *s.* | *d.* |
|---|---|---|---|---|---|---|---|
| Ajax | (Hoyle's) | 7*s* | 6*d* | Isis | (Hoyle's) | 3 | 6 |
| Cardinal | ,, | 3 | 6 | Diana | (Beck's) | 3 | 6 |
| Corinne | ,, | 3 | 6 | Major Domo | ,, | 7 | 6 |
| Flavia | ,, | 5 | 0 | Prince Arthur | ,, | 5 | 0 |
| Generalissimo | ,, | 5 | 0 | Rosa | ,, | 10 | 6 |
| Heartsease | ,, | 3 | 6 | Silkmercer | ,, | 5 | 0 |
| Jenny | ,, | 3 | 6 | Tyrian Queen | ,, | 7 | 6 |
| May Queen | ,, | 5 | 0 | Fireball | (Henderson's) | 3 | 6 |
| Nectar Cup | ,, | 3 | 6 | Mount Hecla | (Gaines's) | 5 | 0 |
| Ocellatum | ,, | 5 | 0 | Beauty of Montpelier | (Rundle's) | 5 | 0 |
| Rowena | ,, | 3 | 6 | | | | |
| Rubiola | ,, | 5 | 0 | | | | |

Any 6 of the above for 35*s*, 12 for 63*s.*, or the set for 84*s.*

Twelve of the following older varieties for 24*s.*:—Alonzo, 1*s.* 6*d*; Brilliant, 1*s.* 6*d.*; Christabel, 2*s.* 6*d.*; Crusader, 1*s.* 6*d.*; Cuyp, 2*s.* 6*d.*; Delicatissima, 1*s.* 6*d.*; Emily, 2*s.* 6*d.*; Gipsey Bride, 2*s.* 6*d.*; Lalla Rookh, 1*s.* 6*d.*; Loveliness, 2*s* 6*d.*; Magnificent, 2*s.* 6*d.*; Nonsuch, 2*s* 6*d.*; Mont Blanc, 1*s.* 6*d.*; Prince of Orange, 2*s.* 6*d.*; Rosalind, 2*s.* 6*d.*; Salamander, 2*s.* 6*d.*; Star, 1*s.* 6*d.*; Virgin Queen, 1*s* 6*d.*; Victory, 2*s.* 6*d.*

FANCY VARIETIES.

Albonii, 1*s.* 6*d.*; Anais, 1*s* 6*d.*; Beauty, 2*s.* 6*d.*; Black Prince, 2*s.* 6*d.*; Defiance, 2*s.* 6*d.*; Exquisite, 3*s.* 6*d.*; Jenny Lind, 1*s.* 6*d.*; Marion, 1*s.* 6*d.*; Prima Donna, 2*s.* 6*d.*; Prince Albert, 2*s.* 6*d.*; Queen Victoria, 1*s.* 6*d.*; Queen of the Gipseys, 2*s.* 6*d.*; Reine de Francais, 1*s.* 6*d.*; Reine de Fleures, 3*s.* 6*d.*; Hero of Surrey, 2*s.* 6*d.*; Bouquet tout fait, 1*s.* 6*d.*; La Belle Africana, 1*s.*; Jehu Superb, 1*s.* Any 6 of the above for 15*s.*, or 12 for 24*s.*

An extensive collection of Ericas, 12*s.* to 18*s.* per dozen; Epacris, strong blooming plants, 18*s.* per dozen; Azalea Indica, ditto, choice varieties, 20*s.* per doz.; and every other article in the Nursery and Seed business at equally low prices.

A choice collection of Dutch Bulbous Roots, of which separate Catalogues may be had.

Remittances are requested from unknown correspondents, for which a discount of 5 per cent. will be allowed.

Wavertree Nursery, near Liverpool, Oct, 11.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

SEEDLING FOREST TREES.—The Subscriber offers for Sale the following, each of which will be warranted of the very finest quality:—

| | | | | | |
|---|---|---|---|---|---|
| Spruce, 3 years per 1000 | 4s.6d. | | Larch, 1 year, per 1000 | | 2s.0d. |
| Do. 1 year ..... | ,, | 2 0 | Scotch Fir, 2 yrs. | ,, | 4 0 |
| Alder, 1 year..... | ,, | 2 0 | Do. 1 year..... | ,, | 2 0 |
| Birch, 2 years ... | ,, | 4 0 | Thorn, 1 year ... | ,, | 3 0 |
| Do. 1 year ..... | ,, | 2 0 | Elm, 2 years ..... | ,, | 3 6 |
| Beech, 1 year ... | ,, | 2 6 | Do. 1 year ..... | ,, | 2 0 |

Fit for exposed out-planting. From 1 to 500,000 of each.
Early orders are solicited.
THOMAS BARNES, Merrion Nurseries, Dublin.

NEW GERANIUMS, &c., AT REDUCED PRICES, NOW SENDING OUT.

BASS AND BROWN have a large, healthy, and vigorous Stock of the following in 4-inch pots, now ready for immediate re-potting, which will make fine specimen plants for exhibition.

NEW VARIETIES OF LAST SEASON.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Hoyle's Ajax ... | 7 6 | Beck's Major Domo ... | 5 0 |
| — Ocellatum ... | 7 6 | — Silk Mercer ... | 5 0 |
| — May Queen ... | 7 6 | — Prince Arthur ... | 5 0 |
| — Nectar Cup ... | 5 0 | — Diana ... ... | 5 0 |
| — Flavia ... ... | 5 0 | — Tyrian Queen ... | 5 0 |
| — Generalissimo ... | 5 0 | Rouse's Alibi ... ... | 5 0 |
| — Cardinal... ... | 5 0 | Foster's Knight of Avenel | 5 0 |
| — Heartsease ... | 3 6 | Bragg's Exquisite ... | 7 6 |
| Rundle's Beauty of Montpellier ... ... ... | 5 0 | Walton's Village Maid ... | 5 0 |

*Any* 12 *of the above for* 3*l.*, *or* 12 *of our selection for* 2*l.* 10*s.* *The set of* 18 *for* 4*l.* 4*s.*

*Any* 12 *of the following best new varieties of the autumn of* 1849 *for* 1*l.* 10*s.*, *or* 12 *of our own selection for* 1*l.* 5*s.*

Alderman, Bragg's
Antagonist, Walton's
Constance, Foster's
Conspicuum, Foster's
Chrisabel, Hoyle's
Crispina, Hoyle's
Cusp, Beck's
Emily, Beck's
Falstaff, Bragg's
Field-Marshal, Symon's
Flying Dutchman, Gaines'
Gipsy Bride, Foster's
Governor, Beck's
Lord Stanley, Hoyle's
Loveliness, Beck's
Magnificent, Foquet's
Nan lee, Hoyle's
Nonsuch, Hoyle's
Painter, Beck's
Prince of Orange, Hoyle's
Purity, Walker's
Rosalind, Beck's
Rowena, Turner's
Satisfaction, Hoyle's

*Any* 12 *of the following first-rate older varieties for* 1*l.*, *or* 12 *of our selection for* 15*s.* *Any* 20 *for* 1*l.* 10*s.*, *or* 20 *of our selection for* 1*l.* 1*s.*

Abd-el-Kader, Alonzo, Ariel, Aurora, Belle of the Village, Blanche, Brilliant, Cavalier, Co-nurion, Cracker, Crusader, Cruenta, Eleanus, Emilia, Forget-me-not, Grandiflora, Gulielma, Gustavus, Jenny Lind, Lamartine, Mercury, Mrs. Brock, Negress, Orion, Princess, Pea l, Prometheus, Rebecca, Refulgent, Rolla, Rosamond, Rosy Circle, Star of the West, Sundown, Symmetry, Salamander, Star, Victory, Virgin Queen, and Windsor Castle.

A collection of good older varieties 6*s.* and 9*s.* per dozen.

FANCY GERANIUMS.

NEW VARIETIES OF LAST SEASON.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Ambrose's Belle Marie ... | 5 0 | Henderson's Exquisite ... | 3 6 |
| — Gaiety ... | 5 0 | Sheppard's Miss Sheppard | 3 6 |
| — Delicata ... | 5 0 | — Grace Darling | 3 6 |
| Henderson's Marion ... | 3 6 | — Little Wonder | 3 6 |
| — Prince Albert | 3 6 | *The Set of* 9 *for* 1*l.* 10*s.* | |

*Our selection from the following* 9*s. and* 15*s. per dozen, or any* 12 *may be selected for* 1*l.*, *or* 20 *for* 1*l.* 10*s.*

Alboni, Anais, Beauty, Bouquet tout fait, Beauty of Winchester, Clown, Defiance, Fairy Queen, Formosa, Hero of Surrey, Jenny Lind, Jehu, Jehu Improved, La Belle d'Afrique, Lady Rivers, Lady Flora Hastings, Madame Grisi, Magnifica, Maid of Anjou, Mazeppa, Superb, Modesta, Singularity, Statiaski, Village Maid, Wintonia, Yeatmanianum, and Zelia.

NEW PLANTS.

| | Each.—s. d. | | Each.—s. d. |
|---|---|---|---|
| Allamanda neriifolia ... | 3 6 | Hoya Bella, 1s.6d., 2s.6d., to | 3 6 |
| — Schottii ... | 1 6 | — campanulata ... | 2 6 |
| Agalmyla staminea ... | 3 6 | — imperialis ... | 3 6 |
| Anguria Warsewiczii ... | 3 6 | Ixora Javanica ... ... | 2 6 |
| Begonia cinnabarina ... | 2 6 | — salicifolia 5s. to | 7 6 |
| Capanea grandiflora ... | 5 0 | Jasminum nudiflorum ... | 1 6 |
| Cantua dependens ... | 5 0 | Lobelia Aurora ... ... | 2 6 |
| Cyrtoceras reflexa ... | 2 6 | — thapsoides ... | 2 6 |
| Deutzia gracilis ... ... | 3 6 | Maranta coccinea, 1s.6d. to | 2 6 |
| Dipteracanthus spectabilis | 3 6 | Medinilla magnifica ... | 15 0 |
| Eriostemon scabrum ... | 2 6 | Nematanthus Morelliana | 2 6 |
| Escallonia macrantha, 2s. 6d. to | 3 6 | Pharibites ostrina ... | 2 6 |
| | | Tropæolum Wagnerianum | 2 6 |
| Gardenia Stanleyana ... | 2 6 | Tri onia aurea, 2s. 6d. to | 5 0 |
| — Fortuni ... | 2 6 | Veronica Andersoni ... | 1 6 |

*The following strong Plants, fine for Winter and early Spring flowering.*

12 Stove Plants, for 1*l.*
Aphelandra aurantiaca
— Ghiesbrightii
Begonia coccinea
— albo-coccinea
— fuchsioides
Centradenia floribunda
Euphorbia splendens
— fulgens
Gesnera oblongata
Hoya bella
Rondeletia speciosa major
Stephanotis floribunda

12 Greenhouse Plants, for 15*s.*
Calceolaria grandis, new,
Cassia corymbosa [shrubby
Chorozema splendens
Correæ magnifica
— Ne plus ultra
— speciosa
— Stockwelliana
Echeveria retusa
Jasminum nudiflorum
Kennedya monophylla
— nigricans [rubra
Siphocampylos microstoma

FUCHSIAS.—Story's, Bank's, and Smith's new varieties of 1851—12 for 20*s.*, or 24 for 30*s.*

PETUNIAS.—Barnes's, Young's, and our own new varieties of 1851—12 for 15*s.*, or 6 for 10*s.*

VERBENAS.—Smith's, Turner's, Barker's, and Chauviere's new varieties of 1851—12 for 12*s.*, or 20 for 18*s.*

NEW CHRYSANTHEMUMS, fine bushy plants, with flower buds, in 6-inch pots, for turning out or re-potting. £ s. d.

| | £ s. d. |
|---|---|
| 12 fine new varieties of last season ... ... ... | 0 15 0 |
| 60 splendid varieties, including the above ... ... | 2 0 0 |
| 40 do. do., 1*l.* 10*s.*, 25 fine varieties, 17*s.* 6*d.*, 12 do. ... | 0 9 0 |
| 10 Lilliputian or dwarf varieties ... ... ... ... | 0 7 6 |

AZALEA INDICA, strong bushy plants for flowering next season:—

| | £ s. d. |
|---|---|
| 20 very fine varieties ... ... ... ... | 1 10 0 |
| 12 do. do., 18*s.*, 6 for ... ... ... | 0 10 0 |

Our DUTCH BULBS have arrived, and are in the finest condition.—AUTUMN CATALOGUES supplied on application.

Goods Carriage Free to London, or any Station on the Bury or Ipswich Line. With all Orders of 2*l.* and upwards, Plants presented to compensate for distant carriage.

Remittances requested from unknown correspondents.

Post-office Orders to be made payable to
BASS and BROWN, or STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

VICTORIA REGIA.

J. WEEKS AND Co., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

NEW PEAS, &c.—EARLY PARAGON, EARLY WONDER, AND CONQUEROR.

FAIRBEARD'S WILL WATCH, fine large Wrinkle Marrow, 4 feet, the best of its class.
NE PLUS ULTRA, Blue Pods.
WAITE'S KING OF MARROWS.
HAIRS' DWARF BLUE MARROW, the best dwarf Wrinkle Pea grown.
And many others will appear in the list of Prices.
FAIRBEARD'S NEW EARLY DWARF PROLIFIC LONG-POD BEANS.
The above to be had at J. G. WAITE'S Seed Establishment, 181, High Holborn.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

WHOMES' Descriptive Catalogue of his NEW PELARGONIUMS may be had on application.
Royal Pelargonium Nursery, Windsor, Oct. 4.

FIRST CLASS GERANIUMS.—TWO GUINEA SET.

WILLIAM E. RENDLE, Plymouth, FLORIST to her MAJESTY, will supply Twelve of the following first-rate GERANIUMS for 2*l.* 2*s.*, with a plant of Elliott's Surprise over.

RUNDLE'S BEAUTY OF MONTPELLIER; May Queen (Hoyle); Nectar Cup (Hoyle); Ajax (Hoyle); Rubiola (Hoyle); Isis (Hoyle); Flavia (Hoyle); Generalissimo (Hoyle); Gaiety (Foster); Corinne (Hoyle); General Jung Bahadour (Gaines); Lady Peel (Paley's, first time sending out); Candidate; Boule de feu; Village Maid; Cardinal (Hoyle); and Heartsease.

*Descriptions of* ELLIOT'S SURPRISE, *and* RUNDLE'S BEAUTY OF MONTPELLIER, *will be found in the* Gardeners' Chronicle, *Sept.* 13*th*, *page* 578.

| | s. d. |
|---|---|
| Twelve excellent GERANIUMS ... ... ... | 12 0 |
| Twelve excellent Fancy do. ... ... ... | 20 0 |
| Twelve excellent Scarlet do. ... ... ... | 15 0 |
| Twelve excellent CINERARIAS ... ... ... | 10 0 |

*For names of the varieties, see page* 578, *Sept.* 13.

*All Orders above* 2*l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railway, or to Cork, Dublin, or Belfast. All Orders attended to in strict rotation.*

*A large Collection of BULBS has just arrived from Holland, which will be offered at very reduced prices.—Catalogues on application.*

Apply to WILLIAM E. RENDLE, Union Road, Plymouth, adjoining the Terminus of the South Devon Railway.

SANGSTER'S NEW EARLY NO. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

VIOLETS.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET (TRUE).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season, by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful Double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the Double Blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets, the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen, or 1*l.* per 100. Any quantity of the above will be sent postage and package free.

STRAWBERRY PLANTS.

The undermentioned first-rate varieties are now ready to send out:—
Myatt's Surprise, sent out first time last season, 1*l.* per 100, or 3*s* per dozen.
Prince Arthur, do. do, 1*l.* per 100, or 3*s.* per dozen.
Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 5*s.* per 100.
Goliah, very fine ... ... ... ... 3*s.* per 100.
British Queen, do. ... ... ... ... 5*s.* ,,
Alice Maud, do. ... ... ... ... 3*s.* ,,
Black Prince, very early ... ... ... 5*s.* ,,
Prolific, very fine and early ... ... ... 5*s.* ,,
Cremont's Perpetual, or double-bearing Strawberry, 12*s.* per dozen, or 4*l.* per 100.
Trollop's Victoria, 12*s.* per dozen, or 4*l.* per 100.
The above are strong and well-rooted plants, such as will insure satisfaction. Any of the Strawberries that are priced, per dozen, can be sent free by post; also those priced, per 100, will be sent package free.
Fine Giant Scarlet Brompton Stocks, Plants that have been all pricked out, 2*s.* 6*d* per 100.
Also, some fine Antirrhinums, all saved from striped and spotted varieties, such as will give every satisfaction, and bloom early next spring, 5*s.* per 100.
Fine Sweet Williams, such as will bloom next season, saved from 50 distinct varieties (the plants are strong and good), 5*s.* per 100, or 1*s.* per dozen. Can be sent by post with any of the above.

WINTER CUCUMBER.

Lord Keynon's Favourite, the best variety for winter cultivation, 2*s.* 6*d* per packet.
A remittance is expected by Post-office order, or the amount in penny postage stamps.
EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

EARLY CABBAGE.—Stout Bedded Plants of superior true sorts, 4*s.* 6*d* per 1000, package included, delivered free of carriage to the Edenbridge station of the South-Eastern Railway.—Address, JOHN CATTELL, Westerham, Kent. Cash or stamps must accompany orders from unknown correspondents.

NEW STRAWBERRY PLANTS.—

| | | |
|---|---|---|
| MYATT'S EARLY SURPRISE | ... | 18*s.* per 100. |
| ,, ELEANOR ... ... | ... | 4*s.* ,, |
| KITLEY'S GOLIAH ... | ... | 5*s.* ,, |
| WILMOT'S PRINCE ARTHUR ... | ... | 40*s.* ,, |
| HOLLYHOCKS, Splendid Double Varieties ... | | 40*s.* ,, |

With every other variety in cultivation. Can be had at J. G. WAITE'S Seed Establishment, 181, High Holborn.

SEEDLING CINERARIAS.

W. IVERY begs to offer the following new varieties, which are now ready.
CINERARIA "BEAUTY," pure white ground, edged with lavender; form extra fine. Recommended by the National Floricultural Society. Price 7*s* 6*d.*
CINERARIA "HAMMERSMITH BEAUTY," blue, with white centre, very dwarf habit; most showy and distinct variety ever offered. Price 5*s.*
W. I. can also supply good plants of the undernamed fine varieties: Blue Perfection (Ivery's), 3*s.* 6*d.*; Empress (do.), 2*s.*; Electra (do), 3*s.* 6*d.*; Fearless (do.), 2*s.* 6*d.*; Little Wonder (do), 2*s.* 6*d*; Madame Miellez (do.), 3*s.* 6*d.*; Madame Castellan (do.), 2*s.* 6*d.*; Monarch (do.), 2*s.*; Bessy (Henderson), 2*s.*; Effie Deans (do.), 3*s.* 6*d.*; Flora M'Ivor (do.), 2*s.*; Lady Araminta (do.), 2*s.* 6*d.*; Lady Hume Campbell (do.), 5*s.*; Pauline (do.), 2*s.* 6*d.*; Wellington (do.), 2*s.* 6*d.*; Alboni (do), 1*s.* 6*d.*; Privateer (Ambrose), 2*s.* 6*d.*; Mademoiselle Parodi (Henderson), 2*s.* 6*d.* Selection left to W. I., 12*s.*, 18*s.*, to 24*s.* per doz.
Select Catalogue of Show and Fancy Geraniums, Fuchsias, Verbenas, Cinerarias, Antirrhinums, Choice Plants, Phloxes, and Chrysanthemums, may be had on application.
Hanover Nursery, Peckham, near London.

ABRAHAM HARDY AND SON, SEED GROWERS and SEEDSMEN, Maldon, Essex, beg to inform their friends that Autumn, Winter, and Early Spring are proper seasons for Sowing or Planting the HERACLEUM GIGANTEUM and HERACLEUM SPHONDYLIUM. The former is a magnificent hardy and ornamental Plant from Siberia, grows 14 feet high, with flowers 12 feet in circumference, and leaves 5 feet wide. Seeds, 6*d.* per packet; large plants 1*s.* each. The latter is a British plant, which improves by cultivation, very useful and proper for cattle, especially for pigs and rabbits in large towns, growing abundance of food on a small space of ground; cultivated Seeds for one rod, 6*d.*; for ¼ acre, 7*s.*; directions, &c. All free by post.
HARDY'S selected early varieties of Potatoes for autumn planting, 5*s.* per bushel, sacks included, and carriage to London. Treatise on Potato Culture, 6*d.* Remittances requested.

EXOTIC NURSERY, KING'S-ROAD, CHELSEA.
We have a fine stock of ARAUCARIA IMBRICATA, CEDRUS DEODARA, RHODODENDRON PONTICUM, in remarkably well-grown plants, of various sizes. This being the best time of the whole year for planting them, we beg respectfully to recommend them in an especial manner, to those who intend embellishing their estates and gardens by ornamental planting, and shall be happy to furnish size and price when applied for. KNIGHT and PERRY.

THE MOUNTAIN OF LIGHT, a new variegated GERANIUM, of dwarf habit, and free growth. The centre of the leaf is deep green, with a broad margin of pure white. The truss is of medium size, the pips very round, and the colour the most intense scarlet. It is a very free bloomer.
First-class Certificates have been awarded to it by the National Floricultural Society, and the South London.
JOHN AND CHARLES LEE intend sending out this desirable variety (which eclipses all former introductions in this class), on the 31st instant. Price 10*s.* 6*d.* each. Early orders are requested, as the stock is limited.
Nursery, Hammersmith.

SEEDLING FANCY PELARGONIUMS.

W. P. AYRES begs to announce that his SEEDLING FANCY PELARGONIUMS, as fully described in the *Gardeners' Chronicle* of October 4, p. 626, will be ready to send out as under. The usual discount to the trade, and a plant of one of the Guinea kinds over in every set ordered.

On the 20th October, the following—

| | | | |
|---|---|---|---|
| Alboni Superb ... | 10*s.* 6*d.* | Formosissimum ... | 31*s.* 6*d.* |
| Caliban ... ... | 21 0 | Gipsy Queen ... | 21 0 |
| Celestial ... ... | 21 0 | Miranda ... ... | 21 0 |
| Sambo ... ... | 7*s.* 6*d.* | | |

At the end of March, or early in April, 1852, the following—

| | | | |
|---|---|---|---|
| Advancer ... ... | 31*s.* 6*d.* | Conspicuum ... | 21*s.* 0*d.* |
| Brunette ... ... | 10 6 | Kentish Beauty ... | 21 0 |
| Painted Pet ... ... | 25*s.* 0*d.* | | |

In relation to the Silver Cups offered as Prizes in June and July for the best six plants selected from the above list, W. P. A. begs to state that those growers who signify their intention to compete before the 1st November, will receive strong plants of "Advancer" and the other kinds to be sent out in April, in the middle of February. Nurserymen, as well as Amateurs, will be allowed to compete.
W. P. A. having a stock of nearly 5000 plants of the leading named Fancy varieties, can supply fine established plants in vigorous health at 12*s.*, 18*s.*, 24*s.*, 30*s.*, to 100*s.* per dozen, the selection being left to himself. Purchasers are advised to send a list of the varieties they already possess, so that duplicates may be avoided.

| | | |
|---|---|---|
| 12 fine and distinct Exhibition varieties | ... | 31*s.* 6*d.* |
| 12 very superior ditto | ... ... | 42 0 |

FANCY PELARGONIUMS.—Alboni, Admirable, Anais, Beauty, Belle d'Epiney, Bouquet tout fait, Defiance, Duchesse d'Aumale, Empress, Esmeralda, Evangeline, Fairy Queen, Fellowsiaaum, Formosa, Gaity, Garland, Hero of Surrey, Ibrahim Pacha, Ioliuskii, Jehu, Jehu Superbum, Jenny Lind, Katty Hayes, La Belle d'Africana, Lady Rivers, Lady Louisa Cornwallis, Lady St. Germain, Lilacina, Lizzey Lindsey, Lucy Neal, Madame Miellez, Magnifica, Mazeppa Superb, Minerva, Modesta, Modesta Superb, Orestes, Odorata, Magnifica, Parodii, Perfection, Pilot, Purity, Princess Maria Galitzen, Picturata, Pencillatum, Queen Superb, Queen Victoria, Quercifolrum Superbum, Reine des Francais, Statiaskii, Village Maid, Wintonia, and Wizard.
W. P. A. has also many thousands of the leading Show Pelargoniums, fine vigorous plants, which he can supply as under:
12 selected from the following, 42*s.*, or 6 for 21*s.*
Beauty of Montpelier, Ajax, May Queen, Ocellatum, Nectar Cup, Isis, Flavia, Cardinal, Generalissimo, Corinne, Prince Arthur (Pontey), Fairy Queen (Seedling), Alderman, Constance, Prince of Orange, Magnificent, Conspicuum, Rowena, Christabel, and Virgin Queen.

| | | |
|---|---|---|
| 12 Pelargoniums, all show kinds of this season | | 15*s.* 0*d.* |
| 12 ditto superior ditto ... | | 21 0 |
| 12 First-rate show kinds, including Ocellatum, May Queen, and Flavia ... ... ... | ... | 30 0 |

Carriage free to London, and plants to compensate for package and long carriage.
*** When cash or a Post-office order accompanies the order, a discount in plants of 10 per cent. will be allowed. Post-office orders payable at Greenwich to WILLIAM PORT AYRES.
Brooklands Nursery, Blackheath, Oct. 11.

WILLIAM HAMILTON, SEEDSMAN, &c, 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

| | s. d. |
|---|---|
| Hyacinths, superior sorts, named, per doz. ... | 6s. and 9 0 |
| Narcissus, very fine large roots, each ... | 4d. to 0 8 |
| Tulips, for early forcing, per doz. ... ... ... | 1 0 |
| Crocus, mixed, for border, per 100 ... ... ... | 1 6 |
| ,, very fine named, per 100 ... ... ... | 2 6 |
| Snowdrops, single or double, per 100 ... ... ... | 2 6 |
| Ixias, of sorts, named, per doz. ... ... | 2s. to 4 0 |
| ,, very fine, mixed, per doz. ... ... ... | 2 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots for which see his Catalogue.

RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.

WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

FANCY PELARGONIUMS.

W. P. AYRES begs to announce that his Descriptive Catalogue of Seedling Fancy and other PELARGONIUMS, CINERARIAS, CALCEOLARIAS &c., will be published in a few days, and will be forwarded upon prepaid application. His Seedling Fancy Pelargoniums will be ready for delivery on and after the 20th of October, but the stock of some of the kinds being limited, early orders are indispensable to insure the collection.

Brooklands Nursery, Blackheath, Oct. 11.

RED LODGE NURSERY GROUNDS, North Stoneham; SEED WAREHOUSE and FLORICULTURAL GARDENS, No. 181, High-street, near the Bar Gate, Southampton.

W. ROGERS, SEN., NURSERYMAN and CONTRACTING PLANTER, begs to inform the Public and those interested in Planting that he intends selling at very reduced prices, the fine Stock of FRUIT, FOREST, ORNAMENTAL TREES and SHRUBS (extending over 60 acres of land) in the forthcoming planting season, priced catalogues of which may be had, wherein will be enumerated all the newly-introduced hardy CALIFORNIAN and CHINESE SHRUBS, CONIFERÆ, RHODODENDRONS, and ROSES, which are added to the stock and cultivated as soon as they appear, it being his determination that these old-established nursery grounds shall continue to merit the patronage of the nobility and gentry so liberally conferred upon him for the last 40 years.

A Gardeners' and Land Stewards' Registry is kept at his office in the town, where men of experience and ability may be always obtained.

The following will be found particularly fine, and in great abundance:—Larch, Scotch Spruce, Pineaster, and Sea Pine, Fir, Hazel, Oak Quicksets, Mahonia (for cover), and Rhododendrons of all sizes, from 4 inches, 40s. per 1000, to 2, 3, and 4 feet, 10s. to 30s. and 40s. per 100; Abies Douglasii, 2 feet, 30s. per dozen, and 2 to 3 inches, 5l. per 100, or 18s. per dozen. Double Camellias, 12s. per dozen; Single Camellias, fit for working, 30s. to 40s. per 100; Dwarf Boursault Rose stocks (strong), 6s. per 100.

SUPERB HOLLYHOCKS.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk, begs to state that his Descriptive CATALOGUE of the above splendid flowers is now ready, containing all the best in cultivation, and including some first-rate Seedlings.

R. B. B. begs to offer strong ground roots, selected when in bloom, from some thousands of seedlings; these are fine double flowers and splendid colours, and will prove a superior class of flowers for the border and shrubbery; 9s. per dozen.

A Descriptive Catalogue of the best Roses in cultivation, including upwards of 300 of the best hardy varieties. R. B. B. will be happy to forward the above lists on prepaid application. Package carefully attended to; extra plants included, to compensate for distant carriage. Carriage paid to London per Norfolk railway.

DUTCH FLOWER ROOTS.

RENDLE'S LIST OF DUTCH BULBS will be found in the columns of this Paper, front page, in the number for September 27, 1851. The prices are very low. Descriptive Catalogues on application to WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

*The Hyacinths are particularly large and handsome. Most excellent kinds can be had at 6s. per dozen.*

The Gardeners' Chronicle.

*SATURDAY, OCTOBER* 11, 1851.

IT is some consolation to know that one enemy to the gardener is thoroughly subdued. If we cannot manage the Potato disease, at least we can defy the VINE MILDEW. An exhibitor of excellent mildewed Grapes declared, at the last horticultural meeting, that he cared no more for egg-mildew in a Vinery than for green-fly in a Cucumber bed. And he was right. What tobacco will do in one place, sulphur will do in another. Smoke your green-fly, brimstone the egg-mildew. Black Hamburgh Grapes were produced by Mr. FRY, and Black Prince Grapes, from the Garden of the Horticultural Society, as well grown, and as well coloured, and as well flavoured, in the midst of mildew, as if no such malady were known. Nevertheless A B and C declare that they have killed their Vines instead of curing them, while E F and G maintain that sulphur is of no more use to a Vine than homœopathic pills to an ass.

The cause of the failures that have taken place is not determinable, the *modus operandi* not being traceable by those who are not witnesses of it. A B and C, however, have no doubt fired their sulphur, an ingenious process, by means of which they have scorched their Vines, and if we may say so, burnt their fingers. On the other hand, E F and G may be suspected of having been frightened at powdering Vines with absolute brimstone, and may have delicately preferred water in which it has been steeped; in doing which they are not unlike the folks who content themselves with having been absent from the Crystal Palace, by reflecting, that at any rate they have seen people who have been there. Others, may be, have waited till the evil was incurable, and some may have been deterred from the true method of cure from fear that the Grapes will eventually smell of sulphur.

At all events, it is certain, that if flower of sulphur is powdered over the *dry* leaves and berries of Vines when first attacked, the mildew will be stopped; and that if it reappears, it may be stopped again by the same means, till at last it disappears, and the Grapes ripen. There is no fact more certain than this. But the sulphur must be left on the leaves and berries, not dusted on and washed off again like plate powder on a silver fork. It must remain, and be allowed to act. Left alone it will do no harm, washed off it will do no good. It may remain on the berries till they are ripe and wanted for table. Fine folks need not be alarmed at this; they will never know that their Grapes have been brimstoned. It is only necessary to syringe the bunches with a very fine rose, so that the water falls on the berries like heavy mist, and in a short time every particle of sulphur will be washed off; or they may be plunged in water, and drawn gently through it. After this, then, neither taste nor smell remains, for the sulphur is wholly gone.

A difficulty has been found by some people in dusting their Vines with sulphur; and as dredging-boxes and powder-puffs are apt to act upon the dresser, as well as the dressee, ingenious mechanicians have provided, and even patented, their "sulphurators." But there is no need of an elephant to drag a dog-cart. A pair of bellows fitted with a tin box communicating by holes in the bottom with a long tube instead of the usual pipe of the bellows is as good as anything. The sulphur drops into the tube through the holes, and is driven forward by the blast. But as flower of sulphur is apt to clog, and refuse to fall through the holes in the bottom of the box, an ingenious Frenchman thought of a plan for patting, or, if you will, rapping the box, so as to displace the sulphur at every puff of the bellows. For this purpose, he attached a long, weak, steel spring to the under-side of the bellows, and secured to the free end of the spring, next the sulphur-box, a hammer-head, which constantly strikes the tube of the bellows, as the bellows are moved in the act of blowing. The result is, that while the bellows say, "Puff, puff, puff," the hammer strikes, "Pat, pat, pat;" and between puffing and patting, a constant cloud of sulphur is directed to every place where it is wanted.

WE must again invite the attention of our readers to Mr. LAWES' long and laborious series of experiments on the Chemistry of Vegetation, which, as we recently observed, are characterised by LIEBIG as being of no practical value for the foundation of general conclusions; a remark probably made in a moment of haste and ill-humour, perhaps even without being thoroughly aware of the true nature and aim of the experiments there condemned. In order to explain the matter fully, it will be necessary to advert once more to the so-called mineral theory of LIEBIG, which is in fact the foundation of the whole discussion, and to which its author appears inclined to adhere with a good deal of tenacity, in spite of all that may be urged against it.

It is perhaps hardly to be wondered at, that the small quantity of inorganic matter which plants contain was formerly considered as being accidental, or at least of no real value, and not in any way essential to their growth and prosperity; at all events, such was certainly the case, and even after the minute and laborious investigations of SAUSSURE, it appears that very little attention was paid to the subject, for DAVY evidently thought them of little or no importance, when he wrote his celebrated lectures on agricultural chemistry. Isolated writers have now and then drawn attention to the existence of these substances in plants, and have indeed pointed out the necessity of their being present in those plants which serve as the food of animals. Thus, for example, it has been long known and admitted that cattle derive a large portion of phosphate and carbonate of lime, the earthy matter of their bones, from the Grass and other plants on which they feed. LIEBIG was the first to insist on the paramount importance of these inorganic substances to plants, which he asserted were absolutely essential to their growth; and indeed he went so far as to say that vegetation was healthy and luxuriant just in proportion to the supply of these substances. In accordance with this view he put forth his theory of exhaustion and fallowing, asserting that the sole reason why a plant could not be cultivated year after year on the same soil, was, that the supply of soluble inorganic matter necessary for the plant soon became exhausted, and that this loss must be remedied either by leaving the soil for a year or two to recover itself under the agency of atmospheric influence, or by the addition of suitable mineral manures. It is often stated that LIEBIG discovered the real office performed in the nutrition of plants by these inorganic matters, and hence threw a good deal of light on the subject; but this is not really the case; for of the true use of the inorganic constituents of plants very little indeed is even now understood. We know that they are essential to vegetation, but we do not know why, or in what manner they act; this still remains to be discovered.

The two great facts which LIEBIG brought forward in a prominent manner, were, the necessity of these substances being present in a fertile soil, and the fact that different tribes of plants require the presence of different inorganic matters; some requiring phosphate of lime, some needing alkali, and some requiring silica. These facts are certainly of the very first importance; but it is obviously impossible to arrive at any very satisfactory conclusion as to the mode in which these substances influence vegetation, until we fully understand the office which they perform, and the effects which they produce. It is quite plain that these inorganic matters cannot in any way serve as food, or at least cannot directly contribute to the supply of carbon, nitrogen, &c.; but at the same time there is no doubt some very simple relation between the absorption of these earthy and saline compounds, and the absorption or assimilation of carbonic acid, ammonia, and water. The practical problem to be solved was, is it most important to supply inorganic matter, or ammonia, to plants? or in other words, must we give plants ammonia, and will that enable them to absorb enough inorganic matter from an exhausted soil, or must we give them inorganic manures; and will they then be able to absorb from the air and soil all the ammonia which they require?

The answer which LIEBIG gave to this important question was, that inorganic manures were of far more value than those which merely contained ammonia; an assertion based solely on hypothetical conclusions, and therefore, especially when we bear in mind how little is really known of the action of these substances, one which ought to be viewed with the greatest caution and circumspection. A great many persons were at once satisfied that LIEBIG's view of the subject must be correct, but there were some who wished to have proofs before they admitted it, and Mr. LAWES was one of those; he accordingly instituted, in conjunction with Dr. GILBERT, a very careful series of experiments, and the result of these experiments is now published, in the Journal of the Royal Agricultural Society. These investigations of Mr. LAWES, as far as they go, are very satisfactory; and whilst we should be the last to admit them for more than they are worth, we feel that the manner in which they have been arranged and conducted is such as to render them wholly trustworthy. They plainly lead to certain conclusions, which we may safely adopt, without fear of being misled.

At an early period in his experiments, Mr. LAWES was led to the conclusion, that very little real information can be derived from the analysis of a soil; because our chemical tests are not delicate enough to detect the less abundant constituents; or to render evident those changes in its composition, which the growth of one or two crops could possibly produce. The soil of an acre of ground, supposing it to be 6 inches in depth, would weigh about 1,344,000 lbs., and consequently the subtraction of a hundred weight of any one ingredient would only amount to about one 13,000th part of the whole, a quantity far too minute to be satisfactorily determined by analysis. Mr. LAWES, in his experiments, therefore, proceeded on a plan in which this difficulty was obviated; he took a field, the soil of which was thoroughly exhausted by heavy cropping, so that without manure it would only produce a poor crop, showing, therefore, that something was deficient; and dividing it into several portions he manured each separately, giving to some ammoniacal manure, to some inorganic ones, and to others a mixture of the two. These experiments were continued on the same fields, and with the same manures, for seven years; so that the value of each class of manure was fairly tested with different plants; and the whole of these results are now before us. The paper is well worthy of careful study, and though we shall mention briefly some of the conclusions to be drawn from them, yet we would recommend every one to read the original account of the experiments, and to judge for himself of their value.

Mr. LAWES found that the ashes of farm-yard manure did not increase the yield of Wheat on exhausted land at all, whilst a small dressing of sulphate of ammonia increased it 5 bushels per acre; and when a mixture of inorganic matter and ammoniacal salts was contrasted with the effects of either taken singly, it was evident that the restoring influence of the latter was far higher than that of the former alone. The practical conclusion, therefore, to which Mr. LAWES arrives is, that in this country the soil becomes exhausted of its ammoni-

cal salts much sooner than of its soluble inorganic components; and, therefore, that ammoniacal manures are more important than mineral or inorganic ones in the cultivation of Wheat. In considering these results, one important fact must be borne in mind; the land on which these experiments were made is by no means a poor soil, for, even though exhausted at the commencement, it bore successively for seven years, without any manure, an average crop of 17½ bushels of Wheat per acre; it is plain, then, that it would not be expedient to deduce from such experiments any general conclusion for all soils. Mr. Lawes denies that inorganic manure is all-important for Wheat, in all situations; but he does not deny that there may be poor soils and peculiar circumstances, in which the supply of ammonia is greater than that of inorganic matter; and which, therefore, the nitrogen being in excess, relatively to the mineral constituents of Wheat, would be less easily exhausted. Under such circumstances a mineral manure would be more useful than an ammoniacal one. We must be careful in rejecting the assertion of Liebig, that we do not fall into the opposite extreme. After having found that mineral manures are not the best in all cases, we must not conclude that ammoniacal ones are always best; neither would be true, as a generalisation.

## VINE MILDEW.—No. II.

Up to the present time there are but two opinions respecting the disease of Vines: the one generally adopted, which attributes it to the development of the Botrytis* and my own, for I am in point of fact the only person who considers the fungus as one of the consequences of the disease. This divergency of opinion induces of necessity another, in the treatment of the malady, with a view to its cure.

M. Duchartre, Professor of the Agronomic Institute of Versailles, in a report addressed to the Minister of Agriculture, on the means of combating the effects of the fungus which attacks the Vines, said, "I am to-day happy in being able to announce to you that the treatment to which the diseased Vines have been submitted has given excellent results, and that henceforth we may flatter ourselves with being able to combat it with success whenever it may appear."

The remedy employed by M. Duchartre consists in dashing over the diseased Vines, by help of a garden syringe pierced with rather large holes, water in which flowers of sulphur are held in suspension.† This simple, inexpensive mean, by common consent, has been most successful. The employment of sulphur in this form had already been recommended by Mr. Kyle, an English agriculturist, who had discovered its properties. These advantages cannot be called in question, and I have no thought of doing so; I have myself witnessed them, but I have witnessed those also which I have myself obtained in the month of July by syringing with water in which was dissolved a small quantity of common salt, or sulphate of iron. My own treatment has only served to wash off the fungus as fast as it appeared. When the disease was over everywhere, I have compared the results obtained in plants which had been experimented upon with those which I had left to their unhappy lot. I then saw no difference, the bunches were completely dry, or only retained a small number of berries. Amongst these some were small, cracked, and deformed; others appeared not to have been affected.

The experiments which I made were commenced too late; they would have been more successful at the commencement of the malady, as I have assured myself from late bunches which did not blossom till the end of July. In these the berries presented no trace of disease. I have made but one experiment with sulphur, and my Vine, at the time of maturity, did not appear to me in better condition than the others.

I conclude from my researches that the malady which raged amongst Vines in 1850, and principally in the Chasselas in the neighbourhood of Paris, and in many other parts of France, is not epidemic but endemic; that it is due to a primitive, special, unknown corruption of the young branches, leaves, stalks, and berries; and that Oidium Tuckeri, instead of being the cause, is only one of its consequences.

That if we wish to prevent, not the ravages, but the development of this fungus, we must not allow ourselves to be taken by surprise, as we did through the summer of last year, but commence from the beginning at the moment of flowering, on the first symptoms of the disease, and not when it is generally dispersed, for then it has produced its effects, and it is difficult to appreciate the advantage of the means which have been employed.

That if, as I believe, the disease does not come from without, but that it is inherent, and belongs to the tissues and juices of the Vine, we must seek the cause and means of counteraction in some accidental circumstance or the mode of cultivation. What seems to prove this is, that the disease has been more virulent in white than in black Grapes, and that the Vineyards have been spared while the trellises have suffered.

I shall terminate these remarks by a final observation on the mode of propagation of Oidium Tuckeri. Professor Brongniart told me lately that some persons thought they had remarked that the fungus appeared first in stoves where the Vine is cultivated to obtain early Grapes, and that by degrees it was communicated to the surrounding trellises. This point of origin, if it were well established, would militate strongly in favour of contagion, but in truth it proves nothing. In fact, if the malady is endemic, if it is connected with a particular condition of the Vines, it is very natural that those which are enclosed in stoves should be more diseased than those which are in the open air, since their vegetation is earlier than that of the others. The fungus cannot be developed at the same time on plants which are placed in very different circumstances. I am well aware that it may be objected that the one prepares and preserves the elements of contagion till the others are in a fit condition for being infected, but why then this preference for white Grapes, and repugnance for those that are black! In this case the Vines, whether staked or on trellises, should be diseased, and we see the malady rage principally in Vines attached to walls, or surrounded by inclosures. There is then something in this question which belongs evidently to aspect and cultivation. If contagion exists, the malady cannot cease to prevail in stoves, and in Vineyards it ought to take place as well in the month of September as in the month of June or July, which is exactly the contrary to what really does take place. If, on the contrary, the Vine itself is affected in the first instance, we see the Oidium prevail as long as the disease lasts. When the points which were diseased are cicatrised or dry, it disappears naturally, and does not invest, as it ought to do, the surrounding surfaces which are sound. The moulds are great gluttons; they are to vegetable what insects are to animal substances. They do not abandon their prey, or rather cease to vegetate, except when there is nothing left to feed upon. They could then be propagated in the months of September and October, because at this time atmospheric momenta are certainly as favourable for their development as in the months of June or July. But they are not propagated, because the vital conditions of the Vines are not the same.

Let us admit for the moment that Oidium Tuckeri grows in stoves, and that it spreads from thence into the surrounding districts. By what means ought we to attack it? There is but one. The focus of infection is known; it is necessary in consequence to root up the plant. In doing so the proprietor will not make a great sacrifice, since the Grapes which he cultivates are not saleable when diseased, and he will not have to regret being the involuntary cause of greater mischief."

The importance of the foregoing memoir cannot be denied, though written under very strong views with regard to the effects of fungi on living vegetables, and as it seems to me chargeable in parts with what the Germans call inconsequence. The fungal theory of the Potato disease, as it is termed, was nowhere more strongly opposed or even ridiculed than in France, insomuch that more than one botanist who commenced with it, was forced to yield to the pressure from without. It is extraordinary, however, that of all the theories that were broached, none has been retained by their several advocates except the fungal theory, which not only is as ardently retained as ever by its first adherents, but is daily gaining ground, and has been eventually adopted by some who were at first the strongest in their opposition. I am not, however, going to discuss again a subject which has been so much canvassed, or which has lost its interest with most readers. My opinions were fully stated in the first number of this Journal, and I have never yet seen reason to alter them.

It is curious that with respect to the Vine disease, the majority are in favour of the fungal theory, and my friend Dr. Léveillé is almost alone on the other side. It is not to be denied that his arguments are extremely plausible, and that there is much in his observations that is worth attentive consideration, but I cannot always admit his data. It may be very true that neither he nor M. Decaisne, of whom no botanist will speak without the greatest respect and self-distrust, have been able to detect mycelium within any part of the plant; but it is no less true that myself and Mr. G. Hoffman have seen it most distinctly, and that the figure given in the *Gardeners' Chronicle* in November, 1847, was drawn from specimens lying on the field of the microscope, in which the growth through the stomata was as evident as that of Botrytis infestans, through the stomata of the Potato. The disease, far from disappearing early, as related in Dr. Léveillé's notes, continued, at least in some instances, in this country as long as the leaves were on the trees, specimens having been forwarded to me from Margate quite late in the year from Vines which I had studied in July; and in November Mr. Hoffman, than whom there are few more careful observers, and who has an excellent microscope, with very great powers of manipulation, assured me that he then distinctly traced the mycelium in the buds when the leaves had fallen.

The same excellent observer witnessed its propagation from the Vine on plants of Chrysanthemum indicum placed purposely beneath, and which were in consequence materially injured. I do not for a moment doubt the correctness of a single observation of Dr. Léveillé, as far as it goes, but the circumstances under which disease of all kinds is generated [illegible] that it is impossible to come to any conclusions from the simple fact of certain individuals escaping where others are attacked, and it is very easy to conceive that where the attack proceeded from within the tissues, as in this case, if I am correct in my observations, the injury would be greater than where the fungus was propagated secondarily on external surfaces from fallen spores. It is very possible, that while superficial it may do no further harm than clogging up the superficial spores, and hindering the due access of light and air, and that it is only directly destructive where it enters the tissue through the stomata; but this, of course, is mere conjecture. The great point is to attend to facts. The disease was observed in England about two years previously to 1847, and till Mr. Tucker, after whom the mould was named, employed the same remedy, or at least a form of it, which has long been efficacious in the case of Peach mildew, the destruction was complete. Mr. John Boys, an eminent solicitor and magistrate at Margate, who has long paid especial attention to the cultivation of the Vine, has informed me that one of his own Vines, and another which he had an opportunity of examining, were completely killed by it, and that in his case even the pith of the branches was affected. He has told me, besides, that 30 plants of the Constantia Grape, raised from eyes received directly from the Cape, were all strongly affected, though there was not the slightest reason to believe that the plants from which the eyes were taken were diseased. Though the destruction was at first complete, as regarded the crop, and, as stated above, in two instances the disease was fatal to the Vines themselves, since he has adopted the system of washing the flues when warm, but not too hot, with black sulphur and quicklime, in the proportion of four ounces of each to sufficient rain-water to make the mixture of the consistence of cream, with frequent syringing with pure water, though the disease has shown itself again and again, his crop has not suffered.* In this case there was no question of the mildew ceasing after the disease had been established, as mentioned by Dr. Léveillé; but the progress of the malady was completely arrested, which would not probably have been the case had the Grapes suffered from some inherent corruption of the tissues themselves.† And the experience of Mr. Boys is borne out by the testimony of the great body of Grape growers in the south of England. As the sulphur is the well-ascertained cure of the fungus to which Peach mildew is due, it is more than natural to conclude that the cause is somewhat similar in Grape mildew, where the effect is equally beneficial. Salt was not found efficacious in England; and where sulphur is used, except in the form of vapour, it must be used in substance, as it is insoluble in water. How it acts upon the mould is not known, but doubtless some decomposition takes place, and where used in combination with lime the sulphate of lime may act as a stimulant to the vegetative powers. Possibly, a combination of quick-lime and Glauber's salts, as recommended with such great benefit in the case of Bunt, might be an improvement on the methods hitherto practised.

It is curious that the Grape mildew has taken a course nearly contrary to that of the Potato disease. It appeared in Kent about 1845, and is at this time prevalent on the opposite coast of Essex, and has now extended southward as far as Naples. At Genoa scarce a Vine is free, and the black Grapes appear to be attacked quite as much as the white varieties, even the Vitis Labrusca suffering from its ravages. In the north and midland counties of England I believe the disease is unknown, and I have not heard of its appearance in Germany.

Where the mind can be brought to adopt the notion of spontaneous or equivocal generation, there is little difficulty in these matters, or at least the difficulty is thrown aside; but as all patient investigation, and one which will not submit to jump hastily to conclusions from imperfect data, is against such notions, we must be content to treat the propagation of even such minute bodies as Oidium Tuckeri as we do those of phenogamous plants. When a large crop of white Clover makes its appearance on lands recovered from the sea, it is an easy solution of the difficulty to say that the plants have been generated spontaneously from the soil. It may not be easy to account for their presence, but yet the lover of truth will not readily solve the difficulty by such an unwarranted conclusion. In the case of the Potato disease and of the Grape mildew it appears

* This is probably a slip of the pen for Oidium, a true Botrytis of the same section with Botrytis infestans, but far more beautiful, and highly developed, and, like all the allied species preying on the parenchym, occurs in South Carolina on the Vine leaves. I have not, however, heard that it is injurious. My specimens, which were gathered by Mr. Ravenal, and have been named B. viticola, Berk. and Curt., occurred on Vitis æstivalis, and, I believe, on some other species.

† As the sulphur is not soluble in water, care must be taken that the powdered mineral is held in suspension. This remark is necessary, as some authorities have recommended the water to be drawn off clear. *M. J. B.*

* It is obvious that great caution must be exercised in this kind of fumigation, and that a gentle current of air should be allowed to run from the bottom to the top of the house (not, however, suffering the temperature to get at first below 65°), as soon as the fumes have been allowed sufficient time, which should never exceed an hour, even in the most virulent cases. Indeed, under any mode of treatment, thorough ventilation is a most important element. The mixture of lime and black sulphur was used where the flues were not of iron; in the case of iron flues, it is recommended simply to dredge them with sulphur; the heat, however, must not be such as to ignite the sulphur.

† It is but fair that I should state that Mr. Boys does not attribute the disease to the Oidium, but to some disturbance of the electric currents of the earth—an opinion to which he has been led from constant observation of a thermometer plunged 20 inches below the surface of the soil. The disease, he states, first appeared with him in 1846, in remarkably fine and dry weather, subsequent to a cold and wet spring. The roots of his Vines, in consequence of the drought, had been kept wet with liquid manure, the temperature of the earth being comparatively low. In regard to the use of remedies, he recommends cultivators to watch for the very first indications of the white bloom which constitutes the Oidium, and then, in four or five days, the cure is certain. A few days' neglect will require greater perseverance in the use of the remedy; but if the young Grapes once split and become deformed, it may

pretty clear that the parasites were not previously known. The conclusion is, then, as Morren well remarked respecting the former, that they must have been imported, and there is no more difficulty in this notion, nor indeed so much, as that of the introduction of such a quantity of white Clover seed into the tracts recovered from the sea. In every branch of natural history there are difficulties enough, and it would be surprising indeed if there were none where such minute productions are concerned. The reflective mind will often observe with combined wonder and admiration how the Almighty produces effects of great magnitude and importance, which are at the first view altogether incommensurate with the causes from whence they are derived.

## ORCHIDS FOR THE MILLION.—No. XIX.

By B. S. Williams, gr. to C. B. Warner, Esq. Hoddesdon.

Climate Hot and Damp.—Plants which are Grown in Baskets with Peat, or Moss and Potsherds.

*Coryanthes macrantha.*—This extraordinary plant comes from the Caraccas, and flowers in May and June, the lip is red, the rest of the flower orange-yellow, spotted with dull purple. It remains but three or four days in perfection. It will grow on a block, but thrives best in a basket, with moss and peat, and potsherds, broken very small. It should be suspended from that part of the roof where there is plenty of light and moisture in the growing season.

*Coryanthes speciosa.*—This is another singular Orchid, which comes from Demerara; it flowers in May and June, and remains but three or four days in bloom. It requires the same treatment as the former.

*Camarotis purpurea*, comes from Sylhet; it flowers from March to May, and lasts in bloom two or three weeks. This is best grown in a basket, with sphagnum, peat, and potsherds, suspended from the roof. In the growing season, it should have a good supply of heat and moisture; afterwards it may be kept rather dry.

*Houlletia Brocklehurstiana*, comes from Brazil; it flowers in October, and remains a long time in perfection. It does well in a basket with sphagnum, and peat, and potsherds, suspended from the roof, where there is a good supply of heat and moisture during the growing season; afterwards it may be kept rather dry.

*Oncidium Lanceanum.*—This fine species, from Surinam, will grow on a block, but it does best in a basket with sphagnum, peat, and broken potsherds, suspended from the roof, where it can have plenty of heat and moisture during the growing season; its flowers remain four or five weeks in perfection.

*Oncidium flexuosum.*—A very neat and handsome flowering species, from Brazil; the blossoms are yellow, slightly spotted with brown; it will last in bloom from four to five weeks.

*Oncidium flexuosum majus.*—This is much finer than the former one. It flowers in July, and remains long in perfection.

*Oncidium bifolium.*—An interesting species, from Monte Video; the labellum is large, and of a beautiful rich yellow, the sepals and petals being small and brownish; the flowers remain long in perfection. It will succeed on a block, but does best in a basket, with sphagnum, and peat, and potsherds, suspended from the roof, in a shady part of the house, where there is plenty of heat and moisture during the growing season; afterwards it may be kept rather dry.

*Oncidium longifolium*, from Mexico. The flowers are yellow, blotched with brown, and the labellum entirely yellow. It will remain two or three weeks in bloom. It will grow on a block; but it does best in a basket with moss, peat, and potsherds.

*Brassia maculata major*, from Jamaica, flowers in May and June; it remains long in perfection, and requires the same treatment as the last.

*Acineta Humboldti*, comes from La Guayra, and flowers in May and June. It grows well in moss and peat in a basket, suspended from the roof.

*Acineta Barkeri*, from Mexico, flowers in June and July. It will succeed on a block, but also does well in a basket with moss and peat, suspended from the roof, where it can receive a liberal supply of heat and moisture during the growing season; afterwards it should be kept rather dry.

*Angræcum caudatum*, comes from Sierra Leone, and flowers in July and August. The blossoms are of a greenish yellow, mixed with brown; the labellum is pure white, from which proceeds a tail about nine inches long, of a pale green colour. The flowers remain long in perfection. The plant succeeds well in a basket with moss, peat, and potsherds, suspended from the roof of the house, where there is plenty of heat and moisture during the growing season.

## BRITISH SONG BIRDS.

(Cage Birds, No. 33.)

No. XLIX.—Having now disposed of a variety of interesting matters, particularly relating to the season of autumn, and the time for the migration of our summer visitors, we will return anon to the consideration of the more weighty topics, as promised. Previous to this, however, we will resume the subject already introduced of a bird's early education.

The most remarkable instance I ever remember to have met with, of a young pupil not only imitating but far surpassing his tutor, was about nine years ago, in Jermyn-street, Haymarket. At that period, I revelled in the undisturbed enjoyment of a large aviary, numbering no fewer than 366 inhabitants, all first-rate songsters; and my fame as an amateur had spread widely. Among the multitude of my visitors was a gentleman, who informed me that a friend of his was possessed of a most wonderful bird, that he should much like me to see and hear. I took the address, and went at an early day to view the prodigy.

On entering the house referred to, and on presenting my card, I was at once ushered into the drawing-room. I there saw two cages—nightingale cages—suspended on the wall. One of them, with a nightingale in it, had an open front; the other had a green curtain drawn down over the front, concealing the inmate. After a little discourse on the subject of ornithology, my host asked me—if I should like to hear one of his nightingales sing? Of course, I was all expectation. Placing me beneath the cage, and drawing up the curtain before alluded to, the bird above, at a whistle from his master, broke out in a succession of strains that I never heard surpassed by *any* nightingale. They were indeed surprisingly eloquent. "*What* a nightingale!" ejaculated I.

The rapid utterance of the bird, his perfect *abandon* to the inspiration of his muse, and his indifference to all around him, caused me to involuntarily exclaim with Coleridge:—

"———*That* strain again!!
Full fain it would delay me."

And so it did. I stood riveted to the spot, knowing how seldom nightingales in a cage so deported themselves.

After listening some time, and expressing my astonishment at the long repeated efforts of the performer—so unusual, I asked to be allowed a sight of him. Permission was granted;—the curtain was raised, and I saw before me,—a *Robin!!* This bird had been brought up under the nightingale from his very earliest infancy; and not only equalled, but very far surpassed, his master in song. Indeed he put him down, and silenced him altogether. This identical bird, I should add, was sold a few weeks afterwards, for nine guineas—he was worth the money. In this case the robin retained no one single note of his own, whereby the finest ear could detect him; and this paves the way to still more singular discoveries hereafter.

The above is one curious fact out of very many others that I could cite, if necessary. All birds whose larynx is large, are capable of similar excellence. Even the house sparrow (Passer domesticus) has been known to rival and to surpass the canary in song. Indeed, if taken very young, and kept in the company of canaries only, he is one of the most apt and ready of pupils. This is no secret to the curious observer. The great difficulty in making these experiments exists in the impossibility, or impracticability, of getting a quiet room, where no other voices than those of master and pupil can be heard. Thus, many are reared in cellars, by gas-light; and kept there till "true" to their song. The "principle," however, is still good, let your birds be educated where they may.

The Hon. Daines Barrington, to whom, as a most valuable authority, I shall often have occasion to refer confirms my observations to the full. One, however, of his remarks, shall suffice for the present. Speaking of the education of young birds, he says, "I have educated nestling linnets under the three best singing larks; viz., the sky-lark, wood-lark, and the tit-lark. Every one of these, instead af adhering to the linnet's song, adhered *entirely* to that of their respective instructors." A very little reflection will show us how natural this is.

I have recently been asked to give my opinion, as to whether young birds, if confined in a cage, and allowed to hear no bird whatever sing to them,—would, or would not, themselves use the note peculiar to their parents? My reply to this question is,—that they would most assuredly "record" the song peculiar to their own tribe, *and none other;* under the circumstances stated. Gilbert White, in an experiment he made with some chaffinches (too long to quote here), sets this question quite at rest, nor can there be any reasonable doubt about it.

If we narrowly watch the ways of Nature in all these matters, our reward will be great. We shall find her on every occasion consistent with herself; and that so far from there being any one thing left to "chance," all is "well ordered and sure." It is only when we mortals interfere, with our (so called) "improvements," that we find "exceptions" from general rules. And in no case do we more offend against Nature's laws than in our "improvement" on the early education of the innocent little creatures about which we are now discoursing.—*William Kidd.*

## Home Correspondence.

*Flower Garden Plants.*—There are few things connected with gardening which require more, or receive less thoughtful attention than the management of flower garden plants, during the winter and spring months. The well-known fact of Verbenas and many other bedding plants being half hardy, has encouraged the idea of a slight protection, only, being necessary for their preservation from frost; and the only provision made to secure this has, in many places, been the erection of ranges of brick pits with glass lights; and as any means of applying artificial heat was considered unnecessary, none have been employed. As I have for several years watched the effect of this treatment, I will just describe what I have seen. About this time, or a little earlier, the cuttings are struck, after a while they are potted singly in small pots, and then placed in the pit, where they enjoy plenty of air and light. For a time they grow most vigorously, but then comes short days and frosty nights; a thick covering is now indispensable. Sometimes a day or two, occasionally a week passes without this covering being removed; when it is, the damp is found to be making sad havoc; a little air is given, which, with the feeble heat of the sun, causes the plants to flag; and well they may, for the soil in the pots is very dry, but no water can be given, it would so fearfully increase the dampness of the pit. The month of February is reached, mildew is spreading in all directions, and continues to do so, in spite of sulphur or any appliance whatever, until at last a third of the plants are found to be dead, and the remainder so much diseased, that half of them at bedding-out time are valueless; in consequence of this, the flower beds are so thinly planted that it is late in the summer before they are covered, and hence arises one of the principal objections to this mode of flower gardening. Now, considering the expense of building these pits, the space of ground they occupy, the cost of mats, the frequent breakage of glass, and the amount of labour involved in their management, with the unsatisfactory result of their use, it must, I think, be admitted that the contrivance is anything but a good one. This being my opinion, I have for the last three years ceased to store flower garden plants of any kind in pits, using in preference a small greenhouse. In this house (the dimensions of which I am unable to furnish, having now left the place), I had a trellis made nearly on a level with the bottom of the front lights, these being hung on hinges were capable of being raised by wedges to admit air, as circumstances might require; this trellis was filled with 5-inch pots, in each of which about 20 cuttings had previously been struck. Now, as 49 of these pots, containing together 980 plants, would stand upon each square yard of trellis, ample means were thus afforded of keeping an immense stock of Verbenas and plants of similar habits, independently of the stage, which was kept for Geraniums and Calceolarias. Under the stage I made a Mushroom bed, and under the trellis I placed, for rooting, the potted bulbs intended for winter forcing. My mode of treatment with the plants thus preserved, was to make the cuttings a little earlier in the season than this, choosing the points of short-jointed healthy shoots; to strike them in a close frame without heat, gradually harden and stop them, then fully expose them to the weather, when at all fine, till the middle of October, the time of housing. After this, I regularly dusted a little sulphur over them once a fortnight, brushing it well about the leaves, and attended very particularly to the watering; for I am convinced that nothing tends more to the increase of mildew and the injury of all plants in pots than dryness at the roots. By strict attention to these points, and by keeping the house both cool and airy, the plants made but little growth, and were always healthy and hardy. About the middle of February the points of all the shoots were taken off and struck in an early Vinery. Early in April all the Verbenas I had wintered were turned out of their pots, carefully separated, and planted deeply in the newly-dug flower beds at once; here, for about six weeks, they made no growth; I did not expect they would. Then why, it may be asked, were they planted so early? Because at that time they were very hardy, and I considered that the longer they remained in-doors the more tender they would become; besides, it made room on the trellis for the newly-struck cuttings, then in small pots, to grow and acquire strength, before they were planted out between the old ones, about the middle of May. By this method, the beds were always well filled, and the house (the like of which any builder could erect and heat for 50*l.*) was available for the cultivation of Fuchsias, and other plants for the conservatory, during the summer and autumn months. *W. Sherwood, Mr. Kendall's Nursery, Stoke Newington.*

*Rhododendron Dalhousiæ and Falconeri.*—Having grown these plants for some time in a late Vinery, I have since removed them to a cool Orchid-house, such as suits Lælias and Cattleyas. A very speedy and marked improvement has taken place in their appearance, and they promise to do well. Is not the plant distributed from Chiswick as Rhododendron cinnabarinum, R. Gibsoni? It does not resemble R. cinnabarinum of Dr. Hooker. It seems a very free grower, in an atmosphere which does not suit the other Himalaya species. What treatment best suits R. javanicum, especially in winter? I find it grows very strongly in a cool Orchid-house, and does not seem excited too soon by the warmth in spring, but it has not flowered with me as yet. Its foliage is remarkable for the enormous size of the stomata, which are visible to the naked eye, and thrips seem to have a special affection for it. *J. R.* [The plants are distributed from Chiswick with the names borne on the seed papers. Until they are older, it is impossible to determine them with accuracy.]

*Carrots and Onions.*—I am obliged to Mr. Steel for his article on Carrots and Lettuces, which appeared at p. 629; and, being interested in the matter, I beg to ask him a few questions respecting early Carrots. Like others, I have been in the habit of sowing Early Horn, and sometimes "Orange" Carrots on a warm, dry border, at times varying from the middle of August to the middle of September; and, in most cases, I have got very good plants for standing the winter, but they invariably run to seed in June. My first impression was, that the seeds might be old or unsuitable, especially as the Carrots never exhibited their proper colour even before they ran to seed, being so white and sticky, that they were useless for all purposes for which young Carrots are wanted. This state of things led me to be more careful another season in procuring good seed, and I saved some myself, and sowed it as above, but with

very little better success. Now I have followed this plan for several years, and have rarely got what could be called useful Carrots. Certainly they do to flavour soup, &c., with: but when young ones are wanted, I sow under glass in a hotbed in the end of January. These become Carrots both in taste and colour, while the autumn ones degenerate into something like what I imagine the original Carrot was before it was brought into cultivation. Now I should like to know if autumn sown Carrots at other places are in the same condition as those I complain of, if so, they cannot be of much use, except for the commonest purposes. While on this subject, I may mention that with me autumn-sown Onions are nearly as important a crop as the spring-sown ones; but these I sow some time between the 12th and 20th of August, and allow them to stand thick all winter. In March they are thinned, and a portion planted out on a well prepared piece of ground; they invariably do well. Taking them as a sample, they are not so uniform in shape as summer ones, but many of them are larger. I have sown several kinds with about the same result. I do not, however, like the one most commonly recommended in gardening works for the purpose, viz., the Tripoli. It is very coarse, and becomes open and scaly. The silver-skinned is, I believe, the hardiest; but it is small, and, for many purposes, not so valuable as some other sorts. It is scarcely necessary to remark that seeds sown at such an unnatural period as August and September ought to be good; and do not pinch quantity. I generally rinse the seed at that period, rejecting all that is doubtful. *An Old Gardener.*

*Oignon de Nocera.*—It is worthy of remark that the Onions produced from seed of this variety, received from the Horticultural Society this season, were attacked with a disease exactly similar to that described in your leading article at p. 595: not on the neck alone, but also on the bulbs. Other Onions in the vicinity, of a different sort, were not affected by the disease. *F. S.*

*Habits of Rooks* (see p. 629.)—The rooks, in a very large rookery within a quarter of a mile of me, always, except in breeding time, roost in a neighbouring wood. *Este.*

*The Maiden Hair Tree* (see p. 614.)—I beg to inform an "Occasional Tourist" that there are two very good specimens of Salisburia adiantifolia in the garden of the Duke of Beaufort, at Badminton. The largest measures 37 feet in height, 18 feet across the branches, and the bole (6 feet from the ground) is 3 feet 8 inches in circumference. This is the largest and finest tree of the kind I have ever seen. *J. T.*——I beg to say that there is a fine tree of Salisburia adiantifolia in the kitchen gardens of Earl Cowper, Panshanger, Herts. *Anon, Sept.* 27.

*Himalayan Vegetation.*—In your report of the proceedings of the British Association it is stated that Dr. Hooker had ascended the Himalaya to the height of 28,000 feet. This is assuredly the highest point ever attained by man. Some 25 or 30 years ago Gerard with great difficulty arrived at an elevation of about 20,000 feet in his futile attempt to reach Laduak, a city which at that period some fabulous reports had given interest to; but the line of perpetual snow was considerably below that point. I think also that Moorcroft by another route accomplished that object a year or two after; but to Webb and Gerard was assigned the merit of having determined the snow line to be much higher than geographers from analogy and other imperfect data had fixed it. The latter had attained an elevation of some few hundred feet above what Humboldt had previously accomplished on the Andes, and which was regarded as the highest point ever ascended by man. Pray does the "Review" of last week mean to say, that Dr. Hooker reached 28,000 feet or even 25,000 feet, or is that only given as the estimated height of the range in the quarter alluded to. Though, perhaps, not strictly within the province of the cultural subjects of a gardening periodical, this question is yet of importance to a class of inquiring minds, who occasionally step out of the beaten track to get a peep at some object in geographical science. The various grades of vegetation from the plains of India to the more elevated regions of Nepaul and Cashmere, have often been treated of, and, beyond the line of profitable cultivation, travellers have described the various families of shrubs diminishing in numbers as a greater height is attained, until only herbaceous plants appear, which again become lost, the limit of vegetation being some Lichens or mosses. Now has not some writer or traveller (which he ought to be) told us, that in some of the elevations of this remarkable range vegetation ceases entirely some considerable distance below the line of perpetual snow, the extreme dryness being such as to extinguish vegetable life, and therefore universal sterility prevails? I think, too, that Moorcroft describes a lake of considerable size at an elevation of some 18,000 feet, which, though receiving the waters of several large rivers, was completely land-locked, the extreme dryness of the atmosphere absorbing all superfluous water as quickly as it was supplied; and though the thermometer indicated an amount of cold many degrees below our freezing point, yet there was neither ice nor any appearance of frost. Now, as it is evident there must be a mistake in the 28,000 feet being attained by any traveller, pray tell us the highest point that has been reached by Europeans on that interesting range, and whether it has ever been exceeded by any similar ascent in the Western hemisphere. These matters are important for gardeners to know, for if we cannot imitate the rarity of the atmosphere which the plants we have from there enjoy in their natural habitats, we may at least glean a little information as to how to treat them in the altered circumstances in which they are placed in this country. *An Old Gardener.*

[You are mistaken in supposing that the *Gardeners' Chronicle*, in reporting the proceedings of the British Association, says that Dr. Hooker ascended the Himalaya chain to either 25,000 or 28,000 feet. The passage misquoted by our querist states that Dr. Hooker "describes the district of the Himalaya in which he travelled as reaching 28,000 feet, whilst that described by Captain Strachy was only 25,000 feet." The greatest elevation attained by man is, if we remember aright, 22,000, and some odd hundreds of feet—by one of the brothers Gerard, who, with a companion and excellent instruments, ascended Purgeool to that height. Purgeool is a mountain in Little Thibet, lat. 31° 50′; long. 78° 40′ E., having a total elevation of 22,600 feet. Humboldt, in his "Aspects of Nature," seems unaware of this ascent. Both brothers had previously ascended the same mountain to upwards of 19,000 feet, and a description of these ascents is given in "Gerard's Account of Kunawur," a work in which our correspondent will find most of the information he requires as to the limits of cultivation, and of the snow-line, and which, with Lloyd and Gerard's Travels, Moorcroft's do., and the works of Royle and Jacquemont, Vigne, Hugel, &c., we would recommend to his perusal. Various plants ascend to upwards of 18,000 feet in the Himalaya, both herbaceous and shrubby. Gramineæ, Cruciferæ, Compositæ, Ericeæ, Ranunculaceæ, and Cryptogamæ (Lichens chiefly), to 19,000. Cultivation of Barley reaches 14—15,000 ft., and Turnips or Radishes on very rare occasions to nearly 16,000. Pasturage may be found, in favoured localities, at 17—18,000 ft., but very scantily. The limit of perpetual snow varies with the humidity of the atmosphere and locality, &c., from 15,000 ft. to 20,000 ft. The position of the greatest amount, and of the lowest level of perpetual snow, does not coincide with that of the greatest elevation to which the mountain mass of the Himalaya rises, but with that of those lower spurs of the mountains, which, being nearest the plains of India (and consequently the ocean) attract and collect all the moisture that would otherwise fall on the much loftier land behind them, in Thibet. Vegetation follows much the same laws, and is hence more luxuriant close to the perpetual snows in the humid regions, where the latter descends to 15,000 ft., than in the arid, where both ascend above 19,000 ft. *H.*]

*Messrs. Wrench's Samples of Seeds.*—I beg to suggest that it might be interesting, and also useful, to the unlearned, if Messrs. Wrench were to sell collections of seeds, such as those exhibited by them, and mentioned in your last week's paper, at p. 634. *Tuesday.*

## Societies.

Horticultural, *Oct. 7.*—Mr. Glendinning in the chair. Sir E. B. Baker, Bart., Sir C. Ricketts, Bart., Sir J. Thorold, Bart., H. Wilson, Esq., and Major-General Fox, were elected Fellows. Messrs. Veitch received a Banksian Medal for a nice specimen of a yellow-flowered shrubby Calceolaria from Peru. Though not quite hardy, even in the climate of Devonshire, it was mentioned that it might be worth while wintering it under protection for the purpose of planting in the shrubbery in spring, where it would probably form a bush, some 2 or 3 feet high, and prove very ornamental in summer. The somewhat ample, shining, bright-green leaves, in which its value in part consists, will no doubt be looked upon with interest by the hybridist who is anxious to improve the foliage of some of the finer flowered kinds.—Messrs. Weeks sent a bloom of the Royal Water Lily (Victoria regia), a bud of Nymphæa cærulea, and a flower and a leaf of N. dentata, from the open heated pond in their nursery, in which such plants have been found to grow and flower successfully. The leaf of N. dentata was certainly as large and fine as it could well be in the best-managed stove aquarium. It was stated that the Victoria had produced 50 blooms in the course of the past summer, and that the plant was still unprotected. A Banksian Medal was awarded.—I. Anderson, Esq., of Maryfield, contributed cut specimens of a seedling Veronica, which, although pretty, was inferior in beauty to V. Andersonii, a charming hybrid, raised by the same gentleman. Mr. Frost, gr. to E. L. Betts, Esq., of Preston-hall, Aylesford, furnished a seedling Begonia, obtained by crossing B. cinnabarina with B. nitida. The result is a freer flowering plant than B. cinnabarina, with even higher coloured flowers than those of that fine kind, while the foliage is very nearly the same as that of nitida. A Certificate of Merit was awarded it.—Mr. Kennedy, of Covent-garden, sent a narrow-leaved variety of Scolopendrium officinale from Yorkshire.—Mr. Stark, of Edinburgh, sent a new purple and lilac-flowered Linaria, called arabida, which looked as if it would make a good rock plant. It was raised from Portuguese seeds collected by Dr. Welwitzsch in 1849.—Messrs. Jackson, of Kingston, sent half-a-dozen nicely-blossomed plants of Odontoglossum grande, which had been flowered in a cool house. It was mentioned that this is one of the hardiest of exotic Orchids, and that it has been even bloomed out of doors during summer under the shade of a Laurel bush.—Mr. Macintosh, nurseryman, Maida-vale, Edgeware-road, received a Certificate of Merit for a very large and fine shrubby specimen of common Mignonette. This was a single plant, pricked out in a small state into a pot last autumn, and shifted on till it had attained its present size. It was remarked that Mignonette is not an annual, as many imagine it to be; but that it will become a woody shrub, and last for years, provided it is well managed, and kept free from frost and damp.—Mr. Rivers, of Sawbridgeworth, contributed some Strawberry plants, illustrative of a new mode of preparing them for forcing. They were in 6-inch pots filled with two-thirds loam and one-third rotten dung. The novelty that attached to them consisted in beating these materials firmly into the pots before the runners were struck, with the view of giving the plants more food than they could possibly obtain under ordinary conditions. It was added that, from experiments he has made, Mr. Rivers entertains a very high opinion of compressed earth for many gardening purposes.—Mr. Fleming, gardener to the Duke of Sutherland at Trentham, furnished four Queen Pine-apples, whose weights were, respectively, 7¼ lbs., 6 lbs. 14 oz., 5 lbs. 15 oz., and 5 lbs. 10 oz. The heaviest, a remarkably fine fruit, was hardly ripe. A Banksian Medal was awarded. Mr. Jones, gr. to Sir J. Guest, Bart., received a Certificate for a Ripley Queen Pine, weighing 6 lbs. 3 oz.; and a similar award was made to Mr. Frost, of Dropmore, for a Black Jamaica, 5½ lbs. A Queen Pine, 5 lbs. 4 oz., was furnished by Mr. Fraser, gr. to the Earl of Radnor; and Mr. Brown, gr. to H. Minton, Esq., had a Ripley Queen weighing 4 lbs. 14 oz. Mr. Elphinstone, gr. to the Speaker, at Heckfield, received a Banksian Medal for bunches of Black Hamburgh Grapes, well swelled and ripened, though not very large, which were cut from Vines raised from eyes that were only struck on the 10th of February last. They were grown in pots, and one of the Vines taken from the pot was submitted to the inspection of the meeting. It was about 4 feet high, stout, and well ripened. It had been topped when about 15 inches high, and had afterwards thrown up a strong shoot which produced the fruit. The young plants—at first placed on a warm Vinery flue—were shifted in April and afterwards forwarded in a bed of leaves. They were topped when 4 feet high, and were shifted into their fruiting pots in May. A dish of Black Hamburgh Grapes was exhibited by Mr. Rust, gr. to J. Maclaren, Esq., of Ticehurst, Sussex; and examples of the same kind of Grape were furnished by Mr. Fry, gr. to Mrs. Dent, Manor House, Lee, Kent, with a view to prove the effect of sulphur in killing the Vine mildew, which has been so prevalent, both in this country and on the continent. When the disease first began to show itself in the Vinery, which it did both last year and this, the temperature was raised, and sulphur vivum was freely applied, by means of Fry's sulphurator. Under this treatment, the mildew disappeared, both from the leaves and fruit, in the course of four or five days. The Vines were afterwards cleared of the sulphur, by syringing them with clean water, through a fine-rosed syringe.—A punnet of round white seedling Potatoes were shown by Mr. Wilmer, of Sunbury. It was reported to be very early and prolific.—From the Garden of the Society came two Orchids, various Achimenes, Tillandsia amœna, a variety of the Japan Anemone, the white Lilium Wallichianum, a Cape Heath, the useful Lyperia pinnatifida, the Siebold Sedum, Torenia asiatica, and Cyrtoceras reflexum, together with fruit of the Late Admirable Peach, Coe's Golden-drop Plum, Gravenstein, and Mère de Ménage Apples, Belle et Bonne and Double Phillips' Pears, and a dish of Black Prince Grapes. The latter were sent to show that Grapes may be kept free from mildew by early and repeated sulphuring over both leaves and fruit. The Grapes were quite free from any smell or appearance of sulphur, although they were stated to have been covered with it the day before the meeting. It may be removed either by plunging the bunch in a vessel of clean water or by syringing it on all sides in a downward direction through a fine-rosed syringe. The garden also furnished a large yellow Gourd weighing 136½ lbs.; specimens of a yellow-striped Mushroom shaped Squash, and a French "sulphurator." The great merit of the latter is its simplicity and cheapness. It consists of a tin box for holding the sulphur, placed on the upper side of the pipe of a pair of common bellows. The sulphur gets into the pipe through small holes made for the purpose in the bottom of the box, and, in order that no stoppage may take place, a small hammer head attached at the end of a slight steel spring is fixed on the under side of the bellows, a gentle tap from which, now and then, keeps up a continuous fall of sulphur into the pipe. These appliances, which may be attached to a pair of bellows for little more than 6*d.*, answer every purpose for which they are intended, equally as well as a more expensive machine.

## Notices of Books.

*The Geological Observer.* By Sir Henry De la Beche, C.B. 8vo, pp. 846; with numerous woodcuts. Longmans.

We scarcely need say that one of the most judicious and successful living investigators of geological phenomena is the present Director-General of the geological survey of the United Kingdom, and author of the work before us. Standing aloof from cabinet speculation, and *à priori* hypotheses, Sir Henry De la Beche has passed his life in the field, examining and classifying facts, and comparing them diligently, until safe conclusions can be formed. The "Geological Observer" may therefore be taken to represent the author himself, expounding the principles which long experience has led him to adopt; and pointing out, from a vast collection of evidence, the grounds upon which his principles are founded.

The work is therefore eminently practical, and will be employed to most advantage by those who have the opportunities of study in the field. "Here, indeed," Sir Henry declares, "is the great source of geological knowledge; however important the cabinet, in its place, may also be. It is there that the observer learns to appreciate the greater problems of geology, and where he may himself so materially assist in obtaining correct views of the modifications which the earth's surface has undergone in past times, and of the causes tending to obliterate its present condition."

The work treats of pure geology only, excluding mineralogy. That is to say, it includes an excellent account of the causes, or supposed causes, which have produced the actual condition of the crust of the earth; but it excludes all details concerning the nature of the mineral and other substances of which the crust is composed. It therefore stands in the same relation to mineralogy as a treatise on physiology would to an account of the genera and species of plants and animals. The subjects themselves are discussed in the following order. 1. Decomposition of rocks and formation of soils; 2. Action of water; 3. Result of that action in forming lacustrine deposits, coast formations, and tidal accumulations; 4. Chemical deposits, bogs, and reefs; 5. Action of ice, icebergs, glaciers, &c.; 6. Caves; 7. Volcanoes and lava inundations; 8. Earthquakes; 9. Rise and subsidence of land; 10. Temperature of the earth; 11. Mode of accumulating rocks, and formation of beds; 12. Igneous rocks, their bending, contortion, and dislocation; 13. Accumulation of metallic substances; 14. And the denudation of rocks.

Our limits preclude extracts; nor indeed could they be made advantageously, so entirely do the several parts of Sir Henry de la Beche's book depend on each other. We, therefore, content ourselves with referring the reader to the work itself, which is abundantly illustrated with good and useful woodcuts, and has a tolerably full index.

## FLORICULTURE.

Awards at Floricultural Exhibitions. — As Societies are now arranging their schedules for next season, it may be well to mention that wherever competition exists with greatest warmth, there is sure to be found that judicious regulation (framed by the late Metropolitan Society) of rewarding at least two-thirds the number of stands staged, and so graduating the value of the prizes, that a small per centage shall alone separate the first from the second, or the 18th from the 19th, as the case may be; the battle is for place, and not for profit. A silver cup fails to induce that display which its cost, judiciously offered, is certain to effect. Taunton, Southampton, Camberwell, Thornbury, have all failed this season in gathering numbers, compared with those at Notting-hill, Highgate, Stoke Newington, Salisbury, Shacklewell, and Slough, &c., localities in which it is universally known the two-third system prevails. Does not this afford a practical lesson, which it would be well for committees and councils to commit to memory? What flower annually maintains the amount of patronage that is bestowed on the Dahlia? Even the Carnation and Picotee fall short, popular though they be. Shall we live to see the day when our summer exhibition tables will give quarters to whole armies of Pelargoniums? A plant infinitely less expensive to cultivate than autumn's king. A few square feet of glass enables the Pelargonium grower to give place and shelter to those marvellous masses of bloom familiar to all who visit our metropolitan exhibitions. How they are produced, few as yet understand; while for Dahlias whole acres are often devoted to their cultivation. But to effect any revolution in flower showing, our warning is, multiply the number of prizes, and lessen the fall in value from first to second, and from second to third, and reward at least two-thirds of the collections staged; then we shall have occasion to remark Pelargoniums for the million, and their production not confined to some three or four, the extent to which their cultivation has for years been limited. *J. E.*

Amateur Tulip Society.—The investigation of the alleged case of non-compliance with the rules on the part of one of the exhibitors, took place on Monday last. The evidence failed to show that any malpractices had been resorted to, and the prize money was tendered to the party, who immediately refused to accept it, and desired that it should be made a gift to the funds of the Gardeners' Benevolent Institution, at the same time withdrawing his name from the lists of the society. The candidate referred to in our last week's notice, seeing the way in which matters were managed, also declined becoming a member, and therefore the ballot for his election was stopped.

Stoke Newington Chrysanthemum Society. — A preliminary meeting will be held at the Society's Rooms, on Thursday, the 16th inst., at 8 o'clock, in order to make the necessary preparations relative to the forthcoming exhibition. *J. E.*

Chesterfield Dahlia Society, *Sept.* 9.—The following are the awards: — 1st Pan of 12 Blooms: Mr. Slack, with Queen of Sheba, Scarlet Gem, Snowflake, Shylock, Elizabeth, Cleopatra, Mrs. Seldon, Fearless, Duke of Wellington, Standard of Perfection, Morgan's King of Dahlias, and Queen of the Isles; 2d, Mr. Barlow, gr. to R. Stephenson, Esq., with Mr. Seldon, Richard Cobden, Beeswing, Berryer, Crocus, Marchioness of Cornwallis, Princess Radziville, Duke of Wellington, Shylock, Magnificent, Sir F. Bathurst, and Queen of Sheba. 1st Pan of 6 Blooms: Mr. Morley, with Essex Triumph, Beeswing, Mr. Seldon, Shylock, Duke of Wellington, and Queen of Yellows; 2d, Mr. E. Morley, with Duke of Wellington, Princess Radziville, Shylock, Mrs. Anderson, Sir F. Bathurst, and Crocus; 3d, Mr. Auckland, with Princess Radziville, Duke of Wellington, Shylock, Sir F. Bathurst, Marchioness of Cornwallis, and Fearless. Classes: A Premier Prize, for the Best Flower in the Classes (given by Mr. Towndrow), was won by Mr. Slack, gr. to E. G. Mayhard, Esq., with Fearless. Dark Class: 1, Mr. Haslam, with Louis Philippe; 2, Mr. Marsden, with Berryer; 3, Mr. Slack, with Admiral Stopford; 4, Mr. Marsden, with Black Eagle; 5, Mr. Slack, with Richard Cobden; 6, Mr. Barlow, with Louis Philippe; 7, Mr. Marsden, with Black Eagle; 8, Mr. Marsden, with Essex Triumph. Crimson Class: 1, Mr. Marsden, with Sir F. Bathurst; 2, Mr. Slack, with Sir F. Bathurst; 3, Mr. Marsden, with Standard of Perfection; 4, Mr. Slack, with Beeswing; 5, Mr. Marsden, with Captain Warner; 6, Mr. Auckland, with Napoleon; 7, Mr. Slack, with Sir Edmund Antrobus; 8, Mr. Marsden, with Morgan's King of Dahlias. Yellow Class: 1, Mr. Slack, with Cleopatra; 2, Mr. Slack, with Crocus; 3, Mr. Slack, with Yellow Standard; 4, Mr. Marsden, with George Glenny; 5, Mr. Slack, with Seedling; 6, Mr. Morley, with Queen of Yellows; 7, Mr. Morley, with Duke of Newcastle; 8, Mr. Morley, with Seedling. Scarlet Class: 1, Mr. Slack, with Shylock; 2, Mr. Marsden, with Shylock; 3, Mr. Morley, with Shylock; 4, Mr. Morley, with Nonpareil; 5, Mr. Slack, with Scarlet Unique; 6, Mr. Auckland, with John Edwards; 7, Mr. Auckland, with Scarlet Gem; 8, Mr. Slack, with Seedling. Orange Class: 1, Mr. Slack, with Duke of Wellington; 2, Mr. Marsden, with Duke of Wellington; 3, Mr. Marsden, with Seraph; 4, Mr. Bacon, with Biondetta; 5, Mr. Marsden, with Toison d'Or; 6, Mr. Marsden, with Earl of Clarendon; 7, Mr. Barlow, with Golden Fleece; 8, Mr. Slack, with Seedling. Blush and White Class: 1, Mr. Slack, with Queen of Sheba; 2, Mr. Marsden, with Queen of the East; 3, Mr. Slack, with Marchioness of Cornwallis; 4, Mr. Barlow, with Queen of Sheba; 5, Mr. Slack, with Snowflake; 6, Mr. Bacon, with Antagonist; 7, Mr. Barlow, with Snowball; 8, Mr. Slack, with Eliza Cook. Tipped Class: 1, Mr. Slack, with Attractive; 2, Mr. Marsden, with Elizabeth; 3, Mr. Slack, with Jenny Lind; 4, Mr. Slack, with Bragg's Star; 5, Mr. Marsden, with Beauty Supreme; 6, Mr. Slack, with Beauty of Hastings; 7, Mr. Slack, with Delight; 8, Mr. Barlow, with Lady Granville. Lilac and Rose Class: 1, Mr. Slack, with Fearless; 2, Mr. Slack, with Fearless; 3, Mr. Marsden, with Mrs. Anderson; 4, Mr. Slack, with Mrs. Shelley; 5, Mr. Morley, with Duke of Cambridge; 6, Mr. Morley, with Elizabeth; 7, Mr. Auckland, with Fame; 8, Mr. Haslam, with Adonis.

Cornwall Royal Horticultural, *Sept.* 9.—Nice collections of florist flowers, as well as of plants and of fruits, were contributed on this occasion. The 1st prize for the best six Fuchsias, consisting of Elegantissima, Kossuth, Orion, Diadem of Flora, Sir J. Falstaff, and Beauty of Stortford, was awarded to Mr. F. H. Earle, Falmouth; 2d (Gem of the South, Gem of the West, Crimson Expansa, Beauty of Leeds, Lord Nelson, and Ignea), Mr. Friend; 3d (Acantha, Crimson Expansa, Gem of the West, Unique, Rosa Quintal, and Ne Plus Ultra), Mr. G. N. Simmons. Best Fuchsia specimen (Purity), Mr. G. N. Simmons; 2d (Gem of the South), Mr. Friend. Best 12 Dahlias (Snowflake, Magnificent, Grenadier, Golden Drop, Fame, Duke of Wellington, Sir Francis Bathurst, Lord Clarendon, Fearless, Cornish Gem, Hector, and Mr. Seldon), Mr. G. Williams; 2d (Duke of Wellington, Grenadier, George Glenny, Mr. Seldon, Cornish Gem, Snowflake, Sir F. Bathurst, Athlete, Beauty of Hastings, Hector, Yellow Standard, and Gasperine), Mr. M. H. Williams; 3d (Purple Standard, Toison d'Or, Mr. Seldon, Duke of Wellington, Captain Warner, Sir E. Antrobus, Elizabeth, Beeswing, Sure-Enough, Florence, Dombey, Princess Alice, and Admiral Stopford), Mr. Friend; 4th (Duke of Wellington, Sir E. Antrobus, Fearless, Snowflake, Seraph, Mr. Seldon, Admiral Stopford, Beauty of Hastings, Marquis of Worcester, Lord Clarendon, Hector, and Beeswing), Mr. M. Williams. Best six ditto (Snowflake, Grenadier, Duke of Wellington, Cornish Gem, Mr. Seldon, and George Glenny), Mr. G. Williams; 2d (Mr. Seldon, Snowflake, Cornish Gem, Grenadier, Beauty of Hastings, and Duke of Wellington), Mr. M. H. Williams; 3d (Marchioness Cornwallis, Duke of Wellington, Captain Warner, Box, Gasperine, and Sir E. Antrobus), Mr. Daubuz; 4th (Beeswing, Captain, Duke of Wellington, Toison d'Or, Purple Standard, and Mr. Seldon), Mr. Friend. Best Roses in pots (La Reine, Devoniensis, Red China, &c.), Mrs. G. C. Fox; 2d (Lady of the Lake, Odorata, Souvenir de la Malmaison, Bougère, &c.), Mr. G. N. Simmons. Best collection of Cut Roses (Souvenir de la Malmaison, Mrs. Elliott, William Jesse, Duchess of Sutherland, Count Robinsky, Queen, Du Petit Thouars, Devoniensis, &c.), Mr. G. Williams; 2d (Souvenir de la Malmaison, Baronne Prevost, Queen, Géant des Battailles, Comte de Paris, &c.), Mr. M. H. Williams. Best Verbenas (Iphigene, Vulcan Superb, Defiance, Lady of the Lake, St. Margaret), Mr. G. N. Simmons.

Cumberland Floral and Horticultural, *Sept.* 16. — Twenty-four Dahlias, Dissimilar Blooms: 1st, Mr. Geddes, gr. to G. Mould, Esq., with Beeswing, Sir F. Bathurst, Mrs. Seldon, Standard of Perfection, Yellow Standard, Mr. Seldon, Purple Standard, Mr. Cobden, Admiration, Lord Mayor, Fearless, Duke of Wellington, Crocus, Capt. Warner, Grenadier, Lady Leicester, Mynn, Princess Radziville, and Scarlet Gem; 2d, Mr. Carruthers, gr. to J. Dixon, Esq. 12 Varieties: 1st, Mr. Geddes, with Beeswing, Box, Capt. Warner, Crocus, Yellow Standard, Mrs. Seldon, Mr. Seldon, Duke of Wellington, Shylock, Sir E. Antrobus, Sir F. Bathurst, and Violet Perfection; 2d, Mr. Carruthers. Six Sorts: 1st, Mr. Geddes, with Beeswing, Sir F. Bathurst, Mr. Seldon, Mrs. Seldon, Fearless, and Shylock. 12 Edged, Tipped, or Shaded: 1st, Mr. Geddes, with Admiration, Boule de Feu, Conspicua, Marchioness of Cornwallis, Princess Radziville, Queen of England, Queen of the Isles, Rainbow, Star, Beauty of Sussex, Mary Jane, Beauty of Hastings, and Turner's Beauty; 2d, Mr. M'Intyre. Six Edged, Tipped, or Shaded: 1st, Mr. Geddes, with Princess Radziville, Turner's Beauty, Admiration, Queen of England, Marquis of Worcester, and Star. 12 Border or Fancy Kinds: 1st, Mr. M'Intyre, with General Cavaignac, Rainbow, Lady Cullen, Jeanette, Empereur de Maroc, Comte de Flandre, Lady Granville, Floral Beauty, Adolphe Dubras, Elizabeth, Madame Wachy, and Miss Stevens. Six Border or Fancy Kinds: 1st, Mr. Geddes, with Empereur de Maroc, Miss Compton, Lady Granville, Rainbow, Lady Cullen, and Jeanette. Three Maroon or Crimson: 1st, Mr. Geddes, with Sir F. Bathurst. Three Scarlet: 1st, Mr. Geddes, with Shylock. Three Rose or Pink: 1st, Mr. Geddes, with Rose d'Amour. Three Lilac: 1st, Mr. Geddes, with Fearless. Three Orange or Buff: 1st, Mr. Geddes, with the Duke of Wellington. Three White: 1st, Mr. Potts, with Antagonist. Three Yellow: 1st, Mr. Potts, with Cleopatra. Six Verbenas: 1st, Mr. Geddes, with Defiance, St. Margaret's, Magnificent, Princess Alice, Boule de Niege, and Heloise. Six Antirrhinums: 1st, Mr. Geddes, with Masterpiece, Snowflake, Crimson King, Delicatissimum, Beauty of Carlisle, and Admiration. In addition to the above, there was an interesting exhibition of plants and fruits.

Scottish Pansy, *Sept.* 2.—The seventh annual Committee Meeting of this Society was held at Falkirk, for the purpose of examining the merits of seedlings raised by members in 1851. There was a numerous display of new flowers, evincing a growing determination to bring the Pansy to the highest state of perfection. The committee awarded first-class certificates to four flowers, three of which were produced by Messrs. Dickson and Co., Edinburgh, and the other by Mr. Finlayson, of Kincardine. "Count de Flahault" (Finlayson), a yellow ground flower, with dark maroon belt and top petals, large, and of a rich velvety texture, very fine form and smooth outline, will be a fine show flower. "Sovereign" (Dickson and Co.), a yellow self, with large and very dark blotch in centre. "Etna" (Dickson and Co.), also a yellow self, with a beautiful blotch of deep maroon; on comparing these with the best of the class (yellow self) in cultivation, they were unanimously considered far superior. "Miss Talbot" (Dickson and Co.), a pure white ground flower, with deep purple belting and top petals, blotch large and dark, fine form and texture. There was another flower, named "Miriam," in Dickson and Co.'s stands particularly noticed, and doubtless very fine, but being in bad condition, the committee delayed giving a decisive opinion of it till seen in a good state. There were a number of seedlings sent by Mr. Wilkinson, Arbroath, but unfortunately so much injured in carriage that no decided opinion could be given. One variety in Mr. Whamond's collection, named "Jane," attracted the particular notice of the committee, and which they unanimously recommended to be brought forward again. Amongst other flowers forwarded by Mr. Gowanlock, of Perth, but also much injured in carriage through post, there was a white ground flower with bluish purple belting and top petals; the committee were of opinion, that had this flower been in good condition, it would, doubtless, rank amongst the finest of its class, and they strongly recommended that it should be brought forward on a future occasion. The eighth grand annual competition of the Society will be held in Glasgow, in June, 1852, of which due notice will be given.—*North British Agriculturist.*

FLORISTS' FLOWERS.

Calceolaria: *Watford.* The office of the *Gardeners' Chronicle* is 5, Upper Wellington-street, Covent Garden; *not* 21, Regent-street.

Dahlias: *J Brimmer.* We at once recognised your fancy flower, Admiration, and can only repeat our description of it, given at page 675. Colour, deepest maroon, with white tips.—*Lector*, and others. Please excuse a week's delay.

Gloxinia; *W T.* Apparently no improvement on red kinds already in cultivation.

Fuchsia: *G M.* Vigorous in habit, bold and free, but deficient in many essentials that make up a first-rate flower.—*J M.* A nice border variety, with a good habit.

Pansy: *E A Mc.* A flower remarkably dark and uniform in colour; deficient in outline.

Verbena: *W T.* A nice white kind worth preserving.

## Miscellaneous.

*Microscopes of the late Professor Link.*—Two excellent microscopes, used by Professor Link for preparing his representations of the microscopical anatomy of plants, are to be sold at Berlin. One of these instruments was constructed by the celebrated optician, Plössl, of Vienna. It has five ocular and six object-glasses, and magnifies by the first ocular from 25 to 210 times, and by the last 1145 times. A revolving micrometer, of excellent workmanship, and measuring with the greatest precision, a large prism and a large lens mounted on separate statives, both for illuminating, and various other implements, are added. The instrument cost altogether about 45*l.* The lenses are in no way injured, nor the screws worn out. The other instrument is a catadioptric microscope, by Professor Amici, of Florence, the discoverer of the pollen-tubes going down to the ovules. It is excellent for its achromatism and its large field of view. There is a fine prism for refracting objects. It has four ocular, and five object-lenses. Its magnifying power reaches from 21 to 1558 times, or with the first ocular to 286 times. The object-lenses, separately mounted, are also used either alone or altogether as a simplex. The object-table slides up and down, and is furnished with a turning diaphragm and two revolving micrometers, the one moving from side to side, the other forward and backward. Two different kinds of camera lucida, and various other implements, especially for illuminating and excluding the false light, are added. This instrument has been but little used. Its price is said to have been about 45*l.* Offers will be received by Dr. Pritzel, Berlin, Alexandrinen-strasse, 88. *Hooker's Journal of Botany.*

*Sale of Orchids.*—The collection of the late Earl of Derby was sold by auction, by Mr. Stevens, at Knowsley Hall, on the 4th inst. The kind of prices they realised is as follows: Saccolabium Blumei, guttatum, and papillosum, 16*l.*; Vanda Roxburghi, cærulea, violacea, and some other kind, 16*l.*; Cattleya Mossiæ, Skinneri, crispa, and granulosa, 13*l.* 10*s.*; Dendrobium Dalhousieanum, calceolare, Pierardi, and cærulescens, 9*l.* 10*s.*; Catasetum (two plants), Cyrtochilum Bictonense, and Cypripedium Lowei, 8*l.*; Oncidium Papilio, ensatum, Cavendishii, and longifolium, 6*l.*; Phalænopsis amabilis, Peristeria elata, and longiscapa, 6*l.* 15*s.*; Odontoglossum grande, citrosmum, and pulchellum, 5*l.* 15*s.*; Miltonia candida, spectabilis, and Myanthus barbatus, 4*l.* 4*s.*; Lælia anceps, autumnalis, and two other sorts, 4*l.* 15*s.*; Sobralia macrantha and Schomburgkia tibicinis, 4*l.*; Angræcum apiculatum and Anguloa Ruckeri, 3*l.* 3*s.*; an Aspasia and Barkeria spectabilis, 3*l.* 15*s.*; Aerides (various species), from 1*l.* to 4*l.* 5*s.*; other lots, of which there were in all 124, fetched from 1*l.* to 2*l.* 10*s.*

*Gardeners' Benevolent Institution.* — We understand that Mr. Charles Dickens has consented to preside at the anniversary dinner in aid of the funds of this Institution, to be held next year, on the Monday after the June Chiswick Show.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Conservatory.—Use fire heat as little as possible, and only in conjunction with a free circulation of air. Thin out and regulate the pendent shoots of climbers, so as to admit the light to the plants below; but it is not necessary to make the wires bare and naked all at once, as, by retaining a few shoots, a more cheerful appearance will be given to the house during winter, without depriving the plants of light; and in spring, just before they begin to break, they may be pruned more closely. The shoots which are to be left during winter should be thoroughly cleared of insects. The house in which the principal display of flowering plants is made, should be kept sufficiently warm, to prevent any injury to those plants which have been brought forward in heat; avoiding draughts of cold air, but allowing sufficient

ventilation to prevent damp condensing about the flowers. The necessary amount of air should be given by partially opening every side ventilator, and every moveable sash also, unless in rainy weather. This is much better than admitting sweeping volumes of cold air by opening only a few of the ventilators to a greater extent. PITS AND FRAMES.—Forcing of plants into flower will now occupy a portion of these ranges, where a considerable display is required during the two last months of the year. In all cases let the excitement be very gradual at first, and by means of bottom heat keep the roots a little in advance of the tops. If the Hyacinths were potted at the time and in the manner recommended, they will now have filled the pots with roots, and a portion of them may be taken up and plunged where there is a slight bottom heat; but unless wanted very early, let it be very moderate, and accompanied by a free admission of top air. Encourage Mignonette with manure water, and remove any flowers which can be spared, to give greater strength to the plants.

### FORCING DEPARTMENT.

PINERIES.—Where the plants are now swelling their fruit, the temperature should be well kept up, and the plants may still with advantage be supplied with liquid manure. Succession plants should be subjected to a gradual hardening process, not so as suddenly to check or prevent their growth, but to reduce its rate by gradually lowering the night temperature, and admitting as much air during the day as the strength of sunlight will allow. The heat, however, during this month, should not be permitted to fall below 60° in the morning. VINERIES.—In applying fire heat to drive damp out of those houses where ripe Grapes are hanging, let it always be accompanied by air, or it will defeat the end aimed at, and even then it must be very moderate, or the Grapes will soon begin to shrivel. It is a nice point to steer between the two extremes, but if it be desired to preserve the fruit in good condition till January or February, no care or trouble must be considered too much. If any Vines have been prepared in pots or boxes for early forcing, a portion of them should now be pruned and well washed; at the same time any exhausted soil from the surface should be scraped off, and replaced by a top dressing of rich loam and dung. The plants should then be introduced into a forcing house or pit, with a temperature of about 50°, which must be gradually increased at the rate of 3° or 4° in a week. If the pots can be plunged in a bed about 15° hotter than the temperature of the house, it will be a decided advantage, as the roots will be thereby kept in advance of the tops. Let the plants be syringed once or twice every five days; and if a quantity of fermenting material can be introduced, the exhalation arising therefrom will considerably assist the development of the buds. PEACH-HOUSES.—The later forced houses will now be ready for cleaning and retraining, in the manner formerly described. This work should be done as soon as possible, that it may not interfere with the out-of-doors training, which should be commenced next month. FORCING PITS.—Rhubarb, Seakale, and Asparagus should now be in progress. The two former may be managed very well in any place possessing the characteristics of a Mushroom-house, namely, moderate warmth and exclusion of light. For Asparagus, a pit or bed should be prepared, furnished with bottom heat by dung or hot-water pipes. Light and air are necessary to this crop to render it fit for use. Nothing can be more absurd than blanching it, by which its flavour as well as its appearance is destroyed.

### FLOWER GARDEN AND SHRUBBERIES.

The general taking up of choice half-hardy plants should be proceeded with. There are thousands of plants, which, if taken up and potted in autumn, would prove invaluable in the following season, from their producing a greater amount of bloom than young plants; but few have much room for keeping them during winter in suitable places. Geraniums are amongst the most useful of the flower garden plants which deserve this care, and are, perhaps, the most easily managed. Unless very large specimens are wanted for next year, let the sides of the plants be pruned in, so that the pots may stand close together. All flowers should be removed; but with the exception of side pruning, every healthy leaf should be preserved until the plants are established in the new soil, after which, they may be cut down to any convenient height.

### HARDY FRUIT GARDEN.

Let the different varieties of Apples and Pears be carefully gathered as they ripen, and labelled. The shelves on which they are laid should be quite clean and dry, and the atmosphere of the fruit room kept perfectly sweet by allowing a free current of air to enter below, and pass through the roof, thereby carrying away with it all the exhalations which, if allowed to stagnate within the room, would materially injure the keeping qualities of the fruit. In storing the fruit, let all inferior or damaged ones be carefully picked out, laying them aside for immediate use; if this be not attended to, such fruit will soon begin to decay, and if not immediately detected, will be liable to communicate the disease to their neighbours. The fruit room should be cool and dry, and provided with means for preventing excessive changes of temperature; it should be provided with efficient means for excluding frost, either by shutters or curtains to the windows. When its situation happens to be near a plant-house, or early forcing-house, heated by means of a boiler, a small hot water pipe properly supplied with stop taps may be carried round the room; this would ensure the exclusion of the frost, and in very wet weather would be useful to drive out the damp. Shelves are preferable to drawers for keeping fruit in during winter, as it is more easily examined, and any that is beginning to decay can be removed without injuring that which is still sound. When drawers are used it is scarcely possible to avoid considerable injury to the fruit every time they are moved, as it is inevitably rolled and rubbed about, thus causing it to become spotted and unsightly, and at the same time hastening its decay. If the planting or removing of any fruit trees is contemplated this autumn, preparation should be made for the purpose as early as possible, that the work may be completed immediately after the leaves begin to fall. If this is attended to the trees will feel their way into the new soil this season. If any new trees are wanted from the nurseries, it is advisable to order them immediately, that they may be amongst the earliest selections from the nurserymen's stock.

### KITCHEN GARDEN.

Let the autumn-sown Onions, Cabbages, Cauliflowers, and Lettuces, be protected from the ravages of snails, by dusting them with lime and soot. The smallest of the Cauliflowers not planted in hand-lights, should be planted in a cold frame, where they can be protected from frost. Cold frames and covers for them should be immediately prepared, and filled with Endive and Lettuce, for winter and early spring. Let the ground beneath the frames be well drained, and a layer of coal ashes placed below the soil, which will help to keep it dry, and prevent the upward progress of slugs, &c. A soil consisting of charred loam and leaf-mould, which should be moderately dry and free from insects, is best for this purpose. The plants should be lifted from the border with good balls, and transferred to the frame, taking care not to break or injure the leaves. The latest crop of Cabbage Lettuce, intended to stand during winter, and come in for early spring use, should be planted in the driest, warmest, and most sheltered border, as it is an object of no small importance to secure a supply of this favourite salad. In very severe weather, they may be protected by Fir boughs. For the protection of winter salads, as Endives, Lettuces, and late Radishes, and for preserving Cauliflower plants during winter, light wooden shutters will exclude frost better than glass sashes and wet mats; and as they are much less expensive, are in every way preferable. Light can be admitted by tilting the shutters at the back during rainy weather, and by removing them entirely when it is dry, without being frosty.

State of the Weather near London, for the week ending Oct. 9, 1851, as observed at the Horticultural Garden, Chiswick.

| Oct. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 3 | 8 | 29.577 | 29.440 | 61 | 49 | 55.0 | 52½ | 52 | S. | .06 |
| Satur. .. 4 | 9 | 29.485 | 29.462 | 64 | 43 | 53.5 | 51 | 53 | S.W. | .25 |
| Sunday . 5 | 10 | 29.748 | 29.571 | 61 | 43 | 52.0 | 53½ | 52½ | N.W. | .18 |
| Monday 6 | 11 | 29.774 | 29.677 | 61 | 40 | 50.5 | 53 | 53 | W. | .00 |
| Tues. .. 7 | 12 | 29.785 | 29.669 | 60 | 40 | 50.0 | 52 | 53 | S.W. | .09 |
| Wed. .. 8 | 13 | 29.955 | 29.833 | 59 | 32 | 45.5 | 52 | 52 | W. | .13 |
| Thurs... 9 | 14 | 29.924 | 29.802 | 60 | 56 | 58.0 | 51 | 51 | S. | .00 |
| Average.... | | 29.749 | 29.636 | 60.8 | 43.3 | 52.0 | 52.5 | 52.3 | | .71 |

October 3—Fine; showery: clear and fine.
— 4—Rain; very fine with hot sun; clear at night.
— 5—Fine; cloudy; clear; rain.
— 6—Very fine; overcast at night.
— 7—Fine; rain; occasionally fine; cloudy at night.
— 8—Fine; very fine; clear; slight frost.
— 9—Foggy and drizzly; rain throughout; cloudy and mild.
Mean temperature of the week, 3 deg. below the average.

State of the Weather at Chiswick, during the last 23 years, for the ensuing week, ending Oct. 18, 1851.

| Oct. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 12 | 59.8 | 42.2 | 51.0 | 14 | 1.00 in. | 3 | 3 | 1 | — | 4 | 5 | 7 | 1 |
| Mon. 13 | 59.8 | 42.0 | 50.9 | 12 | 0.53 | 3 | 4 | 2 | — | 6 | 4 | 4 | 2 |
| Tues. 14 | 59.2 | 45.2 | 52.2 | 11 | 0.50 | 1 | 3 | 2 | 1 | 7 | 3 | 3 | 5 |
| Wed. 15 | 58.0 | 40.6 | 49.3 | 10 | 1.01 | 2 | 2 | 2 | 1 | 7 | 2 | 3 | 6 |
| Thurs. 16 | 58.6 | 42.1 | 50.3 | 11 | 0.52 | — | 2 | 4 | 1 | 3 | 4 | 8 | 3 |
| Friday 17 | 59.0 | 42.5 | 50.2 | 8 | 0.18 | 1 | 1 | 4 | — | 2 | 7 | 6 | 4 |
| Satur. 18 | 58.2 | 42.6 | 50.4 | 12 | 0.88 | 1 | 2 | 1 | 1 | 4 | 4 | 10 | 2 |

The highest temperature during the above period occurred on the 14th, 1845—therm. 76 deg.; and the lowest on the 18th, 1843, and 15th, 1850—therm. 24 deg.

## Notices to Correspondents.

BIRDS. Such of our correspondents (nine in number) as have given us their names and addresses in full, either *have* been written to BY POST, or will be at an early moment. Many others, not replied to, shall receive prompt attention when the above requisite particulars are furnished. The Inquiries made are, many of them, of a generally-interesting character; but the space that must necessarily be occupied in replying to them—how succinct soever the Answers might be—would encroach unduly on the columns of a newspaper. This has *already* become obvious. We beg again emphatically to remark, that *all* letters requiring *an answer* MUST contain a postage stamp, to frank them back to the writers. If WE furnish "brains" and time—the latter a serious sacrifice—it will be conceded that *our* half of the proposed compact has been efficiently performed. *W. K.*—THE YELLOW CHAFFINCH: *Ann T.* Very curious, the detail very pleasing. To your question, we reply, "In a few weeks." *W. K.*—THE DISEASED CANARY: *H T.* When you send your name and address, do not omit the "two specimen feathers." *said* to be enclosed in your letter, but found wanting. *W. K.*

BOOKS: *C K.* Beck's Treatise on the Pelargonium. ‡

DOMAIN: *Scoticus.* We should say that in England this word signifies, *in common parlance*, a considerable territory. It would not be applied to a few fields, but to a considerable tract of country. The derivation of the word shows that it must have originally signified the land surrounding the residence of the lord of the soil—a castle, for instance—and hence it may now be used in Ireland for a park or any other small holding; but we think the familiar application of the word is limited in England in the manner first described.

EMIGRATION: *Beta.* We cannot undertake so serious a responsibility as that of advising persons upon the countries to which they should go. They must judge for themselves. Books are to be had for a few shillings through any country bookseller, giving ample information, far beyond anything that a newspaper can find room for. All we can say is, do not go to South Africa or to Western Australia. We should go to Nelson, in New Zealand, or to British North America; but, observe, we do not advise you to do so. You must judge for yourself.

FRAMES: *J B H.* The best aspect for a cold frame is north-west. Nothing in which it is safe to soak Peas will prevent mice eating them. The best way is to cover them an inch deep in the drills with fine chopped Furze, and then to cover them with earth.

FRUIT TREES: *Cavanensis.* Eighteen sorts of Apples, chiefly for kitchen use, to be planted as espaliers, may consist of the following:—Four Dumelow's Seedling, Beauty of Kent, Alfriston, two Mère de Ménage, Golden Noble, Bedfordshire Foundling, Hawthornden, two Blenheim Pippins, Court of Wick, Court-pendu Plat, two Ribston Pippins, and Golden Reinette. Pears: Williams' Bon Chrétien and Louise Bonne (of Jersey).‖

GALVANISED IRON HOUSES: *R H C.* It would be unsafe to pronounce a decided opinion upon them without trial. We do not anticipate any advantage from them, but we may be wrong (see p. 499 of this year's *Gardeners' Chronicle*). The sashes glazed without putty have nothing to do with galvanising, and are mentioned at the same place. We recommend Hartley's rough plate glass for all purposes.

GRAPES: *J C.* Your seedling Grape resembles a well-ripened Early White Malvasia or Grove-end Sweetwater, and is quite equal to it in flavour.‖

INSECTS: *A B A I.* We found no insects on your Fuchsia leaves. If they are attacked by the aphides or red spiders, the best plan is to fumigate them with tobacco-smoke, placing them in a cotton cover or bag to retain the smoke. *W.*—*G E.* The caterpillar found on dwarf Roses on the sand-banks near Swansea, are those of the fox moth (Lasiocampa Rubi). They are very difficult to rear, especially so late in the season. *W.*—*J H.* The caterpillar found on the twigs of Abies Douglasii is that of the peppered moth (Biston Betularius). Its connection with the Abies is only accidental, and its peculiar attitude is that of the caterpillars of all the family, which are termed geometers, or loopers. *W.*

JACOBÆA LILY: *Beaminster.* The bulbs are perfectly hardy, but they will not flower without a season of drought. The late Dean of Manchester found them succeed well in Yorkshire against the wall of a stove in the open ground, flowering in the spring, and sometimes again in autumn. It likes a rich soil. The bulbs may also be advantageously planted out in spring, and taken up and dried on the approach of winter.

JUDAS TREE: *Mrs Cox.* A tree of this kind, with its peculiar roots, cannot be removed with certainty by the usual methods. But you may manage it thus: Ascertain at what distance from the main stem the roots are as thick as the little finger. From that place dig a circular trench round the tree, going deep enough to cut through all the side roots. Let the trench be 2 feet wide. When this has been done, fill the trench again with the same earth mixed well with leaf-mould. Next year you may safely remove the tree thus prepared, *as soon as the leaves have fallen*, not sooner.

NAMES OF FRUITS: *A G.* 1, Hollandbury; 2, Margil; 3, Fearn's Pippin; 4, Stagg's Nonpareil; 5, Cockle Pippin; 6, Court of Wick; 7, Golden Reinette; 8, 9, Scarlet Nonpareil; 10, Herefordshire Pearmain; 11, Royal Russet; 12, 13, Hughes's Golden Pippin; 15, Alexander; 16, King of the Pippins.‖—*Sub.* Apples and Pears wrapped in leaves: 1, Dutch Mignonne; 4, Wormsley Pippin; 7, 8, King of the Pippins; 11, Cluster Golden Pippin; 12, Alfriston; 13, Braddick's Nonpareil; 14, Gravenstein; 15, Cockle Pippin; 17, Lemon Pippin; 18, Northern Greening; 19, Sam Young; 22, Alexander; 23, Blenheim Pippin; 24, Red Quarrenden; 27, Dumelow's Seedling; 29, Hormead Pearmain; 30, Dumelow's Seedling; 31, Reinette du Canada. 1, Beurré Diel; 2, Doyenné Blanc; 3, Glout Morceau; 5, Passe Colmar; 7, Beurré Bosc; 8, Sucré Vert; 11, 20, King Edward's; 11, Fondante d'Automne; 13, Marie Louise; 17, 21, Easter Beurré; 18, 23, Glout Morceau; 21, Swan's Egg; 25, St. Germain.‖

NAMES OF PLANTS: *A S, Dundee.* 1, some Bromelia, indeterminable from such materials; 2, Asclepias curassavica.—*D H B.* 1, Polypodium Dryopteris; 2, Polystichum Lonchitis; 3, Lastrea spinulosa; 4, Lomaria spicant. You should attach the numbers in a way in which they can be conveniently seen. It takes more time in untying to find them, than to name the specimens. *S.*—*Erzeroum.* 259, Glaux maritima; 873, Androsace alpina; 40, 26, Androsace; 63, Androsace Bocconi; 681, Primula altaica; 90, Primula macrocalyx; 355, Lysimachia vulgaris; 15, Primula auriculata; 48, Iris caucasica; 2, I. reticulata.—*Heterosmithius.* 1, Solanum furcatum; 2, Stemodia palustris; 3, Salvia clinopodioides; 4, Chætosus, near volubilis; 5, Habenaria densiflora; 6, Hedyotis stylosa. We cannot again undertake the labour of naming dried specimens of the Herbarium.—*Green.* Spiræa laxiflora, and Cratægus cordifolia.—*Evelyn.* Viburnum Lentago and Cornus mas.—*X Y Z.* Abies nobilis, Juniperus recurva, and Biota chinensis.—*P K.* Cassia corymbosa.—*J P, Trentham.* We do not see in what way this differs from the dark crimson variety of Pentstemon angustifolius.—*G T N.* The Box-leaved Myrile, and a plant which cannot be identified for want of flowers.—*F L S.* The Snake nut is Ophiocaryon, not Ophiocarpon, *i. e.*, Snake *nut*, not Snake *fruit* (καρυα, a nut.)—*C K.* Bulbs not in flower cannot be named.—*P N Don.* Sesamum indicum, the common Sesame plant.

OAK LEAVES: *A R C.* The beautiful appearances are galls produced by the puncture of an insect—some species of Diplolepis.

PAWLOWNIA: *Vectis.* Permit us to congratulate you upon being the first to flower this plant in England. The specimens are blossom-buds, which are always born in the autumn and brought to maturity in the ensuing summer. They are perfectly hardy, and require no protection, even in the most severe weather.—*Gallicus.* It may be propagated by cuttings.

STRAWBERRIES: *C P.* The proper classification of Strawberries is that of botanists: 1, Wood; 2, Hautbois; 3, Americans. All belong to one or the other; the scarlet and its many varieties to the last.—*C K.* If the pots are full of roots, the plants may receive a larger shift now. Winter them on their sides, so that the plants may not become too wet, and if you can cover the pots with something so much the better. ‡

TREES: *W.* The height to be attained is unknown; it is understood to form a large tree. The two names are synonymous.

WALLS: *L M N.* It is unimportant how many inches the stone coping for a south brick wall for fruit trees—Peaches, Plums, and Pears—should project beyond the south face of the wall; 6 inches are sufficient. Neither is there any absolute rule to meet the following case: "If the fruit border be 12 feet wide, soil dark brown (no peat, no clay), on a porous gravel (limestone); climate, a wet and cold part of Yorkshire, how many inches in the yard should the border slope towards the south?" A difference of a foot between the front and back levels would throw off surface water fast enough; but a difference of 18 inches would perhaps be better, because of the greater exposure of the border to the sun in summer.

VERONICAS: *Edinensis.* We fear that this variety will prove by no means such a favourite as V. Andersonii. It wants the charming mixture of violet and white which renders the latter so beautiful. The specimens had nearly fallen to pieces, though admirably packed.

WHEAT: *C K D.* You shall hear of the hybrids in due time, but we must not anticipate the report of the jurors. Count Odart's work is entitled "Ampélographie Universelle, ou Traité des Cépages," &c., and is published in Paris by Dusacq, Rue Jacob, No. 26; or at Tours, by Cousturier.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

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EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

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Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

ARTIFICIAL MANURES.—Private instructions in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

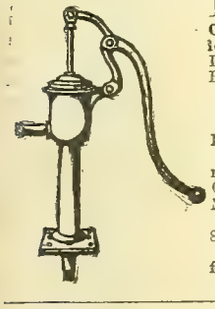
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STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

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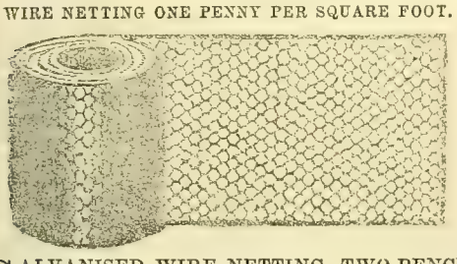
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GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

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KESSINGLAND WHEAT.—Persons desirous of cultivating this productive and new variety of Wheat, can obtain it by applying to WILLIAM GRIFFIN, Eydon, Daventry, who is sending it out in small quantities at 6s. per bushel, including bags. Orders accompanied by post-office orders will be punctually attended to.

SMITHFIELD CLUB, 1851.—CHRISTMAS FAT CATTLE SHOW.—Prize Sheets and Blank printed Forms of Certificates may now be obtained, on application to the Honorary Secretary.

The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

THE ANNIVERSARY DINNER of the CLUB will take place at the FREEMASONS' TAVERN on the WEDNESDAY of the Show Week, instead of the Friday, as heretofore.

B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon-street, Piccadilly, London.

COCHIN CHINA POULTRY.—A few young Birds of this fine and prolific breed, warranted quite pure, for sale. The Pullets are of a cinnamon colour, the Cock Birds of a lighter or darker bay.—For particulars, apply, enclosing stamp, to Mr. HENRY COPLAND, Chelmsford, Essex, who will feel pleasure in showing his Birds to amateurs and others.

PURVEYOR TO HER MAJESTY, H.R.H. PRINCE ALBERT, AND THE KING OF THE NETHERLANDS.

JOHN BAILY, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of USEFUL AND ORNAMENTAL POULTRY; Domesticated Wild Fowl; Gold, Silver, and common Pheasant Eggs for Hatching; all sorts of Fancy Fowls' Eggs, large Aylesbury Ducks, &c.

BAILY'S registered PHEASANT AND POULTRY FOUNTAINS, by which Birds are ensured a supply of clean and wholesome water, and the lives of thousands of Chickens and Pheasant Poults saved—14 quarts, 17s. 6d.; 7 quarts, 15s. 6d; 3 quarts, 13s. 6d. Drawings and particulars forwarded by post on application.

BAILY'S "Hints for the Management and Fatting of the Dorking Fowls for the Table," price 1s. 6d.

The Agricultural Gazette.

*SATURDAY, OCTOBER* 11, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 16—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 23—Agricultural Imp. Soc. of Ireland.

THE INDUSTRIAL EXHIBITION has this day closed.

For nearly half a year a series of illustrated lectures, as it may well be called, has been maintained in constant and surpassing interest before an audience such, for numbers and for composition—in a building, such for size and structure—as the world had never seen. Assemblages such as had rarely met before, except for deadly fight, have joined to receive the lesson of mutual regard and good will. Nations which had hitherto considered one another "natural enemies" have taken their first step in the nobler rivalry of industry, intelligence, and skill; and the philanthropy which dictated the whole affair has itself received a mighty impulse, without swallowing up the lesser sentiments of patriotism in the separate sections of the human family; for that too has been strengthened by the labours and the honours which each has given and received.

Classes which had hitherto looked somewhat suspiciously, it may be, and unkindly, on one another, now know each other better: they have seen the common and the distinguishing excellencies which each exhibit. The wealthy have done homage in their hearts to the wondrous skill of the artificer: the labourer has seen how much he can accomplish when employed by the capital of the wealthy: the landlord and his tenantry—the farmer and his labourers—the manufacturer and the mechanic—the tradesman and his customers—all, for once, have been united in the healthy sentiment of admiration of disinterestedness and skill: and all, without exception, have united in grateful admiration of those beside and on the throne, in whom the virtue of this mighty exhibition has originated, and in whom the truest sympathy with its design exists.—God bless the QUEEN—say millions who have seen how thoroughly her Majesty has entered into all the pleasures of her subjects, sympathised in all their labours, enjoyed the witness of their skill; and, "Long live PRINCE ALBERT," say all who write for the advancement of the British nation or the general progress of mankind: for, surely, never yet was any single effort made so successful for the good of both, as that of which his Royal Highness occasioned the beginning, and this day sees the end.

We are the stronger as a nation for the Industrial Exhibition, in the loyalty and patriotism which it has aroused. Who is not proud of being an Englishman? An English Prince conceived the idea of the Industrial Exhibition—an Englishman designed the Crystal Palace, in which it should be held—Englishmen erected that stupendous edifice at three months' notice—Englishmen have astounded all the world with the wonder of the machinery department, and many other divisions of the spectacle inside. Englishmen have conducted the labours of a congress of the nations to a most successful end. And mankind in general, as well, most certainly, have also made a great step in advance. Who will assert that the good feeling among nations—the friendship between France and England, for example—which this Exhibition has occasioned, has not brought us all a long stage onwards on that journey which is to end in universal peace.

It is, however, to a more limited or sectional view of this great subject that we would, if we had room, at present guide our reader. We would inquire what standing our agricultural exhibitors obtain among the others in the Crystal Palace; how far they have contributed their share to the contents of the Great Museum? whether agriculturists have rivalled members of the other trades and occupations in that disinterested, laborious, and almost self-sacrificing energy, which is certainly the most extraordinary of all the many exhibitions there displayed. The answer to such an enquiry is, we fear, humiliating. The machinery of our different manufactures is exhibited with tolerably equal energy; indeed, our agricultural machine-makers have been educated by the English Agricultural Society into such a pitch of active competition, that the machinery of the manufacture of food has been probably exhibited on a larger scale than that of any other; but the exhibition of the products of our different manufacturers is miserably uneven. There are woollen goods and linen goods, and silks and calicoes, abundantly; there is hardware in abundance and porcelain, and many dozen other manufactures of less importance are exhibited; but the products of the food manufacture—the most important of them all—are hardly to be seen. The colonies in this respect have beat the mother-country. It is not of the quality but the quantity exhibited that we speak. Australian Wheat may well be better than that grown in England; we have not got the sunshine of Australia. But that was not a reason why the products of our agriculture should not be shown in *quantity;* at least enough to indicate their character and kind.

On this, however, we must not enlarge at present. Late, and even altogether past the time, as it may seem, we shall hereafter notice in succession such of the agricultural productions of this and other countries as have been shown; name such specimens as deserved particular attention, and do honour to those individuals who have rescued the agricultural body from the disgrace of having had no share at all in the great event of the current century.

WE are happy to inform our readers that Mr. ALCOCK has caught an idea. The hon. member for East Surrey has discovered a panacea for agricultural difficulty, and if he can but have his own way, Wheat may sink to 30s. without the farmer knowing it. He would not have protection if he could. If JOHN BULL were resolved to restore it in the shape of a 5s. duty, he, Mr. ALCOCK, would not "condescend to accept this paltry, trumpery sum." "What man," shouted the hon. gentleman at Epsom the other day, "would be so base, and shabby, and pitiful, as to accept such a thing, to break through the magnificent principle of free trade." "Do you suppose I should be satisfied to have this humbugging amount of 50l. a-year on 400 acres of land? Not at all, not at all; I should—*I would* have a repeal of the malt-tax; I say, I would ask for liberty *to do what I liked*—to grow what I liked on my own land—to grow Flax, or Beet-root, or Tobacco, as I pleased myself—and do you think you should gag me and humbug me with this nonsense of a 5s. duty? Do you think I am ass enough to be humbugged by your 50l. a-year? (A laugh.) No, I would do nothing of the sort at all. I would have this, if I can, with your assistance, or *without your assistance; I will have* guano at 5l. a-ton, and I'll have liberty to make brandy or spirit, or what I pleased, of my Barley or my Beet-root. Who is going to tell me that we are to have free-trade, but you shall not make spirit, or steep Barley, *or grow Tobacco?*" Away with your protection, away with your duties, your sliding scale, your re-distribution of burthens, your evasion of local burthens; give me guano at 5l. a ton, and the British lion will defy the world. Guano is the thing, and the only thing for our salvation.

Bravo! One cheer more for the honourable member for East Surrey—who *will* have guano for nothing, and *will* do what he likes with his own. Surely we must here have the real mysterious PAUL FOSKETT; at all events Mr. ALCOCK is resolved to Foskettise the Peruvian Government if they won't sell guano in England for the cost of freight and agency. But why does he not call upon the Bank of England to sell him a sovereign for 10s.? What right has the Bank to insist upon 20s. for every one of their gold tokens? it would be a great relief to the agricultural interest if the Bank would lower the price of gold *to them* by one-half; and it is a monstrous iniquity that it won't. Such a rascally corporation deserves annihilation.

We wonder that nobody should have asked the

honourable gentleman why he does not let his land for half its value, swearing that farmers were not "such asses as to be humbugged" by a paltry reduction of 10 per cent. on rents, but would have 50 per cent. off.

Suppose this had happened; suppose that in addition some vehement tenant farmer had started up, exclaiming in the words reported to have been employed by Mr. Alcock, "I am not going to be ruined if I can help it. I have not the slightest idea of having my property destroyed. I have not a halfpenny in the world beyond land in England; I depend upon it solely, totally, and without any equivocation whatever; and do you think I will, with my eyes open, allow that interest to be carried away, and lost to me and to yourselves, if I can help it?" and then had added, that the only way in which he and others could be saved was by compelling the British Government to compound with the national creditors for 10s. in the pound. What, we say, would Mr. Alcock have replied to that? And yet it would not have been more unreasonable than his own wild harangue.

The scheme for securing agricultural prosperity by reducing, by main force, the price of guano from 9*l.* to 5*l.*, is so absurd that we should not have noticed it, had the proposal originated with a person of inferior station to a member of the House of Commons and a representative of an English county. Mr. Alcock argues that, if farmers would refrain from using guano, the Peruvian Government would be compelled to sell it at half price. Another man might as well argue that, if people would refrain from eating meat, the grazier would be compelled to sell his beef and mutton at half price.

But would the proposed measure have the effect anticipated? Certainly not. We are not the only customers of the Peruvians. Vast quantities of guano go elsewhere. And the truth is, Peru can better afford to lose us, than we to lose Peru. We *must* have guano, and that, thanks to the hubbub created by Mr. Alcock, is too well known on the shores of the Pacific. The effect of this preposterous clamour is far more likely to be an advance than an abatement of the price; and on this ground, as well as that of the otherwise suicidal doctrines which Mr. Alcock continues to advance, we once more protest against his proceedings.

Cannot the honourable gentleman perceive to what his principles immediately tend? Or is he prepared to follow in the course of the old buccaneers?

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One of the most remarkable of the agricultural incidents of the present season has been the sudden appearance of the Turnip caterpillar over the whole island, and the havock which it has made on one of our most valuable crops. It is impossible to say how far the general crop may be affected, but it is certain that the loss on particular farms has been very great. It seems that Mr. Bruce, who resides in the south of Ireland, has suffered severely, but can still look forward to a similar visitation with comparative indifference, as he intends to starve the insects out by pulling up the Swedes as soon as they make their appearance, and then sowing Purple-top Yellow in their place; but, as he justly observes, this remedy will only be applicable when late sowing can be practised. He relates a curious instance of the devouring scourge eating the Purple-top Turnips at the rate of 11 to 12 yards a day across the drills in a field, where they cleared the ground before them as they issued from the side where Mangold was growing. In this particular case we think that these voracious devourers might have been met on their own ground by their natural enemies with great effect. For our own part we would rather recommend Turnip growers to be prepared by next season with an army of very useful and apparently most efficient antagonists, than to deprive the caterpillar of the means of existence, for the first chance of a Turnip crop is always the best one. We would advise a trial of the same means which were used by the late Lord Leicester in 1784, to clear his Turnip fields of the pest. In the 2d volume of the "Annals of Agriculture," Arthur Young writes, "Mr. Coke having heard that ducks had been used in small patches of Turnips in gardens to eat the caterpillar, called the black canker, determined, on a field of 33 acres of Turnips being attacked by that pernicious animal, to try how far they might be depended upon on a large scale. He ordered his bailiff to buy all the ducks he could get, who presently collected 400; on the 16th July they were turned into the 33 acres, having water at one corner of the field, and in five days they cleared the whole most completely, marching at last through the field on the hunt, eyeing the leaves on both sides with great care to devour every one they could see, and filling their crops several times in a day. The ducks having saved above 60*l.* worth of Turnips, were sent to the poultry yards. We should imagine ducks might be allowed 15 days for doing this work, in which case 400 ducks would secure 100 acres. Upon such a proportion 20 or 30 might be employed on a small farm to great effect. *R.*

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## MANURES.—No. IV.

Flesh is rarely employed as a manure, except in the case of a dead horse or the refuse of the shambles, when such remains ought to be mixed with earth, as they fertilise a large quantity of matter. Dry flesh leaves 23 lbs. of animal matter. Blood is more largely employed as a manure than flesh, being used in extensive quantities as it comes from the slaughtering houses. In France it is dried, and in a state of powder dusted over the crops, but the better way is to make it into a compost. It consists of the same elements as flesh, and strange to say, in nearly identical proportions; there are found in blood fibrin or muscle, which is analogous with the gluten of vegetables; albumen (albumen, white of egg) similar to that found in vegetables, which preserves wood when combined with a metallic salt. Blood when cold coagulates or thickens; divides into a liquid and solid part; the former called serum, abounding in albumen, which, from its absorptive power of impurities, is used for clarifying or refining sugar; this explains why bullock's blood is employed in the refining of sugar, and the just value attached to the refuse of sugar refineries. Dry blood leaves 4·43 per cent. of ash, rich in the phosphates of soda, lime, and magnesia. Skin is more frequently used in the preparation of glue; the parings of the hides, as they come from the tan-yard, when applied to loamy soils, at the rate of 35 bushels (a bushel costs 6*d.*), should be well covered in the ground, or the effluvia from their decay will attract crows, which will root up the ground, as in the case of bones and seaweed—in searching for worms. In cold or temperate climates, the bodies of sheep are covered with a curled, and closely-matted kind of hair, called *wool*; owing to its roughness and curly form, when manufactured into cloth it thickens in the milling, and forms a close texture—hair will neither thicken nor form any texture. These are the distinguishing features. Woollen rags are well adapted for light and chalky soils, owing to their retaining much moisture, on account of which property they are well suited for Hops: cut into pieces, rags can be applied at the rate of 5 to 9 cwt., either to Wheat, Clover, or Turnips; from their slow fermentive tendency, they should be applied some time previous to sowing a crop, so as to have their fertilising action brought out; scatter them over the soil and cover them with the last ploughing, so as the harrows cannot drag them up. Rags are rich in nitrogen, containing more than blood—they contain 1-20th of their weight of sulphur. In the United Kingdom the wool crop abstracts from the soil five million pounds of sulphur annually, to restore which to the soil, 13,000 tons of gypsum would be required.

Clippings, or Cony-dust, is a substance procured from the waste particles of wool or fur, and mixed up with the clippings of the rabbit skins from off which the fur is taken. It is employed in Lincoln at the rate of 18 bushels, in the raising of Turnips on light soils. Like wool, it is deficient in inorganic matter, and its success, as a manure, may be attributed to the nitrogen and animal secretions contained in it.

Hair is very seldom, almost never, employed in this country as a manure, but it can be purchased at the tan-yards of Belfast for 5*l.* per ton. In China, it is more extensively employed.

Horn is procured, for agricultural purposes, from the parings of that substance in the manufacture of thin plates for lanthorns when the latter are rendered semi-transparent; horn being the first transparent substance used for lantherns and windows. It is similar in composition with wool, and, like it, decays slowly in the soil, in consequence of containing little water—water being a chief agent in promoting decay, probably from the facility with which it yields up its own elements to induce the formation of new compounds.

Refuse of Sugar Refineries is the skimmings of the sugar during the process of refining, which process is effected by the albumen contained in the bullock's blood; a substitute for blood, consisting of gelatinous alumina and gypsum, has of late in this country been employed; hence, the reason why the refuse charcoal is frequently poor in blood. The refuse should be broken into small lumps, mixed with road scrapings, and applied at the rate of 25 tons to cold adhesive soils. It is largely used in France, its value being estimated in proportion to the quantity of blood contained in it.

Fish, where met with in large quantities, is employed as a manure; its efficacy being equal to the bones or flesh of land animals. Thus the bones of an ox contain 64½ per cent. of earthy matter, and 35½ of gelatine;* while those of fish contain 67 per cent. of the former, and 32⅔ of the latter. The inorganic matter consists of phosphate and carbonate of lime. Again, the amount of nitrogen found in salmon and mutton is the same, 12¼ per cent., while that of the skate contains 15¼, and beef 14. Off the coasts of Cornwall and Devon the pilchard, somewhat resembling the herring, and from 8 to 10 inches in length, appears in July in shoals, and is caught in large quantities; 30,000 hogsheads being sent to market annually. Sprats are of the herring tribe—in length from 3 to 5 inches—caught in immense numbers off the British coast, at Yarmouth, and in the Bristol Channel particularly; 30 barrels of them have been known to be taken in a single haul. The refuse of herrings form a considerable source of fish manure; 14 barrels of herrings yielding one of refuse. How great the supply must be, when at Yarmouth the "mart" of the herring trade, 60,000 barrels are annually cured! Our ancestors were ignorant of the mode of "curing" this fish, and it was not till the end of the 14th century, when a native of Brabant made the discovery, for which he was honoured 160 years afterwards by Emperor Charles V., who paid a visit to this benefactor's burial place, and weeping ate a herring on his tomb. In the fens of Lincoln and Cambridge small fish abound in such swarms that they are netted and sold for manure. Whales killed in the northern seas are cut up into large pieces, packed in the vessel until its return home, when the oil is extracted (train oil it is called) by boiling; what remains is called blubber. The fat of the whale preserves its body from putrefaction, and shields it from cold. Fish refuse, whether obtained from blubber, sprats, the entrails and heads of cod and ling from the curing station should be made into layers with old sods, earth, or bog mould, commencing with a layer of earth, two feet in thickness, next a layer of fish, one foot thick, alternating the materials. The compost is thus to remain for two months, when it should be turned, its parts intimately mixed; and at the end of eight months, previously giving the heap two additional turnings, applied at the rate of 27 tons per acre to all crops and all soils.

Fish Oil has been recommended as a manure; I have as yet seen no satisfactory proofs of its efficacy; nor am I inclined to expect such, seeing that oil is but carbon united with the elements of water.

Bones.—Nature uses the salts of lime for the framework of animals. The use of bones as a manure was known in England since 1776; but it was only within the last 29 years that they were employed extensively. Large quantities were imported into Hull from the continent; in the former place machinery was erected for their comminution, and the crushed mass sold out to the farmers of York and Lincoln; and from the successful application of bones to the Turnip crop, they were gradually looked upon as something more than a manure subsidiary to the farm-yard. Previous to machinery being discovered for reducing bones to a state of comparative fineness, the bones were burned, for the sake of their ash, which was called "bone earth;" or when burned in close vessels the residue was called animal charcoal or bone black. By each of these methods the organic matter was lost. Other times they were mixed with quick-lime, strewed in the bottom of dung-pits, and there decomposed by the ammoniacal salts in the urine. Again we find them broken by hammers, from which, as great discoveries spring from insignificant causes, may have led to the invention of machinery to abridge labour; a more general faith in the efficacy of bones led to greater trials of them for manuring purposes, experience taught their immediate action was greater when applied to the soil in a finely divided state, and science corroborated the fact. Bones are crushed by passing through a series of rollers with deeply indented rims, each underlying set having the teeth more closely fitted, until the inch and half-inch standards are reached. The "*dust*" is formed by screening out the finer from the more closely ground particles. *Libra.*

* Gelatine exists in the skins, cartilage, and membranes; gives toughness to the bones; phosphate of lime strength. Nearly half the bones of an ox is gelatine; it is largely found in the bones of young animals, hence, they are more easily broken. The weakness of fish bones arises from an excess of gelatine; bones will retain their shape and appearance, when their earthy salts are dissolved out by a mineral acid, but will become soft; hence the flexibility of bones, when dissolved in oil of vitriol. Gelatine is found in glue, isinglass, and parchment; and in skins, united with tartaric acid, it forms leather.

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## ON THE CULTURE OF PARSNIPS.

The profitable growth of Parsnips requires a soil of deep, rich, warm loam, which may be very much fitted for their use, and for that of all tap-rooted plants, by the operation of subsoil ploughing the land, and deepening the staple. The rotted farm-yard dung is laid on the stubble in the end of autumn, and ploughed under with a deep furrow. In the early spring, the land is moved lengthwise and crosswise, by two operations of a close-tined grubber, which pulverises the soil, and raises the weeds to the surface, which are picked by hand, and removed. The seeds of the Parsnips are then sown in March, on the flat ground, by a drill machine with lengthened coulters, which make ruts for receiving the seeds at the distance of 18 inches, and are covered by a bush-harrow. When the plants are grown 3 or 4 inches high, they are singled by the hand-hoe to the distance of 1 foot from each other, and during summer the intervals of the drills are scarified, and the rows weeded and properly thinned. In this condition the crop grows till the time of storing, which is not early, as the roots are not easily hurt by frost. In the end of October, or in November, the roots are deprived by hand sickle of the top and fibres, and laid in store at the homestead. The tops are given to store pigs in the open yard, where part is eaten, and the refuse converted into manure.

For horses, the use of Parsnips is not applied; for swine, the roots are highly beneficial, either in a raw or steamed condition; and for feeding cattle, the use is very much recommended. Milch cows fed with Parsnips give much milk, and yield a butter that is very well flavoured. The roots are best in a steamed condition, and mixed with chaff in the vats, by which process the chaff is impregnated with the juices of the roots that are expelled by the heat, and which would otherwise be lost. This preparation forms a very agreeable and juicy

food for cows, and is very greedily eaten by the animals, which do well upon the food in all respects. The steamed roots are best prepared for swine in being mashed and mixed with meals, and given to the animals in troughs in a lukewarm condition. Raw Parsnips are very nutritious to store pigs in the open yards.

The cultivation of Parsnips is mostly confined to the Channel Islands, and some favourable spots in Kent. The plant indispensably requires an early, warm climate, and dry soils of the first quality of sandy loam. The average produce of an acre of Parsnips is 12 tons, which are compared, as below, with the average acreable weight of Potatoes in 8 tons :

| 12 tons (26,880 lbs.) Parsnips contain: | lbs. | 8 tons (17,920 lbs.) Potatoes contain: | lbs. |
|---|---|---|---|
| Water ... ... .... | 21,543 | Water ... ... ... | 14,228 |
| Organic unazotic ... | 4,642 | Organic unazotic ... | 3,054 |
| Protein compounds ... | 561 | Protein compounds ... | 414 |
| Ashes ... ... ... | 333 | Ashes ... ... ... | 294 |

This statement may be too favourable to the Parsnip, but it is confirmed by the following particulars :—

| | In 100 parts of Parsnips. | Potatoes. | |
|---|---|---|---|
| Water ... ... ... ... ... | 79.4 | 75.5 | |
| Starch and fibre ... ... ... | 6.9 | 19.0 | |
| Gum ... ... ... ... ... | 6.1 | 6.8 | fattening. |
| Sugar ... ... ... ... ... | 5.5 | 3.3 | |
| Albumen ... ... ... ... ... | 2.1 | 1.4 | fleshening. |

The fattening quality of sugar is well known, and generally acknowledged. Bullocks fresh in condition from the summer's feeding on Clover or good Grass, are put in the feeding stalls about the 1st of October, where they have three meals, daily, of roots, sliced lengthwise, and hay is given between each meal of Parsnips. An ordinary ox will eat one hundred weight, daily, of the roots, when first put to be fattened. Water is given once in a day, and Cabbages or Potatoes are given occasionally, in order to change the food, and prevent cloying on the Parsnips. Three tons of Parsnips and one ton of hay are required to fatten, by Christmas, an ox of about 70 to 80 stones of dead weight. Young cattle thrive very well on raw Parsnips given them in the cribs during winter. Pigs are beginning to feed on Parsnips, with the tops and roots during the month of September, and soon learn to refuse the tops, and are treated with the roots only, which are best given in a boiled state. No grain is employed as food during the fattening process. It is found that boiling the roots increases the quantity of pork, but the quality is rendered flabby. Pigs of 20 months old reach the large weight of 24 to 32 imperial stones by this treatment. Parsnips increase the quantity of butter, but not the milk, in the case of milch cows—while Turnips increase the milk, and not the butter, which shows the fat-producing quality of Parsnips. The pulpy quality of Parsnips renders the food not comfortable to the human taste, but it may be corrected by eating with it some drier articles, as stale bread, or hardened crusts. One part of Parsnips to two of flour makes good bread, and grated Parsnips with flour in one-third part are boiled in a cloth as dumplings, or baked by the heat of the oven in a pie-dish, constitutes a substantial mess, and may be flavoured to please the palate.

Parsnips contain much saccharine juice, are sweeter than Carrots, and are brewed instead of malt with hops, and fermented with yeast. The liquor is very agreeable to the taste. Parsnips contain in 1000 parts 99 of soluble matter.

Chemical analysis gives more soluble nutritious matter to the Carrot and Parsnip than to the Turnip ; yet the general utility of the latter plant is quite indisputable. For every use of the root, the Turnip is best in the raw state—Parsnips are best when boiled, in every case—Carrots raw for horses, and steamed for swine—Potatoes steamed for horses and pigs, and raw for cattle ; and these preparations, being attended with some expense, add to the ready superiority of the Turnip. *J. D.*

## EMIGRATION.

"National prosperity is just the aggregate of the prosperity of individuals. We do not believe that a society with a more patriotic object could be formed than one to promote emigration." *Agricultural Gazette*, p. 588, 1851.

Is this a true exponent in political economy ? Is it not rather a sophistical putting forth ? Does it not convey the impression that national prosperity is, as it ought to be, an aggregate of the prosperity of every individual of the state, or at least of the far greater number of individuals ? Yet is this strictly true, and may not the national prosperity be very great, while the individual prosperity may be limited to very few, the mass being in some miserable state of existence ? Wealth is the synonyme of prosperity ; England is held rich and prosperous, yet may her state at any moment become bankrupt that her creditors may choose to compel her to pay her debt ; fortunately for her, her own children are her creditors ; but is not her wealth too much concentrated for her general happiness, or is it like the waters of the ocean, but gathered in vast reservoirs from thence to be again dispersed over mountain, plain, and valley.

Let us suppose two nations, each with a population of eight millions, that in the one the whole of the people, as in Belgium, for example, live in much comfort, that such and so diffused is the general prosperity that each individual is able to realise ten shillings a year over his annual expenditure ; the national wealth then, the aggregate wealth of these individuals, who, in their content, form a national guard and security which none dare invade, amounts to four millions. In the other country two millions of the population amass by the labour of the other six millions, who are wretchedly lodged, clothed, and fed like—like—Irishmen—over all costs of realisation six pounds each annually, and the national wealth of this country amounts to twelve millions ; but the mass of the people in their discontent are ready to be led away by any one who holds out any hope of amelioration. The national prosperity or wealth is evidently in favour of the latter nation, but the individual happiness, another term for prosperity, is as certainly in favour of the former.

America is prosperous, but the creators of the prosperity of her southern States are slaves—are these happy. Their numerous attempts to escape from their chains, the recent laws made to favour their recapture, say they are not. In the same condition were our West India Islands in the time of their prosperity.

The Irish, before the loss of the Potato, exported a surplus produce of 13 millions, every individual was a capitalist to the amount of his year's provision—yet was Ireland prosperous or her people happy ? And yet each contributed to the national wealth.

Nature, in the hive of the industrious bee, seems to give us a good lesson on political economy ; the greater the number of working bees, the greater the produce of honey, the more powerful to resist aggression. It appears then a strange corollary that of the lessening the number of creators of national wealth, the working bees, by emigration.

It is said, "Why lament that they are going where they will be better off ?" I am not one of those querulous Irishmen who carp at everything—who, right or wrong, lay all our evils on the shoulders of England, or think that a Government is fully equal to the task of warding off those ills which are the consequences of our own misdeeds, our negligences, or our selfishnesses. I am of those who think that a Government can indeed do very little towards the prosperity of a people, yet that it can do more than it generally does, and that it ought to do it. I do not look upon the prosperity of Ireland, or to the excessive emigration which is now depopulating her as a pure Irish question, but as on its bearing with the prosperity of the United Kingdom. I lament not that any man should avail himself of any honest means of bettering his condition, but I grieve that circumstances should have arisen to make Ireland no longer regarded by Irishmen as their home ; I regret that they should have been forced by the ignorance, the neglect, the supineness, or the inability to meet a great exingency, in those who govern us, to look to America—to a people jealous of our power—as their only refuge from wretchedness, their only resource, save the poor-house, from starvation. I am pained that all these ties of affinity and friendship which constitute the charms of home have been transferred from the Irish soil to the American, and I make these observations with the more heartfelt sorrow, as I am assured it is now too late to check the tide of emigration—the Irishman has ceased to look on Ireland as the home of the Irishman ; all his affections, all the ties that bind him, are in America ; there is, perhaps, scarcely a family in Ireland that has not one of its members in America, who, with the zeal of a proselyte, will exert every means to gain over the rest of his family.

National prosperity, truly, is just the aggregate of the prosperity of its population, and is in proportion to the extent, and to the profitable employment of that population ; and on these also its strength and security proportionally depend. How emigration to a foreign State can tend to these ends I am at a loss to conjecture. Had we, indeed, an excessive population, and an emigration from it peopled a well regulated colony of our own, generally received opinion would be in favour of such an emigration being serviceable to the parent State. But without capital to occupy farms of sufficient extent to employ machinery, the loss of labourers will throw our land out of tillage, we shall cease to be the granary of England, we may become her stock farm; and I should think it a serious question of how far it be good economy to trust a nation's bread to foreign supply. It is well known that in the late war half our troops were Irish; what has been may be again, and in the event of a future war, to the desolate hills and plains of Ireland we may in vain look for the recruiting of our armies. It may not be better economy to find our soldiers in a foreign clime than to look there for our bread.

The diminished population has already been felt in Ireland; this harvest it was difficult to procure reapers for twenty pence a day, while in years when our grain brought in the market half as much more than we are likely now to get for it, thirteen pence a day was a rare thing.

It is true, and there is much reason to grieve that it is so, the wages of labour are too low in Ireland, but the circumstances of the farmers are also so low that they can with great difficulty pay these low wages ; and at such low wages they cannot employ a sufficiency of labour for the ordinary tillage of the land. What then will be the consequences, when, from the decreased amount of labour in the market, its value shall have increased beyond the means of the farmer to employ even enough for the very sordid tillage he can now afford ?

It has been the labour of my life to devise profitable employment for a large, though I will not admit, excessive population ; it has been labour in vain, for now it has become necessary to look to such simple and cheap machinery as will supply the want of hands, and meet the abilities of our farmers and the extent of their farms.

It must appear matter of some wonder, that with naturally superior soil, with lower rents, and with less taxes, and with markets but a shade lower, we should not be able to pay more remunerative wages to our labourers. There is, certainly, in this some want of liberality in the employers, but there generally exists much poverty ; there is very great deficiency of real agricultural capital, and there is no obtaining artificial capital ; the monied man feels no security in the agriculturist, and will rather be content with the small interest the public funds afford, than incur the chance of loss in the high one the farmer would be content to give, and which he could turn to good account. Our banks, in their issues at three months, are only available to men in shop trades ; and even had we banks established suitable to the farmer, under our present circumstances, I fear there are very few that would be trusted. I do not say that they are unworthy of confidence, or that much would be risked, but that they could not give that security which would be reasonably required.

The village farmer in Ireland is so rarely a capitalist, for the richer men are almost invariably graziers, that the land is scarcely ever so laboured or manured as to give the return it is naturally capable of. It appears that when the value of the produce of an acre of land in Great Britain averaged *4l. 7s. 7d.*, that of an acre in Ireland only averaged *2l. 9s. 3d.* With a population of over eight millions, the exports from Ireland in grain, flour, and meal, in the years 1838, 1839, and 1840, amounted in money value to 13,804,311*l.* With a population decreased to six millions and a half in the years 1848, 1849, and 1850, these exports did not reach one-half of that amount, *i.e.*, to only 6,130,217*l.*, nor does this convey a just idea of this decrease in our national wealth ; for in these three last years the humbler classes of our people have been dieted almost exclusively on American Maize, at a cost equal to, if not exceeding, the amount of these exports. Our exports in cattle and in cattle produce have perhaps decreased proportionally, while in swine, poultry, and eggs, they have held no proportion whatever ; they had, indeed, almost ceased altogether.

When our population amounted to eight millions it was calculated that the aggregate of unemployed amounted, in the 12 months, to two millions, or nearly 400,000 virile adults ; it must not, however, be understood that these were all able labourers, at least one-half of them were persons who from age or infirmity would not be employed. In the deaths by famine and disease, consequent on starvation, the proportions between the able-bodied men and the infirm persons and children, perhaps, were as nearly preserved as in ordinary times ; and if we reckon these deaths at one million, able-bodied men to the amount of 200,000 have died. In emigration the great mass has been in adults ; and reckoning it to have amounted to 600,000, we may set down the loss in able-bodied labourers to at least 250,000. Setting then the 200,000 deaths by famine and disease against the 200,000 unemployed previous to the famine, we have 250,000 labourers less than were then found requisite to our agricultural labours. And it is to be recollected that even then none were employed but in the hand-to-mouth operations of cropping and securing crops. No railways, no drainings, made a demand on our labour market.

The agricultural, indeed the general prosperity of Ireland, is to be sought for, not in emigration, not in getting rid of her industrious bees—for her hive is not too crowded, she does not want to throw off a swarm—but in the discovery of some way of supplying her agriculturists with the means of working up the raw material—the land. *J. M. Goodiff, Granard, Sept.* 30.

## Home Correspondence.

*Game.*—I have read many valuable articles of my friend Cuthill's ; but I should flatter him too much were I not *in limine* to inform him that I neither agree with the opinions he has come to against game and game preservers, nor do I like the arguments he has made use of to enforce them ; and I add my own opinion that the sources whence he obtained his information have completely deceived him. For one example among others, in his former letter, Mr. Cuthill asks "if all game-preservers, on becoming farmers themselves, did not give up preserving game ?" To which question I replied that my experience, and it had been rather considerable, was just the reverse to this conclusion ; for, out of all the game preservers I knew, and I add now, out of all that I now know, with one solitary exception, all of them farm a portion of their estates, and some of them farm extensively. In his present letter my friend and opponent, seemingly better to recollect himself, asks if four gentlemen whom he names did not do so. I grant that four might do so ; but then, what does this prove ? Nothing whatever, but that out of a population of 28,000,000 of souls, four whimsical old gentlemen, either from age and infirmity, or from parsimony, or inability, sometime in their lives—towards the close of them probably—ceased to be game-preservers. I grant that they did so, but what then ? I repeat, nothing ; and *ex nihil nihil fit.* I therefore leave my friend's other arguments, and come at once to the subject ; but before I do so, let me, to prevent misrepresentation, again repeat, that I am not a sportsman, and that I but very seldom partake of game when it is placed before me, and am more of a vegetarian than a flesh-eater ; but that I take up this subject purely on public grounds, believing, as I sincerely do, that the benefit derived by the farmer from one kind of game more than compensates for the exaggerated mischief said to be done to

him by the other kind; I know also, that many, I may add most, game-preservers may in many respects be ranked among the most valuable members of the community, and that they are public benefactors. But my friend Cuthill, let us calmly discuss this matter, and do you lay aside a little of your preconceived notions, and listen attentively to what I have to say. I begin then with your own profession. Some time since I saw in a large nursery garden a flock of small fowls, and on inquiring of the proprietor why he kept fowls in his garden, he replied that they were the best friends he had, that before he had them his plants were destroyed by different kinds of insects, but his fowls had cleared them all off for him. Of course the fowls in the garden do the work of winged game in the fields. My next case is that of a friend who has a large farm which had been a wood, and for several years his crops were so very much injured by the ravages of wireworms and other pests of that kind, that I advised him neither to destroy moles nor partridges; and as far he could he followed my advice; but although he endeavoured to preserve his game, his neighbours did all they could to destroy it. But at length the proprietor of the adjoining property commenced preserving game, and the consequence has been so beneficial to my friend, that I think I may state, with confidence, the wireworms and other insect pests, before so injurious to his crops, have been nearly annihilated from his farm; for the last few years I have seen no signs of their ravages, though before many acres were laid bare annually. And again, one more case. The best tenant farmer I know, the man who, at the least expense, with the least quantity of seed, grows the largest crops of every kind of grain, and the largest root crops, protects his game, as far as he can, on account solely of the great benefit he derives from it. He is an enlightened man, and I have listened oft with much pleasure to the reasoning, so consonant to my own convictions, he has made use of in favour of the preservation of game; on his fields also I have often seen the partridges run about, something like barn-door fowls, picking up and devouring every insect they could find. I have, also, often heard him wish that his landlord was a game-preserver, and that a keeper was kept on his estate, to save himself the expense and labour of preserving the game on it. But perhaps it may be said that this farmer does not understand what he is doing, or his own interest. Should it, however, be so said, I just observe in passing on, that I intend one of these days to challenge all England to produce a farmer who understands his profession better, grows more produce on a given quantity of land, or is better able to bid defiance to the times, trying as they now are. But, my friend, you compassionate the poor tenant farmer who has to keep game; but change your compassion another way, and pity the man whose lands are infested with slugs and insects of all kinds, for want of game to destroy them. You pity, also, the fate of the unfortunate poacher, who is caught on a gentleman's estate, armed with deadly weapons, and plundering his property, and prepared to murder the servants who attempt to defend it; and pray pity also, for the cases are equal, the thief who should be caught in your own garden, stealing your delicious fruits, the Black Prince Strawberry for example among the rest; or pity him for stealing your ducks and fowls, or a covey of partridges, or nide of pheasants, if you happen to have them in your preserve, alias your garden. I pity no midnight marauder, whether he be called a poacher, a thief, a highwayman, or felon; nor can I discern much difference between the rogue who steals pheasants and partridges, and the rogue who robs gardens or orchards, or steals barn-door fowls; in my mind a rogue is a rogue, and I think, also, the welfare of society and its safety require that he should be punished; and I think were you to catch him in your preserve, packing up your delicious Grapes, or Strawberries, or Melons, or even a pheasant or two, if, I observe, you happen to have bred any, you would pack him off also to the treadmill, or perhaps send him to New South Wales, to exercise his vocation among his brethren there. I am well aware that the *vox populi* is in favour of the side you have taken; but I know also how easy it is to mislead; and my firm conviction is, that the people are sadly, I might say very unwisely misled in this matter. But let us suppose, for the sake of argument, that some few (for comparatively speaking they are but few) landowners do keep more game than their tenants like; yet I always find that men are ever anxious to become the tenants of such men. But suppose again, but for the sake of argument only, that game may do a few tenants injury; yet their being kept is a public benefit. It is game preservers who supply the markets with hares, rabbits, pheasants, and partridges, and at so low a price, that the labourer and mechanic can purchase and enjoy them equally with the wealthiest personages in the realm. But suppose you had the power to destroy the preserves; or to pass a law that no man should keep any animals except such as you yourself keep or would allow, then in such a case game would be confined to the tables of the wealthy only, for it would soon become so scarce, and consequently dear, that none others could purchase it. But, my friend, you reason as if game had no intrinsic value; but that it is kept only for the pleasures of the breeders of it. But it has a real and substantial value as an article of food; and in my humble opinion, though all in this way receive great benefit from it, yet the greatest benefit is derived from it by the cultivators of the soil. The benefit that partridges do in the fields, and pheasants do on arable lands surrounding woods, in destroying the countless numbers of wireworms which they are so fond of, and all other kinds of insects, injurious to the young crops of corn, are so incalculable, that we cannot estimate it; and when these are taken in the aggregate, the vast good they do throughout the country infinitely counterbalances the injury, let it be what it may, that is done by hares and rabbits. I thus publicly record my opinion, carefully and dispassionately arrived at, that were it possible for the revilers of landlords for keeping game, and the sympathisers of game stealers, to effect the object they are aiming at, they would inflict a very grievous injury on the public at large, and a ruinous one on tenant farmers, whom they profess—but I cannot believe them—to be aiming to serve. But another benefit derived from game preservers, and which must not be forgotten, is, that oftentimes the chief amusement many gentlemen have to reside on their estates, and to become acquainted with their tenants, and their labourers, and the poor in general, is the pleasure they derive from the sports of the field. Destroy this inducement, therefore, and you will inflict a crying evil in every part of the country; for I have lived long enough to know, that it is the manly country gentleman, who resides amongst his tenants, that all, and especially the ministers of religion, must appeal to for assistance in behalf of their poorer bretheren, and not the sympathisers with the midnight poaching bandits, who are always lazy, worthless vagabonds, and who, if they were not in fields and woods, robbing there, would be breaking into peoples' houses, or stopping them on the highways to plunder them of their money, or perhaps take away their lives. My friend, I seldom venture to give advice, but for once I will recommend you to reconsider this matter, and should you do so attentively, I hope you will not denounce any law as barbarous which protects men's properties. Learn, also, to forget that ill feeling towards preservers of game, both masters and gamekeepers, which, with too many others, you seem to possess; but think of them as members of the community, from whom both you and all others receive daily the greatest benefits. Let me, also, correct another mistake you have fallen into, namely, that tenant farmers would, if left to themselves, preserve game. No such thing; for, my friend, if one in one hundred would do so, the rest would do all they could to destroy it, until, at length, there would be none left on their lands; and, in consequence, their otherwise fertile fields would so completly swarm with insects of all kinds, that they would becomd barren, or not pay for cultivation, or grow nothing but weeds. I had just finished writing the foregoing, when I received the *Chelmsford Chronicle*, from which I extract the following information, which, I think, bears out much of the reasoning I have given:—"In 1849, one (London) market alone supplied 4,024,400 head of game." Now, as the greater portion of this supply benefited the farms in which it was produced, and cost the farmers not a shilling a thousand in the feeding of it, I think it bears out what I have endeavoured to establish, namely, that game, in the aggregate, is of immense importance to the country at large, and that the little injury one portion of it does to the cultivators of the lands is more than compensated for by the great benefit bestowed upon them by the other portion. I conclude, therefore, my subject by an extract from Lord Brougham's "Object, Advantages, and Pleasures of Science," namely, "not a step can we take in any direction, without perceiving the most extraordinary traces of design; and the skill everywhere conspicuous is calculated in so vast a proportion of instances to promote the happiness of living creatures, and especially of our own kind; and we can feel no hesitation in concluding, that if we knew the whole scheme of Providence, every part would be found in harmony with a plan of absolute benevolence." To this beautiful sentence, I add my own deliberate opinion, that however minute, all insects are produced with some beneficial design; and that one intention of the creation of the feathered creation, flying from field to field, was to regulate their numbers, and keep them within the bounds designed by the great architect of nature, the allwise, merciful and supreme lord of all. Man, thoughtless man, destroys this balance, and then complains that his crops fail, and his fields are unproductive. *George Wilkins.*

*Agricultural Labourers.*—In your leading article of Sept. 27th, you draw a comparison between the condition of the agricultural labourer in Berkshire and Lincolnshire, taking them as types representing two classes. I have lived among the Berkshire labourers for the last 20 years. Your remarks are written with a knowledge of facts, and are therefore valuable; the mere mention of an evil or abuse is the first step to its removal. There is no reason *à priori* why the Berkshire labourer should be in so degraded a position as to suggest the question, Can we live without parish support? I believe that the leading cause is the past working of the poor-law, which, though altered now, has left its stain behind it. It was in Berkshire that the scale of wages, or payments in aid of wages, was promulgated, which virtually made every agricultural labourer a pauper. I saw it in full operation; I saw its fall, and I hope I may live to see its evil traces obliterated; but such I think is not the case. Even now married men receive higher wages and more regular employment than the single. The farmers consider themselves tied to certain labourers, and the labourers look on the farmers as those who must give them employment, and to whose service they are virtually bound. Now Lincolnshire is a county in which vast tracts have been brought into corn cultivation of late years; it had a new start, the labourers were not born on the land as its cultivators, &c. I feel sure, that the only thing by which the condition of the Berkshire labourer can be improved, is doing away with the present law of settlement. No one man should look on another and feel that he is personally liable to contribute so much hard money to the support of that individual; no farmer should look on a labourer and feel, that if he is thrown out of work and goes to the workhouse he will have to pay for it; and, *vice versâ*, no labourer should feel that he must work for such and such persons, or have no work at all. But the farmers and labourers do feel this, and act upon it. It is often said that farmers give more employment, because they wish to keep the labourer out of the workhouse; but the employment being forced, the wages given have reference to the absolute wants of the employed, they do not represent his earnings—sometimes they exceed, sometimes fall short of these. It is not my purpose to show how an alteration of the law of settlement could be adjusted to existing circumstances in matters of rating, &c., though I think it might be done easily. I am convinced that as it exists it is the great hindrance to the improvement of the condition of the agricultural labourer in Berkshire; till some great change in it is made, he must be degraded and over dependent. The labour market must be free. *A Small Farmer, Berkshire, Sept.* 30. ["M. D." informs us that carters in Berkshire receive 9*s.* a week at present, and during harvest they have either diet or other advantages which produce them about 3*s.* a week in addition. He would not wish to make their wages appear less than they are.]

*The Interests of the Labourer*, which formed the subject of your leader of the 27th of September, merit the careful consideration of everyone engaged in the business of agriculture. It appears to me that those who are entrusted with power in that department of the business of life, which is comprised under the term rural affairs, exercise it without a due consideration of the responsibilities which attach to it. The occupant of a farm is a master, and according to the manner in which he uses his power as master, will he increase or diminish the peace and happiness of those who are his servants. If his only object is to increase the sum which stands to his credit with his banker, we may rest assured that the little power which he possesses is used to the prejudice of the happiness of his fellow creatures. The desire of accumulating money will lead him to give an almost exclusive preference to the active and the nimble, and he will be oblivious of the fact that the happiness of society is chiefly dependent upon the honest and faithful, and those who manifest a disposition to cultivate peace. It is well known what effect the skill of the breeder or propagator has in developing particular qualities of the animal or the vegetable. Let us apply this analogy to the social organism—and we will be at no loss to discover the causes which have originated so much carefulness, and rendered the life of many of our fellow creatures barren of those enjoyments, which, under ordinary circumstances, it may yield to every one. Nothing is blinder than avarice, and the energy with which it acts often raises up the greatest obstacle to the attainment of its own desires. Your thoroughgoing avarice has only one instrument by which it can act upon the human mind, and that instrument is fear. The terror of punishment is its only resource in emergencies. Hence the value and importance of a rural police. I will give one illustration. In a certain English parish, not many years ago, there was a small farmer, who had a small quantity of Wheat taken out of his barn by one of his labourers. The labourer was put into the hands of the police, was tried before a magistrate, and sentenced to some months' imprisonment. While the labourer was confined, his wife and children fell to be supported by the parish; and I have the farmer's own authority for saying that his own share of the poor-rates, which went to the support of the wife and children, exceeded the value of the Wheat which was stolen. Now, what have we in the whole of this process, but an exhibition of the way in which poverty is created, by the working of evil passions. It is quite possible that the farmer considered that he did a meritorious thing by exposing the culprit. It is also quite possible that the magistrate may have commended him for his public spirit. But if he had been master of as much philosophy as to know that evil can never be counteracted by evil, he would have come off with the loss of nothing more than a peck of Wheat. In many cases the happiness of a family may be much promoted by taking the son to perform the father's duties when the latter is incapacitated by age and infirmities. I have lately had an opportunity of witnessing the advantages which result from a little consideration on the part of the farmer in this respect. About six years ago an old man offered his son to a farmer in this neighbourhood as soon as he was capable of discharging a hind's duties. After being two years in this situation, the son was promoted to be first servant upon the farm, perhaps partly from charitable motives. He was found unqualified for this situation, and a younger brother was allowed a hind's wages, in order that he might keep house for the old people, and the oldest son was requested to look about for himself. He is a steady active man, and has acquired, under the superintendence of his master, a competent knowledge of farm book-keeping. And he is now upon the eve of embarking for Australia, where the probabilities are many, that he will be able to raise himself to comfortable independence, and perhaps send a little money to his family at home. *B., East Lothian.*

*Fatting of Early Lambs on Carrot.*—The following paper, by Mr. Joseph Blundell, was read before the

South East Hants Agricultural Association, on Tuesday last:—I beg to offer, in competition for the premium offered by the Society, the following experiment upon the use of the white Belgian Carrot, for the purpose of fatting early lambs, carried out by myself in two successive seasons, in the winters of 1849 and 1850, and also in 1850 and 1851, at my farm at Maidenstoneheath, and also on the farm of Richard Trench, Esq., at Frehills. Having noticed the great value of the White Carrot for the feeding of horses and pigs, I was induced, in the month of November, 1849, to commence an experiment, for the purpose of proving the value of this root for the feeding of early lambs, as compared with that of the Swedish Turnip. I began with giving the Carrots, cut with Gardener's machine, in troughs placed side by side with others containing Swedish Turnips, cut with the same machine, in advance of the hurdles, in the usual manner; and I found, in the course of a day or two, that the lambs had so great a preference for the Carrots that they ate no Swedes as long as any Carrots remained in the troughs; in consequence, I discontinued giving any cut Swedes whilst I had any Carrots for use, they having continued in good condition until the 1st of April. Finding my early Somerset lambs doing so well upon Carrots, I decided upon feeding the South Down lambs upon Mr. Trench's farm in the same manner, and the result was precisely the same, they having refused to eat my cut Swedes, when they could get Carrots. I had no means of proving with accuracy the difference in the quantity of Carrots and Swedes consumed by a given number of lambs, neither did I attempt it, considering their great liking for the Carrot quite conclusive; although I believe a lot of lambs would consume a greater weight of Swedes than of Carrots. The quantity of hay consumed was about the same as in former seasons, when feeding with Swedish Turnips. But I was struck with the apparently diminished quantity of corn and cake consumed by the lambs whilst feeding on Carrots; I therefore determined upon ascertaining the actual quantity of oil-cake and Peas consumed by a lot of 100 lambs whilst feeding on Carrots, as compared with former seasons when feeding on Swedes; and having in previous years found that 100 lambs, being allowed as much as they could eat, consumed on the average four gallons of Peas and 26 pounds of oil-cake per day, for a period of nine weeks, commencing at five weeks old, until they were 14 weeks old, being at that age fit for sale; I then found, to my surprise and satisfaction, that 100 lambs, being fed *ad libitum*, only consumed two gallons of Peas and 14 pounds of oil-cake per day (having at the same time the usual allowance of hay and as many Carrots as they would eat), or, in fact, about one-half the quantity usually consumed before commencing the experiment of Carrot-feeding. I had some thoughts of sending a statement of this experiment to the meeting of this Society last year, but I considered it required further trial before I could offer it with confidence to the notice of the agricultural community; and I can only say, that the like experiment carried out during the past winter has proved quite as successful, and was attended with the same results as in the previous one. The advantages to be derived from feeding lambs with Carrots, I find, consists in the saving of one-half the cost of oil-cake and corn, and that the lambs will be fit for the butcher earlier, and attain a greater weight, and better quality at a given age, than when fed on any other root. In proof of which, I have never, during a period of more than 20 years, sold lambs so fat and heavy at the age, as those which I have fed during the progress of this experiment, and in the manner here described. Should the foregoing statement lead to inquiry upon the subject, and prove serviceable to my brother farmers, it will then have produced the result desired by the author. *Joseph Blundell.*

*Draining.*—The object of draining is to keep the soil comparatively dry and warm during the winter, and moist in the summer. Water does harm where it rests on the land, but good where is percolates through, and afterwards runs off. General principles may be laid down to guide the agriculturist in draining; but carrying out the system depends upon the nature of the land, locality, and other circumstances. What may suit one district in a country, will not answer for another. It seems impossible, as some persons wish, to lay down rules to be strictly adhered to in all cases of draining; as well might they insist upon the same plan of cultivation being adopted for sandy loam and clay land; where a sour blue subsoil exists under astiff clay, deep drains at great distances from each other, are not so beneficial to the land as those sunk 3 feet, and about 21 apart; clay will not allow water to pass through it, till it has been acted upon by the air, unless where it has been moved by the spade or plough. It appears reasonable to suppose, should the foregoing statement be correct, that drains 3 feet deep and 21 apart will loosen clay sooner than those of 5 feet, and 30 feet interval. That solid clay is impervious to water may easily be proved, by digging a hole, and filling it with the element; when it will be found merely to evaporate, unless there is an old drain tolerably close at hand. Rain will not pass through clay till the atmosphere has mellowed and opened it, hence workmen are aware that in stiff land the drains do not run freely for a couple of years, which experience teaches them, though they may not be able to give a reason for the fact. In tapping springs on friable soil, it may be necessary to lay the tiles at a greater depth; indeed such land may be safely drained at 4 feet and 30 feet apart, or even more, in some cases. Tubes should not be less than 2 inches in diameter, and the mains 3 inches; and if made with a shoulder they will remain serviceable so much the longer. The view taken of draining may be erroneous, and the writer will only feel too much obliged to any practical man who will correct any mistakes he may have made. The main point to be ascertained is, what style of draining is the best for a particular soil? What is contended for is, that one plan will not suit every description of land. *Falcon.*

## Miscellaneous.

*The St. Quivox Club at Myremill.*—After seeing the luxuriant crops of grain and Turnips at Morriston and Lyonston, the club went onwards to the almost world-famous farm of Myremill. With many operations on this farm almost every reader is familiar. The plan of collecting the liquid manure of the steading, of allowing it to ferment in capacious tanks, and afterwards of distributing it by steam power, is here followed out on a grand scale. Since the visit of the club last year a large building has been erected and divided into 18 pens, for the purpose of feeding pigs. About 90 are in course of being reared or fattened in it at present. The floors are boarded, with interstices of about half an inch left between the boards, and there is no litter whatever used. The pigs appeared to be clean and comfortable, and they seemed to move about with a tolerable degree of ease upon the boards. The evacuations of the animals, which pass through the interstices, are afterwards carried by a subterranean conduit, to the tanks. This conduit, as well as the space under the boards, and the pens generally, may be rinsed with water from the pipes by introducing a hose into the building as often as it is thought desirable. There is a wide walk along the centre of the house, between the rows of hog-pens, along which food is conveniently carried; and here Mr. Kennedy proposes to lay down a pipe connected with the engine, for the purpose of heating the building in winter by means of escape steam. At another part of the steading preparations are being made for the erection of buildings calculated to house comfortably 400 sheep for winter feeding. The trial which Mr. Kennedy made last winter, in the building which we have described as being now fitted up for pigs, quite convinced him of the propriety of following out this plan. There is to be a wall along one side of the sheep houses, but the erections otherwise are to be entirely of wood. The wood is prepared by being steeped in a solution of lime; and, if by this means one-half of the advantage which is said to be conferred by rendering the wood more durable can be attained, the process must be of very great importance to farmers. Some houses on the estate of Closeburn, which were erected 50 years ago with Scotch grown Larch, prepared in this manner, are said to be still in a good state of preservation. The process is cheap and simple. The wood is first sawn and planed, as it is so hard after steeping that tools will not work upon it. The boards are then sprinkled over with newly slaked lime, and put into a pool, the sides and bottom of which must be nearly water-tight. A little hot lime may be now and again added, to keep up the strength of the solution, and the wood may be allowed to lie immersed in the steep for two or three weeks. But home-grown wood, with the sap in it, must alone be used, as dry foreign wood derives little or no benefit from the process. If such an easy process renders deals doubly more lasting, what is to hinder it from being tried on any farm? The advantages would not be confined to timber employed in building; it might be almost of equal importance to steep flakes, gates, paling, stakes, and even implements after they have been made, such as wheelbarrows and other appliances which are peculiarly liable to rapid decay. Two of the fields at Myremill, which are under Italian Rye-grass, are pastured with a large flock of sheep. It is truly astonishing to see the number which are folded on a small piece of ground, making the side of the field to appear as if half covered with them. Mr. Kennedy is fattening 15 to the imperial acre, and the sheep seem to thrive remarkably well with him. Indeed, we are told that not a single sheep has died at Myremill this season. Mr. Kennedy has also a 12-acre field of Carrots, which we do not think can be excelled in Scotland. The field was dressed with 24 carts to the acre of rough dung from the cattle-boxes. The manure was ploughed into the land in the early part of winter; and this was followed in spring by two applications of liquid manure from the pipes. It ought to be recollected, however, that the solid manure, though rough from the boxes, was a good fertiliser, as Mr. Kennedy's fattening cattle from which it was produced are very highly fed. *North British Agriculturist.*

## Farm Memoranda.

Farming of the Earl of Leicester.—Mr. Bell and myself proceeded to Norwich, in Norfolk, about 80 miles distant, and, the next morning, proceeded to Holkham, about 32 miles from Norwich, the seat of the Earl of Leicester, and examined his fine Devon stock, his farm buildings and farm. The stock was not so extensive as I had anticipated, though there were some very fine animals. He had six or eight beasts fattening for the Smithfield Show, that were very fine, and will prove, I imagine, severe competitors for the short-horns and Herefords. Twelve fine yoke of Devon oxen are employed on the farms, and their quick, elastic tread was a subject of admiration, when compared with the heavy, loggy tread of the English cart horse, to be met with in the north of England, and in some of the central counties. Mr. Keary, the bailiff of the Earl, was absent, so that we had not the privilege of seeing him, as we desired and expected. The crops of Wheat, Barley, and Oats, in Norfolk, are remarkably fine. In fact, taking a district of 10 miles, through which we passed by different routes, I have never seen such uniform heavy fields of Wheat and Barley. The lots here are very much larger than is common in this country; and the system of farming is what is called high farming. The common rotation of crops in Norfolk is:—1. Turnips, with manure; 2. Barley, with manure; 3. Clover, or Beans; 4. Wheat, with manure (special). The Turnips are fed off on the field. On the Clover ley they manure with barn-yard manure and marl, the marl giving a better stand for the Wheat. We saw the fields preparing for the crop of Wheat. The Clover is sown with the Barley and mowed once. We saw at the Earl of Leicester's, the Mangold Wurzel fresh as when pulled from the ground. They place them in the autumn in rows, about 3 feet high, 3 or 4 feet at the bottom, and cover with straw, and take them out as wanted. They were feeding some South-Down and cross sheep for market with these and oilcake, and they were in capital condition. There are 1000 to 1500 sheep constantly on the farm, and they are sending them off to market regularly, and replace by purchase from the north. The fat cattle are in covered stalls, or rather yards, as they have abundance of room, well littered, with water and salt before them; and they are fed with oilcake, Mangold Wurzel, cut too fine, I think, and they feed them what they will eat. The fixtures at the Earl of Leicester's are excellent, and everything about the establishment shows the greatest care, to the very smallest minutiæ of the farm. They were threshing their Wheat with a first-rate portable steam engine, and the amount of work performed by it was very large. Two English gentlemen, whom we met on our return to Norwich, informed us that the use of Rape-cake has proved entirely successful in arresting the ravages of the wireworm in the Turnip crop. They burrow themselves in the Rape, and that is the end of their labours. After leaving Norwich, I took a day at Ipswich, at Ransome and May's great plough and engine establishment, and it is one of the most complete, as it is one of the most extensive, establishments in this country. Nine hundred men are constantly employed. While I was there, five steam-engines were being shipped for Lord Dombrieski, of Russia, for his gold and copper mines in Siberia, and a large lot of ploughs for Valparaiso; but I have not space or time to give a description of this establishment, which I intend to do in full hereafter. I visited a number of farms in Suffolk, where they have good farmers, but their land is not equal to Norfolk, and their crops lighter. The Suffolk polled cows are altogether used for the dairy—they are very excellent milkers, and a valuable breed. The Suffolk Punch horse is here found in great perfection, and they are the best breed of work-horses I have seen. The horses are large, but clean-limbed, good travellers, and very valuable. These are worth from 30*l.* to 60*l.* But I must close. *New York State Agricultural Journal.*

METEOROLOGICAL REPORT.—September—October.
(*Continued from p.* 638.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Sept. 30 | 10.10 p.m. | 29.35 | ... | Gentle breeze; starlight. |
| Oct. 1 | 6.30 a.m. | 29.06 | ... | SE. A.M. Blowing hard; barometer falling fast; hard rain. |
| ¶ | 1 p.m. | ... | 28.85 | SSW. Do.; clearing a little. |
| | 1.30 p.m. | ... | 28.85 | 1.30 P.M. Moderating and veering to SW. |
| | 9.50 p.m. | 28.91 | ... | P.M. SW. Brisk; showery; barometer rising. |
| 2 | 6.50 a.m. | ... | 29.09 | A.M. Brisk SW., with heavy |
| | 1.30 p.m. | 29.28 | ... | storms; barometer rising. |
| | 7 p.m. | ... | 29.27 | 4 30 P.M. Barometer fell again; wind backed to SSW., and increased; night rainy. |
| † 3 | 7 a.m. | ... | 29.25 | Fine morning; heavy cumuli in southern horizon. Noon, NW. and gentle; P.M. overcast; brisk breeze SW., but barometer still rising. |
| | 5.30 p.m. | 29.45 | ... | Evening raining. |
| ‡ 4 | 7.35 a.m. | ... | 29.40 | A.M. W., P.M. SW. Brisk |
| | 11.40 a.m. | 29.43 | ... | breeze, and fine pleasant day; barometer stationary after 11.40 A.M. |
| Sun. 5 | 7.50 a.m. | ... | 29.50 | A.M. WSW., 11 WNW., 5.50 NW. Brisk; fine day; barometer rising |
| | 11 p.m | 29.72 | ... | steadily. |

¶ The cyclonic nature of this storm at Portland was so evident, that it was adverted to by a correspondent of the *Times*, and by the local newspapers; the violence of it having washed away a considerable portion of the stage-frame of the breakwater of the harbour of refuge in Portland Roads. Although the force of the wind was more particularly experienced there, this storm's eye must have been of considerable extent, as it passed over Woolwich at about the same time, as I there observed the veering of the wind to be nearly the same, and a fine forenoon was succeeded by a rainy disagreeable evening. This storm travelled northward, having come from the south.

† This storm came from the westward, and travelled eastward, being produced by the collapse of the hinder quadrants of preceding storm.

‡ This storm came from the westward, also, and the same observations apply to this as to the preceding storm.

Dorchester [Oct. 9]. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

SEPTEMBER.

West Somersetshire, *Sept.* 29.—The weather of the past month has been of a most delightful autumnal character, but though fine, it has likewise been dry; during that period

north-east winds prevailed, with no rain; consequently vegetation has been retarded, so that the little rain which we had last week was of service, though more is wanted, and is apparently coming. Turnips and Mangold Wurzel are a fair average crop with us this year, though we have complaints in other districts of the former being attacked with a species of caterpillar. Potatoes are affected, but not, I think, to the extent of former years. Owing to the shortness of Grass, we are here, and further up the country, sending sheep to Turnips rather earlier this year; in moist situations, however, the pastures have stood pretty well, the water under keeping them fresh and green, whilst the uplands on the sand and limestone have been brown and burnt up. We had a splendid time for finishing off our harvest, and both hay and corn may be said to be an average, and in localities above an average crop. Advantage was taken of the late slight change in the weather to plough the stubbles, and sow Rye and Vetches. On the subject of the latter crop, there appeared an interesting paper in your last number but one, in all of which I concur, particularly where it is stated that this crop should be (when sheep are on it), mown and put in racks, instead of being trampled down and mixed with their refuse; also in the mode of cultivating winter Vetches followed by Turnips, both consumed by sheep, leaving the soil improved by the double fold, and in a fine state for Wheat. The numbers of agriculturists who have, in common with other classes, visited town and the Exhibition, will no doubt derive benefit, and have the r ideas enlarged and their prejudices ameliorated; and regarding agricultural machinery, new hints will be given, particularly as to the new invention of the reaping machine and other improvements. This last will no doubt at first, as was the case with threshing and other machines, cause discontent to labourers on its first introduction, but will in the end be to their advantage. *E.*

## Notices to Correspondents.

A Tenant holding a Farm, Yearly, from the 5th of April, Subject to Six Months' Notice to Quit.—*J T.* Query: Is a notice served on the 4th day of October legal?

Cochin China Fowls: *J W.* We know of no work specially on this breed, but have made inquiry.

Ear of Wheat: *J W.* It is Triticum compositum, Egyptian Wheat.

Lime made from Chalk: *C L.* It is as valuable as that made from stone, but it is rarely used, because a large dose of unburned chalk is cheaper and as effectual as a small dose of the same after being burned.

Open Boarded Floors for Cattle: *J W* says, "Would Mr. Mechi give the public the benefit of his further experience on the above—particularly would he say what *drawbacks* the system has? Has he, or have any of your readers tried open boarded floors for *milch cows?*"

Poultry: *T B W.* Silk fowls are not excluded from the "Midland Counties Poultry Show." They come in the class of other distinct breeds or varieties, to which the judges, by the rules, have power to award such prizes as they may seem to merit. A separate class for each denomination of fowl would be impossible, but prizes are provided for all. *J. Baily*, 113, *Mount-street.*

Waterproofing: *W W R P* wants a recipe for waterproofing a rick cloth.

Weeds, &c.: *T F.* We would advise industry in fallowing during hot, dry weather, and *not* salt. Drain from the lowest level you can get with a slight fall, till you get 3½ feet deep, and then keep that depth through the rest of the field.

# Markets.

## COVENT GARDEN, Oct. 11.

A few melting Peaches may yet be obtained. English Pines are large and fine. Grapes are abundant. Dutch Hamburghs are imported in considerable quantities, and good ones realise as much as 9d. and 1s. 3d. per lb. Pears are also brought from the Continent. The best English kinds are Gansel's Bergamot, Brown Beurré, and Marie Louise. These fetch from 2s. to 4s. a doz., and 8s. to 12s. per half sieve. Damsons are scarce. A cargo of St. Michael Oranges has just arrived, which is at least a month before the usual time. Nuts remain nearly the same as quoted last week. Some Spanish ones have made their appearance. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 2s to 4s |
| Peaches, per doz., 6s to 12s | — per 100, 14s to 30s |
| Melons, each, 1s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Damsons, p. half sieve, 6s to 7s | — Brazil, p. bsh., 12s to 14s |
| Apples, kitchen, p. bsh., 1st o 1s 6d | Filberts, per 100lbs., 70s to 90s |
| Pears, dessert, p. doz., 2s to 4s | Walnuts, per bush., 12s to 24s |
| Lemons, per doz., 1s to 2s | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 3d to 6d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 4d to 6d |
| French Beans, p. h. sieve, 2s to 4s | Artichokes, per doz., 4s to 6s |
| Beans, per sieve, 1s 6d to 2s | Lettuce, Cab., p. score, 4d to 1s |
| Peas, per sieve, 1s 9d to 3s 6d | — Cos, per score, 3d to 1s |
| Potatoes, per ton, 45s to 80s | Small Salads, p. punn., 2d to 3d |
| — per cwt., 2s to 5s | Horse Radish, p. bundl., 1s 6d to 6s |
| — per bush., 1s 6d to 2s 6d | Red Beet, per doz., 1s to 2s |
| Turnips, p. bunch, 2d to 4d | Mushrooms, p. pot., 1s 6d to 2s |
| Cucumbers, each, 1d to 1s | Sorrel, per hf. sieve, 6d to 9d |
| Radishes, per doz., 9d to 1s 6d | Tomatoes, p. half sieve, 3s to 4s |
| — Turnip, p. doz., 1s to 1s 6d | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Vegetable Marrows, per doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Leeks, per bunch, 1d to 2d | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

## COAL MARKET.—Friday, Oct. 10.

Eden Main, 16s. 6d.; Wallsend Haswell, 17s. 6d.; Wallsend Hetton, 17s. 6d.; Wallsend Lambton, 17s. 6d.; Wallsend Stewarts, 17s. 6d.—Ships at market, 230.

## HAY.—Per Load of 36 Trusses.

### Smithfield, Oct. 9.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 60s to 84s |
| Inferior ditto... ... | 55 65 | New do. ... ... ... | — — |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 22 27 |
| New Hay ... ... | — — | | J. Cooper. |

The trade heavy.

### Cumberland Market, Oct. 9.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 68s to 78s |
| Inferior ditto... ... | 60 70 | New Clover ... ... | 65 75 |
| New Hay ... ... | 60 70 | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 84 90 | | Joshua Baker. |

### Whitechapel, Oct. 9.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 70s to 76s | Old Clover ... ... | 80s to 88s |
| Inferior ditto... ... | 50 60 | Inferior ditto ... | 70 80 |
| New Hay ... ... | 63 70 | New Clover ... ... | 70 84 |
| Straw ... ... ... | 22 25 | Inferior ditto... ... | 50 63 |

## HOPS.—Friday, Oct. 10.

Messrs. Pattenden and Smith report that the demand for choice new Hops continues to improve, and prices for all sorts fully maintained. Letters from the Continent state that the growth of Hops there falls fully two-thirds short of an average crop, in consequence of which the merchants here are exporting largely both old and new Hops. Present prices:

| | | | |
|---|---|---|---|
| Mid & East Kents | 168s to 252s | Sussex ... ... | 120s to 140s |
| Weald Kents ... | 130s to 150s | Farnhams ... | 168 —252 |

Duty 115,000*l.*

## SMITHFIELD, Monday, Oct. 6.

The number of Beasts to-day is rather smaller, but still it exceeds the demand. A few of the choicest make 3s. 6d., but it is too high to quote; on the whole, prices are about the same as on Friday last. Several second-rate remain unsold. The supply of Sheep is not quite so large as of late; trade is more cheerful, but only in few instances higher prices are obtained. Good Calves are scarce and rather dearer. From Holland and Germany there are 1458 Beasts, 3340 Sheep, 98 Calves, and 149 Pigs; and from Leicester, Northampton, and Lincoln, 2550 Beasts.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. ... | 3 | 2 | to 3 | 4 | Best Long-wools . | 3 | 6 | to 3 | 8 |
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 0 | — 2 | 8 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 3 | 10 | — 4 | 0 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... .. | 0 | 0 | — 0 | 0 |
| | | | | | Calves ... ... | 2 | 8 | — 3 | 10 |
| | | | | | Pigs ... ... | 3 | 4 | — 4 | 0 |

Beasts, 5951; Sheep and Lambs, 27,090; Calves, 185; Pigs, 550.

## Friday, Oct. 10.

The number of Beasts is large, but principally inferior in quality. Many middling ones remain unsold. On the average of business done (which is but trifling), prices range about the same as on Monday. We have a fair supply of Sheep; trade is cheerful for them at late rates. Good Calves are scarce and quickly sold; indeed, all kinds meet with a more ready sale. From Germany and Holland we have 649 Beasts, 1420 Sheep, and 125 Calves; and from the home counties we have 126 milch cows.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. ... | 3 | 2 | to 3 | 4 | Best Long-wools . | 3 | 6 | — 3 | 8 |
| Best Short-horns | 3 | 0 | — 3 | 2 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 0 | — 2 | 6 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 3 | 10 | — 4 | 0 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| | | | | | Calves ... ... | 2 | 10 | — 3 | 10 |
| | | | | | Pigs ... ... | 3 | 4 | — 4 | 0 |

Beasts, 1262; Sheep and Lambs, 5510; Calves, 296; Pigs, 490.

## MARK LANE.

Monday, Oct. 6.—The supply of Wheat from Essex and Kent to this morning's market was smaller than of late, which enabled factors to realise 1s. per qr. advance. There was an improved demand for foreign, on the extreme terms of this day se'nnight, and in some instances more money was obtained. A cargo or two of Polish Odessa Wheat has been disposed of at 30s. 6d., cost and freight to the Continent, but they are generally held for more money.—There is no alteration in the value of Barley; inferior descriptions are a dull sale. —White Peas are very scarce, and bring 1s. to 2s. per qr. more money; other sorts are unaltered in value.—Beans are cheaper. —Old Oats meet a fair inquiry at late rates; new are 6d. per qr. cheaper.—The best marks of foreign Flour must be written 6d. per sack and barrel dearer.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —41 | Red ..... | 37 | —39 |
| — — fine selected runs...ditto | 40 | —41 | Red ..... | 38 | —40 |
| — — Talavera ..... | 44 | —46 | | | |
| — Norfolk, Lincoln, & York... White | 33 | —36 | Red ..... | — | |
| — Foreign ..... | 30 | —48 | | | |
| Barley, grind. & distil., 24s to 25s...Chev. | 28 | —30 | Malting . | 25 | —28 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | 16 | —20 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —24 | Feed ..... | 16 | —21 |
| — Irish ..... Potato | 18 | —22 | Feed ..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed ..... | 16 | —19 |
| Rye ..... | 23 | —27 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..28s to 27s.....Tick | 24 | —30 | Harrow . | 24 | —30 |
| — Pigeon.....26 — 32... Winds | 30 | —33 | Longpod | 24 | —26 |
| — Foreign ..... Small | 21 | —20 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boiler- | 28 | —30 | Suffolk... | 29 | —31 |
| — Maple.....27s to 29s .....Grey | 22 | —25 | Foreign . | 25 | —29 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 32 | —37 | | | |
| — Suffolk .....ditto | 26 | —32 | Norfolk . | 26 | —32 |
| — Foreign .....per barrel | 15 | —21 | Per sack | 28 | —33 |

Friday, Oct. 10.—The arrivals of all grain and Flour this week have been small. This morning's market was fairly attended, and the business transacted in Wheat off the stands was not large, but at extreme rates. Floating cargoes of Polish Odessa have been sold at 31s. 6d. cost and freight to the Continent; 31s. cost, freight, and insurance to Dublin. There is no alteration in the value of Barley, Beans, and Peas; inferior Barley and Oats are a very slow sale.—Flour meets a fair trade at full prices.

Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2080 | 2060 | 40 | 1210 sacks |
| Irish ..... | — | — | 1220 | |
| Foreign ... | 3750 | 1000 | 7180 | 580 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Aug. 30..... | 39s 1d | 25s 10d | 20s 8d | 26s 9d | 30s 7d | 26s 6d |
| Sept. 6..... | 38 9 | 26 1 | 20 1 | 26 2 | 30 4 | 25 11 |
| — 13..... | 38 5 | 26 1 | 19 5 | 25 0 | 28 9 | 27 8 |
| — 20..... | 37 8 | 25 7 | 18 4 | 26 2 | 28 6 | 28 2 |
| — 27..... | 36 7 | 25 0 | 18 0 | 25 4 | 28 8 | 27 0 |
| Oct. 4..... | 35 7 | 25 1 | 17 6 | 24 2 | 27 10 | 27 1 |
| Aggreg. Aver. | 37 8 | 25 7 | 19 2 | 25 7 | 29 1 | 27 1 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

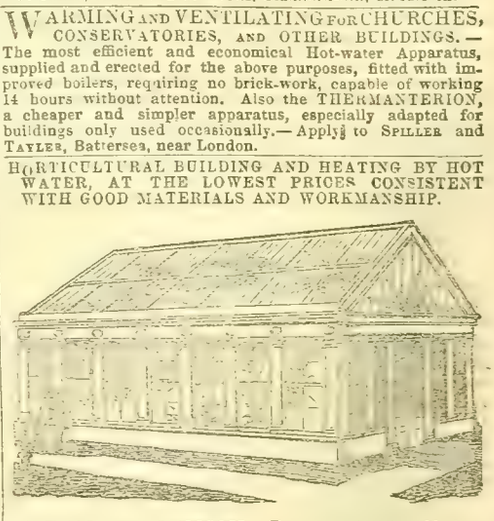
| Prices. | Aug. 30. | Sept. 6. | Sept. 13. | Sept. 20. | Sept. 27. | Oct. 4. |
|---|---|---|---|---|---|---|
| 39s 1d | — | ... | ... | ... | ... | ... |
| 38 9 | ... | ... | ... | ... | ... | ... |
| 38 5 | ... | ... | ... | ... | ... | ... |
| 37 8 | ... | ... | ... | ... | ... | ... |
| 36 7 | ... | ... | ... | ... | ... | ... |
| 35 7 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Oct. 7.—Except a moderate supply of Oats and a fair quantity of Oatmeal, the fresh arrivals into this port from Ireland, and those generally coastwise are still very inconsiderable. At our Corn Exchange this morning we experienced a moderate demand for fair runs of foreign Wheat from country millers, at a further slight improvement upon that of Friday, increasing the quotations for such 1d. to 2d. per 70 lbs. upon the rates of this day se'nnight. Of farmers' new Wheat, the supply was large, and the condition being good attracted attention in preference to the former. Barley and Malt, the former being scarce, fully supported late prices. Beans were little noticed, but unaltered in value. Peas improved 1s. per qr. Oats were rather cheaper, and Oatmeal declined 6d. per load. Indian Corn maintained its previous value.—Friday, Oct. 3.—At our market this morning, the Wheat trade assumed a firmer aspect, and in most descriptions of foreign Wheats transactions to a fair amount were entered into, at an advance of 1d. per 70 lbs. all qualities of new supporting previous quotations. As little or no Barley remains here, prices are nominal. Beans and Peas, upon a limited inquiry, sustained their late value. Oats were cheaper, and Oatmeal hardly maintained the rates of Tuesday. Indian Corn, being in slow request to day, merely supported the terms last noted.


GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1¾ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.
J. Lewis, Horticultural Works, Stamford-hill, Middlesex.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to Spiller and Tayler, Battersea, near London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

THE ROYAL EXHIBITION.
FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, Potter, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following:—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1¾ in. | 6 | 4¾ in. | 11 | 8¾ in. | 16 | 15 in. |
| 2 | 2¼ ,, | 7 | 5¼ ,, | 12 | 9¼ ,, | 17 | 16 ,, |
| 3 | 2¾ ,, | 8 | 6¼ ,, | 13 | 11 ,, | 18 | 18 ,, |
| 4 | 3¼ ,, | 9 | 7 ,, | 14 | 12¼ ,, | 19 | 20 ,, |
| 5 | 4 ,, | 10 | 8 ,, | 15 | 14 ,, | 20 | 22 ,, |

Saucers and Seed Basins the same width as the Pots.

Persons visiting the Royal Exhibition can inspect Charles Phillips's Pottery, &c., in the Model Greenhouse, situate at the West Entrance of the Crystal Palace. C. P. deems it superfluous to laud either the quality of his Clay, or the style in which his goods are manufactured, but confidently refers those parties who have not yet patronised him to the Royal Gardens at Frogmore and Kew, and to the principal Nurserymen in London, Slough, Reading, Oxford, Swindon, Cirencester, Stroud, Worcester, Gloucester, Cheltenham, Bath, Bristol, Taunton, Tiverton, Exeter, Torquay, Totnes, Plymouth, North and South Wales, &c., &c., for the quality of the articles which he has had the honour of supplying them with. All orders for the above Goods will be promptly forwarded, Carriage Free, to any Railway Station within 150 miles of the Manufactory, either in dozens, casts, hundreds, or thousands. Every description of Red Ware, Sewerage, Piping, Closet-Pans, Chimney-Pots, Land Drain Pipes, Seakale Pots, Vases, Tiles, Bricks, &c.

Lists of Prices, Terms, &c., forwarded to any address.
Manufactory, Locking Road, Weston-Super-Mare, Somerset.
Established 1836.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

Her Majesty's Woods and Forests,
Honourable Board of Ordnance,
Honourable East India Company,
Honourable Commissioners of Customs,
Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny per Square Foot.

⁂ Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'Neill and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛ inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered :— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 14 feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 14 feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. | Ins. | Ins. | Ins. | | s. | d. |
|---|---|---|---|---|---|---|
| 6 by 4 | and | 6½ by 4½ | ... ... ... ... | | 10 | 6 |
| 7 by 5 | ,, | 7½ by 5½ | ... ... ... ... | | 12 | 0 |
| 8 by 6 | ,, | 8½ by 6½ | ... ... ... ... | | 13 | 0 |
| 9 by 7 | ,, | 9½ by 7½ | and 10 by 8 ... ... ... | | 15 | 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

### GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 2 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

### GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

### GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 inches | by 4 | and | 6½ | by 4½ | ... ... ... | 13*s.* | 0*d.* |
| 7 ,, | 5 | ,, | 7½ | by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 5 | and | 8 | by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 6 | and | 8½ | by 6½ | ... ... ... | 17 | 6 |
| 9 ,, | 7 | and | 10 | by 8 | ... ... ... | 20 | 0 |
| 12 ,, | 10 | and | 13 | by 9 | ... ... ... | 20 | 0 |

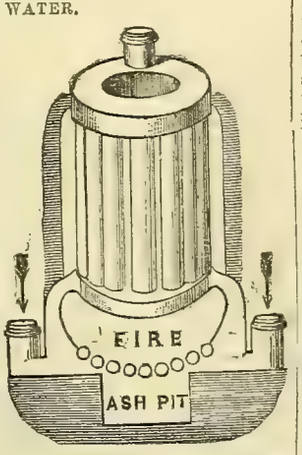
And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | | |
|---|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d.* | per foot. |
| ,, ,, 35 ,, | ..... | 8*d.* | ,, |
| ,, ,, 50 ,, | ..... | 9½*d.* | ,, |
| ,, ,, 75 ,, | ..... | 12*d.* | ,, |

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.




J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

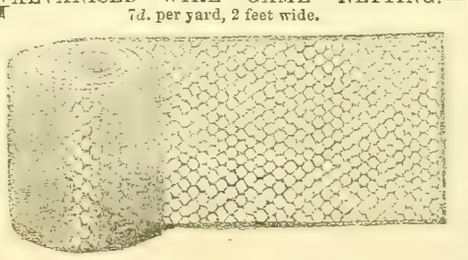
J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

### GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

### GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide | ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

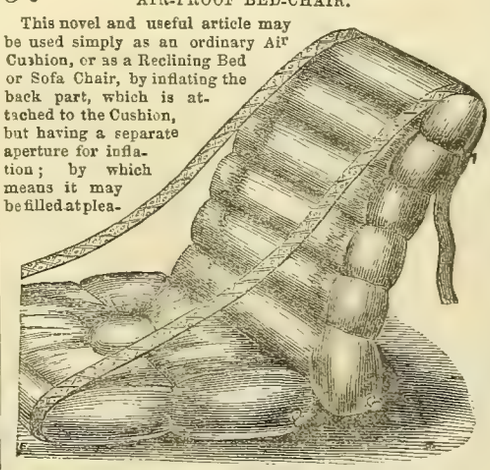
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

### THE GREAT EXHIBITION, HYDE PARK.

North-west Gallery—Class 28, No. 83.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.



This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part, which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber Manufactory, Goswell-road, London, will meet with immediate attention.

CHEAP GLASS.—16 oz. Glass supplied for garden purposes at 2½*d.* per foot; small sizes, 1*d.* per foot; Lights Primed and Glazed, from 1½*d.* to 3*d.* per foot; at HICKSON'S Foreign and English Glass Warehouse, 46, Long Acre, London.

GREENHOUSES.—To be Sold, a bargain, Two Strong-built Greenhouses; one 18 feet long by 10 feet wide, the other 25 feet long by 12 feet wide. A Plan and Particulars sent by addressing a letter to Mr. SMITH, 85, White Lion-street, Islington, London.

### ADULTERATION OF FOOD.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, begs to call attention to his ACHROMATIC MICROSCOPES (warranted good) which will be exchanged if not approved of. These Instruments will define the Circulation of the Blood in the Frog's Foot, the Saw in the Sting of the Wasp, the Comb in the Spider's Foot, the beautiful form and varieties of Pollen in Flowers and their Structure, the Scales of the Butterfly's Wing, and also in many instances Adulteration of Food. It is a very interesting companion, and will pass away usefully many a leisure hour, the fund for observation being inexhaustible. Price for No. 1, 3*l.* 12*s.*; No. 2, 5*l.* 15*s.*; No. 3, 9*l.* 10*s.* A descriptive Book, sent post free, on receipt of three postage stamps. Prepared objects, 12*s.*; injected do., 30*s.* per dozen.

### VINAIGRE DE BORDEAUX.

PURE WINE VINEGAR (preferable to any other) of the finest quality, highest strength, well matured, and in colour and brilliancy like the wine from which it is made.—Sold by Chemists, Grocers, and Wine Merchants throughout the kingdom, whose names may be learnt on application to the importers, W. and S. KENT and SONS, Upton-on-Severn.

N.B.—Export orders from Bonded Warehouses ex duty.

Stores in London, Liverpool, and Hull.

### ZOOLOGICAL GARDENS, REGENT'S PARK.—

The URAN UTAN, presented by the Governor of Singapore, is exhibited daily, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by H. H. The Viceroy of Egypt. Admission, 1*s.* On MONDAYS, 6*d.*

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. The fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

### ROWLANDS' MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the human hair, is too well known and appreciated to need comment. For Children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine comb unnecessary.—Price 3*s.* 6*d.*, 7*s.*; family bottles, equal to 4 small), 10*s.* 6*d.*, and double that size, 24*s.* per bottle.

N.B. Each bottle of the genuine article has the words—ROWLANDS' MACASSAR OIL, engraved in two lines on the wrapper; and on the back of the wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Druggists.

### NEW SHOW ROOMS FOR BEDSTEADS.

HEAL AND SON have erected some extensive Warerooms for the purpose of keeping every description of Bedsteads. In Iron their stock will include every sort manufactured, from the cheap Stump, for servants' use, to the handsomely ornamented tubular-pillared Canopy, as well as Brass Bedsteads of every shape and pattern; and in wooden Bedsteads their Rooms are sufficiently extensive to allow them to fit up a variety, both in Polished Birch and Mahogany, of Fourpost, Canopy, and French, and also of Japanned Bedsteads—in fact, to keep in Stock every sort of Bedstead that is made; and they have also a general assortment of Furniture, Chintzes, Damasks, and Dimities, so as to render their Stock complete for the Furnishing of Bedsteads as well as Bedding. And without attempting to compete with the prices at which the lowest class of Furniture is sold, and which is fit for no useful purpose, their new Stock will be found to be priced on the same principle by which their Bedding trade has, during the last 30 years, been so successfully extended, and the goods, whether of a plain and simple pattern, or of a handsomer and more expensive character, are of well-seasoned materials, sound workmanship, and warranted.

HEAL and SON'S list of Bedding, containing full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post, on application at their Factory,

196 (opposite the Chapel), Tottenham Court Road, London.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2½ yards wide, and of any required length, at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

## SALES BY AUCTION.

ISLINGTON NURSERY.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed, by Mr. G. Smith, to offer to public competition by Auction, on the premises, on MONDAY, October 13th, and two following days, at 11 o'clock each day, in consequence of the Land being let for building, the whole of the valuable NURSERY STOCK, comprising several thousand scarlet, white, and Hybrid Rhododendrons, Ghent, and other Azaleas, variegated and green Hollies, of various sizes, in considerable quantities, several thousand Aucuba japonica, from 1 to 4 feet; a large quantity of fine Mulberries of different ages, many of which are fine bearing trees, &c.—May be viewed prior to the sale.—Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, October 16, at 12 o'clock, a first-class collection of DUTCH BULBS, comprising fine Double and Single Hyacinths, Narcissus, Jonquils, Tulips, Crocus, Snowdrops, Anemones, Gladiolus, &c.; a selected assortment of American Plants, consisting of Ghent and other Azaleas; Hybrid Rhododendrons, Andromeda floribunda, Kalmias well set with bloom-buds, the best varieties of Standard and Dwarf Roses, &c.—May be viewed the morning of sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to sell by public Auction, on the premises, Chester Nursery, Kennington (near Walcot-terrace), on FRIDAY, October 17th, and following day, at 11 o'clock each day, the whole of the NURSERY STOCK, comprising Chinese Arbor-Vitæ, Aucuba, Evergreen Privet, Lilacs, Dwarf Roses, Gooseberries, Currants, &c.; Greenhouse Plants, consisting of the newest varieties of Geraniums, Fuchsias, Chrysanthemums, and Roses in pots, Camellias, Genista, Verbenas, &c.; five newly erected Greenhouses, 10 ranges of Pits and Boxes; together with about 600 feet of capital 4-inch hot-water Pipe, three excellent Boilers; a useful Horse, Spring Cart; a considerable quantity of Bricks, Garden Pots; Compost, and sundry effects. May be viewed prior to the sale; Catalogues (6d. each, returnable to purchasers) had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

VERY IMPORTANT SALE OF NURSERY STOCK, GREENHOUSES, &c., at
FAIRFIELD NURSERY, LONDON-ROAD, LIVERPOOL, THE PROPERTY OF THOMAS WHALLEY.

MESSRS. PROTHEROE AND MORRIS are instructed by the Proprietor to sell by public Auction, without reserve, on MONDAY, the 20th October instant, and following days, the Site of the Nursery being sold to a Building Society, the whole of the large NURSERY STOCK, covering upwards of 12 acres of Land, consisting of Evergreen Shrubs, including many superb Specimens of Scarlet Hybrid Rhododendrons, Ornamental Trees and Shrubs, standard and trained Fruit Trees, standard and dwarf Roses, Hothouse, Greenhouse, and Herbaceous Plants, &c. This Stock is well worthy the attention of Gentlemen and others intending to plant this season, as it is well grown, has been repeatedly removed, and is in fine healthy condition. Also, a large Conservatory, three Hothouses, a large Nine-light Brick Pit, Frames, Hand Glasses, &c., full particulars of which will be in the Catalogue, which may be had at the Nursery; at the Seed Warehouse, 12, St. George's-crescent; from the Auctioneers, Leytonstone, Essex; or free by post on receipt of six postage stamps.

N.B.—Arrangements may be made to leave the Purchases on the Ground for some months, free of expense, to suit the convenience of parties who may not be prepared for planting.

FREE TRADE IN BULBS AND PLANTS.

MR. J. RAWLINGS will Sell by Auction, at the Mart, Bartholomew-lane, on TUESDAY, Oct. 14, and following days, at 12 o'clock, the first portion of a large consignment of DUTCH BULBS, comprising the finest double and single Hyacinths, Narcissus, Tulips, Anemone, and Ranunculus, in 50 fine named sorts; all the new sorts of Crocus, Jonquils, Snowdrop, Gladiolus, Lily, &c. The finest varieties of Ghent Azaleas, Rhododendrons, &c., in cultivation, in fine condition for potting, being beautifully furnished with bloom buds. Standard, Dwarf, and Pillar Roses, including some fine specimens worked with four varieties, and a quantity of Moss and others, fine for potting. Also a collection of Lancashire Gooseberries, Hardy Heaths, Large Yuccas, and the new varieties of Strawberries, such as Myatt's New Early Surprise, and Eleanor, Willmott's Prince Arthur, Kitley's Goliah, &c. &c.—May be viewed the morning of Sale, and Catalogues had at the Mart, and of the Auctioneer, 50, Hoxton-square, and Ebenezer Nursery, Shacklewell.

N.B. On Thursday the lots will be particularly arranged for the convenience of large purchasers.

WANDSWORTH COMMON.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND PUBLIC COMPANIES, ENGAGED IN PLANTING.

MR. J. RAWLINGS will submit to public competition, by Auction, on the premises, Wandsworth Common (five minutes' walk from the Clapham station, and a quarter of an hour's walk from the Wandsworth station, on the South-Western Railway), on MONDAY, October 20, 1851, and ten following days, at 11 o'clock each day (by order of Mr. Robert Neal, in consequence of the ground being immediately required for other purposes), the whole of the valuable NURSERY STOCK, consisting of a considerable quantity of very fine Evergreens, Fruit and Forest Trees; New, Ornamental, and Deciduous Shrubs, &c.; many thousands of American plants, comprising fine scarlet and other Rhododendrons, Azaleas, Kalmia, Andromeda, Magnolia, &c.; a fine collection of Pinus, Standard and Dwarf Roses, and well-established plants in pots, of Clematis azurea grandiflora and flammula, Irish Ivy, Virginian Creeper, Bignonia, Choice Camellias, Chrysanthemums, &c. Also a large new 17-light Pit, 12 000 Bricks, a quantity of useful Timber, Paving Stones, and excellent Stone for Building. 400 loads of Rich Mould, a quantity of Garden-pots, &c.—May be viewed prior to sale. Catalogues (1s. each, returnable to purchasers), may be had on the premises, of the principal Seedsmen, and of the Auctioneer (post paid on application), 50, Hoxton-square, and Ebenezer Nursery, Shacklewell, London.—The whole of the Nursery Stock is in excellent condition, and having been planted within the last three years, may now be removed with the greatest safety.

FULHAM-ROAD.—TO NURSERYMEN, BUILDERS, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, on TUESDAY, November 11, and following day, at 12 o'clock, an assortment of Deciduous and Ornamental Shrubs and Trees, Rhododendrons, Azaleas, and other American Plants, Evergreens, Climbers, &c. &c. May be viewed prior to Sale, and Catalogues had, at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

CHELSEA.—SECOND PORTION OF THE VALUABLE NURSERY STOCK.

MR. D. A. RAMSAY will submit to public competition, on the premises, King's-road, Chelsea, on TUESDAY, October 28, and following day, at 12 o'clock (by order of Messrs. Dennis and Co.), the remainder of the Erections of Greenhouses, Garden Frames, and Lights, Greenhouse Plants of choice varieties, a fine collection of Aloes, Cacti, &c., lately removed from the Great Exhibition, fine Evergreens of various sizes, Crimson Rhododendrons, choice Yuccas, Climbers, in pots, Dwarf and Pillar Roses, and a collection of Pæonias, Scilla, and other Bulbs.—May be viewed prior to sale, and Catalogues had, on the premises, at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road.

NEW BROMPTON.
TO NURSERYMEN, MARKET GARDENERS AND OTHERS.

MR. D. A. RAMSAY has received instructions to Sell by Auction, on the Premises, Park Walk, New Brompton, on TUESDAY, Nov. 4, at 12 o'clock, by order of Mr. SALMON, the STOCK of a Market Gardener, comprising a Market Cart, Horse and Harness, Garden Frames and Lights, Baskets, Ladder, a Heap of Manure, and a large quantity of strong Moss Roses. Also an assortment of American Plants, Deciduous Shrubs, and Ornamental Trees, the property of a country nurseryman.—May be viewed one day prior to Sale, and Catalogues had on the Premises; and of the Auctioneer, Brompton Nursery, Fulham-road.

PARTNERSHIP.—The Proprietor of an old established, extensive, and increasing business in the NURSERY AND SEED TRADE, in the principal town of the South of England, contemplating retirement, is desirous of taking an active partner; one acquainted with the business would be preferred, and from whom a less premium would be expected. Not less than 2000*l.* would be required, for which an immediate return from the proceeds of the business of the forthcoming season would be guaranteed. None but persons of responsibility need apply, or will be treated with.—Apply to T. M. CATTLIN, Esq., 39, Ely-place, Holborn, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO BE LET.—FAMILY RESIDENCE AND FARM of 219 acres, on the Brighton Railway, and only one and a half hour's ride from London and Brighton. To be let at a very low rent, with the shooting; a singularly beautiful and healthy situation. The house contains eight chambers, two sitting-rooms, and offices. The farm buildings are remarkably good and mostly new, and include two cottages for labourers. The fields lie together and open, and the land, which is chiefly arable, has had the benefit, in the last seven years, of a very large outlay in draining and other permanent improvements; altogether it offers superior family accommodation, with a cheap and eligible opportunity for farming. For particulars and conditions, and cards to view, apply to Messrs. DAVIS and VIGERS, Land Agents, 3, Frederick's-place, Old Jewry, London.

TO BE LET, ON LEASE, at a Corn-rent, by Tender, and entered upon at Lady-day next, a most desirable FARM, situate in the parishes of Coleshill, Berks, and Ingleshame, Wilts, the property of the Right Hon. the Earl of Radnor. This Farm consists of 366A. 2R. 1P. of very rich and valuable Meadow, Pasture, and Arable land, and has upon it an excellent Residence, &c.; any farther information may be obtained from Mr. MOORE, Coleshill, Highworth, who will appoint a person to show the farm, and by whom tenders will be received, on or before the 22d of November next. The corn-rent will be calculated at a seven years' average on the prices of Wheat, Barley, and Oats, variable from year to year, as under the Tithe Commutation Act. The Tenders should specify the length of lease for which the tender is made. The highest tender not necessarily accepted; regard will be paid to the character, intelligence, and capital, of the persons tendering; respecting which, unquestionable references will be required.

In One Volume, fcp. 8vo, price 6*s.* cloth, the 4th Edition, corrected and improved.

RIVERS'S ROSE AMATEUR'S GUIDE; containing ample Descriptions of all the fine leading Varieties of Roses, regularly classed in their respective Families; their History and Mode of Culture.

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This day is published, in Two Volumes, handsomely half-bound, price 3*l.*, a new edition of

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On Tuesday, October 21, will be published, in 1 vol. post 8vo, with coloured Plates, price 14*s.* cloth,

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W. P. AYRES has the pleasure to inform his Friends that he has a few sets of the following select CINERARIAS, all of which he flatters himself will be found worthy of his commendation. They are now ready for delivery, and will be forwarded upon application. The usual discount to the Trade.

ORPHEUS.—A bright lilac purple flower, of fine form, the petals being broad and nearly free from serrature, and slightly inclined to cup. In habit the plant is first-rate, being dwarf, and produces side branches with great freedom; height, 9 inches. It obtained a Certificate at the National Floricultural Society in April, 1850, and was much admired by all who saw it. 10*s* 6*d*.

MAGNUM BONUM.—A very large flower, of lilac purple colour, and with petals of fine form and great substance; habit fine and unusually robust, and will be found admirably adapted for exhibition, as it will, with proper arrangement, form a specimen of very considerable size; height, 15 inches. Exhibited at the National Floricultural Society in April. 7*s* 6*d*.

VILLAGE QUEEN.—This is a flower in the way of Madame Mielliez, but superior to it; the colour is white with blue disc, and a lavender blue margin; the petals are broad, and their only fault is that of reflexing slightly at the points. The plant is of good habit and very free; height, 1 foot. 5*s*.

IAGO.—A dwarf and very distinct variety, the colour quite new; the flowers are small and abundantly produced, forming a very compact head; colour, heavy violet purple, bright, and very unusual; height, 9 to 12 inches. 5*s*.

GUSTAVUS.—A clean white flower, nicely contrasted by a bright purple disc, and deep lilac edge; the form is good, and the petals broad and of good substance; habit fine and robust; height, 9 inches. 5*s*.

UNIQUE.—A rich dark azure blue flower, with fiery disc and centre; the flower is of medium size, and the petals of good substance; habit free, bushy, and robust, and the flowers are produced very abundantly; it will make a fine specimen, and will be found quite distinct. 5*s*.

W. P. A. has also a good stock of the leading named kinds, which he can offer at the following prices:

| | | | |
|---|---|---|---|
| 12 distinct and showy kinds | ... | ... | 12*s.* 0*d.* |
| 12 superior do. | ... | ... | 21 0 |
| 12 very fine, fit for exhibition | ... | ... | 30 0 |

Cash or Post-office order.

Brooklands Nursery, Blackheath, London.

NEWPORT NURSERY GROUNDS, ISLE OF WIGHT.

WILLIAM WILKINS, NURSERYMAN and FLORIST, invites the attention of the Public to his very large and choice collection of Fruit and Forest Trees, new Coniferæ, Evergreen and flowering Shrubs, American Plants, Standard and Dwarf Roses, &c., which by periodical removals are prepared for planting out, so as to insure success, the whole of which he will supply on very moderate terms. Greenhouse and Herbaceous Plants in great variety, Geraniums, Verbenas, Heliotropes, Cupheas, Salvias, Fuchsias, Carnations, Pansies, Pinks, Petunias, and other Bedding-out Plants, Dahlias and Florists' Flowers, Raspberry, Strawberry, Rhubarb, Asparagus, Artichoke, Celery, Cauliflower, Herb and Seakale Plants, Russia Mats, Thorn Plants for Fencing, of prime quality, at very low prices.

W. W. having declined the Seed business, has been enabled to give his exclusive attention to the propagation of the large stock now growing in fine and healthy condition in his Nursery, and all orders with which he may be favoured will receive prompt and careful attention, so as to merit a continuance of that distinguished patronage he has for so many years enjoyed, and for which he returns his sincere thanks.

DUTCH HYACINTHS, per doz., 6*s.* to 12*s.*
Or an assortment of three dozen, best sorts, for 16*s.* 6*d.*

| | | | |
|---|---|---|---|
| Double Roman Narcissus ... ... ... | per doz. | 3 | 0 |
| Double and Single Van Thol Tulips ... | ,, | 1 | 0 |
| Mixed Tulips ... ... ... ... ... | ,, 1*s.* to | 6 | 0 |
| Jonquils ... ... ... ... ... ... | ,, | 2 | 0 |
| Crocus, in variety ... ... ... ... | per hundred | 2 | 0 |

*And other roots, of which lists may be had free.*

ROBERT HALL begs to advise the arrival of his annual importation of BULBS, in high perfection, especially drawing attention to the double Roman Narcissus, which for early blooming and fragrance is not surpassed.

Also to the following items of Foreign produce, of his own importation, and choice quality, viz.:—

| | *s.* | *d.* |
|---|---|---|
| French Liqueur Ginger Brandy, an excellent Stomachique, Anti-Cholera, and invaluable in Spasms, per bottle ... | 5 | 0 |
| Curaçao and Maraschino, per bottle ... ... ... ... | 14 | 0 |
| French Liqueurs, per bottle ... ... ... ... ... | 14 | 0 |
| Milk Punch, per dozen ... ... ... ... ... ... | 42 | 0 |
| Old Pale Brandy, per dozen ... ... ... ... ... | 60 | 0 |
| Genuine Dantzic Spruce, per bottle ... ... ... ... | 2 | 0 |
| Old Cordial Gin, per gallon ... ... ... ... ... | 13 | 0 |
| Old Jamaica Rum, per gallon ... ... ... ... | 18 | 0 |
| Pale Brandy, "old in bottle," per bottle ... ... | 6 | 0 |
| Farantosh Whisky, per gallon ... ... ... ... | 21 | 0 |
| Batavia Arrack, 15 years in bottle, per bottle ... ... | 10 | 6 |
| Kershenwasser, per bottle ... ... ... ... ... | 10 | |
| Sardines à l'huile, per case ... ... ... ... ... | 2 | 0 |
| Gorgona Anchovies, bottled abroad, per bottle ... ... | 2 | 0 |
| Honeycomb Parmasan Cheese, per lb. ... ... ... | 2 | 0 |
| New Gruyere Cheese, per lb. ... ... ... ... ... | 1 | 8 |
| Naples Maccaroni, per lb. ... ... ... ... ... | 0 | 10 |

ROBERT HALL, 63, South Audley-street, Grosvenor-square.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, October 11, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 42—1851.] SATURDAY, OCTOBER 18. [PRICE 6*d.*


INDEX.


Apricot disease ..... 664 c
Beans, culture of ..... 668 b
Birds, British song ..... 680 b
Biscuit, meat ..... 662 a
Breeding of fish ..... 659 b
Calceolarias, bedding ..... 661 b
Calendar, Horticultural ..... 664 a
Carrots, winter ..... 661 c
Celery, to blanch ..... 661 a
Corn, culture of ..... 667 b
Cryptomeria japonica ..... 669 c
Cucumber disease ..... 661 a
Dahlia shows ..... 663 b
Diarrhœa, use of Salep in .... 661 c
Draining ..... 668 b
— companies ..... 668 c
Entomological Society ..... 662 b
Evergreens to transplant ..... 660 c
Farm buildings ..... 667 a
Fish, breeding of ..... 659 b
Flax, winter ..... 668 a
Flora, American, Popular Nomenclature of, rev ..... 662 b
Fox moth ..... 662 a
Fuchsia Riccartoni ..... 661 c
Garden walks ..... 659 a
Grape growing, quick ..... 662 a
Hedera Regueriana ..... 661 b
Hollyhock, the ..... 663 a
Manchester Agricultural Show 669 a
Manure, sewage ..... 666 b
— granite as ..... 667 b
Meat biscuit ..... 662 a
Mocking bird ..... 661 a
Musa Cavendishii ..... 661 c
National Flori Society ..... 663 b
Neill, the late Dr. ..... 663 c
Onions, winter ..... 661 c
Orchids for the million ..... 660 a
Paris Horticultural Show .... 662 a
Plough, steam .. ..... 665 c
Ploughing .. ..... 665 a
Potatoes, early planted ..... 661 a
— to winter ..... 661 c
— in Kent ..... 668 c
Poultry disease ..... 667 c
Prices of goods .. ..... 667 c
Rollisson's nursery ..... 662 c
Salep use of in diarrhœa ..... 661 c
Salisburia adiantifolia ..... 661 c
Statistics agricultural ..... 668 c
Temperance ..... 668 b
Transplanting evergreens .... 660 c
Walks, asphalte ..... 659 a
Weather, the ..... 670 b
Wheat prices of ..... 668 a
— Wrench's, samples of ... 670 a
Word in Season, rev ..... 669 c



## ROSES.

WILLIAM WOOD AND SON will be happy to forward Copies of their New ROSE CATALOGUE GRATIS on application.

Woodlands Nursery, Mayesfield, near Uckfield Sussex.

HOLLYHOCKS, fine, warranted all double varieties, 5*s.* per dozen, 30*s.* per 100. Ditto Seedlings, from named flowers, 20*s.* per 100, 3*s.* per dozen.

LARGE MAJOR WHITE ROCKET, 15*s.* per 100, 2*s.* 6*d.* per dozen.

HERBACEOUS PLANTS, finest collection, 30*s.* per 100, 4*s.* per dozen.

Catalogues of Roses, &c., can be had for one stamp. Excellent assortment of Fruit Trees, Shrubs, &c.

DILLISTONE and Co., Sturmer Nurseries, Halsted, Essex.

EXOTIC NURSERY, KING'S-ROAD, CHELSEA. We have a fine stock of ARAUCARIA IMBRICATA, CEDRUS DEODARA, RHODODENDRON PONTICUM, in remarkably well-grown plants, of various sizes. This being the best time of the whole year for planting them, we beg respectfully to recommend them in an especial manner, to those who intend embellishing their estates and gardens by ornamental planting, and shall be happy to furnish size and price when applied for. KNIGHT and PERRY.

TO FLORISTS, AMATEURS, AND GARDENERS.

M. WOOLLARD begs most respectfully to announce her intention to dispose of the entire Stock of FLORIST FLOWERS belonging to her late husband, consisting of a large collection of fine healthy plants of Auriculas; a very valuable collection of Ranunculuses; and all the new and best varieties of Carnations, Picotees, and Pinks.

Royal William Inn, Ipswich, Suffolk.

HOLLYHOCKS, PINKS, AND PANSIES.

J. CHATER AND SON'S Catalogue of the above Flowers, in which will be found most of the best varieties in cultivation, may be had on application to JOHN CHATER and SON, Nurseries, Haverhill, Suffolk. Also may be had, for 20*s.*, carriage free to London, 12 pairs of new and choice Pinks; 12 new and choice Pansies; 6 fine show Hollyhocks; fine double mixed Hollyhocks, 30*s.* per 100; Hollyhock and Pansy Seed, 2*s.* 6*d* per packet.

TWENTY GERANIUMS FOR ONE POUND.

TWENTY CHOICE NAMED GERANIUMS FOR TWENTY SHILLINGS, can be selected by the purchaser from the following list:—Foquett's Magnificent, Topping's Brilliant, Hoyle's Crusader, Arnold's Virgin Queen, Falstaff, Lyne's Forget-me-not, Delicatissima, Rosy Circle, Nourmahal, Desdemona, Sir Robert Sale, Hebe's Lip, Centurion, Negress, Cassandra, Pluto, Symmetry, Gustavus, Gulielma, Sunrise, Duke of Cornwall, Grandiflora, Orion, Black Prince, Mercury, Star of the West, Lady Ebrington, Jenny Lind, Scarlet Defiance, Flora's Flag, and Emilia.

SCARLET GERANIUMS.

Flower of the Day, Excellence, Glendinning's Perpetual, Magnum Bonum, Queen of Summer, Fire Queen, Royalist, Commander-in-Chief, Resilium, Hendersonii, Monarch, Britannia, and General Tom Thumb.

*All Orders above 2l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railways, or to Cork, Dublin, or Belfast.*

Apply to WILLIAM E. RENDLE, Union-road, Plymouth, adjoining the terminus of the South Devon Railway.

THE FINEST NEW ROSES OF THE SEASON.

HYBRID PERPETUAL QUEEN VICTORIA (PAUL'S).—This is unquestionably the finest New Rose of the season; it is a seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly wax-like in appearance, and distinct from every other. Plants, in November, 10*s.* 6*d* each, with the usual discount to the Trade when three are ordered at once.

CLIMBING PERPETUAL ROBERT BURNS (PAUL'S.)—Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedole in colour; like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants, in November, 7*s.* 6*d.* each.

N.B. Each of these Roses has obtained a 1st Class Certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.

*** Further orders for the Roses can only be taken for plants in bud.

A. PAUL and SON, Nurserymen, Cheshunt, Herts.

HOLLYHOCKS.

JAMES KITLEY having a large Stock of fine double HOLLYHOCKS, consisting of about 40 varieties of all colours mixed, begs to offer them at 4*s.* per dozen; named to colour, 6*s.* per dozen; best show varieties, 2*s.* 6*d* each; fine double German varieties, very beautiful, 12*s.* per dozen. Hollyhock Seed, mixed, 2*s.* 6*d.* per packet, post free.

J. K. has also fine border Carnations and Picotees mixed, at 4*s.* per dozen; Single Russian Violets, 3*s.* per dozen; double do., 4*s.* per dozen; Neapolitan do., 3*s.* per dozen. A Post-office order required from unknown correspondents.

Lyncombe Vale Nursery, Bath, Oct. 18.

CARTER'S CATALOGUE OF BULBS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London, respectfully informs his customers, that his new Catalogue of Dutch Flowering Bulbs will be sent, gratis, and pre-paid, on application. The following South American Bulbs, among which novelties may be anticipated, arrived too late for insertion. They may be had at the annexed prices.

| | Each.—£. | *s.* | *d.* |
|---|---|---|---|
| Amaryllis, species albiflora, *white-flowered, new* ... | 0 | 10 | 0 |
| ,, ,, albo-striata, *white, with red stripes* | 0 | 6 | 0 |
| ,, ,, rubra grandiflora, *large red* ... | 0 | 5 | 0 |
| ,, ,, rubro-alba, *red, with white stripes*... | 0 | 7 | 6 |
| ,, ,, rubro-viridis, *red, with green stripes* | 0 | 5 | 0 |
| ,, ,, sanguinea, *dark blood-red* ... ... | 0 | 5 | 0 |
| ,, ,, viridiflora, *green flowered* ... ... | 0 | 5 | 0 |
| Gesnera sp. coccinea, *scarlet, large flowered* ... ... | 0 | 3 | 6 |
| ,, species rubella, *light red, small flowers* ... | 0 | 2 | 6 |
| Griffinia sp. alba, *white and fragrant, new (?)* ... ... | 0 | 10 | 0 |
| ,, species cærulea, *blue* ... ... ... | 0 | 7 | 6 |
| ,, ,, cærulescens, *light blue*... ... ... | 0 | 7 | 6 |
| Iris, species, *white and fragrant, fine* ... ... ... | 0 | 2 | 6 |
| Marica, *fine species* ... ... ... ... ... ... | 0 | 2 | 6 |
| *Tuberous rooted Plant, flower large and fragrant* ... | 0 | 5 | 0 |

*The above are all proper, either for the Greenhouse or Stove.*

| BULBS FOR PLANTING IN BORDERS, &c. | per 100. | | |
|---|---|---|---|
| Hyacinths, *fine mixed, in separate colours* ... ... | 1 | 4 | 0 |
| Narcissus, *in 10 varieties, mixed* ... ... ... ... | 0 | 12 | 0 |
| Jonquils, *in 3 varieties, separate* ... ... ... ... | 0 | 12 | 0 |
| Crocus, *very fine mixed, per* 1000, 12*s.* ... ... ... | 0 | 1 | 3 |
| ,, *large yellow, per* 100, 2*s.*; *new yellow* ... ... | 0 | 3 | 0 |
| Iris, *English*, 100 *splendid varieties, named* ... ... | 1 | 10 | 0 |
| ,, ,, *finest mixed* ... ... ... ... ... | 0 | 12 | 0 |
| ,, *Spanish*, 50 *finest and newest sorts* ... 10*s.* 6*d.* | | | |
| ,, ,, *finest mixed* ... ... ... ... ... | 0 | 5 | 0 |
| Anemones, *in 6 separate sorts, double* ... ... ... | 1 | 0 | 0 |
| ,, 100 *splendid varieties, separate* ... ... | 1 | 5 | 0 |
| ,, *finest new double, mixed* ... ... ... | 0 | 6 | 0 |
| ,, ,, *single, mixed* ... ... ... | 0 | 4 | 0 |
| ,, *splendid single scarlet* ... ... ... | 0 | 8 | 0 |
| ,, *star flowered*, 50 *finest varieties* 12*s.* 6*d.* | | | |
| ,, ,, *finest mixed* ... ... ... ... | 0 | 8 | 0 |
| Ranunculus, 100 *fine named varieties* ... ... ... | 1 | 0 | 0 |
| ,, 100 *new Scotch, named* ... ... ... | 2 | 10 | 0 |
| ,, *splendid scarlet Turban* ... ... ... | 0 | 2 | 6 |
| Gladiolus, *in 8 very fine sorts* ... ... ... ... | 2 | 10 | 0 |
| ,, *common sorts, mixed* ... ... ... ... | 0 | 6 | 0 |
| Snowdrops, *very large Bulbs* ... ... ... ... | 0 | 2 | 0 |

*** Parties taking 50, 25, or 12 Bulbs, will be charged at the same rate as the price per 100. October and November are the best months for planting. Anemones and Ranunculus require a little protection in winter.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

G. RUSSELL, 20, Sussex Road, Brixton, Surrey, has the following for sale:— Per 100.—*s. d.*

| | | |
|---|---|---|
| 1000 Evergreen Oaks, 2 year plants ... ... ... ... | 4 | 0 |
| 2000 Evergreen Oaks, 1 year plants ... ... ... ... | 3 | 0 |
| Either fit for Potting, Planting, or making Hedges. | | |
| 3500 Privets, 2 year plants ... ... ... ... ... | 10 | 0 |
| 15 doz. Gooseberry and Currant, 3 year plants, per doz. | 1 | 0 |

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs Florists, &c., that he is this season selling out his three superb Seedlings, which he thinks will give satisfaction to purchasers, viz.:—

EARL OF WILTON.—Purple flake, fine clear white, well ribboned with purple, long pod and full flower; 10*s.* 6*d.* per pair.

COUNTESS OF WILTON.—Heavy purple Picotee, superb flower, large size, fine form, clear white, without spot or bar, purple heavily laid on; 10*s.* 6*d.* per pair.

FANCY PICOTEE, "COUNTESS OF ELLESMERE."—The most superb variety ever offered, and quite a new style of flower; its marking consists of myriads of minute ticks of purple lake on a delicate blush ground; petals quite smooth on the edge; 3*s.* 6*d.* per pair.

For further description, see his Catalogue, which will be sent on prepaid application, containing priced lists of Auriculas, Alpines, Polyanthus, Primroses, Carnations, Picotees, Pinks, Pansies, and the Lancashire Show Gooseberry Trees.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

THE MOUNTAIN OF LIGHT, a new variegated GERANIUM, of dwarf habit, and free growth. The centre of the leaf is deep green, with a broad margin of pure white. The truss is of medium size, the pips very round, and the colour the most intense scarlet. It is a very free bloomer.

First-class Certificates have been awarded to it by the National Floricultural Society, and the South London.

JOHN AND CHARLES LEE intend sending out this desirable variety (which eclipses all former introductions in this class), on the 31st instant. Price 10*s.* 6*d.* each. Early orders are requested, as the stock is limited.

Nursery, Hammersmith.

SUPERB HOLLYHOCKS.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk, begs to state that his Descriptive CATALOGUE of the above splendid flowers is now ready, containing all the best in cultivation, and including some first-rate Seedlings.

R. B. B. begs to offer strong ground roots, selected when in bloom, from some thousands of seedlings; these are fine double flowers and splendid colours, and will prove a superior class of flowers for the border and shrubbery; 9*s.* per dozen.

A Descriptive Catalogue of the best Roses in cultivation, including upwards of 300 of the best hardy varieties. R. B. B. will be happy to forward the above lists on prepaid application. Package carefully attended to; extra plants included, to compensate for distant carriage. Carriage paid to London per Norfolk railway.

SUPERB NEW PEA.—THE "NOVEMBER PROLIFIC," supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2*s.* 6*d.* per quart; to be had from W. HAMILTON, Seedsman, &c., 156, Cheapside, London.

☞ A liberal discount to the Trade.

RED LODGE NURSERY GROUNDS, North Stoneham; SEED WAREHOUSE and FLORICULTURAL GARDENS, No. 181, High-street, near the Bar Gate, Southampton.

W. ROGERS, SEN., NURSERYMAN and CONTRACTING PLANTER, begs to inform the Public and those interested in Planting that he intends selling at very reduced prices, the fine Stock of FRUIT, FOREST, ORNAMENTAL TREES and SHRUBS (extending over 60 acres of land) in the forthcoming planting season, priced catalogues of which may be had, wherein will be enumerated all the newly-introduced hardy CALIFORNIAN and CHINESE SHRUBS, CONIFERÆ, RHODODENDRONS, and ROSES, which are added to the stock and cultivated as soon as they appear, it being his determination that these old-established nursery grounds shall continue to merit the patronage of the nobility and gentry so liberally conferred upon him for the last 40 years.

A Gardeners' and Land Stewards' Registry is kept at his office in the town, where men of experience and ability may be always obtained.

The following will be found particularly fine, and in great abundance:—Larch, Scotch Spruce, Pinaster, and Sea Pine, Fir, Hazel, Oak Quicksets, Mahonia (for cover), and Rhododendrons of all sizes, from 4 inches, 40*s.* per 1000, to 2, 3, and 4 feet, 10*s.* to 30*s.* and 40*s* per 100; Abies Douglasii, 2 feet, 30*s.* per dozen, and 2 to 3 inches, 5*l.* per 100, or 18*s.* per dozen. Double Camellias, 12*s.* per dozen; Single Camellias, fit for working, 30*s.* to 40*s.* per 100; Dwarf Boursault Rose stocks (strong), 6*s.* per 100.

EDWARD GEORGE HENDERSON is now ready to send out his new CINERARIAS and FANCY GERANIUMS, for which he solicits early orders, as the stock of some of the varieties is very limited.

NEW CINERARIAS.

PRIMA DONNA (HENDERSON'S).—Large dark blue, fine broad petal, good form, and very dwarf habit. 10*s.* 6*d.*

MRS. SIDNEY HERBERT (HENDERSON'S).—White, with narrow carmine margin and carmine disc. A new and distinct colour, of good habit, and a handsome variety. 10*s.* 6*d.*

MARIANNE (HENDERSON'S).—Clear white, with a regular margin of rosy crimson, and black disc; first-rate form; a very handsome and striking variety. First class Certificates have been awarded to this flower. 10*s.* 6*d.*

ROSY MORN (HENDERSON'S).—Rosy crimson, with a white ring round a dark disc; good habit. 7*s.* 6*d.*

ST. CLAIR OF THE ISLES (HENDERSON'S).—White, with medium rosy lilac margin, and of dwarf habit; exquisite form. 7*s.* 6*d.*

MRS. CHARLES KEAN (HENDERSON'S).—White and bright deep rose, light disc; fine form and good habit. 7*s.* 6*d.*

MR. SIDNEY HERBERT (HENDERSON'S.)—Shaded purple, of fine form. 7*s.* 6*d*

NONSUCH (HENDERSON'S).—Crimson plum; fine large flower good broad petal. 7*s.* 6*d.*

CATHERINE SEATON (HENDERSON'S).—Bright rosy carmine, with a circle of white round a carmine disc. Gratis to purchasers of the set.

Price of the set, 3*l.* 3*s.*—The usual discount to the Trade.

NEW FANCY GERANIUMS.

BRIDE (HENDERSON'S).—Brilliant rose, with small white margin, and pure white centre; very free bloomer. 10*s.* 6*d.*

BEAUTY OF ST. JOHN'S-WOOD (HENDERSON'S).—Upper petals bright violet carmine, with a regular clear white margin; a regular belting of carmine runs through the under petals; good truss, and an excellent grower. 10*s.* 6*d.*

OTHELLO (HENDERSON'S). — Rich dark maroon upper petals, with smooth light margin; light blush under petals, with a belting of rich crimson in the centre of each; fine form. 10*s.* 6*d.*

PRINCESS ROYAL (HENDERSON'S).—Upper petals bright rosy carmine, with clear white margin; under petals clear white, with regular carmine markings, and clear white centre; good truss, and a very free bloomer. 10*s.* 6*d.*

AMBASSADOR (HENDERSON'S). — Large bright rose self, with a white margin; fine truss, good form and habit. 10*s* 6*d.*

ANNETTE (HENDERSON'S).—An improvement on "Alboni;" very large truss, and an abundant bloomer. 10*s.* 6*d.*

The set, 3*l.* 3*s.*—The usual discount to the trade.

Wellington-road Nursery, St. John's-wood, London, Oct. 18.

NEW DARK PANSY.

C. KIMBERLEY, Florist, &c., Pinley, near Coventry, is now sending out his Seedling PLUTO, at 5*s.* per plant, warranted first-rate, and the best of its class.—October 18.

TULIPS, &c.

TO BE SOLD, cheap, about 500 BULBS and DRAWERS, with 500 partitions, numbered with reference book, has been more than 20 years in selecting, containing Duke of Devonshire, Emily, Cataline, Polyphemus, Rosa Bianch, Cenotanh, Sir E. Codrington, and all the most popular show flowers of the day. Price given on application to S. Walters, Hilperton, Trowbridge, Wilts.

THOMAS JACKSON AND SON having a large stock of the under-named NEW AND FINE PLANTS, beg to offer them at the following low prices:—

| | *s.* | *d.* | | *s.* | *d.* |
|---|---|---|---|---|---|
| Allamanda paraensis ... | 2*s* | 6*d* | Gardenia Fortunii ... | 2 | 0 |
| ,, Schotti ... ... | 2 | 6 | ,, Stanleyana ... | 2 | 6 |
| Æschynanthus javanicus | 2 | 6 | Gastrolobium paniculatum | 3 | 6 |
| Bartolonia maculata ... | 2 | 0 | Hoya bella ... ... | 2 | 0 |
| Bossiæa Hendersoni ... | 1 | 0 | ,, campanulata ... | 2 | 0 |
| Brachysema præmorsa | 3 | 6 | ,, imp rialis ... | 3 | 6 |
| Camptosema rubicunda | 5 | 0 | Henfreya scandens ... | 1 | 6 |
| Campylobotrys discolor | 2 | 0 | Justicia coccinea ... | 2 | 6 |
| Cupressus funebris ... | 3 | 6 | Mitraria coccinea ... | 1 | 6 |
| Cantua dependens ... | 3 | 6 | Maranta glumacea ... | 7 | 6 |
| Chiriti Mooni ... ... | 2 | 0 | Nepenthes distillatoria | 10 | 6 |
| Chimonanthus macrophyllus ... ... ... | 5 | 0 | Nematanthus Morellii... | 2 | 0 |
| Conoclinum jantinum ... | 3 | 6 | Poivrea coccinea ... | 3 | 6 |
| Chorozema flava ... | 1 | 6 | Phlox Antagonist ... | 5 | 0 |
| Dacrydium Franklini ... | 5 | 0 | Rhodothamnus kamtschaticus ... ... | 10 | 6 |
| Dracæna ferrea variegata | 5 | 0 | Rogiera amœna... ... | 7 | 6 |
| Deutzia gracilis... ... | 3 | 6 | Roupellia grata... ... | 2 | 6 |
| Dipladenia crassinoda | 1 | 6 | Tritonia aurea ... ... | 3 | 6 |
| Escallonia macrantha... | 2 | 6 | Trimalium elegans ... | 2 | 0 |
| ,, organensis ... | 2 | 0 | Thuja Donneana ... | 5 | 0 |
| Eriostemon scabrum ... | 3 | 6 | Vriesia speciosa... ... | 5 | 0 |
| 12 Ericas, of fine sorts, flowering plants ... | | | | 18*s.* | 0*d.* |
| 12 Epacris do. do. ... | | | | 18 | 0 |
| 12 Camellias do. do. ... | | | | 30 | 0 |
| 12 do. do. smaller ... ... ... | | | | 24 | 0 |
| 12 Chinese Azaleas, of fine sorts ... ... ... | | | | 12 | 0 |

Black Hamburgh and Sweetwater Vines, in pots, fruiting plants, fit for forcing, 5*s.* each. Discount to the trade.

Nurseries, Kingston, Surrey, Oct. 18.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, LILIUM LANCIFOLIUM, AND DUTCH BULBS.

HENRY GROOM, Clapham-Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive collection of the above FLOWERS, which he can supply at very moderate prices. He begs to say, that he has received his usual assortment of Hyacinths and Dutch Bulbs, in excellent condition, and that his Catalogue will be forwarded by post, on application. This is the best season to make a selection of Bulbs.

READING NURSERIES.

CHOICE FRUIT TREES, CONIFERS, PERPETUAL ROSES, CARNATIONS, PICOTEES, &c., CARRIAGE FREE.

SUTTON'S PRICED CATALOGUE, containing descriptions of the foregoing, and much useful information to gentlemen who intend planting, may be had, gratis, on remittance of two penny stamps for postage.

Reading Nurseries, Oct 18.

VIOLETS.

TILEY'S VIOLA ARBOREA, or PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season, by Edward Tiley, he begs to state that he has this year a fine stock of the above beautiful Double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the Double Blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets, the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen, or 1*l.* per 100. Any quantity of the above will be sent postage and package free.

STRAWBERRY PLANTS.

The undermentioned first-rate varieties are now ready to send out:—

Myatt's Surprize, sent out first time last season, 1*l.* per 100, or 3*s.* per dozen.

Prince Arthur, do. do., 1*l.* per 100, or 3*s.* per dozen.

Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 5*s.* per 100.

Goliah, very fine ... ... ... ... 3*s.* per 100.
British Queen, do. ... ... ... 5*s.* ,,
Alice Maud, do. ... ... ... ... 3*s.* ,,
Black Prince, very early ... ... 5*s.* ,,
Prolific, very fine and early ... ... 5*s.* ,,

Cremont's Perpetual, or double-bearing Strawberry, 12*s.* per dozen, or 4*l.* per 100.

Trollop's Victoria, 12*s.* per dozen, or 4*l.* per 100.

The above are strong and well-rooted plants, such as will insure satisfaction. Any of the Strawberries that are priced, per dozen, can be sent free by post; also those priced, per 100, will be sent package free.

Fine Giant Scarlet Brompton Stocks, Plants that have been all pricked out, 2*s.* 6*d.* per 100.

Also, some fine Antirrhinums, all saved from striped and spotted varieties, such as will give every satisfaction, and bloom early next spring, 5*s.* per 100.

Fine Sweet Williams, such as will bloom next season, saved from 50 distinct varieties (the plants are strong and good), 5*s* per 100, or 1*s.* per dozen. Can be sent by post with any of the above.

WINTER CUCUMBER.

Lord Keynon's Favourite, the best variety for winter cultivation, 2*s.* 6*d.* per packet.

A remittance is expected by Post-office order, or the amount in penny postage stamps.

Edward Tiley, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HARTLEY'S PATENT QUARRY GLASS, FOR GLAZING CHURCHES, CHAPELS, SCHOOLS, &c.—The above beautiful description of Glass is an adaptation of Hartley's Patent Rough Plate Glass, with a diamond (or quarry pattern); thus avoiding the use of window leads entirely.

Being in single plates, it is impervious to rain, and causes perfect freedom from draughts, which, coupled with its thickness, tends to create an uniformity of temperature within the building. Attention is also directed to its durability, non-transparency, and cost; for, although three times the thickness of crown glass, the one-eighth thick costs less than common lead lights; we can, therefore, with confidence recommend it as an economical, useful, and beautiful article for the glazing of churches, chapels, schools, &c., &c.

Prices to be had and samples to be seen at James Phillips and Co.'s, 116, Bishopsgate-street Without, London.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | |
|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ | by 4½ | ... ... ... | 13*s.* | 0*d.* |
| 7 ,, | 5 and | 7½ | by 5½ ... ... ... | 15 | 0 |
| 8 ,, | 5 and | 8 | by 5½ ... ... ... | 15 | 0 |
| 8 ,, | 6 and | 8½ | by 6½ ... ... ... | 17 | 6 |
| 9 ,, | 7 and | 10 | by 8 ... ... ... | 20 | 0 |
| 12 ,, | 10 and | 13 | by 9 ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6*d.* per foot.
,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

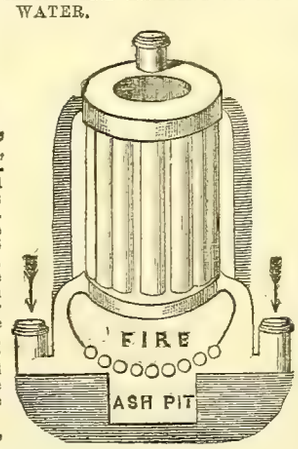
Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1⅝ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.

J. Lewis, Horticultural Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.





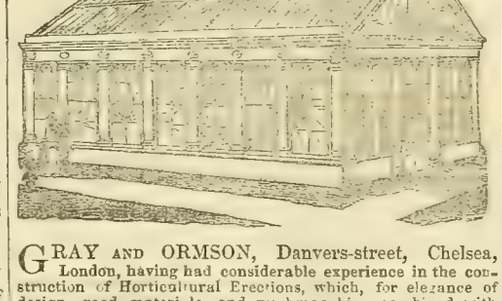

J. Weeks and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their Victoria Regia Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

J. WEEKS AND Co., King's-road, Chelsea, Horticultural Architects, Engineers, and Builders. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to Spiller and Tayler, Battersea, near London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP



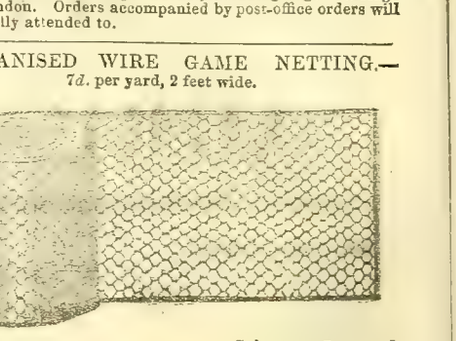
GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

KESSINGLAND WHEAT.—Persons desirous of cultivating this productive and new variety of Wheat, can obtain it by applying to William Griffin, Eydon, Daventry, who is sending it out in quantities not less than half quarters, at the rate of 6*s.* per bushel, including bags. Carriage paid to London. Orders accompanied by post-office orders will be punctually attended to.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

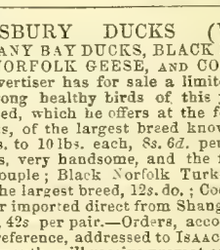


| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, ... | | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c.

The usual allowance to the Trade.

AYLESBURY DUCKS (WHITE), BLACK BOTANY BAY DUCKS, BLACK NORFOLK TURKEYS, LARGE NORFOLK GEESE, AND COCHIN CHINA FOWLS.—The Advertiser has for sale a limited number of the above in fine strong healthy birds of this year, warranted of the purest breed, which he offers at the following prices: Aylesbury Ducks, of the largest breed known, weighing when fattened 8 lbs. to 10 lbs. each, 8*s.* 6*d.* per couple; Black Botany Bay Ducks, very handsome, and the flesh superior to Teal, 21*s.* per couple; Black Norfolk Turkeys, 21*s.* do.; Norfolk Geese, of the largest breed, 12*s.* do.; Cochin China Fowls (pure) from a pair imported direct from Shanghae, and well feathered to the toes, 42*s* per pair.—Orders, accompanied by Post-office orders or reference, addressed to Isaac Brunning, North End, Great Yarmouth, will receive prompt attention.

IRON HOUSES, WOOD HOUSES, AND TENTS, for Emigrants and use in this country. In iron from 12*l.*, in wood from 8*l.*: made for easy erection and removal. Tents, 12 feet square, 6 feet high, in lowest part, 5*l.* Military tents, 42 feet round, 3*l.*, made of thick canvas. Drawings and detailed list of houses and tents sent. R. Richardson, 21, Tonbridge-place, corner of Judd-street, New-road, London. N.B. Iron-wire fencing less than 2-inch mesh, 6¾*d.* per square yard, in various widths, from 6 feet to 15 inches.

SHEEP NETS AND RABBIT NETS.—Sheep Nets, nearly 4 feet high, 4½*d.* per yard, made of strong New Zealand Cord or Cocoa-nut fibre. Long Hare and Rabbit Nets on Cords 50 and 100 yards each. Rabbit proof wire Net, 6¾*d.* per square yard, in various widths, from 6 feet to 15 inches. All kinds of Fishing Nets constantly on sale.—Robert Richardson, 21, Tonbridge-place, corner of Judd-street, New-road, London.

WATERPROOF CAPES, so as to effectually protect a man from wet while stooping down, 3*s.* each, suitable for Coachmen, Gardeners, Gamekeepers, Watchers, Carmen, Horse Drivers, Porters, and Agricultural Labourers. Three thousand London Policemen's second-hand Capes, redressed, 18*s.* and 24*s.* per dozen. Waggon and Cart Covers, Horses, Loin Cloths, Waterproof Coats, Driving Apron for Gigs, Dog-carts, and Omnibuses, &c., &c.—R. Richards n, 21, Tonbridge-place, corner of Judd-street, New-road, London.

N.B.—Transparent Sheeting, nearly 2 yards wide, 1*s.* per yard. One thousand yards thick Tarpauling, second-hand, 1*s.* per square yard, made up.

NEW SHOW ROOMS FOR BEDSTEADS.

HEAL AND SON have erected some extensive Warerooms for the purpose of keeping every description of Bedsteads. In Iron their stock will include every sort manufactured, from the cheap Stump, for servants' use, to the handsomely ornamented tubular-pillared Canopy, as well as Brass Bedsteads of every shape and pattern; and in wooden Bedsteads their Rooms are sufficiently extensive to allow them to fit up a variety, both in Polished Birch and Mahogany, of Fourpost, Canopy, and French, and also of Japanned Bedsteads—in fact, to keep in Stock every sort of Bedstead that is made; and they have also a general assortment of Furniture, Chintzes, Damasks, and Dimities, so as to render their Stock complete for the Furnishing of Bedsteads as well as Bedding. And without attempting to compete with the prices at which the lowest class of Furniture is sold, and which is fit for no useful purpose, their new Stock will be found to be priced on the same principle by which their Bedding trade has, during the last 30 years, been so successfully extended, and the goods, whether of a plain and simple pattern, or of a handsomer and more expensive character, are of well-seasoned materials, sound workmanship, and warranted.

Heal and Son's list of Bedding, containing full particulars of Weight, Sizes and Prices of every description of Bedding, sent free by post on application at their Factory,

196 (opposite the Chapel), Tottenham Court Road, London.

PINE PLANTS FOR SALE.—The different varieties of BLACKS and QUEENS, warranted clean and well rooted.—Apply to W. DAVIES, Starch Green, Hammersmith, near London.

AMBROISE VERSCHAFFELT, NURSERYMAN Guent (Belgium), has just published his new List of Plants, and may be had *free* at Mr. R. SILBERRAD's, 5 Harp-lane, Great Tower-street, London. A. V. begs to offer to the trade fine Camellias and Azalea indica, full of flower buds, and at a very moderate price.

NEW STRAWBERRIES.—Triomphe de Gand, 5*s*. per doz. Merveille de Flandre. 5*s* ditto; Honneur de la Belgique, 2*s*. each: Duc de Brabant 2*s* each; Comte de Flandre, 2*s* each.

DUTCH HYACINTHS for Forcing, 3*s*. 6*d*. per dozen; Best do., for Glasses, 6*d*. to 1*s*. each Double Roman and Paper-white Narcissus, 4*s*. per dozen; Single and Double Due Van Thol Tulips, 2*s*. per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

GOLIATH STRAWBERRY.—A Post-office order for 5*s*. will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TROLLOP'S VICTORIA, 4*l*. per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lyncombe Vale Nursery Bath.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.
WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

WHOMES' Descriptive Catalogue of his NEW PELARGONIUMS may be had on application.
Royal Pelargonium Nursery, Windsor, Oct. 18.

DUTCH FLOWER ROOTS.

RENDLE'S LIST OF DUTCH BULBS will be found in the columns of this Paper, front page, in the number for September 27, 1851. The prices are very low. Descriptive Catalogues on application to WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.
*The Hyacinths are particularly large and handsome. Most excellent kinds can be had at 6s. per dozen.*

THE AMERICAN NURSERY, BAGSHOT, SURREY.
JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.
*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

VICTORIA REGIA.
J. WEEKS AND CO., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1½ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Oct. 18.

**The Gardeners' Chronicle.**
*SATURDAY, OCTOBER* 18, 1851.

THE prevention of WEEDS ON GARDEN-WALKS is one of the questions which would seem to be incapable of solution, if we are to judge from the discordant opinions of practical people. Some years since sulphate of copper was strongly recommended as a deadly enemy to moss; solution of corrosive sublimate was also proposed, and salt, applied in various ways. But it was found that all these substances, however active at first, possessed but a temporary value, unless Mr. FLEMING's plan of applying salt boiling hot shall be found to stand everywhere the test of experience. However, gardeners maintain that, for the removal of weeds on walks, there is nothing like hand-labour.

But we are far from thinking that the resources of the gardener are exhausted by salt, blue vitriol, or corrosive sublimate. In fact, we know that asphalte walks properly prepared will become neither weedy nor mossy; and in asphalte, then, we have a friend to be relied upon. But asphalte is costly, and its appearance is disliked. To avoid the first inconvenience, a horticultural asphalte has been proposed, made from lime rubbish, sand, cinder-ashes, and gas tar; this, too, answers the purpose, but still remains offensive to some eyes. No weeds, however, will grow upon it. It is therefore worth enquiring what quality there is in horticultural asphalte to produce this result. It cannot be the lime rubbish, nor the sand, nor the cinder ashes; for all these are prolific in weeds of one sort or other. Perhaps it is the hardness of the substance; but asphalte walks are not so hard as sandstone or limestone, and both those materials rapidly become mossy. It would, therefore, seem to be the gas tar; and a question arises whether gas tar may not be advantageously used as a weed destroyer on walks, without the usual adjuncts. We know that pales painted with gas tar will bear neither lichen nor moss. We know more; we know that trees trained against such pales are very apt to be sickly till the smell of the tar is gone, or even to die in the meanwhile. Gas tar, then, is a foe to vegetable life.

Influenced by some such considerations as these, one of our correspondents, Mr. HARDY, Nurseryman, of Maldon, tried the following experiment: Twenty rods of walk, 4 feet wide, were cleared of weeds; first, by removing all the gravel, 4 inches deep, then by daubing two barrels of gas tar (value about 10*s*.) evenly over the surface, about half an inch thick, with a brush, and immediately replacing the gravel, which became completely incorporated with the tar. The walk was thus rendered firm and solid. The tar was found to prevent any weeds from growing through it, and only a few small ones were eventually seen to spring out of the gravel itself. The Box on the edge perished at the same time, if the gas tar was allowed to reach nearer to it than 2 inches. Here, then, a gravel walk was, to a certain extent (almost wholly), cleared of weeds, by a stratum of gas tar below the surface; and the walk itself retained its colour, without offending the eye by its blackness.

But, before this experiment became known to us, we had ourselves made some trials of gas tar in another way. Some black walks, constructed on a damp heavy clay, with cinder siftings, and similar materials, although perfectly drained, and in all respects well made, became so mossy in the winter months, that ladies could not walk upon them with comfort. The moss retained water like a green sponge, and days of winter sun were unable to dry it. It was therefore determined to coat the walks with a layer of gas tar, thick enough to cover the moss; but after the first trial, it was found that the cost was too great, and that the gas tar became sticky, as soon as it was warmed by sunshine, or even in ordinary dry weather. The application was, however, proved to stop the growth of weeds most effectually, for a piece of walk thus prepared nine months ago is as naked as it was on the first day of the application. Encouraged by this result, it was determined to *paint* the walks with gas tar, without disturbing the surface; and accordingly, a path in a shrubbery, about 4 feet wide, and rather more than 300 yards long, was thus treated, the tar being applied over moss and weeds, and while hot, on account of its greater fluidity. As soon as a few yards were painted, the workmen sifted sand upon the walk, and then ran a roller over it. The result was a firm, dry, hard walk; weeds refused to grow, moss disappeared, and there was no trace of the walk having been tarred; for the surface, where sanded, looked exactly like any other gravel walk. The quantity of gas tar required for the space above-mentioned was two barrels.

We believe that this trial will prove to have been perfectly successful: the experience of a winter is, however, required to determine how far the tarred surface will continue to resist the inroads of moss. We can only say that at present there is not the slightest trace of its appearance. In one respect the tar, by itself, is superior to imitations of asphalte, namely, that if broken up by frost, the first warm sun restores it to its previous condition, at the mere cost of a turn or two of the roller.

[WE have been favoured by Mr. GRIGOR, of Forres, with an excellent article on Arboriculture, for which we hope to find room in a week or two.]

ARTIFICIAL BREEDING OF FISH.—No. I.

As the amusement of fly-fishing is one which holds a first place in the opinion of every one who understands it; and as the trout and the salmon are the only fish which afford genuine sport to the angler; and as I believe that the latter, in the southern counties of England, is nearly extinct, whilst the former is there far from being abundant; I wish to call the attention of such of your readers as are possessed by the true piscatorial *furor*, to the facility with which these fish can be bred artificially; and as many experiments have been made by my directions, and I have witnessed the results, I beg to say that there is no fear of success, if due care is taken. The experiments of Sharr, Agassiz, &c., have proved that fish can be bred artificially (the experiments of Boccius I have not yet tried, although he professes to arrive at the same results in another manner); and acting on the plan recommended by them, I have known both trout and salmon bred by thousands for the last 10 years; and as now is the time for the experiments to be made, I hope that those who intend to try the plan will lose no time in looking after their supply of breeding fish.

To begin with trout: catch as many as you can conveniently obtain upon the spawning beds *, and examine them carefully one by one, to see that the spawn and milt are in a fit state for exclusion, and also to enable you to separate the males from the females. If they are in a fit state to be operated upon, which may be known by the facility with which the milt and roe run from them, on a slight pressure, squeeze the milt of the males into a little water. When you have obtained all the milt you can get, add so much water that the mixture remains slightly opalescent; say about equal in colour to a tablespoonful of milk mixed in a quart of water. Pour this into a deep dish or bowl, large enough to hold the largest of your female trouts. Take one of these, put it into the water so prepared, and gently squeeze the roe from it, whilst overhead in the water.* Do this as quickly as possible, and return the fish into fresh water, and then pour off the water containing the impregnated roe, through a strainer, carefully preserving it for the remaining fish, and immediately return the roe into fresh spring or brook water. Repeat the operation for every female trout, and you will then have a quantity of impregnated roe, which, if properly managed, will hatch with great certainty. Have ready as many boxes as you are able to stock with spawn, made 3 feet long, 2 feet broad, and 6 inches deep; fill them 2 inches deep with river sand, so well washed that there is not a particle of mud left in it, and upon that put 2 inches of gravel, also exceedingly well washed, and varying in size from a Hazel nut to a pigeon's or pullet's egg. These boxes must be so placed that the water from a spring will run into the first, and from the surface of that into the second, &c.; and below the whole nest of boxes, there ought to be a small reservoir made, say 3 yards by 2 ditto, and 18 inches deep, and well gravelled at the bottom; all these things having been previously arranged, and the water flowing nicely over the gravel, sprinkle the impregnated roe equally over the surface of the gravel, say a quarter of a pint to each box, and it will roll down the interstices of the gravel, and find a bed in which it will remain snugly until the spring, then, about March, if all has been properly managed, you will find, on a careful examination, that the young trouts are coming to life by hundreds.

I am very particular in recommending a spring, rather than a brook, for several reasons; in the first place, brooks are liable to be flooded, and are sometimes so overcharged with sand, mud, &c., that the gravel in the spawning boxes is completely choked with it, and the spawn is lost, as I know to my great and frequent disappointment; at other times all is washed away together. In the second place, the gravel of brooks swarms with water-lice, and the larvæ of aquatic flies, as well as bullheads and loaches, all of which prey upon the spawn of both the trout and the salmon; and in the third place, if you place your spawning-boxes in a brook, it is difficult to prevent the escape of the fry when hatched, and you are left in doubt as to the success of your experiment; with a spring all these inconveniences are obviated, but if your water-course should contain water-lice or aquatic larvæ, it is a very easy matter to destroy them before putting in your boxes, with a little quicklime. It is also desirable to cover your spawning boxes with a wire grating, and also to protect them in severe weather from the chance of being frozen. When they begin to hatch, open a communication between the boxes and the little reservoir below, and if this communicates with a water-course, in which aquatic plants are growing, so much the better; the fry, as soon as they are strong enough, will make their way into this ditch, and will find an abundance of food among the water plants; from thence they ought to be able to make their way into the brook, river, or lake, which it is intended to store with them; but all ducks, wild and tame, should be driven from this ditch, or there will be few trouts allowed to find their way to their final place of destination.

The above rules, with some modifications, are applicable to the breeding of salmon as well as trout, the only difference being in the mode of placing the female fish. The salmon is too large a fish to put into the vessel in which the diluted milt is placed; but I think it desirable that she should be held by an assistant in such a manner that the tail and lower part of the body, up to the vent, are immersed in the water containing the milt; it is also very necessary to hold her firmly, otherwise a large fish, in the struggles it makes to get free, is apt to upset the vessel containing the milt, and then the experiment is at an end; at least for the time; being held firmly by the assistant as above, the belly of the fish must be gently pressed by the hands, to promote the emission of the spawn, which on emission must be gently stirred in the water, to bring every grain of it into contact with the milt; but do not allow it to remain longer in that liquor than a minute, as I have found that if the diluted milt is too strong, or if the ova remain too long in contact with it, they become opaque and never hatch at all, apparently because they are over impregnated. In the ordinary way in which salmon and trout are bred, the milt must be largely diluted with water, and the contact between the milt and the ova can only be momentary; for the streams in which these fish spawn (particularly salmon) are so rapid that the milt on exclusion must be carried away immediately.

I am quite aware that there is another theory which assumes that impregnation takes place 12 months before emission; but a very careful examination of the spawn-

* I have frequently found, when catching trout for this purpose that the milt and roe were not ready for emission. When this was the case, I enclosed the fish in a wire cage, which I immersed in water, examining them every week, until I found they were ready for the experiment.

* I fancy that if the ova come in contact with the air on emission, they are not so readily impregnated as if they are kept covered with the water until the impregnation has taken place, and therefore I wish to lay some stress on the desirableness of thus keeping the air excluded. The milt remains in an active state long after emission, but I have great reason to suppose that this is by no means the case with the roe.

ings of minnows and lampreys (I have never been able closely to examine the spawning of the salmon), convinces me that it is not a correct one ; besides, did any one ever succeed in hatching the ova of fish which had not been allowed to come into contact with milt after exclusion ; if they have, when—where—and how was it accomplished, and where is it recorded ?* I know that I could never succeed, although I have often tried the experiment ; on the other hand, it is the easiest thing imaginable, with due care and a suitable situation, to hatch those that have been properly impregnated after emission. But if I admit, to avoid argument, that this theory is correct, it will not interfere at all with the artificial breeding of trout and salmon ; on the contrary it would materially facilitate it. It would only be necessary to catch a female fish, with the ova ready for emission, and place these ova in clean gravel, in a box, as before described ; but there would be no occasion for males. *T. G., Clitheroe.*

*(To be concluded in our next.)*

## ORCHIDS FOR THE MILLION.—No. XX.

By B. S. Williams, gr. to C. B. Warner, Esq. Hoddesdon.

Climate Cool.—Plants Grown in Pots, with Peat.

*Cyrtochilum maculatum*, from Brazil : blooms from February to March ; it does best grown in a pot, with peat and potsherds ; plenty of water being given in the growing season, but afterwards it should be kept rather dry ; its flowers remain three or four weeks in perfection.

*Cyrtochilum filipes.*—Guatemala, flowers from March to July, and remains in perfection a very long time ; it does best grown in a pot with peat, and good drainage.

*Cyrtochilum hastatum*, comes from Oaxaca. It requires the same treatment as the former species ; it lasts long in bloom.

*Epidendrum verrucosum.*—This fine species is from Mexico. It blooms in June and July, the flowers being of a rich crimson pink, and they remain four or five weeks in perfection. It grows best in a pot, with fibrous peat and good drainage, and it requires a good supply of water while growing.

*Epidendrum vitellinum majus*, from Rosecco, flowers in June and July, and lasts a long time in perfection.

*Epidendrum aurantiacum* comes from Guatemala, and flowers from February to March. The blossoms are of a rich orange colour, with a few delicate streaks of rich crimson in them. This is best grown in a pot with fibrous peat and good drainage, and should have the coolest end of the house, where it can have little heat, with a good supply of water while growing.

*Lycaste Skinneri.*—A beautiful Guatemala plant, which produces its handsome flowers from November to April. The colour of the blossoms is of a pale rosy purple, the centre being deep crimson; it does best grown in a pot filled with fibrous peat, and should be placed in a cool part of the house, where there is plenty of light and but little moisture, except during the growing season. Its flowers remain three or four weeks in perfection.

*Odontoglossum Bictonense*, from Guatemala, flowers in February and March, and lasts a long time in bloom. The sepals and petals are green, spotted with red ; the labellum pink. This will succeed in a pot with fibrous peat and good drainage, and a good supply of water at the roots during the growing season. It should never be kept too dry.

*Odontoglossum cordatum*, comes from Mexico. The sepals and petals of this plant are spotted with brown, on a yellowish-green ground ; the labellum is white, spotted with rich brown. It flowers from January to March.

*Odontoglossum maculatum*, from Mexico, flowers from March to May. This does best in a pot, with peat and good drainage, and a liberal supply of water in the growing season. Afterwards it may be kept rather dry. It lasts long in perfection.

*Odontoglossum pulchellum* is a beautiful Orchid from Guatemala. The flowers are white, with the exception of the crest of the labellum, which is spotted with crimson. They will last four or five weeks in perfection, and are remarkably fragrant. The plant does best in a well drained pot with fibrous peat, and kept in a cool part of the house—rather dry, while in a state of rest.

*Odontoglossum Rossii.*—A beautiful plant from Mexico, flowering in November and January, and remaining long in perfection. It requires the same treatment as the former.

*Odontoglossum Insleayii*, from Oaxaca ; does well in a pot with the same treatment as pulchellum.

*Odontoglossum Egertonianum.*—This fine species is from Guatemala ; the flowers are white and last long in bloom. It does best grown in a pot, with peat and good drainage, and a good supply of water when growing ; afterwards it may be kept rather dry.

*Lælia cinnabarina.*—This beautiful plant comes from Brazil. It flowers in June and July, the colour being a deep red orange, and it remains long in perfection. It does best in a pot, with fibrous peat and potsherds, with a good supply of water in the growing season.

*Lælia flava.*—This fine species is also Brazilian. The flowers are a rich yellow, inclining to orange, and remain long in perfection. Requires the same treatment as the former species.

*Huntleya cochleata.*—Flowers in August and September, and remains long in bloom. It does best in a well-drained pot, with fibrous peat and a good supply of water in the growing season ; afterwards it may be kept rather dry.

*Huntleya violacea* comes from Demerara. It flowers in July and August, and lasts long in beauty. It does well in a pot with peat, and good drainage, placed at the warmest end of the house.

*Oncidium unguiculatum*, from Guatemala. It flowers from October to January ; the lip is a deep yellow colour. This does best in a pot at the coolest end of the house. It keeps flowering for three months in succession.

* There is, however, one fact which would almost lead one to suppose that the ova are impregnated 12 months before emission. It is this,—the male par (salmon fry), are at this season full of milt, and almost ready for emission ; whilst in the females, the ova are so small, that they require a microscope to see them individually, and the whole ovary is merely like a thread ; either the milt of the male is not required to impregnate the roe of the female, or the roe is impregnated long before emission, for the roe of the female par evidently requires many months to bring it to maturity ; but my opinion is, if a female salmon were to ascend a river without being accompanied by, or meeting with a male, that the roe would be impregnated by the *male par*, which always swarms about the salmon spawning beds ; and the experiments of the Duke of Buccleuch's gamekeeper (Shaw), tend to prove that this is the fact—the same excess of males may be desirable that exists in a bee-hive, where there are, at least, a thousand males for one female.

## BRITISH SONG BIRDS.

(Cage Birds, No. 34.)

No. L.—Whilst commenting in a former chapter on the natural instinct of birds, we have asserted that every bird will, in the usual course, sing his own peculiar song *only*. The truth of this, some of our readers venture to doubt. Let me therefore give them *one more* "convincing" proof that what I, Gilbert White, and so very many others affirm, *is* strictly correct.

The redbreast, soon after he has quitted the nest, begins to "record" his song ; and early in August he may be heard singing sweetly. From that time till the present he has gone on improving, till now the gardens round London echo to his voice. And mind—his song is thoroughly perfect ; he "rolls" his anthem with the taste of a first-rate performer, and with all the powerful command of an old bird. If it be urged that he learnt his song from his parent, I say "no." This is impossible, for *the old birds do not sing at all, till late in the winter*. Their offspring, therefore, are self-taught. Nature is never caught tripping in any of *her* movements. It is ourselves who are in fault for not investigating her laws more closely.

We are asked also, whether we think, as most birds of the same species build their nests exactly alike, that the younger are instructed by the older in this matter ? Most assuredly not. Indwelling instinct teaches them this, as well as everything else peculiar to their particular requirements ; and each bird adapts his dwelling as nearly as may be to the constitution and well-being of his family. With respect to caution, however, some particular tribes are, from existing circumstances, far more wary than others (the reason for which, we shall discuss more fully anon), and build in situations as difficult to discover as it would be impossible to penetrate when found. Among the feathered tribe Nature varies her gifts, as indeed occurs amongst ourselves. We are *not* all equally 'cute ; as some of us, 'ere now, like the denizens of the woods, have found to our cost !

Whilst on the subject of nests, I would entreat all such of my readers as have not carefully examined the artistic excellence of their construction, to do so at the first convenient opportunity. It is a piece of exquisitely-cunning workmanship :—

"——— It wins my admiration
To view the structure of that little work,—
A Bird's nest. Mark it well within ; without.
No tool had they that wrought, no knife to cut,
No nail to fix, no bodkin to insert,
No glue to join. Their little beaks were all ;
And yet, how neatly finished ! *What* nice hand,
With every implement and means of art,
And twenty years' apprenticeship to boot,
Could make me such another ? Fondly then
We boast of excellence, *whose noblest skill*
Instinctive genius foils !"

When Hurdis thus sang, I have no doubt he had a nest on the table before him. It is an object to inspire *any* poet with song ; and his reflections on the little architect do honour to his muse.

The further we go with these interesting investigations, the more delighted must we ever feel ; nor can I resist speaking of the gratification I experience in knowing I have so very many readers of a congenial turn of mind. I will now only add, that the instinct of animals, although a subject inexhaustible, and pregnant with the greatest interest, it would not be in accordance with our prescribed limits to pursue further at this time. I have, however, received from all quarters, such unbounded encouragement to "touch" on it as occasion offers, that it will be a leading feature in all my observations hereafter. Before concluding, I take leave to introduce a short but pithy anecdote connected with this matter, on which it seems there *are* "two" opinions. A good friend of mine, a native of Germany "naturalised" here, met me a short time since at the entrance to Madame Tussaud's Exhibition. Regarding me with a knowing look, he remarked,—"My dear fellow, you are on a wrong tack. If you were to write with the pen of an angel (a curiosity, by the way !), who is there in England that would listen to *you* whilst speaking of the wonders of Nature, when they can see *so many murderers* in this Exhibition, modelled in wax with all the startling fidelity of life ? The English are at heart," added he, "essentially a savage people—*and you know it.*"

How anxious am I to redeem my countrymen, and our "ladies fair," from so sweeping a censure ! Albeit my observant and satirical friend had some show of truth on his side, as witness the crowds that throng the Chamber of Horrors, and occupy "first-rate situations" at our public executions. But let that pass,—we hope to "reform it altogether":—

"——*Ingenuas didicisse* fideliter *artes,*
*Emollit mores,*—nec sinit esse feros."

In the company of departing Autumn, we will forge that such things can be ; for

"Her work is a mix'd one, of bounty and plunder,
She strips the green garment that mantles the oak.
Her voice soundeth 'now' with the terror of thunder,—
'Now' sighing, scarce waves Nature's emera'd cloak.
And if at her mandate the falling leaves cluster,
And Earth in her flow'rets no longer is clad,
She gives to the wheatsheaf its ripe golden lustre,
And fills up the Goblet that makes the heart glad."

Who is there amongst us that will not joyously quaff from such a goblet, to the health of so lovely a goddess ?

*William Kidd.*

## Home Correspondence.

*Transplanting Evergreens.*—"When ought I to remove my shrubs ?" "What time of the year is most suitable for planting ? Pray inform me when to commence my new shrubberies ?" are questions repeatedly addressed to those who have to do with garden matters, unmistakeably indicating the fact, that to a large portion of interested persons, the proper period for such operation is not understood. Although in these, as in all other gardening operations, no absolute rule exists ; yet sufficient data are recorded to render tolerably certain the success of the operation based upon them. The ever-changing character of the seasons, the kind of soil, the situation, and other local circumstances, must ever exert powerful influence, and tend to render caution, forethought, and skill, indispensable adjuncts to complete success. In the 4th volume of the "Journal of the Horticultural Society," will be found an able treatise on this subject, by Mr. Glendinning ; and in the *Gardeners' Chronicle* for January 6, 1849, appears an abstract and comment upon it. What I am about to state will serve to confirm the facts there recorded. A year or two ago, it was necessary to remove a large quantity of evergreens, such as make up the ordinary occupants of the shrubbery. And the circumstances attending their removal were such as to extend the period of operations from the last week in August to the following March. The soil was a stiff loam, almost clay, very tenacious when wet, and by no means tractable at any time. The shrubs varied in size from such as a man could easily carry, to those requiring half-a-dozen. The latter size were mostly Portugal Laurels. The first month of planting was dry and sunny. Afterwards rain was frequent. The plants removed in August did not show favourable results. Their foliage assumed in many instances a yellow hue, and a great portion of their leaves dropped off, and the young wood not being sufficiently matured, quailed beneath the influence of the autumn sun. Those transplanted in September, especially the latter part, and October, scarcely indicated their change of situation. Some large Portugal Laurels which were taken from a sheltered situation to one exposed, only cast a few of their older leaves, to indicate their altered circumstances. It will, however, only be just to observe, that at planting time, and once or twice afterwards, a few gallons of water were given them at the roots. This precaution was taken because it was particularly desired they should succeed, and the weather was very dry at the time of their removal ; but I have no doubt that success would have followed without the application. In a limited scale of planting such can be applied, in extensive operations hardly so. It becomes, therefore, a matter for consideration whether it is necessary or not. In looking over the whole of the plants removed, when the growing season commenced, various results were apparent ; but that the months of September and October were the most suitable for transplanting there could not be two opinions. Several removed in March presented sorry spectacles, when summer arrived. They lost all their foliage, and many partially died. Notwithstanding these facts, there can be no period assigned which shall insure success or failure. I have seen Laurels removed in May, with young shoots 6 inches in length, succeed admirably ; and this in so light a soil that no particle of mould adhered to their roots. But the weather was unusually showery ; and I remember an instance of transplanting some large Rhododendrons, when the young shoots were but half matured. The weather was very dry and hot. The watering-pot supplied moisture, and success was complete. On another occasion some Balm of Gilead Firs were transplanted in June, and they succeeded admirably. They were about 3 feet in height. Various similar cases might be cited, were it necessary to do so ; but enough, I imagine, has been stated to show the rule and the exception. *G. L.*

*Cryptomeria japonica.*—It is generally admitted that this fine Conifer will never form an ornamental lawn tree. The sickly, yellow appearance it has for, at least, seven or eight months in the year, is a sad drawback to its general adoption for that purpose. As some situations may, however, suit it better than others, I beg to inquire if any one has succeeded in wintering it, without its putting on the unsightly garb so common to it in most places. I have a tree some 7 or 8 feet high, which this season has borne some seeds (they can hardly be called cones, being globular) ; but last winter, although an exceedingly mild one, it was quite as yellow as on the previous one, which was more severe ; so that I think it is constitutional for the plant to undergo that change, rather than the effect of our climate. The situation in which mine is placed is a dry hill-side sloping to the

south-west, and well sheltered from the north, the subsoil resting on what I believe geologists call the oolite formation. Many of the Conifers succeed remarkably well here, more especially the Deodar, and the Cedar of Lebanon; on the other hand, the Douglas Fir does not thrive at all: the situation seems to be too dry for it, as well as for the Araucaria imbricata, which, though some 15 or 16 feet high, and the tree healthy and well-furnished, is not of so dark a green as some I have seen in a damper place. Nevertheless insignis and some others in the way of Montezumæ, Sabiniana, &c., appear to be quite at home in our dry soil; but the article of Mr. Slow, which was given in your paper a short time ago, confirming my opinion, it is useless repeating it further. As I stated before, I would, however, like to know from some one, who has the Cryptomeria growing under different circumstances to mine, whether they have ever wintered it in anything like a condition worth looking on, as I confess its usual appearance is generally uninviting, until the new growth takes place, which is not before June. *An Old Gardener.*

[The Cryptomeria is in many places even more beautiful in winter than in summer; but the specimens have most remarkable constitutional differences, some being always shabby, others never.]

*The Mocking Bird.*—Your delightful correspondent, Mr. Kidd, has inadvertently confounded the mocking bird, "Sylvia Salicarias," which is a warbler, with the American mocking bird, which is a thrush. With the latter I have no personal acquaintance, and only know it by Wilson's admirable description of it in his American Ornithology; but the former is a common bird here all through the summer; and it sings as perseveringly, day and night, as if it thought it was worth hearing. I think if Mr. Kidd would give this bird a trial, he would find it deserved notice; for, although as a wild bird its song is not very pleasing, yet from its extraordinary imitative powers, I think it would prove valuable if it lived in good society. The habit this bird has of singing all the night through, makes many persons who are not conversant with the songs of birds, and not very attentive to the quality of the song, fancy they have heard a nightingale, but, alas! that sweet songster never graces our country with its delightful notes, probably from the moisture of the climate; and two or three other birds, which appear to be common elsewhere, never show themselves here. Neither the woodlark, the wryneck, nor the nuthatch, are ever met with here; nor even the common bunting, which, 30 miles off, is perched in every hedge, singing its monotonous song as earnestly as if it were delightful music. *T. G., Clitheroe.*

*Blanching Celery.*—This year I adopted the following plan with my Celery, which has answered extremely well. I planted it in a trench and left it to grow to its proper height; I then drew each plant through a circular drain tile, and stopped the top of the tiles with moss, and levelled the ground; in less than three weeks afterwards they were beautifully bleached, quite clean, and came in earlier than in the old way. The drain tiles are very inexpensive, and they do not harbour slugs, &c. *H. M.*

*Early Planted Potatoes.*—The result of our Potato crops is encouraging. We planted, in autumn and early spring, 10 forward varieties; all are very good, with the exception of some few which were allowed to grow after July. We can vouch for the safety of all the earliest kinds, if forwarded by judicious management. Cutting off, or pulling up, the haulm at the end of June or beginning of July, saves the tubers, which by that time should be tolerably ripe. *Hardy and Son, Maldon.*

*The Disease in Cucumbers.*—I presume that too many of your readers are aware that a pestiferous disease has prevailed amongst these useful vegetables for some three or four years; and that, like the Botrytis in the Potato, whole districts have suffered from its ravages; indeed, in some parts it has been a most grievous loss to persons engaged in market gardening. And not only the Cucumber, but others of the same natural order; as for instance, the Melon and the Vegetable Marrow are affected; of this I have had ample experience. I do think that it would be of vast benefit to the gardening community if you would allow an inquiry to be opened in your Paper as to the character and extent of its ravages; for, doubtless, many of those who have suffered by it will be disposed to show forth their experience, and to state fully and freely what remedial or preventive measures they may have adopted, together with their results. It is by means like these—meeting as we can do on common ground, and for mutual benefits—that gardeners can at once glean information, and make deductions of much benefit both to themselves and society at large. A letter which I received this morning so aptly describes the character of the disease, that I cannot do better than use extracts from it; the writer simply seeks advice. I may observe that the case about to be related occurred in Norfolk. He thus commences:—"For four succeeding seasons I have had all my natural (outdoor?) Cucumber plants spoiled with 'the spot.' The plants appear very healthy, grow luxuriantly until the first fruit is about fit to cut, and show fruit in abundance; yet I seldom cut more than a brace or two before they are full of spots, and a kind of gummy substance, which entirely spoils them—the ends of the shoots look as if singed with a hot iron. I have had my frame Cucumbers also spoiled in a similar way. It has made its appearance in my houses this season, very badly at the latter part of the time. I have had it as early as March in my house, but it there acts differently; or, rather, I can treat it differently in that situation. I cannot find any remedy for it out of doors. I have tried different soils and different situations; with manure and without—wet and dry; yet I cannot find a remedy," &c. Thus far my correspondent's experience goes, which exactly coincides with my own; and, I may add, with that of scores within the last five years. Mr. Harley, of High Legh, informed me, some weeks since, that a friend of his at Clapham had told Mr. H., that he knew of some market-gardeners who used to grow Cucumbers out of doors to a vast extent, but who had discontinued their culture, on account of the severe losses they had sustained through this disease. Now, what my Norfolk friend relates as to the severity of the attack on those in houses, frames, and the open ground respectively, precisely confirms what I have experienced; and woe to those which are short of heat, if once attacked. Melons, if short of bottom-heat, quail before its attack in a few days. I have known a pit or frame full of health completely ruined in a week. I was talking last week with Mr. Hamilton, of Stockport, of Pine-growing notoriety, about this disease; when Mr. Hamilton informed me that he has it on his Melons, and he terms it "the spot." He had it some years back in his Cucumbers, and avers, that he should never have kept it under, but for the almost constant use of lime-water applied in a clarified state with the syringe. That heat and atmospheric moisture are antagonistic to the disease I am well assured; for, although I have suffered yearly of late out of doors, and in frames, those in a Pine-house here, although they at times give unequivocal proofs that the disease lurks amongst them—are always successful in spite of it; and an occasional plucking, with abundance of atmospheric moisture, have ever kept it fairly at bay. Now, it is a complete puzzle to me how the spores of this fungus, for I must for the present assume it to be one, exist through the winter. If germs for the succeeding spring are preserved on other living vegetables, weeds, &c., how is it that its devastating powers are not manifest there? Is it possible that it can exist on inorganic bodies, or on dead vegetables; or is an instance known of parasitic fungi thriving equally on the living and the dead? All these things should be thoroughly examined into, in order to know the precise ground our enemy occupies; for it is only by ascertaining the exact habitude of such pests that we can hope to exterminate them in the end. It seems strange, that from the commencement of the Potato disease, there has been greater complaints of the devastations of parasitic fungi than heretofore; at least such is my opinion; and I am assured that I am no way singular in holding it. The country folks here aver that there has been no luck with the Potato since that singular visitation of swarms of flies, which occurred some dozen or 14 years ago, when people could scarcely open their mouths in some parts without drawing in a shoal of these minute creatures. And, indeed, it does appear at first sight to have formed a kind of era in these matters; for since then the troubles of the farmer and gardener seem to have multiplied exceedingly. *Robert Errington, Oulton Park, Sept.* 29. — My Cucumbers are all attacked in the manner exhibited by the enclosed specimens. The complaint is very prevalent in this neighbourhood, both in frames and in the open air, but the latter are certainly the worst. Melons are also affected in the same way. I find that the garden here has been infected by this complaint for these last four years. The Cucumbers I have sent for inspection were cut from plants growing in a house which is heated with hot water pipes for top, and a tank for bottom heat. The attack generally commences with the setting of the first fruit. The plants that I now have looked well up to that stage of growth. Three or four plants in the same house that have not yet commenced bearing, or only just beginning, are looking extremely strong and vigorous; but there are already indications that they will go off in the same manner. Both dry and moist temperatures have been tried, with a view to remedy the evil, but with the same results; no effect for the better has been produced. I may mention, that the water used for watering has always been applied in a tepid state. *C. E.*

*Hedera Rœgneriana.*—The assertion made at p. 597 is solely grounded upon a private communication by Professor Hartwiss, of the Imperial Botanic Gardens, in Nikita, Crimea, which I had an opportunity of perusing. There is no description to be found in works within my reach of Aquilegia, Juniperus, and Pæonia Wittmanniana, except the mere mention of the names in nursery lists. I believe, however, such may be discovered in "Bullet. Acad. St. Petersburgh," of which I notice an extract—descriptive of Pines—in Loudon's "Magazine of Gardening," vol. viii., p. 112. In the same periodical, at page 224 of vol. v., is a notice of some Caucasian plants by Mr. Booth, of Hamburgh, including a Hedera—H. taurica. *J. U. H., Edinburgh.*

[Pæonia Wittmanniana was figured in the "Botanical Register" several years ago.]

*Bedding out Calceolarias.*—As some of your readers may not be aware that these plants are best propagated at this season, I take the liberty of saying that, for several years I have never put in my general stock of this interesting group before the middle or end of this month, and often later—sometimes even as late as January, and then, as well as now, they were struck without heat of any kind. So exceedingly accommodating is this tribe of plants in this respect, that any cottager may strike them with facility. The only requisites are to keep them out of the sun and tolerably damp. It is very rarely that any rot off by what is called damp. The power of resisting this enemy is wonderful; while on the other hand, a dry comfortable heat, which at this untoward season is congenial to most other things, is fatal to Calceolaria cuttings. The mode which I adopt is, to put a large number, say 50 or 60 of the small-leaved kinds, into an 8-inch pot, well drained, and filled with the usual sandy soil. I then place them in a cold frame, behind a wall or building, facing the north; and an occasional watering is all they require, until the appearance of severe weather makes it advisable to remove them to some more secure place. Not more than one in a hundred fail to grow. Their progress certainly is not fast, but it is not wanted to be so, as by February every pot is full of roots; and if they had been struck sooner they would only have so much the longer to stand in a stunted condition, which too often engenders disease or insects, while it rarely happens that they can be accommodated with separate pots before that period. As there is nothing more ornamental than Calceolarias, I strongly advise the amateur or cottager, who has a single plant or two in his garden, to try his hand at increasing it. I imagine that he will be agreeably surprised to find how easily the operation is accomplished. *An Old Gardener.*

*The Maiden Hair Tree.*—There are larger specimens of the Salisburia adiantifolia in the pleasure grounds of the Earl of Darnley, at Cobham-hall, Kent, than any yet mentioned in your columns. The largest tree measures 47 feet in height, and the bole, 6 feet from the ground, is 4 feet in circumference. *G. Wilkerson, gr.*

——The inquiry after the size of examples of the Maiden Hair Tree, at p. 614, has raised in me a curiosity to know what is the present state of the following specimens, mentioned by Loudon in his "Arboretum et Fruticetum, Britannicum," Vol. IV., p. 2099:—At Purser's-cross, near London, one tree, in 1837, was 60 feet, another 50 feet high; in Mile-end Nursery, 60 feet high, and at Leigh-park, Somerset, 40. The tree in the Mile-end Nursery was figured by Loudon in the work just mentioned, Vol. VIII., p. 360. *Diss.* [We believe the last-mentioned specimen no longer exists, the ground being covered with buildings. We remember it a beautiful tree 34 years since.]

*Fuchsia Riccartoni.*—I have now a plant of this sort 14 feet high, covered with innumerable blossoms from the top to the ground. It has never been matted, or had any covering during the last four winters. *J. Gould, Amberd.*

*Musa Cavendishii.*—Will any of your correspondents kindly tell me how long the fruit of this Banana is in ripening. A fine plant of it just 12 months old threw up its flower-spike in May last, and has formed a very large bunch of fruit, which, after swelling to a fair size, has now remained three months without exhibiting any symptoms of maturity. I am told by those familiar with the Banana in tropical climates, that I ought to cut the bunch before it is ripe, and hang it up in a dry place till the fruit turns yellow. My plant is growing in an Orchid-house and has had plenty of heat, and water has been withheld from its roots now for a long time. I want to destroy the fruiting plant, as a sucker is now making very rapid growth, and has attained a large size. *J. R.*

*Wintering Eating, as well as Seed Potatoes, in Charred Peat.*—Last autumn I mixed about a peck of Potatoes with charred peat; the Potatoes had not sprouted above half-an-inch by the 1st of March. For those who have many acres to plant and cannot spare room to spread them out thinly, this plan would be of great service, and it could be pursued out of doors by merely taking the precaution to lay down a good layer of peat first; this would prevent moisture from rising amongst the Potatoes. The heap might be covered over with peat and finished with some slight covering, which would keep rain or frost off. The charred peat prevents heating and sweating, which are two great winter enemies to seed Potatoes. I have all my eating Potatoes stored in this way in a shed. The peat makes them as black as toads, and a little grumbling may be heard just before cooking time from the maid of all work, who gives the poor Irish peat everything but its right name; but with this trifling drawback it is certainly an excellent material for storing all kinds of roots in. *James Cuthill, Camberwell.*

*Use of Salep in Diarrhœa.*—℞. Decocti radicis Salep ex rad. Salep ℥ss prepar., ℥ij; syrupis altheæ, ℥j. A tablespoonful every hour. The above cured me (and is renowned in Syria for so doing) of a dangerous diarrhœa on the Continent. But I had no idea that Salep was a root indigenous to Great Britain! till this day, on opening the 16th vol. (1773) of "Doddsley's Annual Register," where, amongst "useful projects," page 128, I find the culture and use of the Orchis roots (or Salep) strongly advocated. I pray you examine for humanity the Salep as food, instead of sago and arrow-root, as well as for medicine in diarrhœa. You see it is useful in stone and gravel, and in that state of consumption where blood turns watery. *J. E.*

*Carrots and Onions.*—The unsuccessful attempts to grow autumn-sown Carrots to perfection, complained of by your correspondent "An Old Gardener," is no more than a corroboration of my statement, that in most places, if sown in the open ground in autumn, they are found to be an uncertain crop. Having assisted in sowing and managing 300 lights of them for years, I can with confidence assure your correspondent, that if he follows my plan, he will find the result all that he can desire; it is the only way in which I ever saw the market gardeners grow them for an early supply, and I always found them come to the greatest perfection. They will succeed if sown now, but certainly the sooner the better.

As respects sowing on a hotbed I can say but little, never having seen that plan practised; but in my opinion, it is dung and labour thrown away. When a succession has been required, I have made up a bed about the middle of January (in the same way as before), and sown it with horn Carrots and short-top Radishes; thinning the Radishes to about 2 inches, and the Carrots to 1 inch apart, managing them in the same way as the others till the latter end of February, between which, and the time the Radishes were fit for use, they had two or three good waterings; the lights were continued on at night till the Radishes were all off; the Carrots were then thinned to 3 inches apart, and the frame taken away. For a crop to succeed them, some may be sown on a warm border about the same time, sowing Radishes with the Carrots, and covering at night with stable litter. Your correspondent is quite right as regards Onions. The best sort for the purpose I ever found is the White Lisbon; if planted out in March it will grow to a large size, but it is not a good keeper. It is extensively grown by market gardeners. If large bulbs are desired, the best way to grow them is to sow a small bed (of either the Reading or New White Globe), very thickly about the middle of May, on a warm border. They will form bulbs about as large as Peas; they will be ripe about the same time as those sown in March; dry in the same way; then spread them thinly on the floor of a dry room till February, when shallow drills should be drawn across a rich piece of land, 6 inches apart. Plant the smallest bulbs 4 inches apart in rows, and just cover them with earth. Keep them free from weeds, and they will grow very large, and if dried they will keep for some time, though they cannot be depended on so surely as those sown in March. A bed should be sown in every kitchen garden, either as above, or else in August; as, by having a supply of them, the gardener is enabled to thin his spring sown ones out to the required distance at once, by which means they arrive at greater perfection. *J. Steel, Clitheroe.*——I have been in the habit of occasionally sowing Carrots in autumn for these last 15 years, in the various situations in which I have been located; but I have never in any case found them to answer my expectations, or to enable me to dispense with forced Carrots in spring. They were always of a sticky character, and white in colour, running to seed soon. From frequently seeing them recommended to be sown in autumn, I had concluded that our northern climate was too severe for them to stand the winter and arrive at perfection. In the case of Onions, I find the Tripoli to be one of the most useful sorts we have; large Onions at an early period being in request here. I sow it mixed with Strasburgh about the 12th of August, on an early border, in soil deeply dry or trenched, and well manured. The result gives me every satisfaction; but if the Tripoli is not used soon after being pulled, it does not keep equal to the Strasburgh. *R., Aberdeenshire, N. B.*

*Expeditious Grape Growing.*—Seeing, by the report of the last meeting of the Horticultural Society, that my brother has succeeded in fruiting and ripening wood and fruit of the Black Hamburgh Grape from eyes struck in February last, I beg to state that I have got good bunches and well-swelled berries of Muscat of Alexandria, on Vines struck from eyes in March last. The Vines were not stopped at 15 inches high, as his were, but at 8 feet, consequently the fruit is produced on the laterals. I would particularly recommend those about planting Vineries, if they have the convenience, to strike their own plants in February or March, and plant them out in May or June. Some which I have treated in this way here in our new Vineries, surpass two-year-old plants planted in April. *R. Elphinstone, Flixton Hall, Harleston, 16th Oct.*

*Borden's Meat Bisuit.*—At page 629, a correspondent mentions that "four ounces of biscuit make from a pint to a quart of excellent soup." Would you have the goodness to correct the passage, saying—one ounce of the biscuit makes a pint of most nutritious soup. *Wm. Bollaert, St. Peter's Alley, Cornhill.*

*The Fox Moth.*—In your "Notices to Correspondents" it is stated that the larvæ of this moth (Lasiocampa rubi) are difficult to rear, especially so late in the season. I beg to say that this is the best time of year for collecting them, as they are now at their full growth, and the perfect insects may be reared without the least difficulty—all that is required is to have a box with a wire gauze cover, and to place in this box a turf of heath, put the larvæ in it, and let it remain exposed to the weather through the winter; in the spring they will come out for a few days and then spin their cocoons, and the moths will appear early in June. *Henry Doubleday, Epping, Oct. 14.*

*Horticultural Exhibition at Paris.*—I went to the show of the Société Nationale d'Horticulture de la Seine, on Saturday, the 27th of September. It was held in a very large tent, pitched over one of the fountains in the Champs Elysées. I observed several (what I thought) improvements in the way of conducting this fête. It lasted four days; my visit was on the second day, when certainly everything was perfectly fresh, and by the crowds I saw entering on the third day, it appeared not to have lost any of its attractions. Not only were fruit and flowers exhibited, but also vegetables, artificial flowers and fruits, ornamental flower-pots, gardening instruments, miniature drawing-room and boudoir fountains, for keeping bouquets fresh, and even some singing birds and gold fish. The show of green and hothouse plants was very inferior to ours, but there was great beauty and variety among the common flowers, such as Asters, Dahlias, &c. Among yellow Picotees, we have nothing equal to show in England. The grounds of several were brighter and deeper coloured than ours, with much more variety in the colour and marking of the edgings. Indeed, if a little more regularity of shape could be obtained, some of them would be very striking flowers. Why cannot we have in England, as they have now (Oct. 2) at Paris, abundance of Strawberries and Artichokes in all the markets? What struck me most was the great profusion of fine ripe Pears exhibited. While we can only obtain two or three good kinds at this season, there are at least eight or ten at Paris. *L. H., Ipswich.*

## Societies.

Entomological, *October 6.*—J. O. Westwood, Esq., F.L.S., President, in the chair. An extensive list of donations to the library from the Royal Societies of London and Madrid, the Royal Agricultural Society, the Entomological Society of Stettin, the Natural History Society of Geneva, the Literary Society of Liverpool, and various other donors, as well as a number of rare British moths, from Cambridgeshire, presented by Mr. Barlow, was announced, and thanks ordered to be returned for the same. John Curtis, Esq., F.L.S., and Captain Lodder, were elected members of the Society. The President announced that copies of the bye-laws, as amended at a special general meeting, recently held for that purpose, were ready for distribution. Mr. Samuel Stevens exhibited fine specimens of Heliophobus hispidus, and other rare moths, from the Isle of Portland, also Deiopeia pulchella, from Somersetshire; Mr. Edwin Shepherd, a new species of Peronea, reared from Spiræa ulmaria; Mr. F. Smith, an assemblage of the cocoons of Ilythia sociella; Mr. Shepherd, a remarkable cocoon of Saturnia Carpini, and various rare moths from the New Forest and Fulham; Mr. Thompson, a case of insects from Morocco; and the President, several larvæ of the Fox Moth (Lasiocampa Rubi), found on the Wild Rose, near Swansea. Mr. Young presented a quantity of Coleoptera, from Renfrewshire, including the rare Tetratoma ancora. Mr. Stainton read a notice of the distinctions of three nearly allied species of Lithocolletes, one of which was new to the British lists. Mr. Adam White gave an account of various early collectors of, and authors upon, spiders in this country, including Lister, Albin and Martyn, whose works had been recorded by Walckenaer, and also Dandridge, overlooked by the French arachnologist, but whose manuscripts, containing descriptions of 500 species of Arachnida (including Acari, &c.), found near London, were preserved in the British Museum, and from which it appeared that Albin had copied many of his descriptions without acknowledgment. Baron Walckenaer had complained that Latreille had in the same manner adopted his sections of spiders as well as those of Kirby of bees, and had merely given them generic names; a remark which called forth much discussion in justification of the writings of Latreille. A further memoir, by Mr. Newman, of Stroud, on the Bombinatrices was read, in which the writer reasserted that the male Bombi never re-enter the nest after they have once quitted it, and that they have regular rounds for flight; both which statements were combatted by Mr. F. Smith, who had received observations confirmatory of his statements from Mr. Wallcot, of Bristol. Mr. Stainton communicated a translation of a remarkable memoir by Dr. Von Siebold, in which that author suggested the probability that some of the Psychidæ underwent an alternation of generations, the alternate brood producing only female wingless individuals, whilst the other gave birth to ordinary males and females.

## Notices of Books.

*The Popular Nomenclature of the American Flora.* By Berthold Seeman. (*Die Volksnamen, &c.*) A pamphlet, 8vo, pp. 54. Hanover: Part 1.

This little work, seems by anticipation, to show how important to everybody will be M. Alphonse De Candolle's Dictionary of the vernacular names of plants, whenever it appears.

We cannot do better than let Mr. Seeman explain his views in his own words:—

"Whoever has paid attention to botany will have observed that in every country—whatever may be the degree of civilisation it has attained—the people have made some advance in discovering the manifold uses to which plants may be applied, the medicinal and economic virtues they possess, or the noxious qualities, odour, beauty of form, and other prominent peculiarities by which they are distinguished. Wherever this is the case, wherever plants have attracted popular attention, it has given birth to vernacular names. Such names are familiar to thousands, and, while the scientific appellations undergo continued changes, the former descend almost unaltered from generation to generation, and become only extinct when the race that once pronounced them has itself disappeared.

"In an age like the present when it is one of the great aims to render science popular, names of such a nature ought to receive due consideration. But it has been far from being so. Many botanists think them of not sufficient importance to be enrolled in the books of science, and though others set a higher value on them yet no attempt has ever been made to collect all, and to regulate the heterogeneous mass. A well arranged Synopsis of the vernacular with the corresponding scientific names would prove highly useful. It would enable the naturalist to make himself at once acquainted with the most valuable productions of a country, and greatly facilitate his investigations. The medical man, the chemist, the traveller, in fine anyone coming in contact with the vegetable kingdom, would be equally benefited. By simply asking the native name, they would instantly have the scientific appellation, the key to farther inquiries. Occasional mistakes may indeed occur. But these are the exception, not the rule. The vernacular nomenclature is less fallible than it is generally supposed. Tell a Brazilian to show you the Parahiba of his country and he will point to Simaruba versicolor; inform a Chilenian that you are anxious to see the Pichinilla, and he will take you to Fabiana viscosa; or ask an Esquimaux to bring the root of the Ma-shu, and he will fetch that of Polygonum viviparum.

"These considerations led to the compilation of the Popular Nomenclature of the American Flora, and I would have completed the task had not other labours detained me, and had not afterwards the conviction been forced upon me that it would be advisable, instead of confining myself to America, to extend the plan, and enumerate the popular names of the plants of the whole world. Though experience has taught me that in an undertaking of this nature perfection can only be reached in the course of centuries and by the combined efforts of many, still I am convinced a certain degree of completeness is attainable. At present, however, I am unable to execute this plan; want of time and materials prevent me.

"The nomenclature has been divided into two parts like a dictionary, one containing the vernacular-scientific, the other the scientific-vernacular names. The names are arranged in alphabetical order, and spelt either according to the prevailing language of the country in which they are current or that to which they belong. They are given as popular currency has rendered them, and are neither corrected because they are not in accordance with their derivation, nor altered on account of their erroneous grammatical construction. They are never translated from one language into the other, nor have any translated names—the useless encumbrance of scientific works—been received. One and the same name being often applied to several plants in different countries, each name is followed by that of the state in which it has currency, and succeeded by the name of the person on whose authority it is given. By following this mode of quotation I have succeeded in solving the puzzle which hitherto seems to have deferred many an author from attempting the task I have undertaken."

We have only to add that the author has performed this part of his task well, and as fully as could be expected from a first attempt. The volume, when finished, will be of real value.

## Garden Memoranda.

Messrs. Rollisson's Nursery, Tooting. — Few nurseries contain a more extensive collection of plants than this does. It possesses a fine range of houses, three of which have been built expressly for Orchids. The first is span-roofed, and of considerable length, with a table up the centre, and one on either side. There are some hundreds of plants in this house, some of them being fine specimens; and there are several in bloom. Miltonia Clowesii is beautifully in flower. There are three varieties of this plant here; one of them, a fine kind, was imported a good while ago, but is only now flowering for the first time. Along with it was Miltonia spectabilis, the same plant which was at the Chiswick flower show on the 19th of July, and yet it has, at the present time, more than a hundred blooms on it. It is a very fine plant of the kind. In the same house was a variety of M. spectabilis, with purple flowers. It grows in the same way as spectabilis, and the blossoms are very large, often measuring 3 or 4 inches across, and of a fine rich colour. Associated with these were Huntleya Wailesiana, with white and purple flowers; Galeandra Baueri, a fine specimen of Sobralia macrantha, Peristeria elata—the Dove-plant, P. guttata, Brassia Lanceana, some Oncids, Cymbidium giganteum, and Lycaste Skinneri. At the end of this house was a fine collection of Pitcher-plants, all in excellent condition. The pots were plunged in sphagnum in gentle bottom heat. Among them were Nepenthes ampullacea, N. Rafflesiana, N. Hookeriana, and other fine sorts. After leaving this house, a few steps farther on led to another, which was filled chiefly with Cattleyas, Lælias, and Odontoglossuns, &c.; Lælia superbiens was making luxuriant growth. This is rather a difficult plant to manage; but all the extra care that it requires is amply compensated for by its charming spikes of purple blossoms. The magnificent plant of this Lælia, at Chiswick, when in bloom, is worth travelling miles to see. Odontoglossum grande, Cattleya violacea, C. Loddigesii, the beautiful Dendrobium chrysanthum, were all in flower here, together with several others. Contiguous to this is another span-roofed Orchid house of considerable length, containing on a raised platform at the end some fine specimens of Pitcher-plants, among them were Nepenthes albo-marginata, N. Rafflesiana, &c.; and on the left of these was a nice collection of variegated Orchids under bell glasses, while on the right was a tank for aquatics. The Orchids in this house were principally East Indian kinds. We remarked a fine stock of Vanda tricolor and suavis, which has lately been received from Java. There was also the beautiful Phalænopsis grandiflora, the queen of all the Orchids. Several plants of Burlingtonia venusta were flowering beautifully here; some of them having as many as nine spikes of flowers open on them at one time. This is a very useful Orchid, and ought to be in every collection.

Along with these were the tailed Angrec (Angræcum caudatum), a fine plant of Aerides quinquevulnera, with five spikes of flowers; Saccolabium guttatum, and many others. A span-roofed Heath-house was well filled with plants of that interesting genus. Heaths are cultivated with great skill here; a fact sufficiently attested by the many prizes they have obtained at great metropolitan flower shows, during the season. The next thing that attracted particular attention was a fine stock of the beautiful Rhododendron javanicum, of which there are here some hundreds of plants of different sizes, from 6 inches to 2 feet high. The Camellias in the Camellia-house are well covered with flower-buds, and a fine bloom may be expected.

## FLORICULTURE.

THE HOLLYHOCK.—Few autumn flowers are more valuable, for the general purposes of decoration, than the Hollyhock; and I am glad to see that, within the last year or two, the tide of fashion has decidedly set in in its favour. This fine flower has been long neglected, and has had much to complain of; but now its merits are beginning to be fully recognised. It well deserves all the attention that it is likely to receive; for, except the Dahlia, where shall we find its equal in point of beauty at the season in which it blooms. It is hardier than the Dahlia, and will produce a goodly display for a considerable time after the beauty of "Autumn's king" has been cut off by frost. It also looks well in situations in which the Dahlia would be less suitable, as, for instance, against walls; and I have seen the lofty front of an old-fashioned conservatory rendered exceedingly gay by placing a Hollyhock against the clumsy wooden divisions of the sashes. Like most other things, since more attention has been paid to this flower, it has greatly improved in shape, and some of the finest varieties raised of late years may be said to be tolerably perfect in this respect. There is, however, yet ample room left for amendment, and as some of the less initiated in the science of floriculture may be anxious to know what constitutes a good Hollyhock, I venture to furnish them with the following information on the point taken from Mr. Paul's excellent treatise* on the history, properties, and culture of this flower—a shilling's-worth which every lover of Hollyhocks should possess.

"'1. The diameter of the centre should not be less than 3 inches, and the outline not less than half a globe: the florets of which it is composed should be thick, dense, whole on the edges, and entirely free from fringe or serrature.

"'2. The principal or guard-petals should not extend more than from a quarter to half an inch beyond the outline of the centre: they should be thick and flat, forming a circle, and entirely free from notch or serrature.

"'3. Size is a distinct property: when equal in other respects, the larger the better.'

"The above 'characteristics' are supplied by Mr. Downie, and to this definition he appends the following list, which he considers 12 of the best Scotch flowers:

1. Captain Peat (Downie and Laird's), light purplish rose.
2. General Bem (R. Veitch's), vivid scarlet.
3. Illuminator (Downie and Laird's), deep crimson.
4. Lord Willoughby d'Eresby (Downie and Laird's), bright ruby red.
5. Mesmeriser (Downie and Laird's), nearly black.
6. Nova Scotia (Gemmell's), dark maroon.
7. Napoleon (Pow's), shaded lilac.
8. Professor Syme, or Jamie Duff (Downie and Laird's), deep rosy purple.
9. Spectabilis (Downie and Laird's), fine rosy peach.
10. Sir David Wedderburn (Currie's), dark chocolate.
11. Susanna (A. Veitch's), shaded white.
12. William (A. Veitch's), purplish maroon.

"On the same subject Mr. Chater, of Walden, thus writes: 'The definition of a good flower, in my humble opinion, is as follows:

"'1. It is indispensably necessary that the petals be of thick substance, the edges perfectly smooth and even.

"'2. The florets occupying the centre must be compact, closely arranged, rising in the middle so as to make a half globular form, with a stiff guard-leaf extending about half an inch, or rather more, from the centre florets.

"'3. The arrangement of the flowers on the stem or spike ought not to be too thick or too thin. I consider most of the following six varieties perfect flowers; and as regards their general habits, excelled by none that I have ever seen: Walden Gem, Enchantress, and Pulchella (Chater's); Model of Perfection, Queen, and Rosea grandiflora (Baron's).'

"The following is Mr. Chater's list of the next best that he has seen, arranged according to colour:

Obscura (Chater's), mottled.
Attraction (Baron's), mottled.
Mr. C. Baron (Chater's), salmon and pinkish salmon.
Aurantia (Rivers'), salmon and pinkish salmon.
Comet (Chater's), red.
Fireball (Bircham's), red.
Coccinea (Baron's), red.
Magnum Bonum (Baron's), dark.
Purpurea elegans, new (Chater's), purple.
Rosea alba, new (Chater's), mixed colours.
Bicolor (Chater's), mixed colours.
Sulphurea perfecta (Rivers'), yellow.
White Perfection (Chater's), white.

"The next definition is from Mr. Parsons, of Ponder's-end, one of the oldest and most successful amateur cultivators of this flower.

"1st. Shape: this should be something less than half a ball. The flowers should be free from pockets, the anthers not seen. The petals should be free from indentation or notch.

"2d. Size: The ball should be from 1¼ to 2½ inches high, according to its diameter; the greater the diameter the greater should be the height. The diameter of the ball should never be less than 2½ inches. The guard-petals should extend from ⅛th to ¼th of an inch beyond the ball; the larger the ball the broader should be the guard-petal. What we aim at is proportion. The different parts of the flower should bear such relation to each other that the whole may be uniform, and in nothing offend.

"3d. Substance: the petals should be thick and smooth.

"4th. Spike: this should never exceed 7 feet. The longer the footstalks, in moderation, the better, as the bulk of the spike is in proportion to their length, and the greater the bulk the finer the object.

"The following are 12 of the best flowers I have seen:—

Comet.
Enchantress.
Magnum Bonum.
Mr. C. Baron.
Obscura.
Queen (Baron's).
Rosea alba, new.
Rosea grandiflora.
Rosy Queen.
Sulphurea perfecta.
Walden Gem.
Watford Surprise.

"In analysing and comparing the foregoing definitions, we find those of Mr. Chater and Mr. Parsons so nearly agreeing as scarcely to require comment. Mr. Downie, however, although agreeing in regard to substance, &c., differs in the essential points of size and form. This is the distinction: the Scotch florists attach more importance to size; they contend also for a higher ball and a narrower guard-petal. After constructing various models, examining numerous flowers, and duly weighing these points, we venture to give the following proportions: height of ball, 1⅛ inch; diameter of ball, 2½ inches; extension of guard-petal beyond ball, ⅜ inch. This is given as the smallest dimensions admissible. We would not fix a limit to the increase; but whatever it may be, it should hold the same proportions."

Mr. Paul gives a sketch in outline illustrative of his idea of a good Hollyhock, but in this particular his opinion and mine is somewhat at variance; and I hope to be able to point out soon what shape I consider a good Hollyhock should possess. In addition to the points already named, Mr. Paul says—"I would state that the colour, whatever it may be, should be clear and decided. In striped, veined, mottled, or shaded flowers, the ground and overlaying colour should be distinct and well-defined, free from all confusion. The guard-petals should be of great substance, neither ridgy, serrated, nor curled. I should like, also, to see the flowers of increased substance, free from pockets, and of dwarfer habit. We look for great improvement in this latter point. Viewing the plant merely as an object of garden decoration, the height to which it grows is perhaps no disadvantage, but often a recommendation. When rising behind dwarfer plants, it indeed presents a noble appearance, and may justly be styled the monarch of the garden. But as a florist's flower, we hold this to be an objection, and to the correction of this point the attention should be directed. It is probable that important results would arise from hybridising with the dwarfer species, or saving seed from the dwarfest varieties."

I quite agree with Mr. Paul that, by means of judicious hybridisation, the general appearance of this flower may be considerably altered for the better; and I hope with him that this point will receive that attention which it demands. *J. E.*

EAST FORFARSHIRE HORTICULTURAL SOCIETY, *Sept.* 17.—An excellent display of florist and other flowers was produced on this occasion; but we have only been furnished with a list of the awards, without the names of the subjects for which they were given.

NATIONAL FLORICULTURAL, *Oct.* 9.—Mr. STAINS in the chair. Hollyhocks were furnished by Mr. Clarke; Dahlias by Messrs. Bragg, Pope, Rawlings, and Drummond. Three nice Fuchsias came from Mr. Dobson, of Woodlands Nursery, Isleworth, and some good Petunias from Mr. Gadd. A first-class Certificate was awarded to Mr. Drummond, of Bath, for a very beautiful Statice, apparently a cross between S. imbricata and S. macrophylla. The same raiser also received a certificate for a bright scarlet Dahlia called Bob Drummond. It was well shaped; but in the flowers exhibited, the centre appeared to be scarcely sufficiently elevated. Two new members were added to the liste, and two more were proposed for election at the next meeting.

SYDENHAM FLORICULTURAL, *Sept.* 10.—The 1st prize for the best 12 Dahlias was awarded to Mr. R. Chawner, gr. to G. A. Perian, Esq., for Mrs. and Mr. Seldon, Champion, Sylph, Duke of Wellington, Model, El Dorado, Sir F. Bathurst, John Edwards, Queen of Lilacs, Princess Louisa, and Sir Charles Napier; 2d, to Mr. G. Stokes, gr. to W. D. Harling, Esq., for Fearless, Beeswing, Optimus, Toison d'Or, El Dorado, Sir F. Bathurst, Duke of Wellington, Mr. Seldon, Standard of Perfection, Nonpariel, Purple and Yellow Standards; 3d, to Mr. R. Thompson, Florist, Blackheath. Best 6: 1st, Mr. Jauncey, with Mrs. Seldon, Crocus, Richard Cobden, Queen of Lilacs, Captain Warner, and Fearless; 2d, Mr. Gundry. Best 6 Fancies: 1st, Mr. Chawner, with Miss Wayland, Jenny Lind, Lady Granville, Elizabeth, Lady Cullum, and Forget-Me-Not; 2d, Mr. Mockett, with Gasparine, Madame Wachy, Flying Dutchman, La Rosa, Lady Granville, and Dulcis. Fuchsias: 1st, Mr. Mockett, with Psyche, Kossuth, Pearl of England, Don Giovanni, Dr. Grosse, and Sir F. Falstaff; 2d, Mr. Reid, gr. to James Hunt, Esq., with Kossuth, La Carnation, Duchess of Kent, Bianca, Triumph, and Triumphant. Scarlet Geraniums: 1st, Mr. Stokes, with Tom Thumb, Beckenham, Compactum, and Shrubland; 2d, Mr. Pullen, with Mrs. Mayler, Duke of York, Princess Alice, and Tom Thumb. Several other prizes were awarded for Stove and Greenhouse plants, Fruit, &c., and altogether it was an interesting show; but we are sorry to add that it was badly attended.

WYCOMBE, *Sept.* 18.—The friends of this Society will be glad to learn that its funds are in a prosperous state—that several new members were added at this meeting, and that altogether the day passed off the best on record. Dahlias, in collections of 24, were exhibited by, 1, Mr. Bragg; 2, Mr. Ford; 3, Mr. Walker. 12 Fancies: 1, Mr. Bragg; 2, Mr. Ford; 3, A. Lane, Esq. Private growers only: 1, Mr. Shrimpton; 2, Mr. White; 3, A. Lane, Esq; 4, Mr. Bond. Greenhouse plants, Fuchsias, Verbenas, Hollyhocks, Cut Flowers, Marygolds, Zinnias, Roses, Fruits and Vegetables were all produced by, and prizes awarded to, Mr. Sangston, Mr. Bond, A. Lane, Esq., Mr. S. Treacher, Mr. White, Mr. Walker, J. Nash, Esq., Mr. Green, Rev. G. Broadhead, Mr. Wood, F. J. Reynolds, Esq., N. Blandy, Esq., Mr. Harman, T. Edmonds, Esq., Joseph Hunt, Esq., &c. For valuable novelties, we freely grant the glories of the day to Mr. Hunt to whom was awarded an extra prize for a collection of Seedling Sweet Williams, flowers entirely his own, and comprising the greatest possible variety and beauty. The Rose, the Tulip, the Pansy, are each cherished with fondness; but to these, and to other florist flowers, we are glad to be able to add a new claimant, viz., the Sweet William; long may it prosper under the watchful and vigilant eye of "my Lord of Cressex."

YORK HORTICULTURAL, *Sept.* 24.—Among plants, there was nothing particularly striking, except some well grown specimens of Fuchsias. Messrs. Backhouse obtained the 1st prize, for the best six dissimilar varieties, with Fair Rosamond, Comte de Beaulieu, Elizabeth, Sir John Falstaff, Don Giovanni, and Scarletina Reflexa; 2d, Mr. Edward, with Kossuth (very fine), Elegance, Sir J. Falstaff, Inaccessible (extra), Dr. Smith, and Prince Arthur; 3d, Mr. Edward, with Purity, Esteem, Kossuth, Prince Arthur, Globosa Grandiflora, and Smith's Alpha. For the best three Fuchsias: 1st, J. Roper, Esq., with Minerva Superba, Kossuth, and another; 2d, Mrs. Stapylton, with Napoleon, Corallina, and Elegans. And for the best Single Fuchsia: 1st, Mrs. Stapylton, with Pearl of England; 2d, Mrs. Stapylton, with Dr. Smith; 3d, J. Roper, Esq., with Mayle's Purity (fine). There was a tray of six Seedling Petunias, with no name attached, one of which was a very beautiful variety, of good substance and outline, and striking in colour. Of Dahlias, there was a very superior show, and many of the blooms were in excellent character. It is to be regretted that the northern and southern growers of the Dahlia cannot be brought to compete together; this would create more spirited competition, and, we doubt not, tend to improvement in the culture of this "King of Autumn," by stimulating both nurseryman and amateur to excel his competitors in their productions. Why not establish one grand Dahlia exhibition, itinerant in its character, holding its meetings at York, Derby, Manchester, Birmingham, or at such other places as might be agreed upon as the most convenient for the northern and southern florists to meet and compete together? The principle has been acted upon by the Tulip growers, and found to work well, and why not with the Dahlia? This, we submit, is worthy of consideration, and we shall be glad to see the matter taken up by some of the principal of our southern and northern florists. Mr. G. Edward, of York, exhibited some fine flowers in his stand of twenty-four dissimilar blooms, which comprised the following varieties: Queen of Lilacs, Crocus, Princess Louisa, Nil Desperandum, Mrs. Bacon, Earl of Clarendon, Champion, Elizabeth, Hero, Mrs. Hansard, Duke of Wellington (extra), El Dorado, Venus, Lord Mayor, Silver Florin, Shylock, Queen of Dahlias, Kelson's (a promising flower), George Glenny, Imbricata, Admiral, Keynes' Magnificent, John Edward, Mr. Seldon, and Black Diamond. J. Pease, Esq., Darlington, came second, and Messrs. Backhouse, of York, third, with General Negrier, Sir F. Bathurst, Yellow Standard, Duke of Cambridge, Mrs. Bacon, Crocus, Essex, Triumph, Shylock, Beeswing, Queen of Lilacs, Purple Standard, Privateer, Duke of Wellington, Lord Mayor, El Dorado, Queen of the East, Magnificent, John Edward, Mr. Seldon, Nonpareil, Optimus, the Hero, Princess Louisa, and Mrs. Seldon. For the best 18 Blooms: 1st, Mr. Edward, with Mrs. Bacon, Hero, Queen of Dahlias, Nil Desperandum, Queen of Lilacs, Magnificent (Keynes'), Duke of Wellington, Geo. Glenny, Earl of Clarendon, Lord Mayor, Mr. Seldon, John Edward, Mrs. Anderson, Princess Louisa, Silver Florin, Edward's Magnificent, California, and Shylock. Twelve blooms: 1st, J. Richardson, Esq.; 2d, Mr. Marley, Darlington; 3d, Mr. J. Clarke, Green Hammerton. Six blooms: 1st, Mr. Anderson, Whitby; 2d, Mr. Lister; 3d, H. Watson, Esq. Twelve fancy blooms: 1st, Mr. Edward, with Mrs. Willis, Lola Montes, King Fisher, One in the Ring, Mrs. Hansard, Belle de Peg, Flying Dutchman, Dr. Horner, Miss Pope, Princess Charlotte, Approbation, and Miss Compton; 2d, Messrs. Backhouse; 3d, Mr. Clarke, for Hero, Fearless, Beauty Supreme, Mrs. Bacon, El Dorado, Madame Gobert, Sir F. Bathurst, Danecroft Hero, Queen of Primroses, Imbricata, Fame, and Champion. In class showing, the competition was very close, the winning flowers being chiefly the same varieties as those above-mentioned, Mr. Appleby, of York, showed several trays of Hollyhocks, principally Chater's varieties. Pansies were good for the season; in fact, we have rarely seen Mrs. Beck, Duchess of Rutland (a useful flower in the north), Duke of Norfolk, and France Cycole, in better character. Among the best flowers exhibited, we noticed Duchess of Rutland, Hall's Rainbow, Thompson's Excellent, Helen, Trafalgar, Mrs. Harcourt, Lord Hardinge, Northern Star, White Serjeant, Lady Constable, Sir William Herschell, Conquering Hero, Telegraph, Supreme, Wellington, Addison, Marchioness of Lothian, Voltigeur, Lucy Neal, California, Magnificent, Berryer, Duke of Norfolk, Caroline Androcles, France Cycole, Mrs. Beck, Duke of Norfolk, Helen, Milton, Almanza, &c.

CATALOGUES have been received, with thanks, from Mr. R. J. Kaye, Bury; Mr. H. Groom, Clapham; Messrs. Schofield and Son, Knowsthorpe; Mr. William E. Rendle, Plymouth, and Mr. John Holland, Middleton, near Manchester. *J. E.*

DAHLIAS: *Lector.* It would be impolitic to publish your letter, well written though it be. In the main we agree with you; and when the flower is again under consideration, we shall take an opportunity of noticing the matter. *J. E.*

EXHIBITIONS. Want of space has alone prevented the insertion of several reports of meetings, which otherwise would have appeared; during the past month they have been so numerous that to have given all as they occurred would have occupied one half of our columns. Let not those who have furnished accounts of distant meetings think we are ungrateful for their several favours: it is our desire to give all; but that can only be accomplished by patiently waiting until the necessary room can be afforded for them. *J. E.*

PANSIES: *I H B.* Received with thanks. *J. E.*

PELARGONIUMS: *W E R.* The Transactions are in the hands of the printer, and will be forwarded to you as soon as published. They will afford you the information you require. We had Beauty of Montpellier last autumn; the new variety at your convenience. *J. E.*

### SEEDLING FLOWERS.

FUCHSIA: *R R.* A dark variety of the ultra reflexed class; corolla deep purple, stout and smooth; tube and sepals bright crimson. You should not write on the paper in which the box is packed. In the operation of opening the package, the writing got so much disfigured and torn that we could scarcely make out your initials.

HOLLYHOCK: *J Chater and Son.* A remarkably neat flower, of good proportions, smooth in the outline, and in size below the average.

## Miscellaneous.

*The late Patrick Neill.*—In early life, gifted with a taste for scientific pursuits, Botany and Horticulture became his favourite studies. He was one of those who advanced the knowledge of Scotch Botany, and who along with Don and others added many important plants to our alpine Flora. Throughout life he retained a lively and deep interest in Scotch Botany, and his enchanting garden at Canonmills bears testimony to the zeal and success with which he cultivated the rare alpine species. But while Dr. Neill was thus an enthusiastic practical

* An Hour with the Hollyhock. By William Paul. Pp. 32. London: Piper.

botanist, he was also a most enlightened Horticulturist, and contributed much, by his exertions and writings, to promote the gardening of Scotland. He was one of the early founders of the Caledonian Horticultural Society; he acted as Secretary to that Institution for the long period of 40 years; and it is mainly to his exertions that its present high position is due. With him this Society was always a favourite object, and he devoted himself to it. His exertions were crowned with success, and he lived to see the Society struggle through many difficulties, until it was placed in such a position as to ensure its stability and permanency. Dr. Neill embraced in the range of his study all departments of natural history. He was particularly fond of Zoology, and he always had in his garden living specimens of some of the rarer animals, which were objects of attention to visitors. He promoted the establishment of the Edinburgh Zoological Garden, and in his capacity of Secretary to the Wernerian Society he had many opportunities of advancing the science of Natural History. By Dr. Neill's death one of the links have been broken which united us with the Scotch naturalists of last century. His loss will be deeply felt, for he was beloved by all who knew him, and with all his acquirements he exhibited an innate retiring modesty, which was peculiarly pleasing. He loved science for its own sake, and he did all in his power to promote a love for it in others. His collections were open to all, and his house at Canonmills was the resort of every naturalist who visited the Scottish metropolis. Till within a few months of his death, he was able to take an active interest in his favourite pursuits; and even when he felt that his strength was failing, he retained that calm equanimity which ever distinguished him, and he spoke with composure of his departure from the scene of his labours. His death has left a blank in Edinburgh which will not be easily supplied. He was forward in every good work, and many are the institutions which were indebted to his liberality and kind offices. It is not for us at this time, when the tomb is but newly closed upon his mortal remains, to enter into details of his long-continued and usefully-directed labours in the fields of science; this we reserve till a future occasion, in the meantime simply recording the melancholy death of one of Scotland's best naturalists, and one who has been identified with the history of Scottish horticulture, throughout a period of more than half a century. Perhaps no one has ever done so much for the horticulture of a country, as Dr. Neill has done for ours; and no one has ever shown greater anxiety for the education and welfare of practical gardeners. Scotland has been long distinguished for horticulture, and the skill of her gardeners has caused them to be sought after by parties in all parts of Britain. Much must be attributed to the early education which they receive. This puts them on a high vantage ground, and enables them to prosecute horticulture in a scientific manner, and not according to mere empirical laws. Unless a gardener is intelligent and enlightened, he cannot be expected to advance horticulture. He may continue in a beaten path without knowing the why or the wherefore, but he will not be ready to discard what is wrong although it has antiquity to recommend it, nor to adopt those improvements which the progress of science has suggested. There can be no doubt that the information of our gardeners has increased much of late; the theory as well as the practice of horticulture has been studied by them, and we have every reason to hope that by the enlightened exertions of Horticultural Societies, a new era has dawned, which will give rise to a most intelligent class of gardeners. To no one was the horticulture of Scotland more indebted during the last half century, than to Dr. Patrick Neill, whose loss we now deplore, and, indeed, whose decease is a subject of deep regret to all who feel an interest in horticultural operations. We are sure that the gardeners of Scotland have lost their best friend. In the disposal of his effects, by his will, Dr. Neill has not omitted the Caledonian Horticultural Society, for which he laboured so long. We believe that he has bequeathed to the Society a sum of 500*l.*, for the purpose of founding a medal to be awarded to distinguished Scottish cultivators.

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

Let immediate attention be paid to the collecting of a good stock of the most useful soils that can be obtained. By getting them into the compost yard at this season, opportunity is afforded of turning and exposing them to the action of the atmosphere during winter, and thus taking advantage of the frost to destroy the insects with which fresh soil naturally abounds. In collecting turf, it is a good plan to cut it during the next two months, and allow it to lie with the grassy side downwards until it has been penetrated by the first frosts, by which all insects will be driven out or destroyed. Before the turf is cut, the herbage should be mown off it as closely as possible; the sods should not be cut more than from 3 to 5 inches thick, as the part next the surface contains the greatest proportion of vegetable fibre; and from having been more freely exposed to the ameliorating influences of the atmosphere, they are in better order for early use.

### FORCING DEPARTMENT.

Pineries.—Keep a constant eye to the bottom heat, as at no season is it more liable to vary, and never is it more essential to prevent such variations, especially with fruit in progress. To assist in maintaining an equable state of heat and moisture about the roots during the winter, it is a good plan to surface the beds about two inches thick with some half spent tan, or leaves taken from a pit where they have heated, and are partially decomposed. This mulching will in a great measure do away with the necessity of watering the roots of Pine plants during the dark months. The quantity of water introduced should be very much restricted, as the evaporation arising therefrom is liable to condense, and run into the hearts of the plants. This evil may, however, in a great measure, be prevented by due attention to ventilation, and by keeping the laps between the glass clean, thus allowing the excessive vapour to be carried off. Where dung linings are used for Pine frames, a covering of mats will be necessary in severe weather; and as these tend to prevent any escape by means of the laps, a little air should remain on all night. Vineries.—Once more we mention the propriety of adopting some efficient mode of protecting Vinery borders from autumnal rains, and the cold produced by the consequent evaporation. However well drained the border may be, and however porous the material of which it is composed, the continual wetting and partial drying of the soil, besides keeping the roots miserably cold and wet, will so injure the texture of the soil that it will cease to part so freely with the surplus water; and as the evaporation is increased, the warmth of the border will naturally decline in a similar proportion. Proceed vigorously with the pruning and cleaning of the Vines from which the fruit is cut, and at the same time let any needful painting or other repairs be done, that the houses may have a neat and finished appearance, and likewise be in perfect readiness for their next year's campaign. By getting this work speedily completed, the houses may be made immediately available for sheltering Chrysanthemums, Geraniums taken up from the flower garden, and other similar plants, which merely require to be protected from the frost.

### FLOWER GARDEN AND SHRUBBERIES.

Now that the summer flowering half hardy plants are removed, make the best amends in your power by drawing upon the reserve garden. All the important beds should be filled with dwarf evergreen shrubs, or spring flowering plants, as Hepaticas, Primroses, Polyanthus, Alpine Auriculas, Wallflowers, &c. These will supply the beds with foliage, and in spring the flowers of the latter will considerably assist the display produced by the Crocus and other bulbs already planted. Dahlias, if so far injured by frost as to be no longer ornamental, may be cut down, preparatory to their being taken up in a few days' time. Tigridias and other summer bulbs may be lifted and laid in a cool dry shed, till they will part easily from their haulm. Salvia patens should be taken up and potted, or planted in a frame of moderately dry soil, where it will keep without any trouble, by merely excluding the frost.

### HARDY FRUIT GARDEN.

Planting and root pruning of fruit trees, where necessary, should now be in progress, to the exclusion of all other work of secondary importance, that as much as possible of this work may be completed before severe weather sets in. Those planted on this side of Christmas have a decided advantage over those moved at a later period; their roots require a very short season of repose, especially if assisted by a little mulching on the surface of the ground, and are in action long before the tops evince the slightest evidence of activity. With regard to soil, the errors most commonly committed are in making it too deep or too good. For Apples, Pears, and all stone fruits, good loam is all that is necessary; it may be mixed with sand or burnt clay, if the loam is too tenacious; and if the whole, or at least a portion of it, has been charred, it will thereby be considerably improved. When any additional stimulus is necessary, it can be supplied in the shape of mulching or liquid manure. The depth of soil should never exceed 12 or 18 inches; and if the bottom is not naturally impervious, it should be made so by artificial means. Where the situation is very damp, let the border for the choicer fruit trees—as Apricots, Peaches, and Nectarines—be made entirely above the ordinary level, as it is well worth while to sacrifice a foot of the height of the wall, if by doing so the remaining portion is rendered more useful. We form platforms of rubble, 6 to 9 inches in thickness, and concrete the surface of it before depositing the soil. This impervious bottom prevents the roots from getting down into the subsoil, and keeps the trees healthy and fruitful.

### KITCHEN GARDEN.

Let Cauliflowers, under handlights, have all the air possible, protecting them only from frost, rain, or very cold winds. Watch closely for slugs, and check their ravages by timely applications of soot. A little finely sifted clean coal ashes is an excellent thing for covering the surface of the soil between young plants of any kind, as our slimy friends have an insuperable objection to crawl over it. The same remarks apply to the Endive and Lettuce planted in frames for winter use. Let dead or decaying leaves be carefully removed, and the surface of the soil, loosened, to allow the free action of the atmosphere. It is an excellent, but by no means a common practice to plant Garlic and Shallots in autumn; the advantage is in their commencing to root immediately, and continuing to grow below ground in all favourable weather during the winter, while their tops are not emitted till the usual time in spring. We have often dwelt upon the importance of this point as a general principle, viz., affording the roots of a plant an opportunity of getting in advance of the tops.

State of the Weather near London, for the week ending Oct. 16, 1851, as observed at the Horticultural Garden, Chiswick.

| Oct. | Month's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 10 | 5 | 30.168 | 29.535 | 68 | 46 | 57.0 | 52½ | 51½ | W. | .00 |
| Satur. .. 11 | 16 | 30.224 | 30.188 | 68 | 53 | 60.5 | 54 | 52½ | S. | .00 |
| Sunday.. 12 | 17 | 30.233 | 30.274 | 68 | 54 | 61.0 | 53 | 53 | S. | .00 |
| Monday 13 | 18 | 30.179 | 29.959 | 62 | 54 | 58.0 | 56 | 54 | S.W. | .04 |
| Tues. .. 14 | 19 | 29.928 | 29.841 | 62 | 44 | 53.0 | 56 | 54 | W. | .03 |
| Wed. .. 15 | 20 | 29.432 | 29.336 | 56 | 32 | 44.0 | 55½ | 53½ | W. | .34 |
| Thurs.. 16 | 21 | 29.606 | 29.502 | 57 | 28 | 42.5 | 53 | 52½ | S.W. | .00 |
| Average . | | 29.967 | 29.809 | 63.0 | 44.4 | 53.7 | 54.3 | 53 3 | | .41 |

October 10—Densely overcast; cloudy and mild at night.
— 11—Foggy; very fine; clear at night.
— 12—Uniformly overcast; cloudy; densely clouded.
— 13—Overcast; cloudy and fine; rain.
— 14—Fine; very fine; cloudy.
— 15—Rain; constant rain; clear at night.
— 16—Clear; very fine; clear; frosty.
Mean temperature of the week, 2½ deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Oct. 25, 1851.

| Oct. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 19 | 59.7 | 39.4 | 49.6 | 10 | 0.14 in. | 1 | 2 | 2 | 3 | 3 | 4 | 7 | 4 |
| Mon. 20 | 59.2 | 40.4 | 49.8 | 12 | 0.34 | 1 | 3 | — | 3 | 4 | 6 | 6 | 2 |
| Tues. 21 | 58.2 | 38.9 | 48.5 | 10 | 0.61 | 2 | 3 | 1 | 3 | 4 | 4 | 8 | — |
| Wed. 22 | 58.2 | 43.9 | 51.0 | 17 | 0.50 | — | — | 4 | 1 | 5 | 9 | 4 | 2 |
| Thurs. 23 | 57.5 | 40.9 | 49.2 | 17 | 0.46 | 3 | 1 | — | 2 | 4 | 7 | 7 | 1 |
| Friday 24 | 55.7 | 40.5 | 45.6 | 13 | 0.83 | 2 | 1 | 1 | — | 7 | 8 | 4 | 2 |
| Satur. 25 | 55.4 | 38.2 | 46.8 | 10 | 0.72 | 4 | 1 | 4 | 3 | 3 | 4 | 3 | 3 |

The highest temperature during the above period occurred on the 21st, 1830—therm. 73 deg.; and the lowest on the 21st, 1842—therm. 20 deg.

## Notices to Correspondents.

Back Numbers. Full price will be given for the following Numbers: 1844—46; 1847—9, 25, 51; 1845—49; 1850—44, 49.

Banks: *Gallicus.* We have no experience of such a place; but we presume that Quercus coccifera, Tree Box, Holly, Yew, Berberis aquifolium, Hypericum calycinum, Cotoneaster microphylla, Savin, &c., will succeed—and perhaps Deodars, which could be cut away when too tall.

Birds: *J W.* It is, no doubt, a crested lark, of an unusual size.—*Jane L.* We must refer you to the *Gardeners' Chronicle* of Feb. 15.—*William T.* The average number of years is four.—*W E.* Try ripe Groundsel, and a little hard-boiled yolk of egg.—*Elizabeth F.* Nothing but *warmth* can save your little friend. He has been carelessly exposed to draught during his moult.—*M A B.* Bruise some chalk, and scatter it on the bottom of the cage.—*Charlotte C.* By no means. At this season, baths must be dispensed with.—*Louisa P.* The *vermin* are at work. Peruse carefully what we have already said about them in former numbers.—*Joanna.* They are kind, affectionate birds; and will never quarrel, even though three or more dwell together under one roof.—*Avis.* You *may* succeed by keeping them in a room, at one regulated heat, throughout the winter; not otherwise. *W. K.*

Books: *H.* Moore's "Hand-Book of British Ferns."

Fruit Trees: *J A M.* From what you state, the following selection will most probably suit you. Peaches: 2 Grosse Mignonne, 2 Royal George, 1 Royal Charlotte, 2 Bellegarde, 2 Noblesse, 1 Barrington, 1 Late Admirable. Nectarines: Elruge, Violette Hative, and Balgowan. Apricots: 2 Moorpark, 1 Royal. The border should be trenched, and in doing so mix rich turfy loam with the present soil. ‖—*Novice.* We are of opinion that the decay of Apricot trees is accelerated by excessive dryness at the roots, by sun scorching of the stems, and by mildew on the leaves. The Moorpark, to which you more particularly allude, has very broad leaves, and consequently evaporates more than the smaller-leaved varieties; and in dry seasons, in order to supply this evaporation, the roots soon exhaust nearly all available moisture within their reach, after which the trees must suffer. This should be guarded against by watering so as to thoroughly soak the subsoil; but, in doing this, take care that the water is warmer than the border, otherwise the fruit will either drop or swell badly. It is obvious that scorching can be prevented by shading the exposed part of the stem. Sulphur is the best remedy for mildew. Try the Royal Apricot. ‖

Insects: *Quæro.* The little insects which you mistake for red spiders, and which you found beneath the shrivelled body of a *scale* insect, are in fact the young active state of the latter insect. They have only six legs—red spiders have eight; the latter are in no way related to the Coccidæ. *W.*—*S W.* The luminous worm sent is the Geophilus electricus, not very uncommon, the light being generally emitted about pairing time. *W.*—*Margaret.* The grub you describe which has destroyed your Carrots and Onions appears to be the young state of the common cock-chaffer. If your garden is much infested with it the beds ought to be dug up at once, the earth well turned over, and the grubs picked out, as they will now, very soon, burrow deeper in the ground, to avoid the frost. *W.*

Names of Fruits: *Este.* 2, Yorkshire Greening; 3, Margil; 4, Caroline, very different from either of the Astrachan Apples; 6, Pomme de Neige; 7, Hollandbury; 8, Burr Knot; 11, Doyenné Gris; 12, Beurré Diel. ‖—*T G H.* 1, 2, Blenheim Pippin; 3, Brabant Bellefleur; 5, 6, Mank's Codlin. ‖—*H I O.* The Kerry Pippin. ‖—*Lawneswood.* 1, Beurré Rance; 2, Urbaniste; 3, Williams' Bon Chrétien; 5, Beurré Diel; 6, Uvedale's St. Germain; 7, Napoléon; 8, Glout Morceau; 9, 11, Beurré de Capiaumont; 17, English Codlin; 18, Easter Pippin or French Crab; 19, Keswick Codlin; 20, 23, Minchall Crab; 21, Scarlet Nonpareil. ‖—*F L H.* 1, Beauty of Kent; 2, French Russet; 3, Gloria Mundi. ‖—*F G.* A, Royal Russet; C, F, King of the Pippins; L, R, Alfriston; O, Ribston Pippin; W, Golden Pippin; 2, Ribston Pippin; 6, Court of Wick; 8, Keswick Codlin; 19, London Pippin; 20, 34, None-such; 26, Dumelow's Seedling. ‖

Names of Plants: *Florence.* Common Hornbeam.—*J P.* 1, Anthyllis vulneraria; 2, Gnaphalium germanicum; 3, Serratula tinctoria; 4, Hieracium sylvaticum; 5, Gastridium lendigerum; 6, Psamma arenaria.—*W G L.* Argyreia speciosa, not new, but rare. It is a kind of Convolvulus from the East Indies.—*C L.* Oncidium incurvum.—*K B.* 1, some Desmodium, of no horticultural importance; 2, a Leptospermum; and 3, an Acacia, not determinable without flowers.—*W F.* Pyrus Aria.—*T B.* Tremella mesenterica.

Paulownia: *Vectis.* We had forgotten that this beautiful plant had once flowered at Claremont; and we find that Hampton Court also claims the honour.—*T Davidson.* Yes; your plant is in the same state as that of "Vectis."

The Rhine: *A Constant Subscriber* should consult Messrs. Booth and Sons, of Hamburgh, who can advise him much better than we, who are unacquainted with the little details required to form a correct judgment.

Transplanting: *Constant Sub.* You may transplant your Irish Yew and Berberis aquifolium now with advantage.‡

Misc: *W F.* The ashes of burnt vegetable rubbish will be found a good material for mixing in soil in which plants are potted. When the leaves on the extreme shoots of Camellias assume a whitish-yellow colour, it is either because the soil is too wet and cold, or because it is not sufficiently permeable to air.‡

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analysis of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

BIRMINGHAM CATTLE SHOW, 1851.—The Certificates of Entry for CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and, with the PRIZE LISTS, may be had on application to Mr. EDWARD LATHBURY, at the Office, No. 2, Insurance Buildings, Union Passage. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates, as a separate form is necessary for each Entry.

Attention is also requested to the regulations, as set forth in the Prize Sheets, that no entry can be received for Cattle in Classes 1 to 13 inclusive, or for any of the Classes of Sheep or Pigs, without the Breeder's Certificate, in all cases in which the Exhibitor is not the Breeder also.—The Entries close on SATURDAY, November 15. T. B. WRIGHT, Hon. Sec.

Birmingham, Oct. 18.

SMITHFIELD CLUB, 1851.—CHRISTMAS FAT CATTLE SHOW.—Prize Sheets and Blank printed Forms of Certificates may now be obtained, on application to the Honorary Secretary.

The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

THE ANNIVERSARY DINNER of the CLUB will take place at the FREEMASONS' TAVERN on the WEDNESDAY of the Show Week, instead of the Friday, as heretofore.

B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon-street, Piccadilly, London.

BAKER'S PHEASANTRY, Beaufort-street, Kings'-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MILK, CHEESE, AND BUTTER.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, advises any one who keeps Cows to send two postage stamps, and obtain a description of his LACTOMETER, with its uses, and the results of experiments with it upon different Milks. Lactometers, complete, in a mahogany box, 10s. 6d.; Do., with cheaper fittings, 7s. 6d. and 5s.; Hydrometers for testing sulphuric acid, 5s., 7s., and 10s. No consumer of acid should be without one, as it is often sold highly diluted. Saccharometers for Brewing, with tables, 5s., 7s., and 10s. Pediment Barometers, from 1l. each. Wheel Barometers, from 1l. 1s. each. Packed carefully for the country, there being nothing to fear of them getting out of order, as they are warranted to be properly made and good instruments.

**The Agricultural Gazette.**

*SATURDAY, OCTOBER* 18, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 23—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 30—Agricultural Imp. Soc. of Ireland.

WE would advise those who think that PLOUGHING with a pair of horses has been adopted in all districts in the south of England which are capable of being so ploughed, to visit the county of Kent. They will there see the turn-wrest plough with its four, and even six horses flourishing in full vigour, as in the days of the Heptarchy. Let them then cross the river into Essex and Suffolk, and they will see soils not only of the same quality, but much stronger, ploughed well with a pair of horses. The arms of Kent are a white horse, and its motto "*Invicta*." There is the utmost propriety in both: ACTÆON was not more completely devoured by his hounds than Kentish agriculture by its horses; and the prejudices of the men of Kent in favour of their ancient and cumbrous implement, seem to be all but invincible. They appear to cherish it as one of the Saxon privileges, for the preservation of which they stipulated in their celebrated treaty concluded with the Norman at Swanscombe.

Some 50 years ago, MARSHALL remarked on the paucity of live stock kept in Kent; and speculating as to the quarter in which a market was found for the green crops grown there in such profusion, arrived at the conclusion that it was no other than the stables of the farm yards, with their numerous pampered horses, kept always in a state "fit for the butcher;" and that there the whole of the Oats, Beans, Clover, Sainfoin, and Lucerne, which were grown without end, entered a sink which was never closed. A little relaxation is good for editors as well as other people. We therefore in the course of last spring made a tour into Kent; and enjoyed the opportunity of seeing, on the farm of a friend, the performances of the turn-wrest plough in preparing a Turnip fallow. The land had been ploughed and manured in the autumn, and was receiving its second furrow. The soil was a loam with a few dispersed flints,—strong enough for Wheat, not too strong for Barley or Turnips, or for feeding off the latter on the land. We had cultivated a soil as strong in an adjoining county, where three horses were the order of the day, with two-horse ploughs; and our regular day's work, under the same circumstances, would have been an acre and a quarter to each plough, ploughed in furrows 7 inches deep. The field which we saw ploughed in Kent, contained by estimation 10 acres; by actual measurement, we found it rather more than nine acres and three quarters. Four teams were brought to bear on it during two days, and three during one day; each team consisting of four horses, which we were told were worth 60*l.* each; and beautiful horses they certainly were, short, compact, clean-legged, and by nature active. Any two of them would have been capable, if not so fat, of doing more work than was performed by the four. The keep of our horses consisted of two bushels of Oats each, weekly; to which was added, in seed time, half a bushel of Beans. They had no hay in the racks, but received it all in the manger, cut into chaff, one-third by weight of Wheat straw, to two-thirds of hay. With this food they were always in good working condition; so good, as frequently to draw from our neighbours inquiries as to how they were fed, that they looked so much better than their own. We never learned how the horses of our Kentish friend were fed; and we question whether in this respect he had much the advantage of us; his men helping themselves to hay, and thinking it no robbery to steal corn from their master's barn for his own horses. However they were fed, they were fit for the butcher; each team was attended by two *men;* for the drivers were quite old and strong enough to have held the plough themselves. The force thus employed in ploughing these ten acres with furrows not more than four inches deep, was, as we have said, equal to eleven days' work of one four-horse team. With the same number of men and horses we should have ploughed, with two-horse ploughs, not less than 27 acres. Our friend carries his produce to market in the same expensive style, with four of these horses to a waggon; and do not their bells jingle merrily as they enter the town of —— on a market-day? We should add, that he complains bitterly of the times, and is confident every farmer in the land will be obliged to take refuge in the gaol or the workhouse, unless the price of Wheat can, by hook or by crook, be raised 5*s.* a quarter. He wanted an additional 5*s.* when he was ploughing his Turnip fallow in April, and the averages were something above 39*s.*; and we found him still wanting 5*s.* at the meeting of the Royal Agricultural Society at Windsor when they had risen to 42*s.* 6*d.*

But there is progress even in Kent. We travelled on the North Kent Railway, with a party of Kentish farmers, by whom the usual round of agricultural topics was discussed. To our surprise we found one of them maintaining, against the others, the practicability of ploughing the Kentish soils with two horses. For the sake of argument, we espoused the opposite side of the question; and were referred by him to a farm of good stiff land, which, however, we had not time to visit, where he said we might see the two-horse ploughs in successful operation. Before we left the county we visited another Kentish farmer whom we had not seen for more than 10 years. We had then hinted at the practicability of reducing the number of horses employed in Kentish farming, and were told it was impossible "on our soils." "They are more difficult to plough than they seem. Your little kickety ploughs have been tried, but they won't do." A marvellous change had now come over our friend. We remarked to him that we had seen some iron ploughs, not at work, however, in one of his fields which appeared designed for two horses. "No," he replied, "for three. We have knocked off two; if we had not, we should not be able to keep our heads above water in these times." In other respects, 10 years had wrought a wonderful alteration in our friend. He would then hear of no manure but good rotten dung; and despised light manures as much as he despised light ploughs. At our recent visit he entered into calculations to prove that—if London dung were given to him for nothing, delivered at the water side, within six miles of a hilly farm—the carriage, with the filling and spreading, would cost more than the purchase, carriage, and distribution of as much guano and bone-dust as would produce crops equally good. In another 10 years, we have no doubt, he will have adopted two-horse ploughs. Time is an important element in agricultural improvement. We know by experience the annoyances attending their introduction in a new district, arising from the prejudices of the men. The difficulty of overcoming these, causes many farmers to adhere to the old system of three and four horses, who are convinced in their own minds that their land might be ploughed with two. There is a silver key, however, which will open the most intricate lock more effectually than the celebrated American locksmith. An extra shilling or two of wages for the man who works a pair of horses soon reconciles the ploughmen to the innovation, which would be cheaply purchased by giving him all the wages paid to the driver, and saving only in the article of horse keep. When we undertook to cultivate a farm in a neighbouring county to Kent, with two horses, the agricultural oracles of the neighbourhood gave us three years to drag the plough along the surface; and instances were adduced, to the great terror of the landlord, who imagined we should spoil his land, in which the same thing had been attempted and failed. We persevered, however, for 14 years. It was admitted by that time by the more candid of our neighbours, that our ploughing was as good as theirs; and some of them even began to use two horses occasionally, when giving a second or third ploughing.

A regular hob-nail farmer from another three-horse county, who succeeded us, adopted the two horse ploughs without a moment's hesitation, as a great improvement; and has persevered in the use of them for 20 years. There has been in the interval an Agricultural Society established in the district. At the ploughing matches of this Society there are now prizes given for ploughing with two as well as three-horse ploughs; and at those matches quite as many of the former start as of the latter. It will be the same in Kent some 30 years hence, as well as in some other districts, which still rejoice in their three and four-horse teams, and which we are told cannot be ploughed with less strength.

ERRATUM: The word printed "write" in the 42d line of last week's leading article was *written* "wish." Read therefore "'Long live Prince Albert,' say all who *wish* for the advancement," &c.

## THE STEAM PLOUGH.

I OUGHT not to have required your renewed invitation to 'develop a little further my ideas of Steam-cultivation.' But if I were to begin making excuses for silence, you and the readers of the *Gazette*, who got their eyes once entangled in my letter, would soon find yourselves in a labyrinth of explanation which I would rather try to cut short with the old Persian motto that "Speech may be silvern, but silence is golden." In other, and short, words,—I have been purposely silent; because I would rather the subject developed itself; as *I am sure it will*. I have received several private communications, of most interesting reference to my last letter, but which I have found it impossible to answer personally: Life is not long enough for an extra-daily correspondence, if its ordinary duties are to be fulfilled; at least as the penny postage has bequeathed them.

But besides this, I have a sort of mysterious indescribable faith in *slowness*. Everything great and true in its time, has been hard at the birth. And I have a heavy troublesome leaden conviction on my mind, that won't give way, by day or night, that my idea on this same subject of steam-engine agriculture is utterly true.

But it is one thing to see a matter as plain as a pike-staff before your own eyes, and to put it into language very simple to your own mind prepared to understand it, and a very different thing to make it intelligible to those who have never given any express attention to it before. The fault may be just as much in the writer as the reader: and with this assurance I have blamed myself, in self defence against the loss of patience that has sometimes threatened me, when I see the unaccountable misinterpretation of my meaning, which some of my correspondents have disclosed. I have had to wade

through page after page close-written to prove how clearly and fundamentally the writer misunderstood the whole purport and principle which I had endeavoured to convey. I will try to re-state the whole question.

Before the discovery of Steam-power, and its application to machinery, there was *no such thing* as a mechanical power that could be carried about, and applied where and when and how you pleased, *except animal power*. The plough, the spade, or the hoe (with their varieties), were the only possible modes of effecting the task of cultivation. The comparatively recent discovery of steam-power altered the condition of human life in this particular. The modes of action to which cultivation was before limited, and which are exemplified in the use of the three instruments just named, became, on the discovery of steam, *no longer* the necessary and only modes of performing the act of tillage. From the nature of things it was morally certain that whenever that new Power was applied to this act, it would be through an instrumentality as different from the plough, as the plough was from the spade. If a man will only give himself the trouble to think how total a revolution the application of steam effected to the navigation of a ship, and the locomotion of a carriage, he cannot very well fail to see what is meant by the saying that *a new Power requires a new process*. It is a solecism in art, as well as science, to attempt to yoke steam on to a plough. There is no affinity between them; any more than, as I said once before, between a horse and a spade.

I have found it inexpressibly difficult to get this leading postulate clearly and once for all understood. Till it is so it is hopeless to attempt to proceed. The idea of an instrument to be *dragged through the soil*, as a plough is, from one end of a field to another, poisons more or less, not every, but nearly every communication I have received. To those who have understood the matter thus far, I shall seem tiresome in again insisting on it. How difficult it is to *un*learn !

When the attempt was first made to run Steam-Carriages on common roads, it was soon found that however good a Macadamised surface might be for a wheel to *roll* upon, under a Carriage *drawn* by horses, it broke away into a perfect Gravel-bed when the new Power instead of pulling the Carriage which set the wheels simply *rolling* underneath, *laid hold of the Wheel itself*, and produced the locomotion of the vehicle by forcibly driving the wheels round. The very best road gave way under the severe friction of this new mode of producing locomotion, and so did the tires : and nothing could be done till both road and wheel were made of solid iron. *The new Power required a new process.* Instead of pulling the Carriage it drove the wheel, and in driving the wheel it tore up the stones even of a Granite road.

Now put on your Agricultural Spectacles, and apply this parable. When Steam-power is brought into the field, (audiat qui aures habet !) it will "play out this play" over again. Its faculty and virtue consist not in pulling vehicles or implements, but in *driving wheels* : and when Steam-driven wheels will tear up Granite roads into shingle and gravel, and move the Carriage too, (for so it did, only not fast enough for modern travellers,) what forbids the hint being taken by the "audax Japeti genus," that have happily applied so many accidental hints before, and the same refractory Giant being set to rasp up cleverly and methodically with sharpened Mole-like claws, the tender soil, when he has shown his ability to tear so tough a one with the mere *palm of his hand ?* And what forbids, either, that he should spare off a little of his redundant steam in moving his own carcase along, meanwhile, at a pace of little more than half a mile an hour ? "What you save in speed you gain in power ;" and an instrument as broad as Crosskill's Clod Crusher which completes the *whole* work of tillage, as it moves along, will hardly be required to go much faster. At that speed it would cover four acres a day—not of 'ploughing,' not of 'harrowing,' not of 'rolling,' not of 'scuffling,' not of 'rolling *again*,' 'cross-ploughing,' 'clod-crushing,' 'rolling *again*,' 'ridging up,' 'sowing,' and 'harrowing in' ; but of *all* these epithet processes in one Comprehensive act—and word—Cultivation.

"I am a Farmer on a very large scale in Jamaica," writes a recent Correspondent, "having four Estates cultivated on my own account, and nearly 30 others over which I have control. *There* we put from 8 to 14 oxen to a plough, with four people in attendance ; and many good Agriculturists of this Country, who have gone out to manage their own Estates, or those of others, have tried in vain to improve on this abomination. We have an obstinate and most independent peasantry to deal with, who have us completely in their power, and work or not as their fancy takes them, and on their own terms ; for Nature is so productive, and land so cheap there, the stimulus to exertion is wanting. You may conceive then the *cost* of ploughing and pulverising an acre of land ; and when the idea of doing this by Steam has been talked of, I have always said 'If Steam can compete with one man and a *pair* of horses here, what would it do in Jamaica against 12 oxen and four people, *moving* half an acre a day,' (for in some parts of the island not a man is seen in the fields after mid-day.) * * * * I cannot grow the (Sugar) Cane *properly* unless I can give the land a *Garden* Culture. My principal Estates are a rather strong Clay, on Limestone rock and at various depths : had I an instrument such as you describe, I could grow three Hogsheads of sugar where I now grow *one*. Coals with us are little dearer than in London : we get them nearly freight-free."

Is it not astonishing, with occasional facts before us such as these, and some not very far behind them at home in England, that since the first introduction of Steam power to the notice and assistance of mankind, nobody has ever yet attempted to apply it *in its own way* to the definable and simple work of cultivation. It is put to cut chaff, to make sawdust, to granulate powder, to make pins' heads, to reduce all sorts of *coarse material into fine*—and all by wheels,—*circular motion*, and nothing else, for nothing else will it accept,—but nobody can persuade their minds to believe that by the self-same action, and no other, it can cut up a ribbon of soil 8 inches deep and 6 feet wide, and leave it behind granulated to as coarse or fine a texture as the nature of the seed or season may require, and inverted in its bed. It is not ploughing, it is not digging, it is not harrowing, raking, hoeing, rolling, scarifying, clod-crushing, scuffling, grubbing, ridging, casting, gathering, that we want : all these are the time-honoured, time-bothered *means* to a certain Result. That result is—a seed-bed : and a seed-bed is, simply described, a layer of soil from 6 to 12 inches in depth, rendered fine by comminution, and as far as possible inverted during the process.

You may call this 'Theory,' my good Mr. Practical, (whoever you may be,) but I tell you it is Truth : simple, obvious, philosophical, practical Truth. *Since the Invention of the Steam Engine*, it might and may be done *at one process*, as easily as before by 20 ; and it will be. Before you depart this life, you will see one more wonder moving upon the face of the earth, something of this form and fashion—to wit—a complete locomotive engine on four wheels, with tires 10 inches broad, and slightly corrugated cross-wise on the face, the fore wheels turning on a transome, the hind ones fixed ; behind them (suspended) a transversed, cylindrical shaft, 3 feet in diameter, from 6 to 8 feet long, reminding you of a cross-breed between a clod-crusher and a hay-tedding machine, armed with case-hardened steel tine-points, in shape like a dog's claw, each tine-point alternately long and short, so that the side-lap of each claw may cover the work of the other, and no interval or ridge be left uncut : the extremities of the cylinder just covering the wheel-tracks. This formidable-looking cylinder of claws you will see raised or depressed at pleasure by the engine-driver, and adjusted to slow or rapid revolutions, not worked by cog-wheels, but by one of the new metallic bands, geared from the drum of the Engine. That is the "cultivator." A platform from the Engine extends over it, ending in a sort of moveable tail-board, which may be raised or depressed at pleasure, to regulate the settlement of the soil which scatters from it. The revolution of the cylinder is not *against* but *with* that of the wheels, not dragging or retarding but helping the advance of the whole machine, which is moved slowly forward (about half-a-mile an hour) by a detached force of about two horse-power from the same Engine. *C. W. H.*

## SEWAGE MANURE.

For some time now, the theory of applying the sewage matter of towns to arable lands at any distance, by means of steam-power through pipes, has been a favourite one with not a few ; but experiments, as far as they have been tried, leave it a question more problematical than ever to practical men. We are afraid that the many favourable reports and conclusions, published on this important question, have been rather hastily arrived at, and that the only available purpose to which liquid manure can be applied, in the moist climate of Britain, is that of irrigation on Grass lands. Here we can enumerate safe practice with some degree of confidence ; but this rainy-weather system of manuring appears more and more objectionable as we approach it.

Many overlook the fact that the theory of irrigation is different from that of warping or liquid manuring ; for, says one, look at the fertility of the valley of the Nile ; at our water-meadows, says another ; the practice of China and the Netherlands, says a third ; and who can doubt the practicability of applying the whole of our sewage matter to our hungry soils with success, thereby rendering us entirely independent of a foreign supply of corn and cattle. The truth of the old adage "That muck is the mother of meal," cannot be questioned by the most sceptical of the old school, and from the amount of manurial element in sewage, the conclusion is obvious, that were it applied to the soil, the increase of produce would fill our barns to overflow—so much so, that we would have to pull them down, and build larger. Such is the train of arguments which we meet with on this national question ; but the first and grand argument with practical men is, to get hold of the increase of produce ; and here experiment has failed to prove that sewage matter applied on the rainy-weather system is the mother of meal. Such being the result, the next question which naturally arises for solution is, Why does such and such a practice succeed in one place, and not in another ? And the answer which promptly follows is, Because those who have applied the liquid in England are blockheads, clinging to antiquated habits, with such a degree of tenacity, that they cannot discern the true heory of manuring. To apply, for instance, the nozzle of the sewage pipe to "a ripe Gooseberry bush !" Who ever heard of the like, a hundred miles from London ?

With all our shortcomings, however, the true answer to the above question, Why does such a practice succeed in one place, and not in another ? is simply this ; the practices themselves are wholly different. The overflowing of the Nile in Egypt, for instance, is a different practice from the irrigation of our meadows, the irrigation of our meadows from the liquid-manure system of Flanders, and the liquid-manure system of Flanders from that practised by the Sewage Manure Company of the metropolis. Of these differences we need not say a word. The two practices which approximate the closest to each other are those of Flanders and the metropolis ; but although the difference here is less than between them and the others, yet it is by no means inconsiderable ; for the Flemish farmer finds from experience that liquid manure is worthless, comparatively speaking, unless it undergoes a certain degree of fermentation—a process which the sewage matter of the metropolis does not undergo ; consequently, the practices are not parallel, nor the latter experiment a fair one, accounting it may be practically for its own failure. It may be said, by way of objection, that fermentation is unnecessary ; but objections of this kind go for nothing, for it would be just as opportune to tell the practical Flemish farmer that fermentation is a waste of time and labour, as tell the English farmer that he may expect great things from sewage manure, so long as experiments show the contrary. Under such circumstances, chemical analysis is of no value with practical men, and with scientific it certainly ought not to be otherwise. The grand question, therefore, before us, resolves itself into the following, viz. :—If the sewage matter of towns underwent the same degree of fermentation as it does in Flanders, would it produce the same fertilising effects in the more humid climate of Britain ?

In the Netherlands, China, and other places where the liquid manure system is successfully practised, a system of tanks is required, so as to allow a period of eight or ten days' fermentation. To carry out this practice, therefore, we must either have a system of huge tanks in the metropolis, and other towns, or else at every farm and garden in the country, before it can be successfully effected ; and we fear that in the former, sanitary results would arise as a serious barrier to the reduction of such a proposition to practice ; and that in the latter, expenses scarcely less formidable in character to success. Granting, however, that both these obstacles are overcome, we have still two important ones remaining. Would the liquid-manure system suit the moist climate of Britain ? And, is the liquid-manure system of Flanders the best that can be adopted for that country ? To both these questions we are apprehensive that a negative answer must be given, for the following, among many other reasons :—On the best cultivated farms in Britain, more loss is generally sustained from an excess of moisture than from a deficiency ; and consequently, if this excess were to be increased, the loss would be still greater. This is perhaps more particularly the case with corn crops ; but green crops are by no means exempt from injury from moisture, for both are liable to suffer, not only in the early stages of their growth, but also when they are approaching towards maturity. In the former, weeds not unfrequently spring up, exhausting the soil, and choking the young plants ; and in the latter, lodging, rotting, &c., is the result. Now, under such circumstances, the application of liquid manure would not only increase the evils arising from an excess of moisture, but also reduce the temperature of the soil to a degree still more injurious to vegetation, while in the absence of the liquid during heavy rains the plants would suffer more than they now do from a want of food ; and hence be less able to bear up under such unfavourable weather.

Again, if soils contain an abundance of those manurial salts which crops require, and if they are naturally of a carbonaceous and aluminous character, they will absorb from the moist atmosphere of Britain a sufficiency of moisture to supply the wants of plants ; and, in the generality of seasons, more than a sufficiency. If such soils are properly drained, cultivated, and manured with solid manure, there will rather be a tendency to an excess of straw than otherwise, and hence a deficiency of corn. It is only in exceptionally dry seasons that the crops sustain injury during the months of June and July ; and even in these years losses are experienced, the greatest on soils previously injured from an excess of moisture. Cold clay lands inevitably suffer more than open friable loams from drought, so that in both extremes a deficiency of straw is the result of an excess of moisture. If the lands have been in proper tilth during April and May, it is seldom that any injury is sustained from drought during these months ; but if drenched in rain, clays are liable to become baked, and loams less or more injured from sudden changes. To keep the soil open in spring, free from stagnant water, consolidation, and full of manure, are the grand desiderata to avoid the calamity of scorching in June and July. The principal crops which suffer are those put into the ground at this season, such as Turnips. These frequently suffer in the first stage of their growth ; but even here, with a sufficiency of manure in the soil, the application of clean water would just be as salutary as sewage, and much less expensive. Now, under such circumstances, experiments are against the daily watering of Turnips, setting aside the expense ; for generally where it has been tried mischief was done. To hold the watering pan an hour over each plant daily would be a tedious process, and yet we know from experience that if a shower of rain falls sufficiently fast to saturate the soil during the months of June and July, in less than an hour it will inevitably do harm. On the other hand, if there is not a sufficiency of manure in the soil, the daily application of it in a soluble state, so as to suit the growing demands of plants, is, to say the least of it, a very nice theory. To us it appears very problematical whether the daily supply of food should come

from the same tank during wet weather as during dry—during the first stage of the plant as during the last; but on the anomalous character of the liquid system in this respect we shall not dwell.

Lastly, silicious soils appear those best adapted for the liquid system, and we believe it is on them that the success of both the Flemish and Chinese practices have been founded. But even on such soils it appears very problematical whether an application of charcoal and clay would not be more efficacious than so many waterings. The old adage "Lay clay on sand and you buy land" pronounces its award in favour of the former practice. The effects which clay produces when laid upon such soils is very remarkable. The field from which it may have been taken may be burnt up, and also the portion of the silicious field to which it has not been applied, while that part to which it has been applied may be growing luxuriantly. In the case of tenacious clay soils, the application of sand is equally beneficial, producing similar results; so that, without stopping short to find fault with foreign practice, we have data sufficient to establish the only sound practice for the moist climate of Britain.

The conclusion, therefore, at which we arrive at is, to drain lands requiring it effectually, and plough deep, keeping the clod-crusher going when required, so as to admit of the free circulation of the atmosphere to the roots of plants, and to apply solid manures suitable to the different crops. To increase the absorbent powers of silicious soils, by applying clay, &c., so as to effect a permanent improvement, is the second practice to be carried out, so as to avoid the more expensive system of continual waterings, during the scorching months of summer; and, on the contrary, to increase the porosity of tenacious clays, by the application of sand, &c., is the most advantageous, to avoid their baking in the sun. In all cases where sewage matter can be applied to Grass lands, on the irrigation principle, the practice is undoubted; but where this cannot be done, the proposition of separating the manurial elements from the aqueous, by means of charcoal, &c., recommends itself. A very valuable portable manure may be formed of the liquid manure of the farm, the sewage matter of towns, &c., and charcoal, especially for starting Turnips and other plants during the scorching months of June and July, and putting them beyond those dangers to which they are subject. The proposition is deserving of our support. We have oftener than once recommended experiments, anticipating favourable results; but until a series of well-conducted experiments decide the question, satisfactory conclusions cannot be arrived at. Until this is effected, our most sanguine expectations belong to the regions of theory only. To get a manure which would retain moisture in a greater degree, and absorb it from the atmosphere, than any one we now possess, for starting Turnips, and similar plants, would be a most important acquisition. *W. B.*

## THE INDUSTRIAL EXHIBITION.

Farm Buildings.—Among the objects in the agricultural department, and elsewhere, were several models of farm buildings; those of Mr. Mechi, among others. We would at present only refer to those of Mr. Baxter, of Lewes, and of Oaklands Farm, Sussex, in which the principle of covering over a given extent of land, and dividing it out among the efficient purposes of a farmery, is adopted. Not being able to present a plan of this building to our readers, we shall just select from the description which accompanies the model passages on particular portions deserving of remark.

*The Pig-sties.*—The plan adopted with them is to secure cleanliness and warmth by having the flooring formed of Memel deal laths, 1⅛ inch thick and about ½ inch apart for small pigs; 1 inch for middling size, and 1½ inch for full size, and this being raised 2 or 3 feet, the manure falls immediately through and is collected on inclines below; the liquid runs away to the manure-tank, and the solid is removed to the covered manure-yard adjoining. Some prefer a small pit underneath, in which they place ashes, which, when well saturated, are fit for top dressing or drilling. The food is kept in two covered cisterns or tubs, one on each side, between which is placed, in front, a moveable plank resting on the frame of the cisterns, which forms a platform for the purpose of a feeding road, and which, when one end is let down, and the cistern closed, forms a road to the sties for the ingress or egress of the pigs. The cisterns are partially sunk in the ground, even with the platform or feeding road.

*Manure Tank (underground) and Pump.*—It is proposed that connecting drains shall run from the cowstall, stable, piggeries, &c., into the tank; from thence it may be pumped into the manure cart for distribution, or turned with the aid of a shoot, or gutta percha tubes, upon the manure heap in the yard, where composts of various descriptions may be made. The models are upon a much smaller scale than was intended, but as Mr. Baxter was late in his application for space to the Commissioners, only 2 feet 6 inches in length could be allotted to him; but this may be sufficient for the practical man to see the general system of arrangement, as the same plan can, of course, be carried out on any scale, so as to suit various sized farms. No 1 is of square construction, and appears of a more familiar character than No. 2, but the arrangement of the latter is to suit a different ground plan. Each of the buildings contains precisely similar departments and conveniences, so that a general description of one of the models will be all that is necessary. Of course these buildings may be erected of any material suitable to the locality. The estimated price of the same is given in the last page.

In proceeding to the erection of these buildings, the ground in the interior should be prepared with a fall from the highest end through the whole extent, to facilitate the drainage, and if the surface were well puddled or rammed with clay, it would be better prepared to receive any kind of paving; bricks will be necessary in the stable, whilst in the cowhouse, passages, &c., concrete will answer the purpose. The passage which leads down the side of the long building, and the centre of the square one, will have a main drain formed of open drain tiles leading to the manure tank, with connecting branch drains to the horse and cattle departments. The smaller drains in the stable may be of cast iron, similar to those in cross street pavements, with a small opening, an inch wide, along the upper surface; they would not then interfere with the horses' hind feet. With neat stock, an open drain, as usual, may be best. Excepting from the cows the dung may be moved in the usual manner, but in the model the cowhouse adjoins the dung yard, so that the manure may be thrown into it through an opening in the wall. The building is 8 feet from the floor to the eaves, and 25 feet in width—a size sufficient to accommodate six cows in each row, with a passage leading through to all the departments. This will be large enough for a moderate sized farm; but if the occupation is extensive, the long model may have another corresponding range by its side, the centre being supported on posts or pillars. This arrangement doubles the size of every department, and as one centre passage would be sufficient, three or four feet would be gained in the additional portion. The short model could also be on an enlarged scale; in fact, the dung yard cannot be too large, and if the covering of the whole yard is too expensive, an open space adjoining would be very convenient. Large barns are not considered so necessary as formerly, as corn is thought to keep better in stacks; and since the introduction of threshing machines it is more convenient. We have proposed no special department for threshing machines or steam power, but these could easily be added, if required, and under the same succession of roofing; ventilation will be found amply provided for by the doors and windows in the building, but if there is any doubt about it a few air bricks in the walls or perforated zinc will have a good effect. The escape of the vitiated air may be by means of louvre boards, or openings in the ridge tiling.

## Home Correspondence.

*Granite.*—When resident some years ago in the Highlands, it occurred to me that the vast masses of granite in that country could be converted into manure—that is to say, that the felspar and other silicates of potash and soda could be so treated as to render soluble in water the potash, soda, and silex; thus making them an available and valuable food for crops. The readiest way that occurred to me of doing this, was to stratify the granite with alternate layers of carbonate of lime (limestone) and coal in a lime kiln, and burn the whole together, as lime is usually burned. I expected in this process that the granite, being made red-hot, would easily receive any chemical impression from another agent, that the carbonate of lime would be decomposed; that its liberated carbonic acid would seize on the potash and soda of the granite, forming soluble carbonates; that the silex would also become soluble, either in the form of silenic acid, or that it would combine partly with the lime, and that the greatest part of the granite would, when thus soluble, be an extremely valuable manure. I tried the experiment on a large scale—that is, in a lime kiln, and the changed granite I spread upon the land; unfortunately I left the Highlands before a sufficient time had elapsed for me to observe its effect on the crops, and a severe illness prevented my making a chemical analysis of the products of the kiln; but, this much I can say, that the burned granite melted down in the rains; indeed, in a very few days it became disintegrated and pulverised by the action of air and moisture; and I have not the slightest doubt but that it had been rendered soluble by combination with the carbonic acid in the heated kiln. Being now resident in a chalky, gravelly district, where no granite exists, I have had no opportunity of carrying out my experiment as I should wish; the best thing, therefore, I can do is, to give publicity to the theory and practice (as far as it went) in hopes that some one having the opportunity may try the effect of this new manure on various crops. Should it succeed in the manner I believe it will, what an inexhaustible store the farmers will have of a valuable manure! A learned professor said, "I was going to turn Ben Nevis into a dungheap," and truly there is no romance in the expression, for chemically it is possible. I should mention that the granite must be broken into lumps not larger than a cricket ball, for I found all above that size unaltered in the centre, whereas all of smaller size melted completely away. *Martyn Roberts, Woodbank, Gerrard's Cross, Bucks, October 7.*

*Cultivation for Corn.*—It is a curious fact, and not easily explained, that whilst improvement has constantly of late years been making in the machinery and implements of the farmer, and notwithstanding that ploughing is done with half the strength, and the produce is prepared and marketed at half the cost, of 70 years ago, there are many instances of land being worked with the spade, and without the advantages of machinery, competing in its returns with the most intelligent farming. To what is this owing? The last edition (the 8th) of the Rev. Mr. S. Smith's work, "A Word in Season," informs us that his sixth running crop of Wheat has yielded upwards of five quarters to the acre, and a margin for rent and profit of 8*l.* an acre. What farming with the plough approaches the spade husbandry? The only explanation I can offer, and this accords greatly with my own experience, is, that whilst the farmers have been seeking reduction of cost in their ploughing, they have been overlooking the value of deep cultivation and fine comminution of the under strata into which the seed has to push its roots. I have long seen the value of the Kentish turnwrest plough, which breaks up the bottom and sifts the crumb it makes underneath; and after using almost every plough, I still work it whenever I think the crop will be the better for two or three inches of fresh soil, a pulverised bed, and a permeable subsoil, in place of five or six inches of block and a hard pan underneath, left by the cutting ploughs, which will not allow the roots to go any lower. I had the pleasure of seeing Mr. Smith's crop in the spring, and I was much struck with it; I spoke of it when looking at the crops of one of our finest agriculturists, where Wheat was all drilled 14 inches apart, and with only three pecks of seed on an acre. The impression on him of what I told him I had seen, was such that he immediately had an acre of his Wheat measured off, and every other of the rows upon it dug in, so that on this acre the Wheat stood in rows at 26 inches apart, and only with 1½ peck of seed to the acre. The effect very soon showed, although the Wheat of the field presented an appearance of luxuriance I believe seldom seen. Still this acre was distinguishable by its superior growth, and it became apparent in the summer there would be far too much to stand till harvest, and such proved the fact; for before harvest its great length of straw brought it to the ground. The fault was over luxuriance. Here the grower had to complain of his land being too rich—a fault it does not cost money to cure; and to what was this owing, but to the larger amount of food opened to the roots by the turning in of the intermediate space. The value of such instances as these lies not so much in them as examples to follow, as in throwing light on the mysteries of vegetation, and showing the importance of better cultivation. We are here taught how land may be enriched—not by costly manures, but by more effective labour; and, if rightly viewed, we shall see from Mr. Smith's crops, and the instance mentioned, the direction to which our attention should be turned for giving greater fertility to our land. Numerous instances in confirmation of these examples present themselves to me. I can but mention two. A large landed proprietor, desirous of clothing the open ground round his house, planted, about 30 years ago, numerous clumps of trees—anxious to give a rapid growth to those nighest his mansion—for many years had their beds turned in annually. These took the lead, and are now double the size of the beds that were not so treated, and have had to be thinned five or six times; and there can be no question, on looking at the two, that the extra growth has more than doubly repaid the labour upon them. The other case is that of a farmer, in Hertfordshire, who, having a poor side of a field that he could not make productive, one winter, 20 years ago, being overseer, put all the able paupers to work upon it in trenching it; and this side of the field has ever since been the most productive of the two. These are cases I can vouch to; but who is there that does not know the difference that an old garden or Hop-ground ever shows; it cannot be the manure, for the difference is seen after any number of years; it lies in the greater depth given by the culture to the plants to feed from. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, Oct. 13.*

*Prices of Goods in* 1810 *and those in* 1851.—Cottagers are now fully sensible of the reduction of prices of articles of food and clothing, and speak of the advantages they derive at present by Sir Robert Peel's measures. That statesman said, "he hoped his name would be remembered amongst the poor and humble." "Sir," said a cottager, "had prices continued high for food, there would have been open rebellion in the country." But the rural population are surprised at the cheap clothing, as well as feel the advantages of cheap food. One of these cottagers gave me the prices of articles used by them 40 years ago, and what they pay now. Many now living are not aware of the difference of cost of articles of consumption by the peasantry. They will interest many, no doubt:—

| | 1810.—£ | s. | d. | 1851.—£ | s. | d. |
|---|---|---|---|---|---|---|
| Hat ... ... ... ... ... | 1 | 0 | 0 | ... 0 | 7 | 0 |
| Gown ... ... ... ... ... | 1 | 1 | 0 | ... 0 | 6 | 0 |
| Shirt ... ... ... ... ... | 0 | 10 | 6 | ... 0 | 3 | 0 |
| Calico print, per yard ... ... | 0 | 2 | 9 | ... 0 | 0 | 6 |
| Brown Holland lining of gown ... | 0 | 1 | 8 | ... 0 | 0 | 4 |
| Packing cloth, then used for aprons | 0 | 1 | 8 | ... 0 | 0 | 6 |
| Articles of food:— | | | | | | |
| A gallon of flour ... ... ... | 0 | 3 | 3 | ... 0 | 0 | 10 |
| A bushel of flour ... ... ... | 1 | 0 | 0 | ... 0 | 5 | 0 |
| Salt, per bushel ... ... ... | 0 | 18 | 0 | ... 0 | 1 | 0 |
| Bacon, home cured, per lb. ... ... | 0 | 1 | 6 | ... 0 | 0 | 8 |
| Tea (not good), per lb. ... ... | 0 | 8 | 0 | ... 0 | 4 | 0 |
| Brown Sugar, per lb. ... ... ... | 0 | 0 | 10 | ... 0 | 0 | 4 |
| Butter, per lb. ... ... ... ... | 0 | 1 | 0 | ... 0 | 0 | 8 |
| Soap, per lb. ... ... ... ... | 0 | 2 | 6 | ... 0 | 0 | 6 |
| Starch, per lb. ... ... ... ... | 0 | 2 | 6 | ... 0 | 0 | 8 |

Other items might be given, but these may suffice, and will speak for themselves. *X. Y. Z., Hants.*

*Disease in Poultry.*—There have been several inquiries lately in your Paper, as to the best antidote for disease in poultry. As I have had some little experience in this way, a few hints may not be unacceptable. In the first place it is of the greatest importance that the henhouse be kept perfectly clean. I litter the bottom with straw, occasionally sprinkling unslaked lime on the

flooring; this has the effect of keeping it dry, and the straw breaks the fall when the birds jump from the perch, which, in the case of Cochin China poultry, should be low, or from their great weight they are likely either to break the leg or strain the sinews; a hen ladder is generally recommended, but I never could make my birds use it in descending, and therefore use the straw, which can be shaken for some days, and the refuse removed; it afterwards makes capital manure. The water should be given fresh every day, and during moulting a few rusty nails or pieces of iron are very advantageous, as they strengthen the bird, and enable it to shoot the new feathers with greater ease. The food I give mine is as follows: good sound Barley and Wheat, as much as they can eat, once a day; after that I give them steamed Belgian Carrots, broken up, with Barley-meal; and when these cannot be obtained, Barley-meal or toppings. Grass or other green food is indispensable; I also give my birds a full meal of boiled rice every other day, and about twice a week bullock's liver cut into dice. When the chickens are first hatched, the best food is egg boiled hard, and crumbled with bread or fine toppings and a little Barley-meal; and at the same time I give off-corn Wheat, with a few split grits; this food, if given for a fortnight, will forward the chickens in an extraordinary manner; after that time, Barley-meal mixed hard, with water, is very good food, with boiled rice and Wheat. Should chickens, whether young or old, seem at any time ailing, they should be immediately attended to; for never does the old adage, "a stitch in time saves nine," become more necessary than in the case of poultry. They should have, first, some sulphur and cayenne pepper, mixed with Barley-meal, given them, and afterwards, for a full-grown bird, a tea-spoonful of the following mixture, in the same medium, night and morning:—Elecampane fœnugric, liver of antimony, aniseeds, cummin seeds, linseeds, and cayenne pepper, all in powder, mixed in the proportion of equal parts, except the last, of which there should only be half used. It is necessary, however, that the powder be all what is called true—compound powders being frequently used, as the public have a great inclination for cheap drugs, and are consequently supplied therewith, and are disappointed when they find them inefficacious. The above recipe I had given me by a lady who had lost a large number of chickens previous to its use; but since its administration has been very successful. Many persons in this neighbourhood have lost a large number of chickens this season; but wherever they have used the above they have been free from disease, and it is not a bad plan to give a little once or twice a month, to keep the birds in health. I have hatched a considerable number of Cochin China chicks this season; and by giving the above mixture occasionally, I have not lost one, and have maintained my stud in capital health. P.S. I have seen several notices in your Paper lately, of white Cochin China poultry; surely these must be some other breed, as I have seen a great many of the birds, and the colour has invariably been either a dark bay, cinnamon, or partridge colour; for myself I prefer the bay and cinnamon, with very full pluffy thighs, and feather-legged. *Henry Copland, Chelmsford.*

*Prices and Yield of Wheat in South Hants.*—The Wheat crop of this year has proved as I mentioned to be, about an average one, and there is much "tailing" Wheat—about 3 bushels to every 10 or 11 sacks. Last year half a bushel to 10 sacks of best Wheat was about the average. Prices have fallen from 10*l.* to 11*l.* per 5 quarters, to 8*l.* 10*s.* to 9*l.* for the new Wheats. The prices given depend not so much upon the London market value, but what the grower can be prevailed upon to sell it at—a poor farmer will sell his load of Wheat for a pound sterling less than the market value for ready money. Disputes as to weight ought at once to be put an end to, by a rule to sell by weight rather than by measure. This would obviate much unpleasant feeling between both parties. We find 20 sheaves or thereabouts will yield one bushel of Wheat; 15 sheaves are the average. One farm produced 1000 sheaves an acre; at 20 sheaves to a bushel, this would yield 12½ sacks per acre. But 14 and 16 sacks per acre have been grown some seasons. The average quantity of sheaves per acre is 400 to 600, according to the nature of the soil—and no less also to the variety of Wheat sown, suited to a particular soil; in this there is a result, vastly important to farmers, and requires particular attention. It makes a difference of actual rent—no slight matter just now. The Wheat crop is not so good in yield as last year; though the weight per bushel is greater, the corns are smaller. *X. Y. Z., Hants.*

*Winter Flax.*—Permit me to direct your attention to the seed of the winter Flax (see "Official Catalogue," No. 70, Austria), from Laybach, Carniola, and to the following information derived from a member of the Austrian agency in the Exhibition. "The seed is sown in October; shortly after the seed leaves appear the snows of winter securely cover it till the following spring, when the plants grow with great rapidity, and are fit for pulling in May or early in June. This variety is also cultivated in Bohemia and Moravia." I have written to a gentleman in Trieste to procure me some of the seed, and I hope to be able to report on its growth on my own farm and others in this county (East Lothian), and in other parts of Scotland; the want of a covering of snow will, I fear, prove fatal to the plant; but if the trial is favourable, it will give an impetus to the growth of Flax; for annual weeds, which prove so detrimental to the profitable cultivation of really good Flax, even on well farmed land, are seldom injurious to winter sown crops; and, moreover, the Flax may be cleared off in time for a crop of Turnips. But it is chiefly with a view to its introduction to Canada, Nova Scotia, and New Brunswick, in which the climate bears some analogy to that of Laybach, that I have ventured to address you. If it proves hardy in British North America, the inhabitants will have good cause to bless the Great Exhibition. The specimen of Maize deposited on the same table as the winter Flax, also from Laybach, may prove valuable to these colonies—those districts at least which border the zone at which that valuable plant is cultivated. I pointed out these seeds to Mr. Tuckerman, of the United States agency; he gave me his hearty thanks, and resolved that both experiments should be tried. When in London I knew not how to bring the matter before those parties who are, or ought to be, more particularly interested; but now I rest assured that it will receive that attention from you which it deserves. *Archibald Hepburn.* [The sample is not distinguished by its appearance from common Flax, and its character is probably a habit, derived, like that of winter Tares, &c., from treatment.]

*Wheat* at 4*s.* and 4*s.* 3*d.* per bushel, the present market price, will not pay the farmer for growing. If the land is to be kept in tillage, a remunerating crop must be substituted, and such is to be found in Flax (according to practical men), which has hitherto been considered to exhaust the soil more than any other, a mistake originating in ignorance of the system required in its cultivation. England pays somewhere about 5,000,000*l.* to foreign countries for a material we can, with a little trouble, grow ourselves. When Wheat was 60*s.* a quarter we could afford to purchase Flax; but now grain is reduced to about half, agriculturists must turn their attention to something more profitable. There may be some difficulty in inducing men to change their crops; however, a few experiments will soon prove the wisdom of following the example of farmers in the north of Ireland. It will be necessary to establish mills for preparing the Flax for the manufacturers, so as to be within reach of the farmers, as the value of the crop depends upon having the means of dressing the fibre in the quickest and best manner. When is the best time for sowing Flax? [Mid-April.] What soil suits it best? [Adhesive loam.] How should it be sown, broadcast or drilled? [Broadcast.] What treatment does it require when growing? [Weeds must be pulled.] Is there any cheap publication for distribution, giving a plain account of the manner of cultivating Flax? [Many have been reviewed in this journal.] *Falcon.*

*Draining.*—The subject of draining is one of very great importance to the farmer, and must not be passed over hastily or capriciously, because some individuals take a different view of the subject from others. I have read the letters of Mr. James Donald and Mr. Gill in your Paper of the 27th of Sept. and 4th of Oct., and I cannot but think that Mr. Donald jumps a great deal too fast in drawing his conclusions. I will not go into the subject with these gentlemen now, because I hope to see something further from the Rev. Mr. Wilkins; for that gentleman's letter on the subject, which preceded those of Mr. Donald and Mr. Gill, certainly appears to require something further in elucidation of his views; and if they will have the patience to wait I have no doubt Mr. Wilkins will favour us with an explanatory statement. I feel very confident that Mr. Wilkins will be able to make his ground good; for he is not a likely person to have entered on the subject, had he not have been thoroughly satisfied with the correctness of his views; and the readers of your Paper well know that he has not only the ability and power to combat any false reasoning, but that when the gage is once thrown down, he has always the courage to take it up. *W. W. I., Branthan, Oct.* 6.

*Temperance.*—In a late Number of your Paper "E. F.," of the Phœnix Park, Dublin, made some excellent remarks on the propensity of the labouring classes to drink beer. He therein expressed a wish to have medical authority on the subject. If medical testimony will settle the point, it ought to be settled at once; as there is a testimony signed by nearly 2000 of the most eminent of the medical profession throughout the United Kingdom, testifying that wine, beer, cyder, and intoxicating liquors of every description, are injurious to a healthy person. If your correspondent has any doubts on the subject, he may send three postage stamps to the office of the Scottish Temperance League, 30, St. Enoch-square, Glasgow, and I am sure they will furnish him with a copy. *A. K. G., Oct.* 8.

*Cultivation of Beans.*—A neighbour of mine, a farmer, last spring had a piece of land that was sown with Beans, and missed; he asked me if I thought they would do any good if he should sow more. I said "Yes;" he dibbled some more in, and when he was having them cut he asked to come and see them. They came up very thin, and he wished me to see the difference between them and the others which were thick. The Beans were very superior both in quality and quantity on the thin sown ones. Another farmer joined us, and we began to talk about the cultivation of Beans; they seemed to agree rather with me in thin seeding, but when I said I thought they would grow more Beans and better quality with planting them far enough apart to use the horse-hoe betwixt them, they both turned against me, saying it would be an extravagant waste of ground; I said no, not so much so as they seemed to think; they should consider the benefit constant stirring the soil would be—I thought it would be almost as good as a fallow for the next crop; but they contended that stirring the ground was useless, except to kill weeds. They say that the only thing a fallow is made for is to get the land fine and clean to receive the seed; and in doing that, you waste the food for plants, and every time land is stirred it gives off a great quantity of ammonia and absorbs none, and if it lies still it parts with none. If you spread manure on your ground, they say, and let it lie, it will soon all be gone into the air. "Yes" I said, "that's true, some of it would, and the first shower of rain that came would bring most of it back again." "Yes, but let every one keep his own," they said. Now, according to them, I have put my employer to a great deal of needless expence; for, weeds or no weeds, I have always used hoes made on purpose to well cultivate the ground between crops; if I have been wrong, I should be thankful if you, sir, would put me right by your opinion in the *Gazette. J. W.* [We agree with you, and should take your side of the argument with your friends.]

*Potatoes on the East Coast of Kent.*—I have just come home after a week's close inspection upon about fifty fields round the Isle of Thanet, where scarcely a haulm was to be seen but what was dying prematurely, and wherever they were digging for market, one, two, and sometimes three tubers were diseased. I told all of them to dig them all up, that as soon as the wet weather set in half and more would go bad, but the only reply I had was, "Did I think so." The Potato growers in the Isle of Thannet this year have escaped entirely through the dry weather; having had no rain for five weeks up to about September 25th. If the Isle of Thanet growers cannot escape with such famous soil, fine salt air, and altogether a fine southern clime, what can be expected from a north and less favoured counties? If a Potato is worth growing at all, they must pay as much attention to it as any other crops—that is, at getting up time, select their sets, and green them properly. The meaning of greening is that the tuber imbibes certain gases by light and air; and when put into the ground to grow, the stem grows much more woody than after a blanched tuber, and especially after white, covered up, closed up Potatoes, strawed and moulded all the winter; they are altogether changed in their system by being greened (see my pamphlet), and I have proved that a hundred times. This year, when I was planting out a piece of late kidneys wintered upon my plan, in February, I sent for a peck of the Ash-leaved Kidneys, the shoots of which had been rubbed off, and the skin white; the row was planted in the middle of the piece, to give them every chance; they did not come up for a month after the others, some did not come up at all, but formed small insipid tubers without a stem, the others mostly were strong, the shoots very succulent. The late Potatoes were all dug up on the 9th of August, quite ripe. The row of Ash-leaves were also dug up nearly ripe; but one row of the others would have equalled three of the Ash-leaves, had there been three. This experiment was seen by the *Chronicle* reporter, and hundreds of other persons. But I am sorry to say that I found the market gardeners and growers whom I spoke to in the Isle of Thanet were not readers. I examined two garden allotments, one at Ramsgate, East Cliff, the other at Minster; those persons seemed greedy for information, if they could get it. I made them a present of a Potato pamphlet, and they promised to lend it amongst each other. The one on the cliff is a hungry worn-out soil, and very much exposed to all weathers; this is let at 6*d.* a rod; the inland one, a first-rate soil and situation, at 4*d.* a rod. But I am certain that the tailors, shoemakers, and sailors, will beat the Minster ones, because they are more eager for information. But, as I have a good deal more to say upon garden allotments, I shall defer it at present, and to those who have allotments I shall be much obliged if they forward to me their systems, in order to see if something perfect cannot be arrived at, for nothing would improve the labouring classes faster than properly managed allotments. *James Cuthill, Camberwell, Oct.* 1.

*Draining Companies.*—I am sorry to trouble you again, but in printing the article on "Draining Companies," in a late Number, 500 acres are substituted for 100 acres in calculating part of the costs, making the sum total 1537*l.* 10*s.* instead of 537*l.* 10*s.*—the expense named (or intended so to be) in my last observations for draining 100 acres of land by the "General Land Drainage Company." I will only further observe that, if 7*s.* per acre is to be added to this sum for commission, as specified in Mr. Shelley's last letter and unnoticed in my last, it will make the sum total to be paid: Interest on 572*l.* 10*s.*, when 500*l.* is borrowed—and the liquidation at 6¼ per cent. will be 35*l.* 15*s.* per annum for 50 years, which gives at the expiration thereof 1787*l.* 10*s.* I think before the money is applied for, the borrower will do well to ascertain the expenses, as illustrated in the "Abstract of the Company's Act," published by themselves, at page 8 to 13, and if he can obtain such detail as will fix the expense to a limited sum, he will be in a position to decide. *A Tenant for Life, Sept.* 30.

*Agricultural Statistics.*—In your Paper of the 4th of October, you complain of the want of agricultural statistics, and say that no one can say with confidence whether we grow twelve millions or twenty-four millions of quarters of Wheat annually. This has long been a matter of astonishment to me; and, as a beginning of a better system, I beg to propose that the number of acres in Wheat (as well as other farm produce), should be returned by the churchwardens and overseers of every parish, to some office appointed for the purpose. This would cost little, and we should in time be able to deduce something valuable from it. Even if we knew the actual

quantity grown this year, it would do us no good, until we could compare it with other years. *T. G., Clitheroe.*

*Messrs. Wrench's Samples of Seeds.*—I was glad to see, at p. 634, a notice of Messrs. Wrench's collection of British grown agricultural produce. The museum of Messrs. Lawson is a perfect study for those who are anxious to examine all the varieties of corn, seed, Grass, woods, &c., known in Scotland; but as a practical man, having some thousands of quarters of corn through my hands in the course of a year, I consider Messrs. Wrench's assortment the most useful. I see there at a glance all the well known and favourite corn and seed of the London Corn Exchange. The samples are for last season first-rate, especially the Chiddam Wheat grown by Mr. Henry Currie on his property at West Horsley, near Guildford, and which I consider quite equal, if not superior, to the Prince's sample, and regret with you that this collection arrived too late for competition; as, from its true practical and national character it is just what was wanted in this class by the foreigner, and our fellow countrymen living far away from London. *Sam Slick.*——We find a paragraph in your *Gazette* of the 11th October last, signed "Tuesday," to the following effect:—"I beg to suggest that it might be interesting, and also useful, to the unlearned, if Messrs. Wrench were to sell collections of seeds such as those exhibited by them," alluding to our collection of Wheats, &c., in the Crystal Palace. We do not exactly understand what the writer means, but we shall be happy to supply collections of Wheat seeds, &c., of the same varieties as those exhibited by us. We are not aware of any difficulty in this. *Wrench and Sons, London-bridge.*

## Societies.

Manchester and Liverpool Agricultural Show, *Oct. 6 and 7.*—This show was the fourth of the amalgamated societies, and the second held in Manchester; meetings having also taken place at Liverpool and Warrington. The trial of implements commenced at noon on Monday, in a field near the Trafford Arms Inn, Stretford. There was a large attendance, and the trials occupied about five hours. The implements submitted were very numerous, and each was tested. The most important contests were between some two-wheeled ploughs, with the latest improvements, and some of the swing ploughs peculiar to this district. The soil was in good condition for testing the instruments; and, on the whole, they were all considered to get through their work in a very creditable manner. The judges considered that the wheeled ploughs had a decided and striking advantage, when it was required that furrows of a greater depth than 5 inches should be produced; but the swing ploughs worked in a very satisfactory manner to 5 inches depth, for which they are in general specially constructed. A dynamometer introduced by the society was upon the ground, and its use brought out several results, important to the conduct of agricultural labour. Although no striking difference in the draught of the best ploughs of either kind was discovered by the use of the dynamometer, yet the value of the instrument was strikingly exhibited, by the very serious increase in the draught of ploughs, which it showed from an improper or careful adjustment of the different parts, or from general bad gearing. In many cases it was shown that work could be more efficiently performed, with from 10 to 20 per cent. less draught power, after proper arrangement of the parts of the ploughs; and in a few cases a much greater saving was effected. The prize for general work was given to a two-wheeled plough by Gascoigne. The show of cattle, &c., took place on Tuesday morning, on a spacious plot of ground adjoining York-street, Hulme, which belongs to Mr. S. Brooks, and was some time since walled round, with a view to its being converted into a general market for Hulme and its neighbourhood. The previous show was held in a very confined place, near the Victoria Railway Station; and the contrast between the appearance of the old and new ground, and the immense accession of convenience to exhibitors and comfort to visitors, was very generally and warmly remarked upon. The collection of cattle and implements was fully equal to that at Warrington last year, far superior to any ever before brought together in Manchester, and was considered to augur well for the future success of the Manchester meetings, which have usually been considered to a great extent failures, as compared with those of the Manchester and Liverpool and other societies, in different parts of this and the adjoining counties.—The horned cattle were numerous, and comprised some first-rate specimens. The prize in Class I., for the best bull of any breed, above two and under four years old, was gained by a short-horn belonging to Mr. T. Birchall, of Ribbleton-hall, near Preston. The prizes for short-horns were awarded to Mr. H. Ambler, of Watkinson-hall, near Halifax; and Mr. J. B. Case, of Poulton Hey, near Birkenhead. Messrs. John Forrest, of Stretton, and Thomas Forrest, of Antrobus, near Northwich, were the successful exhibitors of bulls, in the classes for tenant farmers; and to Mr. T. L. J. Brooke, of Mere Old Hall, near Knutsford, two prizes were awarded, although he was the only landlord who exhibited. It is to be regretted that the landlords did not manifest their interest in the improvement of the breed of cattle, by coming forward more readily, as exhibitors; for the object to be gained, it should be remembered, is far greater than the silver medals offered by the society, or the honour which attaches to their presentation. In Mr. Brooke's case, the judges considered that both the beasts exhibited possessed much merit; and a prize was awarded in each instance, although the usual course is not to give a prize where there is only one competitor for a premium. Mr. Ambler and Mr. J. Forrest received other prizes for cattle than those mentioned above.—The cows were much commended by the judges, especially those exhibited by tenant farmers, with respect to which some difficulty was felt in deciding which of the two (for dairy purposes) should be declared the better; Mr. James Gorton, of Seedley, Pendleton, received the first prize, however, for a short-horn; and Mr. J. Crowther, of Blackley, the second prize, for a cow of the same description. The prize for extra stock (horned cattle) was given to Sir T. J. de Trafford, for a splendid four-year-old bull. The show of horses was good, in point of numbers; but, with the exception of some few of the stallions, and others, for draught purposes, it was not generally considered first-rate. A chestnut gelding, belonging to Mr. T. Hoyle, of Haslingden, was much noticed and admired; and received the prize "for the best mare or gelding in actual use in the district as a roadster," and Mr. Robert Brown, of Farleigh Wallop, Hants, gained the prize with a very fine animal, shown among the stallions for dray purposes. The most noticeable feature among the display of sheep were some very fine specimens of the Southdown breed, exhibited by Viscount Hill, of Hawkestone, near Shrewsbury, who is said to be the first breeder in this part of the country, for this particular kind of stock, and who succeeded in carrying off three or four of the prizes. Mr. William Ellison, jun., of Sizergh, near Kendal, exhibited some very good rams, as well as several shearling Southdown ewes and Leicester ewe lambs; and he gained several prizes. The pigs, a first-rate collection, were, in the opinion of many, superior to any ever before seen in Manchester; certainly some of the beasts were enormously large and obese. Several of the successful exhibitors were residents in Manchester, although they were not generally the breeders of the stock they had contributed to the show. The show of vegetables and seeds was not large. Mr. Edward J. Pemberton, of Sankey Lodge, near Warrington, gained the society's silver medal, offered for growers of the best specimens of yellow or red Wheat. Some of the Wheat, shown in the straw, was much noticed for the great size and weight of the heads, and the remarkable length and good colour of the straw. There were some very fine specimens of Mangold Wurzel; together with a dozen enormously large and heavy Scotch Cabbages. Messrs. F. and J. Dickson and Co., of Manchester, exhibited a collection of seeds, &c., including some of the best and finest seed Wheats from Scotland. The display of agricultural implements was large and interesting, although there was, perhaps, nothing that had not been seen at some of the more recent shows in different parts of the country. In the collection exhibited by Messrs. C. D. Young and Co., of Liverpool, the things which attracted most notice were Drummond's anti-metallic churn, the merits of which are evidenced by the fact that it had gained the prize at the meetings of nine agricultural societies before being exhibited here, and was similarly honoured on Tuesday; and various sizes of an improved cast-iron rick stand, combining the advantages of being very easily fixed or removed, affording great freedom of ventilation, and preventing the access of vermin to the crop placed upon it. Messrs. Richmond and Chandler, of Salford, had among their implements very compact and useful chaff-cutting machines, of different sizes; an improved apparatus for steaming Turnips, hay, chaff, &c., for horses and cattle; and a patent double action Turnip cutter, which can be used either for cutting for sheep or slicing for cattle. A very good collection of implements was also shown by Mr. H. Bennett, of Liverpool, the most important among them being Sillar's new clod-crushing roller, which is said to possess advantages over existing implements of the same kind, both in the facility with which it cleanses itself, and the small amount of power required for its efficient working; a model of an improved steaming apparatus, which can be easily arranged and effectually worked, either to a greater or less extent, at the option of the manager; and several improved Gorse, hay, &c., cutters, of various kinds. Among the other exhibitors were Messrs. N. Gascoigne, Thewless and Griffith, William Harkes, David Harkes, H. Kearsley, W. H. Peake; Lee, Ross, and Co.; John Whitehead, Lynch and Inglis, &c. Two or three machines for tile making, both for agricultural and sanitary purposes, were exhibited in operation.—The following were the judges for the different descriptions of stock:—Horned cattle: Mr. John Booth, Killerby, near Catterick, and Mr. John Patterson, Hall Beck, near Ulverstone. Horses: Mr. George Hunt, Preston, and Mr. B. Cartledge, Market-street, Sheffield. Sheep and pigs: Mr. W. Torr, Aylesby, near Grimsby, and Mr. W. Henlock, Great Ouseburn, near York. Implements, seeds, and roots: Mr. John Hannam, Kirk Deighton, near Wetherby, and Mr. Thomas P. Outhwaite, Bainesse, near Catterick.—At the dinner, in the Corn Exchange, the Right Hon. the Earl of Wilton, who presided, proposed "Success to the Manchester and Liverpool Agricultural Society." He laid claim to no more knowledge on agricultural subjects than ought to be possessed by every English gentleman of the present day; and he would not therefore take up their time by pretending to give an opinion which system of draining or cultivation was the best. He had reason to think that it had been extensively believed that previous to the enactments of 1846, and which were supposed to have stimulated to great exertion the efforts of the farmers, that that class in England had been deficient in skill, energy, and enterprise; but long before those enactments, English farmers did succeed in raising a greater amount of produce per acre than had ever been raised by others in Europe, or even in the United States. In France, where the best system was pursued, the produce was about 16 bushels per acre, and in the United States about 13; but recent Parliamentary returns showed that in England, at the time of the close of the American war, the produce was 20 bushels per acre; and that, partly owing to the good understanding subsisting between the landlord and the tenant, partly by the exertions and enterprise of the English farmer, and mainly, perhaps, owing to the assistance and encouragement of agricultural societies, the produce of the land of this country had been increased in 1846 to an average of 32 bushels yearly, per acre. The same returns also showed that, while the population had increased 32 per cent., the produce of this country had, during the same period, increased 46 per cent. During the last 10 years, too, above four million hundred weight of guano had been imported from the ports of the Pacific, for the purposes of manure. He mentioned these facts, because a great deal had been said about the want of skill, energy, and enterprise, on the part of the English farmer, before the enactments of 1846; but at the same time it could not be denied that important improvements had taken place since that period. He believed that it was generally acknowledged that agriculture, in this neighbourhood, was in a tolerably flourishing condition; but this circumstance could not be considered as a test of the real state of agriculture in the purely rural and corn districts of the country—because he was satisfied of the correctness of the opinion he had before expressed, that the tenant farmers who held land surrounding agricultural towns were pretty nearly in the same condition as market gardeners near the metropolis. While the most eminent statesmen, and the most learned private individuals, differed so widely as they now did as to the correctness or otherwise of the policy of 1846, he thought the agriculturists had nothing to do but to wait the issue of the great experiment then commenced. But he was free to confess that in 1846 he feared that the unrestricted importation of foreign produce would have the effect of reducing prices to such an extent as to barely, if at all, leave the cultivation of land profitable; and the present prices of corn, added to the burdens that now rested exclusively upon the land, led him to fear that in the agricultural and corn-growing districts it was hardly possible for the tenant farmer to make any profit at all, or for the landlord to claim that return in the shape of rent to which he was clearly and justly entitled. He had also dreaded—connected and attached as he was to this town and neighbourhood, and intermingled as all his interests were with the prosperity of the manufacturing districts—lest when our enterprising manufacturers met with successful competition abroad, they might find, too late, that they had lost their market for their goods. He could only hope and trust that his fears and anticipations upon this subject might not be realised. In common fairness, however, they ought to look to and consider the condition of their brother agriculturists who did not possess the advantages which those in this district enjoyed; for he believed that all whom he was addressing would agree with him in considering the state of agriculture in this district to be an exceptional one. In conclusion, he would say to those present, "Exert yourselves to the uttermost, relax not in your efforts, for these are not days in which men can stand still." Let landlords and tenants, agriculturists and manufacturers, pull together, then we might rest assured of the fulfilment of that great object to which we were all looking, namely cheapness of cultivation and increased produce of the soil, and then we should also ensure that which he would now propose to them as a toast, "Success to the Manchester and Liverpool Agricultural Society."

## Reviews.

*A Word in Season; or, how the Corn-Grower may yet grow rich, and his labourer happy.* Eighth Edition. J. Ridgway, Piccadilly.

The present edition of a pamphlet with which our readers are already well acquainted, contains a postscript, dated September 1851, and an appendix, with plain directions for carrying out the plan of Wheat growing of which the pamphlet speaks. Our extracts embrace portions of both these addenda.

"The outlay and the produce for the present year, 1851, being now ascertained, the account (per acre), stands thus:—

| | £ | s. | d. |
|---|---|---|---|
| Ploughing (12*s.*) the half portion of the acre ... ... | 0 | 6 | 0 |
| Harrowing, levelling, and cleaning the foul stubble... | 0 | 10 | 0 |
| Pressing the channels ... ... ... ... ... | 0 | 1 | 0 |
| Dropping the seed by hand ... ... ... ... | 0 | 5 | 0 |
| 1 peck and ½ of seed (in round numbers) ... ... | 0 | 2 | 0 |
| Rolling ... ... ... ... ... ... ... ... | 0 | 0 | 6 |
| Hoeing the rows, scarifying the intervals, bird keeping, and all the operations down to harvesting and marketing ... ... ... ... ... ... | 2 | 0 | 0 |
| Rates, taxes, and interest ... ... ... ... ... | 0 | 10 | 0 |
| Total amount of outlay ... ... | £3 | 15 | 0 |
| Five quarters and 1 bushel of Wheat (at 35*s.*) ... | 8 | 15 | 0 |
| Two tons of straw (at 40*s.*) ... ... ... ... | 4 | 0 | 0 |
| | 12 | 15 | 0 |
| Deduct outlay ... ... ... | 3 | 15 | 0 |
| Total amount of profit to proprietor ... ... ... | £9 | 0 | 0 |

*Directions for Carrying Out the Plan of Growing Wheat.*—"I suppose at the outset the land intended for Wheat, to be Wheat land; having besides a fair

depth of staple, and a subsoil—as will generally though not universally be the case—of the same chemical composition with the surface. I suppose it dry; or drained 3 feet deep at least; well cleaned of weeds; the lands cast; and the whole tolerably level.

"1. First of all, then, plough the whole land, when dry, 1 inch deeper than the used staple. If it turn up cloddy, bring the clods down with the roller or the crusher. Let this be done, if possible, in August. Harrow deep; so as to get 5 or 6 inches of loose mould to admit the presser. Before sowing wait for rain. After the rain wait for a fine day or two to dry the surface. With this early commencement, a week or two is of no material importance compared with that of 'ploughing dry and sowing wet.'

"As early as possible, however, in September, get in your seed with the presser-drill; or with some implement which forms a firm-bedded channel in which to deposit the seed, grain by grain, a few inches apart. Cover over with the crusher or rough-roller.

"2. When the lines of Wheat appear above ground, guard against the rooks, the lark, and the slug; a trite suggestion, but ever needful, especially here. And now, and at spring, and all through summer, watch for the weeds and wage constant warfare against them. The battle may last for a year or two; or in some foul cases even more; but, in the end, the mastery, and its fruits, without fail, will be yours.

The plant being now distinctly visible, dig the intervals two spits deep; increasing the depth year after year till they come to 20 or 24 inches. Bring up at first only 4 or 5 or 6 inches, according to the nature of the subsoil, whether tenacious, or loamy, or light. To bring up more at the outset would be a wasteful and injurious expense.

"The digging is done thus: before proceeding with the work, a few cuts are made within 3 inches of the Wheat,—the back of the spade being towards the rows. A few double spits, first of all, at the required depth, are then thrown out on the headland, and there left for the present. After this, as the digging proceeds, the staple is cast to the bottom, and the subsoil thrown gently on the top. This process is carried on throughout the whole interval; at the end of which interval, just so much space is left vacant as was occupied by the soil thrown out at the beginning of it. In commencing the second interval at that finished end, the earth is thrown out as at first; not on the headland, however, but into the vacant space of the first interval. And so on all over the acre.

"4. Late in winter and early in spring watch your opportunity, in dry weather, before the roots of the plant are laid bare, to press them with the crusher.

"5. In the spring and early summer, stir the spaces between the rows as often as the surface becomes crusted over; and move the settled intervals 4 or 5 inches deep with the common scarifier, set first of all about 28 inches wide; reducing the width till it come by degrees to 24 and 18 inches. Continue the process, if possible, at the last-named width, up to the time of flowering in June.

"These operations are indispensable to full success; and, happily, can be carried on at little cost. For, while the intervals of each acre can be scarified in 50 minutes, the horse-hoe implement, covering two lands at once, can stir between the rows in 25 minutes.

"6. Immediately the crop is carried, clean the intervals, and move them with the scarifier, in order to sow, without delay, the shed grains. When these vegetate and come up into plant, move the intervals again, 5 or 6 inches deep, and so destroy them. After that, level with the harrow implement; and the land is ready for the drill.

"7. If anything occur to prevent the sowing early in September, and to drive you to the end of October, set the drill for a thicker crop. But, if possible, sow early. For this reason; tillered Wheat has a bad name. But that has reference only to Wheat which has tillered late in the spring. And certainly, in that case, there is the fear of danger to the crop, and damage to the sample. For, supposing no mildew to fall on it, even then the plant ripens unevenly; the early stems being ready for the sickle, while the late-grown shoots have scarcely lost their verdure. But, if mildew come, when the straw is soft and succulent and porous, instead of being, as it should be at that time, glazed and case-hardened against its attacks, the enemy enters in and checks the circulating sap; and the end is, blackened straw, light ears, and shrivelled grain. Therefore, sow early. Let the plant tiller before winter. Give every stem an equal start at spring. And then, with a strict adherence to rule, there need be no alarm as to the result, subject only to those visitations from which no Wheat on any system, on the same description of soil, and under the same climate, is secure."

## Notices to Correspondents.

Churn: *An old Subscriber.* The old barrel churn, for 40 lbs., is as good as any.

Food required by Cattle: *Devoniensis.* What would the carcase of *that* ox weigh, if the animal were fat instead of lean? Divide that weight by four, the quotient is probably nearly the weight of green food, such as Turnips, Clover, &c., which that animal will eat per diem, if it be fed on green food only.

Machine for Milking Cows: *A Lady* begs to know whether any of our correspondents has used the new invention for milking cows, and with what results.

Micaceous Sand: *Usk.* That is what it is; it probably is from one of the beds of the old red sandstone.

Poultry: *W W R P.* White guinea fowls are scarcer, but not more sought after than the usual colour. The belief (and I think a correct one) is, that, in common with other white poultry, they are more delicate, and consequently more difficult to rear.—*T G K.* I know nothing to make unusual care and knowledge necessary to rear Cochin China fowls; therefore any work treating on poultry generally will give the necessary information. The best and most copious work is by the Rev. E. S. Dixon, entitled "Ornamental and Domestic Poultry," published at the *Gazette* office. *J. Baily, 113, Mount Street.*

The Farm Buildings Bill: *W C.* It was brought in by Mr. Baillie Cochrane and Mr. Forbes, and ordered to be printed on the 28th of May last; never got further than the committee, where it was so altered as to be useless. The Chancellor of the Exchequer spoke against it, and of course it was finally lost. *J. G.*

METEOROLOGICAL REPORT.—October.

(*Continued from p. 653.*)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Sun. 5 | 11 p.m. | 29.72 | ... | |
| * 6 | 7 a.m | ... | 29.65 | A.M. Southerly brisk; fine; 7 A.M. Heavy clouds in southern horizon. Noon, barometer risen, and wind WNW. P.M. Fine. |
| | Noon. | ... | 29.69 | |
| | 11 p.m. | 29.74 | ... | |
| 7 | 7.30 a.m. | 29.73 | ... | A.M. S.W. Brisk, overcast. |
| † | 4.15 p.m. | ... | 29.67 | P.M. W. Gentle; fine. |
| | 8 p.m. | ... | 29.72 | |
| | 10.20 p.m. | 29.73 | ... | Night. Brisk; overcast. |
| 8 | 6.40 a.m. | ... | 29.77 | Gentle WNW. Fine; barometer rising steadily. |
| | 11.30 p.m. | 29.86 | ... | |
| 9 | 7.20 a.m. | 28.80 | ... | A.M. SSW. Moderate. Densely overcast and raining. |
| ‡ | 2.30 p.m. | ... | 29.77 | Noon. SW. Stiff breeze. Drizzling. |
| | 8.40 p.m. | 29.80 | ... | P.M. WNW. Brisk; fine. |
| 10 | 5 a.m. | ... | 29.93 | WNW. Gentle; fine day; barometer rising steadily. |
| | 10.10 p.m. | 30.09 | ... | |
| 11 | 7.50 a.m. | 30.12 | ... | SW. Fine towards sunset; |
| § | 4.15 p m | ... | 30.11 | brisk and cloudy. |
| | 10 p.m. | 30.12 | ... | |
| Sun. 12 | 8.5 a.m. | 30.18 | ... | Bright day, nearly calm; barometer steady; 2.30 P.M. Brisk SSW. |
| | 10 p.m. | 30.18 | ... | 10 P.M. Barometer inclining downwards. |
| 13 | 7 a.m. | 30.07 | ... | Brisk SSW. Overcast. Barometer falling steadily. |
| | 10.30 p.m. | ... | 29.93 | After sunset some rain. |
| ** 14 | 7.30 a.m. | 29.91 | ... | A.M. WNW. Brisk; fine; barometer risen during night and now steady. |
| | 2 p.m. | 29.86 | ... | At 2 P.M. wind WSW, and brisk; sky densely overcast, and barometer falling rapidly. 6 P.M. South. Night, heavy wind. |
| | 11.10 p.m. | ... | 29.70 | |
| 15 | 7.30 a.m. | 29.39 | ... | A.M. SSW. Almost calm; raining fast. Noon. Westerly. 2.25 Calm. |
| ¶ | 2.25 p.m. | ... | 29.30 | 5.10 NNW. Clear overhead, but heavy clouds all round horizon. |
| | 6.30 p.m. | ... | 29.31 | Evening calm and bright, |
| | 11 p.m. | 29.34 | ... | and barometer rising, with every appearance of frost. |
| 16 | 8 a.m. | ... | 29.41 | Northerly. Gentle. Bright |
| | 6 p.m. | 29.46 | ... | morning. Barometer rising. Towards noon heavy clouds in west, which poured down a deluge of cold rain; afternoon cloudy; clearing off at times; barometer rising slowly. |

* † ‡ § ** A succession of small storms crossing from westward to eastward over England.

¶ This was a storm of very large diameter, coming from the south, and passing to the westward of England, and then curving to the eastward over Scotland.

Dorchester Oct. 16. *F. P. B. M.*

(*To be continued.*)

# Markets.

## COVENT GARDEN, Oct. 18.

Peaches and Nectarines are about over for a season. English Pines are large and fine. Grapes are abundant. Dutch Hamburghs are still imported in considerable quantities. Pears are also brought from the Continent. The best English kinds are Gansel's Bergamot, Brown Beurré, and Marie Louise. These fetch from 2s. to 4s. a doz., and 8s. to 12s. per half sieve. Damsons are almost over St. Michael Oranges may still be obtained. Nuts remain nearly the same as quoted last week. Some Spanish ones have made their appearance. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce and dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 2s to 4s |
| Peaches, per doz., 6s to 12s | — per 100, 14s to 30s |
| Melons, each, 1s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Damsons, p. half sieve, 6s to 7s | — Brazil, p, bsh., 12s to 14s |
| Apples, kitchen, p. bsh., 1s to 1s 6d | Filberts, per 100lbs., 70s to 90s |
| Pears, dessert, p. doz., 2s to 4s | Walnuts, per bush., 12s to 24s |
| Lemons, per doz., 1s to 2s | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Garlic, per lb., 4d to 6d |
| Cauliflowers, p. doz., 6d to 3s | Artichokes, per doz., 4s to 6s |
| French Beans, p. h. sieve, 2s to 4s | Lettuce, Cab., p. score, 4d to 1s |
| Beans, per sieve, 1s 6d to 2s | — Cos, per score, 3d to 1s |
| Peas, per sieve, 1s 9d to 3s 6d | Small Salada, p. punn., 2d to 3d |
| Potatoes, per ton, 45s to 80s | Horse Radish, p. bundl., 1s 6d to 6s |
| — per cwt., 2s to 5s | Red Beet, per doz., 1s to 2s |
| — per bush., 1s 6d to 2s 6d | Mushrooms, p. pot., 1s 6d to 2s |
| Turnips, p. bunch, 2d to 4d | — per bushel, 7s to 10s |
| Cucumbers, each, 1d to 1s | Sorrel, per hf. sieve, 6d to 9d |
| Radishes, per doz., 9d to 1s 6d | Tomatoes, p. half sieve, 3s to 4s |
| — Turnip, p. doz., 1s to 1s 6d | Fennel, per bunch, 2d to 3d |
| Celery, p. bundle, 6d to 1s 6d | Savory, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Veget. Marrows, p. dz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 6d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Leeks, per bunch, 1d to 2d | Marjoram, do., 3d to 4d |
| Shallots, per lb., 3d to 6d | Watercress, p. 12 bunch., 4d to 6d |

COAL MARKET.—Friday, Oct. 17.

Hollywell, 15s. 6d.; West Hartley Netherton, 14s. 6d.; Tanfield Moor, 13s. 9d.; West Hartley, 15s.; Wallsend Haswell, 16s. 6d.; Wallsend Lambton, 16s. 3d.; Wallsend Stewarts, 16s. 6d.; Wallsend Tees, 17s.—Ships at market, 125.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 16.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 70s | to 75s | Clover ... ... ... | 70s | to 85s |
| Inferior ditto... ... | 55 | 65 | New do. ... ... ... | — | — |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 23 | 27 |
| New Hay ... ... | — | — | | J. Cooper. | |

Cumberland Market, Oct. 16.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s | to 80s | Inferior ... ... ... | 65s | to 75s |
| Inferior ditto... ... | 60 | 70 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 24 | 28 |
| Old Clover ... ... | 84 | 90 | | Joshua Baker. | |

HOPS.—Friday, Oct. 17.

Messrs. Pattenden and Smith report that there is a good demand for both new and old Hops, at the previous currency. Duty, 120,000*l.* to 125,000*l.*

SMITHFIELD, Monday, Oct. 13.

We have rather a shorter supply of Beasts, but the demand having also decreased, we cannot quote trade better; indeed, for middling qualities scarcely so good; many of this kind remain unsold. There were a few more Sheep to-day, and trade is heavy, especially for big Long-wools. Good Calves are not plentiful, and maintain late prices with a ready sale. From Holland and Germany there are 1543 Beasts, 5090 Sheep, 170 Calves, and 109 Pigs; from Spain, 290 Sheep; from Scotland, 20 Beasts; and 2500 from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 2 | to 3 | 4 |
| Best Short-horns | 3 | 0 | — 3 | 2 |
| 2d quality Beasts | 2 | 0 | — 2 | 6 |
| Best Downs and Half-breds ... | 3 | 8 | — 3 | 10 |
| Ditto Shorn ... ... | | | | |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools . | 3 | 8 | to 3 | 6 |
| Ditto Shorn ... | | | ... | |
| Ewes & 2d quality | 2 | 8 | — 3 | 0 |
| Ditto Shorn ... | | | ... | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 3 | 0 | — 3 | 10 |
| Pigs ... ... | 3 | 0 | — 3 | 8 |

Beasts, 4604; Sheep and Lambs, 28,270; Calves, 230; Pigs, 580.

Friday, Oct. 17.

The number of Beasts to-day is very much smaller than it has been of late. The weather is also more favourable for slaughtering. In consequence, trade is brisk, at an advance of about 2d. per 8 lbs. The number of Sheep is small, and prices are generally higher. Choice Downs are scarce, and in a few instances exceed our top quotations. Good Calves are making rather more money. From Germany and Holland we have 166 Beasts, 890 Sheep, 170 Calves, and 23 Pigs; from Scotland, 15 Beasts; and 350 from the northern and midland counties.

| Best Scots, Herefords, &c. ... | 3 | 4 | to 3 | 6 |
|---|---|---|---|---|
| Best Short-horns | 3 | 2 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 8 |
| Best Downs and Half-breds ... | 3 | 8 | — 4 | 0 |
| Ditto Shorn ... ... | | | | |

| | | | | |
|---|---|---|---|---|
| Best Long-wools . | 3 | 4 | to 3 | 8 |
| Ditto Shorn ... | | | ... | |
| Ewes & 2d quality | 2 | 8 | — 3 | 2 |
| Ditto Shorn ... | | | ... | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 3 | 0 | — 3 | 10 |
| Pigs ... ... | 3 | 0 | — 4 | 0 |

Beasts, 720; Sheep and Lambs, 3920; Calves, 322; Pigs, 510.

MARK LANE.

Monday, Oct. 13.—There was little Wheat offering from Essex this morning, but a good show upon the Kent stands; the whole was disposed of at the prices of this day se'nnight; for foreign, a retail inquiry only was experienced, on the terms of last week. Floating cargoes of Polish Odessa are in request for Ireland and the Continent, but the transactions were not numerous.—Best descriptions of malting Barley sell readily at late prices; other sorts are neglected.—New white boiling Peas are 2s. per qr. dearer. In the value of other qualities, and of Beans, there is no alteration.—The trade for Oats is slow, and the price for new black Irish is 6d. per qr. cheaper.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —41 | Red ..... | 37 | —39 |
| — — fine selected runs... ditto | 40 | —44 | Red ..... | 38 | —40 |
| — — Talavera ..... | 44 | —46 | | | |
| — Norfolk, Lincoln, & York... White | 33 | —36 | Red ..... | — | |
| — Foreign ..... | 30 | —48 | | | |
| Barley, grind. & distil., 24s to 25s... Chev. | 28 | —30 | Malting . | 25 | —28 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | 17 | —20 | | | |
| — Scotch and Lincolnshire... Potato | 21 | —24 | Feed ..... | 19 | —21 |
| — Irish ..... Potato | 18 | —22 | Feed ..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed ..... | 16 | —19 |
| Rye ..... | 28 | —30 | Foreign . | — | |
| Rye-meal, foreign..... per ton | — | | | | |
| Beans, Mazagan ... ..28s to 27s.....Tick | 24 | —30 | Harrow . | 24 | —30 |
| — Pigeon.....26 — 32... Winds | 30 | —33 | Longpod | 24 | —26 |
| — Foreign . ..... Small | 21 | —29 | Egyptian | 22 | —23 |
| Peas, white, Essex and Kent.....Boiler | 28 | —30 | Suffolk... | 29 | —31 |
| — Maple.....27s to 29s .....Grey | 22 | —25 | Foreign . | 25 | —29 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 32 | —37 | | | |
| — Suffolk .....ditto | 26 | —32 | Norfolk . | 26 | —32 |
| — Foreign .....per barrel | 15 | —21 | Per sack | 28 | —33 |

Friday, Oct. 17.—The arrivals of grain and Flour of all sorts this week have been moderate. This morning's market was thinly attended, and sales of Wheat from the stands were very limited, without alteration in prices, excepting for the lowest descriptions, which are taken for the Continent at gradually enhanced rates, say—common Ibraila at 20s. per qr., f. o. b., including freight and insurance; and Polish Odessa afloat at 32s. to 32s. 6d., also cost and freight. There is no alteration in the value of Barley, Beans, and Peas.—In Flour there is little passing.—Paris, Oct. 15: Flour continues difficult of disposal, although holders do not anticipate a further decline. Of Wheat the offers are small, farmers being busily engaged in sowing. In the interior, prices of Wheat have undergone no alteration.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Sept. 6..... | 38s 9d | 26s 1d | 20s 1d | 26s 2d | 30s 4d | 25s 11d |
| — 13..... | 38 5 | 26 1 | 19 5 | 25 0 | 28 9 | 27 8 |
| — 20..... | 37 8 | 25 7 | 18 4 | 26 2 | 28 6 | 28 2 |
| — 27..... | 36 7 | 25 0 | 18 0 | 25 4 | 28 8 | 27 0 |
| Oct. 4..... | 35 7 | 25 1 | 17 6 | 24 2 | 27 10 | 27 1 |
| — 11..... | 35 6 | 25 2 | 17 3 | 25 0 | 27 8 | 26 2 |
| Aggreg. Aver. | 37 1 | 25 6 | 18 7 | 25 4 | 29 1 | 27 0 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Sept. 6. | Sept. 13. | Sept. 20. | Sept. 27. | Oct. 4. | Oct. 11. |
|---|---|---|---|---|---|---|
| 38s 9d | — | ... | ... | ... | ... | ... |
| 38 5 | ... | — | ... | ... | ... | ... |
| 37 8 | ... | ... | — | ... | ... | ... |
| 36 7 | ... | ... | ... | — | ... | ... |
| 35 7 | ... | ... | ... | ... | — | ... |
| 35 6 | ... | ... | ... | ... | ... | — |

Liverpool, Tuesday, Oct. 14.—The arrivals from Ireland and coastwise during the past week have been moderate of Oats and Oatmeal, but trifling of other articles. Owing to her Majesty's visit to this town and Manchester there was little or nothing doing during the latter part of the past week; however, where sales of Wheat or Flour were effected, a slight advance over Tuesday's currency was generally realised. In other articles, nothing worthy of remark has taken place. The weather has been for the most part stormy and wet. At this day's market there was a good attendance of the town and country trade, and, though the demand was not so brisk as was anticipated, still a fair business was done in Wheat and Flour at the full prices of last Tuesday. Oats and Oatmeal were in moderate request, at late rates. Barley, Beans, and Peas met with a good retail demand. Indian Corn was hardly inquired for, and buyers might have supplied themselves on more favourable terms.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2s 6d. per yard.—Damask Curtains, 10d. per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8s. per yard.—The best Floor Cloths that can be made, cut to any dimensions. 2s. 3d. per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2¼ yards wide, and of any required length, at 1s. 4d. per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

THE HAIR.—LOST AND RESTORED.—"Newport, Isle of Wight, Sept. 6, 1843.

"Gentlemen,—Some three months since, finding my hair falling off by nearly handsful, and my head approaching baldness; in fact, being quite bald at the crown and on the sides, I was induced, through my hairdresser, Mr. Beach, of this place, to try your BALM OF COLUMBIA, and after persevering with four bottles, according to your directions, I found a new crop produced, which has now restored my head to its former appearance. As I had apprehended a total loss of my hair, I feel it due to the virtues of your Balm of Columbia thus publicly to bear my testimony. Mr. Beach, who recommended me, is the same who used it successfully in Mr. Wilson's case, whose testimony you have lately published. Mr. B. is a Lymington man; I am also a native of that place, though for the last ten years in practice here as a solicitor.—Yours, &c. H. RICE.

"To Messrs. C. & A Oldridge."

For the strengthening of weak hair, its restoration when thinly scattered, or falling off and consequent general improvement and embellishment, the powers of OLDRIDGE'S BALM OF COLUMBIA are known by the continually increasing numbers who are testing its merits, as powerfully and unfailingly efficient.—Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. Ask for OLDRIDGE'S BALM, and never be persuaded to use any other article as a substitute.

13, Wellington-street North, seven doors north of the Strand.

THE GREAT EXHIBITION.—A valuable, newly invented, very small, powerful Waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from four or five miles, which is found to be invaluable at the Exhibition, and to SPORTSMEN, GENTLEMEN, and GAME-KEEPERS. TELESCOPES.—A new and most important INVENTION in TELESCOPES, possessing such extraordinary powers, that some, 3¼ inches, with an extra eye-piece, will show distinctly Jupiter's moons, Saturn's ring, and the double stars. They supersede every other kind, and are of all sizes—for the Waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses, with wonderful powers; a minute object can be clearly seen, from 10 to 12 miles distant.—Invaluable newly-invented preserving Spectacles, invisible and all kinds of acoustic instruments for relief of extreme deafness. Messrs. S. and B. SOLOMONS, Opticians and Aurists, 39, Albemarle-street, Piccadilly, opposite the York Hotel, London.

CUNDY'S PATENT PRIZE STOVE.—W. HODGES, 123, Oxford-street (late J. E. Dowson), is the sole manufacturer of CUNDY'S patent open fire-place, pure warm air ventilating STOVE, which has been so long tested and approved by the public, and for which he received the large Silver Medal from the Society of Arts. It is admirably adapted for warming and ventilating churches, school rooms, and other public places, halls, dining-rooms, &c., &c. Also CUNDY'S Patent Dioko-Capnon or smoke-expelling register Grate, a perfect cure for smoky chimneys; together with a large assortment of Marble Chimney-Pieces, Drawing-room and other Grates, Fenders, Fire-irons, and Kitchen Ranges of the most improved principle, Wind-guards, &c.

THE TEETH AND BREATH.—A good set of Teeth ever insures favourable impressions, while their preservation is of the utmost importance to every individual, both as regards the general health by the proper mastication of food, and the consequent possession of pure and sweet breath. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the Teeth to the latest period of life. It will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the Teeth firmly in their sockets; and from its aromatic influence impart sweetness and purity to the breath. Price 2s. 9d. per box. Beware of spurious imitations. The genuine article has the words, "A. ROWLAND and SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each.—Sold by them, and by Chemists and Perfumers.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily, together with the ELEPHANT CALF, and the HIPPOPOTAMUS, presented by H. H. the Viceroy of Egypt. Admission, 1s. On MONDAYS, 6d.

MEDICINE ALWAYS AGGRAVATES DISEASES, BUT DU BARRY'S FOOD INVARIABLY CURES THEM; indeed, fifty thousand cures have been effected by DU BARRY'S delicious REVALENTA ARABICA FOOD, without medicine, inconvenience, or expense (as it saves 50 times its cost in other remedies). Cure No. 71, of dyspepsia: from the Right Hon. the Lord Stuart de Decies:—"I have derived considerable benefit from DU BARRY'S Revalenta Arabica Food, and consider it due to yourselves and the public to authorise the publication of these lines.—Stuart de Decies." Cure 49,832: "Fifty years' indescribable agony from dyspepsia, nervousness, asthma, cough, constipation, flatulency, spasms, sickness at the stomach, and vomitings, have been removed by DU BARRY'S excellent food.—Maria Jolly Wortham, Ling, near Diss, Norfolk." Cure No. 180: "Twenty-five years' nervousness, constipation, indigestion, and debility, from which I had suffered great misery, and which no medicine could remove or relieve, have been effectually cured by DU BARRY'S Revalenta Arabica Food in a very short time.—W. R. Reeves, Pool Anthony, Tiverton." Cure No. 4208: "Eight years' dyspepsia, nervousness, debility, with cramps, spasms, and nausea, for which my servant had consulted the advice of many, have been effectually removed by DU BARRY'S delicious health-restoring food in a very short time. I shall be happy to answer any inquiries.—Rev. John W. Flavell, Ridlington Rectory, Norfolk." Cure No. 1609: "Three years' excessive nervousness, with pains in my neck and left arm, and general debility, which rendered my life very miserable, has been radically removed by DU BARRY'S health-restoring food.—Alex. Stuart, Archdeacon of Ross, Skibbereen." Copies of testimonials of 50,000 cures (including those of Major-General Thomas King, Drs. Ure, Shorland, and Harvey), may be had gratis. In London are agents—FORTNUM, MASON, and Co., 181 Piccadilly, Purveyors to her Majesty the Queen; also to be had at 60, Gracechurch-street; 330 and 451, Strand. In canisters, with full instructions, 1 lb., 2s. 9d.; 2 lbs., 4s 6d.; 5 lbs., 11s.; 12 lbs., 22s. Super-refined, 5 lbs., 22s.; 10 lbs., 33s. The 10 lbs. and 12 lbs carriage free. DU BARRY and Co., 127, New Bond-street, London.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

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Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in Windows
Currants
Dahlias
Daises
Dog's-Tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
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THE HISTORY OF FRANCE, from the Earliest Period. By Emile de Bonnechose. The two volumes of the French edition comprised in the one of the translation. This work is the history approved of by the Minister of Public Education in France, where it has already passed through five editions. London: D. Bogue, 86, Fleet-street.

Printed by William Bradbury of No. 13, Upper Woburn-place, in the parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be addressed to the Editor.—Saturday, October 18, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 43—1851.] SATURDAY, OCTOBER 25. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Beetle traps | 680 c | Gloucestershire Agricultural Society | 685 a |
| Birds, British song | 677 a | Kitchen garden, how to crop | 678 b |
| — mocking | 678 c | Land, value of | 681 a |
| Botanical Society of London | 678 c | Manure, solid v. liquid | 682 c |
| Bricks, embossed | 685 a | Musa Cavendishii | 677 c |
| Calendar, Horticultural | 680 a | Mushrooms, poisoning by | 675 b |
| Cherries, retarded | 678 a | Oaks, meaning of Durmast | 677 c |
| Chinese hort. shows | 679 c | Orchids for the million | 677 b |
| Claremont, gardens at | 679 b | Pansies, seedling | 679 b |
| Cockroaches | 680 a | Peaches, retarded | 678 a |
| Cookery Book, Lady Clutterbuck's, rev. | 679 a | Pigs | 684 c |
| Cropping a kitchen garden | 678 b | Pinks, select | 679 b |
| Cucumbers, disease in | 678 b | — culture of | 679 b |
| Draining | 684 a | Planting, effective | 675 a |
| East Cumberland Agricultural Society | 685 c | Poisoning by Mushrooms | 675 b |
| Farming, different kinds of | 681 b | Railway literature rev. | 679 a |
| — balance sheets in | 684 c | Roses for exhibition | 676 c |
| Fish, breeding of | 675 c | Seeds, samples of | 677 b |
| Floors, open boarded | 682 b | Shrubberies, effective planting of | 675 a |
| Fortune's (Mr.) arrival | 675 c | Soils, alluvial | 681 a |
| Fruit trees, ringing | 680 c | Tares, winter | 683 c |
| Game | 684 b | Walks tarred | 677 c |
| Garden, kitchen, to crop | 678 b | Weather, the | 686 a |



GOLIATH STRAWBERRY.—A Post-office order for 5*s.* will secure (package free) 100 strong plants of this celebrated Strawberry, or 12 plants, free by post, on receipt of 18 postage stamps. Also TAOLLOP'S VICTORIA, 4*l.* per 100, and any of the old varieties at very low prices. The usual allowance to the trade.—JAS. KITLEY, Lyncombe Vale Nursery, Bath.

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ROSES.

WILLIAM WOOD AND SON will be happy to forward Copies of their New ROSE CATALOGUE GRATIS on application.
Woodlands Nursery, Maresfield, near Uckfield Sussex.

DUTCH FLOWER ROOTS.

RENDLE'S LIST OF DUTCH BULBS will be found in the columns of this Paper, front page, in the number for September 27, 1851. The prices are very low. Descriptive Catalogues on application to WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

*The Hyacinths are particularly large and handsome. Most excellent kinds can be had at 6s. per dozen.*

RENDLE'S LIST OF NEW GERANIUMS will be found in the columns of this Paper, page 578, in the Number for September 13, 1851.
WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

TULIPS, HYACINTHS, LILIUM LANCIFOLIUM, AND DUTCH BULBS GENERALLY.
This being the season for planting these Bulbs,

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to state that he supplies the above FLOWERS of the finest quality, at very moderate prices. His Catalogue may be had on application.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

PLANTING SEASON.

W. H. ROGERS, NURSERYMAN and LANDSCAPE GARDENER, 130, High-street, Southampton, begs to offer any quantity and description of finely grown and well-rooted NURSERY STOCK, including Forest and Ornamental Trees, Evergreen and Flowering Shrubs, American Plants, Fruit Trees, Roses, Herbaceous Plants, &c., &c., at a very reduced price. Planting contracted for to any extent, engaging to replace failures. Gardens and Pleasure Grounds laid out and planted in the best taste.—All communications addressed to W. H. ROGERS, as above, will meet with immediate attention.

SAFFRON WALDEN NURSERY.
SUPERB SEEDLING HOLLYHOCKS OF 1851.

WILLIAM CHATER begs to inform his patrons that he has arranged with Mr. PARSONS for his Seedling Hollyhocks, which were exhibited at Shacklewell Horticultural Show, and took the first prize; also at the National Floricultural Society, where they obtained three first class Certificates.
W. C. is now prepared to send out a few Sets of these unequalled varieties, for prepayment only. A separate priced list may be had on application by enclosing a postage stamp.
Post-office Orders payable at Saffron Walden.
N.B. This advertisement will not be repeated.

SUPERB HOLLYHOCK SEED.—Well ripened Seed, warranted to be saved exclusively from Rosea grandiflora, Delicata, Comet, Model of Perfection, Elegans, Formosa, Gem, Belladonna, Bicolor, Queen, Fireball, Aurantia, Rosea alba, and Sulphurea perfecta. A good mixture of the above, in packets, containing 200 Seeds, will be forwarded, post free, upon the receipt of 2*s.* 6*d.* worth of postage stamps, by R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

F. WOOD, Tothill, Plymouth, respectfully informs the admirers of floral beauty, that they may now enrich their collection by the addition of a superb White Geranium, named "BRIDE OF ABYDOS," raised by him. The ground colour of this beautiful flower is a pure white; the top petals are densely blotched with deep maroon, shading off to a rich claret, leaving a pure white margin; the flower is of exquisite form, a very free bloomer, and of dwarf habit. Plants now ready, 15*s.* each. The usual allowance to the trade.
Agents for London:—Mr. EDWARD G HENDERSON, Wellington Road Nursery, St. John's Wood; and Messrs. Low and Co., Clapton Nursery; and Messrs. VEITCH and SON, Nurserymen.

IMPORTANT TO ALL WHO HAVE A GARDEN.

CHALLENGE COMPARISON AND COMPETITION. CARRIAGE PAID.
All orders above 5*l.* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.
100, own selection, two of each kind, 30*s.*; or our selection, in 100 varieties, 42*s.*
100, purchaser's selection, one of each kind, 42*s.*
100 Alpine or Rock Plants, 42*s.*
The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.
Purchaser's, or our selection, from list, per 100, 2*l.* 10*s.*, one of each.
Own do. do. per 100, 1*l.* 10*s.*, two of each.
This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.
HOLLYHOCKS.—No. 1, fine double kinds, all shades of colour, for exhibition, 9*s.* per dozen; 50*s.* per 100. No. 2, for border display, 6*s.* per dozen; or 30*s.* per 100. These are selected from the finest collection in the country.
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PORTUGAL LAURELS, 1½ to 2 feet, 20*s.* per 100; fine, 3*s.* per dozen. 2 to 3 feet, extra fine and bushy, 30*s.* per 100; 6*s.* per dozen.
EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40*s.*; per 100, 5*s.* 3 to 5 feet, strong, 45*s.* per 1000; or, per 100, 6*s.*, healthy and fine grown.
LIMES, per 100, 4 to 5 feet, 30*s.*; 5 to 6 feet, fine, 40*s.* per 100, fine avenue trees.
HORSE CHESTNUT, 5 to 6 feet, 30*s.* per 100; 10 to 12 feet, 50*s.* per 100, splendid.
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MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.
50 first-rate sorts, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
50 do. purchaser's selection, 3*l.*; or 18*s.* per dozen.
ERICAS, 50 of the finest sorts grown, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
" " purchaser's choice from list, 3*l.*; or 18*s.* per dozen.
CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21*s.*; or 15*s.* per dozen.
" " purchaser's choice, 1*l.* 5*s.*; or 18*s.* per dozen.
The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

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HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25*s.*; 50 fine for 10*s.*; 25 for 8*s.*, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.
CINERARIA, from the choicest sorts, per packet, 2*s.* 6*d.*
PANSY, do. do. do. 1*s.* 6*d.*
HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1*s.* 6*d.*

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GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l.*, in 100 varieties; or 10*s.* per 100, in 50 varieties.
A selection of the choicest description for show, 9*s.* per doz.
The stock extends over 50,000, and is fine and free growing.
CURRANTS.—MAY'S Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25*s.*; or per doz., 4*s.*
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Red Grape and Champagne, fine, 10*s.* per 100.
White Dutch, large and fine, 15*s.* per 100, 3*s.* per doz.
APPLES.—Fine clean Standards, 10*s.* per doz., 70*s.* per 100.
" " Dwarfs, 8*s.* per doz., 50*s.* per 100.
" Dwarf trained superior kinds, 2*s.* 6*d.* each, or 24*s.* p. doz.
The collection is very choice, from the Horticultural Society.
PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.
PLUMS and CHERRIES.—All the leading sorts, standards, 18*s.* per doz.
" " Dwarfs, fine, 9*s.* per doz.
" " Dwarf trained, 3*s.* 6*d.* each, or 36*s.* per doz.
APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5*s.* each, 50*s.* per doz.
RASPBERRIES.—Fastolff, 3*s.* per doz., 16*s.* per 100.
" Antwerp Red, 2*s.* per doz., 12*s.* per 100.
" Monthly, or Double-bearing, 12*s.* per 100, 2*s.* per doz.
STRAWBERRIES.—Early and late kinds, in 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3*s.* 6*d.* per 100.
An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, and Evergreens. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.
tion, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to JOHN MAY, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.
N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.
Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

JOHN ANDREW HENDERSON AND Co., have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21*s.* each.
Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orlean Plum; when fully ripe are of a fine deep black having a fine rich flavour, and very juicy.
It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

THE TRUE LANCASHIRE SHOW GOOSEBERRIES.

| *Red.* | Dwts. | Grs. | *Green.* | Dwts. | Grs. |
|---|---|---|---|---|---|
| London | 27 | 12 | Thumper | 23 | 13 |
| Companion | 25 | 2 | Turn-out | 22 | 0 |
| Wonderful | 24 | 18 | Providence | 21 | 6 |
| Guido | 24 | 4 | Overall | 21 | 0 |
| Slaughterman | 24 | 0 | Green River | 20 | 20 |
| Lion's Provider | 23 | 4 | Queen Victoria | 20 | 7 |
| *Yellow.* | | | *White.* | | |
| Catherine | 27 | 4 | Freedom | 23 | 16 |
| Leader | 24 | 12 | Queen of Trumps | 22 | 8 |
| Drill | 23 | 18 | Lady Leicester | 22 | 7 |
| Pilot | 23 | 0 | Snowdrop | 21 | 12 |
| Railway | 22 | 14 | Tally-Ho | 21 | 4 |
| Dublin | 22 | 12 | Snowball | 20 | 4 |

The above 24 Gooseberries, taken from the "Gooseberry Grower's Register" of 1851, are the heaviest winners of the season, and can be supplied in 24 strong plants for 12*s.*, or 12 plants for 7*s.*, package, &c., included, by JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, whose priced Catalogue of Auriculas, Alpines, Polyanthuses, Primroses, Carnations, Picotees, Pinks, Pansies, and the Lancashire Show Gooseberry Trees, are now ready, and may be had on application enclosing a postage stamp.
Post-office Orders to be made payable at Middleton, near Manchester.

MESSRS. PLATZ AND SON, SEEDSMEN, ERFURT, Prussia, inform the Trade that their CATALOGUE for 1851 and 1852 is now ready, and to be had only of their Agent, ROBERT KENNEDY, Bedford Conservatory, Covent Garden, London.—October 25.

PINKS.—"JULIA YOUNGS," extra fine quality, perfect rose, leaf very finely laced with deep purple; first-rate show flower, either for north or south, combining quality with size. A few pairs of this beautiful Pink may be had of JOHN KEYNES, Florist, Salisbury, post free, on receipt of 5*s.* per pair.
A fine collection of all the show flowers at reasonable prices.

SUPERB HOLLYHOCKS.

WILLIAM HUSSEY begs to offer the undernamed Collection of HOLLYHOCKS, for 30*s.*, basket and package included, or 18*s.* per dozen, purchaser's selection:—Elegans, Abd-el-Kader, Black Prince, Bicolor, Comet, Delicata, Commander-in-Chief, Queen, Enchantress, Formosa, Fireball, Mount-Etna, Model of Perfection, Obscura, Eclipse, Spicata, Purpurea elegans, Venosa, Queen of England, Queen of Roses, Rosea grandiflora, Rosea alba, Rosea superbus, Sulphurea perfecta; and Seedlings of the above, for borders, at 4*s.* per doz., and also the undernamed, fine healthy plants.

| | | | |
|---|---|---|---|
| 12 pairs of fine Show Carnations | ... | ... | 12*s.* 0*d.* |
| 12 pairs of fine Show Picotees | ... | ... | 12 0 |
| 12 pairs of fine Border Varieties, by name | ... | ... | 6 0 |
| True old Clove Carnation, per pair | ... | ... | 0 6 |
| Pansies, per doz., fine show sorts | ... | 4*s.* to 6 | 0 |
| Pinks, per dozen pairs, fine named sorts | ... | 4*s.* to 6 | 0 |
| Double White Major Rockets | ... | ... | 3 0 |
| Cinerarias, per doz., the best sorts | ... | 6*s.* to 12 | 0 |
| Tree Violets, strong plants, in pots, per doz. | ... | 4 | 0 |
| Standard Roses, the most popular sorts, per doz. | ... | 12 | 0 |
| Vines, from eyes, strong plants, each | ... | 2*s.* to 3 | 0 |
| Strawberry Plants, all the approved sorts, p. 100, | | 2*s.* to 3 | 0 |

Plants added to compensate for carriage. Remittance requested from unknown correspondents.
Horticultural Gardens, Norwich, October 25.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.
York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. Early Oxford do., 10*s.* 6*d.* do. Early Ebrington Kidney do., 10*s.* 6*d.* do. Early Ash-leaf Kidney do., 10*s.* 6*d.* do.
Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking,

NEW STRAWBERRY AND DOUBLE DAISIES.

JOHN SALTER, F.H.S., is now sending out his STRAWBERRY, "ATHLETE," at 4*l.* per hundred, or 12*s.* per dozen. It is a very large, handsome fruit, of good flavour, early, enormous bearer, and has been ordered by many persons who saw it growing.

DOUBLE DAISIES.—Twenty-five finest sorts (chosen out of 150 varieties) for 15*s.* They are perfectly double, of fine form, very distinct and pretty, and were awarded a Certificate at Chiswick in the summer.

FANCY PANSIES.—Twelve curiously-striped varieties, quite new in character, and very attractive. The set, 1*l.* 10*s.*

NEW CHRYSANTHEMUMS.—Fifty fine new varieties of 1851, pompous and large show flowers, at 18*s.* and 24*s.* per dozen. His unrivalled collection, containing about 400 vars., is now coming into bloom, and may be seen every day except Sunday; also, some fine seedlings, which he will send out next spring.

Versailles Nursery, William-street, Hammersmith Turnpike.

NEW FORCING CARNATION.

GAINES'S "FLORABUNDA" rose flake, large flower, will bear stove heat and expand well. This flower will be a great acquisition to the bouquet in the spring.

N. G. begs to announce that he can supply good strong plants of the above at 2*s.* 6*d* per pair. His descriptive list of Show Pelargoniums and fancy varieties, &c., is just published, and can be had by applying at the Nursery, Surrey-lane, Battersea, near London.

MESSRS. DICKSONS AND CO. beg to call attention to the following NEW PANSIES, which took the first prize for the best one, the best two, and the best three Seedlings of 1851, at the Competition held in Glasgow, on the 27th ult., open to all Scotland, viz.:—

* "BRITISH QUEEN."—White, with various belt, and top petals of fine bluish purple; 5*s.*

"GOLDEN EAGLE"—A yellow self, with a large and striking blotch, great substance, and fine form; 5*s.*

* "GLIFF."—Yellow, with broad belt, and top petals of rich bronze purple, very large, fine show flowers; 5*s.*

"PEACOCK."—Gold, and rich maroon belt, and top petals, extra form; 5*s.*

"ROYAL STANDARD."—Pure white, with rich purple belt and top petals, exquisite form, and fine blotch; 5*s.*

* "VICTORY."—Yellow and deep maroon belt and top petals, the three lower petals beautifully laced with gold, blotch large, constant, a superb show flower; 5*s.*

Those marked * are now ready. Usual allowance to the Trade.

Edinburgh, Oct. 25.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, near London, informs his kind patrons that his new ROSE AND FRUIT CATALOGUE FOR 1851 AND 1852 is now ready for circulation, and will be sent on receipt of a twopenny stamp. His Stock of Roses, Fruit Trees, Evergreen Shrubs, and Ornamental Trees, are of the finest growth, of all sizes.—Gardens and Pleasure Grounds tastefully arranged and planted on the lowest terms.

E. D. informs his friends that he has no Seed Shop in London.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.

Seed and Horticultural Establishment, Sudbury, Suffolk.

JOHN HENCHMAN is now ready to send out a few sets of his six choice Seedling CINERARIAS, saved from above 4000 varieties at 15*s.* the set. A few stout Seedling CINERARIAS, raised from very choice seed, at 6*s.* per dozen, or 40*s.* per 100. Stout healthy Seedling CALCEOLARIAS, raised from his best varieties, well known for their half shrubby free blooming habit, and large showy blooms, at 6*s.* per dozen or 40*s.* per 100. Choice named PANSIES, by the best growers, at 6*s.*, 9*s.*, and 12*s.* per dozen. A few packets of choice Pansy Seed, at 2*s.* 6*d.* each; Choice Calceolaria Seed, 2*s.* 6*d.* per packet; Hollyhock Seed, warranted, from Chater's superb named varieties, at 5*s.* per packet. Superb African Marygold, lemon and orange, and dwarf French Marygold, at 1*s.* per packet, or 2*s.* 6*d.* the set. Remittance requested from unknown correspondents.—Edmonton, London, Oct. 25.

THE MOUNTAIN OF LIGHT, a new variegated GERANIUM, of dwarf habit, and free growth. The centre of the leaf is deep green, with a broad margin of pure white. The truss is of medium size, the pips very round, and the colour the most intense scarlet. It is a very free bloomer.

First-class Certificates have been awarded to it by the National Floricultural Society, and the South London.

JOHN AND CHARLES LEE intend sending out this desirable variety (which eclipses all former introductions in this class), on the 31st instant. Price 10*s.* 6*d.* each. Early orders are requested, as the stock is limited.

Nursery, Hammersmith.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1¼ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Oct. 25.

TWENTY GERANIUMS FOR ONE POUND.

TWENTY CHOICE NAMED GERANIUMS FOR TWENTY SHILLINGS, can be selected by the purchaser from the following list:—Foquett's Magnificent, Topping's Brilliant, Hoyle's Crusader, Arnold's Virgin Queen, Falstaff, Lyne's Forget-me-not, Delicatissima, Rosy Circle, Nourmahal, Desdemona, Sir Robert Sale, Hebe's Lip, Centurion, Negress, Cassandra, Pluto, Symmetry, Gustavus, Gulielma, Sunrise, Duke of Cornwall, Grandiflora, Orion, Black Prince, Mercury, Star of the West, Lady Ebrington, Jenny Lind, Scarlet Defiance, Flora's Flag, and Emilia.

SCARLET GERANIUMS.

Flower of the Day, Excellence, Glendinning's Perpetual, Magnum Bonum, Queen of Summer, Fire Queen, Royalist, Commander-in-Chief, Resilium, Hendersonii, Monarch, Britannia and General Tom Thumb.

*All Orders above 2l. will be delivered Carriage Free to any Station on the Great Western, Bristol and Exeter, or South Devon Railways, or to Cork, Dublin, or Belfast.*

Apply to WILLIAM E. RENDLE, Union-road, Plymouth, adjoining the terminus of the South Devon Railway.

EXOTIC NURSERY, KING'S-ROAD, CHELSEA.

We have a fine stock of ARAUCARIA IMBRICATA, CEDRUS DEODARA, RHODODENDRON PONTICUM, in remarkably well-grown plants, of various sizes. This being the best time of the whole year for planting them, we beg respectfully to recommend them in an especial manner, to those who intend embellishing their estates and gardens by ornamental planting, and shall be happy to furnish size and price when applied for. KNIGHT and PERRY.

H. LANE AND SON, GREAT BERKHAMPSTEAD, HERTS, are now ready to forward to applicants their CATALOGUE OF ROSES.

" " TREES AND SHRUBS.
" " FRUIT TREES.
" " INDIAN AZALEAS AND CAMELLIAS.

THOMAS JACKSON AND SON having a large stock of the under-named NEW AND FINE PLANTS, beg to offer them at the following low prices:—

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Allamanda paraensis ... | 2s | 6d | Gardenia Fortunii ... | 2 | 0 |
| " Schotti ... ... | 2 | 6 | " Stanleyana ... | 2 | 6 |
| Æschynanthus javanicus | 2 | 6 | Gastrolobium paniculatum | 3 | 6 |
| Bartolonia maculata ... | 2 | 0 | Hoya bella ... ... | 2 | 0 |
| Bossiæa Hendersoni ... | 1 | 0 | " campanulata ... | 2 | 0 |
| Brachysema præmorsa | 3 | 6 | " imp-rialis ... | 3 | 6 |
| Camptosema rubicunda | 5 | 0 | Henfreya scandens ... | 1 | 6 |
| Campylobotrys discolor | 2 | 0 | Justicia coccinea ... | 2 | 6 |
| Cupressus funebris ... | 3 | 6 | Mitraria coccinea ... | 1 | 6 |
| Cantua dependens ... | 3 | 6 | Maranta glumacea ... | 7 | 6 |
| Chiriti Mooni ... ... | 2 | 0 | Nepenthes distillatoria | 10 | 6 |
| Chimonanthus macrophyllus ... ... ... | 5 | 0 | Nematanthus Morellii... | 2 | 0 |
| | | | Poivrea coccinea ... | 3 | 6 |
| Conoclinum jantinum ... | 3 | 6 | Phlox Antagonist ... | 5 | 0 |
| Chorozema flava ... | 1 | 6 | Rhodothamnus kamtschaticus ... ... | 10 | 6 |
| Dacrydium Franklini ... | 5 | 0 | | | |
| Dracæna ferrea variegata | 5 | 0 | Rogiera amœna... ... | 7 | 6 |
| Deutzia gracilis... ... | 3 | 6 | Roupellia grata... ... | 2 | 6 |
| Dipladenia crassinoda | 1 | 6 | Tritonia aurea ... ... | 3 | 6 |
| Escallonia macrantha... | 2 | 6 | Trimalium elegans ... | 2 | 0 |
| " organensis ... | 2 | 0 | Thuja Donneana ... | 5 | 0 |
| Eriostemon scabrum ... | 3 | 6 | Vriesia speciosa... ... | 5 | 0 |

12 Ericas, of fine sorts, flowering plants ... 18*s.* 0*d.*
12 Epacris do. do. ... 18 0
12 Camellias do. do. ... 30 0
12 do. do. smaller ... ... ... 24 0
12 Chinese Azaleas, of fine sorts ... ... ... 12 0

Black Hamburgh and Sweetwater Vines, in pots, fruiting plants, fit for forcing, 5*s.* each. Discount to the trade.

Nurseries, Kingston, Surrey, Oct. 25.

EDWARD GEORGE HENDERSON is now ready to send out his new CINERARIAS and FANCY GERANIUMS, for which he solicits early orders, as the stock of some of the varieties is very limited.

NEW CINERARIAS.

PRIMA DONNA (HENDERSON'S).—Large dark blue, fine broad petal, good form, and very dwarf habit. 10*s.* 6*d.*

MRS. SIDNEY HERBERT (HENDERSON'S).—White, with narrow carmine margin and carmine disc. A new and distinct colour, of good habit, and a handsome variety. 10*s.* 6*d.*

MARIANNE (HENDERSON'S).—Clear white, with a regular margin of rosy crimson, and black disc; first-rate form; a very handsome and striking variety. First class Certificates have been awarded to this flower. 10*s.* 6*d.*

ROSY MORN (HENDERSON'S).—Rosy crimson, with a white ring round a dark disc; good habit. 7*s.* 6*d.*

ST. CLAIR OF THE ISLES (HENDERSON'S).—White, with medium rosy lilac margin, and of dwarf habit; exquisite form. 7*s.* 6*d.*

MRS. CHARLES KEAN (HENDERSON'S).—White and bright deep rose, light disc; fine form and good habit. 7*s.* 6*d.*

MR. SIDNEY HERBERT (HENDERSON'S.)—Shaded purple, of fine form. 7*s.* 6*d.*

NONSUCH (HENDERSON'S).—Crimson plum; fine large flower, good broad petal. 7*s.* 6*d.*

CATHERINE SEATON (HENDERSON'S).—Bright rosy carmine, with a circle of white round a carmine disc. Gratis to purchasers of the set.

Price of the set, 3*l.* 3*s.*—The usual discount to the Trade.

NEW FANCY GERANIUMS.

BRIDE (HENDERSON'S).—Brilliant rose, with small white margin, and pure white centre; very free bloomer. 10*s.* 6*d.*

BEAUTY OF ST. JOHN'S-WOOD (HENDERSON'S).—Upper petals bright violet carmine, with a regular clear white margin; a regular belting of carmine runs through the under petals; good truss, and an excellent grower. 10*s.* 6*d.*

OTHELLO (HENDERSON'S). — Rich dark maroon upper petals, with smooth light margin; light blush under petals, with a belting of rich crimson in the centre of each; fine form. 10*s.* 6*d.*

PRINCESS ROYAL (HENDERSON'S).—Upper petals bright rosy carmine, with clear white margin; under petals clear white, with regular carmine markings, and clear white centre; good truss, and a very free bloomer. 10*s.* 6*d.*

AMBASSADOR (HENDERSON'S). — Large bright rose self, with a white margin; fine truss, good form and habit. 10*s.* 6*d.*

ANNETTE (HENDERSON'S).—An improvement on "Alboni;" very large truss, and an abundant bloomer. 10*s.* 6*d.*

The set, 3*l.* 3*s.*—The usual discount to the trade.

Wellington-road Nursery, St. John's-wood, London, Oct. 25.

STANDISH AND NOBLE, NURSERYMEN, Bagshot, Surrey, solicit attention to the following List of ORNAMENTAL PLANTS, selected from their general Nursery Stock. The greater portion are growing in the open quarters; and, from being periodically transplanted, their safe removal may be relied on. Every Plant sent out will be a healthy, robust specimen; the heights given afford but a slight criterion of their general character. To those having a star prefixed they invite special attention, as being remarkably fine, and fit for producing immediate effect. Gentlemen about to plant extensively would be repaid by making a visit to the Nursery.

All kinds of Ornamental Trees and Shrubs supplied A fine Collection of Roses selected with reference to late autumnal blooming. Also of the best kinds of late-flowering hardy hybrid Rhododendrons, to the cultivation of which especial attention is given.

*** Gentlemen requiring assistance in laying out, or improving their grounds, may procure the services of a competent person, by applying to the advertisers.

With the exception of such names as are printed in italics, the whole of the plants in this list are perfectly hardy.

The number of inches named refer to the heights, unless otherwise stated.

Abies Brunoniana, 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*, each.
" Jezoensis, one year's seedlings, 21*s.* each.
This is one of the last novelties in Conifers. It forms a noble tree of 120 feet in height, and of very distinct character.
" Douglasii, 20 to 36 ins., 5*s.* to 10*s.* 6*d.* each.
Araucaria imbricata, 6 to 9 ins., 1*s.*; 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.*; 24 ins., 5*s.*, each.
*Azalea, "Glory of Sunning Hill,"* 2*s.* 6*d.* to 5*s.* each.
The best double variety in cultivation.
" ovata a hardy evergreen, 6 to 9 ins., 2*s.* 6*d.* each.
" *vittata*, a specimen of this unique variety was awarded a Knightian medal, when exhibited last April at the rooms of the Horticultural Society. The ground colour of the flowers is white, which is beautifully striped with purple, after the manner of a Carnation. It is a very free bloomer. 9 ins., 21*s.* each.
Abelia uniflora, new and distinct. A very free bloomer, 10*s.* 6*d.* each.
Buxus sp., from north of China, round leaved, 10*s.* 6*d.* each.
" " " long leaved, 15*s.* each.
Berberis Fortunii, 9 ins., 1*s.* 6*d.*; 12 ins., 2*s.*; 18 ins., 3*s.*; 24 ins., 5*s.* each.
" Darwinii, 7*s.* 6*d.* to 21*s.* each.
* Cedrus africana, 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 30 ins., 5*s.*; 36 ins., 7*s* 6*d.*; 48 ins., 10*s.* 6*d.* each.
* " Deodara, 2 to 5 ft., 2*s.* 6*d.*, to 10*s.* 6*d.* each.
* Cryptomeria japonica, seedlings, very robust plants, will require no support from stakes. Plants 4 to 5 ft. high have stems as many inches in circumference. 6 ins., 63*s.* per 100. 24 ins., 2*s.* 6*d.*; 36 ins., 3*s.* 6*d.*; 48 ins., 5*s.*; 60 ins., 7*s.* 6*d.* each.
" japonica nana, seedlings 9 to 12 inches through, 10*s.* 6*d.* to 21*s.* each.
*Cupressus funebris, seedlings, very robust plants, from the open border, nearly as wide as high, very handsome plants, 12 ins., 5*s.*; 18 ins., 7*s.* 6*d.*; 24 ins., 15*s.*; 30 ins., 21*s.*; 36 ins., 31*s.* 6*d.* each. Cuttings, 6 to 8 ins., 2*s.* 6*d* each.
* " elegans, a rapid grower, and a most graceful tree, 12 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 36 ins., 5*s.*; 48 ins., 7*s.* 6*d* each.
* " Goveniana.—This is one of the most beautiful plants of its class. It has the merit of preserving its beautiful green colour during the most severe weather. 9 ins., 2*s.* 6*d.*; 12 ins., 3*s.* 6*d.*; 18 ins., 5*s.*; 24 ins., 7*s.* 6*d.*; 30 ins., 10*s.* 6*d.*; 36 ins., 15*s.*; 48 ins., 21*s.* each.
* " Lambertiana, forms a noble tree, rivalling even the Cedar of Lebanon, and succeeds well in very exposed situations. 9 to 12 ins., 1*s.* 6*d.*; 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.* each.
Grafted beneath the surface of the soil, 30 ins., 2*s.*; 36 ins., 2*s.* 6*d.*; 42 ins., 3*s.* 6*d.*; 48 ins., 5*s.* each.
Cephalotaxus Fortunii, male var., long leaves, seedlings, 21*s.* each.
" " female var., short leaves, seedlings, 21*s.* each.
Chamærops sp., a hardy Palm from the north of China, a decided acquisition to our hardy ornamental evergreens, 21*s.* to 31*s.* 6*d.* each.
*Clerodendrum fœtidum.*—The only species of this beautiful genus which can be successfully cultivated in a cool greenhouse, a situation in which this succeeds admirably. It forms its large heads of rosy lilac flowers in great profusion. Strong plants, 21*s.* each.
Cerasus illicifolia, 7*s.* 6*d.* each.
Daphne japonica, 12 ins., 2*s.* 6*d.* each.
" hybridum, 12 ins., 1*s.* 6*d.* each.
Forsythia viridissima.—This plant is not sufficiently known. It is an early spring flowering plant, producing its yellow blossoms in great profusion. But it rarely flowers, or but scantily when young. The plants offered are well set with flower-buds. It forces well. Bushy plants, 24 ins., 1*s.* 6*d.*; 36 ins., 2*s.* 6*d.*; 48 ins., 3*s.* 6*d.*; Standards, 10*s.* 6*d.* each.
Ilex dipyrena, 9 to 12 inches, 3*s.* 6*d.* each.
" microcarpa, 21*s.* each.
" latifolia, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.*; 24 ins., 5*s.* each.
" furcata, 21*s* each.
Juniperus argentea, new and very beautiful, 12 ins., 5*s.* each.
" phœnicea, 12 ins., 1*s.* 6*d* each.
" chinensis, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d.*; 24 ins., 2*s.*; 30 ins., 2*s.* 6*d.* each.
" tamariscifolia, 12 ins., 1*s.* each.
" flaccida, 12 ins., 1*s.* 6*d*; 24 ins., 3*s.* 6*d.* each.
" excelsa, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.* each.
" squamata, 12 ins., 1*s.*; 24 ins., 2*s.* 6*d.* each.
" Cracovia, 12 ins., 1*s.* each.
" macrocarpa, 12 ins., 2*s.* 6*d* each.
" repandens, 12 ins., 9*d.*; 24 ins., 1*s.* 6*d.* each.
" oblonga pendula, 6 to 8 ins., 2*s.* 6*d.* each.
" Bedfordiana, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d*; 24 ins., 2*s.* each.
Jasminum nudiflorum, strong blooming plants, 2*s.* 6*d.* each.
Ligustrum japonicum, 9 ins., 1*s.*; 24 ins., 2*s.* each.
*Lycopodium Wildenovii*, 5*s.* each.
Libocedrus chilensis, 7*s.* 6*d.* each.
Mitraria coccinea, 2*s*, 6*d.* each.
* Picea Pinsapo, very handsome specimens, 30 ins., 21*s.* each.
" Nordmanniana, 10*s.* to 15*s* each.
" ovata, 10*s.* 6*d.* each.
* Pinus insiguis, 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 30 ins., 7*s.* 6*d.*; 36 to 42 ins., 10*s.* 6*d.* each.
" muricata, 9 ins., 10*s.* 6*d.*; 18 ins., 21*s.*; 24 ins., 31*s.* 6*d.* each.
" Montezumæ, 12 to 15 ins., 10*s.* 6*d.* each.
Quercus sclerophylla, 21*s.* to 42*s.* each.
" inversa, 21*s.* to 42*s.* each.
Rose, "Fortune's Yellow," dwfs., 2*s.* 6*d.* to 5*s.* each.
" " " standards, 5*s.* to 7*s.* 6*d.* each.
Rhododendrons.—Hardy late flowering Hybrids, varying in colour, from white to deep crimson. Dwarfs 31*s.* 6*d.* to 6 guineas per dozen; Standards, 21*s.* to 5 guineas each.
" Common ponticum, for covers, thrice transplanted, 12 to 18 ins. high, very bushy, 15*s.* to 21*s.* per 100.
Sikkim Rhododendrons.—We believe we may state, without fear of contradiction, that we possess the largest plants of these beautiful Rhododendrons in the trade. The heights of those we are offering vary from 2 to 9 ins. From the altitude from whence many of them were obtained, there is great probability of their proving hardy in this country. Collections of 24 distinct kinds at 3, 5, or 9 guineas.
Spiræa callosa.—An abundant and continued bloomer. It has large corymbs of rosy purple blossoms, and is a handsome addition to our shrubbery plants; 10*s.* 6*d.* each.
Salisburia adiantifolia (seedlings), 12 ins., 2*s.* 6*d.* each.
*Taxodium sempervirens. This and Cryptomeria japonica are amongst the most rapid growing Conifers. In situations where such are required they cannot be surpassed. 18 ins. to 5 ft., 1*s.* 6*d.* to 10*s.* 6*d.* each.
Taxus Dovastonii, standards, 3 to 4 ft., 7*s.* 6*d.* to 10*s.* 6*d.* each.
" adpressa, 12 ins., 2*s*; 24 ins., 5*s.*; 36 ins., 10*s.* 6*d.* each.
Taxus baccata (yellow-berried var.), 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 36 ins., 7*s.* 6*d* each.
" " (golden-leaved var.) 12 ins., 1*s.* 6*d.*; 18 ins. 2*s.* 6*d.* each.
Viburnum plicatum, 10*s.* 6*d.* to 21*s.* each.
*Weigela rosea.—This beautiful flowering shrub should be grown by every one. It forms a handsome object in the open borders in May. It also forces well. The plants here offered are as wide as high, and will flower abundantly in the spring. 18 ins., 2*s.*; 24 ins., 2*s.* 6*d.*; 30 ins., 3*s.* 6*d.*; 36 ins., 5*s.* each.

A Descriptive Catalogue of Hardy Ornamental Trees and Shrubs; to which is prefixed a Treatise on the Cultivation of American Plants, may be had free, by enclosing six stamps for postage.

THE STANWICK NECTARINE.—Fine young Trees, 4 to 5 feet in height, of this fine variety can now be supplied; also trees in pots, at 21s. each, packing included, and carriage paid to London.

As the proceeds of the sale of this valuable addition to our Fruits are to be applied in aid of the Gardeners' Benevolent Institution, prompt payment is requested, and prepayment from unknown correspondents.

Orders to be addressed to THOS. RIVERS, the Nurseries Sawbridgeworth, Herts.

WILLIAM HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

| | s. | d. |
|---|---|---|
| Hyacinths, superior sorts, named, per doz. ... 6s. and | 9 | 0 |
| Narcissus, very fine large roots, each ... 4d. to | 0 | 8 |
| Tulips, for early forcing, per doz. ... ... ... | 1 | 0 |
| Crocus, mixed, for border, per 100 ... ... ... | 1 | 6 |
| ,, very fine named, per 100 ... ... ... | 2 | 6 |
| Snowdrops, single or double, per 100 ... ... ... | 2 | 6 |
| Ixias, of sorts, named, per doz. ... ... 2s. to | 4 | 0 |
| ,, very fine, mixed, per doz. ... ... ... | 2 | 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots, for which see his Catalogue.

FANCY PELARGONIUMS.

W. P. AYRES begs to announce that his Descriptive Catalogue of Seedling Fancy and other PELARGONIUMS, CINERARIAS, CALCEOLARIAS &c., will be published in a few days, and will be forwarded upon prepaid application. His Seedling Fancy Pelargoniums will be ready for delivery on and after the 20th of October, but the stock of some of the kinds being limited, early orders are indispensable to insure the collection.

Brooklands Nursery, Blackheath, Oct. 25.

VIOLETS.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET (TRUE).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season, by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful Double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the Double Blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets, the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen, or 3l. per 100. Any quantity of the above will be sent postage and package free.

STRAWBERRY PLANTS.

The undermentioned first-rate varieties are now ready to send out:—

Myatt's Surprize, sent out first time last season, 1l. per 100, or 3s. per dozen.

Prince Arthur, do. do., 1l. per 100, or 3s. per dozen.

Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 5s. per 100.

Goliah, very fine ... ... ... ... 3s. per 100.
British Queen, do. ... ... ... 5s. ,,
Alice Maud, do. ... ... ... ... 3s. ,,
Black Prince, very early ... ... 5s. ,,
Prolific, very fine and early ... ... 5s. ,,

Cremont's Perpetual, or double-bearing Strawberry, 12s. per dozen, or 4l. per 100.

Trollop's Victoria, 12s. per dozen, or 4l. per 100.

The above are strong and well-rooted plants, such as will insure satisfaction. Any of the Strawberries that are priced, per dozen, can be sent free by post; also those priced, per 100, will be sent package free.

Fine Giant Scarlet Brompton Stocks, Plants that have been all pricked out, 2s. 6d. per 100.

Also, some fine Antirrhinums, all saved from striped and spotted varieties, such as will give every satisfaction, and bloom early next spring, 5s. per 100.

Fine Sweet Williams, such as will bloom next season, saved from 50 distinct varieties (the plants are strong and good), 5s per 100, or 1s. per dozen. Can be sent by post with any of the above.

WINTER CUCUMBER.

Lord Keynon's Favourite, the best variety for winter cultivation, 2s. 6d. per packet.

A remittance is expected by Post-office order, or the amount in penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

**The Gardeners' Chronicle.**

*SATURDAY, OCTOBER 25, 1851.*

THE approach of the planting season reminds us of the utility of pointing out a feature in some of our newly introduced plants, which, although of considerable importance, is rarely thought of. We look to the form of leaves, the manner of growth, the effect produced by a tree when in flower, but we forget that in their AUTUMNAL TINTS there is sometimes more to admire than in foliage, habit, or inflorescence. The red Maples, the scarlet Oaks, the crimson Sumach, are now familiar, and their effects in the landscape are not forgotten by the judicious planter, but of some of the more recently introduced plants little or nothing can be said to be generally known. To this point, then, we would draw a moment's attention.

First of the Funereal Cypress (*Cupressus funebris*). This plant, to its beautiful habit and delicate glaucous bloom in summer, adds in autumn a tender violet tinge, which we have sought in vain to match. It is evident that when the tree becomes large, this circumstance will be of importance in regulating its position with regard to other trees. In this respect it is essentially different from the true Cupressus torulosa, to which it nearly approaches. Of the latter, we may add that the Isle of Wight specimens in the late Mr. WARD's grounds are probably all spurious, the true plant having very small round cones, not at all larger than those of Cupressus funebris.

Next come some species of *Acer*. Among the best is the famous shaggy Sycamore (*Acer villosum*) of India, a fine tree, lately introduced by Messrs. OSBORN and Co., of Fulham, in its native country associated with Fir trees and Birches upon the highest mountains. Its great angular leaves, covered with velvet underneath, become a rich nankeen brown. It obtains its name from the woolliness of its young shoots and abundant flowers, which are said to be deliciously fragrant. Of less importance, but still a fine object, is the Hyrcanian Maple (*Acer hyrcanum*), a tree resembling our English Maple except in stature, whose leaves in autumn change to yellow before they drop off. Far more brilliant than these is the little circinate Maple (*Acer circinatum*), of Oregon, a bush producing in the spring myriads of dull purple flowers with long crimson bud-scales, looking like petals; in the autumn it puts on a mantle of rich crimson, unsurpassed by the brightest of those rich tints which constitute the Indian summer. Nor must we omit to mention the glaucous-twigged Lobel Sycamore (*Acer Lobelii*), towering, like a column, above the round-headed species of its genus, and still of the deepest green, while all around are changing to red or yellow, and are half unleafed by the recent frosts. These are the real novelties in arboriculture, whose autumn colours deserve notice.

But we must not forget that what is now familiar to us may be still but little known in the distant parts of the kingdom. We will therefore venture to add a word or two concerning a few plants that are not novelties, and yet are little diffused. Take the Holly-leaved Berberry (*Berberis aquifolium*) for example; what can be more admirable than the warm brown crimson of its leaves, wherever they are exposed to the air and sun? What a charming contrast they form to the ever-verdant sameness of Laurels and Bays, and other evergreens to which our gardens trust for winter ornament. The moment the delicate bloom of the berries of this plant is gone, the rich colours of the foliage succeed and endure till spring returns. If with this we combine the Indian Chitra (*Berberis aristata*), with its dark-brown wood, crimson leaves, and scarlet fruit, and a few of the yellow waving plumes of the French Tamarisk (*Tamarix gallica*), groups may be formed which it would baffle the painter to imitate, especially if they become a foreground to the hoary branches of the sweetest of Thorns (*Cratægus odoratissima*), and its piles of succulent Apricot-coloured haws.

One glance at London gardens at this season is, to the planter, worth the closest inspection of them at Midsummer; a thousand unexpected suggestions now occur to the eye of taste, and it is instantly remarked, that our winter shrubberies teem with capabilities which have never yet been developed. In truth, winter decoration is infinitely more important than that of summer. Bounteous Nature, in the latter season, scatters her charms with marvellous profusion over even these northern latitudes; but in autumn and winter she gives us Thorns, Oaks, Hollies, Yews, and a few other insignificant trees and bushes. It is for these that we want substitutes; it is in autumn and winter that we need that infinite variety of tree and shrub which the industry of man has gathered together in these favoured isles. But we want something more than to possess them; we require to know how to avail ourselves of all which they are capable of yielding; how they branch, how they die off, in what form they remain as skeletons, and in what compact masses of never dying leaves. It is here that the English gardener is deficient; it is to these points that he should give his whole attention. For summer effect trees are never planted wrong; for winter they seldom stand aright.

THE following paragraph, which has gone the round of the papers, though evidently exaggerated in some of its details, has excited the fears of many consumers of MUSHROOMS, to such an extent as to threaten material injury to the cultivators of these general favourites. Though no great speculators in edible fungi, the whole experience of the innocence of the common Mushrooms, when properly distinguished, and not in a state of decomposition, is so highly satisfactory, that we think it right to do our part towards allaying any alarm which may at present exist on the subject. We will, however, first give the paragraph at full length, and then append such observations as may seem needful.

"POISONING BY MUSHROOMS.—Two highly respected officers of the Belgian cuirassiers, quartered at Bruges, died on Tuesday week, under circumstances which ought to be made known as publicly as possible. They dined in their quarters, and ordered some Mushrooms dressed in some favourite sauce for dinner, of which they both partook. A few hours afterwards, they were both taken ill of a horrible and agonising colic, which, before night, became so alarming that medical assistance was sent for, when it became the opinion of the doctors that they had been poisoned by the Mushrooms. Every effort was made to save them, but without effect. After suffering the most horrible agonies the whole night, during which one of them broke his back from the violence of his convulsions, they both expired towards morning. The most fearful circumstance connected with the case is, the declaration of several medical men and chemists, that poison is really contained in the true *Agaricus campestris*, or common Mushroom, after a certain stage of growth; and Professor ORFILA has hinted at the same in his 'Book on Poisons.' This, if a fact, ought to be generally made known at this season of the year."

The symptoms here described are evidently such as frequently occur in cases of poisoning by fungi, though they vary considerably, under different circumstances. In a report of VITTADINI, on a disastrous instance, in which *Agaricus vernus* was accidentally eaten, instead of *Ag. mouceron*, the symptoms were, continued nausea, extremely acute pain in the stomach and intestines, frequent fainting fits, convulsions, &c.; and the *post mortem* examination exhibited large inflamed patches of an intense livid rose colour, in the neighbourhood of the pylorus. This agrees with a report of Professor PUCCINELLI, where extensive ulceration of the mucous coat of the intestines was observed after death, caused by some poisonous BOLETUS; and Dr. BADHAM, who has had many opportunities of observing the symptoms peculiar to such disasters, accords perfectly with these authorities, and others which might be quoted to the same effect. There is nothing, therefore, in the symptoms to throw any positive doubt upon the matter, or to suggest the possibility of the presence of some mineral poison; it is, however, to be remarked that neither is there any sufficient information as to the particular species of fungus consumed, the condition in which the fungi themselves were, nor whether some mistake may not have arisen, as in the case quoted above from VITTADINI. It is quite true that *A. campestris* is rejected in Italy by the inspectors of the markets as poisonous, while *A. arvensis*, probably a mere variety, and esteemed far less wholesome in England, is largely consumed; but there is no evidence to show that this exclusion is rational, especially as it is greatly esteemed in Tuscany, and as VITTADINI, one of the best authorities respecting Italian fungi, inserts it in the list of edible fungi of Milan and Pavia; though there is so much prejudice against it amongst the common people, that it does not find its way into the markets.

One or two scattered notices are to be found in authors as to the supposed unwholesomeness of *A. campestris*, but nothing of sufficient precision to overthrow the almost general consent as to its good qualities when in a state fit for food. Even bread when mouldy or decomposed may become a deadly poison. Individual constitutions may indeed suffer, especially where decay has taken place, to a greater or less extent, from the use of Mushrooms, as is the case with certain shell-fish, but such isolated instances are of no more value in the one case than in the other; we need not, however, suppose anything of this kind in the history before us. It is far from probable that two persons should at once suffer from the use of fungi from any peculiarity of constitution; but even taking into due account the fact that Mushrooms vary in their quality, according to different circumstances of climate or locality, and estimating at their proper value the circumstances of the different cases, which have been alleged of fatal effects produced by the use of the common Mushroom,* we cannot help concluding that there is no sufficient evidence to deter the most timid from its use, or indeed to convince us that any effect has been produced, other than may arise from the use of the most wholesome viands, either in excessive quantities, or in a state unfit for consumption. *M. J. B.*

WE are happy to mention, among the last arrivals from India, that of Mr. FORTUNE, after bringing to a successful issue the important duties confided to him by the East India Company.

ARTIFICIAL BREEDING OF FISH.—No. II.

[IN my last paper on the "Artificial Breeding of Trout and Salmon," I stated that it was desirable to destroy the water-lice and aquatic larvæ in any spring where it was intended to try the experiment; and I suggested a little quick-lime for the purpose, but I omitted to state that it was essential to get all this lime washed out of the watercourse (or neutralised with sulphuric or carbonic acid), otherwise the lime would be far more prejudicial to the roe of the fish than either lice, aquatic larvæ, or small fish—in fact, it would destroy the roe entirely; and lime preserves its causticity for a much longer period under such circumstances than many people are aware. I have seen the horses' heels sore from plough

* Instances of bad effects from the use of *A. campestris* may be found in PICO's Meletemata, and WILDENOW's Prodromus Floræ Berolinensis.

ing on land six weeks after the lime was put on. I also omitted to mention that where there is not a spring available, for the purpose of trying this experiment, the next best plan, in my opinion, is to lay a 1½ to 2 inch pipe into a brook, and take the water by it into an artificial watercourse (selecting, of course, such a situation as will give you the necessary fall), taking care to slope down the sides to a low angle (as in the section), and sodding the sides of it very carefully; without this precaution, the erosion of the



water and the disintegrating action of the frost, are apt to bring down the banks, and choke the spawning beds; for want of forethought on this point, I have known very promising beds entirely spoiled.]

But though trout and salmon could be bred in this manner, if this were the true theory (which I by no means believe), there would be no means of breeding hybrids between them, which I take to be a far more important thing to achieve, and to which I will now refer.

Ever since my attention was turned to the artificial breeding of fish, it has always appeared to me exceedingly desirable and important to breed hybrids between the trout and the salmon. The fry of the salmon (which, by the bye, is perhaps the most delicate flavoured fish that exists in this country), although it lives and thrives in fresh water for two or three years, if kept in a locality where it cannot escape to the sea, yet if kept longer than that time pines away and dies. If, therefore, we could obtain a cross between the river trout and the salmon, we should probably produce a fish which, being a hybrid, would be always in good condition; being crossed with a river fish it would probably never require a visit to salt water to keep it in good health. Being crossed with a salmon, it ought to get to a good size in a comparatively short period; and if it would rise at the fly or the minnow, ought to afford good sport to the angler. There does not appear to be a greater specific difference between the trout and the salmon than there is between the horse and the ass, the mallard and the musk duck, or a Cabbage and a Turnip; but in all my experiments hitherto, I have never yet succeeded in producing a hybrid between the trout and the salmon, yet I do not despair of doing so;* for there was always a something to complain of and to doubt about, in every one I tried, and I still think I shall succeed by perseverance. Even if I succeed, the result may not prove quite so favourable as I anticipate, but may turn out as unfortunately as the marriage of the gentleman in the story, which relates that, being good tempered but ugly himself, he married a handsome but bad tempered wife, hoping that his children would have his good temper and their mother's good looks; but when they grew up they were as ugly as the father, and as ill-tempered as the mother. So it may prove with these hybrids; they may not thrive in fresh water, they may not get to a good size, they may not rise at the artificial fly, they may be worthless for the table; nevertheless it is desirable, if possible, that this should be ascertained. The progeny of a male salmon and a female trout may be much better or much worse fitted for a continued residence in fresh water, than the descendants of a male trout and a female salmon; but this can only be determined by experiment. Mr. Lindley says, in his introduction to the "Guide to the Orchard, &c.," that in the cross fertilisation of fruits, &c., the seedling always partakes more of the character of the male than the female parent. But I believe that in breeding mules it is found more desirable that the father should be an ass than a horse. In my poultry yard, I breed hybrids between the musk duck and the common duck, and I find that I have a much better progeny from the male musk duck and the common duck, than from the common drake and the female musk duck; in the latter cross, although the mules are fine birds, the females are not larger than widgeons, and fly about almost like wild ducks; this may not always be the case, but has proved so with me. But to return to the fish. If any gentleman interested in such matter does me the honour to read this paper, and wishes for further information on the subject, I shall be happy to give it as far as I am able; very sure I am, that the sportsman who once fairly starts as a fly fisher, and is so fortunate as to hook a salmon or a large trout, will thenceforward despise or lightly esteem corks and floats, ground baits and trimmers, punts and perch fishing, and will fairly wish them all exchanged for a nice stream well stocked with trout. As a gentleman lately said to me, "Fly fishing is a perfect infatuation;" he was quite right—the extreme avidity with which it is followed by the thoroughly initiated can only be explained on that supposition. To the casual observer there does not appear to be any strong excitement in it, but that is a great mistake; let me get to the bank of a river well stocked with trout in a good humour, early in the morning, and I feel neither hunger, thirst, nor fatigue, if I fish until dark without tasting anything; and the excitement of hooking a 10 or 12 pound salmon is not much inferior to that produced by a long run after the hounds.

I cannot conclude without calling the attention of all interested, and able to render assistance, in remedying the evil, to the great falling off there is in all the salmon rivers in England (with those in Scotland and Ireland I am not acquainted, but believe that matters are not in a much better state there). I believe that the unsatisfactory state of the law has a great deal to do with this decline in the value of the fisheries, and I also believe that is quite possible so to alter the law, as to very greatly improve them, without interfering improperly with what is of far more importance, I mean the manufactories of the country. As the law stands at present, the proprietors of the upper parts of the rivers have not the slightest interest in the preservation of the fish in the breeding season; for, as they are seldom allowed to see a fish during the season, why should they look after the poachers in close time? why should they be put to much expense and trouble, as well as risk the lives of their keepers, merely to breed fish for the proprietors of stake nets and estuary fishings who do not spend a farthing in the preservation of the fish when breeding, and yet reap all the benefit? I had occasion some years ago to examine the evidence given on this subject before the House of Commons in 1825, and was exceedingly amused at the schemes resorted to, to evade the law, moderate and inefficient as was that law. Since then the law has been altered both in Scotland and Ireland, but I do not know what are the provisions nor what has been the effect of the new law; it required that there should be a free passage for the salmon through all the traps, weirs, nets, or devices, that were used to catch or detain them, from sunset on Saturday night to sunrise on Monday morning. One man said he paid 7000*l.* a year for his fishing, and therefore if he allowed them to pass on Sundays he should lose one-seventh of his catch; another said he allowed a free passage on Sundays, but would not allow any one to go and examine for themselves! A third proved that he allowed the fish a free passage on Sundays, but his neighbours proved that he placed in the gap a crocodile painted red! and a fourth was convicted of breaking down the stake nets in the estuary of a river, at the same time he had a net stretched entirely across the river above, both night and day; and so with many others, every one striving with all his might to kill the goose that laid the golden eggs.

This is not the way to improve the salmon fisheries; to do this effectually, the upper proprietors must have a strong interest in the preservation of the breeding fish; and in order to give them this interest, they ought to have an ample supply of them when in the best condition; and to give them this supply, the law ought to be altered. At present I believe the law does not require a free passage for the fish (in English rivers, at least), except from Saturday night to Monday morning. In many of them, I believe, even this is not insisted upon, whereas the law ought to prohibit fishing for, or obstructing the passage of, the fish every night from sunset to sunrise, and this regulation ought to be rigorously enforced; this would give the upper proprietors a chance of having good fish, and a corresponding inducement to take care of them; but nobody would be so much benefited as the owners of fisheries at the mouths of rivers; they would be the first takers, and would still get the lion's share of all the fish that ascended the river. If this were enforced, the expenses of conservation might be defrayed by levying a small tax in the shape of a license for angling, which all true sportsmen would be glad to pay, if it gave a reasonable prospect of a well-stocked river. Now, matters are getting worse every day, and notwithstanding the enormous fecundity of the female salmon (a large one producing 25,000 ova in a season), they are now extinct in some rivers where they used to be found in my recollection, and in others, where they used to be abundant, they are now become quite scarce. Nobody need to wonder at this, when he is told that gangs of poachers are on the look-out for them all through the spawning season; and in one winter, some years ago, as I am credibly informed, 200 salmon were taken in one stream, within 500 yards of the place where I now write. It is nobody's business, and nobody's interest to prevent this, and therefore it goes on openly night and day. Are there no influential gentlemen in the House of Commons who will take up this matter, and endeavour to get an equitable and comprehensive law passed, for the preservation and increase of the breed of salmon? It is a matter of almost national importance; and if duly provided for, and properly attended to, I see no improbability in the supposition that salmon would again be as abundant as they used to be, when the apprentices on the banks of the Ribble, stipulated that they should not be compelled to eat salmon more frequently than three days in the week. The apathy of the country gentlemen in this matter is to me unaccountable. I have some reason to believe, however, that Government have at all times been so far from lending their influence to the promoters of any attempt to amend these laws, that they have obstructed rather than assisted them, most probably from an idea that the preservation of the fish would interfere with manufactories. If I thought that this would be the case, I would not say a word on the subject; but I am very far from holding such an opinion. So far from this being the case, I assert, without hesitation, that weirs need form no obstruction to the free passage of fish, and this without impairing the efficiency of the water power. With the poisonous and filthy mixtures sent by some manufactories down the river, it is far different; and where such are to be found, the case is hopeless. Salmon trout will very rapidly disappear from such rivers never to be seen there again, so long as these noxious contaminations are permitted to flow into them. And I know of instances where the salmon trout were killed for miles, by the refuse of some chemical works being turned into the river. *T. G., Clitheroe.*

* When I commenced this paper, I had no doubt but hybrids had been artificially produced between the sprod (sea trout?) and the common trout; since then, having seen and examined the progeny so said to have been produced, and making some further enquiries on the subject, I find there is some doubt whether the female was a *sprod* or merely a white trout, and therefore I cannot confidently assert (as sometime ago I believed I could), that hybrid fish had already been produced. As some of your readers may not know what a sprod is, it may be necessary to explain. In the Ribble, we have a fish which comes up from the sea in July and August, weighing from six to ten ounces, which, in appearance at least, is a miniature salmon (I believe the same fish is called a whitling in Scotland); besides this, we have a similar but larger fish, which ascends the river a little earlier, at least, which begins to ascend a little earlier, for they run up with every flood from June to September, and which weighs from one to three pounds: this in the Ribble is called a *mort* (in Scotland sea trout), both these fish, if they are two species, afford splendid sport to the angler, who can never consider them beaten, until he has them fairly in his landing net. They are also very delicate eating.

## ROSES.

Brother Amateurs! the catalogues are out; and very shortly, "Now, gentlemen, give your orders," will be the order of the day. Why should not we compare notes in the interval? and each, out of his "bower of Roses by Bendermere's stream," sing something about 1851? At all events, like Cassius, I will plunge in, and bid you follow.

"Uprouse ye then, my merry, merry men!"

And come down with me (in imagination, I mean, not in your dressing-gown) some morning, about 4 A.M., the first week in July last. He who has not seen his favourites,

"With their rosy faces washed with dew,"

has indeed a treat, when

"Jocund day stands tip-toe on the misty mountain top,"

and when

"Morn, in the white wake of the morning star,
Comes, furrowing all the orient into gold."

What a great exhibition! Aye, and "of all nations"—Ayrshire and Austria, the Prairies and Persia, China and sunny France, have sent their representatives, saying "Go, lovely Rose; go to the land whose emblem is the queen of flowers—go, do homage to your sister, 'the bonnie English Rose.'"

But, "hist! I hear footsteps" (as they say on the stage). A gardener approaches, bearing a huge green box; it is filled with the freshest and brightest green moss, the which is studded with zinc tubes. Oh! day of triumph or of tears (Rose-water, of course) to the florist! It is the day of the Rose Show at N——! "Courage, thou foolish, fluttering heart;" and, "gardener, give me the Rose-nippers." "Whither shall we go first?"—"Why, to that glorious, glowing meteor which gleams the brightest in our floral firmament—to Géant des Batailles, and the Hybrid Perpetuals! (By the way, was "Géant des Batailles" the name sent from France; and if so, what does it mean? "Champ de Bataille" would be far more appropriate to the Rose, for crimson is its colour—as the blood of heroes.) At all events, it will be long ere any competitor shall win the proud title of "Jack the Giant Killer;" and justly does it merit the praise bestowed by Messrs. Wood—"quite unsurpassed." But now, "*place aux dames!*" Let the Duchess of Sutherland, Baronne Prévost, and Lady Alice Peel, attend as ladies-in-waiting upon La Reine. Shall we cut these blooms of William Jesse, Madame Laffay, and Dr. Marx? No; they will expand too rapidly in water, and at 2 o'clock will do no credit to the pan. Standard of Marengo—thou art beautiful in colour and in shape, but I dare not trust thee, for I know that in a few hours thine interior would be visible to the public. Comtesse Duchatel, Duchesse de Montpensier, Madame Aimée, Robin Hood, ye have charms of tint and form, but (like Lord John Russell in *Punch*), "you're not quite big enough for the place." Baronne Hallez—thou art full of promise, but this is thy first season with us, and thou art—we will not say of a lady, "no better than thou shouldst be," but—not so good as thou wilt be. Madame Trudeaux, thou must stay at home, for we perceive "the *green* in thine *eye*."

We have lingered so long among the Hybrid Perpetuals, of which, says Rivers, "No Roses are so well worthy the attention of the lover of flowers," that "*brevis esse laboro*" must now be our motto, and we must give the remaining favourites, which complete our pan of 24, *en masse*; Paul Ricaut (were he a Perpetual the Giant himself might feel uncomfortable), Las Casas, Comte Bonbert, Coupe d'Hébé, and Comtesse Molé, from the Hybrid Bourbons; from the Gallicas, Ohl, Comte Boula de Nanteuil, and Shakspere—(Messrs. Rivers and Lane include both Kean and Shakspere in their lists, but are not Messrs. Paul and Wood correct in declaring the two to be identical? And, being on the subject of discrepancies, the modern "war of the Roses," "can any one tell us"—to quote the language of certain concise and caustic articles in this Paper, called 'Trade Memoranda,'—"can any one tell us who is General Allard?" Hybrid China, say Rivers and Paul. Hybrid Perpetual, cry Lane and Wood. I look at a splendid bloom of it on the table before me, this 21st day of October, and give my vote with the latter. And, again, what is "Fortunes' Yellow?" "Gold, of course," says some funny friend; but we mean to what class does it belong? The authorities have declared it a Tea, a Noisette, a Sempervirens—which is it?—but to our pan of Roses); General Jacqueminot ("rich, velvety crimson, a superb show Rose," Wood), Leopold de Bauffremont, and Juno from the Hybrid Chinas; Princesse Clementine (Emerance is beautiful indeed, but somewhat small where only single blooms are shown), from the Hybrid Provence; Madame Zoutman (cut when not too fully expanded), from the Damask; Queen of Denmark, Alba; Souvenir de la Malmaison, Bourbon; Devoniensis!

(the English growers can boast, perhaps, of but one really great Rose as being of their "own composing," but they can say of it, as the lioness of her single offspring, "it is a lion!") Comte de Paris, and Souvenir d'un Ami, from the Tea-scented Chinas; Cloth of Gold, Noisette. These well-grown and well-grouped (remember to take a few duplicates in a spare box, for the toilette of some of your belles may be disarranged by the journey) will, if they gain not the first prize, elicit as many "well I nevers!" and "did you evers!" as your floricultural pride could desire.

May I ask, in conclusion, some more enlightened amateur to tell us, out of his "love among the Roses," something about the novelties; of the merits, for instance, of such Roses as Auguste Mee, Beranger, Caroline de Gansal, Chéreau, Comte Odart, General Brea, Noemi, Queen Victoria, &c. (H. P.); of Aurore du Garde, Souvenir d'un Frere, and Vorace (B.); and of Madame Willermorz (T.). Fain would I exchange thoughts with my brethren on the subject of autumnal bloomers, now that we have them around us, but already

> "The expedition of my violent love
> Outruns the pauser reason."

And so, farewell! *S. R. H.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 35.)

No. LI.—Since we first announced our intention to define the difference between Instinct and Reason, as applied to animals and ourselves, we have received from a variety of quarters "hints" that we have undertaken more than we can prove. As this intimation has reached us from persons whose opinions we highly respect, we approach the subject with all becoming diffidence,—yet nothing daunted.

The columns of a newspaper, wherein the proper discussion of so important a matter in detail would occupy very much space, will not admit of our introducing a metaphysical disquisition, the ramifications of which would easily fill a large volume. We will therefore confine ourselves to a lower flight, and by clipping our wings attempt a popular analysis.

Men of science tell us, and we admit the fact, that where there is "brain" *there* must exist "thought;" *ergo*, where there is thought, *there* also is "reason." To this latter, we demur. According to the definition of Dr. Johnson, Instinct implies "a natural desire." *This* is perfectly comprehensible; for it is the innate, or natural desire, that actuates all the so-called irrational creation; and this desire impels them to perform all those various acts and duties for which they were sent into the world.

If we carefully watch any particular bird or animal in a state of freedom, we shall find that, for the most part, every one of the same tribe are actuated by precisely the same feelings, instructed by precisely the same teaching, and in all things obey the dictates of one and the same nature. All this—whether as regards their habits, their haunts, their habitual tameness or wildness, confidence, or suspicion—aye, even to building their nests in the same manner, and choosing nearly the same kind of holes and localities for their reception.

If the brain here induces volition, or is in any way connected with the intuition of the bird, it is evident that the bird's foresight is very limited. He has just as much "thought" to guide him, as will suffice for the purpose of his self-preservation and the rearing of his family; no more. And why, let me ask, do all birds, when a hawk is seen to hover over them, immediately cower down and show extreme fear? They do this, from the youngest to the oldest. What is it tells them that the hawk is a natural enemy? What *can* it be—but instinct? They cannot "reason" upon the matter, but act from an impulse implanted in all the lesser feathered tribes by the Creator of the universe. We may see the same alarm caused by the sudden appearance of a cat, or indeed any other noxious animal; and herein we view one branch of the "harmony" of Nature.

All our best writers on natural history agree in characterising the lower order of animals as "irrational," in contradistinction to "rational;" and we think that they prove the position they have taken up very cleverly. All this we shall consider as we go gently on. No sane person would attempt to deny that the *degree* of instinct observable in some particular birds far exceeds that of others; but we shall show there is a necessity for this, and that every animal is endowed with as much sagacity or instinct as will be needful both for his security and his happiness. There is no doubt that, by kind treatment, many of them are brought to exhibit proofs of affection and attachment perfectly remarkable. Still, we cannot recognise that "reason" is here called into exercise; it is merely a natural consequence.

In confirmation of this, I would refer to the case of the robin,* whose docility and "finished education" I dilated upon in our 49th Chapter. My remarks on this bird have, I find, caused quite a sensation among the naturalists of the "old school." They acknowledge it to be (to them) "a new fact;" and so, doubtless, it is. This only shows us, how necessary it is for there to be some medium of communication between all persons searching after truth. Everybody has it in his power to reveal *some* curious discovery; and having it in his power, it is wrong to withhold it from the inquiring world. And yet in the education of the proficient robin, there is nothing "marvellous," strictly so called. He imbibed "early impressions;" and not being allowed to mix with society, his early notions became so familiar and "natural" to him, that they formed part of himself. Is it not so with ourselves? "Reason" and good sense might get us partly out of our acquired habits (if bad); but the bird being "instinct"-ively taught, could make no progress whatever in an opposite direction. It would be against his nature. Whoever watches narrowly the habits peculiar to any and every particular tribe of birds, will find them all to closely assimilate. There is a "universal law" in these matters, which it is delightful to recognise:—

> "Whom Nature's works can charm, with God himself
> Hold converse; grow familiar, day by day,
> With His conceptions; act upon His plan;
> And form to His the relish of their souls."

All who steadily join in these pursuits, with an inquiring mind rightly directed, *must* become wiser men; nor need I hesitate to add, that they must also progressively become "better" men. *William Kidd.*

* It is curious, but still more pleasing, to notice the spirit of inquiry that marks the present time. Nobody can now say "We are not a progressing people." The 'principle' involved in the anecdote we furnished of the "educated robin" has, it would seem, so attracted the world, that we are told it has been appropriated (and the source handsomely acknowledged) by nearly four-fifths of the newspaper press. We confess to having ourselves recognised it in very many channels.

## ORCHIDS FOR THE MILLION.—No. XXI.

By B. S. Williams, gr. to C. B. Warner, Esq. Hoddesdon.

Climate Cool.—Plants on Blocks, with Moss.

*Lælia anceps.*—An elegant plant from Mexico, which blossoms in December and January; the flowers are rosy lilac, the lip varied with crimson and yellow. It keeps three or four weeks in perfection. It succeeds best on a block with sphagnum, suspended from the roof. It should be kept in a cool house, and requires plenty of water when growing; but afterwards it may be kept rather dry.

*Lælia autumnalis.*—A fine species, from Mexico; blooms in January and February, and lasts three weeks in beauty. It does best on a block with sphagnum, suspended from the roof; it should have plenty of water when growing; but afterwards it should be kept rather dry.

*Lælia majalis.*—This beautiful plant also comes from Mexico, and blooms from May to June; the flowers are very large, and, if kept dry, will last a long time in bloom. It does best in a basket, or block, suspended from the roof in a cool and airy part of the house; when growing it requires plenty of water, afterwards it should be kept cool and dry.

*Lælia acuminata*, comes from Oaxaca, and produces white blossoms in January and February, which remain three weeks in perfection. It does best on a block, with moss, suspended from the roof; when growing it should have plenty of water; afterwards it should be kept rather dry.

*Lælia superbiens.*—This beautiful species from Guatemala, flowers from November to February; the blossoms are of a rosy purple, remaining a long time in perfection; it succeeds best fastened on a block hung up in a cool part of the house.

*Lælia albida*, comes from Mexico. It flowers from November to January, and succeeds on a block, suspended from the roof; it lasts long in perfection, and requires the same treatment as the last.

*Odontoglossum leucochilum.*—A fine species, which flowers at different times of the year; it does best fastened to a block, with sphagnum, suspended from the roof; it likes a good supply of water at the roots while growing.

*Odontoglossum Cervantesii.*—This beautiful species flowers from January to April. It does best fastened to a block, with moss, suspended from the roof, with a good supply of water when growing. It will last five or six weeks in flower.

*Odontoglossum membranaceum*, a beautiful little Orchid, from Mexico; the flowers are white, marked with brown on the inside, and they will last five or six weeks in perfection. This does best on a block, with moss. It likes a good supply of water when growing; and it should never be allowed to get very dry.

## Home Correspondence.

*Samples of Seeds.*—The hint given by your correspondent, at page 646, is worthy of consideration; and if Messrs. Wrench, as one of the oldest and most respectable firms in England, could supply samples of seeds of genuine purity, they would confer a great favour upon the gardening community generally, and do that which I believe no other establishment in the country could do. The truth is, the seed-trade and seedsmen's catalogues want a thorough purging; and if some rules, similar to those applied to flowers by the National Floricultural Society, could be exercised over seedsmen's novelties, a real benefit would be conferred upon all purchasers of seeds. We are inundated annually with novelties, at least in name, if not in substance; but how many of them turn out worth cultivating, it would not be difficult to calculate. How many varieties, and so-called improvements, has the Early Frame Pea stood sponsor to? And how many more will it represent, if the present system of multiplying kinds is not put a stop to? Answer ye Prince Albers, Emperors, Racehorses, Railways, &c. &c.; but still the trick succeeds, and it would be nonsense to sell a thing for sixpence per quart, when a flaring label, with a new name, and a little of the shopman's "soft sawder" would make from five to ten times the amount of it. This is only a trick of trade, and no worse than tricks practised by other people; but it is simply dishonest, and ought to be treated as such. If a seedsman is fortunate enough to originate a new Pea, a new Broccoli, or a new Potato, he certainly would lose nothing by taking the same course which the florist takes in submitting it as much to public scrutiny as possible before sending it out. We find our account in so doing, and plants which have been well exhibited, always command double the sale to those simply recommended, and no doubt the same result would attend the proper exhibition of new vegetables. Say, for example, Messrs. Novelty have a new Pea which they believe to be earlier than any other Pea in cultivation; let them send sufficient of it to the Horticultural Society to sow a row, say 30 feet long, and there let it be tried against the known early kinds, and if it proves superior to them, they may, backed by such a certificate, charge what they please for it. I am quite convinced there is abundant room for improvement in culinary vegetables, and that they will well repay any attention that may be devoted to them; but the interminable lists of names of articles which have no existence except in the pages of the seedsman's catalogue, are an interminable nuisance, not to say a fraud upon purchasers. A few years back, we heard a native of modern Athens expatiating upon the wonderful collection of seeds which a certain firm in Edinburgh had, the list enumerating names of Peas to the extent of 70, extending from the time of Abercrombie down to the present time; when a north country nurseryman, more remarkable for his love of plants than polished manners, interjected, "Ah, now I ken something more wonderfu' than that, and that is how they manage to supply so many kinds out o' half a dozen sacks." This is a problem which almost every seedsman in the country could readily solve, and though they may be blamed for their knowledge, there are two sides to the story, and purchasers are not wholly blameless. The writer was present at a conversation in which a gentleman of high literary and scientific attainments entered a shop and requested to be served with a quart of "Hotspur Peas." The proprietor remarked he had not a Pea of that name; but, as he supposed, he wanted a good early Pea he should recommend the Early Frame or Warner's Emperor. "But," said the *savant*, "Abercrombie is my authority in gardening matters, and he recommends the Hotspur; I am going to town, and no doubt I can get it there." And no doubt he did; for the London seedsmen can readily manufacture novelties for such customers. Thus, Mr. A. purchases a quart of Hotspur Peas for half-a-crown; and Mr. B., his neighbour, has a quart of Early Frame from the same shop, and out of the same sack, for 9*d*. Mr. A., having paid dearly for his whistle, sows the Peas properly upon good ground; but Mr. B. merely scratches a drill in some badly dug ground, and hence the "Hotspur" prove the best Peas; and the next year every one in the neighbourhood cries out for "Hotspur," for "Mr. A. last year had a most marvellous crop." Thus do synonymes get multiplied, and thus are the means afforded for nefarious persons to victimise the unwary. If one of the great London houses was to send out a seed list, say of 10 kinds of Peas, four French Beans, four broad Beans, six Broccolies, four Onions, four Turnips, and other things in the same proportion, it would probably pay the penalty of its honesty in the "Bankrupt's Gazette," by the end of the year 1852; but let them with the same articles publish a long list, and they will reap annually a golden harvest; and thus is dishonesty bribed. The reform therefore of these abuses, and the curtailments of long catalogues, does not rest with tradesmen, the public must be true to itself and discourage all novelties unless properly certified by competent authorities. The time, I hope, is not far distant when the Horticultural Society, in imitation of the French Government, shall form a board of practical men to investigate such matters as these; and upon whom the responsibility should rest. To defray the expenses of such a board, my guinea or two guineas, annually, is ready at any time; and I doubt not there are scores in the trade who would subscribe a similar amount. *A Florist and Seedsman.*

*Durmast.*—In the article on Oaks in the "Penny Cyclopædia," it is stated that the *Durmast* Oak is the Q. sessiliflora.—Will any of your correspondents be so good as to let me know what Durmast means, and where the term comes from? *T. S. P.*

*Musa Cavendishii* (See p. 661.)—Your correspondent need not expect his fruit to ripen perfectly under six months. I had a plant which showed fruit last April twelve months, and the first fruit was not ripe before November. It will continue ripening a month or six weeks. Do not cut the spike until all are nearly arrived at maturity. If your correspondent has more produce than he can consume, allow me to inform him that it makes a famous ice. Do not withhold water until symptoms of ripening are at hand. I do not permit suckers to grow more than a few inches in height before they are separated from the parent plant. If "J. R." can succeed in getting one or two off without injury to the plant, they may be potted immediately, and forwarded in heat. After the plant has done fruiting, he may provide himself with as many suckers as he chooses. *W. B. Merevale.*

*Tarred Walks.*—Have no fears for the endurance of your tarred and sanded walk. I can assure you that it will last many winters. When I was a stripling I walked for years, winter and summer, to and from one of our most ancient northern cities. On a portion of the foot-path immediately adjoining the suburbs some tar was spilled. I noticed the tar the first evening on

which I passed over it. It was then quite soft. I observed it during the whole of the time I remained in the neighbourhood, at least five years, and I could detect neither flaw nor crack in the coat of tar. It was always smooth and clean in wet weather, and dry in winter and summer. It may have been that the open unshaded position and the constant tread of passengers preserved it from weeds—and herein lies the difference between your case and the one I have mentioned. *W. R. Carter, Eel Moor Farm, Cove, Bagshot.*—I have already made precisely the same experiment with walks that you have made, and it has proved perfectly successful. About seven years ago, I had a small part of one of my garden walks coated with gas tar, which was first boiled, and then laid on hot with an old whitewasher's brush, in sufficient quantity only to saturate the surface of the walk, which was then sprinkled over with as much fine gravel as would prevent the tar from appearing through it when pressed down, and smoothed over with the back of a spade. When set, and before becoming hard, the whole was rolled with a garden roller. The only previous preparation the walk received was, scraping off the loose gravel. A space of about three inches was left between the tar and the Box-edging. Every subsequent year a further small part of the garden walks has been treated in the same manner, until now all, or nearly all, are covered. It was found however, to be an unnecessary trouble to boil the tar and lay it on hot; and therefore, for several years it has been merely poured out of the barrel and allowed to run over the walk, and spread with the back of the end of the square pointed spade, until it was of proper thickness; keeping a clean spade for the smoothing process—and a little coarse gravel has been scattered on the tar before applying the fine gravel or sand. This it was conceived would increase the durability of the covering. Now, the effect has been, that nothing has since been done to these walks, except giving them here and there a very slight sprinkling of sand or very fine gravel, and weeding the spaces between the tar and the Box edging, and (to be precise) one or two small places which the tar had missed; for no weeds or moss have, since the tar was laid on, made their appearance on any part of the walks it has covered, except that on that part done seven years ago a little moss has appeared when bare of gravel; but this is in consequence of a little soil having collected on its surface, and its being under the shade of a tree. All the walks are yet quite hard, and neither rain nor frost affects them; the former runs quickly off, and the latter never perceptibly swells or breaks them. Their appearance has been much admired, and great comfort has been derived from the process, as it has entirely subdued weeds and put an end to the teazing, unremitted and inglorious warfare which it was before necessary to wage against them. I have found no process that has been recommended for preventing weeds on gravel walks, and which I have tried, at all equal to the one above described. I may state, however, in conclusion, that I have found the next best means to be hot water and salt, dry salt next, and the next hand-picking, when these are persevered with. *S. T., Whitehaven, Oct.* 21.

*Cherries and Peaches in perfection now.*—I have sent for inspection a Peach taken from a plant in a pot. This fruit when gathered weighed 6½ ounces, and measured 9½ inches in circumference. I have been induced to send you a specimen, only because I have felt much surprise in finding young trees producing such fine fruit in 11-inch pots, without having at all rooted through the pots into the border. These trees have been potted two seasons, and this year bore abundantly. From six to 10 and 12 fruit were suffered to ripen, many of which were equal in size to the specimen sent, which will also, I trust, serve to illustrate a great advantage gained by the culture of Peaches, Nectarines, Apricots, &c., in pots under glass. The Peach is a new variety, from France, called Reine des Vergers; it ripens on walls, under ordinary circumstances, about the same period as the Royal George, *i. e.*, the first week in September; but by placing the trees out of doors, towards the end of June, if the weather be not under a north wall, and letting them remain there till the middle or end of August, and then placing them in the orchard-house, the fruit, as in the present instance, is retarded; so that Royal George, and Noblesse, and other Peaches that ripen in crowds early in September, may be supplied till the middle or end of October. In like manner, Moor-park Apricots may be retarded a month or six weeks; they ripen slowly, and retain their juice and flavour remarkably well. I ate of some this season, the last week in September; they were slightly shrivelled, from the dry atmosphere of the orchard-house, but they were full of juice, and rich beyond description. It will, I think, be at once apparent to every gardener how advantageous this simple method of retarding Peaches, &c., may be made for a long supply; for if forced Peaches are ripe early in June, and a succession kept up till those from the walls are ready, by retarding the melting Peaches till the end of October, the dessert may be furnished with Peaches and Nectarines for five entire months. This seems a step in the proper direction, and I am sure may, and will be, carried out to an extent beyond all present probabilities. Along with the Peach, I send three branches full of fruit of a new late Cherry (Jardine de Mons), remarkable for its resisting our autumn rains and mists; they have been taken from a tree in the open air; it is a most productive variety, and will be probably the parent of some valuable late sweet Cherries. One of the branches is enclosed in Haythorn's muslin net—it is, I find from experience, the very best material for protecting Cherries from flies and wasps, and "such small deer." *Thos. Rivers, Sawbridgeworth, Oct.* 20. [The Peach weighed, within a trifle, 6¼ ounces. It was large and handsome, red next the sun, melting and delicious. The Cherries looked like White-hearts, highly coloured. They were not large; but fresh, and nearly as well flavoured as Cherries in June. A piece of branch, a foot long, had upwards of 30 fruit on it.]

*Disease in Cucumbers.*—I am glad to see that Mr. Errington has asked for information as to the extent, cause, and remedy of this unaccountable malady. In reply to the first item, I beg to say that in 1849 and 1850 it was exceedingly bad in some places in Kent, and to a less extent some one or two seasons before that; it has not been so destructive this year, and at the place from which I write it has scarcely showed itself at all. In regard to its cause I differ entirely from Mr. Errington, who supposes it to be the effects of fungi. I imagine that the fungus succeeds the cause, otherwise the disease here must be different from the one he speaks of; with me it first shows itself in the shape of a gummy substance of a nearly transparent character, which exudes from the places in the fruit from which the spines ought to grow. These excrescences become attacked with a fungus, of the mould or mildew kind, which soon spreads to the body of the fruit, now rendered unable to resist its ravages, being in fact a mass of running sores. This is the form in which it shows itself here; the foliage, though not of a luxuriant character, is nevertheless not so much affected as to prevent the plants from bearing healthy fruit, provided all other things were favourable. Now this must be different from Mr. Errington's disease; for he speaks of the ends of the shoots looking as if seared with a hot iron, whereas mine is confined (or nearly so) to the fruit, but I can assure him that it is not the less virulent on that account, as the greatest part of the fruit I grew last year was unfit to send to table; and when it was allowed to remain some time on the plant the running sores collected into transparent lumps, varying from the size of a pea to that of a marble or larger, and nothing could have a more loathsome appearance. I had them growing under different circumstances, and all were alike affected; hot water heated pits, dung beds, and the open air ridge, seemed equally unable to resist its influences; and in regard to its period of duration, it showed itself in the winter ones fruiting in the autumn of 1849, and spring of 1850, and throughout the whole of the summer. Repeated trials of new plants, different soils, water and treatment, all resulted in the same thing; so that I did not attempt to cultivate any winter plants in the autumn of last year, but determined to try various experiments on them this season, by adopting every variety of compost I could think of—as peat, mortar-rubbish, brick-rubbish, soot, charcoal, ashes, &c. At planting time I turned my plants out in hills, composed of materials differing widely from each other; the result was, that I have scarcely seen a symptom of disease. I do not, however, attribute this to the means I used for preventing it, as I employed nearly the same last year; but by some of those unaccountable occurrences which are beyond the scope of my comprehension, the crop was tolerably good, certainly quite equal to what might have been expected from the extreme character of the composts used in some of the cases, as I expected the disease again, and made my preparation more with a view to combat it than to give a healthy growth to the Cucumber. I may remark that those planted out-doors in the ordinary rich garden soil likewise escaped, except at the very last, when something resembling it showed itself; but the season was almost expired, and they had done pretty well the whole summer. Now, having detailed the facts of my case, I venture to give an opinion which I once held as to the cause of the disease, but which the issue of the past season has somewhat staggered. "Does not the disease proceed from the plant imbibing food of an improper kind, which not finding any other way of discharging itself than through the spines of the fruit, produce those excrescences we speak of." Certainly that must be the cause, as with me the other necessaries to a healthy state of things, "heat, moisture, shade, or sunshine," were varied in every possible way, with little or no effect; and what makes me rather dubious of even admitting the opinion above given to be correct is, that last year I tried so many different mixtures, from which I expected the plant would draw nourishment of different kinds, and they all proved abortive; nevertheless I venture it, and if I be no more troubled with the pest, I certainly confess that the cause of its capricious appearance and departure is alike unknown to me. If some of your readers can discover any better reason I shall be happy to have it; at the same time let me caution them against taking credit to themselves for having expelled this insidious foe, because, after using some peculiar means, they saw no more of it, the following season. "Who has cured the Potato disease?" or may I ask, is there much more known respecting it than in 1846, when it first made its appearance; and though this disease in Cucumbers may never assume the virulence of the Potato blight, yet it seems equally uncertain in its attacks. *An Old Gardener.*

*How to Crop a small Kitchen Garden.*—The land intended for Cauliflowers in 1853 should be well manured during the coming winter, and trenched as recommended in "Paxton's Cottagers' Calendar," which is the same plan as that practised by market gardeners. In the latter end of February, or beginning of March, plant with Potatoes, 20 inches row from row, and 8 inches from set to set, wintering them as recommended by Mr. Cuthill; rake level, sow Turnip Radishes thinly, and rake them in, they will be off by the time the Potatoes require earthing; let them be all taken up by the first week in August. Put on a little well-rotted dung and dig it in; mark into beds 4 feet 6 inches wide, with 1 foot for an alley between the beds, the same on the outsides; take 2 inches of soil out of the alleys and place it on the beds; rake level, and sow with Winter Spinach, cast a little soil over the seed, and again rake level. Thin at first to 3 inches apart, when large enough thin as required for use, leaving the plants 9 inches apart. Keep the earth well stirred with a small hoe, and the alleys forked at times during winter. The Cauliflowers should be sown about the 20th of August, and wintered in the usual way. About the second week in March, clear away a little Spinach from the edge of the beds, and fork some wood ashes into the alleys; lift the Cauliflowers with a trowel, and plant them with the same implement. Plant a row up each alley at 30 inches apart. Then as the Spinach is required for use, cut a space 18 inches wide along one side of a bed; when one side is cleared, fork it and plant a row of White Cos Lettuces at 18 inches from the Cauliflowers; serve the side of each bed in the same way. When the Cauliflowers require earthing, draw some from the side of the bed, making the alleys the same height as the beds. Clear the middle and fork in some wood-ashes, draw a deep drill, and water it if the weather is dry; plant a row of spring-sown Cauliflowers in each drill, at 30 inches apart. As soon as a Cauliflower is cut, take up the stump, and fill the space with White Cos Lettuce, at 1 foot apart, keeping 15 inches from the second crop of Cauliflowers, by which process the Lettuce will come in, in regular succession. Sow a little seed from February to August, to keep up a succession of plants. When all is off, ridge trench without dung, and sow with Parsnips the following spring. By the above process, I have cut Cauliflowers this season weighing 5½ lbs., when trimmed ready for boiling. *J. Steel, Clitheroe.*

*The Mocking Bird.*—I am obliged to your correspondent, "T. G.," who, at page 661, calls my attention to a little "inadvertence" with respect to my description of the "Mocking Bird," in a former Number. It seems that in this case, however strange it may appear, we are *both* right, and *both* wrong! *I* was applied to for a description of the American Mocking Bird, and "drew his portrait" to the life; whilst "T. G.," under the same title (Mocking Bird), was drawing, with equally-graphic skill, the portrait of another bird, a "warbler"—gifted with imitative powers, and a first-rate *songster*. I would, however, remind your correspondent, in the same kindly tone, that there is *still* some little misapprehension. The bird quoted as being known in Ireland under the designation "Sylvia salicaria," is called by us, in our southern latitudes, the "Sedge Warbler." I confess my ignorance most willingly, as to the truly-wonderful imitative powers of this bird, never having had an opportunity of hearing anything approaching to such excellence as is described by "T. G." at page 613. I love the little fellow much, and have kept company with him often, both in and out of doors; and I have heard him sing sweetly, long after "the shadows of evening have been stretched out." I failed, however, in noting his remarkable imitative powers as applied to so wide a range of different voices. As I never allow myself to be behind-hand when apprised of any "singular fact," I shall duly repair my error, *D. V.*, next spring. I shall seek, carefully, to find out all that I should so much like to know; and as "Cap'en Cuttle" says of certain discoveries, I shall, "when found, make a note 'on." I see "T. G." is treating in a most masterly manner on the "Artificial Breeding of Fish." I know something about this, practically; and if your correspondent will favour me with his name and address, in confidence, we may perhaps, hereafter, be of mutual service to each other. The subject is one of extreme interest, and in "T. G.'s" hands it is likely to be made extensively popular. *William Kidd, Hammersmith, Oct.* 25.

## Societies.

Botanical of London, *Oct.* 3.—The Treasurer in the chair. The Secretary stated that the Council had appointed Mr. J. T. Syme, Curator, and that the rooms would be open every Monday, Wednesday, and Friday, from 10 till 5. The Curator reported that a large collection of duplicates of European plants, mostly those not found in Britain, had been labelled for the Society by Mr. Hewett C. Watson. Lists of the species (amounting to nearly 100, and including many of the rarer Arctic and South European plants), will be sent to the members who desire foreign specimens, in order that they may in rotation select their own desiderata, instead of merely securing parcels looked out for them by the Curator alone, and thus unavoidably selected without reference to the contents of their own herbaria. A specimen of Grammica suaveolens (Schultz), discovered by Mr. E. G. Varenne, growing on Lucerne, near Witham, in Essex, in September last, was exhibited. On inquiry, it was ascertained by Mr. Varenne that the field had been sown with imported seeds, and that the Dodder had proved very injurious to the crop. The Grammica suaveolens is identical with the Cuscuta Hassiaca (Pfeiffer), of Koch's "Synopsis Floræ Germanicæ." It

may be readily distinguished from the other Dodders found in England, by its pedicellated flowers, bright orange-yellow stems, and sweet scent. The conclusion of Mr. D. Stock's paper, "On the Botany of Bungay, Suffolk," was read.

## Notices of Books.

*What shall we have for Dinner?* By Lady Maria Clutterbuck. Bradbury and Evans. 12mo.

THE best account we can give of this useful trifle is that which the authoress herself has furnished in her preface.

"The late Sir Jonas Clutterbuck had, in addition to a host of other virtues, a very good appetite and an excellent digestion; to those endowments I was indebted (though some years the junior of my revered husband) for many hours of connubial happiness.

"Sir Jonas was not a *gourmand*, although a man of great gastronomical experience. Richmond never saw him more than once a month, and he was as rare a visitor to Blackwall and Greenwich. Of course he attended most of the corporation dinners as a matter of duty (having been elected alderman in 1839), and now and then partook of a turtle feast at some celebrated place in the city; but these were only exceptions, his general practice being to dine at home; and I am consoled in believing that my attention to the requirements of his appetite secured me the possession of his esteem until the last.

"My experience in the confidences of many of my female friends tells me, alas! that others are not so happy in their domestic relations as I was. That their daily life is embittered by the consciousness that a delicacy forgotten or misapplied; a surplusage of cold mutton or a redundancy of chops; are gradually making the Club more attractive than the Home, and rendering 'business in the city' of more frequent occurrence than it used to be in the earlier days of their connubial experience; while the ever-recurring inquiry of 'What shall we have for Dinner?' makes the matutinal meal a time to dread, only exceeded in its terrors by the more awful hour of dinner!

"It is to rescue many fair friends from such domestic suffering, that I have consented to give the world the bills of fare which met with the approval of Sir Jonas Clutterbuck, believing that by a constant reference to them, an easy solution may be obtained to that most difficult of questions — 'WHAT SHALL WE HAVE FOR DINNER?'"

*Railway Literature. Murray's Reading for the Rail. Longman's Traveller's Library.*

WHEN we consider how much time is now necessarily consumed in railway carriages, and the tedium of journeys repeated over and over again—where there are no views to amuse the imagination, and no refreshing breezes to invigorate the frame—the necessity of providing some occupation for the mind becomes self-evident. The piles of books, pamphlets, and newspapers, heaped up at every great railway station, testify to the fact that what travellers find the best occupation is reading. It becomes then a point of great public importance that the works furnished for this particular purpose should be of a high class as regards intelligence, tone, and social tendency; qualities of which, it must be owned, we find very little in some of the works currently sold on railway platforms. Messrs. Longman and Mr. Murray have therefore performed a great public service in providing works like those which have hitherto appeared, as substitutes for the rubbish to which we have alluded; and we sincerely trust that they will long continue to do so. Macaulay's Essays and Laing's "Norway" are what the former have commenced with; while Mr. Murray has selected those admirable essays in the *Times*, upon men and things, which every reader of that great journal has grieved to see confined to the fleeting columns of a daily paper. Both are clearly printed; but we are obliged to add that the "Travellers' Library" bears no comparison with Murray's "Reading for the Rail," as regards printing and paper, matters of no small importance to those whose eyes begin to lose their power. The last is a beautiful example of typographical skill.

## FLORICULTURE.

PINKS.—Plantations of these should be made about this season; and the sooner the better, in order that they may be well established to withstand the vicissitudes of the coming winter. My present object is not, however, to write a treatise on the cultivation of this favourite florist's flower, but rather to endeavour to bring it more generally into notice than it seems to be at the present time. Few will be disposed to question the lively interest which Pink growers took in this flower in days of yore; but this has somehow much abated, and the flower has all but stood still; for the past two or three seasons very few new varieties have been offered to the public; we look in vain for those annual novelties which, as regards almost every other florist's flower, are on the increase; all exhibit an onward movement, the Pink alone is stationary. I have just returned from planting Pinks, and in choosing my pets from a somewhat large collection, I find that I am constantly in difficulties, having to contend against treachery, over-fulness, roughness, and sundry other characteristics, which at present seem likely to remain with us, unless prompt measures be adopted for their removal. Are we to allow the glories of the Pink to decline? Will such long-tried patrons as Messrs. Smith, Maclean, Young, Looker, Hale, Creed, White, &c., quietly rest with matters as they are? We want a criterion of every shade known in Pinks; one tier more petals would leave little to desire. This improved criterion of all shades, of purple, of red, of maroon, and of rose, will no doubt be obtained in time. Jenny Lind is too small for general exhibition purposes; Harkforward is of intolerably bad habits; Lady Mildmay, Harriet, and some others, although they must be grown, are rough. Narborough Buck ranks with the full varieties, and thus may we dissect the choicest enumeration from existing sorts. These remarks must not be construed into fault-finding; they are to show how much attention the Pink requires at our hands. By another season let us have reason to give a list, "to avoid" even from those now set down as the few good sorts of 1851. We have at some trouble, and no little anxiety, appended a list of those Pinks most suitable for pot culture; those marked thus * may be depended on as possessing the following qualifications, viz., free growth, early, and plenty of colour; these are all necessary requisites for this kind of cultivation, for exhibition. Those varieties with ** affixed to them are expressly introduced for pot-culture.

Antagonist (Looker)
** Achilles (Looker)
** Alfred Morrison (Carter)
Bob Tickler (Craiggy)
** Benjamin (Bell)
** Brilliant (Ellis)
Clio (Smith)
* Criterion (Maclean)
Countess Rossi (Read)
Dianthus (Smith)
Duchess of Kent (Harris)
** Diana (Smith)
* Goliath (Hillyer)
George Glenny (Bragg)
Great Britain (Ward)
Hark Forward (Smith)
* Harriet (Ker)
Huntsman (Smith)
* Hon. Mrs. Herbert (Keynes)
Julia (Keynes)
Jenny Lind (Giddy)
* Jenny Lind (Read)
King of Purples (Harris)
* Kate (Read)
Kossuth (Read)
* Lola Montes (Costar)
* Laura (Willmer)
* Lord J. Russell (Young)
Lady Teazle (Smith)
Lord Valentia (Kirtland)
* Morning Star (Turner)
** Mrs. Fry (Walters)
Mrs. Judd (Turner)
Mr. Edwards (Turner)
* Narborough Buck (Maclean)
* Optima (Turner)
** Pinder (Colcut)
Queen of England (Hale)
* Rubens (Henbrey)
** Susannah (Mead)
** Surpriser (Costar)
* Sappho (Colcutt)
** Tom Long (Hastings)
** Tywford Rival (Young)
** Winchester Rival (White)
* Whipper-in (Smith)
X X (Young)

GLASGOW.—A Pansy competition took place on the 27th ult., open to all Scotland, for the best one, the best two, and the best three seedling Pansies of 1851, when the whole of the prizes were gained by the Messrs. Dicksons and Co., nurserymen, Edinburgh. The best one was a yellow-ground flower, with rich maroon belting and top petals—the under and side petals beautifully laced with gold, blotch large and dark, form perfect, style of Youell's Supreme, named "Victory." The best two: 1st, a pure golden yellow self, with a beautiful large and dark blotch, outline perfectly smooth, of good substance and form, named "Golden Eagle;" 2d, a beautiful primrose ground, with rich lively bluish purple belt, and top petals. The belting being narrow, and blotch large and very dark, gives it an imposing appearance; fine show flower, named "British Queen." The best three: 1st, a yellow ground, with dark maroon belt and top petals, style of Youell's Supreme, but quite distinct, an improvement on that fine old flower, and named "Peacock;" 2d, a pure white ground, with rich purple belt and top petals—the ground colour meeting in the under and side petals so very exactly, together with a large dark blotch, produces an admirable effect in a stand, and was considered the finest flower of any class brought forward on the occasion, named "Royal Standard;" 3d, a yellow ground with dark bronze purple belt and top petals, of great substance, very large and circular; a striking show flower, named "Gliff."

HENLEY.—A flower show was held here on the 19th ult.; but we have only been furnished with a list of the rewards, without the names of the subjects for which they were given.

CATALOGUES received from Mr. E. Rendle, Mr. C. Turner, of Slough, and Mr. W. P. Ayres, of Frooklands, Blackheath.

PINKS: *Dianthus.* In the preparation of your beds, you can hardly use too much manure; but we never apply it till the last time of digging over, when, being thoroughly buried a full spit deep, it only comes in contact with the fibres at the proper season. You need not entertain the least fear of making the colour run. One thing attend to—and do it well—raise your bed 3 or 4 inches above your ground level, by adding sound and sweet loam, two-year-old hotbed manure, and some sharp sand, and make the surface well rounded, in order that heavy rains may be more quickly thrown off. Our system is to make the beds 4 feet wide, and to plant six plants in each row, 6 inches apart, beginning at 9 inches from the edge of the bed. The second row should be 6 inches from the first, and so continue to the end. We would recommend you to plant the two adjoining rows with the same variety—making six pairs; and being thus brought together, each sort is more readily operated on, according to its particular requirements. The plants will then stand 6 inches apart every way, and at blooming time the buds of four plants may be easily protected with a small, say 6-inch square hand-light. Top dressings, an abundance of liquid manure in the blooming season, and refreshings with copious waterings in day time, together with disbuddings, carding, and shading, are the routine of Pink growing for exhibition. We have a few spare plants, which are at your service, if you choose. Norman was a first-rate grower, but he has been compelled to relinquish his favourite pastime on account of more important duties. You can get supplied from Woolwich, but we never recommend dealers. For choice of varieties, see above. *J. E.*

SEEDLING FLOWERS.

FUCHSIAS: *W J E.* All stout and well contrasted; we fail to appreciate the double corollas: the variety not so favoured has but one drawback, viz., the want of greater obtuseness of its sepals; tube short, surface smooth; colour coral red; corolla dense royal purple, stout, smooth, and well formed.*

PELARGONIUMS: *R F.* Rich crimson, with dark blotch on top petals, margined with a narrow band of bright crimson; bottom petals painted in the style of "Centurion." The bottom petals are too small to be proportionate with the top petals, hence not of good form. At this late season it is impossible to say what the flower may become. Admirably packed.*

## Garden Memoranda.

ROYAL GARDENS, CLAREMONT.—Bonapartea juncea, now called Littæa geminiflora, has been flowering here for these three weeks past, and it promises to continue in that condition for some time yet to come. The stem, which is at least 15 feet high, is clothed three-parts of its length with flower buds and flowers, which, although wanting in gay colours, are nevertheless far from being uninteresting. They are produced in pairs, all round the flower spike, and are pale greenish yellow in colour; they begin to expand near the bottom of the stem first, and continue opening upwards by slow degrees till they reach the top. The plant has been grown in a moist stove, where, however, little fire-heat is applied, except in winter, and it has received no treatment different from that given to the other occupants of the house, except, that while it has been in bloom it has been more liberally supplied with water. The stately flower-stem, issuing from a comparatively small tuft of gracefully weeping rush-like foliage, has a truly imposing effect, rendering the plant, in its present state, a worthy companion of the handsome Palm trees with which it is associated. Among the latter, Caryota urens has lately flowered here. Plumbago capensis every winter adorns the pillars of the house just alluded to, with multitudes of its charming sky-blue flowers. If pruned "hard in" after it has done blossoming, it is found to be not only an exceedingly ornamental pillar, or wall plant, but to afford a lasting supply of flowers for cut bloom. Beaumontia grandiflora, planted out in the bed, also blossoms satisfactorily here during the months of June and July. It is, however, difficult to keep clear of the mealy-bug, which seems to have an especial affection for it. Bignonia grandiflora flowers beautifully in a cool glass porch at the entrance of this stove. Although it is stated to be one of the best "Vines" for cottage drapery in the middle States of America, it is not found to flower well in the open air near London, while B. radicans blossoms in the greatest profusion. A plant of the latter trained against Mr. John Waterer's house at Bagshot, was (when we saw it in 1849), quite a mass of deep orange cup-shaped flowers. A coral tree (Erythrina Crista-Galli) is now in flower at Claremont, in front of the stove we have just been mentioning. The stems are cut down every winter to the roots, which receive such protection as is usually given to Fuchsias, and like the latter it pushes in spring and flowers every autumn as well as if it were in a greenhouse. Close to the front walls of the different glass-houses were numbers of Belladonna Lilies, which were in lovely condition, as were also plantations of Japan Anemone, than which there are few gayer border plants in autumn. The Californian Zauschneria has proved sufficiently hardy to withstand the last two winters out of doors here unprotected, and we believe Plumbago Larpentæ has done the same; but the latter certainly occupies a sheltered situation. The different flower-beds and borders have been very gay; but their beauty is now very much cut off by the cold weather we have lately experienced. Rollisson's Unique and Diadematum rubescens Geraniums had made most effective beds; and a group, consisting of Tom Thumb Geranium and Mignonette in the centre, with lilac Oak-leaf Geranium round the margin, had been much admired. Ageratum Mexicanum was still a good blue bed, and a large mass of the better kinds of Gladioli had been wonderfully fine. They are planted every spring, taken up when the foliage has died off in autumn, and wintered in a loft above the fruit room. Some have, however, been planted about three weeks ago, in order that they may come into flower early. They receive a slight covering of leaf-mould to keep them safe during severe weather. The Cloth of Gold Rose has flowered here this summer on a south aspect: all the blossoms it produced, however, were upon the very strongest shoots, which would seem to indicate what we believe is now pretty generally known, that rich soil and close pruning are the means by which this desideratum is most likely to be effected. The different borders were still tolerably gay, the plants, Pine-apples, and other subjects under glass were in excellent order, and the establishment generally was in good keeping.

## Miscellaneous.

*Chinese Horticultural Exhibition.*—It is perhaps too well known to require mention, that the various merchants, traders, and mechanics in Shanghae, as in most other Chinese cities, are formed into associations or guilds, similar in many respects to the mercantile associations and trades' unions in civilized countries, and for like purposes. These guilds each have their hall or place of meeting, where they assemble to consult on matters affecting their mutual interests, whenever occasion requires; also to celebrate certain holidays, and occasionally to have dinners. The halls of 10 guilds are situated in and about the Ching-wong-miáu—more familiar to the foreign community as the "Tea gardens." From their general resemblance to temples in outward appearance, they are quite liable to be mistaken for these edifices. Seeing one open some days ago, and crowds of people passing in and out, I was informed upon inquiring what was going on, that it was the hall belonging to the money brokers' association, and that the occasion was a floral fair of rather a singular character, from the fact, that but one kind of flower was brought for exhibition, and this was a rare and highly prized species of the Epidendrum, called by the Chinese, Hwui-lan-hwá. From its costliness it is possessed only by the wealthy, who value it at tens and sometimes hundreds of dollars. Though very fragrant, it is not particularly remarkable for beauty, and it is somewhat difficult for us "barbarians," to discover why the mere fact, that the petals of the flower approximate, in their light green, to the colour of the leaves of the plant, should impart to it such an extraordinary value. More common varieties of the same plant, nearly, if not quite as fragrant, and to our dull perception, fully as beautiful as their more highly esteemed sisters, are abundant, and may be purchased at any time for a few cash. The display on this occasion seemed to arise from a sort of pride on the part of the exhibitors, in being the owners of a plant so rare and

valuable, and a desire to have this fact known to the "million." The flowers were in plain pots, each placed upon a high stand by itself. They stood about in different parts of the hall without any reference to order in the arrangement, having the names of the several owners written on a slip of paper attached to each, and a man standing near to protect it from injury. It is well understood by the natives that it is an unpardonable offence to smell the flower, and if, in your simplicity, you approach it for this purpose, you will be told it is inadmissible, and that, if thus insulted it will die. However, their fragrance fills the air, so you get a portion in common with the multitude jostling to and fro about you, and you will be ready to admit that even this is better than nothing at all, to counteract an odour, not quite so sweet, arising from a dense crowd of Chinese on a warm day. An image representing the guardian deity of the city—Ching-wong-kiu-yé—occupies a seat against the wall in the main building, near the entrance, and on a table before it are offerings of various fruits and flowers, in 12 small cups, in three rows of four in each. As you pass through this large hall, you come to a garden, *á lá Chinoise*, consisting of artificial pools and piles of rocks, with paths winding about up and down among them. There are three other small buildings where the flowers are "on exhibition" as in the first. Besides these, the garden contains several curious and beautiful trees and plants. The premises altogether, have rather a crowded appearance, as the whole occupies a comparatively small space, and this effect was greatly increased by the number of people present. In one of the pools are many specimens of gold fish, some of them more than a foot in length. This hall and garden is open to the public but four times a year, except in the year during which the Emperor's birth-day is celebrated by the people generally, when it is open five times. This occurs but once in 10 years. The place is well worth a visit, and admission can probably be obtained at any time, upon application to some of the money brokers, who are in constant intercourse with the foreign merchants. It is called Tsín-liáng-ting, or more commonly Tung-yüen. *North China Herald.*

'*How to get rid of Cockroaches.*—Mr. Tewkesbury, of Nottingham, in a letter to the *Manx Sun*, says:—"I forward an easy, clean, and certain method of eradicating these insects from dwelling-houses. A few years ago my house was infested with cockroaches (or 'clocks,' as they are called here), and I was recommended to try Cucumber peelings as a remedy. I accordingly, immediately before bed-time, strewed the floor of those parts of the house most infested with the vermin with the green peal, cut not very thin from the Cucumber, and sat up half-an-hour later than usual to watch the effect. Before the expiration of that time the floor where the peel lay was completely covered with cockroaches, so much so, that the vegetable could not be seen, so voraciously were they engaged in sucking the poisonous moisture from it. I adopted the same plan the following night, but my visitors were not near so numerous—I should think not more than a fourth of the previous night. On the third night I did not discover one; but anxious to ascertain whether the house was quite clear of them, I examined the peel after I had lain it down about half-an-hour, and perceived that it was covered with myriads of minute cockroaches about the size of a flea. I therefore allowed the peel to lie till morning, and from that moment I have not seen a cockroach in the house. It is a very old building; and I am certain that the above remedy only requires to be persevered in for three or four nights, to completely eradicate the pest. Of course it should be fresh Cucumber peel every night." *Builder.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

Take advantage of the present season, when potting and similar operations are almost suspended, to wash carefully with soft soap dissolved in warm water, all plants which are or have recently been infested with insects; as by so doing, the gummy matter which attaches their eggs to the branches is loosened, and they are more easily removed. The latter part of the business should be managed by syringing the plants with water at a temperature of about 120° or 130°, which will also destroy any living insects which may be lurking about them. Much more good is done by carefully cleaning plants in this way, at this season, than many are aware of. Let any necessary pruning, especially amongst creepers, be done before the cleaning commences, as it is injudicious to waste time in cleaning shoots which are afterwards to be cut away. Let all dirty pots be washed, and their surface soil loosened, and examine carefully any of which the surface has a green or sodden appearance, which is an evident sign that water has been too liberally used, or that the drainage is inefficient; if the latter, it should be immediately examined and rectified, as considerable damage is soon done at this season, when the soil gets in an unhealthy state. Many of the greenhouse Geraniums, and other plants of similar texture, which are in the course of preparation for next spring and summer, will require repotting. In this do not allow the time of year to be any impediment, as nothing in the successful cultivation of such plants is more indispensable during their period of growth than shifting them into larger pots before their roots become too much matted. Greater care in watering is necessary after repotting at this season. In the Heathery, the plants must be carefully watched and dusted with sulphur upon the first appearance of mildew. Keep these plants as hardy as possible by a free circulation of air, and by removing the lights every fine mild day. The stock of plants usually denominated "forcing" or winter-flowering plants should be carefully examined, and compared with the estimated wants during the next five months, that any deficiency may be supplied in the most eligible manner. Lifting and potting of hardy shrubs, as Rhododendrons, Lilacs, &c., may still be done; but it is advisable not to use hese too early, as their blossoms are finer and more lasting when they are not forced until very nearly their natural period of blooming. Amongst the plants which it is not yet too late to procure a stock of, we may particularly mention Tea-scented, China, Moss, and Provins Roses; Belgian and other Azaleas, with Anna Boleyne Pinks, Perpetual Carnations, tree and Neapolitan Violets in pots, Lily of the Valley, &c. These must be brought forward in successional lots by placing them in situations somewhat warmer than those in which the main store is preserved. The most congenial of all forcing pits is a bed of leaves, the heat in which is maintained by means of a hot-water pipe passing beneath them. By plunging the plants in such a medium, their roots are kept in advance of the tops, and plenty of air can be given, thus preventing the lanky etiolated appearance so commonly seen in forced plants. While upon the subject of plants for forcing, we may mention a few, which, though admirably adapted for the purpose, are not so generally in use as they deserve to be; amongst these are the Magnolias conspicua, Soulangeana, Hammondi, and their congeners; Laburnums, Ribes atrosanguineum, and Wistaria sinensis, grown as standards; double Peach, and double Cherry; Weigela rosea, Jasminum nudiflorum, tree Pæonies, and Forsythia viridissima.

### FORCING DEPARTMENT.

Pineries.—As the power of the sun declines, so also must our artificial temperatures be somewhat decreased; and in exact accordance with the latter, must the amount of moisture be regulated. Take care that the quantity of moisture is not so excessive as to condense in quantity upon the glass, &c., close up the laps, or run down into the heart of the plants. To prevent this, the evaporating troughs should be more sparingly filled, and the open tanks closed with moveable tops, giving you the power to confine the vapour or permit its escape. In fine clear weather, when a greater quantity of air can be admitted, the amount of moisture should also be slightly increased. Watering should be performed with great care; and syringing is only admissible on the mornings of very fine days. It should be done with a very fine rose, and driven, not into the plants, but into the atmosphere of the house or pit, with such force that the plants may receive it in the shape of very fine dew. Vineries.—In the anxiety to keep those houses containing fruit sufficiently dry, be careful to avoid the extreme, even in that direction. If the houses are kept too dry by fire heat, the berries will shrivel, an evil nearly as bad, with regard to some kinds, as decay, the result of opposite management. It is easy to comprehend what is wanted, viz., a dry but not an arid atmosphere; but to regulate it to this nicety requires more care and judgment than is generally found, except in a very experienced practical gardener. Let all spare time be now devoted to cleaning the sashes of the different structures, pits and frames included, from the dust and dirt accumulated upon them during the summer. Nothing conduces more to the health and well-being of their occupants than the free admission of light.

### FLOWER GARDEN AND SHRUBBERIES.

Pits and Frames.—Cuttings which are only partially rooted should be kept warm, and as close and moist as is possible, without running into the dangerous extreme of damp. The additional warmth and moisture here recommended is to encourage them to make a little growth, both at top and bottom, before they are hardened off; and that more time may be afforded for the latter purpose, the former should be effected with all consistent speed. Cuttings which were propagated earlier, and are now fairly rooted, should be gradually hardened, that they may retain their health and strength during winter, in a comparatively cool temperature. This should be managed by keeping them quite cool at night, and by exposing them fully in all dry open weather, when not too cold; taking care to exclude frost from the more tender plants, both by night and day. During the hardening process, the very little water that is necessary should be supplied in the morning; and as increase of size is not the object aimed at, but sturdiness of plant, growing points should be stopped, and all flower-buds carefully removed. Aphides or other insects must be destroyed; and upon the first signs of mildew, the plants so affected should be syringed on a dry morning, and dusted over with flower of sulphur.

### KITCHEN GARDEN.

Proceed with the final earthing of Celery with all possible despatch, as the season is too far advanced to admit of longer delay. The same remark applies to Cardoons, the earthing of which should be completed, if possible, by the end of this month. If there is a pretty good quantity of autumn Broccoli or Cauliflowers ready for use, a part of them should be taken up and laid in under the shade of a north wall, where they will be retarded, and may be protected by some covering in severe weather. Carrots are now nearly as large as they will be, and, unless in sandy soils, they had better be taken up now, to prevent their being spoiled by worms.

State of the Weather near London, for the week ending Oct. 23, 1851, as observed at the Horticultural Gardens, Chiswick.

| Oct. | Month's Age. | Barometer. | | Temperature of the Air. | | | Temperature of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 17 | 29.894 | 29.802 | 57 | 36 | 46.5 | 51 | 51 | W. | .00 |
| Satur.. | 18 | 29.941 | 29.742 | 59 | 32 | 56.5 | 49 | 50½ | S.W. | .01 |
| Sunday. | 19 | 30.011 | 29.930 | 62 | 35 | 58.5 | 51 | 50½ | S.W. | .01 |
| Monday | 20 | 30.080 | 30.045 | 64 | 35 | 59.5 | 53 | 52 | W. | .00 |
| Tues. .. | 21 | 30.076 | 29.993 | 62 | 52 | 57.0 | 54½ | 52½ | E. | .00 |
| Wed. .. | 22 | 30.137 | 29.585 | 55 | 50 | 53.0 | 54 | 52½ | N. | .00 |
| Thurs... | 23 | 30.235 | 30.219 | 57 | 50 | 53.5 | 54 | 52½ | S.E. | .00 |
| Average ... | | 30.056 | 29.959 | 59.6 | 50.0 | 54.8 | 52.3 | 51.6 | | .02 |

October 17—Clear; very fine; clear at night.
" 18—Fine; rain; densely overcast
" 19—Fine; uniformly overcast; slight rain; cloudy.
" 20—Uniformly overcast; cloudy at night.
" 21—Foggy; fine; overcast
" 22—Slight fog; hazy; uniformly overcast.
" 23—Foggy; fine; uniformly overcast.
Mean temperature of the week, 5 deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Nov. 1, 1851.

| Oct. and Nov. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday | 26 | 54.4 | 38.0 | 46.2 | 9 | 0.52 in. | 5 | 3 | 1 | 1 | 4 | 6 | 3 | 2 |
| Mon. | 27 | 54.6 | 40.5 | 47.5 | 20 | 0.92 | 3 | 4 | 2 | 0 | 4 | 3 | 7 | 2 |
| Tues. | 28 | 53.9 | 38.3 | 46.1 | 12 | 1.06 | — | 5 | 2 | — | 4 | 7 | 3 | 4 |
| Wed. | 29 | 54.0 | 40.2 | 47.1 | 11 | 0.43 | 3 | 3 | 3 | 1 | 6 | 7 | 1 | 1 |
| Thurs. | 30 | 54.7 | 40.0 | 47.4 | 11 | 0.58 | 3 | 3 | 1 | 3 | 3 | 10 | 1 | 1 |
| Friday | 31 | 53.2 | 39.7 | 46.5 | 14 | 0.88 | — | 2 | 2 | 2 | — | 10 | 6 | 3 |
| Satur. | 1 | 54.6 | 38.9 | 46.7 | 14 | 0.38 | 2 | 1 | 4 | 1 | 3 | 5 | 7 | 2 |

The highest temperature during the above period occurred on the 29th and 30th, 1843—therm. 67 deg.; and the lowest on the 29th, 1842—therm. 23 deg.

## Notices to Correspondents.

Beetle Traps: *B.* One of the best consists in making a hole in the floor, and sinking a basin in it, half filled or so with water or beer. But if your floor cannot be pierced, then procure one of Marchant's traps from Regent's-circus, Oxford-street. See also a paragraph in col. *a* of this page.

Birds: *Josephine.* Your bird, it would seem, has been halt from his birth. The malformation of his foot took place in the egg. He is in no pain. You say "he is always singing;" let this convince you of that fact.—*Letitia.* Try a little German paste and sponge cake, for a change.—*William T.* No; Hemp-seed is bad for these birds; it injures their plumage, and makes them too fat.—*John C.* Put a little sliced Liquorice root in his pan of water for two or three days.—*Maria.* His doleful looks are caused by the "agitation" already spoken of. He will smile on you in a few weeks.—*J W L.* The market price varies, according to the scarcity or abundance of the supply.—*H B.* A long narrow cage is most suitable, and hang him moderately low.—*B M* We cannot recommend wicker-work. Wood, painted, is far preferable.—*Jane.* As we have before said, we cannot sympathise with any persons who *will* keep birds and cats, when the former are devoured, or lacerated by the latter. Your canary is vitally injured, and you will, by his death, learn a practical lesson. May it benefit you hereafter!—*Inquirer.* Either the red-pole or the goldfinch can be readily taught to draw up water in a bucket. You may complete their education in a single day. *Eliza.* By no means. *Never* sift the sand. The small particles of gravel materially aid the digestion of your little prisoner. Keep the sand *quite dry. W. K.*

Camellia Leaves: *A N.* They are covered with the soot fungus (Torula fumago). The only remedy is washing clean with soap and water, and then giving the plants a good syringing. ‡

Charcoal: *New Forest.* We will inquire about it.

Colchicums: *A S.* Transplant them as soon as the leaves are dead in the summer, and at no other time. They are not particular in their soil, provided it is well drained and never water-logged in winter.

Emigration: *J W.* Every day tells us, in louder and louder tones, that it is imprudent for an editor to advise people on this delicate point. Each case requires to be considered separately, and with reference to a hundred personal questions, concerning which the editor of a newspaper can have no information. We know nothing of the Colonisation Assurance Association; but this we know, that the colony in question has been hitherto very unprosperous; and we cannot take upon us to say that its destiny will be improved by the new plan of introducing convict labour; although we readily admit that the measure is better calculated than any other to assist the struggling colonists.

Flower Gardens: *W J R.* You do not seem to be aware that we have already published, at great length, all the more important matters connected with M. Chevreul's arrangement of colours. If you will turn to our volumes for 1849 and 1850, you will find ample comments on the subject. ‡

Fruit Trees: *W H M.* The division comprising one-third of your 220 feet of covered wall, will admit of four trees in front, and four at back. This division being intended for late sorts, the following will be proper:—Two Walbertons, two Barringtons, two Chancellors, two Late Admirables.—*Newtown.* The Newtown Pippin is a large Apple when grown to perfection, as in Long Island, New York, and New Jersey. But in Britain it generally attains but small size, and somewhat resembles the London or Five-crowned Pippin. In both there are five distinctly-prominent projections round the eye. It requires a deep warm soil, and a good situation as regards climate; and unless you can command these, you need not attempt its cultivation. ‖

Fountains: *T G.* We do not see how an answer can be given to your inquiry. The proposition sounds well, but everything as to success will depend upon the elegance and power of the contrivance. Fountains are generally sad trash in this country. A little jet is no better than a boy's squirt.

Grapes: *J C.* Your seedling was noticed in our No. of Oct. 11, p. 648. ‡

Greenhouse Climbers: *S.* Mandevilla suaveolens, white; Kennedya Marryatæ, red; and Hardenbergia macrophylla, purplish blue. *Persevere* in beheading the Dandelions in the way you have been doing, and you will extirpate them. ‡

Names of Fruits: *J H D.* Your seedling Apple is handsome, but it has not sufficient briskness of flavour. It is sweet, but not rich ‖

Names of Plants: *Jane.* Little seedling Ferns, not recognisable in the state in which they are sent. The black substance is Racodium cellare.—*Enquirer.* Lastrea affinis, *J. Sm.*; Nephrodium affine, *Lowe. S.*—*J White.* Miltonia candida.—*Sub* Mesembryanthemum coccineum; it is impossible to name the other wretched morsels.—*A Scott.* 1, Asclepias cura-savica; 2, Billbergia pyramidalis; 3, some kind of Dioscorea or Yam.

Pick-foe: *Reader.* It is figured and described in our volume for 1849, p. 403. ‡

Ringing Fruit Trees: *Falcon.* Perform this operation in spring, when the bark runs freely, and take care that the wounds are not more than half an inch wide. It is better to ring several shoots as thick as the thumb than one limb common to the whole.

Seeds: *C E A.* None require bottom-heat. All are hardy. We have never heard of a plant called Demerary. We must have answered your first enquiry, if we ever received it.

Misc.: *Godstone.* Complain to your news agent. We do not send the paper out folded, but supply the *trade* in sheets.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

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The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

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The Agricultural Gazette.

*SATURDAY, OCTOBER* 25, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 30—Agricultural Imp. Soc. of Ireland.
THURSDAY, Nov. 6—Agricultural Imp. Soc. of Ireland.

NOTWITHSTANDING all that has been said and done by the various Agricultural Societies, both national and provincial, there are yet many anomalies in the practice of various districts, which strike an observer as being strangely at variance with the customs of other portions of the country. Every one who has had the good fortune to pass along the Great Northern Railway, must have admired the splendid farming and magnificent crops in Lincolnshire. Such crops and management might be supposed to include every farm requisite in a similar style. This, however, is far from being the case, particularly with regard to the farm buildings. Strange as it may seem, we believe there is no portion of England so much behind as some parts of Lincolnshire are in this respect. Many of the farms are almost destitute of stables for the farm horses, the poor animals having no shelter, except a large shed and open yard. And as for fattening cattle, we were often surprised to observe no other accommodation than an open yard without any shed whatever, the sides of the yard being formed of thorns wattled into rails, the rakings of the stubbles being built up along one or more sides, partly for shelter, but more for the sake of convenience for litter.

It would seem as if the district had burst at once into a condition fit for producing corn and feeding cattle, without going through the long intermediate stages during which, in other portions of the country, farm buildings have been gradually erected. Still it will strike a farmer accustomed to the noble farm buildings of the north of England and Scotland,—and even the holders of the mud-built farm steadings of Wiltshire, Somerset, or Devon, will be astonished—to see land that produces such crops of Wheat as we see this season in Lincolnshire, so ill provided with the first necessaries of farming.

Having mentioned Wiltshire, we are reminded of a practice followed to a great exent in that country. The sheep are at a certain hour every evening brought home and enclosed in as small a space as possible, by means of hurdles on the *bare fallows*, for the purpose of manuring them. If this be the best means to effect the latter purpose, it cannot possibly be the best method of fattening the unfortunate sheep. We have often expressed our hesitation in finding fault with the established practice of any district; but, surely, in this day of artificial manures and green crops, some other plan of manuring the land might be devised.

Our north country friends often express surprise at seeing so much work still done by means of bullocks. It does seem strange that the superiority of horses should be regarded as a settled question at one end of the kingdom, and yet remain a disputed point at the other.

One of the most influential periodicals of the day has expressed great surprise at learning that 6000 horse-power is the extent to which portable steam threshing-machines are now employed. To a Scotch farmer, the idea of being obliged to hire a threshing-machine, instead of having one of his own, would be insufferable; and we apprehend there would be no difficulty in finding more than 6000 horse-power in fixed machines in a very few of the Border counties. Can this striking difference in practice have arisen from the sense of insecurity, arising from the riots and incendiarism, which a few years ago disgraced the southern counties, and of which threshing-machines were always the first object of attack?

The method of securing the hay is as different in the south of England from that universally practised in the north, as it possibly can be? and nothing would excite greater astonishment on the part of a north countryman, than to see the Barley cut down like hay, as is done in Devonshire. There can be no doubt but these opposite practices depend in a great measure upon the more settled weather of the southern counties. The harvest customs of these districts have sometimes been recommended for general adoption, but as the weather, though of serious importance in out-door operations, does not appear to have been considered by the parties making these recommendations, the trials have been unfavourable to the spread of the south country practice, both in respect of hay and corn harvest.

It is very singular that Wheat succeeds so well after Clover in the south, whilst it is only on the very best description of soils that this plan can be followed in the north. We also observe beautiful crops of Wheat on mossy land in Lincolnshire, where nothing but Oats could be successfully grown in Scotland. The climate must be the cause of this difference—but to which of the climatic agencies are we to attribute the difference. Is it the greater or less fall of rain? Can it be the slight difference in the annual temperature? Or can the greater amount of sunshine and clear weather be the cause?

We have often been struck with the practice of giving sheep a run over perhaps 10 acres of Turnips at one *break*, as is frequent in Scotland; whilst in the southern counties, these Turnips would have been doled out in small portions, at two or three tons a day. The latter must be the more economical plan, and why it is not universally adopted by the intelligent farmers of Scotland, we are at a loss to understand.

As we have intimated, some of these different practices must originate in the difference of climate, soils, and situations; but still there are some of them for which this reason cannot be assigned. Those errors in practice, which have arisen from the isolated position of our farmers, must fast disappear before the information which is forced upon them by the many opportunities they have of meeting together. And in this way, there can be no doubt but the superior facilities afforded by railways will benefit agriculture, at the same time with every other branch of industry in the kingdom.

WE pointed out, in a former article, the varied sources from which the materials must have been derived which form the alluvial soils deposited by the Severn. The rock formations which have contributed to the soils of the Humber, are not less various. The Hull unwaters the thick argillaceous deposit of *Till*, or boulder clay, which forms the lower portion of the erratic tertiaries, northern drift, or diluvium, and which covers the chalk, in Holderness to the depth of more than 100 feet. It also drains the thin film of sandy loam which is the general covering of the same rock in the Wolds of Yorkshire. The Derwent, with its upper tributaries, rises among the siliceous, calcareous, and argillaceous strata of the lower, middle, and upper oolites. It crosses the lias for something more than five miles, and flows through the new red for nearly five times that distance before its confluence with the Ouse, below Selby. The head waters of the Ouse have their origin among the strata of the lias and the new red. The springs of the Swale, the Yare, the Lidd, and the Wharf, issue from the carboniferous limestone, and traverse the millstone grit, the new red sandstone, and the coal measures. The coal measures, with the other rocks above named, occupy a large portion of the area drained by the Aire and the Dove. The Dove and the Trent issue from the carboniferous limestone; the Dove having been derived from a portion of that formation associated with basalt and green stone. Both rivers flow through the millstone grit, and the new red sandstone, and receive some contributions from the coal measures. The course of the Trent, from Nottingham till it falls into the Humber, lies through the new red; but the ancient alluvium on its banks, formed under a different system of levels, and beyond the depositing influence of the present stream, though within the reach of its eroding action, is of a mixed composition, very different from the new red on which it rests. On the west, tributaries bring detritus from the magnesian limestone; on the east from the lias. From such varied sources is the fine detritus derived, which is brought down by the rivers which fall into the estuary of the Humber; but neither the modern warp, with which the industry of man causes the muddy waters of the Trent and the Humber to enrich the barren tracts which border the estuary, nor the similar alluvial deposits formed naturally more than two thousand years ago, are composed wholly of matter brought down by those rivers, and derived from the waste of the rocks through which they flow, nor even from that of the erratic deposits which are spread, more or less, over their catchment basins. A large portion of the materials which compose the sediment thrown down in the process of warping was traced, long since, by Professor PHILLIPS, to the wasting cliffs of Holderness, whence it is brought up the estuary by the flood-tide. He inferred this from the fact that a larger quantity of sediment is deposited in the summer than during the season when these rivers are in flood. More

recently, microscopic researches have revealed the astonishing fact, that a very considerable portion is not detritus of any kind; but consists of the siliceous coverings of infusoria, so minute, that, according to Ehrenberg, a cubic inch would contain 40,000 millions of them, and 147 millions of them would not weigh more than one grain.

Of the rivers which fall into the estuary of the Wash, the Witham, the Welland, the Nen, and the Ouse drain the siliceous sandstone of the lower oolites, and the Oxford clay of the middle oolites. The Ouse flows, not only through these, but through the Kimmeridge clay of the upper oolites; and receives tributaries which have traversed the green sand and the chalk. The deposits, however, which border the estuaries of the Humber and the Wash, must be regarded as parts of one alluvial tract. By the operation of tides and currents, each must have contributed to its neighbour a portion of the sediment brought down by its rivers; and tidal action must have diffused through both the fine detritus derived from the wasting cliffs of Holderness.

We come now to the father of British rivers, the "hoary Thames," and the streams "which swell with tributary urns his flood."

"First the famed authors of his ancient name,
The wandering Isis and the fruitful Thame."

The wandering Isis rises on the eastern declivity of the Cotswolds; and the dip of the strata has determined the course of the stream. These decline so gently to the east, that the waters which issue from the springs of Cricklade, traverse in their windings a distance of 150 miles before they reach the level of the tide at Richmond; while on the opposite side of the watershed, where the strata crop out, the fall is so rapid that the Severn flowing within 12 miles of these hills, is already a tidal river. The course of the Isis is chiefly through the Oxford clay, till it has passed Oxford, joined on its way by the Colne, the Lech, and the Windrush. All of these rise within the escarpment of the Cotswolds, composed of the Bath oolite, based on the inferior oolite. The Evenlode and the Cherwell have their sources in the lias, beyond that ridge, and would have flowed westwards, but for breaches or depressions by which they have been enabled to pass it. The country from which the Cherwell issues is remarkable for being the highest ground in the centre of England; pouring its waters in three different directions. The springs of the Cherwell, which flows southwards to the Thames; of the Leame, which passes by Leamington, into the Warwickshire Avon, and thence through the Severn into the Bristol Channel, and those of the Nen, which has an eastern course to the German ocean, through the estuary of the Wash, are all situated within an equilateral triangle, having sides of little more than a mile each.

Between Oxford and Abingdon, the Isis crosses the calcareous and argillaceous strata of the middle oolites, and the green sand, and is joined at Abingdon by the Ock, which has flowed through the same formations. From Abingdon to near Wallingford, it crosses the upper oolites, under their argillaceous form of Kimmeridge clay, and their calcareous form of Aylesbury limestone. The "fruitful Thame," which joins the main stream a few miles above Wallingford, has had its entire course through these rocks. Between Wallingford and Streatly the Thames flows for about five miles through green sand, bordered by escarpments of chalk. At Streatly it enters a gorge of the chalk, through which formation it winds by Reading, Henley, and Marlow, to Maidenhead. At Reading it is joined by

"The Kennet swift, for silver eels renown'd."

The Kennet drains the chalk and the northern skirts of the western extremity of the eocene tertiary district, commonly called the London basin. Do the eels of the Kennet owe their celebrity to the strata through which it has flowed, or to the declivity of the bed and consequent rapidity of the stream? As a parallel case, we may mention two contiguous rivers which fall into the harbour of Poole, near Wareham, the Peddle, or north river, and the Frome, or the south river. The eels of the latter are considered superior to those of the former. The north river chiefly drains those portions of the eocene tertiaries which are the equivalents of the Bagshot sands; the south river has one-half of its course through the chalk. Leaving, however, this important question to the investigation of epicures, we resume the geological investigation of the course of the Thames. After winding through the chalk from Henley, it enters the London tertiary district at Maidenhead, and quits it no more till lost in the sea. Its northern tributaries have, for the most part, an exclusively tertiary course. The "Loddon slow" drains the middle eocene tertiaries or Bagshot series. The "dark Colne," and the "sedgy Lea," have their origin in the chalk; but the greater part of their course through the London clay, and the siliceous and argillaceous strata of the plastic portion of the series. The Rooding and the Brent are wholly tertiary in their course. If they have the misfortune to have been left unsung by Pope, they may console themselves with the reflection that the Medway, whose nuptials with the Thames were deemed fit theme of Spenser's verse, have experienced from the bard of Twickenham the same neglect of which they complain.

The southern tributaries of the Thames have their origin in the Weald denudation. All its waters, except those of the Rother, flow either northwards or southwards, through gorges in the escarpments of the chalk which bound it. The "chalky Wey" has less pretensions to "roll a milky wave" than the "blue transparent Vandalis," the "sullen Mole," and the "silent Darent." One half of its course lies through the green sand, the other through the tertiary strata. It is only for little more than a mile where it flows through a gorge in the chalk at Guildford, that it traverses that rock. The Mole rises near the junction of the Weald clay, and the Hastings sands, flows for about 10 miles through the green sand, and for five miles through the chalk, before it enters the tertiary district. The Medway flows eastward in Weald clay, between 20 and 30 miles, traverses the green sand for nearly 20 miles, and the chalk for something less than 10, and joins the Thames, where it is bounded by sands of the lower eocene strata. Such are the varied materials rolled down by the Thames and its tributaries, to form the alluvium of its estuary. That much of the matter deposited at its mouth is derived from the upper regions of the river, must be evident to any one who has seen the turbid waters rushing downwards, in time of flood, at Richmond, and knows the length of time which elapses, after heavy rains, before the land waters make their appearance there. The wasting cliffs of London clay in the Isle of Sheppy, like those of the till in Holderness, have, however, furnished large contributions, and to them may probably be due much of the argillaceous character observable in the alluvium of this district. We have only noticed the rock formations along the course of the Thames and its affluents. Like the rocks, however, which form the catchment basins of the Severn and the Humber, they are overlaid by erratic deposits; and some notion may be formed respecting the mixed materials of which they are composed, from the following facts. Fragments of red chalk, which could have been derived from no nearer district than Lincolnshire, have been found in the superficial deposits at Moreton-in-the-Marsh. They are accompanied by pebbles of quartz rock, derived from a conglomerate of the new red, forming the upper Lickey range near Bromsgrove. That conglomerate is itself derivative, composed of the wreck of some of the silurian strata of Caer Caradoc and the Wrekin. Its materials, dispersed in large quantities over the midland counties, have been traced down the valley of the Thames to the gravel of Hyde Park, which is composed chiefly of chalk flints resting on London clay.

At lower levels, and within certain distances of the Thames, is an ancient wide spread alluvium, 20 or 30 feet above the present stream, containing bones of extinct mammals and shells of the same species of molluscs as those which now inhabit the neighbourhood. It contains these Lickey quartz pebbles and pebbles of granite, and has evidently been reconstructed from the erratic deposits which are found at high levels, on the hills flanking the valley of the Thames. The Lickey quartz pebbles indicate transport from the north and west. There are others which indicate a drifting from the north and east. The deposit, for instance, at Highgate, abounding with the wreck of the oolites, forms the southern limit of the boulder clay, which is traceable from the coast of Yorkshire through Norfolk, Suffolk, and Essex.

On the whole we conclude, that the alluvial deposits of rivers are chiefly near their mouths; that amidst the variety of materials derived from the numerous rock formations through which any river and its affluents have flowed, he must be a bold man who will venture to trace each particle of the alluvial soil to its source, or to assign the influence of a given rock. We conclude, also, that this complexity has been further complicated by the presence of superficial deposits, containing matter transported from great distances, which produce, on every rock, a great variety of soils, not referable to variations in the composition of the rocks themselves, and that these superficial deposits are the most easily acted upon by those atmospheric agencies which form alluvial deposits, by the removal of matter from higher to lower levels.

## OPEN BOARDED FLOORS.

My experience in this matter (six years with sheep, and two years with pigs and bullocks) enables me to draw conclusions most decidedly in favour of the plan. I confess I watched it with much jealousy, especially after a whisper from the Rev. A. Huxtable; and so to resolve the doubt I divided a lot of bullocks placing half on clean straw, and the remainder on the boards. It is in vain to seek for any advantage on the soft straw bed; for neither myself, my bailiff, or my visitors can point out a difference, excepting that those on the open boarded, unswept, unstrawed floors are decidedly the cleanest, which seems odd and inconsistent enough. For pigs and sheep the advantage was always too unmistakeable to be doubted. The animals are all perfectly clean and unspotted, as much so as any taken from a clean pasture. During last season I weaned 50 calves, all of which I reared without sickness, and they have always been on the boards. I have also 36 weaned this season equally healthy. Some of last year's have been sold to the butcher as small beef for 8*l.* each, 15 months old. With regard to pigs I would not attempt to keep so many except upon boarded floors. I dare not pack them so close on straw, it being impossible to keep them healthy, whilst with 240 we never have or think of having disease of any kind, and they are so clean that I have often been asked if they had been washed or brushed. The whole question hinges upon having a sufficient space between the spars to allow the manure to pass. Experience has proved to me that for small pigs, ¾ inch; middling ditto, 1 inch; six months ditto, 1¼ inch; Down sheep, 1½ inch; larger ditto, 1⅝ inch; calves, 1½ inches; larger ditto and bullocks, 1¾ inch [intervals are sufficient.] 1¼ inch planks are quite thick enough for sheep and pigs; but I should recommend 2 inches for calves, and 3 inches thick for heavy bullocks. I find Fir too soft for bullocks, as their sharp edged hoofs tear away the edges of the Deal. I should recommend very hard Oak, or the African Oak, similar to the stairs of the Great Exhibition. It is also desirable to have a clamp at the end of the spars, to prevent their giving way to the wedge of the hoof.

There is no effluvia from the bullocks, as there can be no fermentation—air being excluded by the gravity and density of the manure. The sheep and pigs may also be kept sweet by dusting the floors occasionally with salt or gypsum. It is a good plan, after removing the manure, to place a layer of burned clay or carbonised ashes in the pits, in such proportions as will solidify the manure sufficiently to fill into the dung carts. Of course this manure is at once taken to the land, without the intervention of a dung-heap.

I apprehend that when a field is heavily folded, we do not regret the absence of straw or fermentation. But methinks I hear some practical man of the old school say:—"How are we to stamp our straw into manure?" I hope the time is coming when farmers will never have straw enough. It is too good to put under foot. I find practically that it enables me to dispense with poor Grass land. Cut up fine, sifted and mixed with a little meal, some Rape-cake, Turnips or Mangold, it affords my numerous animals ample food.

By the bye, it may be well to state that I never use hay for my horses. They have cut Wheat straw chaff, slightly watered with a watering pot, and 14 lbs. of Bean or Pea-meal mixed with it, and two ounces of salt daily. Their condition is unmistakeably good. They must have salt when they have no hay. The straw is cut very fine; Wheat straw is decidedly the most substantial.

I ought to mention that on open boarded floors you may pack animals very closely, there being always air under them. Take care, in cold weather, to diminish the ventilation, especially for pigs; they have but little hair, and if they huddle together, they want warmth, and will do no good. The thermometer is the best guide. The ventilator must be at the highest point, and a draught of air from each end and below. I would caution those who have bullocks in Warnes' boxes, or covered yards, never to allow the animals' feet to be wet with urine, which would give them rotten hoofs. Straw should be abundantly supplied, to prevent the animal being in any way soiled.

All my animals receive salt in their food, and I have no trouble or anxiety about their health. I have 10 cows on boards, but they go occasionally into a small pasture, as I consider moderate exercise beneficial to "breeding animals." They have often and successfully calved on the boarded floors. *J. J. Mechi, Tiptree Hall, Oct.* 13.

## SOLID VERSUS LIQUID SEWAGE.

The two modes of supplying sewage as a saleable commodity are:—

1st. The mode proposed by the late Mr. Smith, of Deanston, and partially carried out by the Metropolitan Sewage Manure Company, at Fulham; viz., to pump the sewage immediately from the sewers, through pipes, upon the lands requiring it. Though this mode, so far as it has been carried out, demonstrates the value of the liquid as a manure, yet it seems also to show that the system is applicable only to low lying grounds, and those in the immediate vicinity of the source of supply. The latter condition is, however, antagonistic to the great sanitary principle, which is to get rid of the noxious influence of sewer-water, either by chemical agency, or by preventing its exhibition, until removed by mechanical means to a distance sufficiently great to render its effects innoxious to the population of the town producing it.

2d. The mode proposed in 1845 by me, viz.—to effect, by means of proper depositing reservoirs and other contrivances, the precipitation of the fertilising ingredients; to dispose of the deposit either immediately from the reservoirs, or after drying it by long exposure to the atmosphere or to artificial heat, and compressing it into a form commodious for transit to the

proper markets. Hereinafter it will be seen that I *now* propose to dry it by my patent process, which obviates many of the serious objections to other processes.

In improvements of sewers already existing, or in devising a scheme for the construction of a new system of sewers, the first object should be to transmit the sewage from the locality where it is formed to that where it is to be deprived of the water, and converted into an article of commerce, as quickly as possible; and for this purpose to make a fall artificially, if not already so naturally, low enough to create a rapid current in the sewers. Although the evils of the present metropolitan sewers discharging their contents upon the shores of the Thames at low water is bad enough, in a sanitary point of view, nevertheless, the fact that the sewage is prevented from discharging itself for hours during every tide, thus converting what ought to be water-courses into reservoirs, from which noxious gases arise and contaminate the atmosphere, constitutes a much greater evil. The bad effects of such a system of sewerage, in comparison with the one I proposed, either in its sanitary or commercial effects, cannot, perhaps, be more clearly shown, than by the words of Professor Aikin, which I extract from a report made by him on this subject in 1845 :—

"From the facility with which the various matters discharged into the sewers undergo decomposition, when diluted with water, and at a favourable temperature, it is evident that the shorter time that they remain in the sewers, the more valuable they will be, because the less decomposed. It may therefore be confidently anticipated that a plan which by means of a constant current clears out these matters from the sewers in proportion as they are poured in, will furnish them in a state considerably more beneficial to the farmer, and nearly approaching to that of night-soil, which is considered as the richest of all manures."

The next object should be to extract the solid manure in as short a time as possible, or at any rate to fix the volatile salts and gases, and prevent their exposure to the air—and this the lime process effects most rapidly; for within a few minutes after the admixture of lime, which may be effected in the passage of the sewer-water to the reservoirs, the fixing of the gases and precipitation of the salts, and organic matter, and ammonia in the form of nitrogenous matter, commences; and when deposition has taken place, the supernatant water prevents atmospheric influence.

Next, it should be an object to prevent long exposure to the air and artificial heat. These, however, are the usual methods of desiccation in order to convert the manure into a marketable state, and are processes which, besides being very expensive, necessarily deteriorate its fertilising qualities. These objections are obviated by the adoption of my patent process, by means of which the manure can be extracted from the sewer-water, and packed in casks, like guano, or Roman cement, within 24 hours; and this without the aid of heat—the simple operation of drying being in fact a work of minutes, not hours.

Having now given my opinion as to what should be, generally, the principles upon which the construction of a complete system of sewerage and sewage manufacture should be based, I proceed to describe the nature of my invention, and to show that it is in accordance with these principles that the machinery is constructed, and the process of the manufacture carried out.

The arrangements having been made for separating large floating bodies, stones, &c., from the sewage-water received at the outfall, it is then pumped up continuously into the reservoirs, so as to preserve the necessary fall of water in the sewers; I then commence the deodorising process by mixing the sewage intimately with milk of lime, which is made by putting into a cistern a certain measured quantity of lime and adding thereto a definite quantity of water; both being mixed together, and kept in motion by an agitator.

A sufficient quantity of milk of lime is to be used to render the sewage-water clear and free from smell, and to ensure the precipitation. To effect the due admixture of milk of lime and sewer-water, I employ a pump of small bore proportioned to the quantity of the milk of lime required; and the arrangements are such that, while the sewage-water is flowing away from the large pump, it receives from the small pump, through a pipe branching on to the pipe conveying the sewer-water to the reservoirs, a stream of milk of lime commingling with the sewer-water in its passage. The strength of the milk of lime, or the quantity to be used, will vary with every different kind of sewage-fluid. An excess, however, is not prejudicial, as it subsides with the other solid matter.

The mixture of milk of lime and sewage-water then flows into the reservoirs, of which there may be any convenient number; thus the liquid may be passing into No. 1, while No. 2 is depositing, and No. 3 being worked off. When the precipitate produced by the lime has subsided, the deposit, while in a liquid state, is conveyed by a drain or pipe to a well, where it is again allowed a certain time for subsidence, and the superfluous water is drawn off. To cause the deposit to flow into the well without the fear of the drain choking, and to create a current, I apply a screw of one or more turns within the drain, which propels or draws the deposit through it. The deposit is then raised from the well by an endless chain of buckets, or other suitable elevating apparatus, which delivers it into a horizontal trough, from whence it flows into the drying machinery, the quantity being regulated by sluices in the trough.

The drying-machines themselves, and of which there must be a number proportionate to the quantity of sewage obtained and to be dried, perform the operation by means of centrifugal force arising from the machines being made to revolve with great rapidity. The construction of the machine, and its operations, are as follows :—A vertical shaft carries a horizontal plate, about 3 feet diameter, keyed upon its upper end; connected with this plate, and concentric with it, is a ring or drying-cylinder, about 18 inches diameter, of wire gauze or other perforated material. This cylinder retains the manure while the water is thrown out through the wire gauze by the centrifugal force caused by the rapid revolution of the shaft. If now the machine were stopped, the dried manure might be dug out by manual labour; but, to save this expense, and to economise the time required for stopping, I have adopted a contrivance by which the drying-cylinder can be raised up from the horizontal plate while both are in motion; and, as this cylinder is raised, the dried manure flies off through the space left between the cylinder and the plate. This refers to a single machine.

A double machine consists of the ring of 18 inches diameter already described, and another of a similar description, but of 3 feet diameter, upon the same plate and concentric with the first cylinder. In this machine the water, instead of flying from the inner cylinder against the inner surface of the outer cylinder, as it otherwise would do, is made to flow through channels in the plate to the outer edge of the same; but when the inner cylinder is raised to discharge the manure, this is allowed to fly against the outer cylinder.

After having in its turn performed part of the drying process, this cylinder, by a contrivance similar to that employed to raise the inner one, is also raised and the manure allowed to fly out upon the floor, or into a casing fitted to receive it. The means of effecting the raising the cylinders can scarcely be made intelligible without drawings, but perhaps the general idea of the action is sufficient for the present purpose.

Motion having been given to the machine, the manure, in a state of very liquid mud, is introduced by a pipe from the horizontal trough before mentioned, into the inner drying cylinder, in which, by losing much of the water, it becomes solid, though still damp. This cylinder being raised, the manure flies out into the outer cylinder; after which the inner one is again lowered, to be ready for another charge. The drying of the first charge is now completed at the surface of the outer cylinder; and this in its turn is raised and discharged. Meantime a second charge has been run into, and is being partly dried by the inner cylinder; so that the drying operations is beginning upon one charge in the inner cylinder, while it is terminating on the previous charge in the outer cylinder.

The advantage of this process, in addition to that of economy of time is, that the inner cylinder provides a moderate velocity in the first stage of the process, when the mud is very liquid, and the outer cylinder finishes the same by the greater linear velocity of its surface. Moreover, the thickness of the ring of manure will be less in the outer cylinder than that in the inner; so that the moisture from this cause will suffer less obstacle to its outward progress, which is a matter of great moment, inasmuch as the finishing of the drying is the part most difficult.

In order to break up or divide the manure while flying from the inner cylinder, a wire grating or riddle is interposed between the two cylinders; thus, as it were, exposing a fresh surface of the manure to the drying action of the outer cylinder. These machines are arranged in lines, so that one shaft may drive several machines.

The dried sewage as it falls from the machines slides down a sloping board, or is scraped into a trough in which revolves a long screw or creeper, by which it is conveyed to a chamber, where it is packed at once or retained in store.

It will thus be seen that very little manual labour is required in the manufacture, which may be wholly, or nearly so, accomplished by steam or other power. The economical advantages of my system may be thus enumerated :

1st. That as the sewage of towns will probably become very much more diluted, not only from the increasing demand for water for manufacturing and sanitary purposes, but also for the express object of reducing the offensiveness of sewage by increased dilution; if the system of distribution by pipes were to be adopted, an enormous outlay would be required to lay down larger pipes to convey these increased quantities of water, and yet with no greater benefit to the farmer, or revenue to the company; inasmuch as the sewage, though larger in quantity, would be of proportionably diminished strength, and would have to be sold at a proportionably diminished price per ton. Whereas, in the system I propose, the only increase would be the comparatively trifling expense necessary for simply lifting the water into the reservoirs; while the solid manure obtainable would be equally strong with that produced from the less diluted sewage. This is very important in a sanitary point of view, as there can be little doubt that the sooner, after its formation, the sewage is diluted with an abundance of water, the less chance there is of the evolution of noxious effluvia.

2dly. There is an economy in compensation; for, in cases where the water for the sewers is abstracted from a mill-stream, proportionate compensation would have to be made. While, in the pipe scheme, this water is abstracted and not returned; in my system it is returned.

3dly. That the artificial fall allows of the sewers being made of less dimensions, in proportion to the velocity obtained; so that while it involves the expense of providing machinery for pumping, yet this expense is counterbalanced, if not much reduced, by the saving in the cost of the sewers.

4thly. That the artificial fall produces an economy in a sanitary point of view, in the improvement of the health of the town population, the rapid current not allowing time for decomposition, and of evolution of noxious gases from the sewage.

5thly. That, for the same reason, the manure is improved in value; the prevention of effluvia being, in fact, prevention of the escape of fertilising matter, and, of course, an addition, *pro tanto*, to the value of the manure.

6thly. That an economy arises from the use of the lime process, which has this peculiar advantage over other deodorisers, that it adds to, instead of diminishing the value of the manure, because it is precipitated and forms a component part of the manure, which is of greater value than the lime itself.

7thly. That there is great economy of manual labour in the patent manufacturing process, as also in the short period allowed for decomposition, the absence of long exposure to the atmosphere in drying, and the entire superseding of all danger of deterioration of the value of the manure from the application of artificial heat; and of the heavy expense of fuel consequent thereon.

To those who are aware of the condition of the rivers Irk, Irwell, and Medlock, at Manchester; the Aire, at Leeds; the Soar, at Leicester; and other rivers receiving the drainage of manufacturing towns, the subject of the foregoing pages cannot fail to be one of the greatest interest; exhibiting, as it does, not only a process of easy and cheap application, whereby these rivers may be purified, by allowing none but clear water to flow into them, but also a method of converting the product of the drainage which now pollutes them into a profitable article of sale; more especially profitable in these and other manufacturing towns, where the refuse of dyeing, scouring, and other like establishments, contributes large quantities of most valuable animal and vegetable matter.

The system I advocate is applicable to all towns, large or small; and for the purpose of enabling those who are interested to form an approximate estimate of the expenditure and profits, appertaining to towns of various magnitudes, I append the following table, with the qualification, however, that the estimates can be only approximate, as they must vary in each instance, according to local circumstances, and the nature of the trades carried on.

*Table.*—Column 1 : Amount of Population. Column 2 : The Annual Quantity of Patent Manure obtainable from the Population. Column 3 : Cost of Works, or Capital required. Column 4 : The Annual Cost for Deodorizing and Manufacturing the Manure. Column 5 : The Net Income, after deducting the Cost of Manufacture, providing that the Manure be sold at 2*l.* a ton. Column 6 : Lowest Cost per Ton of the Manure to ensure 40 per cent. interest upon the Capital :—

| 1. Population. | 2. Tons. | 3. Cost of Works. | 4. Cost of Manufacture. | 5. Net Income at 2*l.* per ton. | 6. Price of the Manure, to yield 40 per cent. |
|---|---|---|---|---|---|
| | | £ | £ | £ | *s.* *d.* |
| 10,000 | 1262 | 3000 | 1450 | 1074 | 40 5 |
| 20,000 | 2524 | 4500 | 2850 | 2198 | 36 10 |
| 30,000 | 3783 | 6000 | 4100 | 3472 | 34 4 |
| 40,000 | 5048 | 7500 | 5300 | 4796 | 32 11 |
| 50,000 | 6310 | 9000 | 6400 | 6220 | 31 8 |
| 60,000 | 7572 | 10,500 | 7500 | 7644 | 30 11 |
| 70,000 | 8834 | 12,000 | 8400 | 9268 | 29 11 |
| 80,000 | 10,096 | 13,500 | 9300 | 10,892 | 29 2 |
| 90,000 | 11,358 | 15,000 | 10,000 | 12,716 | 28 2 |
| 100,000 | 12 620 | 16,500 | 11,000 | 14,240 | 27 11 |
| 150,000 | 18,930 | 24,000 | 16,500 | 21,360 | 27 7 |
| 200,000 | 25,240 | 31,500 | 22,000 | 28,480 | 27 5 |
| 250,000 | 31,550 | 39,000 | 27,500 | 35,600 | 27 4 |
| 300,000 | 37,860 | 46,500 | 33,000 | 42,720 | 27 3 |
| 400 000 | 50,480 | 59,000 | 44,000 | 56,960 | 26 10 |
| 500,000 | 63,100 | 71,000 | 55,000 | 71 200 | 26 6 |
| 1,000,000 | 126,200 | 134 000 | 108,000 | 144,400 | 25 8 |
| 1,500,000 | 189 300 | 196,500 | 163,000 | 215,600 | 25 6 |
| 2,000,000 | 252 400 | 259,000 | 216,000 | 288,800 | 25 4 |
| 2,500,000 | 315,500 | 321,500 | 268,175 | 362,825 | 25 2 |

The foregoing table will clearly show that the subject of the manufacture of sewage manure is one which calls for the most attentive consideration from all parties interested in improvements of towns, or desirous of embarking in a profitable commercial enterprise. *From a Tract, by Mr. Wicksteed, M.I.C.E., published by J. Weale, 59, High Holborn.*

## Home Correspondence.

*Winter Tares.*—I have always been successful in growing a very heavy crop of Tares, simply by a heavy manuring of "pudding manure" from under my open boarded floors, applied on the Wheat stubble, ploughed, rolled, drilled with 2 bushels of Tares, and harrowed. It is a cleaning crop, for no weed, or black Grass, has the slightest chance, being completely overgrown by the Tares, which are either mowed for consumption in the yards, or folded with sheep. The latter is to be preferred, the Tares mowed and placed outside round the fold-hurdles. I have very fine crops of green round Turnips, succeeding the Tares. The Tare stubble being scarified, harrowed, rolled, manured with "pudding," and once ploughed, the Turnip seed drilled with

3 cwt. superphosphate of lime and a few clay ashes. Although all the land was well manured, both for the Tares and Turnips, I can see an immense difference in the Turnips where the Tares were folded with Rape-cake. I think the system of seven or eight ploughings for Turnips will soon be given up. An Essex friend told me, the other day, he had ploughed nine times for Turnips, and still missed a plant, which did not at all surprise me. Every day convinces me that the plough, although a good machine for turning over the earth, is a most inefficient cultivator. I find Bentall's broad-share, followed by Coleman's or Ducie's drag or cultivator, is a fine preparation for the plough, which would otherwise, in strong clays, turn over certain long and solid blocks, which will be possibly unaltered in form for 12 months. The necessity for drainage in heavy lands intended for Tares is too obvious to require comment. Eight years ago I sowed 2 bushels of seed Tares per acre on a 13 acre undrained heavy land field, which I rented, and had the mortification to see them perish during the winter, being a loss of

| | | | |
|---|---|---|---|
| Seed, at 12*s.* per bushel ... ... | £1 | 4 | 0 |
| Ploughing, harrowing, and rolling ... | 0 | 8 | 0 |
| Half-a-year's rent, &c. ... ... ... | 0 | 15 | 0 |
| | £2 | 7 | 0 |

I then, as a tenant, drained the land 4 feet deep and 30 feet apart, with 1-inch pipes, at a cost of 3*l.* 2*s.* 6*d.* per acre. We hear no more now of such losses and failures. It is ruin to farm such lands undrained, although I consider drainage a landlord's affair, charging the tenant an interest. *J. J. Mechi, Tiptree Hall, Kelvedon, Essex, Oct.* 13.

*The Value of Land.* — It must be acknowledged that agricultural distress is great; but there is no use in merely lamenting over a misfortune which can only be repaired by strenuous exertion on the part of the farmers, both owners and tenants. In order that some equitable arrangement may be made between landlords and renters, various statements should be published in your Paper, from different districts in each county, setting forth the description of land—its capabilities when in fair cultivation, present rent, rates and taxes, price of produce in the market-towns, facility of disposing of grain and animals, &c. Something of this sort is wanted to guide capitalists in investing their money in land; the uncertainty now hanging over the broad acres of England, as to what their worth will be a few years hence, frightens men who have cash to spare from risking it; there is so much doubt about the use land is to be put to when Wheat fails to remunerate. There can be no doubt that land in all counties, at least much of it, is not half tilled, and never will be, unless a better prospect is made clear to farmers of obtaining a fair average per centage for cash expended. Surely, a scheme might be hit upon to calculate the value of land, under free trade, by collecting data from all parts of the country. To get at the information required would be a laborious task for one or two men to undertake; but, if communications bearing on the point were forwarded to the *Gazette*, much important and interesting matter might be laid before the public. A farmer has to wait many months, even years sometimes, before he can expect to receive compensation for money sunk in the land; it is therefore not to be wondered at if the agriculturist is cautious, under the uncertainty what aspect free trade may assume each succeeding year. It is to be hoped a thorough investigation into the grain trade for the next seven years will exhibit farming at the lowest figure, with a tendency rather to rise than fall. Having accomplished a just valuation of the landed property, allowance being made for neglected improvements, let rents be based on such a foundation, which would give an impetus to agriculture, and induce farmers to invest their cash. Unless some arrangement takes place between landlord and tenant, founded upon practical knowledge of the future resources of the country, agricultural affairs will change from bad to worse, ending in ruin to thousands. *Falcon.*

*Draining.*—I have been much amused (and enlightened on many occasions) with the various opinions expressed in your Paper on the subject of "Draining." Many of the advocates of deep draining appear not to have been far from home for their experience in those matters, otherwise they would see that a knowledge of the soil they have to work upon must be the criterion of depth. I think it would be rather ridiculous to adhere strictly to any particular plan merely because Mr. P., or Lord Q., think it the best. The operator must have brains enough to judge for himself whether 2½ feet or 5 feet drains will most effectually rid the soil of its superabundant moisture; if the soil is of uniform substance, such as an alluvial deposit of sandy loam, then, of course, 5 or 6, or perhaps 10 feet deep, would be most proper; or even in clays that are all of one substance to the depth required, because the summer sun would, as Mr. Parkes said, rend it into "cracks and fissures" quite down to the pipe. But if Mr. P. come amongst us he will find such soils that would not crack down to a 5 feet deep pipe, well rammed round, during his life-time; neither will the force of gravity force the water into pipes so secured. We make tanks, or as they are called here "pools," to catch the rain-water, with about 1 foot of tempered clay, and cover it with another foot of soil and stones, and they will last a man's life-time; and how will the sun and air act on the well-tempered clay rammed close on the top of the drain-pipe at 5 feet deep? But to the point. In the beginning of the last year I undertook to drain a large field after a crop of Wheat (of less than 8 bushels per acre); one said "use Mr. Parkes' plan," another recommended Mr. Smith's plan, and another actually presented me with a couple of Mr. Mechi's papers, the first with the stones under the pipe, and the next to correct that error. After paying all due respect to the opinions of my friends, I thought I must experiment a little for myself, so the first thing was to have a dozen test holes dug. In the first I found the water rushed in at about 2½ feet from the surface; and though I continued to dig to 5 feet, the water came in at the same place and trickled down the sides of the drain, and continued to rise till within about 5 inches of the top in a few hours. The next hole drew at about 3 feet 3 inches, and the others varied from 2½ feet to 3 feet 9 inches, and in every case entirely refuted the opinion that the water "always came in at the bottom of the drain," the stratum under the vein of water being comparatively dry. I am not geologist enough to speak of the scientific names of the composition of the soil, which, by the bye, was very various. The principal portion of the field, however, was first a few inches of sandy dead loam, then a sort of pan of the same material, but hard as stone; this moultered on being exposed to the air. The next foot was a sort of yellowish loamy sand with veins resembling iron rust. The next was a sort of pipe-clay, in which is bedded some very hard stone, some being fit for tiles, and others being 10 to 12 inches thick, and some only a kind of slaty shale. Immediately under this layer is about 4 inches of yellow clay, and on this the water invariably drew, no matter what depth the drain. Now, in this case, whose plan was to be adopted? Certainly not Mr. Parkes' or Mr. Mechi's; because if the pipe was clayed in at 4 feet, and the water drew at 3 feet, the clay would effectually prevent the water from getting to the pipe, and the water would prevent the sun and air from acting on the clay. But Mr. Smith's system would not reach to the bottom of the evil, so I determined on applying my own system, which was to have the drains 4 feet deep with a conduit at bottom, and 20 inches of stone on the top of the conduit, thus embracing all the depths where I found that the water drew. These conduits were formed of some of the smoothest of the stones found in digging the drains as far as they would go with a sole, and act beautifully, the cost of laying and filling being 1½*d.* per rod. This, and some other experiments, have fully confirmed me in the opinion that a strict adherence to any plan is not universally practicable, if we wish to obtain the best results at the least cost; and I could point out instances where a blind fulfilment, to the letter, of a certain system of drainage, although having been done now some years, is far from realising the expected result; indeed, I have heard a first-rate farmer declare that it is actually in a worse state now than before. I have heard much about trusting to "stupid and blundering" stewards, for the due execution of draining work. But I think landed proprietors should be equally on their guard with high-sounding theory. *Henry Cox, Longford's-House.*

*Game.*—I am sure "friend Cuthill" has no need of such feeble assistance as mine in handling the subject of game with friend Wilkins; but I certainly think, if Mr. Cuthill has been a little too fast in his condemnation of game and his sympathy with poachers, Mr. Wilkins has gone much wider of the mark in his praises of game and his want of "pity" for those misguided men who are tempted by such enormous quantities kept in some particular spots (and often encouraged by those who ought to know better), to step over the just bounds of the law, in order to satisfy their appetite with what is all but impossible to get at otherwise; but I think they are at least entitled to our "pity" when torn from their families, and the demon haunting them with "the wife and children are starving." But to the other point: I think there are very few farmers who do not glory in a fine covey of partridges or a fair show of those beautiful creatures, "Phasianus colchicus," or enough of "Lepus timidus" for a good day's sport with either harriers, greyhounds, or guns; I say, most farmers are well pleased with a sufficiency of all these to allow his landlord a good day's exercise; but when a farmer sows his 20 acres of winter Beans and the pheasants clear the lot; when he walks over his glorious piece of Swedish Turnips, and find that 5 out of 6 have been tapped, and the water and frost have started decay in the crop; when every one of his Mangold Wurzel pits are broken into and a way made for frost and snow and rotten tubers; when he finds it utterly impossible to grow a few Carrots for his lambs or his horses; when, being an advocate of thin sowing, he is obliged to throw away 2 bushels more Wheat per acre than would be required for a crop; and when he finds the rabbits and hares have already made the crop much too thin, still, when his Wheat is in ear, these vermin should amuse themselves by nibbling it off at knee, laying bare acres by acres; when he shuts up a field of Grass, thinking to have a good bite for his cattle, but at a month's end finds it still bare; when he could drive a waggon and four horses round his fields of spring corn, without crushing an ear; when a farmer sees and feels all this, and sees the gamekeepers of his landlord sacking them at their leisure, to make a market of them, and his lease compels him not to take a license to shoot or kill game, and the law compels him not to kill them without—I say that man, if he get into trouble for destroying a head of game for his own family, deserves, at least, our pity. I am not one of those who would abolish the Game-laws, because I think those who can afford time to shoot and preserve are those who can best afford to contribute towards the support of the State; and I think if the Game-laws were abolished to-morrow, there would be as many convictions, only under a different name, as trespass, or stealing private property. In conclusion, allow me to tell Mr. Wilkins that it would be difficult to beat the farmers out of their dear-bought experience; there are few, I can assure him, who do not know of themselves that it is possible to be over-stocked with game, particularly as he has honoured rabbits and hares with his patronage, and has taken a brief for their defence. *H. Cox, Longford's-house.*

*Balance Sheet.*—I send you my balance sheet. Can you give me any hope that it is wrongly made out? The farm was very foul, and the ground has had nearly twice the usual amount of working and dressing. Capital: Live and dead stock, 800*l.*; machinery, 100*l.*; total, 900*l.*

First Year—March 25th, 1849, to Michaelmas, 1850.

| *Expenditure.* | £ | *s.* | *d.* |
|---|---|---|---|
| Labour ... ... | 195 | 0 | 0 |
| Rent, rates, tithe ... | 241 | 0 | 0 |
| Horse hire ... 47*l.* Fences, &c.... 15*l.* Oats, oilcake, blacksmith, &c ... ...124*l.* | 183 | 0 | 0 |
| Live stock bought ... | 227 | 0 | 0 |
| Seeds... ... ... | 34 | 0 | 0 |
| Manure, &c. ... | 44 | 0 | 0 |
| 5 per cent. on 800*l.* capital ... ... | 40 | 0 | 0 |
| Implements... ... | 100 | 0 | 0 |
| | £1067 | 0 | 0 |

| *Receipts.* | £ | *s.* | *d.* |
|---|---|---|---|
| Feed let or sold ... | 69 | 0 | 0 |
| Live stock sold ... | 119 | 0 | 0 |
| Butter and milk sold | 57 | 0 | 0 |
| Other receipts ... | 82 | 0 | 0 |
| | £327 | 0 | 0 |
| Value of the stock Oct. 11, 1850 ... | 607 | 0 | 0 |
| | £934 | 0 | 0 |
| Loss (1850) ... | 73 | 0 | 0 |
| | £1067 | 0 | 0 |

Second Year—From Oct. 1850 to Oct. 1851.

| *Expenditure.* | £ | *s.* | *d.* |
|---|---|---|---|
| Labour ... ... | 190 | 0 | 0 |
| Rent, rates, tithes... | 250 | 0 | 0 |
| Fences ... 15*l.* 0*s.* Oilcake... 10*l.* 14*s.* Oats ... 10*l.* 0*s.* Blacksmith, and various, 48*l.* 6*s.* | 84 | 0 | 0 |
| Live stock bought... | 258 | 0 | 0 |
| Seeds... ... ... | 14 | 0 | 0 |
| Manure ... ... | 18 | 0 | 0 |
| 5 per cent on 800*l.* capital ... ... | 40 | 0 | 0 |
| Implements bought | 29 | 0 | 0 |
| 10 per cent. on 130*l.* additional capital spent in machinery ... ... | 10 | 0 | 0 |
| | £893 | 0 | 0 |
| Stock taken in Oct., 1850 ... ... | 667 | 0 | 0 |
| | £1560 | 0 | 0 |

| *Receipts.* | £ | *s.* | *d.* |
|---|---|---|---|
| Wheat sold... ... | 85 | 0 | 0 |
| Barley and Oats sold ... ... | 13 | 0 | 0 |
| Hay sold ... ... | 80 | 0 | 0 |
| Live stock sold ... | 323 | 0 | 0 |
| Milk, butter, and other receipts ... | 140 | 0 | 0 |
| | £641 | 0 | 0 |
| Value of stock, crops, fallow, &c., Oct. 12, 1851 ... ... | 760 | 0 | 0 |
| | £1401 | 0 | 0 |
| Loss (1851). ... | 159 | 0 | 0 |
| | £1560 | 0 | 0 |

—*Urban.* [Have you taken credit in 1850 for the value, at the end of that year, of the 100*l.* worth of machinery bought during it? and, at the end of 1851, for the 29*l.* worth of implements bought then? Does the 667*l.* in the one case, and the 760*l.* in the other, include these items?]

*Game.*—I have read with interest the letters of Mr. Cuthill and the Rev. Mr. Wilkins upon "the Preservation of Game," and I fully agree with the latter, that feathered game is more beneficial than injurious to the farmer, if not preserved to too great an extent. I would suggest to preserving landlords, that they should make it a *sine quâ non* with their keepers, that they should keep their tenants' ricks and barns free from rats; and this would not be tasking them too greatly, though they might not have so much time to spend at "the Plough," or "the Barley Mow." Let any one living in the neighbourhood of a "keeper," have ever so valuable a cat, it soon disappears, and all enquiring after it is vain; though its value in a barn is incalculable. I was in conversation with one of these men about two months ago, when he told me he had set a trap in the run of a stoat, and for five successive mornings he had caught a cat! Can it therefore, be wondered at, that rats are so numerous? Those gentry, however, do not generally talk of such things, their proverb being, "More ways of killing a cat than hanging it." *L. B.*

*The use of Winged Game to the Farmer.*—Permit me to add a word to what Mr. Wilkins has said in a late Number on the above subject. I am well acquainted with an estate in one of our eastern counties, on which the last proprietor had, for its extent, a very large number of pheasants; but the present owner, having given up preserving, has scarcely any. The former keeper, a superior man in his station, is now a tenant (and a good and successful one) on the estate, and rents the land nearest to, and intermingled with, the covers. This person must be, I think, from his past and present position, well qualified to judge; and he often expresses to the owner his regret at the scarcity of pheasants. "If we had the pheasants," he says, "we should not have the wireworms?" His present feelings are simply those of a farmer; he is, by age and the habits now of many years, divested of any sort of interest in sporting matters; and of his understanding and education, as qualifying him to form an opinion, an estimate may be formed from the fact that he was able to serve his former master in the capacity of magistrate's clerk. *W., Oct.* 15.

*Pigs.*—Pigs may be too fine bred, so as to become tender in constitution, and require more attention than is consistent with profitable farming at the present day. It is the fashion to praise up specimens of the porcine tribe which feed up remarkably quick; it may be a question whether such animals are as valuable as those which are longer in attaining flesh for the butcher. Can there be as much nourishment in pork or bacon fed up young as there would be if the animals had arrived at a more mature age? Wood which requires years to bring it to perfection is better adapted for furniture than the tree which springs up to an equal size in half the time. Muscle rapidly developed will waste more in cooking,

and so will the fat, than if they were allowed to increase at a natural rate, in character with the growth of the animal. A pig six months old will fatten quicker than one three months old, comparatively speaking, sorts being the same; and the former will prove the best speculation. Perhaps experienced persons will be kind enough to state their opinions, from observation, on this important subject. We find for general purposes, such as riding, driving, and for regular steady work on the road, or hunting, half-bred horses are the best, and show more condition under severe trials. For speed, where nothing else is required, thorough-breds carry the day. For pigs, where pampering is allowed at agricultural shows, the fine kinds will run away with the prizes; but for the pocket, good crosses are to be preferred. Discussing the merits and demerits of that most noisy but useful quadruped, a word about the old story of over feeding for exhibition may be touched upon. It has been proposed that the Agricultural Society of England should offer a prize for the best conditioned bacon and pork pigs, ready for the salting tub, fetching the highest price in the market, and showing by a Dr. and Cr. account the profit accruing to the owner. Protection can never return, so there is no use in farmers expecting it. Rents must come down to present prices, and the land must be made to produce crops that will pay, and Wheat may be left out of the list. *Falcon.*

*Embossed Bricks.*—There is no reason why, in building farm houses and cottages, gentlemen should not give them, now that the duty on bricks is removed, and their is no limit to their size, the simple decoration arising from embossed bricks; many old houses in Norfolk and elsewhere present a very pretty appearance, from the application of the application of this ornament. Designs, however, of this kind were utterly put an end to by the interferenee of the excise. As there is now no law to prevent their re-introduction, it is to be hoped that decorative art may again resume its place in buildings made of brick. In the late exhibition there was no illustration of embossed bricks, but there was a machine called an "Improved Brick-making and pressing machine," shown by Whitehead, of Preston, for making pressed bricks from untempered clay, which was admirably adapted, by the simple addition of an embossed plate, if fastened to the upper surface of the brick mould, for this purpose. This upper surface was similar to the thick cover of a book; it was made of iron, and worked on a close and solid hinge. Had the machine been used with an embossed plate, it could not have failed to have attracted much attention. *T. F.*

## Societies.

Gloucestershire Agricultural, *Oct.* 9.—Tortworth, the seat of Earl Ducie, was the scene of a most interesting gathering, the Gloucestershire Agricultural Society having been most liberally invited to partake of the hospitality of the mansion, and examine the stock and arrangements on the estate. The pleasures of the day were, however, greatly damped by the circumstance that the ill-health of his lordship prevented his personal attendance. Shortly after three o'clock, a party of nearly 130 gentlemen sat down to a sumptuous dinner. In the lamentable absence of Earl Ducie, Lord Moreton (his son) presided. The Chairman proposed "Success to the Agricultural Society, of Gloucester, coupling with the toast the name of Mr. Edward Bowly, of Cirencester." Mr. E. Bowly, after expressing his acknowledgments, said he could not pass on without adverting to the deep regret they must all feel for the absence of one to whom they were all so much indebted. What would have been their society if it had not been for Lord Ducie? He begged to say they should not have been a society at the present time, if it had not been for his lordship. But it was not only their society that his lordship had benefited, it was this county, it was all England. No man of his rank had mixed so much with the middle classes of society, and he knew their wants and feelings; and consequently, holding the position he did, he was calculated to do an immense amount of good to the country at large. He was sorry to refer to the bad times they were now suffering from; but they must remember they were times which were foretold. Every honest Free-trader had said they would have a time of transition—a time when the cloud would be passing over, after which they would have a bright sun before them. All he wished was that they might see this sun. He himself had long seen the folly of looking back,—he looked to what they were to do in the future to meet that future. What was this time of transition? It was this: the tenant farmer finds that his receipts are diminished, and that his outlay goes on the same, and that a good deal of it is not under his immediate control. He could directly control his labour where it was abundant; he could control the expenses of his household; he could not control his rates and taxes; his rent also was not under his immediate control. But he hoped there was a feeling among the landlords—and he believed there was—to come and meet the thing as a matter of business—to join the tenant, and get a reduction of those taxes and local rates which they must have if they were to go on in these times, and to meet the tenant in a business-like way in regard to rent. He asked no favour for the tenant, but to have things adjusted as pure business, and it must come to that. If any remnant of the feudal times remained, free-trade had sent it to the four winds of heaven—there was an end of it. Although there might be an end to the feudal system, he hoped the aristocracy of this country would all hold the position to which they were entitled. He considered the security of this country in a great measure was dependent on the aristocracy; and although the agriculturists were under a cloud at the present time, he thought that no reflecting man could look to the state of this country and compare it with foreign countries without feeling proud that he was an Englishman—and feeling a degree of thankfulness for the condition of this country, where we can all enjoy the fruits of our labour—where we have liberty and respect for the laws.—C. Hayward, Esq., proposed, "The Tenant Farmers of England." He spoke as a practical agriculturist, and he believed they would agree with him when he said that if good farming would not answer, unquestionably bad farming would not. But the difficulty they had to contend with in one respect was this—that if they all went on increasing their productions considerably, they would be increasing their home competition, and by that means they were absolutely contending against themselves. But lately a prospect had been opened to them, so that they might entertain some hopes that they might make profits of their fields unconnected with this sort of competition. Means had been opened to them of supplying our manufacturers; and he could not help hoping, although it might be a small hope, yet it was one for the farmer, that the improvements that had taken place in the preparation of Flax were such as would lead to a very considerable improvement in the position of the tenant farmers of this country. Because there was this difference between the competition that would ensue and that to which he had previously referred, that if they increased their production in green crops and also in grain crops, they were only competing in the same market with each other, whereas by the cultivation of Flax they were supplying an unlimited demand of our manufacturers, with which the food they raised did not come into competition. Facilities were now afforded for the cultivation of this crop by which the expectations that had been raised were fully realised; and he spoke as a practical man when he said there were no greater difficulties to be overcome in the production of a crop of Flax than in the production of any of the cereal crops they now cultivated. The obstacle which had hitherto been in the way was the finding a market for the crop after it was grown; but that was now completely removed, for immediately the crop was converted into fibre there was an unlimited demand for it, and at a price which offered a considerable premium between the price at which it could be grown at a profit, and that at which the manufacturer could make it at a profit. They only wanted a middle man to convert the straw into fibre for the manufacturer. If that were once supplied he felt satisfied there was a market for their crops, at a price which would be remunerative. He hoped there would be found public-spirited individuals who would enter into companies to supply that link; and when it was supplied he believed one crop at least would be offered to the farmer which would be a remunerative one; and if that was clearly remunerative it would assist him in producing other crops without the loss which he now suffered. After a few further remarks, he concluded by proposing the toast for which he rose, requesting Mr. Beman, as a very good specimen of the tenant farmer, to respond.—Mr. Beman, of Donnington, returned thanks. He agreed with Mr. Hayward as to the desirability of growing Flax. He had himself grown it, and he considered it would be remunerative. He referred to the disadvantages encountered in consequence of the lack of machinery in the vicinity of the crop, and the benefits likely to accrue when this want was supplied. He also named some parties who he knew had grown large quantities. They were much indebted to Mr. Brown, for the pains he had taken to make known the advantages of its cultivation. They were at a disadvantage in growing it upon the Cotswold hills, from the population not being thick, and the lack of machinery. The farmers in the neighbourhood of Leeds and other large towns where coal and machinery were on the spot, would of course have an advantage over them. Notwithstanding these drawbacks he believed it would be remunerative. If by growing a million acres of Flax instead of a million acres of corn they could obviate the necessity of importing 8,000,000*l.* worth of Flax, Linseed, and oilcake, it would be a great advantgge to them. He doubted not if the farmers prosecuted the cultivation, machinery would speedily be found to convert the crop into the proper material for the manufacturer.—W. P. Price, Esq., next gave "Agriculture, Manufactures, and Commerce." They were pursuits between which a most intimate relation always would subsist. He hardly knew what right he could claim to address a meeting like the present, he being only a small owner and occupier of land; but he had not spent his life in the country, making his own observations upon what was passing around him, without having learned to take great interest and form his own impressions concerning the condition of agriculture at the present day. He was sorry to be obliged to confess his opinion, and he spoke from his own experience as a farmer on a small scale, and also from his observation of others, that the profession of agriculture was not so profitable as other pursuits to which men in this country devote their lives. It was very much to be regretted that this was the case, because he thought the interests of the country required that it should be fairly and decently remunerative. He believed there would be very little difference of opinion that agriculture was not reasonably remunerative at the present time, although there might be great differences of opinion as to the causes to which this depression was attributable. He believed it was due to a great many causes. He did not think it was due to their having trusted too much to Providence, or their having trusted too much to themselves; but he did believe it was due to their having trusted too much to the State. They had trusted to the State to give a rent to the landlord and a living to the tenant out of the almost spontaneous produce of the soil. They had imposed burdens upon the State which no power on earth could bear; the State had broken down under those burdens, and had thrown them on their own resources. He would refer to another cause to which he believed their difficulties to be due, namely, the fact that they had not followed what he would call the commercial principle in their various proceedings. He meant to say that in the renting and stocking of their farms, keeping them in cultivation, and finding a market for their produce, they had not acted upon what he should call a purely commercial principle. He would endeavour to illustrate this. He had already stated that he was an owner of land, and also on a small scale an occupier of agricultural land; he was also an owner and occupier of land having a commercial value. Now, as an owner of land having a commercial value, he proceeded thus with it: he endeavoured first of all to find an eligible tenant, and having made with him the best arrangement he could, if he afterwards came to ask him to make an outlay upon the land likely to be advantageous, he said at once he had not the least objection, he was perfectly willing to do so upon the occupier paying an interest say from 5 to 7 per cent. according to the nature of the expenditure, and he never yet found a man objecting to those terms—he always acceded to them willingly. Applying this principle to agriculture, he would say that every landlord of agricultural land should at once agree to lay out upon his land any sum of money likely to yield a fair return to enable a tenant to prosecute his business more remuneratively. He was bound, however, to say that he had not found agricultural tenants manifest the same readiness to avail themselves of such outlays as he had ordinary tenants. As an occupier of land having a commercial value he would in the same way, first of all, ascertain whether a certain piece of land suited his purpose, forming his own estimate of its value for that purpose; when he had taken it, while complying with the terms of his lease, he considered himself absolute master of it, so long as he did not waste or spoil it. And he did not see why the agricultural tenant should not place himself in the same position. But, as far as he had observed, no sooner was a farm vacant than 50 or 100 applicants were ready to take it, running a sort of race, and adopting all sorts of expedients to obtain a priority, without regard to its value at all. As a matter of course he did not propose that the owners of agricultural land should make their tenants absolute masters of the land, unless they were men of capital, enterprise, and skill, and fit to be trusted with full powers. He did not see why the same principle which was applied to commercial transactions should not be applied to agriculture. He could fancy an intelligent foreigner who had come over here to study and report on the condition of agriculture and manufactures, at some English seaport observing a house in a dilapidated condition, contrasting most unfavourably with those around it, asking how it came to pass that such was the case? He would be told that the house was in Chancery. Proceeding with his inquiries, he would find almost every farm house in so dilapidated a condition that he would conclude they also were in Chancery.

East Cumberland, *Sept.* 19.—The annual meeting of this Society was held at Carlisle, this day. At the dinner, in the course of the evening, Mr. P. H. Howard, M.P., referred to the American reaping machine, as one of the products of that ingenuity fostered by such societies as he was then addressing; and Sir J. Graham, who occupied the chair, spoke on the same subject as follows:—"In point of numbers, the exhibition, compared with previous shows, was deficient; but what was wanting in quantity was more than counterbalanced by the superior quality of the stock displayed. These remarks apply more particularly to the live stock. In some of the other departments we did not find that extent or variety we have been accustomed to see. The implements comprised some interesting and novel specimens of ingenuity, the invention and workmanship of parties residing in the neighbourhood of Carlisle. There were other articles from a distance which claimed more or less attention, according to their respective merits. First and foremost came the simple and effective American reaping machine. There was a large show of capital ploughs, Young and Co.'s anti-metallic churn and lever cheese-press, iron corn-rick stands, &c. &c. Mr. Howard has alluded to the reaping machine, which, I dare say, most of you saw in operation on Wednesday. Among the many advantages to be derived from the Great Exhibition, I know none that will contribute more to general improvement in every branch of agriculture than the display of these new and improved implements. From what I saw yesterday, I should say that the reaping machine is susceptible of improvement, and yet is undoubtedly an instrument of great promise. I doubt not that the present threshing machine was subject to as much adverse comment when first introduced, and yet see how universally it is now applied. It is true it was made on the other side of the Atlantic, and for that very reason I think it is entitled to especial attention in England. I think that the experiment of yesterday was a very severe trial to the machine. In the first place, the crop upon which the cutter was employed was not such a crop as would lead me to suppose that the Agricultural Society of East Cumberland had done all for the benefit of the agriculture of the neighbourhood. In the first place it was not one of the cleanest of crops—it was certainly not one of the richest of crops—and judging from the appearance of the soil it struck me that it was very much exhausted. If we look at it as exhibited in the second field, we find it operating upon ground in still worse condition than the other, from recent alterations. It was full of stones and old hedges whose roots had not been eradicated. This was the land set aside upon which to test the power of the machine, but after all its working was not unsatisfactory. I think there are imperfections in that machine, and no doubt the skill of the English, their knowledge of mechanical science, and never-failing industry in improving every invention, whether native or foreign, will overcome these difficulties. I think upon the

whole the cutting of the machine was clean and excellent. I do not think the mode of delivering the sheaf satisfactory; and I should be glad to see some device for superseding the raker, the second man, and I do not despair. Notwithstanding these what I call imperfections, I think upon the whole it is a very useful implement—I think it is a very promising implement, and I am glad I had an opportunity of attending and seeing it at work. With reference to the rearing of stock, I must say I saw the show to-day with extreme satisfaction. According to my view, which I stated before on a similar occasion, and it has been since a subject of much adverse comment—I say, and say it deliberately, that there is a tendency in this county to plough too much and to graze too little. The rearing of sheep is in my opinion the key-stone to further improvement in this county. Our climate is not particularly well adapted for the growth of grain but it is for green crops, and Grass; and my own experience would lead me to think that upon the best land in this county it would be very desirable if a larger portion of each farm were laid down in permanent Grass. I speak on the experience of my friend Mr. Teather, with whom I am proud of having been connected in early life. Twenty years ago he tried the experiment of growing Wheat after lea. At that time, as the science of agriculture then existed, the experiment did not succeed; but now I have living witnesses that the finest crops of Wheat have been produced out of Clover lea, which only laid for a year. What does this do? If you have a larger portion of Grass you get an additional crop. I say that any farmer sure of a good Turnip crop, and sheep to eat it off, is greatly improving his farm. I am talking to men who understand the matter. I will challenge any man to show a greater amount of reclaimed bad land than Mr. Ferguson, of Harker Lodge. I have seen no improvements anywhere like his. I have endeavoured to trace how he has accomplished this wonderful change, and I find he has done it by the feeding of sheep, the growing of green crops, and the liberal use of guano. With plenty of sheep, guano, and green crops, you may be sure of improvement on the very worst of land. Again, let us look at the present artificial state of society. These little islands are densely inhabited Two of the raw materials used in our manufactures are beyond our reach; cotton and silk we cannot produce; but we can and will produce Flax; and I say it is worthy the consideration of the agriculturists of this country to adapt its growth to the wants of the country. In this section, however, we are exclusively dependent on foreigners for the supply of the raw material. The right hon. bart. then went on to recommend the growth of Flax, observing that it was certainly the duty of the landlord rather than the tenant to try the experiment in the first instance. He pointed out the difficulties which attended it, suggested remedies for the removal of those obstacles. It was only necessary that the agriculturist should be assisted, and it became the duty of landlords to lead the way in respect to all these experiments and improvements. If the landlords would only assume their proper position, then he might say,

"England herself will never rue,
If England to herself will rest but true."

The Secretary, Mr. Thomas Donald, of Linstock, then read the Inspectors' Report, which was as follows. Mr. Donald remarked that some gentlemen had thought the awards of little interest, but he believed them to be highly interesting, especially to those who had been successful candidates:—

*"To the Chairman of the Committee of the East Cumberland Agricultural Society.*

"Sir,—We have carefully inspected the Turnip crops of the different competitors for premiums of your society, and have found them all well cleaned and thinned, and generally of very superior quality, and, altogether, such as in our opinion would do credit to any county. After full consideration we have awarded the premiums as follow:—To the occupier of a farm of more than 150 acres; two competitors; to Mrs. Baxter, of Fauld, near Longtown. To the occupier of a farm of less than 150 acres; four competitors; to Mr. Lamb, of Brisco, near Carlisle. Mr. Jobling's premium for the best crop of Turnips grown with guano; no competition; to Mr. Wood, of Howrig—very deserving.—W. Bell, T. Gibbons, W. Chris. Forster Thompson."—*Abridged from the Carlisle Patriot.*

## METEOROLOGICAL REPORT.—October.

*(Continued from p. 670.)*

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| * 16 | 8 a.m. | ... | 29.41 | After the heavy shower at W. |
| | 9 p.m. | 29.52 | ... | (see p. 670), wind WNW., occasional showers, and barometer rising steadily. |
| 17 | 2.10 a.m. | ... | 29.60 | A.M. WNW. Gentle. P.M. |
| | 6 p.m. | 29.82 | ... | NNW., brisk; fine and |
| 18 | 1.10 a.m. | 29.84 | ... | sunny day; barom. rising steadily. |
| † | 8 a.m. | ... | 29.84 | 8 A.M. Barometer flat. Brisk SSW. Dense; overcast all day. |
| | 10 p.m. | 29.86 | ... | At night clearer; barometer rising; calm. |
| Sun. 19 | 8.5 a.m. | ... | 29.89 | WSW. to SSW. Brisk. Dull |
| | 10.20 p.m. | 29.95 | ... | day but dry; damp at times. P.M. Barometer rising steadily. |
| 20 | 7.50 a.m. | ... | 29.96 | A.M. S. Gentle; small |
| | Noon. | 29.98 | ... | drizzle. P.M. Do. Fine and sunny. Barometer steady. |
| 21 | 1.5 a.m. | 29.97 | ... | Gentle. Noon. ESE. Barometer falling steadily. |
| ‡ | 3.30 p.m. | ... | 29.84 | Overcast A.M. P.M. Fine |
| 22 | 8.50 a.m. | ... | 29.88 | sunny. Barometer rising. Gentle northerly. Overcast. |

* The continuation of the preceding storm, which had come from the south, passing to the westward of England, and which (at p. 670) I conjectured to be curving to the eastward over Scotland. This conjecture is confirmed by the chilliness of the air during the succeeding days, the body of the storm being then to the northward of us.

† A storm coming from the south, passing to the westward of England, but travelling northward, being deflected in that direction by the easterly and northerly wind of the left hand and rear (*i.e.* northern and western) quadrants of the preceding storm.

‡ This storm travelled eastward up channel (or perhaps further south, over France,) towards the German Ocean; there would probably ensue a fog over London on the 22d—23d, being the effect of the reflux current in the hinder quadrants of this storm.

Dorchester Oct. 22. *F. P. B. Martin.*

*(To be continued.)*

## Notices to Correspondents.

Agricultural Education: *H Bennett.* We can confidently recommend the Cirencester College to any young man *desirous* of instruction, as the cheapest and most efficient agricultural seminary in the kingdom.

Australian Guano: We are unable to give a report from analysis, but will just make the general statement, that it has the appearance which a specimen of somewhat decomposed peat would present, if it were well mixed with small crystals of a similar colour, and if it possessed a slight ammoniacal odour. The fibrous matter about it, however, of course, is not vegetable, but consists of feathers, &c. The crystals are those of some potash salt. It is an interesting specimen, and would probably repay the expense of analysis. Is it found in large quantity?

Bass's Pale Ale: *Senex* says, "In these days Bass's Pale Ale, and scarcely any other ale, is prescribed by all our head physicians and surgeons, as a dietetical beverage; may I beg the favour of your asking your numerous correspondents, through the columns of your Paper, for a receipt for brewing Bass's Pale Bitter Ale? and any other kind of approved bitter ale?"

Boussingault's Works: *Anon.* His "Rural Economy," published by H. Baillière, London.

Butter: *T J H.* The quantity of milk yielding 1 lb. of butter varies from 18 to 20 lbs., *i. e.* 9 or 10 quarts.

Cabbages: *Discipulus.* As we have not had experience of them as food for milch cows, we have inquired elsewhere for the information you ask for.

Feeding Pigs on Boards: *An Old Subscriber.* We should prefer the use of litter on a stone floor, or box-feeding on any floor.—We are not aware of any lately published works on Farm-buildings, except one by Mr. Ewart (Longman and Co.), which we shall shortly review, and one by Mr. Donaldson.

Night Soil: *J J.* Add freshly-burned powdered charcoal.—About poultry next week.

Poultry: *C Pocklington.* There is nothing in your description of a Cochin China fowl which would interfere with perfect purity; but uniform buff, or nankeen colour, is preferable, though difficult to meet with. A Cochin China fowl should be well feathered to the toe, with a small upright serrated comb, the wing well clipped, the thigh much feathered and largely fluffed, especially the hens. A good Spanish hen is to be obtained of any dealer, at prices varying from 12*s.* to 25*s.*, according to quality.—*R G.* If number of eggs be required, the golden and silver Hambro' fowls are the best to keep, as they lay vast quantities and never set. If size be a desideratum, the Spanish are to be preferred, as their eggs are larger than those of any other fowls. The Cochin China fowls lay a great number of eggs, but they are not as large as those of the Spanish.—*Clericus Rusticus* The rule is that the hybrids between Muscovy and common ducks do not breed again. I kept some for a long time and had no produce, but I have been told there are exceptions. I never had one brought under my own notice. *J. Baily,* 113, *Mount street.*

Rape-Cake: *T L.* It is recommended by those who have no interest in the sale of it. Probably not so rich as oilcake per lb., it is a great deal richer per £'s worth, and that is the consideration for the farmer's guidance. You must get the sheep to eat it by reducing it to powder, and mixing it, in gradually increasing proportion, with something that will tempt them.

The Steam Plough.—The article headed thus in our last number should have been entitled "The Steam Cultivator." The whole reasoning of our correspondent, who has made this subject so entirely his own, has gone to prove the term "steam plough" to be altogether a misnomer.

Wheat: *H N.* It is not Wheat—but Darnel; Lolium temulentum.

# Markets.

## COVENT GARDEN, Oct. 25.

Peaches and Nectarines are over for a season. English Pines are large and fine. Grapes are abundant, and meet with a heavy sale, owing to the large importations of foreign ones. Pears are also brought from the Continent. The best English kinds are Gansel's Bergamot, Brown Beurré, and Marie Louise. These fetch from 2*s.* to 4*s.* a doz., and 8*s.* to 12*s.* per half sieve. Damsons are over. Oranges are coming in pretty plentifully. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce and dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3*s* to 6*s* | Almonds, per peck, 6*s* |
| Grapes, hothouse, p. lb., 2*s* to 5*s* | — sweet, per lb., 2*s* to 3*s* |
| — Lisbon, per lb., 9*d* to 1*s* | Oranges, per doz., 1*s* to 1*s* 6*d* |
| Melons, each, 1*s* to 2*s* | — per 100, 6*s* to 10*s* |
| Apples, kitchen, p. bsh., 1*s* to 2*s* 6*d* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Pears, dessert, p. doz., 2*s* to 4*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| Lemons, per doz., 1*s* to 2*s* | Filberts, per 100 lbs., 70*s* to 90*s* |
| Walnuts, per bush., 12*s* to 24*s* | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8*d* to 1*s* | Artichokes, per doz., 4*s* to 6*s* |
| Cauliflowers, p. doz., 6*d* to 3*s* | Lettuce, Cab., p. score, 4*d* to 1*s* |
| French Beans, p. h. sieve, 2*s* to 4*s* | — Cos, per score, 3*d* to 1*s* |
| Peas, per sieve, 6*s* to 8*s* | Small Salads, p. punn., 2*d* to 3*d* |
| Potatoes, per ton, 45*s* to 80*s* | Horse Radish, p. bundl., 1*s* 6*d* to 4*s* |
| — per cwt., 2*s* to 5*s* | Red Beet, per doz., 1*s* to 2*s* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Mushrooms, p. pot., 1*s* 6*d* to 2*s* |
| Turnips, p. bunch, 2*d* to 3*d* | — per bushel, 7*s* to 10*s* |
| Cucumbers, each, 1*d* to 1*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Radishes, per doz., 9*d* to 1*s* 6*d* | Tomatoes, p. half sieve, 3*s* to 4*s* |
| — Turnip, p. doz., 1*s* to 1*s* 6*d* | Fennel, per bunch, 2*d* to 3*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Savory, per bunch, 2*d* to 3*d* |
| Carrots, per bunch, 4*d* to 6*d* | Thyme, per bunch, 2*d* to 3*d* |
| Spinach, per sieve, 1*s* 6*d* to 2*s* | Parsley, per doz. bun., 2*s* to 3*s* |
| Veget. Marrows, p. doz., 1*s* to 1*s* 6*d* | — Roots, p. bundl. 9*d* to 1*s* |
| Onions, p. bunch, 1*d* to 5*d* | Mint, per bunch, 1*d* to 2*d* |
| — Spanish, p. doz., 1*s* 6*d* to 3*s* | Basil, p. bunch, 3*d* to 4*d* |
| Leeks, per bunch, 1*d* to 2*d* | Marjoram, do., 3*d* to 4*d* |
| Shallots, per lb., 6*d* to 8*d* | Watercress, p. 12 bunch., 4*d* to 6*d* |
| Garlic, per lb., 6*d* to 8*d* | |

## COAL MARKET.—Friday, Oct. 24.

Hollywell, 15*s.*; Carr's Hardley, 14*s.*; Eden Main, 15*s.* 3*d.*; Hasting's Hartley, 14*s.*; Tanfield Moor, 13*s.* 6*d.*; West Hartley, 14*s.*; Wallsend Riddell, 14*s.* 3*d.*; Wallsend Hetton, 16*s.* 6*d.*; Wallsend Lambton, 16*s.* 3*d.*; Wallsend Stewarts, 16*s.* 6*d.*; Wallsend Tees, 16*s.* 3*d.*—Ships at market, 117.

## HAY.—Per Load of 36 Trusses.

### Smithfield, Oct. 23.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72*s* to 77*s* | Clover ... ... ... | 70*s* to 85*s* |
| Inferior ditto... ... | 60 68 | 2d cut ... ... ... | 60 72 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 24 27 |
| New Hay ... ... ... | — — | | J. Cooper. |

A brisk trade.

### Cumberland Market, Oct. 23.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75*s* to 80*s* | Interior ... ... ... | 65*s* to 76*s* |
| Inferior ditto... ... | 60 70 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 88 | | Joshua Baker. |

### Whitechapel, Oct. 23.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 72*s* to 78*s* | Old Clover ... ... | 80*s* to 90*s* |
| Inferior ditto... ... | 50 63 | Inferior ditto ... | 70 75 |
| New Hay ... ... | 65 72 | New Clover ... ... | 70 84 |
| Straw ... ... ... | 23 26 | Inferior ditto... ... | 55 65 |

## HOPS.—Friday, Oct. 24.

Messrs. Pattenden and Smith report that the Hop market is active for all fine Hops. The duty is expected out in a few days, and is likely to fall between 128,000*l.* and 130,000*l.*

## POTATOES.—Monday, Oct. 20.

Trade at the waterside has commenced exceedingly heavy; up to this morning we have had no arrivals from Yorkshire or Scotland. Our market is amply supplied from Kent and Essex. Potatoes are of very good quality, and from every appearance prices will range lower this winter than usual. The following are this day's quotations:—York Regents, 55*s.* to 60*s.*; Shaws, 50*s.*, to 55*s.*; Essex Regents, 50*s.* to 60*s.*; Shaws, 45*s.* to 55*s.*

## SMITHFIELD, Monday, Oct. 20.

The supply of Beasts is moderate, and the trade rather improved. The mild weather is against the sale of big Shorthorns, but prime Scots have reached 3*s.* 8*d.* The number of Sheep is smaller, but there is very little alteration in price, the weather being so unfavourable. Good Calves are scarce, and readily disposed of at fully late rates. From Holland and Germany there are 1509 Beasts, 4720 Sheep, 198 Calves, and 76 Pigs; from France 60 Sheep; and 2600 Beasts from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Here- | | | | | Best Long-wools . | 3 | 6 | to 3 | 8 |
| fords, &c. ... | 3 | 4 | to 3 | 8 | Ditto Shorn ... | | ... | | |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ewes & 2d quality | 2 | 8 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ditto Shorn ... | | ... | | |
| Best Downs and | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| Half-breds ... | 3 | 10 | — 4 | 0 | Calves ... ... | 3 | 0 | — 3 | 10 |
| Ditto Shorn ... | | ... | | | Pigs ... ... | 3 | 4 | — 4 | 4 |

Beasts, 4682; Sheep and Lambs, 26,720; Calves, 267; Pigs, 520.

## Friday, Oct 24.

The number of Beasts is by no means large, yet adequate to the demand. There is a cheerful trade for good qualities, and Monday's prices are freely given for all kinds. The supply of Sheep is very small, and chiefly consisting of inferior descriptions. A clearance is effected at Monday's quotations. Trade is dull for Calves, but there is not much reduction in price. From Germany and Holland we have 415 Beasts, 810 Sheep, 218 Calves, and 10 Pigs; and 125 Mich Cows from the home counties.

| Best Scots, Here- | | | | | Best Long-wools . | 3 | 6 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| fords, &c. ... | 3 | 4 | to 3 | 8 | Ditto Shorn ... | | ... | | |
| Best Short-horns | 3 | 2 | — 3 | 4 | Ewes & 2d quality | 2 | 8 | — 3 | 4 |
| 2d quality Beasts | 2 | 4 | — 2 | 8 | Ditto Shorn ... | | ... | | |
| Best Downs and | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| Half-breds ... | 3 | 10 | — 4 | 0 | Calves ... ... | 2 | 8 | — 3 | 10 |
| Ditto Shorn ... | | ... | | | Pigs ... ... | 3 | 0 | — 4 | 4 |

Beasts, 952; Sheep and Lambs, 3670; Calves, 391; Pigs, 653.

## MARK LANE.

Monday, Oct. 20.—The supply of English Wheat to this morning's market was much smaller than of late; fine dry samples commanded the prices of this day se'nnight; but inferior conditioned parcels were disposed of at a slight reduction; foreign met a moderate retail inquiry on late terms. Floating cargoes of Polish Odessa continue in request for the Continent; but little remains unsold.—Barley is unaltered in value; the finest descriptions of malting sell readily.—Peas are scarce, and new white boilers bring an advance of 1*s.* per qr. In the value of Beans no alteration.—The Oat trade is firm.—Flour is in demand at former prices.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38 | —41 | Red ..... | 37 | —39 |
| — — fine selected runs...ditto | 40 | —44 | Red ..... | 38 | —40 |
| — — Talavera ..... | 44 | —46 | | | |
| — Norfolk, Lincoln, & York... White | 33 | —36 | Red ..... | — | |
| — Foreign ..... | 30 | —48 | | | |
| Barley, grind. & distil., 24*s* to 25*s*...Chev. | 28 | —30 | Malting . | 25 | —28 |
| — Foreign... grinding and distilling | 20 | —24 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 16 | —20 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —24 | Feed..... | 16 | —21 |
| — Irish .....Potato | 18 | —22 | Feed..... | 18 | —20 |
| — Foreign .....Poland and Brew | 18 | —22 | Feed..... | 16 | —19 |
| Rye ..... | 28 | —30 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..23*s* to 27*s*.....Tick | 24 | —30 | Harrow . | 24 | —30 |
| — Pigeon.....26 — 32... Winds | 30 | —33 | Longpod | 24 | —26 |
| — Foreign .....Small | 21 | —29 | Egyptian | 22 | —28 |
| Peas, white, Essex and Kent.....Boiler- | 28 | —32 | Suffolk... | 29 | —33 |
| — Maple.....27*s* to 29*s* .....Grey | 22 | —25 | Foreign . | 25 | —29 |
| Maize .....White | — | | Yellow... | — | |
| Flour, best marks delivered ...per sack | 32 | —37 | | | |
| — Suffolk .....ditto | 26 | —32 | Norfolk . | 26 | —32 |
| — Foreign .....per barrel | 15 | —21 | Per sack | 28 | —33 |

Friday, Oct. 24.—The arrivals of foreign Wheat this week have been good, but small of all other grain and of Flour. This morning's market was not numerously attended, and the demand for Wheat was limited, confined almost entirely to the finest and lowest descriptions, the latter for export.—Fine Flour continues to meet some inquiry at the rates lately current.—In the value of Barley, Beans, and Peas there is no alteration.—The Oat trade is very firm.—There is only one cargo of Polish Odessa Wheat afloat on the coast, and consequently nothing doing.

### Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2620 | 3780 | 1070 | 2190 sacks |
| Irish ..... | — | — | 2070 | |
| Foreign ... | 9010 | 2560 | 8380 | 720 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas |
|---|---|---|---|---|---|---|
| Sept. 13..... | 38*s* 5*d* | 26*s* 1*d* | 19*s* 5*d* | 25*s* 0*d* | 28*s* 9*d* | 27*s* 8*d* |
| — 20..... | 37 8 | 25 7 | 18 4 | 26 2 | 28 6 | 28 2 |
| — 27..... | 36 7 | 25 0 | 18 0 | 25 4 | 28 8 | 27 0 |
| Oct. 4..... | 35 7 | 25 1 | 17 6 | 24 2 | 27 10 | 27 1 |
| — 11..... | 35 6 | 25 2 | 17 3 | 25 0 | 27 8 | 26 2 |
| — 18..... | 36 0 | 24 9 | 17 0 | 23 6 | 27 6 | 27 2 |
| Aggreg. Aver. | 36 7 | 25 3 | 17 11 | 24 10 | 28 2 | 27 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Sept. 13. | Sept. 20. | Sept. 27. | Oct. 4. | Oct. 11. | Oct. 18. |
|---|---|---|---|---|---|---|
| 38*s* 5*d*— | — | ... | ... | ... | ... | ... |
| 37 8 | ... | ... | ... | ... | ... | ... |
| 36 7 | ... | ... | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | ... | — |
| 35 7 | ... | ... | ... | ... | ... | ... |
| 35 6 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Oct. 21.—At our market this morning several large sales of foreign Wheat were made to a few country millers, but transactions in the general runs of foreign were by no means extensive, and the partial decline of 1*d.* per 70 lbs. noted on Friday, was fully confirmed for most descriptions to-day. Farmers' new Wheat, of which the supply was rather liberal, and the quality good, was taken at the extreme rates of this day week, and a tolerable clearance effected. Good new English malting Barley, being scarce, was held at 30*s.* to 32*s.* per qr., and grinding samples of foreign were quite as dear as last week. Beans and Peas in fair request at former rates. Oats and Oatmeal, attracting more attention, advanced slightly in price. Indian Corn in granary was more saleable, on rather better terms.—Friday, Oct. 17.—Although our market was tolerably well attended to-day, the Wheat trade opened rather heavily for the general runs of foreign, and in partial instances a decline of 1*d.* per 70 lbs. was conceded. Having no malting Barley prices are still uncertain; grinding samples move gradually at previous rates. In Malt and Beans no variation. Peas in demand and dearer. Oats obtained full prices, and Oatmeal an advance of 3*d* per load.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | | Packed in Boxes of 100 feet each. | £. | s. | d. |
|---|---|---|---|---|---|
| 16 ozs. | 3d. to 3½d. | 6 by 4, 6½ by 4½ | 0 | 13 | 0 |
| 21 do. | 3½d. to 5d. | 7 by 5, 7½ by 5½ | 0 | 15 | 0 |
| 26 do. | 5d. to 7½d. | 8 by 5, 8 by 5½ | 0 | 15 | 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2¾d. per foot. | | 8 by 6, 8½ by 6 | 0 | 17 | 6 |
| | | 9 by 7, 10 by 8 | 1 | 0 | 0 |

FOREIGN SHEET GLASS, of very superior quality, packed, in cases of 200 feet, and in sizes varying from 36 by 26 to 44 by 30 inches, at 38s., 40s., to 42s. per case.

HARTLEY'S PATENT QUARRY GLASS.

Milk Pans, from 2s. to 6s. each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

## GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

## GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... | ... | ... | 13s. | 0d. |
| 7 ,, 5 and | 7½ by 5½ | ... | ... | ... | 15 | 0 |
| 8 ,, 5 and | 8 by 5½ | ... | ... | ... | 15 | 0 |
| 8 ,, 6 and | 8½ by 6½ | ... | ... | ... | 17 | 6 |
| 9 ,, 7 and | 10 by 8 | ... | ... | ... | 20 | 0 |
| 12 ,, 10 and | 13 by 9 | ... | ... | ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

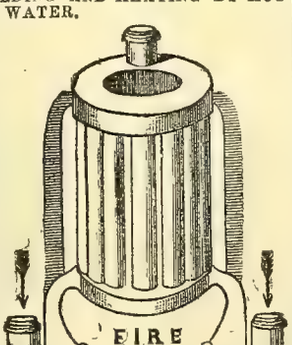
ROUGH PLATE, perfectly flat, ⅜ in. thick, best manufactured.

In sizes under 15 inches ..... 6d. per foot.
,, ,, 35 ,, ..... 8d. ,,
,, ,, 50 ,, ..... 9½d. ,,
,, ,, 75 ,, .....12d. ,,

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



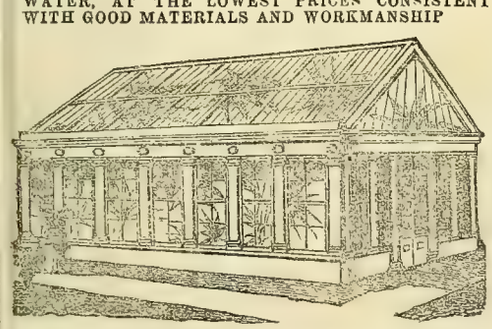



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

## THE ROYAL EXHIBITION.

FLOWER-POTS! FLOWER-POTS!! FLOWER-POTS!!!

CHARLES PHILLIPS, POTTER, of Weston-Super-Mare, having been requested by the principal Nurserymen of England to publish a complete LIST of the clear inside diameter of all Pots manufactured by him, begs leave to subjoin the following:—

| No. | Size. | No. | Size. | No. | Size. | No. | Size. |
|---|---|---|---|---|---|---|---|
| 1 | 1¾ in. | 6 | 4¾ in. | 11 | 8¾ in. | 16 | 15 in. |
| 2 | 2¼ ,, | 7 | 5¼ ,, | 12 | 9¾ ,, | 17 | 16 ,, |
| 3 | 2¾ ,, | 8 | 6¼ ,, | 13 | 11 ,, | 18 | 18 ,, |
| 4 | 3¼ ,, | 9 | 7 ,, | 14 | 12¼ ,, | 19 | 20 ,, |
| 5 | 4 ,, | 10 | 8 ,, | 15 | 14 ,, | 20 | 22 ,, |

Saucers and Seed Basins the same width as the Pots.

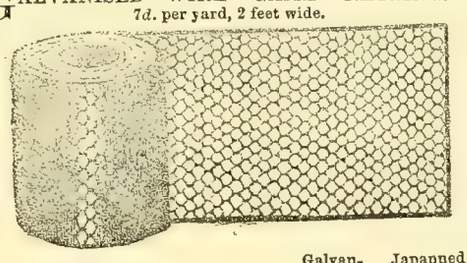
Persons visiting the Royal Exhibition can inspect CHARLES PHILLIPS's Pottery, &c., in the Model Greenhouse, situate at the West Entrance of the Crystal Palace. C. P deems it superfluous to laud either the quality of his Clay, or the style in which his goods are manufactured, but confidently refers those parties who have not yet patronised him to the Royal Gardens at Frogmore and Kew, and to the principal Nurserymen in London, Slough, Reading, Oxford, Swindon, Cirencester, Stroud, Worcester, Gloucester, Cheltenham, Bath, Bristol, Taunton, Tiverton, Exeter, Torquay, Totnes, Plymouth, North and South Wales, &c., &c., for the quality of the articles which he has had the honour of supplying them with. All orders for the above Goods will be promptly forwarded, CARRIAGE FREE, to any Railway Station within 150 miles of the Manufactory, either in dozens, casts, hundreds, or thousands. Every description of Red Ware, Sewerage, Piping, Closet-Pans, Chimney-Pots, Land Drain Pipes, Seakale Pots, Vases, Tiles, Bricks, &c.

Lists of Prices, Terms, &c., forwarded to any address.

Manufactory, Locking Road, Weston-Super-Mare, Somerset.

ESTABLISHED 1836.

## GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

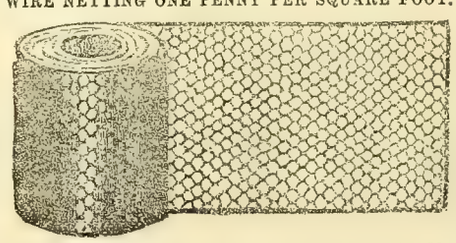


| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide | ... | 7d. per yd. | 5d. per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| 1⅝-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1⅝-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## WIRE NETTING ONE PENNY PER SQUARE FOOT.



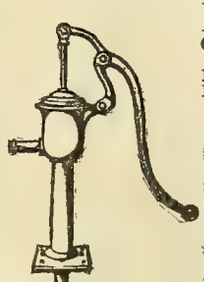
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | | | |
|---|---|---|---|---|---|
| 12 inches wide | 3d. per yard. | 30 inches wide | 7½d. per yard. | | |
| 18 ,, ,, | 4½d. ,, | 36 ,, ,, | 9d. ,, | | |
| 14 ,, ,, | 6d. ,, | 48 ,, ,, | 1s. ,, | | |

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each. Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

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PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

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|---|---|---|---|
| Patent Pump | ... | ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing | ... | ... | 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

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Every description of Machinery for Raising Water, Fire Engines, &c.

GREEN AND HOTHOUSE BUILDER.—Gree and Hothouses made by Machinery, sent to all parts o the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½d.; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d. per foot; if glazed with 16 oz. sheet-glass of a large size, 4d per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

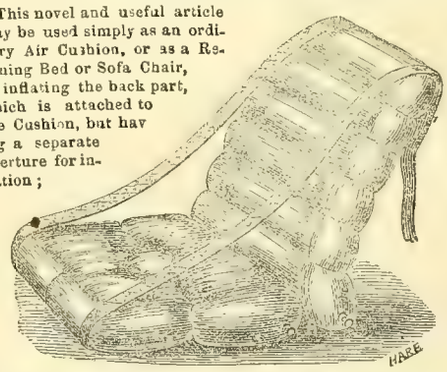
BIRMINGHAM CATTLE SHOW, 1851.—The CERTIFICATES of Entry, for CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and, with the PRIZE LISTS, may be had on application to Mr. EDWARD LATHBURY, at the Office, No. 2, Insurance Buildings, Union Passage. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates, as a separate form is necessary for each Entry. Attention is also requested to the regulations, as set forth in the Prize Sheets, that no entry can be received for Cattle in Classes 1 to 13 inclusive, or for any of the Classes of Sheep or Pigs, without the Breeder's Certificate, in all cases in which the Exhibitor is not the Breeder also. The Entries close on SATURDAY, the 15th of November.

Birmingham, Oct. 15. T. B. WRIGHT, Hon. Sec.

## THE GREAT EXHIBITION, HYDE PARK.

North-west Gallery—Class 28, No. 83.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.



This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part, which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

FOWLER'S PATENT DRAINING APPARATUS.—Stand 28 A, Class IX., Grand Exhibition.—As Mr. Lowcock's engagements with Mr. Fowler will terminate during the present month (the above Machine being now perfect and fit to come before the public), Mr. L. begs to inform the Landowners and Land Occupiers of the United Kingdom that he is now prepared to SURVEY any ESTATES requiring DRAINING, and to inform them whether the above Machine can be used with advantage, and also at about what cost per acre. The usual surveyor's charges will be expected, including travelling expenses; and the price of the Machine, or terms of letting the same, can be obtained of FOWLER AND FRY, TEMPLE-GATE FACTORY, BRISTOL, OR HENRY LOWCOCK, ST. PETER'S-STREET, TIVERTON, DEVON. Mr. Lowcock, is also about to Offer for Sale the patent right of his Patent Turn-wrist Plough—Stand 28, Class IX. Application to be made at St. Peter-street, Tiverton, where all letters must be addressed, post paid. As his engagements are numerous, an early application is requested in respect to the above advertisement.

## NEW SHOW ROOMS FOR BEDSTEADS.

HEAL AND SON have erected some extensive Warerooms for the purpose of keeping every description of Bedsteads. In Iron their stock will include every sort manufactured, from the cheap Stump, for servants' use, to the handsomely ornamented tubular-pillared Canopy, as well as Brass Bedsteads of every shape and pattern; and in wooden Bedsteads their Rooms are sufficiently extensive to allow them to fit up a variety, both in Polished Birch and Mahogany, of Fourpost, Canopy, and French, and also of Japanned Bedsteads—in fact, to keep in Stock every sort of Bedstead that is made; and they have also a general assortment of Furniture, Chintzes, Damasks, and Dimities, so as to render their Stock complete for the Furnishing of Bedsteads as well as Bedding. And without attempting to compete with the prices at which the lowest class of Furniture is sold, and which is fit for no useful purpose, their new Stock will be found to be priced on the same principle by which their Bedding trade has, during the last 30 years, been so successfully extended, and the goods, whether of a plain and simple pattern, or of a handsomer and more expensive character, are of well-seasoned materials, sound workmanship, and warranted.

HEAL and SON'S list of Bedding, containing full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post, on application at their Factory,

196 (opposite the Chapel), Tottenham Court Road, London.

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. The fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

## ROWLANDS' MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the human hair, is too well known and appreciated to need comment. For Children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine comb unnecessary.—Price 3s 6d., 7s.; family bottles, equal to 4 small), 10s. 6d., and double that size, 21s. per bottle.

N B. Each bottle of the genuine article has the words—ROWLANDS' MACASSAR OIL, engraved in two lines on the wrapper; and on the back of the wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London;

IMPORTANT DISCOVERY.

CLARKE AND Co., GARDENERS, SEEDSMEN, and FLORISTS, Percy-cross Nursery, Walham-green, Fulham, are now sending out, in small sealed stone bottles, secured for travelling, on the receipt of 5s., a Mixture (which is both a remedy and preventive) for destroying those grievous pests, the White Mealy Bug, Scale, Thrip, and all other insects, without injury to the plants. This being the season for the more effectual remedy of all insects, C. and Co. recommend that their preparation be applied forthwith. Printed directions sent with each bottle.—Post-office Orders payable at Brompton, to CHARLES CLARKE.

CABBAGE PLANTS.—Fine Early Battersea, Early York, Early Imperial, &c. By T. WELLAND, Surrey Gardens, near Godalming, Surrey. Packed and delivered at Godalming station, 4s. 3d. per 1000. Drumheads, 3s. 9d. per 1000; crates free.

HOLLYHOCKS, PINKS, AND PANSIES.

J. CHATER AND SON'S Catalogue of the above Flowers, in which will be found most of the best varieties in cultivation, may be had on application to JOHN CHATER and SON, Nurseries, Haverhill, Suffolk. Also may be had, for 20s., carriage free to London, 12 pairs of new and choice Pinks; 12 new and choice Pansies; 6 fine show Hollyhocks; fine double mixed Hollyhocks, 30s. per 100; Hollyhock and Pansy Seed, 2s. 6d. per packet.

NEW GERANIUMS, &c.

HENRY WALTON, FLORIST, &c., Edge-end, Marsden, near Burnley, Lancashire, begs to offer the following new and select plants at the extremely low prices annexed:—

GERANIUMS.—Hoyle's Ajax, Ocellatum, May Queen, Nectar Cup, Flavia, Generalissimo, Isis; Bragg's Exquisite, Boule de Feu; Foster's Gaiety; Beauty of Montpellier, Major Domo, Sir R. Peel, Prince Arthur, Sir John Franklin, Lady Franklin, Walton's Village Maid, Walmsley's Teetotaller. Any 12 of the above 2l. 2s., package included.

Constance, Conspicuum, Christabel, Crispina, Falstaff, Field Marshal, Nandee Prince of Orange, Purity, Satisfaction, Abd-el-Kader, Belle of the Village, Crusader, Cassandra, Elegans, Forget-me-not, Gustatus, Gulielma, Honora, Junii, Jenny Lind (Foster's), Jenny Lind (Lynes'), Lamartine, Luna refulgens, Lady Ebrington, Meleager, Minna, Ondine, Plutarch, Prometheus, Rosa Mundii, Raphael, Sparkler, Terpsichore, Virgin Queen, Valgas. Purchaser's selection of 12 of the above, 18s.; H. W.'s selection of 12 for 12s., or 20 for 20s.

AZALEAS. — Alba pleno, Alba perfecta, Alba magna, Aurora, Albertii, Apollo, Beauty of Reigate, Coronata, Decora, Danielsiana hybrida, Excellens, Exquisite, Fulgens, Georgina, Hebe, Hon. Mrs. Herbert, Iveryana, Indica refulgens, Ignescens, Lateritia, Lateritia superb, Minerva, Nitida, Optimus, Phœnicea alba, Prima Donna, Prince Albert, Queen of Perfection, Refulgens, Semiduplex, Maculata, Splendens, Variegata Viricans, and Wadei. Any 12 of the above 18s., or 20 for 30s., package included.

NEW CINERARIAS.—Amy Robsart, Blue Perfection, Clara Mowbray, Clementine, Delicata, Diocletian, Effie Deans, Electra, Fairy Queen, Handel, King of Crimsons, Lady Hume Campbell, Lady Vernon, Madame Miellez, Madame Sontag, Margaretta. Any 12 of the above for 18s.

CINERARIAS.—Angelique, Annie, Beauty of St. John's Wood, Bessey, Calypso, Carlotta Grisi, Cerito, Coronet, Delight, Eleanor, Emperor, Fairy Ring, Flora McIvor, Gem of the Isles, Jenny Lind, Lady Gertrude, Madame Parodi, Masterpiece, Matilda, Newington Beauty, Nymph, Othello, Prime Minister, Resplendens, Sansparil, Sapphire, Satellite, Wedding Ring, and Wellington. Any 12 of the above for 12s. H. W.'s selection of 12 for 6s. and 9s.

Also strong plants of "Jenning's King Pansy," the best dark purple self out, 5s. 6d. each, or four to the trade, 15s.; strong well rooted plants may be depended upon, securely packed, so as to ensure safe delivery. Catalogues of the above, including Hollyhocks, Carnations, Pansies, &c., may be had for one stamp. It is respectfully requested all orders be accompanied with a Post-office Order, payable at Marsden, Lancashire.

FRUIT TREES.

THOMAS RIVERS begs to submit to the Public a SYNOPSIS of his FRUIT TREE CULTURE. The names of varieties, with descriptions and prices, are given in his descriptive Catalogue of Fruits, just published, sent post free for six postage stamps.

APPLES.—Standards for Orchards, and Pyramids and Dwarfs, on Crab Stocks; Pyramids and Dwarfs, and Dwarfs Trained, for Gardens, on Paradise Stocks.

APRICOTS.—Dwarfs, Dwarfs Trained, Standards, Standards Trained, and Dwarf Bushes in pots for culture under glass.

CHERRIES.—Standards for Orchards, Dwarfs, and Dwarfs Trained on the common wild Cherry Stock, Dwarfs for Bushes or for potting for culture under glass, Dwarfs in pots, and Dwarfs Trained on the Cerasus Mahaleb stock.

CURRANTS.—Bushes and Pyramids.

FIGS.—Dwarf Bushes in a bearing state in pots.

GOOSEBERRIES.—Bushes, 80 large Lancashire varieties, 20 small high-flavoured ditto.

GRAPES.—Vines, from eyes, in pots, for Vineries and Hothouses, fine and well ripened under glass; Ditto hardy kinds for walls, also from eyes growing in the open quarters; plants fine, 7 to 8 feet in height; Dwarf Bushes, in pots, for culture in orchard houses.

MEDLARS.—Standards, Dwarfs, and Pyramids.

NECTARINES AND PEACHES.—Dwarfs, Dwarfs trained, Standards, Standards trained, and Dwarf Bushes in pots in a bearing state for culture under glass.

NUTS AND FILBERTS.—Dwarfs and Standards for garden culture, grafted on the Spanish Hazel Nut. These form very prolific trees.

PEARS.—Standards for Orchards, Pyramids, Dwarfs, and Dwarfs trained on Pear stocks; Pyramids from one to six years old, 1s. 6d. to 3s. 6d. and 5s. each; the two latter descriptions capable of bearing a good crop the first summer after planting. Dwarf Bushes for potting and Dwarfs trained for espaliers or walls on Quince stocks. Many acres are devoted exclusively to the culture of Pears.

PLUMS.—Standards for Orchards, Standards trained, Pyramids, Dwarfs and Dwarfs trained for espaliers or walls. The Pyramids are nearly all in a bearing state, so as to be able to give fruit the first summer after planting. Dwarf Bushes in a bearing state, and Dwarf Bushes in pots for culture under glass.

QUINCES.—Standards of the common, and Pyramids of the large Portugal Quince, the finest and most abundant bearer, even when young, of all the Quinces.

RASPBERRIES.—Canes of all the select varieties.

STRAWBERRIES.—Plants of all the varieties worthy of cultivation.

MULBERRIES.—Standards and Dwarfs. Some fine Standards can be supplied 35 to 40 years old. These are 6 to 7 feet high, perfectly straight, and measure from 8 to 16 inches in girth, 5 feet from the ground. They have all been removed within three years, and will transplant with safety.

In connection with fruit tree culture, the following works can be supplied:—THE MINIATURE FRUIT GARDEN; or, the Culture of Pyramidal Fruit Trees. Fourth edition. Sent free per post, for 24 postage stamps. THE ORCHARD HOUSE; or, the Culture of Fruit Trees in Pots under Glass. By THOS. RIVERS. Per post, for 30 postage stamps.

VICTORIA REGIA.

J. WEEKS AND Co., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

TO NOBLEMEN, GENTLEMEN, BUILDERS, AND GARDENERS.

LARCH FIR.—5000 LARCH FIRS for Sale, from 8 to 12 feet in height. These Firs are well adapted for Shrubbery, Lawns, or for forming Avenues and Pleasure Grounds; also for Planting around Newly-built Houses, being of a most flourishing kind. Price 1l. per 100, placed on the Rail at the Tonbridge Station, South-Eastern Railway.—Apply to FRANCIS WHITAKER, Esq., Mountain's Hall, Hildenborough, Tonbridge, Kent.

HOLLYHOCKS.

JAMES KITLEY having a large Stock of fine double HOLLYHOCKS, consisting of about 40 varieties of all colours mixed, begs to offer them at 4s. per dozen; named to colour, 6s. per dozen; best show varieties, 2s 6d each; fine double German varieties, very beautiful, 12s. per dozen. Hollyhock Seed, mixed, 2s. 6d. per packet, post free.

J. K. has also fine border Carnations and Picotees mixed, at 4s. per dozen; Single Russian Violets, 3s per dozen; double do., 4s. per dozen; Neapolitan do., 3s. per dozen. A Post-office order required from unknown correspondents.

Lyncombe Vale Nursery, Bath, Oct. 25.

PARTNERSHIP.—Wanted, an active young Man, as Partner in an established Florist's business He must have 250l. at command, and possess a good knowledge of Plant growing. Address, with age, and other particulars, to B., care of Mr. Field, 4, Coleman-street, London.

FARM TO LET, on very advantageous terms—on lease or yearly tenancy. About 300 acres of Clay Land, thoroughly drained, in a midland county, near a good market and a good railway. The Roads, House, and Offices are all in excellent condition. Rates very low; no pressure of poor; Tithe free; Rent low; no Rabbits; very favourable entry as to tenant right; Game not strictly preserved. About 60 acres more of Grass Land might be added if desired.

Persons desirous of treating for this very eligible occupancy are requested to apply by letter to the Editor of the *Gardeners' Chronicle*, at the Office, 5, Upper Wellington-street, Strand, London.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

TO BE DISPOSED OF, on very advantageous terms, 250), Greenhouse and Stove Plants, comprising large Azaleas, Camellias, Ericas, Epacris, Acacias, Cytisus, Geraniums, Cinerarias, Roses, Begonias, Gesneras, &c.—Apply to J. HOLDER, Florist, &c., Ampthill-square, Hampstead-road, London.

TO BE DISPOSED OF, with immediate possession, an old-established NURSERY and FRUIT GROUND, the proprietor retiring from business. Its locality is in a flourishing neighbourhood, six miles from London; the ground most excellent for Shrubs and Trees, also for producing the finest Fruit.—For particulars, apply to J. C. HARDY, Esq., National Guardian Assurance Society, 19, Moorgate-street, London.

TO BE LET, ON LEASE, at a Corn Rent, by Tender, and entered upon at Lady Day next, a most desirable FARM, situate in the parishes of Coleshill, Berks, and Inglesham, Wilts, the property of the Right Hon. the EARL of RADNOR. This Farm consists of 366 acres 3r. 1p. of very rich and valuable meadow, pasture, and arable land, and has upon it an excellent residence, &c. Any further information may be obtained from Mr. MOORE, Coleshill, Highworth, who will appoint a person to show the Farm, and by whom tenders will be received, on or before the 22d November next. The corn rent will be calculated at a seven years, average on the prices of Wheat, Barley, and Oats, variable from year to year as under the Tithe Commutation Act. The tender should specify the length of lease for which the tender is made. The highest tender not necessarily accepted. Regard will be paid to the character, skill, and capital of the persons tendering, respecting which unquestionable references will be required.

N.B. Inglesham is situated near to the market towns of Highworth, Farringdon, and Swindon, and about six miles from the Shrivenham Station on the Great Western Railway.

TO BE DISPOSED OF, A NURSERY AND SEED BUSINESS, in a Midland County. The Stock is young and healthy, consisting of Standard and Dwarf Roses, Evergreens, and Fruit and Forest Trees.—Apply to Messrs. NOBLE, COOPER, and BOLTON, Seed Merchants, 152, Fleet-street, London.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

GOOD NEWS FOR THE AFFLICTED.

DR. ROBERTS'S CELEBRATED OINTMENT, called the "POOR MAN'S FRIEND," is confidently recommended to the Public as an unfailing remedy for Wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples in the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow Vaccination. Sold in pots, at 1s. 1½d., and 2s. 9d. Also, his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are useful in Scrofula, Scorbutic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. each. Sold wholesale by the proprietors, BEACH AND BARNICOTT, at their Dispensary, Bridport, and by the London houses; retail by all respectable Medicine Vendors in the United Kingdom. Observe—No medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott's, late Dr. Roberts, Bridport," is engraved and printed on the stamp affixed to each package.

*SALES BY AUCTION.*

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, Oct. 31st, at 12 o'clock, a first-class collection of DUTCH BULBS, comprising fine Double and Single Hyacinths, Narcissus, Jonquils, Gladiolus, Crocus, Tulips, Snowdrops, &c. a selected assortment of Standard and Dwarf Roses; American Plants, consisting of fine Hybrid Rhododendrons, Ghent and other Azaleas, Andromeda floribunda, well furnished with bloom-buds, and adapted for forcing.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the Nursery Ground, adjoining Yorkplace, Stoke Newington, on MONDAY, October 27, and following day, at 11 o'clock each day, FINE ORNAMENTAL and DECIDUOUS TREES, EVERGREENS, and FLOWERING SHRUBS, consisting of Aucuba, Portugal and Common Laurels, Variegated and Green Hollies, Arbor-Vitæ, Bays, Ivies, Lilacs, Arbutus, Box, Limes, Acacias, Poplars, Evergreen Privets, &c. A fine assortment of Fruit Trees, comprising Standard and Dwarf Trained Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, choice Grape Vines, &c.—May be viewed prior to the sale. Catalogues had on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHELSEA, SECOND PORTION OF THE VALUABLE NURSERY STOCK.

MR. D. A. RAMSAY will sell by Auction, on the premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY, October 28, and following day, at 12 o'clock, by order of Messrs. DENNIS, the lease expiring at Christmas next, the STOCK must be sold without reserve, and comprises Erections of Greenhouses, choice Greenhouse Plants, a fine collection of Aloes, Cacti, &c., lately removed from the Great Exhibition; fine Evergreens, viz., Aucuba of various sizes, variegated and green Hollies, 5 to 6 feet Box, Irish Yews, Yuccas; Jessamines, Ivies, and other climbers in pots; Roses, Pæonias, Scilla, and other Bulbs, &c. May be viewed prior to sale, and Catalogues had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, London.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. WATERER will sell by Auction, on the premises, Sunningdale American Nursery, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrubs Hill, on TUESDAY, November 4th, and following day, at 11 o'clock, by order of the proprietor, without reserve, the Lease of the Land having expired, the valuable NURSERY STOCK, comprising 12,000 Rhododendrons, Kalmias, and Azaleas, including many large Ornamental Plants, a large quantity of choice Evergreen and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf Maiden and Trained Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots, Common and Portugal Laurels of all sizes, Birch, Ash and Oaks, Purple and Common Beech, Spruce Larch, Scotch Balm of Gilead and Hemlock Spruce Firs of all sizes, a large quantity of Quick, from three to five years old, and a great variety of other valuable Nursery Stock, the whole of which is in a safe moving condition, and well worth the attention of persons about planting.—May be viewed one week previous to the sale, and Catalogues had upon the premises; of Mr. CHARLWOOD, Seedsman, Covent-garden; and of Mr. WATERER, Auctioneer, &c., Chertsey, Surrey, who will forward them on application by post inclosing four postage stamps.

TO NURSERYMEN, GENTLEMEN, AND OTHERS.

BROX, NEAR CHERTSEY, SURREY.

MR. WATERER will sell by Auction, on MONDAY, October 27, 1851, at 11 o'clock, upon the Premises at Brox, by Order of Mr. GIFKINS the Proprietor, the whole of the NURSERY STOCK, comprising 5000 White Moss and other Roses, 2000 Evergreens, and other Shrubs, consisting of Privets, Common Laurels, Laurestinus, Aucuba japonicus, Calycanthus floridus, Snowberries, Common Hollies, Spruce Firs, large Yews, large Tree Box, trained Apricots, 2000 Daphne Cneorum, 1200 Herbaceous Plants of sorts, and other Plants.—May be viewed the morning of Sale and Catalogues had on the premises, and of Mr. WATERER, Auctioneer, &c., Chertsey, Surrey, who will forward them on application by post.

TO FARMERS, BUTCHERS, AND OTHERS.

MR. JAMES CAIN will sell by Auction, on the premises, St. Margaret's, Isleworth, on THURSDAY, the 30th of October, at 1 for 2 o'clock precisely, 150 Southdown fat Wether Sheep; 150 half-bred and Southdown Ewes, in lamb; a fine thorough-bred Alderney Cow, an Ayrshire Cow (both in calf); two Tups of the Duke of Richmond's pure Southdown breed; also a very superior Donkey.—May be viewed the day preceding the sale, and Catalogues had on the premises; at the principal inns in the neighbourhood; and of the Auctioneer, Richmond, Surrey.

TO GENTLEMEN, AMATEURS, FLORISTS, and Others

MR. ALEXANDER will sell by Auction, at the Mart, near the Bank of England, on THURSDAY, October 30, at 1 o'clock precisely, a choice collection of named TULIPS, comprising all the costly varieties in cultivation, viz., Louis XVI. of the finest strains, Pompe Funebre, Camuse de Craix, Rose Lac, Le Abbe Mercher, Comte de Saxe, David, Hamlet, Rose Sans Egale, Evique d'Amboise, Ponceau tres blanc, Ponceau parfait, Violet Quarto No. 1, Grand Monarque, Godet parfait, Toilette de la Reine superior, &c. The whole are warranted of fine strains, and true to name, being a consignment from an eminent firm in Haarlem.—May be viewed on the morning of sale. Catalogues had at the Mart, and of the Auctioneer, Shacklewell, near London.

WANDSWORTH COMMON.

MR. J. RAWLINGS will sell by Auction, on the premises, as above, on MONDAY, October 27, and following days, at 11 o'clock (by order of Mr. Robert Neal), the remaining portion of the valuable NURSERY STOCK. On FRIDAY, the 31st, about 20,000 good Bricks, Building and Paving Stones, a considerable quantity of Draining Pipes and useful Timber, 1000 loads of fine Bog and other Mould, a 17-light Pit, 400 cast Garden-pots, &c.—Catalogues on the premises; of the principal Seedsmen; and of the Auctioneer, 50, Hoxton-square, and Ebenezer-place, Shacklewell, near London.

TO ADMIRERS AND BREEDERS OF ALDERNEY COWS.

TO BE SOLD, a most beautiful and pure-bred ALDERNEY BULL, four years old; colour, dark brown and white; symmetry perfect. The price 20l.—Enquire of Mr. OLIVER, Ewell-grove, near Epsom.

Printed by WILLIAM BRADBURY of No. 13, Upper Woburn-place, in the parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London, and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, October 25, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 44—1851.] SATURDAY, NOVEMBER 1. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agapanthus umbellatus | 694 *a* | Game | 700 *a* |
| Agriculture in Canada | 699 *a* | Garden, kitchen, to crop | 693 *c* |
| — Australian | 700 *c* | Glass, quarry | 695 *c* |
| — in Lancashire | 700 *c* | Grapes, effect of airing well | 694 *c* |
| Amateur Tulip Society and Mr. Edwards | 691 *c* | Kitchen garden, to crop | 693 *c* |
| Arboriculture in Scotland | 692 *a* | Linnæa geminifora | 695 *a* |
| Berberis aquifolium to row | 696 *c* | Orchards, land for | 693 *c* |
| Birds, British song | 692 *c* | Orchids for the million | 693 *c* |
| Birmingham Poultry Show | 701 *b* | — terrestrial | 693 *c* |
| Borneo, vegetation of | 695 *c* | Pine-apple, history of | 695 *c* |
| Broccolies | 694 *c* | Plants in coal pits | 694 *c* |
| Calendar, Horticultural | 696 *a* | Plumbago Larpentæ | 694 *a* |
| — Agricultural | 701 *b* | Plums, late | 695 *a* |
| Charcoal, to burn | 691 *a* | Poultry Show, Birmingham | 701 *b* |
| Cherries, late | 694 *c* | Raspberry double bearing | 694 *c* |
| Chrysanthemums | 695 *b* | Reaping machine, Hussey's | 700 *a* |
| Cropping a kitchen garden | 694 *c* | Rents | 700 *b* |
| Cucumber disease | 694 *b* | Rhododendrons, sale of | 695 *a* |
| Cunningham (Mr.), death of | 695 *b* | Rod and Line, rev | 655 |
| Education, Irish national | 698 *a* | Seeds, samples of | 694 *c* |
| Farming capital | 699 *c* | Scotland, arboriculture in | 692 *a* |
| Farming Society, Lewis | 701 *b* | Temperature | 667 *b* |
| Figs, late | 694 *c* | Tulips, to plant | 695 *a* |
| Fish, to breed | 693 *b* | Vegetation of Borneo | 695 *c* |
| Forest trees in Scotland | 692 *a* | Walks, tarred | 694 *a* |
| — — and underwood | 694 *a* | — lead-refuse | 694 *c* |
| | | Zauschneria, hardiness of | 694 *a* |



SUPERB NEW PEA.—THE "NOVEMBER PROLIFIC" supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2*s.* 6*d.* per quart; to be had from W. HAMILTON, Seedsman, &c., 156, Cheapside, London.—A liberal discount to the Trade.

G. JACKMAN, NURSERYMAN, Woking, Surrey (1¼ mile from Woking Station, South-Western Railway) begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Nov. 1.

HYACINTHS.

GEORGE P. TYE'S REGISTERED BOTTLE and FLOWER SUPPORT should be seen by all growers of Hyacinths. Few inventions have met with such unqualified approbation (see *Gardeners' Chronicle*, May 10, 1851).

May be had wholesale of G. P. TYE, 114, Snow Hill, Birmingham; Mr. JOHN POWELL, Trentham, Staffordshire; or Messrs. EDMONDSON and Co., 61, Dame-street, Dublin; of whom also may be had G. P. TYE'S Registered Spring Label for Tree and Flower-pots (the best out).—Post-office Orders or a reference required.

JOHN AND CHARLES LEE beg to announce that they are NOW SENDING OUT their new variegated SCARLET GERANIUM, the MOUNTAIN OF LIGHT. Those subscribers who have not yet signified the number they will require are requested to do so without delay. Price 10*s.* 6*d.* each.—Nursery, Hammersmith, London.

PINKS.—"JULIA YOUNGS," extra fine quality, perfect rose, leaf very finely laced with deep purple; first-rate show flower, either for north or south, combining quality with size. A few pairs of this beautiful Pink may be had of JOHN KEYNES, Florist, Salisbury, post free, on receipt of 5*s.* per pair.

A fine collection of all the show flowers at reasonable prices.

VICTORIA REGIA.

J. WEEKS AND Co., King's-road, Chelsea, have great pleasure in announcing the complete success of this magnificent Aquatic, the Queen of the Lakes, GROWING IN THE OPEN AIR. The splendid flowers are now open every day, to the great admiration of all who see it. A few fine YOUNG PLANTS ARE NOW FOR SALE. Full instructions for its cultivation will be forwarded on application to J. WEEKS and Co., King's-road, Chelsea.

TO THE TRADE.

PEAR STOCKS, 3 years transplanted, strong and fine, 30*s.* per 1000.

CHERRY STOCKS, 3 years transplanted, 3 to 5 feet, fine, 30*s.* per 1000.

PEARS (Standards), all the leading sorts, fine.

ARBOR-VITÆ (Chinese), 2 to 3 feet, ditto.

LAUREL (Common), 1 to 2 feet, ditto.

RHODODENDRON PONTICUM, 6 to 24 inches, ditto.

YEWS (Common), 2 and 3 feet, ditto.

We have a large stock of the above, and will sell them cheap. Prices on application. Water and rail conveyance to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead Nursery, Newcastle-upon-Tyne.

ACER VILLOSUM.

OSBORN AND SONS, NURSERYMEN and SEEDSMEN, Fulham, near London, respectfully inform the public that they have for sale the above fine and distinct species of Maple at 15*s.* each. (See a notice of it by the Editor of the *Gardeners' Chronicle*, of Saturday, the 25th October).

EXOTIC NURSERY, CHELSEA.

KNIGHT AND PERRY beg respectfully to inform their Patrons, and particularly those who are interested in the introduction of NEW HARDY ORNAMENTAL TREES, that they have now a superb collection of those that are especially suited for the Park, Pleasure-ground, and even Hedge-rows, inasmuch as their judicious introduction there, instead of the too prevalent Elm and Ash, would speedily add much to the beauty of the British landscape. They are now preparing a list of them, and other hardy trees and shrubs, and will be happy to send it to those who apply for it.

Messrs. K. and P. avail themselves of this opportunity to observe that their WALL-TRAINED FRUIT TREES, for which their Establishment has been so long renowned, are now fit for removal. To insure such specimens as they should like to send out, they would respectfully solicit early commands.

KNIGHT and PERRY, Exotic Nursery, Chelsea, London.

H. LANE AND SON, GREAT BERKHAMPSTEAD, HERTS, are now ready to forward to applicants their CATALOGUE OF ROSES.

" " TREES AND SHRUBS.
" " FRUIT TREES.
" " INDIAN AZALEAS AND CAMELLIAS.

MESSRS. PLATZ AND SON, SEEDSMEN, ERFURT, Prussia inform the Trade that their CATALOGUE for 1851 and 1852 is now ready, and to be had only of their Agent, ROBERT KENNEDY, Bedford Conservatory, Covent Garden, London.—Nov. 1.



LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE, AT RENDLE'S NURSERY, PLYMOUTH.—ESTABLISHED 1788.

WILLIAM E. RENDLE AND CO., NURSERYMEN and FLORISTS to the QUEEN, Plymouth have a large Surplus Stock of the following Trees and Shrubs more than they require for their usual sale, and will be sold at the following low prices. ☞ CARRIAGE FREE (See below).

RHODODENDRONS.

Fine large stout bushy plants, from 2 to 3 feet across, 20*s.* per dozen; worth double the money.

BELGIAN AZALEAS.

Fifty choice named sorts (names on application), fine stout plants, some 2 to 3 feet across, all at 20*s.* per dozen. Some varieties are quoted at 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* each in some nursery lists.

CEDRUS DEODARA.

Two thousand fine plants, in excellent condition, in pots, 6*s.* per dozen.

PINUS EXCELSA.

One thousand luxuriant young robust plants, 6*s.* per dozen.

PINUS AUSTRIACA.

This is the most valuable hardy Pine at present known. Three hundred thousand strong robust 2 year old Seedlings, in excellent condition, 7*s.* per 1000. Fine stout plants, transplanted, 10 inches, 25*s.* per 1000. Other sizes equally low.

SCOTCH FIRS.

Four hundred thousand stout robust 2 year old Seedlings, in the finest possible condition, 2*s.* per 1000. Strong transplanted Trees, 3 feet in height (all lifted last spring), 20*s.* per 1000, or 18*s.* if 5000 are taken at once.

LARCH FIRS.

Large surplus stock of fine stout stuff, 3 feet in height, 20*s.* per 1000, or 18*s.* if 5000 are taken at once. They were all lifted last spring.

THORNS.

Fine Seedlings, 2*s.* 6*d.* per 1000, or 2*s.* if 10,000 are taken at once. A large stock of stout transplanted Trees.

ASH.—Very large Stock 3 feet, 15*s.* per 1000.

BERBERIS AQUIFOLIUM.—Strong bushy plants, 24 inches, 3*s.* per dozen.

WEIGELA ROSEA.—Handsome new shrub, 9*s.* per dozen.

RHUBARB: MITCHELL'S ROYAL ALBERT, the earliest of all.—We have more than a thousand strong roots, 10*s.* per dozen. These will produce abundantly next spring, if planted now.

RHUBARB: MYATT'S VICTORIA, very strong roots, 10*s.* per dozen; smaller ditto, 8*s.* per dozen. YOUELL'S TOBOLSK, 3*s.* per dozen

RHUBARB: MYATT'S LINNÆUS, 15*s.* per dozen, fine strong roots.

RASPBERRIES: RENDLE'S LARGE BEEHIVE.—This is a large handsome variety, very prolific, delicious flavour, and has given the most complete satisfaction to all. 4*s.* per dozen.

RASPBERRIES: GRIFFIN'S PERPETUAL, a new and valuable sort, 6*s.* per dozen.

STRAWBERRIES: KITLEY'S GOLIAH, 1*s.* 6*d.* per dozen; 5*s.* per 100. CUTHILL'S BLACK PRINCE, 1*s.* 6*d.* per dozen; 5*s.* per 100. All the following excellent sorts, at 4*s.* per 100:—Myatt's Eliza, Mammoth, British Queen, Globe, Prolific, Victoria, Cooper's Seedling, Elton, Keen's Seedling, Cole's Prolific, Deptford Pine, and Roseberry.

BLACK NAPLES CURRANTS, very superior to the old sorts, 6*s* per dozen.

RABY CASTLE RED CURRANTS, a most superior sort, 12*s.* per dozen.

GOOSEBERRIES.—Some of the best known, including the Crown Bobs, 30*s.* per 100.

ARBUTUS.—Fine plants, in pots, 12 to 18 inches, 5*s.* per dozen.

ILEX OAK.—Fine plants, in pots, 18 to 24 inches, 5*s.* per dozen, worth 10*s.*

HYBRID FULHAM OAKS.—Fine stock of standard trees at 18*s.* per dozen.

BAYS.—Fine luxuriant stock, 2 to 3 feet, stout and bushy, 12*s.* per dozen.

LAURESTINUS.—Fine bushy plants, 6*s.* per dozen.

ENGLISH YEWS.—Fan-shaped, trained for hedge work, large and handsome, 2*s.* each, 18*s.* per dozen; well worth double the money.

JUDD'S GIANT ASPARAGUS.—One hundred thousand fine roots, two years, 1*s.* 6*d.* per 100; three years, 2*s.* 6*d.* per 100.

SEAKALE ROOTS. 3*s.* 6*d* per 100; strong ditto. 5*s.* per 100.

*Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees, is just published, and can be obtained for one penny stamp.*

All Orders above 10*l.* will be delivered CARRIAGE FREE to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast. Steamers from this port to Cork, Dublin, and Belfast, twice a week.

*The South Devon Railway is now open to Plymouth, the Station being within one minute's walk of our Counting-house.*

First orders will have the preference. All orders will be executed in strict rotation.

WILLIAM E. RENDLE AND CO., NURSERYMEN, Plymouth.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

☞ The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

DUTCH HYACINTHS for Forcing, 3*s.* 6*d.* per dozen; Best do., for Glasses, 6*d.* to 1*s.* each. Double Roman and Paper-white Narcissus, 4*s.* per dozen; Single and Double Duc Van Thol Tulips, 2*s.* per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

FOR SALE.—Large Handsome EVERGREENS, Viz., Chinese Arbor vitæs, from 3 to 6 feet; Green and variegated Hollies, 3 to 8 feet; Tree Box, 5 feet; Rhododendrons, 4 feet; Laurels, Arbutus, &c., *will move safely*, and may be had, by the single plant or hundred, at low prices.

CHANDLER and Son's Nursery, Wandsworth-road, Surrey.

VINES FROM EYES, in Pots.—The following select varieties of GRAPES have been grown under glass, and have beautifully ripe shoots from 4 to 5 feet long. All are 3*s.* 6*d.* each, except those priced.

| | |
|---|---|
| Barbarossa, 5*s.* | Hamburgh, The Pope, 5*s.* |
| Black Prince. | Hamburgh, Wilmot's Black. |
| Black Prince, Hamburgh, 5*s.* | Muscadine, Royal. |
| Chaptal, large white. | Muscat, Cannon Hall. |
| Chasselas Musqué, or St. Albans. | Muscat of Alexandria. |
| | Purple Constantia. |
| Chasselas, Rose. | Raisin de Calabre. |
| Frontignan, Black. | Saint Peter's, Oldaker's West. |
| Frontignan, Grizzly. | Shiraz, large black. |
| Frontignan, White. | Sweetwater, Dutch. |
| Frontignan Noir d'Angers. | Sweetwater, Prolific. |
| Hamburgh, Black. | White Nice. |
| Hamburgh, Mill Hill, 5*s.* | White Romain. |

The following varieties, in pots, are grown as dwarf bushes, for fruiting in pots, 3*s.* 6*d.* each.

| | |
|---|---|
| Chaptal. | Sweetwater, Prolific. |
| Chasselas Musqué. | August Muscat. |
| Chasselas, Rose. | Black Alicant. |
| Frontignan, Purple. | Cambridge Botanic Garden. |
| Malvasia, or Grove End Sweetwater. | Esperione. |
| | Knight's Sweetwater. |
| | Purple Fontainbleau. |

The above are all abundantly prolific when cultivated in pots.

THOMAS RIVERS, Sawbridgeworth, Herts.

VIOLETS.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET (TRUE).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season, by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful Double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the Double Blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets, the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s* per dozen; smaller ditto, 3*s.* per dozen, or 1*l.* per 100. Any quantity of the above will be sent postage and package free.

STRAWBERRY PLANTS.

The undermentioned first-rate varieties are now ready to send out:—

Myatt's Surprize, sent out first time last season, 1*l.* per 100, or 3*s.* per dozen.
Prince Arthur, do. do., 1*l.* per 100, or 3*s.* per dozen.
Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 5*s.* per 100.
Goliah, very fine ... ... ... ... 3*s.* per 100.
British Queen, do. ... ... ... 5*s.* "
Alice Maud, do. ... ... ... ... 3*s.* "
Black Prince, very early ... ... 5*s.* "
Prolific, very fine and early ... ... 5*s.* "
Cremont's Perpetual, or double-bearing Strawberry, 12*s.* per dozen, or 4*l.* per 100.
Trollop's Victoria, 12*s.* per dozen, or 4*l.* per 100.

The above are strong and well-rooted plants, such as will insure satisfaction. Any of the Strawberries that are priced, per dozen, can be sent free by post; also those priced, per 100, will be sent package free.

Fine Giant Scarlet Prompton Stocks, Plants that have been all pricked out, 2*s.* 6*d* per 100.

Also, some fine Antirrhinums, all saved from striped and spotted varieties, such as will give every satisfaction, and bloom early next spring, 5*s* per 100.

Fine Sweet Williams, such as will bloom next season, saved from 50 distinct varieties (the plants are strong and good), 5*s* per 100, or 1*s.* per dozen. Can be sent by post with any of the above.

WINTER CUCUMBER.

Lord Keynon's Favourite, the best variety for winter cultivation, 2*s.* 6*d.* per packet.

A remittance is expected by Post-office order, or the amount in penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

TO RAILROAD CONTRACTORS, NURSERYMEN, &c.

RICHARD HARTLAND AND SON, NURSERYMEN, Cork, will deliver, free in London, Bristol, Liverpool, or Dublin, any quantity (over a hundred thousand), of Thorn Quicks, at one to lowing prices, for cash:—

3 year-old, in beds (st out plants), per 1000 ... 2s. 6d.
4 do. ,, (transplanted), per 1000 ... 3s. 6d.
5 and 6 do. ,, ,, per 1000 ... 5s.

All orders addressed as above shall be promptly attended to.

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TEN THOUSAND FRUIT TREES, all choice leading sorts, to be sold this autumn, at one-third the usual prices.—The public are respectfully informed that the remaining part of Mr. BELL'S STOCK OF CHOICE FRUIT TREES will be offered at the under-mentioned low prices, all warranted true to name, on his late Nursery Grounds, adjoining the New Church, Lakenham, Norfolk.

| | Each. | Per doz. |
|---|---|---|
| Fine 2-year Trained Peaches, Nectarines, and | s. d. | s. d. |
| Apricots ... ... ... ... ... ... | 1 6 | 15 0 |
| Fine Dwarf Trained Pears, Apples, Plums, and Cherries ... ... ... ... ... | 1 0 | 9 0 |
| | Per doz. | Per 100. |
| Fine Standard and Pyramidal Pears ... | 9 0 | 50 0 |
| ,, Dwarf do ... ... ... ... | 6 0 | 35 0 |
| ,, Standard Apples ... ... ... | 6 0 | 40 0 |
| ,, Dwarf do. .. ... ... ... | 3 0 | 20 0 |
| ,, Dwarf Plums ... ... ... ... | 5 0 | 30 0 |
| ,, Dwarf Figs ... ... ... ... | 6 0 | ... |
| Fastolf Raspberry Canes ... ... ... ... | | 4 0 |

Fine strong Pear Stocks, 30s. per 1000.
,, Standard Plum Stocks, 8s per 100.

Fine Beech and Hornbeam, 5 feet, 3s. per 100; 25s. per 1000. Oaks, 5 feet, 15s. per 100. Large, 8 to 10 feet, 20s. per 100. Ash, 8 to 10 feet, 10s. per 100. Elms, Huntingdon, 5 feet, 3s. per 100.

All communications to be addressed to JOHN BELL, at Mr. Claxton's, Davey-place, Norwich. A reference or Post-office order to accompany each order.

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RHUBARB, GOOSEBERRY, and STRAWBERRY PLANTS.

Mitchell's Prince Albert, the earliest, 50s per 100.
Myatt's Linnæus, the most prolific, 50s. per 100.
,, Victoria, the largest, 35s. per 100.

The finest sorts of Gooseberries (strong plants) 12s. per 100.

British Queen, Deptford Pine, Jenny Lind, Goliath, and variety of other fine Strawberries, from 3s. to 5s. per 100.

Malcom Pine (by some now called Black Prince); this is the earliest and most prolific of any, 5s. per 100.

Victoria Red or Raby Castle Currant, 20s. per 100.

J. CARSTAIRS, Warriston Lodge, Edinburgh.

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MESSRS. J. AND H. BROWN offer to the nobility and gentry the following desirable plants and choice Fruit Trees:—

| | s. | d. |
|---|---|---|
| Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2s 6d., or, per dozen ... ... ... ... | 24 | 0 |
| Untrained or maiden ditto, 1s 6d each, or, per dozen ... | 15 | 0 |
| Apples, Dwarfs and Standards of best sorts, per dozen... | 15 | 0 |
| Fine Gooseberries, Currants, and Raspberries, per dozen | 3 | 0 |
| Fine Figs, Medlars, Walnuts, and Mulberries, each ... | 2 | 0 |
| Strong Vines from eyes and layers, in pots, per dozen ... | 15 | 0 |
| Filberts, new thin shelled and red skinned, per dozen ... | 3 | 0 |
| Andromeda floribunda, fine blooming plants, per dozen | 18 | 0 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... | 20 | 0 |
| 25 American Azaleas, ditto ... ditto ... ... ... | 15 | 0 |
| 6 Andromedas, of sorts, including floribunda ... ... | 8 | 0 |
| 6 Kalmias and Ledums, one of a sort, by name ... ... | 6 | 0 |
| 12 Hardy Heaths, of sorts ditto ... ... ... | 8 | 0 |
| 25 Hardy American Shrubs, one of a sort by name ... | 10 | 6 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... ... ... | 12 | 0 |
| New Hardy Yellow Rhododendrons, each 7s. 6d. to ... | 10 | 6 |
| Fine Hardy Scarlet Rhododendrons, 2 feet, per dozen ... | 10 | 0 |
| Fine Rhododendrons, 1 foot, hardy hybrid vars., per 100 | 20 | 0 |
| Cupressus funebris and 6 choice Pines for ... ... ... | 10 | 0 |
| Cedar of Lebanon, 3 feet, well grown in pots, per doz. ... | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort, by name ... | 10 | 6 |
| Glycine sinensis, extra fine, in pots, 15 to 30 feet each ... | 3 | 6 |
| 50 Dwarf Roses, on their own roots, by name ... ... | 16 | 0 |
| 12 Choice Tea-scented Roses, in pots, for forcing... ... | 9 | 0 |
| Standard and half-standard Roses, per dozen, 12s. and | 15 | 0 |
| Moss Roses, per 100 ... ... ... ... ... ... | 25 | 0 |
| New Crimson Moss Rose, per dozen ... ... ... | 6 | 0 |
| Scotch Roses, one of a sort, per dozen ... ... ... | 6 | 0 |
| Yellow Rose, Fortune's, each ... ... ... ... | 3 | 6 |
| 12 Berberis, of sorts, including Fortunii ... ... ... | 9 | 0 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants ... | 25 | 0 |
| 12 Choice Camellias, by name, ditto ditto ... ... | 30 | 0 |
| 50 Superior Greenhouse Plants, one of a sort, by name ... | 45 | 0 |
| 24 Choice Ericas, one of a sort, by name ... ... ... | 15 | 0 |
| 12 Orchidaceous Plants, choice species, and good plants | 30 | 0 |
| 12 Newest Chrysanthemums, distinct varieties ... ... | 8 | 0 |
| 12 New Dwarf Liliputian Chrysanthemums, ditto ... | 10 | 0 |
| Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair ... ... ... | 2 | 0 |
| 24 New French Daisies ... ... ... ... ... ... | 12 | 0 |
| Violets: Arborea, Russian, and Neapolitan, per dozen | 4 | 0 |
| 25 Choice Hardy Herbaceous Plants, named ... ... | 7 | 6 |
| Rhubarb, Seakale and new Giant Asparagus plants supplied. | | |
| New Camellia Seeds, just imported, 25 sent by post ... | 2 | 6 |

Albion Nursery, Stoke Newington, London, Nov. 1.

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THOMAS JACKSON AND SON having a large stock of the under-named NEW AND FINE PLANTS, beg to offer them at the following low prices:—

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Allamanda paraensis ... | 2s | 6d | Gardenia Fortunii ... | 2 | 0 |
| ,, Schotti ... ... | 2 | 6 | ,, Stanleyana ... | 2 | 6 |
| Æschynanthus javanicus | 2 | 6 | Gastrolobium paniculatum | 3 | 6 |
| Bartolonia maculata ... | 2 | 0 | Hoya bella ... ... | 2 | 0 |
| Bossiæa Hendersoni ... | 1 | 0 | ,, campanulata ... | 2 | 0 |
| Brachysema præmorsa | 3 | 6 | ,, imperialis ... | 3 | 6 |
| Camptosema rubicunda | 5 | 0 | Henfreya scandens ... | 1 | 6 |
| Campylobotrys discolor | 2 | 0 | Justicia coccinea ... | 2 | 6 |
| Cupressus funebris ... | 3 | 6 | Mitraria coccinea ... | 1 | 6 |
| Cantua dependens ... | 3 | 6 | Maranta glumacea ... | 7 | 6 |
| Chiriti Moori ... ... | 2 | 0 | Nepenthes distillatoria | 10 | 6 |
| Chimonanthus macrophyllus ... ... ... | 5 | 0 | Nematanthus Morellii... | 2 | 0 |
| Conochinum jantinum... | 3 | 6 | Poivrea coccinea ... | 3 | 6 |
| Chorozema flava ... | 1 | 6 | Phlox Antagonist ... | 5 | 0 |
| Dacrydium Franklini... | 5 | 0 | Rhodothamnus kamtschaticus ... ... | 10 | 6 |
| Dracæna ferrea variegata | 5 | 0 | Rogiera amœna... ... | 7 | 6 |
| Deutzia gracilis... ... | 3 | 6 | Roupellia grata... ... | 2 | 6 |
| Dipladenia crassinoda | 1 | 6 | Tritonia aurea ... ... | 3 | 6 |
| Escallonia macrantha... | 2 | 6 | Tetmalium elegans ... | 2 | 0 |
| ,, organensis ... | 2 | 0 | Thuja Donneana ... | 5 | 0 |
| Eriostemon scabrum ... | 3 | 6 | Vriesia speciosa... ... | 5 | 0 |

12 Ericas, of fine sorts, flowering plants ... 18s. 0d.
12 Epacris do. do. ... 18 0
12 Camellias do. do. ... 30 0
12 do. do. smaller ... ... ... 24 0
12 Chinese Azaleas, of fine sorts ... ... ... 12 0

Black Hamburgh and Sweetwater Vines, in pots, fruiting plants, fit for forcing, 5s. each. Discount to the trade.

Nurseries, Kingston, Surrey, Nov. 1.

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IMPORTANT DISCOVERY.

CLARKE AND Co., GARDENERS, SEEDSMEN, and FLORISTS, Percy-cross Nursery, Walham-green, Fulham, are now sending out, in small sealed stone bottles, secured for travelling, on the receipt of 5s., a Mixture (which is both a remedy and preventive) for destroying those grievous pests, the White Mealy Bug, Scale, Thrip, and all other insects, without injury to the plants. This being the season for the more effectual remedy of all insects, C and Co. recommend that their preparation be applied forthwith. Printed directions sent with each bottle.—Post-office Orders payable at Brompton, to CHARLES CLARKE

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IMPORTANT TO ALL WHO HAVE A GARDEN.

CHALLENGE COMPARISON AND COMPETITION. CARRIAGE PAID.

All orders above 5*l* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.

100, own selection, two of each kind, 30s.; or our selection, in 100 varieties, 42s.

100, purchaser's selection, one of each kind, 42s.

100 Alpine or Rock Plants, 42s.

The above exteuds over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.

Purchaser's, or our selection, from list, per 100, 2*l*. 10s., one of each.

Own do. do. per 100, 1*l*. 10s., two of each.

This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.

HOLLYHOCKS.—No. 1, fine double kinds, all shades of colour, for exhibition, 9s per dozen; 50s. per 100. No. 2, for border display, 6s. per dozen; or 30s. per 100. These are selected from the finest collection in the country.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l*.; or 10s. per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5*l*.; or 12s. 6d. per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20s. per 100; fine, 3s. per dozen. 2 to 3 feet, extra fine and bushy, 30s. per 100; 6s. per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40s.; per 100, 5s. 3 to 5 feet, strong, 45s. per 1000; or, per 100, 6s., healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30s.; 5 to 6 feet, fine, 40s. per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30s. per 100; 10 to 12 feet, 50s. per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5*l*.; or 18s. per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50s.; or 9s. per dozen, own selection; mixed, 30s. per 100, or 6s. per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 first-rate sorts, own selection, 2*l*. 10s; or 15s. per dozen.
50 do. purchaser's selection, 3*l*.; or 18s. per dozen.

ERICAS, 50 of the finest sorts grown, own selection, 2*l*. 10s.; or 15s. per dozen.
,, ,, purchaser's choice from list, 3*l*.; or 18s. per dozen.

CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21s.; or 15s. per dozen.
,, ,, purchaser's choice, 1*l*. 5s.; or 18s. per dozen.

The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

SEEDS.

HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25s.; 50 fine for 15s.; 25 for 8s, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.

CINERARIA, from the choicest sorts, per packet, 2s. 6d.
PANSY, do. do. do. 1s. 6d.
HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1s. 6d. FRUIT TREES.

GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l*., in 100 varieties; or 10s. per 100, in 50 varieties.

A selection of the choicest description for show, 4s. per doz.

The stock extends over 50,000, and is fine and free grown.

CURRANTS.—May's Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25s.; or per doz., 4s.

Black Naples, the finest black (no other sort grown), 12s. per 100, 2s. 6d. per doz.

Red Grape and Champagne, fine, 10s. per 100.

White Dutch, large and fine, 12s. per 100, 2s. per doz.

APPLES.—Fine clean Standards, 10s per doz., 70s. per 100.
,, ,, Dwarfs, 8s. per doz., 50s. per 100.
,, Dwarf trained superior kinds, 2s 6d each, or 24s. p doz.

The collection is very choice, from the Horticultural Society.

PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.

PLUMS and CHERRIES.—All the leading sorts, standards, 18s. per doz.
,, ,, Dwarfs, fine, 9s. per doz.
,, ,, Dwarf trained, 3s. 6d. each, or 36s. per doz.

APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5s. each, 50s. per doz.

RASPBERRIES.—Fastolff 3s. per doz., 16s. per 100.
,, Antwerp Red, 2s. per doz., 12s. per 100.
,, Monthly, or Double-bearing, 12s. per 100, 2s. per doz.

STRAWBERRIES. — Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3s. 6d. per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to JOHN MAY, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

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JOHN AND CHARLES LEE beg to offer fine plants, often transplanted, and warranted, of the following:

CEDAR OF LEBANON, 6 feet, clean and straight, 10s. 6d. each, or 35*l*. per 100.

COMMON HOLLIES, 5 to 6 feet, clean and straight, 5s. each, or 20*l*. per 100.

VARIEGATED HOLLIES, 8 feet, clean and straight, 25s. each.—Nursery, Hammersmith, London.

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THE FINEST NEW ROSES OF THE SEASON.

HYBRID PERPETUAL QUEEN VICTORIA (PAUL'S).—This is unquestionably the finest New Rose of the season; it is a seedling from "La Reine," of which it is so exact a copy in every respect, save colour, that it has been designated by some the "WHITE LA REINE." The ground colour is white, overlaid with the most delicate hue of pink, perfectly wax-like in appearance, and distinct from every other. Plants in November, 10s. 6d. each, with the usual discount to the Trade when three are ordered at once.

CLIMBING PERPETUAL ROBERT BURNS (PAUL'S.)—Flowers light vivid carmine, sometimes edged with purple, large, equal to Chenedolle in colour; like it not very double, but possessed of the additional advantage of flowering in the autumn. Desirable on account of its distinct and glowing colour, and a splendid autumnal climber. Plants, in November, 7s. 6d. each.

N.B. Each of these Roses has obtained a 1st Class Certificate from the National Floricultural Society; the former has also received the same from the Royal South London Floricultural Society. Also a fine collection of Hollyhocks now in bloom.

*** Further orders for the Roses can only be taken for plants in buds.—A. PAUL and SON, Nurserymen, Cheshunt, Herts.

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SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2s 6d. per quart.

York Regent Potatoes, from prepared cuttings, 6s. per bush. Cambridge Radical do (a first-rate second early) 6s. do. Early Oxford do., 10s. 6d. do. Early Ebrington Kidney do., 10s. 6d. do. Early Ash-leaf Kidney do., 10s. 6d. do.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1s. 6d.; two-bushel, 2s. 6d. Sacks, 2s. 6d. each.

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BASS AND BROWN'S AUTUMN CATALOGUE is now ready, containing—

PART I. The New Geraniums, Fuchsias, Petunias, Verbenas, and other new and select Plants, at reduced prices.

PART II. Roses, select Evergreen and Flowering Shrubs, Climbers, Hardy Herbaceous Plants, &c.

PART III. Flower Roots, embracing splendid collections of Ranunculi, Gladioli, Early and Late Tulips, Iris, Lilies, imported Dutch Hyacinths, &c., &c.

Copies supplied on application, published complete with the newspaper stamp, to go free.

Seed and Horticultural Establishment, Sudbury, Suffolk.

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COCHIN CHINA POULTRY.—A few young Birds of this fine and prolific breed, warranted quite pure, for sale. The Pullets are of a cinnamon colour, the Cock Birds of a lighter or darker bay.—For particulars, apply, enclosing stamp, to Mr. HENRY COPELAND, Chelmsford, Essex, who will feel pleasure in showing his Birds to amateurs and others. Cock Chickens, 10s. 6d. each; Basket, 2s.

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GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

| Sizes.—Inches. | Under 6 by 4 | Inches. 6 by 4 at | Per foot. | Per 100 feet. |
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| From 6 by 4 | ,, 7 | ,, 5 | ,, 2d. | ,, 0 16 8 |
| 7 ,, 5 | ,, 8 | ,, 6 | ,, 2½d. | ,, 0 18 9 |
| 8 ,, 6 | ,, 10 | ,, 8 | ,, 2½d. | ,, 1 0 10 |
| 10 ,, 8 | ,, 12 | ,, 9 | ,, 2½d. | ,, 1 2 11 |

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3½d. to 5d. ,, ,,
26 oz. ,, 3½d. to 7½d. ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

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GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... ... | ... | 13s. 0d. |
| 7 ,, | 5 and 7½ by 5½ | ... ... | ... | 15 0 |
| 8 ,, | 5 and 8 by 5½ | ... ... | ... | 15 0 |
| 8 ,, | 6 and 8½ by 6½ | ... ... | ... | 17 6 |
| 9 ,, | 7 and 10 by 8 | ... ... | ... | 20 0 |
| 12 ,, | 10 and 13 by 9 | ... ... | ... | 20 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches ..... | | 6d. per foot. | |
| ,, ,, 35 | ,, ..... | 8d. | ,, |
| ,, ,, 50 | ,, ..... | 9½d. | ,, |
| ,, ,, 75 | ,, ..... | 12d. | ,, |

Milk Pans, 2s to 6s. each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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GREEN AND HOTHOUSE BUILDER. — Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½d.; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d. per foot; if glazed with 16 oz. sheet-glass of a large size, 4d per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

FRUIT TREES.

THOMAS RIVERS begs to submit to the Public a SYNOPSIS of his FRUIT TREE CULTURE. The names of varieties, with descriptions and prices, are given in his descriptive Catalogue of Fruits, just published, sent post free for six postage stamps.

APPLES.—Standards for Orchards, and Pyramids and Dwarfs, on Crab Stocks; Pyramids and Dwarfs, and Dwarfs Trained, for Gardens, on Paradise Stocks.

APRICOTS.—Dwarfs, Dwarf Trained, Standards, Standards Trained, and Dwarf Bushes in pots for culture under glass.

CHERRIES.—Standards for Orchards, Dwarfs, and Dwarfs Trained on the common wild Cherry Stock, Dwarfs for Bushes or for potting for culture under glass, Dwarfs in pots, and Dwarfs trained on the Cerasus Mahaleb stock.

CURRANTS.—Bushes and Pyramids.

FIGS.—Dwarf Bushes in a bearing state, in pots.

GOOSEBERRIES.—Bushes, 80 large Lancashire varieties, 20 small high-flavoured ditto.

GRAPES.—Vines, from eyes, in pots, for Vineries and Hothouses, fine and well ripened under glass; Ditto hardy kinds for walls, also from eyes growing in the open quarters; plants fine, 7 to 8 feet in height; Dwarf Bushes, in pots, for culture in orchard houses.

MEDLARS.—Standards, Dwarfs, and Pyramids.

NECTARINES AND PEACHES.—Dwarfs, Dwarfs trained, Standards, Standards trained, and Dwarf Bushes in pots in a bearing state, for culture under glass.

NUTS AND FILBERTS.—Dwarfs and Standards for garden culture, grafted on the Spanish Hazel Nut. These form very prolific trees.

PEARS.—Standards for Orchards, Pyramids, Dwarfs, and Dwarfs trained on Pear stocks; Pyramids from one to six years old, 1s. 6d. to 3s. 6d. and 5s. each; the two latter descriptions capable of bearing a good crop the first summer after planting. Dwarf bushes for potting and Dwarfs trained for espaliers or walls on Quince stocks. Many acres are devoted exclusively to the culture of Pears.

PLUMS.—Standards for Orchards, Standards trained, Pyramids, Dwarfs and Dwarfs trained for espaliers or walls. The Pyramids are nearly all in a bearing state, so as to be able to give fruit the first summer after planting. Dwarf Bushes in a bearing state, and Dwarf Bushes in pots for culture under glass.

QUINCES.—Standards of the common, and Pyramids of the large Portugal Quince, the finest and most abundant bearer, even when young, of all the Quinces.

RASPBERRIES.—Canes of all the select varieties.

STRAWBERRIES.—Plants of all the varieties worthy of cultivation.

MULBERRIES.—Standards and Dwarfs. Some fine Standards can be supplied 35 to 40 years old. These are 6 to 7 feet high, perfectly straight, and measure from 8 to 16 inches in girth, 5 feet from the ground. They have all been removed within three years, and will transplant with safety.

In connection with fruit tree culture, the following works can be supplied:—THE MINIATURE FRUIT GARDEN; or, the Culture of Pyramidal Fruit Trees. Fourth edition. Sent free per post, for 24 postage stamps. THE ORCHARD HOUSE; or, the Culture of Fruit Trees in Pots under Glass. By THOS. RIVERS. Per post, for 30 postage stamps.

Sawbridgeworth, Herts, Nov. 1.

DUTCH FLOWER ROOTS.

RENDLE'S LIST OF DUTCH BULBS will be found in the columns of this Paper, front page, in the number for September 27, 1851. The prices are very low. Descriptive Catalogues on application to WILLIAM E. RENDLE, Florist to her Majesty, Plymouth.

*The Hyacinths are particularly large and handsome. Most excellent kinds can be had at 6s. per dozen.*

STANDISH AND NOBLE'S detailed Advertisement will appear in this Paper on the first Saturday in every Month, to which they invite the attention of all interested in HARDY ORNAMENTAL PLANTS. Their descriptive Catalogue, with the treatise on the "Cultivation of American Plants," can still be had by enclosing six stamps for postage.

Gentlemen requiring the services of a Landscape Gardener can procure such by applying to the Advertisers.

Bagshot, Surrey, Nov. 1.

SUPERB HOLLYHOCK SEED.—Well ripened Seed, warranted to be saved exclusively from Rosea grandiflora, Delicata, Comet, Model of Perfection, Elegans, Formosa, Gem, Belladonna, Bicolor, Queen, Fireball, Aurantia, Rosea alba, and Superba perfecta. A good mixture of the above, in packets, containing 200 Seeds, will be forwarded, post free, upon the receipt of 2s. 6d. worth of postage stamps, by R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, near London, informs his kind patrons that his new ROSE AND FRUIT CATALOGUE FOR 1851 AND 1852 is now ready for circulation, and will be sent on receipt of a twopenny stamp. His Stock of Roses, Fruit Trees, Evergreen Shrubs, and Ornamental Trees, are of the finest growth, of all sizes.—Gardens and Pleasure Grounds tastefully arranged and planted on the lowest terms.

E. D. informs his friends that he has no Seed Shop in London.

**The Gardeners' Chronicle.**

*SATURDAY, NOVEMBER* 1, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| MONDAY, | Nov. | 3—Entomological | 8 P.M. |
| TUESDAY, | — | 4—Horticultural | 2 P.M. |
| | | Linnean | 8 P.M. |
| FRIDAY, | — | 7—Botanical | 8 P.M. |

THE art of CHARCOAL BURNING is, perhaps, of less importance in this country than it is in those which are not so amply provided with mineral fuel; but even here, it is a matter well deserving of attention, not merely in relation to the manufacture of charcoal for specific purposes, such as the making of gunpowder, but taken in a more extended sense, as a means of obtaining a powerful and most valuable fuel. In making common wood-charcoal, various modes are adopted in different countries, and the practical method employed differs considerably, though theoretically the same object is effected in each. The wood, for the most part the thinnings of plantations, badly grown trees, and branches, is cut into billets of a convenient form, and either stacked in a heap, and covered with clay or sods before firing; or else it is burnt in a sort of kiln or oven, provided with suitable dampers. The object to be effected is to drive off the whole of the volatile matters, which the wood contains, by the action of heat; for this purpose it is set fire to, and just enough air is admitted to burn the combustible vapours given off, whilst care is taken not to let in enough to burn the charcoal itself. As soon as the wood ceases to give out inflammable vapours, that is to say, as soon as it ceases to burn with a bright flame, all access of air is shut off, and the charcoal is suffered to cool. In fact, the same kind of process is adopted in making charcoal as is used in charring coal, or making coke.

All forms of vegetable matter contain a large proportion of carbon, and are, therefore, more or less available as fuel; but some are naturally far more valuable than others. The close, dense parts of plants, such as wood, afford far better charcoal than leaves, or even twigs; this depends on two circumstances, namely, the small quantity of inorganic matter which wood contains, and the superior facility with which it may be thus charred, or partially burnt. In consequence of the spongy open nature of a mass of leaves or twigs, the heat requisite to char it, and the air necessary for its partial combustion, would not only drive off the combustible matter, and so char it, but also, at the same time, would cause the complete combustion of the charcoal then formed. Twigs, brushwood, and even Heather, make capital fuel, for they contain abundance of combustible matter, and are easily dried when made up into faggots; but it is very difficult to convert them economically into charcoal. Amongst the inventions shown in the Great Exhibition, was a process for obtaining charcoal from twigs, weeds, and all sorts of refuse vegetable matter, especially designed as a means of preventing the waste of fuel which occurs in thinning plantations, and clearing out the underwood of forests. This process, devised by M. POPELIN DUCARRE, has been honoured with the great medal; and it is therefore reasonable to suppose, that it is not only new but also good.

The mode of converting waste vegetable matter into solid charcoal, exhibited by POPELIN DUCARRE, consists of two distinct operations—one, by means of which it is charred and converted into charcoal powder; and a second, by which the powder thus obtained is formed into solid lumps or blocks. The process of carbonisation is carried on in an ordinary stifle oven or kiln, a good deal resembling a lime-kiln in form and arrangement, the whole being regulated and governed by suitable dampers above and ash-pit doors below; so that the access of air can be diminished or altogether cut off at pleasure. This part of the process is by no means new; the only feature of novelty about it is, that the oven is entirely made of iron, and is portable, so that it may be carried about from place to place; hence, instead of bringing the refuse brushwood to the oven, the latter is carried into the midst of the forest, and is in fact brought to the brushwood. The oven itself is precisely similar to those commonly used for charring peat, Heather, &c. The second process requires a good deal of machinery; in the first place the charcoal is reduced to powder by a kind of mill; it is then kneaded into a stiff paste, with a suitable quantity of tar; next pressed into moulds, by a kind of engine somewhat like a drain-tile machine; and, lastly, the cylindrical masses thus formed and strongly heated in an oven, enclosed in iron drums or canisters. By this last operation the bituminous matter is entirely driven off, but at the same time the charcoal powder is cemented together, and the cylindrical pieces, when they are taken out of the iron drums, are hard, and very like pieces of common wood-charcoal in appearance. The machinery employed for these different operations is ingenious, though somewhat too cumbrous, and probably not so simple as might be devised for the purpose. As regards the principle, however, there is little or no novelty, for it has formed the subject of a number of patents during the last fifty years, and, modified in different ways, it is the basis of at least a dozen of our best artificial fuels. There does not appear, then, to be any novelty either in the mode of carbonising the vegetable refuse, or in the process for forming the charcoal powder into solid lumps.

But there is another point to be considered, in examining the practical value of this process; and that is, the quality of the fuel thus produced. It is well known, that Heather and dried weeds, bound into faggots, make a very serviceable fuel for some purposes, one which gives a strong but not a lasting fire, well adapted for the brick-kiln, and similar operations; it is obvious, that in converting such matters into charcoal, a great deal of heat must be lost, because all the volatile and combustible part of the fuel is driven off and wasted, in the process of charring it. Now twigs, weeds, and leaves contain, even in their natural state, a large quantity of inorganic matter; and, as in the operation of carbonising them, a considerable part of the combustible matter is driven off, whilst all the inorganic matter is left, it necessarily happens that the charcoal powder thus obtained must contain a very large proportion of inorganic matter; in consequence of which it burns with difficulty, and leaves a very high per centage of ash. A great deal of combustible matter is lost during the process, and the result is a very inferior kind of fuel. It is true that the fuel so obtained may be used for particular purposes, and can be burnt in stoves, for which the raw material is wholly useless; and it is, therefore, quite possible that in some situations the process may be advantageously worked, but it is hardly probable that such would be the case in this country. If brushwood and Heather faggots were of no use, then no doubt any mode of converting them into fuel, however bad or inferior, would be of value; but as they form a very useful fuel themselves, it certainly does not appear worth while to burn one-half of them, in order to convert the rest into very bad charcoal.

It is very difficult to discover upon what principle the Council of Chairmen awarded a large medal for this process, which is neither remarkably new nor remarkably good. It might have merited a prize medal, though even that would have elevated it into an undue position, as none of the other different kinds of artificial fuel exhibited receive any medal whatever. We can only suppose that selecting it for the award of a great medal was a piece of good nature, intended as a compliment to a foreign exhibitor who had sent a pretty model.

Though this process cannot be recommended, as a mode of making fuel, yet there is one part of it which may perhaps be worthy of attention, with a different object; and that is, the portable iron oven, which might perhaps be advantageously used for burning weeds. In the ordinary mode of burning weeds, nearly the whole of the combustible matter is lost, and little but ashes are left; it might be worth while to try and save some part of the charcoal; and this might easily be done by the use of such an oven; there is no doubt whatever that whilst the weeds, &c., would be as perfectly destroyed as in the ordinary mode of burning them, the value of the ashes as manure would be considerably increased by the charcoal which would thus remain mixed up with them.

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OUR readers know that we have always stood aloof from the disputes in which our florist friends are rather celebrated for indulging. We have never permitted our columns to become a vehicle for their learned arguments, which are generally of no use to any but the owners; and we have not the smallest intention of departing from what we believe is pretty generally regarded as a wholesome rule. But having lately devoted a portion of this paper to discussing florists' questions, the quarrels aforesaid being excluded, we are in a manner constrained to notice the proceedings of a little metropolitan coterie rejoicing in the modest name of the AMATEUR TULIP SOCIETY.

It is well known that the gentleman who is at present charged with the Floricultural department of this Paper is Mr. EDWARDS, of Holloway, the Secretary of the National Floricultural Society, a gentleman of the highest honour and character, and, till lately, a member of the Amateur Tulip Society. On the 28th of May, Mr. EDWARDS showed, before the Royal South London Floricultural Society, a certain Tulip called Pilot; and on the 29th of May the same variety before the Amateur Tulip Society, when he took their first prize. Shortly afterwards the Secretary of the last Society apprised Mr. EDWARDS that he was charged by somebody with having exhibited as of his own growth a "Pilot" which he did not grow; and further that two "gentlemen of unquestionable authority" were of opinion that the very Pilot referred to had been in fact shown the day before by Mr. TURNER, of Slough. Thereupon ensued a long correspondence, which we have taken the trouble to read, between Mr. EDWARDS and Mr. Secretary, the upshot of which was that a Mr. CLARK having had a private look at Mr. EDWARDS's Tulip bed, and not having seen there the Pilot in question, was of opinion that Mr. EDWARDS *must* have borrowed it of somebody else. As for "the two gentlemen of unquestionable authority" they did not show themselves: in other words, they skulked off. Mr. EDWARDS, in reply, gave ample proof that he had grown the Pilot and might have exhibited it; he asserted, and offered to declare upon oath, that he did exhibit what he had grown; and he produced the evidence of Mr. TURNER, of Slough, that the Pilot of the latter was never in Mr. EDWARDS's possession.

Notwithstanding this, which would have been enough to clear a man in any court of justice in the world, the Amateur Tulip Society declare Mr. EDWARDS's replies to be unsatisfactory, and, in their wisdom, call a special meeting, at which, as will be seen by referring to p. 647, their absurd proceed-

ings broke down, no evidence appearing to substantiate the charge.

The way in which the affair was managed was characteristic. In the first place, they refused our reporter admission; in the next place, they took the special business before the ordinary business, in order to prevent the election of a member who they had reason to think entertained a different opinion of Mr. EDWARDS's case from themselves. Nevertheless the plot failed, and its concoctors have ended by looking foolish, blustering a little, talking of expulsion, and doing nothing.

So much for the Amateur Tulip Society. We wish the members joy of their committee. Such of them as are exhibitors may think themselves lucky if more are not favoured, another year, with the critical inspection of some Mr. CLARK, with the accurate judgment of such another learned gentleman, and the sage opinion of the "two gentlemen of unquestionable authority" unknown. We need hardly add that Mr. EDWARDS thought the proceedings more entertaining than respectable, and like a man of sense shook himself clear of the Society.

## ARBORICULTURE IN SCOTLAND.

IN "Chambers' Edinburgh Journal," of the 5th of July last, there is an article on "Woods," giving an amusing report of a sale by auction of about 60,000 small trees, the thinnings of a plantation 25 years old. The writer of the article (the owner of the plantation) had evidently been unacquainted with the value of this description of timber; and from the circumstance of its being situated in an inland district, far from a regular market, and entirely dependent on a local demand, with the result of the sale of so large a number of trees, he of course was disappointed; and it appears to me that he has brought under the notice of his numerous readers an extreme case, accompanied with remarks which are not calculated to convey a correct idea of the value of arboriculture throughout Scotland, in point of direct revenue. Having had some practice in the raising and management of timber, and being acquainted generally with plantations throughout many of the best-wooded districts in this country, I beg to offer, as summarily as possible, a few remarks on this subject. In the article to which I refer, we are told that "overplanting" has placed various parts of Scotland in a position, as respects trees, analogous to "Canada and Norway." That in some situations, "trees of any sort are barely worth the expense of cutting down. Larch, Fir, Ash, Elm, Oak, all are nearly alike useless —positive encumberers of the soil." To support these statements, an example is given of the sale of thinnings, in a land-locked district, situated about 30 miles from a large town, and where timber has to pass through six toll-bars before it reaches a market. It is added that "facts of this nature are beginning to be painfully felt by the sons and grandsons of many great planters." I readily grant that the expense of carriage for 30 miles, with six toll-bars, would be equal to the value of timber in general, but, fortunately, instances of this sort are exceedingly rare—so rare, that throughout the north of Scotland I do not know a single plantation, of considerable extent, nearly so far from water conveyance. Half the length of road referred to is very unusual, and far beyond the average distance. The Scotch lairds, even during the most favourable periods for improvements, had sagacity and perseverance sufficient to form extensive plantations only where they are really valuable in their cubical contents. Looking over the face of the country, it is surprising to find so few plantations in situations of an opposite character, considering their beauty and effect, and that for a long time back, the cost of plants and planting moorland, with Larch and Scotch Pine in ordinary circumstances, would not have exceeded 15*s.* an acre. From the nature of arboriculture it is generally extremely profitable, its original outlay and subsequent cost being small, compared with its ultimate results. If here and there plantations are to be met with throughout Scotland, cut off from the regular timber markets by an expensive carriage, they are of a trifling extent; and it is uniformly found that if the sale of the property containing such plantations should take place, ample value is obtained for all the outlays incurred. Beautiful green trees, the embellishment of the landscape, towering on the hill sides, and affording a choice of solitary walks, deliciously fragrant and cool in the summer heat, will at all times, and in all situations, command the regard of men of wealth and taste; so that planters, even in the most remote situations, have been wise in their generation. I never yet heard of a solitary instance of a son or grandson lamenting the greatness of the extent of plantations he had inherited; their smallness, however, is not unfrequently brooded over, particularly on pocketing a few thousand pounds from a few acres of felled timber, bordering on land of a similar quality—moorland, which had remained barren for centuries.

In the example given by the Journal in question of the value of timber, not only is the distance from the market unusually great, but the timber, being only thinnings of Fir, Larch, and Oak, 25 years old, is unusually small, and the least valuable of forest produce, only suitable for coal-props, props for wire fences, sheep-flukes, and similar purposes. For such, the demand is always limited, except at shipping ports, where a constant demand for coal-props is generally met with, at various prices per dozen of 72 lineal feet, according to the girth of the trees. These props form the principal return cargoes of coal vessels at the ports in the north of Scotland. Within a few miles of a port, a plantation of Scotch Fir or Larch, 25 to 30 years of age, of ordinary growth, when cut down, generally yields from 25*l.* to 30*l.* per acre, after paying all expenses: while at a great distance from the shore the value of thinnings (the worst trees of course), is seldom expected to yield more than the expense of clearing them away. Such have served the purpose of shelter, in having promoted the growth and quality of the remaining trees, and were they worth less than the cost of cutting, it would be profitable to have them removed. As to the management and economy exercised in the operations, and in disposing of the produce of the thinnings of the plantation reported on in "Chambers," I would only remark that the barking of Larch trees is an unusual thing—I have never known it to pay anywhere; while the bark of the Oak, which is not stated to have been peeled, is generally profitable, if well harvested, even were it carried over 30 miles, passing through half-a-dozen toll-gates.

No one can read the article alluded to without admiring the graphic and interesting description given of the progress of the sale of trees by public roup (auction); but before enforcing the doctrines of the dead loss, and cruel disappointment arising from such plantations, I would have expected that the writer would have informed his readers of the value of the ground previously to its being planted; of the expence incurred in forming the plantation, and that of its subsequent management. Having disposed of the thinnings partly by auction, and the remainder privately, the result for wood and bark was 104*l.* 14*s.* 6*d.*, leaving a balance over outlay of 25*l.* 9*s.* 6*d.*, besides a lot of trees for home use. Thoroughly dissatisfied with the revenue yielded by 60,000 small trashy trees, cut down at one thinning, and disposed of in a remote district, dependant on a local demand, the owner, as if giving a fair example of Scotch Arboriculture, says: "The whole affair was amusingly absurd, and presented a fine instance of the fiddle-faddlery in which country gentlemen usually busy themselves!" So much for thinnings: now for the price of heavier timber. It is added, "To see how far the joke might be carried, we invited a country carpenter who wanted some good Firs, to inspect a lot of upwards of 40 years' growth. Capital sticks they were—not your thinnings. The offer which this judicious artisan made for them was threepence to sixpence each. Had he cleared the two acres of land which they covered, we should probably have pocketed somewhere under 30*s.*" Thirty shillings! This would certainly pay the price of the plants, and of planting two acres; but unless a value is put on the shelter and embellishment of the plantation, there is little left for the interest on the outlay, and for the rent of the ground for upwards of 40 years (supposing it to be worth rent). It is difficult, however, to understand by what calculation he arrives at the result of less than thirty shillings for two acres! I am aware that in this case we have a description of timber which yields only a small return. At about that age the trees stand thin on the ground, and in some situations timber is not much more valuable per acre at 40 years than at 30 years of age. This arises not only from thinness on the ground, but also from the circumstance of the Firs being beyond the size of prop-wood, paling, &c., and as yet unfit for the more important purposes of joisting, flooring, and carpentry in general; too large for some purposes, and too small for the next in ordinary demand. However, be this as it may, I am unable to see how two acres at threepence to sixpence per tree should produce less than thirty shillings! That space should contain at least about 1000 trees But, no doubt, the statement of less than thirty shillings is made for the purpose avowed—"To see how far the joke might be carried."

No one acquainted with the management of Scotch Fir woods, would fell them in a thriving state at the age of about 40 years. With Larch the case is different. In some districts in this neighbourhood, the Larch in many soils and situations is the most profitable timber that can be planted, although its price has lately fallen from 1*s.* 6*d.* to 1*s.* per cubical foot. In soil well adapted to its growth, and under proper management, a tree 40 years of age will produce 20 cubical feet. This is a common growth on some of the estates along the banks of the Findhorn. Here a plantation, composed of Oak and Larches interspersed, formed 40 years ago, was thinned last year; the thinnings were entirely Larches, and some acres, along the most favourable slopes, yielded 40*l.* Many of the trees measured 20 and some 26 cubical feet, and were disposed of by private bargain at 1*s.* per foot. Former thinnings had paid many times the expenses of forming and upholding the plantation. There still remains amongst the valuable Oak from 40 to 80 Larches per acre, advancing each at the rate of 1 to 2 cubical feet annually; therefore a similar return in a short period is anticipated again and again. The expenses of thinning, on the occasion last referred to, did not exceed 2½ per cent. on the revenue, and the operation was performed at the same time as the thinning of the plantation referred to in "Chambers' Journal." The plantation to which I refer on the banks of the Findhorn is situated in a district purely agricultural, 7 miles from Forres, and 11½ from the sea-port at Findhorn. To Forres there is one toll, and between the plantation and the sea there is one and a half toll. Now, be it observed, this is far from being favourably situated, in regard to transport of timber. Eleven and a half miles of road is far beyond the average distance of plantations throughout this country, from water conveyances or from some other ready market; and the time has long since gone past that Caledonia, in respect to her forests, can, with any degree of propriety, be said to resemble Canada or Norway. New purposes are constantly arising for the consumption of timber, the greatest of which of late years has been railways, for which the manufacture of sleepers threatened to dismantle the kingdom previously to the Government reduction of duty on foreign timber. The writer in the journal referred to, terms extensive planting a mania and a craze; but rely on it, country gentlemen see matters in a different light than that in which here presents "the grandeur of arboriculture." In the formation of their extensive plantations they will know that they are laying a foundation of national wealth and independence, and a source of individual prosperity and riches. I would not recommend any landowner to plant, for the sake of timber, land yielding an annual value of 10*s.* or 15*s.*, although it would, under some trees, in many situations be ultimately profitable. Generally speaking, land of that description is ill adapted for Scotch Fir and Larch; but there are thousands, and tens of thousands of acres, of barren wastes perfectly suited for these kinds of timber, that are not worth 2*s.* an acre per annum, far better situated for the transit of timber than the plantation I have referred to, on the banks of the Findhorn, where the expense of plants and planting would not exceed 12*s.* or 15*s.* per acre; and where the revenue, under proper management, even at the present low prices of timber, may be fairly presumed, at the end of 50 or 60 years, to surpass the revenue of a similar space under Wheat, at the present prices; even supposing Wheat to be grown every year during the period, and the produce that of an ordinary crop. I speak of plantations merely in relation to direct revenue; counting nothing on their advantages in embellishment, by converting the bare and dismal districts into rich and waving woodlands; giving rise to pasturage and cultivation, nullifying the bleak winds, tempering the withering frosts, and spreading over the surface a soil rich in vegetable deposit, advantages great in themselves to a country and to individuals. *John Grigor, Nurseries, Forres.*

## BRITISH SONG BIRDS.

(CAGE BIRDS, No. 36.)

No. LII.—We are reminded, whilst affixing the number to the present chapter, that we have positively been chatting with our good friends the public, 52 weeks—an entire year! To us, the time has appeared as it were but a few days, so greatly interested do we feel in the subjects under discussion; nor do we believe, if we may give utterance to our honest thoughts, that our readers have grown tired of our company. We have, indeed, delightful evidence to the contrary, and of a most voluminous nature.

Our good friends, the Americans, too, have fallen in love with our subject; and whilst quoting very largely from our writings, are pleased to speak in a most encouraging manner of the good, the "great moral good" we are likely to work in society, by the "undercurrent," as they term it, which pervades the *ensemble* of our remarks. They consider we aim as much at "men, women, and manners," as we do at the well-being and prosperity of the feathered tribe. Brother Jonathan is right. We have had, and *always* have, this end in view. We may be pardoned so trifling a digression, we trust, in virtue of this being our "first anniversary."

Let us now resume our subject. Instinct, as we have said, if it be at all allied to "reason," is so, no further than as regards "thought;" and that, very limited. Still, in some instances, instinct puts reason to the blush. A bird, a beast, or an insect, will eat as much as he requires, and will then be satisfied. They rarely eat to repletion. Is it always so with us? Some of our ventri-potential citizens, perhaps, will give us the answer. Then,—instinct teaches some birds to choose one spot; others, another.* Some live in woods and thickets only. Some are gregarious; others, solitary. Some tame; some shy. But in all tribes, *one and the same natural instinct prevails.* Just so will any flower, if not tampered with by our "modern improvements," produce unerringly *its own natural form*, growing up minutely correct in its proportions, and diffusing all its inherent excellences.

Again, all animals have a mode peculiar to themselves of understanding each other's language. Even a casual observer of Nature must have seen this, whilst watching the toilsome duties of a colony of ants. How often have we verified the fact of a labourer, wearied from exhaustion, and unable to get his burden up a hill, going direct for assistance to his neighbours, and of his

* The marvellous instinct inherent in *some* of the smaller tribes of birds, would almost exceed belief. The possibility of losing even one of their family, seems (at the season of incubation) to be ever uppermost in their suspicious, wary moments, and they provide against all invaders with an ingenuity far surpassing any "reasonable" plan that we could adopt—so amply does Nature "compensate" them for the want of any "greater gifts." The following illustration of my remark is furnished by the Rev R P. Alington, Swinhope Rectory, Linc ln, who, in the November No. of "The Naturalist," just published, says,—"Last spring, I was shown a nest of the blue titmouse, placed inside a wooden pump. The parent birds entered through the orifice made for the handle, and the nest was placed above a foot below it. It was built all round the piston rod of the pump, filling up the whole space inside; but the frequent working of the piston rod produced a large hole through the centre of the nest. The young were nestled up in one corner, but so near was the piston rod that it must have grazed the old bird, when in use. Notwithstanding this constant disturbance, she reared her young. *One* of her children, only, fell a victim,—being crushed between the piston rod and the nest." This is a pretty anecdote, and it neatly illustrates our subject.

immediately obtaining it—the said burden being carried up the hill, under direct orders from a superior, by several sturdy porters. Herein is a high order of "instinct." But we shall have again occasion to speak of the ant. I merely cite this particular case, to show that Nature implants in *all* animals an intelligible code of signals—known to themselves, and to themselves *only*. Nor can I, by observation, convince myself that this natural gift, or talent, indicates reason—seeing that it subserves but one great end, viz., the happiness and prosperity of the colony. As with the ant, so is it with every other animal of the lower order. There is no expansion of intellect. Their "talent" is given them at their birth, and is taken away at their death. They have done what their ancestors did before them, and no more. So that, if we admit the fact of animals possessed of brain, being also gifted with "thought," we yet find that it is always limited. Nature intended it should be so, as we hope to be able to prove.

Speaking of rational and irrational creatures, SOUTHEY remarks—"Animals go rightly, *according to the ends of their creation*, when they are left to themselves. They follow their instinct, and are safe. But it is otherwise with man. The ways of life are a labyrinth for him. His infancy does not stand more in need of a mother's care, than his moral and intellectual faculties require to be nursed and fostered; and when these are left to starve for want of nutriment, how infinitely more deplorable is his condition than that of the beasts which perish!" It is indeed so! Should any person urge against this, that some birds are taught to repeat words, and connect sentences, and thereby show powers of "reasoning," I would reply, that these birds are naturally endowed—born with this inherent talent of imitation, or mimicry. Hence their so-called "excellence;" but as for understanding what they utter, beyond the instinctive sagacity of their nature, that is totally out of the question.

If these, our premises, be correct, and we be acknowledged to have drawn our deductions logically,—we hope to be able to "complete the case" we have taken in hand. It is one of intense interest; and as we are aware that it has become a matter of public curiosity, we shall pursue the inquiry with all fairness. To understand these things properly, we must use a microscopic eye, and soar aloft for the "why and because" of the things which we want to know. What we daily witness in the animal and vegetable worlds, are ordinations of supreme intelligence, given for wise and good purposes; but, to use the words of an elegant writer, "we are blind, beyond thought, as to secondary causes. Admiration, that pure source of intellectual pleasure, is almost alone permitted to us." If we attempt to proceed beyond this, we are generally lost in the mystery with which the divine Architect has thought fit to surround his works. For my own part, the more interesting discoveries I make, the more distressingly do I feel the extent of my own ignorance. We only "begin" to grow wise, when we have begun to grow old,—and even then, *what* is our wisdom!

Give me the great, grand heart, as large as it was made to be,
That takes in GOD, and HEAVEN, and EARTH, like a deep and glorious sea;
That sees the stamp of Beauty broad and wide on everything,
And loves that beauty everywhere—and OWNS GOD as ITS SPRING.

If we keep close to this spring, we shall hardly go wrong whilst tracing the river in its various windings. At every turn, there lies before us a whole world of living wonders! *William Kidd.*

## ORCHIDS FOR THE MILLION.—No. XXII.

By B. S. WILLIAMS, gr. to C. B. Warner, Esq., Hoddesdon.

(*Concluded from page* 677.)

CLIMATE COOL.—PLANTS GROWN IN BASKETS, WITH MOSS AND PEAT.

*Odontoglossum grande.*—This magnificent Orchid comes from Guatemala. The flowers are large, mottled, and striped with brown and yellow, the lip is white, edged with light purple; they remain long in perfection. It will do on a block, or in a pot; but it succeeds best in a basket, with moss, peat, and potsherds, and should be grown in a fully-exposed part of the house, where it can have a little air.

*Odontoglossum citrosmum.*—This beautiful Orchid comes from Mexico; it flowers in May, June, and July; the blossoms are white, stained with rosy crimson, and they remain four or five weeks in perfection. It will do on a block, with moss, but it likes a basket, with sphagnum moss, peat, and potsherds, suspended from the roof; too much moisture, even in the growing season, does not suit it, and after it has made its growth it should be kept rather dry.

*Lycaste cruenta*, is a good species, which flowers from February to April, and comes from Guatemala. The blossoms are a deep yellow or orange, with a dark crimson mark in the centre; they remain long in perfection, and are very fragrant. This plant does well in a basket with moss and peat and potsherds; it likes a good supply of water in the growing season, afterwards it may be kept rather dry.

*Lacæna bicolor*, comes from Guatemala; it flowers in May and June. The blossoms are a dull greenish yellow, the petals having three violet-coloured streaks, the labellum is white, with a dark purple blotch in the middle; they remain long in perfection. This grows best in a basket filled with sphagnum and peat and potsherds; it requires a good supply of water in the growing season; afterwards it should be kept rather dry.

CLIMATE COOL.—PLANTS ON BLOCKS, WITHOUT MOSS.

*Barkeria spectabilis.*—A beautiful Orchid, from Guatemala, which flowers in June and July. The blossoms are rosy pink or bluish, dotted with deep crimson, and remain long in perfection. It succeeds best on a bare block of wood suspended near the glass, where it can have plenty of light, in the growing season; afterwards it should be kept rather dry and cool.

*Barkeria Skinneri major.*—This fine variety comes from Guatemala, and flowers from October to March. It is a difficult plant to cultivate; the best way to grow it is on a bare block of wood suspended near the glass, where it can have plenty of light and not too much heat. It likes a good supply of water when growing, afterwards it should be kept rather dry. It will continue flowering for three or four months.

*Barkeria Skinneri.*—This lovely species comes from Guatemala. It should have the same treatment as the former, and, like it, it will remain flowering for three or four months.

*Cattleya citrina.*—A fine Orchid from Oaxaca, which flowers in May, June, and July, and remains long in perfection; the blossoms are a deep brilliant yellow colour. This plant is best grown on a block of wood, with the leaves growing downwards, and it succeeds in a cool, airy part of the house. It likes a good supply of water when growing; afterwards it should be kept rather dry.

GREENHOUSE CLIMATE.

*Dendrobium speciosum.*—From New Holland, flowers from February to March. It is best grown in a pot, with fibrous peat and good drainage; during the growing season it should have plenty of water, but afterwards it should be kept dry. If this plant is kept in a hot place, it will not flower.

*Cypripedium insigne*, comes from Sylhet; it flowers from January to March. It is best grown in a pot, with loam and leaf-mould and good drainage; it likes plenty of water while growing, and keeps six weeks in flower.

*Calanthe bicolor*, a neat Japan Orchid, which flowers in April and May. It does best in a pot, with loam and leaf-mould and good drainage; when at rest, it should be kept rather cool and dry. Its flowers remain long in perfection and are very fragrant.

*Bletia patula*, flowers in June and July. This thrives best in a pot, with loam and leaf-mould, with good drainage, and plenty of water when growing; when at rest, it should have but little water; its flowers remain long in perfection.

## Home Correspondence.

*Some Remarks on the Breeding and Preservation of Fresh Water Fish.*—The preservation of certain kinds of fish from the unscrupulous depredations of unprincipled or ignorant people, is deemed of sufficient importance for legislative interference and enactment. Regarded as a valuable article of food, and no unimportant adjunct to the delicacies of the table, the propriety of precautionary measures for the protection of the most esteemed varieties of the finny tribe is sufficiently evident. But this obviously judicious protection, extended by interdicting the destruction of fish during the spawning season, is only efficacious in a limited degree, as the rapidly diminishing supply, of what is technically called "red" fish," in the London market attests. Independently of the edible value of fish, the question is interesting to a vast number of followers of the "gentle art." Can nothing be done even to restore the ancient supply, or at least to check the tendency to decrease, evidenced in the diminished returns from several of our famous rivers. The art of man has brought various wild creatures to subjection. How great the advantages accruing to us from the domestication of the common fowl! And how fortunate that the animal kingdom has afforded nature so tractable, and obedient. Seeing that the denizens of the air, and the earth, have multiplied under our care and tending, why should not a proportionate degree of attention be paid to the extension of the creatures of the waters? It cannot be said that they are utterly wild, and intractable; every one has heard or seen instances of tame fish—we have witnessed trout obey the familiar call summoning them to be fed. At Versailles the carp pursue the visitor round the margin of the pond, with the greed of pigs, for the customary morsel of biscuit; and not far distant from the place from which I write, may be seen perch which freely approach, and take the proffered worm from the hand that holds it. Arguing by analogy, we submit that we may advantageously interpose our protective power, and exercise an important influence in the preservation and increase of the finny tribe. The fecundity of fish equals that of many insects, whose extraordinary powers in that respect are so familiar to us. If the tenth part of the spawn usually deposited, by a trout for instance, attained its due development, and a tenth again of the young fry escaped the destructive inroad of ferocious enemies, we should have little cause to lament the scarcity of this favourite fish. The instinctive care of the parent fish would ensure security for the spawn by depositing it in places less frequented by its common enemies; but it rarely happens that this precaution is adequate to its entire preservation; the spawn is preyed upon by water fowl, rapacious fish, and aquatic insects, and often entirely destroyed by polluted waters drained into the river from highly cultivated districts; the law of might is the law within the water, young fish are preyed upon without compunction by the stronger; hence we find young fish from the first moment of existence endowed with all characteristic instinct, that of self-preservation especially; but neither their small size nor number are sufficient for their safety; but a small proportion in ordinary cases reach maturity. Seeing then that fish are not exempt from that equitable arrangement of Nature, which provides for the maintenance of every kind of creature in due proportion, by permitting destructive influences to check any undue increase, it must then be an object of primary importance to remove what fish we desire to preserve out of the reach of those influences. I am thus led to present the first practical exposition of my views. I have spoken of tame fish. I do not maintain that their tameness is altogether essential; but the advantage of a little familiarity would be to render them more manageable. The first proceeding towards the object in view is, to secure the separation of the fish we desire to protect from its enemies. To do this we must possess a piece of water artificially separated from the source of its supply, but with an adaptation of sluices, so that a suitable quantity of water may be secured, and an excess prevented. For preserving trout, I do not see why every important stream should not be provided with a breeding stew of this description. This stew, as I may call it, may be a branch diverted from the main stream, or a stream flowing from a spring; it should have three divisions, each division provided with a sluice-gate and close gratings. I should keep the breeding fish in No. 2 division from August until January, or until it might fairly be presumed that the depositions of the spawn had taken place; I should then drive them into No. 1 division; Nos. 2 and 3 would then remain for the young fry. These breeding fish should be regularly fed, and familiarised as much as possible. The advantage of sluice gates must be obvious; the water in any one compartment can be let off, and any filth or vermin likely to interfere with the fish destroyed; the bottom of the stream should be composed of sand and gravel—the spawn would be destroyed by mud. I am aware of the plan of collecting spawn artificially impregnated in boxes; but as two able and practical articles have just appeared in the *Chronicle*, fully describing the course to be pursued, I have no occasion to intrude my remarks on the subject. It has been said that "in the multitude of counsels there is wisdom." I trust that others may be induced to give their views and experience on this interesting and important subject; and on the result I hope that the disciples of the "quaint old cruel coxcomb" may count their gains by the dozen, where now they number them by the brace. *W. I., Hatfield.*

*How to Crop a Small Kitchen Garden.*—I have adopted the following plan, which I strongly recommend. At the beginning of the season I had my garden cleared straight through, and I marked it out to be planted, 1st, with a row of Cabbage plants, 2d, a row of Potatoes; 3d, a row of Peas; then plants, Potatoes, and Peas alternately through the garden. I found very great advantage in this plan, by having an immense yield, especially in Potatoes; and having the ground ready, I was enabled to put in the rotation crops without trouble. I propose next spring to follow the same plan, except that I shall plant, 1st, Peas; 2d, plants; 3d, Potatoes; by so doing I shall not of course have the crops again in the same spot of ground. *Vectis.*

*Terrestrial Orchids.*—I some time since inquired of your correspondents as to their experience in growing the more showy Orchids of the south of Europe, and what are the best kinds, and where to be procured. I have been disappointed at not finding any one willing or able to afford information on this subject. I have a small collection (made in Portugal by Dr. Welwitch) which I have potted and kept in a cool house, and most of which are beginning to grow; I suspect these should have been kept cooler or more dry, as I suppose the early spring is the proper time for their growth. *Dodman.*

*Preparation of Land for an Orchard.*—I shall feel obliged by a few words of advice on the following point. For orchards of dwarf fruit trees, should the ground be single or double dug? I am going to plant a large extent of land with dwarf Apple, Pear and Plum trees of choice kinds; and while they are young, to grow Gooseberries and Currants between the rows. I wish to do everything that is requisite for their successful cultivation, but not to expend money on unnecessary or even doubtful operations. The soil consists of 2 or 3 feet of strong brown loam resting on blue lias clay, both of which pulverise very freely on exposure to the air. The ground is being drained with pipes 4 feet deep at 10 or 12 yards apart, which answer extremely well; and up to the present time I have acted on the advice of experienced friends, and double dug it, at an expense of nearly 6*l.* per acre, which process I should have continued had not some other gardening friends also of great practical experience, told me that they not only thought it unnecessary, but even injurious. As far as I at present understand the question, the advantages of double digging are these:—1st, a greater depth of loosened soil, in which the roots may freely extend themselves to procure nourishment, and in dry seasons a more abundant supply of moisture; 2dly, more efficient and quicker drainage of the soil, with greater admission of air to the roots; and thirdly, the mingling together of the top and under soils. Against these, and in favour of single digging, it is said:—1st, it is not desirable that the roots should penetrate far into the ground, but be kept as near the surface as possible, except in very dry soils, which this is not. In illustration of this, the old practice of paving under trees is adduced; 2dly, that for purposes of drainage, deep digging is not necessary, as is proved by the successful results of draining land under ordinary farm culture; 3dly, that if the roots may without injury, or even with some advantage, be allowed to penetrate to a greater depth than a single spit, it need not, and probably would not be till some years hence,

and by that time the under soil would have become so cracked and minutely subdivided in consequence of thorough draining, as to offer sufficient access to the roots—perhaps to as great an extent as if it had been double dug; for in the latter case, the fine particles of the top soil would have been washed into the interstices left after the clods were expanded, and have so filled them as to leave only the same amount of fissures for the downward passage of rain as in the former instance. In matters of this kind extremes are generally bad, and 3 or 4 feet of loosened soil may be as much in excess of the requirements of the case, as 3 or 4 inches may be deficient. I consider it is a matter of degree, resolving itself into a choice between 10 or 12 inches on the one part, and 18 or 20 on the other; and as such I venture to ask the opinion of any of your practical readers, who will oblige me with the result of their experience in similar cases; kindly bearing in mind it is not large standard trees I require, but small prolific bushes. *Richard Varden, Lansdown House, Worcester.*

*Forest Trees and Underwood.*—Having missed seeing your Number of September 20th, and that of the previous week having left my custody, I was quite at a loss, on perusing the communication of "G. L." (September 27th), to call to mind any observation or remark I had made calculated to offend him in the least degree. My remarks, as far as I can recollect, alluded chiefly if not entirely, to those advanced by "Expertus." If I have said any thing unfairly in reference to "G. L." I cannot but regret it; and if he will allow me, I will, with heart and good-will, offer him the right hand of fellowship, as an opponent of pruning, as he seems satisfied himself of its injurious tendency. As my last note referred chiefly to what "Expertus" had advanced, as to modes of pruning being injurious to timber when grown, I had intended to supplement my former observations by endeavouring to show, that all pruning systems are also injurious, in retarding instead of facilitating growth, as their advocates would make us believe. Upon consideration, however, that the subject had been discussed so amply (I may almost say to exhaustion) in your pages formerly, I thought it hardly worth while to re-open it, but meant to make a remark or two upon the practice (or rather neglect) visible in some otherwise beautiful places, of suffering fine, ornamental specimens of various kinds of trees to be crammed up, and greatly injured by overgrown underwood and self-propagated rubbish that have sprung up around them. It may seem invidious to point by name to any spots where this is the case, as proprietors may (adopting the late ducal maxim) say they have a right to do as they please with their own. Nevertheless, there can be no harm in naming Claremont as an example of the evil to which I have alluded. The fine specimens in the pleasure-ground there were formerly quite obscured and injured by rubbish that had sprung up around them; and the walks hemmed in by close hedges of tall Laurel. Some years ago Mr. M'Intosh, much to his credit, had it completely renovated, clearing away the rubbish, and bringing the fine specimens into view; the beautiful slopes becoming covered with Laurel, Rhododendrons, &c., over which one could see in walking round. In fact, the improvement was such that it could hardly be appreciated but by those who were previously acquainted with the place. I may also mention a place of public resort, where the beautiful, well-kept walks are considerably obstructed; and the many fine specimen trees hid by useless, not to say injurious, undergrowth. I allude to the Wilderness at Hampton Court; a word to the wise is enough. In conclusion, I am glad to hail Mr. G. L. as an anti-pruner, and hope he will not accuse wrongfully *Quercus.*

*Zauschneria californica, Plumbago Larpentæ, and Agapanthus umbellatus.*—Observing that the Californian Zauschneria has stood the last two winters out of doors at Claremont, I beg to state it did the same with me in my last situation, which was low and damp; it grew and flowered very freely, without the slightest protection. Where I am at present I have plants in full flower, which doubtless stood out last winter and probably the one before. There is also a fine plant of the Plumbago Larpentæ here, which has been finely in flower for the past month, on a piece of rock-work, where I have no doubt that it has stood the test of two or three winters; although there are not many of the pips, generally five or six, expanded at one time on the same head, still, as the shoots are very numerous, and most of them produce a head of flower, it forms a very beautiful little bush. I may mention that an Agapanthus umbellatus planted here, on the lawn, some two or three years since, flowers beautifully in the summer, without any protection during winter. *E. Sanders, Kingswood Lodge, Englefield Green.*

*Tarred Walks.*—As some of your readers so strongly advocate tarred walks, on the score of their utility and durability, and mention instances in which they have withstood the wear and tear of ordinary traffic for a considerable time, I beg to remind them that there are cases in which they have stood a much more severe test than that of wheelbarrows, carts, carriages, or even waggons, however heavily laden they may have been; as I remember some years ago, on walking by the side of the river Medway, that several places along its banks which had broken away were repaired with the identical mixture you recommend for walks. In certain places the ground was raised, and its top, and the side next the water, protected by a coating of the material in question, the whole being used (I believe) as a towing-path; but the preparation of tar, &c., was supplied in order to protect the bank from the ravages of floods. Now any one acquainted with the latter can easily tell how difficult it is to check their devastating career by any simple, cheap, or effectual means; yet I believe, in the case I speak of, that was effected: but then, I may remark, the tar was not used with a sparing hand; on the contrary it was (mixed with shingle) several inches thick, and had evidently been boiled, as it was as hard as metal, and even in places where the stream had partially undermined it, it stood like a body of cement. Now, having detailed its capabilities in this situation, I suppose some one will be asking what I think of it for garden walks. I at once unhesitatingly say that I do not like it, except in special cases. Certainly, it may be made to assume a hard, smooth, level surface, and that ugly dark surface may be rendered more agreeable looking by a thin coating of fine gravel; but it is this gravel that makes the walk so disagreeable; suppose that it is passed through a three-quarter-inch sieve or screen, still the small stones left in it are very unpleasant to walk upon, resting as they do on a bottom which does not give way to them. If we have the gravel so fine as to be free from such small stones, then it is no better than street mud in wet weather, and the blackened look of the walk is such as to render some coating necessary where appearance is an object. Having said so much against its general adoption, I am not insensible to its merits in some cases, as on steep hills crossings, where there is much wheeling or other dirty traffic, and about door-ways, &c., but beyond that I am unwilling to admit its anti-weed-growing qualities as a compensation for its other inconveniences. *An Old Gardener.*

*Disease in Cucumbers.*—My Cucumbers have been affected this year in exactly the same way as those described at page 678; every fruit exuding gummy granules, some as soon as they were set, others at a later period, immediately succeeded by an olive-green mould, in consequence of which I have had but three Cucumbers from one of Mills's pits, out of which I have been, in former years, well supplied with from 30 to 40 brace, from 12 to 18 inches long—even parts of these three were not fit to be eaten, being brown and hard beneath and round the gum. I made a drawing of the mould which the accompanying woodcut represents. It appears to belong to the genus Dactylium, and is, I think, a new species, which may be called "D. gumminosum." Viewed *en masse* it is olive-green, but as a transparent object it has a whitish gelatinous appearance, stems long and slender, some with short moniliform branches, others bearing at their summits from one to three shuttle-shaped sporidia, which are septate. It may be doubted whether this fungus be the cause or result of the disease. If we only look to the first outward appearance, we should say the latter; but what, then, caused the gummy exudation? The plants were healthy, even to luxuriance, and produced abundance of fine young fruit; and your correspondent says, "Heat, moisture, shade, and sunshine were varied in every possible way, with little or no effect." I did not examine the gum as soon as it appeared, in order to detect a mycelium, if it existed; but the mould appeared, I may almost say, so simultaneously with the gum, that I am of opinion it was there, and that the gum was forced through the skin by the irritating action of the mycelium upon the tissue. "An Old Gardener" asks if much more is known of the Potato disease than in 1846. If he looks into the Horticultural Society's Journal for that year, and the Royal Agricultural Society's Journal published in the end of last year, I apprehend he will not desire to know much more about it unless it be to cure it; indeed, most people are now satisfied that it is caused by the fungus Botrytis infestans. *F. J. Graham, Cranford.*——I observe that information is solicited respecting the spot on Cucumbers and Melons; and as I have combated that enemy twice during these last 14 years, I beg to offer a few remarks on the subject. My first acquaintance with it was in 1837. I was then living at Sandy Place, Bedfordshire. On examining my plants with a magnifying glass, I found a very minute insect, very red and shining, but quite different to the red spider. I have discovered as many as eight or ten of them in a hole in the Cucumber, where the gum had oozed out, and the part had become dry. It is generally to be found on the fruit and on the undersides of the leaves. The three years during which I was troubled with it in frames I had it equally bad on ridges. Towards the close of the third year I had all my frames painted, and the lights dressed with hot lime-wash, and the following season I was quite free from it, both in frames and ridges. I sent several specimens of the insect to Mr. Curtis, who said it was a species of Ixodes. I moved into Norfolk in 1842, where I have seen nothing of the insect or spot, although the former was rigidly looked for. In 1844 the spot and insect paid me another visit. The latter set me at defiance till the autumn of 1846, when I finally conquered it in the following way,—I put a large tablespoonful of arsenic into a gallon of water, and well washed all my frames with it, particularly the joints, which I filled full of the mixture, turning the frames up on their sides and ends, in order that every part might be well saturated. This being done I had the frames whitewashed inside and out with hot lime and water. I had the lights washed with the arsenic water, which I applied with the syringe, and I afterwards whitewashed them the same as the frames; but it must be washed off before it becomes dry, as it will be troublesome to remove. It is worthy of remark that when I had the spot in frames I had it likewise on ridges, and after being freed from it in the former I saw no more of it on the latter. Whether the insect is the cause of the spot or not I leave to others to judge, but my own belief is that it is the cause of the spot. *Thomas Webster, Shouldham Hall Gardens, Norfolk, Oct. 29.*



*Cherries and Raspberries in perfection now.*—As regards the Cherries described by Mr. Rivers at p. 678, I should mention that I have two if not three kinds of Cherries, small standards, which I had about two years ago from Mr. Rivers, and which were netted in the summer, and the fruit is now quite ripe and sound. Two of the kinds are small and sweet, without much flavour; another was large and dark, and is a rich fine fruit. Last year it had been gathered for tarts in the summer. The names under which these trees were sent out are lost, but the latter sort my gardener called a Flemish Cherry. These, and the late bearing Raspberry introduced by Mr. Rivers, which I noticed in your Paper last year, I consider to be great additions to the autumn dessert. The Raspberries are now in full bearing, and if sheltered with canvas, or glass, will continue to yield through November. I have, in addition to the common Morello Cherry, the Buttner Morello against pales, netted; but though it is a good bearer, the fruit, in size and flavour, is far inferior to the common Morello. *Dodman.*

*Samples of Seeds* (see p. 677.)—Your correspondent is quite right in his complaints respecting the multiplication of seeds, and I wish him success in his endeavour to correct an evil which, I regret to say, we gardeners have been the means of fostering. I might go further and include the plant trade as well as that of seeds; but suppose we confine ourselves to the latter at present, and let some one well versed in the qualities of the various kinds of culinary vegetables step forward and give us a list of what is really good, and let the rest be dispensed with. I think much good might be effected by discussing the merits of various things. For instance, let us say Broccoli; and what vegetable is of more consequence to the gardener than a regular supply of nice heads from October till May. Now to meet this case we have a formidable array of names, and all "said" to be good; nay, more than that, some seedsmen go so far as to tell us the exact time in which each individual kind will come into use. Now this seems all very fine; but I have more than once seen (in June) a tuft of long leaves flourishing on the end of a long timber-like stalk that ought (according to print) to have been a beautiful white head of Broccoli in January. Now these things are not uncommon, so let us select say three or four of the best kinds, such as will prolong the season, and dismiss the rest. And as a beginning, I will venture to recommend the Cape, Walcheren, when true, and either the Wilcove or Bowles' Sulphur, for late spring Broccolies. In addition to these three, I would have the old hardy sprouting, and, if the number might be increased, "Chappell's Cream," which comes in before the Wilcove. Now, like many others, I have indulged my *penchant* for novelties for many years, and, perhaps to a little extent, may do so again; but amongst a host of kinds I have found these to be the best Broccolies. If others will come forward, and name what they have likewise found to be good, we may then get to know the very best. What we want in this way is a regular supply from the time the autumn Cauliflowers cease to be useful until the spring ones come in. I have paid a good deal of attention to these things, and for more than two years I have never been without either Cauliflower or Broccoli fit for table. *An Old Gardener.* [We should be glad of information of this kind; but our correspondents will see that in such a case they must give their names and address. We must also add, that the "trade" can take no part in the discussion.]

*Figs and Grapes.*—As connected with the subject of Mr. Rivers' communication, at page 678, viz., retardation, I should wish to propose a question. I am desirous of obtaining late Figs. I have glass, but no artificial heat. Would it be better to retard the first crop according to Mr. R.'s plan, or by stripping off the first crop, and by accelerating the second (by keeping the house much closed) to depend on a late second crop? The trees are in pots. From the Brown Turkey I get a good first crop fruit, but the Nerii seems to throw all its energies towards the second crop. I may here mention that I tried this year a plan recommended by one of your correspondents, viz., to keep slightly open, day and night, the top sashes of a Vinery, and not to admit front or side air. This plan which I continued until the berries coloured (when a little front ventilation was added) succeeded perfectly, and the Grapes ripened at least a fortnight earlier than under the old system. *S. B.*

*Cure for Weeds on Walks.*—To assist this investigation, I may mention that the refuse from one of the lead mines in this neighbourhood (Newton Stewart, N.B.), forms excellent walks, and some made of it 50 years ago remain until now without vegetation of any kind, or even moss, on them. The refuse of other lead mines in the near neighbourhood, I am told, is not fatal to vegetable life, and that the reason is the presence of sulphur in the former, and not in the latter. I cannot myself vouch for this, but analysis would settle the point, and might indicate a cure for weeds. I may add, that both gravels are fatal to fowls. *W. M.*

*Behaviour of Plants in the throat of a covered up Coal-pit.*—Allow me to tell you something about a plant,

hat may be nearly as surprising to some of your readers as toads and frogs living in confinement in stones and trees. It is no uncommon thing, when a coal-pit is old and worn out, for a crop of vegetables to take possession of the upper parts of it; even rare plants will sometimes be found in such places—but how they came there, I know not. It happened, some years ago, that an old pit, with an abundance of vegetation about its mouth, and also down part of its throat, had to be covered up; wood was laid over its mouth, and turf was laid over the wood; the object of the covering was to allow no current of air in the pit. After remaining in that state for some years, this season the mouth of the pit was uncovered, and all traces of the former vegetation had disappeared, except one plant, and it was so greatly changed in appearance, that it took a few minutes to ascertain what the strange-looking thing was or had been; but there it existed, living and growing rapidly, and, as it could not get upwards, it was making its way downwards as fast as it could, and when it was brought to light its extremities had reached nearly three fathoms down the pit. *Peter Mackenzie, West-plean, Stirling.* [This was, we presume, a Rhizomorpha; the woody mycelium of some Boletus-like plant.]

*Late Plums in Pots.*—I have been so much gratified with the ripening of late Plums in pots in my orchard houses, that I am induced to send you a few fruit of Coe's Golden Drop; they are reduced in size from shrivelling in the dry atmosphere, but they are highly saccharine and rich, and would, I have no doubt, have remained on the trees till November. *Thomas Rivers, Sawbridgeworth, Oct.* 22. [They were excellent in all respects.]

## Notices of Books.

*The Rod and the Line; or, Practical Hints and Dainty Devices for the sure taking of Trout, Grayling, &c.* By Henry Wheatley, Esq. With nine coloured plates. Longman and Co.

This is an exception to most of the modern books on fishing, for there is much original matter in it which is good and clearly explained. Brothers of the angle well know that spinning is one of the most difficult points to accomplish, because the principle is but little understood. This book explains it, and points out what to do and what to avoid; it gives clear instructions for making the proper tackle and the various artificial baits, with references to plates, so that the manufacture can be easily accomplished.

The work also gives information to fly-fishers for salmon and trout, and it is written in a free and pleasing style; but the spinning instructions are so good that we strongly recommend all anglers to study the pages of it, for those who do not know anything about it may thus readily learn, and those who perhaps fancy themselves tip-top fishermen may gain valuable information which will be new to them, and increase their chance of returning from a fishing excursion with a full pannier.

## Garden Memoranda.

Chelsea Botanic Garden.—A small plant of the Littæa geminiflora is now blooming in the Chelsea Garden. The flowering stem measures about 11 feet in height. The plant has been kept in a greenhouse temperature for the last two or three years, in the winter season being associated with Aloes and similar plants; and, though comparatively small, is in perfect health, and opening its blossoms very freely; the foliage is very perfect.

## FLORICULTURE.

Tulips.—As the season for planting has arrived, it may be well to offer a few observations on that subject, together with some remarks respecting the characteristics of certain varieties somewhat closely allied, not only in the collection under my immediate care, but also in that of others whose beds I have been privileged to inspect when at their best. I cannot boast of a 30 years' acquaintance with the Tulip, and, therefore, I have few old prejudices to forget in connection with it; yet with much care and a firmly fixed determination only to grow "selections" and not "collections," I find an occasional variety whose room proves more desirable than its company. I have ever been an advocate for the duplicate system of arrangement, *i. e.*, planting the two outside flowers of each row with the same variety; and so on with the second and sixth, and with the third and fifth, as the following example will show.

| *Row* 1. | *Row* 2. | *Row* 3. |
|---|---|---|
| 1. Rose, Cerise blanc | 1. Bybl., David | 1. Biz, Solon |
| 2. Bybl., Salvator Rosa | 2. Biz., Vivid | 2. Rose, Bijou |
| 3. Biz., Polyphemus | 3. Rose, Aglaia | 3. Bybl., General Bournaveld |
| 4. Rose, Magnificent | 4. Bybl., Thalia | 4. Biz., Duke of Devonshire |
| 5. Biz., Polyphemus | 5. Rose, Aglaia | 5. Bybl., General Bournaveld |
| 6. Bybl., Salvator Rosa | 6. Biz., Vivid | 6. Rose, Bijou |
| 7. Rose, Cerise blanc | 7. Bybl., David | 7. Biz., Solon |

| *Row* 4. | *Row* 5. | *Row* 6. |
|---|---|---|
| 1. Rose, Arlette | 1. Bybl., Byzantium | 1. Biz., Albion |
| 2. Bybl., Musidora | 2. Biz., Pilot | 2. Rose, Lac |
| 3. Biz., Fabius | 3. Rose, Triomphe Royale | 3. Bybl., Princess Royal |
| 4. Rose, Emily | 4. Bybl., Louis XVI. | 4. Biz., Platoff |
| 5. Biz, Fabius | 5. Rose, Triomph. Royale | 5. Bybl, Princess Royal |
| 6. Bybl., Musidora | 6. Biz., Pilot | 6. Rose, Lac |
| 7. Rose, Arlette | 7. Bybl., Byzantium | 7. Biz., Albion |

By this arrangement the different classes are regularly distributed throughout the bed, thus, the first flower in row 1 is a Rose; the first in row 2, a Byblœmen; the first in row 3, a Bizarre; and so the second, the third, and the fourth flowers in every row are varied in uniform order; the fifth, sixth, and seventh, corresponding with those already given in detail. Viewed from any point, the colours are thus so well divided and distributed, that I have ever failed to discover the least cause for variation, and therefore I cordially advocate the more general adoption of the plan. Some difficulty may, however, be found in carrying out the system through the entire bed, owing to the want of stock; nevertheless, that should not deter anyone from making the attempt. When purchasing, take especial care to have two bulbs of each of those you want; for instance, buy two of Magnificent (Marefield), 2 Bijou (Scarnell), 2 Vivid (Sanders), 2 Hamlet (Brown), 2 Lac (?), 2 Lacheses (Groom), 2 Salvator Rosa (Brown), 2 Victoria Regina (Groom), 2 Arlette (Dixon), 2 Thalia (Clark), &c., and of the less expensive sorts I find my original purchases varied from four to eight bulbs of each kind, such as Marshal Soult (Groom), David (?), Ponceau tres blanc (Dutch), Princess Royal (Gibbons), Pilot (Gibbons), &c. In the selection of varieties, however, much caution is required; for all that is true of dealers' seed lists equally pertains to Tulip catalogues. What is Rose Astonishing? Rose Matilda? Rose Heroine? Rose Triumphe Royale? Rose Lacheses? what Albion? Polyphemus? Sheet Anchor? Priam? Douzelli? Lord Strathmore? Hamlet? Ulysses? I do not say that these Roses are one and the same, but I do say that great authorities aver that any three of them are too nearly alike even for an exhibition of 12 blooms: so in Bizarres, Albion is said to be but a short-growing variety of Polyphemus; Priam (Wells) a good strain of the same; Sheet Anchor a tall-growing variety of ditto; Hamlet and Ulysses both Slough strains of the same flower; and similar cases might be multiplied to a great extent, but enough has been adduced to show that caution is at least requisite when making purchases, or what is perhaps a sounder policy, make those of whom you buy feel their responsibility, that is the way to raise and maintain confidence. How interesting would an enumeration be of our popular Tulips and their affinities! Surely, many of our cultivators could enlighten us on a subject so full of importance; and in so doing, would they not be conferring much benefit? No Tulip locality should fail to establish a register, the periodical publication of which would set the matter in a fair train for inquiry throughout the whole "fancy;" further, as a rule, I cannot but regret the omission of the raiser's name—this is a fault alone to be charged to the Tulip and Rose growers; for, taking the whole round of florists' flowers, Pinks, Pansies, Picotees, Geraniums, Dahlias, &c., the raiser's name is as perseveringly preserved as the variety itself.

Chrysanthemums.—The unusual mildness of the season is telling in favour of the Chrysanthemum, whose progress during the past week has been rapid. The earlier sorts (such as Princess Marie, Vesta, &c.) are well nigh expanded; and the late sorts, I have no doubt, will be in bloom by the 20th of November. As far as appearances go, a splendid bloom may be expected. Preparations should be made without delay for protecting both plants and blooms, so that they may be available at the shortest notice. Much may be done either for the purpose of retarding or forwarding the bloom by the means used for protection. Such varieties as Perfection, Campestroni, Two-coloured Incurved, King, and Dupont de l'Eure, should be housed first; not only because they are late varieties, but also from the fact that they take a long time fully to develope themselves. These remarks apply to plants grown in pots. When grown against a south wall, &c., other means of protection must be resorted to. Lights not in use may be made available for the purpose, also covering with oiled canvas; both of which, however, in some cases are objectionable, as, for instance, when the plants are grown against a wall in the pleasure-ground. The plan I adopt is simple and effectual, and it is not so unsightly as either of the foregoing; I use the cover or tops of my hand-lights, which are made of iron; I drive two nails into the wall just above the blooms, for one edge of the light to rest upon, and a third nail 2 feet above the others, to which the handle of the light is secured with a string. By this mode of fastening, the light is suspended over the blooms. If the latter are forward, this is sufficient; if late, by lengthening the cord, both edges fall to the wall, completely enclosing the blooms, and at the same time forwarding them considerably. One glass may be made to protect three or more plants, by drawing them to it. Among the more modern varieties, the Duke, Evarden, Cloth of Gold, Lyzzus, Dupont de l'Eure, will take a prominent stand. Nevertheless, our old favourites, Vesta, Annie Salter, Goliath, &c., will appear finer than ever. I have no doubt plants will be exhibited in fine condition. There will be some immense specimens. I have no hesitation in saying that the competition in plants and blooms will far exceed that of any previous year. Be careful in not housing the plants too soon, or loss of foliage will probably follow. *Wm. Holmes.*

Catalogue received from Mr. E. G. Henderson, St. John's Wood. *J. E.*

Pelargoniums: *W E R.* Two plants. *J. E.*

## Miscellaneous.

*Death of Mr. James Cunningham.*—We have to announce the death of Mr. Cunningham, Nurseryman, at Comley Bank, Edinburgh, which took place on Wednesday, the 22d October. Mr. Cunningham was long celebrated as a nurseryman, and was one of the most successful propagators of plants of the age. He was born at Carluke, in Lanarkshire, in 1784; at an early age his love for plants was such as to induce his parents to make him a gardener, and he was thereupon apprenticed to Mr. Loudon, at Lockhart Hall, now Carstairs House, in Lanarkshire. At the expiry of his apprenticeship he was sent to Woodhall, the seat of W. F. Campbell, Esq. of Isla, where he remained for several years, under the late Mr. Walter Henderson; he afterwards removed to London, and for sometime was engaged in the nursery establishment of Messrs. Jenkins, Regent's Park. Subsequently he was employed in the Royal Gardens at Kew, under the late William Aiton, Esq. In this Royal establishment, the late Mr. M'Nab and he were fellow-labourers, and both left for Scotland during the month of April, 1810. Shortly after his arrival in Scotland, he procured a small piece of ground at Comley Bank, to form a nursery, and which has been extended several times; it now contains a larger amount of pot plants than any similar establishment in Europe. During November, 1837, he was appointed Nurseryman and Florist to the Queen for Scotland. Mr. Cunningham did not excel so much in cultivation as he did in propagation; in this latter department he stood unrivalled, and many of the methods practised at Comley Bank were patent to himself. He was the first to take up the hybridisation of Rhododendrons in Scotland, and many excellent hardy standard varieties were produced by him. The celebrated Bryanthus erectus was likewise the result of his labours; and, strange to say, for several successive years the same variety was produced between the same plants without any perceptible change in the offspring. Mr. Cunningham through life was quiet and retiring, with habits peculiar and somewhat eccentric. His remains were interred on the 24th of October, in the parish church-yard of Carluke. *North British Agriculturist.*

*Pine Apples.*—In a copy of the "Hortus Medicus Amstelodamus," now by favour at hand, on the plate *Ananas* is entered the following MS. note by P. Collinson—the eminent F.R.S.:—"Sr Matthew Decker first brought the Ananas or Pine-apple into England to his garden at Richmond, where I saw them about the year 1712." In the "Horticultural Transactions," vol. i. (p. 150), we read:—"Lady Mary Wortley Montagu, on her journey to Constantinople, in the year 1716, remarks the circumstance of Pine-apples being served up in the dessert at the Electoral table at Hanover as a thing she had never before seen or heard of. Had Pines been then grown in England, her ladyship could not have been ignorant of the fact." *Quarterly Review.* [In Lord Waldegrave's collection at Strawberry Hill was a picture representing Rose, the Royal gardener, presenting the first Pine-apple to King Charles the 2d, in the Garden at Hampton Court. The Pine-apple must therefore have fruited in England before 1685.]

*New Style of Glass for Church, Chapel, and School Windows.*—A description of glass, termed "quarry" glass, has been recently manufactured by Messsrs. Hartley, which we think will speedily come into general use for the purposes above named. For these windows, small pieces of glass are generally used, fastened together with lead, which, from the amount of labour required, are rendered costly, and when finished are constantly liable to get out of repair; the wind and rain are soon found to penetrate the joints, and render adjoining sittings exceedingly uncomfortable. The great improvement afforded by the glass we refer to, consists in its being thick, of large size, untransparent, figured in imitation of lead, and presenting that chaste appearance so necessary for places of worship. In connection with these advantages, the quarry glass is so strong that no frames are required to support it; and though three times the thickness of crown glass, windows made of it will be less expensive, perfectly air-tight, of better appearance, and much more durable. To architects and builders the quarry glass will recommend itself as combining utility, beauty, and economy. *Sunderland Herald.*

*Vegetation of Borneo: Ascent of Kini-Balu.*—The following interesting remarks are from a letter received by a correspondent from Hugh Low, Esq., Colonial Secretary at Borneo, who has been the first to ascend the loftiest mountain of that island. The position of Kini-Balu is at the N.E. extremity of Borneo, in about 6° north lat., where it forms a most conspicuous feature from the ocean to the east, north, and south. It has hitherto erroneously been presumed to be volcanic, from its peculiarly steep summit, and the rugged crater-like ridges it presents on various sides, and probably as much from analogy, the lofty explored peaks of Java being invariably so. The discovery of its granitic structure is on this account the more interesting. To the botanist, Kini-Balu seems to afford a rival in Rhododendrons to the Himalaya, and in Pitcher plants to any known country. In the same communication, Mr. Low informs us that he intends again ascending the mountain, and, if possible, reaching a higher elevation. We wish this adventurous and intelligent explorer every success. Nothing is said of the difficulties and dangers that must have attended his journey from the coast to the foot of the mountain, they were doubtless many and severe, and we wait with anxiety for further particulars, which shall be laid at once before our readers. "Labuan, April 23, 1851. As, when I had the pleasuse of meeting you in England, you expressed a wish to know something of the mountain Kini-Balu, I have now the pleasure to inform you, that I have sent to Colonel Butterworth, the Governor of the Straits, a small collection of plants made there by myself, on a visit I paid to the mountain last month, of which I beg your acceptance. I enclose in the same parcel two or three small

pieces of the rocks from different parts of the hill, by which you will perceive that the mountain is granitic, and not volcanic, as has been generally supposed. The view of the hill by which it is best known gives it a conical form; but that, I am inclined to think, is from its having been principally observed from the westward, where the end only of the mountain is seen. I imagined I had gained the top of the south-west end, but such could not have been the case, as the height of the point I gained is by barometer only 8516; whereas the top, by triangulation had been found to be 13,500 feet. [Captain Sir E. Belcher, who visited this locality in the Samarang, in 1844, and published, in his 'Narrative' of that voyage, an admirable view of the mountain, drawn on the spot, by Lieut. Browne, estimated its height, from observations made at Labuan, Ambong, Tampassook, Mantanani, and other places in the vicinity, to be 13,698 feet. Its summit was enveloped with mist, and from the difficulties which its outline and surrounding scenery presented, Captain Belcher did not attempt the ascent.] The highest parts are bare granite, and the ridge very narrow, the side to the northward being sheer precipice. Two or three Orchids were growing on the rock at the extreme point I gained, when the thermometer stood at 52° at noon of a fine day. [By this observation, the elevation reached by Mr. Low might have been assumed as between 8000 and 9000 feet.] The whole of the ascent is exceedingly steep, but with no places of any great difficulty to surmount, as far as I went. I remained two or three nights at an elevation of about 8000 feet, encamped under an overhanging rock, with a pretty considerable torrent rushing past it; the ravine of which was densely clothed with vegetation, including a fine yellow Rhododendron, forming a large shrub or small tree. In the same ravine grew also a Phyllocladus, a small-leaved Dacrydium, and another curious Rhododendron, like a Heath. One of the most remarkable plants was a new Dacrydium, which looked so much like a Spruce Fir, that I, at first, thought it must really be a cone-bearing plant. Of four species of Pitcher-plant, one was of a very curious, and to me of quite a new form, and so large as to contain as much water as I could drink at a draught when thirsty, probably a pint; it was a strong-growing species, and after a rather long search, I found it in flower; but all my specimens of it, together with many others, were thrown away by my lazy followers, during the descent, which we found very severe work, aggravated as it was by being made in very heavy rain. This Pitcher-plant was not found high on the hill, not more than from 2000 to 4000 feet. In all, I saw thirteen species of Rhododendron, in a distance of about three miles; some of those on the lower parts of the mountain epiphytal, and all that were in flower exceedingly beautiful." *Literary Gazette.*

*Sale of Plants.*—Eighty-seven lots of Mr. Smith's (of Norbiton) yellow Rhododendrons, and 16 of his Azaleas, were sold the other day by Mr. Stevens. The Rhododendrons averaged about 6*s.* each, and the Azaleas, which were somewhat large and fine, about 8*s.* a plant.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Let careful consideration be given to the proper management of the stock of winter flowering plants, so as to secure an unvarying display, during the whole time in which they are most required; to accomplish which, the stock should be divided into a number of successions, and introduced at proper intervals. We do not, however, wish to recommend any one to attempt to make use of fewer plants than would be amply sufficient to answer the desired purpose; for we consider that no pains should be spared to make the display as great and as good at all times as the resources of the place will permit. But the thing should be managed so systematically as to allow of the different periods being put as much as possible on a par with each other. Chrysanthemums, scarlet Geraniums, Cactus truncatus, early Camellias, Cinerarias, &c., ought now to be making a fine display in the conservatory; and to ensure a continuance of this as long as possible, let them be freely supplied with water, and occasionally with weak liquid manure. Pits and Frames.—More careful attention will be daily necessary in these, to preserve the plants from the effects of cold and damp. Examine the plants frequently, and remove all decaying leaves or other impurities. Let them have every ray of light which our gradually shortening days will afford them; and whenever the weather will permit, let the sashes be removed. Even when it is too damp to admit of this, a free circulation of air should be ensured, by tilting the lights, which should always be done on the leeward side.

FORCING DEPARTMENT.

Pineries.—Do not allow the cold weather to seal up the ventilators of these houses; the admission of air must of course be gradually reduced, in accordance with the advancing season, but this is a very different matter to almost discontinuing it. We make it a rule to give our plants some portion of air night and day, independent of that which obtains ingress through the laps. Let water be very sparingly used during dull weather, but have an eye to those plants which stand near the flues or hot-water pipes, as they are liable to get dry before their neighbours. Vineries.—All the houses from which the fruit is cut will by this time be converted into greenhouses; the Vines require to be kept cool and dry, and the plants want nearly the same treatment; frost, however, must be carefully excluded. While the plants are in these temporary dormitories, particular care should be taken to keep them perfectly clean and free from insects of every description, or these latter will leave broods behind them, which will be very troublesome another season. If possible, avoid putting plants into those houses in which the fruit is still hanging; but if necessitated to do so, let them be of such kinds as require the smallest quantity of water during winter, such as Crassulas, scarlet Geraniums, or semi-succulent plants of any kind, Cacti and other succulents, with young Vines in pots, Fuchsias, and various bulbous and tuberous rooted plants in a state of repose. As the leaves of the Vines ripen, let them be removed; pinching them off at the apex of the leaf, and leaving the footstalk to fall off when its own time comes.

FLOWER GARDEN AND SHRUBBERIES.

If the perfect neatness usually expected in this department is rendered less imperative at this season, either by the temporary absence of the family, or by their permission, a very considerable saving of labour may be effected by cleaning the walks only, and allowing the leaves on the turf and amongst the shrubs to lay undisturbed till they have all fallen, when they may be cleared away from the turf at one operation, and those amongst the shrubs may be buried by slightly digging over the surface of the ground, thereby giving it a dressed appearance, and improving the condition of the shrubs by placing the decaying leaves in immediate contiguity with the roots. Another advantage in allowing one cleaning to suffice is, that much injury to the turf is thereby prevented, for nothing damages it more than continually sweeping or trampling upon it when wet or frozen. The time saved by the course here proposed may be very advantageously employed in progressing as fast as possible with any new work which may be in hand in any department. It must be borne in mind, also, that a flower garden with empty beds, however clean and neat, has a very bleak, chilling appearance, and falls far short of the idea of a pleasure-ground, according to an English taste. Such a state of things is inexcusable, as sufficient shrubs may be kept, in a very small space of ground, to make the garden during winter look at any rate cheerful. We adverted to this subject some time back, but not so fully as it deserved; and we hope that those who have not already done what is necessary, will lose no time in accomplishing it. It is not, of course, to be expected that the beds can all be filled with flowering plants, but they may be with dwarf bushy plants of handsome evergreens.

FLORISTS' FLOWERS.

The Dahlia has continued to bloom for an almost unprecedented period, but its glories must necessarily now be of short duration. When the tops are blackened by frost, the sooner they are out of the ground the better. Dry the roots gradually, and take particular care of seedlings, especially the weakest, as these often turn out the best flowers. Choose a dry day, and go over Pink and Pansy beds, loosening the surface soil, and bestowing on the plants any little attention they may require Auriculas must not be forgotten amongst the cares attendant on planting Tulips, storing Dahlias, or framing Carnations; but these earliest of our next year's favourites must have plenty of air, without being left exposed to drenching rains.

KITCHEN GARDEN.

Where the texture of the soil is very tenacious, all treading upon the ground while it is wet should be scrupulously avoided, as it is impossible to preserve it free and open, if it is compressed at such a time. The object should be to render it as pervious as possible to the winter frosts; for which purpose, advantage should be taken of favourable weather to manure and trench all vacant ground, leaving the soil as rough and loose as possible. Any full-grown Broccoli, Savoys, &c, that are occupying ground which it is desirable to trench, may be taken up, and laid in with their heads pointing to the north, on any spare piece of ground. Scotch Kale, Cabbage, or Brussels Sprouts, may be similarly removed, observing however, to plant these in their original upright position, for the sake of their sprouts.

State of the Weather near London, for the week ending Oct. 30, 1851, as observed at the Horticultural Garden, Chiswick.

| Oct. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature of the Air. Max. | Temperature of the Air. Min. | Temperature of the Air. Mean | Temperature of the Earth. 1 foot deep. | Temperature of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 24 | ☽ 1 | 30.361 | 30.272 | 57 | 37 | 47.0 | 54 | 52 | N.E. | .00 |
| Satur.. 25 | 1 | 30.386 | 30.348 | 55 | 49 | 52.0 | 53 | 52 | N.E. | .00 |
| Sunday . 26 | 2 | 30.214 | 30.099 | 57 | 42 | 49.5 | 52 | 52 | E. | .00 |
| Monday 27 | 3 | 30.170 | 30.034 | 59 | 37 | 48.0 | 52 | 51 | N.W. | .00 |
| Tues. .. 28 | 4 | 30.100 | 29.576 | 54 | 39 | 46.5 | 51½ | 51 | S.W. | .33 |
| Wed. .. 29 | 5 | 29.419 | 29.305 | 48 | 30 | 39.0 | 51 | 50 | N.W | .02 |
| Thurs... 30 | 6 | 29.359 | 29.424 | 49 | 36 | 42.5 | 49 | 49 | N.E. | .01 |
| Average.... | | 30.035 | 29.872 | 54.1 | 38.5 | 46.3 | 51.8 | 51.0 | | .36 |

October 24—Overcast; dusky haze; uniformly overcast.
— 25—Fine; overcast; fine.
— 26—Overcast; fine; overcast.
— 27—Uniformly overcast; exceedingly fine, with bright sun; clear at night.
— 28—Overcast; fine; clouds of dust along roads; heavy rain at night.
— 29—Clear and fine; slight frost at night.
— 30—Clear; slight shower in forenoon; fine.
Mean temperature of the week, 4 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Nov. 8, 1851.

| Nov. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 2 | 54.2 | 39.2 | 47.7 | 10 | 0.19 in. | — | 2 | 5 | 2 | 2 | 9 | 2 | 3 |
| Mon 3 | 53.6 | 38.8 | 46.2 | 13 | 0.82 | 1 | 1 | 7 | — | 5 | 5 | 6 | 1 |
| Tues. 4 | 50.9 | 36.6 | 43.7 | 12 | 0.14 | 2 | 3 | 4 | 2 | 3 | 5 | 4 | 2 |
| Wed. 5 | 52.8 | 39.0 | 45.9 | 11 | 0.23 | 3 | 2 | — | 4 | 4 | 9 | 1 | 1 |
| Thurs. 6 | 53.1 | 41.3 | 47.2 | 12 | 0.76 | 1 | 2 | 1 | 2 | 5 | 10 | 3 | 1 |
| Friday 7 | 52.2 | 37.9 | 45.0 | 15 | 1.02 | — | 1 | 2 | 3 | 4 | 9 | 3 | 3 |
| Satur. 8 | 50.7 | 35.5 | 43.1 | 13 | 0.38 | 1 | 2 | 1 | 2 | 2 | 9 | 4 | 4 |

The highest temperature during the above period occurred on the 6th, 1834—therm 63 deg.; and the lowest on the 3d, 1845—therm. 20 deg.

## Notices to Correspondents.

Back Numbers.—Full price will be given for the following Numbers: 1846—9, 25; 1850—41, 42, 44, 45, 48, 49.

Berberis aquifolium: *J P M.* Keep your seeds in sand till February, and sow them then. Some of them will be two years in coming up.

Birds: *A Naturalist.* Yes; in some places, and under certain restrictions. The selection of the spot, however, requires *much* judgment.—*Alice.* As you acknowledge yourself to be "a novice," we will not be severe, but rather caution you for the future. Your bird's feet are diseased from the want of cleanliness on your part. His perches should always have been kept clean with a soapy flannel. Dirt is fatal to all cage birds. Read our former remarks about this.—*William F.* By some, he is called the "Ox-eye;" by others, the "Joe-Bent." He is a perfect "savage," and of no value.—*F L.* Try a meal-worm when he droops.—*A G.* All will be right, if you have patience. He has moulted well; his head, now bald, will be perfectly covered in a fortnight.—*Sarah J.* His claws require cutting. Use a sharp pair of scissors for this purpose, and perform the operation carefully but quickly; as the heat of your hand is objectionable to the patient.—*B T.* Try boiled milk, with a little crumb of bread soaked in it.—*Janette.* Now is the very time to purchase a canary, or a black-cap. *Both* are in full song. We have already said *where* the best birds are to be procured.—*Sophia Jane.* —It is too early in the season to purchase hen birds for the purposes of breeding.—*Captain F.* If we are to give the casting-vote, let it be a bat-folded blackbird, in preference to a nestling.—*Ninetta.* Your string of questions, if replied to here, would require more space than we can afford. Send your name and address (inclosing a postage-stamp), and we will write you per post.—*T G.* Your letter and its inclosure have reached us. Many thanks. *W. K.*

Books: *C K.* Apply to Mr. Beck, Worton Cottage, Isleworth. ‡ —*Lignosus.* Brown's "Forester."

Clematis montana: *C N R.* It will succeed perfectly planted out against a south wall without any protection. Its flowers are white.‡

Cupressus: *A E V.* The two names are synonymous.‡

Glass: *W.* We should not like to try the experiment with horticultural rough plate; it is too weak. Thick rough plate, now extremely cheap, is not in the least likely to break. The India-rubber glazing is described by us at p. 499. It is an ingenious plan, and may answer; but it demands a trial, which time alone will give.

Guaco: *Florentine.* According to Humboldt, this is a composite plant called Mikania Guaco. According to Hancock and others, it is an Aristolochia. The statements about it are conflicting; but it can hardly be doubted that it is a plant of great potency.

Insects: *A Sub.* The grub sent with the young Larch tree roots is that of the common cockchaffer. Is this really the culprit? The injuries appear rather to have been committed by the Hylobius abietis. If by the former, the ground ought to be turned up and the grubs picked out at once, before they bury themselves in their winter quarters. *W.*—*R G K.* The insects found about the stone jamb of the door of your plantation belong to a species of spring-tailed insects (Lepismidæ), scientifically known as Petrobius maritimus, generally found about stones near the shore. *W.*—*J B.* The blisters on the Pear leaves sent are caused by the minute larvæ of a little moth (Argyromyges scitella), burrowing between the two surfaces of the leaf. The perfect moth appears in the middle of the summer, sitting among the leaves, and flying off on being disturbed. Hence a cloth daubed with pitch drawn occasionally over the trees will catch the moths in numbers. If the leaves are afterwards blistered, they should be picked off and burnt before the larvæ have left them. *W.*

Names of Fruits: *S W L M.* 3, Crassane; 4, decayed; 5, Beurré Diel; 6, 12, Passe Colmar; 8, Beurré d'Aremberg; 9, Winter Nelis; 11, Glout Morceau; 13, St. Germain; 15, Easter Beurré. The Apple is the Yellow Ingestrie.‖—*Este.* 1, Margil; 4, Wyken, or Warwickshire Pippin; 5, Cluster Golden Pippin; 6, Brickley Seedling; 7, Franklin's Golden Pippin; 8, Cornish Gilliflower.‖—*Senex.* 1, Bedfordshire Foundling; 2, Blenheim Pippin ‖—*Verax.* 2, 3, Chaumontel; 4, Doyenné Blanc; 6, Swan's Egg; 7, Sturmer Pippin; 8, Aston Town; 15, Yorkshire Greening; 19, Minchall Crab; 20, Ribston Pippin; 22, Marie Louise; 23, Autumn Bergamot; 24, Red Streak; 25, King of the Pippins; 26, Wyken Pippin; 27, Old Golden Pippin; 29, Moorfowl Egg.‖—*A B.* 1, 8, Early Nonpariel; 3, Trumpington, or Eve Apple; 6, 12, 13, 19, King of the Pippins; 7, Reinette du Canada; 10, Downton; 11, French Crab; 17, Blenheim Pippin; 20, Bezi de Caissoy; 21, Glout Morceau. In reply to your inquiry respecting No. 7, it will sometimes keep till April. Whether you disturb the soil immediately round the boles or not is immaterial, but you will do well in carrying out your intention of adding fresh soil and manure towards the extremities of the roots.‖—*W West.* 1, Scarlet Nonpareil; 2, 3, Court of Wick; 5, Beauty of Kent; 7, 9, Golden Reinette.‖—*J Carter.* 1, Lemon Pippin; 4, Hollandbury. The seedling, No. 2, and the Cumberland Apple, No. 3, have no merit.‖—*T C, Tunbridge Wells.* Neither of your seedling Apples are worthy of cultivation.‖

Names of Plants: We have received from *J M R* a little packet of entangled, unnumbered morsels in a state quite unfit for examination. We think we distinguish among them traces of Veronica incana, Diplotaxis tenuifolia, and some sort of Teucrium like T. Chamædrys.—*C M—l.* You are aware that Brassiæ are among the most difficult of Orchids to determine from single flowers. As far as we can judge from a specimen crushed in the letter-stamping, yours is B. bidens.—*W A.* Ceriuthe major.—*H C.* Ligustrum lucidum, the Chinese Wax tree.—*H G.* Lycaste macrophylla.—*J W G.* Ageratum cœlestinum.

Potatoes: *Sylvanus.* The effect of autumn-planting has hitherto been, that Potatoes set then have generally escaped the disease; while others, under similar circumstances, but not planted in autumn, have not. This year's experience has, however, somewhat shaken the value of the plan. Nevertheless early planting of some kind is advisable, and, if you should determine on planting now, you had best bury the sets in leaves 6 inches deep. ‡

Vineries: *W S.* Make the border of good turfy loam and dung, with some broken bones or peat, from 2 to 2½ feet deep, on a good well drained bottom. You had better glaze the roof with Hartley's rough plate glass; for which, in your case, the frames need not be stronger than usual.‡

Wall Trees: *J E M.* The article in question is much too long for us to reprint it. We must, therefore, refer you to the book itself.

Zinnia elegans: *B K.* We are not aware that it makes any difference whether you save your seeds from the guard petals or from the cone.‡

Misc. *Debies.* Sir Joseph Paxton is an Englishman. What an idle question!—*Monica.* 1, use Alum. 2, pinch off every flower-bud except that at the end of the shoot. 3, your Orchids want more heat. We cannot have advised you to put Stanhopeas into a greenhouse. 4, give them good turfy loam well rotted down, and the rich stuff from an old Cucumber bed. If possible start them also in bottom heat. 5, don't know such a plant. 6, no *general* answer can be given to the question. For most plants Thames water is sufficient. Do your plants appear to *want* anything more? 7, you cannot give artificial colour to Roses.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

SMITHFIELD CLUB, 1851.—CHRISTMAS FAT CATTLE SHOW.—Prize Sheets and Blank printed Forms of Certificates may now be obtained, on application to the Honorary Secretary.

The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

THE ANNIVERSARY DINNER of the CLUB will take place at the FREEMASONS' TAVERN on the WEDNESDAY of the Show Week, instead of the Friday, as heretofore.

B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon-street, Piccadilly, London.

THE BIRMINGHAM CATTLE SHOW.—CLOSING OF ENTRIES.—The CERTIFICATES of ENTRY for CATTLE, SHEEP, PIGS, and POULTRY, may be had on application to Mr. E. LATHBURY, No. 2, Insurance Buildings, Union-passage, Birmingham. The Entries CLOSE on SATURDAY, the 15th of November.

WHEAT FOR SEED, KESSINGLAND and GIANT RED, two of the most productive varieties, at 5s. 6d. per bushel. New sacks, 1s. 6d. each. Grown by JAMES FAIRHEAD, Seed Grower, near Braintree, Essex. Delivered by Quarter to any Station on Eastern Counties Railway, carriage paid. Post-office orders expected from unknown correspondents.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

CUNDY'S PATENT PRIZE STOVE.—W. HODGES, 123, Oxford-street (late J. E. DOWSON), is the sole manufacturer of CUNDY'S patent open fire-place, pure warm air ventilating STOVE, which has been so long tested and approved by the public, and for which he received the large Silver Medal from the Society of Arts. It is admirably adapted for warming and ventilating churches, school rooms, and other public places, halls, dining-rooms, &c., &c. Also CUNDY'S Patent Dioko-Capnon or smoke-expelling register Grate, a perfect cure for smoky chimneys; together with a large assortment of Marble Chimney-Pieces, Drawing-room and other Grates, Fenders, Fire-irons, and Kitchen Ranges of the most improved principle, Wind-guards, &c.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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Three communications daily on week days; two on Sundays. Sea passage Four Hours and a Half. First class, 3l.; second, 2l. Return tickets (available for a fortnight), first class, 4l. 10s.; second, 3l. Children under twelve, half-price.

For full particulars of the booking-through system between England and Ireland, see "Bradshaw's Guide," page 122; "Walsh's Irish Guide," page 20; "Fisher's Irish Guide," page 2.

THE ROYAL EXHIBITION.—A valuable, newly invented, very small, powerful Waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from four to five miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS. TELESCOPES.—A new and most important INVENTION in TELESCOPES, possessing such extraordinary powers, that some, 3½ inches, with an extra eye-piece, will show distinctly Jupiter's moons, Saturn's ring, and the double stars. They supersede every other kind, and are of all sizes—for the Waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses, with wonderful powers; a minute object can be clearly seen, from 10 to 12 miles distant.—Invaluable newly-invented preserving Spectacles, invisible and all kinds of acoustic instruments for relief of extreme deafness. Messrs. S. and B. SOLOMONS, Opticians and Aurists, 39, Albemarle-street, Piccadilly, opposite the York Hotel, London.

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HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, begs to call attention to his ACHROMATIC MICROSCOPES (warranted good) which wil be exchanged if not approved of. These Instruments will define the Circulation of the Blood in the Frog's Foot, the Saw in the Sting of the Wasp, the Comb in the Spider's Foot, the beautiful form and varieties of Pollen in Flowers and their Structure, the Scales of the Butterfly's Wing, and also in many instances Adulteration of Food. It is a very interesting companion, and will pass away usefully many a leisure hour, the fund for observation being inexhaustible. Price for No. 1, 3l. 12s.; No. 2, 5l 15s; No. 3, 9l. 10s. A descriptive Book, sent post free, on receipt of three postage stamps. Prepared objects, 12s.; injected do., 30s. per dozen.

EXHIBITION PRIZE—HYBRID WHEAT.

MR. RAYNBIRD begs to offer to Agriculturists a new variety of WHEAT, a Hybrid between the Piper's Thickset and the Hopetoun, at 10s. per bushel, including delivery to the Bury St. Edmund's Station.—Address, Mr. R. RAYNBIRD, Hengrave, Bury St. Edmund's, Suffolk.

**The Agricultural Gazette.**

*SATURDAY, NOVEMBER* 1, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov. 6—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 13—Agricultural Imp. Soc. of Ireland.

LIEBIG has stated in his chemical letters, that "water evaporates incessantly from the surface of the young plant; its quantity is in direct proportion to the temperature and extent of the surface." This, like many of his other statements, requires to be considerably qualified, inasmuch as temperature is merely one element. Heat is no doubt the prime agent in the vaporisation of water, but the quantity is regulated by other forces. The amount of moisture which exists in the atmosphere exerts another force, and lessens the quantity of water which might be evaporated with a given temperature. Water at the temperature of 80° would give vapour very rapidly from its surface, if its constituent temperature in the atmosphere only existed at 30°. But if the dew point was to rise to 80°, no further evaporation could take place, because the pressure exerted by this density of vapour prevents any increase of tension without an increase of temperature. The same principle in some measure holds in the atmosphere as in the boiler of the high pressure steam engine, where the boiling point of the water is regulated by the tension of the accumulated steam.

In what form, then, can we express most approximately the evaporative powers of the atmosphere, so that this force may be more readily fixed in our mind, and so far be of use in enabling us to have some conception of its effects on vegetation and the earth? The fundamental conditions which regulate the force of evaporation, other things being equal, is the temperature of the air and the amount of moisture which it may already have in mechanical mixture. The difference between the constituent temperature of the watery vapour—in the atmosphere and the temperature of the air, is an index of its evaporative powers. On this principle the amount of moisture in the atmosphere becomes matter of calculation by observing the difference between a wet and dry thermometer. The markings of the two thermometers only coincide when the air is saturated with moisture. In this case no evaporation and consequent absorption of heat from the bulb of the wet thermometer takes place. Plants are affected in the same manner, and will exhale moisture from their leaves in the ratio of the dryness of the air. Sunshine and the force of the wind exert a powerful influence in promoting evaporation from plants. HALE's well known experiment on the Sunflower need not be adduced in confirmation of this fact. Indeed, if the thermometer is noted, the quantity of moisture in the air can be very closely guessed at from our sensations of heat or cold. A moist air checks the perspirations of the skin, while a dry one promotes them; and in the latter case robs more rapidly of the latent heat, and the air then feels cool, though comparatively warm.

In a former Number we pointed out that there was a remarkable agreement between the mean minimum temperature in the shade and the mean dew-point of the vapour of water in the atmosphere. It must, then, be obvious that the force of evaporation must depend, in a great measure, upon the range of the thermometer through the day. Thus, a mean temperature of a summer-day, at 60°, would have a much less evaporating force composed of 66° and 54° as extremes, than of 80° and 40°; the one would evaporate .07 inch of water, and the other .25 inch. The composition of the mean temperature of any country becomes a most important element in many respects. It is a peculiarity of temperate latitudes that the thermometer differs much more in daily range than it does within the tropics. This, as we formerly showed, is evidently owing to the great amount of moisture which exists in the air near the equator, and this seems to be the chief element in tempering the force of solar and terrestrial radiation. In some of the southern states of North America the difference between the day and night temperature is greater in winter when the air contains less moisture, than in summer when there is more. But this is reversed in our latitude, because the sun has little power in winter; whereas, in summer, a powerful sun, with a comparatively small amount of moisture in the atmosphere, give us a wide range of the thermometer.

We see that Lord WHARNCLIFFE, in an able paper on drainage, in the last number of the "Royal Journal of Agriculture," has laid hold on the range of the thermometer as an index of the amount of evaporation. This can only be done, however, on the supposition that the minimum temperature corresponds pretty closely with the dew-point of the vapour. By the bye we think he has made a most unfortunate selection of two stations to illustrate this principle; and as the same error is very often committed, we take this opportunity of pointing it out. The difference between the annual temperature and the summer temperature at Bedford and at Derby is 6.7° (!) and 8.3° (!) respectively. Now we have no hesitation in saying that this difference principally arises from comparing observations which have been made under totally different schemes. If this very common practice is not carefully guarded against, one will be very apt to write a greater amount of heat or cold, as you go north or south, or in any direction whatever. The very best observations that can be got give but a very uncertain sound, which should make us rather fastidious of the materials which we select.

We are inclined to think that mere mean temperatures are of much less use as a basis for ascertaining the agricultural capabilities of any country than is usually imagined. For example, take the case of Great Britain; the eastern counties of England are very opposite in their effects on vegetation from the western, although their mean summer temperatures are almost equal, as well as where the amount of rain does not differ very materially in spring and summer. It is not in these elements that we are to look for their characteristics. The climate of East Lothian is much superior for ripening the Cereals to many districts in the west of England and Ireland, still the summer temperature is much less. Again, owing to a combination of circumstances, which will be afterwards detailed, Morayshire contains one of the finest Wheat and Barley districts in Britain, but its summer temperature, we have every reason to believe, is lower than in many other parts of Scotland, which are much inferior in corn-growing qualities. The mean summer temperature of London is 62.78°, that of Paris, 64.58° (MAHLMANN); the summer temperature of London will sometimes reach that of Paris, but vegetation in the surrounding country of the latter is, in so many respects, different from that of the former, which impresses us with the conviction that their climatic peculiarities are separated by a much wider boundary than our figures indicate.

In order that we may have some figures to assist us in rightly judging of the composition of our mean temperatures and their special effects on vegetation, we have selected observations which have been made under the same schemes and where every precaution has been used to ensure accuracy. The observations for the East of England may be taken as a type of the driest eastern counties. Those of the West of England for the south-western counties as well as the southern part of Ireland. The others as the temperature of the middle districts of the eastern counties of Scotland. The evaporation is calculated and stated in inches. It would be out of place to enter into the particular data from which

these are deduced. It must also be borne in mind that they are a mere approximation, and even liable to objections; but if we take the other elements into account which modify this force, we believe it will prove as correct a mode as can at present be suggested.

| | March. | April. | May. | June. | July. |
|---|---|---|---|---|---|
| East of England. | | | | | |
| Mean temperature ..... | 43.1° | 47.4° | 54.7° | 60.8° | 63.0° |
| Maximum temperature | 50 3 | 57.1 | 66 0 | 71.7 | 74.1 |
| Minimum temperature | 35.4 | 37.7 | 43.5 | 49 9 | 51.9 |
| Range of thermometer | 15.4 | 19.4 | 22.5 | 21.8 | 22.2 |
| Evaporation in inches | 1.6 | 2.5 | 4.0 | 3.7 | 4.2 |
| West of England. | | | | | |
| Mean temperature ..... | 45 3 | 49.2 | 54.2 | 59.4 | 61.9 |
| Maximum temperature | 50.7 | 54.6 | 60.6 | 67.5 | 68.9 |
| Minimum temperature | 39.9 | 43.9 | 47.9 | 51.4 | 54.9 |
| Range of thermometer | 10 8 | 10.7 | 12.7 | 16.1 | 14.0 |
| Evaporation in inches | 1.2 | 1.2 | 2.0 | 3.0 | 2.5 |
| Eastern Counties of Scotland. | | | | | |
| Mean temperature ..... | 39 3 | 43.2 | 50.1 | 56.2 | 58 5 |
| Maximum temperature | 45.3 | 50 8 | 58 0 | 64.7 | 66.6 |
| Minimum temperature | 33 3 | 35 7 | 42.3 | 47 8 | 50.5 |
| Range of thermometer | 12.0 | 15.1 | 15.7 | 16.9 | 16.1 |
| Evaporation in inches | 1.0 | 1.8 | 2 0 | 2 9 | 3.0 |

The evaporation is calculated on the supposition that the mean dew-point is 2° higher than the mean minimum temperature. It will be observed that the evaporation is not in the exact proportion to the range of the thermometer, because the force of the vapour increases in a greater ratio with the increase of temperature. It will be found that 10° of dryness of the air, with a mean temperature of 80°, would evaporate as much as 32° of dryness when the mean temperature is 46°. In this case we have supposed the minimum temperature and the dew-point to be equal. It must be apparent that the force of evaporation is just as important an element as the amount of rain which falls; for, when the earth is watered by the rains of heaven, and as plants must have a certain quantity to sustain their growth, the effects of this combination of the atmospheric condition becomes a most important inquiry. The amount of evaporation is very different in the east and west of England; but it will be seen the latter agrees more closely with the cyphers for Scotland. In regard to their indications, we might point out many farm practices which are similar in the west of England and in Scotland, but which do not obtain a place in those of the eastern counties. But our object is to show its specific effects on vegetation, which form the foundations of our system of agriculture.

We do not attach any undue value to meteorological figures, for they must be made use of with much caution. There are so many elements in the question that are very apt to be overlooked, some of which we are entirely ignorant of their special effects. But the progress which this subject has already made, and is rapidly making, gives us hope for still greater advances. It is entirely out of the question to look for a correct theory of agricultural chemistry, until we master some of the meteorological aspects of the subject which lie before us exposed on the very surface of our agricultural systems. Let us, then, as far as possible, seize with a firm grasp the facts which are provincially well known, but do not hold where other circumstances interfere as disturbing elements. The analysis of these circumstances may enable us to judge whether our new guide, the chemist, is always working in the right direction, and taking the shortest way to arrive at a sound system of theoretical agriculture. *R.*

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The Commissioners of National Education in Ireland have issued a copious and very interesting report of their proceedings for the year 1850. With the general subject of it we, in our capacity of agriculturists, have no immediate concern; but in that portion of it, which embraces agricultural education, we have a direct legitimate interest. We shall therefore notice—succinctly, however—that division of the able report (presented by Dr. Kirkpatrick, the inspector), which supplies information respecting the agricultural schools which the commissioners have introduced, and are progressively establishing in Ireland.

The tabular statistics exhibit three classes of schools, viz., model agricultural, ordinary agricultural, and workhouse schools.

Of the first class, there are 17 in full operation, five in partial operation, and three in course of formation.

Of the second class, there were 37 in operation (April 1, 1851), and of the third class three.

The aggregate number of pupils in these schools is 1064, exclusively of 173, who are under instruction in the industrial classes of minor schools. The area of land under culture by the combined agencies of all these schools, is under 1000 acres, of which 127 are in connection with the model training school at Glasnevin, near Dublin. The quantities attached to the other model schools vary from 64 to eight acres; to the ordinary agricultural schools, from 16 to about two acres, and to the workhouse schools, from 37 to three acres.

Compared with the present depreciated value of land in Ireland, the rents of these farms are, in many instances, very high; but, probably, leases were entered into by the commissioners and patrons of schools, in times more favourable to the landed proprietary than now; and the proximity of farms to cities or thriving towns will satisfactorily account for the high scale of rents, which range from 4*l.* 8*s.* 10*d.* to 10*s.* (in a few cases lower), per acre.

On the farm at Glasnevin only are any horses kept: the total of beasts of labour on the other farms is two mules and 23 asses; and only in two cases is there more than a single ass on the farm. Spade labour—possibly in some instances occasionally hired horse work—is to be assumed as the *modus operandi*.

There is also another class of model agricultural schools, whose establishment was suggested by Lord Monteagle, as likely to be productive of peculiar advantages, where local circumstances permit: these are called *central* Model Agricultural Schools, being designed to afford opportunities of instruction to the pupils of national schools within the range of a convenient distance. Lord Monteagle has established one at Mount Trenchard, his Limerick estate, and the others have been formed in Cork and Galway, on the properties of J. R. Barry, Esq., and Sir Thomas Burke, Bart.

These model schools are of a two-fold description: "Those under the immediate control of the Commissioners, and those conducted under the superintendence of local patrons or managers. To the former class belong those of ———, in which the agriculturists act merely in the capacity of stewards, being paid a certain salary per month, with furnished apartments in the establishment. They are supplied with the necessary live-stock, seed, implements, &c., and are required to furnish weekly farm reports, and monthly accounts of all receipts and disbursements on account of the farm, certified by proper vouchers. In addition to the management of the school farms on the most approved principles, and the practical instruction of the pupils, they are required to give scientific instruction in agriculture to the resident pupils, and those composing the agricultural class in the school. In the second class, where the establishments are under the direction of local managers, the teacher holds the land as tenant, and farms on his own account, having all the profit that remains after payment of rent and other charges. This class consists of two divisions,—1st, school farms of from 6 to 12 acres, where both the agricultural and literary departments are conducted by the same person, who receives 10*l.* per annum in addition to his class salary as a literary teacher; and 2dly, school farms of 12 acres and upwards, in which the literary and agricultural departments are under the management of separate persons. In those cases the literary teacher is paid at the usual rate, and receives the school fees of the children. The agriculturist receives a fixed salary of 30*l.* per annum, together with the profits of the farm, and 12*l.* per annum for each resident agricultural pupil who may be placed under his instruction."

These are very moderate salaries. To the teachers of ordinary agricultural schools the commissioners pay 5*l.* per annum in addition to his class salary for giving agricultural instruction, and with a stipulation that 3 acres, at least, be in connection with the school. In an economical point of view the system of allowing the master to farm on his own account, and merely paying him 12*l.* a year for the board of each pupil, is unobjectionable. It is the principle acted upon in the French departmental colleges, where the master is paid the sum of 300 francs with each of 20 pupils—the department paying for six, and the Government for the remaining 14. But there is great difficulty in finding a first-rate farmer who combines in himself all the requisite qualifications, among which must be included firmness, and yet liberality and mildness of disposition, with an enthusiastic love of his profession, moderated with prudence. At the death or retirement in any way of *a tenant* teacher of this kind, it is easy to conceive the confusion that must affect the whole school which he kept together, and the difficulty that might arise in reorganising it.

There is difficulty in finding a qualified teacher, and so disinterested as often to forego certain and immediate profit, in order to pursue and illustrate a system which may require time for its completion and development—and free from the penuriousness which would tempt him to overwork and underfeed his pupils. Yet, on the other hand, a well qualified teacher, subject to the control of any committee of men, whose collective wisdom might be very inferior to his own good judgment, might find his movements sadly impeded. To compare little things with great, he might be tortured, impeded, and prevented from doing what his intuitive knowledge would suggest as the best course, as the Duke of Wellington was thwarted and perplexed by comparatively ignorant and feeble minds, on his taking a subordinate command on the soil of Spain.

The Commissioners are quite right in having the one grand establishment under their control, at Glasnevin. The principle of centralisation being to a certain extent most desirable in the system of education, as in other things; we therefore concur in the reporter's sentiment, that "the different agricultural schools throughout the country may form nurseries from which the Glasnevin establishment shall derive a supply of youths, well fitted by their previous training for the large sphere of agricultural instruction and practice which there opens to them." Acting on this principle, it is intended to endow a *free scholarship* in each of the great model schools for the most deserving pupil in each of the industrial classes which have been formed in several of the agricultural schools. In these a few selected pupils are paid about 1*d.* a day for at least two hours' work; and this has been found a very effective stimulus to industry. The sordid and short-sighted parents have been occasionally known in Ireland to object to the employment of their children in the culture of school-fields and gardens without pecuniary recompense. If the local supporters of a model or ordinary agricultural school pay a class of four or six boys, the Commissioners will pay a corresponding number—1*d.* to each individual; and the prospect of being promoted from the industrial class to a free scholarship will be a still stronger incentive to good conduct and energetic industry.

A considerable portion of Dr. Kirkpatrick's report is occupied with very important extracts from the reports of her Majesty's inspectors of schools in England, which tend to demonstrate the beneficial results likely to arise in some English parish schools (agricultural and horticultural) for combining industrial with literary education. The system about to be pursued in this respect at the Battersea training-school and at Kneller-park, are specially referred to; and an answer to those heartless people who dislike the notion of instructing the labouring classes—beyond the merest shadow of elementary education—is thus given in the words of the Rev. M. Michell:—"The only method of overcoming this feeling, it seems to me, is to make the schools really practically efficient, by teaching in them such subjects only as may conduce to form the mind of a labourer, and fit him for his future career. And it should be borne in mind that the education required for a town boy is widely different from that needed for an agricultural labourer. The object to be pursued is to fit the child for his *present* occupation and status in society, not to *raise* him out of it. If he wishes to rise he must elevate himself. He must look to his own or his parents' exertions, not to the help of the State or charity, to place him in a more advanced position in life. I am, therefore, led to think, that if it were possible to attach land to every school, for the scholars to be trained in agricultural pursuits, it would be a very great improvement. The employers of labour would then see that a positive advantage was attained, and the parents might also be induced to make some further sacrifice to procure an evident worldly benefit, which, however, it may be regretted, is to most of them the only, or at least, chief object why they send their children to school."

If much may be said in favour of connecting farms and gardens with the English workhouses, in order to train up pauper children to pleasing and beneficial labour, more may be urged in regard to the Irish workhouses in this particular; for the plain reason that Ireland is pre-eminently an agricultural country, and that an immense portion of her agricultural labourers have already emigrated, or sunk under the wasting influence of famine and poverty. Every poor-house child, then, practically taught what belongs to the successful cultivation of the soil, may be rendered valuable to the State, happy and independent in himself; the well-paid labour of such a one will, assuredly, be required in Ireland, when that country settles down to the serious work of self renovation. We wish God speed, then, to the Commissioners of National Education in Ireland, in their efforts to foster that system of agricultural instruction which, in the words of Professor Johnston, "will make the schoolboys of our days the agricultural improvers of the future." *M. D.*

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## INDUSTRIAL EXHIBITION.

It is not the quality only of agricultural produce that ndicates the suitability of the circumstances under which it was grown—for the attainment of agricultural profits: that depends upon the quantity as well as the excellence of the produce; upon the former even more than upon the latter: and therefore, while describing the samples of colonial produce shown in the Exhibition

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* 'A Word in Season.' Ridgway, Piccadilly. *Eighth Edition.*

building, we shall take the opportunity of adding such information as we possess, regarding the climate and other characteristics of the different localities to which an intending emigrant will look.

1. *Canadian Produce.*—In reference to Canada we have all the information that can be desired on these points, in Professor Johnston's valuable report on the Agricultural Capabilities of the adjoining Province of New Brunswick.* We have not hitherto referred to this report, but would do so now to point out to the agricultural or geological student where he will find the model of a geo-agricultural review of the capabilities of a district. We had occasion some weeks ago to refer to Professor Johnston's "Notes on North America," as a valuable work for the intending emigrant. If any one shall have considered from its perusal that New Brunswick offers as likely a reward for his labour and capital as any other of the provinces referred to in that work, he will probably desire further information regarding it; and we now assure him that he will find all this in full detail in the work we now refer to.

The details regarding climate are to be considered as a rather too favourable account for Canada—where the winters are, no doubt, severe: but the general agricultural methods and results may be held to be pretty nearly alike in both provinces: and on these subjects Professor Johnston's report is particularly full and explicit. We hardly know how to present its statements in a sufficiently brief manner by extract: but, perhaps the following will be the most valuable pieces of information, when taken in connection with an examination of the produce in the Crystal Palace:—

"*Climate.*—If we suppose the year to consist only of a summer and a winter, and that the length of the summer is very nearly represented by the interval between the earliest sowing and the latest reaping, we obtain from the preceding Table the following data and deductions:—

1st. Earliest sowing in the province..... 17th March.
Latest ploughing in the province ..... 1st Dec.
Longest summer from these data, 8 months and 14 days.
2d. Latest early sowing ..... 15th May.
Earliest late ploughing ..... 1st Nov.
Shortest summer from these data, 5 months and 15 days.
3d. Mean length of the summer from these two results, 6 months and 22 days.
4th. Average interval between the earliest sowing and latest ploughing—or mean length of summer—deduced by combining all the returns in the preceding table, 6 months and 22 days."

The following is a portion of the returns relating to the seedtime and harvest of the three chief corn crops:—

TIMES OF SOWING AND REAPING THE DIFFERENT KINDS OF GRAINS AND ROOTS IN THE SEVERAL PARTS OF THE PROVINCE.

| COUNTIES. | No. | Wheat. | | Barley. | | Oats. | |
|---|---|---|---|---|---|---|---|
| | | Sowing. | Reaping. | Sowing. | Reaping. | Sowing. | Reaping. |
| St. John ... | 1 | April 15 to May 15 | ... ... | ... ... | ... ... | Apr. 15 to May 15 | Aug. 15 to Sep. 15 |
| Charlotte ... | 2 | April 20 to May 10 | ... ... | ... ... | ... ... | Apr. 20 to May 10 | Aug. 20 to Sep. 10 |
| Ditto ... ... | 3 | April 25 to May 10 | Aug. 20 to Sep. 1 | May 15 | Sept 1 | Apr. 25 to May 10 | Aug. 20 to Sep. 1 |
| Ditto ... ... | 4 | April 20 to May 1 | Sep. 1 | May 15 to 25 | Aug. 25 to 30 | May 1 to 15 | Aug. 28 to Sep. 15 |
| Ditto ... ... | 5 | May 1 to 10 | Aug. 20 to Sep. 1 | May 20 to Jun. 10 | Aug. 20 | Apr. 20 to June 20 | Aug. 20 to Oct. |
| Ditto ... ... | 6 | May 1 | Sept. 1 | ... ... | ... ... | ... ... | ... ... |
| Westmoreland | 7 | April | August | June | September | May | August |
| Ditto ... ... | 8 | April 1 to May 30 | Aug. 10 to Sep. 20 | May 10 to June 6 | Aug. 20 to Sep. 20 | Apr. 1 to May 30 | Aug. 10 to Sep. 20 |
| Ditto ... ... | 9 | May 1 to June 1 | Aug. 30. | June 1 | Sept. 1 | May 1 | Sept. 1. |
| Ditto ... ... | 10 | May 1 to 20 | September | June 1 to 20 | September | May 1 to 20 | September |
| Ditto ... ... | 11 | April and May | Aug. and Sept. | June | Ditto | April and May | Aug. and Sep. |
| Ditto ... ... | 12 | April 15 to May 15 | Aug. 20 to Sep. 20 | May | August | May | September |
| Ditto ... ... | 14 | May 1 to 31 | Aug. 15. | June 15 to 30 | September | May 1 to 31 | Aug. 15. |
| Ditto ... ... | 16 | May 10 to 30 | Aug. 10 to Sep 10 | June 1 to 25 | ... ... | Apr. 20 to June 1 | ... ... |

Now, the following result arises out of a comparison of these two extracts:—

| | Months. | Days. |
|---|---|---|
| The average duration of summer ... ... ... | 6 | 22 |
| The average period of growth of crops from the above Table ... ... ... ... ... ... | 3 | 17 |
| Leaving for the spring and autumn ploughing, &c., before seed time and after reaping ... | 3 | 3 |

"It must be confessed that these periods are short compared with the length of time for out-door labour which the English and more southern Scottish farmers possess. The effect of this, if other things were equal, would be to impose upon the New Brunswick farmer the necessity of employing a larger force of men and cattle to perform the work of a farm of equal extent than the British farmer needs to do. If this be so, the effect must be to increase the comparative outlay of the New Brunswick cultivator, and to diminish in a proportionate degree his profits.

"Two points, however, have been brought under my notice as in some measure palliating or countervailing any evil which may arise from this cause; thus—1st, the number of days during which rain impedes the operations of the British farmer is notoriously very great. But in New Brunswick the climate is more steady and equable.

"I am informed that the severe frosts in winter generally penetrate so deep into the ground, especially when it is not covered with Grass, as to raise up and separate the particles from each other to a considerable depth; so that when the thaw comes, it is already so loose and open as scarcely to require ploughing at all, or, if ploughed, to be done with little force and great speed."

The subject of climate, in all its details of temperature and rain, is described in full detail, and its effects on agriculture discussed, both as regards the modes of practice which it necessitates, and the resulting produce which it yields. On this last point we extract one more passage:—

MAXIMUM, MINIMUM, AND AVERAGE PRODUCE OF WHEAT, BARLEY, AND OATS PER IMPERIAL ACRE, IN EACH COUNTY IN THE PROVINCE.

| COUNTIES. | Wheat. | | | Barley. | | | Oats. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Maximum | Minimum. | Average. | Maximum | Minimum. | Average. | Maximum | Minimum. | Average. |
| Saint John ... ... ... | 20 | 10 | 15 | ... | ... | ... | 40 | 30 | 35 |
| Charlotte ... ... ... | 33 | 10 | 20¼ | 35 | 10 | 24 | 60 | 25 | 32½ |
| Westmoreland... ... ... | 25 | 15 | 18¾ | 40 | 20 | 26⅔ | 45 | 30 | 35¼ |
| King's ... ... ... ... | 30 | 10 | 20⅝ | 50 | 15 | 28⅓ | 60 | 25 | 37¼ |
| Queen's ... ... ... ... | 20 | 8 | 14¼ | 18 | 18 | 18 | 60 | 13 | 29 |
| York ... ... ... ... | 32 | 15 | 22½ | 64 | 19 | 34½ | 60 | 32 | 38⅝ |
| Sunbury ... ... ... | 30 | 12½ | 19¾ | 40 | 20 | 30 | 50 | 30 | 38⅓ |
| Carleton ... ... ... | ... | ... | ... | ... | ... | ... | 30 | 30 | 30 |
| Albert ... ... ... ... | 25 | 15 | 19½ | 40 | 16 | 22⅝ | 40 | 25 | 28 |
| Kent ... ... ... ... | 40 | 15 | 21 | 20 | 20 | 20 | 35 | 25 | 30 |
| Northumberland ... ... | 25 | 15 | 18½ | 35 | 25 | 29¾ | 40 | 25 | 31⅔ |
| Gloucester ... ... ... | 30 | 15 | 22½ | 35 | 25 | 30 | 40 | 28 | 34 |
| Restigouche ... ... ... | 28 | 28 | 28 | 60 | 60 | 60 | 50 | 50 | 50 |
| Maxima, Minima, and Averages for the whole Province ... ... ... | 40 | 8 | 19 1/12 | 60 | 10 | 29 | 69 | 13 | 34 |

In the following table these results are compared with the similar results published by authority, as characteristic of the State of New York:—

AVERAGE PRODUCE PER IMPERIAL ACRE.

| | State of New York. | New Brunswick. |
|---|---|---|
| Wheat ... ... | 14 bushels. | 20 bushels. |
| Barley ... ... | 16 ,, | 29 ,, |
| Oats ... ... | 23 ,, | 34 ,, |
| Rye ... ... | 9½ ,, | 20¼ ,, |
| Buckwheat ... | 14 ,, | 33⅔ ,, |
| Indian Corn ... | 25 ,, | 41⅔ ,, |
| Potatoes ... ... | 90 ,, | 226 ,, |
| Turnips ... ... | 88 ,, | 460 ,, |
| Hay ... ... | — ,, | 1¾ tons. |

The above facts, and especially those relating to climate, will prepare our readers for the information that few of the samples of agricultural produce, exhibited by Canada, in the Crystal Palace, were remarkable for excellence of quality.

The specimens which come within the scope of our remarks are included between Nos. 27 and 71 in the Catalogue. Among these the barrels of Peas, exhibited by Messrs. Jones, of Sydney; and Limoges, of Terrebonne; the flour exhibited by Messrs. Simpson, of Bournanville; the Hops shown by Mr. Smith, of Stanstead; and the maple sugar shown by Mr. Fisher, of Ascott, have received prize medals: and the Buckwheat shown by Mr. Trenholm, of Kingsey; and the Red Clover seed shown by Mr. Jeffries, of Burodan, are honourably mentioned. Excepting the Peas and the Buckwheat, and the flour (a manufactured article), none of them indicate the more general agricultural capabilities of the country. The specimens of Wheat, Barley, Oats, and Beans, to which one looks as indices on this subject, have not been held deserving of reward; and indeed, excepting the Beans and the Kidney Beans—especially the specimens shown by Mr. Fisher, of Rivière du Prairie; and by Madame Lamere, of Montreal; and C. Fournier, of Longueville—none of the specimens came up to the character of a first-rate sample of English growth. The Oats were not so clear and short and plump as are not uncommonly seen at English markets; and the Wheats, for selected specimens, were not creditable to the growers. In so far as their character was the unavoidable consequence of climate, of course nothing can be said in disparagement of it; but the specimen shown by the Provincial Agricultural Association was *mixed*, evidently containing more than one variety of Wheat, and it contained Oats as well, and certainly it ought not to have been sent to the Exhibition. For the rest we would add, that the samples of Peas and Beans were the redeeming features of the series.

* Published at Frederickton.

## FARMING CAPITAL.

Repeatedly reading statements in the *Gazette* upon this subject, many of them so extravagant as to frighten or deter anyone from entering the business of farming; such as the article called "A Bull-breeding Farm," in No. 39—I do not mean to say there is anything false in those statements—I am induced to send an estimate, and plan of proceeding, to encourage persons of small means, point out the best plan to economise, and endeavour to show that a few hundreds on a small farm of good land, well managed, will prove as profitable as thousands on a large one. I am quite sure we must see, as one of the principal remedies for "present prices," farmers concentrating capital and energy. I therefore, by your permission, enclose an estimate of a 60 acre farm. I have been as concise as I can; but should any of your readers wish it, I shall be most happy in giving detail of practice, but I would strongly advise amateurs to go on a farm for a year or two before commencing for themselves, thereby combining, if only a little, "practice with science," without which I should despair of their success.

1. *Going into Farm.*—We will suppose it entered at Lady-day, 1852, with the usual privilege of going in to till Wheat and Vetches in the autumn of 1851, for which you can generally hire the out-going farmer's horses, &c. Should there not be any corn "seeded out" with Clover, you should also till the quantity named in the rotation. You need not spend more than 20*l.* for implements for a year or two, until you "turn yourself round." Attend the farm sales, and there you will get very good useful ones for a trifle. You can also purchase good working horses for about 10*l.* each; but these, as well as implements, should be replaced as soon as possible for young horses, and the most improved machines.

ROTATION OF CROPS.

| | 1st Year. | 2d Year. | 3d Year. | 4th Year. | 5th Year. | 6th Year. |
|---|---|---|---|---|---|---|
| 60 acres. | 10 acres Clover | 10 acres Wheat | 3 acres Turnips<br>5 ,, Mangold<br>1 ,, Carrots<br>1 ,, Parsnips | 7 acres Barley<br>3 ,, Oats | 5 acres Clover<br>5 ,, Mangold | 10 acres Wheat |
| 7 | ,, Barley | 10 ,, Clover | 10 ,, Wheat | 3 ,, Turnips<br>5 ,, Potatoes<br>1 ,, Carrots<br>1 ,, Parsnips | 7 ,, Barley<br>3 ,, Oats | 10 ,, Clover |
| 3 | ,, Oats | | | 5 ,, Mangold<br>5 ,, Clover | | |
| 15 | ,, 1 Wheat | 3 ,, Turnips*<br>5 ,, Potatoes<br>1 ,, Carrots<br>1 ,, Parsnips<br>5 ,, Mangold† | 7 ,, Barley<br>3 ,, Oats<br>5 ,, Wheat | 15 ,, Wheat | 3 ,, Turnips<br>5 ,, Potatoes<br>1 ,, Carrots<br>1 ,, Parsnips<br>5 ,, Clover | 5 ,, Potatoes<br>3 ,, Turnips<br>1 ,, Carrots<br>1 ,, Parsnips<br>5 ,, Mangold |
| 10 | ,, Turnips | 3 ,, Barley<br>3 ,, Oats<br>5 ,, Wheat | 10 ,, Clover Potatoes | | 15 ,, Wheat | 7 ,, Barley<br>3 ,, Oats<br>5 ,, Clover |
| 5 | ,, Potatoes | | | | | |
| 1 | ,, Parsnip | | | | | |
| 1 | ,, Carrot | | | | | |
| 5 | ,, Mangold | | | | | |
| 10 | ,, Pasture | | | | | |

EXPENDITURE.

| | £ | s. | d. |
|---|---|---|---|
| Purchasing stock, &c.—You should purchase 2 sows ready to litter in March, 3*l.* each ... ... ... | 6 | 0 | 0 |
| In May, 10 fresh calved cows, with heifer calves, 15*l.* | 150 | 0 | 0 |
| 2 horses ... ... ... ... ... ... ... | 20 | 0 | 0 |
| Implements ... ... ... ... ... ... ... | 20 | 0 | 0 |
| In October, 5 yearling heifers, 5 do. steers, 5*l.* ... | 50 | 0 | 0 |
| 10 ewes ... ... ... ... ... ... ... | 20 | 0 | 0 |
| | ‡£266 | 0 | 0 |

* The 3 acres Turnips must be after Vetches or early Cabbages. The Potatoes should be all early sorts, none later than York Regent's; but would advise earlier, to come up in July, when a good crop of Turnips can be got after.

† I would strongly advise early Potatoes and Mangold Wurzel to grow together, the former 1 yard between the rows, thereby giving you 10 acres of Potatoes, and quite as heavy a crop of Mangold Wurzel per acre, making an addition of 125 tons more roots. This double cropping I find answer exceedingly well. I grew a good crop of Carrots, under Barley, last year; and three crops off another piece, viz., Potatoes 1 yard apart, two rows of Carrots between; after Potatoes, good crop of Turnips. This year I have got two crops of Turnips on the same ground 24 inches between the rows; also have a good crop of Carrots between Mangold Wurzel, at 27 inches between; also a promising crop of stubble Turnips. These would be valuable additions to my estimate, but require peculiar treatment.

‡ You will not require immediate cash for yearling heifers, steers, ewes, oilcake, and half for labour, or implements

With your own, 14 six months' pigs and 14 suckers will be your winter stock; but these will not be sufficient to consume all your food, you should therefore purchase some extra cows or steers to make fat, and part with them as your own stock comes on; or fat the whole of your own pigs, the six months as baconers, the autumn litters as porkers.

| | | £ | s. | d. |
|---|---|---|---|---|
| | OTHER EXPENSES. | | | |
| Rent, 1*l.* 10*s.* per acre, and 10*l.* taxes ... ... | | 100 | 0 | 0 |
| Labour, 2 men, say ... ... ... ... ... | | 50 | 0 | 0 |
| 1 boy in the house ... ... ... ... ... | | | | |
| Manure—guano, bone, and soot ... ... ... | | 25 | 0 | 0 |
| Oilcake, &c. ... ... ... ... ... ... | | 25 | 0 | 0 |
| Tradesmen ... ... ... ... ... ... | | 25 | 0 | 0 |
| Say, with the stock and implements ... | | £500 | 0 | 0 |
| Acres. | PRODUCE. | | | |
| 15 Wheat, 5 quarters to acre, at 40*s.* ... | | 150 | 0 | 0 |
| 7 Barley, 6 do. do. 58*l.* ... | | half 29 | 0 | 0 |
| 3 Oats, fed. | | | | |
| 5 Potatoes, 10*l.* per acre ... ... ... | | 50 | 0 | 0 |
| 5 Mangold Wurzel ... ... 125 tons. | | | | |
| 3 Turnips ... ... ... 60 ,, | | £229 | 0 | 0 |
| ¾ Carrots ... ... ... 15 ,, | Fed. | | | |
| 1 Parsnips ... ... ... 15 ,, | | | | |
| 215 ,, | | | | |
| | PRODUCE OF STOCK. | | | |
| 10 cows, 10*l.* each ... ... ... ... ... | | 100 | 0 | 0 |
| 5 2-year-old heifers, sold at 12*l.* ... ... | | 60 | 0 | 0 |
| 5 2-year-old fat steers, at 17*l.* ... ... ... | | 85 | 0 | 0 |
| Profit on 10 ewes, sold fat ... ... ... | | 10 | 0 | 0 |
| 10 lambs, at 1*l.* 5*s.* ... ... ... ... ... | | 12 | 10 | 0 |
| 10 fat pigs, at 5*l.* ... ... ... ... ... | | 50 | 0 | 0 |
| 18 stores, at 1*l.* 10*s.* ... ... ... ... | | 27 | 0 | 0 |
| | | £573 | 10 | 0 |

Thus, supposing the farm to have got into working order, breeding and fatting all your own, the expenses will stand thus—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rent, &c. ... | ...£100 | 0 | 0 | From produce | ...£573 | 0 | 0 |
| Labour ... ... | 50 | 0 | 0 | Expenses ... | ... 225 | 0 | 0 |
| Manure and cake | 50 | 0 | 0 | | | | |
| Tradesmen ... | 25 | 0 | 0 | Profit | ...£348 | 0 | 0 |
| | £225 | 0 | 0 | | | | |

—*E. Hulme, near Torquay, Devon.* [Is this given as experience?]

## Home Correspondence.

*Hussey's American Reaping Machine.*—On the 16th of October I went over to Sydenham, to see this wonderful machine; had it been mine, I certainly would not have risked its reputation upon such poor and half dried up Clover of various heights, from 2 inches to 8 inches high. When viewing it, before it started, it looked a very humble affair. At last a couple of dancing post-horses were yoked to it, and a sort of postillion got up in the saddle. Thinks I, you look more like going to a wedding than shearing. The first bout this machine cut all that was high enough for the clippers; the rush after it completely crushed the piece of Clover down, and in the second attempt, from the pressure of people and the Clover together, the machine failed—this highly pleased a great many, the fate of it was sealed in their minds. An old farmer, in order further to work out its disgrace, halloed out, "Can it cut Rushes?" "Yes," says Hussey. Away we all went to a swampy piece of ground, full of humps and bumps and Rushes; it started, and at the rate of four miles or more an hour, down came every Rush, and doing its work quite to the satisfaction of all. Now if it can cut down nearly ripened, hard, wiry Rushes, what chance can corn stand? What a glorious machine, thought I; for many a back-ache had I in my young days at reaping. *James Cuthill, Camberwell.*

*Game.*—What has become of all the hares and rabbits round Manningtree and Wix? Has my reverend opponent snared them all? They are not even mentioned in his reply to me. He says, the sources of my information are not trustworthy. Now, on the subject I have received no information from any living person. I have lived in too many counties in the United Kingdom not to observe and see the bad effects of the vermin called game, in some places, especially in England, deteriorating the land by one-half its value. This is an opinion long formed by many: Mr. Smith, of Deanston, 30 years ago, was of that opinion; Mr. Mechi, Mr. Davis, the reverend author of the "Word in Season," and, dare I say my reverend opponent, in his own mind, thinks the same; but don't let me be told that this does not depend upon hares and rabbits, but upon high cultivation. Pray who can cultivate highly, when so many vermin exist, destroying all one's prospects, and the cultivator hardly dare look at them? I know one estate in Kent, where the landlord lets his beautiful loamy deep soil for 5*s.* an acre, and the farmers on the estate made all as poor as church mice by these hares, rabbits, and pheasants; and these breeding hedges thickly studded with all sorts of bushes, breeding every destructive insect, by far too numerous for the partridges to keep down, and breeding slugs by the million, that they cannot eat. Not with all the assistance of that winged bird, called the sparrow, can they keep down these insects. By the way, is it not rather odd that that bird was not made game also? I know a farm, where, up to a few years back, the tenants were allowed to kill all the game; they are now forbidden, and the whole estate is let out every year by its noble owner to gentlemen to shoot over; the tenants dare not shoot one. What use was the law of '48 here? and those tenants get no drawback whatever, after feeding a numerous and destructive flock of game at their own expence. Why not give up the farm, says my reverend opponent. The idea! after a man has spent his all in his land. No! he must try and reason with his landlord, and struggle with his difficulties until those laws are entirely abolished. But I must go a little further back. I lived upon a farm, when a lad, where game was preserved, not by the landlord of the estate, but by the neighbouring landlord, to whom it was let, which was ten times worse. I candidly own that every one of the servants, tenants and all, were in the sight of the law downright poachers. And is not this very bad education for the young? the tenant thought it no crime to have part of his own rearing, and it was more his than it was the absent landlord's. After that I was head keeper and head factotum to my lamented friend James Smith, of Deanston; we had a large tract of land given to us to preserve and shoot over, but when shooting time came on we had to travel a few fields before we could get a shot, showing that I was a bad keeper. This estate was well farmed, as the farmers cared little for me, and Mr. Smith knew too well that they could not farm well and have too much game preserved on their lands at the same time. I thought the other day that I would recommend bantams to a large market gardener. "Bantams! what do I want with them?" says he; "we never suffer with insects; it is only bad and slovenly gardeners that breed insects. We have no broad hedges nor ditches. Deep digging and continually burying insects' eggs; all cleanliness keeps a garden free of insects; and so does high farming." Now, this is a positive fact that, high farming, without winged game, have but few insects. Certainly not; if all hedges are kept tidy, ditches filled up, long Grass kept down, shrubs and headland rubbish done away with, the wireworm in time gets scarce. They proceed from a moth. Insects cannot breed if there are no breeding places. "Have you any game upon your very large garden?" "No, no; they won't do." I go down into Kent every year where they only pay 10*s.* a year rent. Now, I shall finish with another bad case that Mr. Wilkins, perhaps, may not have considered, but which proves how practical men regard the subject of game. I have known bailiffs that were anxious men, and desirous to crop the home farm well, and give satisfaction to their master, encourage poachers, and wink at their visits; they were as blind as bats when they saw men poaching. And those game-preserving landlords are of course as desirous of a good crop of corn as any one, and I have known several bailiffs discharged because they did not show a better example to the tenants. How unreasonable was this. My reverend opponent will tell me that those bailiffs were dishonest. I say, no; for, like me, they look upon hares and rabbits as nothing but wild animals, the destruction of which is a great blessing. My very humble advice to game-preserving landlords is, to turn their attention to energetic agriculture, to take the noble example of our London market gardeners, turn all their keepers into whatever they are fit for, turn all their home farms into example farms, buy machinery, drain their land, down with all those broad breeding hedges, turn their two and three acre fields into fields of 10 or 20 acres, fill up their ditches, plough up or dig up to the very roots of the hedges, turn their minds to noble industry, and try and beat one another in good cultivation; give schooling to the rest of their tenantry; better exercise this than shooting, and talking about how many head of game they have. Let them do all this before they starve themselves, their tenantry, and their country at large by adhering to an unprofitable practice, that one day, sooner or later, circumstances and necessity will force them to give up. *James Cuthill, Camberwell.*

*Rental of Land.*—"S. T. H." says, "I let all my farms 16 years ago come next May, and the average rental during that time has been 15*s.* 3*d.* per acre. I am now letting them for the same term; what rental should I value them at? They all lie together, are tithe free, and local rates very small; all the circumstances attending the farms are the same." [As the price of farm produce during the past 16 years is to the price which may be expected during the next 16—so is 15*s.* 3*d.* per acre to the rental you may claim. That is one way of putting the case, though of course it is a very meagre one, and does not hold true in the case of a series of years, during which more economical methods of farming arise, and the value of land may thus possibly increase, notwithstanding the fall in the price of produce.]

*Game Preserving.*—I should have been tempted to reply at once to Mr. Cuthill's observations on the evils attendant on the preservation of game, had I not thought that Mr. Wilkins would most probably save me the trouble, by transmitting to you a more complete answer than I was, perhaps, capable of writing. Now, however, that the latter gentleman's reply has appeared, I observe that he has omitted what I consider the strongest argument in favour of the preservation of game, which is this: if gentlemen were obliged to discharge their gamekeepers, how would they in future prevent their land being trespassed upon by every vagabond who chose to try his luck in shooting or netting his neighbour's game? It might be said, in reply, that without game laws and gamekeepers there would soon be no game to kill, so that the evil would effect its own cure. But, remark, is it desirable that game should be entirely eradicated? Why should we lose so plentiful and wholesome an article of food? It would, however, be a long time before the game was destroyed, and, in the mean time, how is the evil I have alluded to, to be prevented? It can only be done by a very stringent trespass act; and, if so, how will the much pitied, much wronged poachers be benefited? They will still be liable to be caught and punished, and for the same crime too, though perhaps under a different name, viz., trespassing in pursuit of game—for trespassing in pursuit of game it still will be, call it by what name you please. I can write from experience, as almost my only reason for employing a gamekeeper was to prevent my land being used as the common shooting ground of all the neighbourhood, as whenever any of my kind neighbours wanted a bird, they knew there was nothing to prevent their killing one in my Turnips, if they chose. Now, all that has ceased, and though I have no greater quantity of game than before, except as regards pheasants, still, what there is goes into my larder instead of that of any poacher who chose to come for it; the fences are less broken down, poaching is checked, instead of encouraged, and the morals of the neighbourhood, therefore, certainly not deteriorated, and all through employing a keeper. *W. F. G. F.*

*Australian Agriculture.*—With regard to your enquiries respecting farming in this country, I fear I cannot give you any very flattering information. Mr. H. has never directed his attention much to cultivation, further than 8 or 10 acres of Wheat for our own consumption, so it would not be fair to judge from what he can say on that subject. At the same time he tells me to say that he can form no idea what a person might do, without knowing what amount of capital he was likely to possess. A man might do well, provided he is fortunate enough to get good land, and sufficient of it to carry on cultivation to any extent. With care and attention the crops are generally abundant; but there is not the same routine of crops as in England. It is a great advantage when two brothers join, and keep together, so as to dispense with hired labour as much as possible, for that is the great drawback. They must also forget all the little comforts of home, have a large share of energy and perseverance, and be able to put up with many disappointments and privations; such a person may make himself comfortable, but a fortune is out of the question. As to cattle and sheep, there is no good to be done with them, unless a good run can be procured, and that is a difficult matter now, so many feeders having come to the colony, that a large portion of the land which used to be for grazing is now purchased. We have been obliged on this account to lessen our number considerably, so that cultivation seems more likely to suit your brother, provided he can put up with what I have represented; but recollect I have drawn the dark side of the picture, and I doubt not but you could meet with some who might throw more sunshine over it. I can assure you that ever since we left the shores of old England, we have had a very hard and severe struggle, and have had to contend with depreciating prices ever since we commenced. We purchased cattle at 8*l.* to 12*l.* per head, and now they fetch 2*l.* or perhaps 3*l.* if very fat, and then there is the cost of getting them to market, for they become so wild and unmanageable. If any one had told me of all we have had to undergo, during the first four or five years of our sojourn here, I should have said it was impossible; and when I look back I wonder how I did it. However, I must indeed be thankful that I have had health and strength to contend against all discomforts, and that my home is in a slight degree becoming more civilised, but can never be like the one memory holds so dear. *Jane H.*

these can be purchased after Wheat is sold in autumn, also the tradesmen's bills—making 155*l.* Rent and other expenses will be paid from the summer produce of the 10 cows, Barley, &c., so that the sum actually required is but small, viz.—

| | | | |
|---|---|---|---|
| 10 cows ... ... ... ... ... | £150 | 0 | 0 |
| 2 sows ... ... ... ... ... | 6 | 0 | 0 |
| 2 horses ... ... ... ... ... | 20 | 0 | 0 |
| Halt implements ... ... ... | 10 | 0 | 0 |
| Do. labour ... ... ... ... | 25 | 0 | 0 |
| Manure ... ... ... ... | 20 | 0 | 0 |
| | £233 | 0 | 0 |

Of course, if extra stock is purchased the first year, that must be added.

## Review.

*Notes on the Agriculture of Lancashire, with suggestions for its improvement.* By Jonathan Binns. Simpkin, Marshall and Co., London.

THIS is an admirable collection of facts, descriptive of the past condition of local agriculture, for the encouragement of Lancashire farmers, and of its present condition, for their instruction; and the agriculturists of other counties will find much useful matter in its pages. We would gladly extract and publish one-half of its contents—for they are just the sort of matter in which our readers would delight; but, in justice to the author, we must endeavour to satisfy them with a few selected portions—or they must satisfy themselves by the purchase and perusal of the pamphlet. The illustrations are well chosen—chiefly plans of farm-buildings actually erected in the county: including, however, one—a portion of the map of the ordnance survey, showing the marl pits in the Fylde—which illustrates beyond anything we ever saw the utter want of system which formerly prevailed in the business of agriculture.

The work speaks of the geology and soils of Lancashire; of the climate, farming, draining, farm-buildings, and orchards; agricultural labourers and servants; embankments, Larch and coppice woods; implements; the cultivation of Turnips, Grasses, and other crops; the manures used; the cattle, horses, sheep, pigs; summer stall-feeding, dairy management, Gorse, haymaking, Flax, agricultural societies, education, and rents and prospects of the farmer. On all these subjects it is descriptive as well as suggestive—each being treated of in the form of a distinct, useful, read-

able essay—the whole, however, mingled in a somewhat ill-arranged manner. All this is included in 100 octavo pages. Other 60 pages are devoted to descriptions of the districts into which Lancashire is divided—High and Low Furness, Cartmel, Ireby, Borwick and Warton, Foxholes, Bleasdale, Quernmore, &c.; Poulton-by-the Sands, the Fylde, Preston, Darwen, Wigan, the Earl of Derby's estates, Warrington, &c. On the whole, the work is of far more than merely local interest; and we hope it will accordingly obtain a more than local circulation. We extract a passage descriptive of the former and present condition of Lancashire farming:—

"Forty years ago, whilst the drill, the iron plough, and other improved implements, draining, and the breeding and economical feeding of cattle, were receiving the requisite attention in various parts of England and Scotland, Lancashire, with very few exceptions, remained, so far as her agricultural interests were concerned, in a state of ignorance and indifference.

"Implements of the rudest construction were in general use: four or five horses, one before another, might be seen dragging a heavy wooden implement attended by two men, even in ordinary ploughing; and the practice which already obtained in some other counties of ploughing with a pair of horses abreast was here considered a dangerous innovation. The land which had grown grain in successive crops till the produce from it was not remunerative, was left to Nature without any Grass seed being sown, and from its stiff texture and worn-out undrained condition, the Grass which Nature supplied was scanty, and of very inferior quality: this land was roamed over summer and winter, by cattle ill bred and worse fed; and where the prejudice against ploughing up these worthless pastures still remains, the effects of the system are visible at the present day. At the same period the practice of marling was very general; from 100 to 150 cubic yards per acre were laid upon the land (generally sward) in summer, and by this means after remaining on the surface in masses till the land was ploughed in winter or spring, heavy crops of grain, principally Oats, were frequently produced for several years in succession, and when the land was exhausted the operation of marling was repeated; it consequently became stiff and intractable; for, as the calcareous portion of the marl (varying from 15 to 20 per cent.) diminished, and the inferior clay only was left, the land was found, in a few years, to be less fertile and more difficult to cultivate than before; and although this may be remedied to some extent by the application of lime, yet a serious and permanent evil has resulted from the practice of marling, particularly in a level part of the county, by creating a large number of pits in the middle of the fields, which, from the retentive nature of the subsoil, soon became filled with water. The extent of mischief entailed upon the land by these obstructions to ploughing and cultivation, the loss of land, the injury to the adjoining land as well as to the climate, may be conceived by casting the eye over the accompanying small plan of a portion of the Fylde district, copied from the Ordnance map. That the owners should have been willing to allow such irremediable injury to their property must ever be cause of surprise and regret. The cheapness of guano, along with the annually increasing supply of other manures from manufacturing towns, and the extension of the growth of Turnips, have since operated to check this expensive and troublesome mode of cultivation. At the period to which I allude the usual rotation of crops was, 1st Oats (after Grass); 2d, frequently Oats; 3d, summer fallow; 4th, Wheat; 5th, Beans (broadcast) or Barley; then Oats repeated if the land were not quite exhausted; the land was then left without any Grass seeds. Some sowed Red Clover amongst the Wheat, and after two crops of Clover followed by a crop or two of Oats, the land was allowed to lie a few years, but without any Grass seeds being sown. Some few better managers sowed Barley with Grass seeds after the Wheat. Shallow stone drains, across the slope, were sometimes made in the wettest part of the land, the landlord allowing a shilling for every rod of 7 yards, the tenant providing the carting and labour, often without any but his own inspection; and from his uncertain tenure, the drains were very imperfectly executed. Leases (seldom exceeding seven years) were not uncommon, but were encumbered with awkward clauses injurious to both parties. The tenant, in many cases, was bound to bestow all the manure of the farm upon the meadow land; he was allowed to plough only certain specified fields, and not permitted to break up any pasture; the plough was kept going year after year on the same land, and it was by no means uncommon to hear of certain parts of the farm having been in grain crop, with an occasional fallow, beyond the memory of man.

"The tenant was also bound to the precise management of each field during the term of his lease, without consideration of the uncertainty of seasons and the occasional failure of crops; heavy penalties were provided for the infringement of the clauses, and to insure the owner against retaliation for arbitrary proceedings, I have known the following clause inserted:—'That if the taker shall consider himself aggrieved by any of the penalties aforesaid, he shall have no redress either in law or equity.'

"Having described the condition of farming in the county at the commencement of the present century, I proceed to state my views of its present condition, and the causes which have combined to retard its advancement amongst a numerous class of the present occupiers of the soil. Some individuals there are, who, combining skill and industry with a judicious application of capital, are gradually diffusing, in their immediate neighbourhoods, the knowledge of a better system of management; and many landowners, by a judicious relaxation of their injurious restrictions, by the encouragement of draining, the granting of longer leases to men of sufficient capital, and by their own examples as practical farmers, are successfully endeavouring to raise the character of Lancashire as an agricultural county; still a considerable portion of its extent, consisting principally of the undulating slopes between the moors and the low lands, is occupied in farms varying from 50 to 150 acres by a tenantry not possessing sufficient knowledge or capital for their profitable cultivation. A farmer possessing a couple of hundred pounds considers himself qualified for a farm of as many hundred acres, and generally depends upon the sale of his produce for his first half year's rent. Thus, the time of entry being the 14th of February, and the rent, according to the agreement, being due on entry, or on the 1st of June afterwards; by the permission of his landlord, the payment is generally delayed till November, when he is enabled, by the sale of his cheese and other small produce, to raise the necessary sum; the second half year's rent (paid in February or May following) is provided by the sale of his grain. With a fair price for his farm produce he manages, by the exercise of great economy in his household, and by the hard labour of himself and his family, to obtain a living and to pay his way: beyond this result his expectations rarely extend; an increase of his capital or a provision for his family being beyond even his hopes. From this description of the small farmers of Lancashire, it must be evident that without an increase of capital and intelligence on the part of the tenant, or a decrease in the size of the farms, little improvement can be expected in the system of farming which still obtains in the extensive districts I have described. As tenants possessing the necessary capital and skill can rarely be met with, it becomes the duty of the landowners to consider the propriety of reducing these farms to an extent more suitable to the means of the occupiers; and by a judicious system of instruction and encouragement, to raise them from their lethargic and almost hopeless condition. I would not be misunderstood as advocating small farms in preference to those of greater extent, where sufficient capital can be commanded for the latter; but in the present state of the small farmers of Lancashire, I am confident that a reduction of their farms to one half their present extent would be a great step towards the ultimate benefit of that class and of the whole community."

## Miscellaneous.

*The Farm of Galson, Island of Lewis.*—The following report by a member of the Lewis Farming Society was read at the late meeting of that Society by Sir J. Matheson: "Permit me shortly to state the following facts as regards the farm of Galson, when I took the lease of it. I found a portion under small tenants. I gradually laid the ground under green crop, manured with stable-yard manure mixed with seaweed, and a little guano, which produced a good crop, equal to any I have seen on the mainland. I then sowed Barley mixed with Grass seeds, in the proportion of 10 lbs. of Clover seeds, 8 lbs. of Timothy, and 1 bushel of Rye-grass to an acre, which yielded the following year at the rate of three tons of hay of excellent quality, which was stacked in the first week of August. Generally, however, I have found it more beneficial to pasture, the grounds being far from markets. I may here state the feeding capabilities of the Galson Grass—a field of about 16 acres yielding excellent pasture for 18 Highland stots throughout the season, which are feeding for the Castle, and will weigh on an average 450 lbs. The sheep are pastured partly on natural and partly on sown Grass. They are a cross breed between black-faced sheep and Cheviot tups, and weigh usually about 68 lbs. each. The fields referred to were drained on the late Mr. Smith of Deanston's plan. The success of any improvement depends upon the after-treatment, and great care should be taken in not allowing the cattle to poach the fields during winter and spring." *North British Agriculturist.*

*The Birmingham Cattle and Poultry Exhibition.*—We have been requested to call the attention of our agricultural readers to the advertisement announcing that the certificates of entry for all the classes at this great annual show are now being issued, and to urge them to make an early application for the required forms, in order that the entries may be properly completed. We understand that the promises of support to the approaching Exhibition are already so numerous as to leave no doubt that it will surpass, both in extent and general excellence, the two which have been previously held in Birmingham; while the arrangements in Bingley Hall for the accommodation of the stock are such as cannot fail to be entirely satisfactory. The space appropriated for the show of domestic poultry will this year be considerably enlarged; and extraordinary as the exhibition was in this department last year, we are assured that a much finer collection will be brought together in December next, and fully demonstrate the zeal and intelligence which have recently been brought to bear upon a highly-attractive branch of rural economy, and one that, a few years ago, was almost entirely neglected.

## Calendar of Operations.

### OCTOBER.

SEPTEMBER and October are busy months with the sheep farmer, being the time for disposing of his draft ewes and wedders, and selecting rams for the coming season. We had intended making a few remarks on the results of the past year's returns from the former, but there being still a few of the large markets for the sale of Highland sheep, we postpone these for a little; and with regard to rams—without a tempting to detail all the points whose combination constitute the model of our mountain sheep, either Cheviot or black-faced, we would only advert to a few of the absolutely necessary qualifications—disposition to fatten combined with a hardy constitution, and abundance of wool of the best quality. The question of size is one which may be safely left to a man's knowledge of his particular locality, who should be best able to determine the standard most suitable for him, and will take care not to aim either at one above what his lean pasture will maintain, or one which, in a well sheltered and comparatively fertile situation, is manifestly below what he is able to produce. It is generally a sign of good management when the stock on a farm are increasing in size, but the reverse when they are growing less. From 40 to 60 ewes, according to the nature of the ground, being the number allowed to each sheep, it can hardly be expected, where the breeding stock is large, that all the rams should be first-class animals as this would imply a larger outlay of money than is either prudent or necessary. Hence most breeders make a practice of rearing a proportion of their own rams, and so saving a considerable annual outlay, without, at the same time, running into the dangerous system of over-close breeding. Though generally admitted that the produce of shearlings is more vigorous than that of four or five-shears, the difference is not so great as to render it necessary to part with a good sheep because he has been used one or two seasons; both because there is considerable difficulty in procuring a sufficient number of good shearlings, and also because, until their produce is grown up, it is almost impossible to say whether or not they will become good breeders. Hence, whenever practicable, one or more first-class rams should be selected from some stock of known celebrity, and put to a picked lot of ewes; and as mountain sheep vary much in their appearance at different stages of their first year's growth, we would strongly recommend that the whole of the produce, except a few which may be glaringly defective, be kept entire, and the final selection deferred until they are shearlings. We have often been struck with the difference between Leicesters and our Cheviot and black-faced breeds in this respect; the eye of the experienced breeder of the former being able to select, with almost unerring precision, the very day they are dropped, those animals which, for figure and quality, are likely to suit his purpose; while what appear the most unexceptionable specimens of the latter, as lambs, too frequently give anything but satisfaction when grown up; and the reason we believe to be simply this—that whereas in the one case the greatest attention has been paid to the perfecting of the breed since the days of Bakewell; the others, though boasting of as honourable, and a more ancient ancestry, have, until a comparatively recent period, been very much the creatures of chance, or, when attempts at superior culture were made, these were conducted on no fixed principle. But better days have now dawned; the true principles of breeding are being better understood—our hill farmers have got some definite idea of what is wanted; and, with something like a true standard to go by, we have no fears of a successful result. While on this subject, we cannot conclude these desultory remarks, without referring to the stimulus given by the Highland Society of Scotland, as one great cause of the growing improvement so observable in the mountain sheep of that country, both by the handsome prizes offered at the annual shows, and by the example set, and the substantial assistance tendered to the numerous local associations in various districts. As another step towards the improvement of mountain sheep, we are watching with much interest, the determined efforts at present making to introduce the Scotch breeds into many of the rich pastoral districts of Ireland. Though we have not had the pleasure of a personal inspection, the accounts given by practical graziers are such, that if there be any truth in the saying, that "it is the ground which makes the sheep," these new colonies will very soon rival if not outstrip the parent stock. Of late such large importations of the best blood (especially Cheviot) have been taking place, that in the course of a few years we may expect a keen competition at the three national agricultural societies' annual meetings, when it will be no matter of surprise if the "green island" claims the palm of victory. The last of our annual cast of lambs were disposed of some weeks ago, and the remainder of our draft ewes will be sent off in the course of a few days. Considering it better, in many respects, to sell at home, than drive stock to a public market, we always endeavour to avoid the latter alternative, and have been fortunate to make all our sales this year at "our ain fireside." We are now laying in a supply of materials, and purpose beginning this laborious and unpleasant work in the course of a week. The past is the latest harvest we have had in this district for some years. The weather at the commencement was very unfavourable, though towards the end the frequent showers were counterbalanced by drying winds. Still we fear that on most farms late sown grain is but imperfectly ripened; and after the beginning of October it is almost in vain to let it stand, without any good prospect of improving. Whiter it may become, but seldom much riper, while the quality of the straw is deteriorated for fodder. Turnips, though inferior to last year, are growing and promise to be an average crop. We observe more "fingers and toes" than usual. *A Lammermuir Farmer.*

## Notices to Correspondents.

ABORTION IN COWS: *Reader.* You will find on consulting the best authorities, that nothing certain is known on the subject. Ergot in the Grasses has been supposed one cause.

ALLOTMENTS: *Spr.* No act has been passed relative to allotment grounds. One was brought in some years ago by Mr. Cowper, but it did not become law. We do not know if the publication called the "Labourer's Friend" is still published. Apply to any bookseller.

CATTLE: *M H.* We do not know that there is any difference of hardiness between these two, *i. e.*, whether bullocks or heifers stand the cold and inclemency of winter with least injury to their growth.

FLEAS: *P P Q* says, "I am sadly vexed, and my neighbours and work-people annoyed by fleas in a farm-yard where I have had pigs fatted. Can you tell me how to destroy them?" [Could you not drown them? Keep the yard soaked for a week. The weather will soon remove them for you.]

KOHL RABI: *Tonbridgiensis.* The leaves may be stripped and given to cattle; also the roots may be stored, as in the case of Mangold Wurzel.

NETTLES: *F.* You must fork them up, and sow the places with Grass seeds again.

POULTRY: *E P.* It is impossible to say of what disease the chickens die, unless some description of it is given. You should state the symptoms and the time of year at which the mortality is greatest. Half the diseases of chickens are caused by the filthy water they are obliged to drink.—*J T.* Many people have very good Malay fowls, but some are of course more perfect than others; early chickens of such are worth from 30*s.* to 50*s.* the pair.—*D.* The principal difference between the white and grey Dorking is in size, the former being much smaller; the points are the same. In grey Dorking fowls the comb is not considered, being single or double, as fancy may be, but in the white a double comb is always preferred, and by many considered essential. *J. Baily*, 113, *Mount street.*

SHEEP MANAGEMENT: *A B.* The ewes may be folded on the stubble Turnips and young Barley. If they are too succulent, and should scour the sheep, give a little hay with them. —Dr. Newington's dibble is a very good and efficient instru-

mend. We should not like to dibble Tares, or any other seed, excepting where a seed crop is desired.

TIMOTHY GRASS: *C M I.* It is usually sown in mixture with other Grasses; but if you wish to propagate the species by itself, you may sow it on a surface of soil in good tilth, and clean early in April, and bush harrow it in.

TURNIP CUTTER: *L.* Moody's Turnip crusher reduces the root to smaller portions than Gardner's, and it is then more adapted for mixing with other food.—Maiden Bradley, Wilts, will find him—M'Cormick's reaping machine has been beaten, according to a Yorkshire jury. Neither it nor its rival are to be considered as yet in a fit state for employment on a farm.

TURNIPS: *A Young Sheep Farmer.* We suppose you could not grow them year after year continually, except for a few years. Could you not alternate with Mangold Wurzel, Rye, and Rape, &c.?

METEOROLOGICAL REPORT.—OCTOBER.

(*Continued from p.* 686.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| ‡ 22 | 8 50 a.m. | ... | 29.88 | ENE. Almost calm. Overcast and chilly. Barometer rising steadily. |
| | 9.50 p.m. | 30.01 | ... | |
| 23 | 7.30 a.m. | ... | 30.08 | ENE to ESE. Gentle; bright; beautiful day. Barometer rising steadily. |
| | 10.10 p.m. | 30.17 | ... | |
| 24 | 6 50 a.m. | ... | 30.24 | ENE. Gentle; frosty. Barometer steady. Overcast, chilly. |
| | Noon. | 30.25 | ... | |
| 25 | 7.30 a.m. | 30.25 | ... | NNE. Moderate; clear and frosty. |
| | 3 p.m. | 30.24 | ... | ENE. Brisk, overcast, and cold. |
| | 10 30 p.m. | ... | 30.22 | |
| Sun. 26 | 7.50 a.m | 30.12 | ... | ENE. Fine pleasant day. Barometer falling. |
| | 10 50 p.m. | ... | 30.06 | |
| § 27 | 8.30 a.m. | ... | 30.04 | A.M. NNE. Gentle; overcast; foggy. P.M. NNW, N. Brisk; sunny; at night, barometer rising. |
| | 10.5 p.m. | 30.06 | ... | |
| 28 | 7.50 a.m | 30.05 | ... | WSW. Gentle; fine and sunny day. |
| | 10.10 p.m. | ... | 29.57 | P.M. Overcast. Barometer falling steadily. |
| 29 | 7.40 a.m. | 29.38 | ... | Heavy rain in night, with little wind. A.M. NNW. Gentle. P.M. WNW. with very cold and heavy showers; hail; barometer falling steadily. |
| | 6.57 p.m. | ... | 29.25 | |
| | Midnight. | ... | 29 26 | Night. Barometer rising. |
| 30 | 7.40 a.m. | ... | 29.35 | N. A.M. Stiff breeze; dry. barometer rising. |
| | 1.15 p.m. | 29.43 | ... | Noon, NNE. Increasing; overcast; co'd. |

‡ Continuation of storm which had travelled eastward, and to the reflux current of the hinder quadrants I attribute the foggy and gloomy appearance of the 22d.

The season of November fogs is now approaching; these on the west of England ought to accompany *a rising barometer*, if the theory proposed in the previous paragraph be correct.

§ I imagine this to be a storm travelling northward and passing to the eastward of England, *i.e.* over Spain, France, and Germany; had it passed to the northward of these islands it would have produced cold, and had it come from the westward it would have been accompanied by rain.

* So great and rapid a fall of the barometer with so litt'e wind is unusual, but the front quadrants of this storm being lifted up, probably as the barometer rises, we shall have increasing wind, with snow, as the centre of this storm has passed, and the hinder quadrants are to the northward of us.

Dorchester Oct. 30. *F. P. B. M.*

(*To be continued.*)

# Markets.

## COVENT GARDEN, Nov 1.

English Pine Apples are plentiful, large, and fine. Grapes are also abundant, and meet with a heavy sale, owing to the large importations of foreign ones. Pears are also brought from the Continent. The best English kinds fetch 2s. to 4s. a doz., and 8s. to 12s. per half sieve. Oranges are coming in pretty plentifully. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are a trifle cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Melons, each, 1s to 2s | — per 100, 6s to 10s |
| Apples, kitchen, p. bsh., 1s to 2s 6d | Nuts, Barcelona, p. bsh, 20s to 22s |
| Pears, dessert, p. doz., 2s to 4s | — Brazil, p. bsh., 12s to 14s |
| Lemons, per doz., 1s to 2s | Filberts, per 100lbs., 70s to 90s |
| Walnuts, per bush., 12s to 24s | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 6d to 8d |
| French Beans, p. h. sieve, 2s to 4s | Artichokes, per doz., 4s to 6s |
| Broccoli, per bunch, 8d to 1s | Lettuce, Cab., p. score, 4d to 1s |
| Peas, per sieve, 6s to 8s | — Cos, per score, 3d to 1s |
| Potatoes, per ton, 45s to 80s | Small Salads, p. punn., 2d to 3d |
| — per cwt., 2s to 5s | Horse Radish, p. bundl., 1s 6d to 4s |
| — per bush., 1s 6d to 2s 6d | Red Beet, per doz., 1s to 2s |
| Turnips, p. bunch, 2d to 3d | Mushrooms, p. pot., 1s to 1s 6d |
| Cucumbers, each, 1d to 1s | — per bushel, 7s to 10s |
| Radishes, per doz., 9d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 1s to 1s 6d | Tomatoes, p. half sieve, 3s to 4s |
| Celery, p. bundle, 6d to 1s 6d | Fennel, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Savory, per bunch, 2d to 3d |
| Brussels Sprouts, per hf. sieve, 1s 6d to 1s 9d | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Parsley, per doz. bun., 2s to 3s |
| Veget. Marrows, p. doz., 1s to 1s 6d | — Roots, p. bundl. 9d to 1s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Leeks, per bunch, 1d to 2d | Marjoram, do., 3d to 4d |
| | Watercress, p. 12 bunch., 4d to 6d |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 30.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 77s | Clover ... ... ... | 70s to 85s |
| Inferior ditto... ... | 60 68 | 2d cut ... ... ... | 60 72 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 24 27 |
| New Hay ... ... ... | — — | | J. COOPER. |

The supply short and trade brisk.

CUMBERLAND MARKET, Oct. 30.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Interior ... ... ... | 65s to 75s |
| Inferior ditto... ... | 60 70 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 88 | | JOSHUA BAKER. |

### HOPS.—FRIDAY, Oct. 31.

Messrs. Pattenden and Smith report that the demand continues good for all choice Hops The duty is daily expected to be officially announced, and the general opinion is that it will fall between 129,000*l.* and 131,000*l.*

### POTATOES.—MONDAY, Oct. 27.

We have had several arrivals from Scotland since our last report, and a few from Yorkshire, which, with a liberal supply from Kent and Essex, has stocked our market quite equal to the demand. Trade is exceedingly heavy, and very low prices are submitted to. The York Regents arrived so late in the week that none have yet been sold, therefore we cannot quote the price. The following are this day's quotations:—Scotch Regents, 40s. to 50s.; Kent and Essex do., 50s. to 60s.; ditto Shaws, 45s. to 55s.

### SMITHFIELD, MONDAY, Oct. 27.

The number of Beasts is nearly as large as of late, but there is a falling off in weight. Consequently, the best descriptions are readily sold; in a few instances our top quotations are exceeded. The supply of Sheep is short; buyers are very unwilling to advance, owing to the state of the dead markets during the past week. However, the number being small, prices generally are better. There is a brisk trade for good Calves, but prices are very little better From Holland and Germany there are 1278 Beasts, 5630 Sheep, 192 Calves, and 140 Pigs; from France, 80 Sheep; and 2350 Beasts from the northern and midland counties.

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 6 | to 3 | 8 |
| Best Short-horns | 3 | 4 | — 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 |
| Best Downs and Half-breds ... | 4 | 0 | — 4 | 2 |
| Ditto Shorn ... ... | | | | |

| Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools . | 3 | 6 | to 3 | 10 |
| Ditto Shorn ... | | | ... | |
| Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Ditto Shorn ... | | | ... | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 2 | 8 | — 3 | 10 |
| Pigs ... ... | 3 | 8 | — 4 | 8 |

Beasts, 4546; Sheep and Lambs, 24,870; Calves, 242; Pigs, 570.

FRIDAY, Oct. 31.

The supply of Beasts is tolerably good; the weather being very favourable they are readily disposed of at fully Monday's prices. The number of Sheep has rather increased; however, the demand is larger, and we are enabled to retain Monday's quotations. Good Calves are scarce, and they are readily disposed of at an advance of about 2d. per 8 lbs. From Germany and Holland we have 322 Beasts, 1850 Sheep, 193 Calves, and 8 Pigs; from France, 7 Beasts; 450 from the northern and midland counties; and 132 Milch Cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 | 6 | to 3 | 8 |
|---|---|---|---|---|
| Best Short-horns | 3 | 4 | — 3 | 6 |
| 2d quality Beasts | 2 | 6 | — 3 | 0 |
| Best Downs and Half-breds ... | 4 | 0 | — 4 | 2 |
| Ditto Shorn ... ... | | | | |

| Best Long-wools . | 3 | 6 | to 3 | 10 |
|---|---|---|---|---|
| Ditto Shorn ... | | | ... | |
| Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Ditto Shorn ... | | | ... | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 3 | 0 | — 4 | |
| Pigs ... ... | 3 | 8 | — 4 | 0 |

Beasts, 1181; Sheep and Lambs, 5740; Calves, 318; Pigs, 620.

### MARK LANE.

MONDAY, Oct. 27.—The supply of English Wheat to this morning's market was small; the white was taken off on the terms of this day se'nnight; but red was difficult to quit, and generally disposed of at a decline of 1s. per qr.; the inquiry for foreign was most limited, but we observe no alteration in its value.—Barley and Beans sell readily at last week's prices. —White boiling Peas are 1s. to 2s. per qr. cheaper. In the value of the other sorts there is no alteration.—The Oat trade is firm, and new bring 6d. per qr. more money. There is still a fair demand for the best barrel Flour; all other descriptions are a difficult sale.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 38—41 | Red ..... | 37 | 39 |
| — — fine selected runs... | ditto | 40—44 | Red ..... | 38 | 40 |
| — — Talavera ..... | | 44—46 | | | |
| — Norfolk, Lincoln, & York... | White | 33—36 | Red ..... | — | |
| — Foreign ..... | | 30—48 | | | |
| Barley, grind. & distil., 24s to 25s... | Chev. | 28—30 | Malting . | 25 | 28 |
| — Foreign... grinding and distilling | | 20—24 | Malting . | — | |
| Oats, Essex and Suffolk ..... | | 16—20 | | | |
| — Scotch and Lincolnshire... | Potato | 19—24 | Feed..... | 16 | 21 |
| — Irish ..... | Potato | 18—22 | Feed..... | 18 | 20 |
| — Foreign .....Poland and Brew | | 18—22 | Feed..... | 16 | 19 |
| Rye ..... | | 28—30 | Foreign . | — | |
| Rye-meal, foreign.....per ton | | — | | | |
| Beans, Mazagan ... ..25s to 27s..... | Tick | 24—30 | Harrow . | 24 | 30 |
| — Pigeon.....26 — 32... | Winds | 30—33 | Longpod | 24 | 26 |
| — Foreign ..... | Small | 21—29 | Egyptian | 22 | 23 |
| Peas, white, Essex and Kent..... | Boiler | 28—30 | Suffolk.. | 29 | 32 |
| — Maple.....27s to 29s ..... | Grey | 22—25 | Foreign . | 25 | 31 |
| Maize ..... | White | — | Yellow... | — | |
| Flour, best marks delivered ...per sack | | 32—37 | | | |
| — Suffolk ..... | ditto | 24—32 | Norfolk . | 22 | 32 |
| — Foreign .....per barrel | | 15—21 | Per sack | 28 | 33 |

FRIDAY, Oct. 31.—This morning's market was moderately attended, and fine qualities of Wheat, either English or foreign, are inquired after at fully Monday's prices. The demand for the Continent has ceased, and 32s. 6d. per qr., cost, freight, and insurance, for Polish Odessa on the coast, has been paid for Ireland. Maize afloat brought 26s. 6d. per qr. for Galatz, freight and insurance included.—There is no alteration in the value of Barley, Beans, or Peas since Monday. Oats are a good sale at the extreme prices of that day.—The value of Flour remains as last quoted.

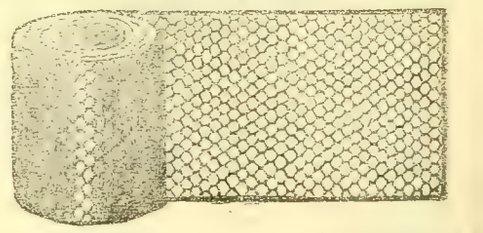
| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS |
|---|---|---|---|---|---|---|
| Sept. 20..... | 37s 8d | 25s 7d | 18s 4d | 26s 2d | 28s 6d | 28s 2d |
| — 27..... | 36 7 | 25 0 | 18 0 | 25 4 | 28 8 | 27 0 |
| Oct. 4..... | 35 7 | 25 1 | 17 6 | 24 2 | 27 10 | 27 1 |
| — 11..... | 35 6 | 25 2 | 17 3 | 25 0 | 27 8 | 26 2 |
| — 18..... | 36 0 | 24 9 | 17 0 | 23 6 | 27 6 | 27 2 |
| — 25..... | 36 9 | 25 5 | 17 5 | 23 8 | 28 6 | 27 7 |
| Aggreg. Aver. | 36 4 | 25 2 | 17 7 | 24 7 | 28 1 | 27 2 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | SEPT. 20. | SEPT. 27. | OCT. 4. | OCT. 11. | OCT. 18. | OCT. 25. |
|---|---|---|---|---|---|---|
| 37s 8d | — | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | |
| 36 7 | ... | | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | | ... |
| 35 7 | ... | ... | | ... | ... | ... |
| 35 6 | ... | ... | ... | | ... | ... |

LIVERPOOL, TUESDAY, OCT. 28.—At our market this morning we experienced a slow limited demand for all descriptions of foreign Wheat at the decline noted on Friday, being 1d. per 70 lbs. under the rates of Tuesday last. The supply of homegrown Wheat was less plentiful to-day than heretofore, and supported the currency of this day se'nnight. Malting Barley and Malt, being in good request, were quite as dear as last week; grinding Barley was the turn cheaper. Beans, upon a limited demand, were unaltered in value. Peas dull and nominally lower. Oats, although in limited supply, hardly maintained our last quotations, and Oatmeal, losing the advance previously named, receded to the rates of Tuesday last. Of Indian Corn little was offered, and no change in price was observable.—FRIDAY, OCT. 24.—Our market was to erably well attended to-day by home and country millers, and with a few Irish buyers. Good runs of foreign Wheat were in moderately fair demand; in order to effect sales, however, sellers were obliged to submit to a decline of 1d. per 70 lbs. from Tuesday's rates: and English, though not quotably cheaper, was rather easier to purchase. Barley, Malt, Beans, and Peas in moderate demand, and steady in value. Oats supported late prices, and Oatmeal again improved 3d. per load.


GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

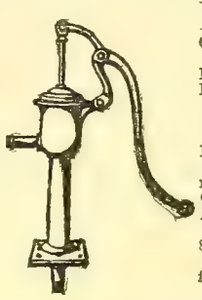


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

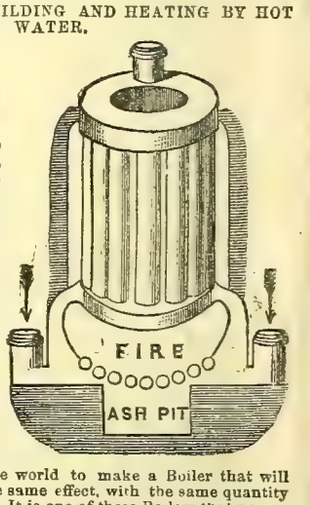
Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



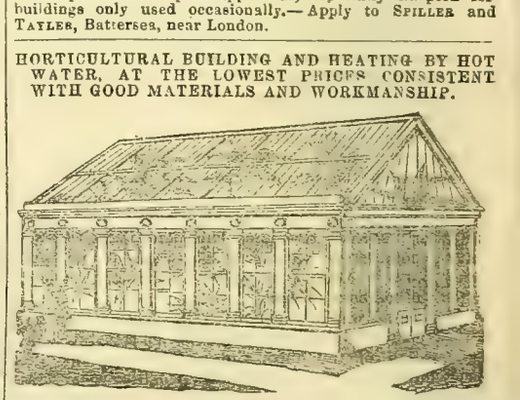

J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREEN HOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured:— 30 inches wide and from 40 to 50 long ... Or 20 „ „ 50 to 70 „ | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered:— Under 8 by 6 | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 | 0 4½ | 0 7 | 0 8 |
| 10 by 8 „ 14 by 10 | 0 5 | 0 7 | 0 9 |
| 14 by 10 „ 1½ feet super., if the length does not exceed 20 inches | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. „ 3 „ or if above 20, and not above 30 inches long | 0 6 | 0 8 | 0 10 |
| 3 „ „ 4 „ „ 20 „ | 0 6½ | 0 8 | 0 10 |
| 4 „ „ 5 „ „ 30 „ | 0 7 | 0 8½ | 0 10 |
| 5 „ „ 6 „ „ 35 „ | 0 7½ | 0 9 | 0 10½ |
| 6 „ „ 8 „ „ 40 „ | 0 8 | 0 9½ | 0 11 |
| 8 „ „ 10 „ „ 45 „ | 0 8½ | 0 10 | 1 0 |
| 10 „ „ 12 „ „ 55 „ | 0 9 | 0 11 | 1 1 |
| 12 „ „ 15 „ „ 70 „ | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. Ins. | Ins. Ins. | s. d. |
|---|---|---|
| 6 by 4 and 6½ by 4½ | ... ... ... ... | 10 6 |
| 7 by 5 „ 7½ by 5½ | ... ... ... ... | 12 0 |
| 8 by 6 „ 8½ by 6½ | ... ... ... ... | 13 0 |
| 9 by 7 „ 9½ by 7½ and 10 by 8 | ... ... | 15 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8th, 6d.; 3-16ths, 9d.; ¼ inch, 1s. per foot, net.

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

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And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

TWO HUNDRED AND FIFTY STOVES, and THREE HUNDRED AND TWENTY-FIVE FENDERS, all differing in pattern, forming the largest assortment ever collected together, are always on Sale at the Show Rooms of WILLIAM S. BURTON. They are marked in plain figures, and at prices proportionate with those that have tended to make his establishment the most distinguished in this country. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s. Bronzed Fenders, complete, with standards, from 7s. to 3l.; Steel Fenders, from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s. Fire-irons, from 1s. 9d. the set to 4l. 4s. Sylvester and all other patent Stoves with radiating hearth plates; and Kitchen Ranges.

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Catalogues with engravings sent (per post) free. The money returned for every article not approved of.

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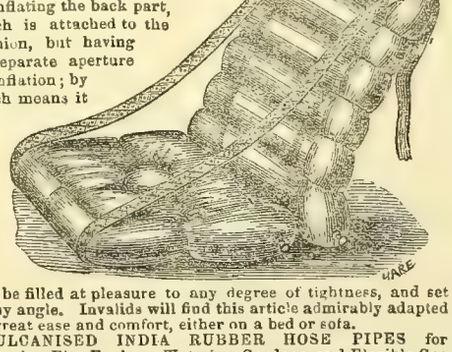
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"To Messrs. C. & A Oldridge."

For the strengthening of weak hair, its restoration when thinly scattered, or falling off and consequent general improvement and embellishment, the powers of OLDRIDGE'S BALM OF COLUMBIA are known by the continually increasing numbers who are testing its merits, as powerfully and unfailingly efficient.—Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. Ask for OLDRIDGE'S BALM, and never be persuaded to use any other article as a substitute.

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METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the World. 30,000 boxes sold weekly.—The fine balsamic and invigorating powers of this Medicine are truly wonderful; a trial of a single dose will carry a conviction that they are all that is necessary to invigorate the feeble, restore the invalid to health, and to do good in all cases. The heads of families should always have them in the house, as they may, with the greatest confidence, be resorted to at any time or in any case. BILIOUS DISORDERS.—These Pills are all-powerful in removing the distressing symptoms attendant upon bilious obstructions, disordered state of the stomach and bowels, such as pains in the head, dizziness of sight, sickness, oppression of the chest, lowness of spirits, disinclination for active employment, and various other symptoms at all times troublesome, and not unfrequently dangerous. By taking two or three doses of OLD PARR'S LIFE PILLS, the symptoms above described are speedily removed, an unusual degree of serenity pervades the mind, the stomach and bowels are restored to their natural functions, and returning vigour is the result. None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government Stamp, pasted round each box; also the fac simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions. Sold in boxes at 1s. 1d., 2s. 9d., and family packets at 11s. each.

"NORTON'S" CAMOMILE PILLS are confidently recommended as a simple but certain remedy to all who suffer from Indigestion, Sick Headache, Bilious and Liver Complaints, Heartburn, and Acidity of the Stomach; Depressed Spirits, Disturbed Sleep, Violent Palpitations, Spasms, General Debility, Costiveness, &c. They act as a powerful tonic and gentle aperient; are mild in their operation, safe under any circumstances, and thousands of persons can now bear testimony to the benefits to be derived from their use. Sold in bottles at 1s. 1½d., 2s. 9d., and 11s. each, in every town in the kingdom.—CAUTION. Be sure to ask for "NORTON'S Pills," and do not be persuaded to purchase an imitation.

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## SALES BY AUCTION.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed to sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, 7th November, at 12 o'clock, a First-class Collection of Carnations, Picotees, and Pinks; also a selected assortment of Tulips, the property of Mr. Wilmer, of Sunbury; together with 500 Standards and Dwarf Roses, consisting of Hybrid Perpetuals, Bourbons, Chinas, Noisettes, Dutch Bulbs, &c. On view the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, BUILDERS, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Medcalf's Nursery, near the Rosemary Branch Bridge, Islington, on MONDAY, Nov. 10, at 12 o'clock (by order of the proprietor, in consequence of the land being required for building purposes), the whole of the Nursery Stock and Greenhouse Plants, &c., together with four Greenhouses, six 3 and 5 light Boxes, a quantity of Bricks, Pantiles, York Paving, Wood, Garden Pots, Tools, Handbarrow, Step ladders, an Iron Pump, and other effects.—May be viewed prior to the sale, and Catalogues had (6*d.* each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Garvie to sell by Auction, on the premises, Maryland Point, Stratford, on MONDAY, Nov. 17, at 11 o'clock precisely, in consequence of the number of lots, about 500 DOUBLE CAMELLIAS, from 1 to 7 feet, beautifully furnished with bloom-buds, comprising all the approved kinds; also 3000 Ericas, in the finest condition; 400 very fine Dwarf Trained Morello, May Duke, and other Cherries; together with a quantity of Green Hollies, Spruce Fir, Laurels, Limes, Rhododendrons, Azaleas, &c. A capital Nest of 170 Seed Drawers.—May be viewed a week prior to the sale. Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. WATERER will sell by Auction, on the premises, Sunningdale American Nursery, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrubs Hill, on TUESDAY, November 4th, and following day, at 11 o'clock, by order of the proprietor, without reserve, the Lease of the Land having expired, the valuable NURSERY STOCK, comprising 12,000 Rhododendrons, Kalmias, and Azaleas, including many large Ornamental Plants, a large quantity of choice Evergreen and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf Maiden and Trained Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots, Common and Portugal Laurels of all sizes, Birch, Ash and Oaks, Purple and Common Beech, Spruce Larch, Scotch Balm of Gilead, and Hemlock Spruce Firs of all sizes, a large quantity of Quick, from three to five years old, and a great variety of other valuable Nursery Stock, the whole of which is in a safe moving condition, and well worth the attention of persons about planting.—May be viewed one week previous to the sale, and Catalogues had upon the premises; of Mr. CHARLWOOD, Seedsman, Covent-garden; and of Mr. WATERER, Auctioneer, &c., Chertsey, Surrey, who will forward them on application by post inclosing four postage stamps.

VALUABLE NURSERY STOCK, HANWORTH-ROAD, HOUNSLOW, MIDDLESEX, NEAR THE RAILWAY STATION.

MR. WATERER will sell by Auction, on the premises, on MONDAY, November 10th, and following day, at 11 o'clock, the property of Mr. J. Riddy, giving up part of his land, comprising 2000 APPLE TREES of sorts, including Hawthornden, Wellington, Early Julien, Manx and Keswick Codlin, White Juneating, and others, true to name; Standard, Dwarf, and Maiden PEARS, CHERRIES, APRICOTS, PEACHES, and PLUMS, of the most approved sorts. Standard Roses, a large quantity of choice Evergreen & Flowering Shrubs, Portugal and Common Laurel, Laurestinus, Spruce, Scotch, and Larch Firs; Hornbeam, Limes, Poplars, Sycamores, Weeping Willows, Mountain Ash, Chestnut, and a great variety of other Forest Trees and Nursery Stock, the whole of which is in a safe moving condition.—May be viewed one week previous to the sale, and Catalogues had, upon the premises; of Mr. Charlwood, Seedsman, Covent-garden; and of Mr. WATERER, Auctioneer, &c., Chertsey, Surrey, who will forward them on application by post.

LINTON, CAMBRIDGESHIRE. — TO NURSERYMEN, FLORISTS, &c.—COPYHOLD NURSERY, DWELLING-HOUSE, AND FLOWER GARDEN.

MR. WHITTLE will sell by Auction, at the Swan Inn, Linton, on THURSDAY, November 13, at 4 for 5 o'clock precisely, by the direction of the executors, all that COPYHOLD ESTATE, favourably known for half a century past as Gimson's Nursery and Flower Garden, comprising about 1½ acre, with Seed-shop, roomy Dwelling-house, three Cottages, and Out-buildings, abutting on the High Road, Linton, subject to the customary fine on death or alienation. The Quit-rent is 8*d.* only, rendering it nearly equal to a Freehold Investment; whilst to a Nurseryman, Gardener, or Florist it offers peculiar inducements for occupation. The Estate has a beautiful Southern Aspect, with a gentle slope, and is naturally well drained. The Soil is of an extraordinary rich quality, and great ingenuity, combined with sound judgment and infinite taste, is exhibited in the disposition of the Grounds and Flower Garden. It is stocked with an abundance of Bearing Fruit Trees, a fine assortment of Greenhouse and Border Plants, Shrubs, Evergreens, Bulbs, Forest Trees, Ornamental Trees, Rock-work and Pond, remarkably fine cut Yew, and other Arbours and Hedges, Greenhouse, Forcing-pits, &c. It is also suggested, that if the present House and Cottages were removed, the site would be exceedingly appropriate for the erection of a respectable Family Residence, and in that case, with the Garden and Grounds already in a matured state, the property, considering its size, would unquestionably become at once one of the most unique Estates in the county. Linton is only 10 miles from Cambridge, 6 from Saffron Walden, 4 from the Chesterford Station, and 12 from Newmarket. The purchaser will have the option of taking to the whole or any part of the stock of Shrubs, Flowers, &c., at a valuation.—May be viewed at any time prior to the sale, and particulars had on the premises, at the Swan Inn, Linton; at the usual Inns in Cambridge, Saffron Walden, Chesterford, and Newmarket; of Mr. GIMSON, Builder, Royston, Herts; of Messrs. NASH and THORNALL, Solicitors, Royston; and at the Auctioneer's Offices, 45, Old-street, St. Luke's, London.

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MR. J. C. STEVENS begs to announce he will sell by Auction, at his Great Room, 38 King-street, Covent Garden, on FRIDAY, 7th November, AN IMPORTATION OF RARE ORCHIDS, in good condition, and consisting of the following fine varieties, viz., Uropedium Lindenii, Odontoglossum Hallii, hastilabium, Naevium, Pescatorei, &c., in fine masses; Oncidium candelabrum, and cucullatum, Brassia cinnabarina, Miltonia pulchella, Myanthus sanguinea, Anguloa Margarita, Huntleya fimbriata, Epidendrum spectrum, Paphinia tigrina, Houlletia picta, and several new and beautiful species of Odontoglossum, Brassia, Anguloa, Arpophyllum, Sobralia &c.—May be viewed on the morning of Sale, and Catalogues had.

NEW BROMPTON.—GROWING CROPS, AND STOCK OF A MARKET GARDENER, &c.

MR. D. A. RAMSAY will sell by Auction, on the premises, Park-walk, near the Goat in Boots, on Tuesday, Nov. 4th, 1851, at 12 o'clock, by order of Mr. Salmon, relinquishing the business, some substantial Garden Frames and Lights, Market Cart, Horse and Harness, Ladders, Manure, and a large quantity of Moss Roses, fine Evergreens, American Plants, Ornamental Trees, &c.; may viewed one day prior to Sale, and Catalogues had on the premises, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

COLCHESTER BOTANIC GARDEN.

MR. W. K. DAWSON begs to say that he is instructed by the Messrs. Burgess to sell by Auction, on WEDNESDAY, November 5, and following days (in consequence of the property being sold for building purposes), their entire stock of splendid FLOWERING SHRUBS AND PLANTS at that establishment, consisting of about 300 Standard and Dwarf ROSES, a large assortment of Pot ditto, consisting of Hybrid Perpetuals, Bourbons, Teas, Chinas, Noisettes, &c., all named on white labels; all the greenhouse plants, with 4 large American Aloes; Fuchsias, Geraniums, &c.; a large quantity of Yews (3 to 6 inches), a fine lot of Evergreen Oaks, Spanish Chestnut, Scarlet Horse ditto, with other ornamental trees and shrubs; 20 doz. Myatt's Victoria Rhubarb, and other good sorts; about 20 lots of prolific Kidney Potatoes, &c.—Catalogues will be in circulation, giving fully detailed particulars, a week previous to the sale, to be had of Messrs. BURGESS, at the Gardens; of the Auctioneer, St. Mary's Colchester; also at the *Essex Standard* office.

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GARDENERS' MAGAZINE OF BOTANY.—The Publishers respectfully intimate that the publication of Part 22 is unavoidably postponed till November 30th.

2, Amen-corner, October 30th.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 45—1851.] SATURDAY, NOVEMBER 8. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agapanthus umbellatus | 710 *a* | Leases, farm | 716 *c* |
| Agricultural Society of England | 716 *b* | Mangold Wurzel | 715 *c* |
| Asparagus, to transplant | 712 *c* | Manure, bones as | 713 *a* |
| Aquatics | 712 *c* | — guano | 716 *a* |
| Birds, British song | 708 *a* | Microscopical Society | 710 *c* |
| Broccoli | 710 *a* | Mildew, Grape | 707 *a* |
| Calceolarias, bedding | 709 *b* | Peat bogs | 713 *b* |
| Calendar, Horticultural | 712 *a* | Plum, Coe's Golden Drop | 710 *b* |
| Charcoal, peat | 713 *b* | Plumbago, Larpentæ | 710 *a* |
| Cinerarias | 711 *b* | Poultry diseases | 716 *a* |
| Crabbe's Dictionary | 711 *a* | Prince Albert's portrait | 711 *a* |
| Cryptomeria japonica | 710 *b* | Pruning forest trees | 708 *a* |
| Crystal Palace, trees in | 707 *b* | Reaping machine | 712 *c* |
| Cucumber disease | 710 *a* | Roots, to harvest | 714 *b* |
| Cucumbers, soil for | 712 *c* | Saponaria calabrica | 710 *a* |
| Draining, Lancashire | 718 *a* | Seeds, samples of | 710 *a* |
| Emigration, Irish | 713 *c* | Stocks, to sow | 712 *c* |
| Farming, small system of | 717 *c* | Trafalgar Agric. Society | 716 *c* |
| Figs, late | 709 *c* | Trees in the Crystal Palace | 707 *b* |
| Fish, preservation of | 709 *c* | — forcar, to prune | 708 *a* |
| Forest trees, to prune | 708 *b* | — formation of wood in | 708 *c* |
| Garden, kitchen, to crop | 710 *a* | — road side | 711 *c* |
| Gorse | 717 *c* | Trout fishing, rev. | 711 *a* |
| Grape mildew | 707 *a* | Tulips | 711 *c* |
| Heracleum giganteum | 710 *a* | Vine Mildew | 707 *a* |
| Hooker's Species Filicum | 711 *a* | Walls, Ivy on | 712 *a* |
| Horticultural Society | 710 *b* | Weather, the | 718 *a* |
| — schedule | 711 *a* | Weeds, burned | 716 *b* |
| Ivy on walls | 712 *a* | Wheat, prices of | 715 *c* |
| Kitchen garden, to crop | 710 *a* | Wood, formation of | 708 *c* |


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| | |
|---|---|
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| MARK LANE EXPRESS | 4769 |
| MAGNET | 4731 |
| BRITISH BANNER | 4421 |
| EXAMINER | 4389 |
| ERA | 4261 |
| EVENING MAIL | 4166 |
| WATCHMAN | 4019 |
| ECONOMIST | 3826 |
| RECORD | 3751 |
| DAILY NEWS | 3692 |
| MORNING HERALD | 3650 |
| STANDARD OF FREEDOM | 3240 |
| BRITANNIA | 3151 |
| NONCONFORMIST | 2965 |
| SPECTATOR | 2936 |
| MORNING CHRONICLE | 2924 |
| ST. JAMES'S CHRONICLE | 2891 |
| SUN | 2674 |
| MORNING POST | 2653 |
| EXPRESS | 2458 |
| GARDENERS' GAZETTE | 2338 |
| JOHN BULL | 2115 |
| MINING JOURNAL | 2057 |
| ATLAS | 1884 |
| GLOBE | 1875 |
| HERAPATH'S JOURNAL | 1852 |
| RAILWAY TIMES | 1648 |
| WEEKLY CHRONICLE | 1634 |
| STANDARD | 1577 |
| WEEKLY NEWS | 1434 |
| PATRIOT | 1332 |
| GARDENERS' AND FARMERS' JOURNAL | 1165 |

Office of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, 5, Upper Wellington-street, Covent Garden.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The Fifth ANNUAL EXHIBITION of this Society will be held at the Manor-rooms, Church-street, Stoke Newington, on THURSDAY, the 20th of November.

Doors open at 1 o'clock. Admission from 1 to 4 o'clock, 1*s.*; from 4 to 8 o'clock, 6*d.* E. SANDERSON, Hon. Sec.

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| ,, Colvillii, 2*s.* per doz.; Gandavensis, 3*s.* 6*d.* p. doz; Rex Rubrorum (rich dark velvet), 1*s.* 6*d.* each; Insignis, 7*s.* 6*d.* per doz. 9*d.* each; Brenchleyensis, 3*s* each; Gandavensis splendens, very superb, 2*s.* 6*d.* each. | | |
| TULIPS, early Duc Van Thol, single or double, per 100 | 7 | 6 |
| ,, 30 fine and beautiful early vars. for | 7 | 6 |
| ,, 10 fine double vars., three of each, for | 5 | 6 |
| ,, 50 fine vars., late Tulips (including Polyphemis, Guido, Rose Pretiosa, Roscius, Holmes's King, Ambassador of Holland, Washington, and other popular show vars) | 50 | 0 |
| ,, Fine mixed, late, per 100 | 15 | 0 |
| ,, Fine border, late, per 100 | 6 | 0 |
| ENGLISH IRIS, 30 very superb vars. for | 17 | 6 |
| ,, ,, very fine mixed, 15*s.* per 100; per doz. | 2 | 0 |
| SPANISH IRIS, 30 beautiful vars., 5*s.*; 20 ditto | 3 | 6 |
| ,, ,, fine mixed, 5*s.* per 100; per doz. | 0 | 9 |
| GERMAN IRIS, 30 superb vars. | 22 | 6 |
| ,, ,, 12 ditto, 10*s.* 6*d.*; 12 other fine vars. | 7 | 6 |
| ,, ,, very fine mixed, 3*s.* per doz.; per 100 | 18 | 0 |
| CROCUS, 25 splendid distinct new vars., 12 of each, for | 15 | 0 |
| ,, David Rizzio, Queen Victoria, and other choice vars., per 100 | 3 | 0 |
| ,, fine, in separate colours, 2*s.* per 100; mixed | 1 | 6 |
| LILIUM LANCIFOLIUM ALBUM, each 1*s.* to | 2 | 6 |
| ,, ,, rubrum or speciosum, 3*s.* 6*d.* to | 10 | 0 |
| ,, ,, roseum 3*s.* to | 5 | 0 |
| ALSTROMERIA AURANTIACA, 7*s.* 6*d.* per doz.; Chilian, 7*s.* 6*d.* per doz.; pelegrina, 1*s.* each; psittacinus, 9*d.* each; pulchella and tricolor, 1*s.* 6*d.* each. | | |
| CROWN IMPERIALS, red, 4*s.* per doz.; per 100 | 16 | 0 |
| FEATHERED HYACINTHS, 2*s.* 6*d.* per doz.; per 100 | 25 | 0 |
| IXIAS, 25 fine vars., 12*s.*; 12 ditto | 6 | 6 |
| ,, fine mixed, per doz. | 3 | 0 |
| SCILLA AMŒNA, 2*s.* 6*d.* per doz.; campanulata alba, per doz. | 1 | 6 |
| ,, other fine vars., 2*s.* 6*d.* per doz. to, each | 0 | 9 |
| TRITONIA AUREA, a splendid orange-coloured new Cape Bulb, each 2*s.* 6*d.* to | 5 | 0 |

Also a choice assortment of IMPORTED DUTCH HYACINTHS, NARCISSUS, JONQUILS, &c. See our autumn Catalogue.

Goods free to London, or any station on the Ipswich and Bury line to Norwich; and with all orders of 40*s.* and upwards, extra plants presented gratis.

Remittances required from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

OTHELLO—NEW CARNATION CLOVE—now ready for sending out, at 5*s.* per pair, or 3*s.* per plant.—This will prove to be one of the finest and choicest ever offered to the public. It is the largest and darkest of its kind yet seen, and is of most powerful fragrance; the flowers are of an immense size, with long pod and fine rose-leaf petals, perfectly hardy, and will thrive well in any situation; it was the admiration of numberless spectators while in bloom during the season, and numerous orders taken for it. On the 9th August it was sent to the Editor of the *Gardeners' Chronicle*, and his opinion was given as follows: "A desirable dark Clove, with a strong scent, well worth cultivation." It is warranted to give satisfaction to all purchasers. Also the following, new:

BLACK WALLFLOWER—NEGRESS.—This is a new superb variety, and is superior to all others of similar kinds, the colour of which may be compared to that of a Mulberry when perfectly ripe; it has a fine large spike, is very hardy, beautifully double, a most prolific bloomer, of very superior habit, and delightful fragrance; price 5*s.* per plant. Both of the above varieties only require to be seen to be grown by every one who has a garden of the smallest dimensions.

TILEY'S VIOLA ARBOREA, or Perpetual Tree Violet, true (see *Gardeners' Chronicle* of 1st November), large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen, or 1*l.* per hundred.

Double White Viola Arborea, do. do., 6*s.* per doz., fine plants.

Russian Superb (true), very fine, 3*s.* per dozen.

White Russian Superb (true), very fine, 3*s.* per dozen.

Each of the above varieties will be forwarded, postage and package free, to any part, on receipt of a Post-office order, or penny postage stamps to the amount.

The Strawberry Plants, as named and priced in the *Gardeners' Chronicle*, on the 1st November, can be supplied as before.

Fine Giant Scarlet Brompton Stocks, 2*s.* 6*d.* per hundred.

Also fine Antirrhinums, all saved from striped and spotted varieties, and will bloom next spring, 5*s.* per hundred.

Fine Sweet Williams, saved from 50 distinct varieties (strong plants), will bloom next season, 5*s.* per hundred, or 1*s.* per dozen.

Will be sent, hamper and package free, on receipt of the amount.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

STIPA PINNATA.

WANTED, any quantity, if of approved quality. Sample, and price per pound, addressed to R. Y., Office of this Paper.

EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton, near London, informs his kind patrons that his new ROSE AND FRUIT CATALOGUE FOR 1851 AND 1852 is now ready for circulation, and will be sent on receipt of a twopenny stamp. His Stock of Roses, Fruit Trees, Evergreen Shrubs, and Ornamental Trees, are of the finest growth, of all sizes.—Gardens and Pleasure Grounds tastefully arranged and planted on the lowest terms.

E. D. informs his friends that he has no Seed Shop in London.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH.—ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., NURSERYMEN *and* FLORISTS *to her Most Gracious Majesty the Queen, have a* LARGE SURPLUS STOCK *of* TREES AND SHRUBS *more than they require for their usual sale, and will be sold at very low prices.*

*** For prices, see front page, Nov. 1, 1851, of this Paper.

*Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees is just published, and can be obtained for one penny stamp.*

WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. American Native, 10*s.* 6*d.* do. Early Manley, 10*s.* 6*d.* do. Early Ash-leaf Kidney, 10*s.* 6*d.* do.

"Moor Green, Sept. 13, 1851.

"Sir,—I can with confidence recommend your early No. 1 Pea for being very early and a good cropper, and in height about 3 feet.—Your humble servant, WM. EDDEN, gardener to T. Taylor, Esq., Moseley Hall, near Birmingham."

"Aylesbury, Sept. 13, 1851.

"Dear Sir,—I have great pleasure in testifying to the superiority of your early Number 1 Pea over every other I grow. I did not sow them till the last week in February, and it was even then earlier than any other I grew. It is a beautiful boiler, and a very prolific bearer. No garden should be without it.—Yours truly, JOHN PETTY, Gardener and Seedsman, Aylesbury."

"Brompton Park Nursery, Kensington-road,

"Sept. 11, 1851.

"Dear Sir,—I have much pleasure in informing you that I grew a few of your early Number 1 Pea, which was much admired by several friends calling on me from the country, in the trade, and pronounced it a first-rate article; very early, fine pod, well filled, and a great bearer.

"I am, sir, yours truly, JOHN ADAMS.

"To JOHN SANGSTER, Esq., Cumberland-place,

"Newington Butts."

With many more, too numerous for insertion.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newingtcn Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

CHOICE HARDY CONIFERÆ, FINE PLANTS AT LOW PRICES.—CARRIAGE FREE (see below).

| | *s.* | *d.* | *s.* | *d.* |
|---|---|---|---|---|
| Auracaria imbricata, seedlings, per doz. | | | 5 | 0 |
| Do. do. do. strong, each | | | 1 | 6 |
| Do. do. fine plants, each | 3 | 6 to | 7 | 6 |
| Abies Douglasii, handsome plants, from seed, 2 ft. | | | 7 | 6 |
| Do. large specimens | 12 | 6 to | 21 | 0 |
| Do. pinsapo | 5 | 0 to | 10 | 6 |
| Pinus insignis, fine, from seed, 2 to 3 ft. | | | 7 | 6 |
| Do. cembra, fine plants | 3 | 6 to | 5 | 0 |
| Do. excelsa | 2 | 6 to | 7 | 6 |
| Picea Webtiana, fine | 7 | 6 to | 15 | 0 |
| Cryptomeria japonica, good seedlings | 1 | 6 to | 3 | 6 |
| Do. do. fine specimens | 5 | 0 to | 10 | 6 |
| Cedrus Deodara, from seed, good young plants | | | 1 | 6 |
| Do. do. larger | 2 | 6 to | 5 | 0 |
| Libana (Cedar of Lebanon), per doz. | | | 18 | 0 |
| Do. do. larger plants, each | 2 | 6 to | 5 | 0 |
| Cupressus Funebris (Funebral Cypress), good plants. | | | | |
| Do. macrocarpa | 5 | 0 to | 10 | 6 |
| Do. torulosa | 2 | 6 to | 5 | 0 |
| Juniperus excelsa | 5 | 0 to | 10 | 6 |
| Do. chinensis | 1 | 6 to | 3 | 6 |
| Libocedrus chiliensis | 5 | 0 to | 10 | 6 |
| Taxodium sempervirens | 1 | 6 to | 3 | 6 |

And many others from 1 to 6 feet.

The above are in excellent condition for transplanting, and will be securely packed for travelling.

*A superior stock of Trained Fruit Trees, all choice sorts, as recommended by the Horticultural Society, and can be warranted true.*

Also a first-rate collection of PERPETUAL and other ROSES, a Catalogue of which will be forwarded to any address, post free.

| PRICES OF ROSES. Per dozen.— | £ | *s.* | *d.* |
|---|---|---|---|
| Standards, finest varieties, by name | 1 | 0 | 0 |
| Dwarfs, do. do. | 0 | 12 | 0 |
| Do. mixed for borders | 0 | 5 | 0 |
| Do. Moss, Cabbage, De Meaux, and others, good for potting | 0 | 5 | 0 |
| Do. Géant des Battailles | 0 | 15 | 0 |
| Do. China, crimson, 9*s.*; blush | 0 | 5 | 0 |

JOHN SUTTON and SONS, Reading Nurseries, Reading, Berks.

*N.B. Carriage free to any Station on the Great Western, South-Western, or South-Eastern Railways.*

*** Grounds laid out and planted with taste and economy.

W. FOSTER, Nurseryman, Seedsman, and Florist, Stroud, Gloucestershire, solicits the attention of Planters to some very fine, well grown and well-rooted plants of the following, which will be sold low, as the ground must be cleared.

| | | |
|---|---|---|
| COMMON LAURELS ... ... ... ... ... | 3 to 4 feet. | |
| Do. do. ... ... ... ... ... | 4½ to 6 | ,, |
| PORTUGAL do. ... ... ... ... ... | 3 to 4 | ,, |
| CUPRESSUS SEMPERVIRENS ... ... ... ... | 3 to 4 | ,, |
| Do. do. ... ... ... ... | 4½ to 5 | ,, |
| BUXUS ARBORESCENS, the True TREE BOX | 2 to 3 | ,, |
| Do. do. ... ... ... ... | 3 to 4 | ,, |
| A few hundreds of strong Larch ... ... ... | 4½ to 6 | ,, |

HARDY HEATHS—Mediterranea, stricta, and rubra, strong bushy plants, grown without peat.

W. F. has a good supply of strong Quick, Larch, and Forest Trees of all kinds, Evergreen and Flowering Shrubs; also a choice selection of Fruit Trees, both trained and Standards. Prices (according to the number taken) will be sent, on application, with samples, if required.

HYACINTHS AND OTHER DUTCH ROOTS *now on Sale at RENDLE'S Nursery and Seed Establishment, Plymouth, at Reduced Prices; a Descriptive Catalogue of which can be had in exchange for one penny stamp.*

All orders above 2*l.* pre-paid to any Station on the South Devon, Bristol and Exeter, or Great Western Railways.

William E. Rendle and Co., Florists to her Majesty, Plymouth.

*** Our Descriptive Catalogue will be found useful, as it contains some good cultural advice.

EDWARD GEORGE HENDERSON, Wellington Road Nursery, St. John's Wood, London, will be happy to forward his NEW AUTUMN CATALOGUE, post-free, on application, containing lists of Geraniums in nine Classes, Dianthus or Carnations in six Classes, Cinerarias, Gladiolus; Hollyhocks, Pansies, Pinks, Liliums, &c. &c., with other new Plants not before offered; all the above Plants are priced, and descriptions corrected up to the present time; Catalogues are also post-paid through France, Germany, Belgium, Holland, Prussia, Austria, and America.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

JOHN ANDREW HENDERSON and Co., have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21*s.* each.

Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orleans Plum; when fully ripe are of a fine deep black, having a fine rich flavour, and very juicy.

It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

WILLIAM HAMILTON, Seedsman, &c., 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

| | s. | d. |
|---|---|---|
| Hyacinths, superior sorts, named, per doz. ... | 6*s.* and | 9 0 |
| Narcissus, very fine large roots, each ... | 4*d.* to | 0 8 |
| Tulips, for early forcing, per doz. ... ... ... | | 1 0 |
| Crocus, mixed, for border, per 100 ... ... ... | | 1 6 |
| ,, very fine named, per 100 ... ... ... | | 2 6 |
| Snowdrops, single or double, per 100 ... ... ... | | 2 6 |
| Ixias, of sorts, named, per doz. ... ... | 2*s.* to | 4 0 |
| ,, very fine, mixed, per doz. ... ... ... | | 2 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots for which see his Catalogue.

H. LANE and SON, Great Berkhampstead, Herts, are now ready to forward to applicants their—

CATALOGUE OF ROSES,
,, OF TREES AND SHRUBS,
,, OF FRUIT TREES,
,, OF INDIAN AZALEAS AND CAMELLIAS.
,, ROSA MANETTI, for stocks, 12*s.* 6*d.* per 100.

# STANDISH AND NOBLE, NURSERYMEN, BAGSHOT, SURREY,

Solicit attention to the following List of ORNAMENTAL PLANTS, selected from their general Nursery Stock. The greater portion are growing in the open quarters; and, from being periodically transplanted, their safe removal may be relied on. Every Plant sent out will be a healthy, robust specimen; the heights given afford but a slight criterion of their general character. To those having a star prefixed they invite special attention, as being remarkably fine, and fit for producing immediate effect. Gentlemen about to plant extensively would be repaid by making a visit to the Nursery.

All kinds of Ornamental Trees and Shrubs supplied. A fine Collection of Roses selected with reference to late autumnal blooming. Also of the best kinds of late-flowering hardy hybrid Rhododendrons, to the cultivation of which especial attention is given.

*** *Gentlemen requiring assistance in laying out, or improving their grounds, may procure the services of a competent person by applying to the Advertisers.*

With the exception of such names as are printed in italics, the whole of the plants in this list are perfectly hardy.

The number of inches named refer to the heights, unless otherwise stated.

ABIES BRUNONIANA, 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*, each.
,, JEZOENSIS, one year's seedlings, 21*s.* each.
This is one of the best novelties in Conifers. It forms a noble tree of 120 feet in height, and of very distinct character.
,, DOUGLASII, 20 to 36 ins., 5*s.* to 10*s.* 6*d.* each.
ARAUCARIA IMBRICATA, 6 to 9 ins., 1*s.*; 12 ins., 2*s.* 6*d.*; 18 ins., 3*s* 6*d.*; 24 ins., 5*s.*, each.
*AZALEA, "Glory of Sunning Hill,"* 2*s.* 6*d* to 5*s.* each.
The best double variety in cultivation.
,, OVATA, a hardy evergreen, 6 to 9 ins., 2*s.* 6*d.* each.
,, *VITTATA*, a specimen of this unique variety was awarded a Knightian medal, when exhibited last April at the rooms of the Horticultural Society. The ground colour of the flowers is white, which is beautifully striped with purple, after the manner of a Carnation. It is a very free bloomer. 9 ins., 21*s.* each.
ABELIA UNIFLORA, new and distinct. A very free bloomer, 10*s.* 6*d.* each.
BUXUS sp., from north of China, round leaved, 10*s.* 6*d.* each.
,, ,, ,, long leaved, 15*s.* each.
BERBERIS FORTUNII, 9 ins., 1*s.* 6*d.*; 12 ins., 2*s.*; 18 ins., 3*s.*; 24 ins., 5*s.* each.
,, DARWINII, 7*s.* 6*d.* to 21*s.* each.
* CEDRUS AFRICANA, 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 30 ins., 5*s.*; 36 ins., 7*s* 6*d.*; 48 ins., 10*s.* 6*d.* each.
* ,, DEODARA, 2 to 5 ft., 2*s.* 6*d.* to 10*s.* 6*d.* each.
* CRYPTOMERIA JAPONICA, seedlings, very robust plants, will require no support from stakes. Plants 4 to 5 ft. high have stems as many inches in circumference. 6 ins., 6*3s.* per 100. 24 ins., 2*s.* 6*d.*; 36 ins., 3*s.* 6*d.*; 48 ins., 5*s.*; 60 ins., 7*s.* 6*d.* each.
,, JAPONICA NANA, seedlings 9 to 12 inches through, 10*s.* 6*d.* to 21*s.* each.
*CUPRESSUS FUNEBRIS, seedlings, very robust plants, from the open border, nearly as wide as high, very handsome plants, 12 ins., 5*s*; 18 ins., 7*s.* 6*d.*; 24 ins., 15*s*; 30 ins., 21*s.*; 36 ins., 31*s.* 6*d.* each. Cuttings, 6 to 8 ins., 2*s.* 6*d.* each.
* ,, ELEGANS, a rapid grower, and a most graceful tree, 12 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 36 ins., 5*s.*; 48 ins., 7*s.* 6*d* each.
* ,, GOVENIANA.—This is one of the most beautiful plants of its class. It has the merit of preserving its beautiful green colour during the most severe weather, 9 ins., 2*s.* 6*d.*; 12 ins., 3*s.* 6*d.*; 18 ins., 5*s.*; 24 ins., 7*s.* 6*d.*; 30 ins., 10*s.* 6*d.*; 36 ins., 15*s.*; 48 ins., 21*s.* each.
* ,, LAMBERTIANA, forms a noble tree, rivalling even the Cedar of Lebanon, and succeeds well in very exposed situations. 9 to 12 ins., 1*s.* 6*d.*; 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.* each.
Grafted beneath the surface of the soil, 30 ins., 2*s.*; 36 ins., 2*s.* 6*d* ; 42 ins., 3*s.* 6*d.*; 48 ins., 5*s.* each.
CEPHALOTAXUS FORTUNII, male var., long leaves, seedlings, 21*s.* each.
,, ,, female var., short leaves, seedlings, 21*s.* each.
CHAMÆROPS, sp., a hardy Palm from the north of China, a decided acquisition to our hardy ornamental evergreens, 21*s.* to 31*s.* 6*d.* each.
*CLERODENDRON FŒTIDUM.*—The only species of this beautiful genus which can be successfully cultivated in a cool greenhouse, a situation in which this succeeds admirably. It forms its large heads of rosy lilac flowers in great profusion. Strong plants, 21*s.* each.
CERASUS ILLICIFOLIA, 7*s.* 6*d.* each.
DAPHNE JAPONICA, 12 ins., 2*s.* 6*d.* each.
,, HYBRIDUM, 12 ins., 1*s.* 6*d.* each.
FORSYTHIA VIRIDISSIMA.—This plant is not sufficiently known. It is an early spring-flowering plant, producing its yellow blossoms in great profusion. But it rarely flowers, or but scantily when young. The plants offered are well set with flower-buds. It forces well. Bushy plants, 24 ins., 1*s.* 6*d.*; 36 ins., 2*s.* 6*d.*; 48 ins., 3*s.* 6*d.*; Standards, 10*s.* 6*d.* each.
ILEX DIPYRENA, 9 to 12 inches, 3*s.* 6*d.* each.
,, MICROCARPA, 21*s.* each.
,, LATIFOLIA, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.*; 24 ins., 5*s.* each.
,, FURCATA, 21*s.* each.
JUNIPERUS ARGENTEA, new and very beautiful, 12 inches, 5*s.* each.
,, PHŒNICEA, 12 ins., 1*s.* 6*d.* each.
,, CHINENSIS, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d.*; 24 ins., 2*s.*; 30 ins., 2*s* 6*d.* each.
,, TAMARISCIFOLIA, 12 ins., 1*s.* each.
,, FLACCIDA, 12 ins., 1*s* 6*d.*; 24 ins., 3*s.* 6*d.* each.
,, EXCELSA, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.* each.
,, SQUAMATA, 12 ins., 1*s.*; 24 ins., 2*s.* 6*d.* each.
,, CRACOVIA, 12 ins., 1*s.* each.
,, MACROCARPA, 12 ins., 2*s.* 6*d.* each.
,, REPANDENS, 12 ins., 9*d.*; 24 ins., 1*s.* 6*d.* each.
,, OBLONGA PENDULA, 6 to 8 ins., 2*s.* 6*d.* each.
,, BEDFORDIANA, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d.*; 24 ins., 2*s.* each.
JASMINUM NUDIFLORUM, strong blooming plants, 2*s.* 6*d.* each.
LIGUSTRUM JAPONICUM, 9 ins., 1*s.*; 24 ins., 2*s.* each.
*LYCOPODIUM WILDENOVII*, 5*s.* each.
LIBOCEDRUS CHILIENSIS, 7*s.* 6*d.* each.
MITRARIA COCCINEA, 2*s.* 6*d.* each.
*PICEA PINSAPO, very handsome specimens, 30 ins., 21*s.* each.
,, NORDMANNIANA, 10*s.* to 15*s.* each.
,, OVATA, 10*s.* 6*d.* each.
*PINUS INSIGNIS, 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 30 ins., 7*s.* 6*d.*; 36 to 42 ins., 10*s.* 6*d.* each.
,, MURICATA, 9 ins., 10*s.* 6*d.*; 18 ins., 21*s.*; 24 ins., 31*s.* 6*d.* each.
,, MONTEZUMÆ, 12 to 15 ins., 10*s.* 6*d.* each.
QUERCUS SCLEROPHYLLA, 21*s.* to 42*s.* each.
,, INVERSA, 21*s.* to 42*s.* each.
ROSE, "FORTUNE'S YELLOW," dwarfs, 2*s.* 6*d.* to 5*s.* each.
,, ,, ,, standards, 5*s.* to 7*s.* 6*d.* each.
RHODODENDRONS.—Hardy late flowering Hybrids, varying in colour from white to deep crimson. Dwarfs, 31*s.* 6*d.* to 6 guineas per dozen; standards, 21*s.* to 5 guineas each.
,, COMMON PONTICUM, for covers, thrice transplanted, 12 to 18 ins high, very bushy, 15*s.* to 21*s.* per 100.
SIKKIM RHODODENDRONS.—We believe we may state, without fear of contradiction, that we possess the largest plants of these beautiful Rhododendrons in the trade. The heights of those we are offering vary from 2 to 9 ins. From the altitude from whence many of them were obtained, there is great probability of their proving hardy in this country. Collections of 24 distinct kinds at 3, 5, or 9 guineas.
SPIRÆA CALLOSA.—An abundant and continued bloomer. It has large corymbs of rosy purple blossoms, and is a handsome addition to our shrubbery plants; 10*s.* 6*d.* each.
SALISBURIA ADIANTIFOLIA (seedlings), 12 ins., 2*s.* 6*d.* each.
*TAXODIUM SEMPERVIRENS. This and Cryptomeria japonica are amongst the most rapid-growing Conifers. In situations where such are required they cannot be surpassed. 18 ins. to 5 feet, 1*s.* 6*d.* to 10*s.* 6*d* each.
TAXUS DOVASTONII, standards, 3 to 4 ft., 7*s.* 6*d.* to 10*s.* 6*d.* each.
,, ADPRESSA, 12 ins., 2*s.*; 24 ins., 5*s.*; 36 ins., 10*s.* 6*d.* each.
,, BACCATA (yellow-berried var.), 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 36 ins., 7*s.* 6*d.* each.
,, ,, (golden-leaved var ) 12 ins., 1*s.* 6*d* ; 18 ins., 2*s.* 6*d.* each.
VIBURNUM PLICATUM, 10*s.* 6*d.* to 21*s.* each.
*WEIGELA ROSEA.—This beautiful flowering shrub should be grown by every one. It forms a handsome object in the open borders in May. It also forces well. The plants here offered are as wide as high, and will flower abundantly in the spring. 18 ins., 2*s.*; 24 ins., 2*s.* 6*d.*; 30 ins., 3*s.* 6*d.*; 36 ins., 5*s.* each.

A Descriptive Catalogue of Hardy Ornamental Trees and Shrubs; to which is prefixed a Treatise on the Cultivation of American Plants, may be had free, by enclosing six stamps for postage.

IMPORTANT DISCOVERY.

CLARKE and Co., Gardeners, Seedsmen, and Florists, Percy-cross Nursery, Walham-green, Fulham, are now sending out, in small sealed stone bottles, secured for travelling, on the receipt of 5*s.*, a Mixture (which is both a remedy and preventive) for destroying those grievous pests, the White Mealy Bug, Scale, Thrip, and all other insects, without injury to the plants. This being the season for the more effectual remedy of all insects, C. and Co. recommend that their preparation be applied forthwith. Printed directions sent with each bottle.—Post-office Orders payable at Brompton, to Charles Clarke.

IMPORTANT TO ALL WHO HAVE A GARDEN.

CHALLENGE COMPARISON AND COMPETITION. Carriage Paid.

All orders above 5*l.* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.
100, own selection, two of each kind, 30*s.*; or our selection, in 100 varieties, 42*s.*
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The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

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This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.

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COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or 10*s.* per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*; or 12*s.* 6*d.* per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20*s.* per 100; fine, 3*s.* per dozen. 2 to 3 feet, extra fine and bushy, 30*s.* per 100; 6*s.* per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40*s.*; per 100, 5*s.* 3 to 5 feet, strong, 45*s.* per 1000; or, per 100, 6*s.*, healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30*s.*; 5 to 6 feet, fine, 40*s.* per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30*s.* per 100; 10 to 12 feet, 50*s.* per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5*l.*; or 18*s.* per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50*s.*; or 9*s.* per dozen, own selection; mixed, 30*s.* per 100, or 6*s.* per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.
50 first-rate sorts, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
50 do. purchaser's selection, 3*l.*; or 18*s.* per dozen.
ERICAS, 50 of the finest sorts grown, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
,, ,, purchaser's choice from list, 3*l.*; or 18*s.* per dozen.
CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21*s.*; or 15*s.* per dozen.
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The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

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HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25*s.*; 50 fine for 15*s.*; 25 for 8*s.*, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.

CINERARIA, from the choicest sorts, per packet, 2*s.* 6*d.*
PANSY, do. do. 1*s.* 6*d.*
HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1*s.* 6*d.*

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GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l.*, in 100 varieties; or 10*s.* per 100, in 50 varieties.

A selection of the choicest description for show, 4*s.* per doz.

The stock extends over 50,000, and is fine and free grown.

CURRANTS.—May's Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25*s.*; or per doz., 4*s.*

Black Naples, the finest black (no other sort grown), 12*s.* per 100, 2*s.* 6*d.* per doz.

Red Grape and Champagne, fine, 10*s.* per 100.

White Dutch, large and fine, 12*s.* per 100, 2*s.* per doz.

APPLES.—Fine clean Standards, 10*s.* per doz., 70*s.* per 100.
,, ,, Dwarfs, 8*s.* per doz., 50*s.* per 100.
,, Dwarf trained superior kinds, 2*s.* 6*d.* each, or 24*s.* p. doz.

The collection is very choice, from the Horticultural Society.

PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.

PLUMS and CHERRIES.—All the leading sorts, standards, 18*s.* per doz.
,, ,, Dwarfs, fine, 9*s.* per doz.
,, ,, Dwarf trained, 3*s.* 6*d.* each, or 36*s.* per doz.

APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5*s.* each, 50*s.* per doz.

RASPBERRIES.—Fastolff, 3*s.* per doz., 16*s.* per 100.
,, Antwerp Red, 2*s.* per doz., 12*s.* per 100.
,, Monthly, or Double-bearing, 12*s.* per 100, 2*s.* per doz.

STRAWBERRIES.—Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3*s.* 6*d.* per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to John May, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

MESSRS. J. MYATT AND SONS have a Stock of the VICTORIA or RABY CASTLE CURRANT, and can supply good strong Plants at 25*s.* per 100; extra strong, 2 years old, 5*s.* per dozen. Also, a good Stock of 2 year planted Rhubarb roots.

MYATT'S LINNÆUS ... ... 10*s.* per dozen.
MYATT'S VICTORIA ... ... 10*s.* „ „
MITCHELL'S ROYAL ALBERT
Smaller 1 year planted Roots, at 50*s.* per 100.
Manor Farm, Deptford, Nov. 8th.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1½ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Nov. 8.

DUTCH HYACINTHS for Forcing, 3*s.* 6*d.* per dozen; Best do., for Glasses, 6*d.* to 1*s.* each. Double Roman and Paper-white Narcissus, 4*s.* per dozen; Single and Double Duc Van Thol Tulips, 2*s.* per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

MESSRS. PLATZ AND SON, SEEDSMEN, ERFURT, Prussia, inform the Trade that their CATALOGUE for 1851 and 1852 is now ready, and to be had only of their Agent, ROBERT KENNEDY, Bedford Conservatory, Covent Garden, London.—Nov. 8.

SUPERB HOLLYHOCK SEED.—Well ripened Seed, warranted to be saved exclusively from Rosea grandiflora, Delicata, Comet, Model of Perfection, Elegans, Formosa, Gem, Belladonna, Bicolor, Queen, Fireball, Aurantia, Rosea alba, and Sulphurea perfecta. A good mixture of the above, in packets, containing 200 Seeds, will be forwarded, post free, upon the receipt of 2*s.* 6*d.* worth of postage stamps, by R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

PLANTING SEASON.

W. H. ROGERS, NURSERYMAN and LANDSCAPE GARDENER, 130, High-street, Southampton, begs to offer any quantity and description of finely grown and well-rooted NURSERY STOCK, including Forest and Ornamental Trees, Evergreen and Flowering Shrubs, American Plants, Fruit Trees, Roses, Herbaceous Plants, &c., &c., at a very reduced price. Planting contracted for to any extent, engaging to replace failures. Gardens and Pleasure Grounds laid out and planted in the best taste.—All communications addressed to W. H. ROGERS, as above, will meet with immediate attention.

TO RAILROAD CONTRACTORS, NURSERYMEN, &c.

RICHARD HARTLAND AND SON, NURSERYMEN, Cork, will deliver, free in London, Bristol, Liverpool, or Dublin, any quantity (over a hundred thousand), of Thorn Quicks, at the following prices, for cash:—

3 year-old, in beds (stout plants), per 1000 ... 2*s.* 6*d.*
4 do. „ (transplanted), per 1000 ... 3*s.* 6*d.*
5 and 6 do. „ „ per 1000 ... 5*s.*
All orders addressed as above shall be promptly attended to.

ACER VILLOSUM.

OSBORN AND SONS, NURSERYMEN and SEEDSMEN, Fulham, near London, respectfully inform the public that they have for sale the above fine and distinct species of Maple at 15*s.* each. (See a notice of it by the Editor of the *Gardeners' Chronicle*, of Saturday, the 25th October).

JOHN AND CHARLES LEE beg to offer fine plants, often transplanted, and warranted, of the following:

CEDAR OF LEBANON, 6 feet, clean and straight, 10*s.* 6*d.* each, or 35*l.* per 100.
COMMON HOLLIES, 5 to 6 feet, clean and straight, 5*s.* each, or 20*l.* per 100.
VARIEGATED HOLLIES, 8 feet, clean and straight, 25*s.* each.—Nursery, Hammersmith, London.

**The Gardeners' Chronicle.**

*SATURDAY, NOVEMBER* 8, 1851.

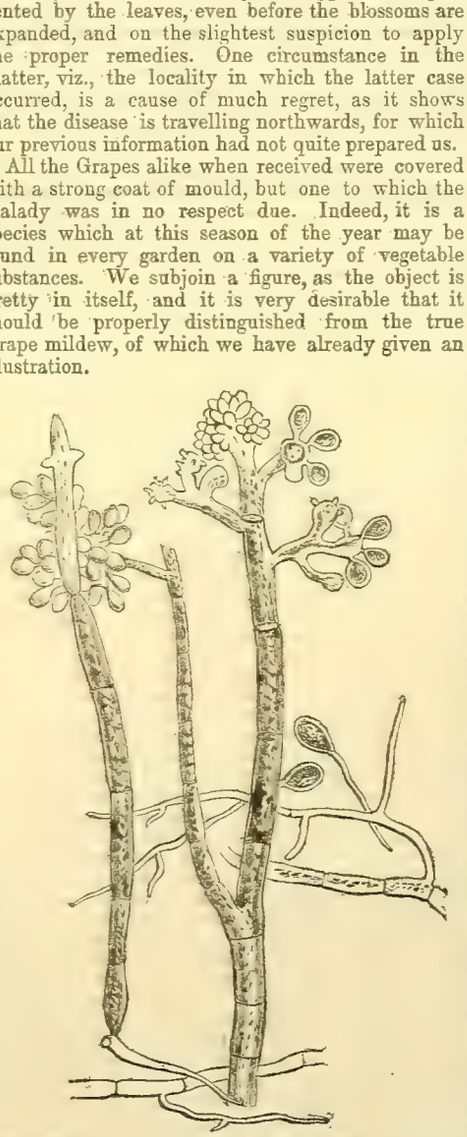
MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Nov. 11—London Floricultural .....6 P.M.
THURSDAY, — 13—National Floricultural .....2 P.M.

OUR late articles on GRAPE MILDEW, and the observations by LÉVEILLÉ, of which we have given a translation, accompanied by notes extracted from the last Number of the Journal of the Horticultural Society of London, afford almost all the information which exists upon this noisome but not unmanageable pest. In cases where a depravation of the system is produced by the presence of some internal irritant producing chemical changes in the constituent parts, though the vital energies may be able for a time to resist its agency when once the balance is turned, effects the most sudden and unexpected, and, apparently, out of all proportion to the exciting cause, will sometimes occur; a fact of which we have ample experience in the diseases to which the human frame is subject, and which is not without example in the vegetable world. Cultivators, therefore, who are cognisant of the history of the Grape mildew ought not to be surprised at the ravages which take place amongst their Vines, even in the course of a single night: effects strikingly similar to those which were produced, in 1845 especially, amongst diseased Potatoes, and of which there have been many examples in succeeding years.

Two most disastrous cases of sudden decay, in magnificent crops of Grapes, have just been submitted to us. In the one case, in which the Black Hamburgh was attacked there is no information as to the previous state of the Vines. It is a Grape extremely liable to decay, where the roots are not well drained; we have no reason, however, to suppose any fault of this kind, though the fact of plants being grown in the same house with the Vines is one not likely to lead to the best results; and the probability is, so far as we can judge from such imperfect data, that the cause was similar to that which was clearly at work in the second case in which the Black Hamburgh and Muscat were attacked, both evidently of first-rate quality, as appears from the specimens forwarded to us. In this case the houses, which during the summer had been greatly damaged by hail, though promptly repaired, were infested with mildew soon after the Hamburgh Grapes were ripe, and under the use of lime and sulphur the mould had, to a great extent, disappeared, but not entirely, as is manifest from the leaves which accompanied the specimens, on which there are still unquestionable traces of the parasite. It is most probable that the mildew had really existed at an early period of the year, at which time alone the remedies are certain in their operation, for it is well ascertained that at that period the delay even of a day or two may be fatal. It cannot, therefore, be too strongly impressed upon all Grape growers, to watch narrowly the appearances presented by the leaves, even before the blossoms are expanded, and on the slightest suspicion to apply the proper remedies. One circumstance in the matter, viz., the locality in which the latter case occurred, is a cause of much regret, as it shows that the disease is travelling northwards, for which our previous information had not quite prepared us.

All the Grapes alike when received were covered with a strong coat of mould, but one to which the malady was in no respect due. Indeed, it is a species which at this season of the year may be found in every garden on a variety of vegetable substances. We subjoin a figure, as the object is pretty in itself, and it is very desirable that it should be properly distinguished from the true Grape mildew, of which we have already given an illustration.



Our figure represents Polyactis fascicularis, CORDA, with its spores in various stages of progress, from their first appearance as minute subglobose granules to their perfect state; and the spores germinating and producing the fruit-bearing hyphasma. *M.J.B.*

ONE of the singular circumstances connected with the Crystal Palace is the well-known fact, that not even one of the anticipations of failure, in which its enemies were so ready to indulge, has been justified in the smallest degree by the result. It was to have been expected that, among so many prophecies of evil, mere accident would have brought about the confirmation of one—one little one. But no; the Fates were remorseless, and would not permit an accident—even to gratify the ASTRONOMER ROYAL.

On the other hand, every favourable view has become more and more brilliant as the great event progressed; as an illustration of which we may take the trees in the transept. These old Elms were pronounced by "practical" gentlemen to be irrecoverably doomed. It was impossible they could bear the dryness, and the heat, and the dust, and the confinement, and so on. We, on the contrary, mere theorists, as we are called, asserted that the trees would grow "with a vigour they had never known before." (*Gardeners' Chronicle*, 1851, p. 99.) And that some of them, at that time standing, and rotten, would become dangerous in consequence of the unusual weight which their brittle limbs would have to bear.

How far we were right may be learned from the following report accompanying some branches from Mr. TAYLOR, the intelligent gardener, to whose care the trees in the Crystal Palace have been entrusted during the season.

"These shoots exhibit the average seasonal growth made by the trees in question, as compared with the annual increase of a young and vigorous tree, standing betwixt the Crystal Palace and the Serpentine, in an open part of Hyde-park. Unfortunately, some shoots that would have more correctly indicated the *extreme* growth of these trees, especially of the one at the south end of the transept, could not, without much difficulty and danger, be got at, owing to their being at the top of the tree, and principally upon central branches.

"Among a quantity of shoots from these trees, which were recently left at Devonshire House for the examination of SIR JOSEPH PAXTON, were several that measured full 6 ft. in length. The latter were seen by many officers of the Executive Committee before they were taken from the building. Nor was the greatest amount of growth exhibited even in the instance just alluded to, the longest shoots being yet upon the tree in the south transept, and which the Sappers and Miners who assisted in obtaining those left at Devonshire House, although first-rate climbers, could not succeed in reaching without considerable risk. However, from an examination of the tree at the south end of the transept, from a position outside the roof-arch of the latter, we are quite sure that some of the longest shoots of this season at present upon this tree, cannot measure much less than 7 ft.; and this not arising, as might at first sight appear, from the unusual vigour generally induced by the breaking off of a branch or limb; for some of the longest shoots exist upon branches that have *not* been broken in the erection of the building.

"The extraordinary vigour of the annual growth—especially of one of the trees in the transept, may be attributed to an increased temperature (the transept not having been artificially shaded like other portions of the roof), and to copious root-waterings, to which may be added the syringing of leaves and branches likewise, for the foliage remained green, and it has continued so, longer than upon Elms in the open air. Sir JOSEPH PAXTON, with parental regard to the welfare of the trees, wisely insisted upon their receiving what has not been inaptly termed their 'weekly ablutions.'

"This watering 'overhead' of the old Elms in the transept and western carriage court, though not performed without difficulty, was happily accomplished without injury to the valuable property beneath and in their vicinity; and thus the freshness and vigour of the trees were preserved, to confer to the last the graceful charm of Nature's contrast with so much that pertained to art.

"In supplying these trees regularly with water, the services of the fire-brigade men, the Sappers and Miners, and of more than one fire engine stationed in the building, have been called into requisition.

"Generally the trees were watered at the root thrice a week, but this occurred oftener, when they first came into leaf, and the operation was always performed in the evening, after the departure of the public. The syringing overhead also performed in the evening, to refresh the trees and preserve the foliage green and fresh, was, as has been hinted, a weekly operation—in order to accomplish which, everything beneath, and in the immediate vicinity of the trees, within fire-engine range, had, for safety from wet and drip, to be securely encased with waterproof material, termed oiled calico. The alarm of some of the superintendents, as well as of the exhibitors and their assistants, respecting the safety of their goods, was great, but, notwithstanding this, Sir JOSEPH PAXTON insisted, for the welfare of the trees, upon having the 'ablution' performed at all risks, and although no serious injury to any one's goods was, to our knowledge, reported, never before, perhaps, were full-grown church organs, electric clocks, groups of marble sculpture, and plaster statuary, valuable cases of stuffed birds and other animals, highly-finished bronze gates, and other beautiful castings, hosiery, shawls, silk goods, and Highland plaids, tweeds, and tartans—*cum multis aliis*—exposed to so much apparent, yet happily so littl real danger!"

Hence it appears that while the dirty, half-starved Elms, growing as if wild in the open park, made shoots at the most a foot long on an average, the

well-fed, well-cleaned, well-lodged trees under the transept, made shoots from 6 to 7 feet long.

It is not unlikely, however, that some visitor to the place may remember how the ground in the north of the transept was prematurely strewed with leaves, and how one of the trees at an early period of the summer had all the appearance of dying. In order, therefore, to remove any misconception upon this point we may as well state that the tree in question was poisoned by the salt water thrown down continually by the confectioners in the place where they made their ices, which place happened to be in communication with the roots.

## BRITISH SONG BIRDS.

(Cage Birds, No. 37.)

No. LIII.—We find we are gaining ground with our subject, daily, and that we are fast making converts to our opinions,—or rather, converts to the truths of science. When a case is fairly argued, it becomes stripped of half its imagined difficulties; and the interest caused by the discussion cannot but be great.*

Paley, in his 'Natural Theology,' defines Instinct, with a nice discrimination, to be "a propensity prior to experience, and independent of instruction." This is strictly true. We, too, contend that it is by instinct that the sexes of animals seek one another; that animals cherish their offspring; that the young quadruped is directed to the breast of its dam for sustenance; that birds build their nests, and brood with such untiring patience upon their eggs; that insects, which do not sit upon their eggs, deposit them in those particular situations in which the young, when hatched, find their appropriate food. In short, that it is instinct which causes the salmon and some other particular fish to leave the sea, and enter rivers, for the purpose of safely depositing their spawn in fresh water.

What again can it be but instinct, that makes a bird prepare a nest for the reception of what she has never yet seen,—an egg? And what but instinct could teach her, that when laid the eggs require *warmth* to bring them to maturity? I can imagine, and admit, that when the embryon first receives the principle of "life"—about 10 days after the eggs have been under the 'parent in expectancy'—the case is altered. Here, natural affection is called into exercise, and every day brings with it pleasing evidence to the senses that pain is by-and-by to be rewarded with pleasure. The occupant of the egg is not only gifted with motion, but it utters a feeble cry long before it is born, and the quick ear of the mother knows, instinctively, at a very early period, all about what is to follow. Hence the difficulty of getting her to quit the nest for food, when the time for hatching is nearly arrived. Her self-importance at such a season is ludicrously comic.

The above observations concern all birds generally; excepting that in the case of birds of the air, the degree of instinct conferred by Nature is considerably greater than what is observable in the common hen for instance, geese, ducks, and other similar animals. Of all senseless, stupid, absurd, aggravating creatures, the domestic hen stands foremost. She will sit on a brick, a stone, a slate, or a block of wood,—and this for weeks at a time; indeed so long as the sensation of "heat" (peculiar at the breeding season) continues to rage. "A chemical operation," says Addison, "could not be followed with greater art or diligence, than is seen in hatching a chicken; yet is the process carried on *without the least glimmering of thought or common sense.* The hen will mistake a piece of chalk for an egg; is insensible of the increase or diminution of their number; does not distinguish between her own and those of another species; and is frightened when her supposititious breed of ducklings take the water!†"

In the case of domesticated fowls, and birds in a state of Nature, there is most assuredly "a distinction with a difference." This is a wise ordinance, worthy of a supreme intelligence. Yet has a fowl "brains." *Here*, surely, we have brains without "thought?"

I have before remarked, that instinct varies in degree with birds even in a wild state. For instance, the blackbird, the thrush, and many other larger birds, build in situations where their nests are readily observable and accessible; they consequently become an easy prey to the heartless robber. As these birds are very prolific, it may be that Nature designed this "limited gift" to be the means of checking their too great increase. This is a fair surmise, seeing that the lesser song birds are, for the most part, far more wary, far more cautious.

In no one thing is the instinct of animals more delightfully observable than in their affection to their young. Nature here addresses herself forcibly to us. Her voice is distinctly audible. "See," says Derham, "how tenderly do birds caress their offspring with their affectionate notes; lull and quiet them with their tender parental voice; put food into their mouths; cherish and keep them warm; teach them to pick, eat, and gather food for themselves; and, in a word, perform the part of so many nurses, deputed by the Sovereign Lord and Preserver of the world, to help such young and shiftless creatures!" Neither must we forget, whilst on this subject, how dear the "instinct" costs the animal which feeds it. Think how very much a bird gives up by sitting so long upon her nest! How repugnant it is to her organization, her habits, and her pleasures! Here we have an animal, light as air, and formed for liberty, submitting to confinement without a murmur; at a season too, when everything invites her to enjoy herself abroad. Made for motion, and to be constantly flying about, behold her for many consecutive hours, extending over many wearisome days and nights, *riveted* to her nest; her limbs cramped, her frame half wasted away, and the most arduous duties yet remaining to be performed!

These are some few of the interesting observations that await the diligent enquirer. We are treating now of birds *only*; but we hope that our readers will not rest here. The Book of Nature is a library of itself, and the student who enters it will find enough to occupy him for his life-time. To those weak-minded, short-sighted individuals, who ridicule our philosophy, we will not reply in our own words, but refer them to the remarks of the "Good Jones," as he is called, to distinguish him from the small fry of that extensive family tree—we mean "Jones, of Nayland." "He who cannot see the workings of a divine wisdom in the order of the heavens, the change of the seasons, the flowing of the tides, the operations of the wind and other elements, the structure of the human body, the circulation of the blood through a variety of vessels wonderfully arranged and conducted, the *instinct of birds, beasts, and other animals*, their tempers and dispositions, the growth of plants, and their many effects for meats and medicine,—he, I say, who cannot see all these and many other things, as *the evident contrivances* of a divine wisdom, is sottishly blind, and unworthy of the name of a man."

Being ourselves anything but vindictive, we will only add to the above that should any person despise these glorious pursuits,—'May he never grow fat!' We are in search of the noblest gifts of God to his creatures; and nothing short of the discovery will satisfy us:—

> So, turning round the lordly Oak,
> Secure th' ambitious Ivy grows;
> And, proof against the tempest's stroke,
> Laughs at the fiercest wind that blows!

We stand not alone, but have a goodly array of ardent followers. *William Kidd.*

## JOTTINGS ON FOREST PRUNING.

Excessive pruning often destroys life in a vigorously-growing tree; but more frequently, a prostration of the vital powers, and stagnation of growth, are the immediate consequences. The whole of a fine avenue of Horse Chestnuts (*Æsculus Hippocastanum*), was deprived of the lower branches, from a sordid motive, and many of them died in consequence. It must be recollected, that the despoiled branches were very large, and the trees very old. A similar result in the case of younger trees occurred two years ago, within a few miles of where I write. A plantation of Scotch Firs, from some cause, became so thinned in an early stage of their growth, that each tree had ample room to extend its lower branches. I saw them before the mutilation of which I am about to speak took place, and could not but admire their robust and healthy appearance, so opposite to what we usually witness in ordinary plantations of the same kind of tree. This robust character would appear, however, not to be exactly what their owner required, for passing through the plantation at a subsequent period, I was presented with a new kind of scenery. The trees, or rather portions of them, were there certainly, but how changed. A Hop-pole with a stable-broom on its top would afford an excellent representation of an individual tree, and the portrait of one would serve equally well for all. But the sequel is not told. This mutilation took place in winter, and when summer returned a botanical ramble led me to the locality, and I observed a quantity of my old friends dead and dying, to say nothing of various little collections of bare poles scattered about, composed of those which had been cut down previously to my visit. I passed through them again the other evening, and I observed how thin were their ranks, and viewing the heads of those still standing, against the clear background of an evening sky, for it was nearly dark, I could distinguish many more in a feeble condition of growth. Had the pruning or rather in this case "lopping" being performed gradually, I mean had a few branches been removed yearly, spreading the operation over several seasons, this destruction of trees would not have occurred. To deprive a tree of its branches at any time, is to disturb its whole circle of vital actions, which cannot but act detrimentally. To obviate its ill effects as much as possible, supposing the removal of such to be advisable, is to extend the operation over as great a space of time as possible, to allow the tree to recover from the effects of one attack before another is given. The philosophy of this we shall come to consider by-and-bye.

A great error in forest management may here be very appropriately alluded to. It is to be hoped that an opportunity for such does not often occur, but still it *does* occur, as those whose business or observation leads them to notice such matters need not be told. The plantations on an estate sometimes become neglected from various causes. The apathy of the proprietor, his fondness for game preserves, or sheer carelessness about the matter, allows his woods to become a tangled mass. Trees have struggled with each other for supremacy, the underwood has out-topped the legitimists of lordly growth, and the whole has become confusion, which a little timely attention would have obviated. From some of the many changes which are every day taking place in sublunary matters, the woodman gains access to the plantations; and, as if to compensate for past neglect, he is merciless in his operations. Nothing comes amiss, the wood is to be thinned, that's his orders, and it will be done. No judgment or forethought is allowed to influence his doings—thin, thin, thin, hack, hack, hack, is the only text he understands, or will understand. At last the wood is thinned, and the two great points of admiration are the clear naked stems of the trees, and the number of faggots for the market. The latter is a point worthy of consideration, certainly, but at what sacrifice is it gained? Stagnation of growth in many instances, death in others, and detriment to all. To effect so sudden a change in the condition of the trees is bad policy. The transition should be gradual; violent changes in the circumstances attending vegetable as well as animal growth, are often followed by disastrous circumstances.

In young plantations, under ordinary circumstances, trimming and cutting away branches too often takes the place of thinning. If sound timber is the object sought, the natural condition of growth cannot be too assiduously attended to. In forest pruning, as in all other operations of a like character, Nature should be assisted, not obstructed; her efforts should be directed, not perverted. *G. L.*

*(To be continued.)*

## ON THE FORMATION OF WOOD IN TREES.

(From the Proceedings of the Royal Irish Academy, June 23, 1851.)

Mr. David Moore, curator of the Royal Dublin Society's Botanic Garden, communicated the following details of the results of physiological experiments on the formation of wood in plants, made in the Royal Dublin Society's Botanic Gardens, Glasnevin, between the years 1839 and 1851:—

"It may appear remarkable in vegetable physiology that what has long been considered an axiom should now be gravely disputed by one of the best physiologists of the present time. Dr. Schleiden, of Jena, in his admirable work, 'Principles of Scientific Botany,' flatly denies that a downward current of elaborated bark-sap either does or can take place in plants, which opinion gives to the experiments I propose to describe much additional interest. At the time my experiments were commenced, and for several years afterwards, the descent of the sap in vegetables does not appear to have been doubted, the whole theory of wood-formation resting on the fact of such being the case. It was therefore more with a view of eliciting information on the latter subject, than to prove or disprove that sap circulates, as it has generally been considered to do, they were undertaken.

"Before entering into details I shall take the liberty of very briefly stating to the Academy the views held on this important subject by Drs. Lindley and Schleiden, which are entirely antagonistic. The former author, in his 'Theory of Horticulture,' at p. 28, makes the following statement:—'When sap leaves the earth and passes into the stem, it ascends by the woody matter of the finest fibres of the root; having left them, it flows into the new wood from which those fibres emanated, and passes along this until it reaches the leaves; on its return from them it descends through the liber, in part passing horizontally through the medullary rays. Wherever it passes, it deposits a portion of its solid parts,' &c. Dr. Schleiden, on the other hand, denies that wood is formed by a descending bark-sap. In his chapter on the 'Reproduction of Plants,' in 'Principles of Scientific Botany,' p. 535, when treating on grafting, we have the following statement:—'Yet the stock must always exert a greater or less influence on the eye or graft, as the sap brought to it must pass through the cells of the stock, and become changed there. In this case the relations are too complicated to enable us to offer an explanation. All that is known on the subject is detailed in manuals of horticulture. I will mention one case. If the branch of a quick-growing plant is grafted upon a very slow-growing one, as, for instance, the branch of a Plum upon a Sloe-stock, the graft will grow rapidly, but not so the stock, which retains its slow-growing character; a striking example of the permanency of the specific life of the stock, and, as it appears to me, affording a fatal argument against the pretended descent of the sap. If a descending bark-sap existed, the Sloe-stock would be naturally covered with annual rings of Plum wood from the graft, and it would grow in proportion to the growth of the graft; but this is by no means the case, for the new annual rings are formed, not out of a descending bark-sap, but out of a cell-development of the cambium already existing in the stock, and having essentially the same characters. The formation of new wood of the nature of the graft has always been taken for granted, in order to prove the descent of the bark-sap; but we find that this wood does not partake of the nature of the graft, and that it must, therefore, be formed independently of any descending juices.' These being the views held by the best authorities on the matter at present, I shall now detail my experiments, and show how far they bear on either,

* We hardly need remark, that we do *not* write for the "philosophers of the new school," who, deriding the doctrine of the immortality of the soul of man, and contending that we are no better than the brutes that perish (except in degree), are "wise far above what is written." We cannot travel, or keep pace, with the modern doctrines; so that we must amicably "agree to differ" from those who dissent from us. We advisedly state this *in limine*, to prevent any possible misconception.

† It is worthy of note, that Nature always appears to apportion her favours towards her children according to the circumstances in which they are to be placed. Thus fowls, and other domesticated animals, being under the immediate care of man, require *comparatively* little foresight, and this fully explains the "why and because" of their occasional stupidity.

"My predecessor, Mr. Niven, had been conducting some physiological experiments before he left the Botanic Gardens, the results of which are already before the public. I consider, however, it only just on my part towards him, that I shall here state my principal experiment to be founded on one he had commenced, though we do not appear to have been aiming to attain similar objects. He had cut several trees more or less through their boles in various ways, one of them, a large Horse-Chestnut tree, then 4 feet in circumference, and now 4 feet 9 inches. At three feet from the surface of the ground, two deep incisions had been made through the stem, crossing each other at right angles, and reaching the circumference on each side (Fig. 1). The tree was thus left growing on four separate pillars of wood, alburnum, and bark, but no results, that I am aware of, were deducible from this experiment, when I commenced the following. Seeing that it afforded an excellent example for observing the growth of woody matter, as it would form to fill up the perforations through the stem, I examined the portion of the tree where it was cut, and found that the heart wood was completely dead, and beginning to decay, at both the upper and lower lips of the cut. It, therefore, could render no assistance whatever for the phenomena of life being carried on through its medium. The ascent of the sap and formation of wood must then have depended altogether on the functions of the alburnum and cambium, which rested on the four pillars of dead wood, now simply acting as supports. During the spring of 1839, I had one of the pillars laid bare (Fig. 1, A), thus

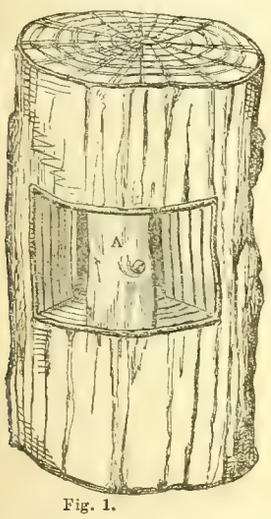


Fig. 1.

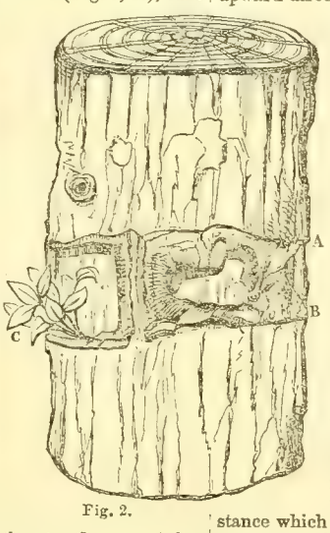


Fig. 2.

confining the life-supporting action to the remaining three. In a short time afterwards, granulated masses of cellular tissue began to form on the upper lip of the incision made, and continued to extend down the surface of the bare pillar throughout the summer, whilst the lower lip of the incision remained free from wood-formation. The woody matter continued to increase rapidly through the summer of 1840, extending itself both in perpendicular and lateral directions from the upper lip. On the lower lip two leaf-buds were formed (Fig. 2, C), which produced young shoots, when woody matter began to form at the bases of these shoots; but on their being removed, the farther increase of tissue at once stopped. In May, 1841, the masses of cellular tissue and wood had extended from the upper lip so as to touch the lower, and to spread along its surface.

"When the junction took place, a second of the pillars was laid bare, as the first had been, and the results were similar. The only difference observable was, that the woody matter did not form so rapidly as it did in the first instance. At the expiration of three more years, a second junction had taken place on the pillar last laid bare. A third was now subjected to the same experiment, the principal difference of results in this case being, that no leaf-bud was formed on the lower lip. As soon as the third junction occurred, the fourth pillar was treated as the others had been, the growths of young wood becoming gradually weaker on each succeeding one being the only difference.

"Having now detailed the way this experiment was conducted, the facts elicited enabled me to deduce:—

"1st. That every organ in an exogenous tree may be thoroughly destroyed, without causing the death of the plant, provided they are gradually destroyed. 2d. Exogenous plants, through their vital processes, have the power of again restoring the organs so destroyed. 3d. The formative energy takes place principally above the wounded portion of the stem, and the newly formed tissues increase, for the most part, in a downward direction.

"Though these results may, at first sight, appear to be little more than confirmations of the old theory of wood-formation, and even the experiment itself in some degree similar to others which have already been made, the latter differs materially from any I know of, in the following particulars. Here the main stem of the tree was operated on, and not the branches only. All the organs were destroyed, including pith, medullary rays, and wood. In the course of 12 years the stem of a large exogenous tree, measuring 4 feet 9 inches in circumference, has been completely killed in a circular ring 7 inches wide, and the organs of vitality again restored, without apparently affecting the health of the tree, which is now, while I write (June, 1851), in full bloom. The results, I conceive, rather than adding confirmation to the established theory, bear out Dr. Schleiden's views in a remarkable manner. It is true the newly-formed tissue extended from the upper lip of the cut chiefly in the downward direction, and that very little appeared on the lower lip. But the train of reasoning I adopt from these circumstances is that of Dr. Schleiden. The flow of sap by endosmotic process from cell to cell was interrupted by the alburnum and cambium being cut across on the pillar which was laid bare. It therefore diverged laterally, and followed its natural upward course, on the three pillars where no laceration had been made, which accounts for no growth taking place on the lower lip. On the portion of stem above the cut, a greater degree of formative energy accrued, in consequence of the interruption the endosmotic process met with below. The tissue thus formed would rather extend itself on the vacant space under, *i. e.*, the bare pillar, than upwards, where endosmosis was less vigorous in consequence of many of the cells being filled with sap of greater density. In this manner it continued to grow until it reached the lower lip of the cut, where its downward course was obstructed, when it spread in a lateral direction over the surface of the lip, as well as upwards, until the bare surface became covered over. During the whole process it did not occur to me, that the young wood was formed by a returning bark-sap. The growth seemed gradual and not periodical. The young tissue taking a lateral and upward direction when it met the lower lip, shows that, although the tendency be downwards, it will alter.

"A remarkable example of the permeability of the tissues of plants has farther been proved through this experiment. From knowing the heart-wood was dead at the part of the stem which was operated on, I was desirous to ascertain whether it continued so to the apex of the tree, which I had some reason to suppose it did, from having about four years ago observed a small portion of the top shoot dead. I, however, found the heart-wood full of sap, and apparently very healthy, in a piece of the top shoot which I had lately cut from below the dead part.

"With similar objects in view, a second series of experiments has been made, at various times within the last 12 years, by planting cuttings of free-growing plants with their tops downwards. Placed in this way, adventitious roots were protruded, and the plants grew. Cellular granulations at first appeared on the end which was now uppermost, and out of the ground, a circumstance which militates against the inference drawn by some, namely, that the physical law of gravitation operates in causing the sap to descend.

"In conducting this experiment, I have invariably found that no cellular callus formed at the lower extremity, as would have been the case had I planted the cutting in the regular way. The young roots were protruded laterally from the bases of leaf-buds under ground; when one or more of these elongated, the axis made a sharp curve upwards, until it regained its natural position. The growth and woody formation went on then in the usual way. In some cases the portion of the cutting above ground remained alive during a considerable period, though no leaf-buds grew on it. It, however, soon died after the ascending shoot gained strength.

"This experiment, in my opinion, also tends to prove that no regular return of assimilated bark-sap takes place in the formation of wood; because, if such were the fact, the portion of the cutting above ground would have lived, and continued to receive the annual deposits, which was not the case.

"The beautiful example I have laid before the Academy, of the junction of stock and graft, proves, beyond any manner of doubt, that the two increase by separate growths of their own wood, as thoroughly as if they still grew on separate roots. I cannot, therefore, see how this fact can be got over by those who hold that exogenous plants increase by annual deposits of bark-sap. It will not, however, do to draw final conclusions from isolated cases on a subject which, if Dr. Schleiden's reasoning be correct, so great a change must necessarily follow in our views of this part of the science of vegetable physiology."

## Home Correspondence.

*Yellow Bedding Calceolarias.*—Amongst the ornaments of a gay parterre, or mixed flower-border, few stand higher in public estimation than yellow Calceolarias; and we look in vain amongst other plants for the fine colour, continued flowering, and compact habit, which this useful tribe possesses. As every particular, therefore, relating to the merits or defects of the varieties now common cannot but be interesting, I send you a few remarks on those kinds which I have grown rather extensively this season; and in return I shall be glad to hear what additions others may have to make to the list. The well known C. angustifolia, and its twin brother rugosa, have proved almost hardy here; last year, every plant left out lived through the winter, and I think there were hundreds; but after a heavy crop of flowers very early in the season, they did not flower so freely as I could have wished; latterly, rugosa has, however, blossomed better, and what is of consequence to know, its flowers do not drop off so much with the rain as those of some others do; and for very late beds, I believe it is about the best variety we have. C. viscosissima floribunda has a better habit than either of the above, of a deeper or more orange colour, and individually the flowers are larger. It does not, however, stand rain so well as some others; but what is equally important, it endures the sun tolerably well—better than any other I have; and we all know what a dislike Calceolarias have to a long continuance of dry weather. Of a still deeper tinge, and quite as good in habit as the last, is a broad leaved variety, less glaucous than viscosissima, and more pointed in its leaves; but the name I have with it is only local, and therefore useless to the general reader. This one I like the best of any. The rain does not wash off its flowers so much as it does those of the kinds mentioned above, and it thrives pretty well. Another broad-leaved variety called (I think) Salvifolia, is much the same in character, except that its flower stems are too weak to resist severe weather, and that is a serious drawback. More gay than any of the above, but less hardy, is the brilliant C. Kayii; this, though lacking some of the good properties of a bedding Calceolaria, is, nevertheless, a great acquisition; its large truss and purity of colour rendering it a universal favourite. It stands the rain better than any sort with which I am acquainted, and for nosegays it is indispensable. A desirable point about it is that the back of the flower is nearly as bright as the front. Notwithstanding its size, however, clearness of colour, and other good qualities, it unfortunately has its faults. It is not so hardy as some others; it does not flower so early, and the plant wants that sturdiness of habit which is necessary to maintain its flowers erect against all kinds of weather; nevertheless, it is a great acquisition, and I have three beds of it now (Nov. 3), about the most showy of anything I have, Salvia fulgens perhaps excepted. In the early part of the season, it is more disposed to grow than flower; in which respect it is exactly the reverse of the variety called "Kentish Hero," which flowers itself almost to death at that time of the year. But I forget, "Kentish Hero" is not yellow; and I have promised to confine myself at present to that colour. Next to C. Kayii, is amplexicaulis, which differs but little from it, except in foliage; the size, shape, and colour of the flowers are the same, but the foliage presents a marked difference; of the two, I prefer Kayii. There is another bright yellow kind, called by some "Floribunda," a very improper name, for I could never get it into flower until late; and I have, therefore, thrown it away along with one or two others of less note. Were I to be asked which two sorts I would prefer, I would at once say "Kayii," and the one resembling viscosissima; if another, then Angustifolia. As I have formerly mentioned that the end of October and November are good times for propagating Calceolarias, I hope that amateurs have or will avail themselves of it. I have only lately put in my stock, which is little short of 2000 cuttings, and I have no fear that more than one or two per cent. will fail. With me the greatest drawback is the effect which dry weather has on them in summer; and in planting a given set of beds, the one that may be a little more shaded than the rest is not always the one that a due distribution of colour renders advisable to plant with yellow Calceolarias; this, together with my dry soil and absence of water, are evils difficult to overcome; nevertheless, I should consider a set of only four beds incomplete unless one of them was planted with this my favourite class of plants. *An Old Gardener.*

*Late Figs* (see p. 694).—Your correspondent "S. B." will not succeed in ripening Figs without fire heat at this season of the year, as they appear to require a greater stimulus than mere close confinement. I have seen it fail in our Fig-house every season. This year, however, I have managed to ripen late Figs, and I am now gathering from small plants in pots. The process is simple, and shows the Fig to be a more manageable plant than some people imagine. In the beginning of October the leaves of the Figs in our Vinery were turning yellow, and the half-formed fruit dropping off, when I had half-a-dozen plants removed to the stove, the surface of the soil well mulched with manure, and the leaves syringed frequently. The result of the experiment is that the leaves have regained their deep green colour, and in 10 days from the time they were first treated in this way the plants ripened fruit. I gather from them about once a week, and there is every prospect of a continued supply up to Christmas, as very few of the fruit has fallen off. *Charles Lee, Hammersmith.*

*Preservation of Fish.*—Since the preservation of fish has been noticed in the *Chronicle*, I am desirous of adding my testimony to the great injury done to many streams and rivers by the deleterious refuse drained into them from towns. I can bring evidence to prove that the waters of a small stream have been so much poisoned by gas and other refuse, which have been suffered to be emptied into it from a town on its banks, as to render it five miles below, at times, totally unfit for the cottagers living near it to make their tea from, which they are in the habit otherwise of doing. A thick, greasy scum, rising to the surface when boiled, discovers its impurity. I have also been credibly informed that many fish have been found dead near the town, evidently killed from this cause. I myself have observed that the fish, particularly dace, have become subject to a very destructive disease, to which, I believe, they were not formerly liable, and by which great numbers perish; this, too, I am inclined to attribute to the tainted water. The symptoms of disease are these:

the fish gradually become covered with a white leprous coating, and, if this is rubbed off, there appears underneath a bright red sore; in this weakened state they may be seen to rise to the surface, and, unable to resist the current, they float down the stream till they die. Another curious circumstance is, that there used to be innumerable quantities of minnows, now it is quite a difficulty to find any. There surely must be some secret, wide-spreading cause of their diminishment. The destructive effects of manufacturing dyes and things of that sort are immediately apparent, but these subtler poisons, which can thus be proved to be baneful in smaller streams, may be doing their work no less surely, though slowly and unseen in the larger salmon rivers of England. I think it is a point well deserving attention, and further investigation, and, if needful, the application of stronger remedies. *Moderator.*

*Samples of Seeds.*—As the originator of the discussion on this subject, you will pardon me for suggesting that the note appended to "An Old Gardener's," remarks, at p. 694, is calculated to stop the discussion altogether, as gardeners who are under the influence of those seedsmen and nurserymen who patronise the long list system, will be afraid to take part in it if their names are to be made public, and the "trade" who can give the most useful information of all, are not to speak at all. I was first induced to start the subject from a discussion which I had at one of the meetings of the National Floricultural Society with two of the leading wholesale seedsmen, when I suggested the propriety of their submitting their novelties to the same test as florists did their flowers, and they immediately said they should be glad to support a Society for the purpose. I have reason to know that several of the "trade" will join the discussion, and impart some very useful information. To the trade it is a matter of quite as much importance that the lists should be purged of all but really good articles, as it is to gardeners. We should then only have to keep half the number of kinds in stock, and should sell all we buy; whereas, at the present time, we buy annually many pounds' worth of seeds, three-fourths of which are thrown away. I was speaking with Mr. Barnes, Mr. Hanbury's late gardener, a day or two back, about Broccolies, and he says if a gardener can manage to get the Walcheren, and Snow's Winter White Broccolies true, "he is not worthy the name if he cannot send them to table every day in the year." He has done so for the last three years. Here, then, all the Broccolies are thrown to the winds. *W. P. Ayres, Brooklands, Blackheath.* [Our reason for objecting to "the trade" is merely this,—that interested parties are not fit judges in their own case; that is all.]

*Heracleum giganteum.*—I have a quantity of excellent seed of this, gathered from the crown umbels of fine plants, from 11½ to upwards of 12 feet high, and I would be happy to distribute it among such of your subscribers as may wish to grow this splendid biennial. You may, therefore, announce to your readers that any one applying to "W. C. G., Post-office, Sandbach, Cheshire," and enclosing a stamped envelope, with applicant's address, will receive seed in return. *M. D.*

*How to Crop a Small Kitchen-Garden* (see p. 693).—I have to thank your correspondent "Vectis," for giving his mode of cropping, as I consider it a step in the right direction. As he so strongly recommends his plan, I should feel obliged if he would answer the following questions, namely, where does he grow his Carrots, Onions, Beet, &c.? for as I read his account he appears to devote the whole of his garden to Cabbage, Potatoes, and Peas; also, what he does with the Cabbages when grown? as I have always found 100 of one planting sufficient for a family, provided they are well supplied with other vegetables. He states that having his ground ready he was enabled to get in his rotation crops without trouble; what crops does he mean? and what does he supply the table with from the time he has his garden cleared right through, till his Cabbages, Potatoes, and Peas are ready for use, say three months? *J. Steel, Clitheroe.*

*Cucumber Disease.*—I beg to thank your correspondents, Messrs. Graham and Webster, for their communications respecting this strange malady. Might I ask the latter if he cured it the same season he had it so bad, by the means he used; or, if he adopted them the following season, and had no disease. There is a wide difference in the merits of the cure in these two cases. In reply to Mr. Graham, who has pointed out to me certain works treating on the Potato disease, and mentioned the name of the fungus said to be the cause of it, I would say, that my proposition remains yet unanswered. As neither science nor experience has yet taught us how to treat that vegetable, so as to enable it to escape the blight, it is but poor consolation to be told that it is caused by a fungus, when that fungus is as obstinate to remove as the disease it engenders. However, I trust the Cucumber complaint will prove less tenacious; but, having baffled the means by which I and some others tried to remove it, I am the more inclined to believe its disappearance in other places may be due to other causes than the artificial remedies used to overcome it. *An Old Gardener.*

*Plumbago Larpentæ and Agapanthus umbellatus.*—These plants have stood with me here in the open air, during the last two winters, without the slightest protection. The Agapanthus has bloomed well; but although Plumbago Larpentæ forms a very pretty bush, it does not get into flower before the tops are cut down by early autumn frosts. *R. C. Haverthwaite, North Lancashire.*

*Saponaria calabrica, a good Bedding Plant.*—Did any of your readers attend to my advice last season to grow Saponaria calabrica (recommended originally I believe by Mr. Beaton), as a bedding out plant. In a well selected parterre garden in this late season, I find it the most beautiful plant now remaining. One long border is covered with it in full perfection, and it is like a carpet of the most delicate pink. Now is the time for those who care for a parterre garden to make up their minds what are the best kinds of plants to stand from June till the end of October, and longer. *Dodman.*

*Coe's Golden Drop Plum.*—Mr. Rivers states, in reference to some specimens of this Plum which he has sent you, that they were shrivelled through the dryness of the atmosphere in his orchard house. Now I beg to ask, is it not the nature of this Plum to shrivel just before getting ripe? I have invariably found it do so, and I have heard others complain of the same thing; in other respects the variety is in my opinion second to none. If it is its nature to shrivel, it ought to be made known, as many employers, unacquainted with the fact, might be induced to impute it to want of skill on the part of the gardener. *J. Steel, Clitheroe.*—Seeing that Mr. Rivers has succeeded in keeping Coe's Golden Drop Plum very late in the season in pots, I send for your inspection two fruit of that variety, which were grown against a south wall, and gathered this morning; my last dish for this season will be sent to table this evening (Nov. 4). I have been successful in keeping this Plum late for two seasons, in the following way. I take care to nail as many of the summer shoots to the wall as can well be got; the fruit is then nicely shaded from the burning sun, and as soon as it shows signs of ripeness I cover it with a close woollen net, in order to preserve it from wasps and beating rains. I believe that the crop this season would have hung till the end of this month. *William Culverwell, Thorp Perrow, Bedale.* [They were somewhat shrivelled; but very good.]

*Cryptomeria japonica.*—I entertain a very different opinion from your correspondent, at page 660, with regard to Cryptomeria japonica, not being likely to form an ornamental lawn-tree; for I am inclined to think that, where the soil is suitable, and the situation not too much exposed, it will in the course of a few years become a very graceful object, and have a striking effect, either as a single specimen or in a group. The cause of its sometimes having a sickly appearance is probably owing to the soil in which it is planted being of a stiff clayey nature, which it seems to dislike—as well as a dry poor soil—but in a moist rich loam it thrives amazingly; throwing up a leading shoot in the course of the season between 3 and 4 feet long, with branches in proportion. I had one plant that seemed very unhappy for two seasons after it was planted out, and made scarcely any progress, until treated with a little weak guano water, which had the desired effect of restoring it to a fine healthy green. I have since had ample proof of guano being acceptable to this plant, and I should recommend those who have any sickly-looking specimens to give them a little guano water occasionally. I feel confident of the result being satisfactory, provided care is taken not to make the dose too strong. *M. E. H.*

## Societies.

Horticultural, *Nov.* 4.—E. Brande, Esq., in the chair. W. Banting, Esq., H. Edwards, Esq., M.P., Rev. J. Thornycroft, and Mr. Keynes, of Salisbury, were elected Fellows.—Of subjects of exhibition, Mr. Franklin, gr. to Mrs. Lawrence, of Ealing-park, received a Large Silver Medal for a very fine collection of Orchids; among which were two plants of Vanda tricolor, two of V. suavis, two fine specimens of Cattleya labiata, a striking variety of Lycaste Skinneri, the useful Odontoglossum grande, Cymbidium giganteum (misnamed lancifolium), the beautiful Calanthe vestita, Miltonia candida and violacea, and some others, including a so-called new Oncidium and Odontoglossum.—Mr. O'Brien, gr. to G. Reed, Esq., Burnham, Somerset, sent a curious, rather than beautiful, new form of Myanthus, for which a Certificate of Merit was awarded.—From Mr. Woolley, gr. to H. B. Ker, Esq., came blooms of the charming terrestrial Orchids called Pleione (Cœlogyne) Wallichii, and maculata, which he stated were two most useful subjects for winter decoration. A plant of the former, which had been grown in a 6-inch pot, was reported to have had 15 flowers on it, all open at one time, and which lasted in perfection from three to four weeks.—Messrs. Veitch produced a slender growing white Dendrobe (D. album), and Pleione (Cœlogyne) lagenaria. The flowers of the latter resemble those of P. maculata, except that they are larger, and that the sepals, petals, and outside of the lip are pink instead of white.—Mr. May, gr. to Mrs. Lawrence, furnished a large and very fine Crowea saligna, together with the yellow Chorozema (C. flava).—Mr. Salter, of the Versailles Nursery, Hammersmith, contributed Pentstemon variabilis, a pale greenish white kind, tipped with pink.—Messrs. Weeks' again sent a bloom of the Royal Water Lily (Victoria Regia), one of Nymphæa cærulea, and a flower with a leaf of N. dentata, still from the open heated pond in their nursery in the King's-road.—Of Pine-apples, Mr. Price, gr. to W. Thompson, Esq., M.P., sent a well ripened Queen, weighing 4 lbs. 13 oz., for which a Certificate of Merit was awarded.—Among Grapes, which were produced in considerable quantity, Mr. Davis, of Oak-hill, had two baskets of Muscat of Alexandria, both of which contained fine bunches; but those in one of the baskets were ripe, while those in the other were not. A Certificate was awarded for the ripe fruit.—Mr. Martin, gr. to Sir H. Fleetwood, Bart., received a Banksian Medal for fine bunches of Oldaker's West's St. Peters, a valuable variety for hanging long after it is ripe without shrivelling. The same exhibitor also showed Muscats, the produce of a second crop from the same Vines this year, and a dish of excellent Hamburghs.—From Mr. Forbes, gr. to the Duke of Bedford, at Woburn Abbey, came a bunch of Mucat weighing 2½ lbs., three of Black Hamburgh, weighing respectively 2½ lbs., 2½ lbs., and 5¼ lbs. Concerning the latter it is to be remarked, however, that it was not one bunch, but a cluster of bunches all produced from a common point or bud. A Banksian Medal was awarded.—Mr. Woolley communicated Black Hamburgh Grapes, fair sized specimens, and perfectly ripe, from Vines that had been grown in what Mr. Rivers calls an "Orchard-house," *i.e.*, an unwarmed roughly constructed shed with a glazed roof. It was stated that there had been an abundant crop in this house, without any mildew, and that such places had been found very useful in winter for keeping Orange trees, Aloes, Fuchsias, or other half-hardy plants that require little water. A Certificate of Merit was awarded. Mr. Woolley also sent a punnet of the same kind of Cherry, of which Mr. Rivers furnished specimens on the branches the other week, and of which some account will be found at page 678. They were not large; but good fruit for this time of the year. They had been gathered from dwarf trees in the open ground, where they have received no protection. From the same gardener, also, came fruit in good condition of the "large monthly bearing Raspberry," which has yielded a succession of fruit ever since August up to the present time.—Mr. Martin sent specimens of a seedling Apple, and 28 varieties of the same kind of fruit also came from Mr. Salter, of Hammersmith.—The Garden of the Society contributed various Chrysanthemums, among which were some nice Daisy-flowered kinds, two Cape Heaths, Epacris miniata, Achimenes coccinea, Campanula garganica, and a large collection of Pears and Apples. Among the former was the beautiful Pear called Forelle, or Trout Pear, which proves to be a good bearer; and, although the tree blossoms earlier than almost any other, yet it has withstood the frosts which have destroyed the best blossoms of other kinds during the last two springs. Fruit was also furnished of Beurré de Capiaumont and Beurré Bosc, two fine Pears, more especially the latter, from standards, and also of Hacon's Incomparable. The latter has the character of being excellent when grown on standards; but from walls it is apt to be rotten at the core. A variety of curious evergreen shrubs and trees were contributed by the Hon. W. F. Strangways, from his garden at Abbotsbury, near Dorchester.

The following notice of an alteration in the bye-laws was read for the first time. "It is proposed to repeal the following bye-law of the Society, viz., Chapter 4, Art. viii., 'Every Fellow may at any time compound for all his future annual contributions, by paying ten times the amount of his annual subscription;' and to substitute the following words, 'Every Fellow may at any time compound for all his future annual contributions by paying, when first elected, 42*l.* 10*s.*; at the end of seven years, 31*l.* 10*s.*; at the end of 14 years, 26*l.* 5*s.*; and at the end of 20 years, 21*l.*'"

Microscopical, *Oct.* 22.—Dr. Arthur Farre in the chair. Mr. Shadbolt read a paper on the sporangia of certain fresh-water Confervæ. The author stated that in a previous paper he had described the conversion of the sporangium of Zygnema quadratum, and Z. varians, into a stellate body resembling the species of the genus Xanthidium. In the present paper he described more minutely the changes which the sporangia or spores of Zygnema quadratum and Z. varians undergo after conjugation. The stellate sporangium has a different appearance in the two species, and marked differences are observable in the form of the cells of the Algæ during their development. He had observed bodies of a similar character in the genera Lyngbya, Vesiculifera, and Tyndaridea. In the first, the spines forming the stellate body were small, and arranged in a spiral form. In the species of the second, the spines were very minute. The chairman exhibited leaves of the Maple, the under side of which were covered with the pupæ of Cassida viridis. A large drawing, representing this creature, was also exhibited. Mr. Busk drew attention to the development of the Diatomaceæ. He had observed, in a species of marine Bacillaria, that several individuals were contained in a membranous tube, from which they passed out, and occasionally retired within it again. After the papers were read, Mr. Shadbolt exhibited specimens of Zygnema, with the stellate bodies. The mounted specimens recently presented were on the table, and were examined by the members, with the aid of the four excellent microscopes in the possession of the Society. Mr. J. Howard, of Bolton, was elected a member.

## Reviews.

*Portrait of Prince Albert.*—Mr. Ransome's series of portraits, drawn by Maguire, has, on former occasions, been mentioned by us as remarkable for the excellence of the likenesses. We are happy to be able now to announce that the *chef d'œuvre* of the artist has just appeared in the form of an admirable portrait of Prince Albert, as patron of the Ipswich Museum. Mr. Maguire has seized with much skill the intelligent and benignant expression of H. R. Highness's countenance, and happily combined it with that dignified manner for which our

great and popular Prince is so remarkable. This likeness is not only the finest of its series, but, in our judgment, one of the best which has yet been published of Prince Albert.

*Sir Wm. Hooker's Species Filicum* (*Pamplin*) has now reached the 5th part, that is to say, the 2d part of the 2d volume, and we understand that the 6th part may be shortly expected. The present issue of this very important work contains the genera *Adiantum*, *Ochropteris*, *Lonchitis*, and *Hypolepis*, occupying 60 pages of letter-press. The plates, of which there are 20, are charming specimens of Mr. Fitch's graceful and accurate pencil.

*The Vade Mecum of Fly-fishing for Trout, being a complete Practical Treatise on that Branch of the Art of Angling, with plain and copious Instructions for the Manufacture of Artificial Flies.* Illustrated by numerous Engravings. By G. P. R. Pulman. Longman and Co.

To those who wish for information and instruction for making artificial flies, this book will be found useful; the directions are clear, and the plates are given in explanation of the proper way of managing and handling the materials throughout the whole process of fly making.

The author is evidently an enthusiastic fisherman, and no doubt understands his business sufficiently to fill his basket in the Devonshire rivers to which he has been accustomed, though he might find more difficulty in doing so, if he tried his hand in rivers where the trout are grown of a higher average weight than in the Axe.

Although there is but little original matter in the book for a practical fisherman, with the exception of the method of making flies above alluded to, the subjects are well arranged; but, in compiling from authors who have written on the natural history of those insects on which the trout feed, and more particularly in that part which treats of Ephemeræ and Phryganeæ, it might be better, before the author publishes another edition of his work, to avail himself of the more close observation of the natural history of those insects which his presence at the river side will enable him to take advantage of, than to trust to comparatively casual observers, who have arrived at hasty conclusions without a careful and minute investigation of the subject of which they have treated.

*Crabb's Technical Dictionary* (8vo, Maxwell), is a well printed volume of 658 pages, containing short definitions of as many terms in art and science as can be compressed into such a space. We would recommend the author, on a future occasion, to omit all generic names of plants except those which are in familiar use.

## FLORICULTURE.

Horticultural Society's Schedule of Prizes for 1852.—Upon reference to page 583, notice will be found of the London Horticultural Society's List of Prizes for 1852, as advertised a few weeks previously in these columns. Since that notice was penned, the schedule itself has been printed and published, and is now in course of distribution to Fellows, to those usually exhibiting at the Society's *fetes* at Chiswick, and to applicants generally. Although my present notice is that of the invitation given to exhibitors at large, so far as florists' subjects are concerned, I yet feel bound to award my meed of praise to the Council, for the improvement made in the form of the publication here referred to; for instead of the old-fashioned sheet, we have now a neat pamphlet of 16 pages, easy of reference, conveniently portable, and highly instructive. I cannot, however, but think, that the size of the said pamphlet should have been that of and uniform with the Society's quarterly journal, in order that the same might have been bound up with the annual volume which the four parts form. Is not the list of prizes offered quite as valuable as the report of those who win them? I would so argue, and further, as a reference in after years, would it not prove alike interesting as important? I feel sure that the Council will take these suggestions into consideration, and I would fain hope that even now a reprint may be made, to form a portion of the Society's next quarter's part, thereby rendering the schedule a permanent and welcome annual feature. I closed my former notice with the Scarlet Pelargonium classes; and now, passing Roses and Heaths, I would call attention to Nos. 9, 10, 11, 12, 13, 14, 15, 16, and 17, which more particularly invite those subjects with which it is my pleasure to be most associated; 12 Carnations are invited in distinct varieties growing in 11-inch pots, a size always used in the south; as also 24 varieties of cut blooms, to be exhibited in growers' boxes; now, although the Horticultural Society never specially meddled with florists' matters, it had foresight enough to set up a standard of what a 24 show box should be, nor is it too much to say that so successful was it in the example given, that the same form and dimensions are universally acknowledged, and as universally adopted. Picotees receive the same ample invitation, 12 plants and 24 blooms. I hail Nos. 13 and 14 as being strides in the right road—yellow ground Picotees in plants, and in cut blooms, six of the former, and 12 of the latter; the flower, even if it be not new, will thus be made to assume a position it so highly merits; I have long considered them as neglected gems; how they will repay with interest the liberal invitation, I am fully aware, knowing that several collections are being formed, and others much extended, to claim a forward place on "the boards of the day;" these, with the white ground varieties, and Carnations, will, there can be no doubt, make the July meeting of deep interest to the growers of such flowers, and one which must well repay for a journey from afar. No. 15 is for Pinks in 12 varieties, growing in 8-inch pots, and No. 16, for 24 varieties of cut blooms; these are, of course, for June. As I lately stated, there is much to be done with Pinks; let us hope that at least some improvement may be made during the season to come, especially as regards pot culture; Pinks are to be "done" in pots, and well, too, as I can testify from an experiment made last season by myself, when, from one pot, in which was grown three plants of Mrs. Herbert (Keynes), I had 16 well-laced and average-sized blooms, fully expanded, and all showable at the same time, standing without stick, tie, card, or split pod, and "the Grass" numbered over 100. No. 17 invites 6 distinct Calceolarias growing in 8-inch pots, both for May and June; dissimilar as are these flowers from blossoms in general, yet by the almost universal ground colour, yellow, much of the interest which they ought to possess is lost; I would remind growers and exhibitors that contrast is of as much importance as good cultivation, for however much a collection may aspire to quality, half its merits rests in a well arranged and well contrasted group. So far I have reviewed Division 1, in which be it remembered nurserymen and private growers exhibit independently of each other, to whom the medals offered are not only numerous, but I may add valuable; amounting as they do to 493*l*. The floral portions of the other divisions shall receive early attention; in the meanwhile I shall feel most happy to receive any suggestions our readers may submit, either for publication or private consideration, as they may direct. The days of exhibition are fixed for the second Saturdays in May, June, and July; which, for 1852, will fall on the 11th, 8th, and 13th, respectively, somewhat early for florists' flowers generally; but this offers little difficulty, fixed and made known so long before; let a florist know what is wanted, and when you want it, giving him reasonable notice beforehand, and I mistake if it be not forthcoming to the hour in all its glory; this touches a subject on which it is my intention to enlarge, viz., the proving the necessity of an early publication of Societies' schedules, in order that growers may know how to fashion their stock, and what to prepare; in this the Horticultural Society has long shown an excellent example, fully worthy of general adoption, and one which should be considered by all committees as imperative. *J. E.*

Cinerarias.—Plants received from the nursery, either last month or this, will be in good condition in 3 and 5-inch pots. They are wintered here in pits or frames well secured, so as to exclude frost. The glass is well covered with mats and straw, but no artificial heat is applied. Thus treated they are always strong and robust; but many grow them in houses, and I think that for a month or so, about January, it would be of service to them to be in a cold house, or a pit heated with pipes, so as to ward off damp, while a long continuance of frost prevails, otherwise a pit is the best place for them, and they can be brought into the house at various seasons, so as to prolong their period of flowering; indeed, by judicious management, they may be had in blossom from November till June. When wintered in pits they will require to be well watched, so as to give air every day to dry up damp. If this is not attended to the leaves will "fog off." At the present time, when they are growing rapidly, they should not have the lights taken off, except when the air is mild and not drying; but let them be tilted on the side contrary to the direction in which the wind is blowing. If the lights are altogether removed their growth is retarded, as they dislike dry easterly winds as much as we do; but a moist air will not harm them. A slight warm shower is always beneficial to them when the weather is such as to permit them to receive it. Never let them become pot-bound; directly this is the case, green fly attacks them, the leaves get pale, and the plant starts for bloom prematurely. If grown in a house, they should never be allowed to have a cold dry air playing amongst the leaves; they delight in moisture while they are in a growing state. When they have finished blooming, about an inch of the surface soil should be removed, and fresh material placed all round the plant, which should be kept in a shady part of the garden. Where a quantity is wanted, plant out in light soil, in some situation shaded from the mid-day sun; or, if you possess only one plant, perhaps a choice seedling, and you wish to be more particular over it than usual, keep it in a pot in a frame, so that you can protect it from wet, when required. Those in pots must not receive much water; indeed, directly the flower is going off, watering should be carefully performed, or the plants may die, or the roots, from which your young stock is to be produced, are injured. Permit the stem to gradually die away and remove the leaves as they wither off, cutting the flower away only. This applies more particularly to some varieties than to others, as many grow freely and produce plenty of stock without this extra care. Never keep old plants to bloom the following season, they seldom produce such fine flowers, and they are more subject to insects and diseases. Let your slips be quite small and young, cutting down into the earth where the stem is blanched; these will strike root quickly. Place them round a pot prepared in the usual way, *i.e.* half crocks; on these some siftings, to prevent the soil from running through the drainage, then the soil as used for the plants, except that it should be finer sifted and should have more sand mixed with it, and the surface should be white sand, in order to prevent the cutting from damping off; place the pots under a common handlight or in a close frame, airing a little now and then, to dry up over abundant moisture; after the first watering, when the cuttings are put in, leave them an hour or two to dry, and then little or no water is required till they are rooted (of course shading, &c., when requisite). Where a few plants only are required the old plant may be taken out of the pot, say in August, and the soil shaken away, dividing and keeping only the young fresh growths. There will be plenty of roots to many of them, and therefore all old roots may be cut away, and any that have not got roots can be put in as cuttings. With the treatment just mentioned you may cut off three or four crops of cuttings in the course of the autumn, and then have the bottoms for dividing. In potting off cuttings they should be kept close for a day or two; then air should be given gradually, and finally, the lights should be thrown off every night. At this stage they will require particular attention; mildew is likely to attack them, *i. e.* the early crops in August. As soon as you perceive it, sulphur freely the parts affected. The insects they are subject to are green-fly and thrips. The former may be destroyed by means of tobacco-smoke and tobacco-water, and the latter by tobacco-smoke; but it must be repeated for two or three consecutive days, as the insect will otherwise recover, and be as lively as ever. When the month of August has been got over there is little to fear, for they will grow away rapidly after that. The lights should then be taken off at night, to lower the temperature and allow the plants to receive the heavy dews. Shade a little, with side air, in August from sun-heat, and indeed keep them as cool as possible. In raising seedlings you must select three or four good shaped and dwarf habited varieties, from which you will have all colours. Some object to dwarf kinds; but, if a tall variety appears amongst my seedlings, I consider it a fault, as they are more apt to run back to the original varieties (shrubby), with long, straggling flower-stalks. Seed, sown in pots or pans, comes up very freely in a few days; let the surface soil be very sandy, and only cover the seed just sufficient to keep it from being washed off while watering; prick off from the seed-pans into store-pots. The soil I recommend is, four parts rotten dung (*i. e.*, decayed into mould) and five parts of loam; or, instead of five, say four maiden loam and one rich yellow loam. The following is a list of some of the most esteemed varieties:—

| | |
|---|---|
| Bessy, distinct. | Pauline, distinct. |
| Carlotta Grisi, good form. | Queen of England. |
| Cerito, ditto. | Wedding Ring, neat and bright in colour. |
| Coronet, very early. | |
| David Copperfield, distinct. | Amy Robsart, good shape. |
| Effie Deans. | Adela Villiers, nice colour. |
| Electra, early and pretty. | Amœna, white. |
| Flora M'Ivor, rich crimson. | Hammersmith Beauty, distinct. |
| King of Crimsons. | |
| Lady Gertrude, good blue. | Marianne, good form. |
| Lady Hume Campbell, finest, early and late, always blooming. | Prima Donna, fine blue. |
| | Nonsuch, distinct in colour. |
| | St. Clair of the Isles, good form. |
| Lettice Arnold, good form. | |
| Madame Sontag. | —*E. G. H.* |

Antirrhinums: *G J.* We believe that Primrose Perfection will be offered for sale in early spring. *J. E.*

Hollyhocks: *Scottish Amateur.* Many of the best varieties now being offered owe their origin to the perseverance of Mr. A. Parsons; his last and crowning efforts have been lately advertised in our columns, and are in the course of delivery. Messrs. Bircham, Baron, and Chater have also raised many splendid flowers. *J. E.*

Pansies: *E.* For the past four or six weeks these have been blooming freely at the nurseries, whither you should have paid a visit, and then have judged and chosen for yourself; we will, however, endeavour to help you in making a selection next week. *J. E.*

Tulips: *J L.* Ours were all planted by the 3d instant; we have long made it a rule not to let the first chance pass after the 25th of October, for at this uncertain season of the year the first favourable weather should always be embraced in open ground operations. Breeders do not excite so much interest here in the south as they have long done in the midland and northern counties; but few collections can be found round the metropolis, yet they are not altogether overlooked, and we should by all means recommend an early application for those you may desire to grow; the cost is somewhere about 2*s.* each for full blooming bulbs; if taken in numbers some reduction is allowed. Of course this applies to varieties in general cultivation; for Juliet (Willison), we have just paid 30*s.*; here you have a rose breeder "very promising, of good shape, and with very pure base;" moreover, it is "let out" this season for the first time, and received a label of commendation by the National Floricultural Society. We know of none by name around London; the midland florists can supply Pilot. We cannot say when Maid of Orleans, Princess Royal, Chellaston Beauty, Countess of Harrington, Van Amburgh, Purple Perfection, Sable Monarch, Alice Grey, &c., will break; that is not in our power even to speculate upon; for whether planted in rich soil, in poor soil, deeply, or near the surface, taken up annually or allowed to remain, the result is just the same—all uncertainty. With all our boasted philosophy, the breaking of Tulips remains a "splendid mystery." *J. E.*

## Miscellaneous.

*Road-side Trees.*—The *Staats Anzeiger* of Berlin contains a curious edict from the Department of Public Works, by virtue of which all the *allées* of Poplars along the public roads are gradually to be removed, and replaced by trees of another kind. The reason alleged is the damage the Poplars do to the neighbouring fields. The Lombardy Poplar is chiefly proscribed; but the Canadian Poplar is only to be replaced in case of the destruction of existing trees by storms of wind and other accidents. Where cultivation is high and the population numerous, fruit trees are to be planted along the roads; but in ordinary cases Oak is the wood selected; next, the Chestnut, the Plane, and the Linden. The selection is to be determined by soil and situation. In damp and moory places the Alder and the Ash are recommended.

The conversion is to be made in two periods, partly to avoid throwing on the market too great a quantity of Poplar wood at once, and depressing the price already very moderate, that species being in no great repute, and partly from an artistic regard to the appearance of the highways, or the *Aesthetische Gesichtspunkt* of the change. This part of the Prussian decree might be recommended to the special attention of the Commissioners of Woods and Forests. The first period may commence forthwith in the manner prescribed, but the second is not to begin till the trees first planted have attained a fair degree of growth, so that some years must elapse between them. If many complaints are made that the change will spoil the prospect (for even an alley of Poplars has its value on a level) the improvement is not to be pressed. And in the vicinity of Royal residences due notice must be given to the Crown, and special permission obtained ere the heads of the doomed Poplars can fall before this general sentence. The decree is accompanied by a diagram, representing the present condition of the avennes, the first period of the change, or *umwandlung*, when Oaks and Chestnuts will have been mingled with the present growth, and the second period when the substitution will be complete.

*Ivy on Exterior Walls.* — A correspondent of the "Paper-hangers and Upholsterers' Guide" says, "The last thing I have to mention on the subject of damp relates to Ivy on exterior walls of buildings. Its effect on walls is, that if it does not entirely eradicate damp, it may be admitted to be a repellent placed on the exterior. I had my attention drawn to a case of this description, where damp had prevailed for a length of time in the walls of an apartment, but Ivy having grown up to cover the opposite exterior side, the affected parts inside had become dry. The gentleman, in whose house I observed the improved change, accounted for it, I think, with much reason, namely, that the close overhanging pendant leaves prevented the rain or moisture from penetrating to the wall, contrary to all other trees which are trained for bearing fruit. *Builder.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

ORCHIDACEOUS PLANTS.—To assist such of these plants as have completed their growth, in going quietly to rest, the atmosphere of the house should be kept gradually cooler; or perhaps it will generally be more convenient to remove them to a cooler house. A situation something similar to that in which Cactuses are wintered will be very suitable, taking care, however, never to allow the temperature to fall below 45° for general species. Some few will endure a lower temperature uninjured, but these are exceptions. At the same time excess of damp must be studiously avoided by carefulness in watering, and by admitting sufficient air to dry up and expel the superabundant moisture. Let the roof sashes be made perfectly clean, that the rays of light may be as little impeded as possible; but while the house is under cool treatment in winter, it is not advisable to allow the tender species to hang too near the glass, as the temperature there is more liable to variation, and the foliage of the evergreen varieties is often injured thereby. Let drip be carefully guarded against, for if it fall upon the roots of the plants, it will injure if not destroy them; or it will excite them into growth, which is scarcely less objectionable. Dendrobiums, Renantheras, Cœlogynes, &c., should now be removed to a cool dry house, to prepare them for flowering. Any plants which are unfortunately producing young growths, out of their natural season, should be placed at the warmer end of the house; but the temperature even there must be very moderate, as the object is not to stimulate them, but merely to keep them in such a state of gradual progression as shall prevent their perishing.

FORCING DEPARTMENT.

PINERIES.—Furnishing bottom-heat by means of hot water has made the management of Pines during winter so simple a matter, that a very brief space will suffice to give all the necessary directions. The moderate bottom-heat required to keep them in a gentle growing state, and top-heat, laden with any required degree of moisture, and sufficient to allow of the free admission of air, are given with equal facility. The amount of moisture raised within the pit must never be very great at this season, and the slightest excess in this respect must be carefully guarded against during dull or foggy weather. Where dung, leaves, and tan are still the materials employed to furnish the necessary amount of top or bottom-heat, the impossibility of suddenly increasing or decreasing its power, according to the particular requirement of the weather, render it a necessary precaution to keep up a stronger heat than is generally wanted, and to moderate it in warm weather by a freer admission of air, that there may be less difficulty in keeping up the temperature when a sudden change takes place. In pits where such means are used, air, by back ventilation, must at all times be more liberally furnished, to allow the exhalations to escape. When there is evidence of a decline in the bottom temperature, let a little fresh tan be pushed in amongst the pots, and even over their rims. In such cases it is often necessary to remove a portion of the old surfacing material, before the new is put in. These matters must be done by very careful workmen, without going amongst the plants, that the leaves be not damaged; for nothing is more injurious to the health and appearance of the plants than mutilating their foliage.

FORCING PITS.—Insure a sufficient supply of Rhubarb, Seakale, and Asparagus, by introducing successions at regular intervals, according to the supply required, and the quantity of plants to meet it. In selecting Seakale plants, take those first which showed the earliest indication of ripeness by casting their foliage. If a frame or pit with glass lights can be spared for Asparagus, it is much more tender and delicate than when grown in a dark place; they should, therefore, when their shoots appear above ground, have all the light and air possible. We force this favourite vegetable in frames, which, during summer, are occupied by Melons. The bottom heat, produced by hot water pipes, is turned on very moderately at first, and afterwards gradually increased, when the roots are fairly in motion. A portion of the stock of the three last mentioned vegetables should be mulched over with some decayed litter as soon as possible, that the warmth of the earth may be retained.

FLOWER GARDEN AND SHRUBBERIES.

All possible advantage should be taken of the few shrubs which flower during winter, such as Laurustinus, Erica carnea, Polygala Chamæbuxus, Menziesia, and others. The display may be materially assisted by a judicious selection of variegated plants, the gold and silver tints of which contrast prettily with the general dark green, and at a short distance they may easily be mistaken for flowering plants. Early flowering herbaceous plants may be planted near the outsides, and still nearer to the edge; belts or patches of Hyacinths, Tulips, Crocuses, and other bulbs, may be planted. In addition to the above, we make use of a choice selection of hardy evergreen shrubs, such as Rhododendron ponticum, Pernettya mucronata, Gaultheria, Tree Box, &c. These are removed with good balls of earth, and in spring are returned to their places in the reserve garden. Take care also to have a constant succession coming on of various sizes, so that when any of them are grown too large for the purpose, they are finally planted out in appropriate clumps.

HARDY FRUIT GARDEN.

During this frosty weather, mulching may be wheeled on for newly planted fruit trees, or for such as are to be planted. Standard Currant trees may be staked and pruned. The operation of training wall trees is performed with greater ease and comfort, and consequently with much saving of time, if commenced early in the season, so that the best weather may be devoted to it. The first operation is to loosen the trees from the walls, and if it be admissible, the latter should have a coat of colour, that all insects and their embryo may be smothered; otherwise, they may at least be well washed with clean water from an engine. If nails and shreds are used, let the former be made hot, and dipped in linseed oil, for the double purpose of destroying insects, and preventing rust; and let the best of the old shreds be boiled, washed, and dried, previously to being re-used. Those who intend to apply the method of using fixed studs, and tying the trees to them with bass matting, will of course take this opportunity of doing so. Where the common nails or shreds have been long used, it will be necessary to rake out and re-point all the joints; the studs are then to be fixed in at suitable distances, and the wall is ready for retraining. At the same time, let diseased trees and inferior varieties be removed, and after carefully preparing their stations let better plants, from other parts of the garden, or young trees from the nursery, be planted in their stead. By carrying on these operations together, a larger number of labourers may be usefully employed, thus keeping the force together. The handier men will of course be selected for that part of the work which requires the greatest care and dexterity. Previous to the trees being retrained, they should be washed over with the following mixture, to destroy any insects with which they may be infested. To one gallon of water, add about a pint of tobacco water, a quarter of a pound of soft soap, and half a pound of sulphur, with sufficient lime and soot to give it the colour and consistence of lead-coloured paint.

KITCHEN GARDEN.

If Cardoons and Celery have made any growth since they were earthed up, they may be gone over again, and a little more soil drawn up around the collars of the plants, to assist in blanching them, and in preserving them more effectually from the frost. It is most fortunate for tender vegetables (though not for many other things) that we had so heavy a fall of snow on the night of the 3d inst., as they would otherwise have suffered severely from the 12° of frost on the following night. Such things as Beet, if not already housed, should be as soon as possible. We are to-day (Nov. 5) filling our ice-house.

State of the Weather near London, for the week ending Nov. 6, 1851, as observed at the Horticultural Garden, Chiswick.

| Oct. and Nov. | Day of Week | Barometer. Max. | Barometer. Min. | Temperature of the Air. Max. | Min. | Mean | Temperature of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 31 | 2 | 29.612 | 29.002 | 48 | 32 | 40.0 | 47 | 47 | N.W. | .02 |
| Satur.. 1 | 3 | 29.613 | 29.559 | 52 | 28 | 40.0 | 46 | 47 | N.W. | .00 |
| Sunday. 2 | 9 | 29.550 | 29.336 | 50 | 31 | 40.5 | 46 | 47 | N. | .01 |
| Monday 3 | 10 | 29.920 | 29.709 | 45 | 26 | 35.5 | 45 | 46 | W. | .06 |
| Tues. .. 4 | 11 | 30.092 | 29.752 | 40 | 22 | 31.0 | 44½ | 44½ | N. | .02 |
| Wed. .. 5 | 12 | 30.084 | 29.884 | 45 | 37 | 41.0 | 42 | 44 | W. | .02 |
| Thurs... 6 | 13 | 29.870 | 29.846 | 47 | 38 | 42.5 | 43 | 44 | N.W. | .00 |
| Average.... | | 29.807 | 29.678 | 46.7 | 30.5 | 38.6 | 44 S | 45.6 | | .13 |

October 31—Fine; exceedingly fine; overcast.
Nov. 1—Overcast; very fine; clear and fine.
— 2—Fine; hail shower at 1 p m. clear at night.
— 3—Hoar-frost, clear; very fine, cloudy; rain.
— 4—Rain; fine but cold; slightly clouded.
— 5—Clear and frosty; clear and fine; cloudy; rain.
— 6—Clear; fine throughout.
Mean temperature of the week, 7½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Nov. 15, 1851.

| Nov. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 9 | 51.0 | 36.3 | 43.6 | 10 | 0.24 in. | 1 | 1 | 3 | 1 | 4 | 8 | 3 | 4 |
| Mon. 10 | 51.7 | 36.8 | 44.3 | 11 | 0.23 | 2 | 2 | 1 | 4 | 5 | 8 | 1 | 2 |
| Tues. 11 | 51.4 | 37.7 | 44.5 | 13 | 0.76 | 1 | 3 | 4 | — | 5 | 9 | 2 | 6 |
| Wed. 12 | 52.3 | 35.5 | 43.9 | 11 | 0.40 | 1 | 3 | 3 | 1 | 3 | 6 | 6 | 2 |
| Thurs. 13 | 51.1 | 36.2 | 43.7 | 15 | 0.66 | 2 | 5 | 3 | 1 | 5 | 3 | 3 | 3 |
| Friday 14 | 49.2 | 33.1 | 41.2 | 13 | 0.67 | 4 | 3 | 2 | 4 | 2 | 5 | 3 | 2 |
| Satur. 15 | 49.0 | 35.4 | 42.7 | 12 | 0.32 | 2 | 4 | 3 | 2 | 4 | 7 | 2 | 1 |

The highest temperature during the above period occurred on the 12th, 1841—therm. 63 deg.; and the lowest on the 15th, 1848—therm. 18 deg.

## Notices to Correspondents.

*** The Editor's absence on the Continent compels us to leave a few questions till his return.

AMATEUR TULIP SOCIETY: *E T C.* We decline discussion. We repeat that we have examined all the correspondence, we have given our best attention to it, and we have made private enquiries, all which prevent our entertaining the smallest doubt that this Society has allowed itself to be most egregiously misled.

ASPARAGUS: *S Y.* It is a good time to transplant Asparagus as early in February as the weather will permit ‖

BACK NUMBERS.—Full price will be given for the following Numbers: 1844—36; 1846—25; 1850—41.

BIRDS: *J T.* By some mischance, your note, dated Oct. 28, did not reach us till Nov. 3, too late for us to reply before you left Wexford. If this comes under your notice whilst at Leeds, we beg to tell you that we know no dealer in birds residing there to whom we could recommend you for what you are in search of. London alone can supply it. Thanks for the kind hint about the hollow perches; the idea is excellent.—*T F.* Your bird is weak and husky. Give him some boiled milk for two days, instead of water; and in a fortnight a little scraped raw beef (lean), moistened with water. He will soon recover.—*Alexis.* The cost would be about 6*s.*—*Spes.* Try one or two Hemp-seeds among the general food. It will warm your bird's stomach. Discontinue all green meat.—*Ninetta.* Yes; you, too, are to be blamed; dirt alone has injured your bird's feet. Soak them carefully in warm water before attempting to remove the "pellets."—*S P.* Warmth is the only remedy now left you. These open cages are fatal to many thousands of birds at this season.—*Penelope.* The mealy-coloured birds are by far the stronger of the two, and generally sing best.—*J C.* Elder-berries and ants' eggs.—*B W.* Certainly not. If you do, cramp will be the inevitable consequence.—*Georgiana.* Let the front only be of open wire-work.—*John L.* Refer to the *Gardeners' Chronicle* of Feb. 1. *W. K.*

BOOKS: *R S.* Moore's "Handbook of Ferns."‡—*F.* Apply to Mr. Cuthill, Denmark-hill, Camberwell.—*G A P.* Price's "Modern Gardener."‡

CUCUMBERS: *Beginner.* Soil composed of three-fourths light rich mould from an old pasture, one-eighth vegetable mould, and one-eighth rotten dung, will produce Cucumbers in abundance. Keep the temperature of the beds about 65° at night, allowing about 10° of a rise in sunshine. Cover at night with mats, but they should always be removed by sunrise, in order to admit all the light possible to the plants. This is very essential to their welfare.‡—*J D.* Cuthill's Black Spine is a good sort for early forcing, as well as for a general crop.‡

HEATING: *W R F., Dublin.* We have no objection to the mode of heating about which you enquire. ‡

HYACINTHS: *L.* Hyacinths which have been grown in pots in the usual way may be removed into glasses when the flowers begin to show colour. The bulbs should then be gently shaken from the soil, the roots washed in lukewarm water, and placed in the glasses, which should be filled with water of the same temperature.‡

INSECTS: *A Constant Subscriber.* Your Vines and Orange trees are badly infested with the common thrips. Careful and repeated fumigations are the best remedy. *W.*

NAMES OF FRUITS: *C B.* 1, Beurré Diel; 2, Gansel's Bergamot; 4, Beurré Bosc; 5, Duchesse d'Angoulême; 6, Winter Nelis; 7, Marie Louise. 1, Hollandbury; 2, Golden Reinette; 4, Beauty of Kent; 6, Court of Wick; 8, Blenheim Pippin; 10, 11, King of the Pippins; 13, Lemon Pippin; 15, Royal Russet; 16, 17, 18, Early Nonpareil; 21, Minchall Crab; 22, Dumelow's Seedling; 23, Hawthornden.‖—*J C.* Your seedling Apple, large, round, brownish yellow, partially russetted, is worthy of cultivation. The flesh is tender and brisk flavoured, though scarcely so sugary, as that of the Blenheim Pippin.‖—*T G, Clitheroe.* The Apple you sent under the local name of "Honest John" is not known by any other. The seedling raised from a pip of the Scarlet Siberian Crab, supposed to have been fertilised with pollen of the "Greenup Pippin," has the bitter peculiar to some good cider Apples, and we can only presume accordingly, that it deserves trial by those who are in the habit of making cider. The other seedling is not worthy of cultivation.‖—*B F T.* 1, Ribston Pippin; 2, 5, Kerry Pippin; 10, 11, 14, 16, King of the Pippins; 13, Manks' Codlin; 18, Golden Reinette; 19, Norfolk Beaufin; 20, Scarlet Nonpareil; 21, Norfolk Beaufin; 24, Yorkshire Greening; 25, 26, Easter Pippin, or French Crab; 27, Berton Russet; 28, Reinette du Canada; 4, Chaumontel, 6, Bishop's Thumb.‖—*H A W.* 2, King of the Pippins; 3, Scarlet Nonpareil; 4, a Red Streak; 6, Hollandbury; 7, 9, Bedfordshire Foundling; 8, perhaps King of the Pippins; 10, Ross Nonpareil; 11, Alfriston; 12, Bringewood; 15, Martin Nonpareil; 16, Downton; 17, Margil, and along with it the London Pippin; 18, Beauty of Kent; 1*s.* 7*d.* was paid for carriage.‖—*Thos. N.* A, Early Nonpareil; C, King of the Pippins; D, Nonpareil; E, Mère de Ménage; G, Court pendu Plat; H, Yellow Ingestrie; N, Dumelow's Seedling; O, T, Golden Reinette; P, Norfolk Beaufin; Q, Hollandbury; R, Lamb Abbey Pearmain; S, Bedfordshire Foundling; A, Marie Louise; C, Beurré Rance. "Carriage-paid" was marked out, and 10*d.* was charged.‖

NAMES OF PLANTS: *Erzeroum.* Received letter, dated Oct. 3, 1851. Many thanks for what is coming; we wish our leisure would enable us to do more justice to your excellent communications.—*C M—l.* Oncidium cri-pum and Warrea Wailesiana, with O. Forbesii.—*T C.* The Acorn-cup belongs to the Valonia Oak (Quercus Ægilops); the other is a seed of the Ivory Nut.—*Shem.* 4, Asplenium Ruta-muraria; 5, A. Trichomanes; 6, Polystichum lobatum. *S.*—*J D.* 1, Escallonia montevidensis; 2, Helianthus altissimus.

PEACH TREES: *J Abell.* The Noblesse will suit your climate, to form a succession to the Royal George. ‖

POTATOES: *G W.* We do not in the least know what you mean, or to what you refer.

STOCKS: *Cymro.* The time chosen for sowing your Stocks was right, but they were kept in the frames three months too long. March would have been better. Your want of success in getting a good bloom, may no', however, have been owing to this; as we have seen Brompton Stocks (though perhaps of a spurious kind) stand two years before they flowered, and when they did flower they were not satisfactory, many being single; and those that were double, blooming very thinly.‡

WISTARIA: *Reader.* Prune this about the beginning of March; cut the leading shoots about half way back, and spur the others in rather short.‡

MISC.: *T S.* We shall be glad to receive the Numbers; they will come free by post.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

SMITHFIELD CLUB, 1851.—CHRISTMAS FAT CATTLE SHOW.—Prize Sheets and Blank printed Forms of Certificates may now be obtained, on application to the Honorary Secretary.

The last day for receiving Entries is SATURDAY, THE 15TH NOVEMBER, 1851.

THE ANNIVERSARY DINNER of the CLUB will take place at the FREEMASONS' TAVERN on the WEDNESDAY of the Show Week, instead of the Friday, as heretofore.

B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon-street, Piccadilly, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

CUNDY'S PATENT PRIZE STOVE.—W. HODGES, 123, Oxford-street (late J. E. Dowson), is the sole manufacturer of CUNDY'S patent open fire-place, pure warm air ventilating STOVE, which has been so long tested and approved by the public, and for which he received the large Silver Medal from the Society of Arts. It is admirably adapted for warming and ventilating churches, school rooms, and other public places, halls, dining-rooms, &c., &c. Also CUNDY'S Patent Dioko-Capnon or smoke-expelling register Grate, a perfect cure for smoky chimneys; together with a large assortment of Marble Chimney-Pieces, Drawing-room and other Grates, Fenders, Fire-irons, and Kitchen Ranges of the most improved principle, Wind-guards, &c.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

EXHIBITION PRIZE—HYBRID WHEAT.

MR. RAYNBIRD begs to offer to Agriculturists a new variety of WHEAT, a Hybrid between the Piper's Thickset and the Hopetoun, at 10s. per bushel, including delivery to the Bury St. Edmund's Station.—Address, Mr. R. RAYNBIRD, Hengrave, Bury St. Edmund's, Suffolk.

MILK, CHEESE, AND BUTTER.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, advises any one who keeps Cows to send two postage stamps, and obtain a description of his LACTOMETER, with its uses, and the results of experiments with it upon different Milks. Lactometers, complete, in a mahogany box, 10s. 6d.; Do., with cheaper fittings, 7s. 6d. and 5s.; Hydrometers for testing sulphuric acid, 5s., 7s., and 10s. No consumer of acid should be without one, as it is often sold highly diluted. Saccharometers for Brewing, with tables, 5s., 7s, and 10s. Pediment Barometers, from 1l. each. Wheel Barometers, from 1l. 1s. each. Packed carefully for the country, there being nothing to fear of them getting out of order, as they are warranted to be properly made and good instruments.

**The Agricultural Gazette.**

*SATURDAY, NOVEMBER* 8, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Nov. 13—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 20—Agricultural Imp. Soc. of Ireland.

THE conversion of our PEAT BOGS into a source of fertilising wealth is a subject of growing importance. Many practical men, who have hitherto been looking to legislative sources for relief, are now with greater earnestness turning their attention to an increased produce, as the only means of relief; and such an increase can only be obtained from an increase of manure, with better cultivation. Now, a large extent of the country is covered with peat, long the most useless and bleak portion of the kingdom, but now assuming a different aspect, because chemists and mechanics have turned their attention to it.

Machinery is now beginning to play upon a few of our bogs; but two great obstacles appear in the way,—1st, the extravagant notions entertained of the value of peat charcoal itself, and the extravagant price charged for it; 2d, the impression that we cannot be supplied with peat charcoal at a cheap rate for fertilising purposes without the infringement of certain patents. To each of those topics we shall, therefore, briefly advert, confining our observations to an agricultural view of the subject.

From time immemorial peat charcoal has been acknowledged to possess valuable fertilising qualities. "Nearly 20 years ago, in the Highlands of Scotland, our attention," says a correspondent, "was drawn to the fact,—a fact no less than an experiment of some centuries standing. It was a circular spot of Grass of the richest verdure, surrounded by stunted heath. 'Here,' my informant told me, 'my grandfather made peat coal for the forge.' He was a very old man, about 90, a blacksmith, unable to work, but was succeeded by his son, who was at the time getting in his coals, consequently the day was a high day with RORY, and accidentally putting the question to him to check his inquisitiveness rather than procure information—'What did your forefathers do before they got coal from the south?'—'Come and see,' said the old man. So we followed him to the green spot of Grass in question, when he explained to us very graphically the whole process of making peat charcoal during the patriarchal times of his forefathers. A pit was first dug, and the dried peat put into it. It was next covered with a tough sod of sward, then fired, and the process carried on, as in the manufacture of wood charcoal. We next discussed the verdure of the green spot of Grass, when we were likewise informed that the whole refuse of the charcoal heap was carefully husbanded and mixed in the dunghill. In short, over the whole north of Scotland, where peat fuel is largely used, the inhabitants, generally fishermen living among dirt, would be suffocated with the stench but for the deodorising qualities of peat-ashes always containing in them a large per centage of the charcoal. Strangers, who visit their miserable shielings, do not experience that degree of disagreeableness which circumstances would lead them to expect—a result which is easily accounted for." All, therefore, that we can boast of having discovered in these piping times, is "a lost sheep in the wilderness;" for between the Land's End and Ultima Thule, there are many green spots to prove the practices of our forefathers, and many a deodorised *midden*. And the fact that those practices have been nearly lost sight of by us ought to convince some, who are now spreading their wings over our peat bogs, in the hopes of making fortunes rather easily, that peat charcoal is not of such a newly-discovered value as many have supposed. As a material for entering into combination with, or retaining within itself other elements, it forms a powerful absorbent; but, even in this respect, it has to compete with a powerful host of cheap enemies; and hence can never possess more than a comparative value. That it forms, however, a valuable basis for a compound, when mixed with other elements of a volatile character, cannot be questioned. It may be profitably used in the farm-yard, as we formerly suggested, in the working up of the sewage matter of towns into a portable manure, but probably no where more advantageously than in our fishing villages along the coast, to absorb the abominable effluvium of fishy matter, converting it into a valuable manure. Mixed with this in the fishermen's midden, it would form a manure not inferior to guano. To such purposes it might be profitably applied, were it obtainable at a reasonable price, but the present price charged is a complete barrier to its general adoption.

The present prices of Irish peat charcoal in the metropolis are, "granulated" for agricultural purposes, 60*s.* per ton; "lumps," for fuel, 80*s.*; "dust," 100*s.* At Dublin it can be had at about 13*s.* per ton less money.

A correspondent, the other day, on being told these prices, answered that he himself could "make peat charcoal at half the money." "No doubt of it," was the reply, "for *we*," said the official, "can afford to sell it at 25*s.* per ton at the works, and have a good profit; but so long as we can get 45*s.* we are not disposed to do so." Such is the position of the peat charcoal trade at present. Either the demand exceeds the supply, or else there exists a monopoly. Our correspondent, a patentee for sewage manure apparatus, &c., is now endeavouring to form a manure company; but the price of peat charcoal, an article required along with other agents, is experienced as a strong barrier. First, it requires an extra capital to start with, and, second, it cannot be sold to farmers afterwards. He is an old practical farmer himself, of many years' standing; knows the value of manure, and thinks that a manure like the one in question might be worth about 40*s.* per ton on the field, according to the present prices of guano, &c.; but this figure no company can afford to sell at, so long as they are called upon to pay 60*s.* for one of the raw materials. "Not many years ago," say they, "your landlords would have given any money to get rid of their peat bogs, so as to be able to cultivate the subsoil; but now, when science has put a value upon them, they cannot bestir themselves to supply the demand of the market. Within themselves they have the means of relieving their depressed tenantry, but those very means they convey over to monopolists, to make fortunes of, while they themselves are complaining of poor-rates."

Were the money now paid in poor-rates invested in the manufacture of peat charcoal for fertilising purposes, there cannot be a doubt but that it would be had at something like half the present prices, labour and capital being at the same time amply remunerated. No doubt *two* patents exist for peculiar methods of making peat charcoal, but why not 150, since the field is open and inviting; for the patentee who will sell the farmer the cheapest and best charcoal will receive his orders. On the soundness of this conclusion inventors and the mechanical world may rest perfectly satisfied. The two patentees, to which we have referred, are sensible that their patents are liable to be superseded by others, and are prepared, we believe, to enter into competition the moment that others enter the field; but so long as they can get 45*s.*, they are not disposed to take 25*s.* We can hardly blame them, though we might, in a friendly manner, suggest that this game may be carried too far; for he who firsts lowers the price to its legitimate level may command the trade. Farmers are not always ungrateful, as sewage manure manufacturers may ascertain if they please.

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IT was said long ago of one Irishman—

SWIFT for the ancients has argued so well,
He has made it quite clear that the moderns excel;

and the same compliment may now be paid, though in a somewhat different sense, to another. Mr. GOODIFF has written so well against our views respecting Irish emigration, that he has virtually written in favour of them. We have displeased him by expressing a belief that a society could scarcely be formed with a more patriotic object than to promote emigration. The remark had special reference to the present circumstances of Ireland, where the whole social system has become deranged, by the loss of the Potato on which it was based; but it is equally applicable to any other conntry, in which, from any cause, the population has become greater

than the means of subsistence, with the existing habits of the people, and the existing social system, which it requires at least the duration of a generation to alter. Emigration has been the resource of every people, so circumstanced, in all ages. In this they but follow the example of the bees, to whom Mr. Goodiff sends us, for a lesson on political economy. The greater the number of working bees, he says, the greater the produce of honey, and the greater the power of resisting aggression. Then why do they swarm? Simply because their hollow tree, when they live in a state of nature, is absolutely and permanently too small for their increasing numbers, and the necessary store of honey; and notwithstanding the many ingenious devices which have been invented to prevent their swarming, when living in an artificial state, it is found in practice to be most expedient to let nature take its course, and to allow emigrant bees to go forth with equal advantage to themselves and to those whom they leave behind them. The national prosperity of the hive is just the aggregate prosperity of individuals. Mr. Goodiff, therefore, should not cite the case of the bees as an argument against emigration. He says, however, that the hive is not full; but that wasps, a mouse, a death's-head moth—one or all of them—in the shape of bad government, have got into the hive, and are driving out the bees.

Irishmen are quitting Ireland, not because it cannot support them, but "because the ignorance, neglect, or supineness of those who govern has forced them to look to America, as the only refuge." We are not to suppose, however, that Mr. Goodiff is one of those querulous Irishmen—for such it seems there are, who carp at everything, and think a Government is fully equal to the task of warding off those ills which are the consequences of our own misdeeds, or negligence, or selfishness. He is more moderate in his views than to expect such impossibilities; and only "thinks a Government can do more than it generally does, and that it ought to do it."

The duty of a Government, under this extremely moderate view of its responsibilities, is defined to consist, in "devising some way of supplying the agriculturists with the means of working up their raw material—the land." In other words, if Irish farmers will persist, year after year, notwithstanding repeated warnings, in staking their all upon the Potato, and relying on it as "the only anchor that can bring up the labouring vessel," it becomes the duty of the Government, when that anchor parts, to provide them with the same amount of food, and the same means of cultivating their land, and paying their rent, as if it had not failed. Will Mr. Goodiff descend from generals to particulars, and say how this is to be done? Let us suppose that her Majesty has honoured him with her commands to form an administration, and that he is so fortunate as to find—no easy task—a sufficient number of Irishmen to constitute a Cabinet, agreed on a system of Irish policy? What will it be? On one point, and one point only, we can imagine them unanimous—a long pull, and a strong pull, and a pull altogether, at the Treasury, for funds to be advanced by way of loan, without interest and without a repayment of principal, to enable the landlords to support the poor in such reproductive works as cropping the land and paying rent. From this point they would diverge.

One would advocate a well digested system of colonisation, to rid the estates of a pauper tenantry; another would propose to bring in a bill to prohibit emigration. The former was demanded a year or two ago, before the Irish peasantry had solved the problem of self-supporting emigration; the latter appears to be the cry now, among the employers of labour, when wages have risen from 13*d.* a day to 20*d.* Will the new Administration repeal the Encumbered Estate Act, which starving Chancery lawyers and landowners whose encumbrances amount to 20 years' purchase of their rental, denounce as an act of spoliation? Are we to have fixity of tenure; and if so, how low in the scale is it to descend? Are tenants only to benefit by it, or is it to include those servants of servants, the subtenants of a sub-tenant? Are we to have a re-distribution of property, under the name of tenant right, or is it to be effected by more violent means? Or are landlords to be armed with more stringent powers for recovering rents, ejecting tenants, and doing what they will with their own? All these have lately been demanded by some section of the Irish, in the name of Ireland. Are mortgages to be cancelled, or will Ireland be satisfied with repudiating the loans made under the Temporary Relief Act? Is the Poor-law to be abolished, which enacted that Irish property should support Irish destitution? Are the poor to be left to starve; and if not, from what funds are they to be supported? Will the model Irish Government re-enact the Corn-laws, the repeal of which is denounced by some querulous Irishmen, as the source of Ireland's woes, and the cause of Irish emigration? This would be to crown the climax of absurdity. By the loss of her staple food, through the visitation of Heaven, Ireland is reduced from the condition of an exporter to that of an importer of food. Without foreign food her people must starve; and the remedy proposed is to render it less accessible; to protect the home produce which she has not, against the foreign produce which she wants. Behold a proof of Irish wit:

> "Here Irish sense is seen;
> With nothing left that's worth defence,
> We build a magazine."

We await, in breathless anxiety, the message which is to develop the policy of the Goodiff administration on these questions. For ourselves, we consider the great evil of Ireland to be, the difficulty of inducing her people to work up the raw material—their land, without the Potato, which Heaven appears to have decreed that they shall not have. We often hear from Ireland of the superiority of the Belgian to the British system of agriculture. Why, then, is it not followed in Ireland? They have the Belgian foundation of small farms; why not add to these the varied rotation of Belgium, its stall feeding, and its liberal manuring? A reformed agriculture can only originate with the people themselves, with the landowners and their tenants. It can no more be enforced by Act of Parliament, than the Potato blight can be prevented by the same means. If we would know the condition of the bulk of the population of Ireland in the palmy days of its agriculture, when the Potato wantoned as in its prime, Mr. Goodiff has sketched it for us, with the hand of a master. Every man was then a capitalist to the amount of a year's food; and yet the village farmers were destitute of capital—all the rich men were graziers; and Sir Robert Kane has told us why—because they were too proud to condescend to such ungentlemanly occupation as arable culture. The land was scarcely laboured or manured so as to give the return it was capable of, and while the produce of an acre in Great Britain averaged 4*l.* 7*s.* 7*d.*, that of the same quantity of land in Ireland averaged 2*l.* 9*s.* 3*d.* As a natural consequence, with a superior soil, lower rents, less taxes, and markets only a shade lower, the farmers rarely paid higher wages, in harvest time, than 13*d.* a day. The unemployed population amounted, on the average of the year, to one-fourth of the whole; and while food was exported to the value of 13,000,000*l.*, the people were *fed like—like Irishmen*, on the potato. Such is Mr. Goodiff's account of the state of Irish agriculture in its best days, given as nearly in his words as possible. Those in italics, in the last sentence, are his. The word in capitals is our comment on them, and on his advocacy of the Potato as the only anchor that can bring up the labouring vessel. Those were glorious days for Conacre and Castle Rackrent, agrarian outrage and wholesale assassination of landlords and land agents; but they are departed. The unemployed, Potato-fed population, seeing the blight of the lazy root perennial, are fleeing. With the diminished competition for land agrarian outrage is on the decline. Even in Tipperary assassinations are few and far between, though she still keeps her hand in. Those who emigrate improve their own condition, for, "the most good-for-nothing here is sure to do well there," says Mr. Goodiff. "It is not more than two years," he adds, "since the broken-down, indolent, lame, and weakly occupant of part of the land I hold, left his wife and nine little boys for this El Dorado of the west. He has twice in that time remitted small sums to his wife, and has now sent 11*l.* to defray the charge of sending out his two eldest sons. It is expected that by their joint labours they will be able to send for the mother and the other children, at an early period next summer." The condition of those who remain is also improved; for Mr. Goodiff has been obliged to pay 20*d.* a day for reaping his grain, against the 13*d.* which he paid with grain selling for half as much more than at present. National prosperity is just the aggregate of the prosperity of the greatest number of individuals. We do not believe that a society with a more patriotic object could be formed than to promote emigration from a country circumstanced like Ireland at the present time.

## ON HARVESTING ROOT CROPS.

Self-interest is the mainspring of all productive and economical labour, and it comes forth most prominently in piece-work. "In the estimation of every labourer, the wages are better than the work." The labourer on piece-work not only gets value for the additional work he performs, but he also reaps the advantage of his mechanical ingenuity and skill, as well as for the additional strength he puts forth to perform a much greater result, than he does when working by the day.

Hard work is easily performed with good will, when the men know the more work they perform the more will be their earning. Piece or task work is therefore greatly to their advantage; but it is also greatly to the advantage of the master, for he also partakes of the profits of piece-work, for the hands and horses which he must employ by the day, in connection with the taskers, must move on much more quickly, and, of course, more work is performed by them in the same time than would have been done if all were at work by the day, either with or without the master's eye on them. In illustration of this, I will endeavour to describe the work performed, and the expense of lifting, cleaning, carting, and storing 30 acres of Mangold Wurzel.

I estimated the crop of Mangold Wurzel at about 30 tons per acre, and to test the correctness of this estimate, I had several cart-loads weighed. The ground being very dry, the roots were capable of being lifted without much earth sticking to them. The empty cart weighs 7¾ cwt., and, without the wings, holds just one cubic yard, but, with the wings, which are 9 inches wide, and are placed so as to bend over the wheels, making the cart about 8 inches wider at the top, and 6 inches higher in the sides, enables it to hold a much greater quantity of roots. I found the weight of the cart-load of Mangold Wurzel to be 20, 22, and 23 cwt.; this, of course, includes the earth sticking to the roots.

The mode of harvesting our root crop, which we have adopted for several years, is this; we let the lifting—cutting off the leaves and the roots, and putting the roots into the cart—at so much per acre, according to the weight of the crop, to one man, who gets other men to join with him in the work and share in the profits; and the arrangement I require to be adopted is, that the one-horse carts which I employ to haul the roots shall be constantly employed, and I require from 16 to 20 loads or tons of roots to be filled hourly. The number of carts required is according to the distance of the field from the store; thus, the distance from the middle of the field to the store being 15 chains, four carts are required; 22 chains require five carts; and 30 chains require seven carts.

*The mode of lifting the roots.*—Five men are employed to pull up the roots; each man pulls up two rows; standing between the rows, he takes with his left hand a root from the row on his left side, and with his right hand a root from the row on his right side, and pulling both up at the same time, places them side by side, across the row where he pulled up the roots with his right hand, so as to have the tops lying in the space between the two rows he has pulled up; the next man takes the two rows at the right hand of the last two rows we have just described, and he, with each of his hands, pulls up a row, and places them on the line of the row which he has pulled up with his left hand, with the root end lying towards the root end of the first row, so that we have now four rows of roots lying close together in two rows, side by side, with their leaves on the outside of each of these rows, and the roots of each row nearly touching each other; and every four rows, when growing, are thus, when pulled, laid in two rows, root to root, occupying not more than 27 inches. Now, as the next four rows are lifted in the same way, and placed in like manner, we have a space unoccupied of three times 27 inches, or 6 feet 9 inches between each double row of roots, for the cart to go between them (viz., this double row of bulbs after they have had the leaves and roots cut off), to carry off the bulbs to the store. After the five men who are pulling the roots, there follow 10 women or boys with knives, made of pieces of old scythes, who, with repeated blows, cut off the leaves and roots, without ever moving one of them with their hands; this is constant, but not hard work, and it requires 10 active women or boys to keep up with the five men pulling.

Immediately on the heels of the cutters follow the carts between the two double rows of bulbs as they lie, having their leaves and roots cut off, and a man, one of the principals of the gang, and nine young active boys and girls throw up the bulbs as fast as they can into the cart, the man speaking to the horse to move forward, or stop, as they clear the ground; when one cart is full, an empty one has been brought by one of the boys who drive the carts, and placed immediately behind the full one; so that as he moves off with the full cart, the man calls the horse with the empty cart to move forwards, and they proceed to throw the roots into the cart as fast as they did into the one that has just gone off the field.

The pulling of the roots and the filling of the carts being the principal work, one of the leaders are in each of these departments of the work; so that, by his example, he shows those with him how he wishes them to work, and thus the work proceeds with the utmost regularity and dispatch; 20 cart-loads are hourly filled in the fields and delivered in the store; 180 to 182 loads of 22 cwt. and 23 cwt. each in a day of nine hours; thus a cart-load is filled every three minutes by 10 pair of hands, which are pulled by five pair of hands, and the leaves and roots cut off by 10 pair of hands—in all 25 pair of hands, men, women, and boys; this has been repeatedly done in a day.

The stores are made of posts and rails, enclosing a space 9 feet apart and 4½ feet high, and of any length, if the space will admit, and as near to where they are to be consumed as possible. The posts are 5 feet apart, let into the ground 18 inches, and 4½ feet above, with five rails above, 4 or 5 inches wide, nailed to the inside of the posts; and each of these stores are 3 feet apart. I have 14 of them about 70 feet long each, which is sufficient to store from 1000 to 1200 tons of bulbs.

In placing the roots in the store, we put straw inside

the rail, of some thickness, to keep out the frost and wet from the sides. As the store is being filled, the end of each store being railed off as the sides are, straw is placed against it and against the ends, for 8 or 10 feet from the end; the full carts are backed to the end, the tail-board of the cart being taken out, the load is tumbled out, and the horse walks out of the store, when a boy, who by this time has brought another loaded cart, walks off with the empty one to the field; two stores are always being filled at the same time, so that each store gets the alternate load; there are two men, one woman, and one boy, to each store; one of the men puts up the straw beside the rail, and thatches the stores as they are full; the man, woman, and boy throw up the roots, forcing them into a roof—the thatcher making them equal, by placing the roots close, so that that he can thatch the store as it is completed; these hands are fully employed in storing from 160 to 182 loads in nine hours. When the store is nearly filled, five rails are placed in the end of it, and the roots thrown up, and the roof formed to the end as it was formed at the beginning.

*The Expense of Harvesting the Mangold, Swedes, Carrots, and Potatoes.*—The price paid for pulling, cutting the leaves and roots off, and filling the roots and the leaves into the cart, per acre, for Mangold, is 6*s.* 6*d.*; for Swedes, 6*s.*; for Carrots, 16*s.*; for Potatoes, 25*s.*

If we look at the mode of proceeding, the pulling, cutting, and filling of the roots, we shall see the advantage of a system, not only in the rapid mode of clearing the ground, but also in the wages which the taskers earn at this period of the year, when the wages of farm labourers are generally at the lowest average.

*The Time and Hands employed in Harvesting 29 Acres of Mangold and 11 Acres of Swedes.*

| 1850 Oct. | | | Men Pulling | Women and Boys Cutting. | Filling Cart. Men. | Filling Cart. Women & Boys. | Quantity. Acres. |
|---|---|---|---|---|---|---|---|
| 17 | Taking up | Mangold in No. 6 | 5 | 10 | 1 | 9 | 11 |
| 18 | Ditto | in No. 6 | 5 | 10 | 1 | 9 | |
| 19 | Ditto | in No. 10 | 5 | 10 | 1 | 9 | 10 |
| 21 | Ditto | in No. 10 | 5 | 10 | 1 | 9 | |
| 22 | Ditto | in No. 2 | 5 | 10 | 1 | 9 | 8 |
| 23 | Ditto | in No. 2 | 5 | 10 | 1 | 9 | 11 |
| | | in No. 22 | 5 | | | | |
| 24 | Ditto | in No. 24 | 5 | 10 | 1 | 9 | |
| | | | 35 | 70 | 7 | 63 | 40 |
| | | | 5 | | | | |
| | | | 40 | | | | |

| | £. | s. | d. |
|---|---|---|---|
| 29 acres of Mangold, at 6*s.* 6*d.* per acre ... | 9 | 8 | 6 |
| 11 acres of Swedes, at 5*s.* 6*d.* per acre ... | 3 | 0 | 6 |
| 40 £ | 12 | 2 | 0 |
| Or, per acre ... | 0 | 6 | 2¾ |

*The wages earned by the contractors and paid by them to the hands they employed:*

| | | | |
|---|---|---|---|
| 40 days of a man, at 2*s.* per day ... ... | £4 | 0 | 0 |
| 70 days of women, at 10*d.* per day ... ... | 2 | 18 | 4 |
| 63 days of boys and girls, at 9*d.* ... ... | 2 | 7 | 3 |
| £ | 9 | 5 | 7 |

Leaving 63*s.* 5*d.* to be divided amongst the contractors, for their labour, viz., four men 16*s.* each, or more than 2*s.* per day over their wages; these five men earniug 4*s.* per day for the seven days' work.

*The expense of hauling the roots home.*

| | | Loads. | Acres. |
|---|---|---|---|
| No. 6, 2 days of 4½ carts equal to 9 horses | | 306 | 11 |
| No. 10, 1½ days of 5 horses | ,, 7½ ,, | 242 | 10 |
| No. 2, 1½ ,, | ,, 7½ ,, | 190 | 8 |
| Nos. 22 & 24, 2 days, 6 horses | ,, 12 ,, | 192 | 11 |
| | 36 | 930 | 40 |

930 loads carted by 36 days of one horse, is 26 loads per day.

*The expense of carting 930 loads off 40 acres of Mangold Wurzel and Swedes.*

| | | | |
|---|---|---|---|
| 36 days of a horse, say at 3*s.* ... ... ... ... | £5 | 8 | 0 |
| 7 days of a man to back and tip the carts, 2*s.* ... ... | 0 | 14 | 0 |
| 7 days of 2½ boys = 17½, at 8*d.* ... ... ... ... | 0 | 11 | 8 |
| | £6 | 13 | 8 |
| Or per acre ... ... ... | 0 | 3 | 4 |

*Expense of storing 40 acres of roots, 930 loads.*

| | | | |
|---|---|---|---|
| 4 men, 7 days = 28 days, at 20*d.* per day £2 | 6 | 8 | |
| 2 boys, 7 days = 14 } 28 days, at 10*d.* ... | 1 | 3 | 4 |
| 2 women, 7 days = 14 } | | | |
| | £3 | 10 | 0 or 1*s.* 3*d.* p. ac. |

| | | | | |
|---|---|---|---|---|
| So that the total expense of pulling, carting, and storing 40 acres, 930 loads of roots is, for pulling, filling in the carts, cutting leaves, &c. ... ... ... ... | £12 | 9 | 0 or 6*s.* 3*d.* p. acre. | |
| Carting the whole ... ... ... | 6 | 13 | 8 ,, 3 | 4 ,, |
| Storing the whole ... ... ... | 3 | 10 | 0 ,, 1 | 9 ,, |
| The expense of harvesting 40 acres | £22 | 12 | 8 or 11 | 4 p. acre. |

The power which the five men brought to bear on this pulling 182 cart loads, of at least a ton each, equal to 182 tons of roots from six acres, besides the leaves and roots, which were equal to eight tons per acre, or to 48 tons on the six acres, this makes 190 tons; besides, to overcome the resistance of the hold which the roots have in the ground, which must be in every case equal to 190 tons; the weight of the roots and leaves, 380 tons. Thus the five men overcame a resistance of 380 tons in nine hours' constant labour, equal to 76 tons for one man, to pull up say only one foot high, and lay it down regularly on the ground; this is an amount of manual strength which we have never witnessed before. *John Morton.*

## MANURES.—No. V.

**Bones.**—The price of bones varies according to the labour bestowed in their preparation, no difference being made between boiled and unboiled bones. A bushel weighs from 42 lbs. to 45 lbs., and costs from 2*s.* 3*d.* to 2*s.* 6*d.* Bones are an invaluable source of phosphoric acid, an element of so much importance to plants; few plants but require phosphate of lime and magnesia in variable quantities, their nutritive value depending in a great measure upon the supply of these substances in the soil. By a wise provision of Nature, the phosphates abound to the greatest extent in such crops as are universally employed as food. A man eating 1 lb. of farina a day would consume 3½ lbs. of phosphate of lime in a year. Leguminous crops, from the small amount of phosphates they contain, are incapable of imparting that strength and solidity of bone to the animals fed on them as others containing less nitrogen. 100 lbs. of bones contain 50½ lbs. of phosphate of lime, which distinguishes them from all other animal substances; 33¼ lbs. of decomposible animal matter, with a little carbonate of lime (least in carnivorous animals); phosphate of magnesia; and a little soda, in the form of common salt. When bones are burned in a fire until everything organic is consumed, a white substance remains called earth of bones, consisting principally of phosphate of lime, a salt composed of 51½ per cent. of lime, and 48½ of phosphoric acid. I have stated that phosphate of lime imparts strength and solidity to bones, full grown animals contain most of this phosphate, hence the hardness of their bones. Young animals contain least, hence their softness of bone. Disease frequently softens the bones, by dissolving out more of this earthy matter than is supplied by the food. Phosphate of lime is white, tasteless, and insoluble, but dissolves readily in acids; hence it is suspended in milk by means of lactic acid, and, by the agency of the organic acids in the soil, is rendered capable of entering the roots of plants. It is largely found in Estremadura, in Spain, under the name of apatite, where it forms entire mountains. It is also found in the urine of adults, but not in that of young animals, for the rapid formation of the bones of the latter require none of the salt to be wasted. If the legs of hens be broken they will lay eggs without shells until the fracture is repaired, the circulation of the lime being required for the recovery of the bone! When bones are boiled they are deprived of gelatine, which dissolved in the water (the fat being previously skimmed off), forms size or glue used in Manchester for stiffening calicoes. Three or four lbs. of fat are extracted from one bushel of bones in process of boiling for 24 hours, which is employed for greasing coarse machinery. During the process of boiling, the bones absorb more water; thus the gelatine decomposes more rapidly when laid in the soil. If rain be excluded bones may be preserved for an indefinite period; but if finely divided and moistened, their temperature rises, and they putrify "on the same principle as, when carried to excess, shows itself in the formidable shape of spontaneous combustion by setting fire to our ricks and kindling the cargoes of ships." Soft bones generally contain much water and fat; the quantity of the latter depends upon the position of the bone in the body, and the condition of the animal—the amount of the former upon the solidity and age of the bone. By the employment of bone-dust, much waste land has and can be brought into cultivation, from its comparative lightness, ease in transport, and containing in a condensed form the elements of vegetable nutrition. There is a vast demand for bone-dust. In South America cattle are slaughtered to supply us with bones, and we cannot even predict how important a branch of commerce may yet arise in the importation of bones from Australia and our Asiatic territories, for the improvement of our fields. The manner in which bones act cannot accurately be explained, so many conflicting results being presented to our consideration. Some are of opinion that in the case of unboiled or unburned bones, the fertilizing action is to be attributed to the organic matter they contain. Others again state their action is to be traced to the inorganic matter. The composition of the soil, whether it be exhausted more of organic or inorganic matter, should be kept in view. Where the former may prove deficient, unboiled or unburned bones may be found more marked in their action; while in the latter the effects of the inorganic elements may be more perceptible. Since phosphate of lime and ammonia are among the chief substances required by plants, may we not without error attribute a double function to bone manure? It would be as equally unwise to burn bones for the sake of their phosphates as it would guano for a like result. Bones are principally applied to the Turnip crop, though their effects are equally good on other crops cultivated for their roots. They are applied to Grass in the form of bone dust, in this state being more easily converted into food for plants, and more evenly extending over a larger space of ground. In Cheshire, bones have been applied to pasture land with much success, an application of 33 cwt. of bones per acre increased the value of worn-out pasture land to double—quadruple its value, and their efficacy remained perceptible for 20 years. Thus pasture land becomes exhausted of phosphate of lime, by the cattle which feed on it—milk, butter, cheese, beef and veal, the indirect products which carry it away. There is 1 lb. of bone earth in every 30 gallons of milk, and in 1⅝ lbs. of bone the same quantity; and for every 2 lbs. of phosphate of lime abstracted from the soil, 3 lbs. of bone earth would be required to supply the deficiency, occasioned either by the selling of dairy products—young stock or cereals. By feeding full-grown pigs upon bran, we could restore the loss of some of the earth of bones; as it contains 50 per cent. of the phosphate. Bones are more permanent in their action than guano; the latter, from the minutely divided state of its constituents, and the readily formed ammonia, from the decay of its organic matter, produces a more immediate and consequently a more transient effect. Bones decay sooner when in the form of dust, because a larger surface is exposed for absorbing moisture from the air and soil. To dissolve bones, procure the latter broken as finely as possible, as a greater surface will be thus exposed to the action of the acid. Place the bones in a broad shallow trough, barrel, or on a flagged floor, raising a little wall of earth of peat to keep the mixture from flowing about; add to the bones half their weight of boiling water, to thoroughly moisten them; after the mixture remaining in this state for a few hours, add half the weight of the bones of sulphuric acid, constantly stirring the mixture, so that every portion of the bone may be acted upon by the acid. At the end of 24 hours, when the bones will be reduced to a mass of paste, the latter should be mixed with an equal bulk of ashes, sawdust, dried peat, or garden mould. Four pounds of common salt added to every bushel of bones facilitates their decomposition, in consequence of the muriatic acid contained in the salt. The sulphuric acid should have a specific gravity of 1.845; will cost from 1*d.* to 1¼*d.* per lb. Water is required to be added to the bones previous to adding the acid, as it will afford an easier passage for the acid through the bones, and prevent the loss of that great heat (266°) arising from the mixing of the acid and water, which otherwise might produce dangerous results to the operator. *Libra.* [In the last article, No. 4, on manures, it was said, "Gelatine united with *tartaric* acid forms leather;" it should be *tannic* acid.]

## Home Correspondence.

*Mangold Wurzel.*—We grow Mangold Wurzel every year on the same ground, manured with dung. The seed is sown in the beginning of April. We are sadly troubled by the plants running to seed. Can you tell me why this is, and whether the tops of the plants running to seed should be broken off? Flintshire is our county. *Overton.*—[You sow too early. Breaking the seed shoots is of no use.]

*Prices of Agricultural Produce.*—Below I copy from the official statements, to be found in the returns presented to Parliament, the average annual prices of Wheat during the preceding five years in Great Britain, France, and Belgium, reduced into English quarters and English currency.

| | Great Britain. s. | d. | France. s. | d. | Belgium. s. | d. |
|---|---|---|---|---|---|---|
| 1846 ..... | 54 | 8 | 55 | 9 | 56 | 3 |
| 1847 ..... | 69 | 9 | 67 | 4 | 72 | 2 |
| 1848 ..... | 50 | 6 | 38 | 7 | 41 | 7 |
| 1849 ..... | 44 | 3 | 35 | 7 | 40 | 5 |
| 1850 ..... | 40 | 3 | 33 | 2 | 37 | 5 |

It was in the first of these years that the Act reducing the duties on the importations of foreign corn into this country was passed, in the last year the duties were suspended, and so continued till sometime in the following year, and in 1849 all the restrictive duties were abolished. It is remarkable that in the year commencing this period the price of Wheat in this country, in its average, was below that which prevailed both in France and Belgium (evidencing the superior resources of this country under pressing circumstances), in the following year it rose to a medium between the averages of the other two, but during the last three years (almost a time of free importations) it has fluctuated at a price exceeding that of the other two countries, although there appears a gradually downward tendency to approximation, no doubt caused by the very large and increasing importations of Wheat and Wheat-flour from its neighbouring rival during such period. Farmers, however, I am inclined to think, may yet encourage a hope that the price of their produce will not permanently be deteriorated so low as it is at the present moment in this country. I so incline from considering what has been the average price of Wheat in France and Belgium during the last 22 years; in the former the average of this period was 45*s.* 9*d.*, and in the latter 46*s.* per English quarter. Compare these figures with those above, and it will be evident why the farmers in France are now suffering a distress equal to those in this country, and are equally earnest in their complaints. Doubtless there are political and social causes in that country, which, it must be admitted, have operated as well as productiveness from favourable seasons and improved agriculture, to produce a supply greater than the demand, and a consequent lowness in its money value. May we not then expect that when the unusual deteriorating circumstances shall subside (and these cannot long continue, for labour must be rewarded), that the price of corn in France will be re-established at something like its former and more normal value? and if so, we should have then nothing to fear in its effects on being introduced into our markets. France, last year, imported into this country just one-fourth of the whole Wheat produced received by us from our own colonies and all foreign countries together, Prussia, even with so low an average price as 31*s.* 6*d.* per quarter, not being able successfully to compete with France, in sending her produce to our markets. It is, then, the great and unusual depreciation of agricultural produce in France, which has caused the very low price which has prevailed here; and, notwithstanding her large exports, she herself is suffering. It is singular that France, not hitherto deemed a corn-growing country, should at once manifest its powers, not only to provide for the wants of her own population, but to be able to administer so largely to those of her neighbours. I do not know what is

and has been the state of the law in regard to the exportation and importation of corn in France and Belgium, having hitherto unsuccessfully endeavoured to get information on the subject. A principal object in addressing this letter to you, is to obtain attention from some of your intelligent correspondents to the subject of the foreign influences to be apprehended upon the future value of our own produce. I have no doubt that many of your readers would be glad of the information as well as myself. *Rusticus.*

*Pinguedo.*—The larger portion of every manure should consist of mineral substances, and not of organic matter; for, who supplied the Garden of Eden with manures, or with vegetable mould? I have adopted a plan of mixing these suitable ingredients so as to form a manure, which I can honestly say I never found to fail. The Pinguedo contains, without exception, every element necessary to vegetable growth, and its components are of great commercial value. I shall now give an elementary analysis of the Pinguedo, that you may see that all proper ingredients are present. It consists of fixed ammonia, carbonic acid, potash and soda, in three different states of combination, phosphates of soda, of lime, of potash, and magnesia, sulphates of lime, magnesia, &c., and carbon and hydrogen combined. It may not be amiss to give here a small list with the present prices of some of the principal and most valuable salts used for the manufacture of this manure, lest those who have not had an opportunity of seeing or trying it, should suppose that it is made up of dung, night-soil, urine, or other stuffs, which are really valuable in their proper places, but which must give way, as I have before said, to the superiority of a manure composed of salts purely chemical, and all of which are used, more or less, as medicines. Nitre, 28*s.* per cwt.; nitrate of soda, 14*s.* to 16*s.* per cwt.; phosphate of lime, 14*s.* per cwt. In addition to what I have just said, the Pinguedo presents the following advantages:—it occupies the least possible bulk,—say one barrel contains 3½ cwt. net, of concentrated Pinguedo, which is enough for a statute acre, possessing as much fertilising power as 20 tons of horse manure. It is exempt from fraud or deception, being purely chemical. It suffers no damage from exposure to the air, nor emits any smell. The economy in cartage and labour is immense, and the method of using it is most simple and convenient, adapted for all soils and situations, and all states of weather. It must be spread on the soil soon after the crops have been gathered, and in the spring. Its efficacy can be seen on Grass within eight days after it has been spread,—the Grass acquiring a dark-green colour, and the height an inch above the unmanured Grass. The Pinguedo answers also for flower shrubs, Gooseberries, Currants, Strawberries, &c. A quarter of a pound round the stem of each plant will afford sufficient nourishment, and the leaves become dark-green, the fruit more perfect, and all kinds of grubs and worms are destroyed. *Conclusion.*—During the spring of the year 1846, I had a favourable opportunity for trying a new experiment with the Pinguedo. Having planted a portion of land with the Potatoes affected with the "murrain" of the previous autumn, and manured them with my composition, I had the satisfaction of finding that the resulting crop was more healthy than other Potatoes of the present year. From this I feel assured that there is no necessity for renewing the Potatoes in this country by an importation of fresh seed. In conclusion, I beg to say that it would be presumptuous in me to offer the Pinguedo to the agricultural world as an infallible manure; for the best guano has failed in many instances, on account of the soils, &c. All that I can state is, that I have never found it to fail in Lancashire, on clayey soils, and this discovery being made only last year, a fair trial must be given (as was the case with the guano when it was first introduced in this country), before any judgment be formed. All parties who have tried it, are prepared to certify that it is superior to any other agent yet tried. I do consider that the Pinguedo is more calculated to supply the wants of a growing vegetation, than a manure like Liebig's, composed of nearly insoluble matter. And with due deference to that great philosopher, I must say that I differ from him in the view which he takes respecting the composition and capacity for solution of manuring matters.

Composition of the "Pinguedo."

| | lbs. | Remarks. |
|---|---|---|
| Sulphate of lime ... | ... 112 | Cheap. |
| Ground bones ... | ... 84 | Cheap. |
| Sulphate of ammonia | ... 56 | Cheap (at the gas works). |
| Peruvian guano ... | ... 28 | 10*s.* per cwt. |
| Nitrate of soda ... | ... 28 | Cheap. |
| Ground charcoal ... | ... 28 | Very cheap. |
| Nitrate of potash ... | ... 14 | About 28*s.* per cwt. |
| Sulphate of potash | ... 14 | Cheap. |
| Sulphate of magnesia | ... 14 | Cheap. |
| Sulphate of soda ... | ... 14 | Cheap. |
| | 392 lbs. or 3½ cwt. | |

To be well mixed and ground together, adding about 30 lbs. of soot, which, together with the sulphate of ammonia, will kill grubs, &c. To be kept in barrels in a dry place until wanted. N.B.—No lime, either in the caustic state, or carbonate, should come in contact with the Pinguedo, or double decomposition will take place in the above mixture. *J. W. Hopkins, Manchester.*

*Poultry Diseases.*—As I have received a number of letters with reference to the communication which appeared on the 18th, requesting further information, I am induced to think I was not sufficiently explicit in the directions for the use of the powder therein recommended. The sulphur and cayenne should be mixed in the proportion of 3 ozs. of the former to ½ oz. of the latter; this will be sufficient for a dozen adult fowls, and should be divided into two doses and given on two successive days; afterwards give the other powder every day "si opus sit." The medium in which it should be given is Barley meal, or any other food the chickens are fond of, and which can be mixed up with water or pot liquor, *i. e.* put enough meal to make a good feed; they may not like it at first, but if hungry by abstinence will soon take to it. Should the birds be very ill and not able to feed, I have found the following very useful—equal quantities of ginger, Epsom salts, gentian, fœnugric, and garlic mixed up with fresh butter to a paste, and pellets the size of a filbert, given night and morning. These doses are all for adult birds; for younger ones, the doses must of course be adapted by the discretion of the donor. P.S. I should have said that one great cause of want of success in the rearing of poultry is, that persons are not sufficiently careful in the relationship of the parents. The cock bird should have a perfectly distinct parentage from the hens; breeding in and in spoils health, beauty, and size. *Henry Copland, Chelmsford.*

*Burned Weeds and Earth, &c.*—I shall feel obliged, if you will state your notion of the effect on Beans, Peas, and Tares, of manure composed of burned weeds and earth, with the emptying of privies, and mixed with sulphuric acid. The mixture appears very powerful, and my men say it is better than any of the London manures I have had down; but as I once tried superphosphate after salting for Oats, and got seriously injured by it, I fear to try any more of my experiments without advice. *Colchester.* [Burned weeds afford fertilising salts essential to vegetation. Nothing can be better than the emptying of privies; and sulphuric acid fixes the ammonia that escapes from the decomposition of such matter. But it requires caution to avoid wasting the sulphuric acid; and, perhaps, gypsum or sulphate of iron are preferable as fixers, since the evolution of the ammonia is a slow process, and the sulphuric acid would, I presume, waste itself by immediately attacking other matter besides the ammonia. You must not add the ashes before you add the sulphuric acid, or it will act on them. I conceive the superphosphate of lime could not possibly be to blame for the injury to your Oats. The salt was probably the injury. Except in rare cases, I can hardly suppose that salt can ever be very serviceable to agriculture, and it must often be injurious. *J. S. H.*]

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's house, in Hanover-square, on Wednesday last, the 5th of November: present—The Earl of Ducie, President, in the chair; Lord Southampton, Sir Robert Price, Bart., M.P., Colonel Austen, Mr. Raymond Barker, Mr. S. Bennett, Mr. Bramston, M.P., Mr. Brandreth, Colonel Challoner, Mr. Walbanke Childers, M.P., Mr. Garrett, Mr. Grantham, Mr. Fisher Hobbs, Mr. Law Hodges, M.P., Mr. Jonas, Mr. Kinder, Mr. Milward, Mr. Pusey, M.P., Mr. Shaw (London), Mr. Villiers Shelley, Prof. Simonds, Mr. Simpson, Prof. Way, and Mr. Wingate.

The following new members were elected:—

Nesfield, R. N. M., Castle Hill, Bakewell, Derbyshire.
Demidoff, the Prince, Florence.
Field, William (Veterinary Surgeon), 224, Oxford-street, London.
Grissell, Thomas, Norbury Park, Mickleham, Surrey.
Wright, R. J., Thorpe, Norwich.

The names of 31 candidates for election at the next monthly meeting were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the report on the accounts of the Society to the end of the previous month, and submitted to the inspection of the members the various quarterly balance-sheets connected with income, expenditure, funded capital, assets, and liabilities: the current cash balance in the hands of the bankers being 659*l.*—This report having been adopted, the Council, agreeably with the special recommendation it contained, unanimously agreed to a vote of their best thanks to Messrs. Navile Reid and Co., of Windsor, for the kind manner in which they had accepted the appointment of the local bankers of the Society, during the period of its Windsor Meeting, and for the courtesy and exactness with which they had discharged the duties of that appointment.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the following awards made by judges in the class of Essays:

I. To Finlay Dun, jun., Veterinary Surgeon, Heriot-row, Edinburgh, the prize of Twenty Sovereigns, for the best Essay on the Diseases of Farm Horses arising from mismanagement.
II. To William Charles Sibbald, Veterinary Surgeon, Biggleswade, Bedfordshire, the prize of Twenty Sovereigns, for the best Essay on the Diseases after Parturition in Cows and Sheep, with the remedies.
III. To Edward J. Hemming, of Lismore, co. Waterford, Ireland, the prize of Twenty Sovereigns, for the best Essay on any subject in Agricultural Chemistry.
IV. To Joshua Trimmer, of Foden Bank, Macclesfield, the prize of fifty sovereigns, for the best Report on the Agricultural Geology of England and Wales.

Fines for Non-Exhibition.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Shelley, the report on the result of the application made to parties who had neglected to pay the fines, for the non-exhibition of animals entered by them for competition, at the Windsor meeting, or to assign in due time a just reason for their absence, was referred to a committee, consisting of the Earl of Ducie, Col. Challoner, Mr. Milward, Mr. Simpson, Mr. Shaw (London), Mr. Brandreth, Mr. Druce, Mr. Barnett, Mr. Jonas, Mr. Brandreth Gibbs, and Mr. Fisher Hobbs.

December Meeting.—The Council decided that the ensuing General Meeting should be held on Saturday, the 13th of December, at 11 o'clock in the forenoon.

Miscellaneous Communications.—Sir George Cayley, Bart., presented to the Society a model of his anti-friction plough; Mr. Lister Maw, an original painting by Davis, of the first-prize short-horn bull, bred by Mr. Maw, at Tetley by Crowle, near Bawtry; Sir W. C. Trevelyan, Bart., offered a collection of agricultural books from his private library; Mr. Kirtland, a case of Indian corn; Mr. J. C Halmers Morton transmitted a sample of Van Diemens Land guano; Mr. Reeve, fine specimens of Beet-roots, grown without manure; Mr. White suggested honorary awards to exhibitors; M. Andreolet offered his services to the Society as a foreign correspondent; the Board of Health addressed enquiries on "the use of precipitates of any kind from sewer-water, or of earths saturated with sewer-water being successfully applied as manure;" the Georgofili Association at Florence expressed their sense of the value of the Society's Journal; Lieut. Edgar Slade, R.N., transmitted for inspection the model of a digging machine, to be worked by steam-power (the construction and probable value of which was explained to the Council by Mr. Garrett); Mr. Matthews, Secretary of the Driffield Farmers' Club, transmitted a favourable report of the trial of M'Cormick's reaping-machine; Mr. Hill Dickson transmitted papers connected with Flax cultivation and management; Mr. Thomas Ellman, of Beddingham, addressed inquiries in reference to the veterinary inspection of cattle, and the conditions under which fat cattle would be disqualified at the Society's country meetings; Mr. Lee and Mr. Bate suggested the purchase of Lawson's collection of Grasses, &c.; Mr. Lister Maw favoured the Council with the results of his experience in Potato and Beet cultivation; Mr. Nathaniel Mathew, of Wern, Carnarvonshire, addressed a further communication, on the subject of the model of the moveable bridge for marsh-lands, presented by him to the Council at a former meeting.

The Council having ordered their usual acknowledgments for the favour of these communications, adjourned to their next monthly meeting on Wednesday, the 3d of December.

Trafalgar (Fifeshire), *Oct.* 19.—At the annual Show of this Society, Mr. Andrew Landale, Easthall, read an essay on "Farm Leases," which we have considerably abridged.

That leases give greater security to the tenant and encourage him to lay out his capital in improvements, and so promote a higher standard of cultivation, is what has been the generally adopted view of the subject in this country. That view of the matter is quite correct, provided these leases are granted in a liberal and fair manner; but if they are clogged with restrictive conditions, and set and fixed rules of cropping, it must be evident to all that the tenant may, with these conditions, be prevented taking advantage of such improvements as may tend to the greater productiveness of his farm. I am sorry to say that a very great number are of the latter description, and not only retard agricultural prosperity, but generally end in the ruin of the farmer and in a decrease of the fertility of the land. For example, should the cultivation of Flax turn out a profitable concern, what signifies it to a tenant with a fixed rotation from which it is excluded? In that case, he is a mere nonentity tied up and fettered; his whole ideas and aspirations are apt to descend and become on a level with the circumstances in which he is placed. Such is the generally defective system of leases that the tenant has usually followed the plan of improving his farm the first half of his lease, and then trying to take out of it in the last five or six years what he has put into it in the former part. And who can blame him? But that system surely bears on the face of it the stamp of something very far wrong. Take it in a national point of view, it is detrimental to the country in keeping down the produce of the soil; and it is injurious more immediately to the landlord as keeping down the condition of his land, and, consequently, the rent of that land. For those owners who insist upon stringent clauses in the leases are almost always disappointed; and it will generally be found that on estates where the terms of agreement are the most liberal, the tenants are the most forward in adopting improvements and cultivating the land upon the most improved systems, while on those estates where the tenants are hampered and dictated to, they are almost invariably behind their neighbours as farmers. For what is it that has raised the agriculturists of Scotland to their present proud and elevated position among the surrounding countries in the world, and enables them to wield such a mighty influence in their own? What is it that has converted heathery and barren moors, whin-clad hills, and stagnant, obnoxious marshes into fertile and fruitful fields? And what is it that has within little more than half a century in many instances more than tripled the value of land? Why, doubtless, their own persevering industry, coupled with their ready adoption and skilfully energetic application of the many and great improvements which have from time to time been introduced, and which is due only to those Scotch farmers that are free and unfettered. Seeing, then, that leases have so far a good effect in improving cultivation in the first part of their duration, it certainly is possible to devise some means whereby all these disadvantages I have mentioned may be obviated, whereby the landlord may have some benefit from the increased fertility of the soil, and the tenant reap the advantage of his improvements up to the last moment of his lease. The means are very simple and very obvious, namely, the adoption of tenant right. I need not describe what that is, as you all know it as well as I do, and I do not argue it for the sake of the tenant alone, as I consider it of as much advantage to the landlord as the tenant. Tenant right is nothing more than remuneration to the tenant for unexhausted improvements at the end of his lease. That it is for the benefit of the landlord as well as of the tenant to maintain the good condition of his land is a self-evident fact, and that result can surely be best accomplished by that law which induces the tenant not to reduce its fertility. I need scarcely enter into any system of cropping, as in leases properly constructed I consider that the tenant should be left entirely to his own will in that matter, and as every locality under different circumstances would require different management, I would frame leases in such a manner as would leave a tenant free and unfettered to farm his land to the best of his skill, and for his unexhausted manures and permanent improvements I would make an allowance at the end of the lease. While doing this it would be necessary to have some clause whereby the landlord would be prevented running the risk of having his land deteriorated by a tenant, and the simple clause generally adopted in some leases binding the tenant to farm according to the rules of good husbandry, would, in my opinion, fully protect the landlord. It must be evident to all, however, that it mainly rests

with the parties contracting to fix terms for themselves. One of the principal parts of any lease is the amount of rent, and that fixed, an important point for consideration is, the term at which that rent should be paid. The general system in this country is that the tenant is not called upon to pay any rent till he has reaped and threshed part of the crop; but in England it is different—the tenant, in most cases, paying rent the first year of his possession, and, consequently, before he has reaped any crop. The latter system, of course, requires more capital by the amount of rent on the part of the tenant, but I am rather inclined to think that if it were generally adopted it would be for his benefit, as the system pursued in Scotland by allowing tenants, with comparatively small capital, to come into the field of competition, keeps up a fictitious value of land. I do not think I am infringing upon the rules which are generally understood to prevail in all societies of this sort met to discuss agricultural subjects, to say, that the law of hypothec acts injuriously to agriculture. On that law I do not mean to enter farther than to say, that in a mercantile point of view, and when agriculture is becoming more a profession than it was when the law of hypothec was framed, it surely is an act of gross injustice to the public generally that a landlord should have a preferable claim to every other creditor. The matter will no doubt be ultimately looked upon as an agricultural grievance which, in these days of free trade and no protection to any one party, we may hope to see abrogated in a very few years. Another most important item in leases is in regard to steadings. The importance of a tenant having sufficient accommodation for the rearing and feeding of all kinds of stock cannot be overrated, and more especially when he is now laid open to competition from all quarters of the world. There is another point which I must not omit to notice, and that is as regards game, as, in most leases, the game is generally reserved by the proprietor. This subject, I believe, has been the cause of more heart-burnings and quarrels between landlord and tenant than almost any other; and, besides, these iniquitous and unjust laws have added more than any other to the amount of crime in the country. There is no point on which a tenant should be more guarded than in taking a farm in the neighbourhood of a game preserve, as although he may have provisions for damages, still he is sure to find to his loss that these damages always fall short of the injury done. Every tenant, in my opinion, should have the power to shoot over his own farm; and it has been found, in every instance where a tenant has been granted that right, that the landlord has always had as much game as offered sufficient sport, and such a quantity at the same time as would do no great injury to the crops. In England I am aware that the most scientific farmers do not care for leases at all, provided they have tenant right; and I am quite of that opinion myself; that I would rather farm a land with no lease and with tenant right, than with the generality of leases and no tenant right. If the two, however, can be judiciously combined in the manner I have stated, a system would be formed whereby the tenant would not only be encouraged to improve the condition of his land, but have a motive to maintain it in that condition, whereby the landlord would be secured of his land being permanently improved, and of its yielding him a greater return by another lease, whereby the country would be advantaged by a higher cultivation, and the public benefited by an increased productiveness of the soil. Before sitting down, I beg, in connection with the remarks I have made, to propose the following resolutions:—1st. It is of the utmost importance to the progress of agriculture, that an intelligent and friendly relation should subsist between landlord and tenant, whereby confidence should be secured between the parties, so that their interests should harmonise, and every means should be taken by the principal contracting party to establish and consolidate that system which is best suited to the respective districts. 2d. The first external symptoms of an advanced state of agriculture are apparent in a well-regulated system of rotation of cropping, but that the experience of one period is too often perpetuated in leases from one generation to another, and what was suited for one stage of agriculture becomes detrimental towards its progress in another. 3d. That remuneration to the tenant for unexhausted improvements at the end of his lease is quite indispensable to maintain the soil in a fertile condition at its termination.

Mr. HAXTON, Drumnod, in seconding the adoption of the first resolution, said there was one statement in the resolution which he thought very important, to the effect that "an intelligent and friendly relation should subsist between landlord and tenant, in order that their interests should harmonise." How was it possible to make them harmonise? In all ordinary bargain-making it was the generally-received maxim that the seller should sell as high as he could, and the buyer buy as cheaply as he could. Now, in individual cases, and applied within certain limits, this maxim was a correct one, but beyond these limits it came to be far from safe. It was perfectly evident that in commercial transactions, if any party should for a lengthened period sell their articles at a higher value than they were worth—and they knew of many instances where this was the case—sooner or later a reaction must take place, whereby they themselves in the long run were the sufferers. In fact, there could not exist a condition of matters where any kind of property sold above its value could continue long to retain its value, because those who are purchasing it must be losers, and those who are selling it must be losers by destroying their customers. How did this apply to agriculture? The landlord was probably not exactly in the position of a seller, but he was in the position of a lessor. He lets his land, and whenever they found a landlord acting on the principle of taking the highest rent for his land, there they would find a reaction must take place which would ultimately injure the landlord himself. It was a self-evident truth that moderately-rented land would in the long run better remunerate the landlord than high-rented land for a short time. When land was overset, the tenant was continually hampered. It was up-hill work with him. He was giving more than the natural value of the land. Rent was the excess of produce after paying for labour, manure, interest of capital, and tenant's profit; and wherever the rent was more than that excess, it must encroach upon one or other of these sources of produce. He believed it first encroached upon the tenant's profits, then his capital, and ultimately upon his expenditure. Whenever the tenant was obliged to draw in his expenditure on the land, then the produce of the land begins to fall below its normal quantity, and both parties will suffer in such circumstances. (Applause.) If he had defined rent properly, the thing became a matter of simple calculation for those who had land to take. If they offered more as rent than the excess of produce over manure, labour, interest of capital, and tenant's profit, they had themselves to blame. They could hardly blame the landlords of the country for taking more for their land than its real worth. How often did they see scores of farmers after one farm, and never so many offers for it, much above the value of the land? They had themselves to blame in such circumstances. (Hear, hear.) The value of agricultural produce had suddenly changed, and all their calculations had been frustrated, because they were not receiving from the produce of the soil what they originally bargained for. Where there were existing leases taken under higher prices, it was a matter of moral duty for the landlord to take into account the condition of his tenant who took the land under these high rates. There was a responsibility laid upon them; they had their own and the tenant's interest to look after. If their tenants were paying more than its natural value for the land, it was perfectly evident that they themselves must ultimately suffer; and they would suffer first by the tenant's taking as much out of the land as would enable him to meet the demands of the landlord. There were one or two other points which he would merely notice, as coming more particularly under the first resolution. Leases had been framed of late years all upon the same principle, as if farming was like making shoes, or any other article of manufacture—as if all land and all climates were alike. No principle could be more pernicious than this when applied to practical agriculture. He quite agreed with the latter part of the resolution, where it was said that "every means should be taken by the principal contracting party to establish and consolidate that system which is best suited to the respective districts." Their leases, taking them as they are written out, were decidedly far more cumbrous and verbose than there was any necessity for. They had page after page of bad language and worse grammar, endeavouring to explain to them certain conditions which any man could tell another in two or three sentences. These things should all be abolished, for they had to pay for them all. The lawyers should set their brains asteep—though he could hardly expect them to do what was against their own interest—in order to shorten and simplify these cumbrous leases. Mr. Haxton then referred to the two payments, "kane" and "carriages," often introduced into leases, characterising them as unpleasant and absurd arrangements, often put into leases without reference at all to their being part of the value of the farm. He hoped the landlords would see it their duty to do away with these old feudal usages, and place their business transactions on a business footing.—Mr. RUSSELL, Kilwhiss, next rose to support the second resolution; and after some prefatory observations as to the necessity of farmers being dealt liberally with in the matter of rotations, spoke as follows:—Leases are often framed very absurdly in the matter of rotation. In some leases which have respect to certain kinds of land, there is a great aversion shown towards Wheat being too often repeated in the rotation. Now, in my opinion, this entirely arises from a misconception that does not reflect much discrimination in those who do so. By them, Wheat is considered a most exhausting crop, which deteriorates the land more than any other. Now this, I may say, entirely arises from the confounding of principles which are entirely different. Land, no doubt, requires to be in a higher condition to raise Wheat than Oats or Barley; but, then, why not encourage this higher condition? You have not the slightest grounds for supposing that the land is more exhausted with Wheat than with other spring crops; but, on the contrary, in almost every lease, Barley is permitted to be sown after Wheat. Now, if the land had been so much exhausted after carrying Wheat, why is it able to grow a good crop of Barley? The one proposition is set in downright mockery to the other. But the real fact is, you cannot reduce the fertility of land by Wheat, because it will not pay any one to sow it where the land is out of condition. You must employ Oats or Barley, which are the real scourgers, simply because they can maintain a much more successful struggle in poor, worn-out, and foul land than Wheat can do. You cannot really reduce land by Wheat to the same wretched condition as you can do with Oats and Barley, and at the same time have any chance of doing it so profitably. Then, would it not show as much common sense in those who prescribe rotations to exclude the growth of Oats and Barley, as a means of maintaining fertility in land, than the suicidal one of being afraid that too great an extent of Wheat will be grown. Wheat will only be grown when the land is in a condition to do so. The cultivation of Wheat in the general farming of Scotland has steadily increased with the larger amount of stock and manure applied to the land. I do not mean to say whether it is more profitable to grow Wheat or the other spring crops at present prices; but this I will maintain that it shows great ignorance of practical agriculture to discourage the growth of Wheat on the supposition that it deteriorates and wastes the land, for it should rather be looked upon as a test of its condition and improvement that it is able to grow it. Let landlords and tenants, then, endeavour to follow such courses as will promote good farming. Our agricultural system is undergoing a severe trial; we have much need of encouragement; it has fallen upon us to feel and bear the change which has taken place; we are in the foreground, but those who are above us must look upon us as their representatives, who are endeavouring to the best of their ability to bear up under the pressure of the times. And no one can deny that the present condition of the tenantry has every claim to the sympathy and consideration of the proprietary, and with the actual results of changes before them, their claims will not be plied in vain.—Mr. HAXTON said he wished to say one word with regard to the important question of the rotation of crops. There were, no doubt, instances in which Barley could be successfully grown after Wheat, but he thought, as a general principle, it might be said that a grain crop extracted from the soil that which a green crop did not extract. If that were correct, all they had to do was to grow a white crop for sale and a green crop for consumption—a white crop to pay the rent, and a green crop to be consumed on the farm to supply manure and keep up the fertility of the land. In these circumstances, the thing was narrowed to a small point—a grain and a green crop alternately. It required no laboured paragraphs to say in a lease that no two white crops shall be grown in succession. This proposition would meet most cases, and would leave the tenant a wide margin upon which to work, as he might grow Wheat, Barley, or whatever he chose, provided he had a green crop intervening. The old-fashioned system of so much for fallow and so much for the different kinds of crops, tied a man down too much; but during the last years of a lease it would be necessary to specify that a certain quantity of Grass should be left upon the farm, and that being specified, he did not think it would be necessary to specify how many acres of white and green crops should be grown.—Mr. RUSSELL, Newmiln, had some difficulty in acquiescing in Mr. Haxton's principle. So far as his own experience went, it was not the principle upon which he would like to work his farm. One very important green crop with him he held to be Clover; and he knew well, from experiments he had made, that he never had Clover at all like a crop unless following Barley after Wheat—two successive white crops. It might be peculiarity of soil, but he would enter into no lease for his land unless he could grow two white crops in succession.—Mr. HAXTON said Mr. Russell had informed them he could not grow good crops of Clover unless with Barley after Wheat. He (Mr. H.) knew a farmer who grew white and green crops alternately, Clover coming in every eight years, and the Clover was always first-rate. He believed that in East Lothian—and the land there was as good as Mr. Russell's—they did not take Barley after Wheat. They always took Turnips after Wheat, and then Barley, and then Clover. If Mr. Russell would extend his rotation to seven or eight years he would grow as good Clover as after Barley. With regard to Mr. Russell's and Mr. Mitchell's remarks about the rules of good husbandry, he would say that a landlord was entitled to insist on a green crop alternately if their land was not sufficiently good to grow Barley after Wheat. In general cases it was not for the advantage of farmer or landlord that two white crops should follow each other. He would give the tenant every liberty at the beginning of his lease, but, in justice to the landlord, would say, at the end of the lease, that he should put the land in such a condition that it could be readily let.—Mr. SHAW said it could not be counted bad farming where a tenant succeeded in raising an excellent crop of Clover even by sowing Barley after Wheat.—Mr. LANDALE, Coalzie, said he thought the tenant ought to be left entirely to his freedom in the matter of cropping. Mr. Haxton had referred to farms in England where Clover came in once in eight years; but if on good land they could produce Clover once in five years by growing Barley after Wheat, surely that system must be considered immeasurably superior to the one which only produced it once in eight years. It was a most extraordinary fact that the premium for five acres of Wheat taken that day was for Wheat sown after Oats by Mr. Honeyman. If Mr. Haxton's system of alternate white and green crops had been carried out, they would not have had that Wheat on the ground at all. They were told, on the one hand, by Mr. Haxton to adopt every new improvement to enable them to meet the times, and, on the other hand, he would so restrict them as to make this impossible.—Mr. HAXTON complained that Mr. Landale had left altogether out of view what he started with, that there were exceptional cases in which Barley could be grown after Wheat. He was speaking of farms generally, and he was affirming what would be for the benefit of farms generally, namely, that farmers should not take two white crops in succession on average lands, at least during the last two years of the lease. No doubt, if they had a proper tenant-right, full compensation for unexhausted improvements, there would be no necessity for such restrictions. (Hear, hear). If, however, there was to be tenant-right there must also be landlord-right, and if a tenant deteriorated his land, he must also pay his landlord compensation for the amount of that deterioration.—After some further discussion, it was agreed, in order to bring the matter to a bearing, to take the opinion of the meeting on the following motion, by Mr. Landale: "That it is the opinion of this meeting that the practice of taking Barley after Wheat cannot be considered bad farming." The vote being taken, 12 voted for the motion, and as none voted against it, the Chairman declared it carried.—Mr. HAXTON then proposed a motion to the effect that the landlord was justified in insisting that alternate white and green crops should be grown during the last five years of the lease, which was put to the vote, and lost by 13 to 6.

## Miscellaneous.

*The American Reaping Machines.*—The following is an extract from a report of the jury appointed by the committee of the Cleveland Agricultural Society, on the comparative merits of the reaping machines of Mr. M'Cormick and Mr. O. Hussey, tried and tested before the jury, on Thursday and Saturday, Sept. 25 and 27, 1851:—"The jury regret exceedingly the most unfavourable state of the weather on the days of trial (a perfect hurricane blowing the whole of the first day), and their consequent inability to make so full and satisfactory a trial as they could have wished. The machines were tested on a Wheat crop, computed at 25 bushels per acre, very much laid; and on Barley at 25 bushels per acre, very short in the straw, and, if possible, more laid than the Wheat. The jury, taking the different points submitted to their consideration, express—1. Their unanimous opinion, that Mr. Hussey's machine, as exhibited by Messrs. William Dray and Co., cut the corn in the best manner, especially across ridge and furrow, and when the machine was working in the direction the corn laid. 2. By a majority of 11 to 1, that Mr. Hussey's machine caused the least waste. 3. Taking the breadth of the two machines into consideration, that Mr. Hussey's did most work. 4. That Mr. Hussey's machine leaves the cut corn in the best order for gathering and binding. This question was submitted to the labourers employed on the occasion, and decided by them, as above, by a majority of 6 to 4. 5. Their unanimous opinion that Mr. Hussey's machine is best adapted for ridge and furrow. 6. That Mr. Hussey's machine at first cost is less price. The trials took place on the farm of Robert Fawcitt, of Ormesby, near Middlesborough-on-Tees, who, in the most liberal and disinterested spirit, allowed his crops to be trodden down and damaged to a very great extent, especially on the 25th, when, in spite of the storm, an immense crowd assembled to witness the trials. The jury cannot conclude their report without expressing the great pleasure they have derived from seeing two machines brought into competition that were able to do such very good work; and also at witnessing the friendly, straightforward, and honourable way, in which the exhibitors of the machines met on this occasion." *Morning Chronicle.*

*Gorse.*—Thomas Matthews, Esq., of Park Hall, near Kidderminster, in a letter to Mr. Saunders, states that he took a field of 10 acres for cultivating Gorse, at a rent of 10*s.* per acre; the soil was of a thin, light character, intermixed with very coarse gravel, resting upon red sand. The seed was sown in 1842, in drills, 12 inches apart, and at the rate of 20 lbs. per acre; it was cut the second year after sowing, and in December, 1845, the crop was weighed and found to produce nine tons to the acre. Gorse arrives at maturity in four years, and should be cut every year; for this purpose a broad strong scythe is used; the cost per acre, with assistance in loading, being 16*s.* per acre. From January 1st to April 26th, 1846, Mr. Matthews had eight horses and 16 cows, consuming each two bushels per day, and 100 ewes, eating 12 bushels per day, making a daily consumption of 60 bushels—say 400 bushels weekly, 2½ tons, a heaped bushel weighing 14 lbs. The Gorse, after being cut, is passed through three rollers of different velocities, at one operation, and the weekly expense of providing for the above animals is stated as follows:—Rent and taxes, 6*s.*; cutting, 8*s.*; carting, 4*s.*; man and boy attending the machine, three half days, 4*s.* 6*d.*; power, coal, (one ton), 6*s.* 6*d.*; engine-man three half days, 6*s.*; making a total of 1*l.* 18*s.*, the cost per ton being 14*s.*; but as double the quantity may be done for the same cost, if carried on upon a larger scale, the cost per ton may be more accurately stated at 7*s.* per ton. The simple machinery required might easily be added to water corn mills, thus still further economising the cost of crushing. Mr. Matthews sometimes mixes equal parts of cut hay and straw, in the proportion of two-thirds Gorse to one-third cut hay and straw. The horses work upon it with less corn than with any other description of food. For barren cows it has constituted their entire food, and they thrive upon it as well as upon the best meadow hay. To milking cows he gives two pounds of oilcake daily, with the above mixture. The Gorse imparts to milk and butter a sweet and agreeable flavour. He give his ewes, 100 in number, 25 lbs. per day of oilcake, with their Gorse, and they have done well; their lambs are better than any in the neighbourhood, and he did not lose one, although great mortality prevailed around him. *Notes on Lancashire Agriculture.*

METEOROLOGICAL REPORT.—OCTOBER—NOVEMBER.
*(Continued from p. 702.)*

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| * Oct. 30 | 7.40 a.m. | ... | 29.35 | P.M. NNW. Brisk. Barometer rising steadily. |
| | 10.10 p.m. | 29.51 | ... | |
| 31 | 7.30 a.m. | ... | 29.53 | A.M. NNE. Stiff breeze; overcast. P.M. NW. to WNW. Moderate, fine, and sunny. Barometer steady. |
| | 10.15 p.m. | 29.54 | ... | |
| Nov. 1 | 7.25 a.m | ... | 29.49 | A.M. W. Barometer falling. |
| † | 11.30 a.m. | 29.50 | ... | Noon, WNW. Brisk, sunny; cold, passing showers. Barometer rising. Evening, NW. Moderate. |
| | 11 p.m. | 29.49 | ... | Night. Barometer falling. |
| ‡ Sun. 2 | 7.50 a.m. | ... | 29.29 | WNW. A.M. Noon, NW. Barometer rising all day. |
| | 10.30 p.m. | 29.56 | ... | Fine, with occasional showers. |
| 3 | 8 a.m. | ... | 29.68 | NNW. Stiff breeze. Fine. Barometer rising steadily. |
| | 10 10 p.m. | 29.85 | ... | |
| 4 | 7.35 a.m. | ... | 29.70 | N. Brisk. Bright and sunny. |
| § | 10.50 p.m. | 29.90 | ... | Barometer rising steadily. |

* Continuation of preceding storm, which lay to the northward, and was travelling eastward.

†‡§ These are all storms coming from the westward, and crossing England (or Scotland) to the eastward. It will be observed that whenever the wind veers from west towards the north, the barometer rises, and then falls as the wind goes back to the westward.

Dorchester Nov. 5. *F. P. B. M.*

*(To be continued.)*

## Notices to Correspondents.

ASPHALTE: *W M.* Will any of our correspondents give a recipe for the cheapest durable asphalte which will bear a cart, and do for barn floors.

CHICORY: *J M* It should be cut into pieces an inch or an inch and a half long. A common box chaff-cutter, worked by a dexterous hand, would do for them very well.

CHURN: *Constant Subscriber.* The American churn is made to churn 10 or 12 lbs.; and it does its work well and speedily.

COMPOUND FLOWERS: *K B.* What do you mean by "compound flowers?" Clovers do not belong to the natural order Compositæ.

DEALERS: *Dulce et Utile.* We must not advertise dealers. They advertise themselves in our columns.

MANGOLD WURZEL: *G S.* In the *Agricultural Gazette*, October 4, Calendar of Operations, Dorset Farm, gives an account of the store pigs being fed entirely from the last year's Mangolds, up to that time. Would he be so good as to say in what state the Mangolds are given, whether raw and whole, as they come from the heap, or are they cut or boiled, and would he also give the method of storing.

SOFT BUTTER: *Northwood.* Try Bean-meal in place of linseed.

PIGS: *M N.* "Ringing" is the only remedy we know of.

POULTRY: *Godstone.* Cochin China fowls, at four months old, will easily bear a long journey. They should start by an evening or night train. *J. Baily, 113, Mount-street.*

ERRATUM. In the article on "Granite Manure" in our No. for Oct. 18, for "*Silenic* acid," read "*Silicic* acid."

# Markets.

## COVENT GARDEN, Nov 8.

English Pine Apples continue plentiful, and Grapes, both foreign and English, are also abundant. Pears are still brought from the Continent. The best English kinds fetch 2s. to 4s. a doz., and 8s. to 12s. per half sieve. Oranges are coming in plentifully. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are still a little cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Melons, each, 1s to 2s | — per 100, 6s to 10s |
| Apples, kitchen, p. bsh., 1s to 2s 6d | Nuts, Barcelona, p. bsh, 20s to 22s |
| Pears, dessert, p. doz., 2s to 4s | — Brazil, p, bsh., 12s to 14s |
| Lemons, per doz., 1s to 2s | Filberts, per 100lbs., 70s to 90s |
| Walnuts, per bush., 12s to 24s | |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 6d to 8d |
| French Beans, p. h. sieve, 2s to 4s | Artichokes, per doz., 4s to 6s |
| Broccoli, per bunch, 3d to 1s | Lettuce, Cab., p. score, 4d to 1s |
| Peas, per sieve, 6s to 8s | — Cos, per score, 3d to 1s |
| Potatoes, per ton, 45s to 80s | Small Salads, p. punn., 2d to 3d |
| — per cwt., 2s to 5s | Horse Radish, p. bundl., 1s 6d to 4s |
| — per bush., 1s 6d to 2s 6d | Red Beet, per doz., 1s to 2s |
| Turnips, p. bunch, 2d to 3d | Mushrooms, p. pot., 1s to 1s 6d |
| Cucumbers, each, 1d to 1s | — per bushel, 7s to 10s |
| Radishes, per doz., 9d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| — Turnip, p. doz., 1s to 1s 6d | Tomatoes, p. half sieve, 3s to 4s |
| Celery, p. bundle, 6d to 1s 6d | Fennel, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Savory, per bunch, 2d to 3d |
| Brussels Sprouts, per hf. sieve, 1s 6d to 1s 9d | Thyme, per bunch, 2d to 3d |
| | Parsley, per doz. bun., 2s to 3s |
| Spinach, per sieve, 1s 6d to 2s | — Roots, p. bundl. 9d to 1s |
| Veget. Marrows, p. dz., 1s to 1s 6d | Mint, per bunch, 1d to 2d |
| Onions, p. bunch, 1d to 5d | Basil, p. bunch, 3d to 4d |
| — Spanish, p. doz., 1s 6d to 3s | Marjoram, do., 3d to 4d |
| Leeks, per bunch, 1d to 2d | Watercress, p. 12 bunch., 4d to 6d |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 6.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 72s | to 78s | Clover ... ... ... | 70s | to 85s |
| Inferior ditto ... ... | 60 | 68 | 2d cut ... ... ... | 60 | 72 |
| Rowen ... ... ... | 60 | 65 | Straw ... ... ... | 23 | 27 |
| New Hay ... ... | — | — | | J. COOPER. | |

The supply large and trade heavy.

CUMBERLAND MARKET, Nov. 6.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 75s | to 80s | Inferior ... ... ... | 65s | to 75s |
| Inferior ditto ... ... | 60 | 70 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | 24 | 28 |
| Old Clover ... ... | 80 | 86 | | JOSHUA BAKER. | |

WHITECHAPEL, Nov. 6.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 72s | to 80s | Old Clover ... ... | 84s | to 90s |
| New Hay ... ... | 65 | 72 | Inferior ditto ... | — | — |
| Inferior ditto ... | 50 | 60 | New Clover ... ... | 75 | 84 |
| Straw ... ... ... | 21 | 24 | Inferior ditto ... ... | 50 | 65 |

### COAL MARKET.—FRIDAY, Nov. 7.

Hollywell, 17s.; Wallsend Gosforth, 19s.; Wallsend Hetton, 20s.; Wallsend Lambton, 20s.—Ships at market, 44.

### HOPS.—FRIDAY, Nov. 7.

Messrs. Pattenden and Smith report that since the declaration of the duty the trade has improved for middling and fine samples, which are now becoming scarce.

| | | | | | |
|---|---|---|---|---|---|
| Mid & East Kents | 160s | to 252s | Sussex ... | ... 100s | to 130s |
| Weald Kents ... | 126s | to 147s | Yearlings ... | ... 95 | —112 |

### POTATOES.—MONDAY, Nov. 3.

The committee report that the market is well supplied both coastwise and by rail. Trade is exceedingly heavy, and it is with difficulty the following quotations are realised:—York Regents, 60s. to 70s.; Scotch do., 40s. to 50s.; Kent and Essex do., 50s. to 60s.; ditto Shaws, 45s. to 50s.; Lincolnshire whites, 40s. to 50s.

### SMITHFIELD, MONDAY, Nov. 3.

Last Monday's improvement in trade has caused a considerably increased supply of Beasts to this day's market. There is consequently a slight reaction, but the choicest descriptions still make 3s. 8d., the reduction being chiefly discernable in inferior qualities. The number of Sheep is small—equal, however, to the demand, and we are not enabled to quote higher prices; a few of the choicest kinds may be stated the turn dearer. Good Calves are freely disposed of, at fully late rates. From Holland and Germany there are 1612 Beasts, 4680 Sheep, and 168 Calves; and 2050 Beasts from the northern and midland counties.

| Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 6 to 3 | 8 | |
| Best Short-horns | 3 | 4 — 3 | 6 | |
| 2d quality Beasts | 2 | 4 — 2 | 10 | |
| Best Downs and Half-breds ... | 4 | 0 — 4 | 2 | |
| Ditto Shorn ... ... | | | | |

| Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools . | 3 | 8 to 3 | 10 | |
| Ditto Shorn ... | | ... | | |
| Ewes & 2d quality | 3 | 2 — 3 | 6 | |
| Ditto Shorn ... | | ... | | |
| Lambs ... ... | 0 | 0 — 0 | 0 | |
| Calves ... ... | 3 | 0 — 4 | 0 | |
| Pigs ... ... | 3 | 4 — 4 | 8 | |

Beasts, 5451; Sheep and Lambs, 25,370; Calves, 218; Pigs, 510.

FRIDAY, Nov. 7.

It was expected there would have been several Beasts left over from Monday, but considerable business was done towards the close. This day's supply is short, and we are consequently enabled to retain Monday's quotations, although the demand is not extensive. The number of Sheep is small, but sufficient; prices remain unaltered. The non-arrival of some Dutch boats causes an unusually small supply of Calves, and a consequent increased activity in trade. From Germany and Holland we have 98 Beasts and 60 Calves; and 125 Milch Cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 | 6 to 3 | 8 |
|---|---|---|---|
| Best Short-horns | 3 | 4 — 3 | 6 |
| 2d quality Beasts | 2 | 4 — 2 | 10 |
| Best Downs and Half-breds ... | 4 | 0 — 4 | 2 |
| Ditto Shorn ... ... | | | |

| Best Long-wools . | 3 | 8 — 3 | 10 |
|---|---|---|---|
| Ditto Shorn ... | | ... | |
| Ewes & 2d quality | 3 | 2 — 3 | 6 |
| Ditto Shorn ... | | ... | |
| Lambs ... ... | 0 | 0 — 0 | 0 |
| Calves ... ... | 3 | 4 — 4 | 0 |
| Pigs ... ... | 3 | 4 — 4 | 8 |

Beasts, 891; Sheep and Lambs, 3550; Calves, 179; Pigs, 560.

### MARK LANE.

MONDAY, Nov. 3.—There was a fair supply of Wheat by land carriage samples from Kent, but small from Essex; the whole was a slow sale on the terms of this day se'nnight. Foreign met s me inquiry, but the state of the English market induced buyers to hold off, and the sale was limited, last week's prices being with difficulty obtained.—There is a good demand for Barley, and foreign is 1s. per qr. dearer.—Peas are unaltered in value.—Beans sell readily at rather more money.—The Oat trade is very firm, and in some instances a slight advance is established on last week's prices. We observe no alteration in the sale or value of Flour.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 38—41 | Red ..... | 35—38 | |
| — — fine selected runs... | ditto | 40—44 | Red ..... | 38—40 | |
| — — Talavera ..... | | 44—46 | | | |
| — Norfolk, Lincoln, & York... | White | 34—36 | Red ..... | — | |
| — Foreign ..... | | 31—48 | | | |
| Barley, grind. & distil., 24s to 25s... | Chev. | 28—31 | Malting . | 25—28 | |
| — Foreign... | grinding and distilling | 22—25 | Malting . | — | |
| Oats, Essex and Suffolk ..... | | 16—20 | | | |
| — Scotch and Lincolnshire... | Potato | 19—24 | Feed ..... | 18—21 | |
| — Irish ..... | Potato | 18—21 | Feed ..... | 18—20 | |
| — Foreign ..... | Poland and Brew | 18—22 | Feed ..... | 16—19 | |
| Rye ..... | | 28—30 | Foreign . | — | |
| Rye-meal, foreign..... | per ton | — | | | |
| Beans, Mazagan ... ..24s to 27s..... | Tick | 25—30 | Harrow . | 25—30 | |
| — Pigeon.....26 — 32... | Winds | 30—33 | Longpod | 24—26 | |
| — Foreign ..... | Small | 21—29 | Egyptian | 22—24 | |
| Peas, white, Essex and Kent..... | Boiler | 28—30 | Suffolk.. | 29—32 | |
| — Maple.....27s to 29s ..... | Grey | 24—26 | Foreign . | 26—31 | |
| Maize ..... | White | — | Yellow ... | — | |
| Flour, best marks delivered ... | per sack | 35—39 | | | |
| — Suffolk ..... | ditto | 25—32 | Norfolk . | 25—32 | |
| — Foreign ..... | per barrel | 15—21 | Per sack | 28—33 | |

FRIDAY, Nov. 7.—The arrivals of English grain since Monday have been moderate, but we have a good supply of Wheat from the Continent, and of Oats from Ireland. This morning's market was thinly attended, and great indifference to purchase Wheat was generally evinced, and prices of both English and foreign remain unaltered.—Barley is in good demand, at the extreme rates of Monday.—Beans and Peas are unaltered in value.—The trade for Irish Oats is dull; foreign remain as last quoted.—Good qualities of Flour are in request at the extreme prices of Monday.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2010 | 2990 | 950 | 1450 sacks |
| Irish ..... | — | — | 15870 | |
| Foreign ... | 9240 | 570 | 11680 | 3140 brls |

| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Sept. 27..... | 36s 7d | 25s 0d | 18s 0d | 25s 4d | 28s 8d | 27s 0d |
| Oct. 4..... | 35 7 | 25 1 | 17 6 | 24 2 | 27 10 | 27 1 |
| — 11..... | 35 6 | 25 2 | 17 3 | 25 0 | 27 8 | 26 2 |
| — 18..... | 36 0 | 24 9 | 17 0 | 23 6 | 27 6 | 27 2 |
| — 25..... | 36 9 | 25 5 | 17 5 | 23 8 | 28 6 | 27 7 |
| Nov. 1..... | 36 6 | 25 7 | 17 5 | 24 10 | 28 6 | 27 5 |
| Aggreg. Aver. | 36 2 | 25 2 | 17 5 | 24 5 | 28 1 | 27 1 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | SEPT. 27. | OCT. 4. | OCT. 11. | OCT. 18. | OCT. 25. | NOV. 1. |
|---|---|---|---|---|---|---|
| 36s 9d— | ... | ... | ... | ... | ... | ... |
| 36 7 | | | | | | |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | ... | ... |
| 35 7 | ... | ... | ... | ... | ... | ... |
| 35 6 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, Nov. 4.—Our market this morning was well attended by home and country millers, with several Irish buyers, directing their attention principally to foreign Wheats, in which a fair business was done at the currency of this day se'nnight, and in a few instances choice qualities were 1d. per 70 lbs. dearer. Farmers' new Wheat moved steadily on the terms last noted. Malting Barley was 1s. per qr. cheaper; grinding samples remaining unvaried. Malt, on the contrary, improved 1s. per qr. In Beans and Peas we have no change to note. Oats were in moderate demand, and steady in value; while Oatmeal receded 6d. per load from last Tuesday's prices. Floating and arrived cargoes of Indian Corn were rather easier to purchase to-day.—FRIDAY, OCT. 31.—Upon a slender attendance of home and country millers at our Corn Exchange to-day the transactions in either English or foreign Wheat were very moderate in amount, but without the sales being pressed, and holders refusing to lower their pretensions, the current rates of Tuesday remained unvaried. Barley, Malt, Beans, and Peas, upon a moderate demand, ruled steady in value. Oats, moving sparingly, were rather cheaper, and Oatmeal declined 3d. per load. Indian Corn dull on the spot, and floating not in active request.


GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and | 6½ | by 4½ | ... ... ... | 13s. 0d. |
| 7 ,, | 5 and | 7½ by 5½ | ... ... ... | 15 0 |
| 8 ,, | 5 and | 8 by 5½ | ... ... ... | 15 0 |
| 8 ,, | 6 and | 8½ by 6½ | ... ... ... | 17 6 |
| 9 ,, | 7 and | 10 by 8 | ... ... ... | 20 0 |
| 12 ,, | 10 and | 13 by 9 | ... ... ... | 20 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ¼ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under | 15 inches | ..... | 6d. per foot. |
| ,, | 35 ,, | ..... | 8d. ,, |
| ,, | 50 ,, | ..... | 9½d. ,, |
| ,, | 75 ,, | ..... | 12d. ,, |

Milk Pans, 2s. to 6s. each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GLASS WATER PIPES.

MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.

Nailsea Glass Works, near Bristol.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | £. s. d. | Packed in Boxes of 100 feet each. | £. s. d. |
|---|---|---|---|
| 16 ozs.... ... 3d. to 3½d. | 0 13 0 | 6 by 4, 6½ by 4½ ... | 0 13 0 |
| 21 do. ... ... 3½d. to 5d. | 0 15 0 | 7 by 5, 7½ by 5½ ... | 0 15 0 |
| 26 do. ... ... 5d. to 7½d. | 0 15 0 | 8 by 5, 8 by 5½ ... | 0 15 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2½d. per foot. | | 8 by 6, 8½ by 6 ... | 0 17 6 |
| | | 9 by 7, 10 by 8 ... | 1 0 0 |

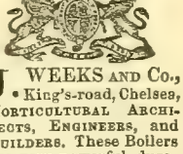
FOREIGN SHEET GLASS, of very superior quality, packed, in cases of 200 feet, and in sizes varying from 36 by 26 to 44 by 30 inches, at 38s., 40s., to 42s. per case.

HARTLEY'S PATENT QUARRY GLASS.

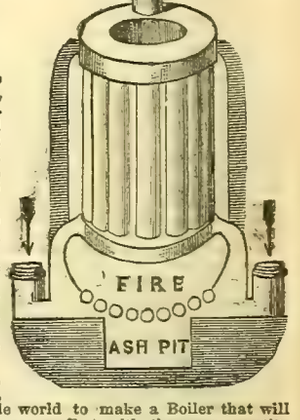
Milk Pans, from 2s. to 6s. each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.




J. WEEKS AND Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

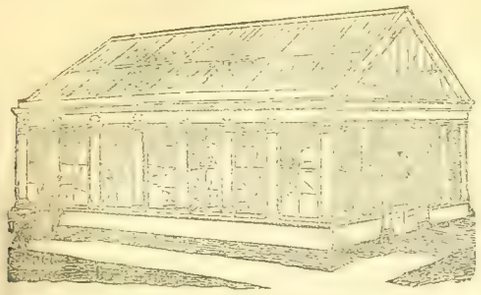
GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½d.; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d. per foot; if glazed with 16 oz. sheet-glass of a large size, 4d. per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

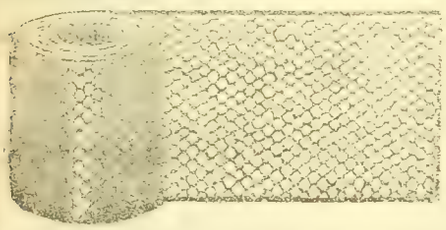


GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

WIRE NETTING ONE PENNY PER SQUARE FOOT.



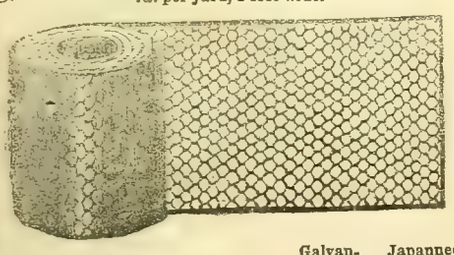
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | | | |
|---|---|---|---|---|---|
| 12 inches wide | 3d. | per yard. | 30 inches wide | 7½d. | per yard. |
| 18 " | " | 4½d. " | 36 " | " | 9d. " |
| 24 " | " | 6d. " | 48 " | " | 1s. " |

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each. Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch " strong " ... | 9 " | 6½ " |
| 2-inch " extra strong " ... | 12 " | 9 " |
| 1⅝-inch " light " ... | 8 " | 6 " |
| 1⅝-inch " strong " ... | 10 " | 8 " |
| 1⅝-inch " extra strong " ... | 14 " | 11 " |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

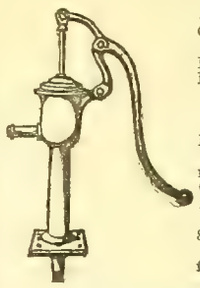
COPPER BOILERS, of various Shapes, for Heating Baths and Conservatories.



Fig. 1. Fig. 2 Fig. 3. Fig. 4.

FIG. 1. TYLOR'S IMPROVED COPPER CIRCULATING BATH BOILER, on Iron Frame complete for fixing.—FIG. 2. COPPER-RIVETTED ARCH-TOP BOILER for large Greenhouses or Public Buildings, from 4 to 40 gallons.—FIG. 3. DOME-TOP COPPERS, with draw-off Cocks, for Public Baths, from 15 to 150 gallons.—FIG. 4. TINNED COPPER COIL PIPES for heating Baths, by passing water through the kitchen range boiler.—Apply to Ironmongers or Plumbers, or to the Manufacturers, J. TYLOR and SON, Warwick-lane, London.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

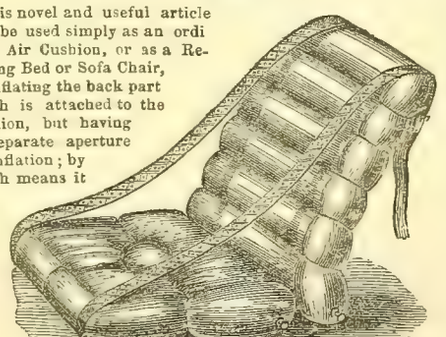
HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2s. 6d. per yard.—Damask Curtains, 10d. per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8s. per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2s. 3d. per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

"FRIGI DOMO."—A Canvas, made of prepared Hair and Wool, a perfect non-conductor of Heat and adapted to many Horticultural and Floricultural purposes for covering over frames where a fixed temperature is required. It is 2¼ yards wide, and of any required length, at 1s. 4d. per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, New Oxford-street, London.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.

This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it



may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

BERDOE'S SUPERIOR OVER-COATS combine, with every other quality essential to a really respectable article, the established reputation of being thoroughly impervious to rain, and are supplied at charges the lowest possible for first-class garments. A very large stock for selection. Also of RIDING and DRIVING CAPES, SHOOTING JACKETS, and of the WATERPROOF PALLIUM, the well-known light Over-coat for all seasons, long regarded as one of the most gentlemanly, economical, and valuable garments ever invented. Price, 45s. and 50s. No slop or inferior goods kept.

96, NEW BOND-STREET, and 69, CORNHILL (only).

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The public is respectfully informed the ALES of this season's Brewings are now ready for delivery, and may be obtained Genuine in Casks of 18 Gallons and upwards, either singly or in any quantity, at their respective Stores, as under, where also a list of the Bottlers may be had:—The Brewery, Burton-on-Trent; 61, King William-street, City, London; Cook-street, Liverpool; High-street, Birmingham; The Exchange, Manchester; Royal Brewery, Dudley, and 33, Virginia-street, Glasgow.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blackfriars, London; and 36, Seel-street, Liverpool.

FORD'S EUREKA SHIRTS and FORD'S EUREKA SHIRT COLLARS are not sold by any hosiers or drapers. The Collars possess an improved method of fastening, which entirely dispenses with the use of strings, loops, or elastic contrivances. Adapted to any size, suitable for once or twice round cravats. They may be had in three different sizes, and either rounded or pointed. Price 11s. 6d. per dozen. Two, as samples, sent post free on receipt of twenty-eight postage stamps.—RICHARD FORD, 185, Strand, London.

THE BIRMINGHAM CATTLE SHOW.—CLOSING OF ENTRIES.—The Certificates of Entry for Cattle, Sheep, Pigs, and Poultry may be had on application to Mr. E. LATHBURY, 2, Insurance-buildings, Union-passage, Birmingham. The Entries close on Saturday the 15th of November.

RANDALL'S PROLIFIC RHUBARB.—In submitting the above to the public, E. R. begs to state, that while possessing all the qualities of Myatt's Linnæus, it is nine days earlier; of superior flavour; upright in growth, and producing large stems all of equal size. Roots 2s. 6d. each. To be obtained of the principal seed-houses in London, and at EDWARD RANDALL'S, Loughboro' Gardens, Brixton, Surrey. Orders accompanied with a remittance will be promptly attended to.—N.B. The usual discount to the trade.

BASS AND BROWN beg to refer to their Advertisement of CHOICE GERANIUMS, in the 2d page of each number of *Gardeners' Chronicle*, of Sept. 27th and Oct. 11th. The plants are exceedingly fine and vigorous. With immediate re-potting, they will make good specimen plants for exhibition next season, with abundant blooms, and will be found very cheap. They also, in the same Advertisements, beg to refer to their select list of NEW PLANTS. Also NEW CHRYSANTHEMUMS, AZALEA INDICA, &c., of which they have a choice assortment, strong and vigorous, and offered at low prices.

12 splendid Stove Plants, for winter and early spring flower, for 20s. 12 beautiful Greenhouse Plants, for do., 15s.

Catalogues on application. Goods free to London, or any part of the Ipswich line to Norwich, and extra plants, gratis, for orders of 40s. and upwards. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CEDRUS DEODARA,

For planting Avenues, single specimens for Lawns, or mixing with Fir and other plantations, grown from seed, either in or out of pots.

MAULE AND SONS respectfully inform Gentlemen about planting, that their immense stock of this most desirable Hardy Ornamental Tree consist of well-grown plants from seed, of all sizes, suited for the above purposes, which are offered by the dozen, hundred, and thousand, on moderate terms. ☞ Prices forwarded on application.

The curious in seminal productions will find by inspecting M. and SONS' Stock, many pleasing peculiarities of foliage in their present state of growth.

Stapleton-road Nurseries, Bristol.

TEN THOUSAND FRUIT TREES, all choice leading sorts, to be sold this autumn, at one-third the usual prices.—The public are respectfully informed that the remaining part of Mr. BELL'S STOCK OF CHOICE FRUIT TREES will be offered at the under-mentioned low prices, all warranted true to name, on his late Nursery Grounds, adjoining the New Church, Lakenham, Norfolk.

| | Each. | Per doz. |
|---|---|---|
| Fine 2-year Trained Peaches, Nectarines, and Apricots ... ... ... ... ... ... | s. d. 1 6 | s. d. ... 15 0 |
| Fine Dwarf Trained Pears, Apples, Plums, and Cherries ... ... ... ... ... ... | 1 0 | ... 9 0 |
| | Per doz. | Per 100. |
| Fine Standard and Pyramidal Pears ... | 9 0 | ... 50 0 |
| " Dwarf do. ... ... ... ... | 6 0 | ... 35 0 |
| " Standard Apples ... ... ... ... | 6 0 | ... 40 0 |
| " Dwarf do. ... ... ... ... | 3 0 | ... 20 0 |
| " Dwarf Plums ... ... ... ... | 5 0 | ... 30 0 |
| " Dwarf Figs ... ... ... ... | 6 0 | ... |
| Fastolf Raspberry Canes ... ... ... ... ... | | 4 0 |

Fine strong Pear Stocks, 30s. per 1000.

" Standard Plum Stocks, 8s. per 100.

Fine Beech and Hornbeam, 5 feet, 3s. per 100; 25s. per 1000. Oaks, 5 feet, 15s. per 1000; large, 8 to 10 feet, 20s. per 100. Ash, 8 to 10 feet, 10s. per 100. Elms, Huntingdon, 5 feet, 3s. per 100.

All communications to be addressed to JOHN BELL, at Mr. Claxton's, Davey-place, Norwich. A reference or Post-office order to accompany each order.

SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

| | |
|---|---|
| Strong well-established plants ... ... | 7s. 6d. |
| Extra ditto, with flowering buds ... ... | 10 6 |

Usual discount to the Trade.

Clapton Nursery, London, Nov. 8.

EXOTIC NURSERY, CHELSEA.

KNIGHT AND PERRY beg respectfully to inform their Patrons, and particularly those who are interested in the introduction of NEW HARDY ORNAMENTAL TREES, that they have now a superb collection of those that are especially suited for the Park, Pleasure-ground, and even Hedge-rows, inasmuch as their judicious introduction there, instead of the too prevalent Elm and Ash, would speedily add much to the beauty of the British landscape. They are now preparing a list of them, and other hardy trees and shrubs, and will be happy to send it to those who apply for it.

Messrs. K. and P. avail themselves of this opportunity to observe that their WALL-TRAINED FRUIT TREES, for which their Establishment has been so long renowned, are now fit for removal. To insure such specimens as they should like to send out, they would respectfully solicit early commands.

KNIGHT and PERRY, Exotic Nursery, Chelsea, London.

TO THE TRADE.

PEAR STOCKS, 3 years transplanted, strong and fine, 30s. per 1000.

CHERRY STOCKS, 3 years transplanted, 3 to 5 feet, fine, 30s. per 1000.

PEARS (Standards), all the leading sorts, fine.

ARBOR-VITÆ (Chinese), 2 to 3 feet, ditto.

LAUREL (Common), 1 to 2 feet, ditto.

RHODODENDRON PONTICUM, 6 to 24 inches, ditto.

YEWS (Common), 2 and 3 feet, ditto.

We have a large stock of the above, and will sell them cheap. Prices on application. Water and rail conveyance to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead Nursery, Newcastle-upon-Tyne.

## *SALES BY AUCTION.*

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction at the Mart, Bartholomew-lane, on THURSDAY, Nov. 13th, 1851, a first-class Collection of DUTCH BULBS, comprising double and single Hyacinths, Narcissus, Crocus, Jonquils, Gladiolus, Snowdrops, Tulips, &c., also Standard and Dwarf Roses, consisting of Hybrid Perpetuals, Bourbons, Chinas, Noisettes, &c., together with a fine assortment of American Plants.—May be viewed the morning of Sale, and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, NURSERYMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Garvie to sell by Auction, on the premises, Maryland Point, Stratford, on MONDAY, Nov. 17, at 11 o'clock precisely, in consequence of the number of lots, about 500 DOUBLE CAMELLIAS, from 1 to 7 feet, beautifully furnished with bloom-buds, comprising all the approved kinds; also 3000 Ericas, in the finest condition; 400 very fine Dwarf Trained Morello, May Duke, and other Cherries; together with a quantity of Green Hollies, Spruce Fir, Laurels, Limes, Rhododendrons, Azaleas, &c. A capital Nest of 170 Seed Drawers.—May be viewed a week prior to the sale. Catalogues had (6*d*. each, returnable to purchasers) on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREENHOUSE AND HOTHOUSE PLANTS.
VERY RARE AND CHOICE RHODODENDRONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. Whalley to offer by Auction, at Fairfield Nursery, Liverpool, on TUESDAY, the 25th, and WEDNESDAY, the 26th, the whole of his valuable Collection of choice and rare RHODODENDRONS, including R. argenteum, barbatum, Falconerii, fulgens, Dalhousianum, Wallichii, and many other varieties figured by Dr. Hooker, and also from Major Madden's very valuable collection from Thibet, &c. Also a large quantity of fine and large Rhododendron hybridum, crossed with especial care from R. arboreum rubrum, arboreum album, campanulatum, cinnamomeum, zeylanicum, with R. alta-clerense, corriaceum, pictum, Victoria, &c.; also crossed with Azalea sinensis, Perryana, indica alba, &c., together with a fine stock of Azalea indica seedlings, Camellias, Pelargoniums, Calceolarias, Chrysanthemums, Lilium lancifolium, extra fine, and a large general stock of Greenhouse Plants. Above 200 Grape Vines in pots from eyes, Carnations, Pinks, Auriculas, fine Standard Dwarf and Moss Roses, Dahlias, and Herbaceous Plants. A large quantity of Standard and Dwarf Fruit Trees, together with Evergreens, and the whole of the Nursery Stock remaining unsold. Also a large Conservatory, four Hothouses, Frames, Handglasses, a large Iron Roller and Second-hand Mowing Machine, and sundry utensils in trade. Catalogues, with full particulars, may be had on the 17th, at the Nursery; the Seed Warehouse, 12, St. George's-crescent, Liverpool; from the Auctioneers; or free by post, on receipt of two postage stamps.

FINAL SALE.—ISLINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the premises, Islington Nursery, about the middle of November (by order of Mr. G. Smith, in consequence of the Land being let for building), the remaining NURSERY STOCK, comprising Rhododendrons, Ghent and other Azaleas, Variegated and Green Hollies, several thousand Aucuba japonica, from 1 to 4 feet; fine Mulberries of different ages, many are fine bearing trees; also Arbor Vitæ, Mezereons, &c.—May be viewed prior to the sale. Catalogues had (6*d*. each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM ROAD.—IMPORTANT SALE OF NURSERY STOCK.

MR. D. A. RAMSAY will submit to public competition at the Brompton Auction Ground, Fulham-road (one mile from Hyde Park corner), on WEDNESDAY, Nov. 19, and following day, at 12 o'clock, a large assortment of Ornamental Trees, Deciduous and Flowering Shrubs, Evergreens, choice Fruit Trees, Bulbs, a Market Cart, and other miscellaneous Nursery Stock.—May be viewed prior to sale, and Catalogues had at the principal seed shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

KING'S-ROAD, CHELSEA.—SALE OF MULBERRY TREES, EVERGREENS, AND OTHER NURSERY STOCK, IN CONSEQUENCE OF THE EXPIRATION OF THE LEASE.

MR. D. A. RAMSAY has received instructions from Messrs. Dennis to submit to Sale by Auction, on the Premises as above, on TUESDAY, ——, and following days, the whole of the valuable Stock of Mulberry Trees (unrivalled in the country), Evergreens, Shrubs, Bulbs, &c., to which he begs to call the attention of the Trade and the Public.—Catalogues will be forwarded on application to the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

LINTON, CAMBRIDGESHIRE. — TO NURSERYMEN, FLORISTS, &c.—COPYHOLD NURSERY, DWELLING-HOUSE, AND FLOWER GARDEN.

MR. WHITTLE will sell by Auction, at the Swan Inn, Linton, on THURSDAY, November 13, at 4 for 5 o'clock precisely, by the direction of the executors, all that COPYHOLD ESTATE, favourably known for half a century past as Gimson's Nursery and Flower Garden, comprising about 1½ acre, with Seed-shop, roomy Dwelling-house, three Cottages, and Out-buildings, abutting on the High Road, Linton, subject to the customary fine on death or alienation. The Quit-rent is 8*d*. only, rendering it nearly equal to a Freehold Investment; whilst to a Nurseryman, Gardener, or Florist it offers peculiar inducements for occupation. The Estate has a beautiful Southern Aspect, with a gentle slope, and is naturally well drained. The Soil is of an extraordinary rich quality, and great ingenuity, combined with sound judgment and infinite taste, is exhibited in the disposition of the Grounds and Flower Garden. It is stocked with an abundance of Bearing Fruit Trees, a fine assortment of Greenhouse and Border Plants, Shrubs, Evergreens, Bulbs, Forest Trees, Ornamental Trees, Rock-work and Pond, remarkably fine cut Yew, and other Arbours and Hedges, Greenhouse, Forcing-pits, &c. It is also suggested, that if the present House and Cottages were removed, the site would be exceedingly appropriate for the erection of a respectable Family Residence, and in that case, with the Garden and Grounds already in a matured state, the property, considering its size, would unquestionably become at once one of the most unique Estates in the county. Linton is only 10 miles from Cambridge, 6 from Saffron Walden, 4 from the Chesterford Station, and 12 from Newmarket. The purchaser will have the option of taking to the whole or any part of the stock of Shrubs, Flowers, &c., at a valuation.—May be viewed at any time prior to the sale, and particulars had on the premises, at the Swan Inn, Linton: at the usual Inns in Cambridge, Saffron Walden, Chesterford, and Newmarket; of Mr. Gimson, Builder, Royston, Herts; of Messrs. Nash and Thurnall, Solicitors, Royston; and at the Auctioneer's Offices, 45, Old-street, St. Luke's, London.

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VALUABLE NURSERY STOCK, HANWORTH-ROAD, HOUNSLOW, MIDDLESEX, NEAR THE RAILWAY STATION.

MR. WATERER will sell by Auction, on the premises, on MONDAY, November 10th, and following day, at 11 o'clock, the property of Mr. J. Riddy, giving up part of his land, comprising 2000 APPLE TREES of sorts, including Hawthornden, Wellington, Early Julien, Manx and Keswick Codlin, White Juneating, and others, true to name; Standard, Dwarf, and Maiden PEARS, CHERRIES, APRICOTS, PEACHES, and PLUMS, of the most approved sorts. Standard Roses, a large quantity of choice Evergreen & Flowering Shrubs, Portugal and Common Laurel, Laurestinus, Spruce, Scotch, and Larch Firs; Hornbeam, Limes, Poplars, Sycamores, Weeping Willows, Mountain Ash, Chestnut, and a great variety of other Forest Trees and Nursery Stock, the whole of which is in a safe moving condition.—May be viewed one week previous to the sale, and Catalogues had, upon the premises; of Mr. Charlwood, Seedsman, Covent-garden; and of Mr. Waterer, Auctioneer, &c., Chertsey, Surrey, who will forward them on application by post.

RE EDWARD EVANS, NURSERYMAN AND FLORIST, A BANKRUPT.

MESSRS. CAFE AND REID will sell by Auction, by order of the Assignee, on the Premises, the ARGYLL NURSERY, Paddington-green, on WEDNESDAY, Nov. 12, at 12 for 1 precisely, 8000 Greenhouse Plants, including many very fine Camellias, Gardenias, and Azaleas, and others of a rare description; seven Greenhouses, 12 5, 4, 3, and 2-Light Frames, Pine and Melon Pits, Summer-house, 30 casts of Garden-pots, Iron Roller, and Tools, a Horse, Cart, and Harness, several loads of Dung and Leaf-manure.—May be viewed on Tuesday next, and Catalogues had on the Premises; also of P. Johnson, Esq., Official Assignee, 20, Basinghall-street; of Messrs. Davies, Son, and Campbell, Solicitors, 17, Warwick-street, Regent's-street; and of Messrs. Cafe and Reid, Great Marlborough-street.

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TO GENTLEMEN'S GARDENERS, NURSERYMEN, AND OTHERS.

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A TREATISE ON THE MANAGEMENT AND CULTIVATION OF FOREST TREES. By John Smith, late Gardener and Forester to the most noble the Marquis of Bute, &c.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said County where all Advertisements and Communications are to be addressed to the Editor.—Saturday, November 8, 1851.

# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46—1851.] SATURDAY, NOVEMBER 15. [PRICE 6d.


INDEX.


| | | | |
|---|---|---|---|
| Agriculture, Irish | 729 a | Kitchen garden, to crop | 726 a |
| — and Chemistry | 730 a | Morphology | 733 b |
| Aquatics | 728 c | National Floricultural Society | 727 c |
| Beer, bitter | 733 c | — proceedings of | 727 b |
| Birds, British song | 724 c | Onions, select | 725 b |
| Broccoli, se ect | 726 b | Orchards, preparing ground for | 726 a |
| Calendar, Horticultural | 728 a | Peas, select | 725 c |
| — Agricultural | 734 a | Pelargoniums, select | 726 c |
| Candle tree | 728 a | Planting forest trees | 724 b |
| Charcoal, peat | 733 a | Plum, Golden Drop | 726 a |
| Chemistry and agriculture | 730 a | Roses, yellow, Climbing | 728 c |
| Chrysanthemum shows | 727 a | Salmon, book of the, rev. | 726 c |
| Daubeny's (Dr.) lecture | 730 a | Seeding, thio | 734 a |
| Entomological Society | 726 b | Timber, Plane tree | 725 c |
| Figs, late | 726 a | Trees, forest, to plant | 724 b |
| Fire Annihilator, Phillips's | 723 c | Victoria Regia | 728 a |
| Floricultural Periodicals | 727 b | Vines in pots | 725 c |
| Forest planting | 724 b | Walls, ivy on | 725 c |
| Garden Gleanings, foreign | 725 a | Weather, the | 725 c—734 a |
| Gleanings, foreign garden | 725 a | Woodlands Nursery, noticed | 726 c |
| Ivy on walls | 725 c | | |



DUTCH HYACINTHS for Forcing, 3s. 6d. per dozen; Best do., for Glasses, 6d. to 1s. each. Double Roman and Paper-white Narcissus, 4s. per dozen; Single and Double Duc Van Thol Tulips, 2s. per dozen. Also Crocus, Iris, Jonquils, Narcissus, Anemones, and Ranunculus, of which a priced List may be had free, per post, from A. COBBETT, Italian and Foreign Warehouse, 18, Pall Mall, London.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1½ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Nov. 8.

TO RAILROAD CONTRACTORS, NURSERYMEN, &c.

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For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1s. 6d.; two-bushel, 2s. 6d. Sacks, 2s. 6d. each.

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*** For prices, see front page, Nov. 1, 1851, of this Paper.

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TO PLANTERS.

WILLIAM URQUHART AND SONS, Dundee, respectfully announce that their LIST of PRICES of Seedling and Transplanted FOREST TREES, &c., may now be had on application.—Dundee, Nov. 15.

SUPERB NEW PEA.—THE "NOVEMBER PROLIFIC" supersedes all other varieties, yielding a crop of extraordinary abundance, stands the severe weather better than any others. It is of the richest flavour, and may be sown from November to July without missing a crop. Price 2s. 6d. per quart; to be had from W. HAMILTON, Seedsman, &c., 156, Cheapside, London.—A liberal discount to the Trade.

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STANDISH AND NOBLE'S detailed Advertisement will appear in this Paper on the first Saturday in every Month, to which they invite the attention of all interested in HARDY ORNAMENTAL PLANTS. Their Descriptive Catalogue, with the treatise on the "Cultivation of American Plants," can still be had by enclosing six stamps for postage.

Gentlemen requiring the services of a Landscape Gardener can procure such by applying to the Advertisers.

Bagshot, Surrey, Nov. 15.

CHOICE FLOWER ROOTS.

ASCLEPIAS TUBEROSA, a beautiful hardy Perennial, 2s. 6d. each.

GLADIOLUS GANDAVENSIS, a superb dark variety, 5s. per dozen.

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CROCUS, Dutch Mixed, large roots, 12s. per 1000.

The above may be had of WILLIAM DENYER, Seedsman, &c., 82, Gracechurch-street, London, near the Spread Eagle.

HUNTER'S PROLIFIC CUCUMBER.—This handsome and delicious variety obtained, in June last year, with fruit upwards of 30 inches in length, the Silver Medal at the Botanic Gardens, Regent's-park: and a Certificate of Merit at the Exhibition in July. It has also been awarded Four Prizes at the Highbury Exhibitions. It is white spined, and an extraordinary bearer. To be had in packets of seven seeds, at 5s.; or three seeds, at 2s. 6d., of Mr. HUNTER, 5, King-street, Islington; and at J. G. RENWICK'S Seed Warehouse, 107, St. John-street, Smithfield, London.

H. LANE AND SON, Great Berkhampstead, Herts, having a very large stock of EVERGREEN TREES and SHRUBS suitable for immediate effect in making New Plantations, Avenues, &c., every plant forming a specimen, have selected, as a more ready guide, the following; the different varieties of which will be found under their respective heads in Catalogue of Trees and Shrubs:—

Arbor-Vitæ, 2 to 8 feet.
Arbutus, 3 to 5 feet.
Araucaria imbricata, 2 to 3½ ft.
Cedrus Deodara, 2 to 6 feet.
,, Libani, 2 to 5 feet.
Cryptomeria japonica, 2 to 8 ft.
Cypress, 2 to 5 feet.
Holly, Green, 2 to 4 feet.
,, Variegated, 2 to 4 feet.
Juniper, 2 to 6 feet.
,, Virginiana, or Red Cedar (splendid plants), 3 to 5 feet.
Kalmia latifolia, 3 feet.
Laurel, Common, 3 to 5 feet.
,, Portugal (fine), 3 to 5 ft.
Phillyrea illicifolia, 3 to 5 feet.
Pinus Cembra, 2 to 3½ feet.
,, excelsa (fine), 3 to 4 ft.
,, insignis, 2 to 3½ feet.
,, Pinaster, 2 to 3 feet.
,, Weymouth, 3 to 6 feet.
Abies Douglasii, 3 to 7 feet.
,, Hemlock Spruce, 5 to 7 feet.
,, Khutrow, 2 to 3 feet.
,, Morinda, 3 to 4 feet.
,, Menziesii, 3 to 5 feet.
,, *Spruce, 3 to 5 feet.
Rhododendron, 2 to 8 feet.
Taxodium sempervirens, 2 to 5 feet.
Yew, Common, 4 to 6 feet.
,, Irish, 3 to 7 feet.

* These, the Common Spruce Fir, in two varieties, the White and Black, are splendid plants, bushy, according to their height.

"PINUS AUSTRIACA,"
THE BLACK AUSTRIAN PINE.

LUCOMBE, PINCE, AND Co., have now on sale a large stock of very fine, healthy, strong plants of this truly desirable Pine, from 9 inches to 2 feet high, which, having been frequently transplanted, are very well rooted, and consequently quite safe to remove to any distance, and are of a superior quality (great attention having been paid to their cultivation); price from 20s., 40s., to 50s. per 1000. They have also some of larger sizes, from 3 to 6 feet high, equally safe to move, owing to proper attention having been paid to their roots, at proportionately higher prices.

This noble and most serviceable Pine thrives in bleak and exposed situations even in poor soils), growing rapidly, and producing dense shelter, in places where other trees will not grow. It also succeeds admirably close to the sea, resisting there the spray and roughest winds.

Exeter Nursery, near Exeter, Nov. 15.

JAMES DICKSON, of Acre-lane, Brixton, begs to inform his Floral Friends that, after what has taken place, he will not act as Judge, nor serve on any Committee (after the next Election), with Mr. John Edwards, of Wace Cottage, Holloway.—Nov. 15.

MESSRS. J. AND H. BROWN offer the following desirable Plants, choice Fruit Trees, &c., which they will forward to any part of the kingdom.

| | s. | d. |
|---|---|---|
| FRUIT TREES. | | |
| Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2s. 6d., or, per dozen | 24 | 0 |
| Untrained or maiden ditto, 1s. 6d. each, or per dozen | 15 | 0 |
| Apples, dwarfs and standards of best sorts, per dozen | 15 | 0 |
| Fine Gooseberries, Currants, and Raspberries, per dozen | 3 | 0 |
| Fine Figs, Medlars, Walnuts, and Mulberries, each | 2 | 0 |
| Strong Vines from eyes and layers, in pots, per dozen | 15 | 0 |
| Filberts, new thin shelled and red skinned, per dozen | 3 | 0 |
| AMERICAN PLANTS. | | |
| Andromeda floribunda, fine blooming plants, per dozen | 18 | 0 |
| 25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name | 20 | 0 |
| 25 American Azaleas, ditto ditto | 15 | 0 |
| 6 Andromedas, of sorts, including floribunda | 8 | 0 |
| 6 Kalmias and Ledums, one of a sort, by name | 6 | 0 |
| 12 Hardy Heaths, of sorts ditto | 8 | 0 |
| 25 Hardy American Shrubs, one of a sort, by name | 10 | 6 |
| 12 Rhododendrons, including scarlet, white, and rose, hardy varieties | 12 | 0 |
| New Hardy Yellow Rhododendrons, each, 7s. 6d. to | 10 | 6 |
| Fine Hardy Scarlet Rhododendrons, 2 feet, per dozen | 10 | 0 |
| Fine Rhododendrons, 1 foot, hardy hybrid vars., per 100 | 20 | 0 |
| Cupressus funebris and 6 choice Pinus for | 10 | 0 |
| Cedar of Lebanon, 3 feet, well grown, in pots, per dozen | 10 | 0 |
| 6 Fine Hardy Magnolias, one of a sort, by name | 10 | 6 |
| Glycine sinensis, extra fine, in pots, 15 to 30 feet, each | 3 | 6 |
| 50 Dwarf Roses, on their own roots, by name | 16 | 0 |
| 12 Choice Tea-scented Roses, in pots, for forcing | 9 | 0 |
| Standard and half-standard Roses, per dozen, 12s. and | 15 | 0 |
| Moss Roses, per 100 | 25 | 0 |
| New Crimson Moss Rose, per dozen | 6 | 0 |
| Scotch Roses, one of a sort, per dozen | 6 | 0 |
| White Unique and Red Provence Rose, strong, p. doz. | 3 | 0 |
| Yellow Rose, Fortune's, each | 3 | 6 |
| 12 Berberis, of sorts, including Fortunii | 9 | 0 |
| 12 Greenhouse Azaleas, one of a sort, blooming plants | 25 | 0 |
| 12 Choice Camellias, by name, ditto ditto | 30 | 0 |
| 50 Superior Greenhouse Plants, one of a sort, by name | 45 | 0 |
| 24 Choice Ericas, one of a sort, by name | 15 | 0 |
| 12 Orchidaceous Plants, choice species, and good plants | 30 | 0 |
| 12 Newest Chrysanthemums, distinct varieties | 8 | 0 |
| 12 New Dwarf Liliputian Chrysanthemums, ditto | 10 | 0 |
| Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair | 2 | 0 |
| 24 New French Daisies, by name | 12 | 0 |
| Violets: Arborea, Russian, and Neapolitan, per dozen | 4 | 0 |
| 25 Choice Hardy Herbaceous Plants, named | 7 | 6 |

Rhubarb, Seakale, and new Giant Asparagus plants supplied.

Albion Nursery, Stoke Newington, London, Nov. 15.

TO GENTLEMEN ENGAGED IN PLANTING, &c.

J. J. FOSTER, of the Edgeware Nurseries, has a fine lot of five feet LARCH plants, which are scarce; also an abundance of splendid Evergreens, Fruit and Forest Trees, as well as Standard and Dwarf Roses of the best kinds, at low prices, delivered free in London, or within 12 miles of Edgeware.

A COMPLETE ARBORETUM.

C. LODDIGES AND SONS beg to state that they are now supplying the above, comprising upwards of 1200 species of TREES and SHRUBS, correctly named, for 50*l.*, cash on delivery; and as their collection of hardy plants will have to be dispersed this season, in consequence of the land being let for building, they most respectfully suggest that all persons contemplating the formation of a COMPLETE ARBORETUM should make early application, as the stock of some species is very limited.—Hackney, Nov. 15.

THOMAS HANDASYDE, Glen Nurseries, Musselburgh, by Edinburgh, begs to intimate that he has now fine plants of his new Seedling PANSY, "MAID OF ATHENS," ready for sending out, at 5*s.* each.

The Gardeners' Gazette, of 19th July last, gave the following character of the above:—"PANSIES: *T H, Musselburgh.* Your seedling came to hand in good condition. Upper petal, rich purple, of velvet-like consistency; lower petal broadly margined with the same; centre, pretty straw colour, shaded with ultramarine from the margin; blotch, the same tint, veined with black; eye bright gold; brow white, well raised, and finely arched; size desirable, and shape good."

Also HANDASYDE'S DUKE OF PESTH, and King's MERRY MONARCH, at 18*s.* per dozen, with all the leading show flowers of the season, of which Catalogues may be had.

Fruit, Forest, and Ornamental Trees, with many of the more rare Coniferæ, Evergreen and Deciduous Flowering Shrubs, Roses, Carnations, Pinks, Hollyhocks, Phloxes, &c., with Agricultural, Garden, and Flower Seeds, all from first-rate collections, at moderate prices.

## MAGNIFICENT SPECIMENS OF CONIFERÆ, HARDY ORNAMENTAL TREES, SHRUBS, &c.

LUCOMBE, PINCE, and CO., respectfully call attention to their fine, and perhaps unequalled Stock, of well-grown specimens, capable not only of producing great immediate effect, but also quite safe to remove to any distance, consisting of

Cedars of Lebanon, 6 to 8 feet.
Cedrus Deodara, 6 to 12 feet
Pinus insignis, 3 to 15 ft. *The most ornamental the most rapidly growing: indeed the finest Pine ever introduced.*
Austrian Pine, 2 to 8 feet.
Pinus Cembra, 3 feet.
Juniperus excelsa, 6 to 7 feet.
Biota glauca. *This is one of the handsomest of the Hardy Coniferæ*
Abies Douglasii, 3 to 12 feet.
Abies Menziesii, 3 to 6 feet.
Araucaria imbricata, 4 feet 6 in. high by 5 feet. *Grand specimens.*
Lucombe Oaks, 8 to 12 and 14 ft.
Ford's Oaks, 6 to 8 feet.
Ilex Oaks, 6 to 12 feet.
Scarlet Oaks, 8 to 10 feet.
Quercus ilex macrophylla, 2 to 3 feet. *Lucombe Pince, and Co.'s new Ilex, the finest of all the Hardy Evergreen Oaks.*
Standard Thorns, 9 feet. *Unusually fine, with large heads and straight stems.*
Purple Beech, 8 to 12 ft. *These are truly grand plants.*
Exmouth Magnolias, 3 to 8 ft.
Standard Rhododendrons, 5 to 6 feet.
Rhododendrons. *Fine bushy compact plants finely set with flower buds.*
Irish Yews, 8 to 10 feet. *These are extraordinary plants, unrivalled in size and form.*
Arbutus, scarlet flowered. *The finest variety.*
Arbutus Andrachne hybrida.
Standard Portugal Laurels, 6 feet. *With clean straight stems, and stately heads.*
Yuccas.
Hedera Fægneriana.

And many other things equally fine, but not within the limits of an advertisement; prices and further particulars of all of which may be had on application to them.

N.B.—Experienced Gardeners recommended.

Exeter Nursery, near Exeter, Nov. 15.

RARE OR CHOICE HARDY CONIFERS.

A. PAUL AND SON, Nurseries, Cheshunt, Herts, beg to offer the following, specimens of which were exhibited by them at the Crystal Palace:—

| | *s.* | *d.* | | *s.* | *d.* |
|---|---|---|---|---|---|
| Abies alba glauca, a beautiful silvery variety of the White American Spruce ... ... ... | | | | 21 | 0 |
| „ excelsa monstrosa, a true Weeping Spruce Fir, with cinnamon-coloured bark and thick fleshy leaves ... ... ... ... | 10 | 6 | to | 21 | 0 |
| „ Douglasii, 1 to 3 feet ... ... ... ... | 3 | 6 | to | 7 | 6 |
| „ Morinda, 1 to 5 feet ... ... ... ... | 1 | 6 | to | 5 | 0 |
| Araucaria imbricata, 9 ins. to 3½ feet ... ... | 1 | 0 | to | 21 | 0 |
| Cedrus Africanus, the Silver Cedar of Mount Atlas, 1½ to 3 feet ... ... ... | 2 | 6 | to | 7 | 6 |
| „ Deodara, 1 to 5 feet ... ... ... | 1 | 6 | to | 10 | 6 |
| „ Libani, 1 to 6 feet ... ... ... ... | 1 | 0 | to | 10 | 6 |
| Cupressus funebris, 1 foot ... ... ... ... | | | | 5 | 0 |
| „ Goveniana, 1 to 5 feet ... ... ... | 3 | 6 | to | 15 | 0 |
| „ Lambertiana, 1½ to 5 feet ... ... | 2 | 6 | to | 7 | 6 |
| „ macrocarpa, 1½ to 5 feet ... ... | 2 | 6 | to | 7 | 6 |
| Cryptomeria japonica, 1 to 4 feet ... ... | 1 | 6 | to | 7 | 6 |
| Juniperus chinensis, 1 to 3 feet ... ... ... | 1 | 6 | to | 3 | 6 |
| „ oblonga pendula, 1 foot ... ... ... | | | | 3 | 6 |
| „ excelsa, 1 to 2 feet ... ... ... ... | | | | 2 | 6 |
| „ tamariscifolia, a beautiful plant for rock-work, 1*s*, or, per dozen ... ... ... | | | | 9 | 0 |
| „ Virginiana pendula, Weeping Red Cedar ... ... ... ... ... | | | | 3 | 6 |
| Libocedrus chiliensis, 9 ins. ... ... ... | 5 | 0 | to | 7 | 6 |
| Picea nobilis, 1 to 1½ foot ... ... ... | 5 | 0 | to | 10 | 6 |
| „ Nordmanniana, 6 ins. ... ... ... ... | | | | 7 | 6 |
| „ Pectinata pendula, Weeping Silver Fir, 1 to 2 feet ... ... ... ... ... | | | | 5 | 0 |
| „ Pinsapo, 1 to 2 feet ... ... ... ... | 2 | 6 | to | 7 | 6 |
| „ Webbiana, 1 to 2 feet ... ... ... ... | 1 | 6 | to | 5 | 0 |
| Pinus apulcensis, 1 to 2 feet ... ... ... | | | | 10 | 6 |
| „ ayacahuite, 1 to 2 feet ... ... ... | | | | 7 | 6 |
| „ excelsa, 1 to 5 feet ... ... ... ... | 1 | 0 | to | 5 | 0 |
| „ Hartwegii, 2 feet ... ... ... ... | | | | 10 | 6 |
| „ insignis, 1 to 4 feet ... ... ... ... | 2 | 6 | to | 10 | 6 |
| „ Lambertiana, 15 ins. ... ... ... ... | | | | 5 | 0 |
| „ macrocarpa, 1 to 2 feet ... ... ... | | | | 10 | 6 |
| „ monticolor, 1 to 2 feet ... ... ... | 3 | 6 | to | 7 | 6 |
| „ ponderosa, 1 foot ... ... ... ... | 5 | 0 | to | 10 | 6 |
| „ Russeliana, 1 to 2 feet ... ... ... | 10 | 6 | to | 21 | 0 |
| „ Sabiniana, 1 to 5 feet ... ... ... | 10 | 6 | to | 21 | 0 |
| „ Tenocte, 1½ to 2½ feet ... ... ... | 5 | 0 | to | 10 | 6 |
| Taxus adpressa, 1 to 2 feet ... ... ... | 2 | 6 | to | 5 | 0 |
| „ Dovastoni, 1 foot ... ... ... ... | 2 | 6 | to | 5 | 0 |
| „ gold striped, 1 to 2 feet ... ... ... | 1 | 6 | to | 3 | 6 |
| „ yellow berried ... ... ... ... | 2 | 6 | to | 3 | 6 |
| Taxodium nucleranum, 1 foot ... ... ... | | | | 3 | 6 |
| „ sempervirens, 1 to 4 feet ... ... | 1 | 0 | to | 5 | 0 |
| Thuja aurea, 1 foot ... ... ... ... | | | | 2 | 6 |
| „ filiformis, 2 to 3 feet ... ... ... | 3 | 6 | to | 5 | 0 |
| „ Warreana, 1 to 3 feet ... ... ... | 1 | 0 | to | 2 | 6 |

*With 150 other species and varieties, for which see Catalogue, forwarded free on application.*

The above are all handsome plants; will be carefully packed, and delivered free of carriage to London.

IMPORTANT TO ALL WHO HAVE A GARDEN.

CHALLENGE COMPARISON AND COMPETITION. CARRIAGE PAID.

All orders above 5*l.* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.

100, own selection, two of each kind, 30*s.*; or our selection, in 100 varieties, 42*s.*

100, purchaser's selection, one of each kind, 42*s.*

100 Alpine or Rock Plants, 42*s.*

The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.

Purchaser's, or our selection, from list, per 100, 2*l.* 10*s.*, one of each.

Own do. do. per 100, 1*l.* 10*s.*, two of each.

This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.

HOLLYHOCKS.—No. 1, fine double kinds, all shades of colour, for exhibition, 9*s* per dozen; 50*s.* per 100. No. 2, for border display, 6*s.* per dozen; or 30*s.* per 100. These are selected from the finest collection in the country.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or 10*s.* per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*; or 12*s.* 6*d.* per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20*s.* per 100; fine, 3*s.* per dozen. 2 to 3 feet, extra fine and bushy, 30*s.* per 100; 6*s.* per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40*s.*; per 100, 5*s.* 3 to 5 feet, strong, 45*s.* per 1000; or, per 100, 6*s.*, healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30*s.*; 5 to 6 feet, fine, 40*s.* per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30*s.* per 100; 10 to 12 feet, 50*s.* per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5*l.*; or 18*s.* per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50*s.*; or 9*s.* per dozen, own selection; mixed, 30*s.* per 100, or 6*s.* per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 first-rate sorts, own selection, 21. 10*s*; or 15*s.* per dozen.

50 do. purchaser's selection, 3*l.*; or 18*s.* per dozen.

ERICAS, 50 of the finest sorts grown, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.

„ „ purchaser's choice from list, 3*l.*; or 18*s.* per dozen.

CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21*s.*; or 15*s.* per dozen.

„ „ purchaser's choice, 1*l.* 5*s.*; or 18*s.* per dozen.

The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

SEEDS.

HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25*s.*; 50 fine for 15*s.*; 25 for 8*s.*, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.

CINERARIA, from the choicest sorts, per packet, 2*s.* 6*d.*

PANSY, do. do. do. 1*s.* 6*d.*

HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1*s.* 6*d.*

FRUIT TREES.

GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l.*, in 100 varieties; or 10*s.* per 100, in 50 varieties.

A selection of the choicest description for show, 4*s.* per doz.

The stock extends over 50,000, and is fine and free grown.

CURRANTS.—MAY'S Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25*s.*; or per doz., 4*s.*

Black Naples, the finest black (no other sort grown), 12*s.* per 100, 2*s.* 6*d.* per doz.

Red Grape and Champagne, fine, 10*s.* per 100.

White Dutch, large and fine, 12*s.* per 100, 2*s.* per doz.

APPLES.—Fine clean Standards, 10*s* per doz., 70*s.* per 100.

„ Dwarfs, 8*s.* per doz, 50*s.* per 100.

„ Dwarf trained superior kinds, 2*s* 6*d* each, or 24*s.* p doz.

The collection is very choice, from the Horticultural Society.

PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.

PLUMS and CHERRIES.—All the leading sorts, standards, 18*s.* per doz.

„ „ Dwarfs, fine, 9*s.* per doz.

„ „ Dwarf trained, 3*s.* 6*d.* each, or 36*s.* per doz

APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5*s.* each, 50*s.* per doz.

RASPBERRIES.—Fastolff 3*s.* per doz., 16*s.* per 100.

„ Antwerp Red, 2*s.* per doz., 12*s.* per 100.

„ Monthly, or Double-bearing, 12*s.* per 100, 2*s.* per doz.

STRAWBERRIES.—Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3*s.* 6*d.* per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to JOHN MAY, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shoveilers, gold-eyed and dun divers, Carolina ducks &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

FEATHER GRASS.

WANTED, any quantity, if of approved quality. Sample, and price per pound, addressed to R. Y., Office of this Paper.

ORNAMENTAL PLANTING.

C. LODDIGES AND SONS most respectfully call the attention of Noblemen, Gentlemen, and Public Companies, engaged in Ornamental Planting, to the undermentioned List of TREES and SHRUBS, which they are enabled to offer at an extraordinary reduction in price (for cash only), the land upon which their arboretum is planted being required for building.

Fine trees, from 4 to 10 feet high, of the following genera, comprising a great number of species: Acer, Æsculus, Alnus, Amygdalus, Betula, Cornus, Corylus, Cotoneaster, Crataegus, Cytisus, Fraxinus, Meopilus, Populus, Prunus, Pyrus, Ribes, Robinia, Salix, Sorbus, Spiræa, Tilia, Ulmus, 4*s.* per dozen named, or a selection from the above, 25*s.* per 100 unnamed, and highly recommended for rough planting.

American Oaks in great variety, 10*s* per dozen.

AMERICAN PLANTS.

Azalea pontica, fine bushy plants well set with bloom, 10*s.* p. doz.

„ Ghent and other varieties named, 18*s* per doz.

Rhododendron ponticum and varieties (very fine), 10*s* per doz.

„ campanulatum, 2 to 4 feet diameter, 10*s* 6*d.* to 42*s.* p. doz.

Andromedas in collections, 18*s.* per doz.; Vaccinium ditto, 12*s.* per doz.

N.B. Packing will be charged as low as possible. Post-office orders made payable at Hackney.—Hackney, Nov. 15.

OTHELLO—NEW CARNATION CLOVE—now ready for sending out, at 5*s.* per pair, or 3*s.* per plant.—This will prove to be one of the finest and choicest ever offered to the public. It is the largest and darkest of its kind yet seen, and is of most powerful fragrance; the flowers are of an immense size, with long pod and fine rose-leaf petals, perfectly hardy, and will thrive well in any situation; it was the admiration of numberless spectators while in bloom during the season, and numerous orders taken for it. On the 9th August it was sent to the Editor of the *Gardeners' Chronicle*, and his opinion was given as follows: "A desirable dark Clove, with a strong scent, well worth cultivation." It is warranted to give satisfaction to all purchasers. Also the following, new:

BLACK WALLFLOWER—NEGRESS.—This is a new superb variety, and is superior to all others of similar kinds, the colour of which may be compared to that of a Mulberry when perfectly ripe; it has a fine large spike, is very hardy, beautifully double, a most prolific bloomer, of very superior habit, and delightful fragrance; price 5*s.* per plant. Both of the above varieties only require to be seen to be grown by every one who has a garden of the smallest dimensions.

TILEY'S VIOLA ARBOREA, or Perpetual Tree Violet, true (see *Gardeners' Chronicle* of 1st November), large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen, or 1*l.* per hundred.

Double White Viola Arborea, do. do., 6*s.* per doz., fine plants.

Russian Superb (true), very fine, 3*s* per dozen.

White Russian Superb (true), very fine, 3*s.* per dozen.

Each of the above varieties will be forwarded, postage and package free, to any part, on receipt of a Post-office order, or penny postage stamps to the amount.

The Strawberry Plants, as named and priced in the *Gardeners' Chronicle*, on the 1st November, can be supplied as before.

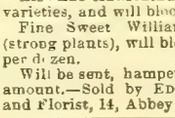
Fine Giant Scarlet Brompton Stocks, 2*s.* 6*d* per hundred.

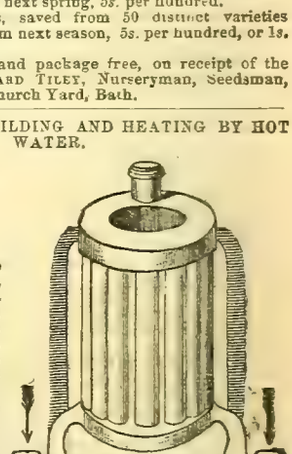
Also fine Antirrhinums, all saved from striped and spotted varieties, and will bloom next spring, 5*s.* per hundred.

Fine Sweet Williams, saved from 50 distinct varieties (strong plants), will bloom next season, 5*s.* per hundred, or 1*s.* per dozen.

Will be sent, hamper and package free, on receipt of the amount.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.






J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

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Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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HENRY BAKER'S (90, Hatton Garden, London), List of Prices. Every instrument made by him warranted accurate.—Vertical self-registering THERMOMETER, for heat and cold, of the best construction, and not liable to get out of order, 14 inches high, in copper case, 1*l.* 5*s*; in japan case, 1*l.* 1*s.*, and 1*l*; 10 inches high, in copper case, 1*l.* 2*s.*; in japan case, 18*s.* Horizontal Thermometers for registering the extreme of cold only, 4*s.* 6*d*; Hot-bed Thermometers, in oak frames, 1*l.* 1*s*; copper frames, 1*l* 5*s.* Thermometers for Brewing, Baths, &c., in copper cases, 14 inches, 7*s.* 6*d.*; 10 inches, 5*s.* 6*d*; 8 inches, 4*s.* 6*d.*; in japan cases, 14 inches, 5*s.*; 10 inches, 3*s.* 6*d*; 8 inches, 2*s.* 6*d.* Dr. Mason's Hygrometer, or wet bulb Thermometer, for showing the humidity of the air, with tables, ivory scale, 1*l.*; wood, 15*s* An invaluable instrument in Hothouses, Sick Chambers, &c. Wheel Barometers from 1*l.* 1*s* each, sent, securely packed, without fear of getting out of order.

COCHIN CHINA POULTRY.—Three pairs of chickens, 15*s.* per pair; five young Cocks, 7*s.* each, or 30*s.* the lot; a Cochin Cock of 1850, 12*s.*; do. crossed with Dorking, 8 lbs. weight, price 6*s.*; do., with Spanish, same weight and price. They are to be parted with immediately, at the above low prices, on account of the bad health of the owner.—Address H. B., Esq., Post-office, Kingston, Surrey.

RANDALL'S PROLIFIC RHUBARB.—In submitting the above to the public, E. R. begs to state, that while possessing all the qualities of Myatt's Linnæus, it is nine days earlier; of superior flavour; upright in growth, and producing large stems all of equal size. Roots 2*s.* 6*d.* each. To be obtained of the principal seed-houses in London, and at EDWARD RANDALL'S, Loughboro' Gardens, Brixton, Surrey. Orders accompanied with a remittance will be promptly attended to.—N.B. The usual discount to the trade.

BASS AND BROWN beg to refer to their Advertisement of CHOICE GERANIUMS, in the 2d page of each number of *Gardeners' Chronicle*, of Sept. 27th and Oct. 11th. The plants are exceedingly fine and vigorous. With immediate re-potting, they will make good specimen plants for exhibition next season, with abundant blooms, and will be found very cheap. They also, in the same Advertisements, beg to refer to their select list of NEW PLANTS. Also NEW CHRYSANTHEMUMS, AZALEA INDICA, &c., of which they have a choice assortment, strong and vigorous, and offered at low prices.

12 splendid Stove Plants, for winter and early spring flower, for 20*s.* 12 beautiful Greenhouse Plants, for do., 15*s.*

Catalogues on application. Goods free to London, or any part of the Ipswich line to Norwich, and extra plants, gratis, for orders of 40*s.* and upwards. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SCARLET GERANIUM "THE AMAZON"

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7*s.* 6*d.*
Extra ditto, with flowering buds ... ... 10 6
Usual discount to the Trade.

Clapton Nursery, London, Nov 15

MESSRS. J. MYATT AND SONS have a Stock of the VICTORIA or RABY CASTLE CURRANT, and can supply good strong Plants at 25*s.* per 100; extra strong, 2 years old, 5*s.* per dozen. Also, a good Stock of 2 year planted Rhubarb roots.

MYATT'S LINNÆUS ... ... 10*s.* per dozen.
MYATT'S VICTORIA ... ... 10*s.* ,, ,,
MITCHELL'S ROYAL ALBERT

Smaller 1 year planted Roots, at 50*s.* per 100.

Manor Farm, Deptford, Nov. 15.

TULIPS, HYACINTHS, LILIUM LANCIFOLIUM, AND DUTCH BULBS GENERALLY.

This being the season for planting these Bulbs,

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to state that he supplies the above FLOWERS of the finest quality, at very moderate prices. His Catalogue may be had on application.

TO THE TRADE.

PEAR STOCKS, 3 years transplanted, strong and fine, 30*s.* per 1000.

CHERRY STOCKS, 3 years transplanted, 3 to 5 feet, fine, 30*s.* per 1000.

PEARS (Standards), all the leading sorts, fine.
ARBOR-VITÆ Chinese), 2 to 3 feet, ditto.
LAUREL (Common), 1 to 2 feet, ditto.
RHODODENDRON PONTICUM, 6 to 24 inches, ditto.
YEWS (Common), 2 and 3 feet, ditto.

We have a large stock of the above, and will sell them cheap. Prices on application. Water and rail conveyance to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead Nursery, Newcastle-upon-Tyne.

EXOTIC NURSERY, CHELSEA.

KNIGHT AND PERRY beg respectfully to inform their Patrons, and particularly those who are interested in the introduction of NEW HARDY ORNAMENTAL TREES, that they have now a superb collection of those that are especially suited for the Park, Pleasure-ground, and even Hedge-rows, inasmuch as their judicious introduction there, instead of the too prevalent Elm and Ash, would speedily add much to the beauty of the British landscape. They are now preparing a list of them, and other hardy trees and shrubs, and will be happy to send it to those who apply for it.

Messrs. K. and P. avail themselves of this opportunity to observe that their WALL-TRAINED FRUIT TREES, for which their Establishment has been so long renowned, are now fit for removal. To insure such specimens as they should like to send out, they would respectfully solicit early commands.

KNIGHT and PERRY, Exotic Nursery, Chelsea, London.

HYACINTHS AND OTHER DUTCH ROOTS *now on Sale at RENDLE'S Nursery and Seed Establishment, Plymouth, at Reduced Prices; a Descriptive Catalogue of which can be had in exchange for one penny stamp.*

All orders above 2*l.* pre-paid to any Station on the South Devon, Bristol and Exeter, or Great Western Railways.

WILLIAM E. RENDLE and Co., Florists to her Majesty, Plymouth.

*** Our Descriptive Catalogue will be found useful, as it contains some good cultural advice.

W. FOSTER, NURSERYMAN, SEEDSMAN, and FLORIST, Stroud, Gloucestershire, solicits the attention of Planters to some very fine, well grown and well-rooted plants of the following, which will be sold low, as the ground must be cleared.

COMMON LAURELS ... ... ... ... ... 3 to 4 feet.
Do. do. ... ... ... ... ... 4½ to 6 ,,
PORTUGAL do. ... ... ... ... ... 3 to 4 ,,
CUPRESSUS SEMPERVIRENS ... ... ... 3 to 4 ,,
Do. do. ... ... ... ... ... 4½ to 5 ,,
BUXUS ARBORESCENS, the True TREE BOX 2 to 3 ,,
Do. do. ... ... ... ... 3 to 4 ,,
A few hundreds of strong Larch ... ... ... 4½ to 6 ,,

HARDY HEATHS—Mediterranea, stricta, and rubra, strong bushy plants, grown without peat.

W. F. has a good supply of strong Quick, Larch, and Forest Trees of all kinds, Evergreen and Flowering Shrubs; also a choice selection of Fruit Trees, both trained and Standards. Prices (according to the number taken) will be sent, on application, with samples, if required.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

# The Gardeners' Chronicle.

*SATURDAY, NOVEMBER* 15, 1851.

OUR readers have not forgotten the discussion in our columns a few years since, concerning what is by botanists called MORPHOLOGY; how some thought the doctrine that flowers and fruits are made of young leaves altered in their development absolutely impious, while others more charitably regarded it as simply absurd. It is needless to say that no enunciation of truth can be impious; or that a doctrine is not necessarily absurd, because it is beyond the comprehension of people unaccustomed to reason. It so happens that the present season has enabled some obliging correspondents to furnish us with evidence upon this subject of so conclusive a character that we think it desirable to produce it, for the sake of showing how completely monstrous productions are capable of being explained by morphological theory, while no other applies to them.

The following cuts represent three Pears, produced in different places, and in different conditions, by which it will be seen that the soundness of the theory in question may be proved, apart from all other proof. A Pear blossom consists of a calyx composed of five sepals; within these appear five petals; next to which stand about 20 stamens; and in the centre of all are five carpels or hollow cases arranged in a ring, and containing seeds. All these parts are regarded in theory as leaves in an altered state, and the whole flower as a very short branch, destitute of the usual power of lengthening, or, which is the same thing, as a leaf-bud, the centre of which will not extend. In the beginning the sepals, petals, stamens, and carpels of a Pear flower were scales, placed upon a fleshy centre; and not distinguishable from those scales, which in the leaf-bud become leaves. To use a gardener's language, there was at first no difference between the blossom-bud and the wood-bud. But, after a time, the parts which were identical begin to be organised differently; in the blossom-bud they gradually change into sepals, petals, stamens, and carpels; in the wood-bud they become young leaves. But if anything occurs to disturb the developement of the blossom-bud as a blossom, then it becomes a wood-bud, or approaches that state, more or less, according to the period at which the disturbing force began to act. It thus appears that whether a bud becomes a flower or a branch, depends entirely upon some unknown force, which acts at a particular moment upon parts originally of identical nature and quality, and capable of becoming leaves; if this action is complete, a flower is the result; if incomplete, a monster; if altogether withheld, then the rudimentary parts, not having their nature changed, proceed to acquire the condition of leaves. Hence it is that when from accidents, such as unusual heat and wet at a critical moment, exuberance caused by the excessive application of rank (azotised) manure, or any circumstances of a similar nature, the usual order of developement is disturbed, flowers are not formed—or we have them converted into tufts of leaves, or even branches, as was so strikingly the case with Roses last summer in some situations. The following three examples seem to offer conclusive evidence as to the truth of this theory:—



No. 1.

No. 1 represents a Pear, in which the calyx and its five sepals are not much disturbed, but in which the petals and part of the stamens, developed in the form of leafy scales, adhere round the centre of the flower, which has lengthened somewhat like a branch, while the remainder of the stamens and the carpels are concealed within the summit, in the form of withered rudiments. The constitutional tendency to fleshiness, which is the characteristic of the Pear, is not lost, in this or either of the two other cases, but is preserved throughout, only diminishing towards the eye.

In No. 2 the phenomena take a somewhat different direction, the leafy tendency being greater in some of the sepals, but the tendency to acquire succulence having been preserved in a far greater degree; as if the disturbing cause, whatever it may have been, which originally prevented the young parts from becoming petals, &c., and which forced the centre to lengthen like a branch, was eventually withdrawn



No. 2.

and overcome by the tendency to become succulent, which the parts had already acquired, when the disturbing cause began to act.

In No. 3, the change advances further, and in another direction. That dislocation of the rings of parts belonging to the flower, which was so visible in the two last cases is here carried still further;



No. 3.

and in addition, two of the young parts near the middle of the whole structure have each formed in their axil one bud, which has become a deformed flower, and produced a deformed Pear. No organ of the plant, except leaves and their modifications, has the power of producing a flower from its axil.

We have no doubt that plenty of similar cases may now be found; and we invite their possessors to consider—1, whether they may not be satisfactorily explained upon the foregoing principle; and 2, whether they can be explained upon any other intelligible principle.

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WE believe that this Paper was among the earliest to draw attention to the machine for extinguishing flame, now called "PHILLIPS'S PATENT FIRE ANNIHILATOR," and to point out its great importance in rural districts. Without reverting to what was then said, we think it desirable once more to draw attention to this important invention, in con-

sequence of two striking experiments that have lately been made with it, and which leave no kind of doubt that it ought to find a place in every establishment, whether domestic or public. The first, tried at Stockport, and certified to by 35 master spinners, candlewick and wadding makers, is thus described by themselves :—

"At the Hopes Carr Mills, Hillgate, Stockport, belonging to Mr. Elkanah Cheetham, we placed in a room upon the ground floor 628 lbs. weight of cotton, known as 'oily waste,' and which burns much fiercer than any other kind of cotton. To make it still more inflammable, it was all passed through the 'picker machines;' into this body of cotton we put a quantity of wood, parts of old machines, which were all well soaked with oil, and then threw in the midst of it a large shovel full of red-hot coals from the engine fire. Having gone to all the expense entirely ourselves, we were determined to prove if we might for the future fully depend safely on your machines in cases of fire at our mills, which are very often happening; we therefore waited until this body of cotton, &c., was one mass of livid fire, and it was not until the beams and boards of the floor above had caught fire, that we gave the word to strike off two of the No. 5, Annihilator Hand Machines; the vapour instantly began to rush out, and in a few seconds the flames were entirely extinguished, and in three or four minutes the fire was entirely put out.

"As many of the persons present, amongst whom were the owners or representatives of the largest cotton mills in Stockport, could not approach the room where the fire was, owing to the great interest excited in the crowd of persons about, we decided to try the power of a hand machine, to see if it could extinguish burning cotton in the open air, and we had a fresh quantity of the same kind of cotton (oily waste) and some old machine boards taken on to the open ground behind the mills, and set on fire in the same way, by throwing into it red-hot coals; the flames were fed and increased by the wind, and after waiting until the whole was a mass of fierce fire, the word was given, and the only remaining No. 5 machine was struck off; notwithstanding the wind, the flames were instantly cut off, and in one minute the whole of the burning mass was dead out, to the great astonishment and complete satisfaction of every individual present.

"Why we have put your Fire Annihilator Hand Machines to such severe tests is for this reason: in our branches of the cotton business we are more liable to fire than in any other branch, and the fire offices will not insure us; it was to us, therefore, of the greatest importance to try and prove for ourselves if we could master this scourge of our trade. We have now fully satisfied ourselves we can do so, and that too without damaging our machinery or cotton."

The second trial, personally made by the Earl of Derby, we give in his lordship's own words, in a letter to one of the agents for the sale of the machine :—

"Knowsley, Oct. 18, 1851.

"I have much pleasure in bearing my testimony to the success of your Fire Annihilator in an experiment here on Wednesday last. The building in which it took place was one which I was about to pull down, and from which I had removed the woodwork, doors, windows, sashes, &c. The centre part, in which the experiment was tried, was a circular, two-storied building, 24 feet diameter in the interior, and having in the centre a circular staircase of 8 feet diameter. There were two windows to the back, and two and a door to the front, and the flooring being removed, and the upstairs window sashes, there was a very powerful draft of air through the building; the space between the outer and inner circle was about three parts filled with shavings, faggots, and a number of old tar barrels, and a considerable number of planks soaked with oil were set upright in a slanting direction against the inner and outer walls. This mass having been set fire to, I allowed it to become thoroughly ignited, and some of the tar barrels to be in a blaze, before I gave the signal for applying the machine. The flame at this time had attained a great height, and threw out a very fierce heat, notwithstanding which, the man who managed the machine was enabled to approach so near as apparently to touch it, standing in the doorway of the burning building. The first charge, though it checked, from whatever cause, did not extinguish the flame, and I confess I had some apprehensions that the experiment would prove a failure; but the effect of the application of a second charge was instantaneous, and almost magical. Every vestige of flame disappeared in the course of three or four seconds, and the fire was so completely subdued, that nothing remained except some smouldering embers. The planks, however, having been completely charred, and the tar barrels turned upside down, so that it was difficult to get at the burning materials inside, the flames broke out again in a few minutes, and were again completely and instantaneously subdued, and a few buckets of water removed all risk of their breaking out again. I am so entirely satisfied with the experiment, which I consider to have been a very high trial, and of the value of the invention, that I intend to keep some of your machines in different parts of this house and the buildings attached, and have to request that you will supply me with half-a-dozen of the size used the other day, which I believe were No. 5. I ought to add, that a very considerable number of persons who were present at the experiment appeared entirely to concur in the view which I took of its complete success."

No comment upon these conclusive experiments can be necessary.

## PREPARING GROUND FOR PLANTING FOREST TREES.

About 1815, Mr. Kirkman Finlay, the then M.P. for Glasgow, an extensive cotton spinner, employing altogether some 6000 people, being persecuted by the Radicals for his Conservative principles, left Glasgow and took shelter in Argyleshire, where he bought a large estate called Castle Toward. He no sooner got possession of it than he set about improving it, by employing 400 labourers, as well as building a new castle. So great an outlay of money in a comparatively poor neighbourhood soon regained for him his former popularity. In five years he planted an enormous amount of trees, nearly emptying the nurseries of Edinburgh, Glasgow, Kilmarnock, &c., of forest stock; a number of acres was trenched by the spade, the surface was deeply pared and put into the bottom of the trench, then a spit deep, and the crumbs were shovelled out and laid on the top. Where the land was shallow, it was only just dug as deeply as the gravel would permit. Large breadths were ploughed, and many acres were planted in the turf upon the slit or T system; but hundreds of the plants so treated died every summer, being choked by the rough herbage, as well as injured by the hooks and scythes used in destroying it. I am told, however, that after they outgrew the Grass they made good plantations; but taking the labour of mowing and clearing away the Grass into account, Mr. Finlay found that trenching or digging was by far the cheapest plan, and the best for the trees. Large "squads" of men were therefore employed all the summer in preparing the ground for the next winter's planting, as well as hoeing round the stems, and keeping down the weeds on the ground that had been planted in former years. Trees are just like other plants, the cleaner they are kept, and the more the earth is stirred about them, the faster they grow, and the sooner they are out of harm's way. Even in "Quick" (Thorn) planting, Mr. Finlay had trenches dug out, and rotten dung put in, and then the "Quick" planted in the trenches made capital fences in a very short time. Of course a "Quick" planter would not cut off the heads at the time of planting. The cutting down ought never to take place till the second year; the same holds good with fruit trees. A large market-gardener once informed me that he never cut down any tree till the second year, on account of the entire head exercising so much more power in drawing up sap, and consequently making good roots; therefore, when beheaded the next year, the roots being strong and numerous, plenty of sap is sent up, and a vigorous and well-formed head is the result. How often do we find Rose trees and many other plants die, on account of cutting their tops off?

How gentlemen can permit acres of forest trees to be planted upon the T or slit system, as is sometimes still done, on a hard grassy bottom, which in the memory of man has never been disturbed, one is at a loss to know, considering that so much good information has been published on forest management. Should the soil be a retentive clay, the slit into which the unfortunate roots are so unmercifully thrust must form a miniature well of water all the winter, rotting the roots, which can have no vigour when spring arrives. I had the superintendence of planting a few belts of plantations on the South Downs, belonging to the Earl of Chichester, where the land on the chalk was in many places only about 2 or 3 inches deep. In this case we had to collect the turf into hillocks, and plant the tree in the centre; and, I am told, they have thriven tolerably well. Had the trifling expense of collecting mould, and carting it near where the trees were to be planted, been incurred, however, they, no doubt, would have thriven as well again. Plantations are like other crops — if well attended to they pay; but if badly managed, just the contrary.

We have the best land in this country for all sorts of trees, but it wants labour before planting; and as it will not be disturbed during the next 50 years, it will get hard enough for even the roots of an Oak to permeate it in search of food. The landed proprietor is often told that he has no occasion to go to any more expense than that of buying the trees and then planting them three times as thick as they ought to be. He should not, however, be satisfied with this; he should do as Mr. Finlay did, insist upon having the ground either trenched, dug, or ploughed, according to its nature, and drained where required. Mr. Finlay, although rich, was a man of business, and had his operations done as they ought to be; and presently I shall be able to show that the produce paid accordingly.

Summer pruning ought to be looked after, until the plantation is from 15 to 20 years old; and it should be performed when the trees are in full leaf. Judicious pruning not only makes valuable timber in a much shorter time, but it renders the trees more handsome in form than when left to Nature, or branches allowed to grow till they are 5 or 6 inches in girth, and then haggled off by persons who know nothing about the physiological construction of a tree.

The highest ground at Castle Toward that was planted was about 800 feet above the level of the sea. In steep parts, where the spade could not be used with advantage, on account of the rains washing the earth down the hill, the trees were planted on the slit on turf system; and where the soil was sandy, I am told that the trees put in in this way have thriven pretty well. Where the land was not very good, green crops were grown upon it, merely to ameliorate it before tree planting was commenced. Upon very stiff and stubborn soils, the top could be burned. This would benefit the land.

Along the sea coast, the outer lines were Sea Buckthorn and that beautiful bush the Tamarisk, next to these nothing thrived better than Scotch Fir. Some Stone Pines were also planted, but I am told by Mr. Gillies, now gardener at Deanston, who lived there many years, that they became top heavy, and were blown down by the heavy gales, which are tremendous there; so much so, that during the building of the castle, a long wooden shed, holding about 50 masons, was carried away on one night several hundred yards. The thinning the wood commenced at the end of the first seven years or so. Mr. Finlay felled all his Larches when his trees were about from 12 to 15 years old; and having a saw-mill on the estate, they were prepared and sent to the Glasgow markets. The last time that I saw him, Mr. F. stated that all his thinnings would not pay for the whole of the outlay, such as fencing, draining, buying trees, planting, rent, &c.; but then the main crop was to come, not to say anything of the beauty, shelter, &c., which the trees afforded, compared with the Heath clad mountains and barren ground which previously existed where they grow; at the present time Castle Toward is one of the finest estates on the Clyde, and being exactly opposite the Bay of Rothsay, occupying about three miles of the rugged shore, its wooded appearance produces a striking effect; the beautiful turreted castle peeping through the dark Scottish Firs and the pretty cottages lining the shore; do much credit to the late Mr. Kirkman Finlay. *James Cuthill, Camberwell.*

## BRITISH SONG BIRDS.

Cage Birds, No. 38.

No. LIV.—Having drawn particular attention to this fact,—that birds which are under the immediate care of man (such as fowls, geese, ducks, &c.) are gifted with little foresight,—inasmuch perhaps as they have no immediate need to call it into exercise; we will now consider the instinct of those birds of the air, who have to provide for their own and their families' safety whilst surrounded by enemies of every kind.

I have not failed to vindicate the ways of Nature on every occasion where her aid is required; and it is pleasing to know, that I have been the means, indirectly, of most satisfactorily establishing the fact of the Cuckoo on certain occasions feeding her own young. This was, until lately, with some few persons a vexed question. I have elicited, also, most abundant and satisfactory proofs, from men of reputation, observation, and undoubted veracity, that the female *does* utter the well-known cry,—'Cuckoo! Cuckoo!!' and that the parent birds *do* linger with us *until after July*, to give safe conduct to such of their offspring as may have been hatched so late in the season.

We must not wonder, but rejoice, that dame Nature takes such singular care of her children, and protects them from their earliest infancy in all times of peril and danger. If they offend against her admonitions, as we "reasonable" folks do, too often, against our better knowledge,—then they, like ourselves, must take the consequences. There is but one law in these matters, and woe be to him who transgresses it!

The Creator of the universe having "limited" his "gifts" to the lower order of animals, and given them a talent of just sufficient value to secure their well-being and happiness,—has, by way of "compensation," endowed them with extraordinary powers, to which we "reasonable beings" are strangers. Among the most remarkable instances of natural instinct, I would direct attention to the especial provision made by the supreme intelligence to supply the necessities of helpless animals, who, if they were, like ourselves, left to grow wise, and take care of themselves, after whole years of nursing, and continual anxiety on the part of their parents,—would inevitably perish during the very first week of winter. To obviate this, there is implanted in every bird's breast, during the breeding season, an excess, if I may so speak, of natural affection,—that Στοργὴ which

"Knows no bounds,—save only to increase;"

and which comes into the world with every bird, some few alone excepted.

We cannot imagine that a mother, brooding over her callow family, can "reason" as to the time when they will be able to fly. This would be an absurd supposition. What then is it that *impels* her to make use of every moment, exert all her energy, and wear herself nearly out in the service she performs, to bring about so desir-

able a matter? It is that Στοργὴ of which we have spoken,—an instinct of so overpowering, so engrossing a nature, that every creature possessed of it *must* act under its influence. To make use of a homely but forcible expression, used on all occasions by a friend of mine who is an unflinching advocate for the doctrine of "philosophical necessity,"—"*they cannot help what they do.*"* Farewell, then, under such circumstances, to the exercise of "reason."

Previous to going more fully into the marrow of our subject, I am anxious to reply to some few cavilling but well-meaning individuals, who imagine that they have set us a task which we shall fail in accomplishing,—raised up arguments that we cannot overthrow. We are glad of the opportunity to prove how easily truth can triumph over error. All we want is, patience and good temper. Happily for ourselves, we possess a little of each.

We are asked, how we dare attempt to prove that "reason does not reign supreme in the magpie, the starling, the parrot, and the mocking bird, who give such ample evidence that they understand all that is said to them, and reply to certain questions?" As we wish to be generous, let us voluntarily include in our list the "talking canary," exhibited some years since at the Cosmorama Rooms, Regent-street. We *might* "throw in" the '*singing* mouse' (!) exhibited at the same place; but as *he* sang "*very* small," we will pass him by.

Let us class the magpie and starling together. What are their powers? They are imitative birds, truly; but neither the one nor the other of them can be taught to utter more than *one*, *two*, or *three* words. These form their "stock in trade." Vain is it to try and teach them something new,—you get the same chattering answer to every question. Then, as for their "intelligence," it just extends to this. They observe that whenever they utter their monotonous ditty,—it is nothing better,—*you* are pleased, and reward them with some favourite *morceau*. Hence, the old story over again. Surely we demolish the supposed fact of any intelligence reigning *here*. Their brain is so constructed, its organisation so imperfect, that it *cannot* possibly be otherwise than it is. At best, their intelligence is but "cunning." One moment's reflection will bear us out in this.

Now for the parrot and the mocking bird. I *ought* to be able to talk oracularly about the former; inasmuch as a neighbour of mine, only three doors removed, has one of the tribe that ranks among the *very first of his* "*order.*" To prove the "reasoning" powers of this bird, I need only remark that he is recognised as a public nuisance. His time is fairly divided between shrieking, screaming, imitating cats and dogs, and dolorously ejaculating throughout the livelong day,—"P-o-o-r Polly!" He utters, it is true, occasionally, a few unconnected words; but no person accustomed as I am, or rather "doomed" as I am, to listen to him whenever I am in my garden, could, even from the excess of an affection for him (if such be possible), dare assert that he knows what he says. His brain is *somewhat* more fully developed than that of the magpie, and just in that ratio are his powers of mimicry increased. In the agony of my sufferings, I have occasionally taken up his *refrain* (with emphatic "variations"). Alas! it was only to be punished on the morrow, and thenceforward, with an *Italicised* addition to my sufferings. My tortured feelings had expressed themselves in song (*de profundis*); and now I am a martyr to my own folly! So much for your "reasoning" parrots. *Requiescant in pace!*

It has become evident, that we cannot, this week, do adequate justice to the mocking bird; and as *his* pretensions to notice far exceed those of the silly parrot-tribe, we purpose speaking of him, at some length, in our next. "*Suum cuique!*" is our favourite motto.

Should we find no more difficulties in our way than have beset us in this our present investigation, with the "reasoning" parrot, &c., it needs not the gift of divination to foretell *who* will have the best of the argument hereafter. The organisation of an animal's brain is necessarily so contracted (for special purposes), that it has no more power to "reason," properly so called, than we have to "fly." The supreme intelligence, too wise to err, has decided that 'Equality' *cannot* exist in this our lower world. Happy is it for us that it *is* so ordained. *William Kidd.*

* It is a most curious fact, that some few hours after penning this sentence, I found recorded in the daily papers a case of attempted suicide. The poor would-be-suicide told the magistrate,—"It was no use to attempt to prevent him from 'doing' it. He *would* 'do' it—he COULD'NT HELP IT!" *Facilis descensus Averni.* Let all advocates for the doctrine of "philosophical necessity" read the remark of this fatalist, and pause 'ere their waning principles become "fixed." *Nulla vestigia retrorsum!*

## FOREIGN GARDEN GLEANINGS.

STETTIN, POMERANIA.—This important town, unlike most others in the north of Europe, has no botanic garden. The royal residence has not one, but there are instead magnificent pleasure gardens, such as are occasionally met with in the towns of Prussia and Germany. These gardens are used for promenading, and contain fine trees and beautiful flowers tastefully grouped, and create a feeling of surprise and admiration in the mind of every stranger. There are other gardens, those attached to the cafés and eating-houses, which contain some fine and rare plants; those a little out of the town are much frequented on Sundays.

Most of the horticultural establishments of Stettin are at some distance from the town. We were most struck with that at Grabow, belonging to MM. Gross and Bayer. The grounds, though small, furnish a large supply of Camellias, Ericas, Dahlias, and Calceolarias, of which we saw more than 30 varieties in flower in the open ground. In addition to these, we were shown Chrysanthemums, Fuchsias, Roses, Verbenas, and 180 varieties of Pelargonium. We ought not to omit to mention 35 or 40 varieties of species of Canna. Although hothouse plants are not abundant in this establishment, it contains a rich collection of perennials; amongst others, 100 varieties or Phlox, 40 of Bellis, &c. The above gentlemen carry on a large trade in flower and vegetable seeds.

ROYAL GARDENS AT POTSDAM.—These gardens, four in number, are about 12 miles from Berlin. The most remarkable is Sans-Souci, so intimately associated with the name of Frederick the Great. It is difficult to describe the magnificent effect of the hill side on which the palace is built. Eight rows of fine houses upon a single slope, nearly 1200 yards in length, form a sort of amphitheatre; in them are fruit trees—Vines, Peaches, Apricots, and Figs; these crystal galleries are divided into two sets by a flight of steps leading to the different levels upon which they are placed. The Orangery contains 500 fine Orange trees, many of which are 45 feet in height, and 1 foot in diameter. Other houses equal to the first in size, and turned towards the palace, enclose trees inferior to those last mentioned.

A large garden, completely surrounded by walls, is also set apart for forcing the same plants; they are placed in the open ground, or in pots, or under houses, extending altogether for a distance of a mile and a quarter at least. When we were there, about the 20th of May, the Cherry-trees had already furnished a supply of fruit; and the Plums were ripe. In this garden early Melons, Cucumbers, and Potatoes, are also forced. The head-gardener drew our especial attention to eight varieties of early, yellow, oblong Potatoes, and the Roman Emperor Cucumber, some seeds of which we brought away; this variety appeared to him to be better than any other, inasmuch as it can be easily kept for six or seven weeks under glass without change of air; nearly an acre of frames is filled with these early plants.

Pine-apples and Strawberries are attended to by M. Seilo exclusively, and he produces some wonderful specimens from his hothouses. The flower department, under the care of a young man, is worthy of the highest praise.

Although the residence at Potsdam is really composed of four palaces and four gardens, yet the latter are so near the one to the other, that they may easily be taken to be but one large garden. Potsdam we need not describe at any length; it is Versailles, on a smaller scale.

The two rows of old white Mulberry trees planted by Frederick, cannot, however, be passed over in silence. Some have been killed by cold, but those which remain are remarkably strong and vigorous.

At the gate of Potsdam we saw the Prussian colony which has been established there for many years, and was, with its rustic houses and national costume, given to the King of Prussia, by the Emperor himself; we paid a visit, too, to Pfau Island, where there is a collection of Roses, which is as celebrated in Prussia as that at the Luxembourg is in France. *Masson's Report.*

## Home Correspondence.

*Samples of Seeds* (*Onions*).—It is somewhat remarkable that the anxiety for multiplying names of "Peas, Lettuce, Cabbage," &c., should have extended itself so little to Onions; perhaps the paucity of names in this case may be owing to so many of the large growers raising their own seed, and the apathy of ordinary buyers to new names for this important vegetable; for if we except the "White Spanish" appearing under the names of "Reading and Portugal," and the Strasburg and Deptford being sold as different, I believe that little has really been done as respects Onions that can be complained of. The Brown and White Globe are evidently different from the above, but the James's Keeping very much resembles the Strasburg; while the Silver-skinned and Tripoli differ too much from any other to be ranked in the same family. But I suppose some will be asking which is the best of the kinds mentioned. I unhesitatingly assert that they are all good, when true; and if I had to buy the seed from an unknown party I would have a little of each, and mix all together before sowing. I have so often seen a blank in a plot of Onions, from one or more kinds not coming up rightly, that I invariably mix all uncertain seed, the Silver-skinned and Tripoli excepted. The latter I have ceased to grow for some years, and I only grow the former for pickling, and occasionally to stand the winter. Onion seed does not keep well longer than one season, and old seed ought to be rejected if possible. The best crops of Onions I have ever had were from home grown seed. But I was once deceived in some I had from a neighbour, which had been ripened on an elevated situation and on very dry ground. This when sown on rich garden soil, on a lower level, produced such an abundance of "thick necks" that I could not have believed the seed to have been genuine, had I not been an eye-witness to its being gathered and sown. I mention this as an instance in which an article, not bearing out all that may be said about it, may be excusable under certain circumstances; the variation, in this case, being evidently caused by the opposite kinds of soil on which the seed was sown to that on which it was raised, and to show that home-grown seed is not always the most successful, although it is usually regarded as being so. One thing most people agree in, viz. that Onions from home saved seed keep better than those from bought seed. This opinion I can neither confirm nor contradict, as it so often happens that long before they can be fairly tested the kinds get mixed. The Globes are said to keep worst, though they possess some good points, and generally yield well; the Blood-red is remarkable for its colour, but it is seldom productive. Useful Onions might be classed into "large kinds," "late keepers" and "mild flavoured," the first of these includes the White and Brown Portugal, Spanish and Reading; the second, the Strasburg, James's Keeping, and Old Deptford; and the Globes are said to be mild and pleasant, and for all culinary purposes they furnish less waste than any other kind. The very small space to which the rootlets are attached is so much the less to cut away; and that hard useless substance, which in some Onions extends to near the centre, is much smaller in a "Globe" than in any other variety; some of the flat shaped sorts are notorious for the latter evil, and in cutting it away a considerable part of what is useful is of necessity removed with it. Now this is an important matter, and one which gives a globular or deep formed Onion a decided advantage over a flat or compressed one; if the admirers of the large Tripoli would only consider the waste that attends cutting it up, they would find it much less productive than they are aware of. The Silver-skinned is rarely grown for any purpose except for pickling, so that if seedsmen would reduce the kinds of Onions to the three families as above, they would save us the trouble of mixing them afterwards. Onion seed, on the whole, is however tolerably true to name; but I cannot praise much its freshness and vitality, yet in that respect it is not worse than some other things. *An Old Gardener.*

*Plane Tree Timber.*—Have any of your readers had experience in the use of Plane tree timber? I am now cutting some large trees of that kind, some of which measure 14 feet in circumference. The wood appears as hard as that of Oak. I am anxious to know what it is most fit for; wheather durable in wet or dry places; whether, if used for flooring, insects are likely to prey upon it; and whether it is a timber likely to cast or warp. *H. B., Llandilo.*

*Vines in Pots.*—I am surprised that Grape vines are not more extensively grown in pots than they are, for they are easily managed, and bear abundantly; they can be trained round sticks or hoops, so as to occupy a very small space; and they could be grown by the cottager as well as by the gentleman's gardener. They would present a very ornamental appearance set about a garden or lawn. Some might be removed early into the house, to accelerate their ripening, and others left out till the last moment; in this way successional crops of this very beautiful and useful fruit might be obtained during a great part of the year. *J. R.*

*Ivy on Exterior Walls.*—The "Paper-hangers' and Upholsterers' Guide," may be right in considering Ivy to be a protector from damp; but a circumstance which I shall mention, leads me to think otherwise, and rather than select it "as, contrary to all trained fruit-bearing trees for eradicating damp," it is the last thing that I would employ for that purpose. There can be no doubt that the close, overhanging, pendant leaves may carry off rain, and while the plants are young no danger need be apprehended; but as they get old the roots penetrate the walls, the lime becomes an entire mass of them, and loses its action. The roots then become conductors of damp into the masonry, and the thick exterior covering of leaves keeping the sun from the walls prevents the latter from ever becoming thoroughly dry. Being employed some three years ago in making extensive alterations in the ground-work here, more particularly in levelling the kitchen garden, it became necessary to remove an old tool-house, the whole of which was covered with Ivy; it stood on gravel in the highest part of the grounds, the walls were built of stones, and about two feet thick, the whole of the roof was in good condition and perfectly dry, fires were lighted in rainy weather, or when doing inside jobs in winter; but, for sometime previous to its removal, the walls were constantly damp—so much so, that during frosty weather the ice was of such thickness inside, that it could be removed in pieces, and the only reason I could assign for this was—that in demolishing it, I found the roots of the Ivy reaching nearly through the wall in many places, and ramifying in all directions. *R. F., Fyvie, Aberdeen.*

*Peas.*—My favourites are Prince Albert, Glendinning's Hero, Champion of England, and British Queen. Scimetars are sown for house and common purposes. In sowing Peas I first sow Prince Albert; 2d, Prince Albert and Glendinning's Hero; 3d, Glendinning's Hero and Champion of England; 4th, Champion of England and British Queen; 5th, British Queen, a dish of which I gathered on Sunday last. *George Fry, Manor House Gardens, Lee, Kent, Nov.* 3.——The following are the kinds I like best; Prince Albert, Warwick, Woodford's Marrow (very fine), Knight's Tall and Dwarf Marrows, and Glory of England. *Alexander Matthew, Moore Abbey, Monasterevan, Nov. 5th.*

*The Weather.*—On the night of Tuesday, the 4th inst., this part of the country (Warrington), was visited by a fall of snow, a fact in itself remarkable, as being an unusually early sign of the approach of winter; but its effects are the most extraordinary part of the matter. When morning came it was found that that fall of snow, though in some places barely sufficient to cover the ground, had done more damage than will easily be conceived. Many a "brave old Oak," that had withstood all the storms and raging elements of the last century, has at length been shattered by the simplest of means.

Many trees have been stripped to the bole, and not a few deprived of their leading branches. Several woods and hedge-rows that I saw the other day presented a most pitiable appearance. The Oaks, especially the later kinds, are the principal sufferers; but other trees, such as the Chestnut &c., which were caught with their summer garments—their leaves—on, have also shared the same fate. The havoc has occurred thus, I imagine:—The snow was accompanied by a little rain and a slight frost, which was sufficient to fasten it upon the leaves, as it fell, until at last the accumulated weight tore down the branches with almost inconceivable force. This may perhaps be accounted for in some measure by the peculiar state of the sap at the present season. I am not aware that there was much wind at the time. What I have stated relates to North Cheshire: how much further it has extended I cannot say, but of one thing I am certain, that wherever the occurrence has taken place, the loss to some landowners will prove to be very considerable. *T. B. Ryder, Warrington, Nov.* 11.

*Late Figs* (see p. 709).—As "S. B." is desirous of obtaining late Figs, and is limited as to convenience for growing them, I would recommend him to try what in Jersey is called "the Double-bearing Black Fig." This plant will continue to produce an incessant crop from July to November, if planted in a pot of sufficient size, and placed in an ordinary greenhouse. *Charles B. Saunders, Jersey.*

*Double digging ground intended for Fruit trees.*—I observe that the utility of this practice is called in question in your Paper, at p. 693; both sides of the subject have been so well stated, that it is difficult to find arguments for either view, of greater force than those advanced. I have always been puzzled to account for the different practice pursued by the same persons in preparing ground for fruit trees. I have seen gardeners make rich borders for Vines, from 18 inches to 2 feet deep, upon which they would not allow a spade to be used; their reason when demanded is, that they wish to have all the roots sufficiently near the surface to be within the influence of sun and air; they tell you that when the roots are encouraged to a great depth the fruit is deficient in quantity and quality. Mr. M'Nab, of Edinburgh, plants his wall trees on the surface, and places good soil over the roots, so that the trees appear to be placed on a mound—the reason he gives for such practice is, that just stated; then why does not the same argument hold good in regard to dwarf fruit trees? Having 114 acres of orchards, some of which have been planted on both systems, I have no hesitation in saying, that the time expended in double digging has been worse than thrown away in our case. A few years since, we broke up a field of Grass land for the purpose of forming a new fruit tree nursery; about half was double dug, the turf turned towards the bottom, in the other half the turf was kept to the surface, both were planted with stocks of different kinds; the first season those planted in turf grew much the best, those planted in the first part being stunted, and the Plum stocks in particular being infested with smother-fly. In the following season they overtook the others, but were never so well rooted, being more difficult to get up, and their roots being long, instead of fibrous. Many of the dwarf Peaches were quite spoilt; for when they were once in the turf they quite overgrew themselves, and became unsaleable. It is possible that the experience of other persons may be quite the reverse of mine, and that in planting trees, like farming, it may be impossible to lay down particular rules; at the same time whatever may be said in favour of double digging, I think it would be difficult to justify the turning the good soil to the bottom, and the subsoil to the top; nor is this necessary in the operation, as both may be left in the same relative positions. *J. R. Pearson, Nottingham.*

*How to Crop a Small Kitchen Garden* (see p. 710).—In answer to Mr. Steel, I beg to state that I omitted to mention that I had retained one-fourth part of my garden for beds of Carrots, Onions, Beet, &c. (the Asparagus bed, of course, is stationary), and I propose the following year to retain again one-fourth for the same purpose in another part of the garden. I do not find that I have too many Cabbages for my household, as, being planted without dung, they are sweet and agreeable. It must be clear that in digging the garden through, if ranks are marked out and left unset, that these ranks are ready at any time to plant the different crops in at a moment's notice—Peas especially; and as I preferred superintending the putting in of the crops myself, I found this one of the advantages alluded to. For the "three months" Mr. Steel inquires about: I certainly only at present have the sprouts from the said Cabbages, but I imagine that crops could have been grown where the early Peas were. I thank Mr. S. for asking these questions, as I perceive that the article alluded to is copied in our local Paper, and these hints as to the mode of cropping may, I trust, partly prove, as he writes, "a step in the right direction." *Vectis.*

*Coe's Golden Drop Plum.*—It is asked, at page 710, whether it is not the nature of this Plum to shrivel just before getting ripe? I say decidedly not. The shrivelling commences after the fruit has attained maturity. I have trees of large size, trained both against south and west walls, and also as standards, the fruit of which this season has been unusually fine and abundant. All the first gatherings were sent to table perfectly ripe, and as smooth and even as possible; but as the season advanced the fruit became shrivelled, but retained an exquisite flavour. I gathered my last dish yesterday, Nov. 10, which affords another proof as to the length of time they will hang on the tree, after they have reached maturity. This variety of Plum is esteemed (and justly so) one of our finest autumnal fruits, and I deem it worthy as much care and attention as the best Peach or Nectarine in cultivation. *G. Fry.*

*Broccoli.*—It is an established fact, that whenever a reformation of any kind is attempted, whether of a political or social nature, some are always found anxious to carry it to excess; and that Mr. Ayres, or rather Mr. Barnes, should be desirous of going the "whole hog," is another proof of what unstable beings we are. At page 710, we have a list of names for Broccoli, sufficient to fill a page in a boy's spelling-book, all cut down to two; or as Mr. Ayres says, "cast to the winds." Now, though I have been a reformer all my life, I cannot coincide with extreme notions, and I am old enough to remember how often similar ones have been wrong; but, no offence to Mr. Ayres, whose proposition does him great credit, and if one kind of Broccoli can be adapted to so varied a supply, the "Walcheren" is that kind; but I beg to ask him, if he thinks it can be depended on to stand a severe winter. I very well remember that all mine perished before February, in the winter of 1846 and 1847, and if I had not had some hardier kinds, I should have been in a poor plight that spring; as it was there was very little, yet there were a few. Now, though I consider the Walcheren to be the most useful kind we have, I do not think that it is much hardier than the Cape; but it comes in at more regular periods. Nevertheless, I question whether it can be depended on to come in at the same time as the Southampton and other large sorts, which are so serviceable in spring. But Mr. Ayres mentions another, which is a spring sort, and I do not question his having had the one or the other in use the whole of a mild season; but the same may be effected with more certainty by one or two more kinds, and in a severe winter their utility will be more apparent. *An Old Gardener.*——The following is a list of those sorts which I deem the most valuable. They succeed each other in the way in which their names stand. Autumn and early winter: Walcheren, Hammond's Cape, and Snow's Superb White. This last, if obtained true, is indeed a superb sort. It served me last season until the middle of February. Late winter and early spring: Winter Imperial, and Knight's Protecting. This last is also a first-rate variety. Late spring: Wilcove, Elsden's Late, and Miller's Dwarf, planted in a late situation. *G. Fry.*——I find the following to be first-rate; Snow's Early White, Grange's Early White, Knight's Protecting, Chappell's Cream, Mammoth, Late White, and Miller's Late Dwarf; the last sort is decidedly the best late sort out, and it is very hardy; it requires to be planted early, and richly manured. *Alexander Matthew, Moore Abbey, Monasterevan, Nov. 5th.*

## Societies.

Entomological, *Nov.* 3.—J. O. Westwood, Esq., President, in the chair. Amongst the donations were the beautiful case of Van Diemen's Land insects, exhibited by Mr. F. Cox, in the Australian department in the Crystal Palace; also Mr. Golding's interesting specimen of honey-comb, in which an artificial queen had been reared from a worker-larva in one of his bar-hives. The President exhibited a living larva of the fine Hamaticherus heros, sent by Sir Thomas Pasley from Pembroke-dock, where it is found occasionally in the heart of Italian Oak timber, and pointed out the peculiar construction of the anterior part of the body of this and other Longicorn larvæ, which had led to the first segment after the head being regarded by some writers as part of the latter, in consequence of the position of the first spiracle in the second segment of the thorax, contrary to the ordinary structure of larvæ. He also exhibited a drawing of the structural details of Leptinus testaceus, a small blind beetle, found in ants' nests, of which very few specimens have occurred in this country. Mr. W. W. Saunders exhibited some small beetles (Anobium paniceum), which had destroyed a quantity of small maccaroni ornaments, likewise some Kidney Beans which had been destroyed by a small species of acarus, the plants, after having laid on the manure heap for two or three days having been further found to be covered with a fine web, evidently the produce of the mites in question. Mr. S. Stevens exhibited a specimen of Dircæa discolor, a genus of Coleoptera, and a species of Gracillaria, both new to the British fauna, taken by Mr. Weaver, in the Black Forest, Perthshire; also specimens of Helops pallida from Tenby. Mr. F. Smith exhibited a drawing of the larva of Cynips longipennis, found within the galls on Oak leaves, commonly called "Oak spangles," and Mr. Douglas specimens of a new species of Tineidæ, the larvæ of which infest dried Figs, likewise various other micro-lepidoptera, reared from Solanum dulcamara and other plants. Mr. Edwin Shepherd exhibited a fine series of Noctua (Aporophila) australis, and a pale variety of Colias edusa, from the neighbourhod of Deal; and Mr. Wilkinson specimens of Talæporia lichenella, the females of which had produced fertile eggs without intercourse with the male; the young larvæ hatched from these eggs were also exhibited. A note was read from Mr. Weaver, on a supposed new species of Psychidæ, allied to Sterrhopteryx opacella. Mr. White exhibited specimens of various Crustacea, and insects brought from the Arctic regions by Mr. Ede, also drawings of some beautiful insects brought home from the South Seas by Mr. M'Gillivray: also a portrait of the late M. Savigny, of whose scientific labours he gave an account. Mr. Spence presented, on the part of Mr. Thompson, of Hull, specimens of corks from wine bottles, which had been destroyed by the larvæ of a small moth, Gracillaria V-flava.

## Notices of Books.

*The Book of the Salmon.* In Two Parts. Part I.—The Theory, Principles, and Practice of Fly-fishing for Salmon, with Lists of good Salmon Flies for every good river in the empire. Part II.—The Natural History of the Salmon, all its known habits described, and the best way of artificially breeding it explained. With numerous coloured engravings. By Ephemera, author of the "Handbook of Angling." Longman and Co.

Every man fond of fishing should read this book, and it will well repay him. Many that are not fond of fishing, after they have read it, are likely to become so. No salmon fisher should be without it, as the first part of it gives information of all the best salmon rivers in the United Kingdom, with plates and instructions for dressing the most killing flies for each river. Also full instructions for the tackle necessary for capturing this king of fish.

In the second part, the natural history and habits of the salmon are minutely described, from the time of spawning through the successive stages of its growth. These interesting details contain the results of the unwearied attention for many years of Mr. Andrew Young, of Inversbin, with instructions for making ponds for the artificial breeding and rearing of salmon, until they are large enough to turn into the river. By the means here pointed out, the proprietors of salmon rivers might increase the stock of fish, a point hitherto too much neglected in most of the salmon rivers in the United Kingdom.

The natural and familiar style of writing carries the reader with the author through all the details of both subjects, and it is at once perceptible that you accompany a master of the art.

The value of this book to the salmon fisher is already noticed; to the naturalist it will be equally essential. But one word of advice to those who are neither one nor the other will not be wasted upon such as will read "The History of the Salmon," for they will be made familiar with a subject not only interesting in itself for the moment, but calculated to enlarge the sphere of every intelligent and reflecting mind.

## Garden Memoranda.

Woodlands Nursery, Isleworth.—It is now pretty well known, by means of advertisement, and otherwise, that Mr. Dobson, formerly gardener to Mr. Beck, has commenced nurseryman and florist on his own account. He has bought a piece of ground, close to the Isleworth railway station, on which he has put up some of the glass-houses from Worton Cottage; and as Mr. Beck at one time amused himself in making experiments in heating, a short history of the means by which one or two of these houses were warmed, may not be uninstructive. The Orchid house at Worton Cottage was furnished with two wooden tanks, with a path between them. They were originally contrived as beds in which Roses in pots were plunged, and brought forward in gentle bottom-heat. Upon some 3 by 2½ inch Oak posts, 21 in. above the ground line, with bearers framed into the same, 3 by 2½ inches, placed edgewise, was fixed a tank formed of 1½ inch best yellow deal, entirely free from sap, dead knots, and shakes. For the bottom the boards were placed lengthwise, ploughed and feather-tongued, and bolted together with ⅝ inch bolts and nuts; sides and ends the same, 9 inches deep, put together with back nails, and white-lead in all joints. Down the inside and centre of the tank, to within 6 inches of the end farthest from the boiler, ran a 1½ inch board on edge, 6 inches deep, with fillet round the sides of the tank, to the same height. On these rested half-inch slates, laid crossways, and beneath them circulated 5 inches deep of hot water through a boiler, the flow pipe from which was introduced at one side of the division, at the end of the tank, about 2 inches from the bottom; whilst the return pipe was fixed in the bottom itself, and on the other side of the division. This formed the heating apparatus; but to make a plunging bed, when wanted for the purposes of propagation, the tank was deepened 7 inches, by removable sides, stayed by light iron bolts. From the edge of the tank sprang a series of removable shelves, rising with the pitch of the roof to the wall. These tanks were put up on the 13th of October, 1846, and now that they have been moved and replaced by Mr. Dobson, at Woodlands, they are found, after six years' tear and wear, to be nearly as sound as ever they were. Considering the facilities with which wooden tanks may be obtained, it is therefore something to know that they are not only durable, but that they have been found to be perfectly sufficient for the general purposes of amateur gardeners. One of Stephenson's copper boilers has been employed for heating this tank for these three years past, and it looks now as if it would last as long again; so much for heating.

In regard to plants, having been supplied with Mr. Beck's excellent collection of Pelargoniums, we need hardly say that Mr. Dobson's houses are well stocked with all that is good in that way. One half-span roofed house, 41 feet long, is quite full of nice small plants in 3 and 4 inch pots in the best possible condition. The next house, 24 feet by 12, contained specimen plants which are intended to be shown next season at the great metropolitan exhibitions; and a third house, 44 feet long and 9 feet wide, has been fitted up—one-half

as a stove and propagating house, and the remaining half as a receptacle for miscellaneous plants. Both divisions of this house can be heated at once, or only the one next the boiler, as may be convenient, the tank being furnished in the middle with sluices for turning off or on the water, as required. In addition to the houses just mentioned, Mr. Dobson has a large and commodious packing shed, a number of pits for half-hardy plants, and a neat little seed shop, facing the entrance to the nursery. Until lately, the ground between the shop and the gate has been exceedingly gay with Verbenas, Calceolarias, scarlet Geraniums, Cupheas, Dahlias, and Hollyhocks. The latter, more especially, have been very fine; they consisted of some of the best varieties, such as Sulphurea splendens, Mulberry superb, Model, Atrosanguinea, Rosea grandiflora, and others. In the seed shop, which was well stored with both seeds and bulbs, were some charming tree or Perpetual Carnations, which were just coming into bloom; and along with them one or two of Mr. Story's best Fuchsias, as well as some of the finer varieties of other raisers. Among Pelargoniums, a dozen of the best and most distinct raised by Mr. Beck, and supplied by Mr. Dobson, are perhaps Silk Mercer, Prince Arthur, Rosa, Diana, Emily, Loveliness, Cuyp, Governor, Delicatissimum, Star, Rosamond, and Gulielma. From among last year's seedlings we would select Ambassador, a large good-shaped flower; lower petals lilac, with a dark blotch on the upper ones, leaving a narrow margin—free bloomer and good habit; Arethusa, lower petals delicate salmon, with a crimson blotch on the upper petals shading off with deep rose—good habit, and very free flowerer, will prove a first-rate variety for all purposes; Commissioner, upper petals dark chocolate, leaving a narrow margin of rose, lower ones light purple, with dark veins, leaving a white eye—good in habit; Exhibitor, a large flat-sitting flower, with deep crimson maroon blotch, leaving a narrow margin of deep rose, lower petals the same colour, with a white eye — stout habit and free bloomer; Incomparable, rightly named from its colour, for in this respect it has no equal; a good-sized tolerably well-formed flower of the deepest orange scarlet; the upper petals have a dark blotch veining off towards the edge—good in habit, but not a free bloomer; Painter improved, a great improvement on the original variety; a striking flower—free bloomer, and excellent in habit. These are a few of the gems of the collection. We may just add, in conclusion, that the plants in the specimen-house looked very promising. By allowing them to receive plenty of light, and keeping them cool over winter, etiolation is prevented; they get well established in their pots, and by the time the growing season has arrived, they are enabled to progress satisfactorily. This is the way in which Mr. Dobson has always managed his plants, and with the best results, as the numerous prizes he has won at the Chiswick and other exhibitions amply testify.

## FLORICULTURE.

The Coming Chrysanthemum Exhibitions.—The Stoke Newington meeting takes place on Thursday, the 20th inst., the North London (Highgate) on Wednesday, the 26th and Newcastle-on-Tyne and Ipswich are fixed for the latter day. In regard to the metropolitan societies, the most lively interest prevails, and it cannot be too much to assume that, ere long, similar demonstrations will be current among our northern and eastern florists. The parent society, Stoke Newington, boasts of some experience, and announces in our advertising columns its fifth annual exhibition. We find by the schedule that several classes have been formed to suit the many capabilities and diversities of the subject. Single specimens: 6 pots; 24 cut blooms; 12 ditto; 6 ditto; and 6 ditto, for members who have never taken a prize for the same, are all invited. These, with some special prizes offered by Mr. Bird, Mr. James, the Treasurer, and Mr. Sanderson, the Secretary, complete he "inducement." At Highgate, invitations are even more diversified and numerous than those just noticed; for we observe that private growers exhibit independently of nurserymen with plants in 11-inch and in 8-inch pots, and with 12 cut blooms, Anemone-flowered varieties being also provided for. The extra prizes offered by Mr. G. Smith, Mr. Stein, Mr. King, Mr. Atkins, Mr. Bevan, Mr. Lochner, Mr. James, and Mr. Edwards, are numerous and valuable. It will be our own duty to furnish reports of the London meetings; and from distant friends we invite accounts of their exhibitions, in order that our readers may learn what is doing in different parts of the country with this our favourite autumn flower. We had almost forgotten to state that at Highgate and Stoke Newington the committees are pledged to empower the censors to award prizes to at least two-thirds the number of exhibitors in each class. The soundness of this policy no one can doubt. Such is the friendly feeling and harmony existing between the two societies in question, that a full gathering of the combined members, with their respective productions, is determined upon at both exhibitions. *J. E.*

National Floricultural Society.—The first Part of this Society's Proceedings has just made its appearance, and if others view it in the same light as we do, it cannot fail to give satisfaction. The arrangement and accuracy of its contents show that it has been got up with much care and judgment. The degree of award, quality of subject, and censors' names are all set forth in full, affording just the kind of information that has been so long wanted both by buyer and seller; and establishing the value of such tribunals as those furnished by the institution of well-managed societies of this kind. In publishing its opening report, the committee say that, "they have no other object in view than to record, for the information and reference of its members, the flowers brought before their notice, and the highly important and well-weighed decisions of the censors upon their respective merits. They simply record conclusions drawn by able and intelligent judges, which it will be evident will carry with them much more weight than if they were the unsupported opinions of an individual." We think so too; and if the society acts with the same caution and discrimination it has hitherto done, it cannot fail to be successful. The following is a digest of the certificates and commendations awarded from its commencement up to the meeting of September 4: Antirrhinum, Primrose Perfection, First Class Certificate. Auricula, Beauty of Bath, ditto. Azalea Indica, Pictura, label of commendation; ditto Vittata, ditto. Calceolaria (shrubby), Wellington Hero, ditto. Carnation, General Monk, ditto. Cineraria: Marguerite d'Anjou, First Class Certificate; Alba Magna, Certificate of Merit; Marianne, ditto; Orpheus, ditto; Queen of Beauties, ditto; Rosalind, ditto; Beauty, Label of Commendation; Christabel, ditto; Field Marshal, ditto; Formosa, ditto; Lady of the Lake, ditto; Loveliness, ditto; Model of Perfection, ditto; Nonsuch, ditto; Prince Arthur, ditto. Dahlias: Dr. Frampton, First Class Certificate; Laura Lavington, ditto; Triumphant, ditto; Douglas Jerrold, Certificate of Merit; Nancy, ditto; Phantom, ditto; Globe, Label of Commendation; Morning Star, ditto; Delphinium: Hendersonii, Certificate of Merit; Erica: Marnockiana, ditto; Fuchsias: Diamond, ditto; Nil Desperandum, ditto; Nonsuch, ditto; Gladiolus: Mrs. Willmore, First Class Certificate; Josephine, Certificate of Merit; Wellington, ditto; Atro-roseus, Label of Commendation; National, ditto; Psittacinus superbus, ditto; Hollyhocks: Swansdown, First Class Certificate; King of Roses, Certificate of Merit; Rosamund, ditto; King of Yellows, Label of Commendation; Joan of Arc, ditto; Magnet, ditto; Meteor, ditto; Safranot, ditto; Mule Pink (without name), Label of Commendation; Pansy, Kossuth, Certificate of Merit; Pandora, ditto; Swansdown, ditto; No 2, Label of Commendation; Pelargonium, Advancer (fancy), First Class Certificate; Elise, ditto; Formosissimum (fancy), ditto; Ganymede, ditto; Optimum, ditto; Magnet, ditto; Mountain of Light (variegated), ditto; Arethusa, Certificate of Merit; Ariadne, ditto; Caliban (fancy), ditto; Chieftain, ditto; Enchantress, ditto; Gipsy Queen (fancy), ditto; Miranda (fancy), ditto; Purple Standard, ditto; Richard Cobden (fancy), ditto; Rubens, ditto; Attraction, Label of Commendation; Beauty of St. John's Wood (fancy), ditto; Fireball (fancy), ditto; First of May, ditto; Herald, ditto; Incomparable, ditto; Lady Emma (fancy) ditto; Queen of the Fancies (fancy), ditto. Phlox Drummondii: Mayii Variegata, Label of Commendation. Picotees: Christabel, Certificate of Merit; Duke of Rutland, ditto; Mary, ditto; Victoria Regina, ditto. Ophelia, Label of Commendation; Prince Arthur, ditto. Pink: Optima, First Class Certificate. Potentilla: Alpha, Label of Commendation. Rhododendron: Superbissimum, Certificate of Merit. Rose: Queen Victoria, First Class Certificate; Robert Burns, ditto. Tulip: Juliet, Label of Commendation. Verbenas: National, Certificate of Merit; Orlando, ditto; Purple rival, ditto. Eliza Cook, Label of Commendation; Koh-i-noor, ditto. The characteristics of the flowers have, for the most part, been given in our reports of the meetings at the time. From the above enumeration, it will be observed that the Society has been pre-eminently supported by seedling raisers, the subjects submitted during the six months numbering many hundreds. *J. E.*

*The Midland Florist*, for October, contains a gossip about Carnations and Picotees, which is in truth the observations of a practised eye during a late sojourn in the south; the flowers noticed are truthfully described In Scarlet Bizarres, the writer has selected Admiral Curzon, Splendid, Lamartine, Emperor, Howard, Bolingbroke, Bardolph; Crimson Bizarres: Duncan, Owen Glendower, Queen Victoria, Lord Milton, Prince Albert; Pink Bizarres: Falconbridge, South London, Princess, Kirke White, Sarah Payne.; Purple Flakes: Premier, Beauty of Woodhouse, Squire Trow, Poins, Perfection, Mayor of Oldham; Scarlet Flakes: Cradley Pet, Splendour, Justice Shallow, Queen Victoria, Firebrand; Rose Flakes: Ariel, Lorenzo, Flora's Garland, Princess Royal, Antonio, Romeo, Madame Sontag. Picotees, Heavy Red: Mrs. Norman, Prince of Wales, Hogarth, Julia Romano Elizabeth; Light Red: Mary, Gem, Miss Holbeck; Heavy Purple: Alfred, Duke of Rutland, Prince Arthur, Lord Nelson, King of Purples; Light Purples: Ophelia; Heavy Rose: Victoria Regina, Grace Darling, Unexpected, Venus, Queen Victoria, Princess Royal; Light Rose: Mrs. Barnard, Countess Howe, and Nina. Such an enumeration shows that "tastes differ" but little in regard to Carnations and Picotees. Under the Editor's record, with the standing motto, "these things we would buy ourselves, and therefore recommend them," is described a Carnation, Slater's Warrior, C.B., a flower not seen in the south. It is reported to be "a large flower, and apparently constant. We received four or five blooms, and they each exhibited the bold well-defined ribbons, without scratch or spot, which a first-rate flower ought to have. The white was particularly good, and the rich markings very beautiful. We should imagine this to be the best crimson bizarr ever raised in Lancashire." Upon such a recommendation, who dare withstand the temptation. We shall look with interest for its "coming out." The Number for November comprises some running comments by the editor, on the Tulips which he saw in 1851, at and around Derby, Nottingham, &c.: Maid of Orleans, Lady Jane Grey, Royal George, Lord Denman, Shakspeare, Deutonian, Anastasia, Vicar of Radford, Queen Catherine, Cerise belle forme, Camuse de Craix, Camillus, Lysander Noir, Prince of Wales, Superb en Noir, Priam, Tariff, Thomas Brown, Charbonnier Noir, General Bournavelde, Midland Beauty, Prince Albert, Pyramid of Egypt, Van Amburgh, Catafalque, Vivid, Earl Douglas, Pilot, Albion (our own strain), Queen Charlotte, Chellaston Beauty, Rufus, Grace Darling, Earl of Radnor, Earl of Pembroke, God et parfait, Salvator Rosa, Heroine, King, Donzelli, Abercrombie, Captain White, Rose Blanc, Lady Clifton, Bion, Carthusian, Telemachus, Queen Eleanor, Virginia, Horatio, Violet Brun, &c., are all spoken of with praise. We deem the article "On Judging the Tulip," by Mr. Caparn, which this Number contains, of so much importance, that we make no apology for giving it entire. Mr. C. says—

"I have carefully noticed the communications which have periodically appeared in various numbers of the *Midland Florist*, and have remarked the difference between the southern and midland opinions on the requisite properties of a flamed Tulip. Although a midlander myself, I must confess I think my local brethren wrong in their judgment. Form and purity are, it is admitted by all, of course, indispensable; it is in the marking, therefore, on which the judges differ. A pure unbroken feather, without any flame, is, I believe, esteemed by both southern and midland the correct marking of a feathered flower. If so, reasoning from analogy, why should not a flamed flower be correct, indeed only correct, without any feather? To require feather without flame in a feathered Tulip, but the flame accompanied with feather in a flamed one, appears to me an irreconcileable anomaly, a perversion of terms. To obviate any difficulty which may arise on the subject hereafter, as the question appears yet unsettled, I would suggest, that in future each class of Tulips be separated into three distinct kinds of marking—feather, flame, and flame and feather; and each pan shall in future, of course, consist of nine flowers, instead of six, being three in each class.

"This communication may, it is probable, meet the eyes of the committee of the Tulip show to be held at Birmingham, in 1852; and I submit it to them whether it be not worthy of consideration, to put an end to existing differences on this point, to adopt at that show the suggestion I have made.

"In other florists' flowers, censors are generally agreed as to the properties, proportions, and marking of the specimens submitted to their judgment. It is desirable that they should be equally so in their censorship on Tulips; for it would be a saving of trouble to them, and an avoidance of perplexity to exhibitors, to have a standard fixed for their guidance." *J. E.*

*Beck's Florist, Fruitist, and Garden Miscellany*, for October, has a truthful portrait of Paul's New Perpetual Rose, Queen Victoria. Having ourselves seen the flower, we can testify to the accuracy of the representation. A neat article on bedding Roses deserves notice, which, together with reports of the late metropolitan exhibitions, make up a number more floral than we have had for some time. The number for November has chosen a happy subject for its illustration; viz., a Sweet William, owing its parentage to Mr. Hunt; this variety (Queen Victoria), forms one of a batch to which we directed particular attention in our report of the Wycombe Floral Meeting. The subject is well handled, and very pretty. The number generally maintains its well-earned and high reputation. *J. E.*

*The Floricultural Cabinet for October.*—The articles on the progress of the Pelargonium proceed and increase in interest. The number for November is embellished with coloured drawings of two Fuchsias. "Orion" brings his "Progress of the Pelargonium" up to the close of 1847, in a way which shows that he must have watched the flower very attentively during a series of years. These, with an enumeration of Carnations and Picotees, complete the number. The number also contains several other good articles on florist flowers, which may be consulted with advantage. *J. E.*

*The Gardeners' Magazine of Botany*, for October (the last we believe that will ever appear of this work), contains a valuable account of insects injurious to Roses, by Mr. Westwood; a good dissertation on the growth of Chrysanthemums for exhibition; a woodcut representation, and a description of Rhododendron glaucum, one of the Sikkim Himalaya kinds; hints on Camellia growing, by Mr. Errington; and excellent practical directions for training the Pelargonium, by Mr. W. P. Ayres. The last-mentioned article is amply illustrated by woodcuts. *J. E.*

National Floricultural, *Nov.* 13.—Mr. Hoyle in the chair. A Certificate of Merit was awarded to a Chrysanthemum named "Versailles Defiance," a rosy lilac coloured variety, of good form, and broad in the petal; Pentstemon Variabilis received a Label of Commendation. It is a promising greenish-white flowered kind, tipped and marked with cherry; both these subjects were contributed by Mr. Salter, of Hammersmith. Mr. Wilkinson, of Ealing, and Mr. Clark, of Playford, were elected members. *J. E.*

Catalogues received from C. G. Wilkinson, Western Rose

Nursery, Ealing Common. The MS. referred to has not been received. *J. E.*

CHRYSANTHEMUMS: *C.* Feed constantly at this season; if the pots are well drained, you can hardly supply too much liquid manure, provided it be not too strong. *J. E.*

CINERARIA: (—). Too late for this week. *J. E.*

DOUBLE DAISIES: *T.* Some very pretty ones were shown at Chiswick last season, by Mr. Salter, and others. *J. E.*

GARDEN-POTS: *C P L.* There can be no doubt that the makers' measurements are "growing small by degrees." Some alteration is imperative, if 32's are 6 ins. wide and 6 ins. deep, 24's 8½ ins. wide and 8 ins. deep, that standard should be adopted by those who make them; failing that, the remedy is with the purchasers. From what we know, there is scarcely a pot sent out of the required size. A reformation is as much needed in this particular as in any connected with floriculture. The "Lancet" is effecting much good by its exposure of frauds in common articles of consumption; we do not promise to follow the same course, but a few casts purchased from the different metropolitan kilns might serve to show who are dealing fairly and who are not. *J. E.*

POLYANTHUSES: *L.* They are favourites, and will well repay your attention; few subjects are more gay in early spring. They are seldom received in too large a state; therefore do not divide too severely. *J. E.*

SCHEDULES: *R S.* Some copies have been forwarded. *J. E.*

TULIPS: *J L.* We are delighted to hear of your success. You may plant any time this month with safety. Let care be exercised in the transit of the bulbs; 4 inches at most—if of moderate size, less. *J. E.—W W. Whitby.* Next week. *J. E.*

PRIMULA: *F R H.* Worth preserving. The other flower has nothing to do with C. puniceus.*

ERRATUM.—The dates of the second Saturdays in May, June, and July, of 1852 (the Chiswick fete days) were inadvertently given wrong last week; they should have been—May 8, June 12, and July 10. *J. E.*

## Miscellaneous.

*Victoria regia.*—On the 28th of August the Victoria regia blossomed for the first time at Hamburgh, in the aquarium of the Botanical Garden. This is the third plant of this species which has flowered on the continent, and the second in Germany. Immense interest was excited in Hamburgh by this occurrence. To prevent too great a crowd, tickets of admission were issued at four schillings each (about two shillings of our money); and as a limited number only could be admitted at once, hundreds were disappointed. On the two days during which the first blossom was expanded, especially on the second morning and evening, more than 2800 tickets were disposed of. *Botanische Zeitung, Sept.* 12, 1851.

*Candle Tree of Panama.*—A production, less beautiful but equally singular, is the Palo de velas, or Candle tree (Parmentiera cereifera, Seem.) This tree is confined to the valley of the Chagres, where it forms entire forests. In entering them, a person might almost fancy himself transported into a chandler's shop. From all the stems and lower branches hang long cylindrical fruits, of a yellow wax-colour, so much resembling a candle as to have given rise to the popular appellation. The fruit is generally from two to three, but not unfrequently four, feet long, and an inch in diameter. The tree itself is about 24 feet high, with opposite, trifoliolated leaves, and large white bossoms, which appear throughout the year, but are in greatest abundance during the rainy season. The Palo de velas belongs to the Natural Order Crescentiaceæ, and is a Parmentiera, of which genus, hitherto, only one species, the P. edulis, De Cand., was known to exist. The fruit of the latter, called Quauhxilote, is eaten by the Mexicans; while that of the former serves for food to numerous herds of cattle. Bullocks, especially, if fed with the fruit of this tree, Guinea Grass, and Batatilla (Ipomœa brachypoda, Benth.) soon get fat. It is generally admitted, however, that the meat partakes in some degree of the peculiar Apple-like smell of the fruit; but this is by no means disagreeable, and easily prevented, if, for a few days previous to the killing of the animal, the food is changed. The tree produces its principal harvest during the dry season, when all the herbaceous vegetation is burned up; and on that account its cultivation in tropical countries is especially to be recommended: a few acres of it would effectually prevent that want of fodder which is always most severely felt after the periodical rains have ceased. *Hooker's Journal of Botany.*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

PAY particular attention to securing as much light as possible in all structures containing plants; and where the rafters or roofs are used as trellises for climbers, these should be reduced within convenient bounds, as the growth of nearly all is, or ought to be, completed. The late autumn flowering creepers, which have been left unpruned in the conservatory, such as Mandevillas and Ipomœas, are now sufficiently ripened for the purpose; but little more should be done after removing the changed leaves than to prune the weakest shoots, deferring the final pruning till March or April. If larger and stronger shoots are cut now, they are apt to commence growing, in spite of the moderate temperature, and thus expend the strength which ought to be reserved till spring. The shoots of Maurandyas should be considerably reduced in bulk, as they are affected by the slightest damp during winter. If any of the late growing Passion-flowers or other creepers impede the ingress of light, they should on this account be reduced; deferring, however, their final pruning until they are about to commence their new growth in spring. FORCING PLANTS.—The free admission of light and air is indispensable to these, and the latter especially, in order that the plants may be kept moderately hardy, and be thereby better enabled to bear moving about during cold weather.

### FORCING DEPARTMENT.

SEAKALE.—Where any regard is paid to neatness, convenience, and economy of labour, let the old fashioned way of forcing Seakale by means of pots and fermented stable litter be abandoned. The pots are expensive, and very liable to get broken; and the litter, if not required for the linings of dung-frames, will make a much better manure by being rotted without fermentation. Where there is not a spare pit, with the bottom heat supplied by hot water, the most economical method is to make up a small bed of Oak leaves, sufficiently strong to ensure a bottom heat of 50°, but not exceeding 55°; and to place upon this a small frame about 30 inches high, and filled to about 18 inches with soil such as is procurable from an old Melon bed. The plants should be taken up with great care, preserving as much as possible of the thick fleshy root, upon which the success of the artificial crop very materially depends; and after watering them sufficiently to settle the soil about them, the frame should be covered with shutters and mats, to exclude the light. The Seakale, forced in this manner, is decidedly superior to that produced by the ordinary method, being firmer in texture and shorter in its growth; it is also a much easier matter either to examine its progress or to gather it for use. By planting the roots 4 inches apart, a superficial yard will produce six or eight dishes; and if the roots are preserved after removal, and laid in till spring, by picking off all the buds but one, they will make good sets for another season. But one of the best places for forcing this vegetable is in the Mushroom house, as the temperature of that is just sufficient, and the very important consideration, absence of light, is secured without additional trouble.

### FLOWER GARDEN AND SHRUBBERIES.

Amongst the numerous exotic plants used for summer and autumn decoration, there are many which will survive the winter, with but a slight protection. All such should now be carefully guarded, as they will materially diminish the quantity of plants to be provided for planting out next spring; and for this excellent reason, preference should be given to the kinds above referred to, in making a selection of plants for flower garden purposes. Under this head will fall Gladiolus, Sparaxis, and many other Cape of Good Hope bulbs; with a great variety of deciduous and half deciduous herbaceous plants, such as Antirrhinums, Pentstemons, Salvia patens, Stachys, Lobelia propinqua, and others; and also some shrubby and sub-shrubby plants, as Fuchsias, Hydrangeas, and the more tender varieties of tea-scented and other Roses. The material we usually employ for this purpose is decayed tan, or half-decomposed leaves, laid over the surface of the soil as a mulching, 2 or 3 inches thick. Whatever be used for this purpose, it should be such as is least liable to absorb and retain moisture. Many use sawdust or dry leaves for this purpose, and conceal their unsightly appearance, by covering with a little soil; but old tan is more convenient, and forms a very congenial top dressing in spring. Some other plants, such as Roses, and the more tender varieties of Antirrhinums and Pentstemons, in addition to a slight mulching, for the preservation of their roots, require some kind of shelter to preserve their branches. The neatest material for this purpose is the prunings of evergreens, stuck into the ground round about them; as, at a short distance, they are not distinguishable from the plants themselves.

### FLORISTS' FLOWERS.

Now we have a lull in floricultural matters. DAHLIAS as a matter of course are all out of the ground and stored away. TULIPS should be planted; if any bulbs are out now, they will, as a matter of course, suffer severely. Many florists hoop over their beds, in order to keep them dry, and prevent the effects of heavy autumnal rains; this we consider a good plan. CARNATIONS and PICOTEES—The beds appropriated to seedlings should be gone carefully over, and the surface soil stirred. Those plants which look the weakest ought to have the greatest attention paid to them, as it is those generally which produce the best flowers. The strongest are generally "selfs," or single flowers. As for AURICULAS we may consider them safe; the demand on the florist's time will be very small indeed; as far as they are concerned, occasional watering, keeping free from weeds and insects, and sheltering from heavy rains, are all that will be required for the next four months. The RANUNCULUS bed may now be turned over, and thrown up into shallow ridges; let these lie exposed to the winter frost, turning over when thoroughly frozen through.

### KITCHEN GARDEN.

PEAS AND BEANS.—Those who reside in favourable localities should now make a sowing of these vegetables, with the hopes of obtaining a very early crop. The seeds should be sown on the leeward side of low ridges, the crowns of which will protect the young plants from cold winds, and the hollows between will aid in keeping the soil dry. Some chopped Furze, or other similar material, should be sown along with the seed, to prevent the depredations of mice. A dwarf variety of Pea, such as Bishop's Longpod, will be found very suitable for the purpose; and of Beans, the Dwarf Fan will be found both hardy and prolific. There is a chance, in warm dry localities, that these sowings will produce good crops, a prospect which is a sufficient warrant for the expenditure in seed and labour; but in medium or late situations, the chance of success is very small. In the latter case, there is less trouble and more certainty by sowing in boxes or turves early in spring and planting them out with a slight shelter towards the end of March. Cauliflowers should be examined every three or four days, and those which have arrived at maturity, if not required for immediate use, should be lifted when dry; after tying their leaves together, they should be laid in by the heels, in a sheltered situation, or hung up in an airy shed, where they will be protected from wet and frost.

State of the Weather near London, for the week ending Nov. 13, 1851, as observed at the Horticultural Garden, Chiswick.

| Nov. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 7 | 14 | 29.835 | 29 770 | 47 | 35 | 41.0 | 43 | 43½ | N.E. | .00 |
| Satur.. 8 | 15 | 29.874 | 29.835 | 48 | 38 | 43.0 | 44 | 44 | N.E. | .07 |
| Sunday . 9 | 16 | 29.869 | 29.803 | 43 | 39 | 41.0 | 45 | 44½ | S.E. | .14 |
| Monday 10 | 17 | 29.757 | 29.626 | 49 | 28 | 38.5 | 45 | 45 | N.E. | .01 |
| Tues. .. 11 | 18 | 30.120 | 30.005 | 49 | 30 | 39.5 | 44½ | 44½ | N. | .00 |
| Wed. .. 12 | 19 | 30.347 | 30.230 | 46 | 29 | 37.5 | 44 | 45 | N. | .02 |
| Thurs.. 13 | 20 | 30.434 | 30.345 | 47 | 36 | 41.5 | 43 | 44½ | S.W. | .00 |
| Average.... | | 30.034 | 29.945 | 47.0 | 33.5 | 40.3 | 44.1 | 44.4 | | .24 |

Nov. 7—Fine; cloudy and cold; clear at night.
— 8—Fine; rain at night.
— 9—Foggy; cloudy; rain at night.
— 10—Fine; very fine; slight rain at night; frosty.
— 11—Fine; exceedingly fine, with bright sun; slight frost.
— 12—Fine; very fine; clear at night.
— 13—Foggy; fine in afternoon; densely overcast.
Mean temperature of the week, 3½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Nov. 22, 1851.

| Nov. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 16 | 49.2 | 34.2 | 41.7 | 10 | 0.41 in. | 4 | 3 | 1 | 3 | 4 | 5 | 3 | 2 |
| Mon. 17 | 48.7 | 35.9 | 42 3 | 13 | 0.40 | 3 | 4 | 1 | 1 | 6 | 6 | 2 | 2 |
| Tues. 18 | 49.3 | 35.7 | 42.5 | 17 | 0.41 | 1 | 4 | 1 | 2 | 4 | 7 | 3 | 3 |
| Wed. 19 | 49.5 | 36.0 | 42.7 | 14 | 0.87 | 1 | 4 | 2 | 3 | 2 | 8 | 3 | 2 |
| Thurs. 20 | 49.5 | 36.8 | 43.2 | 9 | 0.33 | — | 5 | 2 | — | 4 | 4 | 6 | 4 |
| Friday 21 | 49.9 | 38.9 | 44.4 | 17 | 0.37 | 4 | 3 | 4 | 2 | 1 | 5 | 4 | 2 |
| Satur. 22 | 49 6 | 36.5 | 43.0 | 16 | 0.62 | 2 | 2 | 4 | 2 | 3 | 6 | 5 | 1 |

The highest temperature during the above period occurred on the 16th, 1834—therm. 60 deg.; and the lowest on the 16th, 1841—therm. 15 deg.

## Notices to Correspondents.

BIRDS: *Clarinda.* From your statement of grievances, we much suspect that your bird-seed is *old*, and consequently *unwholesome*. Procure some of the newest and largest Canary, Rape, and Flax seeds; discard those which you now have, and see if there be any improvement in the health of your birds. The *best* seeds are 'plump,' have a glossy appearance with them, and may be readily known. Write again soon.—*John W.* From 4s. to 12s., according to their excellence.—*Jane D.* Not until Christmas.—*Clarence.* Try a little Maw-seed, and one or two Hemp-seeds now and then.—*Wilhelmina.* At this season, birds *will* go off song occasionally. Keep them warm, and you will soon be recompensed to your heart's delight.—*Anna P.* If you wish them to sing by candle-light, keep them all in close cages, open only at the front. When they see the fire, and hear the delightful preparations for that most 'amiable,' social meal—"tea," there will soon be a "sweet union of happy voices."—*Louisa C.* From our very heart we pity you. Four of your pets 'lying dead!' However, as you know the worst, let experience make you wise for the future. If you *love* your birds—which we perceive you do—study them as you would do children. *Keep them warm, and out of the reach of all draughts.* Very many thousands die annually, from neglect in these matters. We have described a "model cage" long since. — Why not adopt it? — *Thomas Finch.* Early in the ensuing year. — *Felicia.* No; these side glasses are very objectionable. Have your cage made with a long trough, or drawer for the seed; let a circular glass be introduced in one corner for the water. —*Emma.* We *cannot* refuse your request, urged as it is with so much persuasive eloquence. We will undertake the commission gladly, and have no doubt that you will be well satisfied with our choice. — *William A.* You have been deceived. The bull-finch is a *hen* bird, and not worth one penny.—*E. Smith.* As a rule, if you are in search of a *hen* bird of any description, inquire of dealers in the street for "a male bird that *sings*." What is handed to you, will be just what you want,—a *hen* bird that does *not* 'sing.' Only be careful not to pay too dear for your 'whistle.' *W. K.*

CHARCOAL OVEN: *T C.* We do not know that any one has begun to manufacture portable iron ovens for charring vegetable matter, like that of Popelin Ducarre. Probably a drawing of his oven will be given in the report of the jury. *E.*

GRAVELLING WALKS: *B A.* Shell gravel never binds well if laid on thickly. It should be spread thioly, and evenly raked and well rolled. It is better to give two thin dressings in the year than one thick one.‡

MARKET GARDENING: *Mathetes.* If you have not our back Numbers to refer to, you cannot do better than provide yourself with Mr. Cuthill's pamphlet on this subject, which will furnish you with the kind of information you require.‡

NAMES OF FRUITS: *L S.* 1, Crimson Queening; 3, Pearson's Plate; 4, like Dutch Mignonne; 5, Ten Shillings' Apple; 6, Hollow-crowned Pippin; 7, Gravenstein; 8, Northern Greening; 9, Nelson.‖—*Novice.* 1, Easter Beurré; 2, Crassane; 3, Colmar.‖—*P A D.* 3, 4, Rymer; 5, Franklin's Golden Pippin; 6, Downton.‖—*E R C.* 1, Winter Nelis; 2, Brown Beurré; 4, 6, Easter Beurré; 5, 7, Napoléon; 8, Autumn Bergamot; 11, Gansel's Bergamot. 1, Alexander; 2, Yorkshire Greening; 3, Bedfordshire Foundling; 4, 5, Court of Wick; 8, Norfolk Beaufin; 11, Sweeney Nonpareil; 13, Ribston Pippin; 15, Old Nonpareil; 16, French Crab; 17, Lemon Pippin; 21, Downton.‖—*Dr. Miller.* 1, London Pippin; 2, Hollandbury; 3, Minchall Crab; 4, Ord Apple. Pears: 1, Figue de Naples; 2, decayed; 3, Autumn Bergamot.‖—*J M M.* 1, Doyenné Gris; 2, Winter Nelis; 3, Passe Colmar; 4, Winter Crassane; 6, Doyenné Blanc; 7, Easter Bergamot; 8, Beurré Bronzé; 9, Ne Plus Meuris; 10, Grande Bretagne Doré; 12, Poire Neill; 13, Beurré de Capiaumont; 15, Duchesse d'Angoulême. Apples: 1, Trumpington; 2, White Russet; 3, Royal Russet; 4, Golden Reinette; 5, King of the Pippins.‖

NAMES OF PLANTS: *Georgie.* None of your specimens are in fructification; no native country is given; the species of the groups to which they belong are numerous, and very much alike; therefore, without more information, it is impossible to say with certainty what they are. 1 is some Cystopteris; 2, like Lastrea Filix-mas; 3, a Hymenophyllum, or Trichomanes; 4, Polyatichum, perhaps P. proliferum. *S.*

OAK LEAVES: *H B.* They are covered with Oak spangles, which are figured and described in our volume for 1843, p. 52.‡

PEAR TREES: *M. H.* See Mr. Errington's remarks on the subject at p. 260 of last year's volume.‡

ROSES: *Walley Abby.* The best free-flowering climbing yellow Roses are:—Jaune Desprez, Lamarque, and Solfaterre. Night-soil, in a liquid state, is a capital manure for Roses; it will induce a vigorous growth and fine blooms, but it must be administered with care, as it is very powerful.‡

WATER PLANTS: *Sub.* The following are suitable for a pond:—Nymphæa alba, Nuphar lutea and advena; Butomus umbellatus, Menyanthes trifoliata and nymphoides, the double variety of Sagittaria latifolia, Aponogeton distachyon, and Alisma plantago.‡

MISC.: *St. Beda.* Thanks; but your suggestion is impracticable—at least for the present.‡—*B L.* Interesting; but of little value.‡

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Clover Manure, per ton ... ... ... ... | £11 | 0 | 0 |
| Turnip Manure, do. ... ... ... ... | 7 | 0 | 0 |
| Superphosphate of Lime ... ... ... | 7 | 0 | 0 |
| Sulphuric Acid and Coprolites ... ... | 5 | 0 | 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE PEAT CHARCOAL, impregnated by pressure with the fertilising matter of the London Sewage, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

ROYAL SOCIETY for the PROMOTION and IMPROVEMENT of the GROWTH of FLAX in IRELAND.—The ANNUAL MEETING of the Society will take place on Friday, the 28th inst., at 12 o'clock, in the Society's Rooms, Commercial Buildings, Belfast, to receive the Annual Report of the Committee, to elect Office-bearers for the ensuing year, and to transact such other business as may be brought forward. By order, JAMES MACADAM, Secretary.

Belfast, Nov. 1, 1851.

THE BIRMINGHAM CATTLE and POULTRY SHOW.—The THIRD GREAT ANNUAL EXHIBITION of FAT CATTLE and the various kinds of DOMESTIC POULTRY will be held in the BINGLEY EXHIBITION HALL, BIRMINGHAM, on the 9th, 10th, 11th, and 12th of December next. The PRIVATE VIEW on TUESDAY, December 9.

**The Agricultural Gazette.**

*SATURDAY, NOVEMBER* 15, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov. 20—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 27—Agricultural Imp. Soc. of Ireland.

AT this crisis of Ireland's social condition, and in the prospect of her agricultural improvement, it is of great importance that every legal impediment to the satisfactory arrangement of the relations between landlord and tenant should be removed, so that both these parties which have so deep an interest in the adjustment of their differences—present or prospective—shall clearly understand their mutual rights and privileges, and feel secure in their dealings with each other. Until what is called the land question be put to rest, the letting of lands will be more or less delayed, the outlay of capital on permanent improvements withheld, and the emigration of the labourers of the country continued till there may not be hands sufficient to cultivate the soil.

Will it be credited that there are more than a hundred statutes respecting land tenure in Ireland? Yet, such is the fact; and the stringency of the greater part of them is in favour of the landlord. No wonder that there should be complexities, inconsistencies, and abuses, in the transactions between landlord and tenant. The glorious uncertainty of the law is proverbial even in simpler matters; but, with such a multiplicity of Acts of Parliament affecting what ought to be clear and definite to every one concerned in it, and plain dealing, as between man and man in general, there can be no systematic order established in the rural economy of Ireland.

Without discussing the political and social causes which have rendered the land-tenure question so unsatisfactory to tenants seeking what they consider equitable rights, and displeasing to landlords possessing but illusive privileges in many instances, we shall briefly advert to some of the principal remedial measures proposed for the quietude of Ireland in this respect, by two members of the Irish bar.*

We owe, perhaps, an apology to these gentlemen for noticing thus publicly a work professedly intended for private circulation only; but considering that 450 pages of a goodly octavo, when sent into the world, cannot really remain a confidential communication to friends; and approving cordially, as we do, of the style, matter, and spirit of the book (which was written at the suggestion of Mr. NAPIER, M.P., and is dedicated to Lord MONTEAGLE), we are disposed to think we are not taking an unwarrantable liberty in calling attention to it.

The work is divided into two principal parts, and subdivided into chapters and sections, with the subject of each distinguished, so that any specific information (whether relating to the technicalities of Acts of Parliament or to the author's remarks on any of the numerous topics discussed) may be found without loss of time or confusion of ideas.

The first part, of which the range is very copious and diversified, embraces everything that concerns leases and tenure of land generally in Ireland, under these heads: leasing power—length of term—valuation of the rent in an improvement lease—abatement of rent, and corn rent—taxes—reservations—fences—repairs—fixtures—cultivation—subletting—conacre and cottage allotments—covenants—remedies for rent—ejectments. As may be supposed from this enumeration, there is much reference to law forms and technicalities; but it is without the pedantry or the mystification of law, and there is throughout a great deal of acute observation offered in a common-sense way and in a popular style, which, when the occasion admits of it, rises into writing of a superior order.

Under the head of cultivation we find, after some preliminary allusions to the established customs regarding the course of husbandry in England and Scotland, the usage in Ireland thus distinguished from that in Great Britain:—"In very many parts of Ireland, but more especially in the south and west, the only course of husbandry practised has been frequent corn crops, with an occasional Potato crop between them. In other cases, it was Potatoes succeeded by Wheat, the stubble of which being dug in, they sowed Potatoes again without manure, and afterwards Wheat and Oats; and then they ploughed or manured, or let it remain fallow one year, and so on again. But in the northern and eastern counties the value of a rotation of crops has been more justly appreciated and followed, and Flax has become, perhaps, the most important member of the series; and it has been generally found, that less than a four years' course is too short to be of much practical utility. The mischief of the repetition of white crops, and the immense value, both directly and indirectly, of green crops is, no doubt, beginning to be sensibly felt; and we are led to hope, that in the course of a few years, this practice shall have received such an universal recognition as to amount to a legal usage binding on tenants who are less sensible of its importance; while landlords are beginning more generally, by covenants in their leases, and in their parol lettings, by their influence and control, to insist upon an observance of a system which has become essential to the well-being of the country."

One of the peculiarities of Irish agriculture has been (may we safely use the past tense?) the system of land-letting, known by the term conacre. What the derivation of this expression may be we have never heard, even as conjecture. Be its origin what it may, the inconstancy of employment, and the excessively low rates of wages to the cottier, obliged him to seek for a rood or more of land from a farmer or proprietor, to whom he was bound to pay from 4l. to 12l. per (Irish) acre, according to the quality and condition of the land, and its being manured or otherwise for him. This was analogous to the English allotment system, but differing from the latter in two essential particulars; 1st, the greater extent of land rented by the cultivator; and, secondly, the almost exclusive culture of a late sort of Potato, without any attempt at intercalary or successive crops, during nine months' occupation of the allotment. The conflicting decisions of law courts, respecting the cases of litigated claims for the rent of conacre land, especially when the crop failed and the farmer was left to his remedy on the contract, was among the evils of the system, and these are dwelt upon in the legal points of view, by the learned authors of the book before us. The altered circumstances of Ireland, arising from the combined results of the repeated failures of the Potato crop, the emigration of the peasantry, the increase of steady employment at remunerating wages to those who remain in the country, and the energies of new proprietors and farmers, will, we hope, occasion the total extinction of a system which is only tolerable under a very defective state of the labour market, and of money wages. But we desire to see the *English* allotment system, or some approved modification of it, established in Ireland. We were not, indeed, prepared for the announcement contained in the beginning of the paragraph we here quote:—"The great body of the proprietors in Ireland have lately turned their attention to the English allotment system, as a preferable mode of accommodating the agricultural labourers to the Irish conacre system. Wherever the allotment system is practicable and safe, it appears certainly to be preferable to the conacre, because the tenant gets a more permanent interest in the land than the conacre tenant, who has no interest beyond taking as much out of the crop as he can, and, accordingly, cannot be expected to cultivate it so well as the farmer himself would; and the allotment system would have another important advantage, namely, in emancipating the cottier tenants from the tyranny and extortion of the small farmers, who used to exact the most extravagant rents for the wretched hovels in which the peasant was doomed to drag out his dreary existence. The conacre system, with the poor cottier tenant, not only extorted every farthing of money that he had, but generally managed to keep him in debt, and in absolute dependence upon the farmer. He received no money for his labour, but gave so many days' work for the rent of his cabin and plot of ground. The labour was taken from him at the time of year when it was most valuable, and during the rest of the year he was provided with none, and having no money, was advanced meal or Potatoes by the farmer, at exorbitant prices, to be worked off in labour with the rent; and so long as the small middlemen farmers could exact these large rents from the unfortunate labouring cottiers, they suffered the annoyance of having them in the midst of their farms; but the moment they ceased to be profitable they were turned off the land, and became the first inmates of the poor-house and victims of the hospital."

We should observe that much of the information contained in the book is condensed from the testimony of intelligent and well-informed witnesses who were examined by the DEVON commissioners.

The second part, which extends to 150 pages, is devoted to the *questio vexata* of tenant right, under the heads of tenant right of Ulster—tenant right of occupancy—tenant right of compensation for improvements, involving the principle of compensation—ascertainment of claims, and payment of compensation—are embraced all points in natural connection with the subject.

Lord MONTEAGLE, who, in August last, moved in the House of Lords for a commission to inquire and report on the subject of land tenure in Ireland, failed in obtaining it, but this matter cannot remain in its present unsettled state. "The difficulty of legislating upon tenant right is sufficiently evidenced by the number and variety of enactments that have been from time to time proposed on the subject, and the abandonment of them all successively." "Those who have attempted, as we have done, to deduce from the body of evidence some definite conception of the true nature of the custom of tenant right, can well understand the difficulty of legislating upon a phantom that melts away under every attempt to define it, and that, chameleon-like, appears to assume a different aspect every time it presents itself, so that even the same individual person seldom can be found to speak upon it twice in consistent terms. It is at one time described as a right of the tenant to dispose of his holding for a valuable consideration, although he himself be tenant at will, and have expended nothing on valuable improvements; at another time as a right of continued occupation by the tenant, subject to the payment of the rent to which the premises are liable, or such change of rent as may afterwards be settled from time to time by fair valuation, with a right to sell the occupation to any solvent tenant to whom the landlord shall not make reasonable objection; or less reservedly, as a system of absolute perpetuity at a valuation rent, or as an absolute perpetuity in a farm, subject to a fair rent, to have and to hold to the tenant, his heirs, &c., for ever; or, as claimed in Tipperary, the natural vested right of the people of Ireland, by the grant of God, to the soil of Ireland, to the extent of full, comfortable, secure, and independent existence; or when presented to the British public, in the more specious and winning form of compensation for improvements, a right of occupancy depends on an expenditure of capital and labour; or a right which the tenant has, if he has laid out anything in improvements, and subsequently happens to become unfortunate, to sell his interest, and get compensation for his improvements; or as an equitable claim, whereby the tenant, having expended capital in valuable improvements, or having purchased or inherited the occupation of them, has enjoyed the privilege of selling his interest, subject to the approbation of the landlord; or as the *full* value of all unexhausted improvements in the soil, whether inherited, purchased, or created by the labour or capital of the tenant farmer." All these definitions of claims are marked by the authors as accurate quotations from the various authorities, whether conservative or violently democratical, from which they are taken. The British landlord and the British tenant may well

* "The Tenure and Improvement of Land in Ireland considered with reference to the Relation of Landlord and Tenant, and Tenant Right." By WILLIAM DWYER FERGUSON and ANDREW VANCE, Barristers-at-Law (for private circulation). Dublin: G. J. MILLIKEN, College Green, 1851.

express surprise at some of the notions so gravely entertained. Though the established usage of tenant right is considered as especially confined to Ulster, it is to be found in Tipperary, Sligo, Clare, and Cavan, and principally on the estates of absentees. Mr. KINCAID, one of the most extensive land agents in Ireland, accounts for the usage in Ulster, from the comparative lowness of the rents charged there by the London companies and the great resident proprietors, and the habitual respect paid to the claims of old and industrious tenants.

The authors very forcibly expose the extravagance of the claims put forward in many instances, and their total want of an equitable basis. When a miserable pauper tenantry, incapable of cultivating their lands, are told that they have prescriptive right to the soil, for which they perhaps pay no rent —and that they are entitled to compensation for improvements which exist but in imagination, and which there is not even the intention of effecting, it is certainly time to put a stop to such unreasonable chimeras by legislative authority, and yet to secure concession by the landed proprietary of tenants' claims of recompense for real outlay on permanent improvements.

The authors are of opinion that the tenant-right of Ulster is the effect and not the cause of the tranquillity of that province; that it has arisen from the mutual confidence which has subsisted between landlord and tenant in that province—where there is generally such moral and social superiority—that it is unsuitable for other parts of Ireland differently circumstanced; and in fact "incapable of existing elsewhere," because in Ulster alone there is a great number of small manufacturing capitalists, who are ready to invest their savings in the purchase of "tenants' good will," in little farms suited to their means.

But some of the people of Ulster are not now satisfied with the liberal treatment they have so long received from their landlords, who—we have Lord LONDONDERRY's authority for this—if the tenants desired to quit a farm, received full compensation at a valuation, open to public opinion, for any outlay, and liberty to substitute another tenant. They are agitating for fixity of tenure, and a *right* (instead of permission to do so), of disposing of their holdings to the highest bidder—with other extravagant demands, which are utterly incompatible with the inherent rights of property, and would, if conceded, transfer the real interest in the soil from the landlords to the tenants.

If inconveniences of tenant right are experienced by the best landlords in Ulster, *à fortiori*, they would press much more heavily upon the owners of the soil in those parts of the kingdom where a less educated, orderly, and thrifty class of tenants are in occupation. We think it is satisfactorily shown in the work to which we have so cursorily invited attention, that the tenant right of Ulster ought not to be extended to new districts, and that "to legalise it on the terms which its advocates propose is a pure impossibility, until it shall have acquired some substantial embodiment and uniformity;" nor do we see any reason to dissent from the opinion expressed by Sir GEORGE GREY in the House of Commons, that "it is undesirable to interfere with any custom that has been in existence in any part of the country, and that is not positively mischievous; and where landlord and tenant agree to be bound by such a custom the law should not interfere."

On a review of all the bearings of the case, the learned authors of the work before us, in adverting to the legal part of it, suggest a consolidation of all the statutes affecting the relations of landlord and tenant, and desire only to introduce such changes as have stood the test of experience in this country; they believe that one act might embrace "all statutable powers with respect to leasing and making improvement contracts, and that the remedies of both landlord and tenant might be contained in another." They give very pertinent legal reasons for this opinion, which we need not add: but this sentiment is too important to be omitted—"To the uncertain condition of the law may be traced most of the unsettled notions of the Irish peasantry as to property, and its rights and duties, and the agrarian outrages that have disgraced the country, and no substantial improvement can be effected for the people until the principle is recognised in its fullest integrity, that the vindication of rights should be speedy, cheap, and certain."

## WHAT HAS CHEMISTRY DONE FOR AGRICULTURE?

A LECTURE

DELIVERED AT THE BOTANIC GARDENS, OXFORD, OCT. 30, 1851.

By CHARLES DAUBENY, M.D., F.R.S., Professor of Rural Economy, &c.

IN the lectures delivered in this place on the subject of Rural Economy, it has been my endeavour to explain the rationale of practices ordinarily employed in husbandry, by reference to the principles of modern science, at the same time inviting attention to any new discovery which appeared to have a bearing upon the practical operations of the farm.

But, although, supposing no important omissions to have occurred in the filling out of the outline I had originally sketched, the pupil will thus have had an opportunity of obtaining some acquaintance with such departments, at least of agriculture, as bear any connection with, or admit of any elucidation from, science; yet it may not be amiss occasionally to take up the subject in a different point of view, by bringing together within the scope of a single lecture some of the more important inventions and discoveries, by means of which chemistry has benefited the art of culture; thus holding out encouragement to the further prosecution of science, by an estimate of what has been already accomplished through its instrumentality.

This, indeed, is the professed aim of those able reviews detailing the progress of agricultural knowledge, which have from time to time emanated from the pen of Mr. Pusey, the latest of which appeared in the "Journal of the Royal Agricultural Society," about the close of the preceding year. But on rising from the perusal of that part of the Report, which relates to the scientific part of farming, I can understand, that many have gathered, as I am told has been the case, from the general tenor and spirit of his remarks, an impression, that chemistry has in fact done but little for the improvement of agriculture; and I therefore am not surprised, that a foreigner, who stands confessedly foremost amongst the cultivators of that science, and especially of that branch of it which has the nearest relation to agriculture, should have at first taken umbrage at certain passages, which, viewed by themselves, seem to convey a meaning which I feel convinced would be repudiated by scientific farmers in general, and by none more than by the distinguished editor of a journal, whose motto is "Practice with Science."

For my own part, I see no great reason to object to any statements in this report, when rightly understood, and regarded with reference to the purely practical object which its framer professes to have in view, except only that I should be unwilling to admit that the mineral theory of manures has "broken down," because the particular mineral specific founded upon that theory may have proved a failure.

Whilst, however, I do not come forward to controvert the opinion of so high an authority as Mr. Pusey, when he asserts that Liebig's suggestion for dissolving bones with acid and Sir Robert Kane's for using Flax-water as a manure, are the only new processes in agriculture arising out of chemical discovery, I may at least remind you, that agricultural chemistry embraces a much wider field of utility than is comprised under the category of the invention of new processes, in the limited sense in which the term is employed in the passage before us.

One of the most beneficial aims, indeed, of that science, is to impart greater precision to known and familiar methods of culture, by pointing out the causes upon which their efficacy depends, and thus to enable the agriculturist to employ greater discrimination in their use; whilst another not less important practical end is that of furnishing a clue to the discovery of new and more economical sources for materials of acknowledged utility in husbandry, and of instructing us how to preserve, in all their integrity, the constituents on which their virtue depends.

I believe, indeed, that by taking a somewhat larger view of the subject, it would not be difficult to show, that there have been few improvements in practical agriculture, in the first suggestion, the final development, or the judicious limitation of which to their appropriate objects, chemistry has not been more or less instrumental.

Nor would it be fair to confine ourselves in this enumeration to points upon which the minds of men of science are already made up, leaving out of the account those which are still under debate, but which do not seem susceptible of a perfect solution without the aid of chemistry.

The controversy, for instance, with respect to the importance of mineral manures, is one which can only be settled by the joint efforts of practical and scientific agriculturists; and therefore, may fairly be included amongst those questions of importance on which the services of chemists are demanded.

Nor is it material, with reference to the present argument, whether the scientific principles which serve to regulate the present practice of agriculture have been long established, or are of recent discovery; whether they were pointed out by Sir H. Davy in the last age, or by Baron Liebig in the present; or whether, as often happens, they have resulted from a number of independent investigations, of many of which it is difficult to determine the exact parentage.

In order to estimate the services rendered by science to agriculture, the fairest plan perhaps would be to contrast its present condition, in which scientific principles are often unconsciously adopted even by those who repudiate science altogether, with that in which it existed, after centuries of civilisation, amongst nations like the Romans, where the light of physical science had never penetrated.

Compare the modern systems of husbandry, as adopted in the more enlightened countries of Europe, with that laid down by Columella during the most flourishing period of the Roman empire; and the superiority fairly ascribable to the former may furnish something like a measure of the value of those scientific aids in which the latter were deficient.

It must moreover be recollected, that the value of diffusing sound scientific information amongst the agricultural public is felt, not merely in the attainment of truth, but likewise in the exclusion of error; aiding, as it does, our progress in the right direction, and at the same time guarding us against being led away by the *ignis fatuus* of quackery and fanciful hypothesis. Just as in medicine, a contempt for scientific principles is apt to engender a belief in homœopathy, mesmerism, and other mystical departments of the craft; so an ignorance of the true principles of scientific husbandry leaves the mind open for the reception of any crude hypothesis in vogue at the time, which may chance to take hold of the imagination.

I have myself seen the very farmers, who would turn aside, with incredulity or with indifference, from any sober exposition of the chemical considerations which were to guide them in the selection and management of their manures, in the rotation of their crops, and in other every day operations of husbandry, eager to try the effect of encircling their fields with a *cordon* of wires, intended either to draw down, or to draw off electricity from the ground, they knew not exactly which; but, at any rate, to benefit them in some unaccountable manner, by a new distribution of this mysterious agent over their crops.

I conceive, therefore, that even those who disbelieve in science, might find reasons for promoting its cultivation, if only to prevent the greater evil of an indulgence in crude and absurd hypotheses; just as those who have no faith in medicine, may nevertheless recommend their invalid friends to resort to a physician, in order to prevent them from falling into the hands of a quack.

That many benefits, however, have resulted from the application of science to agriculture, beyond those negative ones which alone, perhaps, would sufficiently vindicate its study, will appear, I think, from a few examples, taken, as I feel myself quite justified in doing, from cases, where something, indeed, had been contributed by unenlightened experience, but where science afterwards stepped in to take advantage of the lucky accident which communicated the first impulse.

It had been known for a long period of time, that certain parts of England were peculiarly well adapted for dairy husbandry; and in consequence, they have been set apart as permanent pastures, devoted especially to the maintenance of cows, whose milk was principally converted into cheese, and sent off to a distance, as fast it was produced, to supply the large cities of the empire.

After a lapse of years it was observed that the produce fell off, and that the ground became exhausted—a natural consequence, as modern science has shown, of the fact, that the soil, from the surface down to the point to which the roots of the Grasses penetrate, contains only a limited quantity of phosphates, without which the plants could not grow; or if they did, would be incapable of supplying to the animals fed upon them the materials for their milk.

The exhaustion, therefore, of this mineral ingredient is seen at present to be a natural consequence of the constant drain made upon it by the system of husbandry pursued, and to entail of necessity the failure of the crop.

There can be little doubt, therefore, but that the chemistry of the present day would have suggested the remedy, had the evil remained until now unredressed; but it must be in candour admitted, that the application of bones to the exhausted dairy lands of Cheshire was, in the first instance, the result of pure accident, or of observation unassisted by science.

Yet, although chemistry did not suggest the remedy, it accounted for its operation, and by these means furnished a clue by which other substitutes might be discovered, and improved means of applying it invented.

That the extraordinary efficacy which the application of bones has been shown in some cases to possess in restoring fertility to exhausted pasture land, is owing to their containing the very material which had been removed by a number of successive Grass crops, is now regarded as so self-evident, that the farmer hardly feels his obligation to chemistry for pointing it out; and, yet, within ten years a standard writer on agricultural chemistry * expressed his disbelief as to the principal efficacy of bones being ascribable to their earthy ingredients, and considered that in Turnip husbandry the organic part constituted the most permanent and most immediately useful part of their composition.

Now it is evident, that the determination of such a question as this is not a matter of mere speculative curiosity. If the animal matter of the bone were really the most useful portion of the manure, it would answer best to spread over our land unburnt bones, irrespective of their price, rejecting altogether such expedients as the one which Mr. Pusey singles out as a specific instance of the benefits rendered to agriculture by science, where an acid is added to the bones; owing to which the earthy portion, indeed, is rendered more soluble, but the animal must be carbonised and destroyed.

Under such circumstances we might cease to smile at the method of manuring, which I have heard was adopted by some farmer, deeply impressed with the notion of the superior value to crops of the organic matter of his bones, and who consequently had it

* See Professor Johnston's work, 1st Edition

extracted by boiling, pouring the broth, or the watery solution, upon his land.

But the advantage of thus ascertaining the cause of the usefulness of bones did not end here, for it immediately suggested itself to the mind, that if the earthy phosphates contained in them constituted their principal value, advantage might be taken of those deposits of the same material which are occasionally met with in the earth itself.

Hence a desire arose amongst the agriculturists of this country to ascertain the extent and nature of a formation reported to exist in Spanish Estremadura, consisting, according to the vague accounts given of it, of this same mineral matter.

I was in consequence induced myself to visit Spain in the year 1843, in company with Captain Widdrington, for the purpose of exploring this locality; and we were thus enabled, not only to report upon all the circumstances relating to this interesting deposit, but also to bring away with us a sufficient quantity of the material itself, to test its efficacy as a manure in comparison with that of bones.*

At the time, indeed, at which we made our Report, the practical utility of this investigation might have appeared problematical, because the Spanish Phosphorite was found to lie at such a distance from roads and navigable rivers, that the expense of conveying it into England placed it beyond the reach of the farmer. Nevertheless, the efficacy found to belong to this description of mineral phosphate when applied as a manure, not only confirmed us in our belief, that bones owe their chief efficacy to their earthy constituents—but also established this important principle, namely, that the mechanical condition in which the material exists, does not exercise any important influence upon its action upon the land, and hence held out encouragement for further search for it being made in localities more accessible, or nearer home. Nor were these efforts unrewarded; although the success was attributable to scientific investigations, not originally undertaken with any practical object, but purely in that uncalculating spirit of inquiry after truth which animates the genuine Naturalist.

Baron Liebig, indeed, in the year 1843, was ridiculed by many for proposing, in a letter which he wrote to the late Sir Robert Peel, the coprolitic and bone beds, which had been pointed out to him by Dr. Buckland in the course of the tour he made through England, as substitutes for bones in agriculture; although even at that time the experiments by which I had convinced myself of the presence of minute proportions of phosphates in many secondary limestones † might have prepared us to expect, that extinct animals would have left in the strata the earthy materials contained in the soft, as well as in the osseous parts of their structure, and would thus, by their decomposition, have been the means of accumulating a mass of phosphatic matter sufficient to meet all the exigencies of husbandry.

This, however, would remain a matter of probable conjecture only, until the discovery above alluded to, as being the result of a purely scientific inquiry, had been made—I mean until the detection of the real nature of the so-called pseudo-coprolites of Suffolk had been brought about in the manner which I am now about to recount.

It so happened, that the farmers in the neighbourhood of Felixstow, in the county of Suffolk, frequently came across a multitude of oval or rounded pebbles, having a waterworn appearance, which lie disseminated through the loose sandy material of which the soil and subsoil of their land is composed.

Finding these bodies so hard and tough as not to be easily reduced to powder, they were in the habit of throwing them aside in heaps, as an hindrance to their farming operations, until at length the attention of certain geologists who visited the neighbourhood was attracted to them, and amongst the rest that of Professor Henslow of Cambridge.

The latter, on his first inspection of them in 1843, imagined, from the peculiar shape and twisted appearance which they often presented, that they might be coprolites, or the indurated fæces of some extinct animal; but a more careful examination convinced him, that the form they possessed was attributable to the circumstance, that the material of which they were composed had collected round any nucleus that might have presented itself, that nucleus consisting, in some cases of the teeth or vertebræ of fishes, at others of fragments of some mineral matter.

The next step in the investigation was to ascertain the chemical constitution of the nodules themselves, and this was effected through the exertions of Mr. Brown, of Stanway, who had them submitted to chemical analysis, which proved that they contained from 50 to 60 per cent. of phosphate of lime.

The discovery in the same locality of numerous sharks' teeth, and of bones of the tympanum of the ear of the whale, referred by Professor Owen to several distinct species of Cetacea, completed the solution of the problem relating to the real origin of this deposit.

There can now be but little doubt, that the phosphate of lime was derived from the decomposition of the marine animals, which had peopled the seas in that immediate neighbourhood during the tertiary period.

The phosphate, at first dissolved in the sea water through the agency of carbonic acid, was afterwards precipitated, as that solvent escaped; and at the moment of its deposition would be attracted to any hard body, whether of an animal or a mineral nature, that chanced to offer. Hence, the origin of those *pseudo coprolites*, as they are termed, which occur in the crag of Suffolk; hence that of the phosphatic matter, incrusting in so many instances the bones and teeth of marine animals found in the same locality.

The scientific exploration of this district quickly showed the great abundance of these phosphatic nodules over a wide district from the River Orwell northwards along the coast of Suffolk, and hence immediately suggested their importance for agricultural purposes. Accordingly, a demand was soon created for this new mineral fertiliser, and this demand has gone on steadily increasing up to the present year, when, as I was lately informed by a gentleman, who is the proprietor of some mills at Harwich, at which the nodules are reduced to powder, and thus rendered fit for conversion, through the agency of sulphuric acid, into superphosphate, nearly 10,000 tons of it are annually dug up, reduced to powder, and consumed as manure.

I have been assured that the landed proprietors of the district in which the coprolites prevail have benefited to the extent of from 300*l.* to 1500*l.* through this discovery; that the value of land throughout the coprolitic district has risen in consequence; and that 500 labouring men, boys, and women are employed the greater part of the year in digging up this material from the subsoil, or in preparing it for market. It is probable that the landowners, who are reaping such advantages from the discovery, are not generally aware of the steps by which it was arrived at, or we should surely have heard of some expression of gratitude at least, if not some more substantial token of the obligation felt by them to the naturalist, who first pointed out to the world the real nature of this hitherto neglected and despised material.

Nor is this the only discovery of the kind which has been lately achieved in Great Britain.

In the year 1843, Mr. Payne, of Farnham, having remarked the extraordinary fertility, especially for Wheat and Hop crops, belonging to the soil on a particular part of his farm, where a green band of marl, more or less silicious, and abounding in fossils, made its appearance; and having moreover noticed, that this same marl, when spread over other land, imparted to it its own fertilising qualities, was induced to submit it to analysis, and learnt from Professor Way, Consulting Chemist to the Agricultural Society, that no less than from 52 to 57 per cent. of bone earth phosphate was, on the average, present in it.

This discovery encouraged him and others, to undertake a kind of geological survey of the district in which this marl occurs, and to enquire into its relation to the contiguous rocks. From this examination it resulted, that the phosphatic marl forms a seam along the line of junction between the upper green sand and the chalk; the phosphoric acid spreading upwards also in smaller quantities, to a certain extent, through the chalk marl.

The gault also, which divides the upper from the lower green sand, occasionally contains fossils which are rich in phosphates; but below the gault, the lower green sand at and near its junction with it, is pervaded by phosphatic nodules, almost as abundantly as the upper green sand has been stated to be.

Now as the beds in which these phosphates occur extend from one side of England to the other in a direction from N.E. to S.W., namely, from Flamborough Head, in Yorkshire, to the southern coast, this material may be looked for everywhere throughout this range; and, in fact, by following such a clue, it has been detected already about Petersfield, Guildford, Folkstone, in the Isle of Wight, near Black Gang Chine, and between Culver Cliff and Atherfield Point, and in sundry other localities.

The presence of phosphate of lime has probably arisen from some process of nature by which this mineral came to replace the carbonate of which shells are commonly made up; and a striking proof that it was introduced from without, after the organic matter had become fossilised, is afforded by the fact, that the external portions of the Hampshire nodules are often richer in phosphates than the internal ones.

Professor Way informs us, that whilst the exterior portions of a fossil sponge, analysed by him, contained 32·17 per cent. of phosphate of lime, and only 61·71 of carbonate, the intermediate contained only 13·87 of phosphate to 67·14 of carbonate, and the interior 10·26 of phosphate to 69.17 of carbonate. Since, therefore, this phosphatic ingredient appears to have been of subsequent introduction, we cannot feel confident that it will be found uniformly present in the bed; still there can be little doubt, from what has been already ascertained, that the aggregate amount stored up in the interior of the earth would be sufficient to manure our lands with phosphate of lime for centuries to come, were all other sources of it exhausted.

Now in the instance before us we cannot, it is true, ascribe the whole merit of the discovery to scientific investigations, for the efficacy of the marl in question was observed before its real nature had been discovered; and it is therefore conceivable, that even in the absence of all chemical knowledge, it might have been employed as a manure, even although its true constitution had remained a secret.

Yet it is most probable, that had not the existence of phosphatic nodules in the chalk of France been announced in the first instance by Berthier; had not their occurrence also in England been subsequently made known to us by Dr. Fitton's investigations in the Isle of Wight, and by Professor Henslow's in Cambridgeshire; and had not the probability of bone earth being commonly found in a fossil state in the earth been so strikingly put before us by Dr. Buckland, in consequence of his researches on coprolites, the peculiar efficacy of this species of fertiliser would have been long overlooked, and its virtues, even if known in the immediate neighbourhood, would have been far from being so generally appreciated.

The same remark applies to another kind of manure lately introduced into English agriculture, the operation of which is in some respects similar to that of the phosphates. I allude to guano, of which within a few years so large an amount has been imported from the islands of the Pacific and elsewhere, that the annual consumption is stated not to fall short of 80,000 or 100,000 tons in Great Britain alone.

In this indeed, as in the preceding instance, it may be said that accident had the start of theory, for the Peruvians, unenlightened by science, have employed this material to renovate their lands for many centuries back. It must, however, be recollected, that although a circumstantial report of this fact was made to us by the most celebrated of modern travellers, in his well known Personal Narrative, nearly half a century ago, no attempts were made to introduce the substance into Europe, until the time when an increased interest in agricultural chemistry had been awakened amongst us, owing in great measure to the wide circulation of Baron Liebig's masterly treatise.

At any rate, even if guano had been introduced into husbandry independently of the suggestions of the chemist, it could not have been brought into general use with any degree of success without his assistance.

Two chances of disappointment await the farmer in the purchase of this commodity—the first, the liability to adulteration to which it is subject after its importation into the country; the second, the extreme difference in its value in the different localities from which it is obtained.

From neither of these hazards has the purchaser any adequate security, except from chemistry.

Without its aid, he possesses no means of judging whether he is applying to his land a material containing 55 per cent. of phosphate of lime or 24; 17 per cent. of ammonia or 1½ per cent.; or whether, indeed, there may not be as much as 50 or 60 per cent. of foreign matter intermixed with the really useful constituents of the sample submitted to him, even without any intentional fraud on the part of the vendor.

If, therefore, a farmer would feel mortified at being so destitute of all practical knowledge, as to depend wholly upon his farrier, whenever he attempted the purchase of a horse; ought he not to feel an inclination to acquire so much knowledge at least of chemistry, as would enable him to lay in his stock of guano without appealing on every occasion to the chemist for advice?

Now in the case both of the phosphates and of guano, the reason of the value of either commodity as a manure, would have remained to this day a mystery, had it not been for scientific research.

Without the light thus afforded, the farmer, safe only so long as he persevered in the beaten track of his predecessors, would in this instance, as well as in so many others, have found no guide to direct his footsteps, no principles upon which to modify his practice, with reference to any new circumstances that might arise; or if he ventured to appeal to principles at all, might have been led still farther astray by false hypotheses, such as those respecting the stimulating action of manures upon the ground or upon the crop, from which so many absurd inferences have been deduced.

The principles upon which modern agriculturists proceed in applying phosphates or guano to their land are now so generally understood, that men are apt to regard them as self-evident, and to forget that within a few years every one of them was either unknown, or was disputed.

Simple as it may appear to us in the present day, it is by no means a self-evident proposition, that the grain which nourishes us contains essentially certain earthy ingredients of a particular chemical constitution—that these ingredients can neither be dispensed with, nor yet be provided by the growing plant itself—that soils are charged with them in variable proportions, but always in limited quantity; and that consequently they often require to be supplied from artificial sources, in order that the crop may be enabled to grow luxuriantly.

Although these facts may now be regarded as truisms, and little gratitude felt towards chemistry for its share in establishing them, yet it must be recollected, that within 20 years, the contrary opinion was commonly enough entertained, to induce me to undertake a set of experiments partly for the purpose of disproving it;* that at the commencement of the present century, Schröder obtained a prize from the Academy of Berlin, for having, as was conceived, proved that a portion at least of the earthy ingredients found in plants was formed in the act of vegetation; and that even at a later period the same notion was indulged in, as at least not impossible, in the case of the earthy matter of the eggs of birds, by so eminent a philosopher as Dr. Prout.†

Indeed the possibility of transmuting one simple substance into another, can be by no means regarded as a self-evident absurdity, and hence it is not so

* Journal of the Royal Agricultural Society, vols. v. and vi.
† Report on Mineral Waters, 1836. Brit. Assoc. Reports for Bristol, p. 20; and 2d Lecture on Agriculture, 1840, p. 43.

* Linnæan Transactions, 1833, On the Degree of Selection Exercised by Plants with regard to the earthy constituents presented to their absorbing surfaces.
† Phil. Trans. for 1822.

surprising that such a power should be attributed to the mysterious operations of vegetable life, until its existence had been either disproved by facts, or at least shown to be utterly at variance with the whole tenor of experimental research.

The same remark applies to the now generally established belief in the presence of nitrogen in all species of grain, and the consequent necessity for a supply of ammonia from one quarter or another to the growing plant.

The first of these facts was ascertained by Gay Lussac only within a few years; the latter would even recently be disputed by those who, like Mulder, and Professor Johnston, of Durham, contend for the possibility of nitrogen being absorbed under certain circumstances from the air, and being thus directly assimilated by plants; an opinion discountenanced, as I conceive, by a reference to the general economy of nature, which appears to show, that the constituents of the atmosphere ever maintain their relative proportions unaltered, and suggests to us, that nitrogen must be conveyed to the plant through the medium of ammonia only, inasmuch as there is every reason for supposing, that this element cannot be made to abandon its elastic form through the influence of vegetative forces.

Nothing indeed short of the powerful action of electricity will cause it to unite with oxygen, although the strength of its affinity for this body is shown by the stability of some of the compounds it forms with it; nor do we know of any other element capable of uniting with it directly, except it be carbon, in an experiment not yet fully cleared up.*

It seems, therefore, *à priori*, improbable that the nitrogen of the atmosphere can have any share in the nutrition of plants; and so far as experiments have yet gone, the evidence is on the same side.

I have recently grown Beans in an artificial soil, composed of pounded brick, and enclosed a plant obtained from them in an atmosphere, sufficiently supplied with moisture, and renewed at regular intervals by the introduction of fresh air taken from the outside of the building in which the experiment went on, but from which all the ammonia present had been carefully removed, by passing it first through weak sulphuric or muriatic acid. After a certain time the plant confined in this atmosphere became feeble, mildewed, and flabby; whilst another placed under precisely the same circumstances, except that the air retained its ammonia, continued till the end of the experiment healthy, and comparatively vigorous. (The two plants were shown to correspond with the description above given, and the apparatus in which the experiments had been carried on was also exhibited.)

The many bearings on practical husbandry which these theoretical principles involve will not at the present day be disputed—they lie indeed at the root of those questions which have of late been so much agitated between Baron Liebig on the one hand, and Mr. Lawes on the other, as to the necessity of phosphates and of ammonia for the success of certain crops, and are taken for granted by both parties, notwithstanding the differences of opinion which exist between them with regard to the utility of ammoniacal and mineral manures under particular circumstances.

It must be confessed, that this discrepancy of opinion between the highest living authority on organic chemistry, and an experimentalist who has undertaken so elaborate and extended a series of researches with the view of elucidating the theory of husbandry as Mr. Lawes, is calculated to shake the confidence of practical men in the *dicta* of science. It may therefore be not amiss to show, that this discrepancy is after all confined within narrow limits, and by no means pervades the whole of their theoretical conclusions.

Baron Liebig for instance, maintains, that provided a plant be furnished with a sufficient quantity of those mineral ingredients which are essential to its constitution, in a form in which they can be readily taken up and assimilated, it can dispense with any artificial supply of ammonia; this being obtainable either from the atmosphere, or from the rain-water with which its roots are moistened.

He accordingly suggested to his friend, Mr. Muspratt, of Liverpool, a set of manures compounded upon the above principle, and calculated to meet the requirements of the several descriptions of crops in use in husbandry. These, although in fact patented by the above named gentleman, became commonly known by the name of the great chemist who devised them, a circumstance which has given occasion to an anonymous writer in the recent number of a periodical* to indulge in some rather ungenerous and misplaced sneers against the Giessen Professor; as if it had been beneath his dignity, as a man of science, to seek pecuniary profit from his own discoveries.

I have already stated, that the patent was not taken out by Liebig himself; but had the fact been otherwise, it would have been strange to bring such a charge against a Foreigner, in the country of the Arkwrights, the Watts, and the Wedgwoods; a country where a Wollaston increased his wealth, without damaging his reputation, by keeping to himself to the last hour of his life a chemical secret; and where at the present moment the same Gentleman is engaged, without the slightest impeachment on his respectability, partly in experiments on agricultural chemistry, and partly in more lucrative undertakings, as a vendor of manures.

Whilst, then, Baron Liebig lays the greatest stress upon mineral fertilisers; Mr. Lawes, on the other hand, infers from his experiments at Rothamstead, that cereal crops are improved more by ammoniacal salts than by phosphates, and that the latter are chiefly beneficial to Turnips and other plants of a similar organisation. Experiments of this description are doubtless valuable as a guide to direct our practice, where the circumstances are similar to those under which they were undertaken, and as an indication, that in the climates and on the soils with which we have to deal, cereal crops are unable to abstract from the atmosphere, or from the soil, sufficient ammonia for an abundant crop, and, therefore, require the adventitious aid of nitrogenised materials.

Before, however, we can admit their validity, as establishing a general law applicable to all places and climates, it will be necessary, at least, to reconcile them with facts well known to all the world, which point to an entirely opposite conclusion. Thus, for instance, as Baron Liebig observes, the fields in the Delta of the Nile are supplied with no other animal manure than the ashes of the burnt excrements of animals, which form their principal fuel in a country so denuded of wood; yet they have been proverbially fertile from a period earlier than the first dawn of history, and that fertility continues to the present day as conspicuous as it was in the earliest times. These fields receive every year, from the inundation of the Nile, a new soil, rich in those mineral elements, which have been withdrawn by the crops of the previous harvest. The mud of the Nile contains as little nitrogen, as the mud derived from the Alps of Switzerland, which fertilises the fields after the inundation of the Rhine. If this fertilising mud owed this property to nitrogenised matters, what enormous beds of animal and vegetable exuviæ and remains ought to exist in the mountains of Africa, on heights extending beyond the limits of perpetual snow, where no bird, no animal finds food, from the absence of all vegetation!

Why, indeed, should we be surprised, that under the vivifying influence of the exuberant heat and moisture of the valley of the Nile, cereal crops should be able to effect that, which, according to Mr. Lawes' own experiments, it would appear that, even in our own less genial climate, plants, with a larger development of leaves, are capable of doing; for how else are weto a ccount for the fact, that Turnips, which contain more nitrogen in proportion than the Grasses, can dispense with ammoniacal manures, provided only sufficient superphosphate be administered to them in an early stage of their growth?

On the other hand, the inutility of mineral manures can only be predicated with respect to land already charged sufficiently with all the fixed ingredients which the plants grown upon it contain, and that this is not the case in all parts, even of our own country, will appear from the case already cited, in which the pastures of Cheshire were so strikingly improved by a simple dressing of bones.

It cannot be contended, that what is true of some species of Grasses does not hold good with respect to the rest, and that it may not be possible by injudicious cropping to reduce other land, through the exhaustion of its phosphates, to the same state of sterility as the fields of Cheshire.

The experiments which I have myself performed on a small scale, and of which an account is given in the "Philosophical Transactions," for 1845,* tend to show that the phosphates, as well as the alkaline salts present in the soil, exist there in two different conditions, a part being readily taken up by water containing carbonic acid, the remainder capable of being extracted at the time only through the more energetic action of mineral acids. It is reasonable to suppose, that the portion which the former menstruum fails at once to dissolve, will not be immediately available for the purposes of the growing plant, but that it may nevertheless become so with greater or lesser rapidity, in proportion to the degree of energy with which the vegetable processes are going on in the soil which contains it.

In the case of Mr. Lawes's land, which, at the very time when it was considered by him as agriculturally exhausted, produced 16½ bushels of Wheat to the acre, it cannot be supposed that the mineral phosphates were actually deficient; but it is very possible, that the floating capital, as it may be termed, had been reduced by previous cropping, so that it might require a certain vigour in the plant to extract the requisite amount of phosphate and alkali from the soil. By the application of ammoniacal manures, this increased vigour may, as it would appear, be imparted to the cereal crops, but not to the Turnips, which latter would consequently be checked in their development, unless phosphate of lime were added, in a more soluble, and more readily available form, than that in which it existed in the soil.

We should, however, have had more solid grounds to proceed upon in this matter, had Mr. Lawes undertaken an analysis of his soil, at the time when he considered it to be in an exhausted condition, as was done by Mr. Way, in the researches in which I engaged his able assistance; we might then have had data for determining, how far the circumstances of his farm corresponded with the average ones in other parts of England, and what amount of phosphate of lime remaining in the land suffices for an abundant crop of cereals, when other plants grown in it are benefited by a more liberal supply of that mineral.

Whilst, however, Mr. Lawes' experiments appear to me insufficient to overturn Baron Liebig's position as to the utility of mineral manures to cereal crops in general, I am by no means prepared to advocate the opinion which that great chemist in some parts of his works appears to countenance, namely, that the artificial application of ammoniacal salts is of no practical utility. I should rather avail myself of the admission made by himself in other passages which might be quoted—that this abnormal supply of ammonia, although not essential to the growth of plants, tends to accelerate it; for if their development within a given time be in proportion, *cæteris paribus*, to the freedom with which they are furnished with manures of this descriptlon, it may be inferred, that in the absence of other counteracting influences, the subsequent luxuriance of the crop will bear some relation, at least, to the rapidity of its previous growth.

In common, then, with the larger proportion of men of science, as well as of practical agriculturists, I will take it for granted that ammoniacal salts, in due subordination to the earthy phosphates, are serviceable in vegetation; and proceeding upon these premises, shall point out, as a real boon to mankind, a recent discovery, of which Mr. Thomson, of Coot Hall, in Yorkshire, and the Rev. Mr. Huxtable, of Sutton Waldron, in Dorsetshire, seem to have had a glimpse about the same time, but which has been since more fully worked out by Professor Way, the consulting chemist to the Royal Agricultural Society, whose name has been already more than once referred to.

I allude to the fact, that argillaceous soils possess the property, not merely of detaining, by a sort of adhesive affinity, saline matters when made to percolate through them in solution in water, but also in some cases of effecting decompositions in those presented to them, of a kind which would not take place without its assistance

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* In a popular lecture it did not seem desirable to dwell upon the proofs of this assertion, but as it is opposed to the opinion of certain able chemists, I subjoin the grounds upon which I object to the arguments by which they maintain the contrary.

*Arguments for and against the Theory of the Absorption of Gaseous Nitrogen by other Elements.*

1. When organic substances which contain no nitrogen are oxidised in the air, ammonia not unfrequently is produced. *Answer.*—This fact may be readily referred to the absorption of ammonia by all spongy bodies, as has been shown by Faraday, the ammonia being, of course, derived from the atmosphere.

2. When moist iron-filings are exposed to the air, and undergo oxidation, ammonia is disengaged. *Answer.*—Berzelius, Rapport, for 1844, admits that this experiment is fallacious. Will has also refuted it.

3. When tin-filings are rapidly oxidised by means of nitric acid, ammonia is produced. *Answer.*—This experiment proves nothing, as the nitrogen and hydrogen, when they combine, are both in a nascent state.

4. If a current of moist air be made to pass over red-hot charcoal, carbonic acid and ammonia are simultaneously formed. *Answer.*—This experiment I have myself repeated, but found that the ammonia did not continue to be evolved after the experiment had been for some time prolonged. Hence I conclude that it was derived from the charcoal, which had absorbed it previously.

5. If 40 parts of iron-filings be mixed with 1 part of hydrate and 1 of nitrate of potass, and then heated, ammonia becomes perceptible. *Answer.*—This experiment comes under the same category as experiment No. 3.

6. Nitrate of potass is generated in hot climates where no organic matters are present. Hence we infer, that nitrogen and oxygen are made to combine directly through the agency of porous bodies, lime being present to unite with the nitric acid formed, and the compound being afterwards decomposed by potass. *Answer.*—It cannot be denied, that in most cases, and in all those which have been fully examined, organic matters were present where nitre was produced. If in any instance, as in that of the caves of Ceylon, their presence cannot be substantiated, may it not be, that the lime and potass attracted ammonia from the air, and that the nitric acid proceeded from the oxidation of ammonia?

7. When a succession of electric sparks is passed through common air, nitric acid is slowly but sensibly generated. *Answer.*—I have repeated this experiment under circumstances which exclude the objections which might be raised against Cavendish's experiment, as originally performed, in which, as potass was used, ammonia might probably have been present in it. I am bound, however, to state, that even when no potase was employed, and the air had been passed through sulphuric acid, to deprive it of ammonia, nitric acid was produced by the electric spark, and therefore to admit that the direct union of nitrogen and oxygen may be accomplished in this way. No ammonia could be generated, when hydrogen and nitrogen were electrified together, by means of the same powerful machine as that I had used successfully for producing nitric acid. Yet the power of electricity to cause the union of nitrogen and oxygen must be confined to very narrow limits, or the quantity of nitric acid generated on the whole body of the atmosphere would have been so much greater than it is found to be, as to entail the destruction of animal and vegetable life.

8. Desfosses showed, that when nitrogen was brought into contact with carbon at a high temperature, an alkali being present, a cyanide was produced, and Mr. Lewis Thomson is said to manufacture Prussian blue on a large scale on this principle. Dr. Fownes (Brit. Assoc. Rep. vol. 10), appears to have shown that no ammonia could in these cases be present. *Answer.*—This experiment seems to establish the possibility of gaseous nitrogen uniting with carbon, as the preceding one does of its combining with oxygen But the porous nature of charcoal, and its power of absorbing gases, must be taken into the account; and it may, therefore, still appear doubtful, whether there is any decided evidence, that nitrogen can be made to abandon its elastic form on the earth's surface, except through the combined agency of electricity and of the attraction of oxygen. How then, it may be asked, can ammonia be produced at all? Doubtless great pressure would effect the union of its component parts, as we know that their mutual affinity is powerful enough to keep them united when once brought together. How this pressure is brought about is of course a matter of conjecture, but the theory which supposes the union to take place in the interior of the earth may serve to account for this, as well as for the evolution of ammonia through chasms in many places, more especially in those connected with volcanoes. This, however, is not the place to dwell upon such speculations, which are only alluded to in order to show, that it is not necessary to suppose the ammonia which plants and animals require to have been "pent up in deep caverns," since it might be generated gradually by volcanic processes, which caused nascent hydrogen, under great pressure, to be brought into contact with nitrogen. At any rate, I cannot admit my friend Professor Johnston's explanation, which, if I understand it rightly, assumes that carbonaceous matter has had a share in volcanic processes—an idea, I believe, abandoned as untenable, ever since the time of Werner.

* "Edinburgh Review" for July, article "Chemistry."

* Bakerian Lecture, "On the Rotation of Crops."

through the operation of the ordinary laws of chemical affinity.

The adhesive attraction which produces the former of these remarkable effects, although exerted in different degrees for different salts, seems to be exhibited more or less for all. Thus, water containing common salt, if made to filter through clay, loses a portion of its saline impregnation. But the decomposing agency of the soil is evinced principally with reference to salts of ammonia, which are often made to exchange their acids with those combined with other bases brought into contact with them, such as lime and magnesia.

Accordingly, sulphate and muriate of ammonia will be converted into the carbonate in their passage through clay, and the latter, through the adhesive affinity exerted for it by the earth, will be detained within its substance. Hence, water holding sulphate or muriate of ammonia in solution, if made to percolate a certain thickness of vegetable mould, containing some proportion of argillaceous earth, will come out entirely free from all ammoniacal salts, but containing, in the place of it, either sulphate of lime, or sulphate of magnesia, according to the nature of the earth present in the soil.

For the same reason it is that sewage-water may be freed from all its impurities, by being made to filter through a certain thickness of clay.

It is needless for me to remark upon the important aid this discovery affords us towards preserving and concentrating the valuable contents of our manure-heaps. We see, that an admixture of clay or marl in sufficient quantity with decomposing animal and vegetable exuviæ, will prevent the escape of ammonia, and even of alkaline and phosphatic salts, although the water which contained them be allowed to drain off, after passing through this material.

We perceive, also, under what circumstances it may be admissible to employ as manures such salts of ammonia as, when alone, would be useless in vegetation, because the plant being unable to separate from them their alkaline ingredient, could not obtain from them any nitrogen; and we also see opening upon us a promising train of research, which may not improbably suggest to us hereafter the means of availing ourselves, for the purposes of husbandry, through the instrumentality of certain mineral substances, of the whole of that immense accumulation of fæcal matters which is now emptied into the Thames, and at the same time of disarming it of its noxious influences upon mankind.

But I must hasten on to a few other examples of the service rendered by chemistry to husbandry, and I know of scarcely any to which I can appeal with greater confidence than to Professor Liebig's refutation of the *humus theory* of vegetation, and of his exposition of the true manner in which plants obtain their nourishment from the soil.

I am aware that Mulder * and a few others still profess to adhere to the old opinion, that *humus* does actually supply nourishment to plants, by being rendered soluble in the sap, and taken up along with it into their tissues; although the Dutch chemist himself seems to leave the question in doubt in another place, where he states, that it is still open to investigation, when humus, as such, appears to have nourished a plant, whether it had not been previously decomposed into carbonic acid, and in this state had supplied nourishment to the roots.

On the other hand, on reviewing the arguments which incline him to the belief that humic acid is actually taken up into the vessels of the plant; whilst on the one hand I see no reason to deny the possibility that its soluble salts may occasionally be contained in the sap, as is the case with other saline solutions brought into contact with the roots, I can, on the other, discover no proof that such is by any means an ordinary occurrence, or one having any reference to the nutrition of the vegetable. On the contrary, the sap of plants, whenever it has been examined, is found to consist of the same ingredients, namely of water, carbonic acid, carbonate of ammonia, and saccharine matter; but never to contain humus under any of its modifications.

Now the *onus probandi* surely rests with those who maintain a theory so opposed to all analogy, as that of supposing the vegetable to be nourished, in any degree, by means of a material, which is, at any rate, wholly inadequate to supply any considerable portion of what is necessary for its growth; as has been demonstrated both by Liebig and by Schleiden, authorities who, differing as they do on many other points, agree at least in this one.

Nature, however prodigal she may be in results, is chary as to the means she employs to obtain them; she has no occasion to resort to expedients to which man is often driven, who, having begun his work with one set of instruments, is induced to perfect it by the aid of another; and in this case physiologists have shown, that she has provided an entirely distinct machinery for the purpose of accomplishing the assimilation of the four organic elements, namely the specific influence of the luminous rays upon the green parts of the vegetable tissue, by which carbonic acid, water, and probably ammonia, are decomposed; and carbon, hydrogen, oxygen, and nitrogen, assimilated.†

The absorption of sap by parasites from the parent tree, which Mulder appeals to in support of his theory, is by no means a parallel case to the absorption of humus by the roots. The former can only be regarded in the light of a prolongation of the plant which supports it, in the same sense, at least, as a new shoot is of the original trunk, or a scion of its stock. When supplied with leaves, the parasite elaborates its own sap receiving the crude material from the new wood; when destitute of them, it implants its roots into the bark, in order to obtain the sap already elaborated; but in either case the mode of nutrition is entirely in harmony with that of plants in general, and can in no degree be appealed to, as countenancing the anomalous theory which supposes humus itself to be taken up and assimilated.

Although, therefore, much that relates to the nutrition of plants may be still obscure, I cannot admit that this is the case with respect to the manner in which the materials present in the soil are rendered available; conceiving, as I do, that the doctrine maintained by Liebig, even though it may still be doubted by a few, commands the assent of the scientific world generally enough, to be considered a safe foundation for practice.

Assuming, then, that the humus theory, which supposes vegetable mould to constitute in itself the food of plants, has given place to the doctrine which represents it as serviceable only, in proportion as it supplies, through its decomposition, or its absorbent properties, carbonic acid and ammonia; I will beg you to consider how much light has been thrown upon the hidden operations of agriculture by the establishment of such a truth—how greatly, on the one hand, our practice may be modified, and our methods of culture improved, by having the principle impressed upon our minds, that humus must undergo a kind of decomposition, before its constituents can become assimilated—and, on the other hand, how many faulty proceedings may be discontinued, through the rejection of the crude notion formerly in vogue, that plants are nourished in the soil on which they grow, in the same sense, and by the same process of assimilation, as animals are by the plants on which they feed.

The above examples may suffice to show the benefits which science has conferred upon agriculture, properly so called.

There is, however, another branch of rural economy, namely, the art of feeding and fattening domestic animals, in which the services rendered by it are even more palpable, and less open to dispute. To know that warmth is to a certain extent a substitute for food; that every expenditure of muscular force, and even every exertion of mental or bodily power, involves the consumption of an equivalent amount of animal tissue—that sugar, gum, and starch, no less than oil, are convertible by the processes of the animal economy into fat—a principle which even Dumas is at length compelled to concede; that the temperature of the body may be maintained by means of a cheaper kind of nourishment than is needed for supplying the waste of the system; are facts which cannot but prove of the highest practical utility to all those whose business it is to provide animal food for the wants of our population.

On these topics, however, less need be said, because ample justice has been done by Mr. Pusey, in his valuable report, to the services rendered by Baron Liebig to this branch of our subject.

In conclusion, then, let me request you to consider, whether the facts that have been brought forward in the course of this Lecture do not hold out inducements to all those engaged in agriculture, whose time and education permit, for making themselves familiar with the first great truths of chemistry, and for keeping its principles steadily in view in all the operations of farming, and especially whenever they aspire to innovate and improve upon existing methods. It may be true, that some of the principles alluded to were suggested at a period antecedent to that included within Mr. Pusey's Report. It may also be true, that the germ of some of the most important facts or generalisations announced to us by Baron Liebig, is traceable to Saussure and other of the earlier experimentalists. These, however, are points which, however much they may concern the reputation of the individuals, cannot affect our judgment as to the utility of science itself, or as to the probability of further assistance being derivable from its prosecution. Nor will I dispute the position, that, with the exception of the addition of sulphuric acid to bones, and the employment of flax-water as a manure, no successful process of recent introduction can be appealed to, solely and distinctly referable to the suggestions of the chemist;* and still less would I seek to encourage amongst my hearers the notion, that for every agricultural difficulty a chemical *nostrum* can be devised. It would be as absurd for a mere chemist to conduct a farm, as for a mere mathematician to command an army; although the best arrangement of troops in a battle may be a mechanical problem, and an Archimedes may have done good service to his countrymen, by firing the enemy's fleet, through the resources of science.

If, indeed, success in agriculture were so dependant upon the manipulations of science, as some sanguine persons, to whom Mr. Pusey's remarks are addressed, appear to have imagined, the consequences would be much to be deplored; as it would transfer the cultivation of our fields to the charge of a comparatively small number of men of subtle and refined intellects—closet philosophers, who had made physics the principal business of their lives—instead of continuing, as it has hitherto done, to supply an healthful and improving occupation to that larger body of practical and intelligent persons, whose plainer and less cultivated understandings, although unfitted for the abstractions of science, are perfectly competent to grapple with the difficulties of an art, in which it seems intended, that tact, and sagacity, and experience should, after all, always hold the highest place amongst the qualifications needed for success.

But with all these deductions, it may be safely asserted, that there is scarcely any process in the art of culture, however entirely it may have originated with unscientific men, which would not be benefited, by being brought so far under the domain of chemistry as to be carried on with a constant reference to its principles.

You must have seen, in the course of my previous lectures, abundant proof of this, in the remarks that have from time to time been made, on the management of farm-yard manure, on the selection of artificial substitutes for it, on the uses of tillage, and on the methods of rendering the soil available for the nourishment of plants. Nor can there be any doubt, that in proportion as our scientific knowledge advances, in proportion as agricultural chemistry is cleared from those doubts which hang over some of its principles, and also in proportion as the generalisations deduced from its facts by the first authorities become rooted in the minds of practical cultivators, it will, as Mr. Pusey anticipates, bring forth more fruit, and vindicate more completely than at present its claim to an important, although always, no doubt, a subordinate place, amongst the acquirements of the practical agriculturist.

* "Chemistry of Vegetable Physiology," chaps. v. and viii.

† See Liebig's "Chemistry in its application to Agriculture," chap. iii.; and Schleiden's "Botany, Engl. Trans." p. 473, *et seq.*

* May not, however, the use of charcoal in horticulture suggested by its absorbent powers with reference to gases, be held as another boon conferred by chemistry; and the power of gypsum in fixing ammonia—the failure in the use of which is, I believe, mainly attributable to the mineral not having been exposed to heat before it was pulverised, and being applied in a dry state, instead of being mixed up with water to the consistence of cream—be cited as another?

## Home Correspondence.

*Peat Charcoal.*—I shall be obliged by any of your correspondents informing me of their experience with peat charcoal, in growing Potatoes or Turnips. A friend of mine, who was at considerable pains and expense in preparing some, tried it this season upon both; but without the slightest apparent benefit. The Potatoes, upon which a good allowance of charcoal was put, over the sets and dung, at planting-time, were neither a better crop, nor freer of disease, than the rest of the field. Upon Turnips, three drills were manured only with charcoal, saturated with urine, from a feeding shed—the rest of the field has a good crop, but upon these three drills the Turnips are few in number, and are not larger than Radishes. Tried upon Grass, on a lawn, it has not been more successful. If this much-bepraised deodoriser (fertiliser we cannot call it) is not found to answer better elsewhere, the bogs of Ireland are not likely to turn out quite the California some patriots (speculators?) would have us believe. I have a fair crop of Turnips, upon a thin gravelly soil, which would be much improved were the crop eaten off by sheep, folded upon the field; but this is not convenient. I am told that the soil will be equally benefited by leaving the tops of the entire crop to rot on the surface; or rather ought I to plough them in whilst green? [Plough them in green.] The Potato crop in this county (Dumfries) is generally light; the disease varying according to quality of soil, whilst light, dry, gravelly, or pure mossy soils have not more than one-sixth or one-eighth; heavy loams and damp clays have as much as one-half and two-thirds diseased tubers. Upon some high lying farms the stems were blackened by frost in the beginning of July; here the tubers are few and small—not half a crop. Oats will be a fair average. In high, damp localities much of the crop, though cut three weeks since, is still in the fields; and, from the late wet and warm weather, must now be injured by sprouting: a great deal, too, destroyed by rooks, wild pigeons, black cocks, and grouse—the last as destructive as any; and then they come in such numbers you can hardly drive them away—to use a gun would be high treason; a human you may shoot, when carrying off your property, but with a black cock or grouse, it is quite "*un autre chose.*" They manage these matters better in France now, at any rate. A word upon these cunning rogues, the rooks; all summer I have had a boy to keep them from a 5-acre field of Potatoes. On Sunday week the callant went home to his mother's for a clean shirt. The crows soon observed, and took advantage of his absence; for some three hours they had it all their own way, and so good a use did they make of their time, that next morning 11 half-bushel basketsful of half-eaten Potatoes were gathered off the drills; how many were wholly eaten, and how many were carried away, could of course only be guessed at. As there is no unmixed good in this world, so neither is there any unmixed evil—the crows, though they occasionally help themselves rather more liberally than we like, to the corn and Potatoes in autumn, do good service at other seasons of the year by destroying myriads of slugs, grubs, and other "small deer," which, though unseen, are not the less active in blighting the hopes of the *Tenant Farmer.*

*Beer.*—In reply to "Senex," in your Number of the 25th, I beg to inform him that an ale far superior to Bass's (I speak medically and gastronomically) can be easily brewed from sugar and hops; and as the quality of sugar is less variable than that of malt, with more certainty of success, according to the recipe given by Michael Donovan in his "Domestic Economy," published in Lardner's "Cyclopædia." This work is valuable in many respects; but especially in its exposure of impositions practised to profit "the few" at the expense

"of the many." It is in "Domestic Economy" what Davis's Pharmacopœia is in medicine, the antagonist of quackery. Having often tried the process, and with success, the only modification I would suggest, is that the Hops, to prevent trouble, should be inclosed in a muslin bag, and that it should be fined, to hasten its clarification, with isinglass,—not dissolved in vinegar, as recommended in Black's Treatise, edition 3d, 1844; but in a small portion of the beer itself; a process also useful in the manufacture of cider—to get rid of the "yeast," which determines the vinous, then the acetous, and often the putrid, fermentation. "Senex" may be assured that beer thus manufactured, if bottled, soon becomes "champagne," from its lightness on the stomach, with the "bitter" tonic of the "Hops." *Agricola Cæsariensis.*

*Thin Seeding.*—I am always glad to please my neighbours, but I am not pleased with the cause (viz., bad crop of Wheat, only 7 sacks to the acre) of their pleasure. They rejoice to see my system (viz., thin sowing, no ploughing, clean hoeing) come to the ground; and tell me if I do not publish it to the world they will. I think they are rather premature in their rejoicing. I do not consider it an absolute failure. The very best farmers cannot every season invariably insure success. This 7 sacks, or 28 bushels per acre, that is so much talked about, is, after all, as much, I should think, as the average of England. A neighbour of mine, a four-course man, grew one year 12 sacks per acre; the next time it came for Wheat, farmed in the same way, he grew only 3 sacks per acre. I own I cannot control the elements, or I could grow more. After I put on the top-dressing (soot) there came a hasty shower and washed great part of it away, or there might have been 2 or 3 sacks per acre more. The wind also blew from all quarters, in currents between the trees (50 to the acre), and beat it about so that before harvest it pointed in all directions except the perpendicular, or there might have been 2 or 3 sacks more. Then again it was not the right sort of Wheat (of course not Piper's Thickset), or there might have been 2 or 3 sacks more. Taking these drawbacks into the account, I guess the public will think I am on the "laughing side." I think there are not many farmers can say what I can, viz., that they have grown on one acre in 7 years from about 2 pecks per acre seed, 70 sacks of Wheat, without the land being moved in any way, except the surface about an inch or so by hoeing. Perhaps the cream of the matter respecting this "jail" crop is, after all, that I get more than 3*l.* per acre profit. A neighbour said, last year, "Now after all you prove nothing. Perhaps if you had ploughed deep, subsoiled, dug, scarified, hoed, &c., you would have grown more still." I therefore dug a piece across the middle of the field, farmed it in the same way (except digging). It planted best, and looked best, all the season; but when we came to test it by the bushel, there were 5 pecks per acre less! *J. D. Piper, Colne Engaine, Essex, Nov.* 4.

### METEOROLOGICAL REPORT.—November.

(*Continued from p.* 718.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Nov. 5 | 8 a.m. | ... | 29.94 | Fine frosty morning. Light |
| | 11.30 a.m. | 29.95 | ... | at S. and N. occasionally. |
| | 6 30 p.m. | 29.93 | ... | P.M. Gentle northerly breeze. |
| | 10.30 p.m. | ... | 29.86 | Barometer falling steadily. Fine evening. |
| 6 | 7.40 a.m. | 29.79 | ... | A.M. Barometer rising during night, though lower than last observation. Northerly. Moderate. |
| | 10.40 p.m. | 29.79 | ... | P.M. NW. Dull cloudy day. |
| 7 | 8 a.m. | 29.79 | ... | NNW. Stiff breeze; cold and |
| | 3 p.m. | ... | 29.75 | cloudy. |
| 8 | 7 50 a.m. | ... | 29.77 | Gentle NNW. breeze; foggy, |
| | 11 a.m. | 29.79 | ... | clearing off as sun rose. |
| | 6.30 p.m | 29.78 | ... | P.M. NNW. Overcast. |
| | 10 p.m. | ... | 29.77 | Evening, heavy rain. |
| Sun. 9 | 7.45 a.m | ... | 29.70 | NNW. Gentle. |
| | 3 p.m. | 29.75 | ... | Cloudy. |
| | 10.15 p.m | 29.73 | ... | Evening, rain. |
| 10 | 7.50 a.m. | ... | 29.59 | NNW. Gentle. Bright and sunny. |
| | 6.40 p.m. | ... | 29.59 | Evening, rain. Barometer |
| | 10.10 p.m. | 29.63 | ... | steady all day; rising at night. |
| 11 | 7 a.m. | ... | 29.87 | N. Moderate. Barometer |
| | 10.10 p.m. | 30.02 | ... | rising steadily. Bright and fine. |
| 12 | 7.40 a.m. | ... | 30.09 | N. Gentle. A.M. Hazy. Ba- |
| | 11.30 p.m | 30.22 | ... | rometer rising steadily. |
| 13 | 8 a.m. | ... | 30.28 | A.M. N. Gentle. Bright. Barometer rising steadily. |
| | 11.30 a.m | 30.31 | ... | Noon. Thin white clouds. |
| | 3 10 p.m | 30.30 | ... | |
| | 7.5 p.m. | ... | 30.29 | Evening. Dense, overcast. |

* † ‡ ¶ All these fluctuations arise from currents of air passing over England from west to east, and lying to the northward.

Dorchester Nov. 13. *F. P. B. M.*

(*To be continued.*)

## Calendar of Operations.

### NOVEMBER.

Dorset Farm, *Nov.* 3.—We are now engaged in storing the Mangold Wurzel, which, although they were very backward during the early part of the season, have, after all, turned out a very good crop; and the Turnips have made up wonderfully; the consequence is, that the price of stock has risen very much lately—ewes, of average quality, are now worth 4*s.* to 5*s* a head more than they were a month ago; but they are not likely to rise much higher, as the weather is now setting in cold, which will put a stop to vegetation. Wheat sowing is progressing well, and may be stated as about half done. Although ploughing was delayed for some time by drought yet the very favourable weather that succeeded has tended very much to make amends for that, and I believe that Wheat has never been put in better, on ordinary land, than it has this season. We have got ours in, with the exception of some that comes after Mangold Wurzel. On this land we fold the sheep upon the Mangold Wurzel tops, which are left on the ground after the roots are carted off. The sheep do very well upon them, if care is taken not to let them have too many at one time, especially if the leaves are dried up a little before they have them; and as this root has generally a good allowance of dung applied to it, a very light dressing, with the sheep, is sufficient to insure a corn crop after; and the treading of the sheep tends to give that consistency to the land so necessary for Wheat. In the case of Turnips, if the land has had a dressing of dung, we carry off one-half or two thirds of them, and eat the rest on the land, which leaves it fit for the Barley. Grass is still abundant; but as the nights are getting long, and occasionally frosty, the more valuable cattle will have a little hay by night, instead of lying out. We shall now be employed ploughing the Wheat stubbles, to let them have the benefit of the frost during winter, and in doing so we endeavour to get a little beyond our usual depth with the plough, because the winter frost will help to naturalise the fresh soil, and also roots are fond of something new. *G. S.*

## Notices to Correspondents.

Books: *H Copland.* We cannot find the title. It is a pamphlet descriptive of a two-acre farm, cultivated most profitably by a tradesman of either Essex or Suffolk. Perhaps some one will furnish the name.

Food for Cows: *H T.* Cabbages and hay. And for sheep, 2 lbs. of chopped hay, ½ lb. of Bean-meal, ½ lb. of Linseed, and 20 lbs. of cut Swedes a day apiece. Give it in three lots.

Italian Rye-grass: *M.* The extracts from Mr. Dickinson were made in a past volume. See pp. 125, 534 (1845); and pp. 93, 459 (1847).

Kohl Rabi: *H S M.* It may be secured now. There is a good and cheap lantern for the stable made of wire gauze.

Mangold Wurzel: *Constant Reader.* The leaves may be given to cows without risk of injury, provided dry food (some hay or straw) be given with them. We are storing roots; and all the tops are gathered and thrown into yards, where the pigs work among them; but most of them rot.

Pond Mud: *Eboracensis.* A very short distance of carriage would justify a farmer in declining the gift, unless it be peculiarly rich in vegetable matter. It should be taken out, and suffered to drain and dry; then be broken up, mixed with salt and gypsum, and applied to Grass-land.

Poultry: *J C M.* The fowl has either had an injury in the back, or is cramped from a chill. If the bird is kept in a paved yard, or if used to a poultry house with bricks or stone floor, it is probably the latter. The treatment for it will be bread soaked in ale, and pounded peppercorns mixed up with meal. Examine his feet, to see whether it arises from ulcers caused sometimes by small gravel stones having entered through the skin, and remaining in the feet.—*W W H.* If the cramp complained of is in adult birds, adopt the treatment mentioned above; if in chickens, it is very often only the result of weakness, caused by fast growth, and merely requires age and generous food to cause it to disappear. *J. Baily*, 113, *Mount-street, London.*

Salt: *H B.* Salt has been tried broadcast, 2 cwt. or 3 cwt. per acre, in wet weather in June, as manure for Turnips. It has succeeded better with Mangold Wurzel. The best way to apply it to land is to add it to the farm-yard manure, about a stone to a ton.

Weed: *Anti weed.* The only tract on this subject that we are acquainted with is one published long ago by B. Holditch (Ridgway, Piccadilly), which is trustworthy and instructive.

## Markets.

### COVENT GARDEN, Nov 15.

English Pine Apples continue plentiful, and Grapes, both foreign and English, are abundant. Small quantities of Pears are still brought from the Continent. The best English kinds fetch 2*s.* to 4*s.* a doz., and 8*s.* to 12*s.* per half sieve. Oranges are plentiful. Nuts remain nearly the same as quoted last week. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are a little cheaper. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3*s* to 6*s* | Almonds, per peck, 6*s* |
| Grapes, hothouse, p. lb., 2*s* to 5*s* | — sweet, per lb., 2*s* to 3*s* |
| — Lisbon, per lb., 9*d* to 1*s* | Oranges, per doz., 1*s* to 1*s* 6*d* |
| Melons, each, 1*s* to 2*s* | — per 100, 6*s* to 10*s* |
| Apples, kitchen, p. bsh., 1*s* to 2*s* 6*d* | Nuts, Barcelona, p. bsh, 20*s* to 22*s* |
| Pears, dessert, p. doz., 2*s* to 4*s* | — Brazil, p. bsh., 12*s* to 14*s* |
| Lemons, per doz., 1*s* to 2*s* | Filberts, per 100lbs., 70*s* to 90*s* |
| Walnuts, per bush., 12*s* to 24*s* | |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8*d* to 1*s* | Leeks, per bunch, 1*d* to 2*d* |
| Cauliflowers, p. doz., 6*d* to 3*s* | Shallots, per lb., 6*d* to 8*d* |
| Scarlet Runner s, p. b. sve., 2*s* to 4*s* | Garlic, per lb., 6*d* to 8*d* |
| Broccoli, per bunch, 8*d* to 1*s* | Artichokes, per doz., 4*s* to 6*s* |
| Peas, per sieve, 6*s* to 8*s* | Lettuce, Cab., p. score, 4*d* to 1*s* |
| Potatoes, per ton, 45*s* to 80*s* | — Cos, per score, 3*d* to 1*s* |
| — per cwt., 2*s* to 5*s* | Small Salads, p. punn., 2*d* to 3*d* |
| — per bush., 1*s* 6*d* to 2*s* 6*d* | Horse Radish, p. bundle, 1*s* to 4*s* |
| Turnips, p. bunch, 1*d* to 2*d* | Red Beet, per doz., 1*s* to 2*s* |
| Cucumbers, each, 1*d* to 1*s* | Mushrooms, p. pot., 1*s* to 1*s* 3*d* |
| Radishes, per doz., 9*d* to 1*s* | — per bushel, 7*s* to 10*s* |
| — Turnip, p. doz., 9*d* to 1*s* | Sorrel, per hf. sieve, 6*d* to 9*d* |
| Celery, p. bundle, 6*d* to 1*s* 6*d* | Tomatoes, p. half sieve, 3*s* to 4*s* |
| Carrots, per bunch, 4*d* to 6*d* | Fennel, per bunch, 2*d* to 3*d* |
| Brus. Sprouts, p. hf. sieve, 9*d* to 1*s* | Savory, per bunch, 2*d* to 3*d* |
| Spinach, per sieve, 1*s* 6*d* to 2*s* | Thyme, per bunch, 2*d* to 3*d* |
| Onions, p. bunch, 1*d* to 5*d* | Parsley, per doz. bun., 2*s* to 3*s* |
| — Spanish, p. doz., 1*s* 6*d* to 3*s* | Mint, per bunch, 1*d* to 2*d* |
| Endive, per score, 9*d* to 1*s* | Basil, p. bunch, 3*d* to 4*d* |
| Beet, per doz., 6*d* to 1*s* | Marjoram, do., 3*d* to 4*d* |
| Parsnips, per doz., 6*d* to 1*s* | Watercress, p. 12 bunch., 4*d* to 6*d* |

HAY.—Per Load of 36 Trusses.

Smithfield, Nov. 13.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72*s* to 77*s* | Clover ... ... ... | 70*s* to 85*s* |
| Inferior ditto... ... | 60 68 | 2d cut ... ... ... | 60 72 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 23 27 |
| New Hay ... ... — | — | | J. Cooper. |

Trade heavy.

Cumberland Market, Nov. 13.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 74*s* to 80*s* | Inferior ... ... ... | 65*s* to 75*s* |
| Inferior ditto... ... | 60 70 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 86 | | Joshua Baker. |

Hops.—Friday, Nov. 14.

Messrs. Pattenden and Smith report that the demand for all fine Hops continues unabated, at full prices.

Potatoes.—Southwark, Monday, Nov. 10.

The committee report that the market continues to be supplied quite equal to the demand, which is anything but brisk. In some few instances a little better prices have been obtained than in our last report. The following are this day's quotations:—York Regents, 60*s.* to 70*s.*; Scotch do., 40*s.* to 50*s.*; Kent and Essex do., 55*s.* to 65*s.*; ditto Shaws, 40*s.* to 55*s.*; Lincolnshire whites, 40*s.* to 50*s.*

Coal Market.—Friday, Nov. 14.

Eden Main, 16*s.* 9*d.*; Wallsend Braddyll's, 18*s.* 3*d.*; Wallsend Hetton, 18*s.* 6*d.*; Wallsend Lambton, 18*s.* 3*d.*; Wallsend Stewart's, 18*s.* 3*d.*; Wallsend Adelaide Tees, 16*s.* 9*d.*—Ships at market, 120.

Smithfield, Monday, Nov. 10.

There was a large supply of Beasts; the weather being milder the demand was smaller; the trade generally was worse; we are, however, still enabled to quote 3*s.* 8*d.* for choice Scots. There were a few more Sheep on offer; choice Downs maintained late quotations—indeed, 4*s.* 4*d.* was realised; in a few instances, big Sheep, owing to the weather, were lower, and, in consequence of a large supply from Holland, inferior qualities unsaleable. Trade on the average was worse for Calves, still a good one made 4*s.* From Holland and Germany there are 1784 Beasts, 5460 Sheep, 297 Calves, and 60 Pigs; from France, 100 Sheep and 12 Calves; from Scotland, 120 Beasts; and 2950 from the northern and midland counties.

| Per st. of 8 lbs.—s d | s d | Per st. of 8 lbs.—s d | s d |
|---|---|---|---|
| Best Scots, Herefords, &c. ... 3 | 4 to 3 8 | Best Long-wools . 3 | 4 to 3 8 |
| Best Short-horns 3 | 2 — 3 4 | Ditto Shorn ... | ... |
| 2d quality Beasts 2 | 4 — 2 10 | Ewes & 2d quality 2 | 8 — 3 2 |
| Best Downs and | | Ditto Shorn ... | ... |
| Half-breds ... 4 | 0 — 4 2 | Lambs ... .. 0 | 0 — 0 0 |
| Ditto Shorn ... ... | | Calves ... ... 3 | 0 — 4 0 |
| | | Pigs ... ... 3 | 4 — 4 4 |

Beasts, 5282; Sheep and Lambs, 26,780; Calves, 364; Pigs, 510.

Friday, Nov 14.

The number of Beasts is large and trade very dull; however, the favourable change in the weather enables us to retain Monday's quotations. Although the supply of Sheep is small it exceeds the demand. Monday's prices are fully realised for choice kinds, but they are scarcely reached for inferior qualities. Good Calves are scarce, and fully as dear. From Germany and Holland we have 500 Beasts, 1150 Sheep, and 153 Calves; and 115 Milch Cows from the home counties.

| | | | |
|---|---|---|---|
| Best Scots, Herefords, &c. ... 3 | 4 to 3 8 | Best Long-wools . 3 | 4 — 3 8 |
| Best Short-horns 3 | 2 — 3 4 | Ditto Shorn ... | ... |
| 2d quality Beasts 2 | 4 — 2 10 | Ewes & 2d quality 2 | 6 — 3 0 |
| Best Downs and | | Ditto Shorn ... | ... |
| Half-breds ... 4 | 0 — 4 2 | Lambs ... ... 0 | 0 — 0 0 |
| Ditto Shorn ... ... | | Calves ... ... 3 | 0 — 4 0 |
| | | Pigs ... ... 3 | 4 — 4 8 |

Beasts, 1207; Sheep and Lambs, 3810; Calves, 262; Pigs, 525.

Mark Lane.

Monday, Nov. 10.—The supply of English Wheat to this morning's market was moderate, and disposed of on the terms of this day se'nnight. The attendance of buyers being small, the sale of foreign was limited, but it realised our extreme quotations.—There is more demand for the low descriptions of foreign Flour, and prices for all sorts are fully supported.—Malting Barley sells at last week's prices; grinding is 1*s* per qr. dearer.—Beans and Peas are very firm, and in some instances 1*s.* per qr. more money is obtained.—The Oat trade is slow, and new Irish are 6*d.* per qr. cheaper.

| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38—41 | Red ..... | 35—38 |
| — — fine selected runs...ditto | 40—44 | Red ..... | 38—40 |
| — — Talavera ..... | 44—46 | | |
| — Norfolk, Lincoln, & York... White | 34—36 | Red ..... | — |
| — Foreign ..... | 31—48 | | |
| Barley, grind. & distil., 25*s* to 26*s*...Chev. | 29—32 | Malting . | 25—28 |
| — Foreign... grinding and distilling | 22—26 | Malting . | — |
| Oats, Essex and Suffolk ..... ..... | 16—20 | | |
| — Scotch and Lincolnshire...Potato | 19—24 | Feed ..... | 18—21 |
| — Irish ..... Potato | 18—21 | Feed ..... | 18—20 |
| — Foreign .....Poland and Brew | 18—22 | Feed ..... | 16—19 |
| Rye ..... | 28—30 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ...25*s* to 27*s*.....Tick | 26—30 | Harrow . | 26—30 |
| — Pigeon.....27 — 32... Wind- | 30—33 | Longpod | 24—26 |
| — Foreign ..... Small | 21—29 | Egyptian | 22—24 |
| Peas, white, Essex and Kent.....Boiler- | 28—31 | Suffolk... | 29—32 |
| — Maple.....27*s* to 29*s* .....Grey | 24—27 | Foreign . | 26—31 |
| Maize ..... White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 35—39 | | |
| — Suffolk .....ditto | 25—32 | Norfolk . | 25—32 |
| — Foreign .....per barrel | 15—21 | Per sack | 28—33 |

Friday, Nov. 14.—The arrivals of grain of all kinds this week have been moderate. This morning's market was badly attended, and a mere nominal business in Wheat transacted; prices of both English and foreign may be considered the same as on Monday last.—Barley is firm, and grinding qualities being scarce are rather dearer.—In the value of Beans, Peas, and Oats there is no alteration. A cargo of Egyptian Beans afloat fetched 20*s.* per qr., cost, freight, and insurance. Flour meets a good inquiry at late rates.—A few sales of floating cargoes of P. O. Wheat have been effected during the week, at 28*s.* to 31*s.* per qr.; a cargo of Beheira realised 23*s.* per qr., both cost, freight, and insurance. In Maize there was nothing doing.

Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2170 | 3130 | 320 | 2260 sacks |
| Irish ..... | — | — | 8330 | |
| Foreign ... | 7280 | 4570 | 5490 | 4510 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Oct. 4..... | 35*s* 7*d* | 25*s* 1*d* | 17*s* 6*d* | 24*s* 2*d* | 27*s* 10*d* | 27*s* 1*d* |
| — 11..... | 35 6 | 25 2 | 17 3 | 25 0 | 27 8 | 26 2 |
| — 18..... | 36 0 | 24 9 | 17 0 | 23 6 | 27 6 | 27 2 |
| — 25..... | 36 9 | 25 5 | 17 5 | 23 8 | 28 6 | 27 7 |
| Nov. 1..... | 36 6 | 25 7 | 17 5 | 24 10 | 28 6 | 27 5 |
| — 8..... | 36 1 | 26 1 | 17 6 | 25 1 | 28 10 | 28 2 |
| Aggreg. Aver. | 36 1 | 25 4 | 17 4 | 24 4 | 28 2 | 27 3 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Oct. 4. | Oct. 11. | Oct. 18. | Oct. 25. | Nov. 1. | Nov. 8. |
|---|---|---|---|---|---|---|
| 36*s* 9*d* | ... | ... | ... | ... | ... | ... |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 1 | ... | ... | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | ... | ... |
| 35 7 | ... | ... | ... | ... | ... | ... |
| 35 6 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Nov. 11.—Our market this morning was well attended by country buyers. Wheat was in moderate request, at fully last Tuesday's price for useful samples of red, and at an improvement of 1*d* per bushel on white. There was a much better demand upon American Flour, choice qualities of sweet commanding an advance of 6*d.* per barrel on the quotations of this day se'nnight; sour barrel Flour sold more freely than of late, and to go into widely-apart districts. Indian Corn was not much dealt with to-day, but the value was considered to be supported. Good meaning Irish Oats were scarce, and improved 3*d.* to 1*d.* per bushel, and Oatmeal also 3*d.* per load. Grinding Barley improved 2*d.* per bushel, and Egyptian Beans 3*d.* to 6*d.* per qr. In Peas no bange occurred.

——Friday, Nov 7.—There was a good attendance of country millers and dealers at our Corn Exchange to-day. We experienced a heavy demand for Wheat, and full prices were paid; indeed, for superior samples of white a small advance was obtained. The better qualities of American Flour likewise commanded 3*d.* to 6*d.* per barrel more than on Tuesday, and a fair quantity taken for shipment, and into the interior. There was no change of price in Indian Corn. Oats were slightly better. No alteration as regards Oatmeal, Beans, or Peas.

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 „ „ 50 to 70 „ ... ... ... ... ... ... ... ... ... | *s. d.* 0 6 | *s. d.* 0 8 | *s. d.* 0 10 |
| IN SQUARES, cut to the sizes ordered :— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 „ 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 „ 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. „ 3 „ or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 „ „ 4 „ „ 20 „ 30 „ | 0 6½ | 0 8 | 0 10 |
| 4 „ „ 5 „ „ 30 „ 35 „ | 0 7 | 0 8½ | 0 10 |
| 5 „ „ 6 „ „ 35 „ 40 „ | 0 7½ | 0 9 | 0 10½ |
| 6 „ „ 8 „ „ 40 „ 45 „ | 0 8 | 0 9½ | 0 11 |
| 8 „ „ 10 „ „ 45 „ 55 „ | 0 8½ | 0 10 | 1 0 |
| 10 „ „ 12 „ „ 55 „ 70 „ | 0 9 | 0 11 | 1 1 |
| 12 „ „ 15 „ „ 70 „ 85 „ | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. Ins. | Ins. Ins. | *s. d.* |
|---|---|---|
| 6 by 4 and 6½ by 4½ | ... ... ... ... | 10 6 |
| 7 by 5 „ 7½ by 5½ | ... ... ... ... | 12 0 |
| 8 by 6 „ 8¼ by 6½ | ... ... ... ... | 13 0 |
| 9 by 7 „ 9½ by 7½ | and 10 by 8 ... ... | 15 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.—1-8th, 6d.; 3-16ths, 9d.; ¼ inch, 1s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116 BISHOPSGATE-STREET WITHOUT, LONDON.

### GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 | and 6½ | by 4½ | ... ... ... | 13s. 0d. |
| 7 „ | 5 and 7½ | by 5½ | ... ... ... | 15 0 |
| 8 „ | 5 and 8 | by 5½ | ... ... ... | 15 0 |
| 8 „ | 6 and 8½ | by 6½ | ... ... ... | 17 6 |
| 9 „ | 7 and 10 | by 8 | ... ... ... | 20 0 |
| 12 „ | 10 and 13 | by 9 | ... ... ... | 20 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6d. | per foot. |
| „ „ 35 „ | ..... | 8d. | „ |
| „ „ 50 „ | ..... | 9½d. | „ |
| „ „ 75 „ | ..... | 12d. | „ |

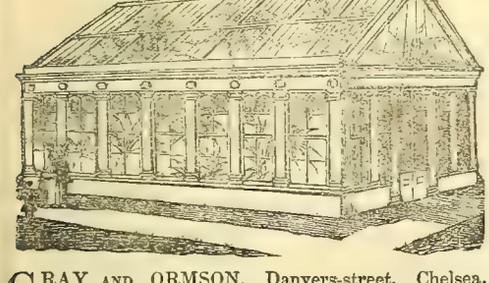
Milk Pans, 2s to 6s. each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

### GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

STEPHENSON AND Co., 61, Gracechurch-street London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

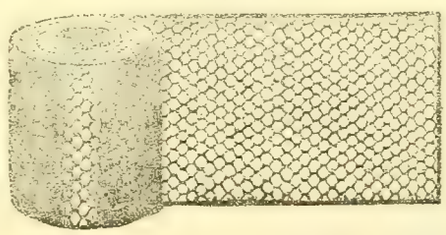
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GREEN AND HOTHOUSE BUILDER.—Greenhouses and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½d.; 1¾ in. ditto, 3d.; 2 in. ditto, 3½d. per foot; if glazed with 16 oz. sheet glass of a large size, 1d per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

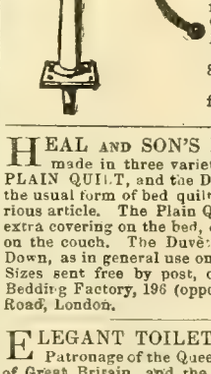


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch „ strong „ ... | 9 „ | 6½ „ |
| 2-inch „ extra strong „ ... | 12 „ | 9 „ |
| 1⅝-inch „ light „ ... | 8 „ | 6 „ |
| 1⅝-inch „ strong „ ... | 10 „ | 8 „ |
| 1⅝-inch „ extra strong „ ... | 14 „ | 11 „ |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

### FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0

Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c.

The usual allowance to the Trade.

HEAL AND SON'S EIDER DOWN QUILTS are made in three varieties—the BORDERED QUILT, the PLAIN QUILT, and the DUVET. The Bordered Quilt is in the usual form of bed quilts, and is a most elegant and luxurious article. The Plain Quilt is smaller, and is useful as an extra covering on the bed, or as a wrapper in the carriage, or on the couch. The Duvet is a loose case filled with Eider Down, as in general use on the Continent.—List of Prices and Sizes sent free by post, on application to HEAL and SON'S Bedding Factory, 196 (opposite the Chapel), Tottenham Court Road, London.

ELEGANT TOILET REQUISITES.—Under the Patronage of the Queen, the Court, and the Royal Family of Great Britain, and the several Sovereigns and Courts of Europe. ROWLAND'S MACASSOR OIL. The unprecedented success of this discovery in restoring, improving, and beautifying the Human Hair, is too well known and appreciated to need comment. Price 3s. 6d., 7s., family bottles (equal to four small) 10s. 6d., and double that size, 21s.—ROWLAND'S KALYDOR. An eastern botanical discovery of unfailing efficacy in eradicating all Cutaneous Eruptions, rendering the skin soft, clear, and fair, and bestowing a healthy roseate hue on the complexion.—Price 4s. 6d., and 8s. 6d. per bottle.—ROWLAND'S ODONTO, or PEARL DENTIFRICE. A fragrant White Powder, prepared from oriental herbs, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Beware of spurious imitations. The only genuine of each bears the name of "ROWLANDS'" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND and SONS, 20, HATTON-GARDEN, London, and by respectable chemists and perfumers.

### EXHIBITION PRIZE—HYBRID WHEAT.

MR. RAYNBIRD begs to offer to Agriculturists a new variety of WHEAT, a Hybrid between the Piper's Thickset and the Hopetoun, at 10s. per bushel, including delivery to the Bury St. Edmund's Station.—Address, Mr. R. RAYNBIRD, Hengrave, Bury St. Edmund's, Suffolk.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

### WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

### SACKS.

FOUR-BUSHEL ..... 1s. ½d.
FIVE Do. ..... 1s. 5½d.
NET CASH.
B. S. PLUMMER, 18, Bread-street, London.

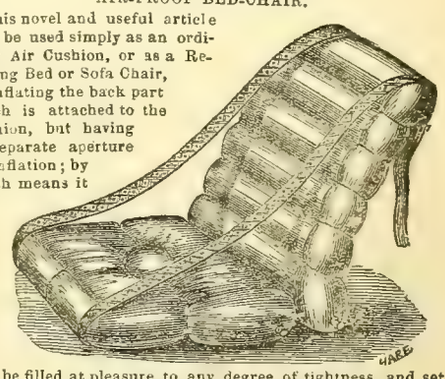
### FOSSIL BONES AND PSEUDO-COPROLITES (FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD and Co., Artificial Manure Manufacturers, Ipswich, Suffolk.

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4, LEADENHALL-STREET.—Mr. MECHI begs respectfully to acquaint such of his patrons as honoured him with their orders at the Great Exhibition, that the ARTICLES are now READY for DELIVERY. Those who were restrained from giving their commands by the regulations of the Royal Commissioners, which prohibited the withdrawal of goods from the building, are informed that the unsold portion of the splendid stock exhibited is now removed to 4, Leadenhall-street, where it may be inspected in the same unique glass cases which excited so much admiration. The well-known elegant show rooms of Mechi have thus acquired another attractive feature, and he solicits an early visit from intending purchasers, as well as from persons of taste who are fond of seeing the most superb manufactures advantageously displayed. N.B.—The usual extensive stock of dressing cases, desks, work boxes, tea trays, and papier maché articles; razors, strops, table and other cutlery, needles, &c.; bagatelle tables, affording an unfailing amusement on a wet day.

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## SALES BY AUCTION.

FINAL SALE.—ISLINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the premises, Islington Nursery, about the middle of November (by order of Mr. G. Smith, in consequence of the Land being let for building), the remaining NURSERY STOCK, comprising Rhododendrons, Ghent and other Azaleas, Variegated and Green Hollies, several thousand Aucuba japonica, from 1 to 4 feet; fine Mulberries of different ages, many are fine bearing trees; also Arbor Vitæ, Mezereons, &c.—May be viewed prior to the sale. Catalogues had (6*d.* each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Garvie to sell by Auction, on the premises, Maryland Point, Stratford, on MONDAY, Nov. 17, at 11 o'clock precisely, in consequence of the number of lots, about 500 DOUBLE CAMELLIAS, from 1 to 7 feet, beautifully furnished with bloom-buds, comprising all the approved kinds; also 3000 Ericas, in the finest condition; 400 very fine Dwarf Trained Morello, May Duke, and other Cherries; together with a quantity of Green Hollies, Spruce Fir, Laurels, Limes, Rhododendrons, Azaleas, &c. A capital Nest of 170 Seed Drawers.—May be viewed a week prior to the sale. Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREENHOUSE AND HOTHOUSE PLANTS.
VERY RARE AND CHOICE RHODODENDRONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. Whalley to offer by Auction, at Fairfield Nursery, Liverpool, on the following days, viz.:—TUESDAY, the 25th, WEDNESDAY, the 26th, and THURSDAY, 27th Nov., the whole of his valuable Collection of choice and rare RHODODENDRONS, including R. argenteum, barbatum, Falconerii, fulgens, Dalhousianum, Wallichii, and many other varieties figured by Dr. Hooker, and also from Major Madden's very valuable collection from Thibet, &c. Also a large quantity of fine and large Rhododendron hybridum, crossed with especial care from R. arboreum rubrum, arboreum album, campanulatum, cinnamomeum, zeylanicum, with R. alta-clerense, corriaceum, pictum, Victoria, &c.; also crossed with Azalea sinensis, Perryana, indica alba, &c., together with a fine stock of Azalea indica seedlings, Camellias, Pelargoniums, Calceolarias, Chrysanthemums, Lilium lancifolium, extra fine, and a large general stock of Greenhouse Plants. Above 200 Grape Vines in pots from eyes, Carnations, Pinks, Auriculas, fine Standard Dwarf and Moss Roses, Dahlias, and Herbaceous Plants. A large quantity of Standard and Dwarf Fruit Trees, together with Evergreens, and the whole of the Nursery Stock remaining unsold. Also a large Conservatory, four Hothouses, Frames, Handglasses, a large Iron Roller and Second-hand Mowing Machine, and sundry utensils in trade. Catalogues, with full particulars, may be had on the 17th, at the Nursery; the Seed Warehouse, 12, St. George's-crescent, Liverpool; from the Auctioneers; or free by post, on receipt of two postage stamps.

BRITISH AND FOREIGN STUFFED BIRDS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, Nov. 25, at 12 o'clock, an extensive and valuable collection of BRITISH BIRDS, stuffed and set up by an eminent naturalist, and comprising many of rare occurrence; also a few Foreign specimens, spiritedly grouped, in glazed cases, and under glass shades. A copy of Meyer's "Illustrations of British Birds and their Eggs" (coloured plates), and Albin's "History of Birds and Insects."—May be viewed the day prior, and morning of sale, and Catalogues had.

Important Sale of Large Timber, comprising 4423 Sticks of superior Oak, Elm, Ash, Beech, and Fir on the Thellusson Trust Estates, in the county of Herts.

MR. GEORGE FULLER is instructed to sell by Auction, at the Essex Arms Inn, Watford, on WEDNESDAY, the 10th of December, at 12 for 1 o'clock, under the direction of N. W. Senior, Esq., one of the Masters of the High Court of Chancery, a large fall of very superior Timber, of immense length and girth, comprising 900 OAK, 797 ELM, 695 ASH, 1362 BEECH, 300 FIR, 154 CHERRY, and 215 others, with their lot, top, and bark, now growing on the Thellusson Trust Estates in the parishes of Aldenham, St. Stephens, King's Langley, Bushey, Ellstree, and Rickmansworth, being within 14 miles of London, close to water carriage, and accessible by capital roads. The Timber may be viewed 14 days prior to sale, on application to the tenants, and catalogues had gratis at the Chambers of the Master Senior, Southampton Buildings, Chancery-lane; of Mr. George Fuller, Land and Timber Valuer, 4, Raymond Buildings, Gray's Inn; T. W. Budd, Esq., 33, Bedford-row; John H. Benbow, Esq., Stone Buildings, Lincoln's Inn; at the Auction Mart, London; of Mr. Whitley, the Bailiff, at Aldenham; the Red Lion Inn, Aldenham; Essex Arms, Watford; Swan, Rickmansworth; Great Red Lion, St. Alban's; Bell, Hemel Hempstead; Salisbury Arms, Hertford; the Western Hotel, Bristol; and George Hotel, Portsmouth.

GREAT SALE OF VALUABLE NURSERY STOCK, IN CONSEQUENCE OF A PORTION OF THE LAND BEING REQUIRED FOR BUILDING.

MR. J. RAWLINGS has received instructions from Mr. Adams, to sell by Auction, on the Premises, Kensington-road (opposite the west end of the Great Exhibition), on MONDAY, Dec. 1, and following days, at 11 o'clock each day, the whole of that extensive and unequalled Stock of large Evergreens, Ornamental Trees and Shrubs, comprising Green and Striped Hollies, Common and Irish Yews, Phillyrea, Alaternus, American and Chinese Arbor-vitæ, Aucuba, Common and Portugal Laurel, Cedrus Deodara, Cedar of Lebanon, &c., all of which are from 3 to 10 feet high. Handsome specimens of Coniferous Plants, including Abies, Pinus, Picea, &c., with large Thuja filiformis, Taxodium pendulum and nuciferum, 6 feet high. A splendid collection of specimens of about 60 species and varieties of Oak, such as is not to be met with in any other establishment. As also a magnificent tree of Salisburia adiantifolia, 20 feet high, and many other objects of interest and value, which cannot be enumerated in an advertisement.—May be viewed prior to the sale. Catalogues (1*s.* each, returnable to purchasers) may be had on the Premises; of the principal Seedsmen; and of the Auctioneer, 50, Hoxton-square, and Ebenezer Nursery, Shacklewell, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. J. RAWLINGS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, Nov. 19, and following day, at 12 o'clock, about 1000 Pot-roots of Dahlias, comprising all the new and leading varieties (the property of a Country Nurseryman, declining their further cultivation), 1000 Waterloo, Grootvoorst, Anna Maria, Lord Wellington, L'Ami du Cœur, Grand Monarque, and other Hyacinths, Double and Single Tulips, Narcissus, Crocus, Jonquil, Gladiolus, &c., with a selected assortment of Standard and Dwarf Roses.—May be viewed the morning of sale, and Catalogues had at the Mart, and of the Auctioneer, 50, Hoxton-square, and Ebenezer Nursery, Shacklewell, London.

FULHAM ROAD.—IMPORTANT SALE OF NURSERY STOCK.

MR. D. A. RAMSAY will submit to public competition at the Brompton Auction Ground, Fulham-road (one mile from Hyde Park corner), on WEDNESDAY, Nov. 19, and following day, at 12 o'clock, a large assortment of Ornamental Trees, Deciduous and Flowering Shrubs, Evergreens, choice Fruit Trees, Bulbs, a Market Cart, and other miscellaneous Nursery Stock.—May be viewed prior to sale, and Catalogues had at the principal seed shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

Ten magnificent Orange Trees, abundantly set with bloom and fruit, 8 feet high; Double Camellias, Azalea indica, 600 Standard Roses (including 100 Geant des Battailles), Lilium rubrum, Dutch Bulbs, Fruit Trees, Shrubs, &c.

MR. HASLAM will sell, as above, at the Auction Mart, on WEDNESDAY and THURSDAY, Nov. 19th and 20th.—N.B. The Orange Trees will be sold on Thursday. The whole may be viewed on Tuesday next.

TO NURSERYMEN, HORTICULTURISTS, SEEDSMEN, AND OTHERS.

MR. MORLEY has to dispose of the LEASE of premises, 40 years of which are unexpired, at a low rent, together with the Goodwill, Fixtures, and Effects of a Nurseryman, producing a net income of 200*l.* per annum; also the Lease of the Ground, about one acre, well stocked with choice Greenhouse Plants. Is situate about three miles north of London, and contiguous to the intended Finsbury Park; has large Greenhouse, Hot-water Pit, Stabling, Sheds, &c. The whole will be offered upon very equitable terms, with immediate possession.—Apply to Mr. MORLEY, 1, Sidmouth-street, Gray's-inn-road, London.

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MESSRS. CAFE AND REID will sell by Auction, by order of the Assignees, on the premises, the ARGYLL NURSERY, Paddington-green, on THURSDAY, Nov. 20th, and following days, at 10 for 11 o'clock precisely each day, on account of the number of lots, 10,000 Greenhouse Plants, including many very fine Camellias, Gardenias, Azaleas, and others of a rare description; 7 Greenhouses, 12 five, four, three, and two-light Frames, Pine and Melon Pits, Summer-house, 30 Casts of Garden-pots, Iron Roller, and Tools; a Horse, Cart, and Harness; several loads of Dung and Leaf Manure; also a few lots of Household Furniture.—May be viewed on Wednesday, and mornings of Sale. Catalogues had on the premises; also of P. JOHNSON, Esq., Official Assignee, 20, Basinghall-street; also of Messrs. DAVIES, SON, CAMPBELL, and HARD, Solicitors, 17, Warwick-street, Regent-street; and of Messrs. CAFE and REID, Great Marlborough-street.

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No. 47—1851.] SATURDAY, NOVEMBER 22. [PRICE 6d.


INDEX.


| | | | |
|---|---|---|---|
| Beech trees, bleeding in | 740 c | Leaves, tree | 741 a |
| Birds, British song | 739 c | Linnean Society | 742 c |
| Broccoli | 742 b | Mangold Wurzel | 748 b |
| Bulbs, hardy | 742 a | Manure, Kopros | 741 a |
| Calendar, Horticultural | 744 a | Orchids at Chiswick | 740 c |
| Cheltenham Hort. Soc. | 742 c | Oxford Bot. Garden | 744 a |
| Chrysanthemum, Ivory on, rev. | 742 c | Plants, absorption of nitrogen by | 739 b |
| — show | 743 b | — in cool pits | 742 b |
| Cropping a kitchen garden | 741 c | Plant naming | 739 c |
| Cryptomeria japonica | 740 c | Plum, Coe's Golden Drop | 742 b |
| Cuckoo, the | 741 a | Potato, prolific | 741 a |
| Double digging | 745 b | — stalk, long | 740 c |
| Draining and Lord Wharncliffe's letter | 746 a | Quick, to plant | 741 c |
| Epidendrums | 742 b | Reaping machine | 747 b—749 a |
| Fleas | 749 c | Saffron Walden Farmers' Club | 749 a |
| Floors, boarded | 748 a | Scythe, Boyd's | 739 a |
| Fly fishing, rev. | 743 b | Spade husbandry | 745 b |
| Fossil remains | 748 b | Strawberries new | 740 b |
| Fumigators | 740 c | Thrush, performances of a | 742 b |
| Glass, horticultural | 741 c | Tulips, breaking | 743 b |
| Gleanings, foreign garden | 740 a | Vegetation, theory of | 744 a |
| Hammersmith Celery Show | 742 c | Vegetable show at Chislehurst | 748 c |
| Heating | 742 a | Victoria in the United States | 743 c |
| Horses, to clip | 748 a | Walls, Ivy on | 742 b |
| Ice, to stack | 743 c | Weather, the | 749 c |
| Ireland, state of | 748 b | — in the north | 741 a |
| Ivy on walls | 742 b | Wheat growing | 745 b |
| Kitchen garden, to crop | 741 c | — soil exhausted by | 750 a |
| Layard's Nineveh, rev. | 743 b | Word in season | 745 b |


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| ST. JAMES'S CHRONICLE | 2891 |
| SUN | 2674 |
| MORNING POST | 2653 |
| EXPRESS | 2458 |
| GARDENERS' GAZETTE | 2338 |
| JOHN BULL | 2115 |
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| WEEKLY CHRONICLE | 1634 |
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Office of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, 5, Upper Wellington-street, Covent Garden.

HOLLYHOCKS.

NATIONAL FLORICULTURAL SOCIETY'S TRANSACTIONS.—ROSAMOND and MAGNET are given in the Society's Transactions just published as belonging to Mr. Chater, of Haverhill, and to Mr. Bircham, of Bungay; whereas, the said Hollyhocks Rosamond and Magnet both belong to Mr. Wm. Chater, of Saffron Walden.

JOHN EDWARDS, Hon. Sec.

NORTH LONDON FLORICULTURAL SOCIETY.—The Grand CHRYSANTHEMUM EXHIBITION of this Society will take place at the Assembly Rooms of the Gate House Hotel, Highgate, on WEDNESDAY, the 26th instant. Admission on the day from 1 to 4 o'clock, 1s.; from 4 to 8 o'clock, 6d. Tickets obtained before the day, 6d. each.

Further particulars from Mr. C. P. LOCHNER, Hon. Secretary, Warwick House, Harrow-road, Paddington.

N.B. Members who have not yet paid their subscriptions are requested to do so without further delay.

EDWARD GEORGE HENDERSON begs to inform those parties who have recently received his New Autumn Catalogue, that there is an error in the List of PINKS (page 26); those priced at 1s. 6d. and upwards will be for the pair, and those at less for single plants.

Wellington-road, Nursery, St. John's Wood, London, Nov. 22.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1¼ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Nov. 22.

WILLIAM HAMILTON, SEEDSMAN, &c, 156, Cheapside, London, will forward his CATALOGUE of BULBOUS ROOTS (of which he has a large collection), on application.

| | s. | d. |
|---|---|---|
| Hyacinths, superior sorts, named, per doz. | 6s. and | 9 0 |
| Narcissus, very fine large roots, each | 4d. to | 0 8 |
| Tulips, for early forcing, per doz. | | 1 0 |
| Crocus, mixed, for border, per 100 | | 1 6 |
| ,, very fine named, per 100 | | 2 6 |
| Snowdrops, single or double, per 100 | | 2 6 |
| Ixias, of sorts, named, per doz. | 2s. to | 4 0 |
| ,, very fine, mixed, per doz. | | 2 6 |

Gladiolus, Lilies, Jonquils, Amaryllis, Ranunculus, Anemones, and a number of other roots, for which see his Catalogue.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2s. 6d. per quart.

York Regent Potatoes, from prepared cuttings, 6s. per bush. Cambridge Radical do. (a first-rate second early) 6s. do. American Native, 10s. 6d. do. Early Manley, 10s. 6d. do. Early Ash-leaf Kidney, 10s. 6d. do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1s. 6d.; two-bushel, 2s. 6d. Sacks, 2s. 6d. each.

ORNAMENTAL PLANTING.

C. LODDIGES AND SONS most respectfully call the attention of Noblemen, Gentlemen, and Public Companies, engaged in Ornamental Planting, to the undermentioned List of TREES and SHRUBS, which they are enabled to offer at an extraordinary reduction in price (for cash only), the land upon which their arboretum is planted being required for building.

Fine trees, from 4 to 10 feet high, of the following genera, comprising a great number of species: Acer, Æsculus, Alnus, Amygdalus, Betula, Cornus, Corylus, Cotoneaster, Cratægus, Cytisus, Fraxinus, Meopilus, Populus, Prunus, Pyrus, Ribes, Robinia, Salix, Sorbus, Spiræa, Tilia, Ulmus, 4s. per dozen named, or a selection from the above, 25s. per 100 unnamed, and highly recommended for rough planting.

American Oaks in great variety, 10s. per dozen.

AMERICAN PLANTS.

Azalea pontica, fine bushy plants well set with bloom, 10s. p. doz.
,, Ghent and other varieties named, 18s. per doz.
Rhododendron ponticum and varieties (very fine), 10s. per doz.
,, campanulatum, 2 to 4 feet diameter, 10s 6d. to 42s. each.
Andromedas in collections, 18s. per doz.; Vacciniums ditto, 12s. per doz.

N.B. Packing will be charged as low as possible. Post-office orders made payable at Hackney.—Hackney, Nov. 23.

MAGNIFICENT SPECIMENS
OF
CONIFERÆ,
HARDY ORNAMENTAL TREES, SHRUBS, &c.

LUCOMBE, PINCE, AND CO., respectfully call attention to their fine, and perhaps unequalled Stock of well grown specimens, capable not only of producing great immediate effects, but also quite safe to remove to any distance, consisting of—

Arbutus Andrachne hybrida.
Arbutus magnifica.
Arbutus, scarlet flowered, *the finest variety.*
Abies Douglasii, 3 to 12 feet high.
Abies Menziesii, 3 to 6 feet.
Araucaria imbricata, 4 feet 6 ins. high by 5 feet through; *grand specimens.*
Æsculus smalus ferrugineus.
Biota glauca. *This is one of the handsomest of the hardy Coniferæ*
Purple Beech, 8 to 12 feet. *These are truly grand plants.*
Cedars of Lebanon, 6 to 8 feet.
Cedrus Deodara, 6 to 12 feet.
Cupressus macrocarpa, 5 to 7 feet.
Cupressus Uhdeana, 5 feet.
Cupressus Goveniana, 3 to 4 feet.
Fagus Cunninghamii.
Fagus betuloides, 3 to 4 feet; *the Evergreen Antarctic Beech.*
Garrya elliptica.
Hedera Rægneriana, *the new Giant Ivy.*
Holly, Black Irish.
Irish Yew, 8 to 10 feet. *These are extraordinary plants, unrivalled in size and form.*
Juniperus excelsa, 6 to 7 feet. *Truly magnificent specimens.*
Lindleya mespeloides.
Magnolia grandiflora, Exmouth var.
Myrica californica.
Oaks, Lucombe, 8 to 12 and 14 feet.
Oaks, Ford's, 6 to 8 feet.
Oaks, Ilex, 6 to 12 feet.
Oaks, Ilex macrophylla, 2 to 3 feet. LUCOMBE, PINCE, and Co's *new Ilex, the finest of all the Hardy Evergreen Oaks.*
Oaks, scarlet, 8 to 10 feet.
Pavia californica.
Pinus insignis, 3 to 15 feet. *The most ornamental, the most rapidly growing, indeed the finest Pine ever introduced.*
Pinus austriaca, the Austrian Pine, 2 to 8 feet.
Pinus Cembra, 3 feet.
Pinus tuberculata, 1 to 1½ feet.
Pinus muricata, 1 to 1½ feet.
Pinus Sinclairii, 4 to 5 feet.
Picea Nordmanniana. *This noble Fir, from the Caucasus, is one of the finest and hardiest of the Silver Fir tribe, shooting late, and thereby avoiding injury from spring frost.*
Standard Rhododendrons, 5 to 6 feet.
Rhododendrons. *Fine bushy compact plants, finely set with flower-buds.*
Standard Thorns, 9 feet. *Unusually fine, with large heads and straight stems.*
Standard Portugal Laurels, 6 feet, *with clean straight stems, and stately heads.*
Thuja japonica.
Taxus adpressa, 1½ to 2½ feet.
Taxus Dovastonii, 2 to 3½ feet.
Taxodium sempervirens, 7 to 10 feet.
Viburnum suspensum.
Yuccas of sorts.

A first-rate collection of Fruit Trees of all descriptions, including fine trees of the Stanwick Nectarine, and many other things equally fine, but not within the limits of an advertisement.

Prices and further particulars of all of which may be had on application to them.—Exeter Nursery, near Exeter, Nov. 22.

N.B. Experienced Gardeners recommended.

IMPROVED SION HOUSE WINTER CUCUMBER.—Packets of the above justly esteemed Cucumber will be forwarded upon the receipt of 13 postage stamps, by PAGE and Co., Seed Merchants, Southampton.

CHEAP ASSORTMENTS OF TULIPS, RANUNCULUSES, ANEMONES, IRISES, HYACINTHS, GLADIOLI, CARNATIONS, PICOTEES, PINKS, and PANSIES, may be selected from the Catalogue of CAREY TYSO, FLORIST, &c., which will be forwarded on receipt of two postage labels. "THE RANUNCULUS, How to Grow it," price 6d.; "HINTS ON THE CULTURE OF THE ANEMONE, SINGLE AND DOUBLE," price 3d., may be had of any Bookseller.—London Publishers: JACKSON and WALFORD.—Wallingford, Nov. 22.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.—JOHN ANDREW HENDERSON AND Co. have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21s. each.

Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orleans Plum; when fully ripe are of a fine deep black, having a fine rich flavour, and very juicy.

It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

BEST LANCASHIRE GOOSEBERRIES, named, at 15s. per 100.

Also, APPLES, PEARS, CURRANTS, RHUBARB, &c., in all the best varieties, and at equally moderate prices.

Carefully packed, to carry any distance, or for exportation.

H. BIGLAND and Co., Manchester.

FEATHER GRASS.

WANTED, any quantity, if of approved quality. Sample, and price per pound, addressed to R. Y., Office of this Paper.

TRANSPLANTED THORN QUICKS AT HALF PRICE, FOR READY CASH.—SELLING OFF.—The Remainder of the Stock of Transplanted Thorn Quicks, the property of the late Mr. JOHN M'CRAITH, Nurseryman, of Kilkenny, will be cleared off this present season, at the following greatly reduced prices. Two years old Transplanted Thorns, 14 to 18 inches in length; circumference 3-8ths to 7-16ths; 9d. per 1000. Three years old, transplanted: length, 17 to 24 inches; circumference, 8 to 10-16ths; 1s. 3d. per 1000. Four years old, transplanted; length, 23 to 25 inches; circumference, 5 8ths to 1 inch; 1s. 8d. per 1000. Quantities of 100,000 and upwards delivered carriage free in Dublin or Waterford. Apply to Mrs. SUSANNA M'CRAITH, High-street, Kilkenny.

HYACINTHS AND OTHER DUTCH ROOTS *now on Sale at RENDLE'S Nursery and Seed Establishment, Plymouth, at Reduced Prices; a Descriptive Catalogue of which can be had in exchange for one penny stamp.*

All orders above 2l. pre-paid to any Station on the South Devon, Bristol and Exeter, or Great Western Railways.

WILLIAM E. RENDLE and Co., Florists to her Majesty, Plymouth.

*** Our Descriptive Catalogue will be found useful, as it contains some good cultural advice.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERA, ROSES, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had on application, by enclosing two postage stamps.—Windlesham Nursery, Bagshot, Surrey.

TO PLANTERS.

WILLIAM URQUHART AND SONS, Dundee, respectfully announce that their LIST of PRICES of Seedling and Transplanted FOREST TREES, &c., may now be had on application.—Dundee, Nov. 22.

SEED TRADE.

ABRAHAM HARDY AND SON, SEED-GROWERS and SEEDSMEN, Maldon, Essex, beg to announce that their Priced Wholesale CATALOGUE OF SEEDS, &c., for 1851-2, is now ready, and will be sent free, on application.—Seed Establishment, Maldon, Nov. 22.

PINE PLANTS.—For Sale, a quantity of PINE-APPLE PLANTS, of all the approved varieties, to insure a succession of fruit; they are fine, clean, and healthy.—For particulars, apply by letter to W. HARDIE, at the Gardens, Castle Ashby, Northampton.

MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M. having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1s. 3d. per lb.; any quantity under 10 lbs. will be charged 2s. per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

PLANTING SEASON.

W. H. ROGERS, NURSERYMAN and LANDSCAPE GARDENER, 130, High-street, Southampton, begs to offer any quantity and description of finely grown and well-rooted NURSERY STOCK, including Forest and Ornamental Trees, Evergreen and Flowering Shrubs, American Plants, Fruit Trees, Roses, Herbaceous Plants, &c., &c., at a very reduced price. Planting contracted for to any extent, engaging to replace failures. Gardens and Pleasure Grounds laid out and planted in the best taste.—All communications addressed to W. H. ROGERS, as above, will meet with immediate attention.

RHUBARB ROOTS.

MYATT'S VICTORIA ... ... 40s. per 100
,, LINNÆUS ... ... 5s. ,,
MITCHELL'S ROYAL ALBERT ... 50s. ,,

Can be had in any quantity at J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

SEED TRADE.

J. G. WAITE'S PRICED CATALOGUES of GARDEN AND FLOWER SEEDS are now ready, and can be had on application.

Seed Establishment, 181, High Holborn, London.

IMPORTANT TO ALL WHO HAVE A GARDEN.

CHALLENGE COMPARISON AND COMPETITION. CARRIAGE PAID.

All orders above 5l. carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES. 100, own selection, two of each kind, 30s.; or our selection, in 100 varieties, 42s.

100, purchaser's selection, one of each kind, 42s.

100 Alpine or Rock Plants, 42s.

The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.

Purchaser's, or our selection, from list, per 100, 2l. 10s., one of each.

Own do. do. per 100, 1l. 10s., two of each.

This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.

HOLLYHOCKS.—No. 1, fine double kinds, all shades of colour, for exhibition, 9s per dozen; 50s. per 100. No. 2, for border display, 6s. per dozen; or 30s. per 100. These are selected from the finest collection in the country.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4l.; or 10s. per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5l.; or 12s. 6d. per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20s. per 100; fine, 3s. per dozen. 2 to 3 feet, extra fine and bushy, 30s. per 100; 6s. per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40s.; per 100, 5s. 3 to 5 feet, strong, 45s. per 1000; or, per 100, 6s., healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30s.; 5 to 6 feet, fine, 40s. per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30s. per 100; 10 to 12 feet, 50s. per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5l.; or 18s. per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50s.; or 9s. per dozen, own selection; mixed, 30s. per 100, or 6s. per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 first-rate sorts, own selection, 2l. 10s.; or 15s. per dozen.

50 do. purchaser's selection, 3l.; or 18s. per dozen.

ERICAS, 50 of the finest sorts grown, own selection, 2l. 10s.; or 15s. per dozen.

,, ,, purchaser's choice from list, 3l.; or 18s. per dozen.

CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21s.; or 15s. per dozen.

,, ,, purchaser's choice, 1l. 5s.; or 18s. per dozen.

The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

SEEDS.

HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25s.; 50 fine for 15s.; 25 for 8s., post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.

CINERARIA, from the choicest sorts, per packet, 2s. 6d.

PANSY, do. do. do. 1s. 6d.

HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1s. 6d. FRUIT TREES.

GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4l., in 100 varieties; or 10s. per 100, in 50 varieties.

A selection of the choicest description for show, 4s. per doz.

The stock extends over 50,000, and is fine and free grown.

CURRANTS.—May's Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25s.; or per doz., 3s.

Black Naples, the finest black (no other sort grown), 12s. per 100, 2s. 6d. per doz.

Red Grape and Champagne, fine, 10s. per 100.

White Dutch, large and fine, 12s. per 100, 2s. per doz.

APPLES.—Fine clean Standards, 10s per doz., 70s. per 100.

,, ,, Dwarfs, 8s. per doz., 50s. per 100.

,, Dwarf trained superior kinds, 2s. 6d. each, or 24s. p. doz. The collection is very choice, from the Horticultural Society.

PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.

PLUMS and CHERRIES.—All the leading sorts, standards, 18s. per doz.

,, ,, Dwarfs, fine, 9s. per doz.

,, ,, Dwarf trained, 3s. 6d. each, or 36s. per doz.

APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5s. each, 50s. per doz.

RASPBERRIES.—Fastolff, 3s. per doz., 16s. per 100.

,, Antwerp Red, 2s. per doz., 12s. per 100.

,, Monthly, or Double-bearing, 12s. per 100, 2s. per doz.

STRAWBERRIES.—Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3s. 6d. per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to JOHN MAY, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

CEDRUS DEODARA,

For planting Avenues, single specimens for Lawns, or mixing with Fir and other plantations, grown from seed, either in or out of pots.

MAULE AND SONS respectfully inform Gentlemen about planting, that their immense stock of this most desirable Hardy Ornamental Tree consists of well-grown plants from seed, of all sizes, suited for the above purposes, which are offered by the dozen, hundred, and thousand, on moderate terms. ☞ Prices forwarded on application.

The curious in seminal productions will find by inspecting M. and SONS' Stock, many pleasing peculiarities of foliage in their present state of growth.—Stapleton-road Nurseries, Bristol.

TO RAILROAD CONTRACTORS, NURSERYMEN, &c.

RICHARD HARTLAND AND SON, NURSERYMEN, Cork, will deliver, free in London, Bristol, Liverpool, or Dublin, any quantity (over a hundred thousand), of Thorn Quicks, at the following prices, for cash:—

3 year-old, in beds (stout plants), per 1000 ... 2s. 6d.
4 do. ,, (transplanted), per 1000 ... 3s. 6d.
5 and 6 do. ,, ,, per 1000 ... 5s.

All orders addressed as above shall be promptly attended to.

RANDALL'S PROLIFIC RHUBARB.—In submitting the above to the public, E. R. begs to state, that while possessing all the qualities of Myatt's Linnæus, it is nine days earlier; of superior flavour; upright in growth, and producing large stems, all of equal size. Roots 2s. 6d. each. To be obtained of the principal seed-houses in London, and at EDWARD RANDALL'S, Loughboro' Gardens, Brixton, Surrey. Orders accompanied with a remittance will be promptly attended to.—N.B. The usual discount to the trade.

BASS AND BROWN beg to offer the following CHOICE FLOWER ROOTS, fine, and true to name:

| | s. | d |
|---|---|---|
| ANEMONES, 100 varieties, beautiful and distinct, double ... ... ... ... ... | 24 | 0 |
| ,, 50 ditto, 12s. 6d.; 25 ditto .. ... ... | 7 | 0 |
| ,, choice double, mixed, per 100, 7s. 6d. to | 10 | 6 |
| RANUNCULI, free by post, with printed directions for planting and culture. | | |
| ,, 100 superb vars., new and choice... ... | 70 | 0 |
| ,, 100 very fine vars. ... ... ... | 35 | 0 |
| GLADIOLI, 50 splendid vars., early and late kinds, for | 50 | 0 |
| ,, 25 ditto, 30s.; 12 ditto .. ... ... ... | 17 | 6 |
| ,, 12 splendid early vars. ... ... ... ... | 10 | 6 |
| ,, 12 fine vars. ... ... ... ... | 6 | 0 |
| ,, splendid mixed Seedlings, p. 100, 20s.; p. doz. | 3 | 0 |
| ,, Colvillii. 2s. per doz.; Gandavensis, 3s. 6d. p. doz; Rex Rubrorum (rich dark velvet), 1s. 6d. each; Insignis, 7s. 6d. per doz. 9d. each; Brenchleyensis, 3s. each; Gandavensis splendens, very superb, 2s. 6d. each. | | |
| TULIPS, early Duc Van Thol, single or double, per 100 | 7 | 6 |
| ,, 30 fine and beautiful early vars. for ... ... | 7 | 6 |
| ,, 10 fine double vars., three of each, for ... | 5 | 6 |
| ,, 50 fine vars., late Tulips (including Polyphemis, Guido, Rose Pretiosa, Roscius, Holmes's King, Ambassador of Holland, Washington, and other popular show vars) ... ... ... ... ... | 50 | 0 |
| ,, Fine mixed, late, per 100... ... ... ... | 15 | 0 |
| ,, Fine border, late, per 100... ... ... ... | 6 | 0 |
| ENGLISH IRIS, 30 very superb vars. for... ... ... | 17 | 0 |
| ,, ,, very fine mixed 15s. per 100; per doz. | 2 | 6 |
| SPANISH IRIS, 30 beautiful vars., 5s.; 20 ditto ... | 3 | 6 |
| ,, ,, fine mixed, 5s. per 100; per doz. ... | 0 | 9 |
| GERMAN IRIS, 30 superb vars. .. ... ... ... | 22 | 6 |
| ,, ,, 12 ditto, 10s. 6d.; 12 other fine vars.... | 7 | 6 |
| ,, ,, very fine mixed, 3s. per doz.; per 100 .. | 18 | 0 |
| CROCUS, 25 splendid distinct new vars., 12 of each, for | 15 | 0 |
| ,, David Rizzio, Queen Victoria, and other choice vars., per 100 ... ... ... ... ... | 3 | 0 |
| ,, fine, in separate colours, 2s. per 100; mixed... | 1 | 6 |
| LILIUM LANCIFOLIUM ALBUM, each... ... 1s. to | 2 | 6 |
| ,, ,, rubrum or speciosum, 3s. 6d. to | 10 | 0 |
| ,, ,, roseum ... ... ... 3s. to | 5 | 0 |
| ALSTROMERIA AURANTIACA, 7s. 6d. per doz.; Chilian, 7s. 6d. per doz.; pelegrina, 1s. each; psittacinus, 9d. each; pulchella and tricolor, 1s. 6d. each. | | |
| CROWN IMPERIALS, red, 4s. per doz.; per 100 ... | 16 | 0 |
| FEATHERED HYACINTHS, 2s. 6d. per doz.; per 100 | 25 | 0 |
| IXIAS, 25 fine vars., 12s.; 12 ditto... ... ... ... | 6 | 6 |
| ,, fine mixed, per doz. ... ... ... ... ... | 3 | 0 |
| SCILLA AMŒNA, 2s. 6d. per doz.; campanulata alba, per doz. ... ... ... ... ... ... | 1 | 6 |
| ,, other fine vars., 2s. 6d. per doz. to, each ... | 0 | 9 |
| TRITONIA AUREA, a splendid orange-coloured new Cape Bulb, each ... ... ... ... 2s. 6d. to | 5 | 0 |

Also a choice assortment of IMPORTED DUTCH HYACINTHS, NARCISSUS, JONQUILS, &c. See our autumn Catalogue.

Goods free to London, or any station on the Ipswich and Bury line to Norwich; and with all orders of 40s. and upwards, extra plants presented gratis.

Remittances required from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

OTHELLO—NEW CARNATION CLOVE—now ready for sending out, at 5s. per pair, or 3s. per plant.—This will prove to be one of the finest and choicest ever offered to the public. It is the largest and darkest of its kind yet seen, and is of most powerful fragrance; the flowers are of an immense size, with long pod and fine rose-leaf petals, perfectly hardy, and will thrive well in any situation; it was the admiration of numberless spectators while in bloom during the season, and numerous orders taken for it. On the 9th August it was sent to the Editor of the *Gardeners' Chronicle*, and his opinion was given as follows: "A desirable dark Clove, with a strong scent, well worth cultivation." It is warranted to give satisfaction to all purchasers. Also a pure white Clove Carnation, 1s. 6d. per pair. Also the following, new:

BLACK WALLFLOWER—NEGRESS.—This is a new superb variety, and is superior to all others of similar kinds, the colour of which may be compared to that of a Mulberry when perfectly ripe; it has a fine large spike, is very handy, beautifully double, a most prolific bloomer, of very superior habit, and delightful fragrance; price 5s. per plant. Both of the above varieties only require to be seen to be grown by every one who has a garden of the smallest dimensions.

TILEY'S VIOLA ARBOREA, or Perpetual Tree Violet, true (see *Gardeners' Chronicle* of 1st November), large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen, or 1l. per hundred.

Double White Viola Arborea, do. do., 6s. per doz., fine plants.

Russian Superb (true), very fine, 3s. per dozen.

White Russian Superb (true), very fine, 3s. per dozen.

Each of the above varieties will be forwarded, postage and package free, to any part, on receipt of a Post-office order, or penny postage stamps to the amount.

Fine Giant Scarlet Brompton Stocks, 2s 6d. per hundred.

Also fine Antirrhinums, all saved from striped and spotted varieties, and will bloom next spring, 5s. per hundred.

Fine Sweet Williams, saved from 50 distinct varieties (strong plants), will bloom next season, 5s. per hundred, or 1s. per dozen.

Will be sent, hamper and package free, on receipt of the amount.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7s. 6d.
Extra ditto, with flowering buds ... ... 10 6

Usual discount to the Trade.

Clapton Nursery, London, Nov. 22.

H. LANE AND SON, Great Berkhampstead, Herts, having a very large stock of EVERGREEN TREES and SHRUBS suitable for immediate effect in making New Plantations, Avenues, &c., every plant forming a specimen, have selected, as a more ready guide, the following; the different varieties of which will be found under their respective heads in Catalogue of Trees and Shrubs:—

Arbor-Vitæ, 2 to 8 feet.
Arbutus, 3 to 5 feet.
Araucaria imbricata, 2 to 3½ ft.
Cedrus Deodara, 2 to 6 feet.
,, Libani, 2 to 5 feet.
Cryptomeria japonica, 2 to 8 ft.
Cypress, 2 to 5 feet.
Holly, Green, 2 to 4 feet.
,, Variegated, 2 to 4 feet.
Juniper, 2 to 6 feet.
,, Virginiana, or Red Cedar (splendid plants), 3 to 5 feet.
Kalmia latifolia, 3 feet.
Laurel, Common, 3 to 5 feet.
,, Portugal (fine), 3 to 5 ft.
Phillyrea illicifolia, 3 to 5 feet.
Pinus Cembra, 2 to 3½ feet.
,, excelsa (fine), 3 to 4 ft.
,, insignis, 2 to 3½ feet.
,, Pinaster, 2 to 3 feet.
,, Weymouth, 3 to 6 feet.
Abies Douglasii, 3 to 7 feet.
,, Hemlock Spruce, 5 to 7 feet.
,, Khutrow, 2 to 3 feet.
,, Morinda, 3 to 4 feet.
,, Menziesii, 3 to 5 feet.
,, *Spruce, 3 to 5 feet.
Rhododendron, 2 to 8 feet.
Taxodium sempervirens, 2 to 5 feet.
Yew, Common, 4 to 6 feet.
,, Irish, 3 to 7 feet.

* These, the Common Spruce Fir, in two varieties, the White and Black, are splendid plants, bushy, according to their height.

ROBERT M. STARK, Edgehill Nursery, Dean, Edinburgh, respectfully invites the attention of his friends and the public to his STOCK OF TREES, SHRUBS, &c., which comprises every article generally in demand, and is unusually healthy this season. Priced Catalogues of the following may be had on application:

Forest Trees, Shrubs, Hedging, and Underwood, new and showy Shrubs, Trees, and Roses, new or rare Plants, containing many interesting novelties; select Herbaceous Plants, with height and colour indicated; Alpine Plants, hardy Ferns and Aquatics.—Nov. 22.

"ESSEX HERO" CUCUMBER.

JOHN CHAMBERLAIN, after growing this splendid CUCUMBER three years, feels pleasure in introducing it to the public, feeling sure that it will give general satisfaction, especially those intending to exhibit. It is an abundant bearer (one of his plants last June had as many as 16 on it at one time, all handsome fruit); it grows from 20 to 27 inches long, very slender, short neck, dark green, black spine, holds its blossom well, and in every respect coming to the standard of perfection in a Cucumber. It has been exhibited by J. C. at eight horticultural shows, where it was awarded seven first prizes—five at Colchester; at Ipswich, July 3, 1851; and at Chelmsford, July 15, 1851; at which places he received orders for it from nearly every grower, especially at Ipswich. It is now ready for sale, in packets of four seeds, at 3s. 6d.; eight seeds, 5s.; or good strong plants, 3s. each pot, or 5s. the pair.

J. C. has an excellent Ridge Cucumber, a hybrid between the common Long Prickly and the Great Britain; as hardy and prolific as the common Prickly; for example, J. C. sowed two rows in the middle of May, 1851, on well dunged heavy land, 18 yards long and two yards apart, from which he gathered 206 seed fruit, from 12 to 18 inches long, besides a great number very handsome, fit for table, during harvest. Sold in packets of 12 seeds, 1s.; or large ditto of 48 seeds, 2s. 6d.

The following good old sorts may be had of him, seeds at 1s. per packet, or good strong plants from the beginning of November till the end of April, at 1s. 6d. each pot, or 12s. the dozen:—Sion House, Great Britain, Walker's Rambler, Roman Emperor, Phenomena, Kelway's Victory, and his own White Spine.

MELONS.—BROMHAM HALL (Green-flesh), and LORD GLENCOE at 1s. each packet.

The above Cucumbers and Melons were all seeded by J. C., and the greatest care taken to keep them true. If plants are sent by carriers or rail, 1s. extra is required for box and secure packing. A remittance must accompany orders from unknown correspondents.

JOHN CHAMBERLAIN, Great Horkesley, Colchester, Essex.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, will be happy to forward his new Autumn Catalogue (post paid), on application. It is also post paid throughout America, Austria, Belgium, France, Germany, Holland, and Prussia.

E. G. H. can supply plants of the following (for description see page 27 in the above Catalogue).

The New Raspberry Belle de Fontenay, 7s 6d. each; Weigela lutea, or Middendorffiana, 10s. 6d. each; Hesperis Matronalis Flora Plena (Double Crimson Rocket), 2s. each.

Tropæolum azureum, 2s. 6d. each; T. tricolor, 2s. 6d. and 3s. 6d. each; T. Hockerianum (true), for winter flowering, fine, 3s. 6d. each.

Cremont's Perpetual Strawberry, 1s. each, or 9s. per dozen.

EARLY FLOWERS, adapted for Blooming In-doors, and in the Borders in the Winter and early Spring.—The undersigned beg respectfully to intimate to the nobility, clergy, gentry, and the public that they have imported a choice STOCK of DUTCH and other FLOWER BULBS, of the finest possible quality, and take the liberty of offering the following assortment for 10s., viz.—Half a dozen best Hyacinths for glasses, half a dozen good Hyacinths for pots, 50 Crocuses (four separate colours), 50 large double Snowdrops, half a dozen double Van Thol Tulips, half a dozen early Van Thol Tulips, one dozen double white sweet-scented Narcissus, half a dozen double Jonquils, one dozen winter Aconites, 25 splendid mixed Tulips, one dozen beautiful mixed double Anemones.—CLARKE and Co., Seedsmen and Florists, 86, High-street, Borough, about 30 doors from the London-bridge Railway Terminus.

WANTED, to Rent, either in the vicinity of London or in any part of the country, a GARDEN, with a good range of Glass, adapted for Forcing, &c. The most satisfactory reference can be given.—Apply, pre-paid, to A. M., Post-office, Exeter.—This Advertisement will not be repeated.—Nov. 22.

STANDISH AND NOBLE'S detailed Advertisement will appear in this Paper on the first Saturday in every Month, to which they invite the attention of all interested in HARDY ORNAMENTAL PLANTS. Their Descriptive Catalogue, with the treatise on the "Cultivation of American Plants," can still be had by enclosing six stamps for postage.

Gentlemen requiring the services of a Landscape Gardener can procure such by applying to the Advertisers.

Bagshot, Surrey, Nov 22

MESSRS. J. MYATT AND SONS have a Stock of the VICTORIA or RABY CASTLE CURRANT, and can supply good strong Plants at 25s. per 100; extra strong, 2 years old, 5s. per dozen. Also, a good Stock of 2 years planted Rhubarb roots.

MYATT'S LINNÆUS ... ... 10s. per dozen.
MYATT'S VICTORIA ... ... 10s. „ „
MITCHELL'S ROYAL ALBERT

Smaller 1 year planted Roots, at 50s. per 100.

Manor Farm, Deptford, Nov. 22.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH.—ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., NURSERYMEN *and* FLORISTS *to her Most Gracious Majesty the Queen, have a* LARGE SURPLUS STOCK *of* TREES AND SHRUBS *more than they require for their usual sale, and will be sold at very low prices.*

*** For prices, see front page, Nov. 1, 1851, of this Paper.

*Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees is just published, and can be obtained for one penny stamp.*

WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

BASS AND BROWN beg to refer to their Advertisement of CHOICE GERANIUMS, in the 2d page of each number of *Gardeners' Chronicle*, of Sept. 27th and Oct. 11th. The plants are exceedingly fine and vigorous. With immediate re-potting, they will make good specimen plants for exhibition next season, with abundant blooms, and will be found very cheap. They also, in the same Advertisements, beg to refer to their select list of NEW PLANTS. Also NEW CHRYSANTHEMUMS, AZALEA INDICA, &c., of which they have a choice assortment, strong and vigorous, and offered at low prices.

12 splendid Stove Plants, for winter and early spring flower, for 20s. 12 beautiful Greenhouse Plants, for do., 15s.

Catalogues on application. Goods free to London, or any part of the Ipswich line to Norwich, and extra plants, gratis, for orders of 40s. and upwards. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

A COMPLETE ARBORETUM.

C. LODDIGES AND SONS beg to state that they are now supplying the above, comprising upwards of 1200 species of TREES and SHRUBS, correctly named, for 50*l*., cash on delivery; and as their collection of hardy plants will have to be dispersed this season, in consequence of the land being let for building, they most respectfully suggest that all persons contemplating the formation of a COMPLETE ARBORETUM should make early application, as the stock of some species is very limited.—Hackney, Nov. 22.

"PINUS AUSTRIACA,"
THE BLACK AUSTRIAN PINE.

LUCOMBE, PINCE, AND Co., have now on sale a large stock of very fine, healthy, strong plants of this truly desirable Pine, from 9 inches to 2 feet high, which, having been frequently transplanted, are very well rooted, and consequently quite safe to remove to any distance, and are of a superior quality (great attention having been paid to their cultivation); price from 20s, 40s., to 50s. per 1000. They have also some of larger sizes, from 3 to 6 feet high, equally safe to move, owing to proper attention having been paid to their roots, at proportionately higher prices.

This noble and most serviceable Pine thrives in bleak and exposed situations (even in poor soils), growing rapidly, and producing dense shelter, in places where other trees will not grow. It also succeeds admirably close to the sea, resisting there the spray and rough-st winds.

Exeter Nursery, near Exeter, Nov. 22.

**The Gardeners' Chronicle.**
*SATURDAY, NOVEMBER* 22, 1851.

MEETINGS FOR THE ENSUING WEEK.

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|---|---|---|---|---|
| MONDAY, | Nov. | 24 | Geographical | 8½ P.M. |
| TUESDAY, | — | 25 | London Floricultural | 1 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Medical and Chirurgical | 8½ P.M. |
| | | | Zoological | 9 P.M. |
| WEDNESDAY, | — | 26 | Microscopical | 8 P.M. |
| | | | Society of Arts | 8 P.M. |
| | | | Royal Soc. of Literature | 4 P.M. |
| THURSDAY, | — | 27 | Numismatic | 7 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8½ P.M. |
| SATURDAY, | — | 29 | Botanical | 8 P.M. |
| | | | Medical | 8 P.M. |

COUNTRY SHOW.—Wednesday, November 26: Newcastle-on-Tyne Chrysanthemum.

THE appearance of BOYD'S Self Adjusting Scythe, as represented in our advertising columns, must have attracted the attention of our readers. We have received from Mr. BOYD a specimen of one of his contrivances, whose novelty consists in its being capable of being set, without the assistance of a blacksmith, to any angle that may suit the requirements of the workman who is to use it. The blade and handle are those of the common scythe, and it is therefore to the means of fixing the two together, that we have to direct attention. This consists of an iron band, attached lengthwise for 4 or 5 inches to the under side of the handle, immediately at the end of which is a joint, kept together by a screw and nuts, that moves horizontally inwards or outwards, and from this joint a square iron arm, about 3 inches long, reaches the heel of the scythe, which is furnished with an eye through which a flanged screw is passed into the circular flattened end of the small arm just alluded to. By these means the blade is attached firmly to the handle, and the cutting edge can either be set high or low, as may be required, while the upper joint permits the blade to be fixed in or out of the square, as suits the kind of work to which it is applied; all the implements required for these operations being a small key for screwing off and on the nuts.

We have had this scythe, fixed as above described, tried in our own garden; but it was found that the upper joint could not be made fast enough to keep the blade steady without the assistance of a Grass hook, and the latter, in addition to other inconveniences, would not permit the heel to be sharpened sufficiently well to render it capable of cutting short Grass with advantage. This circumstance induced Mr. BOYD to substitute a cogged joint, *i. e.* having a ratchet and key or tooth, so as to prevent the joint moving outwards; and now the invention answers perfectly, and is a very important improvement on the common scythe, inasmuch as it can be set on the spot in a minute or two, and to the greatest nicety, by the workman who is to use it. When the time and trouble required to set a new scythe, or the rendering an old one capable of being used by a second mower, are taken into account, the value of Mr. BOYD'S contrivance will be apparent; and we strongly recommend it for trial by the mowers of lawns. For hay it may be found too weak in the neck; but for short Grass it is sufficiently strong, and perfectly efficient.

IN the early part of the spring we gave a short account of some curious experiments, of M. VILLE, on the direct absorption of nitrogen by growing plants; these researches (which seemed to indicate that, to some extent at least, plants are able to absorb the nitrogen of the air in its separate and uncombined state, and therefore that they are not entirely dependent on ammonia and nitric acid for the supply of that important element) led to the publication of a second series of experiments, by MM. CLOEZ and GRATIOLET (p. 147). These gentlemen, without giving any minute details of the mode in which their experiments were conducted, stated that their results were in accordance with those of M. VILLE, and that they had arrived at the conclusion, that plants in growing, as it were, respire a certain quantity of nitrogen; that is to say, that they constantly exhale a small quantity of that gas, and that they languish and die if they are placed under circumstances in which they are unable to absorb a fresh supply of it, to replace that which is thus continually being given off. We did not at the time think the arguments of these authors conclusive or satisfactory, but as the subject is one of very great practical importance, we looked forward with a good deal of interest to the publication of further experiments and observations, on the absorption of nitrogen by plants. Recently MM. A. and W. KNOP have to some extent confirmed the observations of CLOEZ and GRATIOLET, or at least confirmed their experiments, for it does not by any means follow that the conclusions drawn from them are correct.

In these new experiments, there is one point of interest entirely opposed to the results of CLOEZ and GRATIOLET, and which appears to throw a good deal of light upon some parts of the subject. It will be remembered that these experiments are somewhat complicated, inasmuch as the plants which are the subjects of experiment are growing under water, and, therefore, in circumstances considerably different from those of ordinary land plants. CLOEZ and GRATIOLET found that when a cut piece of Potamogeton stem was exposed under water to the influence of light, gas was given off from only one of the cut surfaces, namely, that which was nearest to the root of the plant; this result is not confirmed by the experiments of MM. KNOP; they found that the evolution of gas, at either the upper or lower cut surface of the piece of stem, did not depend on its relation to the root, but, on the contrary, depended wholly on the known laws of hydrostatic pressure, the gas always being given off from that surface which was uppermost, and which was, therefore, least affected by the weight of the water in which it was plunged. In fact, the general result of their experiments appears to show, that under such circumstances, when plants are plunged under water, whether entire or cut in pieces, the evolution of gas is not so much regulated by the peculiar construction and direction of the cells and intercellular passages of the stem, as by the different degrees of resistance to its evolution, presented by the various degrees of pressure to which the surface of the plant is subjected. Hence, also, they are led to conclude, that the evolution of gas from such plants, when they are cut or wounded under water, does not prove that a similar evolution of gas is constantly taking place when the plant is in a sound and healthy state, but only results from the diminished pressure to which the gas in that part of the plant is subjected; it escapes from its weakest part—that part in which it is least perfectly confined.

These observations of MM. KNOP, which seem to have been carefully conducted, therefore fully justify the remark already made, that such experiments are far from satisfactory, and that it is not safe to deduce, from investigations of this sort, where plants are placed under forced and unnatural conditions, any general laws respecting the growth of plants. It is shown that under the peculiar circumstances of the experiment, plants do really absorb air through their leaves, which passes downwards towards the roots; but it is at the same time also shown, that this downward current of air is not a healthy function of the plant, but results entirely from the unnatural conditions in which it is placed. The main question remains just as it was before any of these experiments were published; for, even granting that the constant absorption and emission of nitrogen were proved, it would yet remain to be shown in what manner this is connected with the growth of the plant; for if it is only the case that plants absorb, and subsequently give off, the same nitrogen, and do not permanently retain, or assimilate any of it, the importance of free or uncombined nitrogen will not be proved; and we shall have to fall back again upon the old theory, that plants can only assimilate nitrogen when it is in a state of combination.

IN a late number of the "Botanische Zeitung," there is a notice by SCHLECHTENDAL to the effect that the Director of the Botanical Garden at Vienna has taken occasion of the publication of the annual Seed Catalogue to append a leaf containing a list of such species as have been received from other Botanical Gardens under incorrect names, and that he has made up his mind to adopt the same plan himself in future. So many difficulties are attendant upon such a practice, and so large a staff of scientific gardeners and professors, with all the accompaniments of a first-rate library and herbarium, for the accurate determination of every object under cultivation, that we do not think it probable that it will be very generally adopted. It is still, however, a step in the right direction, though one which cannot be fully carried out, in our own country at least, notwithstanding every wish to do so, till the more influential classes of our body politic have far more correct notions than they possess at present, of the importance of the less showy parts of natural science. Unfortunately, the taste of the present time is too much in keeping with such superficial views, but we still have hopes that better things are before us, and that the success which has attended the formation of the museum at Kew, within a space of time entirely without example in the history of such institutions, will in the end lead to some general results which may make that garden not only the first establishment of the kind beyond all comparison within the universe, which undoubtedly it is, but also a school of Botany equally without parallel.

## BRITISH SONG BIRDS.

(CAGE BIRDS, No 39)

No. LV.—"If we be rightly instructed," as the gentlemen of the long robe say, our observations about the starling, magpie, parrot, *et hoc genus omne*, are unanswerable; inasmuch as no person will come forward to prove that these creatures do or can *understand* what they say.* How then *can* they "reason" about what they do not understand? The idea is absurd. Let us look upon this point as settled. There still remains for us to consider the claims of the Mocking-bird, and the "Talking canary;" of which, anon.

We have been asked, if we ever saw the head of a bird dissected,—and whether we ever examined the cells containing the brain? Most assuredly we have; and we most readily grant (what indeed ought to be all that can be required of us) that it is a beautiful contrivance of Nature so to furnish as much brain, and no more, than can answer the wants, requirements, and perfect happiness of each one of her 'gifted' family. Ever since we first made Natural History our study, we have dwelt upon these bountiful provisions of Nature with the fondest enjoyment. The reward attending such pursuits is inappreciable. But to return.

The mocking bird, though we *have* lately so "run him down," is a magnificent "improvement" on the parrot tribe. His brain gives evidence that his powers are great. He is highly gifted by Nature to enjoy himself, and the "organ of Mirth"† is the exact size of his head. Thus, his talent, or *forte*, lies in one thing *only*,—mimicry. To this end was he born; well has he fulfilled his mission. Hear how faithfully he is described by his biographer, WILSON,—an authority to whom all must bow, who love truth. "The instinct of this bird," says Wilson, "is peculiar to himself. He whistles for the dog; Cæsar starts up, and runs to meet his master. He squeaks out like a hurt chicken; the hen hurries about with hanging wings and bristling feathers, 'clucking' to protect her

* A correspondent reminds us, and we well remember the circumstance, that some years since a parrot in the Westminster-road was taught to utter *three consecutive words*. On *one* occasion, Polly repeated her lesson to admiration. Her master (a fishmonger) having demanded 2*s.* 6*d.* for a pair of soles of an intending purchaser, the latter made answer, "I'll give you 1*s.* 6*d.*" "Go to Bath!" shouted Poll. Whether the person addressed *did* go so far, we never heard tell.

† In phrenological parlance,—"The Organ of Imitation."

injured brood. The barking of the dog, the mewing of the cat, the creaking of the passing wheel-barrow, follow with great truth and rapidity. He repeats the tune taught him by his master, though of considerable length, fully and faithfully. He runs over the quiverings of the canary, and the clear whistlings of the Virginia nightingale, or red bird, with such superior execution and effect, that the mortified songsters feel their own inferiority, and become silent; whilst *he* seems to triumph in their defeat by redoubling his exertions." Did any one bird, in particular, do this; and were it not a natural gift *universally* bestowed upon *all* this tribe—none would acknowledge sooner than ourselves that there was an instance of "reason" produced. But alas! it is surely *not* so. *Ex uno disce omnes.*

The talking canary, our readers may remember, uttered the words very distinctly, "Pret-ty Jane!" and "D-e-a-r Mary!" Let us kindly imagine that some pretty, lovely faces, whose fair owners rejoiced in those endearing names, had by their witcheries taken their favourite's heart by storm. We have *one* instance on record of an "unlikely animal" having been heard to speak,—let *this* be recorded as *another* deviation from the general rule, caused by a "great occasion." This bird, be it known, was fairly worried to death in the course of a few weeks. Sometimes, he *would* lisp out the names of his two favourites,—sometimes, he would *not*. He would appear to have disapproved of "one shilling entrance" being charged, for strangers to listen to the burden of his song. He fell sick, was sent to Brighton for change of air!—a real fact—and there he died. One week previous, the sum of 100 guineas was offered for him,—and refused. Whether THIS bird had the gift of "reason," or not, WE will not say. Let our kind, but only half-converted readers, have the benefit of the doubt.

There could not perhaps be a more fitting season than the present, for us to enter our strongest protest against the excessive "tales of Wonder and Imagination," connected with animals, that from time to time find their way into print, to the great and serious detriment of science and truth. Let it ever be borne in mind, that even Truth itself becomes positive falsehood, *if it be presented in any other than its right relations.* There can be *no* truth but the whole truth! Whatever is recorded contrary to the law of Nature in any animal, and impossible to be traced to any sound principle connected therewith, must be regarded as apocryphal. It is just as impracticable for us to become acquainted with a perfect knowledge of animals, from popular and highly-coloured anecdotes and stories, as it would be to obtain an insight into human nature from the lavish outpourings of friendly partiality and parental fondness. A firm conviction of this truth, always induces me to relate nothing but what I can corroborate,—none but literal facts.

We might pursue the inquiry for ever, without getting at any result different from what has been already gained; and as regards our favourites, the birds, we have now cited almost as many cases as are required for proof of their allotted share of "instinct." However we shall, in our next chapter, introduce from our own personal observation, a very beautiful illustration of that Στοργή concerning which we have already spoken. It will satisfactorily establish *the truth* of all that we have already advanced; and it will prove, moreover, how good, how kind, how omni-present is that Being, 'who hateth nothing that he has made, but delighteth in the work of his own hands.'

"There is a special Providence in the fall of a sparrow,"

and it is delightful to watch how this Providence protects every member of her family,—from the minutely-small fluttering humming-bird to the enormous towering eagle.

There is *one* bird that appears strangely *un*natural,—the ostrich, who lays her eggs in the sand, and then incontinently leaves them to be hatched by the rays of the sun. In *this* bird, the Στοργή, or excess of natural affection, does *not* exist. "To justify the ways of God to man," it is remarked of the ostrich in the Sacred Oracles, that "she is hardened against her young ones, *because God hath not imparted unto her understanding.*" We should like to examine the brain of the ostrich, and see wherein it is different from that of other birds. We feel persuaded there would be *something* gained by the investigation, for—"Wisdom is justified of *all* her children." *William Kidd.*

## FOREIGN GARDEN GLEANINGS.

VEGETABLE MARKETS, BERLIN.—Market gardening is by no means in so advanced a state in Prussia as in France, and the vegetable markets of Berlin are far inferior to those of Paris, although the latitude of the two towns is nearly the same. At the time we left Paris, Cos and Cabbage Lettuces, Carrots, Cabbages, Broccolis, Mushrooms, and Asparagus, were abundant; and two months afterwards at Berlin we could only find a few Cabbages, Cauliflowers, and badly-grown Lettuces; on the other hand there was an abundance of roots of the the preceding year, an abundance of preserved Potatoes, but few new ones, large French Beans, and immense Turnip-rooted Cabbages, of which we brought away several specimens. Three months later Paris is in the third season; Berlin is only in its second season. The following were the principal vegetables at that time to be found in the markets; red and Portugal Cabbages, Swedish Turnips, Spinach, Sorrel, and considerable quantities of Cucumbers, grown on hot-beds, according to the custom in the north; many Melons, and especially Cantaloups; Purple Onions, Potatoes, Radishes of all sorts, few Lettuces, Artichokes and Cauliflowers. It seems not to be the custom to eat Haricots and Peas before the seed begins to ripen. The following are the principal fruits in Berlin: Cherries, Plums, early Pears, Apples, Peaches, the two sorts of Currant, a few Strawberries, and, lastly, plenty of Pine-apples, cut and in pots. The price of fruit and vegetables is about one-tenth less than in Paris.

FLOWER MARKETS OF BERLIN.—Florists abound in Berlin, but they are inferior as a class to those of Paris. We twice examined their markets, and were satisfied that their plants were, as well for variety as for elegance, decidedly inferior to those found in the French capital. That taste which is so remarkable in the French flower markets, is not to be found in Berlin. The prices are much the same in the two towns. We had almost forgotten the Pinks, of which Germans are so fond. Their favourite flowers are the varieties of Celosia, the red and yellow Cockscomb, and what we call bicolors and tricolors, and most charming effects are produced by the contrast of these plants. Myrtles and Pomegranates are more in demand in Berlin than in Paris; the latter especially, which are kept from flowering until the winter, are used for interior decorations. We wish the French florists would introduce into their own country Humea elegans, which so well deserves its name.

The Berlin florists do not, like the French, expose their flowers for sale in elegant shops; they place them on the floor and on each side of the steps leading to the store, which is nothing more nor less than a cellar; this method has, in our opinion, great advantages both in winter and in summer. *Masson's Report.*

## Home Correspondence.

*New Strawberries and other Fruits.* — The love of novelty and the love of money are truly prevailing characteristics of the age we live in, and the increase of these passions in a proportionate ratio is every day apparent in high-sounding puffs of advertisements, which are constantly victimising the public—not only those who are mere amateurs, but even those who are thoroughly initiated in the art and mysteries of gardening. There are few who follow out this pursuit with spirit but have been taken in more than once, twice, or thrice, by giving long prices for articles inferior to those they were previously in possession of. I speak feelingly, and I am quite sure that my case is not a solitary one. I think that the establishment of the Floricultural Society is in its sphere a great boon to the public. Henceforward, flowers which will not bear the ordeal of that association's censorship will not be purchased. Well would it be if an association could be formed of respectable nurserymen and gardeners, to decide upon the merits of new fruits; each kind to be sent for their inspection at least twice in the course of each of two successive seasons; they would probably exhibit them under favourable and unfavourable circumstances, and the verdict of such a body would be invaluable to the purchasing public. Individual opinion on such matters is not sufficient, however honourable, high-minded and far removed from suspicion the censor may be. The Josling's St. Alban's Grape was a proof of this; a verdict of superior excellence was pronounced upon that fruit by a well-known individual, to whose integrity I need not add my humble testimony. But it proved to be nothing but Chasselas Musqué, a Grape which everybody had been growing for years. In Strawberries, my experience has not borne out the assertions made respecting some of the kinds. I do not find the Black Prince worth culture, and have long dispensed with it. It is certainly early, but not earlier than Grove-end Scarlet; less productive, and not so fit for the cook and confectioner, on account of its colour. In the dessert, it will not be patronised at a season when large dinners, routes, and balls can be furnished with British Queens, of which everybody must make "two bites." As a late sort, it has no value with me, but probably if forced and turned out, it would, like other kinds, yield some late fruit. The Goliah Strawberry in like manner is with me acid, insipid, coarse, very large, and a shy bearer; instead of being superior to the "British Queen," it is as much inferior to that excellent kind, as the Queen of the Sandwich Islands would be in comparison with our august Sovereign; the Bicton White was another kind only valuable for its colour. If your readers refer to the Journal of the Horticultural Society, they will there find much such an estimate of the "tremendous bearer" and "superior to British Queen," kinds as I have experienced. I for one will buy no more new Strawberries from merely advertised descriptions. Myatt's Eleanor has been by some parties described as of "fine flavour;" it may, I think, prove valuable for preserving, but it is disagreeably acid for the dessert; it will, however, be useful, on account of its lateness. Myatt's Globe is a good and useful Strawberry, but not equal to Eliza or British Queen. Myatt's Mammoth is only worth growing for display; it is magnificent in appearance, but horrible in flavour. Prince Arthur will prove useful; it is, as the late Mr. Wilmot said of it, "as hard as a cricket ball," and will bear packing well. Unquestionably the British Queen is the best kind in cultivation, producing a good crop, if liberally treated, equal to any in size, and superior to all large kinds in its deliciously sub-acid flavour; being at the same time free from the coarse woolly texture which pervades all the former race of large Strawberries derived from crosses with the Chili Pine. *J. Henry Bailey, Nuneham, Oxford.*

*Orchids at Chiswick.* — I was glad to find that the Council of the Horticultural Society had in part adopted the suggestion I made some time since in the *Gardeners' Chronicle*, viz., encouraging the exhibition at their great shows, not only of collections of Orchidaceous plants remarkable for their good cultivation, viz., large specimens, but also collections of smaller plants. I feel assured that this will lead to the furnishing greater variety of these plants at the coming shows, and that many will be induced to send who may not have such specimens as are in the collections of Mr. Hanbury, Mr. Warner, or Mrs. Lawrence. I think it may be well that you should explain this to your readers, as many may not have understood the effect of the Society's programme. I understand that some object to the smallness of the prize offered for their collections inferior in size; but I do not think that many having plants to show, will be deterred by such a reason from exhibiting their collections. I assume that it is more the honour and credit, as cultivators, that induce collectors or their gardeners to send, than the mere amount of the prize to be gained. *Dodman.*

*Unusual Growth of a Potato Crop.* — A tuber of a favourite sort of Potato, the "Farmers' Glory," was planted late last spring, on the top of a heap of decayed leaves, that had been collected about three or four months, and were but slightly decomposed, and situated in a sheltered and shaded spot behind a Vinery. About Midsummer, the top showed extraordinary vigour, having made about a dozen strong and very lengthened shoots, trailing over the surface of the leaf-heap, some of which ultimately attained 7 feet, others 8, and one or two even 9 feet in length. On the 27th September, whilst still in a state of active growth, and having even a few flowers remaining, the top was cut off, and, including all main stems and side shoots, which were very numerous, it measured 396 feet, and weighed 24 pounds. As anticipated, the growth underground was very disproportionate to that above; the tubers, 32 in number, weighed but 2¼ lbs., and most of them were very small. Twice during the summer, about three gallons of strong liquid stable manure was given to the plant. There does not appear to be any practical value in this statement, and the object in recording it is merely the preservation of a physiological phenomenon, in the extraordinary development of the leaves and stem above ground, and which would appear to have been chiefly owing to a somewhat elevated temperature of the soil, from the slow decomposition of the leaves, and the attendant evolution of carbonic acid and ammoniacal gases, though the liquid manure would, doubtless, contribute an important share of stimulating nutriment. It may be added, that the tuber was a very large one, having weighed, when first raised from the ground, 24 ounces; and it had remained exposed to the light in my study from that time to that of its planting. Another tuber of the same sort, and raised at the same time, weighed 32 ounces, and both were grown in a field-crop. *G. Lloyd.*

*Fumigators.*—It has been suggested that iron tripods supporting deep basins or pans, with holes in them, to allow a current of air to pass through, should be used for holding the fire on which is placed the tobacco or tobacco paper for fumigating plant houses, &c. These would be found very inexpensive, and would quite supersede garden pots, which are generally used for the purpose, but they are not at all suitable, as the heat causes them to crack and fly about in all directions, causing accidents, and being the occasion of much loss and damage to the plants. *W.*

*Cryptomeria japonica.*—I quite agree with the writer of the paragraph at p. 710, who says that this interesting Conifer will form one of the chief ornaments of the pleasure-grounds and park scenery, if due attention is paid to the soil and situation in which it is planted. A wet place must be scrupulously avoided, for plants never thrive in it; while on dry ground, with well-ripened wood, although under ordinary circumstances peculiarly susceptible of frost, they will be found to resist its attacks. In 1848 I received a plant 3 feet high, from Messrs. Knight and Perry, for which I selected a soil rather rich and porous, thoroughly sheltered from the north and east winds, which I consider more injurious to the plant than any other. It has retained its original healthy colour, and is very promising, being now 9 feet high, 17 feet in circumference, and regularly branched from bottom to top. About two years ago I planted six smaller ones, within a mile of that just described; but they succeeded so badly that I have taken up those of them which were most exposed to the north-east winds, and planted them in partially sheltered situations. I remember seeing a Cryptomeria last winter, not 12 miles from here, planted in wet heavy soil, lying due north, and it looked as if it was quite dead. At present the glory of the park is a Taxodium distichum, which measures 66 feet high, and 12 feet in circumference, at 3 feet from the ground. Have any of your readers seen a larger one? *R. Lynch, Port Eliot Gardens.*

*Bleeding Beech Trees.*—What can I have done to put a stop to a disease which is making great ravages amongst our Beech trees? The bark splits perpendicularly for a foot, or perhaps 2 feet, and then the sap streams from the wound, blackening the whole side of the tree, which eventually bleeds to death, standing as if struck by lightning, with two or three of these deep fissures at each side. The soil is a light loam above, and stiff yellow clay below. All other forest trees thrive well, but the Beeches are gradually dying in the manner just described, and there will soon not be one

left in the place, unless some remedy can be applied. I may state that the gardener tells me that some of the Plum trees in the garden had the same disease some time ago, which he cured by applying yellow clay and manure to the roots; but he does not think it would do for the Beech trees. *J. M. E., Dublin.*

*Tree Leaves.*—It is a common thing for gardeners interested in the orderly appearance of "their grounds" to complain about the length of time the leaves hang on the trees this year—this complaint has been made by myself and others year after year; and though there are seasons in which Nature's operations in this respect are brought sooner to a close than in others, yet, on the whole, the difference is less than is often supposed. I cannot, however, help thinking that this season some counteracting agency must have been at work to retard them, as they are certainly 10 days or a fortnight later than last year; why they should be so I am unable to say; the fine weather we had in August and September and up to the middle of October, ought, in my opinion, to have ripened them, but such is not the case: that process is now performed in a forcible manner by the "hard weather" which we are just experiencing, and yet the Elm leaves hang on with a pertinacity that would appear to set ordinary frosts at defiance—but it is remarkable what effect that all-powereful agent has on some kind of trees. I have noticed Horse-chestnuts, not more than half denuded, to be completely so the morning of the first severe frost, their foliage lying in a mass as if raked together. It is singular that frost should have the power of detaching the petioles of this, and not those of other trees, from the incipient bud; but after all we shall not get the whole of the trees stripped so early as last year, though it may be accomplished about the same time as it was in 1849. *An Old Gardener.*

*The Season in the far North.*—I have been somewhat surprized to find the frost so severe in the south, as to enable people to fill their ice-houses; for here, about Fochabers, there has not been sufficient lowness of temperature to kill the Dahlias. There were showers of snow and hail on the 2d and 3d inst., but in sheltered places the Dahlias and Hollyhocks are nearly as fine as they have been all the season. Hybrid Perpetuals and Bourbon Roses are still opening their buds, and the common Chinas are flowering profusely. Potatoes are a good crop in this quarter, and generally free from disease. *J. Webster, Gordon Castle.*

*A Prolific Potato.*—One tuber weighing about 8 oz. was cut into eight sets and planted in the spring of last year; the produce raised last October, free from disease, was planted this spring; the produce this year, just dug up, without cutting or pulling the tops off till the beginning of October, amounts to 3½ sacks, weighing 698 lbs., with only 6 or 8 slightly infected with the prevailing disease. The quality is very good, but much better later in the season. The sort is a Red Kidney. *J. Alloway, Tattingstone House, Harkstead.*

*New Manure.*—We beg to inform you that this summer we have used the new patent Kopros, prepared from nitrogenous matter in combination with superphosphate of lime, and we find it very excellent, causing the plants to grow rapidly but robustly, and turning the foliage to a beautiful dark green colour; it is altogether well adapted for plants generally, but for those grown in pots it is invaluable. *J. Weeks, and Co., Chelsea.*

*The Cuckoo.*—I am very much surprised to find Mr. Kidd again asserting that the female cuckoo utters the well-known cry of the male; he might just as well assert that the female nightingale sings, for the cry of "cuckoo" is the *song*, and not the call-note of the bird; both sexes have the latter in common, but the song is peculiar to the male, and I distinctly affirm that the female *cannot* utter "cuckoo." The throat of the male is capable of great distension; and when singing, this part is swelled out as large as a hen's egg; but the throat of the female is incapable of similar distension, and, as a matter of course, she cannot produce the same sound. There is not the least difficulty in distinguishing the sexes when dead, by the structure of the throat. I must also express my utter disbelief that the cuckoo, under any circumstances, feeds its own. *Ruricola, November* 18.

*Thoughts in relation to a Theory of Vegetation.*—Reading in your paper respecting the sleep of plants, certain opinions which I have entertained for many years as to the moving cause which starts and sustains vegetable life, press themselves upon me; and I solicit the privilege of laying them before your readers, in the hope that they may find sympathy from some one who thinks for the pleasure of thinking. My theory is this, that the same cause which causes the ebb and flow of the tides, also originates the infancy of vegetable life—carries it forward to maturity, and afterwards conducts it back to decay. In other words, my opinion is, that the infinite variety of vegetable life which we see, results directly from the operation of a primordial law of the universe, which in the language of astronomy is called gravitation, and in that of chemistry affinity or attraction; that the light and heat of the sun perform a very secondary part, indeed, in first originating, and afterwards sustaining vegetable life; that these may be compared to the smiles and caresses of a mother upon her infant, which are indeed necessary concomitants of its health and happiness, but do not sustain its growth and vigour. My theory resolves itself into this; that vegetation is a process analogous to that of crystallisation regulated and controlled, accelerated or interrupted, matured or destroyed, by the law of a continually varying gravitation. This theory is suggested to my mind by the following reflections:—1st. The moon exercises an influence upon vegetable life of the same nature as that which the sun exercises.—2d. The tides of the ocean are due to the joint influence of the sun and moon; they happen twice in the day. They vary as to time and degree, because the joint influence of the sun and moon is a continually varying quantity. The tide of vegetation happens once in the year; being chiefly dependent upon the sun's annual periods, it is less susceptible of his daily ones. Nevertheless, these are not altogether imperceptible, as in the case of the sleep of plants, and of the phenomena of the Passion-flower. The moon's monthly periods are still more perceptible, as is witnessed by every farmer at full moon in the accelerated growth of his plants, and in their speedier ripening at harvest during the same monthly period. But it is the sun's annual periods that mark themselves most distinctly upon the vegetable creation. For no sooner does he begin to ascend in the heavens, in the middle of winter, than vegetation also prepares to start; and shortly after he has attained his annual meridian, vegetation ceases to make further efforts, and the juices of plants are matured into fruits, or fall back again into decay. The fruits of autumn may be compared to the produce of the secrets of the deep, which occasionally float upon its surface, and are either cast out upon the beach or swept back again by the receding tide.—3d. A belief in the influence of moon and planets upon vegetation has been more or less prevalent in all ages. In ancient times it occupied so prominent a place in popular belief, as practically to influence cultivation. It is only in these latter times, when the evidence of things not seen exert so little control over the human mind, that the notion of planetary influences has been classed among opinions which characterise an infantine state of mental attainment. Surely Sir Isaac Newton, who sought to trace the influence of the planets upon the destiny of mankind, could not be sceptical of their influence upon vegetation. But which of us now cares about knowing the ordinances of Heaven? To which of us now do the sweet influences of Pleiades convey an idea of good or evil? Or what man out of all our enlightened guides of modern public opinion would attach any value to the bequest of a blessing "of the precious things put forth by the moon."—4th. The fame of Sir Isaac Newton is associated chiefly with the discovery of gravitation by the fall of an Apple. But what was it that raised the Apple? Might it not be a modification of the same law? The law is the same for apples as for plants. We know that it is one and the same law which causes the ebb and flow of the tides, their motions being occasioned in the same manner, as we may make the beam of a balance to move either way by the transposition of one of the weights. We know that every particle of matter obeys the law of gravitation; and we know also, that all particles do not obey it equally. Let us conclude then, that this balancing between the earth and the heavens takes place with regard to every particle of matter. In a change of substance there will originate a necessity for a change of position, and change of position will again necessitate a change of substance; so that, by the simple law of gravitation, modified by the motions of the heavenly bodies, we have a source of constant activity kept up on the surface of our globe. If we have evaporation obedient to the call of the heavens, and the dew and the rain acknowledging subjection to the earth, why not also admit that the juices of the Apple are carried up by the influence of the same law which occasions the rise of the tide and the ascent of vapour; as we acknowledge that the Apple itself, when in a state of maturity, falls in obedience to the same law which occasions the descent of a drop of rain?—5th. What is it that supports the Rose which I now see in the air? The law of gravitation, according to the popular notion of that law, is fearfully hostile to it; it threatens every moment to crush the flower in ruin upon the earth, yet there it hangs, a beautiful emanation from the earth, and held in momentary equipoise by the law of gravitation. It is as a snowflake upon the great river of vegetation, a "moment white, then lost for ever." What is the resemblance between the growth of a Rose tree, and the ascent of vapour? Both ascend towards heaven in an imperceptible manner, and in an attenuated form. By the law of gravitation, the particles of vapour agglomerate and fall in rain upon the earth. In obedience to the same law the juices of the Rose tree ascend. So long as vegetation is young and vigorous, these juices take the form of leaves, and spread themselves out towards heaven. But so soon as these juices are matured, they take the form of seed or fruit, and become pendent towards the earth.—6th. It has often been a matter of curious speculation with me, to ascertain the reason why the fall of forest trees should be so frequent in March, when they expose so little resistance to the blast and so rare in summer, when they expose so much canvass in the shape of leaves for the wind to act upon. We cannot account for it, but by supposing that the leaves contribute to give stability to the tree in the same manner as its fins contribute to give stability to a fish in the water. The leaves are of the air in the same sense as the flakes of crystallisation are of the solution which contains them. Being of the air, they take hold of the atmosphere in the same manner as the roots, being of the earth, take hold of the soil. A little acid dropped into a solution of certain salts will give no inapt outline of a tree in the full pride of vegetation. But the resemblance is not confined to the appearance—the processes of formation in both cases have a family likeness. At first we have in both cases thin substances waving uncertainly in the element which sustains them. By-and-bye an agglomeration takes place. In the one case crystals are formed, in the other fruit is formed, and in both cases the results are deposited in obedience to the law of gravitation. A drop of water pendent from the extremity of an icicle resembles the fruit of the Vine, and a bunch of Grapes may be compared with the stalactites of a cavern. It might be curious to trace the effect of motion upon the conditions required by the law of gravitation. An arrow, a race-horse, a swift flying bird, a swift swimming fish, and a fast sailing boat have all a similar configuration, to enable them to accomplish the purposes for which they are formed. Perhaps it is giving too much latitude to the imagination to suppose that the same conditions impose the necessity of a similar configuration upon the fast growing Poplar; or that this is the reason why all plants elongate chiefly during the period of accelerated vegetation. *J.R.*

*Quick (Thorn) and Fruit-tree Planting.*—I have read with interest the numerous articles written by Mr. Cuthill, and amongst them that on the preparation of land for forest trees, &c., which I think good. But I cannot speak so favourably of his observations upon the cutting of young Quick hedges. Mr. C. says they should not be cut down till the second year after planting. Now, what would be the result of such a practice? Why, a dwindling, miserable plant the first year, and little better the second. The method generally practised is to cut down close to the ground at the time of planting; this I consider objectionable, as it deprives the young plants of too many leaf-buds at once, which are indispensable agents to call the roots into action. My plan is, to plant at the usual time, but not to cut down till the young buds are fairly started, say the beginning of May. The operation is then easily accomplished with a pair of strong shears. By this method, the roots are called immediately into action, and by reducing the tops to a few buds, they are enabled to send up strong shoots the first year. Mr. C. also remarks on the planting of fruit-trees, and seems to infer that they should not be headed down at the time of planting. Now, according to physiologists, and "practicals," the head of a tree should always be reduced in proportion to its roots, at the time of planting; this operation is, however, not often attended to with the care which it deserves. My practice is merely to lighten the head, by cutting back the extreme points to other well-placed shoots. By which means the top may be proportionately reduced, and, at the same time, leaving a good supply of buds, to call the roots into action; and the result is a healthy growth the first season, whereas, on the other hand, by leaving the top entire, the result is a great proportion of dead shoots, and those which are alive are miserable, half-starved things, each contending for a portion of support, which the roots, from being overdrained by an unequal head, are unable to supply them with. As to Mr. C.'s hints respecting Roses, it certainly would be bad practice to cut down at the time of planting. My plan is to leave the heads until the sap is in motion and the buds beginning to start, at which time the operation may be performed with safety. *Wm. Cox, Strensham Court, Nov.* 19.

*How to Crop a Small Kitchen Garden* (see p. 726.)—I have to thank "Vectis" for answering my questions, but it still appears to me that by his mode of cropping, the greater part of our most useful vegetables must be banished from the garden altogether, such as Brussels Sprouts, Broccoli, Cauliflowers, Spinach, &c., as no allowance is made for them, and he evidently does not grow them, or he would have had no occasion to say he had only Cabbage sprouts now, when he ought to have Cape and Walcheren Broccoli, Borecole, Brussels Sprouts, and Spinach. I do not see how these could be grown by his system of cropping without interfering with the rotation next year, as he could not well avoid having one of the Brassica tribe on the same spot where one of the same family grew this season, a circumstance which it seems to be his chief aim to avoid. Now if he can afford to dispense with these useful vegetables, I can assure him I cannot, and I think that the generality of your readers will be of my opinion. I stated that he had made a step in the right direction, because I feel well convinced that if cultivators of small gardens wish to grow every kind of vegetable usually grown in larger ones, they must adopt a system of placing one crop between another, as open ground is not always at command—a system which I pursue on a large scale; but before anyone can adopt such a plan with success, they must well understand the nature of the vegetables they wish to cultivate, which knowledge is only to be obtained by years of practical experience, or else by receiving instructions from one who has had such experience, without which they would be liable to fall into extremes, either by placing their crops at such a distance that no ground would be saved thereby, or else they would put them so near that one would spoil the other. *J. Steel, Clitheroe, Nov.* 19.—In my former article on this subject at page 726, after "I certainly only at present have the sprouts from the Cabbages," read *and a good crop of Broccoli.* This was omitted to be mentioned by me last week. *Vectis.*

*Glass for Horticultural Purposes.*—We all remember the time in which most garden structures were glazed with the old-fashioned common glass, with its undulating surface, and opaque appearance; after that came crown glass, first in large squares, and then in small ones, and to such an extent did the small square mania rage some 20 years ago, that a glazier's bill presented a formidable array of figures for squares put in; this mode continued with but little variation up to the period when sheet glass came into use, and I believe Mr. Paxton was about

the first to introduce the "long square" system, so very common at the present day. Well then, the removal of the duty on glass gave a new impetus to the sale of the article; and the inability of the manufacturers to meet the demands of the trade for a time kept the prices up, which led to an extensive importation of foreign glass of an inferior kind; and no doubt our own manufacturers, in their anxiety to compete with the foreigner in low prices, commenced making a similar bad article, which, finding a customer in the hothouse builder, on account of its cheapness, has led to most of the complaints we have heard about sheet glass, burning or scorching, whichever it may be called. Now, having had a good share of experience with all the kinds of glass mentioned above, and also once with a house glazed with coloured sheet glass (of which I shall speak hereafter), I have no hesitation in stating, that where sheet glass of good quality is used, and a sufficient ventilation provided, and attended to, it will never burn or injure the foliage of plants that will endure sunshine through any other kind. I have two pits, each 90 feet long, and a house of 50 feet, as well as some others, all glazed with sheet glass in squares of about 2 feet long, by 8 or 9 inches wide; and since they were put up three years ago, I have never observed anything in the shape of burning; true, I have at times in hot weather shaded Melons a little, but their health did not require it, as I never did so until their fruit was set. I have likewise fully exposed Pines, and I never observed a leaf of my Vines to flag in the hottest day of summer; in fact I consider the flagging, scorching, and other complaints laid to the charge of the sheet glass, to apply only to that of an inferior description, or what is more likely, to some other cause altogether; as for instance, defective ventilation, want of robust health, or something improper with regard to culture. In saying this much, I am by no means blind to the many cases in which sheet glass has failed to give satisfaction, but there might be much fewer, if every thing tending to good cultivation were present at the same time; and I would strongly advise those intending to build new houses, to pause and inquire before they too hastily introduce this new-fashioned "rough plate." I can hardly regard it in any other light than a retrograde movement; resembling as it does the old-fashioned "under duty glass of our grandfather;" its principal merit is what I would call its principal fault, it obstructs the light, rather than diffuse it [No, no], and for most purposes we have none too much of that necesary auxiliary to forcing in England. But as I have not tried it [We have], I would prefer the evidence of those who have, and if they who have had it in use a year or two would just tell us the condition it is now in, that would also enlighten us in the matter, as I cannot but think its rough surface must become exceedingly dirty in time [No], and eventually obscure more than its originators intended, independent of its bad appearance. There is nothing connected with gardening of more importance than glass; it enables us to enjoy the beauties of tropical climes (modified to a certain extent), and also furnishes our tables with the produce of more favoured lands, or that of our own at a time in which we could not obtain it without such assistance; everything, therefore, relating to that useful article must be of the greatest interest to the horticulturist, and so I make no apology for calling the attention of your readers to the subject. *An Old Gardener.*

*Heating by Hot-water Pipes.*—Mr. Corbett, of Downton Castle, has explained to me a method of heating hothouses, which had long suggested itself to him, and which he has put in practice in the warming of some recently erected for Mrs. Acton, at Acton Scott. He states that it answers to his fullest expectation, and from his account I think that it is likely to supersede every other plan, and ought to be made generally known. It is cheap, economical in fuel, and expeditious in raising and keeping up the desired temperature. This method is simply that of placing a piece of round wood in the inside of each length of piping, with studs, at equal distances, to keep it in the centre. The pieces of rounded wood being of such diameter that there will be about half an inch of water only in circulation throughout the whole length of the pipes. Wood may probably be the fittest material to place in the inside of the piping, being a non-conductor of heat. It may be well to state, that a 4-inch pipe contains 12½ inches of water in every inch in length; therefore, a piece of wood, 3 inches in diameter, will take up, or occupy, 7 inches of that pipe, leaving only 5½ inches for the circulation of water. *John Mearns, F.H.S.*

*Common Hardy Bulbs.*—I have for some time noticed the absence of many of the old common hardy sorts of garden bulbs, which, 20 years ago, were to be seen in greater abundance than they are now; I allude more especially to gardens of the middle and lower classes of society; their absence has not certainly been replaced by better things—were it so, then, the circumstance might be allowed to pass over unnoticed. I have settled in my own mind that one of the reasons of their disappearance is, their continual liability to be destroyed in digging or turning over the ground when their tops are not to be seen above the surface. Labels may be put where they are to be found, but these, from many causes, are often lost or get misplaced. Now, to avoid this, I have thought of a plan which I think would be very likely to prevent this, at a very trifling cost; it is as follows:—Get some of the common garden pots from 7 to 10 inches deep, rather straighter than they are generally made, but having no bottoms to them; place this pot in the earth up to the rim (or cover the rim altogether if you object to its appearance above ground) in this pot plant your bulbs, of whatever kinds they are, and I should think they would flower better, or at any rate quite as well, as if planted in the common way; when digging or turning over the ground it is obvious that they could not be injured, as the spade or fork striking against the side of the pot would give notice directly of the fact of the bulbs being close at hand. The cost of these pots need not be more than one penny each, and they would last for many years; and another advantage would be, you could give the bulbs a soil congenial to themselves, and different to that around, with a little trifling extra care and trouble. As I was passing the Bethnal-green-road, nearly opposite Abbey-street, the other day, I accidentally came across something of the sort of thing I am speaking of; it was a pot without a bottom to it, and it had a hole in the side. The object for which these were made was to raise seeds and various things, and which, by putting a piece of glass over the top, formed a cheap description of hand-glass; the price of the article was 1½*d.* each (size, about 7 inches deep, and 5 inches across the top); these articles might be turned to very useful purposes. I am going to give them a trial. *A. Burgess, Hackney.*

*Epidendrums.*—What is the species of Epidendrum mentioned in a former *Chronicle*, as figuring at the Horticultural show in China? I presume it is E. Chinense, which is very sweet, and blooms in winter. What is the particular green variety alluded to? Is it grown in this country? *Dodman.*

*Ivy on Brick Walks.*—An Ivy mantled wall is at all seasons of the year a subject of admiration to most beholders, and to lovers of the picturesque it must be a matter of interest to point out cases where its uninjurious effects on brick structures are manifested. The north wall of my residence has been clad with this beautiful climber for 30 years past, and three weeks ago, owing to neglect of timely clipping, a heavy gale tore down a breadth of 24 feet, disclosing, however, no hollow bricks, or creviced mortar joints, but a surface smooth as a deal floor; the bricks are of a soft nature, and the house an old one; at the south side of which, where no Ivy has been planted, the bricks (all out of one kiln) are for the most part crumbly and uneven. The north (Ivied) side of the house has been always perfectly free from damp, and I consider, contrary to the opinion of your correspondent, at page 725, that the roots of the Ivy absorb moisture from the wall, and undoubtedly, from the position of the leaves wrapping one under the other, it shoots off rain drops as effectually as does the thatch of a roof. *H. H.*

*Performances of a Thrush.*—Some three or four years ago, my gardener caught a young thrush, full grown and fledged but unable to make its escape over the wall, by reason of its being drenched by a thick drizzling rain then falling. In the course of the early part of the ensuing spring, the man being ill and confined to his bed, I went to see him, and during my visit I inquired how long they had had the robin which I heard singing. To my surprise, I was informed that it was the thrush, and on going over to the cage to satisfy myself, I observed him with his head downwards, and on one side, and his tail depressed, uttering the low warble of the robin, in precisely the attitude of one. The owners did not seem to think it extraordinary, because, as they said, he had been hung up where there were plenty of robins to teach him. But his acquired accomplishments did not end here, for, a few days afterwards, I heard him sing the notes of a linnet; besides which, I was told (though I never was favoured with an opportunity for establishing the fact by my own ears), that he occasionally crowed in imitation of a cockerel, but with what success I cannot say. This bird is still, I believe, in the possession of its captor's widow, and should any of your readers desire to know more on the subject, I will make inquiries. *J. F.*

*Coe's Golden Drop Plum.*—I have been an extensive grower of this excellent variety for years, and in my opinion it is not perfectly ripe until it has commenced to shrivel. It certainly may be eaten before that time; but, to my taste, it is not so richly flavoured as when it is slightly shrivelled. *W. Lewis.*

*Broccoli.*—About 40 years ago a Neapolitan vessel was driven on shore on the western coast of Cornwall, and the gentleman to whom the vessel was consigned sent me a packet of Broccoli seeds. I raised a crop from them in my garden, near Falmouth; they proved to be a green sort with very close heads, and averaged a full yard in circumference; the flavour was peculiarly fine, and, after the heads were cut, side shoots sprang from the stumps, which being planted produced heads equally fine. I grew them for or five years, and then, by my gardener's neglect, lost them. I have in vain endeavoured to procure the sort from our English seedsmen. Three years since I requested Mr. Knight, of the King's-road, to procure me some of the seed from Naples, but he forgot the commission. I venture strongly to recommend this sort as superior to any of the present fashionable ones. The plants I had were of the green kind. *John Gould, Amberd, near Taunton.*

*Plant found in a covered up Coal-pit* (see p. 694).—I have waded to the neck in water hundreds of feet beneath the surface of the earth, with an oil lamp stuck in my cap, in search of specimens of Rhizomorpha, and found them many yards in length; but I do not think that the plant that was found descending the old pit was one of that genus. I should be inclined to say that it was a blanched braken or Fern (Pteris aquilina). I met with a fine specimen of the same species of plant about a month ago, growing in a wood; it had forced its way through brushwood and was waving its decompound frond, like a small Palm tree, above its neighbours. When pulled up and laid upon the ground it measured 11 feet in length. So you see that the same kind of plant will push its way through difficulties, whether they are under the earth or above it. *Peter Mackenzie, West Plean, Stirling.*

## Societies.

LINNEAN, *Nov.* 18.—R. BROWN, Esq., in the Chair. Part of a paper was read by the Assistant Secretary, "On Two New Genera of Plants," by J. Miers, Esq. The first genus described belonged to the natural order Eriogoneæ. After criticising the structure of the order and its relation to Polygonaceæ, and assigning his reasons for placing these orders near to Caryophyllaceæ and Portulaceæ, the author described the new genus under the name of Tetraraphis. The only species was T. spiculata, a plant growing on the eastern side of the Cordilleras of the Andes. The genus was named from the four long spines of the involucre. A letter was read from Mr. J. Hogg, of Norton near Stockton, giving an account of the ripening of the Grapes of a Vine in the open air in his own garden. The latitude is 54° 35'. The Vine had been previously cultivated in a hot-house, and was placed out in the open air for destruction. Specimens of the leaf and flower of Victoria regia, and of the fruits of Cucumis prophetarum and Momordica charantia were presented by Mr. Robert Marnock. A collection of objects of natural history exhibited at the Crystal Palace, from Van Diemen's Land, were presented by Dr. Milligan, Secretary to the Royal Society of Van Diemen's Land. They consist of necklaces formed of a species of shell belonging to the genus Eleuchus; "native bread," a species of fungus, the Mylitta australis; gum from the Acacia mucronata; Kino from the Eucalyptus, and Blood-juice from an unknown plant, with a collection of several specimens of wood, from trees growing in Van Diemen's Land. The President observed that the catalogue of the Tasmanian collection at the Great Exhibition was, both for the accuracy and extent of the information it contained, the best that he had seen. Mr. Adam White exhibited specimens of lead from the lining of a cistern which had been bored by a small beetle (Anobium striatum). The specimens came from Dr. Gilbert of Harpenden. Mr. White mentioned other instances in which various species of Coleoptera had bored into lead. The object in all these instances seemed to be to effect an escape.

CHELTENHAM HORTICULTURAL AND FLORAL ASSOCIATION.—At a late meeting of this Association, the following alterations in, and additions to the existing rules, were proposed and carried: Ordinary members to consist of four classes, namely, annual subscribers of two guineas, one guinea, and half-guinea, and life members, donors of five guineas; the first to be entitled to 20 tickets, and to have three votes at all elections; the second, nine tickets, and two votes; the third and fourth, four tickets. Honorary members to be entitled to the privileges of the second class of annual subscribers. The omission of those portions of the sixth, seventh, and tenth rules referring to an extra show, to exhibiting in two classes, and to possession of plants two months before exhibition. Non-subscribers to be admitted for 3*s* 6*d.*, if tickets are purchased three days previous to the exhibition, and 5*s.* on the day. The altering of the present name of the Association to that of the "County of Gloucester and Cheltenham Horticultural Society."—*Cheltenham Journal.*

HAMMERSMITH CELERY SHOW, *Nov.* 18.—The annual exhibition of Celery was held on Tuesday last, at the Thatched House. About 25 heads were produced; they were mostly of a white kind known as "Lidgard's Own." The 1st prize for three heads was awarded to Mr. Lidgard, the 2d to Mr. Ashton, and the 3d to Mr. Green. It was imperative that each head should weigh at least 5 lbs., without root or "sprue," and that it should be well grown and blanched. The winning nine heads weighed 60 lbs.

## Notices of Books.

*A Treatise on the Cultivation of the Chrysanthemum.* By William Ivory, Gardener to the Rev. George Chetwode, Chilton House, Thame, Oxon.

WE have just received a copy of this excellent treatise on this useful autumn and early winter flower. Our readers will recollect the favourable account which was given of Mr. Ivory's Chrysanthemum growing, in our number of the 25th of April last. Since the appearance of that article, Mr. I. has been induced to give his experience in the form of a small pamphlet, from which we venture to make a few extracts. Speaking of "blindness," he says, "it is of the utmost importance to have the cuttings of a moderate growth and size, not the coarse flabby-leaved ones, similar to those produced from deep suckers; but such as are produced from the old stems just beneath the surface, which are firmer in their texture, and strike more freely. Indeed it is of the greatest moment to secure this condition, for success depends more upon securing plants of uniform growth, and so preventing their going what is called 'blind,' than upon anything else, as I have many times proved. Last season was a noted one with growers, inasmuch as great numbers of plants went blind. Some attributed the defect to one cause, and some to another; but I am satisfied that selecting improper cuttings has more to do with it than any other."

In addition to the state of the cutting, however, we are of opinion that undue stimulation of any kind will have the effect of causing "blindness" faster than anything else. The soil Mr. I. uses for the first potting is equal parts of loam and leaf-mould, with a little sand. In potting for the last time in the middle of July he uses 8-inch pots for blooming them in, with soil of three parts loam and one part rotten dung, placing only one piece of crock at the bottom of the pot for drainage. After the plants are stopped and the pots filled with roots, so soon as the side shoots are two or three joints in length, he gives them, for the first time, some weak

liquid manure, prepared by mixing either a bushel of sheep droppings or soot in a large tub of water, which must be well stirred up and then allowed to settle; he then well dilutes it again with soft water before using it, which is two or three times a week, but not oftener. Respecting thinning, Mr. I. says:—

"So soon as the side shoots are three or four joints long, look them over and reduce them to the number required. Such kinds as Annie Salter, Queen of Yellows, Defiance, L'Ange Gardien, and all with similar free habits, I allow from 12 to 18 shoots; if very fine blooms are required, thin them out to 12; if a larger number are desirable, they will carry 18, but which of course will be smaller; these plants look very beautiful when properly sticked out: such kinds as the Duke, Clustered Yellow, Queen of the Gipsies, Formosum, and Nonpareil, from 10 to 12 blooms.

"It should here be observed, with regard to those late kinds, the cuttings of which were directed to be put in by the third week in May, are also to be potted and stopped each time in advance of the early sorts, as the shoots require longer to mature themselves. In thinning out the shoots, leave them equally distributed, so as to form a handsome uniform plant; if suckers appear from the bottom, stop them just above the soil, as they may be useful after a time, in case a few of the bottom leaves go off. The Queen of Yellows is liable, after stopping, to produce two or three very strong shoots from the top, and grow quite away from the lower ones; these strong shoots must be removed as soon as they appear—if not, they will spoil the plants quite. I recommend to grow several plants of Vesta, Pilot, Nonpareil, and The Bride, where convenient, they being four of the finest ever raised, are distinct colours, and of good habit."

One of the chief features of Mr. Ivory's system of culture is the treatment of the plants after they are housed, when the weather begins to set in wet or frosty. He says:

"At this time, in most gardens there are empty Cucumber and Melon pits, or Vineries; now in those pits where a moderate bottom-heat (from 65° to 70°) can be secured, is just the place for them, to be plunged to half the depth of the pots—which heat is to he maintained until the buds begin to expand, or until the first week in November. The effects of the pots being full of firm sound roots, the bottom-heat, and dry air, will soon be perceptible. Before plunging the plants let the surface of the soil become quite dry, so that if bad weather sets in, the foliage will not be choked with damp, nor will mildew attack them, which is sure to be the case when surrounded by stagnant moist air. In watering the plants after plunging, be careful not to wet the surface of the soil in which they are plunged; I have proved the importance of attending to this. Give plenty of air day and night, only exclude from frost and rain both the foliage and buds, the last named in particular; for if wetted now, they are apt to be one-sided. In plunging, give plenty of room, and if in pits have the lights off as much as possible. At all times endeavour to secure a circulation of air; if this is not done, the foliage cannot prepare food for the bud, the footstalk becomes weak and lank, and the leaf turns yellow. Where bottom-heat cannot be secured, set the plants out thinly in houses, and by all means keep the air dry and moving, watering the roots at all times with water at from 65° to 70°, which will in some measure answer the purpose. Without bottom-heat I have never been able to produce blooms anything like in point of size and form, as with it. Those kinds which come semi-double in a usual way, will come perfectly double under this treatment; indeed, in all kinds it forces the centre out, so as to form a perfect flower, approaching in size and form a first-rate Dahlia. When the plants are plunged, lift them up now and then, as, if they root through the bottom, those roots in the pots will become inactive and die. As the centre of the blooms begin to come up, withdraw them from the heat gradually, and stick them according to taste. Many kinds are better left as they grow, unless intended for exhibition, when they must be secured to prevent bruising; but plants grown in this way, in a few weeks (the shoots being of equal strength, able to support themselves, clothed with foliage to the bottom, and 18 or 20 inches in height), are very different to manage, and move from place to place, to the naked lank things too often seen. If, in any stage of growth, mildew attack them, which is generally on the under side of the leaf, fill a common dredging-box with flower of sulphur, turn the plant upside down, then dredge it, and let it remain on; it will prove a safe and sure stop to its ravages, which, if neglected and allowed to spread, will certainly spoil the foliage. When the blooms are fully expanded (which they will be after the middle of November), keep the roots rather drier than usual, watering them in the morning; by this treatment the blooms will remain perfect for five or six weeks. I have had some kinds quite fresh up to the beginning of January."

Having treated of the management of the plants in detail, he concludes with the following *multum in parvo*:—

"Put in the cuttings from the middle of May to the middle of June, have all potted off by the middle of July, have them all placed in the blooming pots by the first week in August, and all stopped within the first 10 days of August; let all the plants be plunged into bottom heat (where convenient) and protected from wet and cold, by the middle of October, and if all goes on well, they will be in bloom by the middle of November; so that the whole time occupied, from commencing with the cuttings to the time of their being in full bloom, is about 20 weeks."

Such are some of the more interesting points of a treatise, the persual of which in its extended form we heartily recommend. We understand that Mr. I.'s plants are now in splendid bloom, and well worth inspection. They average from 18 inches to 2 feet in height, and have 12 blooms to a plant, as large and perfect as a Dahlia. Some idea may be formed of their size when it is stated that one can barely span the blooms over, and they are beautifully up in the centre.

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*Fly-Fishing in Salt and Fresh Water* (Van Voorst), contains good directions for making artificial flies, and useful practical advice to fishermen who visit Ireland, especially as regards sea fly-fishing, and the preparation of winter flies. The author assures his readers that he has fished "on 365 days in the year, excepting, of course, on Sundays!"

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*Layard's Popular Account of Discoveries at Nineveh* (8vo, Murray), is another of Mr. Murray's valuable contributions to "Reading for the Rail." The work is very skilfully condensed by the author, and will be most acceptable to those who have found his larger work inaccessible. It is illustrated with capital woodcuts and plans of excavations.

## FLORICULTURE.

Breaking Tulips.—Owing to the remarks made in the *Chronicle* of November the 9th, I am induced to make a few observations on the raising and breaking of the Tulip. I confess that the rectifying of Tulips is an interesting and "splendid mystery." But I think their variegation is really and strictly the consequence of poverty, as manuring or rank growing demonstrates beyond all doubt that such an injudicious process renders flowers once light and fine in strain, heavy and badly run. I as well as others have often been both deceived and grieved in my purchases, by only adding a name to my collection and not a variety. The only charitable construction I could put upon it was that the breeder had been broken by different individuals, at different periods, and at different places unknown to each other, each giving it a name, the consequence being that one variety being broken at different places and periods, received many names. Fifteen years ago, or thereabouts, I commenced raising seedling Tulips on the following plan, one I would strongly recommend to all who think of immortalising themselves by adding something really good to what we already possess in the Tulip. It is as follows: Early in the spring I sow my seeds in shallow boxes or pans of sandy earth. As soon as the young plants appear to change in the foliage, I take them all carefully out of the box, planting each little bulb exactly 6 inches apart, in a bed already prepared for them. Here they are marked and entered in my memorandum book, in the following manner:—

| | | | | |
|---|---|---|---|---|
| | | 1830. | | |
| No. | 5000, | from Polyphemus | ... ... | 50 roots. |
| — | 5001 | — Triumph Royal | ... ... | 100 do. |
| — | 5002 | — Surpass Carafalque | ... | 609 do. |
| | | 1831. | | |
| — | 5003 | — Pearl Brilliant | ... ... | 10 do. |
| — | 5004 | — Madame Vestris | ... ... | 225 do. |
| — | 5005 | — Strong's King | ... ... | 110 do. |
| — | 5006 | — Juliet | ... ... | 311 do. |

By this I find I have in two years added 1415 new seedlings to my stock. My object in using such high numbers, is to prevent jumbling the numbers placed at seedlings with those of my general collection. In the place where I first plant, exactly 6 inches apart, I never remove them from it, until they bloom and exhibit qualities worth taking notice of. By this method I prevent any possible mixture by annually re-planting. But the greatest point gained, is the facilitating their breaking, by remaining so long in the same place, as the breeder colour appears by excess of poverty to be more readily extracted, leaving what we call a rectified flower. As a proof of this, I have broken several, or rather, I have had several beautiful things broken, when first they showed bloom, that was on the fourth or fifth year from seed. There is one fact which I have to make known, hitherto, as far as I know, unknown to all Tulip raisers. It has been so clearly demonstrated to me, that I cannot allow the floricultural world to be ignorant of it; it is, that in preparing one of my seedling beds along the side of a line of Apple-trees, say at 6 yards from tree to tree, opposite and close to the roots of these trees, the number of flowers broken the first time blooming was so striking, when none, or next to none, were found in the intermediate spaces, that I could not overlook it, and therefore I at once concluded, with others of my friends, to whom I pointed it out, that poverty was undoubtedly the grand secret in Tulip breaking. *William Willison, Flowergate, Whitby.* [Thanks. Yours is just the kind of information we want.]

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Stoke Newington Chrysanthemum Exhibition.—If ever the merits of a gorgeous, and for its season of blooming, unrivalled flower, were prominently and successfully established with the public by the energy of "the few," that flower must be the Chrysanthemum; and those "few" who have brought this pre-eminence about, it must be admitted by all, are the founders of the Stoke Newington Society, whose triumphs arrived at the very summit of perpetual fame by the productions last Thursday, submitted for the gratification of an immense assemblage, in numbers larger than hitherto known, not only from the immediate locality, but the neighbouring counties of Essex, Kent, Surrey, Sussex, Buckinghamshire, &c. The manor rooms, in which the exhibition was held, presented a spectacle of the greatest interest—one which must be long fixed in the minds of Flora's votaries that day assembled. This, the fifth annual meeting, even surpassed the magnificent display in the same locality last year, even now vividly in our recollection: Plants, cut blooms, company, and general arrangements, each vied with the other for mastery of excellence, and a perfect whole was the result; a more happy combination none could desire, and it will be well for the executive to try no radical change in their constitution, in seasons to come; rather let them be prompted by the old proverb, "to let well alone." We have an elaborate report preparing, but from the late hour ere our duties at the exhibition were concluded, we find it impossible to give the results in detail this week. Among the more prominent of the successful exhibitors, we find the names of Taylor, Scruby, Holmes, James, Sanderson, Elliott, Bundel, Merry, Croxford, G. Smith, Biscoe, Shield, Lochner, Callahan, Hatton, Williams, Chandler, Salter, &c. *J. E.*

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Books: *G G.* Received with thanks, and will have early attention. *J. E.*—*C J P.* Too late for this week. *J. E.*

Catalogue Received from G. Rogers, Uttoxeter, Staffordshire. *J. E.*

Communications: *W E R.* We thank you for the offer, and will report on the subject in a day or two. *J. E.*—*J F W.* Next week. *J. E.*

Frost: *A.* It was so severe about London on Saturday night that much damage has been experienced in some places—17° are reported. *J. E.*

Tulips: *T.* If the soil has much settled, add sufficient to make the bed even with the side boards, provided always that by so doing you do not bury your bulbs too deep. *J. E.*

## Miscellaneous.

*Stacking Ice.*—Ice may be stacked—plain English ice, or snow well beaten down into a mass, after the Roman fashion, which answers for all economic purposes every bit as well. This is the mode of stacking ice or snow which has been found to succeed most thoroughly at Chatsworth; in the first place, let the owner of the dairy-farm select, not the coolest and shadiest spot, as he inevitably would do without better instruction, but the openest and sunniest, because driest, bit of ground he can find—the sunnier the better. At Chatsworth the first trials were made in shady places, and proved far less satisfactory, because a dry place is required, and the dryness which the sun occasions more than compensates for the temperature of its beams. The platform having been judiciously selected, dig all round it a sufficient trench, which is to contain the water that will, more or less, inevitably drain from the completed stack; let the bank of the trench be lower on the outer side, and, if necessary, a siphon tube may be put in to drain off any excess. The object of the trench is, firstly, to prevent any of the drainage water from spreading over the platform; therefore to keep the platform dry; and secondly, to preserve this drainage water, which is very cold, and can be used for making butter. Then lay over the whole platform a bed of straw, six or nine inches thick. Straw is a sufficient and convenient non-conductor, and ice wrapped in straw is tolerably well protected from external influence. Upon the straw bed make your stack, building up with sides perfectly upright. The sides are to be thus perpendicular, in order that whatever melts may at once flow into the trench and not soak into and spoil the ice which remains otherwise unmelted. If the stack happens to be long, partitions of straw should be inserted at convenient distances, for the protection of one part while another portion is in use. The stack being erected in this manner, coat round the whole outside of it, and thatch it with a straw defence of 18 inches thick. If you build the stack of snow, build it in the same manner, but take care to batten it down. A stack of ice or snow, so made and so defended, will remain good through the hottest summer, and will obviate the necessity for any ice-house. Remember that all this will be done in mid-winter, when your labourers have comparatively nothing to do; when your horses are eating their heads off; and your carttires are rusting from idleness. *Dickens's Household Words.*

*Victoria Regia in the United States.*—On the 21st of March last I planted, in small seed-pans, four out of the 12 seeds you sent to me. Three of these germinated as follows:—the 1st on the 10th of April, the 2nd on the 14th of April, and the 3rd on the 22nd of May. On the 24th of May one of the plants was transferred to the house constructed for it, and placed in a tank, of an octagon form, about 24 feet in diameter. The largest leaf was then 4½ inches in diameter. Fire-heat was applied till the 21st of June, and then wholly dispensed with till within a few days. The solar heat, with the house kept very close, was sufficient to raise the temperature of the water to 85°, whilst the atmosphere was about 10° higher. The temperature of the house and water, however, was materially below these points at times, there being occasionally as great a difference as 15°. Notwithstanding these great variations, and the low temperature at intervals, the plant flourished in the highest degree, and on the 21st of August produced a flower 15½ inches in diameter. Another flower succeeded it in a week, which was pronounced by the Committee of the Pennsylvanian Horticultural Society to be 17 inches in diameter; the petals being 7 inches, and the disc or crown of the flower 3 inches. For the past three weeks the plant has contributed two flowers a week, the ninth flower blooming this evening. The leaves have reached a diameter of 6½ feet. The salver edge made its appearance with the 24th leaf, and every successive leaf has been thus formed. This 24th leaf attained at maturity a diameter of 5 feet 8½ inches. It was the 27th leaf that measured 6 feet 6 inches. Since the plant has begun to bloom, the leaves are not so large; still they have reached 6 feet 2 inches in diameter. That we have succeeded in producing larger leaves and flowers than you have in England, I ascribe to the more favourable character of our climate. It is certainly more natural to the plant that the temperature of the air should be higher than that of the water. These conditions, you are aware, are reversed in England—an effect produced by artificial heat, which is of course less favourable than solar heat. I have in my kitchen

garden a small basin for catching the rain-water and overflow from the aquarium and other houses. It is about 8 or 10 feet in diameter. Into this basin I planted one of the Victorias, on the 25th of June last. The plant has grown remarkably well, the largest leaves attaining a diameter of more than 4 feet. It has not yet, however, bloomed, and may not, as cold weather is near at hand. Sash, blocked by whiting, has remained over the basin during the whole time. I am satisfied that we can flower the plant next season in this position. The third plant is still in the small seed-pan in which the seed was sown. The excitement produced by the successful cultivation of the Victoria on this side of the Atlantic has been very great, and I am happy to say that no one has affirmed that the glowing accounts of the plant were at all exaggerated. Indeeed, the universal sentiment is, that no tongue or pen can exaggerate it.—*Caleb Cope, in Hooker's Journal of Botany.*

*The Oxford Botanic Garden—New Houses.*— In the summer of the present year an addition was made to the establishment by the building of two stoves, the larger intended for aquatic, the smaller for Orchidaceous plants, which, with the propagating house contiguous, erected previously, constitute a range 84 feet in length, extending along the eastern side of the garden, in a direction nearly parallel to the river Cherwell. The former of the two new housss is built upon a new plan, with a ridge and furrow roof, composed of glass let into iron frames without columns to support them. It encloses a tank measuring 26½ feet by 17 feet, warmed by pipes of hot water traversing its centre. The depth of the water in the tank is 3 feet 6 inches, and a slight motion is given to it by means of two small overshot wheels, which may be made to revolve by the application to them of a minute jet of water. In the centre of this tank there is a mound of soil, previously burnt, into which is introduced the Victoria Lily, the plant about which so much curiosity has been excited ever since the period of its first flowering at Chatsworth. Round the margin of the tank may be also seen the following interesting aquatic productions of the tropics. The Nelumbium speciosum, the sacred Bean of Egypt, a plant of much historical interest, being figured on the sculptured monuments of that country, but no longer found there, though common enough in various parts of the East Indies. Its leaves, which are orbicular, sometimes measure 2 feet in diameter ; and its flowers, which are very handsome and fragrant, often exceed in their native country the size of 10 inches. The ancient Egyptians used the seeds, which are enclosed in a fruit like that of the Poppy, as an article of food. Another plant from Jamaica, with smaller leaves than the above, is also a kind of Nelumbium, a genus differing in the multitude of its pistils from the true Water-Lily, of which we have in the tank the following exotic species. N. cærulea from Egypt, a very beautiful plant with large blue petals ; rubra and stellaris from the East Indies ; dentata from Sierra Leone, nearly allied to the Nymphæa lotus of Egypt, with leaves ribbed on the back like the Victoria regia, and flowers with a green calyx, and numerous white petals ; odorata minor, a small fragrant species from North America ; and micrantha from the river Gambia, with elegant small white flowers, and viviparous leaves. Here also may be seen the Pistia stratiotes, a gigantic kind of Duckweed common in the ponds of the West Indies, the leaves of which in like manner float loosely on the surface of the water unattached to the soil ; two species of Pontedera, namely crassipes from Guiana, distinguished by the swelling petiole of the leaf, and cærulea from North America, the flower of which is analogous to that of the Lily, but has a naked perianth ; the Limnocharis Humboldtii, a plant with conspicuous yellow petals ; a fine specimen of the Papyrus already alluded to in the Guide ; another gigantic species of Sedge, from Madagascar, the Cyperus alternifolius ; the Jussieua grandiflora of Carolina ; and a curious tropical Fern, called Ceratopteris thalictroides, a native of both hemispheres, having its sterile fronds bipinnated, and its fertile ones contracted into linear revolute segments, both kinds being viviparous. The shelves on either side of the house contain several fine tropical plants, and a few handsome climbers are planted in the soil. The stove which flanks the Victoria house to the north is designed for all kinds of seedling plants, and for others in the earlier stages of their growth ; but the corresponding one to the south is reserved principally for tropical Ferns, and Orchidaceæ.

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

In damp weather it is indispensable to give all the air possible ; but when rain is falling, this must be done without opening any sashes by which the latter can be admitted, as otherwise the damp will be increased instead of diminished thereby. This points out the utility of back as well as front ventilators in the upright walls, as by them a free circulation may be obtained in all kinds of weather. Where there is a deficiency of room for half-hardy plants in pots, as Tea-scented Roses, &c., during the winter, they may be plunged behind a north wall ; and if they can be protected by a temporary erection covered with tar-cloth, sufficiently high above their heads to shelter them from rain, without excluding air and light, it would be still better. There are hundreds of plants which our frosts will not injure, provided the sun never shines on them while they are in a frozen state; and the frost will have still less effect upon them if they are kept dry. See that the pots of all plants that are plunged in the ground have their rims covered an inch deep with the plunging material, to preserve them from the action of the frost ; and let an extra covering be laid over the Hyacinths and other bulbs which are plunged out of doors.

FORCING DEPARTMENT.

Cucumbers in pots for planting out should be kept growing steadily ; and when a shift into larger pots is required, let them have some lumps of half-decayed turf, a little well-rotted cow manure, and some flaky leaf soil. Plunge them in bottom heat in a light pit, removing all fruit and male flowers as they appear, and stopping the shoots at every second joint. Thus treated, the plants become strong and healthy, and when put out in a well-prepared bed, they produce fruit in a very short time and in great abundance. Those plants now bearing in boxes should have liberal treatment in regard to rich top-dressing and liquid manure, and only one or two fruit should be allowed on each plant at a time. French Beans require a temperature of 60° by night, and a rise of 10° or 15° by day, according to the weather. Air in moderation is also indispensable; for when kept too close, the plants soon become drawn and slender. Put successions of Sea-kale and Asparagus into suitable situations for keeping up a supply. We have already, in former Calendars, stated how these are best forced at this season. Small salads should be sown regularly, so as to maintain a constant supply. As these salads are so much in request, and so soon become shrivelled when cut at this season, we have adopted a plan of having a number of small boxes (about 14) 12 inches long, 4 inches wide, and 2 inches deep. We sow in these boxes every second or third day, and when any salad is required the boxes are sent into the house, so that it can be had perfectly fresh at the moment it is wanted to be served up. Boxes of Mint and Tarragon should be put into a mild temperature, so that a supply may be ready when required. Prepare beds of leaves for early Potatoes, spring Carrots, and Radishes.

FLOWER GARDEN AND SHRUBBERIES.

Most of the deciduous trees having now lost their leaves, advantage should be taken of all suitable weather for clearing them away, especially from the turf and gravel walks, that the first shower of rain may do away with the dirty and smeared appearance consequent upon the use of the besom or leaf-rake. After a sufficient quantity of leaves has been secured for fermenting purposes, and for decomposing into compost, the residue may be drawn into open spaces in the clumps, and covered with a little soil, to prevent their being blown about with the wind. In the course of the next twelve-months these leaves will rot, and next autumn they may be used as a top-dressing or mulching for newly-planted trees. Advantage should be taken of frosty weather to prepare the ground for planting trees or shrubs, by trenching well the clumps or spots which they are designed to occupy; and by carting or wheeling any necessary material on the ground while it is hard enough to bear the traffic. Actual planting however, must be deferred until the weather is favourable, as the roots cannot safely be exposed to frosty air. All plants recently removed should be well mulched with half-rotten leaves, or some other similar material, which will serve to dig in as a sort of manure in spring. Let all such plants be securely staked, as by nothing are they sooner injured than by being rocked about by the wind.

KITCHEN GARDEN.

Beds of Asparagus intended for forcing, should be at once covered with half-rotted leaves or manure, to prevent the ground being frozen, and so that they can be dug up easily in any weather. Those beds which are not intended for this season's forcing, should also receive their winter's mulching at the same time. The surface of the beds should first be lightly pricked over, and then a scattering of salt should be sown over them, at the rate of 1 lb. to the square yard ; and upon this, a coat of well-rotted dung should be laid about 5 inches thick. The alleys also between the beds should be well dunged, and forked over as deeply as it can be done, without injuring the roots which extend into them. Pits and Frames will require very careful attention during severe weather, as it will often be necessary, in order to prevent the effects of frost, to keep them closely covered up during the day, as well as at night. But if due attention has been paid to our oft repeated cautions to keep the inmates dry, they are in little danger of sustaining any injury, provided the covering be ample (excessive rather than otherwise), and also that advantage be taken of every favourable opportunity of admitting light and air, even if it be but for an hour in the middle of the day. Caution, however, must be observed in exposing the plants to the direct rays of the sun, as that can never be done with safety while the leaves are in a frozen state. In such cases, light should be admitted on the north side only, that they may be gradually thawed by the moderate warmth of the atmosphere.

State of the Weather near London, for the week ending Nov. 20, 1851, as observed at the Horticultural Garden, Chiswick.

| Nov. | | Moon's Age. | Barometer. | | Temperature of the Air. | | | Temperature of the Earth | | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. | Min. | Max. | Min. | Mean | 1 foot deep. | 2 feet deep. | | |
| Friday.. | 14 | 21 | 30.239 | 30.100 | 44 | 25 | 34.5 | 43½ | 44 | N. | .00 |
| Satur.. | 15 | 22 | 30.022 | 29.946 | 41 | 19 | 30.0 | 42 | 43 | W. | .10 |
| Sunday.. | 16 | 23 | 29.845 | 29.815 | 42 | 26 | 34.0 | 40½ | 42 | N. | .00 |
| Monday | 17 | 24 | 29.821 | 29.701 | 35 | 27 | 31.0 | 40 | 41 | N. | .00 |
| Tues. .. | 18 | 25 | 29.871 | 29.839 | 41 | 16 | 28.5 | 38 | 40 | N. | .00 |
| Wed. .. | 19 | 26 | 29.849 | 29.644 | 37 | 25 | 31.0 | 37½ | 39 | S.W. | .00 |
| Thurs.. | 20 | 27 | 30.062 | 29.861 | 43 | 24 | 33.5 | 37½ | 39 | N. | .00 |
| Average.... | | | 29.965 | 29.844 | 40.4 | 23 1 | 31.8 | 39 8 | 41.1 | | .00 |

Nov. 14—Clear and fine; frosty at night.
— 15—Frosty ; very fine ; sharp frost at night,
— 16—Frosty ; clear ; cloudy.
— 17—Clear and cold with brisk north wind ; frosty.
— 18—Clear and frosty ; cold north wind ; severe frost at night.
— 19—Severe frost for the period of the season ; overcast; a few snow-flakes.
— 20—Clear and frosty ; fine ; clear and frosty at night.
Mean temperature of the week, 10½ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Nov. 29, 1851.

| Nov. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
| Sunday 23 | 48.6 | 35.9 | 42.3 | 10 | 0.36 in. | 1 | 4 | 3 | 1 | 3 | 8 | 3 | 3 |
| Mon. 24 | 48.0 | 33.3 | 40.7 | 9 | 0.50 | 3 | 4 | 2 | 2 | 2 | 7 | 3 | 2 |
| Tues. 25 | 46.3 | 33.4 | 39 9 | 13 | 0.27 | 3 | 3 | 3 | 2 | 3 | 6 | 2 | 3 |
| Wed. 26 | 47.4 | 33.2 | 40.3 | 12 | 0.54 | 1 | 2 | 6 | 1 | 3 | 10 | 1 | 2 |
| Thurs. 27 | 47.0 | 35.4 | 41.2 | 12 | 0.88 | 1 | 2 | 4 | 1 | 4 | 8 | 3 | 2 |
| Friday 28 | 48.2 | 36.8 | 42.5 | 13 | 1.21 | 2 | 2 | 2 | 2 | 7 | 4 | 5 | 1 |
| Satur. 29 | 48.5 | 36.5 | 42.0 | 14 | 0.56 | 2 | 1 | 4 | 3 | 3 | 9 | 2 | 1 |

The highest temperature during the above period occurred on the 28th, 1823—therm. 60 deg. ; and the lowest on the 29th, 1846—therm. 16 deg.

## Notices to Correspondents.

ACER : *C F P.* We will give you a full account of this presently. It is apparently as hardy as a Sycamore, and not unlike one.

BIRDS : *J C E.* Very early in the ensuing year. Do not buy your birds for breeding *until after Christmas;* they will then have got safely over their various ailments. We will answer your inquiries about the sky-lark, &c., by post.—*Observer.* Your bird never will be well, or sing freely, till you have ceased to feed him on fig-dust. We have spoken fully about this, on several recent occasions.—*Rustic.* You may try worms and small pieces of raw meat, but you will *not* get him to live beyond Christmas.—*J B.* Do not by any means give your bird loaf-sugar, and never attempt to let him bathe at this season. He evidently has the cramp, and his stomach is out of order. Scatter some powdered chalk on his sand, and keep him warm.—*Tyro.* His disfigurement is caused by the "agitation" peculiar to this season. His damaged tail will be restored in the spring.—*S P.* See *Gardeners' Chronicle,* Feb. 22, and the two subsequent numbers.—*Aliquis.* They are very affectionate birds, but their song is of little value. Still, as your children are so fond of him, keep him by all means.—*Hopeful.* Yes; the hedge-sparrow, or Dicky Dunnock, is a most merry little chorister, and well worth a cage. We have plenty of them in our garden all the year round.—*J. McPherson.* From 3s. to 21s. ; but if *you* have not a well-attuned ear, let some friend accompany you who has.—*Omicron.* They will not "open" before March. They will then continue in song until August.—*Expectation.* In a very short time ; it will form one of the *most* interesting of the whole series. — *Looker-on.* In six weeks from to-day.—*Forward.* Bullfinches are very easily tamed. Let the pair be placed in a good-sized cage, open in the front ; hang them moderately low, and take constant notice of them. They will soon recognise your voice, and repay your attention with evident marks of delight whenever they see you approach. They are most affectionate little creatures.—*M E S.* Your calamity is a common, but a 'heavy' one. These poor creatures, every way unfit for a cage, and to live in this country, get restless and fidgetty after a certain age. They then frequently fall to stripping off their feathers, and *so* obtain a "new excitement." All you can do is—to feed her low, vary the food, and give as much change of scene as possible, to divert the animal's attention. Take her out of her cage every now and then, and let your family cosset her. No other *Recipe* will CURE the evil habit ; nor can we venture to answer for this doing so. *W. K.*

BOOKS : *G R T.* The Part of Decandolle's "Prodromus," for which you inquire, has not yet been published. It is said to be delayed by Professor Dunal. There is no general translation of Mohl's works, but several of his treatises are to be found in Taylor's "Annals of Natural History," a capital periodical.—*E. L.* Paxton's "Cottagers' Calendar," and Whiting's "Flower Gardening for Ladies." ‡

CRICKETS : *R P* will thank some of our readers to inform him of a ready method of poisoning or otherwise destroying these pests.

FLOWER GARDENS : *W P P.* Plans cannot be described. Apply to your neighbour, Mr. Kemp, of Birkenhead, who will furnish a plan.

HEATING : *C M.* A stove without chimney, with prepared charcoal fuel, is not injurious to plants, provided it is not allowed to dry the air of the house.

NAMES OF FRUITS : *W H I.* 1, Wyken Pippin ; 3, 4, Hollandbury.‖—*M T B.* The Golden Harvey.‖—*Coombes.* 1, Dutch Mignonne ; 2, Braddick's Nonpareil ; 3, Early Nonpareil; 4, Royal Russet ; 5, 9, London Pippin ; 7, King of the Pippins ; 10, Braddick's Nonpareil ; 11, Reinette Blanche d'Espagne ; 12, Court of Wick ; 14, Blenheim Pippin ; 16, Rhode Island Greening ; 18, Coe's Golden Drop.‖—*W Thorpe.* The Apple raised near Maidstone has probably no name. It is a very handsome, tolerably large, roundish fruit, fit only for kitchen use.‖—*Thos N, and H A W.* Those not named were unknown.‖

NAMES OF PLANTS : *J Weeks.* Apparently one of the varieties of Celosia argentea.—*E G T.* The leaves seem to belong to Mespilus grandiflora, as far as we can judge ; but the identification cannot be sure without flowers or fruit.—*G Groves.* 1 and 2, Ficus reptans ; 5, Brachycome iberidifolia ; 4, Kaulfussia amelloides.—*Shem.* 3, Amaryllis Belladonna. The other two require a careful examination. We will tell you next week.—*M C.* Perhaps bulbs of Saxifraga granulata.—*R W K W.* Disandra prostrata.—*C M.* Fedia Cornucopiæ.—*W W Keane.* Such specimens are indeterminable. Besides, we never name Cryptogamic plants, having no relation to gardening.—*D J.* Setaria italica.—*A E G.* Amorpha fruticosa, Berberis trifoliata, Benthamia fragifera.—*John Brown.* Setaria italica, the small German Millet ; grains used for poultry feeding. This plant is common in India.—*J S.* It is not practicable to name such fragments with accuracy.—*M D D.* Æschynanthus grandiflorus and Boussingaultia baselioides.—*R F H.* 1, Hymenophyllum Wilsoni ; 9, Bryum rostratum.

PEARS : *B B B.* In the south of England, in rich warm soil, and in favourable seasons, the Marie Louise is produced very fine, and abundantly, from standards ; and the fruit is likewise better flavoured than from walls.‖

POOR-RATES : *A Victim.* We do not see why nurserymen should not pay poor-rates, as well as other people.

SEEDS : *A M S.* Sow them in peat, sand, and loam in February, in a hot-bed. Pot the bulbs in loam now, and put them into a greenhouse without water till they begin to grow, then give them a little, and increase it till they are in full vigour.

SHRUBBERIES : *R P.* Fill it up with Ivy, Periwinkle, and Berberis aquifolium, with plenty of common Laurels, Yews, Hollies, and Privet.

VINES : *E W.* By all means buy "Sanders on the Vine;" an excellent book noticed by us at p. 327 of the current volume. We have no further information concerning the Vacca Vinery. Perhaps our correspondent in Wales will tell us how he is getting on.

MISC. : *M H.* If you will send us your address and six postage stamps, the number will be forwarded to you. ‡—*J. S.* We never give prices, which is the business of advertisers. You will find the kind of information you want respecting Conifers in Knight and Perry's Catalogue, or in that published by the Horticultural Society, in late Nos. of its Journal, or in a catalogue sent out by Messrs. Lawson, of Edinburgh. ‡—*R F H.* See p. 134, 1850.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

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|---|---|---|---|
| Turnip Manure, per ton | ... | ... | £7 0 0 |
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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE PEAT CHARCOAL impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

FOSSIL BONES AND PSEUDO-COPROLITES
(FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD and Co., Artificial Manure Manufacturers, Ipswich, Suffolk.

ROYAL SOCIETY for the PROMOTION and IMPROVEMENT of the GROWTH of FLAX in IRELAND.—The ANNUAL MEETING of the Society will take place on Friday, the 28th inst., at 12 o'clock, in the Society's Rooms, Commercial Buildings, Belfast, to receive the Annual Report of the Committee, to elect Office-bearers for the ensuing year, and to transact such other business as may be brought forward. By order, JAMES MACADAM, Secretary.

Belfast, Nov. 22, 1851.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

ADULTERATION OF FOOD.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, begs to call attention to his ACHROMATIC MICROSCOPES (warranted good) which wil be exchanged if not approved of. These Instruments will define the Circulation of the Blood in the Frog's Foot, the Saw in the Sting of the Wasp, the Comb in the Spider's Foot, the beautiful form and varieties of Pollen in Flowers and their Structure, the Scales of the Butterfly's Wing, and also in many instances Adulteration of Food. It is a very interesting companion, and will pass away usefully many a leisure hour, the fund for observation being inexhaustible. Price for No. 1, 3l. 12s.; No. 2, 5l. 15s.; No. 3, 9l. 10s. A descriptive Book, sent post free, on receipt of three postage stamps. Prepared objects, 12s.; injected do., 30s per dozen.

THE BIRMINGHAM CATTLE AND POULTRY SHOW.—The THIRD GREAT ANNUAL EXHIBITION of FAT CATTLE and the various kinds of DOMESTIC POULTRY, will be held in the BINGLEY EXHIBITION HALL, BIRMINGHAM, on the 9th, 10th, 11th, and 12th of December next. Admission—To the PRIVATE VIEW, on Tuesday, December 9th, 2s. 6d.; on Wednesday, Thursday, and Friday, 1s.

**The Agricultural Gazette.**

*SATURDAY, NOVEMBER* 22, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Nov. 27—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, Dec. 3—Agricultural Society of England.
THURSDAY, — 4—Agricultural Imp. Soc. of Ireland.

IN a remote part of one of the central counties of England there has been growing and maturing, during the last six years, courting little notice, intent upon utility and truth, rather than on fame, a patch of agricultural experiment—some ten or twelve acres in extent—which bids fair to do for the clay-soil husbandry of this clay-soil kingdom, what the tiny mushroom can do for the paving-stone of two or three hundred-weight;—lift it from its sluggish bed, burst the tough cement that held it down, push it bodily from the grave in which it lay, and, if need be, turn it right over, top-side down, —*double-dig it*.

To the almost lost and buried relics of the only absolute agricultural genius that this country ever knew, may perhaps be dated the first origin of an idea which has at last met with its worthy explicator: let there be a libation therefore to the name of JETHRO TULL, before a word be said or a praise be uttered upon a discovery, original enough after every honour paid to *him*—to place its present author in the foremost rank of English agricultural Improvers.

Let us put it as a problem. Be it required of you, O Struggler of the Clays! to grow upon four *half*-acres of your stiffest yellowest subsoil a crop at the rate of *forty-one bushels* of Wheat to each *half* acre, without manure, without a fallow, without a "leguminous or green crop intervening," as your leases have it,—nay *after a previous Wheat crop*, where a fallow had not been known in the memory of man, and where all the neighbouring wisdoms (those encouraging and enlightened prophets that you shall haply find around you, try it where you will!) have, with all the authority of established ignorance, promised you some two or three quarters to the acre for your pains, as 'the most *that* field ever did do or ever will do, new-fangle it as ye may!'

Yes. You smile. You don't believe it: or you believe it as a kind of conjuror's trick; a trick of words rather than deeds; a sort of thing that may do very well on paper, may do to line the columns of some teazing Chronicle or Gazette that *wo'nt* let you alone, that would fain persuade you there is actually still something more to be learnt in farming than you know already, and *have* known since you were a boy—that there are one or two things yet extant in heaven and earth undreamt of in your philosophy! O there's an accomplished infidelity about you, Mr. Practical: *robur et æs triplex* for the cunning spear to penetrate that shall carry conviction, or even the value of a doubt of your complete and perfect knowledge of all that can be said on Wheat-growing, home to your breast. It is hard to approach you, hard to cater for the thankless; hard to explain, and simplify, and popularise, truths that the ear rejects, for *within* there is nothing that responds. But even you know this, that hard duties must be performed, hard soils disturbed, hard stones broken; and after all, that there is something good and useful to be made and done, even with the hardest material, that there are tools tempered to act upon it, useful things to be made out of it, the more lasting and valuable because they were so hard. So shall it be with you, strong-hearted son of the soil! when the pernicious system has long passed away into forgotten history, that has made you what you *were*, let us already rather say than what you *are*.

Yes. There are still, it is believed, one or two things to be learnt, even in farming. We have not scaled the topmost pinnacle of possible knowledge, nor sounded every depth of practical attempts to meet impracticable times. Those two 'Mineral'-grinding 'Theory'-splitting individuals, LAWES and LIEBIG, may actually be coprolizing each other about *something*, after all! though what upon earth it is—don't let you and I cudgel our brains to know. It won't help to raise prices—that you may depend; and it won't lower the rent—that's certain. So what good *can* it do for *Farming?*

"Tu ne quæsiris scire, nefas, quem mihi quem tibi
*Finem* Dî dederint, Dobsonoe! nec *Rothamstonios*
Tentâris numeros! Ut melius, quicquid erit, pati!"

Alas! for the Art, in which those who do most truly need, at this most critical moment, all that is—all that can be known about its deepest extra-subter-subsoil mysteries, do most despise, and jeer at, and defy the whole catechism, the whole groundwork, the whole rudimentary axiom-page upon which each after-problem depends; without which every leaf of working-day experience is like a separate Chinese puzzle, without beginning, middle or end. Alas! for the perceptive and inventive powers that have been 'cribbed, cabined and confined"—say rather—stifled, stunted, stupified by sixty years—two generations—of 'price'-maintaining anti-*cost-reducing* Legislation.

How will you awaken it? By what ordinary trade-language shall you reach it? Tell the Cotton-spinner, the Silk-throwster, or the Flax-worker a new dodge to shorten, economise, or cheapen some tiniest process in his manufacture; he listens and inclines, *arrectis auribus*. The 'price' of his article in the market he well knows is Nature's making, not his, not anybody's; it lies far away out of his reach; it belongs to the dominion of a Power that not Kings nor Queens, nor Parliaments, nor even Squires can influence or reach: but the COST of PRODUCTION—aye! there you reach him home! Now you touch a string that *he* can fiddle to as well as any other biped with two hands and a brain to guide them: now you come to "something practical" —because you come to something possible, something which *has* been done, *is* done, and *will be* done again, as long as human brains shall retain their power, and human right-hands their cunning.

But how is it *afield?*—"If you please Sir, (*not to be angry!*) I can tell you how to grow more Wheat on half an acre without manure, than you grow on a whole acre, *with:* and how to grow it year after year on the same field, without injury to the soil, without 'exhaustion,' and *with* a profit of something like seven or eight pounds an acre."—— "What!—free-trading, 'price'-lowering, Peel-mongering, Whig-maintaining, Theorist'—What! You can, can you? Take your double-digging, and your triple rows, and your horse-hoeing, and your 'spaces' and your 'intervals,' to the —— place where TULL took his!—the house of a century's oblivion, death ungratified, fame unvindicated, labour unrequited! What have *we* to do with 'cost of production'? It's PRICE we want—what Queen—Lords—and Commons, with all the Squires to back them, and *all unanimous*, could not give, any more than they can give back the Last Century, or cotton-stockings again at seven shillings a pair,—it's *that* we want, and that we'll have; and anything that savours of the *other* road to profit, the vulgar road that all other trades are racing in, we *won't* have; not at *any price.*"

Is this—*is* this indeed—to be the song? Then good-bye Wheat-growing, for England. We're at a pretty pass already; fighting an up-hill fight against countries, *not* untaxed, *not* unindebted, *not* better soiled, *not* better tilled, or favoured than our own; that tune won't do; *but*, free from laws that curse the soil with intransferable stagnation, that tie a dead estate to a living man, and the living land to an unborn one, that say, Thou shalt not buy an acre of land without a lawyer's 'permit,' a conveyancer's 'Title,' as old as your grandfather's wig, and as useless, and of such expense, such arbitrary grotesquely disproportionate expense, that the 'title' to an acre may be twenty times its value, so that none can buy but he who can buy hundreds or thousands, to be '*occupied*' by other men—his 'tenants.' The German, the Frenchman, the Belgian, the Dutchman, the Norwegian, the Dane, the Swiss, the Tyrolese, the Lombard, the Tuscan, fights you with his *own* weapons, sticks his own plough or spade into his *own* field,

"*paterna* rura bobus exercet *suis*," buys his farm without a lawyer, and sells it as he pleases, without a scribbled sheep-skin for each acre. *Can you beat him?* can you *meet* him? with *your* feet trembling on another man's land, and his *standing* on his own? It is not 'taxes,' nor 'tithes,' nor 'poor-rates,' nor 'game,' nor 'malt tax,' nor 'currency,' nor any other of those worn-out old cat's-calls that have been shrieked and whooped from the gallery any time these fifty years. The question is simpler, shorter, and more direct, and therefore ever overlooked, as such usually are; the question is 'Free-trade in corn, without free-trade in Land?' You can't see it, Mr. Dobson, you think it's not *your* business. No! you've been blindfold too long. But *you will* see it. For seen it must be, and grappled with, too, before two more Sessions are over,——or ever the Grouse begin to fall in '53. But this is a digression.

A clergyman, a scholar, and a gentleman, yet, in spite of all these disadvantages, a practical as well as scientific agriculturist, starting from the point where Tull left off (and through lack of knowledge and opportunity, may without derogation be said to have failed), has discovered, and communicated in a pamphlet* of striking simplicity of language and practical style, a mode of growing Wheat which he has followed with unvarying success for six years. The only variation, at least, has been that in trying it on a new piece of ground, taken in hand and sown last autumn, the return this harvest has exceeded by seven bushels to the acre his normal return of 34 bushels hitherto regularly reaped from the alternate strips or beds of each acre, divided as it is into longitudinal sections, 30 inches wide, alternately Wheat and fallow, *without manure*, thus in fact growing the quantity of corn above-named not upon the whole, but upon half the acre.

The provoking part of it is that there is really no magic in it. It is as dry and matter-of-fact a piece of agricultural logic, as perfectly reconcileable with every true and accepted principle of vegetable growth and nutrition long ago generalised by Liebig, and particularised by Lawes, as if Mr. Smith had dropped like a ready-made 'conclusion' into his place, in the 'syllogism' of which they had respectively furnished the premises. Everything about the soil and atmosphere, everything about manures organic and inorganic that Liebig has said and Lawes has proved (*pace* the 'Mineral Theory,' most respectfully!) everything that Tull has *truly* said about Wheat, everything that everybody truly says about *double-digging*, 'if they could only afford it,' is simply condensed into action, and rendered visible, tangible, and practicable to the common senses and spades of mankind through this clever and comprehensive adaptation of 'the unities' of agriculture.

It has done not only for spade-husbandry in general, but for that expensive edition of it—*double*-digging—what the lever does for the human arm—overcome the burthen by *dividing* it. '*Cunctando restituit rem.*' Mr. Lawes finds that his land, with ordinary cultivation, without manure, naturally produces 17 bushels of Wheat to the acre. Mr. Smith doubles the cultivation (still without manure), and—exactly doubles the crop. There is a sort of moral neatness about this which is attractive. The only question was, *how* to double the cultivation, and not be beaten by the expense; and the solution of this puzzle is exactly the nonpareil of Mr. Smith's discovery. How to 'make an egg stand on its end' puzzled the Savans of Madrid for a good part of the 15th century, till One Man did it instanter, by a method so obvious and simple, that they were all ready to hang themselves. That many have got into a state of suspense, though not to that degree it may be hoped, upon the merits of the Smithian Wheat-system, may readily be imagined; but the experiments upon it in progress this year, in various parts of England, will go far to test its applicability to clay soils generally. The process itself is, however, one which actually bristles with texts of interesting discussion to the agriculturist; and to some of these we must revert very soon. *H*.

* A Word in Season, &c. J. Ridgway, Piccadilly.

## A REPLY TO LORD WHARNCLIFFE'S LETTER ON DRAINING.

[In the Royal Agricultural Society's Journal, 1851, No. 1.]

In the form of a letter to Mr. Pusey, Lord Wharncliffe has furnished an article in the last Journal of the Royal Agricultural Society "On Draining under certain conditions of soil and climate," in which the use of drains of 4 feet in depth, at wide intervals, in the direction of the slope, with intermediate drains of 2 feet in depth, at narrow intervals across the fall, leading at right angles into the upright 4 feet drains, is advocated as the perfection of draining under certain peculiarities of soil and climate.

As I take a very different view to his lordship, I shall presume to question the plans he has so confidently introduced; and as he speaks of his qualifications for directing draining with the strongest assurance, although it does not appear that he has had any other experience than that which his own draining has afforded him, I feel called on, in support of my own convictions, to refer to my experience as extending over 20 years, during which period I have professionally had to lay out, and personally superintend, draining in almost every variety of soil and situation; and further, I will confess to having become a convert to the deep parallel draining of Mr. Parkes, after having, in the dark, wasted much money both in shallow and deep draining.

If I did not know how ready many are to accept the authority of great names, and the mischief such an article appearing in the Journal is likely to effect, I should feel it a waste of time to point out the weakness of the reasoning, and the contradiction between the principles laid down and the practice adopted; and with all due respect to Lord Wharncliffe, should take for granted the unfitness of a person in his lordship's station, and with his limited experience, for a practical drainer.

It is not a little extraordinary that Lord Wharncliffe, throughout his letter, labours to impress his readers with his faith in deep draining, and in certain principles to which his lordship's practice is directly opposed. He commences by observing, "there are few instances in which I would now willingly stop short of a good 4 feet," and "the dominant direction should, in almost all cases, be that of the slope to be drained." "These appear to me to be axioms of the science;" and yet his lordship concludes by advocating 2 feet drains and putting these drains across the slope; but as his lordship fancies he has to deal with an exceptional case, it becomes necessary to examine his grounds for considering it in that light.

His lordship speaks of "his climate as being more moist and as having more rain, and more equable temperature than the generality of England," and "his land as being situated 600 to 900 feet above the level of the sea, and the soil to be strong, resting on a yellow clay, with beds of rock or shale impenetrable to water, terminating at a certain point, but not always within a descent of 4 feet." He describes his draining as having commenced with drains of 3 feet in depth and at 8 yards distance; these, he tells us, "produced a not unsatisfactory result." He "next tried drains of 3½ feet at the same distance, but here the cost was beyond the proper limit." (What that cost was he does not tell us.) He then "further increased the distance to 10 or 12 yards without perceiving much difference in the result." He then "divided 4 acres, draining one side at a depth of 3 feet and at 10 yards distance, and the other at 4 feet and 13 yards distance," and after three years his lordship cannot satisfy himself of any clear advantage on one side or the other; he adds, "there are parts on both halves of which the surface is undrained, although the outlets have never failed to do their duty." "These last facts, however," he tells us, "seem to have proved two things irresistibly. First, that to clear such ground of bottom water, deep drains are indispensable, and within rational limits, the deeper the better; and secondly, that in soils so circumstanced, the surface and the bottom drainage are two distinct things, of which, though the latter be complete and effective, the former may at the same time be a failure." He continues, "Looking then to the source of saturation from beneath, my conviction has been only thereby strengthened that it can be reached by deep drains alone. I accordingly adopted a depth of 4 feet in various localities, but then again immediately sprung up the difficulty of cost." (His lordship considers 4*l*. 10*s*. 8*d*. as the limit within which draining should, if possible, be kept, with a view to profitable improvement.) To meet this, his lordship informs us he has tried 4-feet drains at intervals of 16 or 18 yards, but refers to this experiment as not having completely answered. From these results he considered the problem unsolved, and he had to seek a system which, "without sacrificing the essential condition of depth, or unduly exceeding that of cost, would be better adapted for thoroughly effecting its object," and after instancing clays as close and deep in other situations said to have been drained by means of 4-feet drains, he asks "Why then should we meet with so much difficulty when it only forms part of a more manageable series, and is not unfrequently of a less apparent stubborn form?" and answers, "It strikes me forcibly that the true solution probably lies in the diversity of climate;" and his lordship thus continues, "To secure the full effect of thorough drainage in clays, there should be not only well laid conduits for the water which reaches them, but also subsidiary passages opened through the substance of the close subsoil by means of atmospheric heat and the contraction which ensues from it;" and after quoting from Mr. Whitley and Mr. Pusey on the difference of climate in Britain, he continues, "If, as Mr. Parkes and others say, the contraction and opening of stiff clays by atmospheric heat is necessary to the efficiency of deep draining, I think I have demonstrated such process in soils cannot be reckoned upon in ordinary years, and indeed can scarcely be said to occur more than once in a quarter of a century. It therefore seems indispensable to devise some system which may serve to secure the benefit of deep drainage without its help," and his lordship concludes by proposing "to draw off effectually and constantly the bottom water from beneath the clay, and from its substance, by means of drains of 4 feet every 18 or 20 yards, and to provide a vent for the upper water by cross drains of 2 feet every 8 yards, led into the 4 feet drains, and which he tells us may be done at a cost of 4*l*. 10*s*. 8*d*. per acre, whilst to drain with upright 4 feet parallel drains at 30 feet distance, would cost 5*l*. 7*s*. 9*d*. per acre, and at 36 feet, 4*l*. 9*s*. 10*d*. an acre;" and adds, "whilst the deep drains at 36 feet distance are the cheapest by 1*s*. an acre, the 30 feet distance is 17*s*. 1*d*. an acre dearer, and thus transcends the limits considerably, within which such work should, if possible, be kept with a view to profitable improvement."

Our readers will see from these extracts that Lord Wharncliffe has neither tried the deep parallel drains, at moderate distances, advocated by Mr. Parkes, nor the close furrow drains of the late Mr. Smith, and yet imagines he has secured all the benefit of both their systems, and supports his departure from admittedly correct principles wholly on the ground of the absence in his case of the variations of temperature and drought, necessary to produce those different conditions of the soil which are essential to its shrinking, and affording the cracks and fissures requisite for the action of deep drains to dry the surface.

I will not occupy time by entering into the curious reasoning by which his lordship arrives at his deductions. I leave his readers to judge how far "his facts" prove irresistible with relation to the occasion for the 2 feet and 4 feet drains, and for surface and bottom drainage as two distinct things. Nor will I enter into details of cost; although, as his lordship makes this so much a consideration, it might be worth while to show the errors into which he has fallen from his inexperience in this respect, and how much he might have saved by a uniform system of parallel deep drainage; nor will I enter into the mischief which is likely to ensue from bringing side drains of only 2 feet depth into others of 4 feet, and the difficulty of giving to such drains a secure junction. These are objections to the plan which every practical drainer will at once see. My object is rather to attack the theory, feeling as I do that the question with landowners seeking the improvement of their estates will not be one of saving a shilling an acre, but which plan will most effectually benefit their land; and to this view I will confine what I have to say.

As his lordship assigns as the sole reason for adopting so singular a plan of draining, the lesser variation of temperature and the greater amount of rain he has to contend with at Derby in contrast with Bedford, it may be well to enquire what this really amounts to.

At Bedford the mean monthly temperature in the year is stated to range between 38 and 64 degrees; whilst at Derby it is between 35 and 55 degrees, and the annual amount of rain between the driest and wettest situations in England is 24 and 47 inches. Were the variations of temperature and of dryness in the year at Derby really no greater than his lordship has described them, it could readily be shown that they are quite sufficient to produce those changes in the condition of the soil which are requisite for its cracking sufficiently to make deep drains effectual, but if greater be thought necessary it will be enough to point out that Lord Wharncliffe has been taking, for the purpose of calculating the effect of variations of climate upon soil, the mean of each month's variations, and not the actual highest and lowest temperature of the year, and has overlooked the fact that greater variations than he has allowed in the year are not unfrequent in the space of 24 hours. By Lord Wharncliffe's table, water would appear never to freeze and corn and fruit never to ripen at Derby, while on the other hand it is well known, not only that both these circumstances occur, but that it is absolutely necessary to agriculture in all countries to have variations of daily change as well as of season, in order to break and pulverise the clay and bring it into order for sowing; which changes, whether produced by alternations of heat and cold, or of wet and evaporation, are productive of shrinkings in the soil sufficient to produce those cracks which Mr. Parkes has shown, and which daily experience proves, give porosity to the stiffest soils.

I might extend this article by entering into explanations of the effect of evaporation at all seasons in assisting the draining, which his lordship has wholly overlooked, and show that any deficiency of heat from altitude may be more than compensated by the quicker evaporation which takes place in such situations; but space is wanting to me, and I feel that sufficient has been intimated to satisfy any reflecting person of the varying condition of all soils at different seasons, and to show that to admit of this altered condition is at once to allow the lands capability of being drained, while with respect to the larger amount of rain in certain situations, and its effect on drains, it must be evident that the descent of a larger quantity of water can have no other effect on drained land than to assist in establishing the cracks, making them permanent fissures for the escape of water, resembling those found to give vent to springs at the bottom of wells hundreds of feet from the surface.

We have now to examine the plan his lordship has put before the public as the *ne plus ultra* of good draining, and I will commence by describing the various practices which have led to so singular a violation of principles which meet with his lordship's approval.

According to his own showing, Lord Wharncliffe began his draining with no settled plans, and without any experience. He commenced by trying numerous plans of his own, none of which, by his own account, appear to have thoroughly answered; and it is to be regretted, on his own account, that throughout all his experiments he appears never to have tried that which,

had he studied the best authorities, would have been the first, namely, 4 feet parallel drains in the line of greatest descent, at intervals governed by the tenacity of the soil. It is probable, from his lordship's description of the soil, that 4 feet drains at 33 feet distances, and a cost of 4*l.* 10*s.* per acre would have been effectual.* It is clear that his lordship's error has been to draw information as to his draining wholly from his own experience, and, by his own showing, he has been learning from his failures. He first tried 3 feet drains at 24 feet and at 30 feet distances; next 3½ feet drains at 30 and 36 feet distances, and then 4 feet drains at 39 feet, 48 feet, and 54 feet distances. None of these experiments proved satisfactory, and in singular contradiction to the principles he lays down, he finishes with 4 feet drains 18 to 20 yards apart, combined with intermediate 2 feet drains, at 8 yards distance, crossing the slope into 4 feet drains.

It would not be too much to assume that some, at least, of the partial failures described may have arisen from the want of more practical knowlege in the overseer of the work, seeing that his lordship took the onus of the superintendence; for in not a few instances have failures, attributed in the first instance to too great depth, been detected to arise from the faulty execution of the work, wrong direction of the lines, imperfect levels, irregular cutting, negligence in laying the pipes, fraud, &c., and it will at once appear to our readers how much in this respect his lordship's draining, from his own showing, has been exposed to these causes of failure.

Were the removal of surface water the only end sought in draining, and could we suppose drains laid only 2 feet from the surface equally durable and out of harm's way, with drains laid further from all disturbance of the surface, and equally active in laying the land dry with deeper drains, his lordship's side-draining would only be open to the serious objections which always apply to draining across the fall, and to the waste of money which his plan involves in double draining the space aside the upright drains, from which the latter take the water (objections in themselves sufficient to upset all he has said in their favour); but in draining there should be other views, which happen to have been altogether lost sight of; namely, we should seek to give to vegetation the fertilising matter which is left behind in the perfect filtration of the water, and the advantages of higher temperature, and greater depth of soil for the roots to extend into — objects which are only to be attained by going deeper. Nor is this all; for whilst these benefits are to be gained only by deeper drains, the cost of really efficient draining on this principle is less than on the plan recommended; and even were it not so, the addition of 17*s.* 1*d.* per acre to the cost would be a consideration inestimably small in comparison with the advantages attaching to the greater perfection of a consistent and permanent principle of drainage.

Lord Wharncliffe has evidently been draining under the impression, natural to inexperience, that surface-water will not reach 4 feet drains, and that it is necessary to have drains for both the top and bottom water, in other words, he must have two holes in his granary for his cats, a big one for the mother and a lesser for the kitten—he will have 4 feet drains for the bottom water and 2 feet for the surface, not seeing that drains drawing off water at a level of 4 feet, must take that water from above, and lay the ground above them the drier, and in so doing give vent to water still higher, and thus produce those shrinkings and fissures in the soil which eventually afford all the vents necessary to let down the water from the surface.† His views are in accordance with the exploded use of pipes below and stones above, once thought necessary to give admission to the surface and bottom water, and which has led to such waste of money. I would refer his lordship to Mr. Mechi's letters, where he speaks of his experience in draining, and to the Report of the Lords' Committee on Draining, in 1849, where he will find instances of 8*l.*, 12*l.*, and even 19*l.* per acre having been expended to secure the imaginary advantages which are misleading him. In an article of this nature it is impossible sufficiently to enter into the reasoning in support of principles which even Lord Wharncliffe admits to be correct. There are works in which this is most convincingly done, and to which I would refer every one who has draining to do; I have alluded to the "Reports of the Lords' Committee on Draining;" I would also particularly refer to the "Essays on the Philosophy and Art of Land Drainage, by Mr. Josiah Parkes," the little work "Agricultural Drainage," from the Quarterly Review, No. 171, and to the "Report of the Commissioners of the Metropolitan Sewers, 1851." In all these the greater efficiency of deep drains in removing surface water, and the higher temperature given to clay soils by deep draining, are unanswerably shown, whilst experience is every where affording the test of the principle. The shallow draining advocated by Lord Wharncliffe has now become the exception, not the rule, and is in fact fast disappearing before the experience of the greater efficiency of deeper draining.

Lord Wharncliffe has gone to work, as is too often the case with land-owners in their agricultural improvements, with a very imperfect conception of the end in view, and with no settled plan; and having relied for information from his own experience, he has erred throughout, more or less, and will pay the penalty in the imperfection of his work. As his lordship has put forth his own imperfect practice as a guide for others, I feel bound to assure those interested in the subject that there is much more in the philosophy of draining than will be discovered in merely making mistakes. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London, Oct.* 21.

* His lordship says, "our usual payment for cutting and filling per rood of 7 yards upon an average of the mattock or spade work in good or bad ground, barring hard stone, has been 1*s.* 3*d.*" Now in my experience in the stiffest clays in the kingdom the wages of late years have seldom exceeded 8*d.* the rod of 5½ yards, and have latterly been as low as 6*d.* I have draining executing at this time for 7*d.* and 7½*d.* in the hard Wealden and the London clays, where beds of stone or gravel are not unfrequent, and where the men look to getting 2*s.* 4*d.* per day; but certainly labourers look for higher pay when they have no blemen for masters, and in this instance his lordship may have paid a trifle for being his own foreman.

† Where can his lordship suppose the water comes from, which he tells us his 4 feet drains continue to discharge? Drains cannot take from a lower level, they can only draw from a higher; the water which his lordship admits his deep drains are constantly discharging, must be taken from above the level of his deep drains, and be thus kept from accumulating in the space between the surface and his drains. The shallow drainers appear not to know that except in the case of tapping springs, drains can only draw downwards.

## THE AMERICAN REAPING MACHINE AT NEWCASTLE.

The machine was first put into operation at Whorlton, in a field of Oats. The crop was rather a light one, and the nature of the ground, composed as it was of high ridges and deep furrows, was not the best suited most effectively to exhibit the capabilities of the machine; but, on being set in motion, it was soon apparent that it was well adapted for the work to be executed. When moving along level ground parallel to the ridge, the crop was admirably cut, but the machine having to pass over many of the ridges diagonally, in those parts the cutting was uneven. After a short trial at Mr. Robson's field, the machine was removed to a Wheat field on the farm of Mr. Nicholson, of Lough House, and there its performance was much more satisfactory. A portion of the Wheat had been cut by sickle, and, as usual, a great number of heads were left for "gleaners." A quarter of an acre having been measured off, the machine was put in operation on it, and the grain was cut in nine minutes, with short stubble, and remarkably clean, presenting a striking contrast to the other portion of the field. But, as being preferable to our own opinion, we subjoin that of the committee of the Farmers' Club, which was drawn up after careful deliberation, and conveyed in the following report:

We, the undersigned committee of the Newcastle-upon-Tyne Farmers' Club, appointed at a meeting held on Saturday, the 20th inst. at the Club Room, in the Literary and Philosophical Society, to report the result of a trial, made this day, of McCormick's reaping machine, met for that purpose at East Whorlton, a farm belonging to his Grace the Duke of Northumberland, in the occupation of Mr. Riddell Robson, and beg to lay before you the conclusions at which we arrived.

The first trial was made on a rather light crop of Oats; the ridges of the field were high, and the furrows correspondingly deep; notwithstanding these disadvantages, however, the work was equal to the expectations of the committee.

A second trial was made in a field belonging to T. H. Graham, Esq., occupied by Mr. Nicholson, bearing an average crop of Wheat. A portion was measured off, and exceedingly well cut, at the rate of an acre in 40 minutes.

The committee may state, generally, that the crop leaning to the machine or standing upright, was cut low and quickly, and that scarcely an ear of corn was ungathered to the sheaf; where the corn, however, was much laid or twisted, the operation of the machine was not certainly so efficient, and perhaps no piece of machinery can, under these circumstances, be expected to compete with the sickle.

William Stevenson, Throckley House.
Joseph Laycock, Lintz Hall.
William Nixon, Union Hall.
John E. Wilkinson, Dunston Lodge.
Hugh Taylor, Cramlington.
Sept. 22, 1851. William Glover, Hon. Sec.

Various descriptions of the machine have been published, but only an inspection can enable any one to form a correct estimate of its merits and capabilities. The machine consists of a platform, to the front of which the cutting apparatus is attached, and what is called a reel, composed of four planks or flappers, about 6 feet in length and 10 inches in width, set askew, connected at their extremities, at equal distances, by a hoop-shaped frame, and having some resemblance to the paddles of a steamer. The whole rests upon two wheels of small diameter, but of considerable width. From one of these the motion is produced, by the aid of cog and crank wheels. The machine is drawn by two horses, harnessed outside the platform by a pole, and driven by a man mounted on a seat behind them. Another man sits astride on a part of the framing, with his back to the horses; and, with a strong rake, throws off the corn as it falls on the platform. In front of the platform project a number of halbert-shaped forks of iron, about 4 inches in length, with spaces of 1½ inch between, across and within which spaces a set of horizontal lancet-shaped blades, with edges serrated like the old reaping hook, are driven by a crank wheel, which produces a rapid oscillating motion, by which the cutting is effected. As the machine is drawn forward by the horses, the reel revolves, and the flappers descending upon the corn draws it between the projecting forks, which serve to compress it, while the knives or saws, also set in motion by a crank wheel attached to the bearing wheel, easily cut it, and the revolving motion of another flapper throws it in a sheaf upon the platform, whence it is immediately removed by the raker to make way for another. The machine presents a front of about 5½ feet to the corn, and that breadth is consequently cut as it advances. The horses pass along the edge of the corn, without coming in contact with it. They appear to find the work moderate, though the machine cuts at the rate of an acre and a half per hour. The machine is free from anything that can be called complicated mechanism. In the trial of the machine which took place on Monday, its success was, in the opinion of nearly every practical farmer present, complete. It cut everything before it, leaving not a single ear behind. This was especially remarkable in the field of Wheat. The stubble was perfectly level, and cleaner than the neatest raking could make it. The corn was thrown upon the platform by the flappers in the best possible order for tying up; and it was delivered upon the ground in the same state by the man who raked it off, with great skill and regularity. We must not be understood to mean that it will cut corn upon all descriptions of land, and under all circumstances. Our observations apply to that portion of the Wheat field which was measured off, and which had the advantage of being level. When the crop is laid or twisted, the machine will not work so well until some contrivance is introduced for lifting the corn and presenting it to the knives. But its performance, even in those spots which were twisted, and in others which were artificially pressed down for the purpose of testing it, was satisfactory. All the corn which was laid about towards the knives, or laid sideways from them, was as well cut as by hand; though, when laid directly from the knives, it was imperfectly cut.

Of the general success of the experiment there can be no doubt. There never was an agricultural implement which on its first exhibition obtained the approval of practical farmers so generally as this has done. It is certainly, as Mr. Pusey has observed in the late number of the Journal of the Royal Agricultural Society, "the most important addition to farming machinery that has been invented since the threshing machine first took the place of the flail." The cost of Mr. M'Cormick's reaping machine is 28*l.* There is nothing in its material or construction to warrant so high a price; but the inventor, no doubt, is entitled to a reward for his ingenuity. We may, however, suggest for his consideration that the custom of the million at a moderate price may be more profitable than that of the hundred large farmers at an immoderate one.

The American reaping machine, which has thus burst upon us with so great an effect from the other side of the Atlantic is, strictly speaking, no novelty in design or principle. There have been several, of home manufacture, brought before the British public, and too soon forgotten. The first was made by Mr. Boyce 30 years ago; he obtained a patent for it; it cut corn close to the ground, by a scythe fixed to a horizontal spindle; but as there was no provision for gathering up the corn in parcels, it was regarded as a failure. Some years afterwards, Mr. Plunkett, a London machine maker, attempted to improve this machine by substituting for the scythes a circular steel plate, made very sharp at the edge, and knotched at the upper side like a sickle; this plate acted in the same manner as a fine-toothed saw, and was found to cut the corn better than the scythes of the original machine. Mr. Gladstones, of Castle Douglas, next tried his hand. He constructed a machine in principle similar to Mr. Plunkett's, but made it work much better by introducing a circular table, with strong wooden teeth notched below all round, which was fixed immediately over the cutter and parallel to it. The use of these teeth was to collect the corn and retain it until it was operated on by the circular cutter. The corn, when cut, was received upon this table, and when a sufficient quantity was collected, taken away by a rake or sweeper, and laid upon the ground, beneath the machine, in separate parcels. Of this machine a drawing and description appear in the 7th vol. of the Farmers' Magazine, p. 273. The next attempt was by Mr. Robert Salmon, of Woburn, Bedfordshire. He cut the corn by means of shears. Its best feature was that it was provided with a complete apparatus for laying down the grain in parcels as it was cut. Mr. Smith, of the Deanston Cotton Works, Perthshire, next came into the field. In the harvest of 1811 he tried a machine on a small scale, worked by two men. In 1812 he made another which was worked by one horse; but though he cut several acres of Oats, it was found that the horse could not move the machine on an acclivity with effect. In 1813 and 1814 he made other trials and employed two horses. An engraving of this machine is given in the 2nd vol. of the "Encyclopædia Britannica," from which we extract the following description:—

"The cutter of this machine is circular and operates horizontally; it is appended to a drum connected with the fore part of the machine, its blades projecting some inches beyond the periphery of the lower end of the drum; and the machine is so constructed as to communicate, in moving forward (the horses *impel* and walk in the wake of the machine quite clear of the grain), a rapid rotary motion to this drum and cutter, by which the stalks are cut, and falling upon the drum, are carried round and thrown off in regular rows. This ingenious piece of machinery will cut about an English acre per hour, during which time the cutter requires to be sharpened four times with a common scythe stone. The expense is estimated at from 30*l.* to 35*l.* If properly managed it may last for many years. We are sorry to learn that Mr. Smith has not found it convenient to prosecute his invention."

Mr. Smith, however, did again bring it out in 1837, but it did not come into general use. In 1829, the Rev. Patrick Bell, A.M., tried a machine of his making, at Gowrie, county of Forfar, cutting down Oats, Barley, and Wheat, on an uneven surface and a considerable declivity, taking a breadth of five feet at a time. The stubble was left from three to four inches long; and the corn was deposited on the ground in a very regular manner in the form of swathes; worked by one horse; cost about 30*l.* Mr. Stephens, in his Book of the Farm, says that by Bell's machine, corn may be cut at 3*s.* an acre, including binding and stooking. There were other machines. Stephens notices that of Mr. Joseph Mann,

of Raby Coat, in the Abbey Holme, Cumberland, who tried his invention in 1832. "The cutter is a disc of a regular polygon of 12 sides, and the gatherer a revolving drum with rakes, from the teeth of which a comb strips the straw, which then drops at one point of the machine in a continuous swathe. It requires horse power and a man to guide." Thus it appears that the reaping machine, which comes to us from America as an original invention, had its birth in England; that some of those which were not successful, though not so simple and effective in the cutting apparatus, were greatly superior in the property of depositing the grain on the ground without the clumsy and expensive process of the man and rake; and we think that, by and bye, one horse and a boy driver will be found sufficient for the work. While we attribute to the American machine all the merit that belongs to it, there is no need of lamentation that we derive it from a foreign source; for, independently of what we have stated, it is a further consolation that Mr. M'Cormick is himself a Scotchman, and so is his assistant, Mr. M'Kenzie. *Newcastle Journal.*

## Home Correspondence.

*Clipping Farm Horses and Bullocks.*—Having done this the last five years, I can confirm its utility, and even necessity, by my experience. If you doubt it, try it on one of a pair of plough horses, and in less than a week your horseman, however prejudiced, will beg to have the other clipped. I assume, of course, that the farm horses have a comfortable ventilated stable to lie in at nights, the same as our nag horses. Is it not strange that a farmer cannot consider the same principle applicable to both classes of animals? Where is there so much vigour, condition, and activity as in the London horses? who are all comfortably ensconced at night, their hay and straw cut, and their Oats bruised, and their water "chilled." I find it a good plan to clip my farm horses piece-meal, my man taking a slice off each daily—the change is less sudden. The same remark applies to bullocks. They certainly go on faster without their great coats, which were never intended for warm boxes or stalls, but Nature's open fields. Besides, I apprehend the hair requires daily nourishment, as much in proportion as any other portion of the body. The horses, instead of remaining wet all night, are dry in a few minutes. *J. J. Mechi, Tiptree Hall, Nov.* 4.

*Open Boarded Feeding Floors.*— Having, since my last, made many inquiries, I beg to state, first, that sawdust is a most excellent and useful absorbent; and, like the cut straw, becomes powerfully affected by the action of the manure. I use all I can get in the neighbourhood; and, although I have not tried it, I have no doubt tanners' refuse bark would be decomposed, and answer well under the floors. From 24 to 30 inches is deep enough for the pits, which should be under cover, and the building troughed. If in a sandy or porous soil, it should be of bricks set in cement. The pits under the bullocks should be at least 30 inches deep, especially if, as in my case, there are two in a box, 10 feet by 8 clear of the feeding trough. I think I said, before, 10 superficial feet for a sheep, and from 40 to 60 for a bullock, according to size, is ample space. In winter your pigs can hardly be packed too close, if well ventilated. Their shed must feel warm, or they will not pay during winter. Convenient sizes for lifting out are panes of spars about 7 or 8 feet by 5. If there is a deficiency of ashes, sawdust, or other absorbent, a drain for the liquid is desirable, but I prefer having the solid and liquid together. Cattle and sheep may be either loose or tied up on the floors. I prefer their being loose, unless quarrelsome. For fixing ammonia, I use gypsum from Mr. W. H. Potter, Clapham-road-place, London. I find it better and cheaper than the ground and expensive gypsum or stone. Some common salt, too, answers admirably for the purpose, and gives us, by decomposition in the manure the alkali so necessary for our crops. I have had abundant proof of this on my own and other cases. As to feeding, my young bullocks, weighing 400 lbs. net, get about 4 lbs. of Rape-cake, and 1 bushel of cut roots, and about 14 lbs. of cut Wheat-straw chaff, with 1 lb. of Bean-meal. My cattle eat 100 bushels, or 900 lbs. of fine cut Wheat straw chaff daily. It is put into large cast-iron pans, and the meal sifted amongst it, with 1 oz. of salt to each small bullock, and sufficient water to moisten it. The waste steam from the engine passes under and around these pans, and heats them; the next day the food is given to the animals quite warm, and the Wheat straw smells like brewing. I prefer warm water for every animal where available, because it saves the expense of heating it by the carbon of the food. Horses might drink warm water at any time, as is the case at the London breweries. It would be dangerous to give them cold water when heated, although the ploughmen are too apt to do so, and give them the "gripes." There is no doubt steaming roots and mixing them with meal, and giving them warm to pigs, is a good plan; although, to save expense, I give them raw Mangold and dry unground Beans, and access to water. I should mention that the planks or lattice pieces are 3 inches wide; they may have one clamp in the middle and one at each end. My numerous correspondents will excuse me if I adopt this mode of answering their queries. As to flies, you must and will have them where there is plenty of warmth and food, and breeding places in the manure. N.B. I can just now buy store pigs at about 4½*d.* per lb. with the offal, ready made, which is cheaper than breeding. It takes about 7 lbs. of meal to make 1 lb. of pork, net dead weight, and about 9 lbs. or more of meal or oil-cake to make 1 lb. of beef. The fact is, when you sell a pig you get paid for his skin at full price, and head and foot half price; whilst in a bullock you almost give away the skin, head, &c. If I remember right, the skin is about 15 per cent. of the net weight, or 8 per cent. of the gross weight. This is why I like pig feeding. I think it takes 160 lbs. of Turnips to make 1 lb. of meat, even with good management. *J. J. Mechi, Tiptree Hall, Nov.* 4.

*Storing Mangold Wurzel.*—In regard to this subject, I have to state that the method of storing is very simple, but I do not think quite so cheap as the estimates given in your Paper of the 8th. The price we give per acre for pulling, twisting off the tops, and loading into the cart, is 7*s.* 6*d.* per acre. We do not cut anything about them when taken up. And I think there is sufficient reason for this, because we know that Beet-root is best when taken up without the root being cut, as that allows the sap to escape, and Mangold is much of the same nature. We have no posts nor rails to store them between, but lay them on the ground, about 6 or 8 feet wide at the base, raising them up in a roof shape, as high as they will lie together; then we cover them up with rough straw, sufficient to keep out the frost. Afterwards they are thatched with straw as it is tied up from the threshing-machine. The machine being what is termed a bolting one, that is, the sheaf is fed in sideways instead of endways, and the straw comes out nearly straight, and fit for thatching. If there is any danger of the bottom of the heap lying too damp, we dig a small trench round it, or draw a furrow with the plough, turning the furrow from the heap; otherwise, if turned to the heap, it would catch the rain that falls on the roof, and convey and keep it among the roots. We have stored them between double rows of hurdles, the distance between the inside hurdles being about 6 feet, and the outside line about 3 inches from the other, the opening being filled with straw. But this requires a great number of hurdles, which are of little use afterwards. The other is less trouble, and answers equally well, for I am sure that we might have kept the last year's crop up to the present time, if it had been necessary. So you see the storing is simple, and you shall presently see that the consummation of them is equally so. We sometimes boil a few to mix up with bran or Barley-meal for young pigs, or sows with young, but we always let them have what they can eat raw, as they come from the heap, and the young ones soon learn to eat them without cooking. It is amusing to see a little pig standing on the top of a root nearly as large as itself, and eating it with a hearty good will: they soon declare themselves independent of the cook. For two years we have fed the large store pigs and dry sows on the raw root entirely; when the weather was dry we gave them plenty of water in their trough, but nothing else; and some of them have appeared quite fit for the butcher; but we should not think them fit to kill if only fed on this, because the flesh will not be so firm as if they have Barley-meal, or any other grain. I am aware that some have said Mangold is apt to make the sows slip, but with us this has not been the case; indeed, out of from 20 to 30 sows, we have not had more than two slips for these two years past, and that was proved to be from the rough treatment they received from their companions. Our fatting pigs have always as many of the roots as they can eat. One word more as to storing. All that we have to do is to keep out the frost and rain, and at the same time give them air (which they will obtain through the covering) and not have the roots at all injured. *Dorset Farm, Nov.* 10.

*Fossil Remains.*—A year ago last Christmas, I was engaged levelling down an old pit on my farm, situate at Middleton, in Suffolk, about three miles distant from the sea, as the crow flies, and four or five by the road from Dunwich. As I collect any fossil remains of shells and bones that I can get, I instructed my men, if they turned out anything curious, to save it for me, and accordingly when I went to see how the work was going on, a very beautiful (in my estimation) specimen of the ammonite was presented to me, which they had dug out. The soil in which they were digging was sandy, with a slight admixture of clay, and as far as our excavation went, which was equal to a pit face of about 200 square feet, it was perfectly barren of fossil remains, except the one above mentioned, which I ought to mention is not quite perfect, though sufficiently so to see a strong resemblance to the fossil commonly called "ammonite." The following paragraph in Sir C. Lyell's "Elements of Geology" (page 326) has raised three questions in my mind, viz.,—How did this fossil get there? Does it belong to this formation (a part of the tertiary)? and if it does not belong to this formation, to what does it belong? "As these Maestricht beds have been thought to be intermediate in character between the second and tertiary formations, it may be proper to mention, as opposed to this opinion, that the ammonite, baculite, hamite, and hippurite have been found in the maestricht limestone, genera which have not yet been detected in strata newer than chalk." No doubt a more experienced geologist than I have any pretensions to be, will easily solve my questions; but in case the circumstance as related above may afford any interest to others, I have ventured to forward it to you for insertion. *J. R. Markby, Halesworth.*

*Ireland.*—As a lover of peace, I would not approach the troubled waters of strife, unless it were to endeavour to screen them from the ruffling blast of contention. Mr. Goodiff's letters, and your comments, exhibit a dark picture of distress, which, alas! is but too true to the life. Under existing circumstances, emigration is undoubtedly one of the remedies for relieving the distress of the Irish. But we must allow that emigration or starvation is a sad alternative; it is a state that need not be, and which, therefore, ought not to be. But if landowners and land-agents will continue to neglect their duty and their interest; if the land should still remain ill-cultivated or uncultivated; if it is still to be sublet; and if, from want of better cultivation, the peasant be still doomed to exist upon Potatoes, then, until these evils cease, emigration must be a blessing to the poor starving Irishman; and, until those whose duty and interest it is to remove these grievances do their part, emigration should be promoted. But let them take a friendly admonition, or assuredly they will suffer severely from the evils which their own apathy has brought upon them. Let them consider that the working poor constitute the sinews of wealth; that labour, well directed, constitutes the chief, if not the only source of wealth. And let them strive to prevent that dire necessity which compels the poor peasant to desert the home of his fathers—the land where his love lingers; let him not be compelled to say:

> "Far, far from thee, my native home,
> An exile, I am doom'd to roam."

Let them consider that Ireland ought to be one of the fairest isles in the Atlantic ocean, since it possesses many peculiar advantages; its hidden treasures, untold, are incalculable. Even in its bogs the elements of prosperity are concealed; and labour, guided by science, is the key to unlock and the power to bring them forth. Deep draining—the manufacture of peat charcoal—the cultivation and manufacture of Flax—the cultivation of Beet and the extraction of its sugar—the adoption of the Belgian system of agriculture—and, where cultivation cannot be carried on, the more extensive breeding of sheep and goats; these, and other similar things, offer a fine scope for the profitable employment of labour and the investment of capital. Yet, with all its advantages, Ireland is still one of the most neglected, degraded islands under the sun. And while ignorance continues to keep its depressed inhabitants in their miserable condition, emigration must be a blessing to the poor creatures. It makes a fine opening for the influx of Scottish and English occupiers, who, with their enterprise, capital, and skill, will effect a complete reformation, converting many barren bogs into productive fields. This is a consummation greatly to be desired, and a good resulting from the calamitous famine, and the Act for the Sale of Encumbered Estates. But let neither Irish, English, nor Scotch capitalists imagine that their estates can ever be prosperous while they are living in another country, and annually draining these estates of that wealth which, like the dew of the earth, should revert to the place from whence it arose. Depopulation and emigration are, however, making a fine opening for colonisation by Scottish and English farmers, who should on no account emigrate to detached farms, but form large colonies, in which they would find mutual protection and assistance. The subject naturally suggests the consideration of the tenure and cultivation of English as well as Irish farms; and, in conclusion, I take the liberty to say that there is still great need of improvement in the letting and cultivating farms in England. Of this Binn's "Notes, on the Agriculture of Lancashire," noticed in your *Gazette* of the 1st of November, at p. 700, and many facts of which I am cognisant, in various parts of the kingdom, give abundant proof. If farms were properly laid out, rightly let, so as to promote the best cultivation, and that fully carried out, many farmers might be saved from ruin or emigration. But to effect this, we want more such men as the late Lord Leicester, and Mr. Blacker, and his noble employer, and a few more of the same character, now living, and striving to benefit their dependents and the whole community, both in England and Ireland. May their efforts be abundantly blessed, and their example generally copied, and may honest industry be liberally rewarded in our native country. *O. F.*

*Annual Vegetable Exhibition at Chislehurst, Kent: Nov.* 12.—This day the school-room in the parish aforesaid contains a good display of vegetables and fruit produced by cottagers. It is truly gratifying to behold the result of industry within the district of the Chislehurst Vegetable Society. Much credit is due to the cottager, as well as to the founders of the Society and managers—to the first for his produce, the second for its origin, and to the last for its progress. Although the vegetables and fruit are decidedly fine, the competition is not so great as one would imagine, compared with the extent of the district and its population. It is my humble opinion that the number of exhibitors may be increased many fold, simply by allotment ground, the benefit of which no one can deny. I think it not amiss to recommend every agricultural labourer without a plot or garden, and many there be I could point to in Chislehurst, to apply without delay to the liberal landlord in his immediate vicinity for a field where to exercise his spade and other implements for an hour or two of a morning or evening, independent of his daily occupation, instead of spending the time at an ale-house or elsewhere to no account. Presuming the industrious cottager in every agricultural district to be able readily, in this our highly favoured land, to obtain a piece of ground,—which surely no landlord would refuse him, insomuch as its use would no doubt greatly facilitate the difficulties with which the labourer has to struggle for pecuniary wants—tend to keep him and his family from falling in on the parish, and thereby increase the wealth and independence of our country—adapted to the growth of culinary vegetables. The next thing to be considered is the

way in which his time and the soil may be applied to the most profitable account. I would recommend the attention of the cottager to that cheap and useful little calendar by Sir Joseph Paxton, if more massive and expensive information is not within his reach. For previous years one copy has been purchased for the sum of 3*d.*, or 25 copies for 5*s.* Fifty copies, I imagine, would go a great way in one society's district, and 10*s.* out of the funds, distributed in the shape of the above little work, would not, I think, be badly bestowed. *J. G., Chislehurst.*

*Fleas.*—At p. 701, a correspondent complains of being infested with fleas, fostered, apparently, by his fat pigs. I once sent you an account of an efficacious mode of attacking wasps' nests, which seems to have been adopted with success by some of your correspondents; and if the following notice of a successful attack on fleas be not beneath your notice, perhaps you will give it currency. Our Bob, clever dog as he is at a rat, cannot contrive to rid himself of his fleas. Partly Scotch terrier and partly undefined mongrel, he is short-necked and short-legged as a turnspit. In spring and autumn, more especially, the fleas take up their quarters in two positions, one along his back and the other on his chest; where they increase and multiply to an extent sufficient to make the life of Bob very uncomfortable. I recommended some sweet oil (any oil would have answered) to be poured over the infested parts, and rubbed in with a rag, knowing how instantly fatal such an application would be to insect life. The application succeeded perfectly. I am told the dead fleas tumbled out by scores; and hundreds fell off him as the rubbing proceeded. He was afterwards washed with a solution of common soda, in order to get rid of the oil; and Bob has assumed the air of a decidedly comfortable dog ever since. *J. S. Henslow, Hitcham, Nov.* 10.

## Societies.

SAFFRON WALDEN, *Oct.* 22.—At this meeting Mr. MILES, M.P., alluded to the trial of the American reaping machine. It was first tried on Mr. Mechi's farm, but the weather was bad, and it was not considered a fair trial. Mr. Pusey, however, reported the trial experiment to the Council of Chairmen, and they determined to give the machines the two great medals. But at the same time Mr. Pusey advised that another trial should be made. It was made at Mr. Pusey's. Now mind the result. The two American machines came into competition. With M'Cormick's, Mr. M'Cormick was present; he worked it first, and it did its work most admirably, and perfectly to the satisfaction of Mr. Pusey and himself (Mr. Miles.) They then put Hussey's machine together; no one was there for it, but they got it into gear, and till they thought they had got it into the best gear they did not try it. The machine started; they found it as bad a machine as they thought could be invented for the purpose, and they then gave the great prize to M'Cormick's, and declined to give any prize to Hussey's. After a time they were taken into Yorkshire; Mr. Hussey was present, and Mr. Thomson, of Moat Hall, conducted the trial; they then found, on cross-furrows, the trial proved Hussey's far superior to M'Cormick's, and they asked that they should give him the medal; but to this he (Mr. M.) objected, as it was not the same machine that was shown in the Exhibition, and they could not say whether any alteration had been made in it or not. This would be stated in the Society's Journal, but as this was the first opportunity he had of explaining the matter, he thought it right to do so. Nothing could be better than the work of M'Cormick's machine, and with two pair of horses he had no doubt it would reap 16 acres a day. (Hear.) Now, as to Flax; it would be recollected that M. Claussen appeared before the Council of the Society, and having described his operation, they told him what they had to look to was a ready market for the Flax, and if the grower had anything to do with the steeping it would be useless to England. He then said he had invented a machine, for about 5*l.*, which the farmers could use at home, break the reed of the straw, and send it to the manufacturer; and he put down the produce at 8*l.* or 9*l.* an acre. But the machine was not forthcoming, nor was it certain that the process itself would succeed, for he found on enquiry that it was not perfect. But that there was something in it he had no doubt; and it behoved them to look at every penny, when a penny was to be turned. He was tired of the cry, "Cultivate, cultivate"—it sickened him to death, for he said the generality of the farmers had strained every nerve to do themselves and the country justice, and we saw them now without a remunerating price. The Royal Agricultural Society would do its duty, and would recommend to practical farmers nothing but what was for their benefit; but if they had progressed up to the present time, there might be a time when they could not do it, not from want of will, but from want of means. The farmers had strained themselves in their efforts to advance, and it was time to see whether something was not to be done, which it was not in them to effect, but for a higher power to carry on.

Mr. MECHI, after alluding to the delightful bond of union that existed between Lord Braybrooke, his family, and the neighbourhood, said they had heard something of the difficult position of the agriculturists, which meant, he supposed, the position of the landlord, the tenant, and the labourer; and also, as was observed by Lord Hardwicke, of the tithe-owner and the government. There were five parties concerned, but they would allow him to invert the order, and begin with the labourer, because he thought industry was the parent of capital and the labourer was the foundation of agricultural operations. (Cheers.) Now they were here to speak the truth; and he believed, from all the enquiry he had been able to make, that the condition of the agricultural labourer was most satisfactory. He was not alluding to the state of the poor-rates, because he knew the low price of produce had a tendency to diminish rates; but he said the labourer was in a prosperous condition. (Marks of dissent.) He should be happy to hear an objection, but he stated what he believed to be the truth, and why he believed it was this:—In Essex the estimate of a labourer's week's wages was the value of a bushel of flour—that had been the general rule of action; and as the price of a bushel of flour now was 5*s.* 6*d.*, and he heard they were giving 7*s.* 6*d.* a week in this neighbourhood, and in his own neighbourhood they gave 8*s.* and beer, it showed that the labourer was better off. (A person exclaimed, "The wages are not so high.") He knew there were some gave 6*s.* 6*d.* some 7*s.* 6*d.* some 8*s.* and 9*s.*; and probably the average would be about 8*s.* or 7*s* 6*d.* Well, then, it must be quite clear that wages being 7*s.* 6*d.* the labourer must be in a better state, and he was sure they were all delighted that it was so. (Hear.) Now he went from the labourers to the tenants; he knew this was ticklish ground, and in the first place he must state that the low price of the farmers' produce—he meant of corn, for meat was dear enough—certainly entitled him to all the deductions in the cost of his productions that he could fairly claim. They knew the great items in that cost were rent, labour, tithe, and government taxation. Now they could not complain particularly about labour; he did not think they did, and the labourer was well off; but he did think that rent should be reduced, if they were to have permanently a low price of corn, to something like a fair proportion to the price of their produce. He believed in many cases that had been done, and in many cases where it had not been done, it would be done, either from the good sense and calculations of the proprietors themselves, or from the stern force of compulsion and necessity. He came now to the tithe, and the clergy would find to their sorrow that they would sink or swim with the farmer; but the farmers must recollect that if they were paying the tithe rent charge on a high price now, they had that price and were bound to pay on it. He did not say whether it was right or wrong to fix the charge on so high a scale, but he wished the tithe were higher on the farmers, because it proved that they had had more, and they should all be sorry to see it so low next year. Then they came to the landlord, and in reference to this point he felt they were in a comparatively happy district, for he was sure the landlords he saw there were too much men of business to expect their tenants to pay their rent out of capital; but if the tenants got a proportionate reduction, he did not think they would be so badly off. They heard a good deal about agricultural ruin. Now in commerce, when they heard a man was ruined, when they looked for him he was gone, and his name was in the *Gazette*; but when he (Mr. M.) came here he still saw the same happy faces. (No, no.) He did not say all, but he saw a great many that he had seen before continuing in the same tenure. (A voice—"Not happy.") He could only say that he recognised those honoured names, the Claydon-, and the Webbs, and the Jonases, as being still there, and long might they remain. But he would not hear of their being ruined, because he did not believe it to be the case. (A voice—"Where is the balance-sheet?") In reference to that he would only say that in the course of a few weeks, at the request of the Society of Arts, he should lay before them a copy of his books, and he had no doubt that many would be happy to see that he had lost some money, if it should be so; they would then be made happy for once. But at all events, last year he had a valuation of his property, a very satisfactory one to him as a landlord, and this year they should have it as a tenant; but he would not anticipate, and till the next month he hoped they would restrain their impatience. The question had been asked—has agriculture done her duty? He denied that she had. If he took the state of cultivation in Cambridgeshire, he should feel happy on the subject of agriculture, because they had there men of great ability and great capital, who were an honour to their country in agriculture, and he honestly believed they were not losing money. But let them look at the general state of the country; go from one county to another and look at the reports on farming in the different counties of the kingdom, and he said that the almost universal complaint was, that good farming was the exception, and bad farming was the rule. He excepted parts of Norfolk and Cambridgeshire, but when they spoke of the whole kingdom, they spoke of Ireland, Scotland, and England, and if they had read the reports on the farming of the different counties, he thought as honest men they must come to the conviction that however high the agriculture of this country might stand, as compared with other nations, generally it was low compared with that perfection which existed in parts of this country. Let them recollect it was their duty to improve it. Look at what the manufacturers were doing; and manufactures were essential to their success. He had had at his farm this year crowds of foreigners from all parts of the world; he had talked with them upon the subject, and as to labour, he had gone into a comparison of its cost, both as to the money paid and the work done, and he could prove to them that the labour of England, taken by the quantity of work, was as cheap as any, if not the cheapest in the world. There was a fact for Mr. Jonas to look at. (Laughter.) He believed, therefore, so far as foreign labour went, they had nothing to fear. Then, as to the manufactures, trade and commerce of this country, let them look at the advantages the agriculturists possessed from these. He had said to these foreigners—"What do you do with your corn?" and they said—"We send it to England; we cannot afford to eat it ourselves, and we send it to you; it is with meat the same—it is half the price because we have no one to sell it to;" and the agriculturists in this country would be in the same state if they had not a district which afforded a market to send their corn to—he sent his corn to the manufacturing district; and therefore the greater the union between them the better for those two interests, and the happier for the country at large. (Cheers.) Then, again, look to the difference in practice in agriculture in different parts of the country. There was as much as 2½ per cent. difference, and this in any manufacture would cause its entire removal from one part to another, and he did not know whether 1½ per cent. would not do it. Essex, for instance, ploughed with two horses, and stood pre-eminent for ploughing, while in some other counties they used six in a line; and having appealed to a surveyor in Herts on the subject, he sent him the allowances made there for the ploughing on heavy land, and he found the first ploughing 13*s*, the second 11*s.*, the third 10*s.*, and the fourth 8*s.*; and he believed there were four ploughings for Wheat. (A Voice: "I don't believe it—it is not generally the case.") He gave no names, but this letter was dated from Herts last week. Then let them look at the extraordinary discrepancy as to the form and size of the fields, and the system of management. Look at Norfolk and Cambridgeshire, and they saw large fields. He knew a farm in Norfolk of 1000 acres in only four fields; he went into Devonshire, and he found there a farm that a gentleman told him the tenant had left, and he could not let it, and on inquiry what it was, he said it was a farm of 67 acres, and there were 27 fields. Thus he had 27 gates to open, had got 27 headlands, and 27 hedges full of trees, and then the tenant could not live. (Hear.) Was that a solitary instance? He appealed to a noble lord there, whether he did not know one whole parish in which there was an average of three-acre fields? Then what conclusion could they draw but that agriculture was in a most backward state, as compared to manufactures, and trade. This must be amended. He heard of landlords who could not let their farms, heavy undrained land; and when they were told to keep stock on it, could they, he would ask, keep stock on heavy land in winter, unless they had buildings to put it in? Then there were landlords who did not like to cut down their timber. But all this must come to an end before they could go to the country and show they had done their duty as agriculturists—and by agriculturists he meant the landlord, the tenant, and the labourers. Therefore, he said, let them go to the country with clean hands, and be sure they had done their duty before they complained. Then as to the management of their stock—he did not speak of the men there, for he called them the Napoleons of farming, and he said if all the country was farmed as Cambridgeshire was, the foreigner could not put his head in with his foreign corn. He believed they would have to produce corn as the manufacturer did his cotton; for the manufacturer sold to them at one time for 3*s.* 6*d.* that which he now sold to them at 6*d.*, and got a better profit. How was that done? Not by the old clumsy system of weaving by hand; but let them look to what had been done in manufactures, to the capital invested in machines, not only to make the article, but to make the machinery, as shown in the Great Exhibition. Then he said to the agriculturists, compare your own clumsy contrivances with this, and I do say agriculture is far behind in its application of steam power, in drainage, in fences, and timber—your buildings are badly placed, and before you can produce the article at a cheap price and in abundant quantity you must remedy all these things. With respect to taxation, he thought it did not require any conjuror to show that they bought all their things at the cheapest rate. (No, no.) Why his lady bought two beautiful dresses the other day for 7*s.* 10*d.*, and he bought an umbrella the day before yesterday for 18*d.*, a very good one. (Laughter.) He stated this to show that the expenses of the farmer were reduced in a great degree by the articles imported for his use. One word as to himself. It might or might not be fortunate that he was connected with agriculture; but he bought some farms, and finding them undrained and the buildings tumbling down, he said to the tenant, "Pay me a fair per centage, and I will do all that is required." The tenant said the farm was poor, and would not pay for it; to which he replied, "Then give it up, and I will do it myself." He did do it himself—and let them remember that the more capital they got from manufactures to lay out on agriculture, the more corn they would get, the more labour they would employ, and the less pauperism they would have—and he could only say that the expenditure of his money in agricultural pursuits was a thing he should never regret. He did not at all admit that good drainage, the removal of fences, and other things of this kind were unprofitable, but if they were he said the satisfaction was self-abiding that he had applied his money in promoting the contentment and the employment of his fellow-creatures, instead of investing it in foreign loans, and foreign speculations, as many would do if they believed all they were told as to the prospects of agriculture. (Hear.) By-and-bye he should have to talk to them about his balance-sheet and his own concerns, and he hoped many would benefit by it—he did not mean such men as Mr. Samuel Jonas, for he thought they had done all they could, and would reap the advantage of it. He had now to propose with great pleasure the health of the judges of the day. (Cheers.)—Mr. S. JONAS returned thanks, and said he felt proud in endeavouring to promote the objects of the Society, because the one class as landlords and the other as tenants were here combined to improve the social position and the morals of the people amongst whom they resided. Speaking there as a tenant farmer, it might be expected that he should make a few observations in reply to some of those that had been addressed to the meeting. Mr. Mechi stated that he complained loudly of the state of agriculture—of the bad state of the land, and the way in which much of it was cultivated; but could Mr. Mechi, or any man of business be surprised that the lands of England should be gradually going out of cultivation? that when the tenant farmers were deprived of a just remuneration for their skill and capital, he did find the land of the country in this state? As a commercial man, what actuated him in his pursuits but a remuneration for his capital? Mr. Mechi stated that the labourer was benefited largely by the present state of things; but he (Mr. J.) begged leave to differ from him; and he would ask, was the large decrease of population in Ireland, to the extent of two millions, a proof of the improved state of the labourers? He was sure many of them must have had their feelings sadly touched at seeing the crowds at the railway stations, who from the circumstances of the times were compelled to leave their homes, and seek in far distant lands that employment of which they had been unjustly deprived by the enactments of the Legislature of this country. Again, Mr. Mechi had spoken of the bad manner in which the land was drained; but were they to look to Mr. Mechi as a good example of the system of drainage? He (Mr. J.) had the compliment paid him, by that gentlemen or some one else, of having sent to him a publication by Mr. Mechi, in which he stated the manner in which he began at Tiptree Heath; he stated that in his first attempts at drainage, after having dug the ditches, he laid stones at the bottom; he was then at the expense, on the top of these stones, of laying the tiles; he covered them up, and when the rain came he rushed to his open ditches to see the result, and to his astonishment not a drop of water could be find in the pipes. (Laughter.) Was that the man who was to be held up as an oracle to them? (Cheers.) He knew of no man more overflowing with the milk of human kindness than Mr. Mechi, but he could not allow his statements to pass without some observations from him. (Cheers.)

### METEOROLOGICAL REPORT.—NOVEMBER.

(*Continued from p.* 734.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Nov. 13 | 3.10 p.m. | 30.30 | ... | P.M. Calm. Dense, overcast. |
| | 10.10 p.m. | ... | 30.29 | |
| 14 | 7.45 a.m | 30.18 | ... | A.M. Brisk N; fine and bright. |
| | 11.5 p.m. | ... | 30.11 | P.M. gentle. |
| 15 | 7.40 a.m. | 29.95 | ... | N. Gentle. Foggy, A.M. Cold, |
| * | 6 p.m. | ... | 29.83 | disagreeable day, with a |
| | 10.30 p.m. | 29.84 | ... | little snow. P.M. overcast. Barometer falling steadily till evening, and then rising. |
| Sun. 16 | 8 a.m. | 29.78 | ... | N. Gentle. Fine bright day. |
| † | 10 p.m. | ... | 29.77 | Barometer steady. |
| 17 | 7.55 a.m. | ... | 29.79 | A M. N, brisk. Fine morning. |
| | 11.50 a.m | 29.80 | ... | |
| ‡ | 3 p.m. | ... | 29.78 | |
| 18 | 8 a.m. | 29.79 | ... | N. Brisk. Bright, beautiful day. Barometer steady. |
| 19 | 7.40 a.m. | 29.77 | ... | NW. Gentle. Overcast. |
| ¶ | 11.20 p.m. | ... | 29.54 | P.M. Rainy. |
| 20 | 8 a.m. | ... | 29.69 | Northerly. Brisk. Fine bright |
| | 6 p.m. | 29 89 | ... | day. |
| | ↓ | ↓ | ↓ | |

* I think this storm must have travelled northward over France and the German Ocean, in which case the barometrical depression will have been greater at London than here, and the hour of minimum would be in the evening of the 15th. It was probably a cyclone of very considerable extent.

†‡ These depressions would be produced by small cyclones originating in the rear quadrants of the preceding storm.

¶ This is a storm of great diameter coming from the westward and southward, and tying a long way off to the northward.

Dorchester Nov. 20. *F. P. B. M.*

(*To be continued.*)

## Miscellaneous.

*Exhaustion of a thoroughly Cultivated soil by the Wheat plant.*—Who has taken the trouble to follow the roots of a Wheat plant? Let a man do this; let a man do it in well-pulverised soil, 20 inches or 2 feet deep. He will see what an infinitely small portion of the inner surface of the soil is touched by the roots. Let him consider that, without touching that surface, the roots cannot take up and assimilate the nourishing solutions of which it is the vehicle; that the soil is infinitely divisible, and infinitely divided by this mode of tillage; and so is able to offer a perpetual change of surface, and therefore a perpetual supply of those substances, say of silicates or phosphates, sulphates or alkalies, which the plant requires. For myself, I see little cause for dread of exhaustion of the soil; and though, perhaps, the duration of these substances cannot strictly be called infinite, yet the period when the supply will cease is certainly so distant as to be indefinite. *A Word in Season.*

## Notices to Correspondents.

Bones, &c.: *G B.* Bones if roughly broken will heat and break down to powder if placed in a heap with damp sand.—Hay-seeds from a *good* pasture will make a good permanent pasture. It is not sufficiently preferable to sow Grass seeds without a corn crop, to justify the loss of that crop. If you sow without a crop the spring is still the proper season for sowing.

Cows, &c.: *Constant Subscriber.* Half a cwt. to ¾ of a cwt. of Carrots to a small cow, with 10 or 12 lbs. of hay, will be a sufficient daily ration. They had better be cut by a Gardener's or Moody's cutter. They had better be washed. Carrots are good for horses, to which they may be given at the rate of from 30 to 40 lbs. a day. The cultivation you name will be given next week.—*E D.* We would give her 3 lbs. of Bean-meal and 1 lb. of Linseed, daily, with the other food; and if she be a good milker she will use it in her produce and not in growing fat.

Italian Rye-grass: *H B.* It is best sown late in spring after the Barley is up, and hoe it in. It will come to a good bite towards the end of April. Rape may be sown after winter Vetches, just as Turnips are when sown on the flat, and they will be ready for the sheep any time in winter or spring. They are a much better spring food than Mustard. You may sow Italian Rye-grass immediately after harvest—by scarifying the stubble and clearing it, and waiting for a rain to moulder the soil and thereafter bush harrowing it in.

Manuring: *B B B.* Top-dressing is wasteful, but unavoidable; and this, or rather early in spring, is the best season at which it can be done on Grass lands, for evaporation is at its minimum.

Potatoes: *M M G.* The ground should be dug in autumn, and well exposed to frost, and *then* the Potatoes may be planted lazy-bed fashion, if you choose. But to lay tubers on the undug Grass, and cover them with the earth from the trenches, was unpardonable; and it is no wonder that the crop was destroyed by worms.—You may milk thrice a day with advantage.

Small Farm: *B.* Next week.

Watering places: *Caradoc.* On Deanston the main drains in their course delivered their water to an under-ground cistern or cesspool, and a pump placed there supplied cisterns for four adjoining fields. Something of that kind might suit you. Or a circular, saucer-shaped basin, pitched and otherwise water-tight, may be placed at the corner of four fields, the hedges of which, by means of iron fencing, may meet in its centre—a very neat arrangement of this kind we saw lately at Cirencester—and into this the drains may be delivered.

## Markets.

### COVENT GARDEN, Nov 22.

English Pine Apples continue plentiful, and Grapes, both foreign and English, are abundant. Small quantities of Pears are still brought from the Continent. The best English kinds fetch 2s. to 4s. a doz., and 3s. to 12s. per half sieve. They consist of Glout Morceau, Crassane, Beurré Diel, and Chaumontelle. Oranges are plentiful. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms remain stationary. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Apples, kitchen, per bushel, 1s to 2s 6d | — per 100, 6s to 10s |
| Pears, dessert, p. doz., 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p. bsh., 12s to 14s |
| Walnuts, per bush., 12s to 24s | Filberts, per 100lbs., 70s to 90s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 6d to 8d |
| Broccoli, per bunch, 8d to 1s | Artichokes, per doz., 4s to 6s |
| Potatoes, per ton, 45s to 80s | Lettuce, Cab., p. score, 4d to 1s |
| — per cwt., 2s to 5s | — Cos, per score, 3d to 1s |
| — per bush., 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Turnips, p. bunch, 1d to 2d | Horse Radish, p. bundle, 1s to 4s |
| Cucumbers, each, 1d to 1s | Red Beet, per doz., 1s to 2s |
| Radishes, per doz., 9d to 1s | Mushrooms, p. pot., 1s to 1s 3d |
| — Turnip, p. doz., 9d to 1s | — per bushel, 7s to 10s |
| Celery, p. bundle, 6d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Carrots, per bunch, 4d to 6d | Tomatoes, p. half sieve, 3s to 4s |
| Brussels Sprouts, p. half sieve, 9d to 1s | Fennel, per bunch, 2d to 3d |
| Spinach, per sieve, 1s 6d to 2s | Savory, per bunch, 2d to 3d |
| Onions, p. bunch, 1d to 5d | Thyme, per bunch, 2d to 3d |
| — Spanish, p. doz., 1s 6d to 3s | Parsley, per doz. bun., 2s to 3s |
| Endive, per score, 9d to 1s | Mint, per bunch, 1d to 2d |
| Beet, per doz., 6d to 1s | Basil, p. bunch, 3d to 4d |
| Parsnips, per doz., 6d to 1s | Marjoram, do., 3d to 4d |
| Leeks, per bunch, 1d to 2d | Watercress, p. 12 bunch., 4d to 6d |

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 20.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 72s to 77s | Clover ... ... ... | 70s to 84s |
| Inferior ditto ... ... | 60 68 | 2d cut ... ... ... | 60 70 |
| Rowen ... ... ... | 60 65 | Straw ... ... ... | 23 27 |
| New Hay .. ... ... | — — | | J. Cooper. |

A good supply and a heavy trade.

CUMBERLAND MARKET, Nov. 20.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 65s to 74s |
| Inferior ditto ... ... | 60 70 | New Clover ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 78 86 | | Joshua Baker. |

WHITECHAPEL, Nov. 20.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 70s to 76s | Old Clover ... ... | 84s to 88s |
| New Hay ... ... | 66 75 | Inferior ditto ... | — — |
| Inferior ditto ... ... | 50 60 | New Clover ... ... | 76 84 |
| Straw ... ... ... | 21 24 | Inferior ditto ... | 55 70 |

HOPS.—Friday, Nov 21

Messrs. Pattenden and Smith report that the market and prices continue good for middling and fine samples.

COAL MARKET.—Friday, Nov. 21.

Holywell, 16s. 6d.; Tanfield Moor, 15s. 6d.; Howard's West Hartley, Netherton, 16s.; Wallsend Haswell, 19s. 6d.; Wallsend Hetton, 18s. 6d.; Wallsend Gosforth, 18s. 6d.—Ships at market, 17.

SMITHFIELD, Monday, Nov. 17.

The supply of Beasts is shorter, and prices on the average better; yet it is difficult to quote higher for inferior qualities. A good clearance is effected, owing to the favourable weather. The number of Sheep is smaller, and late rates are fully maintained; indeed, some of the choicest kinds are rather dearer. The number of Calves is quite equal to the demand, and trade generally is no better. From Holland and Germany there are 1643 Beasts, 5060 Sheep, and 247 Calves; from Scotland, 150 Beasts; from Norfolk and Suffolk, 120; from Ireland, 170; and 2400 from the northern and midland counties.

| Per st. of 8 lbs.—s d s d | | Per st. of 8 lbs.—s d s d | |
|---|---|---|---|
| Best Scots, Herefords, &c. | 3 8 to 3 10 | Best Long-wools | 3 6 to 3 10 |
| Best Short-horns | 3 6 — 3 8 | Ditto Shorn ... ... | |
| 2d quality Beasts | 2 6 — 3 0 | Ewes & 2d quality | 3 0 — 3 4 |
| Best Downs and Half-breds ... | 4 0 — 4 4 | Ditto Shorn ... ... | |
| Ditto Shorn ... ... | | Lambs ... ... | 0 0 — 0 0 |
| | | Calves ... ... | 3 0 — 4 0 |
| | | Pigs ... ... | 3 4 — 4 4 |

Beasts, 4805; Sheep and Lambs, 24,060; Calves, 300; Pigs, 480.

Friday, Nov. 21.

We have a fair supply of Beasts to-day as regards numbers, but the quality of it is very middling. Trade is dull, and the average of prices lower. A few choice Scots make 3s. 10d., but in so few instances that we are not justified in quoting it. There are a few more Sheep on offer to-day than on Friday last, and the demand is small; consequently the advance experienced on Monday is not maintained. Although the number of Calves is not large, it exceeds the demand; prices are about 2d. per 8 lbs. lower. Indication of change in the weather causes a dull sale for all kinds of stock. Our foreign supply consists of 501 Beasts, 1900 Sheep, and 160 Calves. The number of Milch Cows is 120.

| Best Scots, Herefords, &c. | 3 6 to 3 8 | Best Long-wools | 3 6 — 3 8 |
|---|---|---|---|
| Best Short-horns | 3 4 — 3 6 | Ditto Shorn ... ... | |
| 2d quality Beasts | 2 4 — 2 10 | Ewes & 2d quality | 2 10 — 3 4 |
| Best Downs and Half-breds ... | 4 0 — 4 2 | Ditto Shorn ... ... | |
| Ditto Shorn ... ... | | Lambs ... ... | 0 0 — 0 0 |
| | | Calves ... ... | 2 10 — 3 10 |
| | | Pigs ... ... | 3 0 — 4 4 |

Beasts, 1240; Sheep and Lambs, 4889; Calves, 275; Pigs, 485.

MARK LANE.

Monday, Nov. 17.—The supply of English Wheat by land carriage samples to this morning's market was small from Essex, and but moderate from Kent; the white was taken off at an advance of 1s. per qr., but we cannot alter our quotations for red. There was rather more inquiry for some of the finest qualities of foreign; these commanded the extreme prices of last week, but other descriptions are comparatively neglected.—Picked samples of malting Barley sell readily at last week's rates, but secondary sorts are difficult of disposal; foreign grinding is very scarce, and rather dearer.—We raise our quotations for Beans and Peas 1s. per qr.—There is a fair sale for Oats at fully last week's prices.—Fine barrel Flour is in good request at our quotations.

| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 38—41 | Red ..... | 35 – 38 |
| — — fine selected runs...ditto | 40—44 | Red ..... | 38—40 |
| — — Talavera ..... | 44—46 | | |
| — Norfolk, Lincoln, & York... White | 33—36 | Red ..... | — |
| — Foreign ..... | 31—48 | | |
| Barley, grind. & distil., 25s to 26s...Chev. | 29—32 | Malting . | 25—28 |
| — Foreign... grinding and distilling | 22—26 | Malting . | — |
| Oats, Essex and Suffolk ..... ..... | 16—20 | | |
| — Scotch and Lincolnshire...Potato | 19—24 | Feed ..... | 18—21 |
| — Irish .....Potato | 18—21 | Feed ..... | 18—20 |
| — Foreign .....Poland and Brew | 18—22 | Feed ..... | 16—19 |
| Rye ..... | 28—30 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..26s to 28s.....Tick | 27—31 | Harrow . | 27—31 |
| — Pigeon.....28 — 33... Winds | 31—32 | Longpod | 25—27 |
| — Foreign .....Small | 22—30 | Egyptian | 23—25 |
| Peas, white, Essex and Kent.....Boilers | 29—32 | Suffolk... | 30—33 |
| — Maple.....28s to 30s .....Grey | 25—28 | Foreign . | 27—32 |
| Maize .....White | — | Yellow ... | — |
| Flour, best marks delivered ...per sack | 35—39 | | |
| — Suffolk .....ditto | 25—32 | Norfolk . | 25—32 |
| — Foreign .....per barrel | 15—21 | Per sack | 28—33 |

Friday, Nov. 14.—The arrivals of grain and Flour this week, either English or foreign, are very small; English Wheat fully supports our quotations of Monday, and although the sale of foreign was limited, extreme prices were realised on the business transacted.—The value of Flour is firmly maintained, and for American barrels there is a good demand. We observe no alteration in the value of Barley, Beans, and Peas since Monday.—The Oat trade is very firm, and in some instances 6d. per qr. more money is paid.—There are but few floating cargoes on the coast unsold. Two of P. Odessa Wheat not arrived have been taken for the Continent, at 33s., cost, freight, and insurance. For Galatz corn, 27s. is asked.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Oct. 11..... | 35s 6d | 25s 2d | 17s 3d | 25s 0d | 27s 8d | 26s 2d |
| — 18 ..... | 36 0 | 24 9 | 17 0 | 23 6 | 27 6 | 27 2 |
| — 25..... | 36 9 | 25 5 | 17 5 | 23 8 | 28 6 | 27 7 |
| Nov. 1..... | 36 6 | 25 7 | 17 5 | 24 10 | 28 6 | 27 5 |
| — 8..... | 36 1 | 26 1 | 17 6 | 25 1 | 28 10 | 28 2 |
| — 15..... | 36 4 | 26 7 | 18 1 | 26 0 | 28 8 | 28 3 |
| Aggreg. Aver. | 36 2 | 25 7 | 17 5 | 24 8 | 28 3 | 27 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Oct. 11. | Oct. 18. | Oct. 25. | Nov. 1. | Nov. 8. | Nov. 15. |
|---|---|---|---|---|---|---|
| 36s 9d | ... | ... | ... | ... | ... | ... |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 4 | ... | ... | ... | ... | ... | ... |
| 36 1 | ... | ... | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | ... | ... |
| 35 6 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Nov. 18.—At our market this morning fine white American and high mixed Dantzic Wheats were held 1d. per 70 lbs. over previous rates, but the advance was not freely paid, and all other descriptions of foreign, upon a slow limited demand, remained without any decided change in value; whilst farmers' new Wheat, of which there was a further good supply, moved readily at late rates. Malting Barley being scarce, and Malt in few hands, both were quite as dear as last week; grinding Barley, on the contrary, was in limited request, and rather cheaper. Best new mealing Oats improved ½d. per 45 lbs., all ordinary qualities being dull and depressed in value. Oatmeal was saleable at an advance of 3d. per load.——Friday, Nov. 14.—At our Corn Exchange to-day, fine white foreign Wheat was in moderate, though not in lively request, at a trifling advance over late rates; whilst good English Wheat was taken freely by our local millers, and commanded the full rates of Tuesday. States and Canadian Flour continuing to meet a ready sale, general qualities were again 3d. dearer. Although in Barley, Malt, Beans, and Peas, little business was apparent, prices remained unvaried. Oats, being scarce, were the turn dearer, and Oatmeal supported our last quotations. Of Indian Corn, either on the spot or floating, no sales were reported to-day.


HARTLEY'S PATENT QUARRY GLASS, FOR GLAZING CHURCHES, CHAPELS, SCHOOLS, &c.—The above beautiful description of Glass is an adaptation of Hartley's Patent Rough Plate Glass, with a diamond (or quarry pattern); thus avoiding the use of window leads entirely.

Being in single plates, it is impervious to rain, and causes perfect freedom from draughts, which, coupled with its thickness, tends to create an uniformity of temperature within the building. Attention is also directed to its durability, non-transparency and cost; for, although three times the thickness of crown-glass, the one-eighth thick costs less than common lead lights; we can, therefore, with confidence recommend it as an economical, useful, and beautiful article for the glazing of churches, chapels, schools, &c.

Prices to be had and samples to be seen at James Phillips and Co.'s, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 inches by 4 and 6½ by 4½ | ... | ... | ... | 13s. | 0d. | |
| 7 ,, 5 and 7½ by 5½ | ... | ... | ... | 15 | 0 | |
| 8 ,, 5 and 8 by 5½ | ... | ... | ... | 15 | 0 | |
| 8 ,, 6 and 8½ by 6½ | ... | ... | ... | 17 | 6 | |
| 9 ,, 7 and 10 by 8 | ... | ... | ... | 20 | 0 | |
| 12 ,, 10 and 13 by 9 | ... | ... | ... | 20 | 0 | |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21s. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | | |
|---|---|---|---|---|
| In sizes under 15 inches ..... | 6d. | per foot. | | |
| ,, ,, 35 ,, ..... | 8d. | ,, | | |
| ,, ,, 50 ,, ..... | 9½d. | ,, | | |
| ,, ,, 75 ,, .....12d. | ,, | | | |

Milk Pans, 2s. to 6s. each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

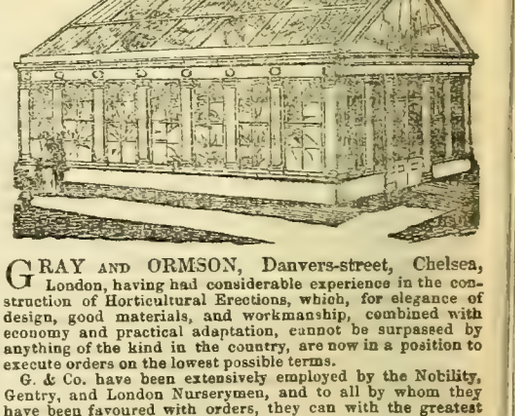



J. Weeks and Co., King's-road, Chelsea, Horticultural Architects, Engineers, and Builders. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. Weeks and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their Victoria Regia Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY and ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

DOMESTIC SANITARY MEASURES.—Places in Gardens rendered as comfortable as the best-constructed water-closets by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Sold only at Fife and Co's Scientific Repository, 26, Tavistock-street, Covent Garden, London, sole depôt for the Patent Hermetically-Sealed Inodorous Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also improved Portable Water Closets, with pump, cistern, and self-acting valve. Orders by post attended to.

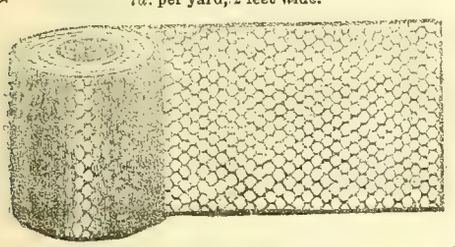
GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1⅝ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.
J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

CONSERVATORY.

TO BE SOLD, very cheap, a second-hand CONSERVATORY, 70 feet long, by 20 feet wide.—For particulars and to view, apply to Mr. HENRY TOBY, Glebe-place, King's Road, Chelsea, near London.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

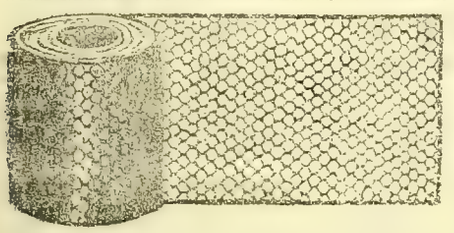
GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, .. | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1⅝-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1⅝-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

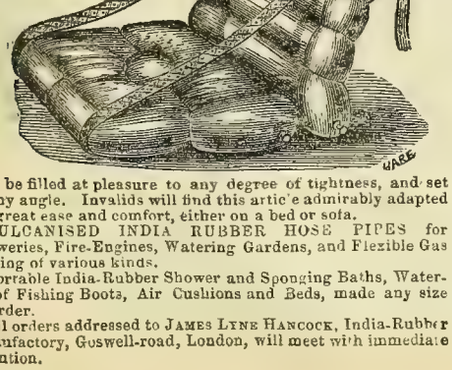
| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 ,, ,, | 4½*d.* ,, | 36 ,, ,, | 9*d.* ,, |
| 14 ,, ,, | 6*d.* ,, | 48 ,, ,, | 1*s.* ,, |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 41, Skinner-street, Snow-hill, London.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.

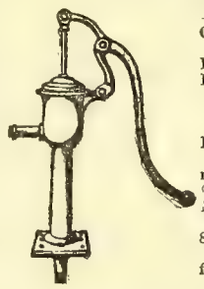
This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it



may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.
VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.
Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.
All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

TO HORTICULTURAL & FLORICULTURAL SOCIETIES.
BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Rick Cloths, with Poles, &c., complete. Marquees and Tents on hire. Netting and Bunting for Fruit Trees. Orders, per post, duly attended to.
Address BENJAMIN EDGINGTON, 2, Duke-street, Southwark.—A Warehouse, 208, Piccadilly.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

| | |
|---|---|
| Patent Pump ... ... | £1 16 0 |
| Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... | 2 12 0 |

Larger sizes if required.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.
JOHN WARNER & SONS,
8, Crescent, Jewin-street, London.
Every description of Machinery for Raising Water, Fire Engines, &c.
The usual allowance to the Trade.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—CRINILENE has been pronounced by thousands to be the only preparation that can be relied upon for the restoration of the hair in baldness from any cause, preventing the hair falling off, strengthening weak hair, and checking greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in a few weeks with certainty. It is elegantly scented, and sufficient for three months' use; will be sent, post free, on receipt of 24 postage stamps, by Miss DEAN, 48, Liverpool-street, King's-cross, London. Testimonial: Dr. Thompson says—"It is a beautiful preparation, and the only one I can recommend."

CROSBY HALL VAULTS, No. 35, BISHOPSGATE-STREET-WITHIN.—CURRALL and SON beg to invite public notice to their STOCK of OLD BOTTLED WINES. They being desirous to secure that patronage which wines of the first quality, at fair and remunerating profits, will maintain, respectfully submit the annexed list of cash Prices:—

| | Per doz. | | Per doz. |
|---|---|---|---|
| Port, old bottled .. | 36*s.* and 42*s.* | White Port in pints, bottles and package inclusive .. | 30*s.* |
| Ditto, six years in bottle .. | 48*s.* | Sherry (excellent dinner wine) .. .. .. | 28*s.* |
| Sherries, pale and brown .. | 36*s.* | Port, superior draught | 28*s.* to 33*s.* |
| Ditto ditto .. | 42*s.* to 48*s.* | | |
| Marsala .. .. .. | 24*s.* | | |
| Champagne (1 doz. cases) | 54*s.* | | |

PALE BRANDY, 60*s.* per doz.; bottles, 2*s.* per doz.; hampers, 1*s.* per doz.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The public is respectfully informed the ALES of this season's Brewings are now ready for delivery, and may be obtained Genuine in Casks of 18 Gallons and upwards, either singly or in any quantity, at their respective Stores, as under, where also a list of the Bottlers may be had:—The Brewery, Burton-on-Trent; 61, King William-street, City, London; Cook-street, Liverpool; High-street, Birmingham; The Exchange, Manchester; Royal Brewery, Dudley, and 33, Virginia-street, Glasgow.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The URAN UTAN, presented by the Governor of Singapore, is exhibited daily, together with the ELEPHANT CALF, and the HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt. Admission, 1*s.* On MONDAYS, 6*d.*

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. The fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLANDS' MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the human hair, is too well known and appreciated to need comment. For Children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine comb unnecessary.—Price 3*s.* 6*d.*, 7*s.*; family bottles, equal to 4 small), 10*s.* 6*d.*, and double that size, 24*s.* per bottle.
N.B. Each bottle of the genuine article has the words—ROWLANDS' MACASSAR OIL, engraved in two lines on the wrapper; and on the back of the wrapper nearly 1500 times, containing 29,028 letters.
Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Druggists.

"WHERE SHALL WE GO THIS MORNING?" Such is usually the query over the breakfast table with visitors to London. Let us answer the question. If you can admire the most beautiful specimens of Papier Maché manufacture which are produced in this country, displayed in the most attractive forms—if you want a handsome or useful Dressing Case, Work-Box, or Writing Desk—if you need any requisite for the work table or toilet—or if you desire to see one of the most elegant emporiums in London, then you will go to MECHI'S, 4, LEADENHALL-STREET, near the India House, in whose showrooms you may lounge away an hour very pleasantly.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

FRIGI DOMO.—A perfect protector against frost, a non-conductor of heat or cold, and cheaper in price than baize matting. A canvas made of prepared hair and wool, adapted to many horticultural and floricultural purposes, for covering up, where a fixed temperature is required. It is 4½ yards wide, and of any required length at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, Oxford-street, London.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.
Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blackfriars, London; and 36, Seel-street, Liverpool.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.
METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.
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INDEX.


Accounts, farm ..... 765 *b*
Agricultural chemistry ..... 763 *c*
Almanacs, Gleany's ..... 759 *b*
Beech on an Oak ..... 757 *c*
Bee hives ..... 755 *b*
Birds, British song ..... 756 *a*
Botanical Society of Edinburgh ..... 759 *a*
Calendar, Horticultural ..... 760 *a*
— Agriculture ..... 765 *c*
Chemistry, agricultural ..... 763 *c*
Chrysanthemums, Ivory's ..... 757 *c*
Chrysanthemum show, Stoke Newington ..... 759 *b*
Churns ..... 765 *a*
Clover failure ..... 764 *a*
Coelogynes, terrestrial ..... 756 *c*
Cotoneaster, to sow ..... 760 *c*
Cucumber disease ..... 756 *c*
Emigration, Highland ..... 761 *b*
Exeter Club ..... 765 *b*
Farms, small ..... 765 *b*
Farming, steam ..... 762 *a*
Farm accounts ..... 765 *b*
Forest trees, to prune ..... 758 *b*
Game ..... 764 *b*
Garden, to make ..... 758 *a*
Gadioli ..... 759 *c*
Glass, rough plate ..... 758 *a*
Glass houses, winter covering for ..... 756 *c*
Grape, Joaling's ..... 758 *a*
Guano, Australian ..... 761 *b*
Gynerium argenteum ..... 757 *c*
Ice stacks ..... 758 *c*
Leaves, tree ..... 757 *a*
Nightingale, the ..... 759 *a*
Oak on a Beech ..... 757 *c*
Orchids for the million ..... 756 *a*
Paxton, Sir Joseph ..... 755 *a*
Phosphate nodules ..... 764 *c*
Planchon, Dr ..... 759 *c*
Plane tree timber ..... 757 *c*
Potatoes in Perthshire ..... 758 *c*
Potato disease ..... 759 *c*
Poultry show, Birmingham ..... 766 *a*
Pruning forest trees ..... 758 *b*
Rhododendron javanicum ..... 758 *b*
Snow storm ..... 758 *c*
Strawberries, new ..... 757 *a*
Timber, Plane tree ..... 757 *c*
Tree leaves ..... 757 *a*
Victoria Regia ..... 756 *c*
Walls, glass ..... 755 *a*
Weather, the ..... 766 *a*
Weeds ..... 758 *c*



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Catalogues on application. Goods free to London, or any part of the Ipswich line to Norwich, and extra plants, gratis, for orders of 40*s.* and upwards. Remittances from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CEDRUS DEODARA,

For planting Avenues, single specimens for Lawns, or mixing with Fir and other plantations, grown from seed, either in or out of pots.

MAULE AND SONS respectfully inform Gentlemen about planting, that their immense stock of this most desirable Hardy Ornamental Tree consists of well-grown plants from seed, of all sizes, suited for the above purposes, which are offered by the dozen, hundred, and thousand, on moderate terms. ☞ Prices forwarded on application.

The curious in seminal productions will find by inspecting M. and SONS' Stock, many pleasing peculiarities of foliage in their present state of growth.—Stapleton-road Nurseries, Bristol.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 1*s* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. American Native, 10*s.* 6*d.* do. Early Manley, 10*s.* 6*d.* do. Early Ash-leaf Kidney, 10*s.* 6*d.* do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

MESSRS. J. MYATT AND SONS have a Stock of the VICTORIA or RABY CASTLE CURRANT, and can supply good strong Plants at 25*s.* per 100; extra strong, 2 years old, 5*s.* per dozen. Also, a good Stock of 2 years planted Rhubarb roots.

MYATT'S LINNÆUS ... ... 10*s.* per dozen.
MYATT'S VICTORIA ... ... 10*s.* „ „
MITCHELL'S ROYAL ALBERT

Smaller 1 year planted Roots, at 50*s.* per 100.

Manor Farm, Deptford, Nov. 29.

NEW GARDEN SEEDS,
SAVED THIS SEASON.

WILLIAM E. RENDLE AND Co., SEED MERCHANTS, Plymouth, beg respectfully to state that they are now receiving from some of the most careful growers a choice assortment of

NEW AND GENUINE SEEDS,

Of first-rate quality; and as the season is fast approaching when a fresh supply of seeds will be required for the Kitchen Garden, they take the liberty of recommending the proprietors of every garden whether extensive or small, to procure without delay a copy of

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY,

*Which cost more than One Hundred Pounds in its production, and has been most favourably noticed by some of the most eminent Horticulturists of the day, as well as by the Editors of the leading Garden Publications.*

*It contains 24 folio pages, and is the same size as the* GARDENERS' CHRONICLE.

It contains a Descriptive Catalogue of the best Culinary Vegetables in cultivation, with the time of sowing, height, and other useful particulars, as well as the quantities furnished by WILLIAM E. RENDLE and Co. for their Collections; also a Descriptive Catalogue of all the choicest and best varieties of Agricultural Seeds; and an excellent Descriptive List of all the newest and choicest Flower Seeds.

It likewise contains a COMPLETE CALENDAR OF OPERATIONS in the Kitchen Garden for every month in the year, in a concise and useful form.

*Copies can be obtained from any Bookseller in town or country, price Fivepence, through Messrs.* BRADBURY *and* EVANS, *the London publishers.*

*Copies will also be sent gratuitously on receipt of Six penny postage Stamps (to pay the postage), on application to* WILLIAM E. RENDLE & Co., *Seed Merchants, Plymouth.*

*Our Stocks, Early Peas, Beans, Radish, and Carrots are already in, and can be supplied at once.*

BEST LANCASHIRE GOOSEBERRIES, named, at 15*s.* per 100.

Also, APPLES, PEARS, CURRANTS, RHUBARB, &c., in all the best varieties, and at equally moderate prices.

Carefully packed, to carry any distance, or for exportation.

H. BIGLAND and Co., Manchester.

A COMPLETE ARBORETUM.

C. LODDIGES AND SONS beg to state that they are now supplying the above, comprising upwards of 1200 species of TREES and SHRUBS, correctly named, for 50*l.*, cash on delivery; and as their collection of hardy plants will have to be dispersed this season, in consequence of the land being let for building, they most respectfully suggest that all persons contemplating the formation of a COMPLETE ARBORETUM should make early application, as the stock of some species is very limited.—Hackney, Nov. 22.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, will be happy to forward his New Autumn Catalogue (post paid), on application. It is also post paid throughout America, Austria, Belgium, France, Germany, Holland, and Prussia.

E. G. H. can supply plants of the following (for description see page 27 in the above Catalogue).

The New Raspberry Belle de Fontenay, 7*s.* 6*d.* each; Weigela lutea, or Middendorffiana, 10*s.* 6*d.* each; Hesperis Matronalis Flora Plena (Double Crimson Rocket), 2*s.* each.

Tropæolum azureum, 2*s.* 6*d.* each; T. tricolor, 2*s.* 6*d.* and 3*s.* 6*d* each; T. Hockerianum (true), for winter flowering, fine, 3*s.* 6*d.* each.

Cremont's Perpetual Strawberry, 1*s.* each, or 9*s.* per dozen.

SUPERB NAMED AND MIXED ASSORTMENTS OF ANEMONES, RANUNCULI, GLADIOLI, TULIPS, IRIS, CROCUS, LILIUM, IMPORTED DUTCH HYACINTHS, &c., with a large Collection of other Roots.—For BASS AND BROWN'S Priced Advertisement of the above, see *Gardeners' Chronicle* of Nov. 8th and 22d, or Catalogues sent free on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

HUNTER'S PROLIFIC CUCUMBER.—This handsome and delicious variety obtained, in June last year, with fruit upwards of 30 inches in length, the Silver Medal at the Botanic Gardens, Regent's-park; and a Certificate of Merit at the Exhibition in July. It has also been awarded Four Prizes at the Highbury Exhibitions. It is white spined and an extraordinary bearer. To be had in packets of seven seeds, at 5*s.*; or three seeds at 2*s.* 6*d.*, of Mr. HUNTER, 5, King-street, Islington; and at J. G. RENWICK'S Seed Warehouse, 107, St. John-street, Smithfield, London.

ROSES.—Paul's QUEEN VICTORIA, Paul's ROBERT BURNS, and other new sorts, direct from the Raisers, at the same prices as charged by them.

Also Géant des Batailles, Robin Hood, and other established favourites, including the best of the Perpetuals, Bourbons, &c., if left to our selection (which will ensure satisfaction), at 20*s.* per dozen, standards; or 12*s.* per dozen, dwarfs. Also common sorts of dwarfs, 5*s* per dozen.

JOHN SUTTON and SONS, Nurseries, Reading, Berks.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERÆ, ROSES, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had on application, by enclosing two postage stamps.—Windlesham Nursery, Bagshot, Surrey.

PINE PLANTS.—For Sale, a quantity of PINE-APPLE PLANTS of all the approved varieties, to insure a succession of fruit; they are fine, clean and healthy.—For particulars, apply by letter to W. HARDIE, at the Gardens, Castle Ashby Northampton.

HAMILTON'S NEW EARLY PEA, THE NOVEMBER PROLIFIC, 2*s.* 6*d* per quart.

WARNER'S EARLY CONQUEROR, 1*s* per quart.

GREGORY'S EARLY HANGDOWN BEANS, 9*d.* per quart.

LORD KENYON'S FAVOURITE CUCUMBER 1*s.* per packet.

And all other favourite sorts of Kitchen Garden Seeds, Catalogues of which may now be had for two postage stamps, on application, addressed, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

WILLMORE'S SURPRISE GERANIUM.

JOHN AND CHARLES LEE beg to announce that they have purchased the entire stock of this extraordinary novelty of Mrs. Willmore, of Edgbaston, near Birmingham, and they intend offering it to the public in the autumn of 1852, when they will have proved its qualities as a bedding plant, which they believe to be first-rate; and opportunities will have been afforded at the various Flower Shows of witnessing what may be regarded as a floral wonder.

Mrs. Willmore has stated her belief that its parentage lies between Geranium erubescens and a Hollyhock. Our great Horticultural authority, Dr. Lindley, repudiates the idea, but acknowledges it to be an extraordinary production. Messrs. LEE hope to produce such proof as may possibly stagger the learned Doctor's opinion, if it fails to convince him. For the present, suffice it to say that the structure of the plant is different to anything to be found in the Geranium; the roots are quite unlike any of the class, and the seed pods are formed more like a Hollyhock than a Geranium. The flowers are semi-double, and the whole truss of a monstrous form. Allowing it to be no more than a mere sport from the Geranium, its merits far exceed anything hitherto introduced as a gay border or bedding flower.—Nursery, Hammersmith.

TRANSPLANTED THORN QUICKS AT HALF PRICE, FOR READY CASH.—SELLING OFF.—The Remainder of the Stock of Transplanted Thorn Quicks, the property of the late Mr JOHN M'CRAITH, Nurseryman, of Kilkenny, will be cleared off this present season, at the following greatly reduced prices. Two years old Transplanted Thorns, 14 to 18 inches in length; circumference 3-8ths to 7-16ths; 9*d.* per 1000. Three years old, transplanted: length, 17 to 24 inches; circumference, 8 to 10 16ths; 1*s.* 3*d.* per 1000. Four years old, transplanted; length, 23 to 25 inches; circumference, 5 8ths to 1 inch; 1*s.* 8*d.* per 1000. Quantities of 100 000 and upwards delivered carriage free in Dublin or Waterford. Apply to Mrs. SUSANNA M'CRAITH, High-street, Kilkenny

LISTS OF SEEDS, PLANTS, &c.

PETER LAWSON AND SON beg to state that the following may be had at their Establishment, 1, George the Fourth Bridge, Edinburgh; or from their Agent, J. C. SOMMERS, 159, Fenchurch street, London:—

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| Agricultural Seeds. | Herbaceous Plants. |
| Garden Seeds. | Florists' Flowers. |
| Flower Seeds. | Dutch Flower Roots. |
| Treatise on Flower Seeds. | Stove and Greenhouse Plants. |
| Forest Trees. | Garden and Minor Agricultural Implements. |
| Ornamental Trees and Shrubs. | |
| Descriptive List of Roses. | |

Also,

Lawson's Agriculturist's Manual, 8vo, pp. 430, 10*s.* 6*d.*
Lawson's Treatise on Grasses, 4to, pp 48, 1*s.*
Lawson's Fruit Trees, 4to, pp. 83, 1*s.* 6*d.*
Lawson's Coniferæ, or Fir Tribe, 4to, pp. 104, 1*s.* 6*d.*
Also, Synopsis of the Agricultural Products of Scotland, in Parts, at 1*s.* each; or in 2 Vols., 7*s.*; First, now ready, 5*s.*

GERMAN SEEDS.

MESSRS. PLATZ AND SON, SEED GROWERS, Erfurt, Prussia, inform the trade that their CATALOGUE for 1852 is now ready, and may be had on application of their Agent, Mr. ROBERT KENNEDY, Conservatories, Covent Garden, London. The universal approval which their Articles have obtained induce Messrs. P. and SON to solicit a trial of the present year's Stock, which includes many new and interesting varieties.—Erfurt, November 28.

FEATHER GRASS.

WANTED, any quantity, if of approved quality. Sample, and price per pound, addressed to R. Y., Office of this Paper.

ORNAMENTAL PLANTING.

C. LODDIGES AND SONS most respectfully call the attention of Noblemen, Gentlemen, and Public Companies, engaged in Ornamental Planting, to the undermentioned List of TREES and SHRUBS, which they are enabled to offer at an extraordinary reduction in price (for cash only), the land upon which their arboretum is planted being required for building.

Fine trees, from 4 to 10 feet high, of the following genera comprising a great number of species: Acer, Æsculus, Alnus, Amygdalus, Betula, Cornus, Corylus, Cotoneaster, Crataegus, Cytisus, Fraxinus, Mespilus, Populus, Prunus, Pyrus, Robes, Robinia, Salix, Sorbus, Spiræa, Tilia, Ulmus, 4*s.* per dozen named, or a selection from the above, 25*s.* per 100 unnamed, and highly recommended for rough planting.

American Oaks in great variety, 10*s* per dozen.

AMERICAN PLANTS.

Azalea pontica, fine bushy plants well set with bloom, 10*s.* p. doz.
„ Ghent and other varieties named. 18*s.* per doz.
Rhododendron ponticum and varieties (very fine), 10*s.* per doz.
„ campanulatum, 2 to 4 feet diameter, 10*s* 6*d* to 42*s.* each.
Andromedas in collections, 18*s.* per doz.; Vaccinums ditto, 12*s* per doz.

N.B. Packing will be charged as low as possible. Post-office orders made payable at Hackney.—Hackney, Nov. 29.

IMPORTANT TO ALL WHO HAVE A GARDEN.

## CHALLENGE COMPARISON AND COMPETITION. CARRIAGE PAID.

All orders above 5*l.* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.

100, own selection, two of each kind, 30*s.*; or our selection, in 100 varieties, 42*s.*

100, purchaser's selection, one of each kind, 42*s.*

100 Alpine or Rock Plants, 42*s.*

The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.

Purchaser's, or our selection, from list, per 100, 2*l.* 10*s.*, one of each.

Own do. do. per 100, 1*l.* 10*s.*, two of each.

This Nursery has long held high celebrity for possessing a splendid stock of Flowering Shrubs and Ornamental Trees, extending over 800 species and varieties of the finest selection; and for quality, correctness in naming, and health, not equalled by any. To Gentlemen forming Arboretums, or adding desiderata, this is an opportunity never before offered.

HOLLYHOCKS.—No. 1, fine double kinds, all shades of colour, for exhibition, 9*s.* per dozen; 50*s.* per 100. No. 2, for border display, 6*s.* per dozen; or 30*s.* per 100. These are selected from the finest collection in the country.

COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or 10*s.* per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*; or 12*s.* 6*d.* per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20*s.* per 100; fine, 3*s.* per dozen. 2 to 3 feet, extra fine and bushy, 30*s.* per 100; 6*s.* per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40*s.*; per 100, 5*s.* 3 to 5 feet, strong, 45*s.* per 1000; or, per 100, 6*s.*, healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30*s.*; 5 to 6 feet, fine, 40*s.* per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30*s.* per 100; 10 to 12 feet, 50*s.* per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5*l.*; or 18*s.* per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50*s.*; or 9*s.* per dozen, own selection; mixed, 30*s.* per 100, or 6*s.* per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.

50 first-rate sorts, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.

50 do. purchaser's selection, 3*l.*; or 18*s.* per dozen.

ERICAS, 50 of the finest sorts grown, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.

" " purchaser's choice from list, 3*l.*; or 18*s.* per dozen.

CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21*s.*; or 15*s.* per dozen.

" " purchaser's choice, 1*l.* 5*s.*; or 18*s.* per dozen.

The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

SEEDS.

HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25*s.*; 50 fine for 15*s.*; 25 for 8*s.*, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.

CINERARIA, from the choicest sorts, per packet, 2*s.* 6*d.*

PANSY, do. do. do. 1*s.* 6*d.*

HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1*s.* 6*d.*

FRUIT TREES.

GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l.*, in 100 varieties; or 10*s.* per 100, in 50 varieties.

A selection of the choicest description for show, 4*s.* per doz.

The stock extends over 50,000, and is fine and free grown.

CURRANTS.—May's Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25*s.*; or per doz., 4*s.*

Black Naples, the finest black (no other sort grown), 12*s.* per 100, 2*s.* 6*d.* per doz.

Red Grape and Champagne, fine, 10*s.* per 100.

White Dutch, large and fine, 12*s.* per 100, 2*s.* per doz.

APPLES.—Fine clean Standards, 10*s* per doz., 70*s.* per 100.

" " Dwarfs, 8*s.* per doz., 50*s.* per 100.

" Dwarf trained superior kinds, 2*s.* 6*d.* each, or 24*s.* p. doz.

The collection is very choice, from the Horticultural Society.

PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.

PLUMS and CHERRIES.—All the leading sorts, standards, 18*s.* per doz.

" " Dwarfs, fine, 9*s.* per doz.

" " Dwarf trained, 3*s.* 6*d.* each, or 36*s.* per doz.

APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5*s.* each, 50*s.* per doz.

RASPBERRIES.—Fastolff, 3*s.* per doz., 16*s.* per 100.

" Antwerp Red, 2*s.* per doz., 12*s.* per 100.

" Monthly, or Double-bearing, 12*s.* per 100, 2*s.* per doz.

STRAWBERRIES.—Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3*s.* 6*d.* per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to JOHN MAY, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

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GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

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HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
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| PACKED IN CRATES, for cutting up of the sizes as Manufactured :— | *s. d.* | *s. d.* | *s. d.* |
| 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| Or 20 " " 50 to 70 " ... ... ... ... ... ... ... ... ... ... | | | |
| IN SQUARES, cut to the sizes ordered :— | | | |
| Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 " 14 by 10 ... ... ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 " 1½ feet super., if the length does not exceed 20 inches ... ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. " 3 " or if above 20, and not above 30 inches long ... ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 " " 4 " " 20 " 30 " ... ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 " " 5 " " 30 " 35 " ... ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 " " 6 " " 35 " 40 " ... ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 " " 8 " " 40 " 45 " ... ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 " " 10 " " 45 " 55 " ... ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 " " 12 " " 55 " 70 " ... ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 " " 15 " " 70 " 85 " ... ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. | Ins. | Ins. | Ins. | *s.* | *d.* |
|---|---|---|---|---|---|
| 6 by 4 | and 6½ by 4½ | ... ... ... ... | | 10 | 6 |
| 7 by 5 | " 7½ by 5½ | ... ... ... ... | | 12 | 0 |
| 8 by 6 | " 8½ by 6½ | ... ... ... ... | | 13 | 0 |
| 9 by 7 | " 9½ by 7½ | and 10 by 8 ... ... | | 15 | 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d.*; 3-16*ths*, 9*d.*; ¼ *inch*, 1*s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs.*

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

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THOMAS HANDASYDE, Glen Nurseries, Musselburgh, by Edinburgh, begs to intimate that he has now fine plants of his new Seedling PANSY, Maid of Athens, ready for sending out, at 5*s.* each. The Gardeners' Gazette of the 19th July gave the following description :—"Pansies: *T. H. Musselburgh.* Your seedling came to hand in good condition; upper petals rich purple, of velvet-like consistency, lower ditto broadly margined with the same; centre pretty straw colour, shaded with ultra-marine from the margin; blotch, same tint, veined with black; eye, bright gold; brow white, well raised, and finely arched; size desirable, and shape good." Also,

HANDASYDE'S PANSY Duke of Perth, per doz. 18*s.* 0*d.*

" Merry Monarch, do. ... 18 0

With all the leading show flowers of the season, of which Catalogues may be had. Fruit, Forest, and Ornamental Trees, with many of the more rare Coniferæ, Evergreens, and deciduous flowering Shrubs; Roses, Carnations, Pinks, Hollyhocks, Phloxes, Fuchsias, &c.

Garden Seeds for early sowing. Orders respectfully solicited.

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GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

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| 6 inches | by 4 | and 6½ | by 4½ | ... ... ... | 13*s.* | 0*d.* |
| 7 " | 5 | and 7½ | by 5½ | ... ... ... | 15 | 0 |
| 8 " | 5 | and 8 | by 5½ | ... ... ... | 15 | 0 |
| 8 " | 6 | and 8½ | by 6½ | ... ... ... | 17 | 6 |
| 9 " | 7 | and 10 | by 8 | ... ... ... | 20 | 0 |
| 12 " | 10 | and 13 | by 9 | ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

In sizes under 15 inches ..... 6*d.* per foot.

" " 35 " ..... 8*d.* "

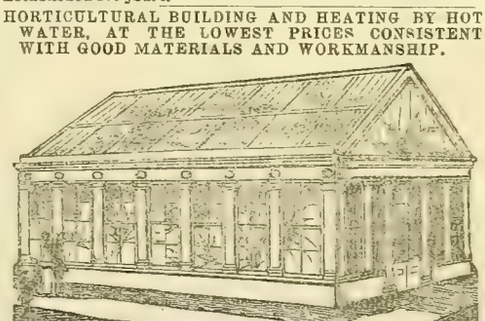
" " 50 " ..... 9½*d.* "

" " 75 " ..... 12*d.* "

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

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GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1½ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.

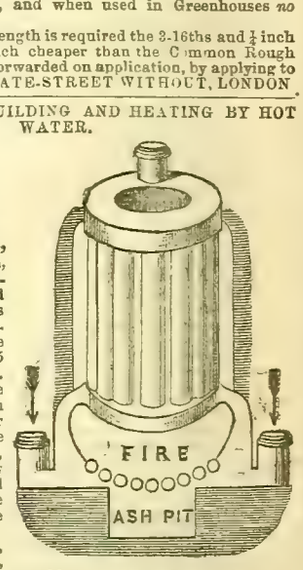
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WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER.




J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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WARMING AND VENTILATING.

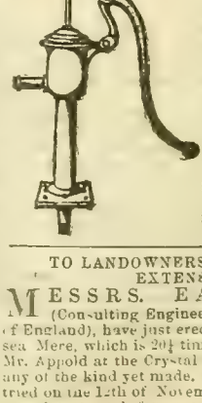
D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

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ENGLISH TIMBER cut to any length and scantling at from 2*s.* 4*d.* to 3*s.* per foot for Oak or Ash, 1*s.* and upwards for Elm; Oak Sash Sills from 2½*d.* per foot; Foreign Timber, Dantzic, at 55*s.* per load; Yellow Deals from 3*d.* per foot; Floor Boards, ⅞ in. and 1 in., yellow batten, at 12*s.* 6*d.* and 15*s.* All other descriptions equally low.—Apply to Mr. MAY, 90, Leadenhall-street, London.

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FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0

Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London. Every description of Machinery for Raising Water, Fire Engines, &c. The usual allowance to the Trade.

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TO LANDOWNERS AND AGRICULTURISTS.

EXTENSIVE DRAINAGE.

MESSRS. EASTON AND AMOS (Consulting Engineers to the Royal Agricultural Society of England), have just erected an APPOLD PUMP at Whittlesea Mere, which is 20½ times larger than the one exhibited by Mr. Appold at the Crystal Palace, and five times larger than any of the kind yet made. This powerful pump was publicly tried on the 12th of November, in the presence of the landed proprietors and farmers of the county, assisted by several scientific gentlemen, and at various lifts from 1 to 10 feet. At two to three feet, it raised 101 tons of water per minute (which would cover an acre of land one inch deep); and at five feet, it raised 75 tons per minute.—Grove, Southwark.

HOME GROWN SEEDS, CARRIAGE FREE.—The great advantages of purchasing SEEDS OF THE GROWERS are the *superior germinating quality, trueness to the sorts, and economy of price.* These advantages have now been afforded by us to *retail* as well as wholesale purchasers for several years, and are fully appreciated by the public, as is shown by the numerous recommendations we are receiving from our customers in all parts of the Kingdom.

*We have now the pleasure of announcing that our New Seeds are all harvested and arranged for delivery, and respectfully solicit early orders, which will have the preference of scarce sorts.*

Catalogues may be had on remitting two postage stamps.—Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

NEW ARAUCARIA, "ARAUCARIA COOKII."—This extremely rare species, just introduced for the first time from New Caledonia, is described in the last Number of the "Journal of the Horticultural Society," by Dr. Lindley. The stock consists of only a very few plants from seed, 6 to 9 inches high, and quite healthy. Ten guineas each.

NEW HARDY SHRUB—NEILLIA THYRSIFLORA, a native of Nepal; grows about 6 feet high, producing beautiful white flowers 10*s.* 6*d.* each.

AMYGDALUS PERSICA, *sanguinea plena*, double crimson peach, from China, quite hardy. Dr. Lindley, in describing it, says, "It is a very fine and handsome plant." Three guineas each.

AMYGDALUS PERSICA, *alba plena*, double white Peach, from China. This and the above are exceedingly ornamental plants, either in the open ground or in pots, constituting handsome objects for winter and spring decoration in the conservatory. Three guineas each.

R. GLENDINNING, Chiswick Nursery, near London.

HYACINTHS AND OTHER DUTCH ROOTS *now on Sale at RENDLE'S Nursery and Seed Establishment, Plymouth, at Reduced Prices; a Descriptive Catalogue of which can be had in exchange for one penny stamp.*

All orders above 2*l.* pre-paid to any Station on the South Devon, Bristol and Exeter, or Great Western Railways.

WILLIAM E. RENDLE and Co., Florists to her Majesty, Plymouth.

*** Our Descriptive Catalogue will be found useful, as it contains some good cultural advice.

MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1*s.* 3*d.* per lb.; any quantity under 10 lbs. will be charged 2*s.* per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter.* An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7*s.* 6*d.*
Extra ditto, with flowering buds ... ... 10 6
Usual discount to the Trade.
Clapton Nursery, London, Nov. 29.

**The Gardeners' Chronicle.**
*SATURDAY, NOVEMBER* 29, 1851.

MEETINGS FOR THE ENSUING WEEK.

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| MONDAY, | Dec. | 1 | Royal (Anniversary) | 4 P.M. |
| | | | Entomological | 8 P.M. |
| | | | Chemical | 8 P.M. |
| | | | British Architects | 8 P.M. |
| TUESDAY, | — | 2 | Horticultural | 2 P.M. |
| | | | Linnean | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| WEDNESDAY, | — | 3 | Society of Arts (Anniversary) | 8 P.M. |
| | | | Geological | 8 P.M. |
| THURSDAY, | — | 4 | National Floricultural | 2 P.M. |
| | | | Zoological | 3 P.M. |
| | | | Antiquarian | 8 P.M. |
| SATURDAY, | — | 6 | Royal Botanic | 3 P.M. |
| | | | Medical | 8 P.M. |

TILL SIR JOSEPH PAXTON* proposed his Crystal Palace, little had been done in the application of glass to garden structures, beyond what had been in practice for half a century. The repeal of the Excise duties had enormously increased the consumption of glass, and had caused its quality to be materially improved, but had led to no novelty of application. The combination of wood and iron, which was so happily hit upon in Hyde Park, has, however, now suggested to Mr. CHARLES EWING, gardener to O. F. MEYRICK, Esq., of Bodorgan, in Anglesea, the idea of constructing garden-walls also of glass and iron only. The plan is to have iron uprights firmly fixed into the ground, and faced with glass on both sides, the space between the two faces being occupied by trees planted and trained in the usual way. The glass is all moveable, so that perfect ventilation, as well as perfect shelter, is secured.

We hope to be able next week to give full details concerning this novel mode of construction, which seems likely to cause a complete revolution in the manner of managing plants under glass, provided, as we understand to be the case, the price at which the glass walls can be put up is less than that of common brick walls. Models of the walls will be exhibited next Tuesday, at the meeting of the Horticultural Society, in Regent-street, on which occasion an explanation will be offered of the peculiarities of Mr. EWING'S plan, and, we believe, some estimate of the actual cost. The Horticultural Society and several private persons have determined upon making immediate trial of the plan, so that we shall not have to wait long for results.

THE undoubted excellence of some of the articles exhibited in the United States' division of the Crystal Palace, seems to have led people to imagine that everything from the other side the Atlantic must deserve attention. We regret our inability to confirm this notion; but truth obliges us to declare that North America is as fertile in rubbish as the mother country itself. From this judgment we cannot except the beehives, which one of our correspondents has imagined to be superior to all others.

It is perfectly true that a hive and live bees were exhibited in the American department, and were said to have been brought across the Atlantic. They were shown in one of the worst sort of wooden hives—a collateral one of three square boxes, somewhat on the plan of NUTT'S. The centre or stock-box was full of very old comb, with a few bees in a weak state; the left-hand box was empty, except a few dead bees; the right-hand box (which alone had the communication between it and the stock box open) contained a small quantity of comb. On the top of the centre box was placed another square box, containing fine comb and honey of good colour; but there was no communication open between it and the stock, and it appeared to have been put there only for effect. When we first visited this hive the stock was in a very weak state; on attempting again to examine it, later in the season, the hive was so closed that we were unable to get at it; but judging from the bees as seen from the outside of the building, the stock still appeared to be no better.

Since the close of the Exhibition, we have noticed another hive in the American department, not included in the Official Catalogue, and not observed by us during the time the Exhibition was open. It is a square box of wood, 13 inches square, and 11 inches deep, inside measure; has two strong bars across the middle, with the intention of supporting the combs; above this box, which is intended for the stock hive, are two long boxes with glass ends; these are covered with a box similar in shape, but rather smaller than the stock hive. This hive is slightly made of $\frac{3}{4}$ inch boards, is badly contrived, and is ill adapted to the requirement of bees.

There were also two hives of American origin exhibited in the agricultural department, and such as no experienced bee-master would have thought of using: nevertheless one if not both had been tried under high patronage, and had signally failed.

It is not a little curious that although the extremes of temperature are much greater in the United States than in England, yet, neither of the three last hives were of substance or materials to resist even the changes of temperature experienced in our own country.

It is clear, then, that North America has contributed nothing to the apiarian. It would seem, indeed, that in the United States, as in this country, the last thing which inventors think of, is the nature of the insect for which they have to provide. We may as well, therefore, take this opportunity of pointing out what we conceive to be the fundamental principles by which bee-keepers ought to be guided, in the choice of a place for their hives, and to which all else is subordinate, except the structure of the hive itself, to which we shall advert on a future occasion.

Any shed or other building will answer the purpose of an apiary, in which the following conditions can be secured. 1. Perfect shelter to the hives from the sun and wet. 2. A firm place in the ground, and so low in height as to be as much as possible under the wind, and yet to admit of the hives being placed from 15 to 20 inches from the ground. 3. Free access to the *back* of the hives, with an aspect avoiding the morning and mid-day sun, but placed towards its setting. 4. The sides and back, if enclosed, not to be fitted so close as to prevent a free circulation of the air at all times around the outside of the hives; the door or shutters to be so contrived that they can be opened or shut without the least disturbance to the bees by jarring or grating. 5. Freedom from all rustic or other ornament that can harbour spiders or other enemies. 6. A place where the bees are as little exposed as possible to disturbance of any kind, more particularly in front of the hives. 7. Not to be placed on Grass, but to have sand or fine gravel beneath it, extending to at least a yard in front.

A very convenient bee-house may be made as follows: six uprights of $2\frac{1}{2}$ inch quartering, placed three in front and three at the back, the back ones about 8 or 10 inches higher than the front, with a space between the front and the back ones rather wider than the hives, about 20 inches, the two middle ones placed so as to admit two hives with a space of about 3 inches between the hive boards on each side of them. This will make two spaces between the three uprights of about 40 inches each; about 15 inches from the ground the six uprights should be framed together. This frame will be the support for the hive-boards; between this frame and the frame of the roof, height should be allowed for the hives, their boards, and the covers of the glasses, leaving also sufficient room for removing these covers from the glasses without disturbing them. This will be about 20 inches for the front uprights from the lower frame, and 28 or 30 for the back ones. The roof should be framed on the top of the uprights, slanting from back to the front, and projecting over the front uprights about 12 inches; this may be thatched with straw or reeds, or covered with feather-edge boards: reeds are the best. It may have doors hung, or loose shutters fastened with buttons for the ends and back. These should not reach the roof by about 2 inches, so as to let the air pass freely under it. When all is framed together, the lower part of the uprights should be placed in the ground 8 or 9 inches deep and well rammed in; the uprights will have been left long enough for this purpose in addition to the 15 inches. It should then have three coats of paint, finished stone colour, and will be ready to receive old stocks next February, or new hives and swarms in the next season. Such an apiary will contain four hives, as many as should ever be allowed in close proximity; but it may be repeated at short distances in the garden as frequently as may be required. *Y.*

WEEDS.—No. I.

THIS is a subject of much interest, equally to the proprietor of a large estate, the occupier of a suburban villa, and the humble citizen, or labourer who cultivates his plot of allotment ground.

Weeds are to all the bane of cultivation, adapting themselves to every variety of soil, situation, and circumstances. Poor and barren soils produce their peculiar weeds; while rich and highly cultivated ground is favourable to the growth of a formidable host of these pests. Even the hardest rocks and walls produce them, and they seem to be fitting instruments for the fulfilment of the curse imposed on fallen man, that he should eat bread by "the sweat of his brow."

The pleasures of cultivating a garden have been in all ages extolled and descanted upon by the "wisest of men." They, too, have been sung by our poets, but alas! for human happiness! they are not unalloyed; weeds will spring up and choke the finest flowers; our gayest, sweetest friends, are oft nurtured with a Nettle in their hearts.

Weeds are the most constant, the most enduring of "forget-me-nots." They follow us in the first bright days of spring and the heats of summer; they attend us in the declining days of autumn, and are not wanting when winter spreads his icy mantle over the face of Nature; they grow in the tropical climates of our stoves, and flourish around our ice-houses. From whence do they come?

In the course of my experience as a gardener, I have not unfrequently met with persons who have thought that weeds are produced by some mysterious agency. I have heard it said, that certain land was subject to such and such weeds and always would be—true enough! because the weeds were allowed to seed, year after year.

When we remember that all weeds, in addition to their facilities for propagation, by division of the roots or creeping stems, are endowed with the power of reproduction by seed to an almost unlimited extent, the importance of getting rid of them in their infancy must be obvious; the labour of doing this may at first be considerable, but it will be the forerunner of a sound, sensible, and permanent economy, if persisted in for a few years.

It does not appear to me that true economy consists in letting the surfaces of the ground become covered with weeds and moss, and then using expensive applications to destroy them; but rather in steady and uniform perseverance in thinning the ranks of the enemy, giving no quarter. It is an old adage that,

"One year's seeding
Makes seven years' weeding."

Also that,

"One year's good weeding
Will prevent seeding."

I can vouch for the truth of this old distich from practical experience, having fully tested the truth of it; and the recommendation of Dr. Lindley, in answer to a correspondent, "that there is nothing like hand labour," exemplified by a boy "at half-a-crown a week," is in my humble opinion most correct.

Many persons may object to this on the score of not having sufficient hands to do it. But be it remembered, that although a reduction of necessary labour may effect a temporary saving and negligence of the "bits of Groundsel," the day of retribution will certainly

* It may be interesting to many of our readers to know that at last we have a good likeness of this gentleman, executed in lithography, after a Daguerreotype by Mr. KILBURN, of Regent-street. Nothing can more faithfully represent the fine and thoughtful features of the original, than this admirable drawing by Mr LYNCH. It is published by HERING and REMINGTON, of Regent-street.

come; and even the next generation may lament the effects of "one year's seeding."

It is purposed in this paper to treat firstly of the weeds which infest cultivated ground, as kitchen and flower gardens; secondly, those which disfigure lawns; and thirdly, those which daily "beset our paths."

*Weeds which infest cultivated Garden-ground.*—The most troublesome of this numerous tribe are the Groundsel, Chickweed, Shepherd's Purse, Bistort, Nettle, Couch Grass, Coltsfoot, Bindweed, Dead Nettle, Dandelion, Sow Thistle, and Docks.

The gardener, by his deeper system of cultivation, possesses an advantage over the farmer, for the annihilation of a crop of weeds, as all the above may be got rid of by deep trenching, say to a depth of 2½ feet, excepting that pest the Bindweed. Although the farmer can loosen and aerate to a considerable depth by the subsoil plough, he cannot bury the roots of perennial weeds at a sufficient depth to insure their destruction. His remedy, therefore, consists in the processes of fallowing, giving repeated harrowings, and the tedious operation of hand-picking.

To cleanse a foul and "well-seeded" garden, after having trenched down the surface, with its vegetation, let it be frequently cropped, digging and stirring the soil to various depths, to bring the latent seeds near enough to the surface to vegetate; and when they have done so, apply the hoe in their infancy from time to time. Let all crops be grown in drills, for the sake of facilitating the operation. If you can prevent it, do not allow weeds to go to seed in the hedges or fences, and never pass a "bit of Groundsel" but with a feeling of zealous indignation. Such a system will in a few years rid you (comparatively) of weeds. I have pursued the course I recommend for some years, and my labour for destroying weeds is not a tenth part of what it was. There never was a fouler garden than I found it, and I believe there are few now where weeds are scarcer. "Vincit omnia labor" is truly applicable to this result.

While upon the subject it may be well to mention, that for a light crop of weeds the newly-invented hoe, or the blade of an old knife, makes one of the best tools for use. This is not mere theory, but was first noticed to me by Mr. Myatt, of Manor Farm, Deptford, whose reputation as a market gardener needs no comment from me.

The danger of procrastination has not any more apt illustration than the evil consequences which result from neglecting a crop of weeds, because they are only small ones—mere "bits." We should ever bear in mind how they deprive our crops of the fertilising matters which we may, at considerable expense, have deposited in the soil, and at no period are they so exhausting as when the flowers are developed, and the seeds forming. When in this state they choke and destroy, and fail not to leave behind them unmistakeable evidence that we have not yet learned to act upon the advice of our immortal poet, who says—

"Be wise to day,
'Tis madness to defer."

*H. Bailey, C.M.H.S., Nuncham, Oxford.*

## BRITISH SONG BIRDS.

(Cage Birds, No. 40.)

No. LVI.—We have very successfully travelled thus far, on our journey of inquiry into the "universal Law of Nature;" and we were not wrong in believing that fair argument, urged in a kindly tone, would give us a peaceable hearing from those who felt really interested in arriving at the truth. We will now at once resume the thread of our discourse; having, for the time at least, silenced those few quibblers who imagined they knew better than our old writers, and men possessed of more experience than themselves, "what was what."

The more closely we pursue our observations, and regard the operations of Nature in her handiwork, the more food shall we have for reflection as well as admiration. Every creature, it is evident, was sent into this world for the purpose of self-enjoyment, as well as for the benefit of mankind; and thus we find them "gifted," each with a talent peculiar to themselves. Hence, they can converse together, act together, plan together, live together; and establish a code of laws which their various societies are, one and all, bound to respect and to obey. "What less," asks Derham, "than a good, a supreme intelligence, could thus endow irrational animals with such various *instincts*, equivalent *in their special way* (here is 'a distinction with a difference') to reason itself? Insomuch that some from thence have absolutely concluded that these creatures have some glimmerings of reason. But," adds he, "it is *manifestly* Instinct, *not* Reason they act by; *because we find no varying.* Every species doth naturally pursue, *at all times, the same way* (our *own* argument), without any tutorage or learning. Whereas Reason, *without instruction*, would OFTEN vary; and do that by *many* methods, which Instinct doth by *one* alone." Considering this point settled so far, we will now address ourselves to a most interesting branch of our subject,—the grand end for which our friends, the birds, were brought into the world; and first let us consider *how* they lead forth their family, when ready to quit the nest. Much profitable instruction lies concealed beneath.

That Nature implants "obedience"—a quality in which most of the children of mankind are sadly deficient—in young birds, is self-evident on such remarkable occasions as these. Fortunately, it is not many weeks since I myself witnessed a case of the kind; I can, therefore, speak boldly to the point. A little wren (Troglodytes vulgaris), who had built her nest—I say *her* nest, because I never could observe that her mate ever assisted in its formation—in a very snug corner under my aviary window, laid some eight or nine eggs, and hatched them all, save one. This one I found subsequently in the nest. It was not fecundated. I may add, that the nest was not more than four feet from the ground, but artfully built in the corner of a fluted pillar.

The cunning stratagems of this little creature to escape my eye, as I passed to and fro before her nest—I could not attend to my poultry without continually passing it—have often amused me. For a long time I pretended to know nothing about it, and whenever My Lady Artful has flown off, or rather slipped off at my approach, I have studiously avoided taking any notice of her. I always observed, however, on such occasions, that she would patiently wait until I was gone before she re-entered her dwelling; unless indeed I stayed in the vicinity unusually long; and then, my back being turned towards her, she would noiselessly glide in. It was not until her young were hatched, that I openly recognised her whereabouts. I hardly need tell my readers, that had this tiny creature been aware of my privity to her place of concealment when the eggs were first laid, she would have decamped. Her instinct would have told her there was an enemy to be avoided. The voice of Nature, however, when once the cares of incubation were over, and the cries of her children heard, caused her to brave *all* for their sakes, and to protect them at any hazard.

My first recognition of her ladyship—a day or two after her family were hatched, and my watchful eye as she flew hither and thither with spiders in her mouth, caused her some anxiety. She observed, however, that I never took any advantage of her; never attempted with undue curiosity to pry into her dwelling; and that I never offered her any cause of offence. This led very quickly to a degree of pleasing familiarity, which all who have studied the nature of birds can well understand. She was always glad to see me, listened with the sprightliest of motions to any tune that I might whistle, and really seemed pleased to show me a bunch of spiders that she had twisted between her mandibles. When my eye was fixed on the nest—then would she descend, feed her young, and immediately set out for a fresh supply. Her attentions were unremitting; her motherly care an example for all woman-kind.

As the children increased in bulk, I thought I would venture just to peep in at them. One morning, whilst so engaged, the anxious mother returned with a mouthfull of dainties. It is quite true that she exhibited no symptoms of fear whatever. On the contrary, she seemed well-pleased to find me admiring her offspring, who, I believe, numbered eight. It was a sweetly-pretty sight, to see how methodically they were all disposed in the nest; nor did they venture to move forward or backward. They were all-but ready to take wing. Three mornings subsequently, I found, at a very early hour, that the whole family had just bid good-bye to the nest for ever! They were all safe over-night; and on first missing them, I imagined that some cat had made them her prey. The nest, however, remained intact; and in it, the unfruitful egg before referred to.

My eyes were instantly turned upwards to the lofty Firs, skirting the bottom of my garden, and towering above the aviary. There, sure enough, were all the happy family, including the Mamma; and, on this occasion, the Papa also. It was the very first time I had seen him, although his voice was always audible, since the commencement of building the nest. Do let us pause one moment, to imagine what *must* have been cheerfully, patiently, and perfectly performed by the little mother—totally unassisted I believe by her mate from first to last! Here is something for us to reflect upon for a life-time.

But as Nature made nothing in vain, and has a design in all she does, I made accurate observation that whilst the maternal parent was refitting and recruiting, their Papa was the principal instructor of the children from the moment of their quitting their cradle. The whole family acted evidently in concert. I saw him early and late, teaching, feeding, and instructing them; and, not to be tedious, in some six weeks, or less, after their birth, they had arrived at comparative maturity.* Herein Nature's laws are provident. Her motto with the feathered tribe, is—"Bis *dat qui* Cito *dat.*" When the autumn has ended, Her work has been perfected. Her children have attained "their majority."

From what has been said of this one bird, a very fair judgment may be formed of the rest. One law prevails, one instinct impels, and Nature's uniform course of action is vindicated. Enough has now been adduced for our purpose, as connected with the common order of birds. Of those gifted with an increase of sagacity,—all, be it borne in mind, *needful* for the possessors,—we shall speak anon. Wonder and admiration await us at every turn; and every living creature we behold, the more carefully it is considered, the more do we marvel at its inherent excellence:—

"In some are found
Such teachable and apprehensive parts,
That Man's attainments in his own concerns,
Matched with *the expertness* of the brutes in theirs,
Are oft-times vanquished, and thrown far behind."

Who better than the poet Cowper himself, who penned these expressive lines, could bear us fully out in all that we have advanced? Who than he had more ample opportunities for tracing Nature in all her graceful and amiable footsteps? *William Kidd.*

* All the members of this diminutive but "Happy Family," are, I am pleased to say, still inmates of my garden—some one of them frequently paying us a friendly visit at the window, to share in our good cheer. Their approach is duly heralded by a "pet" canary, who, from within, sings loudly as they respectively make their appearance. We always get a song *in return* for favours granted.

## WINTER COVERING FOR HOTHOUSES.

The inhabitants of plant and fruit houses require for their healthy development, heat, air, light, and moisture. To provide such houses with the means of obtaining the necessary amount of these essential elements, every plan appears to have been brought into operation which the skill of the architect and cultivator combined could devise; and certainly hothouse building has arrived at a state approaching perfection. Yet, it seems to me that one important point is still neglected. While ample means are provided for obtaining heat, we seldom find any plan adopted for efficiently retaining it. A large quantity of warmth is absorbed by opaque walls and other surfaces of a properly glazed hothouse during a winter's day of bright sunshine. At that season, such a state of weather by day is usually followed by a cold frosty night, a clear sky; and in fact, by every circumstance favourable for the escape of the heat which was generated in the houses by the rays of the sun. Now the practice of the gardener (I must say generally, as it is not universally the case) is to find a substitute in fire-heat, instead of endeavouring to retain the more wholesome warmth afforded him by the sun. It must not be inferred that I wish to establish an idea that fire-heat ought to be dispensed with; but I am confident that if hothouses were provided with an external covering, which would in some measure prevent radiation, much less of that kind of heat would be needed; and for what are called greenhouses, principally furnished with Heaths and New Holland plants, it would be found necessary only to apply it in extreme cases.

"Whatever checks radiation from a body keeps it warmer." I am informed, on good authority, that a thermometer exposed to a clear sky has been proved to fall 7° lower than another within a few yards of it suspended under a cambric pocket handkerchief, all circumstances, with the exception of the handkerchief, being equal. Passing clouds, however slight, prevent radiation from the earth's surface. Clouds have two important offices to perform in regard to heat, namely, those of keeping the earth and its inhabitants warm in winter by preventing radiation, and cool in summer by shading from the burning rays of the sun. A covering acts upon a glass house, as respects heat, just as a cloud acts upon the earth. It is used by gardeners for shading, but in the case of preventing radiation it is generally neglected. The reason for this probably is, that if shading were neglected in summer, the evil would soon show itself, in the shape of burned leaves; whilst the injury arising from the non-application of winter covering is not so apparent, where the means of heating by fire are at command.

The objections which I have heard urged against covering are, its expense in the first place (balance the saving of fuel against this and see which way the scales will turn), its liability to be blown about, torn to pieces, and breaking glass, the inconvenience attending putting it on and taking it off, and its unsightly appearance when off. Now in these times when gardeners can invent and build "Crystal Palaces" of gigantic size, surely it is possible to contrive something for covering a glass house of any dimensions, that would be liable to none of these objections. Something cheap and elegant, that could be easily applied and removed, and when off, instead of having an untidy appearance, would be somewhat ornamental. *G. Buchan, Trentham.*

## Home Correspondence.

*Orchids for the Million.*—I think the Cœlogyne Wallichii will be soon grown as easily as a pot of Crocuses, and it may be brought into flower from October to January, and probably may be made to flower twice a year. All that is required is to grow it fast in heat—a hotbed, if the leaves are shaded from the sun, would be quite sufficient, and then to give the plant a long rest as soon as it has completed its growth. It propagates very freely, and is an abundant bloomer; the flowers last a long time. I suspect that four or five years hence this will be grown in the nurseries as common as Cyclamens, and other beautiful winter and early spring flowers. C. maculata, as at present cultivated, is not a free blooming plant; but as it is only the larger bulbs which produce blossoms, my gardener suggests that this plant should be grown in mould richer than that which is in general use with respect to these plants. *Dodman.*

*Victoria Regia.*—At this late period of the year it may be interesting to know that we have this day (Nov. 22), a beautiful flower on this queen of aquatics in our open heated pond, and that there is another bud which is on the eve of expanding. *J. Weeks and Co.*

*Disease in Cucumbers.*—Both these and Melons have been suffering here from a disease which has been common in this quarter for these last three years. In 1850 some Melons were subjected to microscopic examination, but nothing explanatory of the cause of the affection could be detected. No traces of fungi could be found, and therefore it was believed that some external influence must have been the cause of the evil. I was unable to satisfy myself, however, that this was the case; and, upon cutting up a Melon that was gathered at the same time as those previously examined, I found a greenish mould covering the gummy excrescence, and descending into the flesh of the fruit; and, judging from Mr. Graham's description, I believe the mould to be identical with that which he has dis-

covered on his Melons. I am of opinion, however, that this mould is the effect, and not the cause, of the disease; and I think that nothing like fungi being discovered in the diseased Melons first examined, tends to strengthen this opinion. The Melon I myself examined was cut from the same plant as those upon which no fungi could be found, and it appears to me that, being kept a little longer than the others, fungi had made their appearance. This induced me think that the fault lay at the root; not in the shape of disease, as the plants were luxuriantly healthy, but in the food they took up and assimilated. I was the more strengthened in this belief as a Cucumber, growing in a large pot of dry lime rubbish and leaf-mould, was free from disease. This year's experience, however, has proved that I was wrong; for Cucumbers that have been grown in the same material were this season, utterly worthless, from disease, and no application of any kind to the root (and many were tried) seemed to exercise any ameliorating influence. Finding this to be the case, I had recourse to sulphur, which certainly had a powerful effect; for, by its means, I have been able to cut good Cucumbers from plants from which, before I used the sulphur, I could not cut one that was not more or less diseased. I regret that the experiment was made too late in the season for any positive conclusions to be arrived at. But I would recommend a second trial of it. I applied it by filling the pit, in which the plants were, with the fumes from a hot flue, and by making a sort of paint of sulphur, lime, and clay, and using it round the walls of the pit. *John Middlemiss, Bentham Hill, Tonbridge Wells.*——I beg to inform "An Old Gardener," that in October, 1846, my plants were as badly, if not worse, diseased than I ever saw them. I dressed the frames as described at p. 694, the same month. In the first week in November, I made up my seed-bed, and in due time the seed was sown. I never had plants cleaner and more healthy through the winter; and in February, 1847, I cut fine fruit. So confident am I of success, if the means that I have used be strictly adhered to, that I no longer dread that once formidable enemy. I forgot to mention in my last that the flower-pots must be all washed in scalding water, before they are put into the frames, and the thermometer immersed in the same. *Thomas Webster, Shouldham Hall Gardens, Norfolk.*

*Tree Leaves.*—In addition to what has been stated by "An Old Gardener," at p. 741, I observed on the 20th instant, in driving along the road from Boston to Spalding, in Lincolnshire, that many of the trees retained their foliage after the severe frost of the preceding day; indeed the country had still the appearance of autumn, the plantations wearing their autumnal tints and the Quick hedges full of leaves. Several of the "oldest inhabitants" of the district allege that this will be a severe winter, in consequence of the reluctance of the trees to part with their clothing. *C. P., Boston.*

*New Strawberries.*—Mr. Bailey has suggested, at p. 740, an admirable scheme for testing new fruits, which is, that an association be formed to decide upon their merits—each kind to be sent for inspection at least twice in the course of each of two successive seasons. Thus far I agree with him. It is well known that a great many people get disappointed in regard to new fruits, which is principally owing to parties who advertise them being over anxious, and not giving themselves time to prove the quality of their productions. I do not, however, agree with Mr. Bailey in discarding so many magnificent varieties of Strawberries, most of which I have tested. I think that it is doing the raisers of such fruits great injustice. I will not say that the varieties which Mr. Bailey discards will not prove useless, if he oblige them to feed on what they really do not like. In most cases we find that both hybrid fruits and flowers require treatment different from their parents. What constitutes one variety of Strawberry may not constitute another—hence the difference in flavour, &c.; showing that unless you have the proper constituents proportionably in the soil it is impossible to arrive at perfection. The first two varieties (Mr. Cuthill's Black Prince and Kitley's Goliah) which Mr. Bailey speaks of as being useless with him, are really—I was going to say, the most useful to me. I will say conscientiously that there cannot be too much said in favour of them. When I first came in possession of Mr. Cuthill's Black Prince, I own that I was not over sanguine as to its merits, but after giving it a third trial I am quite satisfied about its being a valuable variety, both as a forcer and for the out-door quarter. The Goliah is worthy of its name, it is not only a fine large fruit, but with me it is also excellent in flavour; it is particularly good for forcing, being an excellent setter, and it ripens a little earlier than the British Queen. A few years ago we much wanted some seed varieties of Strawberries, and now we may say with confidence we have got them, so all that remains for us to do is to study their nature and wants. I am of opinion that we are not patient enough with our new fruits: I speak particularly with reference to the Strawberry. *J. M.*—Mr. Bailey's article upon the formation of a society for the censorship of new fruits, similar to the National Floricultural Society, merits attention. I have no doubt that such an association may yet be established, when the buyers of fruits will reap great advantage in not being imposed upon, by purchasing what they may have had in their possession years before, as in the case of the so-called Cuthill's Black Prince Strawberry, a variety deserving a far better name than that given to it by Mr. Bailey; but at the same time it is not new. I have known it for the last 15 or 16 years to be extensively cultivated by the market gardeners about Aberdeen, and others throughout the country; being as I understand raised by a market gardener here, and named Black Seedling, which name it still retains in this district. In Edinburgh, I believe it goes by the name of Malcolm's Seedling. So that here is an instance of the multiplicity of names, which ought to be all cut down to that first given it, viz., Black Seedling. Mr. Cuthill himself acknowledged some time ago, in an article in your columns, that it was given to him by a friend who had received it from Aberdeen. This, together with his description, led me to suspect it to be identical with the Black Seedling, and prevented me from purchasing it. I stated my opinion to several nurserymen, who mentioned that I ought to make it known, but this I always delayed, thinking some of the Aberdeen growers would do so who might know the raiser's name and its exact history, and it was only at the Tarriff Horticultural Society's Show, in July this year, when some of the fruit was exhibited by an amateur, who received his plants from England under the new name, that I was fully convinced that I was right. I may add that it possesses all the good qualities Mr. Cuthill has given it (except lateness, which I know nothing about) but it is an abundant bearer, of excellent quality either for table or preserve, and very early, if well cultivated. As yet I have seen nothing equal to it at the period in which it comes into use. *P. Farquhar, Aberdeenshire.*——The Black Prince is, I think, very unjustly condemned by Mr. Bailey. I have grown it the last four seasons, and consider it the best early Strawberry that we have, and it certainly is a most prodigious bearer. I never knew it fail. On the 14th of last June upwards of half a peck of fine fruit was gathered from a bed in my garden, containing only 37 plants—runners of the previous year. Of Goliah I know nothing, but I consider Myatt's Eleanor a splendid variety. It is certainly, when well grown, the handsomest Strawberry we have; and although rather acid, is a very fine flavoured fruit, and unequalled for preserving. *Henry Doubleday, Epping, November 26.* [We should think that these conflicting opinions indicate pretty clearly what degree of unanimity would be experienced in the proposed new society.]



PAMPAS GRASS (GYNERIUM ARGENTEUM).

*Pampas Grass* (*Gynerium argenteum*).—Amongst the many rare plants to be seen out of doors, at Dalkeith Palace Gardens, is a fine specimen of this Grass, which has been in flower all through the autumn. (See annexed woodcut.) To those who admire the beauty and elegance of Grasses when in bloom, the Pampas is well worth going two days' journey to see. Its rapid growth and elegant habit make it a very attractive and ornamental object for fringing the sides of lakes or rivers. The leaves grow in tussocks; and the large culms, which are 2 inches in circumference, rising from the root, being crowned with 2 feet or more of a panicle, of a fine silvery grey, give it a magnificent appearance. The panicle is in the form of that of the beautiful Arundo phragmites. This admirable Grass will be found to be a great acquisition to the ornamental Gramineæ of this country. *D., Dalkeith.*

*Mr. Ivory's Chrysanthemums* (see p. 742).—As I have seen Mr. Ivory's plants, I feel it to be my duty to bear testimony to their excellence, for they were truly magnificent, by far eclipsing any of the London growers' productions which I have had the pleasure of seeing. *John Patterson, gr. to the Baroness Wenman.*

*An Oak growing on a Beech.*—Having accidentally discovered the inclosed specimen of Beech and Oak leaves growing on the same tree, and, as you will observe, on the same twig, the circumstance being new in this part of England, at least to the men I employ, I will thank you to mention in your Notice to Correspondents whether it is common in any other country. *An Old Subscriber.* [Two small errors lurk here. Firstly, the plant is a Hornbeam, not a Beech-tree. Secondly, the "Oak" is not an Oak, but an accidental variation in the form of the leaves of the same Hornbeam, a circumstance with which naturalists are familiar.]

*Plane Tree Timber.*—A correspondent inquires, at page 725, as to the qualities of the wood of the Plane tree. At Bessingley, near Bridlington, in the East Riding of Yorkshire, are some book-cases and other furniture made out of the wood of a Plane tree that was

killed by a cold spring about 25 years ago, when, I believe, the Plane trees throughout England were very generally killed, or much injured. The wood that this furniture is made of is of a yellowish colour (more of a lemon yellow than the wood of the Maple), mottled here and there with brown, and without much figure. It has stood well, and has not hitherto, I believe, been attacked by worms. *C. W. Strickland, Tadcaster.*

*Hints to Persons making a Garden.*—A garden calculated to grow not only a variety of plants, but a variety of sorts of plants, ought to contain within itself rock, wood, and water, sand, loam, clay, and a surface undulating, or sloping in different directions, so as to give the greatest choice of aspect. These conditions do not necessarily require a large extent of ground, though space is, of course, desirable. It is also a great advantage when such requisites of situation are found naturally, and have not to be contrived and patched up by art. For classing and cultivating plants of particular countries, or of similar qualities together, each class in a soil and locality the most favourable to it, such a division of garden ground as is above pointed out is indispensable. Space will ultimately be economised by it, and the interest and utility of the garden greatly increased, whether the principle of the classification adopted be simply the constitutional nature of the plants,—as wood, rock, maritime, or desert plants ; or whether it be combined with a geographical distribution according to their native countries. The latter arrangement in large pleasure grounds and places where the climate admits of the culture of a wide range of species, might be adopted with success. We see commonly plants of all countries, Europe, Australia, China, America, and Africa, growing side by side indiscriminately ; memory would be assisted and science advanced by grouping them according to their respective natures or natural habitats. It is to be hoped that these hints may be followed up. *S.*

*Josling's St. Alban's Grape.*—In justice to Mr. Thompson, permit me to offer a few remarks on this Grape, which has been again brought into notice by Mr. Bailey. When it was first "let out" it had the advantage of a high commendation from Mr. T., which doubtlessly caused a greater sale for it than it would otherwise have had, from the fact that Mr. T. is justly regarded as the highest authority on fruits in this country. I believe that I was the first person who drew his attention to, and pointed out to him that I could see no difference between Josling's St. Alban's and the Chasselas Musqué. At the same time I sent Mr. T. fruit of each variety, and he unhesitatingly pronounced that he could see no distinction between them. Extraordinary, however, as the thing may appear, I observed from the same Vines a marked difference between the two sorts this last season, Josling's St. Alban's being by far the better Grape of the two : and I am not the only person who has observed the same thing this last season, when both varieties have been grown in the same house. I may add that two Vines of each variety grow in the same Vinery here, and I cannot account for such a marked distinction existing, unless the age of the Vines has something to do with it. Perhaps some of your correspondents can throw more light on the matter. *C. Ewing, Bodorgan, Anglesea, Nov.* 24.

*Rough Plate Glass.*—The invitation of your correspondent, "An Old Gardener," leads me to offer a few remarks on this subject, concurring as I do with him in the opinion that everything relating to that useful article (glass), must be of the greatest interest to the horticulturist. I would, however, premise that the question is not so much whether sheet glass is to be preferred to Hartley's rough plate glass (the only rough plate that I I am acquainted with), as which of all the several kinds of glass that have been used, or are now in use, will best answer the gardener's purpose. I believe that I am correct in saying, that many intelligent gardeners prefer crown to sheet glass, having tried both ; the reason for this may be, the one supposed by your correspondent, viz. :—that the sheet glass they used was of an inferior quality ; query, could this be the case at Bowood, (see Spencer's complaint) ? To mismanagement, or want of proper ventilation, the burning or scorching could scarcely in their case be attributed. Others, again, have tried the rough plate, and have found, that whilst it combines all the advantages of the crown and sheet glass, it seems to them to possess some which belong not to either of the two last named. Do you ask for proof of this ? my reply is—look at the plants which have been grown under rough plate glass. Had there been any deficiency of light, the Erica would have certainly discovered it during the long winter months ; the forced Strawberry would not have assumed so sturdy an appearance, or put on a livery so green : the Vine could not have produced leaves and wood, and fruit, which excited the admiration and commendation of practical and intelligent gardeners. Some of the many stove plants which have been transferred from sheet to rough plate would have doubtless proclaimed their sufferings, had they experienced any ; so far, however, from this being the case, the majority improved in appearance, and not one can be said to have exhibited suffering. It must then be allowed, that whatever theoretical disadvantage may be assumed, no practical one has yet been discovered in the substitution of rough-plate for sheet glass. It might be rash to to venture further than this, if the argument were only for victory's sake ; but as my object is to induce others to give the horticultural world the benefit of their opinions and experience, I shall proceed to state what I consider to be the peculiar advantage which rough-plate possesses over every other kind of glass, or, as least, over crown and sheet glass. We are all ready to allow with "An Old Gardener," "that we have none too much of that necessary auxiliary, light, to forcing in England." In this consists the peculiar advantage of rough plate. That necessary evil, shading, which must be resorted to in many cases where sheet glass is used, may be almost, I believe altogether dispensed with, except, perhaps, in the case of Orchids. Now, granted that a gardener be ever so attentive, and that the blind is run up whenever a cloud passes over, there are many bright days, sometimes even weeks, when the blind must be lending its protection for several continuous hours ; and if the sum of these be taken, it will be found that plants under rough plate have enjoyed a much larger proportion of light during the year than those under crown or sheet glass, accompanied with blinds ; unless it be received as an axiom that diffusion of light of necessity implies considerable diminution. This, however, I have endeavoured from facts to show cannot be the case, since plants the most susceptible to diminution of light seem to thrive as well under rough plate in the winter months as under sheet glass ; and here, I may ask, is it no advantage to have the benefit of this additional light and heat at a time when the plants are carrying on those processes which, in their own bright climes, they perfect, not under a blind, but under the fullest exposure to every ray of light and heat that can possibly reach them during the day ? One word as regards the condition of rough plate, after two years' use; if there be any change at all, it becomes to the eye somewhat more transparent. It has no greater affinity for dirt than any other glass, nor am I conscious of its possessing any disadvantage peculiar to itself. Like all other glass it will crack with frost, if the laps are not puttied : to neglect this is to commit a serious mistake. I do not remember to have seen a leaf scorched or burnt under this glass ; still I can conceive it possible that, by ingenious mismanagement, such a result might be arrived at. If any of your correspondents would favour us with their experience and opinions on the application, of glass, whether crown, sheet, or rough plate (without fire-heat), to Peach walls, and describe the mode of application, and the result, I feel sure that many of your readers would feel obliged, and none more so than myself. *H., Bristol.*——I can speak with some confidence of the merits of Hartley's rough plate, from a trial of one year. In September, 1850, I built a new house, and glazed it with Hartley's glass, and it has far exceeded my expectations. The light is gently diffused ; it never scorches, and requires no shading (no slight merit during the last hot summer), and the forced Strawberries in the spring ripened a fortnight earlier than those in an adjoining house, glazed with small sheet glass. I have since built another house this autumn, and glazed it with Hartley's glass, so satisfied am I with its excellence. I had almost forgotten to add, that its rough surface has no tendency to become dirty. My squares are 30 by 11, and I have now 800 feet of it erected. *J. J. C., Fair Oak.*—— The following is an extract from a letter of one of our customers who has used Hartley's rough-plate since 1849 :—"I am glad to say that I still more and more admire Hartley's rough plate glass, and have on all occasions recommended it ; many friends of mine have ordered it, and like it very much. I only wish I had used it for all my roofs. I have used it for all sorts of plants, raising seeds and cuttings, and find that it requires no shading whatever. It admits sufficient light and heat for all purposes, and I am convinced that the true Hartley's patent rough plate must give universal satisfaction." *J. Phillips and Co., Bishopsgate street.*

*Rhododendron Javanicum.*—This fine Rhododendron is now in flower at Killiow, near Truro. One spike has 15 flowers on it, of a beautiful bright orange. It is, I am told, the first plant of the kind that has blossomed in Cornwall. *Edward Randall.*

*What is Pruning ?*—This is a question which, in the discussions on that subject, has been little attended to. There are two operations on forest trees, very different in their principles and results, both of which usually pass under that name. The most common, which may more properly be termed "lopping," is the rude practice of cutting off branches large and small indiscriminately, to increase the length of the stem ; the other, which is properly "pruning," is the stopping or shortening gradually by successive annual amputations, such branches as are tending unduly to enlarge themselves ; and, by diverting the sap from the proper central leading stem, to form a spreading and unsightly head. This is an operation which, if commenced at an early period of its growth, and completed before the age of 20 years, cannot be injurious to the tree or derange its economy, like that of suddenly depriving it of large branches in a state of luxuriant growth. Some of the branches of 2 inches in diameter and under, treated in this manner, may be destined to be eventually removed when the flow of sap to them has been sufficiently deadened, and the stem of the tree sufficiently enlarged to render the wound relatively small. But in by far the greater number, probably 19 in 20, the branch, when sufficiently shortened by a clean diagonal or slanting cut, at a properly placed leading twig, is left to cicatrise and remain permanent. This operation is particularly suited to hedgerow and avenue trees, where elevated heads and clean elongated stems are important ; but may be occasionally useful in park trees, to stop an ambitious or unruly limb, and even, but there very sparingly, in plantation trees. If pruning be begun, however, as it ought to be, in the nursery, and the main growth of the plant directed to the central stem, the after pruning of trees will be rarely and sparingly required. The best season for pruning I conceive to be after midsummer, when the sap having been elaborated in the leaves is beginning to descend and be distributed for the material of next year's growth ; and when the vital economy of the plant will be least deranged by the operation. The results of pruning performed on this plan, I have found very satisfactory, and the most unpromising and unsightly heads gradually brought in a few years into a symmetrical form, without any perceptible checks to the luxuriant growth of the tree. When the wound is one inch or more in diameter, a little boiled tar or Fleming's paint laid on with a brush, will prevent the growth of Moss or fungus until closed. No doubt the new wood formed over the wound does not unite with it ; but this is of little consequence when the wound is small, and in avenue or park trees, cultivated rather for ornament than for timber ; and I think the operation performed on the system now advocated, does not deserve the hard terms in which "pruning forest trees" is spoken of by some of your correspondents. It is proper to state that different trees require different degrees of pruning. The Lime and Horse Chestnut may be pruned pretty freely without injury ; next to these, the Ash and Beech ; then the Elm and Sycamore ; the Oak requires milder treatment, the amputation of the two or three last annual shoots of a branch will sensibly check its growth ; the Birch bears pruning least of any, and should rarely be touched. *J. S. H., Perthshire.* [Our correspondent understands this subject as we do, and he will see by referring to various leading articles published in our columns, that when we have exclaimed "Prune not at all," it has always been with reference to the barbarous process of hacking and lopping.]

*A Destructive Snow Storm* has lately occurred in this part of Norfolk. On the 18th inst. the grounds were strewed with branches and limbs of trees, many of them being of great size, and the damage done in the pleasure grounds is great. Amongst timber trees, Oaks have been the principal sufferers, and it is distressing to see so many fine trees which have long been admired for their size and beauty, so ruthlessly shorn of their fair proportions. The storm commenced on the night of the 16th. At half-past 10 the thermometer stood at 34°, the wind being north-west. It was squally occasionally through the night, gleams of lightning being seen, with sleet and snow falling, according to the varying of the temperature. At mid-day, on the 17th, the snow was 9 inches deep ; about that time the havock among the trees began ; the cracking and occasional falling of branches gave warning that it was unsafe to pass beneath them, and this morning (the 18th), a doe was killed by one of these falling limbs. Many of the smaller ornamental trees have been laid prostrate with the snow. The damage done amongst the shrubs cannot yet be ascertained, but some of the larger evergreens have suffered severely, especially the Cypress tribe ; one fine red Cedar (Juniperus virginiana), a tree of great size, is almost completely destroyed, three large limbs having been torn off, one of which was some 3½ feet in circumference. The damage done in the open park is much less than that in the pleasure grounds and shrubberies, where it is more sheltered. Previously to the storm the trees were drenched with moisture, and many of the Oaks were covered with leaves, which may account for the greater destruction among them. From the fall of sleet and snow, and the temperature varying but little from 34°, an enormous weight of snow and ice adhered to the trees ; and such being the case, it is not surprising that many should have been laden beyond their powers of resistance, and that results such as I have described should have taken place. The loss of valuable property here by the occurrence is considerable ; several fine Oaks are so much disfigured that it will be necessary to take them down. *Thomas Elliott, Elmham Hall Gardens, Norfolk.*

*Potatoes in Perthshire.*—The disease has touched the crop more lightly here than in most places reported. In my farm, in gathering and subsequent turning and picking, about four bolls out of 80, or five per cent. of diseased tubers were found. The report in the *Gardeners' Chronicle* of an experiment last year with diseased sets, induced me to give it a trial on a small scale. The produce (which I preserve for seed next year) was about 3 bushels, out of which only 10 diseased tubers appeared. *J. S. H., Perthshire.*

*Ice Stacks.*—I observe that you have given an extract from Dickens's "Household Words" on stacking ice ; and as the subject is particularly interesting at this season, I beg to ask if any one can explain the cause of failure in an attempt to preserve ice in the following way :—In December, 1849, I obtained permission from my employer to make an ice-house, the general plan of which was furnished by the *Gardeners' Chronicle* some years ago. A spot was selected where the ground was somewhat sloping, and a circle marked out 14 feet in diameter, in which were placed upright posts 5 feet high, and at the distance of 2 feet apart ; at 2 feet within this was placed another circle of strong stakes, the space between which and the posts was then carefully filled up with straw, and the whole firmly bound together, thus forming a circular straw wall 2 feet thick ; a layer of small roots was then placed on the ground inside, and on these a layer of straw 9 inches thick ; 20 cart-loads of excellent ice were then put in, well broken and rammed down, and the whole was covered with a thick coat of straw. The roof was then put on : strong rafters were nailed on to the outside posts joining together in a point at the top, and thatched with straw 18 inches thick ; the whole was done in so substantial a manner that the house is standing now, as

sound as ever, and so confident was I of success, that I could have "laid my life" on the result. However, about the beginning of the following July, a hole was cut in the straw, and on entering, not a particle of ice was to be found. The only reason I can assign for the failure of this experiment is the want of a current of air passing over the ice, by means of which the superincumbent moist air might have been driven off. I am not one of those who deny every attempt at improving and simplifying matters connected with rural economy, but I cannot help thinking that there has been too much theorising on the subject in question. *E. J., Oxon.* [Do not you suspect that you have allowed air to reach your ice somehow ?]

*The Nightingale; "Can a 'Hen' Nightingale Sing?"*—Your well-meaning correspondent, "Ruricola," has, at page 741, raised a curious question; or more appropriately speaking, he has "found a mare's nest." With the laudable view of attempting to correct what he imagines to be 'an error,' *he* has advanced a sad error indeed; and one which cannot be too soon corrected. He harps upon the 'impossibility' of a *hen* nightingale 'singing!' Let me assure him (for it is a pity that such assertions should get abroad), that both I and several other nightingale-fanciers known to me, have had hen (love-sick) nightingales, caught early in the season, that have "sung" sweetly,—not indeed with the volubility of the male, for the formation of the larynx forbids of course such an extent of power; nor for any length of time. Let us, to speak within compass, say their occasional "songs" have lasted for some 10 days after they were caged. There are also *other* hen birds which 'sing.' For instance, young hen robins (early in the autumn), and hen canaries, are frequently heard to sing. It is true that their song—for 'song' it is, and *not* their 'call-note'—is necessarily small. If "Ruricola" will at his leisure refer to some of your earlier "Notices to Correspondents," he will therein find 'advice' asked on behalf of ailing canaries, which, "although 'hens,' yet *sing sweetly.*" *W. Kidd, New Road, Hammersmith, Nov.* 26.

## Societies.

Botanical of Edinburgh, *Nov.* 13.—The President, in taking the chair, alluded to the success which had attended the meetings of the Society during the bygone session, the increased zeal for botany among the members, and the numerous donations made to the Herbarium and Botanical Museum in Edinburgh. He urged on the members the desirableness of renewing their exertions this season, and he particularly invited the young members to record the observations which they made, and thus render them available for the purposes of science. He concluded his address by alluding to the deaths which had taken place among the members of the Society since last meeting, and in an especial manner referred to the labours of the late Dr. Neill, Mr. David Steuart, Dr. Bromfield, Mr. James Nicol, and Mr. James Cunningham. All of these gentlemen, in their different departments, had done much to forward the science of botany. Several donations to the Library and Herbarium were announced. The chairman exhibited a specimen of the fruit of Tomato, in which five separate succulent carpels were included within a single fruit, an appearance similar to what is frequently exhibited in the Orange. He also produced examples of Zostera nana, from the shore of the river Blyth, in Northumberland, which had been sent by Mr. Storey, of Newcastle, for the Society's Herbarium.—Mr. G. Lawson exhibited a fresh specimen of the immature fruit of Victoria Regia, grown in the Stove Aquarium at the Garden of the Royal Botanic Society of London, Regent's Park. The following papers were read.—1. *On the Gulf Weed (Sargassum bacciferum.)* By S. Mossman, Esq. 2. *On the Correspondence between the Angles formed by the Veins of the Leaves and those formed by the Branches of the Stem.* By Mr. William Mitchell, Edzell. Communicated by the Rev. Dr. M'Cosh. These, more especially the latter, being very long, will be given, as soon as room can be afforded them, in another part of this paper. 3. *On Fossil Woods from Antigua and Australia.* By R. Bryson, Esq.—Mr. Bryson exhibited examples of silicified woods from Antigua and Australia. The former being both exogenous and endogenous, while the latter were coniferous. Some of the specimens were about a foot in diameter, and were beautifully polished by Mr. Young. Mr. B. made some remarks on the process of silicification, and pointed out the difference of appearance presented by the woods. Some were completely opalised and hard throughout; others had portions either extenal or internal, which were less completely silicified, and in a friable state. In this latter state the Australian woods showed the coniferous structure, while the opalised forms did not show discs under the microscope.—Mr. Anderson showed several fossil leaves from the tertiary formation, belonging to dicotyledonous plants.—Mr. J. B. Davies produced the following specimens from Mr. Lawson, jun., who remarked, in a letter accompanying them, "I send a few novelties which may perhaps be interesting. Some new varieties of curiously-marked Kidney Beans from Portugal; Tea grown in Portugal; also Turmeric root; new Turnips and Radish from France, the white variety is the earliest I have ever heard of, being ready in three weeks, I understand; specimens of the Bromus Schraderi and canadensis, showing very abundant foliage at this season; this Grass has been long known to botanists, but there seems great difficulty in making our agricultural friends believe in its value; Isatis Indigotica, as employed in China for dyeing Tea."—Mr. Fortune remarked, that the Early Turnip was common in China, and had probably been imported into France, whence Mr. Lawson had obtained it.—Mr. Davies also exhibited specimens of Elymus hordeiformis affected with ergot, and a variety of Elymus canadensis with a branching spike of several heads.—Mr. Stark exhibited growing specimens of Portuguese plants, amongst which was a beautiful species of Linaria, apparently allied to L. supina or L. alpina, but with large flowers of a rich purple.—At the request of the President, Mr. Fortune gave some interesting information relative to the manufacture of Tea in China, and also in regard to the Tea plantations belonging to the East India Company, in the Himalaya.—D. Oliver, Esq., jun., was elected a Fellow, and six candidates were proposed for election at next meeting.

## FLORICULTURE.

*Glenny's Garden Almanac for* 1852. Cox, King William-street, Strand.

This, the thirteenth annual issue, opens with a modest preface, the text being "Good wine needs no bush." "Progress of Floriculture" begins that portion of the book with which our duty is most concerned; without entering into the discussion, we wish the progress of floriculture to be rapid; that some matters are to be set right, there can be no doubt; but it is best done by avoiding aught that may injure the cause we all advocate. There is a vigorous drilling of the Royal South London Floricultural Society's Committee, concluding with the assurance that "all is meant for the best." A strong and loyal defence is given of Dahlia "King." "Showing other people's Productions" is an appeal to men's feelings, written in the right spirit. New Dahlias, 15 in number, are enumerated; some of them have been already noticed in our columns. On the criticisms against the National Floricultural Society, it is not our intention to comment; we are not its director. Although, upon the whole, this Almanac ventures upon less than usual, yet it will be found serviceable to the inexperienced, and a good remembrancer for all. *J. E.*

Stoke Newington Chrysanthemum Exhibition, *Nov.* 20.—In our last we only recorded the names of the successful exhibitors, promising that a more extended report should follow; we, therefore, proceed to redeem our promise. Five years since Mr. James, Mr. Holmes, and some few friends, ventured the establishment of a flower show in "dreary dark November," a month especially unfavourable for such meetings; yet, in the face of numerous disadvantages, our Chrysanthemum friends had no fear, they knew the capabilities of the flower they had pledged to foster, they foresaw that a flower-loving public must appreciate even the effort made to dispel the gloom by which Nature's face at that time is surrounded. To such attention, therefore, our favourite flower, which cheats the winter of half its dreariness, owes much of its present perfection and beauty. The meeting, some account of which we are now about to give, far surpassed the sanguine expectations of even its most enthusiastic supporters; plants and cut blooms being all they could possibly have desired.

Class I. Single specimen plants, grown with one stem only: 1st, to Mr. Scruby, with Defiance; 2d, to Mr. Bundel, with Madame Cameron; 3d, to Mr. Elliott, with Pilot. These plants were truly examples of the very highest cultivation—from a single stem, some inches clear above the pot, the laterals had started; these again and again feathered, until as a whole, plants, some 4 to 5 feet high and 15 to 18 feet in circumference, were the result. They were amply furnished with foliage—plump, healthy, and vigorous. The flowers on the specimens could not have numbered less than 300, and of these there were scores fit for exhibition as single blooms, so that floral profusion had not detracted from individual quality. Specimens such as these placed side by side, had a charming effect—the first was white, the second reddish crimson, and the third a deep rose; these plants, with one or two duplicates, occupied a raised platform, filling one side of the room. Immediately in the front, but standing on the floor, were arranged four specimens for the prizes offered by Mr. Bird: these were contributed by Mr. Scruby; the sorts were Pilot, Vesta, Clustered Yellow, and Annie Salter. They were in 11-inch pots, and were capital specimens of good management.

Class II. Six pots of distinct varieties, size not exceeding 11 inches, there being no limit to the number of plants in a pot. Four collections responded to the invitation. They came from Messrs. Holmes, Elliott, Scruby, and James. All exhibited the application of much skill. Mr. Holmes and Mr. Elliott were placed equal first. Mr. Holmes's six plants were only some 2 to 3 feet high, while Mr. Elliott's were from 5 to 6 feet; both collections possessing, however, many qualifications which constitute perfect specimens—very healthy, clean, full, well flowered, and judiciously varied. Mr. Holmes staged Annie Salter, Queen of England, and Madame Cameron, as the back row, with Vesta, Pilot, and Defiance for the front. Mr. Elliott arranged Vesta, Madame Cameron, Annie Salter, Madame Poggi, Pilot, and Minerva; 3d, to Mr. Scruby, with Madame Cameron, Annie Salter, Defiance, Lucidum, Pilot, and Lysias; Mr. James produced Vesta, Madame Cameron, Defiance, General Negrier, Annie Salter, and Madame Poggi. These four collections occupied two sides of the room in double lines, and with the single specimens already alluded to, produced altogether a most charming effect. So admirably was each collection arranged, and so kindly did each exhibitor study his neighbour's interest, that we dare not allow the circumstance to pass unrecorded.

The cut flowers were ranged on two long tables; to the right the twenty-fours and sixes, to the left the twelves and sixes; and although there was little space to spare, each collection found ample room. The total number of collections staged for competition was 36, and when we state that in many instances the Metropolitan Dahlia stands were used, some idea may be formed of the *tout ensemble*. We can further add, that of the 500 blooms so exhibited, there were many whose circumference exceeded 20 inches; ye Dahlia growers, think of that! more than 6 inches in diameter.

Class III. embraced 24 cut blooms of not less than 12 distinct varieties, nor more than two blooms of any one variety. Mr. Taylor, who delivered a lecture on the culture of the Chrysanthemum for cut flowers, a full report of which is published at p. 151 of our present volume, justified the instructions he so ably advanced by receiving the first prize; his blooms were staged in three rows of eight, the varieties being Beauty, King, Campestroni, Queen of England, King, Goliath, Beauty, Queen of England, Racine, Phydias, Pio Nono, Defiance, Golden Clustered, Phydias, Defiance, Clustered Yellow, Formosum, Sydenham, Cyclops, Guillaume Tell, the Duke, Pio Nono, Plutus, and Sydenham; 2d, to Mr. Scruby, with Madame Chauvière, Beauty, Queen of England, Cloth of Gold, Madame Hardy, Orlando, Madame Hardy, Queen of England, The Duke, Pilot, Defiance, Madame Chauvière, Clustered Yellow, Pilot, Defiance, Orlando, Phidias, Annie Salter, Dupont de l'Eure, Annie Salter, The Duke, Dupont de l'Eure, Beauty, and Clustered Yellow; 3d, to E. Sanderson, Esq., with Queen of England, Pilot, Goliath, Clustered Yellow, King, Goliath, Beauty, Queen of England, King, Defiance, Cyclops, Imperial, Beauty, Sydenham, Phidias, Clustered Yellow, The Warden, Phydias, Temple of Solomon, Louis Napoleon, Vesta, Temple of Solomon, Vesta, and Lysias; 4th, to Mr Elliott, with Cloth of Gold, Pilot, Beauty, Queen of England, Pilot, Lucidum, Vesta, Queen of England, Rabelais, Orlando, The Duke, Beauty, Phidias, Annie Salter, Defiance, Princess Marie, Phydias, Defiance, The Duke, Rabelais, The Warden, Formosum, Dupont de l'Eure, and Annie Salter; 5th, to Mr. James, with The Warden, Queen of England, Clustered Yellow, King, The Warden, Campestroni, Queen of England, Lysias, Defiance, Sydenham, The Duke, Two-coloured Incurved, The Duke, Lysias, Beauty, Vesta, Nonpareil, Formosum, Christine, Vesta, Dupont de l'Eure, Formosum, Clustered Yellow, and Pio Nono; 6th, to Mr. Merry, with King, Queen of England, Goliath, Golden Clustered, King, Queen of England, Goliath, Golden Clustered, Beauty, Princess Marie, Gem, Phidias, Gem, Beauty, Jenny Lind, Dupont de l'Eure, Sydenham, Defiance, The Duke, Formosum, Dupont de l'Eure, Annie Salter, and Sydenham.

Class IV. Twelve cut blooms, distinct varieties: 1st, to Mr. Taylor, with Goliath, King, Beauty, —— (?). Phidias, Clustered Yellow, Queen of England, Formosum, Madame Laborde, Pio Nono, Duchesse d'Abrantes, and Defiance; 2d, to Mr. James, with Goliath, King, Queen of England, Lysias, Nonpareil, Clustered Yellow, Christine, Defiance, Vesta, Dupont de l'Eure, Formosum, and Sydenham; 3d, to Mr. Scruby, with Madame Chauvière, Princess Marie, Queen of England, Annie Salter, Pilot, Madame Hardy, Goliath, Orlando, Beauty, Clustered Yellow, Dupont de l'Eure, and The Duke; 4th, to Mr. Croxford, with Goliath, Pilot, Queen of England, King, Phidias, Beauty, The Warden, Clustered Yellow, Two-coloured Incurved, Sydenham, The Duke, and Dupont de l'Eure; 5th, to Mr. G. Smith, with Cloth of Gold, Madame Chauvière, King, Clustered Yellow, The Warden, Defiance, Guillaume Tell, Pilot, Phidias, Annie Salter, The Duke, and Princess Marie; 6th, to Mr. Biscoe, with Beauty, Defiance, King, Phidias, Cloth of Gold, Campestroni, Formosum, Madame Poggi, Vesta, Annie Salter, Sydenham, and Clustered Yellow; 7th, to Mr. Shield, with Pilot, Beauty, General Marceau, Cloth of Gold, Clustered Yellow, Zoé, King, Orion, Defiance, Phidias, Annie Salter, and The Duke.

Class V. Six cut blooms, distinct varieties: 1st, to E. Sanderson, Esq., with Goliath, Queen of England, Defiance, Beauty, The Duke, and Aristides; 2d, to Mr. Scruby, with Princess Marie, The Duke, Clustered Yellow, Goliath, Beauty, and Lysias; 3d, to Mr. Croxford, with Beauty, Queen of England, Pilot, King, Clustered Yellow, and Lysias; 4th, to Mr. Taylor, with King, Beauty, Clustered Yellow, Phydias, The Duke, and Defiance; 5th, to Mr. G. Smith, with Campestronii, Christine, Defiance, Golden Clustered, Queen of England, and Vesta; 6th, to Mr. Biscoe, with Lysias, The Warden, Beauty, Phydias, Goliath, and Dupont de l'Eure; 7th, to Mr. Callaghan, with Beauty, Cyclops, King, The Duke, Phidias, and Formosum; 8th, to C. P. Lochner, Esq., with Christine, Orlando, Queen of England, The Duke, The Warden, and Golden Clustered.

Class VI. Six cut blooms, distinct varieties, competed for by members who had never taken a prize for cut blooms: 1st, to Mr. Hutton, with Formosum, Queen of England, Beauty, The Duke, Golden Clustered, and Defiance; 2d, to Mr. Shield, with Annie Salter, King, Beauty, The Duke, Clustered Yellow, and Formosum; 3d, to Mr. Williams, with Orlando, Cloth of Gold, Beauty, Campestrouii, Sydenham, and The Duke; 4th, to Mr. Aldridge, with Madame Chauvière, King, Annie Salter, Phidias, Queen of England, and Formosum. Extra prize offered by Mr. James for four distinct Anemone flowered varieties: 1st, to Mr. Taylor, with Marguerite d'Anjou, Gluck, Fleur de Marie, and Madame de Godereau; 2d, to Mr. G. Smith.

For 6 plants of Pompons: 1st, to Mr. Taylor; 2d, to Mr. James. Collections not for competition were contributed by Messrs. Chandler, Wandsworth, and by Mr. Salter, Hammersmith; the latter bringing all Pompons. The most distinct were, Piquillo, Nanette, Cybèle, Pouledetto, Golden Drop, Circé, Criterion, Asmodie, Sacramento, Solfaterre, and Marie Vougel. Mr. Batten was also a contributor.

Having now finished our report, we will take this opportunity of announcing that a five guinea Silver Cup is offered for six plants at the show in 1852. This is the gift of an officer of the Society. This induced another offer of a five guinea Cup for 24 blooms at the same show, by Mr. James, the treasurer. Both these prizes are to be in lieu of the Society's money prizes, whereby its funds will be spared some few guineas. Other Silver Cups are in contemplation. Further, Mr. Salter signified his intention of offering prizes for new flowers. The inducements, therefore, in the year 1852 will be great. The receipts at the door this year amounted to over 40*l.*, and this for one flower! On account of so liberal a return the prizes were of greater value than any hitherto awarded. It is but just to state that during the evening every claimant was fully paid. We have only to add that at the dinner at the Rochester Castle in the evening, where we had the honour of presiding, the greatest harmony prevailed, and that there was a full meeting. *J. E.*

Edinburgh: *C T.* We could scarcely believe its insignificance. Your jottings will be acceptable. *J. E.—R S.* Many thanks for the enumeration. *J. E.*

Gladioli: *J Speed.* The following we know to be good, and are, we believe, in the trade; not so those produced and rewarded at the National Floricultural Society, which remain, so far as we know, in private hands—the raisers': *Ramosus Tribe*—Ramosus, Dr. Lindley, General Cavaignac, General Van Welden, Insignis, Oscar, Prince Albert, Queen Victoria, Sir Robert Peel, Van Gagern, Vitellinus, Wilhelmus, Magnificus, and Rosa Mundi. *Gandavensis and Floribundus Tribe*—Gandavensis, G. amabilis, G. splendens, G. Duc d'Ursel, Psittacinus sanguineus, Brenchleyensis, Viridis, and Ne plus ultra. *J. E.*

Illustrations: *W H, Hackney.* The Plates for February, Part 13, were—Grapes, Ericas, Heliotrope (Gem), and Billbergia Moreliana. *J. E.*

Old Hotbeds. Most valuable for top-dressing in early summer; protection from excessive wet is desirable; if frozen through, it is improved. *J. E.*

Report: *J I C.* Highly important, and in strictest confidence. *J. E.*

## Miscellaneous.

*Dr. Planchon* has been appointed Professor of Botany in the Medical School of Nancy. *Garten Zeitung.*

*The Potato Disease.*—Of the atmospheric influences of bye-gone ages, we have no other record than is afforded in the remains of the animals of that period. These mostly possessed a powerful crushing or masticating apparatus, which enabled them to subsist on branches of trees; whilst in those of later date may be traced characters progressively partaking of the nature of the present class, which feed almost entirely on food of a nitrogenous property. The vegetable kingdom may, therefore, be supposed to have undergone a change calculated to produce these results; and it is within our remembrance that, when a boy, in Devon, the nature of the Potato was totally different to the root now raised

there—it having almost lost its mealy character; whilst grain and all other plants of a nitrogenous kind have increased in quality in a corresponding ratio. That this change is referable to some cause is beyond doubt; and we think that its demonstration is both simple and easy. On the operation of combustion and respiration, we need not dilate—it being well determined that, for every 27 parts of carbon converted into carbonic acid, 73 parts of oxygen are abstracted from the atmosphere; whilst hydrogen combines with oxygen in the proportion of 1 to 8. Coals, wood, and turf or peat—the principal articles of combustion—contain a considerable proportion of hydrogen; but in order to simplify the question, although our argument will damage thereby, these materials will be considered as composed of carbon only—any estimate, in fact, that may be formed of the amount of ammonia generated being little more than approximative, and must unquestionably fall very far short of the actual quantity. Of the amount of fuel consumed before the Potato disease made its appearance we have not by us any statistical account; but it may be observed that Newcomen's engine was introduced in the year 1705; and with the improvements that have been made on it, including those by Watt, continued in use only as a land engine until 1807, when Fulton practically applied the steam-engine to the propulsion of a boat; and from that period steam vessels have progressively increased in number; and with their increase steam has been applied to the locomotive and other purposes, consequent on the rapid improvements towards civilisation that have been developed within these few years; whilst furnaces of all kinds have kept pace with the appliances of steam. That the Potato disease has increased in virulence with the increased consumption of fuel is unquestionable. We will, therefore, endeavour to trace what are the conditions necessary to the production of this epidemic. The following statement, on the authority of Professor Ansted, will give an approximative estimate of the amount of coal raised, and therefore consumed in the world; and to it is added the respective coal-fields:—

| | Tons. | Square Miles. |
|---|---|---|
| British Islands ... | ... 32,000,000 ... | ... 12,000 |
| France ... ... | ... 4 150 000 ... | ... 2,000 |
| Belgium ... ... | ... 5,000,000 ... | ... 520 |
| Spain ... ... | ... 550,000 ... | ... 4,000 |
| Prussia ... ... | ... 3,500,000 ... | ... 1,200 |
| United States ... | ... 4,000,000 ... | ... 113,000 |
| British North America ... | — ... | ... 18,000 |
| Total ... ... | 49,200,000 | |

Or about 50,000,000, to which is to be added wood, peat, and other combustible materials, also the carbon consumed in respiration, which certainly may be taken at 10,000,000 more, making a gross total of 60,000,000 tons; 60×73=4380÷27=162,000,000 tons of oxygen abstracted from the atmosphere; and if to this be added the 60,000,000 tons of fuel, or carbon, it will give 182,000,000 tons of carbonic acid generated. Now, it is self-evident that for every volume of oxygen abstracted from the atmosphere, there must be four volumes of nitrogen liberated; and although it is of rather less specific gravity than oxygen, its weight may be assumed at four times 162, or 648,000,000; and as this gas combines with hydrogen in the proportion of 5 to 1, we shall have a general annual increase in the amount of ammonia generated in the formation of snow, and brought down to the earth, of no less a weight than 777,000,000 tons. That rain and snow-water invariably contain ammonia is unquestionable; and although our principles were communicated to the editors of the "Philosophical Magazine" so far back as 1844, in the Journal for October, 1851, will be seen an article extracted from the *Comptes Rendus*, expressive of surprise that in hailstones, analysed by the writer, should be found ammonia and black matter, analogous to the carbon of the vegetable kingdom. That such an amount of accumulating matter, to which should be added the increase of ammonia of putrefaction, should induce a putrefactive disease in a non-nitrogenous plant, under particular conditions, may readily be conceived; and it is but reasonable to assume that the amount of moisture that passes through a plant should be in proportion to the evaporating influence in the atmosphere. In 1846 and 1847, when the evaporating influence was great, and the earth was negative, the Potato disease prevailed; but with a similar amount of evaporation in 1849, and the earth positive, it totally disappeared. If, then, our position be correct, the remedy for this epidemic is self-evident—the abstraction of the ammonia being all that is requisite: and in 1847 we suggested to a friend that, for the preservation of his crop, he should plant the esculent between Cabbages—a highly nitrogenous plant; and in half of a plot of ground which he so treated he had not half a dozen rotten tubers; whilst in the corresponding half, but without the Cabbage, he had not as many sound. We are also informed by Mr. Bickerton, an experimental farmer in Wales, that he has tried the plan with singular success. *F. Coxworthy, in the Mining Journal.*

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

Besides the usual ripening of Gloxinias, Achimenes, and other bulbous and tuberous-rooted plants, there are many other stove plants which require placing in a cooler temperature during the season of rest. Under this head will be included Clerodendron squamatum, and similar species, Allamanda, Aphelandras, Vincas, and various others which have done flowering; and which, as the late autumn and winter flowering plants go out of bloom, should be subjected to a cooler and drier treatment, until the proper season returns for their new growth; taking care that they are not allowed to become altogether dry—or loss of roots and death will be the consequence. If a stock of young plants has been reared, many of the older ones may be discarded, thus making room for others which it is more desirable to preserve. Let every exertion be made not only to keep in check, but also to eradicate insects, especially the "mealy bug," and those of the scale family. They breed more or less all the year round, but more slowly at this season than during spring and summer. If, therefore, vigorous and persevering endeavours are made to destroy them, by examining the plants, if possible once a week, their numbers will be so much reduced in the spring, that sufficient time may be spared, even in that busy season, to cure effectually this worst of all garden nuisances. The best of all tools and materials for this purpose are the sponge and syringe, with hot water (110° to 130°) and soft soap. Let every tie be unfastened, as these are their favourite hiding-places during winter; and where wire trellises are used, they should also be thoroughly washed with hot water.

FORCING DEPARTMENT.

Peach-house.—Those who intend to have Peaches in their first house ready by the middle of May, should commence forcing immediately. If the greater part of the roots are in the outside border, it should be covered with dry litter, Fern, or tree leaves, which in their turn should be kept in their places, and nearly concealed by a slight sprinkling of earth. The interior temperature should be very moderate at first, commencing at 40° as night temperature and increasing very gradually until the season is fairly turned; the day temperature may rise 10° by fire-heat, and 15° to 20° by sun-heat. Unless the weather is very damp, a slight syringing may be given every day with tepid water; and when the weather turns out very fine, the operation may be repeated. It must, however, be distinctly understood that these syringings must not be construed into deluging, but that the water is to fall on the plants like fine dew. The early Peach-house, or a pit under similar treatment, will be excellently adapted for starting Strawberries to produce a very early crop; but the latter should, if possible, be plunged into a bed of leaves or some other material, to give a gentle bottom heat; and if such can be introduced into the Peach-house, the warmth and moisture therefrom will be beneficial to the Peaches also. A pit, however, is preferred for the Strawberries, as they can there have the mild bottom heat, and still be near the glass. Fig-house.—Let the shoots be untied, and if any pruning is necessary, it should be performed at the same time; but if proper attention has been paid to stopping the shoots during summer, very little pruning with the knife will be required; in fact it will be confined to removing a few shoots where they are too crowded to admit of their being properly trained. The shoots should be cleaned and washed over with sulphur and soft-soap, taking care not to injure the buds when performing these operations. The walls, woodwork, and glass, should be thoroughly cleaned; and any necessary painting, colouring, or other repairs, done forthwith.

FLOWER GARDEN AND SHRUBBERIES.

The flower garden being now cleared of all its summer occupants, the beds neatly forked up, and the turf, &c., put in order, let the walks have their share of attention, raising any low places, to give them an uniform shape, and to throw off the wet into the side drains. When they are dry, let the roller be frequently passed over them, as by making the surface of a well-formed walk firm, the wet will pass off more freely, and it will consequently be in less danger of injury by the frost. The enjoyment of a garden during winter, depends so much upon the state of the walks, as regards smoothness and dryness, that too much attention can scarcely be paid to them.

HARDY FRUIT GARDEN.

Whenever the state of the weather will permit of the soil being worked, it is a great advantage to fork the ground about the fruit bushes lightly over, and at the same time to work in some well-rotted manure amongst the roots; the same operation buries the leaves, and gives to the whole a neat and orderly appearance. The requisite pruning, staking, and tying should be first performed, to prevent the necessity of treading upon the ground, after it has been forked. If the Raspberry canes were not thinned in the autumn, they should now be reduced to four of the strongest on each stool, rejecting any which may have been deteriorated, by producing fruit in autumn; and, as a matter of course, entirely removing all the old canes. The stakes should then be examined, and renewed, if necessary, fixing them perfectly upright in straight lines, and cutting them to one uniform height, that the whole may bear evidence of good workmanship. When forking in the top-dressings, a little pains should be taken to destroy the embryo suckers which are visible on any of the roots.

State of the Weather near London, for the week ending Nov. 27, 1851, as observed at the Horticultural Garden, Chiswick.

| Nov. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 21 | 28 | 29.930 | 29 836 | 46 | 34 | 40.0 | 37 | 38½ | W. | .00 |
| Satur.. 22 | 29 | 30.149 | 29.998 | 45 | 25 | 35.0 | 38 | 39 | N. | .00 |
| Sunday. 23 | 0 | 30.133 | 29.855 | 45 | 32 | 38.5 | 38½ | 38½ | W. | .18 |
| Monday 24 | 1 | 29.493 | 29.452 | 46 | 23 | 34.5 | 40 | 40 | N. W | .00 |
| Tues. .. 25 | 2 | 29.492 | 29.469 | 46 | 23 | 34.5 | 39 | 39½ | S.W | .00 |
| Wed. .. 26 | 3 | 29.738 | 29.599 | 36 | 28 | 32 0 | 38 | 39 | N W. | .00 |
| Thurs... 27 | 4 | 29.899 | 29.788 | 42 | 26 | 34.0 | 38 | 39 | N.W. | .00 |
| Average ... | | 29.833 | 29.713 | 43.7 | 27 3 | 35 5 | 38 3 | 39 1 | | .18 |

Nov. 21—Overcast; drizzly; clear.
— 22—Cloudy; fine; clear; frosty.
— 23—Frosty; clear and fine; cloudy; rain.
— 24—Densely clouded; clouded and fine; foggy; frosty.
— 25—Frosty; very fine; cloudy; frosty haze.
— 26—Foggy; fine; clear; slight frost.
— 27—Overcast; hazy; fine.
Mean temperature of the week, 6 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Dec. 6, 1851.

| Nov. and Dec. | Average Highest Temp. | Average Lowest Temp | Mean Temp. | No of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 30 | 43.2 | 36.8 | 40.0 | 15 | 0.31 in. | 1 | 2 | 1 | 2 | 3 | 9 | 5 | 2 |
| Mon. 1 | 43.8 | 37.1 | 43.0 | 11 | 0.25 | 1 | 2 | 2 | 3 | 2 | 6 | 7 | 2 |
| Tues. 2 | 48.1 | 36.4 | 42 3 | 12 | 0.51 | 1 | 2 | 1 | 1 | 4 | 8 | 2 | 6 |
| Wed. 3 | 47.6 | 36.2 | 41.9 | 11 | 0.17 | 1 | 3 | 2 | 1 | 3 | 7 | 7 | 1 |
| Thurs. 4 | 47.0 | 35.2 | 41.5 | 11 | 0 28 | 4 | 2 | — | 2 | 4 | 8 | 4 | 1 |
| Friday 5 | 47.3 | 34.8 | 41.1 | 14 | 0.12 | — | 1 | 1 | 1 | 2 | 9 | 7 | 4 |
| Satur. 6 | 46 6 | 37.0 | 41.8 | 14 | 0.14 | 1 | 1 | 1 | 1 | 4 | 10 | 6 | 1 |

The highest temperature during the above period occurred on the 30th, 1835—therm. 58 deg.; and the lowest on the 5th and 6th, 1844—therm. 14 deg.

## Notices to Correspondents.

Back Numbers: *J L.* You can have the numbers: please to remit 12 postage stamps.

Begonia cinnabarina; *M B.* will thank some of our correspondents to inform him how to manage this Begonia, so as to make it flower. He has had a plant for nearly eight months, and it has neither blossomed nor yet grown well. He adds, that several of his neighbours have had it for the same length of time without any better success. He has tried it in the Pine stove and in the greenhouse, the soil being sandy loam and peat.

Birds: *E.* If it be indispensably necessary to fumigate the plants after the manner you propose,—it will be desirable to *try* the effect produced on your birds by the smoke arising from the tobacco paper. If, on the first and second experiments, no ill consequences result, you may occasionally do as you suggest; but we frankly tell you, *if* you can avoid the necessity, do so. The birds most likely to be affected would be the love-birds. At this season, groundsel should be supplied about once a week. The *bath* should be altogether discontinued. Your aviary and conservatory being in such close proximity, is unfortunate.——*G B*, Try Millet seed.—*Anne T.* Boiled milk is far preferable, at all times, to the use of saffron.—*Maria T.* It is entirely brought on by an exposure to cold. If you really *must* have an open cage, drop a silk handkerchief, "for pity's sake," over the poor little sufferer at bed-time.—*George.* The average is four years.—*Fright.* Let the cat be killed at once, by all means. 'Life for life,' in such a case as *you* describe, is "sound doctrine."—*Alicia.* It is simply weak, from the tedious process of moulting. Be patient till Christmas.—*John.* From 12 to 17,—occasionally 22!—*Alexander.* A young bird, hatched during the present year, is worth 5*s*. When two years old, he is worth 10*s*. Of course, some of this tribe are better than others. You must exercise good judgment in your selection.—*Sarah N.* No birds are more sagacious and none more readily tamed. Offer him something tempting, from your own fair hand, and his good sense will doubtless prompt him to accelerate what you so much desire.—*Stephen.* They are pretty creatures truly, but the burden of their song induces greatly to melancholy.—*J C E.* Want of space prevents our prefixing and repeating the names of the several birds about which we are consulted. As you are a regular subscriber, you can suffer no individual loss.—*J T.* Your favour is received, and shall have attention.—*J F*, whose letter referring to the "Instinct" of a particular bird has just reached us, has our very best thanks. The matter as well as the manner of the communication are *not* lost upon us. We shall know how and when to avail ourselves of our valued friend's kind hint. Will he be so kind as to wri again, enclosing "facts" and "authorities?"—*J J.* Your humanity equals your good sense. To "slit the tongue" of this poor inoffensive bird would, indeed, be, as you say, both cruel and unlawful. Besides, the operation, if performed, would be *quite useless.* It is high time *such* "vulgar errors" were exploded! *W. K.*

Books; *H M.* If he understands botany he may use the book you mention, but not otherwise. He had better study Lindley's "School Botany" in the first instance.—*Reader.* Moore on the "Melon and Cucumber." ‡

Clematis: *L X Y.* Propagate it by layering in September.

Cotoneaster microphylla: *W P.* Rot the pulp off your seeds in sand till February, and sow them then, as you would Whitethorn haws. ‡

Fruit trees: *J M M.* Coe's Golden Drop Plum requires a southern exposure, in order to acquire full perfection. Earlier Plums are better suited for a northern aspect. ‖—*W P C.* You may shorten your newly-planted Apple and Pear trees a little now, but certainly not in March. ‖

Insects: *G S W, Gloucester.* The small beetle found in the cork of your Port-wine bottles is the Cryptophagus cellaris, an insect generally found in cellars and similar damp places. The grub was doubtless that of the little moth Gracillaria W. flava, which is often very destructive to the corks in wine cellars. We know no other remedy against the latter than to resin the whole of the exposed parts of the corks. *W.*

Names of Fruits: *P F.* 1, Blenheim Pippin; 2, 8, Margil; 4, Cockle Pippin; 5, Reinette du Canada; 12, Norfolk Beaufin; 14, Bedfordshire Foundling; 15, Easter Beurré. From some others the numbers were detached.‖—*W D F.* 3, Comte de Lamy; 41, Knight's Monarch; 5, Alfriston; 6, Trumpington or Eve Apple. ‖—*J S, Bath.* Your seedling Apple is very like the King of the Pippins. ‖

Names of Plants: *Enquirer, Cork.* It appears to be a bit of Teucrium fruticosum.—*Shem.* 1 is certainly Plectranthus fruticosus, which only forms a woody stem when old and in a dry hot climate; 2 is one of the many varieties of Veronica Teucrium.—*A H.* We know nothing of Arbutus magnifica.—*J A.* 2 is a colourless variety of Lycaste Deppei; 1 is probably a new Promenæa; at least it seems different from Pr. xanthina, but the specimen was ruined by bad packing. Flowers should be wrapped in tissue paper, without cotton wool, and enclosed in damp brown paper in a box strong enough to prevent their being crushed.—*A B C D.* Iberis gibraltarica. You may strike all such plants as you name by putting cuttings under hand-glasses in August, and leaving them till they are rooted. But much time will be saved by going at once to a nurseryman.—*E M.* Collinsia tinctoria, a nice hardy annual.

New Pine-apples: *J S.* We consider the discussion you wish to raise premature. Wait till they have fruited, and then let us know what you think of their quality. ‡

Plantations: *A Sub.* Grub up all the Elms. Leave as many of the Firs as you can, and fill up the spaces between them with more Spruce and Scotch Firs, intermixed with Pinasters, Hollies, Yews, and common Laurels. If the plantation is well thinned, and the ground well trenched, this new plantation will soon give shelter; by degrees the old Firs can be removed, if necessary, and the growth of the Hollies, Yews, and Laurels can be encouraged till they form a screen.

Plunging Material: *H I O.* The most suitable material for plunging pots of cuttings in, over a hot-water tank, is cinder-ashes, or these mixed with sawdust. As to the proper depth for a plunging bed, that depends on whether you want a brisk heat or only moderate warmth. From a foot to 15 inches is deep enough for most purposes. ‡

Wistaria: *A C R.* Leave untouched all the shoots except the unripe end, which should be cut back.

Misc.: *G.* 31, Great Winchester-street, Broad-street City. ‡

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | |
|---|---|
| Turnip Manure, per ton ... ... ... | £7 0 0 |
| Superphosphate of Lime ... ... ... | 7 0 0 |
| Sulphuric Acid and Coprolites ... ... | 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE PEAT CHARCOAL impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

FOSSIL BONES AND PSEUDO-COPROLITES
(FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD and Co., Artificial Manure Manufacturers, Ipswich, Suffolk.

ROYAL SOCIETY for the PROMOTION and IMPROVEMENT of the GROWTH of FLAX in IRELAND.—The ANNUAL MEETING of the Society will take place on Friday, the 28th inst., at 12 o'clock, in the Society's Rooms, Commercial Buildings, Belfast, to receive the Annual Report of the Committee, to elect Office-bearers for the ensuing year, and to transact such other business as may be brought forward. By order, JAMES MACADAM, Secretary.

Belfast, Nov. 29, 1851.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TO HORTICULTURAL & FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Rick Cloths, with Poles, &c., complete. Marquees and Tents on hire. Netting and Bunting for Fruit Trees. Orders, per post, duly attended to.

Address BENJAMIN EDGINGTON, 2, Duke-street, Southwark.—A Warehouse, 208, Piccadilly.

MILK, CHEESE, AND BUTTER.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, advises any one who keeps Cows to send two postage stamps, and obtain a description of his LACTOMETER, with its uses, and the results of experiments with it upon different Milks. Lactometers, complete, in a mahogany box, 10s. 6d.; Do., with cheaper fittings, 7s. 6d. and 5s.; Hydrometers for testing sulphuric acid, 5s., 7s, and 10s. No consumer of acid should be without one, as it is often sold highly diluted. Saccharometers for Brewing, with tables, 5s., 7s., and 10s. Pediment Barometers, from 1l. each. Wheel Barometers, from 1l. 1s. each. Packed carefully for the country, there being nothing to fear of them getting out of order, as they are warranted to be properly made and good instruments.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blackfriars, London; and 36, Seel-street, Liverpool.

GUANO.—For SALE, by Private Contract, 130 tons Guano, per Cleopatra, from Eagles' Rocks, South Seas, in lots to suit the convenience of purchasers. Sample and analysis to be seen at the Brokers.

CHAS. SUTHERLAND and Co., 24, Mincing-lane, London.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE GENERAL MEETING will be held, at the Society's house, Hanover-square, on SATURDAY, the 13th December, 1851, at 11 o'clock, in the forenoon.

By order of the Council,
JAMES HUDSON, Secretary.

London, November 29 1851.

THE BIRMINGHAM CATTLE AND POULTRY SHOW.—The THIRD GREAT ANNUAL EXHIBITION of FAT CATTLE and the various kinds of DOMESTIC POULTRY, will be held in the BINGLEY EXHIBITION HALL, BIRMINGHAM, on the 9th, 10th, 11th, and 12th of December next. Admission—To the PRIVATE VIEW, on Tuesday, December 9th, 2s. 6d.; on Wednesday, Thursday, and Friday, 1s.

CATTLE SHOW, 1851.—THE PRIZE CATTLE SHOW of the SMITHFIELD CLUB and Exhibition of Implements, Seeds, Roots, &c., commences TUESDAY MORNING, and closes FRIDAY EVENING, Dec. 9th, 10th, 11th, and 12th, BAZAAR, King-street, Portman-square. The space appropriated to the Show is nearly double that of former years, and the arrangements are marked by the usual attention to the comfort of visitors.

SMITHFIELD SHOW.—NEWINGTON'S PATENTED AGRICULTURAL IMPLEMENTS will be exhibited. Improvements have recently been made in the Top-dresser and Cultivator, and the prices reduced. Applications for Catalogues, &c., to be made only to Mr. GABRIEL, Surrey Chambers, 24, Arundel-street, Strand.

SMITHFIELD CATTLE SHOW.

W. SKIRVING, Walton Nursery, Liverpool, begs to acquaint his friends and the public, that he will attend at the ensuing Smithfield Cattle Show, to exhibit Roots of his Improved Swede and other Turnips, and to take orders for the seed of them and all other approved kinds of agricultural seeds. W. S. will also exhibit specimens of these three new and highly interesting hardy trees, Araucaria imbricata, Cedrus Deodara, and Cryptomeria japonica, of which he holds an extensive stock, of various ages and sizes, all grown from seed in the open ground and transplanted into beds or pots in the Nursery.

# The Agricultural Gazette.

*SATURDAY, NOVEMBER* 29, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Dec. 3—Agricultural Society of England.
THURSDAY, — 4—Agricultural Imp. Soc. of Ireland.
THURSDAY, — 11—Agricultural Imp. Soc. of Ireland.
FARMERS' CLUB—December 1: Botley.

SOME of our readers may remember seeing reference some weeks ago to a sample of AUSTRALIAN GUANO, received from a correspondent in Van Diemen's Land. It was described as being a fibrous half rotten mass of feathers and earthy matter, profusely intermingled with brown-coloured crystals.

We have been favoured by Mr. WAY with the following analysis of it, made at the request of the Earl of DUCIE, President of the Royal Agricultural Society of England, which we insert here for the information of those who may be within reach of the article.

| | Per Cent. |
|---|---|
| Moisture ... ... ... ... ... | 31.55 |
| Animal matter and salts of ammonia ... | 19.74 |
| Sand, &c. ... ... ... ... ... | 3 11 |
| Phosphates of lime and magnesia ... | 31.36 |
| Sulphate of lime ... ... ... ... | 3 45 |
| Sulphates and chlorides of potash and soda ... | 10.79 |
| | 100.00 |

The small crystals dispersed through the guano are ammonio-phosphate of magnesia.

| | |
|---|---|
| Nitrogen ... ... ... ... ... | 4.58 |
| (Mean of two determinations.) | |
| Equal to ammonia ... ... ... ... | 5.56 |

Mr. WAY states: "The sample is of better quality than one that I before examined from the same parts of the world. It is, however, considerably inferior to the old Ichaboe variety; and as that kind was sold at 7l. per ton, I do not think the present sample is worth more than 4l. 10s. or 5l. at the outside."

THE Irish are not the only people to whom EMIGRATION will afford relief from the pressure of population on their existing means of subsistence. There is another branch of the Celtic race who are in the same predicament, arising principally from the failure of the Potato. Like the peasantry of Ireland, they labour under the unfounded imputation of idleness. The idleness of both is the creature of unfavourable circumstances; for, remove those circumstances, and place them in situations where there is scope for their exertions, and no people can work harder than the Celt of Ireland, or the Celt of Scotland.

The indolence of the Irish sprung in a great measure from the Potato, and the facility which it afforded for obtaining a subsistence with little exertion. It is to them what a fine climate is to the inhabitants of tropical and sub-tropical countries. It is what Buckwheat is to the Breton peasant "the symbol of agricultural misery, and the most detestable culture; and, with the Chestnut, the triumph of improvidence and idleness."

Of the Scottish Highlander, the author of "Flax: its culture and preparation in Scotland, Ireland, and Flanders" speaks in the highest terms as an acute, moral, virtuous, and exemplary people, excellent payers of rent, and possessing patience, activity, industry, and perseverance. He speaks thus of them: he says, "from long experience as the manager of extensive and populous estates in the Highlands and Islands of Inverness, Argyle, and Ross, and as the superintendent of more than half of the kelp manufacture which formerly flourished on the western coasts of the Highlands, and the shores of the Hebrides. If at any time they were idle," he adds, "it was because they had not sufficient employment, being merely engaged in taking care of their little stock of sheep and cattle, and cultivating their limited crops." This is the picture of their condition, when settled on the least barren portions of their mountain homes, the green alluvial tracts which margin the glens and valleys of the interior, as the cultivators of small patches of land, their social condition intermediate between the hunter, pastoral, and agricultural state. From these homes they were dislodged by the high prices of the revolutionary war, which gave a greater value to their holdings, as appendages to large sheep farms, than as separate occupations, with their inefficient culture, under a climate unsuited to cereal crops. Some emigrated to the United States and British America, where they became, for the most part, prosperous landowners, and were enabled to establish their families, however numerous, in the same independent circumstances. The greater portion flocked to the barren promontories of the western coast, to follow a mixed agricultural, fishing, and manufacturing life—the manufacture being the preparation of kelp, from the sea-weed, which rendered the most barren and rocky coast more valuable than the richest land. On those sterile and sea-beaten promontories the Potato necessarily became the staple food. There, as in similar situations on the W. and S.W. of Ireland, there is no alternative between the Potato culture and pasturage. While the kelp trade flourished, and the Potato yielded food, the condition of the highland population appeared to be improved by their removal to the fishing villages of the coast. But the kelp trade departed, leaving behind it all the evils attendant on a commercial revolution. It received its first check from the loss of the monopoly of the home market, by the removal of those impediments which the war had thrown in the way of commercial intercourse. Its death-blow was given by the advance of science, and by improved chemical processes, which superseded both home-made kelp and foreign barilla, by the extraction of soda from common salt. This improvement has conferred incalculable advantages on the community, through the manufactures of glass and soap, by the supply of cheap soda, which is one of its products, and through the bleaching trade, by the supply of cheap chlorine, which is another. It has given also a great stimulus to the manufacture of sulphuric acid, which is necessary for the attainment of these results, and by the reduction in the price of sulphuric acid, consequent on improvements in the mode of making it, to which that stimulus gave birth; it has indirectly benefited the community through various other manufactures; but it has ruined one branch of the industry of the Highlands: and the return of peace, by removing impediments to the prosecution of the herring fisheries by foreign nations, has injured the other.

The population to which the kelp trade and the fisheries afforded the principal means of subsistence was now thrown back on its agriculture; and had the Potato continued sound, the agriculture of the Highlands might have benefited by the cessation of demand for kelp, and for herrings for exportation. Both might have been advantageously applied as manure, upon soils whose natural sterility demands some extraneous aid. But the cup of Highland suffering has been filled to the brim, by the failure of the only food which regions so bleak and barren are capable of producing in sufficient quantities for the wants of a population now rendered redundant. Manfully have the people of the Atlantic coast of Scotland struggled, year after year, against the complication of evils entailed upon them by the blight which has fallen upon their commerce and their agriculture. They have struggled in silence, relying chiefly on their own resources, and receiving comparatively little of that aid from the public treasury, and from eleemosynary contributions, which has been lavished so profusely on the more clamorous Celt of Ireland, not on the inhabitants of the sterile portions alone, of those which, like the Western Highlands of Scotland, can grow nothing but the Potato—but on the population of its most fertile districts, where the Potato ought not to be the exclusive food of the people. "The same stroke," says Mr. MILLER, in the *Witness* newspaper, "which did little more than slightly infringe on the comforts of the people of the Lowlands, utterly prostrated those of the Highlands; and ever since, the sufferings of famine have become chronic along the bleak shores and rugged islands of at least the north-western portion of our country. * * * It has dissipated the last remains of

capital possessed by the *people* of the Highlands, and placed them in circumstances of prostration too extreme to leave them any great chance of recovering themselves; or rather in circumstances from which, in the present state of the country, recovery of them as a *people* is impossible." Emigration appears the only present available remedy; and an act was passed in the last Session, to enable part of the money advanced under the Land Improvement Act, to be employed in assisting emigration from the Scottish Highlands. It is satisfactory to know that comfort and independence await those who may avail themselves of such assistance to establish themselves in North America. We know not whether it is proposed to confine this aid to settlers in the British colonies—a limitation more easily enacted than enforced—but whether in the States or the British provinces, Professor JOHNSTON found, during his recent tour, that industry and sobriety rarely failed to place the agricultural emigrants, who refrained from speculating in the lumber trade, in comfort and independence. It is satisfactory, also, to those desirous of improving their condition, without dissolving their British connections, to know that these advantages are quite as easy of attainment in Canada and New Brunswick as in the United States.

Mr. MILLER, who appears to look with regret on the emigration of a large portion of the Highland population, is able to suggest no other practicable remedy for their distress. Their restoration to the valleys of the interior he found barred, in 19 cases out of 20, by those green patches being bound by lease to some extensive sheep farmer, and as little available for the present emergency, even to the proprietor, as if they lay in Canada or the United States. We may add, that pasturage, being the natural application of such mountainous districts, will always be the most profitable; and that the most profitable will always be the prevalent application of the soil in any country under an advanced state of civilisation. His other proposed remedy, that of enlisting some 20,000 Highlanders in the British army, is barred by an obstacle which he has stated himself—the decay of the old martial spirit of the Highlanders, and the reluctance of the population to enlist.

A more feasible substitute for emigration is that proposed by Mr. BROWN, in the pamphlet on the Flax culture before alluded to, namely, the revival of the cultivation of Flax and of its preparation and conversion, which once flourished in the Highlands, he says, as a domestic manufacture. To their revival, however, in that form, there are formidable obstacles. The linen trade, like the manufacture of kelp, has undergone a revolution. The spinning-wheel and the hand-loom have been superseded by steam-driven machinery; and if Flax is to be raised in the Highlands, it must be to supply the mills of Dundee, Leeds, and Belfast.

The cultivation of Flax is also in a revolutionary state.

It has long been evident that, in order to extend the growth of it in Britain, a division of labour is necessary, which shall separate the cultivation of the crop from the preparation of the fibre. With the improved processes, the old system of steeping will be unable to compete. At the head of these new processes we place SCHENCK'S patented system of steeping in hot water, as it has been in successful operation for some years, and produces an article for which there is an established market; whereas the commercial success of CLAUSSEN'S short fibre or Flax-cotton has yet to be proved. If therefore the soil of the Highlands be, as Mr. BROWN says (and he ought to know), adapted to the growth of Flax, to be exchanged for the food it will no longer yield, the introduction of the Flax culture must be effected by the formation of establishments for preparing the fibre from straw, to be purchased of the grower, and for employing the present redundant population in spinning it by machinery. This will be to fall in with the current; it is vain to attempt to stem it by the re-establishment of a domestic manufacture, to be conducted on the old expiring system, which rendered the farmer a mere weaver, raising his own food and raw material.

## STEAM FARMING.

WE are much indebted to your correspondent, "C. W. H.," for drawing attention to the cultivation of land by steam. He argues rather too strongly against employing any of the known methods of preparing the soil; we need more to combine them with any new systems, according to the circumstances and work to be done, which, we require to keep in mind, imply various operations, acting upon a substance constantly varying, as wet or dry, steep or level, of uniform texture, mixed with stones, or with an iron-bound pan. It is of no use attempting too great a uniformity of action under such a variety of circumstances, but the object should be, to prepare a machine fitted for performing the different works, in the best manner. The saw-mill is a most useful invention, but requires modifications to meet particular circumstances; we cannot, in this country of knotted cross-grained wood, use the one or two toothed saw, successfully used in America at immense velocity, where the wood is soft and uniform in grain, and free of knots. Nor can any wood be brought with safety to the power-driven saw, without the previous squaring of adze and hatchet; then it has to be hauled up and placed upon tables with guides, wheels, and rails. In the same way we must, by manual and horse labour, by tramways and rails, by levelling, straightening, and lengthening our fields, and by bringing the soil to some degree of uniformity of texture, prepare the way for the steam-plough, and, moreover, so arrange the different working parts of it as is best suited for the particular work it has to do. Steam-power is exerting a nearly uniform energy, and we must have regard to the opposing obstacles, so as to interpose compensating contrivances, as well as to see that the tool, put for its use, is the best suited for the purpose; and after doing what we can to prepare the soil, as well as the machine, all our ingenuity will be required to provide against the shocks and strains which will take place. Several steam-ploughs have been invented, which, under favourable circumstances, are said, for I should mention that I have not seen them in operation, to do their work in a way which gives every encouragement for extending the application. The plan usually adopted has been, to place the engine at one end of the field, along which it gradually moves, as the plough which it drags up at right angles to itself, by a chain, requires a new breadth of land. Where the land is intersected by canals, the engine has been placed in a vessel and proceeds as before. Several machines have also been invented, where the part which works the soil is attached to the frame-work on which the engine is placed, to which it is connected by gearing, so that the whole machine is intended to be self-moving over the land, working as it advances, or rather retires. It certainly is most desirable to see such a machine marching at a regular pace along the length and breadth of the field, doing its work regularly, deeply, and efficiently, leaving behind it a well-prepared seed-bed, while, at a nimbler pace, a lighter machine dibbles in seed, giving its portion of manure as it does so, or distributing the seed with all the regularity of a self-moving spinning machine, and at a later period again to see it making a clean sweep, and folding up, as it were, the tall grain; all this we may hope to see, but to accomplish it, under the less favourable circumstances than the jenny, we must proceed with due consideration of all the difficulties to be overcome. On steep land there can be no profit in attempting to make a self-moving machine travel over the field, and so hopelessly exhaust the power. While on flat well-prepared land, in place of the stationary engine and moving plough, a self-moving machine might be profitably employed to do the deep and heavy work; and on the steep land, and for light work on the prepared land, the stationary, or rather, the same engine, say with a revolving drum, in place of its cultivator, placed at the side or end of the field, would drag along its detached tender at a much quicker pace than it could possibly move itself, as well as disturbing the soil less. The consideration of the best forms of the engine, and manner of placing it on its carriage, the way in which this carriage should move on the land, and in what manner the working part, or cultivator, should be attached, when the machine is self-moving, and when it is stationary; then the kind of cultivator to be employed for performing all the different preparatory operations, as well as those for finishing the work, should all be treated of; but I fear that I can do little more than make the outline. Before proceeding with such remarks as I can offer on these subjects, and having pointed out the necessity of preparing for the steam-plough, let us indulge in a sort of vision of a steam-worked farm. There is no finer sight than an extensive roofed-in station on any of the great lines of railway. The high airy space, well lighted from the roof, which is even elegantly supported, prevents all feeling of inconvenience or closeness from being under cover, while great indeed are the advantages; everything can be done and kept in greater order and regularity than in the open air, as, being independent of the weather, there need be no rushing about to get under cover, or leaving property to be destroyed by wet; and the whole lighted up at night looks like a great hall. Now, picture the innumerable advantages of such an edifice as a farmstead, how well adapted for our climate. The whole might be entered by a large archway, either at the end or sides; on each side ranges of byres, stables, and every necessary building, either under separate roofs of their own, or under the one large roof, and of different stories in height; some mere open lofts, others more enclosed, for granaries, and other purposes. A large space in the centre, and at a lower level than the sideways, which would be broad on each side, and paved, would be divided into pens for cattle, sheep, and pigs; another part is a more open straw yard, for the young stock. Down the centre, and above the heads of the animals, there is a line of rail, communicating with the straw and the root houses, and the place where prepared food is mixed. The waggons which run on this line are provided with funnels, by which each animal's ration is discharged into the trough below, while from the lowest part of the feeding courts runs another line of rails, by which the whole dung can be conveyed to the land. The dung is thus well prepared, being trodden by the cattle, and neither washed by rain nor dried by sun. In the centre, parts on a level with the roadways are allotted for carts, and frequently would be seen loaded ones, even to the greatest height, either ready for an early start, or late brought in, while cranes are ready to hoist up the grain, and weighing machines are at a convenient side of the entrance, suspended above, and out of the way may be seen harvest cart frames and implements. Towards one end of the whole farm station, is a thin partition which separates the parts alluded to from the covered stack yard, thereby securing the crops in a more speedy and less, in the long run, expensive way, saving time and labour of thatching and clipping; then the wet days can be employed in the barn, when it might be unsafe to break up a stack if outside, and expose it to the wet. The sides of the part for stacks and the upper parts of the whole are fitted with moveable louvred blinds, so that ventilation and free access of air can be regulated. As the whole is to be well lighted with gas, made at the gasometer outside the premises, which can be put up for a moderate sum not exceeding 50*l.*, the work inside can be carried on to any hour that is required. Above the whole is an elevated cistern supplied by a force pump, worked by the engine: from this pipes run to the cattle pens, stables, and wherever water is needed, as well as nozzles in several places, to which hose are attached in case of fire, and for washing out the whole place, as well as washing out byres and clearing drains. One feature of the whole is, that galvanised corrugated iron is much used for the sides, divisions, and roof. It is strong and durable, and of good appearance, and should be made at a cheaper rate. I have before advocated its use for fences. It need scarcely be added that the greatest order and regularity prevails in such an establishment, and the time and work is so well marked by the large clock and bell, that the very impatience of the cattle, if not supplied with their food at the appointed hour, helps to enforce regularity. I may remark, in passing, how great an improvement it would be to cover in stable courts, or even a space in front of the coach houses; just take a look on a rainy day at the operation of yoking the horses to a carriage, or on a wet night when some friends' carriages are there, standing out exposed to the wet; a dim lantern, flickering about, rather adds to the confusion, by frightening a young horse, the whole is hastily done and harness imperfectly buckled; compare all this with the advantages of being under cover and properly lighted, besides many other, that of exercise in winter. But to return to the farm. Manure is now our great munition, with which to fight free trade, consequently house feeding and the culture of feeding crops are rapidly extending; for this, the steam farm, with its station, is most particularly adapted, both in the preparation of food and housing the animals; and as carrying in the crops is heavy work, on this house system the rails are well suited for this. Parts of these plans are fitted for farms of all sizes, though to carry them out fully implies a large farm, the expense would then be found to be by no means excessive, if we compare it with the outlay on different buildings and keeping them up, if the land was portioned out to small farms, and it would perhaps be found to be the least expensive where new buildings had to be erected. One effect of modern speculative propensities is, that men of capital are on the look-out for safe investment; and land is one kind of security in which there is confidence, but which, unless in good order and well farmed, makes but a small return. Capital will turn to land, and consequently to farming, which is being made a study and profession, instead of being looked upon as a natural gift along with acres. Another reason for the improved farming of land is, that proprietors are now obliged to exert themselves to obtain any rent. It is therefore the more interesting to examine into every suggestion for carrying on the operations of the farm. Connected with the buildings is the steam-engine, which, in this case, would require to be of more power than usual, giving motion to all the most approved machinery for grinding, bruising, threshing, chopping, and other operations, as well as to a circular saw and boring-tools, where gates, hurdles, and carpenter work is done. Flour is prepared, and, at the option of the men, they can purchase at a low rate such quantities as suits them, of the pure unadulterated article; and a barrack, with board, is kept, under regulations and advantages, for the single men, from whose kitchen the others may purchase rations at fixed rates. The churn is worked by the steam power, nor is it allowed to pass in pipes without heating the poultry-house, after which the pipes convey it into a small apartment where there are many coils of pipe; this is what gardeners call a Polmaise heating place; the air is admitted by a large grating, and, after being heated, is driven by fanners into a sort of barn or drying-room, where corn and hay is laid on large wooden, bottle-rack looking stands, while ventilators carry off the moist air; and the dried fodder being removed, is replaced by other in a less favourable state. The laundry-maid from the house, with her linen, also claims a day occasionally. The food for the cows and pigs is also steamed, while the latter sometimes have the benefit of a warm bath. Most of these, and other operations, may be seen at work at many admirably-conducted farming establishments; but the steam system has to be yet further extended. We have supposed the station complete; we have now to turn to the lines of rail. There would be a trunk line, going from the buildings, through the centre of the lands to the furthest field, and from it sidings to each field, to which a moveable set of rails can be attached, so as to bear the wag-

gons, with manure and crops, to and from a central part of the field. Where possible, the main line should have an incline outward from the steading, and the engine be so placed as to it, that its hauling power may be used to the best advantage. In this way waggons started would, by their own impetus, run to their destined siding, under the control of the breaksman, where a man with his horse had other waggons to send back, while those brought were being driven to the field along the temporary line. To save turn-tables, several of which would be required at the buildings, the sidings should branch off in such time as to give a good sweep into the field. The rope from the engine would haul the waggons up the incline, and turn them into their proper places—those with roots to the house for the purpose, for dung to the line before mentioned—while the peculiar harvest truck, with a moving stack, were hauled up to a stage which was nearly as high as the large roof, thence the stack is thrown down to the part allotted for the covered stack-yard, through sliding panels in the roof. There would also be trucks for carrying common carts, from which they would be driven to some less accessible part. Along the trunk line may be seen an iron pipe of considerable dimensions, for the purpose of conveying water, or liquid manure, either to cisterns in suitable places, from which, or from the main pipe direct, the liquid is distributed over the fields by portable tin pipes, or flexible hose. The main pipe is provided with contrivances for stopping or changing the course of the contents. In practice, several contrivances would occur, which would simplify the operations, and lessen the expense, without endangering the safety of such a line as this.

The remarks on the steam farm have led me away from those on the machine for working the land. As far as one can judge of a machine from drawings, the best I have met with, of a steam plough, is one patented by Usher, of Edinburgh, a description of which, with plates, will be found at page 70 of the 51st volume of the "Mechanics' Magazine," the whole appears to be well arranged, and compactly put together. The plough itself is also improved, and revolves; other implements can be substituted. The method by which the frame carries the working part appears good, as it can be raised or depressed; and by the addition of strong springs to this part, accidents from concussions, which would be fatal to an unyielding tool, might be, in a great degree, guarded against. The work done by the common plough by horse labour, is only one part of the operation of tilling the soil, it must be followed by other implements. It would be a great improvement if the first operation could be made more complete, consistent with no great increase of draught, as few farm operations are profitable, except in particular circumstances, which require more than two horses. The advantage of the plough is, that it can be made to pass quickly along, taking off a uniform slice of earth, and turning it over; in this latter the various grubbers are defective as a first work, although suitable enough after other preparations on the earth. The plough leaves the slice of earth too smooth in many soils, and the part immediately below the sole of the plough is quite beaten down; to this, at competitions, it would be well to direct attention. There was a plough exhibited with a short fork attached, which worked at the side of the plough, with a sort of digging motion; the intention was to turn out Potatoes; by reversing the fork, and making it act downwards, it might be made to break up the earth, after being turned over with the plough. The necessity of making the first work more complete is still more urgent with the steam cultivator, but there is a limit to this. Time is an important element in agriculture, both in regard to the operation and to the farmer's pocket; climate and other circumstances will seldom allow sowing to follow immediately upon breaking the land, and the action of the air is one of the best harrows, and its aid is required before implements can be employed to the best advantage to reduce the land to a seed-bed; it is not necessary then to attempt to complete the work at one operation, but to leave it in a better state than it is by the common plough. The spade in proper hands is a much better cultivator than the plough, as in using it several operations are combined; it is driven into the ground by the leverage of the handle, the spadeful is loosened, then lifted and turned over, then receives some thrusts, which leave the surface regular, yet sufficiently open to admit the air; to render the work more complete, a fork is used in the space left by the spade, to it the same motions are given, and the soil is deepened and loosened without being turned up. This combined action appears to be the best to follow, as far as possible, with the steam cultivator, which would ensure regularity of depth, for the drawback to the use of the spade and fork is, that their proper use depends upon the moral character as well as upon the physical strength of the workmen. As your Paper cannot well be taken up with sketches, any further remarks on the subject will be best made by going over a sort of descriptive plan of a machine, having reference to what has already been stated. I would again refer to Usher's, as giving the best idea of the whole machine. It would consist of a locomotive furnace and boiler, on the most improved form, particularly as regards compactness, together with considerable power. I would have an engine on each side, so as to give greater uniformity of action to the working tool, to which it is connected at each end. These should be mounted on a strong frame work, as low as possible, consistent with passing any obstacles. When in action, it would move on the unbroken ground; the working part would therefore be attached behind, where there would be sufficient platform for the attendants. The cistern and receptacle for fuel must take up as little space as possible. Another strong frame, which carries the working implement, is to be attached to the main frame, as in Usher's, by strong pivots, and the same apparatus for raising and depressing, with the addition of compensating springs. There is also the wheeled gearing necessary for giving motion to the machine itself; 1st, at one uniform rate; 2d, means to detach this power from the wheels of the machine, to communicate it to the cultivating or hauling part; and 3d, means of giving a forward movement to the whole at regular intervals. This last has reference both to the action of the working implement, and to the advance of the machine when hauling. The machine is intended to be used in various ways, according to that which is best suited to the work it has to do, and the state of the land. On level prepared land it is to move along the surface, working as it goes; or it is to be placed in the middle, and, by hauling, work to a centre; or placed at the end of a field, is gradually to advance, as if dragged up a working tool; or, to shorten the distance of haulage, it is to run on a tramway, with the implements attached at some distance by chains. The hauling apparatus must then be so arranged as to work at best advantage at different angles, or the machine must have a turn-table within itself.

Another important thing is the manner in which the whole shall rest and move on the ground. Large broad wheels, almost rollers, first occur; if the motion was continuous, these would be best; if only intermittent, it would be difficult to move the machine, which must necessarily be of considerable weight, out of the hollow made even by a large wheel. It would be possible to invent a means by which each wheel should carry two tramways, which were alternately, by a rotary motion, or by a side lifting motion, placed before the wheel. When placed at the end of a field, a tramway could be laid. A sort of sledge-frame, with low broad wheels, might be useful in some cases; whatever plan is adopted for this part, that of making the engine haul itself up seems one of the most efficient, unless it is placed on rails. It will be found in practice to be of consequence to attend to the kind of gearing by which power is communicated to the working part; flat chains working on pins and flat sides appears to be one of the best. The great cause of the failure of steam carriages on common roads, which in theory is quite feasible, was the concussions and connecting the power by rigid means. Mechanics are accustomed to overlook, or at least not to give sufficient thought, to the difference between a fixed and steady engine, with a moving part and the material to be operated upon brought to it, and an unsteady engine with a moving part brought to the work, and that very partially prepared for it.

We now come to the cultivator itself; in this, as before shown, I incline to follow the combined action of the spade and fork for the principal implement, and so far back as 1844 made a sketch of the motions and means of producing them. In the Exhibition I found an implement which, without explanation as to its manner of working, I was not surprised that it found no favour. The machine I allude to was one by Mr. G. Thompson, of Westminster, who has carried out very much the desired motions, and only required the forks attached. I propose that a series of spades should be attached by arms, cranks, and guides, to a main axle, in such a way that the greatest leverage power shall begin to act on the spade, at the time it begins to enter the ground; after its being forced to its full depth, the spade is carried on and upwards, then the point is lowered so as to lodge the contents; the turning over, unless the earth would do so of itself, I am not prepared for, after which it is moved up to the highest point; but before it has reached that the forks have begun to make a similar movement, only going deeper and rising more perpendicularly, so as to stir the soil without lifting it. From seeing very hastily Mr. Thompson's machine, it is to be hoped that the practical difficulties are nearly overcome. During this operation the machine is stationary, but when the forks begin to come out of the ground, the forward motion of the engine assists in the work, and the spade is already down for its next slice. This would be used with the intermittent motion of the whole, and the forks or spades could be used alone. For continuous motion of the whole a different kind of implement must be used. On this I have little to say, but may mention that a sort of Archimedian screw-blade, with a rotatory and spiral motion, has occurred as one plan, these screws should act in a slanting direction, so as to throw out the earth. The blades of the screw would much resemble the mould-board of the common plough, and at the end should be pointed and have a sharp half-turn to enter and hold the ground. For detached implements, such as would be used by hauling, many of those now in use could be adapted, more particularly by combining two, such as a crusher and a dibbling machine, or some of Dr. Newington's with a sowing machine followed by a roller. The means of transmitting power to one of these detached machines, so as to make it a more efficient cultivator, should also be thought of. To obtain power on the machine it must either be of very considerable weight, or else the tool must so catch hold of the soil as to compensate for want of weight, such as the plough. Though many difficulties must occur, yet they have already been partly overcome; and it is the pride of our country that the talents of our practical men never fail in bringing any useful undertaking to a successful issue. Experiments with any machine of the kind must be attended with very considerable expense; while, even if completed, the demand must be limited and slow. It would therefore appear to be a very fit object to which societies and individuals should hold out some encouragement to practical men.

I have extended these remarks to great length, which have little novelty to recommend them. If, however, what is brought together is the means of drawing the attention of those capable of devising and executing machines for the speedier and less expensive cultivation of the land, it will be a great satisfaction. *Forester.*

## AGRICULTURAL CHEMISTRY.

Who shall decide when doctors disagree? Not certainly unlearned dabblers in science; nor do I pretend to do so. Here we have the great expounder of agricultural chemistry and the great practical agriculturists at issue, like sages of old on the colour of the chameleon, and perhaps with as little cause of difference. The question is simply that of the sufficiency of inorganic matters applied to the soil, in the common acceptation of the terms, as manures. It does not admit of question that where a soil is deficient in inorganic matters the supplying of them becomes necessary; Mr. Pusey will not deny this, nor that inorganic substances are essential in the fabric of vegetable and animal organism.

It is a speculation, perhaps rather fanciful, of Liebig, founded on facts, that is questioned—the sufficiency of certain inorganic matters for an abnormal production, and applied as manures—that has been taken up by Mr. Pusey, whose experiments Liebig considers inconclusive, and in which opinion, if, as I believe, we may draw from his writings that in the application of inorganic matters as manures, he presupposes the presence of a sufficiency of organic matters, he must be considered correct. In his manure for Wheat, Oats, and Barley he only offers certain inorganic matters as substitutes for the "animal manures, which act by their inorganic constituents."

The subject has been introduced into the columns of this paper by such powerful hands, perhaps I should say heads, that it may be considered an impertinent work of supererogation in one so humble in all his attainments to mix himself up in it, but I think it well to endeavour to induce a consideration of this subject, lest, from the experiments of Mr. Lawes, a too hasty conclusion may be come to, that Liebig has been wrong in his evidences, because he may appear to have erred in an inference from them. I think the general rule to be drawn from Liebig is, not that inorganic matters are sufficient of themselves to vegetation, merely aided by atmospheric influences, but that they are essentially requisite in its development; for, in asserting the great principle of their essentiality, he admits the very great influence of carbonic acid and ammonia, and devotes much space in his work on agricultural chemistry to the detection of ammonia in the atmosphere; and in his discovery of it in maple sugar, ascribes its presence there to have been derived from the roots—a conclusion I am disposed to question, as it would be more readily obtained through the leaves. He says, "Carbonic acid, water, and ammonia, contain the elements necessary for the support of animals and vegetables. The same substances are the ultimate products of the chemical processes of decay and putrefaction. All the innumerable products of vitality resume, after death, the original form from which they sprung. And thus death—the complete dissolution of an existing generation—becomes the source of life for a new one." Could we have a more decided assertion of the requirement in the soil of animal and vegetable manures. But, again, he says, "The roots" (before the production of leaves) "perform the functions of the leaves from the first moment of their formation: they extract from the soil their proper nutriment, namely, the carbonic acid generated by the humus" —humus, or mould, a product of the decay of vegetable matter. "By loosening the soil which surrounds young plants, we favour the access of air, and the formation of carbonic acid." "When a plant is quite matured, and when the organs by which it obtains food from the atmosphere are formed, the carbonic acid of the soil is no further required." It is now that the recently applied manures cease to influence the growth of plants; the organic matters supplied have done their work, they have promoted a large abnormal development of leaf—of vessels—to take in the organic matters that are freely offered to them in the atmosphere and in exhalations from the soil; the great business of the roots is now to drink up water from the depths of the earth and the inorganic matters they find dissolved in it; they have gone below the region of organism. The great object in the application of manures is to obtain this large development of leaf; and, as by the more than admission, by the direct assertion of Liebig, the matter most essential to this end is carbonic acid, an organic matter—the application of organic manures is, according to him, more efficient than inorganic ones could be, and this is no more than Mr. Lawes has proved.

Neither does Liebig, although finding ammonia in the atmosphere, do any discredit to its utility applied as a manure; for he says, in speaking of the employment of bone-dust, dried dung, lime, ashes, &c., as portable manures, "Although by these means the necessary phosphates are furnished to a soil, and solid animal excrements rendered unnecessary, they have led to the neglect of the liquid excrements, that is, of the urine of men and animals, which is thus completely lost

to agriculture. The urine of man, into which all the nitrogenous constituents of animals are finally deposited, is completely lost to the fields. This most important of all manures, so properly estimated in Flanders, Germany, and China, is altogether lost to the English agriculturist." I do not find, that I can recollect, that Liebig attributes a large early development to the application of inorganic manures, and we cannot doubt that on an early and large development will depend, all other things being equal, the future growth of a plant; a plant early nourished must exceed in its future growth that which has not been so stimulated, both from the increased number of leaves, and from their enlargement, the capacity of a plant to drink in food, organic food, from the air is increased, while the larger size of its roots, proportional to the overground growth, will enable it to take up a larger column of water containing a proportional amount of inorganic matters. In the rearing of animals we may find an analogical proof of this, if proof were necessary; the animal well fed when young will, in its after growth, always excel that which has been stinted. The inorganic materials of a plant bear so small a proportion to its organic components, that it would appear more requisite to supply these latter; and the more so as in giving these to the soil in the form of manure, we also give the former, perhaps, in a proportional quantity, and by the action of the organic matters so given, we bring so much of the inorganic ones in the soil into a fit state to be imbibed by the plants (roots or leaves I enter not now into the discussion), as these organic matters can act upon.

But it is to be remarked, that even in soils to which, either from their composition or from the locality, inorganic matters do not appear to be necessary, their application is attended with much success, as in the instance of lime and salt, the first experiments in which were tried in Scotland so near the sea-side that the sea water, somewhat evaporated, was used for slacking the lime. At Aghada, situate on the tongue of land that forms the south-east boundary of the Cove of Cork, a retired captain of the East India Company's naval service, used with perfect success lime and salt compost on poor well worn stubbles, by no means prime land; and he assured me he had better crops from it of Potatoes, Wheat, and Clover, than from his yard and stable-dung, or from the Cork town manure.

In the burning of land, where much of the organic matters of the soil are dissipated, and which takes place on many of the poorer soils of Ireland at short intervals, large products of Potatoes and Oats are obtained without any organic matters ever being supplied; the plan is to pare and burn the surface, to plant Potatoes, followed by Oats. The land is then left without seeds to recover a sward as it may, which it does in four or five years, and is then again burned and cropped as before. The pasturage it affords is scant enough; and as Liebig remarks of the fruitful corn land around Naples, "The animals fed on these fields yield nothing to these soils which they did not formerly possess. The weeds upon which they live spring from the soil, and that which they return to it as excrement must always be less than that which they extract. The fields, therefore, can have gained nothing from the mere feeding of cattle upon them; on the contrary, the soil must have lost some of its constituents." He before had observed, "Corn has been cultivated on this land for thousands of years, without any part of that which is annually removed from the soil being artificially restored to it."

Land is recovered by mere fallowing it, either worked or unworked, and in Ireland it is a most common practice to leave exhausted land to recover itself, without seeds even, and which it does do in a few years, and is then able to give a fresh succession of crops.

Liebig found the *modus operandi* of inorganic matters, and their importance to the vegetable economy, little known and less appreciated. I do not recollect any notice of them in the older writers, with the exception of some confused notions of the action of lime, phosphorus, &c., by practical writers, and even the scientific ones seem to have had very ill-defined opinions; it was "not determined in what way salts assist vegetation, whether by hastening the putrefaction of animal substances contained in the soil, or by attracting the humidity of the atmosphere." The experiments of Giobert led him to believe "that though beneficial to the growth of some species, and requisite to the health of others, earths are not capable of affording any considerable nourishment to the plant." Sir H. Davy apprehended a loss of vegetable food by exposing the soil to the action of the air; fallowing seems to have been used solely for destroying weeds. Agriculture was only an art, it remained for Liebig to introduce it as a science. Impressed with the importance of his researches, anxious to force them on the farmers' notice, his mind absorbed in the wondrous data he had found, and carried away by enthusiasm (ever an attendant on genius), it was easy to glide from demonstrable truths to visions of fancy, and it was natural to endeavour to impress on the minds of others the truthfulness they held in his. Liebig has erred, I think, in laying too great stress on the application of inorganic matters as manures, so as to lead to the belief (which I doubt of his entertaining) that they may supersede the use of vegetable and animal matters in this connection. *J. M. Goodiff, Granard.*

## Home Correspondence.

*Correspondence on the Clover Failure.*—[We have been favoured with the following letters between Mr. Lawes and Professor Henslow on this subject, and are glad to have the opportunity of so effectively bringing the subject again under the notice of our readers.]

*To Professor Henslow.*—Dear Sir,—Following your advice, I drilled about 6 acres of land with red Clover last spring, without any corn crop, and manured the land with 20 or 30 different manures. There was a good crop all over, and in some places, where particular manures had been applied, a splendid crop. It was cut in August, at which period the ground was perfectly covered over; soon afterwards the Clover commenced decaying in small patches over the whole of the field; and as far as I can judge, the decay is equally distributed over the best and worst manured portions; the decayed spaces are not very extensive at present, and I have had sticks placed at the extremities to mark the progress. This field was Clover two years ago. I should wish very much to have the benefit of your advice, if you could contrive to come here for a day or two at any time during the winter, as I think a careful inspection of the plants might enable you to form some opinion respecting the cause of the disease. At present, I think the decay is arrested, but I fully expect to find it extending rapidly in the spring. It is very singular that this plant should be the only agricultural plant which I find any difficulty in growing every year upon the same soil; it will require the combined efforts of physiologists and chemists to make a full solution of this interesting problem. *J. B. Lawes, Rothamsted, St. Alban's, Nov.* 20.——*To J. B. Lawes. Esq.*—Dear Sir,—Instructive as your experiment undoubtedly is, excuse me for saying it is not precisely the one I have suggested. I have been desirous of knowing how Clover comports itself when sown with and without Barley, all things else being the same; your experiment is very suggestive, for it seems to show that its being sown with Barley is not always (if it ever be) a cause of those failures of which agriculturists frequently complain. If the cause of these failures is to be sought, as I have long suspected, in the peculiar treatment which this plant receives, its own peculiar constitution being considered with reference to that treatment, we must not only inquire what effect its being sown with Barley has upon it, but what may be the effect of its being mown earlier or later by a few weeks or even days. I could wish you had left a moiety of each parcel of this field unmown, to see whether such portions were also liable to go off, as well as those which were mown in August. Better still if you had mown at intervals a little piece at a time. There are many plants esteemed to be perennial, which, under culture, scarcely last more than two, three, or four years; and possibly, Clover will not bear the treatment to which you have subjected it, and recover sufficiently to last for two years. I can easily fancy a difference of a few days in the period of mowing a plant of this sort might make all the difference to its successful cultivation. Possibly the sap prepared for the peculiar functions of a second year's growth may not have been stored in the roots, and your removing the stems too early may have intercepted the process. Many plants will not bear being pruned except at particular stages of their growth. Pray take these ideas as they occur, for I am sure you are not likely to regard such suggestions, as many farmers would be apt to look upon them, worthless, if they were not followed by an immediately favourable result; as your experiment stands—it affords us only one fact, viz., that Clover sown with 30 different manures, and mown in August, is liable to go off. If you had grown half the field with Barley and half without, at successive intervals, the interest of the experiment would have been greatly enhanced. Viewing the question physiologically, without regard to the chemistry involved in the manuring, I think the experiment should be repeated under the form here suggested, and I would repeat it on the very same ground without adding one particle more of manure to the soil. *J. S. Henslow, Hitcham, near Hadleigh. Nov* 24.

*Game.*—First, let me have a few words with "W. F. G. F." I thank this gentleman for his letter in general; but I am sure he will excuse me, if I observe, how provoking and disheartening it is, after an advocate, like myself, has been contending for a certain point through a series of letters, for some gentleman to start up, like one of the Seven Sleepers, and state, that the chief point on which the whole question turns has been entirely overlooked. "W. F. G. F.'s" complaint is exactly of this kind; for had he paid attention to all I have written on this subject, he would have found that at the commencement of this discussion I undertook to prove that game, taken in the aggregate, was of much more value than injury to the country at large, and that game-preserving gentlemen were public benefactors; and at the same time I also particularly stated that game could not be preserved without the employment of gamekeepers. "W. F. G. F." would also have found, that, when my opponent replied, that tenant farmers would be the best keepers, I answered that tenant farmers neither would nor could preserve the game; for I said, if one would, a hundred would not, and so for want of keepers all the game would be destroyed off their lands. And does not Mr. Cuthill himself admit this, in his letter of November 1st? wherein he asks "what has become of all the hares and rabbits round Manningtree and Wix." Now, Mr. Cuthill knows very well that some 14 years since around Manningtree and Wix the game was well preserved by two most excellent landlords, whose absence from this neighbourhood, from that time, has been greatly lamented by all farmers. Then, in my parish of Wix, we had plenty of game, and several game certificates were taken out in it; but now game has become so scarce, that, although we have 3000 acres of land under the plough, divided into farms, on an average of 200 acres each, not one tenant farmer takes out a certificate, since there is no game for them to shoot. But my friend asks, "What is become of the game round Manningtree and Wix?" What! Why, those amiable gentlemen, the armed midnight bandits, have stolen the whole for want of game preservers. But, my friend writes, that because he considers game to be nothing but wild animals, their destruction is a great blessing; but do my parishioners consider its destruction a great blessing? No such thing; but a great loss, for many valuable reasons, both to my parish and the neighbourhood. But my worthy opponent asks if I have turned poacher and snared them all, as they are not even mentioned in my reply to him. In answer to this inquiry, I assure the curious inquirer that when I steal hares and rabbits, I shall also steal geese and turkeys, and the first hamper full I shall obtain in that way I will make him a present of. But my friend denies that the excuse I made for him was a correct one; yet I made it in mercy or in kindness to him, and I really think he should so have received it. But I will let the reader judge between us. Mr. Cuthill asked me this important question: "How was it," said he, "that game preservers, on becoming farmers themselves, always gave up preserving?" When I replied that such was not the fact, but just the reverse; for that I knew several gentlemen who preserved game, and that, with one single exception, all of them farmed a part of their estates, and some of them farmed extensively; and I now repeat that such is the case at the present time; and I defy a refutation of what I write. But to get my friend out of his dilemma, I made the only excuse for him I could, namely that his informant had deceived him; but now he tells us that no one could deceive him, for "on this subject he had received no information from any living creature." Then, Mr. Cuthill, allow me politely to inform you that you have deceived yourself; for I know in Essex and elsewhere many game preservers, and every one of them is an extensive farmer, with the exception I have above stated. Mr. Cuthill informs us that garden cultivation will destroy all wireworms and slugs; but I say, not always, and in all places, though it may in some places. But farmers cannot garden cultivate; and if they could, near woods, without pheasants and partridges, I defy them to keep down the millions of insects which are bred in such localities; and for lack of game, three extensive and well educated nursery gardeners of my acquaintance keep flocks of bantams in their gardens solely for the purpose of destroying the insects which are injurious to their crops. But come, let us reason together a little further. You inform us that when a boy you lived on an estate on which you say, and I quote your own words, "I candidly own that every one of the servants, tenants and all, were downright poachers." From that notable estate, or "after that," you write, "I was head keeper and head factotum to my lamented friend James Smith. But when shooting time came on we had to travel a few fields before we got a shot, showing that I was a bad keeper." A bad keeper, aye, sure enough you were, a bad keeper indeed. I have heard much of that celebrated Mr. James Smith, as being known through the world for his shallow draining; but the man who could go to an estate for "a head keeper and head factotum," whereat every person on it, both tenants and servants, were downright poachers, must have had brains much shallower than his drains. But my worthy opponent still proceeds, and we must follow him, though I assure him that a sense of duty alone compels me in this instance to do so. "But I have known," continues he again, "bailiffs who were anxious men, encourage poachers, and wink at their visits; they were as blind as bats when they saw men poaching." I know not how blind bats are; but I know that they see better in the dark than most men can in the light, and hence they are not so blind as the bailiffs were who closed their eyes whilst poaching thieves stole and carried away their masters' property. But "my reverend opponent will tell me," adds Mr. Cuthill, "that those bailiffs were dishonest; but I say no; for, like me, they look upon hares and rabbits as nothing but wild animals, the destruction of which is a great blessing." My good Sir, do reconsider this last sentence, and try to blot it out of your memory, though it is indelibly fixed upon paper. It matters not what you and bailiffs may choose to call your employers' property; nor can any name you may apply to game vindicate the conduct of stewards on an estate who encourage poachers to steal it, or to shut their eyes whilst the rogues, in their vocation, are carrying it away. By the same rule, bailiffs may call a sheep a wolf, or a pig a fox, or a goose an eagle, and thus encourage poachers to thieve them, and wink at their visits; the principle in each case being the same precisely, if I have any judgment in such matters. I must however repeat that I have read with much interest many of my friend Mr. Cuthill's valuable communications, and I trust I shall live to read many more of them, but I should wound my feelings were I to say that he is equally successful in his defence of poaching. *Geo Wilkins.* [We have been forced materially to abridge this communication.]

*The Phosphate Nodules of Felixtow, in Suffolk.*—In a late number of the *Agricultural Gazette*, an interesting lecture of Dr. Daubeny has been published, showing how modern chemistry has been directly and indirectly serviceable to agriculture. In noting some of the steps by which the chemical compositions of the phosphate nodules in the red clay has been ascertained, he observes:—"The next step in the investigation was to ascertain the chemical constitution of the nodules themselves, and this was effected through the exertions of Mr. Browne, of Stanway, &c." Dr. Daubeny will, I trust, excuse me for saying this statement is incorrect. Reference to the extract from my letter to the *Bury Post*, of 3d July, 1845, published in the *Agricultural Gazette* for 1848, p. 180, will show him that Mr. Potter first analysed these nodules, and detected 56 per cent. of the phosphate of lime in them. I am afraid that I am in some measure responsible for a few misapprehensions that have occurred respecting the facts of the case, from allowing a passage in my original communication in the "Geological Proceedings," to stand after Mr. Potter had made known to me the results of his analysis. I have there stated:—"I am not aware whether any analysis has ever yet been made of them." This was the fact at the time the paper was written, and had been transmitted to the Geological Society. But before it was read, I happened to be in Cambridge, and met Mr. Potter in Mr. Deck's shop. I pointed out to both these gentlemen, practical chemists, the conclusion at which I had arrived respecting the probable origin of the nodules, and alluded to the possibility of their becoming serviceable in agriculture, according to the recently-published remarks of Liebig on coprolites. Mr. Potter, to whom I presented specimens, undertook to analyse them, and to report to me the result at the approaching meeting of the Geological Society, when my communication was to be read. This he did, and I stated to the meeting the analysis he had made, and exhibited the phosphate of lime he had procured, and which I still possess. His analysis appeared at the time singularly confirmatory of the views I entertained. This analysis ought, certainly, to have accompanied my paper; but Mr. Potter requested me to suppress it, and not to allude publicly any further to the subject, until he should have made such enquiry as might satisfy him whether it would be worth his while to make arrangements for procuring the nodules for an important ingredient in his artificial guano. I consequently was silent, in order that he might have the first chance in any speculation that might arise out of

the discovery. Months passed away, and Mr. Potter seemed to make no effort towards securing his opportunity; when I received a letter from Mr. Lawes, asking for information respecting the nodules, I wrote immediately to Mr. Potter, and I remember telling him, that as I was no speculator myself, and merely regarded the question scientifically, I did not feel justified in withholding from Mr. Lawes the information I had given himself. I quite forget whether it was on account of Mr. Potter or Mr. Lawes, that I visited Felixtow expressly to satisfy myself that I was not misleading them with respect to the abundance of the nodules, and the facility with which they might be procured. I had become acquainted with Mr. Smith there, who was in the habit of collecting iron pyrites on the coast, and I showed him the nodules in the cliff, and enquired at what rate he thought they could be collected. He named 10*s.* per ton as the probable price, and I believe it was on this information that Mr. Lawes wrote to him for the 2 tons which, as I have stated, he afterwards analysed. Whether this happened previously to Mr. Solly's visiting me in the progress of his enquiries, alluded to in Dr. Buckland's report to the Agricultural Society, I do not recollect; but certainly Mr. Solly's analyses were undertaken subsequently to that of Mr. Potter; and I think also subsequently to those of Mr. Lawes. I have not heard from Mr. Potter since I informed him of Mr. Lawes' application, and I have never yet had the pleasure of seeing Mr. Lawes, though we occasionally correspond about agricultural experiments. Mr. Browne first suggested to me the probability of these nodules being derived from the London clay, his own judgment being guided by his having seen something of the sort from the London clay at Hampstead; but it was not till shortly after my letter to the *Bury Post* that I received full confirmation of the correctness of his conjecture, by obtaining phosphate nodules from the London clay in the railway cutting at Colchester, as I stated at the Oxford meeting of the British Association. I will not trespass upon you by allusions to the many interesting analyses that have been made, and the conclusions at which we have now arrived respecting these and other concretions of phosphate of lime, my object being to point out the cause which has prevented Dr. Daubeny, Dr. Buckland, and other inquirers from recognising Mr. Potter's analysis as the first positive information we received of the phosphatic character of these nodules. *J. S. Henslow, Hitcham, Nov.* 20.

*English and American Churns.*—The alleged superiority of the new American churn over English churns has led to some trials being made, in order to test their comparative merits. The claim put forth in favour of the American churn by its inventor or patentee, is, that it produces butter in from six to 12 minutes, while the English churn is said to require half an hour and upwards to complete its work. This claim of superiority of the American is stated to arise from the different form of the dasher, and from the means provided, by a hole in the lid, for the admission of a constant supply of fresh air into the churn. It is, however, further set forth as important that the temperature of the cream used should be brought to 60°. There being here three conditions stated as necessary for the conversion of cream into butter, in the shortest possible time, viz., the particular form of dasher, the large supply of fresh air, and the temperature of 60°, it becomes interesting to determine whether the successful result arises from one or other of these conditions, or from the combination of the three. Having this object in view, four trials have been made with an English and an American churn, simultaneously, with cream from the same stock in each respective instance. The English churn used was of the ordinary form of square box churn, with the cross dasher of open bars, and the lid fitting close. If filled up to the line of axis of the dasher, it would hold 10 quarts of cream. The American churn, if filled up to the corresponding line, would hold six quarts. The results of the several trials are stated below; and it will be observed, that in two of them the cream used was divided between the churns, proportionately to their sizes, and in the other two equal measures of cream in each.

| Date. | Churn. | Cream used. | Time occupied. | Butter produced. |
|---|---|---|---|---|
| | | Quarts. | Minutes. | lbs. ozs. |
| Oct. 7 | English | 5⅝ | 8 | 5 15½ |
| | American | 3⅜ | 8½ | 3 9 |
| „ 10 | English ... | 4 | 7½ | 3 6 |
| | American | 4 | 12 | 3 4⅝ |
| „ 14 | English ... | 5⅝ | 5 | 5 7 |
| | American | 3⅜ | 7½ | 3 8 |
| „ 17 | English ... | 3 | 6 | 2 14 |
| | American | 3 | 12 | 2 10 |

It will be here seen, that in each of these trials (and they are all that have yet been made with these two churns, in corresponding conditions) the English churn brought butter in the shorter time. It appears unnecessary to look further to prove that there is no merit whatever in the form of dasher, and the air-vent in the lid, put forth by the American, as the grand discovery, entitling to a patent. In the temperature being at 60° lies the whole secret, if secret it be, for this is no new discovery, and is not patentable if it were. If our English dairymaids be furnished with thermometers, and instructed to bring their cream to 60°, by the addition of so much boiling-water as may be necessary for that purpose, they need not seek for American churns, nor occupy the long and uncertain time which they have hitherto done in producing butter. *Hampstead.*

*Farm Accounts.*—In the farming account I sent you, you asked if the machinery was credited. It was not; but it was not charged; so that, as it ought to appear on each side of the account for 1850-51, it would not affect the result. Your other suggestion, about credit being given for new implements, would somewhat modify the loss. The accounts and suggestions I refer to appeared in the *Agricultural Gazette* of Oct. 25. I hope next year to send you a more satisfactory balance-sheet. Your correspondent, "E. Hulme," page 699, in your last Number, would find a wide difference between his theory and practice. *Urban.*

## Societies.

Eydon Village Industrial Club, *October* 17.—*The Autumnal Show of the Industrial Club recently established in that village*—The object of the Club is to mark out by small prizes the best specimens of grain, vegetables, fruit, flowers, roots, needlework, and any work of ingenuity; also to reward good character in service in young persons under 24 years of age. The following statement shows how generally and warmly the Club is supported by the inhabitants. The population of the parish is about 620, and at the recent show 30 labourers, 27 tradesmen, and 8 persons of the class of farmers exhibited 208 lots of articles, some of the vegetables and roots being very superior. Two Cucumbers were shown, one being 19½ inches long, the plants from which they had been cut having produced 206 fruit since the 5th of May last. The following letter was given to each member:—

As we have united ourselves in an Industrial Club, I think it not in any way unbecoming in me, as your clergyman, and one of the original promoters of our Club, to take the part in our autumnal show, of addressing a few words to you on the cultivation of our land. I am not going to put before you any new-fangled notions, or to recommend any experiments by which you may very probably suffer loss; but my object is to put before you a few facts, upon which the industrial working of your brain may lead to the increased industrial working of your hands. For your inspection, there are three samples of straw:—No. 1 is from one of the centre rows of the 4-acre piece of Wheat, cultivated by the Rev. Samuel Smith, of Lois Weedon, having a row of Wheat 12 inches distant from it on each side. No. 2 is from an outside row, having on one side a row of Wheat at 12 inches distance, and on the other side a row of Wheat at the distance of 3 feet. You will perceive No. 2 to be much stronger, thicker, and firmer, than No. 1. No. 3 is the produce of one grain of corn, grown by William Pipe, of this village, in his garden in 1845. There are 88 stems from this one grain. This one corn was put into the ground in his garden by his wife, with no other seed near it; it was carefully cultivated, and, as it tillered, mould was put around and on the crown of it, the effect of which was to make it throw up additional stems. I do not mean to say that all these stems ripened good corn, or that such a plan could be followed out in general practice, either in a garden or a field; but if you let your brain industriously meditate on the above facts, and the straw you may now see, you cannot fail of being struck with the advantage of space. But space, if left untouched, will produce weeds, thereby making the land foul, and be injurious to the Wheat crop; Mr. Smith, therefore, of whose small farm all of you have heard, and some of you have seen, works his 3 feet space as a fallow, digging and turning it over once during the winter, and by hoeings preventing the growth of weeds in the spring. His principle therefore, or the foundation of his plan, is space and fallow. The practice of a fallow is as old as anything of which we have record. In the Bible (Leviticus, chap. xxv.), we read that the Israelites were commanded to give their land rest every seventh year. In every country, however uncivilised or thinly inhabited, all the land is, at certain times, fallowed. In England, so valuable is the restoration of land by fallow considered, that to obtain it, farmers are willing to be at the expense of frequent ploughings, and the loss of a year's crop, incurring thereby, in expense of work done and loss of crop, a cost of not less than 9*l.* or 10*l.* per acre, to be made up by the extra produce of the succeeding crops, till the return of fallow. The great novelty of Mr. Smith's system is that he has hit upon a clever plan of fallowing about half of his land every year, and so mixing it with his growing crop as to give that the immediate benefit of the fallow. By these means, he makes his cultivated part (about half the acre), produce about as much as an acre ordinarily does. I am inclined therefore to think that, as Mr. Smith annually restores and cleans his land, without losing a crop, that his plan of fallowing is not so expensive as at first sight it may appear; for with regard to weeds, I believe the truth of the old adage, that prevention is not only better, but, in the long run, cheaper than cure. Consider then the above facts, whether they do not establish the benefit of space and fallow. Now for a few facts, to call your attention to the beneficent power of the Almighty, in giving such a productive quality to Wheat, the chief food of man. The 88 stems of No. 3 each produced an ear, some full and good but others not; average however each at 30 grains, and there will be a 2640-fold produce. Mr. Smith, in his published account, has sowed about 2 pecks per acre, obtaining, in three successive years, an average produce of 34 bushels, or 136 pecks, being about 6-fold. Last year, however, he sowed about 1 peck to the acre, obtaining a produce in head and tail Wheat, 41 bushels 3 pecks, or 167 pecks, being a produce of about 160-fold. Now what is the return for seed in common farming? Usually 2½ bushels or 3 bushels are sown per acre, and if the average produce be 3½ bushels, it is about 12 fold. In a rich Wheat-growing district in France, the yield was considered the last summer to be about 15-fold; if the yield were the same in England, the crop would be considered to be heavy; yet we see there is a power in Wheat of producing very much more, and how little does man usually make of the extraordinary productive qualities which the Almighty has bestowed on Wheat. In a few days I expect to be in possession of an extraordinary produce from one ear of Barley. I will mention only one more instance of the produce of an acre of ground, on which Mr. Smith has, this year, by interlining with space and fallow winter Beans and Mangold Wurzel, obtained of the former 7 qrs. 4 bushels, with a crop of about, by guess, 12 or 14 tons of Mangold Wurzel. These are facts upon which it would be well for us industriously to employ our brains. I do not take upon myself to recommend any plan of cultivation, but we must wonder, and admire the bounty of the Almighty, and confess that we do not sufficiently take advantage of it. There is an old proverb of "waste not, want not." If we cannot grow more corn, let us consider whether we do not waste much, which may bring on want. *Francis Clerke. Eydon, Daventry, Oct.*

## Miscellaneous.

*Small Farm System.*—We have had occasion several times to discuss in the columns of the *Athenæum* the "great or small farm question;" or, as the French say, in language much more expressive, the question of the *grande ou petite culture*. During the last nine or ten months the *Morning Chronicle* has contained a series of very able papers from a special correspondent, whom the conductors of that paper despatched to France for the express purpose of investigating the state of French agriculture. The mission of this correspondent has now been brought to a close; and in a very interesting and able paper recently published in the *Chronicle*, he has given a *résumé* of his proceedings, and of the conclusions at which he has arrived. We can refer to this paper only as far as it bears on the cultivation question. The writer seems to be quite satisfied that where the occupier or owner of a small patch of land can cultivate it with the spade, a minute division does no harm. He says:—"The rule which strikes me as applying to the matter is this: Where spade-husbandry can be legitimately adopted, there the extreme sub-division of land loses much, if not all, of its evils. The reason is plain:—Spade-husbandry, while it pays the proprietor fair wages, also in certain cases developes in an economical manner the resources of the soil." This testimony is of great importance. On the general question of the *morcellement*, the writer is much less positive. He says:—"Are small properties, then, in cases in which spade-husbandry cannot be economically applied, injurious to the social and industrial interests of the community in which they exist? The following propositions appear to me to sum up what may be said on either side of the question.—1. Small landed holdings undoubtedly tend to produce an industrious population. A man always works hardest for himself. 2. Small landed holdings tend to breed a spirit of independence, and wholesome moral self-appreciation and reliance. On the other hand, 1. Small landed holdings, by breeding a poor and ignorant race of proprietors, keep back agriculture, and injure the whole community of consumers. And, 2. Small landed holdings tend to grow smaller than it is the interest of their owners that they should become. Capital borrowed at usurious rates of interest is then had recourse to for enlarging individual properties; and the result is, the production of a race of involved, mortgaged, and frequently bankrupt properties. With these simply stated propositions, for which there is the amplest evidence, I take my leave of the subject." It is only fair to add, that the researches and writings of the correspondent of the *Chronicle*, whose words we have now quoted, will certainly form an epoch in the discussion in this country of the social questions relating to the present state of France. Two years ago, M. Blanqui was commissioned by the Academy of Moral and Political Sciences to investigate personally the "situation of the rural population of France." M. Blanqui has already made several partial reports of his proceedings to the Institute; and he is described as having made considerable progress in the regular and official treatise in which it is his intention to embody the results of his inquiry. As some evidence, however, of the effect produced in M. Blanqui's mind by what he has seen and heard of the *petite culture* in France, we may quote a sentence from one of the papers which he has laid before the Academy. "It is the division of property—mother of the *petite culture*—which has principally contributed to develope in the soil of France so rich a variety of productions; and which alone explains the ardour with which so many new proprietors have lavished on the land the treasures of their intelligence and activity." *Athenæum.*

## Calendar of Operations.

### NOVEMBER.

Lammermuir Sheep Farm, *Nov.* 22.—Much to the comfort, we doubt not, of all concerned, the sheep bathing was completed by the middle of the month. The jacketing and breeking of the hoggs was also got through a few days ago. For the benefit of the uninitiated, we may state, that the later operation consists in sewing a piece of thin linen cloth over the tails of the ewe hoggs, or such young ewes as are thought too weak to have lambs, but which cannot, at the same time, be conveniently removed beyond the reach of the rams. At the end of the season, these breeks are taken off without delay, washed, and laid aside for another year; their presence, though necessary when the hogs winter beside the ewes, being both troublesome and injurious to the wearers, when permitted to remain long on. From "use and wont," the 22d of November has become the fixed day for admitting the rams to the ewes in this district. On some of the less exposed grazings, where crosses with the Leicester are bred, this is done about a fortnight sooner; and as these crosses are generally shown at the earlier lamb markets, the plan is good, provided there be a sufficient supply of Turnips for the ewes, for some weeks before, and during lambing; but on the higher grounds, when the spring is late, and the sheep have generally to shift for themselves, the middle of April will be found sufficiently early for lambs. We never permit the rams to remain out above six or seven weeks, when they are brought back into some convenient inclosure, and fed upon Turnips, during the remainder of the winter and spring months, as we do not like to see this important division of the stock get into low condition at any season. According to the nature of the ground, we allow between 40 and 50 ewes to each ram, besides keeping a few in reserve in case of accidents. For some time the shepherds will require to be upon the alert, both to prevent the stronger sheep monopolising an undue number of ewes; and as each ram has his locality assigned him, to see that they do not wander beyond their proper beat; and that none of the ewes are grazing at any great distance from their lords. The condition of hill sheep at this season being a matter of much consequence, we may state, that upon the whole, there is very little cause for anxiety. Perhaps we could have wished to have seen the Cheviot hoggs somewhat fuller in flesh—though it cannot be said that they are below an average in this respect—and as far as the ewes are concerned, we are satisfied. Much, of course, depends upon the nature of the coming winter; already there are some ominous symptoms of a severe one, but as the same things are observed every autumn, we patiently wait the issue. On the arable part of the farm, the labour consists in ploughing Oat stubble for Turnips, which, but for sickness among the horses, would have been finished ere this; carting out manure to be spread and ploughed in immediately; providing the young cattle and a few sheep with Turnips;

threshing Oats for fodder, and carting part of the grain to a neighbouring mill, to be made into meal for the shepherds and other farm servants. A spade's-man kept on the farm has been repairing all the stone fences. During fresh weather, he will be employed making and cleaning out pasture drains, and during frost, quarrying stones for a new sub-division fence. *A Lanarkmuir Farmer.*

METEOROLOGICAL REPORT.—NOVEMBER.
*(Continued from p. 749.)*

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| Nov. 20 | 8 a.m. | ... | 29.69 | Northerly. Fine bright, cold day. Barometer rising steadily. |
| | 10.30 p.m. | 29.97 | ... | |
| 21 | 8 a.m. | 29.92 | ... | Gentle breeze, and overcast. |
| * | 3.30 p.m. | ... | 29.81 | A.M. W. Noon WNW. Barometer falling steadily. |
| | 11.30 p.m. | 29.86 | ... | P.M. NW. Evening brisk; barometer rising. |
| 22 | 8 a.m. | ... | 29.96 | NNE. Brisk. Bright sunny day. Barometer rising steadily. |
| | 10.30 p.m. | 30.09 | ... | |
| Sun. 23 | 7.45 a.m. | 30.05 | ... | A.M. NW. to WNW. moderate. Frost. Bright and sunny. P.M. S. Overcast, hazy. Barometer falling steadily. |
| | 10.40 p.m. | ... | 29.63 | Night, blowing hard, and raining fast. |
| 24 | 7.40 a.m. | 29.45 | ... | A.M. W. Calm. Horizon bounded with heavy cumuli. |
| † | 1 p.m. | ... | 29.41 | P.M. Overcast. |
| | 10.30 p.m | 29.45 | ... | Evening, bright. |
| 25 | 8 a.m. | 29.44 | ... | A.M. W. Gentle. Overcast. |
| ‡ | 10.30 p.m. | ... | 29.37 | P.M. WSW. Do. Raining. |
| 26 | 7.40 a.m. | ... | 29.46 | N. Brisk. A.M. Cold. Overcast. |
| | 11.40 p.m. | 29.70 | ... | Noon—P.M. Bright and fine. |
| 27 | 7.50 a.m | ... | 29.72 | N. Gentle. Hard, white frost. |
| | 5 p.m. | 29.76 | ... | Beautiful day. |

Continuation of preceding storm.

* A storm coming from the westward, and travelling eastward.

† This storm must have come from the southward, lying a long way to the westward, and on approaching this country have curved to the eastward, across England.

‡ This storm came from the westward, and crossed England to the eastward.

Dorchester Nov. 27. *F. P. B. M.*

*(To be continued.)*

## Notices to Correspondents.

BIRMINGHAM POULTRY SHOW: *E S, G W, Clericus, and others.* I will endeavour to answer all your queries under one head. A subscriber's card admits at any time during the Exhibition. The entries are more than 1000 in number. All the competing pens are not made up of perfect specimens, but the best of every breed in England will doubtless be there. I consider 50*l.* a prohibitory price for three fowls, but if any one will give that sum they must be sold. It would not be ridiculous if a larger sum were named, because the object in doing so is apparent. "Emily" may satisfy herself it is an "exhibition for ladies," by visiting it. Tuesday is the best day, as it is a private, consequently a select day. I do not know the intrinsic value of the large Silver Medal. It was last year very handsome and very well executed. Being an exhibition advertised for four days, an "intended large buyer" will easily understand he cannot be allowed to remove his purchases till the close. I am not aware whether the North-Western Railway Company will run special trains. It is by far the largest and best exhibition of the sort I ever saw; and I do not believe any one who has not seen it can imagine what it is, compared with anything else of like nature: it is the Crystal Palace to the time-honoured Bartholomew Fair. *J. Baily*, 113, *Mount-street.*

BREWING: *G P* says, "I intend to try a nine gallon cask of ale, made of sugar instead of malt, adopting Donovan's proportions of sugar and Hop as for a 1) gallon cask; and shall make use of 'Agricola Cæsariensis's' suggestions of the muslin bag to inclose the Hops, and dissolved isinglass. Will he obige me by stating what quantity of isinglass should be dissolved for my nine gallon cask? and what time should be allowed for fermentation at this season of the year before the cask is permanently driven in? Will it be necessary to wire the corks of the bottles? I generally brew a 60 gallon cask at a time, and hitherto of malt and Hops. Supposing I should prefer the use of sugar, what quantity of sugar and Hops should I make use of for draught ale? as bottling so large a quantity would be inconvenient, and when would such 60 gallons be fit for use?"

CABBAGES: *Discipulus.* 1. *Do the open or hearting taint the butter the most?*—Good butter is made from cows fed on either, but perhaps the firm part of the Cabbage is more likely to give a bad taste. 2. *Do Cabbages taint butter more in summer or winter?*—In summer Cabbages are generally free from decayed leaves, which cause a bad taste in the butter; but if care is taken to remove these, we do not think that either in summer or winter can the bad taste be often traced to feeding on Cabbages. 3. *Does it matter whether the Cabbages are given just after milking, or at any other time?*—In winter, Cabbages are sometimes given just before milking; we give them when the cows will eat them up clean. 4. *Will any article put into the milk or cream prevent the tainting?*—In a dairy where excellent butter is made, a tablespoonful of chloride of lime, diluted in a quarter of a pint of water, is put to two gallons of cream, just before churning; another remedy is, 1 oz. of saltpetre, in fine powder, to the same quantity of cream; or half a tea-spoonful of the latter is also put into a pail holding about three gallons, before milking. 5. *Do Cabbages taint most when in the vigour of growth or when quite ripe? Ex.: Drumheads in December or after?*—It would be a waste of food to use them before they are fully grown; but if too ripe and decayed, they are the cause of tainting. 6. *Can you give any directions for preventing the tainting?*—If you find Cabbages that are free from decayed leaves, or in fact anything else, cause your butter to taste, feed your cows upon something else; and be attentive to cleanliness, both in the dairy and in feeding the cows. In winter time a few Carrots given to the cows will improve the taste and colour of the butter. With reference to Cabbages or white Carrots given to each cow, we should say from 50 to 70 lbs., but the quantity must vary with the other food given; we should not feed solely on either. Cabbage seed must be sown in beds in the latter part of July or August, and the young plants pricked out before winter, to come in for early planting. The plants from seed sown early in the spring succeed these, but the autumn sown, we believe, give the heaviest crops. We prefer the Drumhead Cabbage to all others. *H. R.*

CATTLE: The only specific breeds that receive particular articles in the "Cyclopedia," are the short-horns, Herefords, and Devons, with the Ayrshire and Jersey cattle as dairy breeds. All other breeds will be described in the article "Ox," by Mr Wilson, of Edington Mains.

COCHIN CHINA EGGS: *Animal Bib. Impl.* See our advertising columns. Mr. Baily, of Mount-street, answers most of our poultry correspondents.

CHEMICAL QUESTION: *G B.* We are unable to answer it. You should apply to a chemical periodical on the subject.

"DRUMMOND'S PATENT ANTI-METALLIC CHURN:" *A Constant Sub.* We do not know it.

HOPS. &c.: *W K.* asks, "Has the bine of the Hop and the stalks of Beans ever been tried for manufacturing purposes, if treated on the principle which Chevalier Claussen applies to Flax?" [We believe it has been tried, but not successfully, as material for the paper manufacture.]

INSECT DESTROYER: *S Myers.* You should advertise it.

LIQUID MANURE CARTS: *G F.* Mr. Chard, Milk-street, Bristol, late Mr. Stratton, can, no doubt, give satisfactory information on the liquid manure carts made by Mr. Stratton, which were probably the best.

LIQUID MANURE TANKS: *A Landlord* says—"I shall feel much obliged to any of your correspondents who will inform me, from experience, what is the size required for a liquid manure tank for a farm of 300 acres of average land, farmed on the four-shift course. In Mr. Ewart's essay (Journal of the Royal Agricultural Society of England, vol. xi., p. 248), it is stated that 10 feet in diameter and 20 feet deep is a proper size; but in his treatise on agricultural buildings (p. 16), 8 feet diameter and 12 feet deep is counted sufficient. Now, as the former of these is about two and a half times the capacity of the latter, it is evident that if the smaller one is large enough, the larger one is considerably larger than is necessary; and as I am about to construct tanks on some of my farms, any information tending to discover what has practically been found to be the golden mean with respect to size, will be esteemed a favour. [No tanks at all is the right method. This, with the adoption of box-feeding in stables, as well as in feeding-stalls, is the most economical mode of manure management.]

ONE ACRE TO SUPPLY WINTER FOOD FOR THREE COWS: *Ab Initio.* ½ to Cabbages = 10 tons; ½ to Carrots = 5 tons; ½ to Mangold Wurzel = 16 tons. ½ after the first cut Cabbages in September to Rye = 1½ tons. In all 32½ tons, or 650 cwt., which is more than 1 cwt. a day for three cows during the half year, between September and April, which is all they will want in the way of green food. You must give them a little hay with it, or some straw-chaff with Bean-meal and Linseed. Put all your manure on the arable land, and buy guano as well. If you break up pasture this winter you can lay it down again in any future spring.

PIGS: *A B C.* We do not remember having previously received your inquiry. You had better apply to Mr. Moore, of Colesbill, near Farringdon.

POND MUD: *Eboracensis.* We would not carry it a mile; but if it be close by we should be glad to use it, unless, indeed, the land were already rich enough, which is a possible thing. It is not a saleable article.

SMALL FARM: *R.* "How you can turn the field to the best account," is a great deal too general a question to ask. With six acres you can easily keep a "cow or two." You may grow Wheat and Potatoes enough for your family, and do this as well; by cultivating Cabbages, Vetches, and Lucerne, as summer food; and Cabbages, Mangold Wurzel, Carrots, and Rape, as winter food. If you have the back numbers of this Paper, look at the schemes of cultivation there given.

SWELLING: *D.* The ointment of biniodide of potass is the best for removing enlargements; but in the case in question, excision by the knife will probably be most advisable. *W. C. S.*

TANNERS' WASTE: *S N.* We should prefer composting it with the lime to using the two separately. It is only in the case of ammoniacal manures that there is loss by mixing the lime and the manure together.

YEAST: *B M P* says, "Will any reader of the *Agricultural Gazette* kindly inform me how to get the bitterness out of yeast?" He uses 6 lbs. of Hops to 8 bushels of malt, and the yeast spoils all the bread, and gets sour very soon.

# Markets.

## COVENT GARDEN, Nov 29.

The supply of English Pine-apples is well kept up, and Grapes, both foreign and English, are plentiful. Small quantities of Pears are still brought from the Continent. The best English kinds fetch 2s. to 4s. a doz., and 8s. to 12s. per half sieve. They consist of Glout Morceau, Crassane, Beurré Diel, and Chaumontelle. Oranges are plentiful. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are dearer. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Apples, kitchen, per bushel, 1s to 2s 6d | — per 100, 6s to 10s |
| Pears, dessert, p. doz., 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p. bsh., 12s to 14s |
| Walnuts, per bush., 12s to 24s | Filberts, per 100 lbs., 70s to 90s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 6d to 8d |
| Broccoli, per bunch, 8d to 1s | Artichokes, Jerusalem, per hf. sieve, 9d to 1s |
| Potatoes, per ton, 45s to 80s | Lettuce, Cab., p. score, 4d to 1s |
| — per cwt., 2s to 5s | — Cos, per score, 3d to 1s |
| — per bush., 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Turnips, p. bunch, 1d to 2d | Horse Radish, p. bundle, 1s to 4s |
| Cucumbers, each, 6d to 1s | Red Beet, per doz., 1s to 2s |
| Radishes, per doz., 9d to 1s | Mushrooms, p. pot., 1s to 2s 6d |
| — Turnip, p. doz., 9d to 1s | — per bushel, 7s to 10s |
| Celery, p. bundle, 6d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Carrots, per bunch, 4d to 6d | Fennel, per bunch, 2d to 3d |
| Brussels Sprouts, p. half sieve, 1s 6d to 2s | Savory, per bunch, 2d to 3d |
| Spinach, per sieve, 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Onions, p. bunch, 1d to 5d | Parsley, per doz. bun., 2s to 3s |
| — Spanish, p. doz., 1s 6d to 3s | Mint, per bunch, 1d to 2d |
| Endive, per score, 9d to 1s | Basil, p. bunch, 3d to 4d |
| Beet, per doz., 6d to 1s | Marjoram, do., 3d to 4d |
| Parsnips, per doz., 6d to 1s | Watercress, p. 12 bunch., 4d to 6d |
| Leeks, per bunch, 1d to 2d | |

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 27.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 68s to 80s |
| Inferior ditto... ... | 60 67 | 2d cut ... ... ... | 60 70 |
| Rowen ... ... ... | 60 63 | Straw ... ... ... | 22 26 |
| New Hay ... ... | — — | | J. COOPER. |

A large supply and a heavy trade.

CUMBERLAND MARKET, Nov. 27.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 80s | Inferior ... ... ... | 65s to 75s |
| Inferior ditto... ... | 60 70 | New Clover ... ... | — — |
| New Hay ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 86 | | JOSHUA BAKER. |

WHITECHAPEL, Nov. 27.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 72s to 76s | Old Clover ... ... | 80s to 84s |
| New Hay ... ... | 65 75 | Inferior ditto ... | — — |
| Inferior ditto... ... | 50 63 | New Clover ... ... | 75 80 |
| Straw ... ... ... | 21 24 | Inferior ditto... ... | 55 70 |

HOPS.—FRIDAY, Nov. 28.

Messrs. Pattenden and Smith report that there is a better trade for Sussex Hops, and prices have advanced 5*s.* per cwt. since this day week; there is also a steady demand for other sorts, at a shade more money.

| | | | |
|---|---|---|---|
| Mid & East Kents | 140s to 252s | Yearlings ... ... | 95s to 112s |
| Weald Kents ... | 120s to 147s | Old Hops ... ... | 20s to 50s |
| Sussex ... ... | 105s to 126s | | |

POTATOES.—SOUTHWARK, MONDAY, Nov. 24.

The committee report that the during the week the supply, both coastwise and by rail, has been very limited, which has caused an advance in price for all sorts of Potatoes. The following are this day's quotations:—York Regents, 70s. to 80s.; Scotch do., 60s. to 75s.; Kent and Essex do., 65s. to 80s.; ditto Shaws, 60s. to 65s.

SMITHFIELD, MONDAY, Nov. 24.

Although there were fewer Beasts, prices are no higher; indeed, middling qualities are scarcely so saleable as of late. The number of Sheep is larger; trade is generally dull, especially for big Sheep, owing to the changeable weather. Calf trade is heavy, at about Friday's prices. From Holland and Germany there are 390 Beasts, 4910 Sheep, 175 Calves, and 23 Pigs; from Spain, 240 Sheep; from France, 90 Sheep and 4 Calves; from Norfolk, 100 Beasts; from Ireland, 150; and 2400 from the midland counties.

| Per st. of 8 lbs.— | s | d | s | d | Per st. of 8 lbs.— | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 | 8 to 3 | 10 | | Best Long-wools . | 3 | 4 to 3 | 8 | |
| Best Short-horns | 3 | 6 — | 3 | 8 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 6 — | 3 | 0 | Ewes & 2d quality | 2 | 10 — | 3 | 0 |
| Best Downs and Half-breds ... | 4 | 0 — | 4 | 2 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... | | ... | | | Lambs ... ... | 0 | 0 — | 0 | 0 |
| | | | | | Calves ... ... | 2 | 10 — | 3 | 10 |
| | | | | | Pigs ... ... | 3 | 0 — | 4 | 4 |

Beasts, 4763; Sheep and Lambs, 27,890; Calves, 227; Pigs, 460.

FRIDAY, Nov 28.

The supply of Beasts to-day is small, but equal to the demand. Monday's prices are with difficulty maintained; 3*s.* 10*d.* is an extreme quotation, and only realised in a few instances. We have, for the time of year, a fair supply of Sheep. Trade is exceedingly dull, at about the same prices as on Monday last. Good Calves are scarce, and fully as dear; inferior qualities are lower, and it is difficult to effect a clearance. From Germany and Holland we have 187 Beasts, 1050 Sheep, and 182 Calves; from France, 120 Sheep and 6 Calves; from the midland counties, 300 Beasts; and 105 Milch Cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 | 6 to 3 | 10 | Best Long-wools . | 3 | 4 — | 3 | 8 |
|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 4 — | 3 | 6 | Ditto Shorn ... | | ... | | |
| 2d quality Beasts | 2 | 4 — | 3 | 0 | Ewes & 2d quality | 2 | 10 — | 3 | 0 |
| Best Downs and Half-breds ... | 4 | 0 — | 4 | 2 | Ditto Shorn ... | | ... | | |
| Ditto Shorn ... | | ... | | | Lambs ... ... | 0 | 0 — | 0 | 4 |
| | | | | | Calves ... ... | 2 | 6 — | 3 | 10 |
| | | | | | Pigs ... ... | 2 | 8 — | 4 | 0 |

Beasts, 716; Sheep and Lambs, 3520; Calves, 262; Pigs, 430.

MARK LANE.

MONDAY, Nov. 24.—The supply of Wheat from Essex and Kent to this morning's market was moderate, and sold slowly at the terms of this day se'nnight. Foreign was in limited retail demand only, but fully former prices are insisted on. Floating cargoes continue in demand for the Continent, but they are very scarce.—The value of Flour remains unaltered.—A few picked samples of Barley brought last week's prices, but other descriptions of malting were the turn lower; grinding sells readily.—Peas are scarce, and white boilers bring 3*s.* per qr. more money.—Beans fully maintain late rates.—The Oat trade is firm, and the advance of Friday fully established.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 38 | 41 | Red ..... | 35 | 38 |
| — — fine selected runs...ditto | 40 | 44 | Red ..... | 38 | 40 |
| — — Talavera ..... | 44 | 46 | | | |
| — Norfolk, Lincoln, & York...White | 33 | 36 | Red ..... | — | |
| — Foreign ..... | 31 | 48 | | | |
| Barley, grind. & distll., 25s to 26s...Chev. | 29 | 32 | Malting . | 25 | 28 |
| — Foreign...grinding and distilling | 22 | 26 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 16 | 20 | | | |
| — Scotch and Lincolnshire...Potato | 19 | 24 | Feed ..... | 18 | 21 |
| — Irish ..... Potato | 18 | 21 | Feed ..... | 18 | 20 |
| — Foreign .....Poland and Brew | 18 | 22 | Feed ..... | 16 | 19 |
| Rye ..... | 26 | 28 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan .....26s to 28s.....Tick | 27 | 31 | Harrow . | 27 | 31 |
| — Pigeon.....28 — 33... Winds | 31 | 32 | Longpod | 25 | 27 |
| — Foreign ..... | 22 | 30 | Egyptian | 23 | 25 |
| Peas, white, Essex and Kent.....Boilers | 32 | 35 | Suffolk... | 33 | 36 |
| — Maple.....28s to 30s .....Grey | 25 | 28 | Foreign . | 27 | 35 |
| Maize ..... White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 35 | 39 | | | |
| — Suffolk ..... ditto | 25 | 32 | Norfolk . | 25 | 32 |
| — Foreign .....per barrel | 15 | 21 | Per sack | 28 | 33 |

FRIDAY, Nov. 28.—The arrivals of all descriptions of grain continue small; to-day's market was thinly attended, and the inquiry for Wheat limited; nevertheless, holders were indifferent as to selling, and on the little business done extreme prices were realised. There continues to be some inquiry for floating cargoes for the Continent.—The trade for spring corn of all descriptions is very firm at Monday's quotations.—The arrivals of Oats are very short, and in some instances higher prices are realised.—In the value of Flour there is no alteration.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 1710 | 2620 | 940 | 1820 sacks |
| Irish ..... | — | 440 | 4360 | |
| Foreign ... | 2440 | ½ — | 1370 | 1360 sacks |

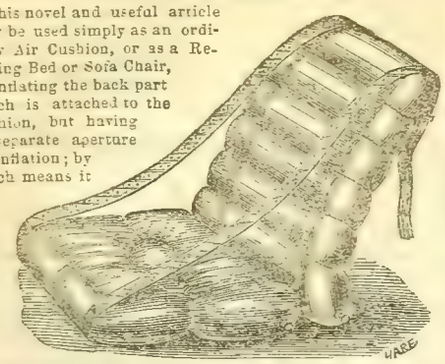
| IMPERIAL AVERAGES. | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Oct. 18..... | 36*s* 0*d* | 24*s* 9*d* | 17*s* 0*d* | 23*s* 6*d* | 27*s* 6*d* | 27*s* 2*d* |
| — 25..... | 36 9 | 25 5 | 17 5 | 23 8 | 28 6 | 27 7 |
| Nov. 1..... | 36 6 | 25 7 | 17 5 | 24 10 | 28 6 | 27 5 |
| — 8..... | 36 1 | 26 1 | 17 6 | 25 1 | 28 10 | 28 2 |
| — 15..... | 36 4 | 26 7 | 18 1 | 26 0 | 28 8 | 28 3 |
| — 22..... | 36 9 | 27 0 | 18 3 | 23 2 | 29 8 | 28 7 |
| Aggreg. Aver. | 36 5 | 25 11 | 17 7 | 24 4 | 28 7 | 27 10 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| PRICES. | Oct. 18. | Oct. 25. | Nov. 1. | Nov. 8. | Nov. 15. | Nov. 22. |
|---|---|---|---|---|---|---|
| 36*s* 9*d* | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 4 | ... | ... | ... | ... | ... | ... |
| 36 1 | ... | ... | ... | ... | ... | ... |
| 36 0 | ... | ... | ... | ... | ... | ... |

LIVERPOOL, TUESDAY, Nov. 25.—At our market this morning there was a good display of samples, principally of the fine descriptions of American Wheat, and having a moderate attendance, there was a fair amount of business in this grain at the full prices of Tuesday last; farmers' Wheat at the same time realising the highest quotations. American Flour sustained the improvement of Friday, whilst choicest marks of French and Irish brought extreme rates. Malting Barley and Malt, in the absence of supply, are unchanged in value. Grinding Barley rather cheaper. Oats command full prices, and Oatmeal is 3*d.* per load dearer. Beans and Peas in fair request. Indian Corn more sought after at the reduction of Friday.—FRIDAY, Nov. 21.—Having few country millers at our Corn Exchange to-day, the transactions in any descriptions of foreign Wheat were limited in amount; nowithstanding, the sales effected were at the full rates of Tuesday; whilst farmers' Wheat was in good request, and the turn dearer. Barley and Malt ranged precisely the same as last market day. Beans and Peas were held on rather higher terms but which were scarcely attainable. Oats and Oatmeal, upon a moderate demand, supported our last currency. Indian Corn in slow request at a further decline of 6*d.* per qr.

## J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.



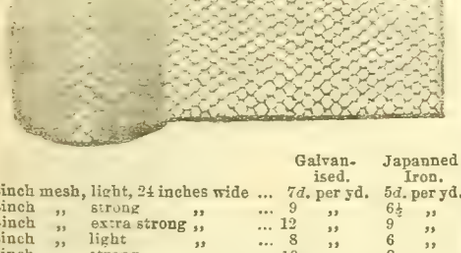
This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

## GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7d. per yd. | 5d. per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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Cauliflowers
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Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
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Creepers
Crocus
Crown Imperials
Cucumbers
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Daises
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Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
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Leeks
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Mint
Mustard
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Nemophilas
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Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
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Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with explained
Guards against
Labelling [wind
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, arrangement of trees, &c.
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c. saw proper for the purpose

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing
Grafting, advantage of
Grafting, disadvantage of
Operation in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 49—1851.] SATURDAY, DECEMBER 6. [PRICE 6*d.*


INDEX.


| | | | |
|---|---|---|---|
| Agricultural Soc. of England.. | 779 *c* | Ireland, state of | 778 *b* |
| Birds, British song | 772 *b* | Lasiobotrys Loniceræ | 772 *a* |
| Calendar, Horticultural | 776 *a* | Late Roses | 775 *a* |
| Cheese, cream | 781 *c* | Linnean Society | 774 *b* |
| Chrysanthemum show, High-gate | 775 *c* | Manure for Potatoes | 778 *a* |
| Chrysanthemum show at Norwich | 775 *c* | Mosses, luminous | 776 *a* |
| Conifers, names of | 774 *a* | Musa Cavendishii | 774 *a* |
| Cuckoo, the | 774 *a* | Mushrooms | 772 *a* |
| Draining | 777 *b* | National Floricultural Society | 775 *b* |
| — in Lancashire | 781 *b* | Newcastle Farmers' Club | 780 *b* |
| Farming, alternate culture | 779 *b* | Orchids, blocks for | 774 *a* |
| Fire Annihilator, Phillips's | 773 *c* | Plant cells | 772 *a* |
| Fossil remains | 779 *b* | Potatoes, manure for | 778 *c* |
| Game | 779 *c* | Reaping machine | 781 *a* |
| Game Birds, &c., rev. | 774 *c* | Roses, late | 773 *a* |
| Garden, to make | 772 *a* | Stables, ventilation of | 780 *b*–781 *b* |
| Garden Gleanings, foreign | 773 *a* | Subsoil | 777 *b* |
| Glass houses, to cover | 773 *c* | Ventulation of stables, &c. | 781 *b* |
| Glass, rough plate | 773 *b* | Walls, glass | 771 *b* |
| Horses, to clip | 779 *b* | Weather, the | 781 *c* |
| Horticultural Society | 774 *a* | Wheat, price of | 779 *c* |
| Ice stacks | 773 *c* | Wheat growing, Ward on | 778 *a* |
| | | Yeast, bitter | 781 *c* |
| | | Young's (Mr.), nursery | 775 *a* |



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Kirkaldy, Dec. 6.

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*CEDRUS AFRICANA, 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 30 ins., 5*s.*; 36 ins., 7*s.* 6*d.*; 48 ins., 10*s.* 6*d.* each.
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*CRYPTOMERIA JAPONICA, seedlings, very robust plants, will require no support from stakes. Plants 4 to 5 ft. high have stems as many inches in circumference. 6 ins., 63*s.* per 100. 24 ins., 2*s.* 6*d.*; 36 ins., 3*s.* 6*d.*; 48 ins., 5*s.*; 60 ins., 7*s.* 6*d.* each.
,, JAPONICA NANA, seedlings 9 to 12 inches through, 10*s.* 6*d.* to 21*s.* each.
*CUPRESSUS FUNEBRIS, seedlings, very robust plants, from the open border, nearly as wide as high, very handsome plants, 12 ins., 5*s.*; 18 ins., 7*s.* 6*d.*; 24 ins., 15*s.*; 30 ins., 21*s.*; 36 ins., 31*s.* 6*d.* each. Cuttings, 6 to 8 ins., 2*s.* 6*d.* each.
* ,, ELEGANS, a rapid grower, and a most graceful tree, 12 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.*; 36 ins., 5*s.*; 48 ins., 7*s.* 6*d.* each.
* ,, GOVENIANA.—This is one of the most beautiful plants of its class. It has the merit of preserving its beautiful green colour during the most severe weather. 9 ins., 2*s.* 6*d.*; 12 ins., 3*s.* 6*d.*; 18 ins., 5*s.*; 24 ins., 7*s.* 6*d.*; 30 ins., 10*s.* 6*d.*; 36 ins., 15*s.*; 48 ins., 21*s.* each.
* ,, LAMBERTIANA, forms a noble tree, rivalling even the Cedar of Lebanon, and succeeds well in very exposed situations. 9 to 12 ins., 1*s.* 6*d.*; 18 ins., 2*s.* 6*d.*; 24 ins., 3*s.* 6*d.* each.
Grafted beneath the surface of the soil, 30 ins, 2*s.*; 36 ins., 2*s.* 6*d.*; 42 ins., 3*s.* 6*d.*; 48 ins., 5*s.* each.
CEPHALOTAXUS FORTUNII, male var., long leaves, seedlings, 21*s.* each.
,, ,, female var., short leaves, seedlings, 21*s.* each.
CHAMÆROPS, sp., a hardy Palm from the north of China, a decided acquisition to our hardy ornamental evergreens, 21*s.* to 31*s.* 6*d.* each.
*CLERODENDRON FŒTIDUM.*—The only species of this beautiful genus which can be successfully cultivated in a cool greenhouse, a situation in which this succeeds admirably. It forms its large heads of rosy lilac flowers in great profusion. Strong plants, 21*s.* each.
CERASUS ILLICIFOLIA, 7*s.* 6*d.* each.
DAPHNE JAPONICA, 12 ins., 2*s.* 6*d.* each.
,, HYBRIDUM, 12 ins., 1*s.* 6*d.* each.
FORSYTHIA VIRIDISSIMA.—This plant is not sufficiently known. It is an early spring-flowering plant, producing its yellow blossoms in great profusion. But it rarely flowers, or but scantily when young. The plants offered are well set with flower-buds. It forces well. Bushy plants, 24 ins., 1*s.* 6*d.*; 36 ins., 2*s.* 6*d.*; 48 ins., 3*s.* 6*d.*; Standards, 10*s.* 6*d.* each.
ILEX DIPYRENA, 9 to 12 inches, 3*s.* 6*d.* each.
,, MICROCARPA, 21*s.* each.
,, LATIFOLIA, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.*; 24 ins., 5*s.* each.
,, FURCATA, 21*s.* each.
JUNIPERUS ARGENTEA, new and very beautiful, 12 inches, 5*s.* each.
,, PHŒNICEA, 12 ins., 1*s.* 6*d.* each.
,, CHINENSIS, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d.*; 24 ins., 2*s.*; 30 ins., 2*s.* 6*d.* each.
,, TAMARISCIFOLIA, 12 ins., 1*s.* each.
,, FLACCIDA, 12 ins., 1*s* 6*d.*; 24 ins., 3*s.* 6*d.* each.
,, EXCELSA, 12 ins., 2*s.* 6*d.*; 18 ins., 3*s.* 6*d.* each.
,, SQUAMATA, 12 ins., 1*s.*; 24 ins., 2*s.* 6*d.* each.
,, CRACOVIA, 12 ins., 1*s.* each.
,, MACROCARPA, 12 ins., 2*s.* 6*d.* each.
,, REPANDENS, 12 ins., 9*d.*; 24 ins., 1*s.* 6*d.* each.
,, OBLONGA PENDULA, 6 to 9 ins., 2*s.* 6*d.* each.
,, BEDFORDIANA, 12 ins., 1*s.*; 18 ins., 1*s.* 6*d.*; 24 ins., 2*s.* each.
JASMINUM NUDIFLORUM, strong blooming plants, 2*s.* 6*d.* each.
LIGUSTRUM JAPONICUM, 9 ins., 1*s.*; 24 ins., 2*s* each.
*LYCOPODIUM WILDENOVII*, 5*s.* each.
LIBOCEDRUS CHILIENSIS, 7*s.* 6*d.* each.
MITRARIA COCCINEA, 2*s.* 6*d.* each.
*PICEA PINSAPO, very handsome specimens, 30 ins., 21*s.* each.
,, NORDMANNIANA, 10*s.* to 15*s.* each.
,, OVATA, 1*s.* 6*d.* each.
*PINUS INSIGNIS, 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 30 ins., 7*s.* 6*d.*; 36 to 42 ins., 10*s.* 6*d.* each.
,, MURICATA, 9 ins., 10*s.* 6*d.*; 18 ins., 21*s.*; 24 ins., 31*s.* 6*d.* each.
,, MONTEZUMÆ, 12 to 15 ins., 10*s.* 6*d.* each.
QUERCUS SCLEROPHYLLA, 21*s.* to 42*s.* each.
,, INVERSA, 21*s.* to 42*s.* each.
ROSE, "FORTUNE'S YELLOW," dwarfs, 2*s.* 6*d.* to 5*s.* each.
,, ,, ,, standards, 5*s.* to 7*s.* 6*d.* each.
RHODODENDRONS.—Hardy late flowering Hybrids, varying in colour from white to deep crimson. Dwarfs, 31*s.* 6*d.* to 6 guineas per dozen; standards, 21*s.* to 5 guineas each.
,, COMMON PONTICUM, for covers, thrice transplanted, 12 to 18 ins high, very bushy, 15*s.* to 21*s.* per 100.
SIKKIM RHODODENDRONS.—We believe we may state, without fear of contradiction, that we possess the largest plants of these beautiful Rhododendrons in the trade. The heights of those we are offering vary from 2 to 9 ins. From the altitude from whence many of them were obtained, there is great probability of their proving hardy in this country. Collections of 24 distinct kinds at 3, 5, or 9 guineas.
SPIRÆA CALLOSA.—An abundant and continued bloomer. It has large corymbs of rosy purple blossoms, and is a handsome addition to our shrubbery plants; 10*s.* 6*d.* each.
SALISBURIA ADIANTIFOLIA (seedlings), 12 ins., 2*s.* 6*d.* each.
*TAXODIUM SEMPERVIRENS. This and Cryptomeria japonica are amongst the most rapid-growing Conifers. In situations where such are required they cannot be surpassed. 18 ins. to 5 feet, 1*s.* 6*d.* to 10*s.* 6*d.* each.
TAXUS DOVASTONII, standards, 3 to 4 ft., 7*s.* 6*d.* to 10*s.* 6*d.* each.
,, ADPRESSA, 12 ins., 2*s.*; 24 ins., 5*s.*; 36 ins., 10*s.* 6*d.* each.
,, BACCATA (yellow-berried var.), 12 ins., 2*s.* 6*d.*; 24 ins., 5*s.*; 36 ins., 7*s.* 6*d.* each.
,, ,, (golden-leaved var.) 12 ins., 1*s.* 6*d.*; 18 ins., 2*s.* 6*d.* each.
VIBURNUM PLICATUM, 10*s.* 6*d.* to 21*s.* each.
*WEIGELA ROSEA.—This beautiful flowering shrub should be grown by every one. It forms a handsome object in the open borders in May. It also forces well. The plants here offered are as wide as high, and will flower abundantly in the spring. 18 ins., 2*s.*; 24 ins., 2*s.* 6*d.*; 30 ins., 3*s.* 6*d.*; 36 ins., 5*s.* each.

**A Descriptive Catalogue of Hardy Ornamental Trees and Shrubs; to which is prefixed a Treatise on the Cultivation of American Plants, may be had free, by enclosing six stamps for postage.**

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PINE PLANTS.—For Sale, a quantity of PINE-APPLE PLANTS, of all the approved varieties, to insure a succession of fruit; they are fine, clean, and healthy.—For particulars, apply by letter to W. HARDIE, at the Gardens, Castle Ashby, Northampton.

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MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M. having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1*s.* 3*d.* per lb.; any quantity under 10 lbs. will be charged 2*s.* per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

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SUPERB NAMED AND MIXED ASSORTMENTS OF ANEMONES, RANUNCULI, GLADIOLI, TULIPS, IRIS, CROCUS, LILIUM, IMPORTED DUTCH HYACINTHS, &c., with a large Collection of other Roots.—For BASS AND BROWN'S Priced Advertisement of the above, see *Gardeners' Chronicle* of Nov. 8th and 22d, or Catalogues sent free on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

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SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7*s.* 6*d.*
Extra ditto, with flowering buds ... ... 10 6
Usual discount to the Trade.
Clapton Nursery, London, Dec. 6.

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JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | | Packed in Boxes of 100 feet each. | £. s. d. |
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| 16 ozs.... ... | 3*d.* to 3½*d.* | 6 by 4, 6½ by 4½ ... | 0 13 0 |
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FOREIGN SHEET GLASS, of very superior quality, packed in cases of 200 feet, and in sizes varying from 36 by 26 to 44 by 30 inches, at 38*s.*. 40*s.*, to 42*s.* per case.
HARTLEY'S PATENT QUARRY GLASS.
Milk Pans, from 2*s.* to 6*s.* each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.
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And many other sizes, or cut to order in various thicknesses.
Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.
ROUGH PLATE, perfectly flat, ¼ in. thick, best manufactured.
In sizes under 15 inches ..... 6*d.* per foot.
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Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

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MESSRS. COATHUPE AND CO., CROWN and SHEET GLASS MANUFACTURERS, Nailsea, near Bristol, Somerset, beg to inform Engineers and others that they are supplying GLASS PIPES, with their Joints, from 1 to 4 inches bore, capable of bearing very great atmospheric pressure, in lengths from 3 to 7 feet, the lengths being less as the diameter of the bores increase. These Pipes may be seen at the Exhibition (Class 24, Section 47), with their forms and modes of joining, in the Section allotted to the Glass Manufactures; and references can be given of their great utility in numerous localities, where they have been successfully employed. The great advantage of Glass Pipes for the conveyance of pure water over all metallic substances, has been too largely dwelt upon by medical and scientific authorities to require any further comment.
Nailsea Glass Works, near Bristol.

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GLASS FOR CONSERVATORIES,
GREENHOUSES, PIT FRAMES, &c.

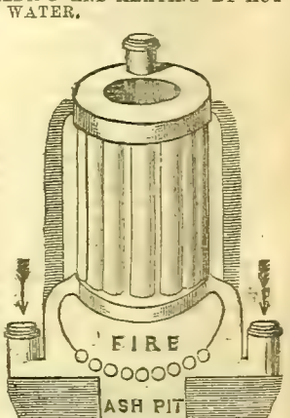
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| | | Under 6 by 4 | at | 1½*d.* is | £0 12 6 |
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Larger sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* to 7½*d.* ,, ,, ,,
PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
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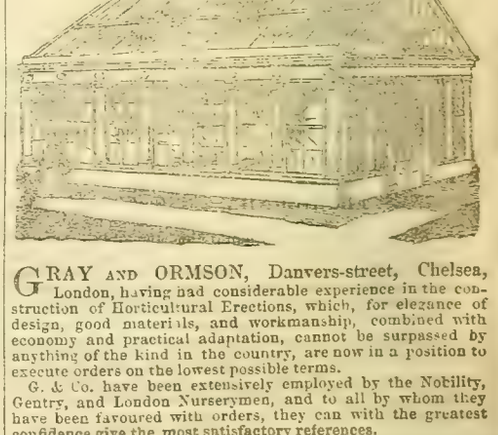
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J. WEEKS and Co., King's-road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.
G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.
Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

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GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 12 in. greenhouse lights, 2½*d.*; 15 in. ditto, 3*d.*; 2 in. ditto, 3½*d* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra.
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CHALLENGE COMPARISON AND COMPETITION. Carriage Paid.

All orders above 5*l.* carriage paid to London, Liverpool, Birmingham, and Edinburgh, and all the intermediate Stations within 150 miles of the Nurseries, upon any line of Railway whatsoever. To those ornamenting their Gardens or Grounds, this is an advantage seldom offered.

SELECT HARDY HERBACEOUS PLANTS AND ALPINES.
100, own selection, two of each kind, 30*s.*; or our selection, in 100 varieties, 42*s.*
100, purchaser's selection, one of each kind, 42*s.*
100 Alpine or Rock Plants, 42*s.*

The above extends over 1000 species and varieties, selected from the choicest collections in the country, warranted second to none for beauty and display. Having an immense stock, they can be furnished at these low prices.

AMERICAN PLANTS, FLOWERING SHRUBS, ORNAMENTAL TREES, AND EVERGREENS.
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COMMON LAURELS, 1½ to 2 feet, per 1000, 4*l.*; or 10*s.* per 100, fine. 2 to 3 feet, bushy, extra fine, per 1000, 5*l.*; or 12*s.* 6*d.* per 100.

PORTUGAL LAURELS, 1½ to 2 feet, 20*s.* per 100; fine, 3*s.* per dozen. 2 to 3 feet, extra fine and bushy, 30*s.* per 100; 6*s.* per dozen.

EVERGREEN PRIVET, fine, 2 to 3 feet, per 1000, 40*s.*; per 100, 5*s.* 3 to 5 feet, strong, 45*s.* per 1000; or, per 100, 6*s.*, healthy and fine grown.

LIMES, per 100, 4 to 5 feet, 30*s.*; 5 to 6 feet, fine, 40*s.* per 100, fine avenue trees.

HORSE CHESTNUT, 5 to 6 feet, 30*s.* per 100; 10 to 12 feet, 50*s.* per 100, splendid.

ROSES, 50 splendid sorts, Standards, fine healthy stuff, per 100, 5*l.*; or 18*s.* per dozen, own selection. 100 superb sorts of Dwarf Roses, in 100 fine varieties, 50*s.*; or 9*s.* per dozen, own selection; mixed, 30*s.* per 100, or 6*s.* per dozen.

MISCELLANEOUS GREENHOUSE AND STOVE PLANTS.
50 first-rate sorts, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
50 do. purchaser's selection, 3*l.*; or 18*s.* per dozen.
ERICAS, 50 of the finest sorts grown, own selection, 2*l.* 10*s.*; or 15*s.* per dozen.
" " purchaser's choice from list, 3*l.*; or 18*s.* per dozen.
CHINESE AZALEAS, 20 excellent show sorts, blooming plants, 21*s.*; or 15*s.* per dozen.
" " purchaser's choice, 1*l.* 5*s.*; or 18*s.* per dozen.

The above will be found to contain all the most beautiful and leading favourites. The plants are free grown, fine, and healthy. A splendid opportunity for specimen growers.

SEEDS.

HERBACEOUS PLANT Seeds, 100 fine varieties, comprising the choicest sorts from our unrivalled collection, 25*s.*; 50 fine for 15*s.*; 25 for 8*s.*, post free. A season will be gained by sowing them now in pots, and protecting under glass through the winter, and transplanting in early spring.
CINERARIA, from the choicest sorts, per packet, 2*s.* 6*d.*
PANSY, do. do. do. 1*s.* 6*d.*
HOLLYHOCK, warranted to produce 75 to 80 double in the 100, 1*s.* 6*d.*

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GOOSEBERRIES, the finest Lancashire, and other sorts, per 1000, 4*l.*, in 100 varieties; or 10*s.* per 100, in 50 varieties.
A selection of the choicest description for show, 4*s.* per doz.
The stock extends over 50,000, and is fine and free grown.
CURRANTS.—May's Victoria or Raby Castle, red, has the finest flavoured, most abundant bearing, and largest sized bunches and berries of any Red Currant known; it is the best sort grown, and ought to be in every garden. Per 100, 25*s.*; or per doz., 4*s.*
Black Naples, the finest black (no other sort grown), 12*s.* per 100. 2*s.* 6*d.* per doz.
Red Grape and Champagne, fine, 10*s.* per 100.
White Dutch, large and fine, 12*s.* per 100, 2*s.* per doz.
APPLES.—Fine clean Standards, 10*s.* per doz., 70*s.* per 100.
" " Dwarfs, 8*s.* per doz., 50*s.* per 100.
" Dwarf trained superior kinds, 2*s.* 6*d.* each, or 24*s.* p. doz.
The collection is very choice, from the Horticultural Society.
PEARS.—The same price as Apples, well meriting the attention of planters, containing the choicest French, Flemish, and other sorts.
PLUMS and CHERRIES.—All the leading sorts, standards, 18*s.* per doz.
" " Dwarfs, fine, 9*s.* per doz.
" " Dwarf trained, 3*s.* 6*d.* each, or 36*s.* per doz.
APRICOTS, PEACHES, and NECTARINES.—Fine three years trained, 5*s.* each, 50*s.* per doz.
RASPBERRIES.—Fastolff, 3*s.* per doz., 16*s.* per 100.
" Antwerp Red, 2*s.* per doz., 12*s.* per 100.
" Monthly, or Double-bearing, 12*s.* per 100, 2*s.* per doz.
STRAWBERRIES.—Early and late kinds, 25 fine sorts, including some American novelties new to England, and all others of approved merit, 3*s.* 6*d.* per 100.

An extensive Descriptive List is in course of publication, in three parts, due notice of which will be given. Part I. will contain Greenhouse and Stove Plants, and all such as are tender. Part II. Hardy Herbaceous Plants and Alpines, with Ornamental Trees, Shrubs, Evergreens, and Roses. Part III. Fruits of various kinds. A short description will be given, as far as practicable, of everything contained. The want of such a list has long been felt by ourselves and correspondents, as a guide in making selections. To be had gratis on application.

In cases where our friends leave to us the discretion of selection, it will always be our anxious desire to supply fine plants of merit, and may be confidently relied on. To that end it is requested that we may be favoured with a list of such plants, &c., as are already in their possession, that duplicates may not be sent. All communications addressed to John May, the Hope Nurseries, Leeming-lane, Bedale, Yorkshire, will meet with immediate attention.

N.B. A fine stock of Larch, Spruce, Oak, &c.; sizes and price on application.

Ornamental grounds designed, executed, and furnished on liberal terms. Forest Planting by estimate.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, and CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s.* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. American Native, 10*s.* 6*d.* do. Early Manley, 10*s.* 6*d.* do. Early Ash-leaf Kidney, 10*s.* 6*d.* do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to Hay, Sangster, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

G. JACKMAN, Nurseryman, Woking, Surrey, (1½ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Dec. 6.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

JOHN ANDREW HENDERSON and Co. have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21*s.* each.

Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orleans Plum; when fully ripe are of a fine deep black, having a fine rich flavour, and very juicy.

It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

The Gardeners' Chronicle.

*SATURDAY, DECEMBER* 6, 1851.

MEETINGS FOR THE ENSUING WEEK.

| | | | |
|---|---|---|---|
| Monday, | Dec. | 8 | Geographical ..... 8½ P.M. |
| Tuesday, | — | 9 | Syro Egyptian ..... 7½ P.M.<br>Civil Engineers ..... 8 P.M.<br>Medical and Chirurgical ..... 8½ P.M.<br>Zoological ..... 9 P.M. |
| Wednesday, | — | 10 | Literary Fund ..... 3 P.M.<br>Society of Arts ..... 8 P.M.<br>Graphic ..... 8 P.M.<br>Pharmaceutical ..... 8½ P.M.<br>Ethnological ..... 8½ P.M. |
| Thursday, | — | 11 | Royal Soc. of Literature ..... 4 P.M.<br>Antiquarian ..... 8 P.M.<br>Royal ..... 8½ P.M. |
| Friday, | — | 12 | Astronomical ..... 8 P.M.<br>Philological ..... 8 P.M. |
| Saturday, | — | 13 | Asiatic ..... 2 P.M.<br>Medical ..... 8 P.M. |

Models of the Glass Walls mentioned in our last were exhibited on Tuesday to the Horticultural Society, and beautiful looking contrivances they were. Should they realise in any considerable degree what there is great reason to believe they will fully realise—a new era in gardening is about to commence. For dead ugly cross-walls we shall have beautiful glass partitions, for "blocks" of Vineries we may expect great lengths of treillage; for conservative walls we shall get upright cases filled with exotic leaves and flowers; and even in the kitchen garden "the foot of a south wall" may cease to be an intelligible expression, when men shall have once begun to grow their early vegetables, or to ripen their forced Strawberries at the bottom of a glass box.

Conceive a line of flat iron uprights, nine feet high, firmly secured to the ground, so that no displacement is possible. Let the edges of these uprights be pierced with holes, through which wires may be horizontally stretched, whereon to train branches. At the distance of a foot from both faces of the uprights, erect a perpendicular sash of glass. House in the sashes with a glass coping, so constructed as to throw water off into gutters prepared for its removal. Finally, give the upright sashes a free motion to the right or left, that every part of the trellis-work can readily be uncovered and made accessible. The reader will then have an idea of Mr. Ewing's glass wall, which, in fact, is an erect glass case, 9 or 10 feet high and about 2 feet thick, perfectly transparent, within which all manner of plants may be trained in the espalier form, in a double line, one line facing the south, the other the north, or otherwise, according to the direction of the wall.

Some of the points which are gained by this plan are of great importance in gardening, wholly irrespective of that gain which consists in substituting an object of great beauty for one pre-eminently ugly. The first of these is shelter, an advantage which a brick wall does not possess. Enclosed at night in such a case, spring frosts and hail or snow-storms, while fruit trees are in blossom, can produce no injury. By closing the sashes to windward and leaving them open to leeward, a perfect screen is secured against unfavourable winds, without any material loss of ventilation. In bad weather rain need have no access; in damp weather comparative dryness is secured. In winter snow and ice cannot hang about the branches, and the worst effects of frost must be thus prevented.

But shelter is not secured by the sacrifice of light, as happens in greenhouses. On the contrary, the transparency of the structures is as perfect as is attainable if any medium whatever is to be interposed between plants and the source of light. In fine weather, when light is most wanted, and the sashes all open, there can be little difference, and certainly none of the least importance, between what reaches the interior and that in the free air. And, if it were otherwise, the full command of air which this invention secures, more than compensates for the loss of an element, the importance of which is often over-estimated. Experience tells us, that in looking at the action of light upon plants, physiologists have formed their views too much upon theory only partially exact; ascribing to the mere effect of light what is probably owing to the joint action of air in rapid motion, light, and heat.

Walls have this serious fault in addition to all others, that they present great difficulties in the way of fumigation or sulphuration, the necessity of which latter operation is becoming so much greater every day. In fact there is no way in which those operations can be applied to walls unless with the aid of canvas screens or travelling covers. In the glass walls, on the contrary, tobacco-smoke or sulphur can be applied even more easily than in a greenhouse.

As compared with Vineries these walls occupy very little space, not much more indeed than the superficial area of a Vinery roof; so that instead of a hollow block of glass containing some thousand cubic feet, a hollow plate of glass consisting of a few hundred will answer the same purpose.

These are what strike us as the advantages to be expected from glass walls, constructed upon Mr. Ewing's plan. Are any disadvantages to be expected? That is a question which can only be answered by experience. It may be that they will not be warm enough in summer to ripen certain kinds of fruits, from the want of the power of absorbing and reflecting heat. Mr. Ewing has, in fact, anticipated this objection, by providing his upright iron standards with grooves, into which slate, or wood, or metal panels may slide. This would, however, destroy the transparency of the walls, and is not likely to be required, unless for the most tender of fruits. It has been observed, too, that the space provided between the glass and trellis is insufficient; an opinion in which we concur in the case of slovenly gardeners who leave a forest of breastwood or Pear-spurs 18 inches long on their trees; but we believe that the space is sufficient with good cultivation. At all events, if the space should not suffice, the fault would be one of detail, and not of principle.

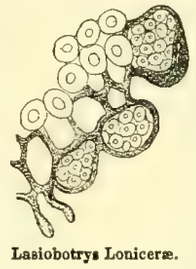
Concerning the main question, price, we are unable at present to make any positive statement. The patentees will lose no time in communicating that to the public through our advertising columns. We believe that the glass walls will be found at least as cheap as brick ones; and if it were otherwise their beauty, and obvious applicability to numerous purposes, now only attainable in a greenhouse, really reduces the cost to a secondary consideration. We believe, too, that they would be regarded as tenant's and not as landlord's fixtures, a most serious consideration, concerning which, if we are wrong, perhaps some legal friend will set us right.

In the course of the season a trial of these walls will be made in the garden of the Horticultural Society, when full opportunity will be found of investigating both the merits and demerits of the invention.

It was a favourite notion of the French botanist, Turpin, that every organism is but the development of a single primitive cell. This is, in fact, the one idea which pervades all his memoirs, and the germ of almost every true or false theory which he propounded. Of the notion itself, properly understood and limited, there can be little doubt, though it may be practically impossible to insulate, as Turpin proposed, a single cell of some phænogam, and by proper treatment to induce such an evolution as shall give rise to a plant similar to that from which it was taken. For, though while the cells are in connection, some privileged vesicle, as in the embryo-sac, or in any other part of the plant, may be the origin of the new individual, that cell, when insulated, might be wholly unfitted for such an end. Phenomena, similar to that of the occurrence of two kinds of flowers in the same shoot, in a variety of Laburnum in common cultivation, have been ingeniously explained by the supposition that a

single cell of two varieties had been divided in the process of preparing the stock and its scion, that the two half-cells had become completely united so nicely as to form a whole possessed of different character in its constituent parts, and that, from this cell so constituted, a bud had been produced, which was capable of exhibiting, according to the predominance of these parts, the peculiar attributes of each variety. This of course is but theory, but it is very specious and possible.

Some of Turpin's speculations, as that of the development of the sporidium of a Truffle into a new individual, without any direct germination, have been proved on further examination to be incorrect; it is now well ascertained that Truffles, like other Fungi, are developed from a mycelium springing from the sporidia. A fact, however, has lately come within our cognisance scarcely less wonderful than the development of the Truffle from the "Truffinelles," supposing that to be correct. The curious *Lasiobotrys*, which is not uncommon on the leaves of various species of Honeysuckle, has perplexed many botanists, because the apparent perithecia never fructify, but produce a number of minute perithecia from their base, which contain asci. The larger bodies in fact consist of a cellular mass of which the outer cells are dark, while those of the centre are hyaline, with thick walls. This is exactly the structure of the perithecia of *Sphæria* when immature, a portion of the central cells in age being absorbed, and those nearer the circumference either being transformed into asci, or giving rise to them; and such is in fact the structure of the smaller cysts in *Lasiobotrys*, in which alone at present asci have been observed. The curious point is the mode in which these minor perithecia originate from the large original mass. A happy section has exhibited very clearly the transformation of certain of the external cells into these organs of reproduction. The dark external cells at first contain a turbid slightly granular mass. This, however, in certain privileged individuals, at length becomes organised, exhibiting at first a few hyaline thick-walled cells. As these increase in size and number, the wall of the cell itself also become cellular, just after the fashion of the development of the simple walled cells into cellular sporangia in *Antennaria*, and finally separates entirely, or retains merely a slight connection by a portion of its surface with the parent mass. For some time there is no apparent difference between the two, except as regards size; but ultimately, a sheaf of utricles is formed towards the base, which soon assume the usual structure of asci. We have represented in our figure, which is highly magnified, the origin of these bodies, which we think highly important in a physiological piont of view. *M. J. B.*



Lasiobotrys Loniceræ.

## MUSHROOMS.

After reading the paragraph at page 675 relative to the late case of poisoning by Mushrooms, I was induced to examine some remarks which I had made, from time to time, on the changes of a fairy ring near where I am now writing. In the summer of 1849, I was requested to inspect a fairy circle, and was informed that in the previous year it had produced a great crop of fine looking Mushrooms, which were gathered and placed in the larder to await the time for cooking them, but in the meanwhile suspicion arose as to their being the true Mushroom, and they were destroyed without knowing whether they were really poisonous or not. When I visited the ring in 1849, I found a fine crop of Agaricus pratensis, which was looked upon with wonder by many, seeing that such fine Mushrooms had changed to those insignificant Champignons; and for me to say that they were of the same family, and eatable, was considered remarkable. They were, however, very fine, and made a delicious dish. In 1850 the same ring produced a crop of Agaricus arvensis (by the description given, I considered those in 1848 to have been the same), many of which I ate, and others I made into ketchup; but this year they have changed into a poisonous kind—Agaricus cristatus.

Where such annual changes as those just mentioned take place, great caution is required in gathering by persons not well acquainted with the edible kinds of fungi, although the common Mushroom can hardly be mistaken by the most casual observer, for when of medium size its beautiful pink or flesh-coloured gills, with its very fragrant odour, are good distinctions. When it becomes older, and the colour changes, it may, however, then be taken for some other kind. The quantity of different kinds of fungi is greater here than in any other part where I have been, and many bear close resemblance to the common Mushroom: they are, however, deficient in that very fine odour which is so abundant in Agaricus campestris. I have seen Agaricus virosus very plentiful in fairy rings, a species which is extremely poisonous, and may, at a certain age, be taken for A. pratensis by people unacquainted with their difference. In order to be on the safe side every doubtful species should be rejected.

I must not forget to mention that Withering remarks that only one species of Mushroom is ever concerned in making any one fairy ring. In the case just alluded to I did not find more than one species of Agaricus at one time, although I discovered Boletus luridus intermixed as well as within the ring. *William Culverwell, Thorp Perrow.*

[The preceding observations are well worth the attention of all who are experimentalists in esculent Mushrooms. It may be doubted whether the true *Agaricus pratensis* be meant, as it could scarcely be compared with *Agaricus virosus*, the former having a turbinate pileus, with thick, distant, buff-coloured decurrent gills, while those of the latter are of a totally different character. *Agaricus pratensis* is beautifully figured in Greville's "Scottish Cryptogamic Flora," and is indeed an excellent fungus. It is a well known fact, that many species frequently occur in the same ring, but not at the same time; and there is, therefore, some plausibility in the notion that the same mycelium may produce more than one kind. It will be found, however, on close examination, that the mycelium frequently affords excellent characters for the distinction of species, and there is no more reason to infer the identity of Agaricus growing successively on the same spot, than there is for asserting the identity of early and late Grasses in the same plot of ground. The mycelium, though frequently small and insignificant, is really the plant; and the pileus, with its stem and gills, the fruit. In some cases, however, the mycelium acquires an enormous development, as in the Amboyna species, figured by Rumphius, and in the well known Pietra funghaja of Italy. Every person who has studied these plants in their native ground is almost as well assured of finding a particular species in its own locality at the proper time of year, frequently confined to a few square feet, as in any other branch of botany, provided the weather and local circumstances are similar. Even in phænogamous plants it is well known that species are more abundant in particular years, and some appear only periodically. *Epipactis purpurata* was most abundant in a wood whose undergrowth is *Tilia parviflora*, a few years since, just after the brushwood was cut, though it had not been seen in the locality before during an acquaintance of 15 years, and it has in vain been sought for since. Under similar circumstances a neighbouring wood was absolutely blue with the common Columbine, though at other times only a few scattered plants could be found on the most diligent search. Numerous examples of a like nature might be adduced, and much more, in plants so completely dependent on atmospheric conditions as fungi, may we expect a little irregularity as regards the constancy of their appearance. If, however, the species mentioned in the foregoing remarks—substituting probably *Ag. oreades* for *Ag. pratensis*—be submitted to microscopic inspection, no doubt can be entertained about their complete difference. We may add to the list as frequent tenants of the same rings as *A. oreades* and *A. arvensis*, *A. personatus*. *A. procerus* also occasionally grows in them, one of the best of esculent fungi. This could scarcely be confounded with *A. cristatus*, though a fairy ring is a curious station for that species. *M. J. B.*]

## BRITISH SONG BIRDS.

(Cage Birds, No. 41.)

No. LVII.—It will readily be believed, that on a subject like the one we are now treating of, there must exist some differences of opinion; indeed, we have already hinted that the "Philosophers of the new school" are severe upon us for our short-sightedness, and 'narrow views.' Be it so. We try to reason logically and as Christians; and hope to show, by our evenness of temper, that we have no wish to quarrel with any person, however widely we may differ in our thoughts and perceptions of Nature's works.

The human mind, when once it ventures out of its depth, and dares to soar higher than it has a warrant for—and there surely is a limit to Man's inquiries into the more subtle and intricate works of God in connection with ourselves; establishes a code of laws, and introduces a new train of visionary ideas, as ridiculous and dangerous as they are untenable and unsound. Let us listen to the modestly-urged expostulations and sensible remarks of the good St. Pierre on this subject. "Nature," says he, "is herself the source of all that is ingenious, amiable, and beautiful. By applying to her the violence of our imaginary laws, or by extending to all her operations those with which we are already acquainted, we conceal others worthy of the highest imitation with which we are totally unacquainted. We add to the cloud with which she veils her divinity, that of our own errors. They get into credit by time, by professorships, and by books. We carry with us, into researches so independent and so sublime, the passions of the college and of the world. Those who enter first on the career oblige those who come after them to walk in their footsteps, or to give it up; as if Nature were their patrimony; or as if the study of Nature were an exclusive trade which did not admit of every one's participation! * * It is the study of some men's whole lives, to raise men towards the Deity by their sublime discoveries,—they little suspecting, that the laws *they* are endeavouring to establish in physics *may one day subvert those of morality*. In order to form a right judgment of the magnificent spectacle of Nature, *we must suffer every object to remain in its place*, and remain ourselves in that which she has assigned to us."—We offer no apology for the above admirable quotation, as it subserves a great moral purpose. There are many who dissent from these dogmas *toto cælo*; and we are anxious to declare ourselves of the 'old school.' But let us now resume our subject.

It has been objected to our general remarks, that the rook, crow, and other members of that family, are most assuredly possessed of reason, and that we cannot prove to the contrary. Now we do not admit this at all. The rook and crow, it must be borne in mind, are very different from most other birds. Their size and colour render them palpable to the sight of every passer by; consequently they require more foresight than those animals whose colour assimilates with that of the ground, or the particular situation which they are in the habit of frequenting. Plovers, partridges, larks, and some other birds, easily escape observation by lying close and motionless when danger is apprehended. You may pass within a foot of them, and never see them. I once found, quite accidentally, on a sloping bank, the nest of a yellow-hammer; and I marked the spot. On revisiting it a day or two afterwards, I was really puzzled to recognise it again. The old bird was on the nest, covering her young; and though my eye must several times have been fixed on her, yet, from her stillness and from her being surrounded by objects corresponding in colour and effect, I was for the time deceived.

The rook and crow are generally found upon ploughed fields; and are therefore naturally aware that, from their contrasting colour, they become objects for observation. Nature, foreseeing this, teaches them by a "universal law" to employ a scout or sentinel, whose duty it is to apprise the general body when anything looks at all suspicious, or there is reason for becoming alarmed. They then at once rise on the wing and decamp. If this were not universally the case, or formed a solitary instance of sagacity, we might, as we have before observed, be induced to alter our opinion,—*not* otherwise. They communicate the "signal" by a language peculiar to themselves. Often have we subjected them to a "proof" of this natural law, by raising a stick, shouting, or waving our hat; and we have *on every occasion* found our belief confirmed. The sentinel has "smoked" us, and has "reported progress."

The vulture, the eagle, and birds of that tribe know, by an unerring instinct, when and where they can obtain their prey, safe from pursuit; and they build their nests in situations for the most part inaccessible. As for the raven, which it is said can see and smell food at an incredible distance,—I believe sight and smell have very little to do with it. This creature is "gifted" by Nature with an instinct far superior to these common perceptions. No sight, no smell, could teach them what we have known them to exhibit in the matter of foresight. Let us, therefore, exalt Nature in her most bountiful gifts to certain of her family. They are, undeniably, 'extraordinary' endowments bestowed for "special" purposes.

We are again appealed to on the subject of certain birds, in foreign countries; and are defied to prove that *they* are not gifted with 'reason.' Our opponents are not very clear sighted, but we readily listen to them; for, as we have before said, to elicit truth is our *only* object. In the matter of some foreign birds, which build their nests at the extreme ends of branches, and in other equally safe positions, to escape the attacks of serpents, and such-like noxious animals peculiar to India and the East—what do we see but (as I have from the very first laboured to prove) the never-failing, never-ending beneficence of Nature, in providing for the wants, requirements, and necessities of *all* her children, *wherever situated*. Were she to forsake them, or neglect to endow them with instinct *because they resided abroad*, then should we have a most imperfect creation indeed! But the question cannot, must not, be *so* argued. Everything is better ordered than we could order it, how "wise" soever we may consider ourselves to be. To show how willing we are to give those who doubt, the benefit of every reasonable argument, we subjoin for their consideration the following, recorded by Dr. Buchanan. If nature's voice be not audible *here*, we leave the sceptics to explain the matter in their own way. "The birds," says Dr. Buchanan, "that build hanging nests, are very numerous at Cape Comorin. At night, each of their little habitations is lighted up, as if to receive company. The sagacious little bird fastens a bit of clay to the top of the nest, and then picks up a fire-fly; sticking it on the clay to illuminate the dwelling, which consists of *two rooms*. Sometimes there are three or four fire-flies; *the object of this is*,—that the blaze of light in the little cell should *dazzle the eyes of the bats*, WHICH WOULD OTHERWISE KILL THE YOUNG OF THESE BIRDS." As this is an "universal law," and not regulated by the brain, or organisation of any one bird's head in particular; what becomes of the modern philosopher's argument? We might multiply instances *ad infinitum*; but after all, it is labour thrown away to argue with an unbeliever.

Rather than wait for the natural evolution of the doctrines and views that would suffice to explain the mysterious powers of life and organisation in the animal creation, our impatient speculators seize upon some plausible supposition, and intrude it by main force into the appearances—thereby attempting to get rid of difficulties, and to misrepresent facts, for the sake of maintaining their own (untenable) position, and getting credit for their (misplaced) ingenuity. Day after day, we observe that this error is becoming widely circulated; and we feel quite sure that it must occasion painful regret to all who love their Creator, and are impressed

with His unerring goodness towards everything that He has made. *William Kidd.*

## FOREIGN GARDEN GLEANINGS.

Royal Gardens at Charlottenbourg.—A wide and beautiful avenue leads from Berlin to Charlottenbourg. In a corner of the park at the latter place, upon a small mound, may be seen the tomb of K. William, surrounded by a magnificent platform, on which the most rare and splendid flowers are to be found throughout the summer. At the end of this park, and before the palace, there is another platform, shaped like a horse-shoe, and designed by the King himself with exquisite taste. Although it is not ornamented with a single shrub, the annual and biennial herbaceous plants are so arranged according to their height, colour, size, and duration, that the effect produced is grand in the extreme.

Behind the palace are gardens laid out in different styles; there is a charming artificial Swiss valley, surrounded by beautiful trees, and on one side bounded by a stream of water, shaded by fine specimens o Cupressus disticha, and crossed by rustic bridges. At the end of this valley there are some tropical trees, and especially an Araucaria excelsa from Chili, worth 200 dollars; this magnificent tree suffered a little in its passage to Europe, but has now quite recovered and is in full health and vigour.

We need not describe the great clumps of trees, &c., scattered here and there, and which serve as a sort of frame to this splendid picture. Further on there are Palms in the open air, trees from cold climates, and groups of Agave of an uncommon size, crowning a small hill. In the damper places there are Cannas, Maranta grandis, Arundo Donax with ribbon leaves, Fuchsia corymbosa, Mexican Maize, Persicaria from the Levant, and Ricinus. We should very much like to see such masses of vegetation introduced into our own country.

The Orange house, decorated with statues of gods and goddesses, was built in the time of Frederick the Great, is 58 yards in length, and contains 500 Orange trees.

The kitchen garden, though its soil is hot and dry, nevertheless furnishes an abundance of excellent vegetables. The fruit trees, and the Apricots more particularly, bear very plentifully. Vines are trained with great care, and in various shapes. We were very much struck with a small spot in front of the temple of Princess Lignitz; the flowers which decorate it are tastefully shaded by the Vines, which form over them a species of canopy. The park is too much like that at Versailles to deserve any special remarks. *Masson's Report.*

## Home Correspondence.

*Late Roses.*—The following are now in full flower at Moore Abbey, County Kildare: Baronne Prevost, Duchess of Sutherland, Bouquet de Flore, Geant des Batailles, La Reine, Madame Laffay, Mrs. Elliot, Madame Desprez, Souvenir de la Malmaison, Fellenberg (very fine), Abricote, Devoniensis, White China, Aimée Vibert, Jaune Desprez, Rose de Roi, Bourbon Queen, Gloire de Rosaméne (very fine), Grand Capitaine, Pierre de St. Cyr, Celimene, and Acidalie. Since the above was written, there have been two nights' hard frost, which will, no doubt, put an end to Rose flowering this season. *Alexander Matthew, Dec.* 1.

*Hints to Persons making a Garden.*—Rock, wood, and water being the principal constituents of natural scenery; sand, clay, and lime the most obvious characteristics of natural soils, it becomes an object with the gardener to adapt—not his soil to his plants, as is the common but mistaken practice—but rather his plants to his soil, at the same time that he makes the most of his situation for picturesque beauty and horticultural enjoyment. An erroneous idea prevails, that it is necessary to have a very good—that is, a very rich soil, natural or artificial, for a flower-garden: a notion to which the requirements of the kitchen and fruit-garden have, in all probability, contributed. But most persons who have travelled with botanical pursuits in temperate climates (for with tropical botany, our out-door gardening has nothing to do), must have observed that the districts most productive of variety are those of a wild and sterile character; and that while in regard to luxuriance and vigour in the development of individual species, fertile plains and rich alluvial valleys are pre-eminent, they are accompanied by great monotony in the prevailing features of their vegetation. The modern taste in gardening in England is gradually leading to a something of higher aim and wider scope than the mere landscape pleasure-ground of the last century, or the more formal floriculture which preceded it: neither will be abandoned, because each has its merits, but they will, it may be foreseen, be united with views of a more scientific character. Geography and physiology may each contribute to give interest to collections in which mere horticulture plays but a subordinate part, though capable of combining and illustrating these two branches of science in a very high degree. The introduction of new plants, and the trial by experiment how far certain species, genera, or families—or the plants in general of certain regions, can be adopted to one climate without care, or cultivated to any useful purpose with care, form also legitimate objects of an enlightened system of horticulture. A few years ago the notion of acclimatising or naturalising plants of warmer lands than our own, was beginning to prevail, but was checked by some severe winters, as well as by juster views of what it was reasonable to expect in modifying the laws of nature. Except by a long succession of seedlings, and then only when some seedling shows a marked variation from the type, the expectation of acclimatising tender plants may be pronounced nearly hopeless, and is not intended to be included in the recommendations of the present notice. With regard to naturalising even the hardiest species, everyone must have observed the strong and unaccountable repugnance of the vast majority of plants, however easy their culture within the garden walls, to sow themselves to any extent, or to reproduce themselves for any length of time even when self-sown, outside of them. It is sufficient to have mentioned these few preliminary points before proceeding to some more practical observations hereafter. *S.*

*Rough Plate* v. *Sheet Glass.*—If "An Old Gardener's" sheet glass is not better than 21 ozs. to the foot, I expect that if his houses are exposed to the sun, he will have a scorching, except the aspect be a north one. I happen to have from 4000 to 5000 feet of Vineries, glazed with 21 oz. sheet, which was procured from a first-rate firm; but I have never been able to get over a season without the foliage of my Vines being dreadfully burned. This, however, has not occurred through want of robust health, for with all the disadvantages which this glass possesses, my Vines are the very acme of perfection in that respect. Your correspondent speaks of the old fashioned common glass, no doubt meaning the old green glass. Ah! give me that now in preference to sheet. It is twenty to one better for good cultivation; indeed, my sheet glass, looking obliquely at it, appears as if it had been hammered upon an anvil. I have had Camellias burnt under it, 7 feet from the roof. What glass manufacturer in England will not tell you that he knew it would cause burning; but he was obliged to meet a foreign market! I trust that its sun is setting, however, never again to rise, as far as horticulture is concerned. Now a word as to the merits of rough plate. At the present time I have nearly 3000 feet of it in use in the shape of pits and conservatory, and I am so far satisfied of its superiority, not only over sheet glass, but also over all other kinds of glass for horticultural purposes, that for whatever is to reglaze or erect new here, I will adopt it without hesitation. I use it for plant culture, Melons, Cucumbers, propagating, &c., and perhaps no one regrets more than I do that I cannot replace the sheet in my Vineries with it. It is a mistake to suppose that it obstructs light; on the contrary, it collects and diffuses it better than the clearest sheet or crown glass. Another advantage which it possesses is, that there is no scorching and no shading. I have recommended it to all my friends, and I have had the pleasure of seeing it adopted for the growth of the Vine. My friend is an amateur, but he has produced a pattern of Vine growing under rough plate, that would not be a disgrace to me or even "An Old Gardener." As to this kind of glass becoming dirty, that has not happened here. There are, however, many samples of glass in the market, called rough plate, which I would not use. The glass I have employed was purchased of Mr. James Hartley, of the Wear Glass Works, Sunderland, sole patentee of the true rough plate. A large conservatory erected at this place, glazed by him, is open for inspection as to its appearance, utility, &c. This glass is perfectly efficient for all purposes of horticulture; it effects a saving of fuel, and is proof against the severest storms. *James Roberts, Gardener to the Duke of Cleveland, Raby Castle, Nov.* 28.——It may interest some of your readers to know, that last winter I re-glazed with "Hartley's rough plate" a Vinery, which had previously been glazed with sheet glass; and which gave occasion to the complaints I formerly made against that article. The Vinery is a large house, with a flat roof, requiring nearly 1000 feet of glass, and during the late summer, it has answered every expectation I was led to hope from its use; and I have much pleasure in adding my testimony to its good properties, and adaptation to most garden purposes. *John Spencer, gardener to the Marquis of Lansdowne, Bowood, Dec.* 2.——I have for the last three years had a large quantity of Pines and a variety of stove plants growing under Hartley's patent rough plate glass. During the hottest sunshine, I have never required shade, and the plants have grown, especially the Pines, with a health and vigour that I have never seen surpassed. No instances of scorching have occurred, nor has the glass become dirty. I never would use any other glass for Horticultural purposes. *Tirydail.*——The south side of the roof of the plant-stove here was glazed with Hartley's patent rough plate, in panes 30 inches by 7 inches, three years ago; and from my experience of it I consider it superior to sheet glass in several respects. First it contains a tinge of green that I have not seen in any other kind of glass, which plants are peculiarly fond of, and it does not burn or scorch like sheet-glass, consequently there is no necessity for shading on that account; but when shade is necessary for other reasons, it is as much required with rough plate as with any other glass. All the plants that I have grown under rough plate possess a richer hue than the same kinds grown under sheet glass; they are also as sturdy in their habit, and blossom and fruit as freely under the former as under the latter. The light transmitted through rough plate is as powerful as that through sheet or crown glass; and it is of a better quality than sheet glass gives, which can easily be proved by means of some of the delicate vegetable colours, such as those of the Red Poppy, or newly expanded flowers of the Franciscea uniflora, placed on paper at a distance of 6 or 8 inches from the glass in strong sunlight, or some metallic compounds may be used which are equally sensitive to the effect of light, and *cæteris paribus*. It will soon be seen by the effect of the light upon the colour used under each kind of glass, that the rays are as powerful under one as the other; but the extraction or change of colour will be much more even under the rough plate than under the sheet-glass, showing that the light through the rough plate is of the best quality; and I consider that this description of glass is a boon to the horticulturist, as the obligation to shade, to save plants from the scorching propensity of sheet-glass, at a time when you require the sun-light upon them, is a very serious disadvantage. *Henry Bundy, gardener to Lord Dynevor, Dynevor Castle, Llandilo.* [We here close our correspondence concerning Hartley's rough plate. We have more letters to the same effect; and our own experience is conclusively in favour of it.]

*Phillips's Fire Annihilator.*—I desiderate practical information: 1, as to cost; 2, as to bulk, weight, and moveableness; 3, as to quantity of charcoal and nitre requisite to use, and therefore to keep; 4, as to time required in getting it ready; and 5, as to competency of farm-servants, house-servants, and others, not practical chemists, to get it ready for use, and use it. It points to most important results: 1, a law compulsory on all parishes, at least in towns and villages, to keep them; 2, to covenants in farm leases to do the like; 3, to the depreciation of fire-insurance-office shares; and 4, to Mr. Phillips purchasing Stow, and not insuring it. *A. H.* [For prices and such information you should write to the company's shop, at 150, Leadenhall-street. Each time the machine is fired, a fresh charge is required; and persons in the country should keep such charges by them; they are sold with the machines. The action is as instantaneous as the discharge of a fire-lock, and no more skill is required in its use than pulling a trigger. It is always ready for use, just as a loaded gun is always ready.]——The satisfactory notices of this very ingenious, and, as I have myself witnessed, very effective invention for the immediate extinction of fire, which have from time to time appeared in your paper, lead me to suppose that the subjoined extract from a newspaper cutting, relating to a similar invention in the former part of the last century, will not be uninteresting. I found the cutting pasted into an old copy of "A Century of Inventions by the Marquis of Worcester." I shall not be mistaken by you or by Mr. Phillips, if this should meet his eye, to wish to detract from the merit of that gentleman's invention, but rather to aim at overcoming any prejudice which from mere novelty alone may attach to his very important discovery. The cutting is dated in M.S. June 1760. The extract is as follows:—"The famous machine for immediately extinguishing fires, invented by that eminent chemist, the late Mr. Ambrose Godfrey, will, we hear, be submitted to the judgment of the present age; and, if found to answer the original intention, it is hoped will not be suffered again to drop into neglect. This machine is of a convenient portable size, proposed to be hung up in houses to be ready upon all occasions; and by being thrown into the window of a room on fire, by a sudden explosion suffocates and extinguishes the flames. In the year 1723 an edifice was erected at Belslize, near Hampstead, on purpose to try the experiment, which was set on fire and extinguished by the machine, to the satisfaction of some of the first nobility and persons of condition of that time. But from what fatality so great a design was then laid aside and never since taken up again, is at this time extremely difficult to be accounted for." *H.*

*Winter Covering for Hothouses.*—In a paper contributed by Mr. Buchan, at page 756, he very justly observes, "the inhabitants of plant and fruit houses require for their healthy development heat, air, light, and moisture," by light I presume he means sun-light, "the greater light that rules the day only," for by his system of covering at night, he entirely excludes the important and peculiar influences of "the lesser light that rules the night"—and the stars also. *Inquisitor, Lee-place, Lewisham, Dec.* 1. [Which lesser light is not of the slightest importance to plants that we know of.]

*Ice Stacks.*—"E. J." has no great reason to complain of the failure of his attempt to preserve ice, as detailed at p. 758. He appears to have adopted the general idea of the system I described at p. 812 of your volume for 1848; but to have departed from its essential principle. For his information I will, as succinctly as possible, recapitulate the substance of the article above alluded to. The position chosen for the ice stack at Hatfield is the north side of an abruptly sloping undrained bank. The ice is thoroughly pulverised, and the stack is compactly built up in a conical form from a base of 18 feet by 16 feet; when completed it is covered with 18 inches of dry Fern, and then thatched with straw. The thatch must rest exclusively on the ice stack, and no impediment should be allowed to exist to prevent its subsidence with the ice. As the ice wastes it is necessary occasionally to visit the stack, to see that the thatch closely clasps it. A wall, composed of decayed Fern and straw, stands at the bottom of the bank, and serves as a slight protection to the body of ice when first built, but it is not otherwise of great importance. It will be seen from the above, that in the application of the protecting materials, every endeavour is made to exclude air and moisture. "E. J." fell into error in placing roots and straw beneath the body of ice, the moist air existing amongst the roots would inevitably conduce to its destruction. The fixed roof was also, in my opinion, objectionable; as the bulk of ice decreased, a space between the roof and stack would be left, allowing a current of air to act on the top

as the air amongst the roots would at the bottom of the stack. Dependence on the wall of straw was perhaps another cause of failure. If "E. J." wishes for success, he must throw aside the roots, knock down his posts, and make the thatch moveable. *W. Ingram, Hatfield, Herts.*

*The Cuckoo.*—Notwithstanding the difference which "Ruricola" says exists between the formation of the throat of the male and female cuckoo, I am as sure as I am of my own existence that Mr. Kidd is right in stating that the female does utter the well-known cry, and also that the cuckoo does sometimes feed its own young. As proofs of these assertions I offer the following. I have stood within 3 feet of a cuckoo while depositing its egg in the nest of a robin, and I have heard that cuckoo when she left the nest, after depositing her egg, utter the pleasing sound "cuckoo" twice, as distinctly as ever I heard it in my life. I am certain that it was the female. I stood in a cellar where there is a small grated window surrounded with Ivy. A robin had made its nest on the ledge of the window. Happening to be in the cellar one day, and hearing a rustling noise at the window, I went up to it, and saw a cuckoo; but in approaching I had disturbed her, for she flew away. I observed that all the eggs (four in number) of the robin had disappeared, and that the nest was empty (whether the cuckoo had cast them out or not I cannot tell, but I found the shells on the ground when I went out). Thinking that the cuckoo might return, I remained at the window as quietly as possible, and she did return; but she exhausted my patience, as I had to sit in a rather tiring position, in order to see her, and I went out. On going round to the window she flew away; and, as I have said, called "cuckoo" twice. I looked in the nest and there was her egg, which I know was not in the nest before she returned the second time. I may state that coming out of the cellar and going to the window did not occupy me 30 seconds. In watching the progress of the young cuckoo, which in due course, under the fostering care of the robin, made its appearance, I have seen, from the same window, a cuckoo more than once bring food to it. I well remember a cuckoo carrying food to a young one, some 10 years ago, at Kingsbury, in Middlesex. I recollect it well, as it was the first young cuckoo I had ever seen; and I discovered it by seeing the old one go to the nest with something in its mouth. I saw it go several times, but I afterwards found that a hedge-sparrow did the most of the feeding. I noticed it particularly, as I had read that the cuckoo never did feed its own young. *Opinionum commenta delet dies, naturæ judicia confirmat. John Middlemiss, Bentham Hill, Tonbridge Wells.*

*Musa Cavendishii.*—This valuable tropical fruit has being growing in great luxuriance in the hothouse of the Rev. Sir T. G. Cullum, Bart., Hardwick-house, Bury St. Edmunds, in a bed, without the aid of bottom-heat; but, in order to accelerate its ripening, the gardener cut off the stem and suspended it in the warmest part of the house. As the plant is readily increased by suckers, will some of your readers favour me with the best mode of cultivation? *N. S. H., Bury St. Edmunds.*

*Blocks for Orchids.*—After some years' experiments, I find that the best of all possible blocks on which to grow Orchids, are formed from the root of Elder. They must be allowed to dry, so that the bark strips off, and they should be sawn into suitable sizes. Their gnarled and rugged surfaces appear to be peculiarly agreeable to the roots of Orchids. I have long used Elder for this purpose, finding it by far the most durable of soft woods, and at the same time spongy, so as to absorb due moisture; bnt is difficult to obtain it of suitable size and form. The roots which I have only tried during the last year or so, seem perfect, and such plants as Cattleya Mossiæ, Dendrobium aggregatum and Jenkinsii, soon cover the blocks with their roots, which are thus preserved through winter without the slightest injury. If the bark be retained, minute insects (and I believe young woodlice) harbour and are troublesome; the naked wood is free from these objections. *J. R.*

*Names of Conifers.*—Why is the name Pinus austriaca preferred to that of Pinus nigricans? The tree is not known by that name in Austria, to a small part of which country it is restricted, and in which most of the European Conifers are found. Host calls it nigricans, and in the Vienna Botanic Garden it stands under that name as well as in the "Flora Austriaca." It is hardly more than a variety of Laricio, so common over the south-east of Europe. Nigricans is the proper translation of its German name, Schwartz Föhre (black Fir), in contrast to P. sylvestris, their white Fir; while austriaca is neither characteristic nor distinctive. What is the distinguishing character of the genus Chamæcyparis? There appear to be two plants going under the name of Mexican Cypress in your list—Chamæcyparis thurifera and Cupressus thurifera—are they alike in general appearance? Pinus Persica I see numbered among the three-leaved Pines; this is hardly correct. It certainly bears occasional quills of three leaves; but only interspersed among the normal two-leaved ones, as happens to the Pinaster, and may possibly also to its nearest congener, P. halepensis. *S.* [It appears that Höss's name of P. austriaca was published earlier than Host's P. nigricans; no doubt it is a variety of Laricio. In Chamæcyparis the scales of the cones are two-seeded, in Cupressus they are many-seeded. Cupressus thurifera and Chamæcyparis thurifera are the same plant.]

## Societies.

Horticultural, *Dec.* 2.—E. Brande, Esq., in the chair. The greatest novelties exhibited on this occasion, and those which excited by far the most interest, were the models of glass walls, some account of which will be found in a leading article in another part of to-day's paper. Flowers, except those contributed from the Society's Garden, were scarce. Mr. Salter, of Hammersmith, sent a collection of Pompone Chrysanthemums in a cut state, the produce of crosses between Mr. Fortune's Chusan Daisy and some of the larger flowered kinds. Many of the sorts were very handsome; but as they were not shown in the shape of plants, a circumstance to be regretted, little can be said with certainty respecting them.—Blooms of a very beautiful hybrid Epiphyllum were produced by Mr. Snow, gr. to the Earl de Grey. It was stated to have been raised between E. Russellianum and E. truncatum, but it was much deeper in colour, and better shaped, than either of its parents. A Certificate of Merit was awarded it. —Fruit was tolerably plentiful. Mr. Ingram, gr. to her Majesty, at Frogmore, sent a finely-formed and well ripened, smooth-leaved Cayenne Pine-apple, weighing 8 lbs. 4 oz., for which a Knightian Medal was awarded. The same variety, weighing 5 lbs. 13 oz., together with a new kind, called Charlotte Rothschild's Pine, which resembles the Cayenne, were furnished by Mr. Dodds, gr. to Col. Baker. A Banksian Medal was awarded for the Cayenne.—Black Jamaicas, weighing respectively 4 lbs. 9 oz. and 4 lbs. 5 oz., came from Mr. Povey, gr. to the Rev. John Thornycroft.—A Certificate was awarded.—A Jamaica, weighing 3 lbs. 9 oz., was also shown by Mr. Bundy, gr. to Lord Dynevor, at Dynevor Castle, Llandilo.— From Mr. Higgs, gr. to J. Barchard, Esq., came a very fine cluster of the fruit of Musa Cavendishii. The bunch consisted of upwards of 90 fruits, most of which were ripe, and, upon some of them being cut up and tasted, they proved to be very good. This was from the dwarf variety of this Musa, which is most suitable for small stoves; a Banksian medal was awarded. Black Cluster Grapes, attached to the branches, shrivelled, and in the condition of raisins, but showing that they had perfectly ripened, were exhibited by J. Hogg, Esq., of King's Bench-walk, Temple. These had been produced without any artificial assistance on an open wall, at Norton, which is two miles north of Stockton-on-Tees. The plant in question had been transferred to the open wall, from a glass-house in which it produced abundantly, a propensity which it appears still to retain.—Mr. Middlemiss, gr. to A. Pott, Esq., Bentham Hill, Tonbridge Wells, sent a fruit of the Dampsha Melon, a variety which, although by no means first-rate in flavour, has the property of keeping good for a long time after being cut. The fruit shown was stated to have been removed from the plant on the 8th of September, and it was still in fair condition. The fruit shown was oblong in shape, and had some resemblance to a green and yellow mottled Gourd.—Mr. Cameron, of Uckfield, furnished a dish of Mannington's Pearmain Apple, a good keeping sort, possessing a brisk flavour, and a great bearer. The specimens shown were stated to have grown on nursery trees, two years from the graft. Potatoes, the produce of New Zealand seed which was distributed by the Society in April, 1849, were communicated by J. Gaskell, Esq., of St. Nicholas. The result of three trials with them is, that they are not less liable to disease than sorts in usual cultivation. A sample of a nice-looking dessert Pear, called Triomphe de Jodoigne, was furnished by Mr. Rivers, of Sawbridgeworth, from one of his potted plants; it arrived too late to be critically examined.—From Mr. Lawrence, of Parliament-street, came common garden watering-pots, with globular roses, instead of those of the usual form. This is found to be an improvement, inasmuch as it disperses the water better and quicker than the old-fashioned rose. — From the Garden of the Society came Beaufortia decussata, Muraltia Heisteri, three varieties of Epacris, the beautiful Winter Heath (E. hiemalis), and plants of various Pompone and other Chrysanthemums. The Daisy-flowered kinds were mostly new and unnamed, having nothing by which to distinguish them, except the numbers under which they were received from M. Van Houtte, of Ghent. The following Pears were furnished in good condition, viz., Beurré Diel, Napoleon, Glout Morceaux, Passe Colmar, and Forelle. The latter were smaller specimens than those shown at the last; but they were still perfect. The Apples sent consisted of Beachamwell, Dutch Mignonne, Court Pendu Plat, Blenheim Pippin, Waltham Abbey, Seedling and Tower of Glammis, the two latter being kitchen Apples.—In consequence of a clerical error in the notice of the alteration of the by-laws read at the last meeting, the following was re-read on this occasion as for the first time:—It is proposed to repeal the following by-law of the Society, viz.: Chap. 4, Art. 3, "Every Fellow may at any time compound for all his future annual contributions by paying ten times the amount of his annual subscription;" and to substitute the following words: "Every Fellow may at any time compound for all his future annual contributions, by paying, when first elected, 42*l.*; at the end of 7 years, 31*l.* 10*s.*; at the end of 14 years, 26*l.* 5*s.*; at the end of 20 years, 21*l.*"

Linnean, *Dec.* 2.—W. Yarrell, Esq., in the chair. Mr. Moore, of the Botanic Garden, Chelsea, presented to the society specimens of the staminiferous cones of *Zamia furfuracea*. Mr. Adam White exhibited two collections of insects, one consisting of Hymenoptera, made by Mr. Frederic White, and the other of Lepidoptera, Hemiptera, and Coleoptera, made by Mr. W. H. Bates, in South America. Mr. White gave a sketch of Mr. Bates' very important travels in South America, in the district of Para, and up the river Amazon, from whence he had sent back collections of insects and plants. If Mr. Bates obtained the assistance he needed, he proposed to explore the natural history of a branch of the river Amazon, called Rio Tassajos, which penetrated the Brazils, some 1000 or 1200 miles. He is now at Para. The remaining part of Mr. Miers's paper on two new genera of South American plants was read. In a note, the author stated that his new genus *Tetraraphis*, resembled Nuttall's genus, Oxytheca, which also belonged to the Erigoneæ. The second genus belonged to the order Bignoniaceæ, and was a leafless, spiny shrub, about 8 feet in height, and found growing on the western declivity of the Cordilleras. The name given to the plant was *Oxycladus aphyllus*. It differed so much from the true Bignoniaceæ, that the author proposed for it a sub-tribe, *Oxycladeæ*, and placed the remaining plants under the heads of Bignoniaceæ and Crescentieæ.

## Notices of Books.

*Game Birds and Wild Fowl; their Friends and their Foes.* By A. E. Knox. Van Voorst. 12mo, pp. 264.

We formerly noticed, with commendation, Mr. Knox's "Ornithological Rambles in Sussex," and we must not withhold our tribute of praise to this his second and better production. He is a true lover of Nature, and looks at everything with the eye at once of a keen sportsman and a practised naturalist. As a narrator of the scenes which a field zoologist so heartily enjoys, he scarcely yields to any one in graphic skill.

A few extracts from the author's account of a wild-fowl expedition, in the winter, will, we think, more than justify this statement:—

"I had made preparations over night for a regular field-day. The distance from my residence to the mouth of the haven was little more than a mile along the shore, and I was thus enabled—though not without a certain degree of labour, which, however, the intense cold rendered less irksome—to carry my own guns and ammunition, and at the same time to dispense with the services of an attendant, who, as experience had taught me, proves rather an incumbrance than an advantage on an expedition of this kind. My long duck-gun was now unpacked, and a heavy double, weighing about 11 lbs., also put into requisition. A supply of Eley's cartridges suited to the calibre of each, with well dried powder and waterproof caps, were stowed away in the larger pockets of my shooting coat, while the smaller receptacles contained the minor sundries necessary to complete my equipment. But although I willingly dispensed with the services of a biped attendant, I had one companion whose assistance was all in all to me on such occasions. This was an Irish water spaniel, whose education I had myself superintended in his native bogs and on the shores of the Atlantic, and whose sagacity, courage, and docility far surpassed those of any dog that I have been able to procure in this country. He was rather larger than a setter, but his legs were shorter and stronger; his coat was curly, entirely of a liver colour, and of a fine silky texture; his ears long and pendulous; his feet were webbed like a duck's, to the very toes; his face was smooth; his forehead broad and open. But the most striking feature was his eyes. Nothing in canine physiognomy could surpass the intelligence of their expression. They were of a bright golden colour, like those of a sparrow-hawk; restless, and always on the move; indicating a joyous and adventurous spirit, and an ardour and perseverance, which indeed were prominent qualities in the character of their possessor."

"As I swept the shores of the estuary with the spy-glass, I had the satisfaction of observing that my sport was not likely to be anticipated by any wandering gunner, who might have perceived the birds already, and perhaps venture on a random shot before I could commence operations, or even decide on the best mode of carrying them into effect. There was not a human being within sight, nor could I discover a single boat on the surface of the water."

"It was evidently the gun-boat of a wild-fowl shooter, and of one who was no novice in the craft; but when the first feeling of disappointment had passed away, I easily succeeded in persuading myself that I should derive more pleasure from witnessing his operations than in spoiling his sport—which would have been the result of a premature movement on my part, for he was yet at least half a mile from the objects of his pursuit—but it occurred to me at the same moment that I might even manage to convert him into an unconscious but important ally in contributing to my—the jackal's—share of it. Taking, therefore, a hasty survey of the harbour and its shores, I saw that if I could contrive to conceal myself at a certain point on a long and narrow belt of shingle at some distance, over which the swans would probably fly when returning to the sea, I might perhaps have the good luck to intercept them. I lost no time in carrying out this plan; the coast-guard man ferried me across the mouth of the estuary, after which, by taking a wide circuit and availing myself of the nature of the ground where it was possible to mask my advance, I succeeded at last in reaching the desired point, and having scraped a hole in the loose shingle sufficiently large to conceal myself and my dog in a crouching attitude, I placed my guns on either side of me, and now directed all my attention to the exciting scene in the harbour. The hoopers were still there, surrounded by several flocks of wild ducks, some 500 yards from the position which I occupied, and about half that distance beyond

them was the gun-boat, as harmless a looking object as could well be imagined, lying low in the water, and never for a moment attracting the attention of any of the devoted birds, who appeared to be perfectly at their ease and in the full enjoyment of repose and plenty after their long and stormy voyage. The brent geese and the widgeons were preening their feathers, while the scaup and tufted ducks were continually diving, or flapping their wings on their return to the surface before they again plunged to the bottom. The swans were also feeding, but in a different manner; with their long necks they explored the surface of the mud beneath, where, to judge from their perseverance and the number of tails that appeared at the same moment directed upwards, they must have discovered something well suited to their palates. I could also distinguish some of the less common species of anatidæ, among which the males of the smew and the golden-eye were conspicuous in their pied plumage. The sooty coter too was there, but foraging by himself apart from the main body. All this time their concealed enemy was gradually lessening the distance between them and himself. Slowly and stealthily did he advance, nearer and nearer, until at last I expected every instant to hear the roar of the stanchion-gun, and fancied that he must be excessively dilatory or over-cautious, as minute after minute elapsed without the report reaching my ears. At last a bird rose from the crowd and flew directly towards me. I saw that it would pass tolerably near, and when in a few seconds afterwards I perceived that it was a male golden-eye within 30 yards of me, I almost forgot the important—though as yet passive—part I was enacting in the scene, and as I instinctively grasped my double-gun and raised the hammer, I felt tempted to pull the trigger. Prudence, however, prevailed, and I followed the example of my sagacious dog, who lay crouched at my side without moving a muscle of his limbs. He had seen the bird as well as myself, and his quick eye had detected my hasty movement, but his attention was again directed to the main body of water-fowl, several of which had at length taken alarm and were rising, one by one, from the water. It was an anxious moment. The swans were still there, but they had ceased to feed; their heads were turned towards me, and I soon perceived that the entire flotilla had gradually approached nearer to me. Now or never, thought I. I glanced rapidly at the advancing gun-boat—almost at the same instant a small puff of smoke issued from its further extremity, succeeded by a pigmy report, and up rose the entire host of water-fowl—swans and all—the snow-white plumage of the hoopers standing out in bold relief against the murky sky. Then a huge volume of smoke and a bright flame burst from the prow, followed by the thunder of the great gun itself—off at last!—and as it cleared a passage through the winged mass between us, several of the motley crowd fell to rise no more; almost at the same instant the head and shoulders of a man were protruded from a covering of sea-weed, under which he had hitherto been concealed, and the next moment he was vigorously plying his paddles in all the excitement of a regular cripple chase. My turn had at length arrived; restraining the ardour of my dog, who only waited for a word to take an active share in the pursuit, I turned my attention to a detachment of swans, about five in number, which had apparently escaped unhurt, and after wheeling once or twice over the bodies of their dead companions, uttering all the time their trumpet-like notes, were now gradually ascending and nearing my place of concealment. On they came, but suddenly their leader seemed to have discovered my position, and veered round in an opposite direction, followed by all except one, who, as he was passing overhead, fell a victim to my long gun. A brent goose almost at the same instant passed on the other side, and afforded an easy mark for the first barrel of my heavy double, while the second was discharged at a venture, but ineffectually, at a party of pochards—the last detachment of the fugitives, as they hurried back once more to the tempestuous but less treacherous waters of the channel."

## Garden Memoranda.

Mr. Young's Nursery, Milford.—The beauty of the better sorts of Conifers, both in summer and winter, has led to their liberal introduction into private establishments, not only in England, but also in Scotland and Ireland; and this has induced nurserymen to pay more than usual attention to their cultivation. Mr. Young, foreseeing the demand which was likely to arise for this interesting tribe of plants, was among the earliest to devote a portion of his nursery to this description of stock, and the result is, that in few places is to be found so fine or varied a collection as he has got at present at Milford. Situated rather high, in the pure air of the finely undulated country in the neighbourhood of Guildford, and with a light loamy soil lying on sand-stone, these plants grow with a vigour and beauty which is uncommon to them in less favoured localities. Here some of the more tender and beautiful of the Mexican Pines endure the rigour of the winter's frost unscathed; but this is to be attributed, in no small degree, to Mr. Young's judicious management, in carefully watching and checking luxuriant and late growths. Whenever he perceives that such are likely to occur he moves the plant early in autumn, which has the effect of stopping its luxuriance, and of giving the shoots a chance of ripening and hardening before unfavourable weather sets in. In addition to this advantage they can be moved and transplanted with facility, and without fear of loss at any time. Their roots being so near "at home," a nice ball of earth is secured, and the plants never experience the slightest harm from the shift. This periodical lifting and replanting is extended to all the Conifer tribe in Mr. Young's nursery, so that Spruce and other Firs 10 and 15 feet high can be transplanted with the greatest safety, a circumstance of much value in planting for immediate effect, in forming screens, and in shutting out unsightly objects. Under the treatment just described, Pinus patula, one of the very handsomest of the Mexican species, and tender in most places, is found to stand the winter well, unprotected in any way; indeed, Mr. Y. finds that such sorts, in moderately exposed situations, where winds sweep off all stagnant damp, succeed much more satisfactorily than in low ground, where moisture hangs long about their leaves. In proof of this, in tolerably elevated and open places, the Cryptomeria and Taxodium sempervirens maintain their green colour unimpaired throughout the winter. The former, artificially fertilised, ripens fruit in abundance here; and we believe that Mr. Young was the first to raise plants in this country from home-matured seeds. The same thing is, however, stated to have been effected at the late Lord Harrington's, at Elvaston, and perhaps at other places.

Among a host of Junipers, Cypresses, and other plants, we remarked nice examples of Pinus pyrenaica, whose bright yellow bark, seen occasionally through the green foliage, is not unornamental, and it is as hardy as a Scotch Fir. It is therefore a good kind for exposed situations. P. Sabiniana, Webbiana, Montezumæ, Hartwegii, Teocote, longifolia, Russelliana, monticola, nobilis, Nordmanniana, and all the finer kinds are cultivated here, and are generally good sized plants, beautifully furnished with branches on all sides. Deodars and Araucarias are abundant and of all sizes; some of the former are splendid specimens, and their grey aspect strikingly contrasts with the deep green of the majority of the Pines with which they are intermingled, more especially with that most interesting of all the tribe P. insignis, whose lively appearance is so charming in the depth of winter. Indeed, so various are the colours of Conifers, that by exercising a little skill in planting them, great variety and effect may be produced by this description of plant alone. Mr. Young has attempted to illustrate this as far as he can by planting them in wide borders by the sides of his walks in what he calls the ornamental department of his nursery. Of the Yew tribe he has an immense stock, both in the shape of single specimens and hedge plants, and, as we have stated, these together with every other kind of plant in his establishment, are all lifted and replanted every three years or so, in order that no deaths may occur when they are sold and sent to other places.

The stock in this nursery being all of a hardy kind, few glass houses are required; nevertheless, there are some, and one of these, a long span-roofed erection, is used for wintering young plants of the tenderer Conifers. In this house, which is furnished with a bed in the middle, and shelves up either side, was a large stock of the Funereal Cypress (Cupressus funebris). Plants of Libocedrus chilensis, a large tree from mountains in the south of Chili, was also here, together with the New Zealand L. Doniana, the former being the handsomer of the two.

But it is not Coniferous plants alone for which Mr. Young's nursery is famous. Occupying an extent of 20 acres, he grows all kinds of forest and fruit trees, Quick, and other hardy stock, all of which is especially cared for, and is in excellent condition. Among other trees of an ornamental character we remarked fine examples of what is called the new Lucombe or Oxford Oak, a sort that is perfectly evergreen, while the old Lucombe Oak is not. In addition to these there were several new evergreen Oaks, not trees, but spreading bushes raised from seeds given to Mr. Young by P. B. Webb, Esq. These may prove valuable for planting among rocks, and for skirting the margins of clumps, &c. A new broad-leaved Laurustinus, some remarkable Hollies, and the Ivy called Hedera Rægneriana, are also worthy of mention. The latter, from the large size of its heart-shaped leaves, will be found useful for many purposes, and very ornamental.

After what has been stated, we need hardly say that a visit to this nursery cannot fail to be productive both of pleasure and profit, more especially to those about to plant; for here good sized specimens afford some idea of the kind of effect large plants of the sorts likely to be wanted make. It is easily reached by the Southampton Railway to Woking, and thence by loop line to Godalming, which is within two miles of Milford.

## FLORICULTURE.

National Floricultural Society, *Dec.* 4.—Mr. Salter in the chair. As might be expected at so advanced a season, but few novelties were contributed: Cyclamen persicum rubrum, a well coloured and finely formed seedling, received a Label of Commendation. It was furnished by Mr. E. G. Henderson.—An Epiphyllum, between E. violaceum and E. truncatum, was forwarded by Mr. Gaines. It was evidently a free flowering sort, but it was damaged by travelling.—Collections of Pompone Chrysanthemums were sent by Mr. Salter and Mr. E. G. Henderson, and from the latter establishment came a plant of Erica Leeana, in good flower.

North London (Highgate) Chrysanthemum Exhibition, *Nov.* 26.—As the following report of the awards and flowers occupies much space, we shall confine our preliminary comment to the simple announcement that every success has attended the unceasing exertions of the committee of this rapidly extending society, whose exhibition on this occasion was all that could possibly have been desired.

Class I. Six varieties in 11-inch pots, private growers: 1st, to Mr. Holmes, with Madame Cameron, Queen of England, Annie Salter, Defiance, Pilot, and Vesta; 2d, to Mr. James, with Vesta, Madame Cameron, Defiance, Medusa, Cloth of Gold, and Pilot.

Class II. Six varieties in 8-inch pots: 1st, to Mr. Lewis, with Pilot, Madame Cameron, Annie Salter, Vesta, Minerva, and General Marceau; 2d, to Mr. Boram, with Cloth of Gold, Queen Victoria, Formosum, &c.

Class III. Twelve blooms: 1st, to Mr. James, with Queen of England, King, Goliah, Lysias, Clustered Yellow, Defiance, Christine, The Duke, Dupont de l'Eure, and Imperial; 2d, to Mr. Taylor, with Golden Clustered, King, Queen of England, Beauty, Phidias, Defiance, Ne plus ultra, The Warden, Sydenham, Plutus, Pio Nono, and Formosum; 3d, to Mr. Hutton, with Phidias, Queen of England, The Duke, Rabelais, Golden Clustered, The Warden, King, Defiance, Vesta, Formosum, Beauty, and Dupont de l'Eure; E. Sanderson, Esq., set up Queen of England, Beauty, Defiance, King, Golden Clustered, Goliath, Temple of Solomon, The Warden, Aristides, Vesta, Barbarossa, and Imperial.

Class IV. Six varieties in 11-inch pots. Nurserymen: 1st, to Mr. G. Smith, with Napoleon, the Duke, Nemesis, Pilot, Annie Salter, and Defiance; 2d, to Mr. Back, with Vesta, Campestroni, Formosum, Queen of England, Annie Salter, and Defiance; 3d, to Mr. Batten, with Madame Cameron, Pilot, Belle de Versailles, Christine, The Warden, and Mount Etna.

Class V. Six varieties in 8-inch pots: 1st, to Mr. G. Smith, with Nonpareil, Annie Salter, the Duke, Pilot, Defiance, and Belle de Versailles; 2d, to Mr. Back, with Clustered Yellow, Pilot, Defiance, Campestroni, Annie Salter, and Madame Poggi.

Class VI. Twelve blooms: 1st, to Mr. Merry, with Guillaume Tell, Queen of England, The Duke, King, Goliah, Phidias, Clustered Yellow, Gem, Formosum, Dupont de l'Eure, Defiance, and Pio Nono; 2d, to Mr. G. Smith, with The Warden, Madame Chauviere, Queen of England, Clustered Yellow, Annie Salter, Christine, Polyclète, Vesta, The Duke, Phidias, Defiance, and Peruvienne.

Class VIII. Open. Six distinct Anemone-flowered varieties: 1st, to Mr. Taylor, with Madame de Gordereau, Marguerite d'Anjou, Fleur de Marie, Nancy de Sermet, and Gluck; 2d, to Mr. G. Smith, with Fleur de Marie, Cleopatra, Gluck, Madame de Gordereau, Nancy de Sermet, and Marguerite d'Anjou.

Class X. (Extra Prizes.) To maiden exhibitors, by Mr. G. Smith: 1st, to Mr. R. Waters, with The Warden, Cloth of Gold, Jenny Lind, Sydenham, Rabelais, and Vesta.

Class XI. By Mr. Stein, for three white and three yellow Anemone flowers: 1st, to Mr. James, with three blooms of Fleur de Marie, and Gluck.

Class XII. By Mr. King, for six plants Pompons: 1st, to Mr. Taylor, with Piquillo, La Fiancie, Daphnis, Le Nain, Bébé, La Jougleur, and Elise. Mr. James and Mr. Batten also exhibited in this class.

Class XIII. By Mr. Back, for a single bloom: 1st, to Mr. James, with Queen of England.

Class XIV. By Mr. Atkins, for three blooms of yellow: 1st, to Mr. James, with Clustered Yellow. This prize was at first awarded to Mr. Taylor, for three nice blooms; but it was afterwards withdrawn, on account of his not having complied with the regulations.

Class XV. By Mr. Atkins, for three blooms of white: 1st, to Mr. Taylor, with Defiance.

Class XVI. By Mr. Bevan, for the best specimen plant: 1st, to Mr. James, with Pilot.

Class XVII. By Mr. J. Edwards, for class showing in four divisions, viz., yellow, white, light and dark: best yellow, to Mr. Taylor, with Plutus; 2d, to Mr. Lochner, with Clustered Yellow; 3d, to Mr. Lochner, with Annie Salter: best white, to Mr. Lochner, with Defiance; 2d, to Mr. James, ditto; 3d, to Mr. Lochner, ditto: best light, to Mr. Lochner, with Christine; 2d, to Mr. Taylor, with King; 3d, to Mr. James, with Queen of England: best dark, 1st, to Mr. James, with Lysias; 2d, to Mr. Lochner, with Pio Nono; 3d, ditto, with Campestroni.

Class XVIII. By Mr. Lochner, for class showing Anemone flowers in two divisions: best yellow, to Mr. G. Smith, with Gluck; 2d, ditto, ditto; 3d, to Mr. Lochner, ditto: best light, 1st, to Mr. G. Smith, with Fleur de Marie; 2d, ditto, ditto; 3d, ditto, Madame de Gordereau.

Class XIX. By Messrs. James and Bevan, for the 1st, 2d, and 3d best flowers, to be selected by the censors from the entire exhibition. The first award was made to E. Sanderson, Esq., for a bloom of Beauty, being the No. 2 flower as enumerated in the 12 blooms in Class III.; this was the pride of the exhibition; 2d, to Mr. James, with Lysias, the No. 4 flower in the first stand of Class III.; 3d, to Mr. Taylor, for a flower of Defiance shown in Class XV.

Collections of plants and cut flowers were largely contributed by Mr. Salter, Mr. E. G. Henderson, Mr. Stein, and Mr. McEwan; an extremely well grown and abundantly bloomed Epiphyllum truncatum was staged by Mr. Stein. During the evening the prizes were handed to the respective winners, and the Hon. Sec., C. P. Lochner, Esq., announced, after payment of all claims, that there would be a balance in hand. Some extra prizes were announced by Mr. Salter for next season. *J. E.*

Norwich, *Nov.* 26.—The usual Chrysanthemum Show was held on Wednesday, the 26th ult. Many of the plants, especially the collection of 12, exhibited by the Rev. R. G. Lucas, were very beautifully grown, but the blooms were not, we think, quite so large as usual. The following is the list of awards. 18 varieties: 1st, to Rev. S. Burroughes, with Gipsey Queen, Satyr, Madame Hardy, Jenny Lind, Hecuba, Defiance, Queen of England, Nonpareil, The Warden (very promising), Annie Salter, Phydias, Queen of Yellows, Cloth of Gold, Duchesse de Moutal, Vesta, Pilot, Clustered Yellow, and Louis Napoleon; 2d, to J. Gordon, Esq., with The Duke, Saturne, King of Crimsons, Jenny Lind, Nonpareil, Vesta, Madame Poggi, Christine, Defiance, Pharemond, Annie Salter, Columbus, Queen, Trillby, Clustered Yellow, Belle de Versailles, Pilot, and Madame Chauvière; 3d, to R. Chamberlin, Esq., with Ondine, Madame Poggi, Bride, Campestroni, General Marceau, Defiance, Pilot, The Duke, Nonpareil, Annie Salter, Vesta, Duchesse de Montabello, Nancy de Sermet, Clustered Yellow, Lucidum, Minerva, Lysias, and Fleur de Marie; 4th, to Charles Short, gr. to Sir W. B. Procter, Bart., with Minerva, Merit, Eclipse, Queen of Yellows, Beauty, Memnon, Madame Bijou, Miss Jane, Annie Salter, Vesta, Campestroni, Defiance, Duchesse de Montabello, Cleopatra, Pilot, Sultana, Nancy de Sermet, and Queen of England. 12 varieties: 1st, to Rev. R. G. Lucas, with Minerva, Comte Ratzan, Vesta, Queen of Gipsies, Annie Salter, Defiance, Madame Poggi, Empress, Madame Chauvière, Pilot, Superb Cluster, and The Duke; 2d, to J. Gordon, Esq., with (Unknown), Hecuba, Nonpareil, The Duke, Christine, Endymion, Defiance, Annie Salter, Lysias, Madame Chauvière, Clustered Yellow, and Belle de Versailles; 3d, to J. N. Waite, Esq., with Sultana, Princess Marie, Queen of Yellows, Madame Poggi, Queen of Gipsies, Temple de Solomon, Bride, Vesta, Nancy de Sermet, Pilot, Minerva, and King of Crimsons 6 varieties: 1st, to Rev. J. Burroughes, with Nonpareil, Defiance, Vesta, Hecuba, Pilot, and Clustered Yellow; 2d, to Rev. R. G. Lucas, with Madame Poggi, Hecuba, Annie Salter Vesta, The Duke, and Pilot; 3d, to J. Gordon, Esq., with Formosum, Vesta, Endymion, Madame Chauvière, Clustered Yellow, and Louis Napoleon. Cut blooms, 12 varieties: 1st, to G. B. L. Knight, Esq., with Clustered Yellow, Comte de Ratzan, Hecuba, Queen of Yellows, Vesta, Pilot, Madame Poggi, Madame Chauvière, Annie Salter, Queen, The Duke, and Temple of Solomon; 2d, to G. Morse, Esq., with Minerva, General Morceau, Abd-el-Kader, Campestroni, Queen of Yellows, Princesse Marie, Annie Salter, Ondine, Pilot, Lavinia, Clustered Yellow, and Fleur de Marie. *J. E.*

Catalogues. Received from Mr. Dobson, of Woodlands Nursery, Isleworth.—*W R B, Slough.* Pansies and Hollyhocks.

## Miscellaneous.

*Mr. Rucker's Orchids.*—Botanists and horticulturists are alike interested in the conservation of the rarest and finest collection of Orchideous plants that has ever been amassed by any one individual. The palm for such an assortment has been universally awarded to S. Rucker, Esq., of West Hill, Wandsworth, where the collection is in all its integrity. Circumstances have happened, as the public is but too well aware, which require that these splendid specimens should find another possessor; but we must be allowed to express a most earnest hope that they will not be dispersed, but that some one among the noblemen and private gentlemen of fortune, of whom many have been distinguished by their love of science and of horticultural pursuits in this country, will be inclined to purchase it, and preserve it entire. *Hooker's Journal of Botany*

*Luminous Mosses.*—About two years since, Dr. Milde observed in the Orchis-house, at the Breslau Gardens, that the infant fronds or prothallus of some Ferns, which happened to stand in a dark place, emitted an emerald green light exactly as the Cotyledonoids of Schistostega osmundacea in the cavities of rocks. The same appearance presented itself in a fissure constantly moistened with the spray of a waterfall in the course of last July. The light proceeded from globular bodies. The place on examination proved to be thickly clothed with Mnium punctatum, almost every leaf of which was covered with a large drop of water, which produced exactly the same effect as the spawn of Schistostega. Meyer says rightly, that this species must be erased from the list of luminous plants, for the peculiar refraction and reflection which is produced by the drops of water on the leaves of the Mnium is equally effected by the swollen cells of the Cotyledonoids of the Schistostega, and has nothing to do with a development of light from the substance of the plant itself. *Botanische Zeitung*, 1851, p. 630

## Calendar of Operations.

*(For the ensuing week.)*

PLANT DEPARTMENT.

As the season is approaching when every proprietor looks to home for enjoyment, let the gardener make it his particular business to contribute, as far as lies in his power, to the gratification and pleasure of his employers and their friends. The plant houses and their occupants will be of the first importance at this dull season; and, to be appreciated, they should be arranged in such a manner as to display themselves to the best advantage. Great care should be taken of plants now in flower, in order to preserve them in that state as long as possible; due attention should also be paid to bringing others forward, that a proper succession may be kept up. Let perfect order and neatness be evident in everything; for, if this point be attended to, it will compensate in a great measure for the absence of a more extensive floral display. Hybrid Rhododendrons, and Chinese Azaleas, will now be coming in, to assist with the Camellias, early Epacrises, Indian Daphnes, and numerous other good things, in producing a rich display of flowers. A few more of the above should now be put into a mild heat.

FORCING DEPARTMENT.

PINERIES—Care should be taken during the next few weeks to limit the application of exciting influences, or the plants will be induced to grow at a rate very disproportionate to the amount of light which they are at liberty to enjoy. The object to be aimed at in Pine-growing, is not the producing of a large plant with gross exuberant foliage, but rather the production of small, yet healthy plants, with short sturdy leaves, while the roots are revelling in the rich compost, which they will continue to do even through the winter months, if the bottom heat is kept at 80° to 85°. This end is not, however, to be obtained through starving the plants by an inadequate supply of water and soil, but by affording, along with a proportionate quantity of these requisites, a free circulation of air at all times. If this point, in connexion with a proper supply of water, be duly attended to, and if a healthy root-action be secured, the plants, though small, will be filled with highly-elaborated sap; and, as a natural consequence, will produce large, well-swelled and highly-flavoured fruit. VINERIES.—Let forcing be carried on with great caution at this dull season of the year; but take advantage of every fine day to allow the temperature to rise 15° or 20° higher than that which it is kept during the night. Where the buds are not yet broken, the rods may be syringed three times a day in fine clear weather, with water of which the temperature is about 70; and, after the buds break, it should be used 10° to 15° warmer. But when sharp frost is expected during the night, syringing in the afternoons should be avoided; as otherwise the water becomes congealed about the laps of the squares, sometimes breaking them, and the front gutter or spout for carrying away the water from the roof becomes choked up with ice. Too much steam from the vapour troughs has also a similar tendency. Admit air on every favourable opportunity; and proportion the amount of moisture in the atmosphere to the strength of daylight. Be careful that the fermenting material over the roots does not get too hot—a moderate warmth, not exceeding 75° or 80° in the dung, is sufficient; but, at the same time, it should be frequently examined, that it does not fall too low during cold weather, or the check will injure the roots. Where the Grapes are still hanging, remove the faded leaves, which are no longer of any service to the Vines, and prune in at once all spurs on which no fruit is hanging.

FLOWER GARDEN AND SHRUBBERIES.

Let perfect neatness prevail in this department also, to compensate for the absence of more brilliant attractions. Remove all the fallen leaves, and let the surface of the soil in the borders and clumps be forked over, or made clean with the rake. The walks should be put into perfect order, and, if necessary, receive a slight sprinkling of clean fine gravel. It is not, however, a good time during frosty weather to lay down gravel, unless it is very clean, and free from clay; and even then, it is only in extreme cases that we would recommend it. Let the drains and grids be examined and cleaned; and if in very rainy weather the water lies on any parts of the walks, let the defect be remedied by introducing a new drain, or by filling up the low places with new gravel; nothing interferes so much with the enjoyableness of any place, at this season, as damp dirty walls. If the turf is wet in any part of the pleasure ground, the winter season during mild weather is an excellent time for remedying it, by cutting drains wherever they are required. In doing this, keep the drains at the greatest possible distance from trees, to prevent them being choked up by the roots; but in parts where the proximity of trees is unavoidable, let the drains be filled with broken rubble to within 12 or 15 inches of the surface, that a passage may be secured for the water, even if the roots do enter the drains. In filling the drains up with soil, let it be well rammed in, to prevent any after sinking of the surface.

FLORISTS' FLOWERS.

After severe weather, beds containing Pinks and Pansies should be carefully examined, those which have been late planted particularly, as the frost will often raise them nearly out of the ground. The latter would be benefited by having hoops placed over them, on which mats should be stretched during frost. If this precaution is not observed, small boughs of Spruce Firs may be inserted round the bed, and small twigs placed on each side, to prevent the plants being broken off by rough winds. In exposed gardens rabbits or hares will oftentimes commit serious damage; we have found an occasional handful of soot scattered over the soil a preventive, as well as having a beneficial effect on the plants themselves. Air, air, air, as much as possible, to Auriculas, Polyanthuses, Carnations, and Pansies, kept in frames; they will require very little water now, but when absolutely necessary, let it be given in the morning. Take every opportunity during wet weather of repairing handglasses, painting flower-pegs, casting leaden layer-pegs, &c. Look at Dahlia roots, and remove any that may be decaying.

KITCHEN GARDEN.

To prevent any difficulty in digging up Celery or Cardoons, when the ground is frozen very hard, let a portion of each, about as much as will suffice for a couple of weeks, be always under protection, either by means of loose litter, Fern, or thatched hurdles, or some other convenient material which will exclude frost. These coverings should be put on while the ground is in an uncongealed state, as it would otherwise do harm rather than good, by preventing the sun and air from acting upon the soil in case of a change of weather. It must however be understood that the portion which is covered up is not to be left untouched till the arrival of frosty weather, but used in the regular rotation; and as the covering is taken off the part for present use, it is to be moved forward to a similar space beyond, so that a supply for the next ensuing fortnight shall always be under protection, excepting, of course, when the ground is in a frozen state. If, by means of spare frames or other contrivances, a portion of such crops as Parsley, Spinach, Sorrel, &c., can be protected, they will be found very convenient, when the ground is covered with snow. Some Horseradish, Jerusalem Artichokes, Parsnips, &c., should be got up and laid in moist soil for present use. It is a practice with many, on the approach of severe weather, to take up a quantity of Celery and Cardoons, and remove them in-doors; but we never take up more than two or three days' supply, as we have invariably observed great waste to result from the opposite practice; besides which, the quality of the vegetable is deteriorated.

State of the Weather near London, for the week ending as observed at the Horticultural Garden, Chiswick.

| Nov. and Dec. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 28 | 5 | 30.073 | 29.990 | 44 | 21 | 32.5 | 38 | 38½ | N.W. | .00 |
| Satur.. 29 | 6 | 30.170 | 30.158 | 39 | 22 | 30.5 | 38 | 38½ | S.W. | .00 |
| Sunday.. 30 | 7 | 30.247 | 30.162 | 39 | 20 | 29.5 | 38 | 38 | N.E. | .00 |
| Monday 1 | 8 | 30.257 | 30.245 | 39 | 32 | 35.5 | 39 | 40 | W. | .00 |
| Tues. .. 2 | 9 | 30.267 | 30.237 | 41 | 27 | 34.0 | 37 | 39 | N.W. | .00 |
| Wed. .. 3 | 10 | 30.285 | 30.187 | 39 | 24 | 31.5 | 37½ | 38 | S.W. | .00 |
| Thurs.. 4 | 11 | 30.245 | 30.234 | 43 | 35 | 39.0 | 37½ | 38½ | S.W. | .00 |
| Average.... | | 30.220 | 30.173 | 40.5 | 25.8 | 33.2 | 37.7 | 38.6 | | .00 |

Nov. 28—Sharp frost; exceedingly fine; cloudy; frosty.
— 29—Frosty, with fog; fine; very foggy at night.
— 30—Foggy: dense fog; clear and frosty.
Dec. 1—Frosty; fine; uniformly overcast.
— 2—Overcast; clear; slight frost.
— 3—Overcast; hazy; cloudy at night.
— 4—Frosty; fine; overcast.
Mean temperature of the week, 8¼ deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Dec. 13, 1851.

| Dec. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 7 | 47.2 | 36.6 | 41.9 | 15 | 0.14 in. | 2 | 1 | 3 | 2 | 4 | 4 | 5 | 4 |
| Mon. 8 | 45.8 | 33.9 | 39.9 | 13 | 0.16 | 1 | 3 | 2 | 1 | 2 | 7 | 7 | 2 |
| Tues. 9 | 45.2 | 35.0 | 40.1 | 10 | 0.03 | 2 | 5 | 2 | 1 | 1 | 9 | 4 | 1 |
| Wed. 10 | 46.2 | 34.5 | 40.3 | 8 | 0.20 | 1 | 3 | 2 | 1 | 5 | 7 | 4 | 3 |
| Thurs. 11 | 45.8 | 32.8 | 39.3 | 8 | 0.62 | 1 | 3 | 1 | 3 | 5 | 6 | 4 | 3 |
| Friday 12 | 46.2 | 34.5 | 40.4 | 8 | 0.26 | 2 | 2 | 2 | — | 5 | 8 | 5 | 1 |
| Satur. 13 | 47.1 | 32.2 | 39.7 | 8 | 0.13 | 1 | 3 | 2 | 1 | 7 | 8 | 2 | 1 |

The highest temperature during the above period occurred on the 13th, 1842—therm. 61 deg.; and the lowest on the 13th, 1846—therm. 11 deg.

## Notices to Correspondents.

BIRDS—THE BLACKBIRD: *Agnes.* We most readily accede to your proposition, and admire the good taste that suggests our devoting "the very *first* week in the coming year" to a consideration of the claims of this "herald of early spring." His mellow voice, and amiable disposition, deserve such honour. Be it his, to receive it at our hands!—TRICKS OF CANARIES: *W M.* The habit which some of this tribe have of picking out their feathers is not easily curable. We have, however, just received from a young lady in Berkshire a proposed remedy for this evil practice, which we annex. The case of the poor parrot, to which we adverted a fortnight since, has no doubt suggested the kind and timely advice. "I cured a canary of mine," remarks the young lady, "by suspending in his cage a piece of pack-thread, previously dipped in sugar and water. He immediately began pecking at it; and finding it palateable, he never afterwards resorted to his own feathers. I allowed the pack-thread to remain some weeks in his cage. I may add, that *every other attempt to effect a cure had proved ineffectual.*"—*Rosa.* It would be rather premature to publish the list now, inasmuch as it might not prove accurate. The precise order *must* depend greatly on circumstances. We will, however, bear your suggestion in mind, and furnish all particulars at the proper season.—*John C.* Your black-cap has been blinded by cold. If not kept in an equable temperature, these birds invariably go blind in the winter.—*Edwin J.* No; young birds, being imitative, soon lose their original note, unless kept in a quiet room.—*Emily.* Sponge-cake is preferable to bread. If two days old, all the better.—*James F.* Try one snail, daily. They will not eat garden worms, and meal-worms are expensive.—*Arabella.* Select six, nearly uniform in size, and with heads of the brightest red. Put them all in one cage, open at the front only. They will twitter merrily; and their whole cost will not exceed 2*s.* You can tame them very easily.—*Harry T.* Ample directions were given in the first 16 Nos.; but the whole subject is necessarily indivisible.—*Emma.* Many thanks for the kind interest you have shown in the matter of the sick bird, and for the valuable information you have supplied connected therewith. You will see that we have *already* had occasion to avail ourselves of your good offices. Sometimes the heat of a room, or an improper mode of feeding a canary, will induce to these bad habits. In the summer season a frequent change of scene—such as allowing them the range of a large room, &c., &c., will divert them from their malpractices; but at *this* season, your proposed plan is undeniably good.—*Arabella.* Almost immediately after Christmas. Your patience must tarry yet a little longer. If these birds *suddenly* cease singing in the autumn, they seldom resume song till after the new year has come in.—*Jane L.* Our advice is asked "too late." Cramp has paralysed your little friend, and by putting his head behind his wing he gives you timely notice that you must immediately part. At this season, all who really *love* their birds should show their good sense, and keep them from cold and draughts.—*Alpha.* Read carefully the "treatises" Nos. 17 to 28.—*R T.* Full particulars, inadmissible here, about feeding your robins, and teaching your birds to "draw water," will be forwarded you by post.—*Chatteris.* We fear our letter, sent last week, has miscarried. We wrote on Saturday.—*W J.* The *extent* of your "list of inquiries" renders it necessary for us to reply to you by post. We will do so.—*Sidmouth.* See *answer* given to "J. C. E.," in last week's Paper. *W. K.*

CHEAP SULPHURATOR: *W S C.* Any tinman can make the contrivance described at p. 643 out of an old pair of bellows.

FARM: *D C L.* Yes; a great many.

FLOWER GARDENS: *W P P.* We have not one word to say in favour of hearts, diamonds, &c. Perhaps you might get some hints from Loudon's "Villa and Suburban Gardener." But it would be better to obtain a plan. We meant Mr. Kemp, of Birkenhead.

FRUIT TREES: *J S C.* Manure should be applied with a sparing hand, and only when soil is quite worn out. Stone fruit should not have it at all. It is no doubt desirable that the roots of all fruit trees should be kept near the surface.—*S J S H, Perthshire.* Fruit trees for an east aspect wall: In a northern part of the country late Pears will not ripen well on this aspect. You may plant May Duke, Knight's Early Black and Elton Cherries; Jefferson and Orleans Plums; and the Jargonelle, Williams' Bon Chrétien, Suffolk Thorn, and Broom Park Pears.‖

GLASS: *R F.* If possible, the laps should be the depth of the thickness of the glass. At all events, the shallower the better, if the laps are to be open. If they are to be puttied, then ⅛-inch is about what will prevent the putty coming out readily.—*W N S H.* Hartley's patent rough plate.‡

GRAFTING: *R M.* Read the articles on this subject which were published in our columns last spring.‡

LIQUID MANURE: *Frutex.* The gardener who applies liquid manure during hard frost, must be insane. But, surely, you are joking. No man could do that. Liquid manure should be given when plants are growing, or about to grow, and, if possible, a little at a time, and often.

NAMES OF FRUITS: *J F.* 35, Black Achan; 36, Grey Doyenné.‖—*J B Warren.* The Pear is unquestionably the Chaumontel.‖—*C R P.* The Passe Colmar; you will find it to possess a still higher degree of excellence if grown against a south wall, or as an espalier.‖—*W E.* 8, Early Nonpareil; 28, King of the Pippins; 30, probably Beauty of Kent; 11, Blenheim Pippin; 14, Northern Greening.‖

NAMES OF PLANTS: *S T.* 1, Celsia arcturus; 2, Echeveria lurida; 3, Escallonia rubra.—*Erzeroum.* 446, Papaver orientale; 175, P. hybridum; 153, P. armeniacum; 456, Glaucium luteum; 143, Hypecoum pendulum; 837, Trifolium arvense.—*Erzeroum.* 28, Viola Kitaibeliana; 628, V. Pallasii, yellow; 645, V. Pallasii, purple.—*A B.* 1, Maxillaria fusca; 2, Scutellaria, perhaps coccinea; 3, ?? Detestable specimens detestably packed.

PHILLIPS'S FIRE ANNIHILATOR: *B D.* This has been repeatedly mentioned in our advertising columns, to which we must beg to refer you. (See p. 254 of our volume for the current year.)

RUSTIC VASES: *Amateur.* There is no book that treats specially on the subject. If you have access to any of Downing's or Loudon's works, you may find such things figured in them.‡

SEEDS: *P N.* Your plan is the very worst that it is possible to imagine, and is founded on erroneous views, now wholly exploded. The seeds you have sent are alive and well, but your mode of packing would soon finish them off. Dry all seeds as well as you can, in the sun or dry air. Put them loosely in canvas bags, and cause them to be hung up in a cabin or between decks, where the air may circulate freely about them during their voyage. If you cannot do this, with bulky seeds, then put them in earth (loam), rammed hard in a stout wooden chest, or in kegs, if you prefer it. Loam is much better than sand. Such part of the cargo generally must go below; but seeds should never be placed in the hold, if it can be avoided.

WALLS: *S J S H.* When a *south wall* is mentioned, gardeners understand it to be the south aspect of a wall running east and west. A *north wall* is understood to be the north side of a wall running in the same direction of east and west. When trees are said to be planted against an east wall, the meaning is that they are planted against a wall facing the east. A north border is understood to be one at the bottom of a wall facing the north; and so of others.‖

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Turnip Manure, per ton | ... | ... | £7 0 0 |
| Superphosphate of Lime | ... | ... | 7 0 0 |
| Sulphuric Acid and Coprolites | ... | ... | 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE PEAT CHARCOAL impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

FOSSIL BONES AND PSEUDO-COPROLITES (FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD and Co., Artificial Manure Manufacturers, Ipswich, Suffolk.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron.—His Royal Highness PRINCE ALBERT.
President of Council.—Earl Bathurst.
Vice-President.—Earl Ducie.
Principal.—Rev. J. S. Haygarth, M.A.
PROFESSORS, &c.
Chemistry.—J. A. C. Voelcker, Ph. D., F.C.S.
Geology, Zoology and Botany.—James Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery.—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, & Mathematics.—W. Sowerby, C.E.
Manager of Farm.—R. Valentine.
Assistant to Chemical Professor.—A. Williams, M.R.C.S.

THE NEXT SESSION will begin early in FEBRUARY. Students are admitted either as Boarders, or as Out-Students. The annual fees for boarders vary from 45 to 80 guineas, according to age and other circumstances. The fee for out-students is 40l. per annum. The College course of lectures and practical instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education. Prospectuses and information can be had on application to the Principal.

THE BIRMINGHAM CATTLE and POULTRY SHOW.—The THIRD GREAT ANNUAL EXHIBITION of FAT CATTLE and the various kinds of DOMESTIC POULTRY, will be held in the BINGLEY EXHIBITION HALL, BIRMINGHAM, on the 9th, 10th, 11th, and 12th of December. Admission—To the Private View on TUESDAY NEXT, December 9th, 2s. 6d.; on Wednesday, Thursday, and Friday, 1s.

CATTLE SHOW.—A choice assortment of MALVERN DOG CARTS, Leicester, and Sporting Carts, will be on view at Messrs. TRUPP'S during the Cattle Show; also a new Whitechapel Cart, and some very light one-horse Sporting Phaetons.

269, Oxford-street, near Baker-street, London.

CATTLE SHOW.

COGAN'S GLASS CHURN.—This PATENT CHURN is the cleanest, easiest, and the best; its arrangement is simple, its appearance elegant, and in all respects superior to every other. Dairymen and others supplied with Glass Milk Pans, Glass Cream Pots, Glass Milk Pails, Syphons, Lactometers, and every other kind of Dairy Glass; Hartley's Rough Plate and every kind of Hothouse and Horticultural Glass. Besides the GLASS PEN so attractive at the Exhibition, Messrs. COGAN and Co. have produced several new articles in Glass for useful and ornamental purposes. Catalogues can be had in the Implement Gallery, at Baker-street Bazaar, during the Show of Prize Cattle; and at their Glass Warehouse, 48, Leicester-square, London. Visitors to London during the Holidays are invited to see this establishment; likewise their stalls in the Langham Bazaar, Regent-street; and at the Hungerford Hall, Strand, where competent persons are engaged to explain and give information.

ENGLISH TIMBER cut to any length and scantling at from 2s. 4d. to 3s. per foot for Oak or Ash, 1s. and upwards for Elm; Oak Sash Sills from 2½d. per foot; Foreign Timber, Dantzic, at 55s. per load; Yellow Deals from 3d. per foot; Floor Boards, ¾ in. and 1 in., yellow batten, at 12s. 6d. and 15s. All other descriptions equally low.—Apply to Mr. MAY, 90, Leadenhall-street, London.

TO HORTICULTURAL & FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Rick Cloths, with Poles, &c., complete. Marquees and Tents on hire. Netting and Bunting for Fruit Trees. Orders, per post, duly attended to.

Address BENJAMIN EDGINGTON, 2, Duke-street, Southwark.—A Warehouse, 208, Piccadilly.

SMITHFIELD CATTLE SHOW.

W. SKIRVING, Walton Nursery, Liverpool, begs to acquaint his friends and the public, that he will attend at the ensuing Smithfield Cattle Show, to exhibit Roots of his Improved Swede and other Turnips, and to take orders for the seed of them and all other approved kinds of agricultural seeds. W. S. will also exhibit specimens of these three new and highly interesting hardy trees, Araucaria imbricata, Cedrus Deodara, and Cryptomeria japonica, of which he holds an extensive stock, of various ages and sizes, all grown from seed in the open ground and transplanted into beds or pots in the Nursery.

CATTLE SHOW, 1851.—THE PRIZE CATTLE SHOW of the SMITHFIELD CLUB and Exhibition of Implements, Seeds, Roots, &c., commences TUESDAY MORNING, and closes FRIDAY EVENING, Dec. 9th, 10th, 11th, and 12th, BAZAAR, King-street, Portman-square. The space appropriated to the Show is nearly double that of former years, and the arrangements are marked by the usual attention to the comfort of visitors.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE GENERAL MEETING will be held, at the Society's house, Hanover-square, on SATURDAY, the 13th December, 1851, at 11 o'clock, in the forenoon.

By order of the Council,
JAMES HUDSON, Secretary.

London, December 6, 1851.

**The Agricultural Gazette.**

*SATURDAY, DECEMBER* 6, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

| | | | |
|---|---|---|---|
| TUESDAY, | Dec. 9 | | Smithfield Club. Birmingham Cattle Show. |
| WEDNESDAY, | — | 10 | Agricultural Society of England. |
| THURSDAY, | — | 11 | Agricultural Imp. Soc. of Ireland. |
| WEDNESDAY, | — | 17 | Agricultural Society of England. |
| THURSDAY, | — | 18 | Agricultural Imp. Soc. of Ireland. |

AMONGST the various obligations which the Clay-soil farmer is under to the Draining-tile, there is none more important, none perhaps less appreciated than the new relation in which it places him with regard to THE SUBSOIL. Before the modern system of drainage was much known or practised, shallow cultivation was the general rule, certainly the general practice, upon the clays. To bring up fresh soil, or plough below 'the staple,' as it was called, was regarded as little less than a qualification for Bedlam. There were few neighbourhoods in which a quotable instance did not exist of some rash man, and some unhappy field, whose respective characters had suffered permanent deterioration by too bold a launch of the share-point into the unknown strata that lay beneath the ordinary 'pan,' that had been trodden rubbed and polished by hard iron, probably since the days when the wooden implement of the Saxon followed, with comparative harmlessness, the cloven hoofs of the Ox-team.

Nor was the wide-spread opinion and still wider practice which prevailed, as to the shallow ploughing of clays, without defensible grounds. To prepare a seed-bed upon a field of undrained clay without running the chance of being thrown out for the whole winter, by some unlucky dash of wet, it was necessary to be pretty cautious to preserve a high ridge and an open furrow, and above all to keep the thin layer of cultivated soil lying upon its hard foundation, in that self-drying form and condition not inaptly represented by the round-backed convexity of a Macadamised road.

To attempt to open any dealings or even acquaintance with the subsoil, under such circumstances, was simply quixotic. There it remained compacted in its hard bed in a state of permanent and annually increasing induration and barrenness, if indeed its qualities in this respect had any capability of addition left—penetrated by no shower, exposed to no frost, admitting nothing and transmitting nothing, a veritable *mortuum caput* if ever any portion of creation deserved the name. No wonder, if on some accidental or audacious upturning, the 'nasty stuff' took years to civilise into decent or profitable texture. It had been ill-used for centuries, and it resented it for years: that was all: the debt of evil, accumulated through a score of generations, lay upon it: woe to the man who woke up the long account upon his year-to-year-held soil, and the impervious undrained 'pan' that lay below,—for it to *thaw* upon at leisure. It was safer to hide from such a formidable creditor, or to keep *him* hidden from the daylight, and men's eyes: and hidden he was, accordingly, like a public enemy.

The Draining-tile came at last. Two, three, four feet deep into the furrow went the spade, the shovel, and the pickaxe; and slowly fighting its way to the lower depths, through ignorance and prejudice stiffer than the clay, harder than the rock, more impracticable and elusive than the quicksand, the 'Two-inch Pipe' at last laid the water-course at a depth where every drop that goes must *leave its treasure behind it*, in the soil or subsoil, and depart with clean hands, drawing after it into tributary action every concealed and capillary channel, crevice, crack or cleavage that existed *under* that hardened kneaded cake which lay next beneath the soil, throughout the sections of earth that now hung tapped and undermined betwixt drain and drain. Down went the 'water-table' like a loosed-out pond or tank: crack went the under-soil, forsaken by its pent-up winter-damp, and left for the first time to the inevitable and awakening influences of ascending and descending moisture. Gravitation in the winter, capillary attraction in the summer, now commenced their alternate and enlivening action, and the field began TO BREATHE: for, what is breathing but *inhalation* and *exhalation?* and when *the pipe* was thus added to the bellows, who could forbid the alternating action of Nature's lungs that must ensue, with Rain and Frost at one end of the year and Heat and Sunshine at the other, to put the valves in motion?

But Man, hard-minded conventionalist, still clings to the old rule, though the principle is swept away that gave it force or reason. 'Subsoil' is still 'subsoil' with him, and 'the nasty stuff' is still 'the nasty stuff.' If the battle of the draining-tile is nearly over, the battle of the subsoil is yet to begin. Perhaps of all the prejudices that now infect the clay soil agriculture of this country, the prejudice against the subsoil is the most inveterate and common. The occupier of an undrained farm, experienced in his own conditions of success, confesses to it, and heads the charge: he has seen some (undrained) field where the subsoil was exposed, or he has stocked away some hedgerow where the hard bare 'till' was left (*with no soil underneath it*) and he tells you that they bore nothing for several years—so *he* for one has no faith in the subsoil! In vain you point out to him that the ground you drained and double-dug last year for 'the new plantation,' is throwing up fat roystering weeds and thistles, that would hide a flock of sheep; he is not fond of weeds and thistles, and rejects the unsavoury illustration; he has never double-dug any ground himself—would think it madness to bring up 'that nasty stuff' to the top, 'burying the good soil' in that dreadful way; he has never tried it, so he is sure it would not do, [the old argument against the deep drain come to life again!]—and he never means to try it, for the same good reason.

So thought JETHRO TULL, who tells his followers never to plough below 'the staple;' and well he might say so, on his Berkshire clay, nearly a century before the drain-tile had been heard of. And the consequence was that his Wheat was mildewed year after year, and his system, though pregnant with *after-truth*, miscarried. He never could get quit of this besetting enemy, the mildew; perhaps had every other impediment and vexation been overcome, or spared him (and people can hardly conceive in these days the martyrdom which the spirit of improvement brought upon him in those), he would only have been driven to a more serious conflict with this intractable but *meaning* foe.

It is at this point that the plan adopted for the last six years with such success by Mr. SMITH, and noticed on a recent occasion, parts company with TULL altogether, and begins an independent and entirely original course. The field having been ploughed and prepared for Wheat in the ordinary way (for we will suppose the experiment at its commencement) the grain is sown in triple drill-lines a foot apart, with *intervals* three feet wide,—just as though a three-row drill gauged to a foot wide between the seeders had passed up and down the field, *missing* an interval of three feet at each return: thus sowing *two* feet (the width occupied, it will be remembered, by three rows a foot apart) and leaving three unsown. The sowing is done early; if possible during the second week in September; and as soon as the plant appears above ground, the *double digging* of these three-foot intervals commences. In point of fact they are to constitute *next year's fallow*.

And here we must take occasion to correct what appears to us an unfortunate error of description in the account given of his system by Mr. SMITH, in the last number of the Royal Agricultural Journal. New systems have generally enough to battle against, without the self-infliction of extra sources of misunderstanding, by the use of erroneous or ambiguous expression. "Wheat year after year upon the same field," is a phrase of startling incidence upon the ear agricultural; and not less so to the inner sense, when informed that one-half of the field is really fallow. In fact, it would be quite as legitimate a description to call it 'Fallow

year after year upon the same field,' as Wheat: the fact being that the 'field' is equally divided (in detail, though not in moiety) between the two. We say 'equally' with perfect accuracy, because in the double-digging, the approach of the spade to the side-rows is necessarily fended two or three inches from the growing plant on both sides, leaving the width actually worked 30 inches, and the width occupied by the crop the same. Peace therefore to the tender feelings bucolic, that have been shocked from their complacency by an announcement awful to the ears of landlords and agents! It is, indeed, "Wheat year after year upon the same field"—but *not* upon the same part of it—in the same *garden*, but not upon the same *beds*.

It might, in fact, be most accurately described as the 'spade-fallow system' of Wheat growing; nor do we know any name that would more wisely or appropriately distinguish it. The attempt to coax clay soils into a sort of dream-land of Turnip-husbandry—to treat them, metaphorically as it were, upon a nearly four-course system—as if the drain-tile had performed the miracle it never promised, of metamorphosing clay into sand, has been one of the hasty errors of a transition period, and which people are beginning to find out. Clay, though drained, is still clay, greatly improved indeed in texture, character, and capability; but its distinctive features must still be borne in view, and treated accordingly; and those whose ambition for the practice of a 'gentlemanly soil' persists in thus mistaking Orson for Valentine, will find that in snapping at the shadow of light-soil practice they are sacrificing the substance—the genius of the clay, which light soils possess not, nor (with improved mechanical treatment of the clays) anything which is fully its equivalent.

The chemical superiority of the aluminous over the silicious soils, the whole evidence of the Laboratory has incontestibly proved. The drawback to its attestation in the field is simply a mechanical one. The drain-tile has done much: that clever little red-jacketed brigade of "sappers and miners," working under ground, has opened the passage: but the main body of that force that shall complete the conquest of the clays is not yet come up, the campaign scarcely opened. That at present prices of Wheat—their staple produce—the plough does not pay upon the clays, is the common complaint of the time. Such is the figurative language used; is it not significant? Let us look at the proposition again. 'On clay soils, at low prices, *the plough* does not pay.' Admitted, that chemically they are by far the richest,—that their power to absorb and retain volatile organic manures, the ammonia of the atmosphere, for instance, is incomparably greater, and that they are by far the richest storehouse of the mineral elements of fertility; yet, in spite of all this, at low prices, the clay soils, *par excellence*, do not pay *under the plough*. What is the conclusion?

In farming light soils, it is of well known yet scarcely enough known importance, to keep the land as solid as possible. No implement does this better than the plough; by the very nature and necessity of its action, it presses down the under-soil with exactly the stress by which it lifts and turns the upper. The spade does just the reverse; it lightens everything it touches. Even in double-digging, it throws the subsoil so lightly over the soil, that the atmospheric influences of every season are freely admitted. The Autumn rains, the frosts and thaws of Winter binding and loosening alternately, the *powdering* winds of March, the melting showers of April, the genial warmth of Summer,—each in their turn attack 'the nasty stuff' in irresistibly persuasive succession, on the clays. With the aid of a few light scufflings in the spring, to shatter the caked surface, and re-open the thirsty pores of mother earth, to the ammonia that falls in every shower, and the more important *daily* portion of it brought with every evening's dew (strangely unnoticed by the learned Liebig!)—with such a *preparatory* fallowing as this, who that knows anything from actual and intelligent experience of the constitution of a clay subsoil, will refuse to trust it as a seed-bed for next year's Wheat crop, with the rich top soil lurking below it, and offering to the instinctively exploring roots an additional stratum of permeable and fertile mould to complete their growth, and give vigour to the plant, just when the heavy stem and the maturing ear are most in need of sustenance?

Who *that has thus made trial of* 'the nasty stuff,' enters his verdict against it? It *has been* systematically tried for six years with *unvarying success*, by one person, on a subsoil of ordinary character; the alternate 30-inch rows double-dug, as described, between the rows which bear the growing corn. (To call this System a repetition of Tull, who seldom dug and never double-dug, and shrunk from the subsoil more than any man, is mere ignorance and inattention.) These rows at harvest appear to cover the *whole* field, concealing and *shading* the fallow prepared for the next crop, and producing 34 bushels per acre, *without manure*. But *is it, indeed*, without manure? There was something said about 'ammonia,' and showers, and nightly dews: ample subject for a chapter to itself. *H.*

## "THE IRISH EXODUS."

I have read with some interest, considerable surprise, and deep regret, your various articles approving of, nay urging on emigration, as the principal if not the only panacea for Irish distress. With surprise that you should be so far in the dark, not only as regards the interests of Ireland, but the sovereignty of Great Britain; and with regret that you should persevere in promulgating such views, with so many facts negativing all your assertions—facts patent to all sensible men but yourself. As my friend Mr. Goodiff appears, according to your notice, to have failed to convince you of the erroneousness of your views in this respect, I shall not trench on his mode of handling the subject; but I will, with your permission, give you a few facts, as rather irreconcileable with your oft-repeated views on Irish emigration.

It is a fact that Ireland, from time immemorial, has been not only the nursery but the draw-farm of England, in filling the ranks of her armies and manning her fleets, without which she never could have become what she is said to be, the mistress of the world. Is she now independent of Ireland in these respects? I rather think not. It is a fact that Irishmen, and Irishwomen too, have, in all their poverty, added considerably to the revenue of England. Can the Chancellor of the Exchequer, with all his boastings, afford to dispense with such trifling aids? I fear not; and if he can, he can very well afford to lighten the burdens of which England now so loudly and so justly complains. It is a fact that Irishmen and Irishwomen have, in all their poverty, been pretty good customers to your English manufacturers. Are these manufacturers now so well supplied with markets and consumers elsewhere as to be regardless of their Irish customers? The commercial travellers will, I think, say no. And if such facts be admitted, and no sane man in Ireland, nor many in England doubt them; and that emigration continues so as that her lands may be all employed in the feeding of stock suited to them, but on which now there are, in many places, none.

Will the short-horns of Kildare, the long-horns of Limerick, the Leicester sheep of Roscommon, the cheviots on the various high pastures, the mountain cows in Kerry, the ponies in Cashindal or Connemara, or the goats in Donegal, fill the ranks in your army, man your fleets, and consume excisable and manufactured articles? If they do, by all means have them, and let Irishmen and Irishwomen go to the Americans, who want them, and who will, sooner or later, use them perhaps in the very overthrow of England, whose greatness you would uphold by Irish emigration.

You have been rather unfortunate—and you will, I hope, excuse my saying so—in introducing the name of Sir Robert Kane in furtherance of your emigration scheme, as his life and writings are, of all others, the most opposed to such systems, or the consolidation of farms. If you or any of your readers doubt this, please turn to chapter viii., pp. 309—11, in a word, read the whole work, second edition, "Industrial Resources of Ireland," and in it will be found the root of Irish misfortunes. At pp. 406 and 407 he says, "So far from the habits of the working class of this country being adverse to the introduction of industrial occupations, they have made, within the last few years, unparalleled strides in the habits which best conduce to industrial success;" and hence their wish now to emigrate, because the British Government will not enact such laws as will protect them, not against foreign competition, but against those idle vagabonds to whom you allude, but made so by bad laws, which you, Sir Robert Kane, and all honest men, exclaim against—the very graziers to which, inconsistently enough, you would assign the lands, by extirpating the legitimate occupants. But hear Sir Robert Kane a little further. "We were reckless, ignorant, improvident, drunken, idle. We were idle, for we had nothing to do; we were reckless, for we had no hope; we were ignorant, for learning was denied us; we were improvident, for we had no future; we were drunken, for we sought to forget our misery. That time has passed for ever." So it has, and Irishmen will pass away, too, if you write a line to urge the imperial but unwise policy of encouraging them to do so. They, with the instinct of rats quitting a leaky ship, are crawling away from this jolly boat attached to England's great bark, leaving the boat to sink and the bark in danger of following her. I think I hear you, whilst reading this, exclaim, "Oh, these unhappy Irish have now the fountains of education open to them, but they won't drink of the waters." True for you, if you say so; but bear in mind that the Irish have a conscientious conviction that these waters are polluted if not poisoned; and though parching with thirst, will not taste of them. But this is a subject a little too ticklish for either you or me to touch upon. All your readers must have been too often bored, by having placed before them the dark side of the picture of the West of Ireland, without ever getting as much as a true sketch of any bright spot. That there is such a spot, on which the sun of common sense, if not full justice, occasionally shines, I am now going to prove. This spot extends over a space of nearly 100,000 acres, the property of an Irish nobleman resident in England. For two years before I came down here, I had been employed on that property, valuing lands between landlord and tenants, and superintending improvements in the same; and I can now tell you that there is not in all Ireland, nor perhaps in many parts of England or Scotland either, better paid-up rents than on it. There is not on it over 12 farms that could average 50 acres each, and the only farms untenanted were some two or three of these, though the best lands on the property, and would be let at a fair rent, if suitable tenants could be got for them. There is not on the entire property 12 ploughs, 12 harrows, 12 carts; no nor 12 horses worthy of the name. Is it by the encouragement of emigration this comparatively happy state of things is made to exist? Not at all; it is by a course the very opposite to this. It is by keeping the people on the land, through a pretty fair instalment of justice, and by whom is this instalment of justice to landlord and tenant doled out? Directly by a young man, the principal agent, and indirectly by his deputy, both Englishmen, but long enough in Ireland to know it and its wants, with the means of supplying the same, to a great extent by its own people, through its own resources; and still better could they supply them but for the bad laws of which Mr. Goodiff so justly complains, and which you seem so much to admire.

Come back with me now from the miserable county of Mayo, where rents are so well paid by the people kept on the land, and on passing through the rich county of Roscommon, you will find the large farms from which the people were driven, or on which they were starved out, and what shall we find? Deserts on the finest land in Great Britain, the late haunts of the "Terry Alt," and the "Molly McGuire," with an odd English farmer to the east having got that encouragement so long denied poor Paddy, by having good homesteads prepared for them, as in duty bound, by their landlords, and their rents lowered to a tolerably fair standard, by good agents appointed also too late.

Will those Englishmen continue to pay their rents? I fear not, whilst the Poor-law bastilles of Castlerea and Roscommon are filled to over-flowing by idle, able-bodied paupers, who should, could, and would support themselves, as I have so often shown, and as Mr. Goodiff has shown too, if the Government of which he complains would only permit them to do so.

Come on into the county of Longford, where you will find Mr. Goodiff himself, not "one of those querulous Irishmen who carp at everything, and think a Government is fully equal to the task of warding off those evils which are the consequences of their own misdeeds, or negligence, or selfishness," but a mild, unassuming, persevering, industrious, upright Englishmen; showing by his example, as far as permitted, what all could do "if their rulers would let them." Come on again through the county of Westmeath, or King's county, where you will meet long-established and industrious Scotch farmers, and ask them is emigration the panacea of Ireland, which they would honestly advise? And I rather suspect they'll answer in the negative. Come on still through Kildare, now said to be "in a transition state," between out-going Irish, and in-coming Scotch tenants. Enquire if the latter, in the well-arranged homesteads, at the landlord's expense (a thing always denied Paddy) are paying as high rents as some Paddies are paying beside them. If I am not much mistaken, you'll find that some of them have, *Ipsis Hibernos Hiberniores*, gone "and left the key under the door." And now that I have got you so near me, may I ask you to come down and "take potluck" with me here, and I will show you, even in this "model county," where large farms are said to be well managed, where the small farmers are "got shut of" paying the owners from 2*s*. 6*d*. to 5*s*. 10*d*. an acre for land hitherto paying 15*s*. to 20*s*. an acre; and for a similar quality of land the small farmers still struggle, where permitted to stay, paying from 10*s*. to 15*s*. an acre. With these facts staring you in the face, and "a thousand and one" others which I can adduce, will you persevere in recommending that as a benefit which every other wise and impartial man must now cry down as a curse to the country generally, though it may seem a benefit to the individuals who may be fortunate enough to escape from a country so badly governed as all men of all parties and all creeds now proclaim this to be? If you do, then it will be said, and I would regret to hear it said, you will stand *solus* at the press and amongst those who value the stability of the throne of England. *Edward Carroll, Beg Erin, Castlebridge, Wexford.*

## EXPERIMENTS WITH VARIOUS MANURES IN THE CULTIVATION OF POTATOES.

Although I do not pretend to be a proficient in the art of farming, and understand but superficially the science of agricultural chemistry; yet taking a pleasure in testing, upon a small scale, the effects produced from the application of sundry of the various substances that have of late years been introduced to public notice for increasing the return of our usually cultivated crops, I trust that I may not be considered over-presumptuous in submitting, through your excellent and valuable journal, should you deem it sufficiently interesting to publish them therein, the results I have acquired in the raising of Potatoes with these during the course of my researches.

Having measured off an acre and a half in the centre of a six acre field, consisting of a light, sandy, surface soil, very much out of condition, with strata of ferruginous clay, soft red sandstone, and white and yellow sand, about 16 inches underneath, which was cropped

with Rye the preceding year, unmanured, I had, early in the month of April, the whole trenched two spits deep, and manured with 15 cart loads of thoroughly decomposed stable dung, being 10 loads per acre. It was then formed into drills 6 inches deep and 2 feet apart. I next divided the space into six equal lots, being a quarter of an acre each, and planted in those drills the Potato sets whole (Flourballs), a foot separate in the row.

| | s. d. | £ s. d. |
|---|---|---|
| Lot 1 had 2½ more cart loads of the dung spread over the sets along the drills, and was then covered with the soil, the cost of which, at 5s., came to ... ... ... ... | | 0 12 6 |
| Lot 2—84 lbs. of guano added, costing ... ... ... | | 0 7 2 |
| Lot 3—84 lbs. superphosphate of lime ... ... ... | | 0 5 3 |
| Lot 4—63 lbs. guano ... ... ... ... | 5 4 | |
| 21 lbs. sulphate of potash ... ... | 4 6 | |
| 14 lbs. sulphate of magnesia ... ... | 1 3 | |
| | | 0 11 1 |
| Lot 5—70 lbs. superphosphate of lime ... ... | 4 5 | |
| 21 lbs. sulphate of potash... ... ... | 4 6 | |
| 21 lbs. sulphate of ammonia .. ... | 3 0 | |
| | | 0 11 11 |
| Lot 6—28 lbs. nitrate of soda ... ... ... | 4 0 | |
| 21 lbs. nitrate of potash ... .. ... | 5 3 | |
| 14 lbs. sulphate of magnesia ... ... | 1 3 | |
| | | 0 10 6 |

Each lot being previously well mixed with three times its bulk of simple top soil from the same field.

The five last specified preparations were spread, the same as in lot 1, respectively over the sets along the drills left uncovered, and the whole six lots then raked smooth. The cost of the applications, including the dung first added, at 5s. per load, would thus come to, per acre, in lot 1, 5l. ; lot 2, 3l. 18s. 8d. ; lot 3, 3l. 11s. ; lot 4, 4l. 14s. 4d. ; lot 5, 4l. 17s. 8d. ; and in lot 6, 4l. 12s., making the average of the whole six lots 4l. 9s. per acre.

The plants throughout the whole came up very evenly, and much about the same time, but those in lot 1 displayed all along a lighter colour than the others, and did not attain to so great a length and luxuriance of haulm as those in lots, 2, 4, 5, and 6 ; nor were the leaves so large ; and lots 4, 5, and 6, moreover, kept growing longer than the rest—indeed, continued doing so at the time they were taken up, without any symptoms of blight being observable in the stems. Upon raising the crop in September,

| | Bush. | | Bush. | |
|---|---|---|---|---|
| Lot 1 produced | 82½, | being at the rate of, per acre | 330 | A good many of which were diseased. |
| Lot 2 ,, | 85½ | ditto ... | 341 | Ditto. |
| Lot 3 ,, | 55½ | ditto ... | 221 | Not so many diseased. |
| Lot 4 ,, | 98 | ditto ... | 392 | A few only were affected. |
| Lot 5 ,, | 91 | ditto ... | 364 | Ditto. |
| Lot 6 ,, | 84 | ditto ... | 336 | Ditto. |

Comparing the cost of the different applications with the realised results, it will be seen that lot 1, where stable dung alone was used, though the most expensive, did not prove so efficacious as most of the others in which only half the quantity thereof was applied along with artificial manures ; and the statement also shows that lots 4 and 5, in which a proportion of sulphate of potash was introduced, gave not only the most prolific, but likewise the healthiest crop, which, I presume, may be accounted for from the circumstance of the large quantity of potash and sulphuric acid that are found, on analysis, to exist in the composition of the tubers and haulm of the Potato plant. There is usually, it is well known, but a very small per centage in the soil of potash, soda, magnesia, and the sulphuric and phosphoric acids, and as all plants contain a considerable share of these, more or less, in their structure, a proportionate supply is, no doubt, calculated to do good in general. But, unless the organic matters which also constitute the food of plants be present at the same time in sufficient abundance, the others must of course fail to produce so decided an advantage, and hence the disappointments so frequently experienced by the application of these singly. Guano, though so richly stored with organic matter, phosphates, and ammonia, yet, being deficient in those alkaline substances, will be found to possess a considerably improved fertilising power when incorporated therewith. Nevertheless, even with their addition, consisting wholly as it does of the excrements of birds, it too, will, if used constantly, cease after a time to yield the same beneficial effect, without an adequate quantity of *humus* be also present in the soil.

In order that I might be enabled to obtain by practical evidence, the correctness of these affirmations, as well as to judge of the state of fertility existing in the soil itself, another acre alongside of the before-mentioned lots, was also trenched, planted, and divided into four equal portions, exactly in the same manner, without any manure being added, as in the first instance.

| | Bush. | | Cost. | Bush. |
|---|---|---|---|---|
| Lot 1 was then covered over with the simple soil, and produced... | 27 | or, per acre ... | | 108 |
| Lot 2 had 84 lbs. of guano, costing 7s. 2d., and produced ... ... | 54¾ | .... | £1 18 8 | 219 |
| Lot 3 had 42 lbs. nitrate of potash, costing 10s. 6d., and produced | 29¼ | ... | 2 2 0 | 117 |
| Lot 4 had 42 lbs. nitrate of soda, costing 6s., and produced ... | 28 | ... | 1 4 0 | 112 |

The plants in lot 1 grew slender and sickly, and did not reach above a foot to 14 inches in height. Those in lots 2, 3, and 4, were more luxuriant, but all the four became completely withered in August, and their tubers were mostly of very small size, though not so many of them in proportion appeared to be diseased as in lots 1 and 2, in the foregoing case.

I ought to mention, that in the above and the preceding experiments, the guano employed was the best Peruvian, obtained from Mr. Gibbs, warranted to contain about 16 per cent. of ammonia, and not less than 20 per cent. of phosphate of lime. The superphosphate was prepared entirely from bones, not coprolites; the potash, soda, and ammonia, were not chemically pure, but of the best merchantable quality, and the sulphate of magnesia such as is sold in the shops as Epsom salts.

My conclusions, therefore, with regard to artificial manuring, are these :—That alkalies applied simply, tend chiefly to promote luxuriance of foliage, without producing any very sensible benefit to the land ; that phosphate of lime conduces to fill the ear in grain, increase the number, size, and weight of tubers or bulbs, in root crops, and augment the yield of others generally ; that a certain proportionate quantity of suitable organic matter is necessary to be added, or present in the soil, to bring these into action, so as that the plants may be able to assimilate them according to their wants, as well as to impart a mechanical and permanent fertility to the soil ; I mean, to keep it in what farmers term "good heart," which is the real object to be obtained in administering manure at all, and that, therefore, on occasions where such is found to be deficient, in order to accomplish this desideratum, stable or yard dung ought invariably to be added, in a certain diminished extent, according to circumstances, along with the applications of all artificial manures, for the purpose of furnishing the requisite supply in bulk to the land, of decomposable animal and vegetable matter, which the substitutes of the chemist, guano (or any other substances, are incapable of affording. *W. D. S., Nov.* 1.

## Home Correspondence.

*Alternate Culture.*— Your correspondent "H." has brought the plan of cultivating land in alternate strips of Wheat and fallow so forcibly before the public, that probably many may now be induced to take up the subject who would otherwise have turned a deaf ear to the advice of theory, or even of practice, in such a case. May I direct attention to what will be found in De Candolle's "Physiologie," p. 1036, on this very subject, as likely to throw light upon one, at least, of the reasons which should recommend the practice, and at the same time induce caution against unduly raising expectations that manuring may in future be entirely dispensed with. After remarking that the greater number of phenomena which gardeners and agriculturists ascribe to the influence of the atmosphere, are really to be attributed to that of light, and stating some examples, he makes the following remarks, which I have freely translated : "It is principally to the same cause that we should ascribe the greater vigour exhibited by our crops on the borders of fields and of our trees on the outskirts of woods. The principle on which Tull's method is founded of dividing a field into very narrow strips, which are to be sown or left fallow, on alternate years, is that of enabling the entire field to be equally stimulated by the action of light. (In a note, he remarks—I say nothing of the pretext of dispensing with manure, a practice which Tull had combined with the fundamental principle here referred to ; and which, in fact, was the real reason of the little success of his scheme.) 'My field is all border,' said an intelligent cultivator to me, who had adopted this plan, and who had found the mean value of his corn, which had now become both larger and heavier, amply repaid him for the increased manual labour which the process requires." *J. S. Henslow, Hitcham, Nov.* 25.

*Clipping Horses.*—Mr. Mechi is perhaps not aware that a new machine has been invented for burning off the hair, instead of the tedious and expensive way of clipping by scissors ; and I have been told by at least a dozen of drivers connected with the great company of omnibuses belonging to the Waterloo and Atlas company, that it is by far a superior plan to the old one, and after the first burning of the horses they care little about it. I have not seen this simple thing, but it is a gutta percha tube fixed on a gas-pipe and at the end is the machine, consisting of an iron about 6 or 8 inches long, with holes bored in it horizontally, and above the burners, horizontally, is a comb to raise the hair. When everything is ready the gas is lighted, and a man can do a horse easily in three hours: the thing altogether costs 2l. I was told that a white horse looked rather queer after the operation, but for a darkish haired horse it was hardly noticed. And the beauty of this new plan is, that you can leave just as much or as little as the operator chooses, and it is certainly very extraordinary that something of this sort was not long ago found out. Sending horses to hard ploughing all day with such great coats on, must very soon put them in a stew, and do their work with very great fatigue, compared to when their great coats are off ; they cannot catch cold, for as soon as labour is over they are at once taken to the stables, and instead of having a wet great coat on all night, they at once get dry. "But," says the farmer, "I have no gas ;" but gas now is in every town, and it would suit the blacksmith to buy the machine, and then do the horses brought to him ; the expence of doing a horse is three hours' gas, a man (any man can do it), say 3s. altogether, not saying a word about the comfort of the horse, and the loss of strength, and food, by such terrible sweating when at hard work. *James Cuthill, Camberwell, London.*

*Fossil Remains.*— Your correspondent, Mr. J. R. Markby, states that in levelling a pit last winter at Middleton, Suffolk, he found an ammonite in the soil he was moving, which soil he states to be of a sandy nature with a slight admixture of clay. As I am one who have pleasure in assisting an enquiring mind, I beg to state that the ammonite was, in some convulsion of Nature, broken up from its original bed and finally deposited where it was found by Mr. Markby. In answer to Mr. Markby's three queries ; the fossil in question reached the spot where it was found by transport, having been borne there by the action of water. It does not belong to the period when the soil was deposited in which Mr. M. discovered it ; but it had been a fossil, ages prior to its being deposited there. The fossil known as an ammonite belongs to the secondary formation. *H. A.*

*Price of Wheat.*—It is interesting to observe that the average price of Wheat now is just the same as it was in the year 1202, or almost 650 years ago. It was then 12s. per quarter, which in the money of the present times would be equivalent to 36s., the average price now. *T. Bul.*

*Game.*—There cannot be, I should conceive, any dispute about the abstract question of the preservation of game ; it can only resolve itself into a question of degree ; the due balance between increase of population, improved cultivation, and the amount of game, with the method of preservation. When such balances are wholly within the control of the established laws of nature, we observe that a just and well preserved equilibrium is maintained ; but when coming under the disturbing influence of human will, they become liable, as all man's regulations are, to imperfections, yet are they never absolutely removed beyond the all-guiding power of the Creator. In this case, however, the right being granted (and if landed property has any fundamental and unalterable rights, this is one of them), the due regulation of it, keeping pace with the time and advancing requirements of society, must be left to the proper feelings of the game-preserver and the force of public opinion. I should however imagine that it will ever remain a fair question, whether, under any system of the most improved cultivation, birds and animals not wholly domesticated, might not obtain their food from sources not profitably available for any other kinds, which solely depend upon the care of man for their sustenance ? Will there not be always berries of all sorts, Acorns, &c., which may feed vast numbers of them, which otherwise rotting in the ground would return no food to man ? Will there not be always innumerable insects and caterpillars (even could we by our vaunted knowledge and mechanical appliances, turn the mountains and swamps of the United Kingdom into one vast market garden), to the destruction of which, winged game alone would be found adequate auxiliaries ? Plantations moreover (for hedge-row timber, however picturesque, and enhancing as it does the beauty of English scenery, is already condemned) will readily be allowed to offer the best and most approved plan of growing timber. How then are these to be kept entirely free from game unless some person has the power of killing it ? And who has so just a right as the owner ? And if the right be in any case tranferred to the tenant, will he not take the place of the other, and become a game preserver ? Besides the benefit conferred by the continual check of all kinds of vermin should not be entirely lost sight of, which if unmolested, would do very serious injury to the cultivator of the soil. Let any one make a rough calculation of all hawks and stoats, &c., which are on this account annually slaughtered, and their progeny, according to the natural law of increase in each, and then consider if gamekeepers do no public service. They might, again almost be looked upon as a rural police not chargeable to the country, for the idle vagabonds of a neighbourhood are always kept under their observation, and so receive many checks which deter them from further deeds of mischief. And this point receives further confirmation from the fact that in countries where the game laws were relaxed such vagabonds increased into dangerous bands, a terror to all honest folks who wished to pursue their industrial occupations in peace. I do not wish to advocate the cause of over-preserving, or defend the genteel line of butchery which has become the fashionable profession of many, under the refined name of battues, which I consider a greater degradation of sport with dog and gun, than the turning of fox-hunting into steeple-chases, and mostly carries with it the conviction of an unthinking or bad landlord. In this, then, as in all other things, a happy medium should be observed ; while the abuse, which constitutes the evil, should be carefully guarded against. *Moderator, Nov.* 4.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's house in Hanover-square, on Wednesday last, the 3d of December : present, the Earl of Ducie, President, in the Chair, Duke of Richmond, Mr. Raymond Barker, Mr. Barnett, Mr. Brandreth, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Lawes, Mr. Milward, Prof. Sewell, Mr. Shaw (London), Mr. Shelley, and Prof. Way.

The following new Members were elected :

Fischer, Ewald, Wietendorf, Mecklenburg-Schwerin.
Hall, Dr. Marshall, Grosvenor-street, London.
Pocock, Thos. William, Glenridge, Virginia-water, Surrey.
Weir, Edward, 351, Oxford-street, London.
Powell, William Styles, Castle-street, Hereford.
Groves, Thomas, Manor House, Nun-Monkton, York.
Mitchell, Wm. Rowland, Royal Agri. College, Cirencester.
Hartley, John, The Oaks, Wolverhampton.
Goodson, William, Hill Farm, Carshalton, Surrey.
Evans, David, Llaethlin, Aberayron, Cardiganshire.
Key, Kingsmill Grove, 103, Newgate-street, London.
Pollen, R. H., Rodbourne, Malmesbury, Wilts.
Townshend, Charles, Pulford, Chester.
Matthews, Francis Cook, Driffield, Yorkshire.
Bulkeley-Owen, B. H., Tedsmore Hall, Salop.
Whiting, Charles, Beaufort House, Strand, London.
Greener, Thomas, Etherley, Darlington, Durham.

Del Valle, The Conde, Vergana-in-Giupoiscos, Spain.
Hawkesworth, Thomas, Chesterfield-place, Weymouth.
Harris, His Exc. Lord, Governor of the Island of Trinidad.
Coryton, Augustus, Pentillie Castle, Cornwall.
Peacocke, Montague, Fylewell, Lymington, Hants.
Scott, Sir William, Bart., Ancrum House, Jedburgh, Roxburghshire.
Jackson, John S., Bank of Mona, Douglas, Isle of Man.
May, John, Bath-road, Reading, Berkshire.
Wright, George, Chapel Farm, Dorking, Surrey.
James, William, Maypowder, Blandford, Dorset.
MacClintock, H. Stanley, Randal's Town, County Antrim.
Bulley, Rev. Frederick, Fellow of Magd. College, Oxford.
Stonehewer, William Scott, 10, Brunswick-terrace, Brighton.
Pye, William, Oaklands, St. Alban's, Herts.

The names of 17 candidates for election at the next Monthly Council were then read.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the report on the accounts of the Society, to the end of the previous month; from which it appeared that the current cash-balance in the hands of the bankers at that date was 781*l.*

Fines.—The Duke of Richmond, Chairman of the non-exhibition Fines' Committee, read the following report to the Council:—

"The Committee have had laid before them a list of the parties who had become liable to fines for the non-exhibition of animals entered for the Windsor Meeting, agreeably with the 22d regulation of the Show, printed both in the prize-sheet, and on the several certificates on which the respective entries had been made. Of these parties, it appeared, 18 had duly paid the fines, and 10 had sent letters of excuse, while the remaining 19 had sent no reply whatever to the circular addressed to them by order of the Council.—The Committee are of opinion, that the payment of these fines should be enforced, with one exception only, namely—in favour of Mr. Sharp Spence, who states that his animal died on the railroad, and that his servants informed the officers in charge of the show-yard at Windsor, of the circumstance.—The Committee recommend that the regulation under which these fines are levied, should be amended, with a view of making it more stringent; and the Committee accordingly beg to submit to the consideration of the Council the following new rule for future adoption:—In order to check the non-exhibition of animals which have been entered for the show, thus causing the Society to make unnecessary preparations and incur unnecessary expenses; and also to prevent the show-yard from being disarranged, a fine of 10*s.* will be levied on each entry of stock which shall not be exhibited, unless a certificate, under the hand of the exhibitor or his authorised agent, be lodged with the Secretary of the Society, on or before the day of exhibition, proving to the satisfaction of the Council, that such non-exhibition is caused either by the death of the animal or animals, by contagious or infectious disease, or by unavoidable injury, sufficient to prevent such stock from being exhibited."

The Report was unanimously adopted by the Council, and directions were given for carrying out its recommendations.

Guano.—The Duke of Richmond took that opportunity of reporting the favourable progress of the communications into which, at the request of the Council, he had entered with Viscount Palmerston, H.M. Principal Secretary of State for the Foreign Department, for the purpose of effecting a reduction in the price of Guano imported into this country. On the motion of Mr. Shelley, seconded by Mr. Fisher Hobbs, the cordial thanks of the Council were expressed to his Grace for the anxious attention he had bestowed on this subject, and for the important facts he had communicated to the Council, in reference to the deep interest felt by H.M. Government on this national question, and the entire willingness of the noble Lord at the head of the Foreign Department to promote the wishes of the Society, and advocate the cause of the English farmer to the utmost of his power; the noble Duke being requested by the Council to continue these communications, and act on their behalf and that of the Society in such manner as he might from time to time find most desirable.

Foreign Elections.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Raymond Barker, the following resolution was passed, and the by-law of elections ordered to be amended accordingly, namely, "That, in future, every candidate proposed for election into the Society, whose residence is out of the United Kingdom, shall only be elected under the condition that he makes in one payment the composition for life in lieu of annual subscriptions."

Standing Committees.—The following standing Committees were appointed for the year 1852:

Finance Committee.—Colonel Austen, Mr. Raymond Barker, Mr. H. Blanshard, Mr. Brandreth, Colonel Challoner, Mr. Jonas, Mr. Wilson (Stowlangtoft.)

House Committee.—Past President, Chairman of Finance Committee, Mr. Raymond Barker, Mr. Brandreth, Colonel Challoner, Mr. Brandreth Gibbs, Mr. F. Hobbs, Mr. Kinder, Mr. Shelley.

Journal Committee.—Duke of Richmond, Lord Braybrooke, Lord Portman, Hon. R. H. Clive, M.P., Sir C. Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. Burke, Mr. Childers, M.P., Mr. E. Denison, M.P., Mr. Hyett, Mr. Miles, M.P., Mr. Milward, Mr. Pusey, M.P., Mr. Shaw (London), Mr. Shelley, Mr. Thompson.

Chemical Committee.—Lord Portman, Sir John V. B. Johnstone, Bart., M.P., Mr. Dyke Acland, Dr. Daubeny, Mr. Hoskyns, Mr. Hudson (Castleacre), Rev. A. Huxtable, Mr. Hyett, Mr. Jonas, Mr. Lawes, Mr. Miles, M.P., Mr. J. M. Paine, Mr. Pusey, M.P., Mr. Shaw (London), Mr. Sheridan, M.P., Mr. Thompson.

Veterinary Committee.—Duke of Richmond, Sir John V. B. Johnstone, Bart., M.P., Mr. Raymond Barker, Mr. S. Bennett, Mr. Brandreth, Colonel Challoner, Mr. E. Denison, M.P., Mr. F. Hobbs, Mr. Pym, Prof. Sewell, Mr. Shelley, Prof. Simonds, Mr. Shaw (London), Prof. Spooner.

General Lewes Committee.—Duke of Richmond (Chairman), Mr. Shelley, (Vice-Chairman), Earl of Chichester, Lord Portman, Sir Edward C. Dering, Bart., Sir M. W. Ridley, Bart., Sir John V. B. Johnstone, Bart., M.P., Sir H. Shiffner, Bart., Colonel Austen, Mr. Raymond Barker, Mr. Braudreth, Colonel Challoner, Mr. G. Darby, Mr. Ellman, Mr. B. Gibbs, Mr. Grantham, Mr. Hamond, Mr. F. Hobbs, Mr. Law Hodges, M.P., Mr. Jonas, Mr. Milward, Mr. Pusey, M. P., Mr. Shaw, (London), Mr. W. Simpson.

Implement Committee.—Lord Portman, Sir M. W. Ridley, Bart., Mr. Brandreth, Colonel Challoner, Messrs. Easton and Amos, Mr. Garrett, Mr. B. Gibbs, Mr. Hamond, Mr. F. Hobbs, Mr. Hornsby, Mr. Miles, M.P., Mr. Shaw (London), Mr. Shelley, Mr. Thompson.

Lewes Meeting.—The Council decided that the country meeting of the Society at Lewes, in 1852, should be held in the week commencing Monday the 13th of July.

Miscellaneous Communications.—Prof. Nesbit's offer to exhibit before the Council, at their weekly meeting, on Wednesday, the 10th of December, a new and simple mode for detecting the adulteration of guano; and Prof. Way's offer to explain at the same time a mode of effecting the same desirable object, communicated to him by a young Belgian chemist, were accepted with thanks by the Council.—Mr. Parkes, C.E., transmitted for each member of the Council, a copy of a work he had just published, containing an exposition of what he considered to be fallacies in land drainage, especially as propounded by Lord Wharncliffe, in the last Journal of the Society.—Baron Mertens addressed to the President a communication containing suggestions for ascertaining the conditions of deep ploughing, and an offer to become in part subscriber to a prize for promoting competition in the practical trial of the same.—Chevalier Claussen invited attention to his operations at Stepney for the manufacture of Flax-cotton fabrics.—Mr. Lawrence addressed to the Council various suggestions connected with the subject of Implement Prizes.—The Council ordered their usual acknowledgements for these communications; and adjourned to their weekly meeting, at 12 o'clock on Wednesday, the 10th inst., at which all members of the Society had the privilege of being present.

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Newcastle, *Sept.* 6.—Mr. B. Green read a paper on the "Ventilation of Stables." He said:—

Having made various plans of different arrangements of stables, with and without lofts (I have them with me for the inspection of the meeting), I prepared a model of a two-stalled stable, to illustrate the mode of ventilation I advocate, which was shown at the Northumberland Agricultural Society's meeting here, on the 7th August, and is now in the room. It may not be out of place here to say that the great object in view was to house each draught (team?) in distinct stables, with separate lofts. That their provender, trapping, &c., should be under the control of each farm-servant, as a means of making him alone responsible for the condition of his horses, cleanliness of his stable, and the regulation of the food in regard to quantity; and by providing the stable with almost a self-acting system of ventilation, to insure a supply of pure air. His Grace the Duke of Northumberland, with his usual promptness and consideration, has sanctioned the building of the stables on this principle. Having made calculations of the difference of cost between the stables with the hay houses on a level, and with lofts above, in the range for 10 horses, I find it is 35*l.* more for the former than for the latter. My opinion, therefore, is not only as a matter of economy, but by lessening the cubical contents of the stable, by putting a loft above, that the due amount of warmth, free from foulness, with the ventilation I have proposed to adopt, is secured by the loft; and the air will be sufficiently rarified with having only two horses in one stable; that foul vapours will not be allowid to generate, and if they do, I prevent them from penetrating the loft to injure the hay, and in a range of stables open to the roof, with hay houses on the floor, none of these disadvantages are so cheaply or so easily effected. When a stable is cold, the animal has a much greater amount of the heat of his body to expend in warming it, and taking, on an average, from 1000 to 1100 cubic feet to be the proper quantity provided for each horse (that his blood may not be unnaturally cooled), I find that a stable of the size indicated by the model, viz. 18 feet deep, and 12 feet 6 inches wide, and 9 feet 7 inches high up to the boarding of the loft, contains 2156 feet, which leaves 1078 cube feet for each horse; and a stable of the same dimensions, without a loft above, has in the roof 862 feet more for the horses to warm, being 431 feet in excess for each animal. Farm stables, however, I propose (merely as a matter of economy) to be 16 feet deep, 15 feet wide, and 9 feet 7 inches high, being 1840 cubic feet, making 920 cubic feet for each animal, which will make them amply warm, and I propose to ventilate them on the principle of the model. In consulting the authorities I have named, I found they agree, that the effect of several horses being shut up in the same stable is to vitiate the air and yet, even in the present day there are too many who carefully close every aperture by which a breath of fresh air can possibly gain admission. A very large stable has nothing to recommend it but some trifling less expense, by getting many stalls in one apartment, rather than in several small stables. If the desideratum be, therefore, a cheap, rather than a healthy stable, and the builder be the owner of the horses, the large one may ultimately be a great loss. No wonder why so many horses catch cold. But by watching the alterations of temperature, which occur during the 24 hours, the cause is easily discovered, as sometimes 12 horses will be in all together; then two are left to expend their heat and flesh in the large vacuum created, and these transitions are unavoidable, and, indeed, are constantly happening in large stables. Neither are they so easily ventilated, if wished. They require a loftier roof than is ever given. They are not so easily kept in order (seldom at all), as the men leave it to each other, in spite of remonstrance. Disease once ensuing from the litter usually seen around, contagion spreads rapidly and extensively. Then, again, the rest of a horse is disturbed by the entrance of other horses at intervals. A vicious horse often disturbs his fellows; a collar may be slipped, and the vicious horse enters another stall, kicks, bites, and violence ensues, sometimes fatally. These objections are, however, modified in a measure in large farm stables, where all the draughts are more out together than in other cases; and this is the reason they have answered better, and clearly the cause that they have been longer continued in use, as an established custom, in absence of anything else being suggested. Again, the return to a hot stable is as dangerous as the change from a heated atmosphere to a cold and biting air. Many a horse has travelled over a bleak country and on being put into a hot and foul stable has been seized with inflammation and fever. There is, however, a great difference between hot and foul air. Warmth is congenial to the horse, but it should be pure; cold is not so dangerous as foulness. The effect of pure air in all animals, as well as human beings, is to purify the blood, and to enable it duly to perform its innumerable functions in circulating through the body. According to Lavoisier, 100 measures of pure air contain 73 of nitrogen and 27 of oxygen. It has been proved that the breathing animal consumes the oxygen, and death ensues when the supply falls below the demand. Carbonic acid gas is given out from the lungs, and impregnates the air, rendering it poisonous. The impure air of a stable is deficient in oxygen, and mingled with carbonic acid gas. Acrid vapours, arising from the dung and urine, if left, lead to disease; and it is clear, therefore, that any mode of ventilation that will carry off these vapours will be a boon. The effects of hot stabling are, a fine short glossy coat, a strong disposition to accumulate flesh, extreme susceptibility of cold, and therefore extreme heat is objectionable; but such heat cannot exist if the air be kept tolerably pure. A warm stable is generally at 60 to 65 degrees; in a hot stable it is often 10, 15, or 20 degrees higher. The same quantity of food does more good in a warm than in a cold stable, and all kinds of horses thrive better in a comfortably warm stable than in one sensibly cold. An extra supply of nourishment is, therefore, necessary in a cold stable; or, in other words, the horse will eat more food. A certain quantity of blood is requisite to produce heat; if a horse be not warmly housed, the nutriment which should go to the formation of vigour must be expended in the production of heat. The heat which is constantly passing from the horse's body soon warms, but judicious ventilation will keep it sufficiently comfortable; but in no case should a high degree of heat be purchased by sacrificing ventilation so far as to produce a sensible contamination of the air. The warmth usually recommended is that in which the thermometer stands at 62°. The best place for admitting light is at the back of the horse, to light the gangway; and where the work of the stable is to be done. In the case of two-stalled stables like the model, there is light from each side wall, but still this is at the back of the horse. I object altogether to putting windows in front of the horse; it glares his eyes, and the ray of light does not reach that portion of the stable where it is most needed. I will now give you a quotation from Youatt:—"Agriculturists should bring to their stables the common sense which directs them in the usual concerns of life; and should begin, when their pleasures and their property are so much at stake, to assume that authority, and to enforce that obedience, to the lack of which is to be attributed the greater part of bad stable management, and horse disease." All authorities, and all parties whom I have heard speak, or believe themselves competent to give an opinion on the subject, have held different views in regard to ventilation. Some think the badness of the fittings of the doors and windows are sufficient to admit fresh air. Luffer boards on the roof seem to have gained influence on some. But for my own part, I deprecate both these systems; and, finally, I have never seen two stables ventilated alike, in all the stables that I have seen. I will now proceed to a description of the model. All the walls are intended to be of stone, and the timber foreign. The scale of this model is as near as may be two inches to a foot. I have stated before the general dimensions to be 18 feet deep, 12 feet 6 inches wide, and 9 feet 7 inches high; and these dimensions I recommend for all racing and riding stables: they should not be less. The stall partitions have iron heel posts rounded going up to the joists, and fixed thereto. This is preferable to stopping them off, and putting on ball finials or any other finishing. Iron bottom rails are also intended, and the top rails may be of tick wood, if preferred, but iron may be more advantageously used, curved higher up to the head, to prevent the horses touching or smelling each other. The deals are intended to be 2½ inches, beaded and half-lapped, to avoid the middle rail, which makes the partition smooth, and prevents the horse scraping his hocks. In the latter named stables this partition should be repeated against the wall. The stalls are intended to slope 1 inch to the yard, and to be well paved. A channel stone is provided behind the horse, with a descent to the grating at one end, and from thence, below it, glazed pipe-drains will be laid to carry the liquid manure away into a tank, or in cases of farm stables where the fold is on the side of the stable, into it, to mix with the solid manure. In farm stables the gangway may be paved also, but in other stables it should be flagged and grooved transversely, but in each case sloped to the channel. The mangers are intended to be only 36 inches long, 12 inches deep, and 12 inches wide, of iron altogether, or with tick-wood rolls, or they may be made of slate or English marble, like the urinals of railway stations. Iron racks are intended, but with the rungs much closer together, and scarcely to lean out at all, or project in front, and they are only to hold a stone, or a stone and a half of hay; the space for it being got by hollowing out in the thickness of the wall. The small rack prevents the possibility of a quantity of hay lying in it to spoil, and the horse is better with an empty rack at times, for he relishes his food more when it is due to him. The hay I propose to be put down from the loft into the stable, as required, in a box tube, brought down to near the floor, and the aperture closed with a slot at the bottom, and no foul air can pass up it. The small trap-door for the ladder, double rabbetted inside, would be, therefore, the only opening to the loft, but I would prefer the groom being sent up by a ladder from the outside. The man will then take the hay in the stable, assuming the guaging to be, as it ought, kept clean, and put it into the rack, thus preventing the hay-seeds falling on the horse's head if put down over the manger from the loft. The careful groom, by the directions of his master, should roll the hay up in the loft before putting it down the box tube to economise the hay seeds. In farm stables, however, by double mitring very small doors over the racks they would not be objectionable, as the ventilation is anticipated to be so complete as not to admit of vapours being engendered at all, and the flooring deals are intended to be grooved, and hoop iron inserted in the joists. No ceiling is required, but the underside of joists and flooring will be painted, or in farm stables done with pitch, which expedients would prevent any foul air that might arise from passing up. The height of the loft is 5 feet 6 inches up to the tie beam, and 10 feet 6 inches to the apex of roof. Rough plate-glass is introduced in the slating, to light it, and the roof, if lower, ought to have ventilators. A door with a weather-board at the bottom is provided into the loft to admit the hay, immediately above the stable-door, and the stone head of the latter forms the sill of the former. Another door is provided at one side for the farm stables, to put the manure into the fold. This is 4 feet 6 inches by 2 feet 6 inches, and the stable door is 7 feet by 3 feet 9 inches. The masonry of doors is all chamfered, to avoid chafing the horse, if he touch it. Boxes are provided below the racks to collect the hay seeds, with openings to remove them, by putting dealsin a sloping direction from underneath the manger, and this also prevents the horse from getting his head or fore legs under it, and admits of the fresh air, from the tube in front of him, passing up between his head and the wall, to the opening above for the emission of the impure air into the close tube, through the loft, to pass off out of the roof above, and the top is turned down to prevent down drafts. I provide openings at both sides of the stable, and the pipe passes through, as may be observed, in front of the horse. I intend it to be of cast-iron, with small holes perforated on three-fourths of its diameter only, so as to diffuse the air. Each end of the tube is bell-mouthed, and not perforated till the circular part commences. The openings on the outside have cast-iron perforated gratings, so that the air is also diffused before entering the tube; and the small doors provided may be closed when the wind is strong at either side, or they both can be closed together, which, however, is not at all desirable. Ample light is provided by the two windows over the two doors, and these are intended to be glazed with rough plate-glass; but additional light may be provided by another glazed window at the same height on each side of the stable, if for three or four horses. I have stated my opinions before in regard to the best position for bringing in the light, to be at the back of the horse; and, after the utmost consideration, I am satisfied that the best situation for bringing in the fresh air is in the position shown in the mode in front of the horse, immediately below the apertures for emission of foul

air. Suppose both doors are shut and the stable has become foul (as it would do) immediately the small outside doors, one or other, are opened to the fresh-air tube, a diffused current will move off the vapours from the whole area of the stable, up the close tube above, and when they are all dispelled thus, the pure atmospheric air will gradually and imperceptibly diffuse itself through the stable. In this position the fresh air does not pass over the horse in a current, as it would do, if brought from the back of the stable; and as the pure air must and will reach his nostrils, if admitted at all, it is clear that if it gets there at first, it will be of most service. But it can only enter by the perforations, and no current will be perceptible while the ventilation is going on. Finally, then, in confirmation of this system, I have, since 1845, had the repeated assurances of those who bring horses to the race meetings here, that the Stand Stables are cured of foulness and undue heat. It is capable of being adapted to all cases, and at the Grand Stand Stables the openings in the walls are directly in front of the horse, but protected outside with a grating, and inside with a slot, to open and shut at pleasure. The tubes are all of wood, like so many boxes, the full width of the stall, but only the side next the wall (a space being left), and the bottom of the box or tube, is perforated. If the current be violent when the slot is open, the wind blows against the back of the tube, and is reflected back through the perforations in the other two sides, avoiding all draft upon the horse. The same mode of provision is made in the model, with the air admitted in a different position from the Stand stables.—The Chairman, Sir M. W. Ridley, Bart., said, "The paper just read contained, no doubt, many correct and valuable remarks. At the same time, however desirable it might be to have a stable well ventilated, in the manner described by Mr. Green, much of the mischief which arose from the neglect of a system of perfect ventilation might be avoided, if the farmer would only see the litter removed every morning, and the stable thoroughly cleansed—a precaution which was too apt to be neglected. The presence of so much ammonia was most hurtful. A gentleman told him that he once had a groom who attached great importance to keeping the stable exceedingly hot; and he not only excluded the outer air, but kept in the foul litter, laying down layer upon layer of straw. So great an amount of ammonia was, therefore, generated that the lungs of the horses were affected, and they died in consequence; and, in the end, the groom himself died from an infection of the lungs. Every person must be aware, who went into a foul stable, how powerful were the fumes of ammonia, making the eyes smart. A veterinary surgeon, consulted by a friend of his, whose horses had got a "hacking cough," recommended him to give them Grass. The cough, however, remained. Another application was therefore made for advice; but, this time, his friend saw the other partner of the firm. "Oh," said he, when the facts were stated, "it's a Grass cough!" "Why," was the reply, your partner recommended Grass as a cure; and now you say it is a Grass cough! Which doctor am I to follow?" The matter ended in following neither, but in giving the horses more air—which had the desired effect; and the virtues of pure air having been discovered, the stable was permanently ventilated by means of admitting the fresh air and carrying off the foul.—Mr. G. H. Ramsay said, it must be very gratifying to the members of the club, that the architect of one of the largest proprietors in the country, (the Duke of Northumberland,) should have come forward to read a paper on the important subject of stable ventilation, and assisted them in preserving the health and prolonging the lives of their horses. They were deeply indebted to Mr. Green for the valuable facts which he had laid before them; but in one respect, perhaps, his plans were open to question. He proposed to build his stables with lofts; and the hay, so kept, would be deteriorated as food. He (Mr. R.) doubted very much if there should be any racks at all—whether it was not better to feed horses with cut hay, Clover, and chaff—giving them, occasionally crushed food—lofts and racks being thus needless.

## Miscellaneous.

*The American Reaping-Machine at the Exhibition of the East Cumberland Agricultural Society, at Carlisle.*—I shall briefly detail what I saw. The field had a moderate declivity; the crop, Wheat, an average of the neighbourhood, what we would consider light, but all standing up; the ground unfavourable, being in narrow ridges, with moderately deep furrows; the plot selected was nearly square, a portion on each side, with the end ridges, having been reaped and cleared off; the machine commenced at one side, and reaped full round, was drawn by two strong horses, which were on their mettle and distressed; up the hill, in the centre of the ridge, it cut well; across the hill and ridges badly, and down the hill far worse; in fact, in the latter case, it dragged off the heads leaving a great portion of the straw cut at various lengths; and as a gentleman, a looker-on, observed, "It was like a man half-shaved with a bad razor." I reckoned 22 persons attending it, men and women; all appeared to be very busy collecting and binding up the grain in bundles, not sheaves, the heads and roots being somewhat equal; this is its greatest fault, delivering the grain after being cut, strewing the heads all over the ground; the persons attending could have cut the grain, at least as quickly, immensely better, and without one-fourth the loss. After it had cut once round the field, it was obvious to the most casual observer, that it was from home—out of its element—a decided failure; all present agreed in this. On the next day, the 20th, we had another fair trial, under other circumstances, and in another part of the country. The Earl of Lonsdale, for his own information, and that of his tenants and neighbours, hired, and had it brought down to Westmoreland, where it appeared before a large party of the nobility, gentry, farmers, &c., on the farm of Mr. Beanstead, near Lowther, and commenced work about 11 o'clock. This field was laid out favourably, in broad, well-formed ridges, with very shallow furrows, and was much more favourable in that respect than the one at Carlisle, except being rather hilly, steep, and a much better crop, which, I could easily perceive, was against it. It cuts moderately light grain better than heavy; here it was a good, standing crop, such as a reaper would choose for a first-rate day's work; it was drawn by two very strong horses, but it would have required four. They were much distressed, and during the four hours it worked, were twice changed. As on the former day, it cut cleanly up the hill, but very badly across the ridges, particularly at the foot, where the grain was strong; and they did not attempt to cut down the slope at all; it would have been abortive. After two rounds of bad work, they gave up cutting across also, and confined the operation to cutting up hill, going down empty. The work was continued four hours, cutting in all 9760 square yards, or a little over two statute acres. As on former days, a great number of persons were attending, binding up, &c., in fact, a quantity that could have reaped more ground in the same time, and immensely cleaner and better. Its great fault is delivering the grain from the platform—on which it falls after being cut; this falls on the former cut ground in great disorder, strewing it over with loose heads. A trial was made to bind up some of the heaps into sheaves orderly, straightening the grain tops and butts, as after reapers, but this was found quite impracticable: a man could have reaped and tied a sheaf much sooner and better than he could have settled the heaps as they left the machine. A very important experiment was made in the field by some gentlemen, to ascertain the loss sustained by loose heads, gleanings, &c., left on the ground after the grain had been bound up. An average square yard was measured, the loose heads collected upon it, the grain and straw separated and weighed. Of grain there was three-quarters of an ounce, being at the rate of 226⅔ lbs. per acre; of straw, 1¾ oz., or 378 lbs. per ditto—a quantity the value of which would have reaped, bound, and carried it to the stack-yard. After witnessing these trials, the facts are incontrovertible, that this implement is not, at present, calculated to meet circumstances. All circumstances must suit it; the ground must be perfectly level, without ridge or furrow; the grain must be a moderately light crop, and all standing. Even taking these matters into consideration, the crop can be much cheaper and better reaped by the scythe or sickle. On this head there were not two opinions in the field that day, nor have I heard any other since; the implement was acknowledged on all hands to be a decided failure. I am not prepared to say that it may not be much improved; in this country I should think it will. But there are serious difficulties in the way, in making a machine to do the work correctly and cheaply, in various localities, under different circumstances, and with different crops. My own impression is, it will be a long time ere it can come in competition with the scythe or the sharping sickle. On this head I may mention, that a very important experiment was made in this neighbourhood a few days ago, by the members of the Penrith Agricultural Society, to test the merits of the scythe and sickle in reaping grain. An English mower and an Irish reaper contested for a prize, and our countryman won easily. From this we may infer that there are still hopes for Ireland. *Thomas Skilling, Lowther Castle, Sept.* 22, 1851; *in the Dublin Gazette.*

*Draining in Lancashire.*—On the Duke of Hamilton's estates, drains from 60 to 70 miles in length have been of late annually completed, with pipe tiles, from 3 to 5 feet, and on a great number of the drains where the subsoil is clay, turves have been placed over the tiles. The width at the bottom is governed by the size of the tile, which ought exactly to correspond, and fit firmly and truly. The cost of labour in draining on these estates is as follows: 33 inches deep is 6*d.* per rod of seven yards; 36 inches, 7½*d.*; 42 inches, 9½*d.*; 4 feet, 11½*d.*; and 5 feet, 1*s.* 6*d.*, exclusive of carting the turf and tiles. Turves of the above description are used alone without tiles in many parts of the country where the clay is firm, and answer well; having been dried, and consequently, reduced in size, they swell from moisture, after being trodden into the drain, and are exceedingly secure, so much so, that after being in the drain a short time, they are not removed without difficulty. These turves are much preferred to the Grass sod dug from the surface, having been taken up after 50 years, and found perfect: their cost is 2*s.* 6*d.* to 3*s.* per thousand. It is very desirable to place a tile or two at the outlet of these turf drains, which not only admits of more ready inspection, but preserves it from being trodden in by cattle. The cost of cutting and finishing this turf drain is, according to depth, say for 30 inches, from 3*d.* to 4*d.*; for 3 feet, 5*d.* to 6*d.* per 7 yards. The advantages of pipe tiles consist not only in economy of construction, but in efficiency of purpose. The water, by being confined to a narrow space, clears out any sediment that would collect in a wider drain. Within a moderate distance of manufactories, a very cheap drain is sometimes made with waste cinders or "clinkers," thrown in promiscuously: they are used principally in pasture or meadow land, the drain being cut 2 feet deep, and filled to the sod. *Notes on Lancashire Agriculture.*

*New Mode of Ventilating Public Buildings, Stables, &c.*—Mr. Charles Watson has addressed a letter on this subject to the *Halifax Guardian*, in which he says:—"About six years ago I was appointed to a large ill-ventilated school-room, and as my health was injuriously affected I devised a mode of ventilation that has proved effective—withdrawing the vitiated and supplying any quantity of pure air without perceptible sensation to persons in the room, and they are not exposed to currents of air. Every crevice in the room that admits air may be closed without affecting the operation of the ventilator. The apparatus is made of zinc and iron, is simple, self-acting, and durable, and regulates the supply of air according to the season of the year and the number of persons in a room. It has been also successfully applied to other schools and to public buildings, private dwellings, stables, large weaving sheds, an infirmary, an editor's study, and a chapel that seats above 1000 persons. In one of the stables were nightly lodged nine horses, and generally four of them suffered from disease, now they enjoy good health; on opening the door in the morning the stench was intolerable, and the horses, harness, walls, and door were very wet, at all times the floor was black with damp—now, the smell is scarcely perceptible, and all are quite dry. In another stable that had holes in the roof and walls, the horse next the window was so inconvenienced for want of fresh air that he pushed his head through the glass that some might be admitted; since one of my ventilators was put in, the holes have been closed, everything is dry, and the smell is pleasant. I feel thus induced to give publicity to my experience, because there is a great outcry throughout the United Kingdom about the injurious effects of ill or no ventilation, and a knowledge of efficient means for remedying the evil is so limited. I am not the discoverer of the principle, but I believe the first who has applied it. The invention is not patented. I have allowed it to become public property. It is the opinion of those who have used the ventilator that it has only to be known to be extensively applied. If those who suffer from bad ventilation and want a remedy, or if workers of zinc feel disposed to introduce and push the ventilator in their localities, I will feel it a source of gratification to be called upon to furnish them by letter with full explanations as to its construction, with advice as to its applicability to special buildings, and to inform them of the necessary apparatus to test the ventilator and convince the most sceptical. The larger the building the more suitable the ventilator; yet rooms about 14 feet square have derived equal advantages." *Bedford Mercury, August* 20.

METEOROLOGICAL REPORT.—NOVEMBER—DECEMBER.
(*Continued from p.* 766.)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| ‡ 27 | 7.50 a.m. | ... | 29.72 | N. Gentle, bright. |
| | 11.30 p.m. | 29.83 | ... | Sunny day; white frost; barometer rising steadily. |
| 28 | 8 a.m. | ... | 29.88 | N. Gentle, hard. |
| | 11 p.m. | 29.98 | ... | White frost, heavy bank in eastern horizon; bright and sunny; barometer rising steadily. |
| 29 | 7.50 a.m. | ... | 30.00 | A.M., calm, clear and frosty. P.M., easterly. Evening, ENE. Gentle. |
| | 6 p.m. | 30.03 | ... | Bright beautiful warm day; barometer steady. |
| | | | | Night, densely overcast. |
| Sun. 30 | 8 a.m. | ... | 30.00 | NNE. Gentle; overcast rainy. |
| • | 5.30 p.m. | ... | 30.03 | Cold, comfortless, dull day. |
| | 10 p.m. | 30.06 | ... | Night bright. |
| Dec. 1 | 8 a.m. | ... | 30.11 | N. Gentle; bright; hard frost. |
| | 11 a.m. | 30.15 | ... | Bright day; barometer steady from noon. |
| | 10.30 p.m. | 30.15 | ... | Night frosty. |
| 2 | 3.40 a.m. | ... | 30.16 | N. Almost calm; fine sunny day, thawing; barometer steady. |
| | 10.30 p.m. | 30.18 | ... | Night, barometer risen. |

‡ Continuation of the previous storm, which had come from the westward, and crossed England (or *possibly Scotland*), to the eastward. By laying a storm-card on a map of the British Isles, it will appear that as the centre of this storm lay to the northward, the wind in the rear quadrants of this cyclone, coming from a colder latitude, caused a succession of white frosts. I say *possibly Scotland*, as this must have been a cyclone of considerable area, and the centre of it must have lain a long way off to the northward.

The month of November has been unusually bright and fine, and white frosts have prevailed during it to an extent not commonly experienced. I believe I have already stated that fogs and *black frosts* are generally consequent on a storm passing over the *south* of England to the German Ocean, *eastward*, and coming from the south; whereas, *white frosts* appear to be caused by storms passing over Scotland to the northward. It will, perhaps, be a matter of interest to some of my readers to observe how far this hypothesis is susceptible of proof.

• "Three white frosts, and then rain," is a common saying in some parts of England: the continuation of white frosts has been explained above (‡); and the rain, which, after a white frost is almost always accompanied by a fall of the barometer, is the condensation of the dampness of the front quadrants of an approaching cyclone, travelling from the equator towards the Poles, *i.e.*, from a warmer to a colder latitude. The present storm came from the southward, passing over France and the German Ocean; if this hypothesis be correct, the depression of the barometer should have been greater in London on the 30th, than in Dorchester.

Dorchester, Dec. 4. *F. P. B. M.*

(*To be continued*).

## Notices to Correspondents.

BITTER YEAST: *Anon.* The bitterness of yeast may be removed by straining it through bran, or by dipping a red-hot charcoal in it. But the most effectual and easily-available remedy is, to put the yeast in a large pan and cover it with fresh spring water, changing it every three or four hours. This last is the plan we adopt, and it never fails. The bran seems to impair the strength, and the coal sometimes stains it, but the water purifies it both in colour and taste; thus maintaining its character as the best beautifier as well as purifier. *G. S.*

BOOKS: *A Subscriber.* Information in detail on the very different subjects named is only to be obtained in our Agricultural Cyclopedias—and we recommend Blackie's, in course of publication.

CATTLE INSURANCE COMPANIES: *L C F.* next week.

CONTRIBUTIONS TO THE GAZETTE: *Subscriber.* Both of your papers have been received—with thanks.

CREAM CHEESE: *Friday.* It is made by adding the cream of one meal's milk to the milk immediately taken from the cow. This, after being *made* and pressed gently two or three times, and carefully turned for a day or two, is fit for use.

DRAINING MATERIALS: *N.* A well burned 1½-inch pipe is as good and economical a material as any.

EARLY SPRING FOOD: *Anon.* If you cannot sow till March, you must not till April; when, if white Mustard be sown, it will give you a crop early in June.

FODDER: *M.* We do not know in what work you can see a list of the various plants that have been tried as green and dry food for cattle, with the various results. Fullarton's "Cyclo-

pædia of Agriculture," in the article "Food of Animals," refers to the subject.

Grass Land: *An Old Subscriber.* Apply compost of earth and farm manure in autumn, or some more soluble manure, as guano and superphosphate of lime, in early spring.

Gravelly Soil: *Urbs in Rure.* You should get up some of the clay below, and mix it in compost with your manure, and spread the compost over all. Artificial manures upon very light soils are very rapidly wasted; but after dressing with this clayey compost, you might more economically apply guano or bone-dust. Three cwt. of Peruvian guano per acre, in compost with vegetable mould or other organic manure, is as good an application as you can make; apply it broadcast in early spring.

Gypsum: *G M.* Sprinkle 3 or 4 lbs. of the powder among the litter of each horse or beast.

Milk: *J J.* asks if Rape-cake, given to cows, will affect the taste of butter? Most likely it will; but we have no experience. Will any one who has had experience give us it.

Oilcake: *J H.* It is probably cheaper than the Oatmeal—more economical.

Pinoceo: *T J* asks our correspondent on this subject where he can obtain this manure.

Poultry: *J J* must have overlooked the answer to his query, some weeks since; it immediately followed another, asking the same question. Cramp is caused by damp, or by stone or brick floors to poultry houses; if from the latter cause, it may be cured by removing the floors, and substituting good hard earth, such as will be made with gravel and a small mixture of clay to harden it; it should be rammed till it will bear sweeping without disturbing the surface. If from damp, the fowls should be removed to a drier spot; if that cannot be done, the food must be altered, to counteract the evil effects of the locality, and must be persevered in, so long as the bad weather lasts; nothing is better than bread soaked in ale, given once a day, a little meat at times, and oatmeal slaked and mixed with pounded peppercorns. In fast-growing, large young birds, weakness is often mistaken for cramp, because the birds rest on their knees; this will disappear as they get strength, and cease to grow, and the food mentioned above will help them. I know no one who breeds Malay fowls for sale, and gentlemen will not allow their stocks to be picked. So long as purchasers will put no faith in sellers, so long will diseased fowls be sold; it is impossible to keep them healthy in confinement, especially in London; and if gentlemen will not buy without seeing, then they buy at their own risk and on their own judgment, and dealers have no alternative but to keep stock on hand. If buyers would put a little more faith in sellers, and the latter would be more careful to sell none but good specimens, and thereby justify confidence, such complaints as those of "J. J." would be less frequent. *J. Baily.* 113, *Mount-street.*—*J R M.* See "Farming for Ladies." In our next volume we may perhaps give plates of poultry-houses, &c.

Erratum. There is an omission in one of the sentences in Professor Henslow's letter to Mr. Lawes, p. 764, which, as it materially affects the character of his suggestion, requires notice. The sentence stands thus: "If you had grown half the field with Barley and half without, at successive intervals," &c.; whereas he meant to suggest that "each half thus grown, *should be mown little by little* at successive intervals." This way of varying the experiment would show us whether these failures may be attributed to the too early mowing of the Barley; and *also* whether there is any difference in this respect between that which is grown with, and that without, Barley. Of course in both cases one patch should be left wholly unmown, by way of comparative experiment, so essential in all such cases, and which (as De Candolle long since complained) had been so frequently neglected as to have rendered the great mass of agricultural experiments utterly worthless as data for arriving at scientific conclusions.

# Markets.

## COVENT GARDEN, Dec. 6.

The supply of English Pine-apples is still well kept up, and Grapes, both foreign and English, are plentiful. Importations of Pears from the Continent are nearly at an end for this season. The best English kinds fetch from 2s. to 4s. a dozen, and 8s. to 12s. per half sieve. They consist of Glout Morceau, Crassane, Beurré Diel, and Chaumontelle. Oranges are plentiful. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are still dearer. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Heliotropes, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Apples, kitchen, per bushel, 1s to 2s 6d | — per 100, 6s to 10s |
| Pears, dessert, p. doz., 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p, bsh., 12s to 14s |
| Walnuts, per bush., 12s to 24s | Filberts, per 100lbs., 70s to 90s |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 6d to 3s | Garlic, per lb., 6d to 8d |
| Broccoli, per bunch, 3d to 1s | Artichokes, Jerusalem, per hf. sieve, 9d to 1s |
| Potatoes, per ton, 45s to 80s | Lettuce, Cab., p. score, 4d to 1s |
| — per cwt., 2s to 5s | — Cos, per score, 3d to 1s |
| — per bush., 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Turnips, p. bunch, 1d to 2d | HorseRadish, p. bundle, 1s to 4s |
| Cucumbers, each, 6d to 1s | Red Beet, per doz., 1s to 2s |
| Radishes, per doz., 9d to 1s | Mushrooms, p. pot., 1s to 2s 6d |
| — Turnip, p. doz., 9d to 1s | — per bushel, 7s to 10s |
| Celery, p. bundle, 6d to 1s 6d | Sorrel, per hf. sieve, 6d to 9d |
| Carrots, per bunch, 4d to 6d | Fennel, per bunch, 2d to 3d |
| Brussels Sprouts, p. half sieve, 1s 6d to 2s | Savory, per bunch, 2d to 3d |
| Spinach, per sieve, 1s to 1s 6d | Thyme, per bunch, 2d to 3d |
| Onions, p. bunch, 1d to 5d | Parsley, per doz. bun., 2s to 3s |
| — Spanish, p. doz., 1s6d to 3s | Mint, per bunch, 1d to 2d |
| Endive, per score, 9d to 1s | Basil, p. bunch, 3d to 4d |
| Beet, per doz., 6d to 1s | Marjoram, do., 3d to 4d |
| Parsnips, per doz., 6d to 1s | Watercress, p. 12bunch., 4d to 6d |
| Leeks, per bunch, 1d to 2d | |

## HAY.—Per Load of 36 Trusses.

### SMITHFIELD, Dec. 4.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | Clover ... ... ... | 70s to 80s |
| Inferior ditto... ... | 60 66 | 2d cut ... ... ... | 60 70 |
| Inferior ... ... ... | 60 68 | Straw ... ... ... | 22 25 |
| New Hay ... ... ... | — — | | J. Cooper. |

Trade heavy.

### CUMBERLAND MARKET, Dec. 4.

| | | | |
|---|---|---|---|
| Prime Meadow Hay | 75s to 78s | Inferior ... ... ... | 65s to 73s |
| Inferior ditto... ... | 60 70 | New Clover ... ... ... | — — |
| New Hay ... ... ... | — — | Straw ... ... ... | 24 28 |
| Old Clover ... ... | 80 86 | | Joshua Baker. |

### WHITECHAPEL, Dec. 4.

| | | | |
|---|---|---|---|
| Fine Old Hay ... | 70s to 75s | Old Clover ... ... | 76s to 86s |
| New Hay ... ... ... | 60 70 | Inferior ditto ... | — — |
| Inferior ditto... ... | 45 55 | New Clover ... ... | 75 84 |
| Straw ... ... ... | 21 24 | Inferior ditto... ... | 55 65 |

## HOPS.—Friday, Dec. 5.

Messrs. Pattenden and Smith report that there is a much better demand than usual at this period. Middling and fine samples are very scarce, and realise rather more money. Currency:

| | | | |
|---|---|---|---|
| Mid & East Kents | 140s to 252s | Yearlings ... ... | 95s to 112s |
| Weald Kents ... | 120s to 147s | Old Hops ... ... | 20s to 50s |
| Sussex ... ... | 105s to 130s | | |

## COAL MARKET.—Friday, Dec. 5.

Holywell, 18s.; Carr's Hartley, 16s.; Eden Main, 18s. 9d.; Ravensworth West Hartley, 15s. 6d.; Wallsend Riddell, 18s. 3d.; Wallsend Harton, 18s. 6d.; Wallsend Russell's Hetton, 19s. 3d.; Wallsend Bell's, 19s.; Wallsend Stewarts, 19s. 3d.—Ships at market, 57.

## SMITHFIELD, Monday, Dec. 1.

The supply of Beasts is considerably shorter, which enables us to quote 4s. for the choicest Scots. The number of Sheep is small; trade, however, is not proportionably active, yet the shortness of supply causes an advance of fully 2d. per 8 lbs. on almost all kinds. Good Calves continue to be scarce, and are sold rather dearer. From Holland and Germany there are 656 Beasts, 3690 Sheep, and 161 Calves; from Scotland 220 Beasts; from Norfolk and Suffolk, 120; and 2750 from the northern and midland counties.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Hereford, &c. ... | 3 | 8 | to 4 | 0 | Best Long-wools . | 3 | 6 | to 3 | 10 |
| Best Short-horns | 3 | 6 | — 3 | 8 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 10 | — 3 | 2 | Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 4 | 2 | — 4 | 6 | Ditto Shorn ... | | | ... | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| | | | | | Calves ... ... | 2 | 8 | — 4 | 0 |
| | | | | | Pigs ... ... | 3 | 0 | — 4 | 4 |

Beasts, 4013; Sheep and Lambs, 23,630; Calves, 191; Pigs, 450.

## Friday, Dec. 5.

We have a heavy trade for Beasts to-day, owing to a larger supply of mild weather. A few of the choicest make 4s., but 3s. 10d. is the more general price for good qualities. Several inferior remain unsold. The supply of Sheep is considerable for the time of year; buyers are scarce, and Monday's prices are scarcely maintained. There are very few good Calves on offer, we are therefore enabled to retain late quotations for these, but generally trade is worse. From Germany and Holland we have 95 Beasts, 1790 Sheep, and 88 Calves; from France, 30 Sheep; from the northern and midland counties, 400 Beasts; and 110 Milch Cows from the home counties.

| Best Scots, Hereford, &c. ... | 3 | 8 | to 3 | 10 | Best Long-wools . | 3 | 6 | — 3 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| Best Short-horns | 3 | 6 | — 3 | 8 | Ditto Shorn ... | | | ... | |
| 2d quality Beasts | 2 | 8 | — 3 | 2 | Ewes & 2d quality | 2 | 10 | — 3 | 2 |
| Best Downs and Half-breds ... | 4 | 2 | — 4 | 4 | Ditto Shorn ... | | | ... | |
| Ditto Shorn ... ... | | | | | Lambs ... ... | 0 | 0 | — 0 | 0 |
| | | | | | Calves ... ... | 2 | 8 | — 4 | 0 |
| | | | | | Pigs ... ... | 3 | 0 | — 4 | 4 |

Beasts, 897; Sheep and Lambs, 4349; Calves, 157; Pigs, 389.

## MARK LANE.

Monday, Dec. 1.—At the close of Friday's market several parcels of foreign Wheat were taken on speculation, and a considerable quantity purchased for exportation. The supply of English Wheat by land carriage samples to this morning's market was small, and generally disposed of at an advance of 1s. per qr.—Foreign met a retail inquiry at rather more money, and we raise our quotations 1s. per qr. Floating cargoes continue to be inquired after for the Continent.—We observe no alteration in the value of Barley, Beans, or Hog Peas. White are very scarce, and again 1s. per qr. dearer.—Oats meet a fair demand, at an advance of 6d. per qr.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... | White | 39—42 | Red ..... | 36 | —39 |
| — — fine selected runs... | ditto | 42—45 | Red ..... | 38 | —40 |
| — — Talavera ..... | | 46—48 | | | |
| — Norfolk, Lincoln, & York... | White | 34—38 | Red ..... | — | |
| — Foreign ..... | | 32—49 | | | |
| Barley, grind. & distil., 25s to 26s... | Chev. | 29—32 | Malting . | 25 | —28 |
| — Foreign... grinding and distilling | | 22—26 | Malting . | — | |
| Oats, Essex and Suffolk ..... ..... | | 16—20 | | | |
| — Scotch and Lincolnshire... | Potato | 19—24 | Feed ..... | 18 | —21 |
| — Irish ..... | Potato | 18—21 | Feed ..... | 18 | —20 |
| — Foreign .....Poland and Brew | | 18—22 | Feed ..... | 16 | —19 |
| Rye ..... | | 28—30 | Foreign . | — | |
| Rye-meal, foreign.....per ton | | — | | | |
| Beans, Mazagan ... ..26s to 28s..... | | Tick 27—31 | Harrow . | 27 | —31 |
| — Pigeon.....28 — 33... | | Winds 31—32 | Longpod | 25 | —27 |
| — Foreign ..... | | Small 22—30 | Egyptian | 23 | —25 |
| Peas, white, Essex and Kent..... | | Boilers 34—36 | Suffolk... | 35 | —37 |
| — Maple.....28s to 30s ..... | | Grey 25—28 | Foreign . | 28 | —36 |
| Maize ..... | | White — | Yellow ... | — | |
| Flour, best marks delivered ...per sack | | 35—39 | | | |
| — Suffolk ..... | | ditto 25—32 | Norfolk . | 25 | —32 |
| — Foreign .....per barrel | | 15—21 | Per sack | 28 | —33 |

Friday, Dec. 5.—The arrivals of grain and Flour (Barley excepted), have been small this week; to-day's market was thinly attended, and the sales of Wheat were very limited; nevertheless, prices are fully supported. Floating cargoes for the Continent continue in request, but scarcity of offers and the advanced prices asked prevent business.—Flour is a slow sale, although still wanted for export.—The supply of Barley since Monday has been rather more liberal than of late, and that day's prices are barely maintained.—The value of Beans and Peas remains as last quoted.—The Oat trade is dull, and prices to-day are scarcely as good as at the beginning of the week.

### Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 2340 | 4190 | 3480 | 1520 sacks |
| Irish ..... | — | — | 1200 | |
| Foreign ... | 1800 | 2950 | 8570 | 810 sacks |

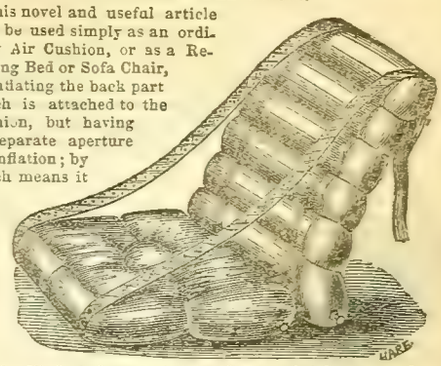
| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Oct. 25..... | 36s 9d | 25s 5d | 17s 5d | 23s 8d | 28s 6d | 27s 7d |
| Nov. 1..... | 36 6 | 25 7 | 17 5 | 24 0 | 28 6 | 27 5 |
| — 8..... | 36 1 | 26 1 | 17 6 | 25 11 | 28 10 | 28 2 |
| — 15..... | 36 4 | 26 7 | 18 1 | 26 0 | 28 8 | 28 3 |
| — 22..... | 36 9 | 27 0 | 18 3 | 23 2 | 29 8 | 28 7 |
| — 29..... | 37 2 | 27 1 | 18 8 | 25 7 | 30 5 | 28 10 |
| Aggreg. Aver. | 36 7 | 26 3 | 17 11 | 24 8 | 29 1 | 28 2 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Oct. 25. | Nov. 1. | Nov. 8. | Nov. 15. | Nov. 22. | Nov. 29. |
|---|---|---|---|---|---|---|
| 37s 2d | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 4 | ... | ... | ... | ... | ... | ... |
| 36 1 | ... | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Dec. 2.—At our market this morning there was a good attendance of the trade, and a fair consumptive demand was experienced for Wheat, at an advance of 1d per 70 lbs. on all descriptions. American Flour also met with a good sale at fully 2d. per barrel more money, and French was held for extreme rates. Oats were in fair request, and fine mealers were fully 1d. per 45 lbs. dearer. Oatmeal brought full prices. Barley, Beans, and Peas sold in retail at late quotations. Indian Corn was held for more money, but few sales were made.—Friday, Nov. 28.—There was a moderately fair business transacted in Wheat and Flour for local consumption at our Corn Exchange this morning at fully Tuesday's prices. Several purchases of the superior qualities of both articles were made for shipment to Ireland, and to move into the interior. Indian Corn was considered a shade better in value than on Tuesday. Every other article of the corn trade fully sustained late rates, and there was more looking after feeding stuffs.


J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.



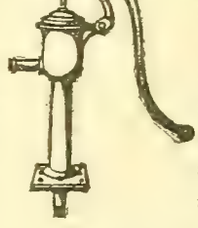
This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to James Lyne Hancock, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

FARM AND COTTAGE PUMPS.



PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... £1 16 0

Patent Pump, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing ... ... ... 2 12 0

Larger sizes if required.

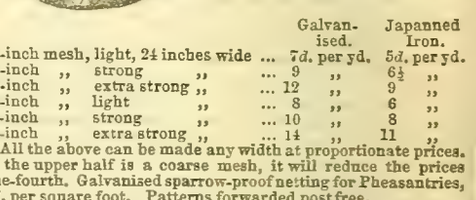
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

JOHN WARNER & SONS, 8, Crescent, Jewin-street, London.

Every description of Machinery for Raising Water, Fire Engines, &c.

The usual allowance to the Trade

GALVANISED WIRE GAME NETTING.—*7d.* per yard, 2 feet wide.

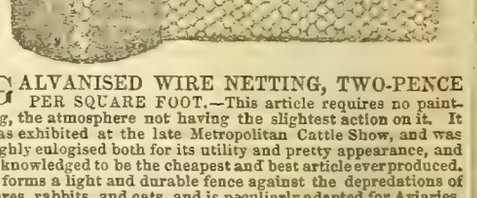


| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | | *7d.* per yd. | *5d.* per yd. |
| 2-inch | strong | ... 9 | 6½ |
| 2-inch | extra strong | ... 12 | 9 |
| 1½-inch | light | ... 8 | 6 |
| 1½-inch | strong | ... 10 | 8 |
| 1½-inch | extra strong | ... 14 | 11 |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

| | | | |
|---|---|---|---|
| 12 inches wide | 3*d.* per yard. | 30 inches wide | 7½*d.* per yard. |
| 18 " | 4½*d.* " | 36 " | 9*d.* " |
| 14 " | 6*d.* " | 48 " | 1*s.* " |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames: Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

COPPER BOILERS, of various Shapes, for Heating Baths and Conservatories.

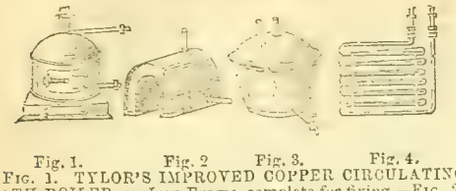


Fig. 1. Fig. 2 Fig. 3. Fig. 4.

FIG. 1. TYLOR'S IMPROVED COPPER CIRCULATING BATH BOILER, on Iron Frame complete for fixing.—FIG. 2. COPPER-RIVETTED ARCH-TOP BOILER for large Greenhouses or Public Buildings, from 4 to 40 gallons.—FIG. 3. DOME-TOP COPPERS, with draw-off Cocks, for Public Baths, from 15 to 150 gallons.—FIG. 4. TINNED COPPER COIL PIPES for heating Baths, by passing water through the kitchen range boiler.—Apply to Ironmongers or Plumbers, or to the manufacturers, J. TYLOR and SON, Warwick-lane, London.

THERMOMETERS.

HENRY BAKER'S (90, Hatton Garden, London), List of Prices. Every instrument made by him warranted accurate.—Vertical self-registering THERMOMETER, for heat and cold, of the best construction, and not liable to get out of order, 14 inches high, in copper case, 1*l.* 5*s.*; in japan case, 1*l.* 1*s.*, and 1*l.*; 10 inches high, in copper case, 1*l.* 2*s.*; in japan case, 18*s.* Horizontal Thermometers for registering the extreme of cold only, 4*s.* 6*d.*; Hot-bed Thermometers, in oak frames, 1*l.* 1*s.*; copper frames, 1*l.* 5*s.* Thermometers for Brewing, Baths, &c., in copper cases, 14 inches, 7*s.* 6*d.*; 10 inches, 5*s.* 6*d.*; 8 inches, 4*s.* 6*d.*; in japan cases, 14 inches, 5*s.*; 10 inches, 3*s.* 6*d.*; 8 inches, 2*s.* 6*d.* Dr. Mason's Hygrometer or wet bulb Thermometer, for showing the humidity of the air, with tables, ivory scale, 1*l.*; wood, 15*s.* An invaluable instrument in Hothouses, Sick Chambers, &c. Wheel Barometers from 1*l.* 1*s.* each, sent, securely packed, without fear of getting out of order.

A PRIZE MEDAL FOR SUPERIOR LOCKS WAS AWARDED TO J. H. BOOBBYER, AT THE GREAT EXHIBITION OF 1851

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for Gardens, 1*s.* 2*d.* each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

TO LANDOWNERS AND AGRICULTURISTS.
EXTENSIVE DRAINAGE.

MESSRS. EASTON AND AMOS (Consulting Engineers to the Royal Agricultural Society of England), have just erected an
APPOLD PUMP, AT WHITTLESEA MERE,
which is 20½ times larger than the one exhibited by Mr. Appold at the Crystal Palace, and five times larger than any of the kind yet made. This powerful pump was publicly tried on the 12th of November, in the presence of the landed proprietors and farmers of the county, assisted by several scientific gentlemen, and at various lifts from 1 to 10 feet. At two to three feet, it raised 101 tons of water per minute (which would cover an acre of land one inch deep); and at five feet, it raised 75 tons per minute.—Grove, Southwark.

WARMING AND VENTILATING FOR CHURCHES, CONSERVATORIES, AND OTHER BUILDINGS.—The most efficient and economical Hot-water Apparatus, supplied and erected for the above purposes, fitted with improved boilers, requiring no brick-work, capable of working 14 hours without attention. Also the THERMANTERION, a cheaper and simpler apparatus, especially adapted for buildings only used occasionally.—Apply to SPILLER and TAYLER, Battersea, near London.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap and efficient Portable Cooking Apparatus or Cottagers' Stove.

250 STOVES, AND 325 FENDERS, all differing in pattern, forming the largest assortment ever collected together, are always on Sale at the Show Rooms of WILLIAM S. BURTON. They are marked in plain figures, and at prices proportionate with those that have tended to make his establishment the most distinguished in this country. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto, with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.* Bronzed Fenders, complete, with standards, from 7*s.* to 3*l.*; Steel Fenders, from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.* Fire-irons, from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other patent Stoves with radiating hearth plates; and Kitchen Ranges.

WILLIAM S. BURTON is enabled to sell at these very reduced charges from three simple causes, which he is most anxious the public should understand and appreciate.

First. From the frequency and extent of his purchases.

Second. From those purchases being made exclusively for cash.

And last, not least, from the non-allowance of the usual discount of 10 or 15 per cent. to architects, builders, &c., on the amount of goods sold through their recommendation, by which arrangement the price of such goods is of course enhanced to, at the very least, the extent of the discount.

WILLIAM S. BURTON has just completed some extensive alterations in his premises, by which he has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the Show of GENERAL FURNISHING IRONMONGERY, including cutlery, nickel silver, plated and japanned wares, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues with engravings sent (per post) free. The money returned for every article not approved of.

39, OXFORD-STREET (corner of Newman-street), Nos. 1 and 2, NEWMAN-STREET, and 4 and 5, PERRY'S-PLACE.
Established A.D. 1820.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The ORANG UTAN, presented by the Governor of Singapore, is exhibited daily, together with the ELEPHANT CALF, and the HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt. Admission, 1*s.* On MONDAYS, 6*d.*

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING
Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are
F. M'NEILL AND CO.'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—CRINILENE has been pronounced by thousands to be the only preparation that can be relied upon for the restoration of the hair in baldness from any cause, preventing the hair falling off, strengthening weak hair, and checking greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in a few weeks with certainty. It is elegantly scented, and sufficient for three months' use; will be sent, post free, on receipt of 24 postage stamps, by Miss DEAN, 48, Liverpool-street, King's Cross, London. Testimonial: Dr. Thompson says—"It is a beautiful preparation, and the only one I can recommend."

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

DR. BARKER continues to supply the afflicted with his Celebrated Remedy for this alarming complaint, the great success of which for many years past renders any further comment unnecessary. It is easy and painless in use, causing no inconvenience or confinement, and is applicable to every variety of single and double Rupture, however bad or long standing, in male or female, of any age. The remedy, with full instructions for use, will be sent post free, to any part of the Kingdom, on receipt of 7*s* in postage stamps, or Post-office Order, by Dr. ALFRED BARKER, 45, Liverpool-street, King's Cross, London, where he may be Consulted Daily from 10 till 3 o'clock (Sundays excepted.)

DOMESTIC SANITARY MEASURES.—Places in Gardens rendered as comfortable as the best-constructed water-closets, by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l.* Sold only at FIFE and Co's Scientific Repository, 26, Tavistock-street, Covent Garden, London, sole depôt for the Patent Hermetically-Sealed Inodorous Chamber Commodes, 1*l.* 4*s.*, 2*l.* 6*s.*, and 3*l.*; also improved Portable Water Closets, with pump, cistern, and self-acting valve. Orders by post attended to.

CROSBY HALL VAULTS, No. 35, BISHOPSGATE-STREET-WITHIN.—CURRALL and SON beg to invite public notice to their STOCK of OLD BOTTLED WINES. They being desirous to secure that patronage which wines of the first quality, at fair and remunerating profits, will maintain, respectfully submit the annexed list of cash Prices:—

| | Per doz. | | Per doz. |
|---|---|---|---|
| Port, old bottled | 36*s.* and 42*s.* | White Port in pints, bottles and package inclusive | 30*s.* |
| Ditto, six years in bottle | 48*s.* | Sherry (excellent dinner wine) | 28*s.* |
| Sherries, pale and brown | 36*s.* | Port, superior draught | 28*s.* to 33*s.* |
| Ditto ditto | 42*s.* to 48*s.* | | |
| Marsala | 24*s.* | | |
| Champagne (1 doz. cases) | 54*s.* | | |

PALE BRANDY, 60*s.* per doz.; bottles, 2*s.* per doz.; hampers, 1*s.* per doz.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s, Sole Establishment, 130B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not regenerate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blackfriars London; and 36, Seel-street, Liverpool.

SACRED HARMONIC SOCIETY — EXETER HALL — CONDUCTOR, Mr. COSTA.—Next FRIDAY, Dec. 12, Handel's "MESSIAH." Vocalists, Miss Birch, Miss Dolby, Mr. Lockey, and Mr. H. Phillips.

The Orchestra, the most extensive in Exeter Hall, will consist of (including 16 double basses), nearly 700 Performers. Tickets, 3*s.*; Reserved, 5*s.*; Central Area, numbered seats, 10*s.* 6*d.* each; at the Society's Office, 6, in Exeter Hall.

BERDOE'S SUPERIOR OVERCOATS.—Quality the true test of cheapness.—A very large stock of first-class garments, adapted to every taste and purpose, and reduced to the lowest possible scale of charge; also of Overcoats for Boys, of all ages (at from 25*s.* to 35*s.*), kept for selection, or made to order. An extensive variety of SHOOTING JACKETS, RIDING AND DRIVING CAPES, &c., at same charge, at a day's notice. All guaranteed to resist any amount of rain, and possess every quality essential to a really respectable and permanently satisfactory article.

W. BERDOE, 96, New Bond-street, and 69, Cornhill (only).

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

FRIGI DOMO.—A perfect protector against frost, a non-conductor of heat or cold, and cheaper in price than bass matting. A canvas made of prepared hair and wool, adapted to many horticultural and floricultural purposes, for covering up, where a fixed temperature is required. It is 2¼ yards wide, and of any required length at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, Oxford-street, London.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The public is respectfully informed the ALES of this season's Brewings are now ready for delivery, and may be obtained Genuine in Casks of 18 Gallons and upwards, either singly or in any quantity, at their respective Stores, as under, where also a list of the Bottlers may be had:—The Brewery, Burton-on-Trent; 61, King William-street, City, London; Cook-street, Liverpool; High-street, Birmingham; The Exchange, Manchester; Royal Brewery, Dudley, and 33, Virginia-street, Glasgow.

FORD'S EUREKA SHIRTS and FORD'S EUREKA SHIRT COLLARS are not sold by any hosiers or drapers. The Collars possess an improved method of fastening, which entirely dispenses with the use of strings, loops, or elastic contrivances. Adapted to any size, suitable for once or twice round cravats. They may be had in three different sizes, and either rounded or pointed. Price 11*s.* 6*d.* per dozen. Two, as samples, sent post free on receipt of twenty-eight postage stamps.—RICHARD FORD, 185, Strand, London.

HEAL AND SON'S EIDER DOWN QUILTS are made in three varieties—the BORDERED QUILT, the PLAIN QUILT, and the DUVET. The Bordered Quilt is in the usual form of bed quilts, and is a most elegant and luxurious article. The Plain Quilt is smaller, and is useful as an extra covering on the bed, or as a wrapper in the carriage, or on the couch. The Duvet is a loose case filled with Eider Down, as in general use on the continent.—List of Prices and Sizes sent free by post, on application to HEAL and SON'S Bedding Factory, 196 (opposite the Chapel), Tottenham Court-road, London.

ELEGANT TOILET REQUISITES.—Under the Patronage of the Queen, the Court, and the Royal Family of Great Britain, and the several Sovereigns and Courts of Europe, ROWLAND'S MACASSAR OIL. The unprecedented success of this discovery in restoring, improving, and beautifying the Human Hair, is too well known and appreciated to need comment. Price 3*s.* 6*d.*, 7*s.*, family bottles (equal to four small) 10*s.* 6*d.*, and double that size, 21*s.*—ROWLAND'S KALYDOR. An eastern botanical discovery of unfailing efficacy in eradicating all Cutaneous Eruptions, rendering the skin soft, clear, and fair, and bestowing a healthy roseate hue on the complexion.—Price 4*s.* 6*d.*, and 8*s.* 6*d.* per bottle.—ROWLAND'S ODONTO, or PEARL DENTIFRICE. A fragrant White Powder, prepared from oriental herbs, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Beware of spurious imitations. The only genuine of each bears the name of "ROWLANDS'" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND and SONS, 20, HATTON-GARDEN, London, and by respectable chemists and perfumers.

FREEDOM FROM COUGH IN TEN MINUTES after use, is insured by DR. LOCOCK'S PULMONIC WAFERS. From the Rev. Cyril Curteis, Rectory House, Seven Oaks, Kent. "Dear Sir,—I have the greatest pleasure in recommending your Wafers. On Sunday last I was suffering from a cold, when I tried them with the most perfect success." Dr. Locock's Pulmonic Wafers give instant relief and a rapid cure of asthma, coughs, and all disorders of the breath and lungs. They have a pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all druggists. Also Dr. Locock's Female Wafers, the best medicine for females. Full directions with every box.

AN EXCELLENT FAMILY MEDICINE FOR INDIGESTION, BILIOUS AND LIVER COMPLAINTS, &c.—In every instance where a fair trial has been made, NORTON'S CAMOMILE PILLS have invariably given satisfaction, affording permanent relief in all cases of Indigestion, and a speedy cure for Headaches, Bilious and Liver Complaints, Heartburn, and Acidity of the Stomach, Depressed Spirits, Disturbed Sleep Violent Palpitations, Spasms, General Debility, Costiveness, &c. They are mild in their operation, safe under any circumstances, and thousands of persons can now bear testimony to the benefits to be derived from their use.—Sold in bottles, at 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* each, in every town in the kingdom.—CAUTION. Be sure to ask for NORTON'S PILLS, and do not be persuaded to purchase an imitation.

## SEEDS, CARRIAGE FREE.

GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN

SEED ESTABLISHMENT, READING, BERKS,

FOR SUPPLYING SUTTON'S HOME-GROWN SEEDS TO ALL PARTS OF THE UNITED KINGDOM.

THE GARDEN SEEDS grown in Berkshire and the Southern Counties having obtained great celebrity, and our low prices for Seeds of superior quality having gained us a very extensive connection in almost every county in the United Kingdom, we have made such arrangements with MESSRS. PICKFORD AND CO. (who have Offices on most of the great lines of Railways), as will enable us to DELIVER OUR GOODS FREE OF CARRIAGE, as under:—

Packages of not less than Two Pounds value are now sent carriage free as far as

*Bideford, Swansea, Birmingham, Chester, Liverpool, Manchester, Sheffield, Lynn, Norwich, and intermediate Stations;* also *to York, Leeds, Lincoln, Boston, Peterborough, and all other Stations of the* GREAT NORTHERN RAILWAY; *also by Steam Packets to Hull, Sunderland, Leith, and to the coasts of Wales and Ireland.*

*Packages of not less than Ten Shillings value are delivered free of carriage to*

Any Office in London, Bristol, Exeter, Southampton, Dorchester, Portsmouth, Dover, Canterbury, Guildford, Reigate, Oxford, Banbury, Cheltenham, Gloucester, Hungerford,

*And all Stations on the Great Western, South-Western and South-Eastern Railways.*

Being extensive *Growers* of Seeds (including the best of the New Sorts as soon as introduced), we can supply any sort required at THIRTY PER CENT. LESS THAN THE PRICES GENERALLY CHARGED in most parts of the kingdom; and as we grow *most largely* those sorts which we have proved to be most worthy of cultivation, *a still greater economy will be* EFFECTED BY ORDERING ONE OF THE UNDERMENTIONED COMPLETE COLLECTIONS FOR ONE YEAR'S SUPPLY.

### SUTTON'S COLLECTIONS OF GARDEN SEEDS.

| | £ | s. | d. |
|---|---|---|---|
| No. 1.—A COMPLETE COLLECTION OF GARDEN SEEDS, FOR ONE YEAR'S SUPPLY OF A LARGE GARDEN; including 20 quarts of Peas, in the best eight sorts for succession; the best eight sorts of Broccoli, together with the choicest Melons, Cucumbers, Lettuces, Cauliflowers, and every other sort of Vegetable required, and in full quantities ... ... ... ... ... ... ... ... ... ... ... | 2 | 10 | 0 |
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## THE BOOK OF THE GARDEN.

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WITH UPWARDS OF ONE THOUSAND ILLUSTRATIONS.

By Charles M'Intosh,

F.R.P.S., F.R.S.S.A., CORRESPONDING MEMBER OF THE LONDON HORTICULTURAL SOCIETY, THE MASSACHUSSETTS HORTICULTURAL SOCIETY, AND ROYAL CALEDONIAN HORTICULTURAL SOCIETY, ETC., ETC.

Late Curator of the Royal Gardens of his Majesty the King of the Belgians at Claremont and Brussels; and now to his Grace the Duke of Buccleuch, at Dalkeith Palace.

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THE object of the BOOK OF THE GARDEN is to exhibit, in a clear and orderly treatise, all that is known at the present day on the subject of Gardening; as well as to make public the result of the Author's long and extensive experience, and the original views which that experience has developed.

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# THE GARDENERS' CHRONICLE
AND
# AGRICULTURAL GAZETTE.

**A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.**

No. 50—1851.] SATURDAY, DECEMBER 13. [PRICE 6*d*


INDEX.


| | | | |
|---|---|---|---|
| Acer circinatum | 791 *a* | Kitchen garden, to crop | 789 *c* |
| — villosum | 791 *c* | Lawns, weeds on | 788 *a* |
| Agriculture, systems of | 793 *b* | Manure management | 796 *b* |
| Bats and fireflies | 789 *c* | Meteorology and farming | 793 *b* |
| Bee houses | 789 *b* | Orchids, sale of | 792 *a* |
| Birds, British song | 788 *a* | Ostrich, the | 789 *c* |
| Birmingham Cattle Show | 797 *a* | Panama, trees of | 790 *c*—791 *c* |
| Calendar, Horticultural | 792 *a* | Plants, effect of frost on | 789 *c* |
| Cedron tree | 791 *c* | — old esculent | 791 *b* |
| Chrysanthemum exhibitions | 790 *b* | Rhododendrons, Sikkim | 787 *b* |
| Clover failure | 796 *a* | Royal Hort. Soc. of Ireland | 790 *b* |
| Cows, to keep | 796 *a* | Seeds, bad | 789 *a* |
| Digging machine | 797 *c* | Services, professional | 791 *a* |
| Drainage | 794 *b* | Smithfield Show | 796 *b* |
| Entomological Society | 790 *a* | Straw for plaiting | 797 *c* |
| Farming and meteorology | 793 *b* | Strawberries, new | 789 *b* |
| Fork husbandry | 796 *b* | Trees, forest, to prune | 788 *c* |
| Forest pruning | 788 *c* | — of Panama | 790 *c*—791 *c* |
| Frost, effect of, on plants | 789 *c* | Vienna, shooting near | 792 *a* |
| Game | 795 *c* | Vinery, Yucca | 789 *c* |
| Garden, to make | 789 *a* | Walls, glass | 790 *a* |
| Glass walls | 790 *a* | Weather, the | 789 *b* |
| Gooseberries for succession | 792 *c* | Weather, the | 793 *a* |
| Hens, singing | 790 *a* | Weeds on lawns | 788 *a* |



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MYATT'S LINNÆUS ... ... ...
MYATT'S VICTORIA ... ... ... ...
} Strong Roots 50*s.* per 100.

WILLIAM MITCHELL, Enfield Highway, Middlesex.

MESSRS. J. AND H. BROWN offer the following choice FRUIT TREES, &c., which they will forward to any part of the kingdom:— *s. d.*
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ... 20 0
25 American Azaleas, do. do. ... ... ... ... ... 15 0
25 Hardy American Plants, one of a sort, by name ... 10 6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties ... ... ... ... ... ... 12 0
New hardy yellow Rhododendrons, each, 7*s* 6*d.* to ... 10 6
Fine hardy scarlet Rhododendrons, 2 feet, per dozen ... 10 0
Cedar of Lebanon, 3 feet, well grown, in pots, per dozen 10 0
Standard and half standard, per dozen ... 12*s.* and 15 0
Wistaria sinensis, extra fine, in pots, 15 to 30 feet, each 3 6
12 Greenhouse Azaleas, one of a sort, blooming plants ... 25 0
12 choice Camellias, by name, do. do. ... ... ... 30 0
24 choice Ericas, one of a sort, by name ... ... ... 16 0
12 Orchidaceous plants, choice species, and good plants 30 0
6 Bulbs of Lilium lancifolium, one of a sort, for ... 12 0

FRUIT TREES.

Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2*s.* 6*d.*, or, per dozen ... ... ... ... 24 0
Untrained, or maiden do., 1*s.* 6*d* each, or, per dozen ... 15 0
Apples, dwarfs and standards of best sorts, per dozen ... 15 0
Fine Gooseberries, Currants, and Raspberries, per dozen 3 0
Fine Figs, Medlars, Walnuts, and Mulberries, each ... 2 0
Strong Vines from eyes and layers, in pots, per dozen ... 15 0
Filberts, new thin shelled and red skinned, per dozen ... 3 0

Garden Seeds of all kinds supplied.

Albion Nursery, Stoke Newington, London, Dec. 13.

MAGNIFICENT SPECIMENS
OF
CONIFERÆ,
HARDY ORNAMENTAL TREES, SHRUBS, &c.

LUCOMBE, PINCE, AND Co. respectfully call attention to their fine, and, perhaps, unequalled stock of well grown specimens; capable not only of producing great immediate effects, but also quite safe to remove to any distance, consisting of—

Arbutus Andrachne hybrida.
Arbutus magnifica.
Arbutus, Scarlet-flowered, *the finest variety.*
Abies Douglasii, 3 to 12 feet high.
Abies Menziesii, 3 to 6 feet high.
Araucaria imbricata, 4 feet 6 ins. high, by 5 feet through. *Grand specimens.*
Æsteosmalus ferrugineus.
Biota glauca. *This is one of the handsomest of the hardy Coniferæ.*
Purple Beech, 8 to 12 feet. *These are truly grand plants.*
Cedars of Lebanon, 6 to 8 feet.
Cedrus Deodara, 6 to 12 feet.
Cupressus macrocarpa, 5 to 7 feet.
Cupressus Uhdeana, 5 feet.
Cupressus Goveniana, 3 to 4 feet.
Fagus Cunninghamii.
Fagus betuloides, 3 to 4 feet. *The Evergreen Antarctic Beech.*
Garrya elliptica.
Hedera Rægneriana. *The new Giant Ivy.*
Holly, Black Irish.
Irish Yew, 8 to 10 feet. *These are extraordinary plants, unrivalled in size and form.*
Juniperus excelsa, 6 to 7 feet. *Truly magnificent specimens.*
Lindleya mespeloides.
Magnolia grandiflora, Exmouth variety.
Myrica Californica.
Oaks, Lucombe, 8 to 12 feet, and 14 feet.
Oaks, Ford's, 6 to 8 feet.
Oaks, Ilex, 6 to 12 feet.
Oaks, Ilex macrophylla, 2 to 3 feet. *Lucombe, Pince and Co's new Ilex, the finest of all the hardy Evergreen Oaks.*
Oaks, Scarlet, 8 to 10 feet.
Pavia californica.
Pinus insignis, 3 to 15 feet. *The most ornamental, the most rapidly growing, indeed, the finest Pine ever introduced.*
Pinus austriaca (the Austrian Pine), 2 to 8 feet.
Pinus Cembra, 3 feet.
Pinus excelsa, 3 to 5 feet.
Pinus tuberculata, 1 to 1½ foot.
Pinus muricata, 1 to 1½ foot.
Pinus Sinclairii, 4 to 5 feet.
Picea Nordmanniana. *This noble Fir, from the Caucasus, is one of the finest and hardiest of the Silver Fir tribe, shooting late, and thereby avoiding injury from spring frost.*
Standard Rhododendrons, 5 to 6 feet.
Rhododendrons, *fine bushy compact plants, finely set with flower-buds; these are especially worthy of notice.*
Standard Thorns, 9 feet, *unusually fine, with large heads and straight stems.*
Standard Portugal Laurel, 6 feet, *with clean straight stems and shapely heads.*
Thuja japonica.
Taxus adpressa, 1½ to 2½ feet.
Taxus Dovastonii, 2 to 3½ feet.
Taxodium sempervirens, 7 to 10 feet.
Viburnum suspensum.
Yuccas of sorts.

A first-rate collection of Fruit Trees of all descriptions, including fine Trees of the Stanwick Nectarine, and many other things equally fine, but not within the limits of an advertisement; prices and further particulars of all of which may be had on application to them.

Exeter Nursery, near Exeter, December 13.

N.B. The Exeter Nursery was established in the year 1720, and is situated in the valley of the Exe, contiguous to the St. Thomas' Station of the South Devon Rail, and within 10 minutes' walk of the centre of "the Ancient City of Exeter:" and those who honour it with a visit may always depend upon seeing a collection of the newest, rarest, and most beautiful plants, such as for variety and quality cannot be excelled in any Nursery in the kingdom. And L., P., and Co. beg leave further to observe, that for the express purpose of facilitating the inspection of these, they have erected, upon an original plan, a spacious show house, close to the entrance of the Nursery, which will enable those whose time is limited to take a cursory glance of some of their productions.

SUPERB NAMED AND MIXED ASSORTMENTS OF ANEMONES, RANUNCULI, GLADIOLI, TULIPS, IRIS, CROCUS, LILIUM, IMPORTED DUTCH HYACINTHS, &c., with a large Collection of other Roots.—For BASS AND BROWN'S Priced Advertisement of the above, see *Gardeners' Chronicle* of Nov. 8th and 22d, or Catalogues sent free on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

STANDISH AND NOBLE'S detailed Advertisement will appear in this Paper on the first Saturday in every Month, to which they invite the attention of all interested in HARDY ORNAMENTAL PLANTS. Their Descriptive Catalogue, with the Treatise on the "Cultivation of American Plants," can still be had, by enclosing six stamps for postage.

Gentlemen requiring the services of a Landscape Gardener, can procure such by applying to the Advertisers.

Bagshot, Surrey, Dec. 13.

SEEDS DIRECT FROM THE GROWERS—CARRIAGE FREE TO ANY STATION ON THE GREAT NORTHERN, GREAT WESTERN, SOUTH-WESTERN, OR SOUTH-EASTERN RAILWAYS.

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply their choice sorts of KITCHEN GARDEN SEEDS, NEW AND TRUE, at THIRTY PER CENT. LESS than the prices usually charged in most parts of the Kingdom. Carriage free, as see their Advertisement in the last page of last week's *Gardeners' Chronicle*.—Further particulars may be had by post, on application (enclosing one postage stamp), addressed, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

OF GREAT IMPORTANCE.
TO EXHIBITORS OF CUCUMBERS AND OTHERS.

EDWARD TILEY has great pleasure in being enabled this season to offer his celebrated and unrivalled new Cucumber "CAPTIVATION," which has not been equalled or surpassed by any other Cucumber ever sent out. He has been many times asked for this superb variety by growers who have seen it, but he has been unable to supply it, in consequence of the small quantity of seed it produces. E. T. has no hesitation in saying that this will be found "the standard of perfection of a Cucumber," and he has never seen one so before till he raised this. It possesses the following unrivalled qualities: It is a splendid black spine, of a very dark-green colour, and entirely free from ribs or shrivels, with scarcely any or no handle, and carries its bloom well to the last. Length, from 24 to 28 inches. It is a very quick grower, sets well, prolific bearer, and second to none for exhibiting. To show its perfection, a brace of these Cucumbers, when cut last season, were found to measure exactly 10 of its diameter long, being 25 inches, and not more than half an inch handle. As a proof of the productiveness of the above, a bed was made for a two-light frame, and four plants placed therein; the first brace of fruit was cut on the 29th March, and the last brace on the 25th November last, during which time the unaccountable number of 102 brace was produced from the four plants; total length of the whole amounting to 56 yards 2 feet.—Sold in packets of three Seeds 5*s*., or five Seeds, 7*s*. 6*d*. Also,

TILEY'S CUCUMBER "PHENOMENA,"

which Cucumber gave universal satisfaction last season. This is also a splendid black spine, abundant bearer; in length, from 22 to 28 inches, and very easily grown, with little heat. Packets, of six Seeds, 2*s*. 6*d*., or a packet of this and one of "Captivation," 6*s*.

E. T. has also Seed of the undermentioned fine varieties:—

| | |
|---|---|
| Chamberlain's "Essex Hero," a fine black spine, per packet of four seeds | 3*s*. 6*d*. |
| Hunter's "Prolific," fine white spine, 2*s*. 6*d*. per packet of 3 seeds; or, per packet, of 7 seeds | 5 0 |
| "Lord Kenyon's Favourite," a fine winter Cucumber, per packet | 2 6 |

The above Cucumbers have been exhibited at the Botanic Gardens, Regent's Park, London, Colchester, Ipswich, Chelmsford, Bath, and other places, where they were successful in carrying off first prizes. Also—

| | Per packet.—*s*. *d*. |
|---|---|
| Victory of Bath Cucumber, extra fine black spine | 1 0 |
| Gordon's White Spine | 1 0 |
| Hamilton's Black Spine | 1 0 |
| Conqueror of the West, a good frame Cucumber | 0 6 |
| Butcher's Stratford-upon-Avon Cucumber, do. do. | 0 6 |

And numerous other older varieties at 6*d*. per packet.

A remittance must accompany the order from unknown correspondents, either by Post-office Order or Penny Postage Stamps, when the whole or any quantity of the above varieties, as the case may be, will immediately be forwarded to any part.

*Numerous Cucumber growers, on visiting the Cucumber grounds last season, expressed their astonishment at the quantity and perfection in which they were then growing.*

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

NEW ARAUCARIA, "ARAUCARIA COOKII."—This extremely rare species, just introduced for the first time from New Caledonia, is described in the last Number of the "Journal of the Horticultural Society," by Dr. Lindley. The Stock consists of only a very few plants from seed, 6 to 9 inches high, and quite healthy. Ten guineas each.

NEW HARDY SHRUB—NEILLIA THYRSIFLORA, a native of Nepal; grows about 6 feet high, producing beautiful white flowers. 10*s* 6*d* each,

AMYGDALUS PERSICA, *sanguinea plena*, double crimson Peach, from China, quite hardy. Dr. Lindley, in describing it, says, "It is a very fine and handsome plant." Three guineas each.

AMYGDALUS PERSICA, *alba plena*, double white Peach, from China. This and the above are exceedingly ornamental plants, either in the open ground or in pots, constituting handsome objects for winter and spring decoration in the conservatory. Three guineas each.

R. GLENDINNING, Chiswick Nursery, near London.

LANDSCAPE GARDENING.
EXCLUSIVELY PROFESSIONAL.

MR. THOROLD, of Norwich, offers his services to the Nobility and Gentry as a LANDSCAPE AND ORNAMENTAL GARDENER, in the highest style of the Art, including Decorations around a House, forming Water, Approaches, Picturesque Scenery, &c.

ENGLISH TIMBER cut to any length and scantling at from 2*s*. 4*d* to 3*s*. per foot for Oak or Ash, 1*s*. and upwards for Elm; Oak Sash Sills from 2½*d*. per foot; Foreign Timber, Dantzic, at 55*s*. per load; Yellow Deals from 3*d*. per foot; Four Boards, ½ in. and 1 in., yellow batten, at 12*s*. 6*d*. and 15*s*. All other descriptions equally low.—Apply to Mr. MAY 90 Leadenhall-street, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c.

| | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | *s*. *d*. | *s*. *d*. | *s*. *d*. |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured:— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered:— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. | Ins. | Ins. | | | | *s*. | *d*. |
|---|---|---|---|---|---|---|---|
| 6 by 4 | and | 6½ | by | 4½ | ... ... ... ... | 10 | 6 |
| 7 by 5 | ,, | 7½ | by | 5½ | ... ... ... ... | 12 | 0 |
| 8 by 6 | ,, | 8½ | by | 6½ | ... ... ... ... | 13 | 0 |
| 9 by 7 | ,, | 9½ | by | 7½ | and 10 by 8 ... ... | 15 | 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—1-8*th*, 6*d*.; 3-16*ths*, 9*d*.; ¼ *inch*, 1*s*. *per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs*.

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to JAMES PHILLIPS & CO., HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 inches by 4 | and | 6½ | by | 4½ | ... ... ... | 13*s*. | 0*d*. |
| 7 ,, | 5 | and | 7½ | by | 5½ ... ... ... | 15 | 0 |
| 8 ,, | 5 | and | 8 | by | 5½ ... ... ... | 15 | 0 |
| 8 ,, | 6 | and | 8½ | by | 6½ ... ... ... | 17 | 6 |
| 9 ,, | 7 | and | 10 | by | 8 ... ... ... | 20 | 0 |
| 12 ,, | 10 | and | 13 | by | 9 ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses.

Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s*. per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d*. | per foot. |
| ,, ,, 35 | ,, | ..... 8*d*. | ,, |
| ,, ,, 50 | ,, | ..... 9½*d*. | ,, |
| ,, ,, 75 | ,, | .....12*d*. | ,, |

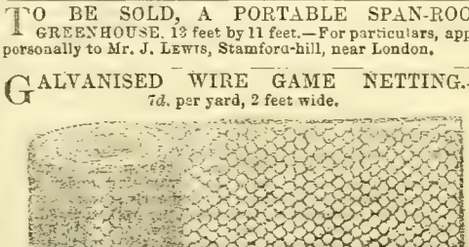
Milk Pans, 2*s*. to 6*s*. each; Metal Hand frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d*.; 1⅝ in. ditto, 3*d*.; 2 in. ditto, 3½*d*. per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d*. per foot extra

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

TO BE SOLD, A PORTABLE SPAN-ROOF GREENHOUSE, 13 feet by 11 feet.—For particulars, apply personally to Mr. J. LEWIS, Stamford-hill, near London.

GALVANISED WIRE GAME NETTING.—7*d*. per yard, 2 feet wide.



| | | Galvanised. | Japanned Iron. |
|---|---|---|---|
| 2-inch mesh, light, 24 inches wide | ... | 7*d*. per yd. | 5*d*. per yd. |
| 2-inch ,, strong ,, | ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, | ... | 12 ,, | 9 ,, |
| 1⅝-inch ,, light ,, | ... | 8 ,, | 6 ,, |
| 1⅝-inch ,, strong ,, | ... | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, | ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d*. per square foot. Patterns forwarded post free.

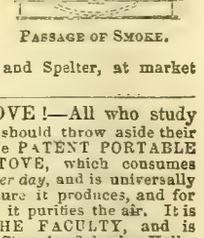
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

MECHI'S PREPARATIONS FOR CHRISTMAS AND NEW YEAR'S PRESENTS.—Sensible that the season is approaching when love and friendship give their tangible testimonials, Mechi has taken care to provide an abundance of objects for tasteful selection. None need deny themselves the luxury of giving, for the most inexpensive as well as the most costly articles are to be found at his repository of utilities and elegancies, 4, Leadenhall-street, near the India House. England has always been renowned for its hearty Christmas liberality, while "Le jour de l'an" of our lively neighbours (the French) is equally consecrated to the gifts of affection. Mechi invites a visit from the natives of all countries to his emporium, where they may be sure of putting their kind intentions into an acceptable shape. A new feature has been added to his elegant show rooms by the removal from the Great Exhibition of the unique glass cases which excited so much admiration. Within them are displayed to the greatest advantage a superb stock of ladies' and gentlemen's dressing cases, work boxes, tea trays, work tables, chess tables, tea caddies, card cases, &c. Those who desire to make really useful presents will find in the general department the best table cutlery, scissors, thimbles, penknives, writing desks, ivory and other hair brushes and combs, and a variety of goods adapted to every exigency; also bagatelle tables, affording a charming amusement on a wintry or wet day.

4, Leadenhall-street, London.



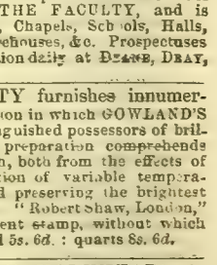
FUMI-PORTE.



FUMI-PORTE WITH CAP.

LAWRENCE AND CO., No. 55, Parliament-street, Westminster; and No. 10, York-place, Lambeth, ZINC DEALERS and MANUFACTURERS.

Chimney Shafts, 9*d*. per foot; various Cowls and Tops for Chimneys; Perforated Zinc, 3½*d*. per foot; Drawn Bell Tube, &c., 3½*d*. per lb.; Rain Pipe, 3 inches, 4*d*. per foot; 2 inches, 3*d*. per foot; Skylights and Windows. Drawn Bay, Cottage, and Church Lights, made to order and plan; Brass and Zinc Plates engraved and fixed on Glass; Sheet Zinc, Nails, and Spelter, at market prices.



PASSAGE OF SMOKE.

THE ONLY PERFECT STOVE!—All who study Health, Comfort, and Economy, should throw aside their old Stoves, and replace them with the PATENT PORTABLE VENTILATING SUSPENSION STOVE, which consumes only *Three Farthings worth of fuel per day*, and is universally admired for the delightful temperature it produces, and for the extraordinary manner in which it purifies the air. It is strongly RECOMMENDED BY THE FACULTY, and is adapted for Bed-rooms, Churches, Chapels, Schools, Halls, Libraries, Greenhouses, Shops, Warehouses, &c. Prospectuses to be had free by post. In operation daily at DEANE, DRAY, and Co.'s, London-bridge.

THE TOILET OF BEAUTY furnishes innumerable proofs of the high estimation in which GOWLAND'S LOTION is held by the most distinguished possessors of brilliant complexions. This elegant preparation comprehends the preservation of the complexion, both from the effects of cutaneous malady and the operation of variable temperature, by refreshing its delicacy and preserving the brightest tints with which beauty is adorned. "Robert Shaw, London," is in white letters on the Government stamp, without which none is genuine. Prices, 2*s*. 9*d*. and 5*s*. 6*d*.: quarts 8*s*. 6*d*.

LONDON TO DUBLIN (*viâ* HOLYHEAD) in THIRTEEN HOURS and a HALF.

Three communications daily on week days; two on Sundays. Sea passage Four Hours and a Half. First class, 3*l*.; second, 2*l*. Return tickets (available for a fortnight), first class, 4*l*. 10*s*.; second, 3*l*. Children under twelve, half-price.

For full particulars of the booking-through system between England and Ireland, see "Bradshaw's Guide," page 122; "Walsh's Irish Guide," page 20; "Fisher's Irish Guide," page 2.

FOOD FOR INFANTS, LADIES NURSING, AND INVALIDS.—BULLOCK'S SEMOLA is agreeable to the taste, easy of digestion, and the most nutritious substance ever introduced. This food is sanctioned by the leading members of the profession.—Sold in packets at 1*s*, 2*s* 6*d*., and 7*s*. 6*d*. each, by LLOYD BULLOCK, 22, Conduit-street, Hanover-square, and may be ordered of chemists and druggists.

THE ROYAL EXHIBITION.—A valuable, newly-invented, very small, powerful Waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of 4 to 5 miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS. TELESCOPES.—A new and most important INVENTION in TELESCOPES, possessing such extraordinary powers, that some, 3½ inches, with an extra eye-piece, will show distinctly Jupiter's moons, Saturn's ring, and the double stars. They supersede every other kind, and are of all sizes—for the Waistcoat pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant.—Invaluable newly invented preserving Spectacles; invisible and all kinds of acoustic instruments for relief of extreme deafness.—Messrs. S. and B. SOLOMONS, Opticians and Aurists, 39, Albemarle-street, opposite the York Hotel, London.

HOLLYHOCKS AND ROSES.

JOHN CHATER AND SON can still supply most of the leading varieties of Hollyhocks in cultivation on reasonable terms. Also 12 fine Show Roses, 2 feet Standards, for 12*s.* (six summer and six Perpetuals). Strong Climbing Roses, 4*s.* 6*d.* per dozen; double major white Rockets, 2*s.* 6*d.* per dozen; superb named Hollyhock Seed, in packets of 200 seeds, 1*s.* 6*d.* Catalogues of the above may be had, on application, by enclosing a postage stamp. 12 fine Show Pansies, 10*s.*

Nursery, Haverhill, Suffolk.

PRINCE ALBERT PEAS, AND EARLY ASH-LEAVED KIDNEY POTATOES, at 6*s* per bushel, delivered free of expense at the Bredon station, on the Birmingham and Gloucester Railway. Four-bushel bags, 2*s.* each.—Address to Mr. ARTHUR STOW, Bredon, near Tewkesbury.

YEWS FOR HEDGING, &c.

EDWARD SANG AND SONS have for SALE a large quantity of YEWS of a size suitable for making hedges. The plants are of fine quality, three years transplanted, and from 9 to 21 inches in height. Prices moderate.

Kirkaldy, Dec. 13.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERÆ, ROSES, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had on application, by enclosing two postage stamps.—Windlesham Nursery, Bagshot, Surrey.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2*s* 6*d.* per quart.

York Regent Potatoes, from prepared cuttings, 6*s.* per bush. Cambridge Radical do. (a first-rate second early) 6*s.* do. American Native, 10*s.* 6*d.* do. Early Manley, 10*s.* 6*d.* do. Early Ash-leaf Kidney, 10*s.* 6*d.* do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1*s.* 6*d.*; two-bushel, 2*s.* 6*d.* Sacks, 2*s.* 6*d.* each.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1¼ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Dec. 13.

BEST LANCASHIRE GOOSEBERRIES, named, at 15*s.* per 100.

Also, APPLES, PEARS, CURRANTS, RHUBARB, &c, in all the best varieties, and at equally moderate prices.

Carefully packed, to carry any distance, or for exportation.

H. BIGLAND and Co., Manchester.

SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7*s.* 6*d.*
Extra ditto, with flowering buds ... ... 10 6
Usual discount to the Trade.

Clapton Nursery, London, Dec 13.

HUNTER'S PROLIFIC CUCUMBER. — This handsome and delicious variety obtained, in June last year, with fruit upwards of 30 inches in length, the Silver Medal at the Botanic Gardens, Regent's-park; and a Certificate of Merit at the Exhibition in July. It has also been awarded Four Prizes at the Highbury Exhibitions. It is white spined and an extraordinary bearer. To be had in packets of seven seeds, at 5*s.*; or three seeds at 2*s.* 6*d.*, of Mr. HUNTER, 5, King-street, Islington; and at J. G. RENWICK'S Seed Warehouse, 107, St. John-street, Smithfield, London.

MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1*s.* 3*d.* per lb.; any quantity under 10 lbs. will be charged 2*s.* per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

WILLMORE'S SURPRISE GERANIUM.

JOHN AND CHARLES LEE beg to announce that they have purchased the entire stock of this extraordinary novelty of Mrs. Willmore, of Edgbaston, near Birmingham, and they intend offering it to the public in the autumn of 1852, when they will have proved its qualities as a bedding plant, which they believe to be first-rate; and opportunities will have been afforded at the various Flower Shows of witnessing what may be regarded as a floral wonder.

Mrs. Willmore has stated her belief that its parentage lies between Geranium erubescens and a Hollyhock. Our great Horticultural authority, Dr. Lindley, repudiates the idea, but acknowledges it to be an extraordinary production. Messrs. LEE hope to produce such proof as may possibly stagger the learned Doctor's opinion, if it fails to convince him. For the present, suffice it to say that the structure of the plant is different to anything to be found in the Geranium; the roots are quite unlike any of the class, and the seed pods are formed more like a Hollyhock than a Geranium. The flowers are semi-double, and the whole truss of a monstrous form. Allowing it to be no more than a mere sport from the Geranium, its merits far exceed anything hitherto introduced as a gay border or bedding flower.—Nursery, Hammersmith.

NEW GARDEN SEEDS, SAVED THIS SEASON.

WILLIAM E. RENDLE AND Co., SEED MERCHANTS, Plymouth, beg respectfully to state that they are now receiving from some of the most careful growers a choice assortment of

NEW AND GENUINE SEEDS,

Of first-rate quality; and as the season is fast approaching when a fresh supply of seeds will be required for the Kitchen Garden, they take the liberty of recommending the proprietors of every garden whether extensive or small, to procure without delay a copy of

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY, *Which cost more than One Hundred Pounds in its production, and has been most favourably noticed by some of the most eminent Horticulturists of the day, as well as by the Editors of the leading Garden Publications.*

*It contains 24 folio pages, and is the same size as the* GARDENERS' CHRONICLE.

It contains a Descriptive Catalogue of the best Culinary Vegetables in cultivation, with the time of sowing, height, and other useful particulars, as well as the quantities furnished by WILLIAM E. RENDLE and Co. for their Collections; also a Descriptive Catalogue of all the choicest and best varieties of Agricultural Seeds; and an excellent Descriptive List of all the newest and choicest Flower Seeds.

It likewise contains a COMPLETE CALENDAR OF OPERATIONS in the Kitchen Garden for every month in the year, in a concise and useful form.

*Copies can be obtained from any Bookseller in town or country, price Fivepence, through Messrs.* BRADBURY *and* EVANS, *the London publishers.*

*Copies will also be sent gratuitously on receipt of Six penny postage Stamps (to pay the postage), on application to* WILLIAM E. RENDLE & Co., *Seed Merchants, Plymouth.*

*Our Stocks, Early Peas, Beans, Radish, and Carrots are already in, and can be supplied at once.*

W. E. RENDLE and Co. have made arrangements to supply all the new descriptions of SEEDS that may be advertised in this Paper during the ensuing season.

NEW DAHLIAS.

E. SPARY begs to announce to his Floricultural Friends, both English and Foreign, that he intends sending out, the first week in May, 1852, the below named DAHLIAS, which E. S. can confidently recommend as constant and desirable show flowers.

ABSOLAM (SPARY'S).—Clear amber, first-rate form, and petals very constant (an acquisition in its colour). Height, 4 feet; Plants, 10*s.* 6*d.*

VICTORIA (COOK'S).—Pale primrose, tipped with lilac; exquisite form, and good centre. To exhibitors will prove a desirable light flower. Height, 4 feet; 10*s.* 6*d.*

JOHN DAVIES (COOK'S).—Crimson, occasionally shaded with puce; symmetrical fine form; petals high in centre. Always to be depended on. Height, 4 feet; 7*s.* 6*d.*

A Descriptive Catalogue of select new and old varieties of Dahlias will be ready in January; Camellias, Geraniums, Fuchsias, Cinerarias, Verbenas, and a variety of other plants; Hamburgh Vines, and other sorts (in pots), from E. S.'s celebrated stock; Bouquets, Seeds, &c.

Queen's Graperies and Nursery Ground, Park-street, Brighton.

The Gardeners' Chronicle.

*SATURDAY, DECEMBER* 13, 1851.

MEETINGS FOR THE ENSUING WEEK.

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| MONDAY, | Dec. | 15 | Chemical | 8 P.M. |
| | | | Statistical | 8 P.M. |
| | | | British Architects | 8 P.M. |
| TUESDAY, | — | 16 | Linnæan | 8 P.M. |
| | | | Civil Engineers | 8 P.M. |
| | | | Pathological | 8 P.M. |
| WEDNESDAY, | — | 17 | Society of Arts | 8 P.M. |
| | | | Geological | 8 P.M. |
| THURSDAY, | — | 18 | Numismatic | 7 P.M. |
| | | | Antiquarian | 8 P.M. |
| | | | Royal | 8 P.M. |
| SATURDAY, | — | 20 | Medical | 8 P.M. |

THE third and last part of Dr. HOOKER'S "RHODODENDRONS OF THE SIKKIM-HIMALAYA" has just appeared. Although, perhaps, it contains figures of plants scarcely so grand as *R. Dalhousieanum* and some others, it yields in nothing to its predecessors in point of beautiful execution. Whether we shall ever see the species in our gardens in their native beauty, it is premature to say; we can only express an ardent hope that gardeners will overcome the great difficulty that attends their management. Some persons, indeed, in their desire to soften the vexation of those who have lost their "miffy" plants by the hundred, pretend that, after all, the species are not so fine as is alleged, and that their death is no great matter. But we can assure our readers that, after having in many cases compared Dr. HOOKER'S dried specimens with the published plates, we find nothing to complain of, except, perhaps, a tendency to diminish rather than exaggerate. Some of the flowers and leaves which we have seen are finer than anything which is to be found in the pictorial representations themselves.

Having already in our volume for 1849, p. 228, given such an idea of the Sikkim climate as could then be gathered from published materials, we have little to add on the present occasion, beyond the following extract from Dr. THOMAS THOMSON'S valuable sketch of the climate of the Himalaya, republished in the last Number of the Horticultural Society's Journal.

"The source of humidity in the Himalaya," says this most intelligent traveller, "is almost entirely the Bay of Bengal, which is situated about 5° to the south of the eastern extremity of the chain; and the wind which carries the humid atmosphere along the chain is that which is known to nautical meteorologists as the south-west monsoon, a wind which begins to blow in the open sea about the month of April, but whose effects are not felt in the far interior before the month of June. This wind, though constant in its direction at sea, is not so in its inland course; at the head of the Bay of Bengal it is almost a south wind. It blows from the sea nearly due north towards the Himalaya, striking in its course upon the low chain of the Khasya hills, whose maximum elevation is scarcely 7000 feet.

"Upon this range the first force of the monsoon is expended, and the annual fall of rain at Churra Poonjee, elevated 4000 feet on its southern slope, amounts to about 500 inches. This range, which has its origin among the mountain ranges of the south of China and north of Burmah, lies to the south of the Burrampooter, and, following the course of that river, terminates in the concavity of its great bend, where it turns down towards the sea. The Khasya mountains do not therefore entirely run across the Bay of Bengal, so as to intercept the force of the monsoon from the whole of the Himalaya, a part of which wind, laden to saturation with moisture at a temperature of nearly 90° F., blows due north from the Bay of Bengal upon the district of Sikkim, which is on that account the most rainy part of the whole range of the Himalaya, for, on the one hand, the more eastern parts of the chain are protected by the Khasya range, and on the other, the more westerly parts are more distant from the source of moisture, and therefore receive a less share of it. The interception of the moisture from the province of Bootan and the independent states north of Assam, by the Khasya range, has this curious effect, that the lower ranges of this portion of the Himalaya are dry and arid, while above 7000 feet, to which elevation only the hills to the south attain, the climate is very much more humid.

"The diminution in the amount of moisture in proceeding to the Westward along the Himalaya from Sikkim is extremely gradual, but also, so far as our present rather limited number of observations go, very regular. The effects of the south-west or rainy monsoon diminish step by step, as we advance westward, till on arriving at the valley of the Indus at the western extremity of the Himalaya, it ceases to be observed at all. In these most western portions of the chain, very little rain falls at any season of the year, and the little which does occur falls in the spring months, and is therefore quite independent of the regular monsoon.

"It is also worthy of note, that in the more western parts of the chain the climate is extremely dry at all periods of the year, except during the monsoon or rainy season, as it is called in India, while to the eastward the climate of the mountains shares to a considerable extent the more equable and always moist climate of Bengal.

"The most important point of all, however, regarding the climate in respect of its effects on vegetation, which requires to be borne in mind, is that a very great portion of the rain which falls is deposited on the first range of mountains upon which the rain wind strikes. I have already pointed out that this is the case with the Khasya range, and it is there highly strikingly illustrated by the fact, that it is only on the very south side of the hills that the rainfall is so enormous, the fall 20 miles north of Churra being probably less than half what it is there.

"This tendency of the rain-fall to exhaust itself very considerably on the first range of mountains to which it has access, is peculiarly important in a mountain chain 150 miles in width, its effect being that the upper part of all the large valleys, and especially the interior valleys and their ramifications, are much more dry than those adjacent to the plains of India. Even in the most humid part of the Himalaya, in Sikkim, this difference is extremely marked, and in the more dry parts to the west (the extreme east interior is not known), the inner valleys are so dry that rain is scarcely ever known to fall."

To this excessive moisture it is, we presume, that attention should be directed; but the grand difficulty will be to combine it with a suitable temperature. Upon this, and many similar points, the public trusts that Dr. HOOKER will favour them with his suggestions. There can be no doubt that the species of Rhododendron require very different treatment: for instance, the *R. Edgworthii*, now figured, a species with large pale lemon-coloured flowers, hardly inferior to *R. Dalhousieanum*, comes from the valleys of the inner ranges of Sikkim, at an elevation of 7000—8000 feet, hanging from trees in an atmosphere saturated with moisture; on the other hand, *R. æruginosum* and *fulgens*, two species with the habit of *R. campanulatum*, are found at twice the elevation, where the climate must be totally different; and as an extreme case, the *R. nivale*, "from the loftiest elevation on the surface of the globe,"—is a representative "of the most excessive climate—of the joint influences of a scorching sun by day, and the keenest frost by night—of the greatest drought, followed in a few hours by a saturated atmosphere—of the balmiest calm alternating with the whirlwind of the Alps. For eight months of the year it is buried under many feet of

snow; for the remaining four, it is frequently snowed and sunned in the same hour. During genial weather, when the sun heats the soil to 150°, its perfumed foliage scents the air; whilst to snow storm and frost it is insensible, blooming through all, expanding its little purple flowers to the day, and only closing them to wither, after fertilisation has taken place." Such is Sikkim!

We understand that the late Mr. Feilding, of Lancaster, has bequeathed his Herbarium to the University of Oxford, upon certain conditions. This collection, formed at a very large expense, is understood to consist of 70,000 species, forming one of the most complete herbaria in the world.

## WEEDS.—No. II.

On Lawns.—The beauty of a Grass plot or lawn is so much dependent upon its being free from weeds, that I think my commentary would be incomplete if a few observations were not made on this branch of my theme.

I have sometimes seen operations upon a large scale in order to eradicate Moss, but I think that unless excessive in quantity it forms a luxurious carpet, and in extensive grounds is useful to cover the surface where little else can grow. In the more distant and sequestered portion of pleasure grounds, I prefer the mossy bank, overhung with umbrageous foliage; but in the formal quadrangles of mansions or colleges, neither moss nor weeds should grow. Such plots, with the margins of walks in terraces, their slopes, and the formal patches of Grass, which frequently form part of a design, should be free from Moss, Daisies, and all broad-leaved plants, including the coarser Grasses, such as the Couch-grass (Triticum repens), and the Cocksfoot (Dactylis glomerata). There is no plant which detracts so much from the beauty of our English lawns as the common Daisy (Bellis perennis). Sorry am I to lay such a charge upon this "modest crimson-tipped flower," associated as it is with our happy recollections of childhood, when all that was gay and pleasing seemed made for us alone, and we dreamed not that the same field which yielded us Daisies and Buttercups produced also Nettles and Thistles. But while I would do it ample justice as a wild flower, which

> "Opens with perennial grace,
> And blossoms everywhere,"

I confess to have found it my greatest plague, particularly in the earlier spring and summer months; after the lawns have been neatly mown, "swept, and garnished," a few hours of sun have studded them with these flowers, producing a frittered effect, and destroying that agreeable contrast which a well-kept lawn always gives to masses of flowers, particularly those of a scarlet colour. In gardens where there are many large trees, the better Grasses will not thrive, but even if annually renewed, as annually perish; in such places the Daisy and Moss alone will thrive, and therefore in all such spots I would not disturb them, but take their verdure as the best instalment we can have for the effect of turf. On the contrary, wherever level open spaces prevail, more particularly in scenes which are highly artistic, the Daisy has no place. The quadrangles of the colleges at Oxford have long been celebrated for the beauty of their Grass-plots; and I remember that at All Soul's College I have seen the most perfect specimen of a well-kept lawn I ever beheld: not a Daisy, or broad-leaved plant of any kind, but one uniform, dark-green, velvety surface, such an one as perfectly accorded with the artificial expression of the venerable buildings, and was evident of the design and influence of highly civilized and erudite man.

Beautiful as were the Daisies and golden Dandelions of our childhood, and much as we regard their beautiful forms and wise adaptation as a link in the great charm of nature, we hail their absence from such classic regions as a boon.

One of our poets has immortalised the Daisy in these lines—

> "The Rose has but a summer's reign,
> The Daisy never dies."

Now it is precisely for these ever-blooming and "never" dying qualities that we gardeners banish them from our lawns. They may be ranked in the first class of our "forget-me-nots," and every gardener may truly say of them what the poet said of the Rosemary, "that's for remembrance."

Next in order, as weeds on lawns, come the Dandelion and Rib Grass, or Plantain; these are the only ones which become troublesome when Grass is moderately well kept. But what is deficient in quantity is compensated for by the facility with which great quantities are produced from seeds. The practice of neglecting the mowing of Grass as a point of economy is not to be commended, because it gives these pests an opportunity of propagating themselves to an almost incredible extent, not only stocking the Grass with their frequency, but also the walks.

The task of cleaning a foul lawn is indeed a serious one, but one which will amply repay, where high keeping is necessary; and like all other undertakings, it may be accomplished by a little perseverance. When once got under, they may, by a little regular appliance, be easily kept in subjection.

The best workman for the purpose is a boy from 12 to 14 years of age, who need only be thus occupied in dry and suitable weather. The best instrument is the Daisy-digger; it has a handle like that of a large chisel, into which is fixed a piece of iron, which is bent upwards at the end and forked thus ⋋. It is necessary to take out the entire roots of these ⋋ plants, and therefore advantage should be taken to do it after rain, the operator placing the forks under the leaves of the plant, and pressing the handle gently down, the plant is drawn out of the earth, the point of fulcrum being that where it begins to curve.

I fear that my remarks may be thought tedious upon this simple subject, but as "trifles make the sum of human things," it is evident that to do great things well we must not despise little ones. My maxim through life has been—that what is not worth doing well, is not worth the attempt. Often have I seen persons on Grass delving and pottering with a short weeding knife to extract weeds, when the use of the Daisy-digger would have done double the work in a more efficient manner.

According to Professor Burnet, the Plantain "has a peculiar tendency to follow the migrations of man, as if domesticated or sympathetically attached to the human race. It has by the natives of some of our settlements been emphatically called 'the Englishman's feet,' for with a strange degree of certainty, wherever it is found, there our countrymen have trod." *Henry Bailey, Nuneham, Oxford.*

## BRITISH SONG BIRDS.

(Cage Birds, No 42.)

No. LVIII.—It can hardly be matter for surprise that, whilst reasoning logically on the ways of Providence, and whilst directing attention to an undeviating "universal law" by which all things (animals included) are wisely governed,—it can hardly be matter for surprise, we repeat, that we should raise up some few opponents; and that by such we should be esteemed 'ignorant,' and behind the times in which we live. Be it so. These "wise men" will have it that 'reason,' properly so called, *must* reign wherever there is brain,—and they defy all proof to the contrary. Whilst 'doctors so disagree,' who shall decide the point? However, even the renegade Pilate could ask "What is truth?" and surely it is worthy of careful inquiry to come at it.

Our modern philosophers are by no means the only persons who have made the brain of animals a matter of constant study. But the point in which they fall short is, the inability they possess to 'comprehend,'—that is the word, the difference between matter and mind,—'ponderables' and 'imponderables.' The philosophers of the old school, amongst whom materialism seems to have found comparatively little place,—filled as they were with admiration at the wonderful works of God, settled this question at once, and discarded all 'speculation' the moment they found they were on 'sacred ground.' Far be it from us to imagine that the Creator of heaven and earth should make man "in his own image," and share such honour indiscriminately with the brute creation! To everything has been given "its own body"—beautiful in the extreme in all its interior machinery, and admirably adapted for its purpose; but as Equality never was designed to reign on earth, everything in Nature is assigned its proper, its fitting place.

Buffon, a true experimental philosopher, tells us, that on dissecting the uran-utan,* there were found "*many* essential distinctions in its internal formation from that of a man; though in some parts," he adds, "*the affinity is so great that their inferiority can only be attributed to the want of reason, or a deficiency in those intellectual powers that lift the human race above all other creatures.* The tongue, and the organs of the voice, are exactly similar; yet is the animal DUMB. *In the appearance and arrangement of the* BRAIN, *no difference can be perceived;* YET is the uran-utan IRRATIONAL." Hence, Buffon wisely concludes that mind does not depend upon any conformation of matter, but is of a nature superior and independent. Derham, too, the reverend author of the 'Physico-Theology,' made this particular question a matter of intense study; and gives us "proofs" undeniable of the soundness of the argument on which we insist. Many other equally corroborative facts—*quæ nunc perscribere longum est*, might be adduced; but we feel they are not required. We may just observe, that all our wisest philosophers are agreed upon the genus *Simia* having its organisation as nearly as possible framed like that of man. Admitting this—even to the full extent of the organs of speech being identical in both,—WHY, let us ask, do they NOT speak? If the "vital principle" be really the same in brutes as in ourselves, how can it fail to act, *cæteris paribus*, as well in the one machine as in the other? The philosophers shirk this altogether. Lucretius took the proper view of "mind and matter" when he remarked,—

> "——*Nil ideo natum est in corpore ut uti*
> *Possemus; sed quod natum est id procreat usum.*"

And after giving many proofs of the correctness of his arguments, he adds,—

> "——*Omnia denique membra*
> Ante *fuere, ut opinor,* eorum quam fuit usus."

By this sound doctrine, atheistical cavillers are worsted in their dictum,—that "Things make Uses." We maintain that the converse is the case; and that "Uses make Things."

Nature, unassisted, could not constitute bodies, whose structure is against the law of specific gravity; and we hold with Ray, that spontaneous production is against the catholic laws of motion, against matter of fact, a thing without example—not only in Man, and the nobler animals, but in the smallest of insects, and the vilest of weeds; though the fertility of the earth cannot be said to have been impaired since the beginning of the world. "Read the 'Vestiges of the Natural History of Creation'," said one of our modern philosophers to me a few weeks since; "you will *then* agree with me, that we mortals were most probably, or, for what we can tell to the contrary, *originally* in the tadpole state, rejoicing in plump round bodies, with cork-screw tails, at the bottom of a pond!" I *have* long ago read the book in question; yet do I *not* agree with my philosophic friend of the tadpoles. Nor need I enumerate here, how very many other similar works I have read; all of which, so far from "convincing me of my error," serve rather to confirm my fixed, my unchangeable principles. It is not my intention to pursue this branch of our inquiry any further; it would be quite out of place. Indeed, I stated at the outset, that a metaphysical disquisition on such subjects was, in the columns of a newspaper, impracticable, and would readily fill a large volume,—I might have added, *six* large volumes. However, I consider that what has been advanced has not been *de trop*, and that it will not be without its useful purpose. It will lead people to "think," if it does nothing more; and it will, moreover, fortify them against giving too great credence to *all* the hypotheses of Modern Science.

I purpose devoting two more chapters to this series of Papers—one, of course, to the instinct observable in the "higher order" of animals, with pleasing examples; and the last to the noble consideration of Reason, and its gradual advance upwards, from the cradle to the grave. Instinct we have shown to be stationary; reason, it will be proved, is always progressive.

The termination of this inquiry which has formed so interesting a subject for the last eight weeks, will bring us, should we live so long, to the end of the present year, a year long to be remembered by us all; for such fine successive seasons as we have had, are beyond the recollection of any of us. No time has been lost, so far as our winged friends are concerned. Passing through a state of probation, the last three months of the year are with them a *tempus non;* but so soon as the new year commences, they all in turn give signs of new life, and return to the performance of their allotted duties in the choir with due energy. We do indeed long once more to commence heralding their sayings and doings; and we shall be found ready to sing their praises at the first dawn of 1852.

The voices of the blackbird and the thrush, at present small and irregular, will then be heard merrily pealing; and many lesser feathered pensioners, even now benumbed with cold, and occasional parlour visitors, will in January present themselves at our windows to share our Christmas cheer. Truly welcome shall they be to the rites of our hospitality; and we shall look for our reward in the harmony of their sweet voices at an early day of dawning spring.

No person, if he be honest, can say that the gratitude of a bird does not far exceed that of any of the human race. By the former, a favour conferred is *never* forgotten; whilst, by the latter, it is seldom, if ever, remembered. We speak truly, experimentally, advisedly. *William Kidd.**

* There is, at the present time, in the Zoological Gardens, Regent's-park, one of these extraordinary animals, which are said so closely to resemble Man in their organisation; and it is "strange" to observe how constantly and sedulously its society is courted by the fair visitors to the gardens. We only hope that our weapons may not hereafter be turned against ourselves; and the "reason" of the animal not said to be "proved" by the "natural affinity" evidently existing between it and the fair sex! Hamlet was in the right, when he said—"There are more things in heaven and earth, than are dreamt of in our philosophy," for we really have seen Men looking *very like monkeys.*

## JOTTINGS ON FOREST PRUNING.

I have alluded to the philosophical bearing of forest pruning, as distinct from the mechanical, and demanding as such a separate course of inquiry. The effects of the latter are generally visible to the eye; for the full appreciation of the former, a certain amount of faith is demanded—faith in the existence and operation of the powerful but invisible agents which enter so largely into the material world, and which in their combinations perform such wonderful phenomena in the great laboratory of Nature. We do not see the action of the leaf in the economy of the plant; but from scientific data, or negative evidence, we can infer how important an organ it is. We cannot follow with the eye the fixation of carbon, building up the solid tissues of the Oak, the elaboration of absorbed fluids, or the deposition of secreted products; yet we know that every moment in the growth of a plant, some one, or all of these processes are going on. We know, beyond the possibility of doubt, that fluids are pumped up from the soil, and absorbed from the air; mixed, concentrated, and a portion again exhaled; that any material obstruction to the circle of phenomena, which are the visible evidences of the life of a vegetable, must act detrimentally to its constitutional vigour, and it is to this point that I wish to make allusion in relation to trees grown for timber.

We know that all exogens consist of a series of layers of wood overlying each other—the layer of this season completely enveloping that of the preceding, the last formed layer of course being in immediate contact with the leaves, by whose agency it has been formed; and it will be found that such a connection is maintained with every layer after its formation till it assumes the character of heart wood, such connection decreasing as we approach the centre of the tree. From this must be inferred that for several years after the formation of a

* *Erratum.*—In last week's article the word "imitation" (see second paragraph, line 14), *should have been* "admiration." Although the mistake is palpable to the eye of a careful reader, yet the correction is important, as the sense is materially

layer of alburnum, certain changes take place, a number of secretions are deposited, and doubtless various fluids and gases are thrown off, which, if retained in the tissues of the wood, would act detrimentally to its durability.

Organically speaking, the heart-wood of a tree is of little importance. If wholly removed no injury would be sustained to the surrounding parts. It aids nothing in the vital economy. Its formation and consolidation is complete. But if during its changes from the season of its formation to that of the inert condition of duramen, any material interruption to the processes by which such changes were effected had been given, there can be no doubt but that it would have reached that state in a morbid condition, and its durability would of course be affected. Such injury could not, however, be appreciable to the eye.

No such injury can be effected by pruning; every branch is connected with a given number of living layers of wood. When a branch is removed, every such layer is cut off from an amount of leaf surface by which its important changes are effected. The result is, that the wood does not attain its natural conditions. Deleterious matters are retained in its tissues, and its organisation is incomplete.

There is a disease to which the human subject is liable, arising from an imperfect formation of the *septum* of the heart, which allows a portion of the blood, at each pulsation, to escape into the arteries, without having performed the pulmonary circulation. The result is that the whole mass of blood is impure, from the non-removal of the deleterious matters acquired in its circulation through the body. Persons labouring under such a disease may be known by the leaden hue of countenance and their want of vivacity. They are seldom long livers. An imperfect aëration of the blood in animals, and that of the sap in plants, produces analogous disastrous results. The difference in the two cases is, that the one is apparent, the other not. In both cases the system becomes loaded with impurities, which a healthy action of all the organs would have thrown off, and in plants a plethoric condition is induced by an indiscreet removal of the branches. On a future occasion I shall endeavour, by a few diagrams, to render visible the conditions I have here described. *G. L.*

## Home Correspondence.

*Hints to Persons Making a Garden.*—Rock, wood, and water. To begin with the rock. No garden that pretends to represent the variety of Nature in her vegetable kingdom can dispense with something in the form of rock—be it natural or artificial; not merely by way of a feature in the pleasure-ground, but as a situation or condition almost indispensable for certain plants; and those plants, it may be observed, are some of the most interesting and elegant species that we have in cultivation. Great mistakes are frequently made in the selection of a site for rockwork, as well as in that of the plants supposed to be adapted to it. Of course, where the gardener is fortunate enough to have natural rock to deal with, he must take it as he finds it; but that is not often the case. With regard to the proper site for rockwork, a garden, to be complete in that particular, ought to possess two entirely distinct piles of rock, unless the situation and the scale of operations be so extensive as to allow of one pile of rock considerable enough to afford a sunny and a shady face, each large enough for the requisitions of that department. For the plants that like sunny rocks are chiefly those of warm or dry climates, sea-shore plants, or those of the Mediterranean rocky coasts, or of the arid parts of the east. Those, on the other hand, that prefer moist or shady rocks, are those of the Alps, or of northern moors and mountains, Ferns, &c. The two, it will be evident, are hardly compatible. Primula minima and Asplenium fontanum would hardly assort with Crassula jasminiflora, and Convolvulus Cneorum. The Alpine and the Mediterranean, or maritime rocks, should be considered as quite distinct. On no rocks, unless natural and on a very large scale, should those plagues, the creeping plants, be allowed. They are suited only to banks, generally to the shade. Every gardener will understand that the plants alluded to are such as Moneywort, St. John's Wort, Periwinkles, Lyciums, or Honeysuckles. Trees ought not to be permitted near rocks destined for maritime plants, and but partially near those appropriated to mountain plants, though they will not injure Ferns or Orchidaceæ. A rocky soil is not necessarily poor; a good natural soil, unmanured, but well drained, suits maritime or Mediterranean rocks, and a damp, peaty gravel, perhaps with a slight trickling of water, will agree with Alpine rocks. No plants should be grown on rocks but such as are naturally rock plants. *S.*

*Bad Seeds.*—There is so much difficulty in procuring true and good seeds, even from established houses, that amateurs are fairly disgusted with the frequent disappointments they are subjected to, either through carelessness or wilful neglect. Can you suggest any plan to mitigate the evil? To find your Walcheren Broccoli, which you have tenderly nursed all the winter, turn out, in spring, useless rubbish, is enough to provoke the mildest temper, more particularly as it cannot be replaced, and you must patiently wait many months to witness another failure, although you procure your seed from another house. To have your field of Carrot seed unproductive, and your Cabbages run to flower, are among the many miseries we amateurs are liable to, and we shall never be well treated till the parties who fancy they may send us any trash are exposed in the *Chronicle*. *Falcon.* [We have some thoughts of publishing the result of trials of seeds made by known persons of judgment. We fully admit that some seeds are disgraceful to the houses that sell them.]

*Bee Houses.*—The instructions for the construction of an apiary given in a Leading Article (at p. 755), are, on the whole, excellent; it may, however, perhaps be questioned whether the slanting of the roof from back to front is advisable. It has, indeed, its advantages as well as its disadvantages, as ordinarily made. The advantage is that the house, being higher behind, where the apiarian's operations ought to be performed (and not in front), he has more head room for working. The disadvantage is that rain dropping on the roof is liable to fall or be blown on the bee-boards, even if the roof be extended 12 inches in front, as "Y." suggests. This may be prevented either by having the front entirely closed, with holes only for the entrance of the bees, or by the adoption of a very simple little contrivance which I have observed in the hot-houses of my friend W. W. Saunders, Esq, for preventing the dropping of the steam collected on the underside of the frames of the lights. This consists simply in fastening along the under side of each of the frames dividing the panes of glass, strips of thin zinc plate, about an inch wide, bent up at each side, so as to form a little gutter, which is to be tacked to the frame, and made at the bottom to communicate with a little transverse gutter, having an exit outside the house. Thus, for a few shillings, the annoyance from drip may be prevented. With reference to the size of the bee-house, that given by "Y." may be advisable for amateurs and experimentalists; but for those who keep bees for profit, I apprehend a much larger house would be more convenient. If hives are not kept entirely apart, I know no reason, so far as the natural habits of the bees are concerned, why a hundred instead of four hives should not be kept in one apiary. Will "Y." be so good as to state his reasons why he restricts the number to four. *J. O. W.*

*The Weather.*—Instead of the damp and stormy weather which usually characterises November in the south of England, the past month has been remarkable for its low temperature, comparatively clear skies, and drought. The mean temperature has been six degrees below the average of the last nine years; and upon reference to the valuable tables compiled by Mr. Glaisher, of the Royal Observatory, Greenwich, and published in the Phil. Trans., Part 2, 1850, it appears that so low a temperature has not been recorded in November since the year 1786. During the present century, the following are the only instances of much continued frost at this period, and which I here insert, together with their respective mean temperature.

| Years. | Mean Temperature of November. |
|---|---|
| 1807 | 38.7° |
| 1809 | 39.5 |
| 1815 | 38.9 |
| 1826 | 39.9 |
| 1829 | 39.3 |
| But the mean temperature of November, 1851 has been only | 37.78 |

It is worthy of remark that much severe weather prevailed during the subsequent winter months in every instance. A general idea is prevalent in this neighbourhood that it is many years since there was such continued drought and scarcity of water during the autumnal months. I shall therefore state the fall of rain during the past five months, ending November 30th, together with the quantity which fell in the corresponding months of 1847, and the average for the same period during the last eight years:

Fall of Rain in Inches.

| | 1851. | 1847. | Average of 8 Years. |
|---|---|---|---|
| July | 3·50 | ·22 | 1·95 |
| August | 1·56 | 1·08 | 2·69 |
| September | ·21 | 1·80 | 1·99 |
| October | 4·11 | 1·57 | 3.99 |
| November | ·81 | 2·12 | 2·63 |
| Total | 10·19 | 6·79 | 13·25 |

From this table it is manifest, that although the fall of rain in the present instance is rather more than three inches below the average, yet it is nearly three and a half inches more than fell in 1847, proving, therefore, that it is not safe to trust to "the memory of man" in these matters. *C. Leeson Prince, M.R.C.S., Uckfield.*

*New Strawberries.*—Mr. Bailey has stated, at p. 740, that the Black Prince is not worth cultivating. Now this variety is very early, an abundant bearer, and fine in flavour; and it is most useful, inasmuch as it ripens sooner than any of the large-fruited kinds. I imagine therefore, that Mr. Cuthill has not much "victimised" the public in sending it out. In like manner Mr. B. says the Goliath is acid, insipid, coarse, and a shy bearer. (Can a thing be acid and insipid at the same time?) Now, according to this account, I am one of those who, Mr. B. insinuates, has victimised the public. Mr. B. must have grown this variety under very unfavourable circumstances, or he could not have formed such an opinion of it. But without offering a word myself as to its merits, I will refer Mr. B. to what has been said in favour of it, in 1849, 1850, and 1851, by the best authorities on fruits in the different weekly periodicals of the day; and in addition to such opinions, I have numerous testimonials in writing from those who have tested it. The Bicton White, Mr. B. says, is only valuable for its colour; can a white fruit be valuable on that account? Myatt's Eleanor he mentions to be disagreeably acid. Now Mr. B must not tell the gardeners about Bath that this is a bad Strawberry; they find it too useful a variety to listen to such statements. Nevertheless the raiser of this, as well as of the celebrated British Queen must, in Mr. B.'s opinion, be a "victimiser" of the public. Myatt's Globe I am not acquainted with, but I have heard it highly spoken of. The Mammoth is the only variety that deserves Mr. B.'s condemnation, and even this, being the largest of all Strawberries, deserves a further trial. Willmot's Prince Arthur Mr. B. describes as being as hard as a cricket-ball; consequently Mr. Willmot must be classed amongst "victimisers." I have, however, heard from good authority that this is a good Strawberry, and I intend to have a hundred or two of the plants. The British Queen is the only fruit Mr. B. seems to care for, as all the other large varieties are like eating wool or drinking vinegar. Is Mr. Bailey quite sure that all these large, woolly, acid, ill-flavoured, worthless sorts were raised from crosses from the Chili Pine, and so become worthless? I can assure him that the Goliath was not crossed in that way; it was raised (without crossing) from the British Queen. I should like to give Mr. Bailey an opportunity of testing the merits of the Goliath with the British Queen next season; and in order to do that effectually, I cannot, perhaps, do better than offer to show a bed of Goliath against a bed of Mr. B.'s British Queen, for a *5l.* note. This can very well be done, as both varieties are ripe at the same time. Mr. B. may choose any number of plants for this purpose, varying from 12 to 100; and I will "take him" upon the number he may stake; he shall have liberty to appoint a censor, and I will appoint mine; and provided these two do not agree, they shall call a third as a referee. The respective merits of the fruits shall be taken on these five points, viz., flavour, colour, size, productiveness, and hardiness of plant; the one that gains the most points to be declared the winner. This plan will decide the merits or demerits of the Goliath much better than anything I can say regarding it; and I will give Mr. B. until the 1st of next June to say whether he will accept my challenge or not. *James Kitley, Lyncombe Vale Nursery, Bath.*

*Effects of Severe Frost upon more or less sheltered Plants.*—The great injury sustained by Evergreens from low temperature in sheltered positions, has been ascribed to their want of habitual exposure to cold. I find that builders are generally of opinion that it is more dangerous to use cements during winter in low protected situations, than in loftier and colder places. If this opinion be well founded, there may be, in the case of the plants, something beyond the effect of mere habit. *A.*

*The Ostrich.*—I am sure that your amusing correspondent Mr. Kidd, will not willingly libel any of his feathered friends; and, therefore, I am certain that he will not be angry with me, for correcting an error which he has made at p. 740, respecting the ostrich. He accuses that bird of a want of parental feeling, but I think, after what I say, he will fully acquit one parent of that offence. I have had an opportunity of watching the South American ostrich on its native plains; the hens all lay to one nest (like guinea hens), but one hen sits them, and after the young leave their eggs, the cock bird takes charge of the family. When he meets with another cock similarly employed, he attacks him, and in case of victory, takes charge of the other's family: so that in a short time a strong bird may be seen with three or four united families together, 50 or more in number, and they will follow him in a long string, as orderly as a charity school, led by a parish beadle. *Observator.*

*Vacca Vinery* (see p. 744).—In reply to your correspondent's inquiries, I beg to say that the cows are now in the Vinery again for the winter. The Vines have grown remarkably well, and I believe I must let them bear a few bunches next summer; at present, Strawberries, scarlet Geraniums, Calceolarias, &c., are thickly stowed away, on boards placed across the beams above the cattle, for the winter; and the front walk is (or rather was) looking very pretty with a fine scarlet Geranium, planted in the border, in full blossom; and a large quantity of Chrysanthemums and two Orange trees were trained along the wall. I say *were*, for, alas! the fat pigs have just made their way in and destroyed root and branch. I think the warmth of the cattle will keep out frost; if not, I shall add a small Polmaise stove at one end. For three nights we have had the thermometer, outside, down to 18° of Fahr.; in the cow Vinery it did not go below 37°. *Tirydail.*

*Bats and Fireflies.*—It were to be wished that our scientific writer on "Song Birds" would erase from his last paper the anecdote of the bats and fireflies. The gentleman who first gave the strange story to the public must have been under a delusion. Zoologically speaking, it is a blot from the clever pen which has lately transcribed it, and a stain upon the instructive page which has received it. It will not do. It is a nursery tale from distant eastern regions. Delenda est. *Charles Waterton, Walton-hall, near Wakefield, Dec. 8.*

*How to Crop a Small Kitchen Garden.*—I would not advise any one to grow Early Peas and Beans on a south border, where there are trees against the wall, unless the border is at least 12 feet wide, when it should be laid out in the following manner. Leave a space next the wall, 2 feet wide (which will be found very useful); then form a path, 2 feet wide; the space between the latter and the walk may be trenched and cropped with Early Peas, or any other crop, without at all injuring the trees. But whether Peas are grown on a border, or on a more open part, the mode of cropping should be the same. Let the ground be well manured with well rotted dung, and ridge trenched; let the trenches be 2 feet wide, and run north and south.

It is the best practice to sow on sods laid Grass downwards, as recommended in this Paper, or else in small pots placed in a frame, as a more regular crop is thereby insured. Sow about the beginning of January. When up 1 or 2 inches, plant a row on the west side of the first ridge half-way down, the next on the fourth ridge, which will be 6 feet between the rows; so proceed till all is finished. If sown where they are to remain, sow about half-way down the ridges, allowing the same distances. In the beginning of March fork down the ridges, which will earth the Peas; then strew some soot along the rows (which I consider one of the best manures that can be applied to Peas), and stick them. Plant one row of Lettuces up the centres; about the beginning of June draw two drills, at 3 feet apart, and plant a row of Cauliflowers in each drill, at 30 inches apart. As soon as the Peas are all gathered clear away the sticks, and fork the ground, earthing up the Cauliflower. Beans should be grown adjoining the above. The best practice is to sow thickly in a frame, or else close under a wall, and to cover with a handglass; or in lieu of that, arch the bed over, and cover at night with a mat and straw. Sow about the middle of December. When up 2 or 3 inches, fork down the ridges; then draw two drills, at 1 foot apart, plant one row in each drill, at 3 inches apart; plant with a dibber, retaining the Bean to the roots, if possible; go 3 feet, then plant two rows more in the same way (measuring from inner row to inner row), and so proceed till all is finished. Plant a row of Lettuces, at 2 feet apart, up each middle. In June, plant Cauliflowers between the Lettuces, provided they are not off. When the Beans are all gathered, clear away the stalks, and fork the ground, earthing up the Cauliflowers: then plant a row of Lettuces between. The Cauliflowers for the above plantation should be sown about the middle of April. *J. Steel, Clitheroe.*

*Singing Hens.*—Allow me to add my little anecdote to Mr. Kidd's testimony of singing hens, and somewhat, too, in contradistinction to the old saw, "A singing hen," &c. I may say I have met with a very worthy dame who sang often and loud. In the year 1843 I had a favourite cock canary, and, possessing a good breeding cage, I thought I would get him a mate, and obtained a green hen, which from the habit of singing, after her fashion, was gladly disposed of as being good for nothing. However, having a predilection to oppose or rather fathom old notions, I thought I would give her the same chance as I should have done a mute and higher priced bird. I accordingly put them up the beginning of February; and, not to be too tedious, I had the pleasure by the end of the season of an increase of 25 young; the produce of five nests, without an addled or unfecundated egg, or the least casualty after hatching. By this time (end of August) I did not wish for more; however she built again and laid four eggs, which I did not allow her to incubate, and took the male away, thinking that would prevent her laying more, and therefore any casualties to such a matron by exhaustion. In that I was mistaken, as, although I took nest-box, &c., away, she laid two more eggs in the bottom of the cage, making in all 31 eggs in one season, and bringing the first 25 birds up. I remarked they generally left the nest at from 8 to 10 days old, and fed themselves at 12 or 13. One of the first nests I have still in my possession, eight years old next March. She was full of her song during the breeding, but not when sitting, and so tame that she allowed me to be very inquisitive as to her progress. I attribute a great part of the success to good management. *Walter Stone, Commercial Academy, Hammersmith.*

*Glass Walls.*—In reading your account of the proposed glass walls, I am inclined to think that it would be a more useful, as well as on the whole a cheaper mode, to dispose the sashes on a slope, instead of perpendicularly, thus A: like the ridge of a house. Take for instance the length of the proposed wall to be 50 feet, the height 10, and the distance between the walls 2 feet with a glass coping over. If you compare this with walls set on the slant, so as to meet in a ridge, and to extend 3 feet on each side, there is hardly any difference in the glass required from that in the upright walls; and consider the convenience of having such a place to stow away half hardy plants in the winter, or early Strawberries, &c., in the spring. *T.*——On examining Mr. Ewing's models of glass walls, I could see at once that their application would not end in the growing of fruit trees alone. An erection of the sort made wider, and 40 feet long, heated with hot water pipes, would produce more Cucumbers, Melons, Strawberries, French Beans, &c., than four 12-light pits could do. Nothing would be more easy than to shelve it for pots; and as I learn that the Horticultural Society is about to test the merits of the invention, I trust that the patentees will take this hint, and make it adapted for forcing the things I have just mentioned. If my acre was held by lease, instead of by yearly tenancy, I should be amongst the first to try the walls for Cucumbers and Melons. Glass and iron, as I stated in your columns last spring, will by and bye effect wonders, not only for the horticultural world, but it will be largely employed for a thousand other purposes not at present thought of. Like gutta percha, there will be no end to its uses and benefits, at least to all northern Europe. *James Cuthill, Camberwell.*

## Societies.

Entomological, *Dec.* 1.—J. O. Westwood, Esq., F.L.S., President, in the chair. Amongst the donations to the Society announced as received since the last meeting, were various publications from the Royal Society, the American Association for the Advancement of Science, the Smithsonian Institute of America, the Lyceum of Natural History of New York, the Boston Natural History Society, Messrs. Guérin Méneville and Macquart, &c., and a large box of beautiful British Lepidoptera from Mr. H. Doubleday. A new part of the Transactions was announced as ready for delivery. Mr. S. Stevens exhibited a specimen of Argynnis Lathonia, taken near Hastings, by Mr. Cooke, of Brighton; also specimens of Diphthera Orion, and Adela cuprella (two very rare moths), the latter taken on Sallows, in April. Mr. A. White read a note from Mr. George, of Kensington, relative to the supposed luminosity of the well known Staphylinus, commonly called the devil's coach-horse (Goerius olens.) Having observed a number of moveable shining points in a lane near Kensington, at night, Mr. George swept up the whole into a handkerchief, which, on being examined, was found to contain a specimen of the insect in question. Mr. Stephens suggested that the Goerius, when captured, was in the act of devouring a Scolopendra electrica, the writhing motions of which would present the appearance noticed. Mr. F. Smith also said, that on one occasion he had observed the allied Staphylinus maxillosus, luminous from having devoured decaying crabs which emitted light during their decomposition. Mr. Curtis stated that the ordinary food of Goerius olens was earwigs, and that it was consequently a friend to the gardener, and Mr. Westwood stated that he had seen it attack a common worm three times its own length. Mr. A. White also exhibited several species of spiders and Tipulidæ from the arctic regions, brought home by Messrs. Ede and Ommaney; several species of spiders had been confounded under the name of Lycosa saccata, including one of those exhibited, which he proposed to call L. Baffini. He also noticed the powers which the eggs of the Tipulidæ must possess of repelling the frost in the arctic regions, where they must lay so long in the frozen ground previous to hatching in the short summer; and Mr. Curtis stated that Capt. Ross had repeatedly frozen caterpillars, and that they as often revived again on being thawed. A letter was read from Mr. Bates, giving some account of his travels in Brazil, and stating his intention of remaining there several years longer and of ascending one of the tributary streams of the Amazon River. A letter was also read from Mr. Newman of Stroud, on the habits of the species of the genus Bombus, in reply to Mr. Smith. An abstract of Mr. Le Conte's memoir on the Pselaphidæ of North America was read by Mr. Douglas, and Mr. Westwood read the commencement of a report upon the insects and insect products exhibited in the Great Exhibition of the Industry of all Nations during the past summer.

Royal Horticultural of Ireland, *Nov.* 26.—The Duke of Leinster, President, in the chair. At this, the annual general meeting, the secretary read a report from the Council, from which we extract the following: "Your Council have the satisfaction of informing your Society that scarcely in any previous year has there been more encouraging and gratifying results, as it relates to its general working, than has been presented in its several operations throughout the season. The several exhibitions that have taken place have redounded much to the credit of your exhibitors, and speak not less for the spirit of the employer than they have done for the perseverance and skill of the cultivator. As to attendance (notwithstanding the all-absorbing attraction arising from the great London Exhibition), your several shows have, on the whole, been well and liberally patronised, as will appear by reference to the balance-sheet. With respect to expenditure, besides the current expenses of the year now closing, a considerable amount of arrears, chiefly arising from the general depression that has unfortunately recently attached, more or less, to almost every interest in Great Britain, but especially in Ireland, your Council are happy to inform you, have been entirely cleared off, and your Society now stands with a fair and encouraging balance to its credit, to begin active and energetic operations for the approaching year. In no corresponding period have the subscriptions to its funds been more regularly and punctually paid. The arrears of subscriptions for the present year do not in all exceed 12*l*." The High Sheriff, Alderman Kinahan, moved the adoption of the Report, and Dr. Plant seconded the motion, which passed unanimously. Mr. Niven then read the rules of the Society, to which a new one was added, that practical gardeners should be admitted members on payment of a subscription. A resolution appointing the Council and officers for the ensuing year was next passed. *Dublin Advocate, Dec.* 3.

## FLORICULTURE.

Chrysanthemum Exhibitions.—With these has closed the floral year of 1851. It is not our intention here to review the entire doings throughout this particularly lengthy season—one, we may say, of unexampled prosperity; for Floriculture has not only fully maintained its position, but evidence has been given of a vigorous determination to march with the onward movement. The Great Exhibition of all Nations had, no doubt, its influence in making the now almost past year one to be ever held memorable; floriculture has been no laggard, and although we may not boast our Exhibition of all Nations, we may proudly refer to our exhibitions of all flowers; gorgeous displays have been made in localities hitherto anti-floral; old institutions have maintained their positions, and, in truth, universal prosperity seems paramount wherever Flora reigns. Exhibitions are the key-stones of all floral greatness; it is to the practical demonstrations made at these gatherings, from which success takes its rise, and it is to the results derivable from these *réunions* on which the whole science hinges; every improvement emanates from exhibitions—form, substance, colour, novelty, habit, and general display, each in its turn shares the critical observations of the connoisseur, comparisons are instituted year by year, anticipations are rife for the future, hints abound for sundry improvements where weakness is apparent—in truth, our best energies are strengthened in the cause we love and advocate. What will not the Chrysanthemum owe to the exhibitions we have just recorded? We append a simple statistical enumeration of the more popular varieties, a duty we owe our readers, but in this much caution is needed; for instance, Golden Clustered Yellow is shown to have been produced in no less than 42 blooms; whereas Plutus, a new variety, figures but thrice; in this it is that searching enquiry must be made, reliable information alone used, otherwise injury may arise to a new sort, not in general cultivation; old sorts which make no way had better be at once discarded; they are either deficient in quality, or they are inconstant: and however fine a variety may be when caught, "there is nothing like constancy" in the constitution of a flower for exhibition. On the other hand, if the magic word new be given, argument should run, "On what variety is it an improvement?" These and sundry other tests prove, however, of little real value, unless applied by comparison at public exhibitions. The following is a classified statistical list compiled from our reports of the three Chrysanthemum Exhibitions at pages 759 and 775:—

| Times shown. | Name. | Class. | Times shown. | Name. | Class. |
|---|---|---|---|---|---|
| 46 | Defiance | W | 12 | Sydenham | D |
| 42 | Golden Clustered | Y | 11 | Campestroni | D |
| 35 | Queen of England | L | 10 | Madame Chauviere | L |
| 33 | Pilot | D | 10 | Christine | L |
| 33 | Annie Salter | Y | 10 | Madame Poggi | D |
| 32 | The Duke | L | 10 | Cloth of Gold | Y |
| 30 | Beauty | L | 9 | Madame Camerson | D |
| 29 | Vesta | W | 8 | Nonpareil | L |
| 24 | King | L | 7 | Pio Nono | D |
| 21 | Phidias | L | 6 | Minerva | L |
| 18 | Formosum | L | 6 | Orlando | D |
| 15 | Goliath | W | 6 | Princess Marie | L |
| 15 | The Warden | D | 5 | Temple of Solomon | Y |
| 13 | Dupont de l'Eure | D | 5 | Queen of Yellows | Y |
| 13 | Lysias | D | 5 | Hecuba | D |

W, white. L, light. Y, yellow. D, dark.

Here we have 30 sorts, which have been shown in the aggregate no less than 520 times, including pot plants; the classes have been represented thus: Class 1, white, 3 varieties, shown 90 times; 2, light, 11 ditto, shown 201 times; 3, yellow, 5 ditto, shown 95 times; 4, dark, 11 ditto, shown 134 times. Total, 30 sorts shown 520 times.

In addition to the above we find that about 40 sorts have been produced, varying from one to four times each; but we think enough has been given in the foregoing whereon to form an estimate of the relative value of the sorts shown. *J. E.*

Newcastle-upon-Tyne Chrysanthemum Exhibition, *Dec.* 3.—The 1st prize for 18 pots was awarded to Mr. Stocksley for Madame Chauviere, Queen of England, Etoile de Versailles, Rose et Blanch, Annie Salter, Temple of Solomon, Queen, Etna, Lucidum, General Marceau, Surprise, Comte de Nantyar, Cyclops, Fleur de Marie, Jenny, Madame Poggi, &c. 12 in pots: 1st, to Mr. Deans, with Annie Salter, Nonpareil, Temple of Solomon, Queen, Queen of the Gipsies, Minerva, Solar, Lucidum, Marquis, Fleur de Marie, Minerva, and Gipsy Queen; 2d, to Mr. Stockley, with Queen of England, Marquis, Catalini, Lucidum, Queen, Jenny, Henrietta, Madame Poggi, Etoile de Versailles, La Reine d'Or, Fleur de Marie, and Queen of England; 3d, to Mr. Holmes. Three pots; 1st, to Mr. Deans, with Queen of the Gipsies, Annie Salter, and Minerva; 2d, to Mr. Stocksley, with Etoile de Versailles, Madame Chauviere, and Queen of England; 3d, to Mr. Holmes. Best cultivated specimen: 1st, to Mr. Deans, with Annie Salter; 2d, to Mr. Stocksley, with Etoile de Versailles. Best light: Mr. Deans, with Lucidum. Best dark: Mr. Deans, with Madame Poggi. Best yellow: Mr. Deans, with Annie Salter. Best 24 cut blooms: 1st, to Mr. Stocksley, with Lady Hunlock, Pius the 9th, Fleur de Marie, Marquis, Pilot, Madame Chauviere, King of the Crimsons, Princess Maria, Queen of England, Madame Poggi, Temple of Solomon, Annie Salter, General Marceau, Lucidum, Marquis, Fleur de Marie, and La Reine d'Or, &c.; 2d, to Mr. Deans, with Temple of Solomon, Pius the 9th, Annie Salter, Princess Maria, Marquis, Queen, Minerva, Queen of Gipsies, Queen of England, Lucidum, Elvira, Jenny, Etoile de Versailles, Foulatowski, Nonpareil, Madame Poggi, Fleur de Marie, and Solar, &c. Best 18 cut blooms: 1st, to Mr. Deans; 2d, to Mr. Stocksley. Best 12 cut blooms: 1st, to Mr. Stephenson, with Queen, Annie Salter, Princess Royal, Madame Poggi, Nancy de Sermet, and Temple of Solomon, &c.; 2d, 12 cut blooms, to Mr. Johnston, with Nancy de Sermet, Princess Maria, Solar, Annie Salter, Rigolette, Lucidum, Gluck, Queen of England, Pilot, Lady Talfourd, Etoile Palaise, and Fleur de Marie. Three Pompons in pots: 1st, to Mr. Stocksley, with Cuce, Madame Miellez, and d'Or.

Books. Our notices of periodicals are omitted this week, for want of space. *J. E.*

Scarlet Geraniums next week. *J. E.*

Misc: *J E and Co., Dublin.* Attended to. *J. E.—J S., Hammersmith.* Immediately. *J. E.*

## Miscellaneous.

*Ornamental Trees of Panama.*—The most famous of all the ornamental plants is the Couroupita odoratissima, Seem., combining a most delicious fragrance with a splendid flower. In the Morro, a forest near the village of Rio Jesus, are four of these trees, which are considered by the inhabitants as the only ones that exist in the country, and the greatest curiosities Veraguas can boast; and, indeed, I myself have never observed them in any other locality. They form a group, and are vernacularly termed Palos de Paraiso (*i. e.*, Paradise trees), or Granadillos, deriving the former name from their beauty,

and the latter from the close resemblance which their flowers bear in shape and size to those of the Granadilla (Passiflora quadrangularis, Linn.). The trees are from 60 to 80 feet high, and up to an elevation of 20 feet, where the branches diverge, their stems are thickly covered with little sprouts, bearing, from February until May, blossoms, the odour of which is of so delightful and penetrating a nature, that in a favourable breeze it may be perceived at nearly a mile's distance. The flowers are 1½ to 2 inches in diameter, and their petals are of a beautiful flesh-colour with yellow stripes, contrasting charmingly with the golden stamens of the centre. The people of Veraguas, whose apathy is not easily roused by the beauties of Nature, often repair to these trees during their flowering season, in order to behold the bright tints of the blossoms, and enjoy the delicious perfume which they exhale. *Hooker's Journal of Botany.*

*Acer circinatum.*—This is a most beautiful hardy deciduous tree from Oregon, with purple and white flowers, and leaves rich crimson in the autumn. It was introduced by the Horticultural Society. (See Fig. 210.) There is probably no hardy tree in this country more eminently beautiful than this, if tree it can be called, for it seems rather a bush. In the spring, when its leaves unfold, they are preceded by long crimson leaf-scales, from two to four to each twig; the leaves when they first come are thin, semi-transparent, and a clear light green; at the same time peep out little tufts of purple flowers, with white petals; and in the autumn the plant seems on fire with the rich red of the foliage, more rose-coloured, and not less intense, than that of the most scarlet of Oaks. Sir William Hooker tells us that the species is found wild on the Great Rapids of the Columbia River, and is common along the north west coast of North America, between lat. 43° and 49°. Mr. Douglas observes that it is exclusively confined to the woody mountainous country that skirts the shores, and there, among the Pine forests, it forms almost impenetrable thickets. The branches are pendulous and crooked, often taking root, as is the case with many species of the genus Ficus. Bark smooth, green when young, white when fully grown. The wood is fine, white, and close-grained, very tough, and susceptible of a good polish. From the slender branches of this tree the native tribes make the hoops of their *scoop-nets*, which are employed for taking salmon at the Rapids, and in the contracted parts of the river. It is said to form a tree 20 to 40 feet high. *Paxton's Flower Garden for December.*

Fig. 210.



Fig. 211.

*Remuneration for Professional Services.* — The value of ordinary commodities finds its level by the reciprocal influence of supply and demand. The producer calculates the cost of production by a simple process of arithmetic, adding a per-centage for profit, the amount of which is regulated by the balance of pressure between demand and competition. The value of mental labour or professional skill is not deducible by any such method of calculation. The benefit conferred on the employer bears no definite relation to the expense incurred, or the labour bestowed, in each particular case; and although all these items may be considered as elements in the calculation, there is no formula by which to arrive at an uniform result. Consequently, disputes not unfrequently arise, and in the absence of a better tribunal, cases are argued in courts of law, and decided by juries, who, with every disposition to do justice, are in possession of imperfect data on which to form an opinion. As a general rule, professional men are underpaid for their services, because the nature of these services is not understood by those who have to form an estimate of their value; and however low this estimate may be, those parties who are called upon to pay the amount, are seldom satisfied. In the case of Taylor *v.* Vickers, there are some peculiarities which seem to deserve attention. The public have very little idea of the labour and research involved in chemical analysis. Patients frequently take a pill or a mixture to a chemist's, requesting that the same may be analysed, and a supply prepared, with a copy of the prescription, supposing that the price of the medicine will include the analysis. The following case occurred lately:—A patient having derived much benefit from a prescription, lent it to many of his friends, and acquired some celebrity as the possessor of a certain cure. One of his friends lost the prescription, but another happened to have a bottle of the medicine, which he obtained, and took it to a chemist for analysis. Being informed that the expense would be two guineas, he said he could get a new prescription for half the money, which he accordingly did, by calling on the doctor. *Abridged from the Pharmaceutical Journal.*

*Esculent Plants.*—Evelyn, moreover, is valuable by helping us to mark the introduction of several of our cultivated vegetables. Of "Artichaux," he tells us (Acetaria): "'Tis not very long since this noble Thistle came first into Italy, improved to this magnitude by culture, and so rare in England that they were commonly sold for crowns a piece; but what Carthage yearly spent in them—as Pliny computes the sum—amounted to *sestertia sena millium*—30,000*l.* sterling. Note that of the Spanish Cardon—a wild and smaller Artichoak, with sharp pointed leaves and lesser head—the stalks, being blanched and tender, are served up *à la poiverade* (that is, with oyl, pepper, &c.), as the French term is." Of "Pompey's beloved dish, so highly celebrated by old Cato" he says: "'Tis scarce an hundred years since we first had Cabbages out of Holland; Sir Anthony Ashley, of Wiburg St. Giles, in Dorsetshire the seat of the Earls of Shaftesbury), being—as I am told—the first who planted them in England." Of the Melon he bids us "Note, that this fruit was very rarely cultivated in England, so as to bring it to maturity, till Sir George Gardner came out of Spain; I myself remembering when an ordinary Melon would have been sold for five or six shillings." Spinach was "by original a Spaniard." Tarragon also "of Spanish extraction;" and "the Caulyflower (anciently unknown) from Aleppo." Some of our garden esculents are of high antiquity; Asparagus was a favourite vegetable with Cato, and Onions are inscrutable. Others are quite modern upstarts. Sea-kale is one of these—by the present mode of producing it. And a truly British dish it is. On many parts of the south coast the inhabitants, from time immemorial, have been in the habit of searching for it in the spring where it grows spontaneously, and cutting off the young and tender leaves and stalks, as yet unexpanded and in a blanched state, close to the crown of the root. Evelyn confounding it with "the Broccoli from Naples, perhaps the *halmerida* of Pliny"—[or Athenæus rather]—"*capitata marina et florida*," mentions that "our sea-keele, the ancient crambe, and growing on our coast, are very delicate." But its cultivation is a recent practice. *Quarterly Review.*

*Acer villosum.*—A noble tree, from the Himalayas, with the aspect of a Sycamore. It was introduced by Messrs. Osborne and Co., of the Fulham Nursery, (See Fig. 211.) Dr. Wallich tells us that this is a very large tree, inhabiting the high Alps of India, approaching towards those of perpetual snow in Sirmore and Kamaon, ripening its fruits in November, at which time "the very fragrant flowers also begin to appear." Dr. Royle says it is only "seen with Pines and Birches on the loftiest mountains, which are for many months covered with snow." In its general appearance this may be compared to the common Sycamore, but is a much finer looking tree, its leaves being thicker, greener, and larger; besides which, they are covered with a close fur on the underside, although smooth above; in the autumn they assume a peculiar nankeen tint. The plants in the possession of Messrs. Osborne and Co. have not yet blossomed; but our Herbarium tells us that the "fragrant" flowers come out in close panicles, covered with long yellowish hairs. Undoubtedly this is one of the finest hardy deciduous trees yet introduced. It is to be hoped that India will soon yield us her other alpine Sycamores, of which there are three, viz., 1. *A. sterculiaceum* Wallich, found near the summit of Mount Sheopore, and very like *A. villosum*, except that it is nearly destitute of hairs. The trunk of this is said to be 3 feet in diameter, and the flowers white.—2. *A. caudatum* Wallich, so called because the palmate leaves have the lobes extended into tails. In this the leaves are scarcely more than three-lobed, and are sharply and doubly serrated. Dr. Wallich says it is a native of the highest regions of Nepal, towards Gossain Than, as also of Sirmore and Kamaon. Dr. Royle found it growing in company with *A. villosum*. It is a remarkable and handsome species.— 3. *A. cultratum* Wallich, the leaves of which are heart-shaped, and deeply divided into seven much acuminate *undivided* lobes, besides being much smaller and thinner than in the two preceding species. It is "a larger tree, native of the regions towards the Himalaya, in Kamaon and Srinaghur." Dr. Royle, who also found it, says that its wood "is white, light, and fine-grained." Dr. Wallich suggests its being allied to the *Acer pictum*, of Japan, to which we must add that it is little different from Bunge's *Acer truncatum*, from Northern China. *Paxton's Flower Garden for December.*

*The Cedron Tree of Panama.*—A tree, which has attained great celebrity, is that called Cedron (Simaba

Cedron, Planch.). The most ancient record of it which I can find is in the "History of the Buccaneers," an old work published in London, in the year 1699. Its use, as an antidote for snakes, and place of growth, are there distinctly stated; but whether on the authority of the natives, or accidentally discovered by the pirates, does not appear. If the former was the case, they must have learned it while on some of their cruizes on the Magdalena, for in the Isthmus the very existence of the tree was unsuspected until about 1845, when Don Juan de Ansoatigui ascertained, by comparison, that the Cedron of Panama and Darien was identical with that of Carthagena. The virtues of its seeds, however, were known, years ago, from those fruits imported from the Magdalena, where, according to Mr. William Purdie, the plant grows in profusion about the village of San Pablo. In the Isthmus it is generally found on the outskirts of forests in almost every part of the country, but in greater abundance in Darien and Veraguas, than in Panama. The natives hold it in high esteem, and always carry a piece of the seed about with them. When a person is bitten, a little, mixed with water, is applied to the wound, and about two grains scraped into brandy, or, in the absence of it, into water, is administered internally. By following this treatment the bites of the most venomous snakes, scorpions, centipedes, and other noxious animals, have been unattended by dangerous consequences. Doses of it have also proved highly beneficial in cases of intermittent fever. The Cedron is a tree, from 12 to 16 feet high; its simple trunk is about 6 inches in diameter, and clothed on the top with long pinnated leaves, which give it the appearance of a Palm. Its flowers are greenish, and the fruit resembles very much an unripe Peach. Each seed, or cotyledon I should rather say, is sold in the chemists' shops of Panama for two or three reals (about 1*s.* or 1*s.* 6*d.* English), and sometimes a much larger price is given for them. *Hooker's Journal of Botany.*

*Sale of Orchids.*—A few plants of Vanda cærulea, just imported, were sold the other day by Mr. Stevens, at from 1*l.* 1*s.* to 5*l.* 5*s.* per lot. Some miscellaneous Dendrobes realised from 1*l.* to 1*l.* 12*s.* per lot. At a former sale Odontoglossum hastilabium fetched from 1*l.* 10*s.* to 3*l.* 3*s.*, the famous Uropedium Lindenii from 1*l.* 18*s.* to 3*l.* 5*s.*, Oncidium candelabrum from 1*l.* 10*s.* to 4*l.*, and Odontoglossum nævium from 1*l.* 10*s.* to 4*l.* 5*s.* Others fetched from 1*l.* to 2*l.* 10*s.* per lot.

*Out Shooting near Vienna.*—When we had quite reached the hunting-ground, I found myself almost alone. Our companions had been dropped by the way singly, like Hop-o'-my-Thumb's crumbs, and formed a line of sporting posts some 20 or 30 yards apart from one another. We then stood at ease for an hour, with a keen wind in our teeth; while a section of our party took a circuit for the establishment of a circle, within which the game was to be hemmed. My friend at this time had an opportunity of introducing me to a few stationary brethren. A fat little Sancho, in dress boots, with a coat much too small for his broad back, stood nearest to us. He was armed with a small Swedish rifle, which was loaded with ball. When my friend presented me to him as "Sir Smith," he answered "Mr. Sir, your most obedient servant." The rest were a motley group of officers in uniform, and men in every costume but what we should suppose to be the right one; fine picturesque fellows with sweeping moustaches, good beards, and gorgeously coloured clothes. A painter might have been glad of them—though certainly an English painter never would have grouped them in a sketch of partridge shooting. At length a hum along the line informed us that the sport was shortly to begin; and a student from Bonn who had included English in his studies turned to me with some excitement, saying, "Sor, if you please now we cotch them will." Assuredly, there galloped hares in plenty down upon us, with their heads up, and the partridges were darting upward like rockets in all directions. "Lie quiet," said I to the student, "for here comes a hare!"—"I fear me not," was the reply. The student, shutting both his eyes, let off at the same time both his barrels, and a horrid howl from my friend's bull-dog told us the result, which was precisely the reverse of that which was either intended or desired. A sharp fire now ran along our line, and the hare fell. When we took him up, it appeared that our stout little friend with the rifle had the credit of one among the lucky shots; for besides being riddled like a sieve, our victim had his head almost blown off. In some alarm at these proceedings, I refrained from firing, in order that I might keep a wary and an anxious eye upon the gentleman who had just shot the dog. My relief was inexpressible, when one of the keepers told me he could do no further harm, precaution having been taken to load his gun with powder only, and not to put in very much of that.—*Dickens's "Household Words."*

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

The season of the year is fast approaching when everything in the shape of flowers are always most scarce, and consequently most appreciated, when they can be had. In the early part of the season, we advised that cuttings of that charming little plant, the Otaheite Orange, should be struck, and forwarded, that they might come in usefully at this time, as neat flowering plants suitable for the tables of the drawing-room or sitting-room; and by placing them now, in a slight warmth, their buds will expand freely, and be ready for Christmas. Older plants will be in fruit and flower at the same time, in which state they are doubly interesting; their fragrance, too, is delightful. A collection of neatly trained pot plants in fruit, such as many kinds of dwarf Oranges, Ardisias, Habrothamnus, &c., are objects of much interest at all times; and a very good effect may be produced by bringing such prominently into view, at a time when flowers are scarce. Plants, with handsome foliage, may be made to play their part also. What is finer than the Ferns, when well grown? And the Calathea zebrina and Dracæna terminalis are also valuable, on account of their beautiful and highly coloured leaves. Some of the early potted Hyacinths, Tulips, and Narcissus, may now be removed from the bed in which they have been plunged since October, to a gentle heat. We always find them to come strongest when plunged in some well worked horse-litter and leaves. These plants will bloom well with with a bottom heat of 70° to 75°, and 55° to 60° top heat, with a little air at all times.

### FORCING DEPARTMENT.

Pineries.—It will be a trying task just now to manage these structures with no other heating material than fermenting litter. Every favourable opportunity should be taken to turn the linings, and if necessary to add to them. Let them at least be protected by some kind of covering from the rain and snow; and if possible, let them be entirely enclosed, that they may of themselves supply a sufficient amount of heat to do away with the necessity of covering the pits during any portion of these very short days. Young Pines are frequently much drawn during winter, and the mischief is not noticed until they are taken out in the spring to be repotted or planted; and then it is that the gardener repents not having given more air, and more light, by keeping the glass clean. We have felt this ourselves, and no doubt others have done the same. If the bottom-heat is 80°, the top may be as low as 55° without the plants suffering; and particular care should be taken that no injury occurs from excessive dampness at the root from any cause. We seldom see plants suffering from being too dry during winter, unless the roots are too near a flue.

### FLOWER GARDEN AND SHRUBBERIES.

The sooner that all tender plants, such as Tea Roses, are protected with some light warm material, the better. Half decayed leaves answer very well, as they do not become frozen, and the wind does not disturb them. Besides this protection, we stick in among them some short Yew branches, to check the cold cutting winds, which do more harm in the early spring, than even very severe frosts. The pruning and tying of creepers upon walls and trellises should now be proceeded with. Take advantage of frosty weather, when the walks are hard, to convey fresh soil to the flower beds; or for doing any kind of work in the flower garden and shrubbery which would damage the walks when not in a frozen state. In extensive gardens there is generally much heavy wheeling to do every winter, and no time is more favourable than during sharp frost. All plants of which any doubts are entertained as to their perfect hardiness, should have some kind of protection afforded them; but in doing this, care should be taken not to go into the opposite extreme.

### HARDY FRUIT GARDEN.

The dressing of fruit trees against walls, with a mixture of a little lime, soot, and tobacco water (or water in which tobacco has been boiled), with a small quantity of glue to fix the mixture to the trees, should now be proceeded with. No scale or the larvæ of any troublesome pests can withstand this simple recipe; and as fruit trees are so liable to the attacks of insects it is well worth the trouble of applying it, even if there are at present no signs of our enemies; for in this, as in all other cases, prevention is better than cure. Some Pear and Cherry trees, which were omitted when this operation was in progress last year, were completely denuded in August by the grub of the saw-fly; while the trees to which the mixture had been applied were quite uninjured. After the trees are dressed over, proceed actively with the retraining; and as soon as Peaches, Nectarines, or Apricots are trained, let the coverings be applied. These should be let down when there is rain or sleet, to keep the branches dry, and thus preserve them from canker and gumming; and also during bright sunshine to prevent the buds from being prematurely excited, which is as necessary at this season as it is to protect the blossoms in spring. The fault of Peaches and Apricots in our climate is their early blossoming; and shading during sunshine in winter is found to keep them back considerably. Take grafts of any good kinds of Pear and Apple which it may be desirable to increase, and lay them well into the ground on the north side of a wall. The wood for this purpose should be the well ripened shoots of last year; and care must be taken to provide only such as are healthy, and perfectly free from all kinds of insects. Cuttings of choice Gooseberries and Currants should be put in; and the Bur Apple, which is a good stock for dessert Apples, should also be struck from cuttings, removing all buds except three or four at the top, so as to get rid of suckers. Handsome standard Currant trees may be quickly obtained, by splitting up old bushes that have many stems. Take them up wholly with plenty of roots, divide them into single stems, trim the roots, and spur the shoots up the stem, as it will bear all the way up; and shorten in the shoots which are to form the future head to within 5 or 6 inches. Plant in good rich soil, and tie them to a stout straight stake, and you have a standard at once. We have some very fine standard Currants made in this way, which are much admired, and they produce the finest fruit.

State of the Weather near London, for the week ending Dec. 11, 1851, as observed at the Horticultural Garden, Chiswick.

| Dec. | Moon's Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Min. | Mean | Of the Earth. 1 foot deep. | 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 5 | 12 | 30.241 | 30.229 | 47 | 39 | 43.0 | 39 | 39 | S.W. | .02 |
| Satur. .. 6 | 13 | 30.221 | 30.204 | 49 | 44 | 46.5 | 41 | 40 | S.W. | .00 |
| Sunday . 7 | 14 | 30.202 | 30.069 | 51 | 40 | 45.5 | 42 | 40½ | S. | .00 |
| Monday 8 | 15 | 30.214 | 29.919 | 54 | 25 | 39.5 | 42½ | 41½ | W. | .00 |
| Tues. .. 9 | 16 | 30.189 | 30.091 | 54 | 52 | 53.0 | 42 | 42 | S.W. | .09 |
| Wed. .. 10 | 17 | 30.057 | 29.981 | 53 | 33 | 43.0 | 44½ | 43 | S. | .00 |
| Thurs.. 11 | 18 | 30.521 | 30.366 | 51 | 27 | 39.0 | 45 | 43 | W. | .00 |
| Average.... | | 30.235 | 30.122 | 51.3 | 37.1 | 44.2 | 42.3 | 41.3 | | .02 |

Dec. 5—Hazy; cloudy; uniformly overcast.
— 6—Overcast; densely overcast; cloudy.
— 7—Fine; cloudy; slightly clouded at night.
— 8—Cloudy; clear and remarkably fine; slight frost.
— 9—Foggy; hazy; densely overcast; mild at night.
— 10—Cloudy and mild throughout.
— 11—Clear and very fine; foggy at night.
Mean temperature of the week, 3½ deg. above the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Dec. 20, 1851.

| Dec. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 14 | 45.8 | 33.6 | 39.7 | 13 | 0.32 in. | 2 | 2 | 1 | 2 | 3 | 6 | 4 | 1 |
| Mon. 15 | 47.0 | 36.0 | 41.5 | 14 | 0.50 | 1 | 2 | 1 | 3 | 7 | 6 | 3 | 1 |
| Tues. 16 | 46.6 | 36.3 | 41.4 | 14 | 0.68 | 1 | 3 | 2 | 2 | 4 | 5 | 4 | 5 |
| Wed. 17 | 46.6 | 34.8 | 40.7 | 14 | 0.37 | 3 | 2 | 1 | 2 | 3 | 8 | 4 | 2 |
| Thurs. 18 | 45.5 | 35.2 | 40.4 | 12 | 0.33 | 2 | 6 | 1 | 1 | 4 | 7 | 5 | 1 |
| Friday 19 | 45.3 | 36.5 | 40.9 | 13 | 0.38 | 2 | 4 | 2 | 1 | 3 | 8 | 3 | 1 |
| Satur. 20 | 44 3 | 33.8 | 39.1 | 9 | 0.76 | 1 | 6 | 1 | 2 | 8 | 4 | 1 | 2 |

The highest temperature during the above period occurred on the 16th, 1849—therm. 58 deg.; and the lowest on the 14th and 15th, 1846—therm. 13 deg.

## Notices to Correspondents.

Back Numbers: Full price will be given for No. 25, 1846; and Nos. 38, 42, and 48, 1850.

Birds—Canaries Living in the Open Air: *S.* This little episode appeared in the *Gardeners' Chronicle* of May 17, forming No. XXX. of the treatises on "British Song Birds." We shall, as we have already said, pay marked attention to this subject at the proper season; the more readily, as the experiment has already been made by our Most Gracious Majesty and Prince Albert, at Osborne, and with success. Of this, more by and bye.—*Olney.* You may, indeed, anticipate a treat; for however interesting the matters hitherto discussed, those which have to follow, as each bird renews his song in the coming year, will be even more so. We have, as yet, scarcely made a beginning.—*J C E.* The paper arrived safely. Many thanks for it, and also for the accompanying letter.—*Chatteris.* We feel obliged by your kind researches, and are glad to have such a watchful eye placed at our disposal.—*E C.* Your birds have gone into a *second* moult. It is as bad to keep them in an over-heated room, as it is to leave them exposed to cold. Reduce the heat gradually, and do not expect any "song" from your little prisoners till next spring.—*Novice.* The most lively companion we can recommend you, is a canary. Hear him sing before purchasing him. Kindness will soon render him familiar.—*Jane F.* It can only be acquired by long practice. The eye, certainly, *has* much to do with it.—*Canterbury.* On the 3d of January, next ensuing; we shall then go on regularly.—*Maidstone.* The feet are diseased solely from dirt. If you wish to keep your birds well, you must keep them clean.—*E A H.* Your bird has the cramp. Give him a little Maw seed, and keep him warm.—*Eliza N.* The tail-feathers will reappear in the spring, and your little friend's plumage will be bright and attractive as ever in a few weeks afterwards.—*Keswick.* In about a month, which will be just the thing for your proposed trial.—*P N.* They are very showy birds, and very amusing in their habits, but of little intrinsic value.—*Fanny.* They are hardy enough to endure any amount of cold; but, in confinement, should be kept out of the reach of draughts.—*J F W.* A "divorce," under the circumstances stated, is sound law; and let it be, from the peculiar atrocity on the part of the husband,—"*a mensa et thoro.*" Your bullfinches are "unequally yoked;" and the necessary consequences are but too obvious. Fortunately for them, the case need not, as with us, be carried into 'Doctors' Commons? Nature has kindly given them 'cheap law?' *W K.*

Glass Pipes: *Rev W F C.* We cannot answer letters privately; you will find them advertised at page 770 of last week's paper.

Gooseberries; *H D.* The following varieties will afford a good succession:—Early Sulphur, Early Green Hairy, Rob Roy, Early White, Keens' Seedling Warrington, Early Black, Small Dark Rough Red, Red Champagne, Woodward's Whitesmith, Melling's Crown Bob, White Fig, Pitmaston Greengage, Red Turkey, Rumbullion, Leigh's Rifleman, Red Warrington, Massey's Heart of Oak, Edwards's Jolly Tar, Cleworth's White Lion, Collier's Jolly Angler. The Elton Strawberry is later than the British Queen.‖

Names of Fruits: *W H S.* 1, Northern Greening; 2, Old Nonpareil; 3, Hawthornden; 4, New Rock Pippin.‖—*E S.* 1, Court Pendu Plat; 3, Golden Noble; 6, Dutch Mignonne; 10, Minchall Crab; 30, Beurré Diel.‖

Names of Plants: *A Constant Subscriber.* Quercus infectoria for the cup, and Ceratonia siliqua, the Locust tree, or Carob tree, for the seed. There is no good book on the subject; Loudon's "Encyclopædia," and "Cottage and Villa Architecture," contain some information.—*B K C.* 1, Hibiscus acerifolius; 2, Nicandra physaloides; 3, Pharbitis diversifolia.—*W C C.* Pistacea lentiscus, the Mastich tree.

Seeds: *P N.* The pulp is useless to them, and is much better away, if they are packed as we have advised. Mix the seeds in dry loam, and then ram the mass down hard into the kegs.

Sugar: *C R D.* We do not believe that lead is used anywhere at present in purifying sugar in the manner to which you refer. It is true that common treacle sometimes contains a minute trace of lead, derived from the use of leaden vessels, white paint, &c., but the quantity is very small indeed, and you need not be afraid of its injurious effects.

Superphosphate: *C E W.* Cabbages, Cauliflowers, and all sorts of root crops like it, if dissolved in water, and applied to the soil while they are growing. If you give it to others, you must dilute it largely, and apply it every now and then, like other liquid manure. Made as yours is, there is danger of its burning the roots.

Vine Borders: *W F.* Chalk makes a very good bottom. Mr. Mitchell, the celebrated Grape grower, at Brighton, has his borders on nothing else. The main bulk of the compost should be rich turf, to which may be added bone-dust, or broken bones and cow-dung. Drain well, and after your border is made, cover the surface in winter with some material that will throw off heavy wet. ‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Turnip Manure, per ton | ... ... | £7 | 0 0 |
| Superphosphate of Lime | ... ... | 7 | 0 0 |
| Sulphuric Acid and Coprolites | ... ... | 5 | 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

FOSSIL BONES AND PSEUDO-COPROLITES (FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD and Co., Artificial Manure Manufacturers, Ipswich, Suffolk.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TO LANDOWNERS AND AGRICULTURISTS. EXTENSIVE DRAINAGE.

MESSRS. EASTON AND AMOS (Consulting Engineers to the Royal Agricultural Society of England), have just erected an

APPOLD PUMP, AT WHITTLESEA MERE,

which is 20½ times larger than the one exhibited by Mr. Appold at the Crystal Palace, and five times larger than any of the kind yet made. This powerful pump was publicly tried on the 12th of November, in the presence of the landed proprietors and farmers of the county, assisted by several scientific gentlemen, and at various lifts from 1 to 10 feet. At two to three feet, it raised 101 tons of water per minute (which would cover an acre of land one inch deep); and at five feet, it raised 75 tons per minute.—Grove, Southwark.

A PRIZE MEDAL FOR SUPERIOR LOCKS WAS AWARDED TO J. H. BOOBBYER, AT THE GREAT EXHIBITION OF 1851.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STUBCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blackfriars, London; and 36, Seel-street, Liverpool.

ADULTERATION OF FOOD.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, begs to call attention to his ACHROMATIC MICROSCOPES (warranted good) which will be exchanged if not approved of. These Instruments will define the Circulation of the Blood in the Frog's Foot, the Saw in the Sting of the Wasp, the Comb in the Spider's Foot, the beautiful form and varieties of Pollen in Flowers and their Structure, the Scales of the Butterfly's Wing, and also in many instances Adulteration of Food. It is a very interesting companion, and will pass away usefully many a leisure hour, the fund for observation being inexhaustible. Price for No. 1, 3l. 12s.; No. 2, 5l. 15s; No. 3, 9l. 10s. A descriptive Book, sent post free, on receipt of three postage stamps. Prepared objects, 12s.; injected do., 30s. per dozen.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE, PEAT CHARCOAL, impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

SMITHFIELD CLUB CATTLE SHOW. STAND. No. 164.

READ'S PATENT FIRE AND GARDEN ENGINES, upon his new patent principle, which, for power, portability, and simplicity of action, surpass anything of the kind hitherto invented.

PATENT SUBSOIL PULVERISER, PATENT VETERINARY INJECTING INSTRUMENTS, IMPROVED HOLLOW PROBANGS, for relieving Hoven or Choked Bullocks, Sheep, Calves, &c.

GARDEN MACHINES and SYRINGES of every description, manufactured only by

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Manager of Farm.—R. Valentine.
Assistant to Chemical Professor.—A. Williams, M.R.C.S.

THE NEXT SESSION will begin early in FEBRUARY. Students are admitted either as Boarders or as Out-Students. The annual fees for boarders vary from 45 to 80 guineas, according to age and other circumstances. The fee for out-students is 40l. per annum. The College course of lectures and practical instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education. Prospectuses and information can be had on application to the Principal.

**The Agricultural Gazette.**

*SATURDAY, DECEMBER* 13, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Dec. 17—Agricultural Society of England.
THURSDAY, — 18—Agricultural Imp. Soc. of Ireland.
WEDNESDAY, — 24—Agricultural Society of England.

BEFORE we attempt to apply the meteorological figures which we gave in a former Number, in explaining some of the causes of our varied systems of agriculture, we must first be convinced that these systems are actually required. For this end we shall take a general view of the subject in its broadest features; and we think it will appear patent to every one that our chemistry of vegetation must have a little more elasticity in it, if it is to assist us in solving the numerous problems of a practical nature by which we are beset. Mr. PUSEY, in the last Number of the Royal Agricultural Journal, is still confident that at present Rothamstead must be considered "as the principal source of trustworthy scientific information on agricultural chemistry." Now we would say to Mr. PUSEY, what we would say to any one else, "If you think you can account for the varied systems of British agriculture by the light of Mr. LAWES' chemistry, just try it." If our best practical authority is still going to encourage our hard-working and most useful chemists to contentment, with a mere Pisgah-view of the promised land of scientific agriculture, and is not to direct them when they wander, he may depend upon it that others will go in and possess the territory.

We have already given our opinion of Mr. LAWES' experiments, and we by no means under-rate his labours—he has done much to consolidate our opinions on many special points. The elaborate experiments of Mr. HANNAM and Mr. GARDNER, in the Transactions of the Highland Society, are, however, as valuable for practical purposes, seeing that these were made under less artificial conditions. For on this account Mr. LAWES' figures will by no means bear that rigid application which many imagine. We do not think that Mr. LAWES' generalisations on the chemistry of vegetation are an improvement on the broad and deep views of LIEBIG, nor do we think that LIEBIG has been quite fairly dealt with on the ammonia question. We say deliberately that Mr. LAWES has actually shown his own experiments to be "entirely devoid of value *as the foundation for general conclusions*." But for special purposes they are exceedingly valuable. His last contribution to the Journal of Agriculture is but an iteration of his former opinions; but as he draws particular attention to a subject which happens to lie across our path, we make his propositions the basis for better developing the principles which we are endeavouring to trace. And to show that some of the difficulties with which he is struggling are of his own creation, we appeal from the narrow and limited horizon of Rothamstead to that of a much wider experimental field. Mr. LAWES writes:

"There is another point in connection with the great demand made by the Wheat plant upon nitrogen supplied to the soil, to which we draw particular attention. De SAUSSURE, DAUBENY, and DRAPER, have found that nitrogen was really given off during the growth of certain plants; but, in a practical point of view, the question still arises whether this is uniform with all the different plants which enter into a rotation. It would appear that there is evidence of a superior power in the leguminous, as compared with the Graminaceous plants, of obtaining their nitrogen from the atmosphere rather than from the soil; or it may be supposed that the expenditure of it during the growth of the plant is greater in the one case than in the other. In support of the view that leguminous plants do possess a superior power of reliance upon the atmosphere for their nitrogen, and, indeed, that it is to this property that they materially owe their efficacy in rotation with grain, we may refer to the admirable investigations into the chemistry of agriculture of M. BOUSSINGAULT. The rotation usually adopted at Bechelbronn, and throughout the greater part of Alsace, is as follows: Beet-root, Wheat (17 bushels), Clover, Wheat (24 bushels)."

The chemists and agriculturists of this country must know a little more of the philosophy of rotations nearer home before they can expect to derive much practical benefit from the agricultural practices of one of France's fairest and richest provinces. But why does Mr. LAWES not give the results of his own experiments on leguminous plants, rather than refer to the rotation of Alsace? He expends much care in dividing plants into classes which he imagines have less or greater powers of relying on the atmosphere for their nitrogen. Now this *is* the case, to a certain extent, when they are grown under the same conditions, but this difference applies as much to species as to classes. In this respect the Wheat-plant will no more admit of being taken as a type of the Graminaceous order, or even of the cereals, than the wild Mustard can be taken as a type of the nitrogen-collecting powers of the Turnip. But on the other hand, there seems to be no inherent difference between plants by which one class relies more upon the atmosphere for nitrogen than another. It is to the conditions in which they are or can be grown that we must look, when we would account for their opposite qualities and requirements taken in connection with their known habits and functional resources. This at once leads us into the discussion of the circumstances of vegetable growth, and the consideration of the specific effects of the excess or deficiency of any of the multifarious elements of growth.

We shall first consider the widely opposite characters of some of the members of the Graminaceous plants and the analogy which some of them bear under certain conditions to the leguminous plants—embracing Clover, Beans, Peas &c.

So far as we can judge from the results of two very opposite systems, there is reason to believe that the plain of Alsace is as fertile as the "golden vale" of Limerick in Ireland. In the latter, however, there may be a continual succession of Graminaceous plants—some ameliorating and restoring fertility to the soil, while others are scourging, and exhaust it. The simple and primitive rotation of Grass! Grass! Grass! Oats (50 bushels); Wheat (30 bushels); Oats (50 bushels), is much more productive in nitrogenous seeds, than the highly artificial one of Alsace. There is, surely, no evidence here that all the members of the Graminaceous order have less nitrogen in the produce than is supplied in the manure. For "the annual expenditure of nitrogen is completely replaced by means of the pastures." (LIEBIG.) The Grasses under the skies of Limerick fulfil the office of restoring the nitrogen to the soil which has been spent by their congeners, the cereals, as effectively as the Clovers of Alsace, the Lucerne of Provence, or the Turnips of Norfolk. The granitic soils of Aberdeenshire are comparatively barren, when contrasted with the calcareous loams of Alsace; but if the mineral condition of soils is favourable in the former (Aberdeenshire), they rapidly enrich themselves under pasturage. But such a system as this never would succeed on a similar class of soils in Bourbonnois, where they would probably be abandoned to Broom for some years, to recruit the exhaustion brought about by bearing several miserable crops of Rye or Oats. In the drier portions of France, it is only in the irrigated meadow that the Grasses are such powerful agents in extracting from the atmosphere those elements which sustain animal existence.

In many parts both of the New and Old World, Wheat is watered like the Grasses with the best results. But while this operation can be successfully carried out even under our cold humid skies, for the Grasses, it can only be practised on the Wheat plant where the temperature is high combined with a clear dry atmosphere. Experience has hitherto been against the practice of watering the cereals in France, except in extreme cases of drought. In the arid climate of Spain, the productive powers of the country are almost entirely centered in its well watered valleys, and three crops of Wheat are sometimes grown in one year in the Vegas of Granada. (INGLIS.) There is little doubt that the Wheat plant in these cir-

cumstances can rely to a much greater extent on the atmosphere for its nitrogen, than when it is grown in the cold dry springs of Northern Europe. The Wheat plant is not necessarily one that requires much nitrogen in the soil, any more than its congeners, the Grasses; it is entirely a matter of circumstances. In the moist and warm atmosphere of Xalapa in New Spain, Humboldt found Wheat was raised solely for fodder, for there it had no tendency to produce seed. In that region, it would be no greater test of the fertility of land than the growth of the common Grasses in Britain. But Wheat is a most exhausting plant—taking a large quantity of manure to grow it—in the higher latitudes of North America and Europe.

It may be stated as a general law that those plants which can be grown both in spring and in autumn, require more highly nitrogenised manures in the former than in the latter season; or, in practical language, they are very truly said to exhaust more when raised in spring than in autumn. Thus, those crops which are often grown by the farmer with manures that are deficient in nitrogen, demand an enormous supply of that valuable element in the hands of the market-gardener, when they are grown out of their agricultural season. This principle can be traced through a great number of our cultivated plants, and it holds out a means of solving points of much practical importance, that we may in vain look for in any other direction. It is also in the nicer shades of this and similar modifying principles, and in the analogy which one plant bears to another, under given conditions, that we can expect to arrive at a rational explanation of the cause of the different exhausting powers of the cereals. But we must always keep in view that there are many points of differences in plants which we can never fathom, any more than why one species of plant is externally different from another.

Just look at the requirements of Wheat and Rye. The habits of the Wheat plant require that it should be sown in autumn over the continent of Europe. It is very sensitive of solar heat, and on the return of spring it is amongst the first of the Graminaceous plants to push forward its leaves to the extreme cold and dry atmosphere of European springs—even while the Grasses in the pastures are yet dormant, like the Oak, and will not unfold their tender shoots until the air becomes more genial and adapted for fulfilling the functions which Nature has assigned them. The large quantity of manure required by the Wheat in Europe and North America is probably a consequence of the ungenial conditions of the first stages of its growth. It is a fact which has been long recognised on the continent of Europe, that Wheat is more exhausting than Rye; or in other words, the former requires much more manure or a richer soil to grow it than the latter. Rye is even grown as a forage plant in Europe, after the land would not carry a crop of Wheat. Wheat might be as easily grown, and as productive as Rye in some parts of Mexico, but it is not so in Europe. It would therefore appear that, owing to certain atmospheric conditions peculiar to Europe, Rye gets rid of less nitrogen in the manure than Wheat does; this is plainly revealed in the history and necessities of the agricultural systems.

Some of our finest qualities of Wheat are grown in the countries adjoining the Baltic; but, although Wheat brings a much higher price than Rye, the extent of land in Wheat bears a small proportion to the extent in Rye, because the latter can be grown with much less expenditure for manure. This is the simple reason why the lower classes in the greater part of Europe subsist on the black, instead of the white bread. Two crops of Wheat are generally believed to exhaust the land as much as three of Rye; this is particularly seen when the soil is poor or out of condition; in these circumstances, Rye will often be grown with advantage when it would be out of the question to grow Wheat. The productive powers of the climate of the continent of Europe for Wheat are very much exaggerated; but what can we expect to learn on this subject when every one is impressed with the false idea, that the amount of summer temperature is the ruling element which determines the whole matter. We are satisfied that many of the fine soils of France would be more productive, for Wheat and all the other cereals, if they had been placed in the same atmospheric conditions of many parts of England, and even of Scotland. But the opposite opinion is so firmly seated in the popular mind, that it is almost useless to write against it. One is very apt to look upon the agriculture of much of the continent in a very unfavourable light, from not being aware of the comparative productiveness of Wheat and Rye. It was from a cursory view of this matter which led Arthur Young—the soundest practical philosopher modern farming has had—to exclaim, "the quantity of Rye in every part of France, even in the richest provinces, is probably one of the grossest absurdities in the agriculture of Europe." Certainly it does look very absurd to see such an extent of fine land under Rye, where the climate is generally supposed to be so very superior for the growth of Wheat; but it is the want of manure that is the great drawback to the extension of its cultivation, whether in Italy or in Ireland. Even in the rich soils of Flanders, with their overrated system of farming, the Wheat crops have a shabby appearance in sight of the luxuriant crops of Rye; there Wheat encroaches on the breadth of land sown with Rye, as the manure increases on a farm in much the same way as it has done over the spring crops in Scotland with the increased production of meat on a given space. The prime difficulty in Scotland also is to get a sufficient supply of manure to grow a large breadth of Wheat—to proscribe and limit its cultivation on the farm is only on a par with the policy of the fox in the fable, who despised the luscious produce of the Vine, as it was beyond his reach. In many parts of Britain, however, the conditions of soil for growing Wheat are separated from those which influence the produce of the spring crops by a much wider boundary than that of the Wheat and Rye on the continent of Europe; and there is no country where there are greater facilities for studying the causes which modify the exhausting qualities of the cereals and other plants, if we do not tie up ourselves to inflexible and unnatural theories. *R.*

## ON LAND DRAINAGE.

Under the term drainage is included the regulation of the water-level in loughs—the changing, improvement, and new forming of river channels, and the sewerage, draining, water supply, &c., of towns. But for our purpose, the most important office of drainage is to provide for the escape of water from the soil which supports and nourishes plants, whose existence and growth are modified or prevented by the action and influence of water, or by want of it. The method of effecting this desirable object is what is called thorough drainage, and though cases of any of the other provinces of drainage, which we have mentioned, may demand the attention of the agriculturist, it is principally with this and its various applications that he shall have to deal. In all these cases it is very necessary to be able to calculate the quantity of water which will be discharged by given relations, or under given circumstances of inclination, size, and shape of conduits, &c. To give a rule applicable to all cases, would be to embody in a formula almost the whole subject of hydraulics or hydrodynamics; and though it is done, and to the mathematical scholar appears simple, yet to purely practical men it presents apparent complexity and difficulty. Leaving it therefore to what we have in previous lectures said, and to what we shall say when treating it as a separate and distinct department, applicable to this as well as to numerous other cases, we shall rest satisfied with introducing the following practical rule, which will furnish the velocity with sufficient accuracy for ordinary purposes.

Multiply the hydraulic mean depth (in feet) by the declivity per mile (in feet), extract the square root and subtract one sixteenth of itself from it, the remainder will be the mean effective velocity in miles per hour; from which the amount of discharge may be calculated. The quantity discharged equals the velocity multiplied by the area of the section of conduit, $Q = v.s.$ It should be here explained that the hydraulic mean depth is the depth of the rectangle, whose area is equal to the sectional area of the stream, and whose base is equal to the line of contact between the water and the channel, or what the French call the *périmètre mouillé*. Hence in a circular conduit, such as a pipe, it is one half of the radius, or one fourth of the diameter.

Example:—Find the discharge of a pipe or stream (rectangular) 6 feet broad and 2 deep, with a fall of 5 feet per mile.

Here the hydraulic mean depth = 1-2 feet, wherefore the velocity is 2-3 miles per hour nearly. Therefore a mass of water, 2-3 miles long, 6 feet broad, and 2 deep (= 5388 cube yards, or 145,464 cube feet), would be delivered every hour, which is equal to 2424 cube feet, or nearly 15,000 gallons per minute. Such is the quantity of water which can be conveyed away, and such is the method of determining it for given circumstances.

The next preliminary consideration is, the determination of the quantity of water which *must* actually be conveyed away. It is principally surface or rain-water which we have to guard against. The quantity of rain varies in different places, and each must determine it by his own or his neighbour's rain gauge. It is found by careful observation here that the greatest quantity is ·75 inch, or $\frac{3}{4}$ of an inch in depth all over the surface in 24 hours. This is the maximum, when *it* is provided for the rest is sufficiently safe; for we need not allude to the learned gentleman who cut a small hole for a kitten, though he had already provided a door for its mother.

Now it has also been found by careful observation that of the water which falls on the surface of the ground only *one-half* passes off through the best constructed and most efficient drains. We have therefore only a ·375 inch deep sheet of water to be delivered in 24 hours. This on an acre equals 13,590 cubic feet, or &c. gallons, &c. From these two principles the smallest pipes that may be used can be determined in all situations, and here it may be observed that the joints of the smallest pipes can be shown to be sufficient for the entrance of all this water, or even more.

As an illustration of this method and its applicability, take the case of a 50 acre field. It will be found that more than 47 cubic feet of water must be discharged per minute in the extreme case to be provided against. Now, would one-half inch pipe be sufficient? Let us see. The area of section of this pipe is ·19,635 square inch, and supposing a fall of 20 feet per mile, which is a great one, the velocity would be found to be nearly 52 feet per minute, and $Q = 52 \times ·00,136$ (= the section of pipe in area in square feet) = ·6727 &c. cube feet of water delivered per minute. Showing that this pipe would not be at all adequate to discharge 47 cubic feet under the circumstances supposed.

By taking the instance of a 2 or 3 inch pipe, and determining its delivery under assumed circumstances, the reader may become familiar with this method of estimating the effects of pipes, drains, rivers, &c., compared to any quantity of water which it is necessary to convey from one place to another.

A five-inch pipe would give a velocity of six miles an hour, and is therefore admissible in this case. Such a velocity would not wear hard materials nor cause any great mechanical mischief. When a river meanders through a flat country, its course might be straightened, its channel systematically, suitably, and properly formed, and simultaneously the ground may be drained and improved, the whole being done with a very moderate outlay; but of this case we shall speak more in detail when considering the conditions of proper and possible irrigation.

It is frequently necessary to execute some cuttings and embankments in drainage and irrigation, but we cannot detail the methods of making these, at least in this place. They have been already pointed out. Rivers are often modified for the purpose of navigation, &c. Engineering is then called in, to exercise a very extensive influence; but we cannot for the present dwell on these cases. We must now proceed to discuss the methods of thoroughly draining land for agriculture. It is surprising to see what a quantity of the country still requires the skill and energy of the drainer, though every one admits the advantages of this system of improvement.

It was early observed that in valleys and hollows lined with stiff retentive clay, the water which fell on their own surface, or on that of the surrounding eminences, collected in reservoirs under the surface, which broke out in springs in the sides or bottoms, and kept their vicinities continually in a state of wetness, destructive of healthy vegetation. Though this evil would necessarily impress itself on the attention of the farmer, yet in many cases it appeared impossible to take the water away, owing to the obstruction of high ground all round it, as well as to the retentive character of the land itself. Many cases, however, admit of easy and effectual treatment.

If it be found by boring that the retentive soil lies on a porous bed, which often happens, a complete remedy will be afforded by cutting a well through to this bed, and conveying the water into the well by small drains from the various springs or points at which the water collects. In some cases tapping with a geological auger will be quite sufficient to let the water escape through such a porous substratum. When no such porous substrata are found, a drain of suitable size must be cut from the spring, or through them all, if many exist, and conveyed to a lower level to discharge itself. This drain may in some cases even be partly composed of a syphon bringing the water over some eminence when the wet soil is *land locked*, so to speak. All these cases require the exercise of some skill in their treatment. Their occurrence is only exceptional, though it is striking, and calls loudly for relief when it does exist; and no doubt many places may be much improved by it at a very small outlay of capital. It was to this subject and on these principles that Elkington founded his system of drainage. His chief error seems to have been—ascribing all necessity for drainage to the same circumstances, and treating all on the same principles. No doubt the method has merit, and finds many instances where it may be advantageously applied. But it is certain that all land may be improved by drainage, and that a much more extensive, nay universal system is needed. This is supplied in thorough drainage, which has a variety of other names, such as parallel drainage, &c., and which we now consider.

Thorough drainage consists in forming a main drain, commencing it at a low level to which it is intended to conduct the water to be there discharged, and carrying it up through a low part of the ground to be drained, submains leading from this main at various points and in different directions, along other hollow parts of the ground, where any such exist, and minor drains, which are laid at suitable distances apart, parallel, or as nearly so as may be to each other, and also nearly as possible at right angles to the main or submain to which they flow.

The materials, expense, distance apart and depth of these drains, are still much canvassed, and much that appears ridiculous is said on the subject. We shall consider these subjects successively, and we trust that we shall settle them very considerably.

Regarding the depth, on which we shall find the other questions considerably dependant, it must be evident to every one that when a soil is stiff and retentive the water cannot make its way through it, but must flow

along the top of this stiff clay in finding its way to the drains. In other words, it gets very little lower than the vegetable mould, which must be rendered porous to some extent by roots of plants, even if it were not moved by the plough. But the water will not be able to find its way far, having so many obstructions, or if it must get away to a distance by the force of its own weight, it will remain a ruinously long time in doing so, and will stagnate and injure vegetation. Deep draining would have no adequate advantage in this case, as the water must flow to the edges and down the sides of the drain, not making its way through the soil directly to the bottom. The drains cannot draw from great distances, whatever may be their depth.

From these two considerations, namely, of the obstruction to water flowing far, on a nearly horizontal surface (that of the clay), and of the inutility of deep drains (since they cannot draw to a distance which is very great), we infer that in stiff retentive cold soils, drains should approach the minimum depth and distance.

On the contrary, in gravelly and porous soils the water makes its way down from the surface and filtrates through the subsoil to almost any distance and depth. Hence in this case deep drains will draw from distances proportioned to their depth. These two cases would best be illustrated by the use of a diagram.

Deep drains at considerable distances therefore seem most suitable for porous, gravelly, and loose subsoils. They may in this case reach the maximum depth and distance. It thus appears that both deep and shallow drainage have their respective advantages, that both are required and applicable; where then can be the use of so much discussion and altercation on the subject, as appears in all the journals of the day which notice agricultural interests and improvements?

We have now to point out what are the *minimum* and *maximum* of depths and distances to which we have referred.

The water entering the pipes, stones, conduits, or whatever else conveys the water along the drains, must be previously filtered, so that no deposit may be made which would obstruct the passage. Hence some layer (clay for instance) must remain unmoved between these pipes and stones, &c., and the tillage or surface mould. Supposing the plough to move the soils to a depth of 12 inches, and allowing 6 inches for this immovable layer, and 9 inches for the stones, &c.; we obtain a minimum of 2 feet 3 inches, for a general rule we shall say 2½ feet for the minimum depth of a drain in arable land. In pasture land or water meadows they need not be so deep. The distance between such drains may be from 20 to 30 feet. The maximum again depends on the facility of forming the drain, as we have seen that it does not depend on the soil. But as a deep drain should be wide at top, to allow men to work at great depths, we question whether it would be economical to make any drains deeper than 5 feet. This we shall state as the maximum, to be filled with materials so near the surface as the abundance of such materials allows; but not of course nearer than the 20 inches for tillage and filtering stuff. With this depth the drains may be placed at a distance apart of 60 feet. Between these limits the nature of the soil must suggest to the skilful drainer what dimensions he will choose. Practice suggests the following relations:—3 feet deep, 33 feet apart; 4 feet deep, 48 feet apart, &c. &c.

It is also a result of practical observation that by doubling the depth you may drain one half more surface, and three times as much soil. This is only true in the case of porous subsoils. One other circumstance remains to be adverted to, namely, that when the fall is slight an increase may be required to be made by varying the depth of the drain. Mains and submains must always be from 4 to 8 inches deeper than those drains which flow into them, in order to increase their draught of the water from these minor conduits. Regarding the dimensions of each drain in cross sections, it needs only to be mentioned that it must be such that a man can conveniently stand and work in it. It may be 15 inches at top and taper down to 3 or 4 at bottom, according to the nature of the filling materials. If pipes be used the bottom of the drain should just be capable of receiving them.

The drainer having decided on the distances of his drains, and marked them on his plan, proceeds to stake them out on the field, and should make models and gauges of wood, to ascertain that the labourer has cut them to the form required by the specifications, and also a level (such as the A level) to try the rates of inclination, which should be made sufficient to cause the water to flow, yet must not be too great, so that the soil would be worn away.

We have said that all land may be improved by drainage, but many cases of wet land which demand immediate attention occur. Delay in drainage is positive waste of the legitimate produce of the soil.

The usual symptoms by which these cases may be detected, and by which, in general, wet land may be known to require drainage, are,—1st, that it produces coarse Grass, much weeds, rushes, or in general vegetation which possesses the characteristics, in some degree, of aquatic plants; and 2d, that when tilled, it appears dark and cold after rain, while the surrounding dry ground looks comparatively light in colour, and hearty; and 3dly, that in every case wet ground feels hard and inelastic to the tread. From these symptoms the practical man soon decides when drains are needed, and simultaneously the method of forming them to advantage.

The result of draining immediately appears to be beneficial, and shows itself in increased and healthier crops, more luxuriant and matured at the season of ripening. The explanation of these changes is, no doubt, supplied by the facts, that by the combined and alternate action of air and water, much matter is made available to the plants by chemical changes and mechanical action, such as solution and transportation, which was not before suitable to their nourishment, or within their reach. If the water lies in the subsoil, the air cannot act upon it below that water, and it is known that the roots of plants do not penetrate lower down than they find air. Many other equally rational causes might be assigned were any argument needed to prove the importance of this treatment of wet soil. It is wet soil which in seasons of drought are most likely to lack healthy moisture. It becomes hardened, cracked, and caked, so that the dew only falls on its surface to escape again in the first hour of the succeeding sunny day, which otherwise would cause the rejoicing plants to grow in vigour, refreshed by the cooling draught of evening. It never is spongy. In pasture land open drains may serve very well, but they fill up and are so liable to be obstructed by matter falling that they will be found as expensive in the end as thorough drainage. In all cases of drainage the subsoil must be examined by opening into them a short drain to see it. This preliminary reconnoissance must precede all conclusions of form and position of drains. It is therefore the first operation to be performed.

*Materials.*—Where stones can be easily obtained they are perhaps the most economical materials for drainage, and will serve very well, if carefully put in. The mains and submains should be formed by placing the stones so that a duct of triangular section is formed throughout:—Thus ▲ the triangle should be as nearly equilateral as possible, and should rest on its base that it may not sink into the clay and get choked up. Small stones should then be put in on it. The stones for all drains should be broken, but not too small. A little straw or brushwood placed on them to prevent the mould getting down among them is an indispensable requisite. The mould may then be pushed in; but the turf, when carefully removed in the opening of the drain and placed on the stones in filling in, serves admirably for this purpose. Where stones are not in abundance without great expense for quarrying, carriage, &c., tiles may be used. The circular tile now seems to have established its character as the best and most economical. Certain it is that it suits most the purposes of drainage, completely supplying all the requisites to a good draining conduit.

A drain should never be placed close to a fence, else the roots of trees, &c., get in and stop it up; besides vermin are more likely to lodge in it if it is near hedges, &c. It is difficult to say what the expense of drainage ought to be, so much depends on the price of labour, the nature of the soil, size, &c.; but 3*d.* per pole may be taken as a fair average, which will enable anyone to compute the expense of a given quantity of work approximately. Bricks, peat, and Larch tubes, have in many localities been found cheap and efficient materials for forming drains, when stones and pipe tiles could not be conveniently obtained. The price of tiles is very uncertain, varying with their size, &c., from 10*s.* to 25*s.* We need not here advert to the many excellent drainage tools which are now so commonly sold, and used everywhere throughout the country.

In conclusion, we have only to express our astonishment that so much discussion should exist about the depth of drains—since their useful depth in any situation can be settled to a mathematical demonstration, and therefore admits of no doubt. Yet we find silly people still raising the question, and short-sighted individuals who only see as far as the boundary of their own respective premises, setting up a favourite depth and distance, which *they* would apply in all cases. True, it would only involve a little additional and unnecessary expense, and therefore they are quite at liberty to indulge their foolish fancies on their own territories; but we regret that this will not satisfy them. They must be out in print and try to instruct, while they only mislead, as often as they find innocent or ignorant readers and practitioners.

We have also to regret that very much land still remains in its primeval state of neglect and humidity. How often one sees a farm cultivated almost beyond its capabilities, money expended on artificial stimulants to vegetation, and lazy men going idle for want of work, or crying out against the introduction of improved machinery for performing useful labour lest *they* should be disengaged; and in another tenement, a few perches distant, wet, unreclaimed native land, requiring only labour to double its produce. Much agitation is kept up about the best manures, while not one-fourth of the land is prepared for the beneficial application of any, to the full extent which skill alone directing labour would effect. Yet every man must not be his own drainer, unless he first studies the principles; or he is likely to incur much more useless cost than would remunerate the professional practitioner in this department. It is almost painful to see what waste is caused by inattention to drainage and irrigation.

Frequently a river may be seen lazily wending its way to be drunk up by the ocean in dry weather, when it might be made to play a most important part as the farmer's friend, and the same stream in times of rain comes with resistless force and carries off his grain and half the food of all his crops, as if in wicked retaliation for his carelessness and neglect of it. This is a subject, however, which we purpose to resume at no very distant day, and we shall therefore now conclude with humble wishes that some people may have been improved in their notions of drainage by our earnest efforts. *Lecture by J. G. B. Marshall, B.A., C.E., Professor of Engineering, at Royal Ag. College, Cirencester.*

## Home Correspondence.

*Game.*—What! has the old poacher trapped his reverend opponent along with all the hares and rabbits round Manningtree and Wix — 3000 acres of first-rate land, all highly cultivated, and not a hare or rabbit to be seen. Is it in the middle of these 3000 acres is to be found the challenge farm which the reverend gentleman spoke of some time ago? No doubt of it. No game farm could for a moment challenge one that is free of those destructive animals. A gentleman living here, who holds a high office in Somerset House, told me that upon his farm, near Farnham, he is surrounded with game estates; he told me that he has repeatedly sent to them to say that if they do not take means to keep hares, rabbits, and pheasants off his farm that he must destroy them himself, as the land belongs to him. He also told me that he would follow a very different course of culture (and *now* he is a second Mechi) in good farming; he knows there are great virtues in Cabbages, Brussels Sprouts, Savoys, Carrots, &c., but these vermin are continually devouring them, and would take one man doing nothing else to watch his ground, besides living in hot water with his neighbours. At an estate, some miles below Croydon, two years ago, the farmers were so eaten up with game that they threatened, to a man, that they would all leave if the game were not reduced. The landlord very wisely granted it; he allowed not only the farmers but all their friends to kill as well. How many was the number, thinks my opponent? one of the men who helped to kill told me that there were close upon 15,000 head of all sorts. My reverend opponent knows nothing of a game estate. For what has a noble Earl done away with all the game upon his immense estates, as mentioned just now in the papers, and many more besides him? I do hope that no one for one moment will think that I have anything but a national good in view. Those nightly bandits would soon turn into decent workmen if there were no game. As game stealing is the first crime of these people, all others would alike cease; the now oppressed farmer would no longer have to keep *their* families. Game preserved estates produce just the very lowest rent, a continued animosity and bitter feeling between landlord and tenant, too often carried on in an under current; it is also the producer of every sort of destructive insect; the very nursery beds of millions of seeds along the uncultivated headlands and broad hedges and ditches. And many of those beautifully ripened seeds can and do travel for miles. Some game estates that I know are not one bit better than when the Saxons first landed upon our shores. But on the other hand, where no game is, leases are granted; the farm has a neat and garden-like appearance, the wild animals are all gone, no rats and mice by the thousand coming in from their summer quarters to winter upon the corn of the farmer. No gamekeeper's houses covered with cats, polecats, stoats, weasels, &c., the farmers look after them; but where game is, they are not allowed even to shoot at a rat, or the keeper would soon be after him. I am quite prepared to state, that when the Game-laws are done away with, the land will rise in price in every acre. Is it not cruel to think that we have the best of land within 30 miles of the great metropolis, let at 5*s.* and 7*s.* 6*d.* per acre (all through game). The days are now gone, a gentleman will no longer be able to resist the just demands of his tenants, even if he should be rich enough to still make his estate into a game preserve. My reverend opponent, in one of his letters, has stated that it is a great benefit to the poor to have such a quantity of game sent to London; I can answer for them all, that the poor of London do not even know the taste of either a hare, pheasant, nor partridge; half-a-crown for a hare, half-a-crown for a pheasant, and three shillings for a brace of partridges! One wild thing they do buy, and that is rabbits; those are bought at 8*d.* and 10*d.* a-piece, and a cat would answer the same purpose. My reverend opponent seems to lay some stress upon woods breeding insects. No doubt of it. I must here state that a properly managed wood ought to be kept quite clear of all brushwood and rubbish. A plantation likes good management, like a plantation of Liquorice or anything else. I am truly sorry that the Rev. George Wilkins has spoken so lightly of the celebrated Mr. Smith of Deanston's shallow draining. I have a case here that Mr. Smith was quite right with drains 2 feet 6 inches in a strong retentive clay. When the rage came up for deep drains, the Bishop of Winchester ordered a ten-acre field to be drained 5 feet deep at some five-and-thirty feet apart; the drains never run. The bailiff took upon himself after two years to put in drains upon Smith's plan 2 feet 6 inches deep between the others; those drains carried off every drop of surface water. The Bishop was so surprised that he had no more deep drains upon such soil. This I was told in Sir Robert Peel's house some four years ago or more; and by the Bishop's steward and bailiff. Had my reverend opponent known Mr. Smith, of Deanston, for five-and-thirty years, as I have done, he would have arrived at a very different opinion of this great man, whose name will not soon be forgotten. I return my most grateful thanks to my reverend opponent for his temperate and kind consideration during this discussion, and his good wishes for so humble an individual as myself. *James Cuthill, Camberwell, London.*

*Game.*—I should not have troubled you again on this subject, had it not been for Mr. Wilkins' last communication. I must, however, in self-defence, beg to assure that gentleman that I am not "like one of the seven sleepers," for I have carefully read every word he has published in the *Agricultural Gazette*, on the subject of game; and it was because I considered, and still do consider, that he left untouched that particular point to which I wished to draw the attention of your readers, that I troubled you with the few lines he has found fault with, though at the same time thanking me for my letter in general. He may, in his own mind, have intended to include among his arguments the point I adverted to, but he certainly never brought it forward with the clearness I thought it deserved; at any rate I cannot understand his considering it "disheartening and provoking" to have a fellow-labourer in the same cause. He surely cannot be jealous of my humble article! If so, I am afraid I shall again incur his displeasure; as, before I conclude, I wish to say a few words in answer to Mr. Cuthill's last communication on the subject under discussion. That gentleman seems to me to be labouring under a great mistake, in so perseveringly connecting the preservation of game with small fields and wide hedgerows. He surely cannot pretend to say that is the character of farms in Norfolk, which is the most celebrated partridge county in England. Why it is only a few days ago that I read an account of a farm in that county of 1000 acres, which was divided into no more than four fields. In Cambridgeshire, too, where I am in the habit of shooting, the fields are very large. Indeed the whole county, as everybody knows, is very open, and nowhere have I seen more game. And in Suffolk, on my own property, I have many fields of 50 acres and upwards; and when I used to preserve had plenty of game. My only reason for giving up preserving there was the great distance of that estate from my place of residence; and I may safely assert that I never had any complaints, except occasionally on the subject of rabbits, which I always endeavoured to keep under as much as possible, and which I would willingly have got rid of altogether, had it been possible. In conclusion I will merely add that I should be sorry to see the day arrive when the moderate preservation of game is forbidden. The present outcry against it is, I am convinced, founded on a most unfortunate and much to be lamented prejudice, originating among the candidates for mob popularity, and encouraged by a very large class of people who will not take the trouble to think for themselves, but imbibe, involuntarily perhaps, the stereotyped mistakes of the many, and are therefore well prepared to be influenced by those mob orators or ignorant enthusiasts who, either to gain their own ends, or from an honest though mistaken conviction, that if it were not for game there would be little or no crime in the country, are labouring to bring about an alteration in the laws, which the farmers themselves, who are supposed to be the most aggrieved, would be the very first to lament. *W. F. G. F.*

*Clover Failure.*—Seeing, from your Paper of the 29th ult., that the above subject is again revived, I take the liberty of submitting to your notice the following facts, which, if new, may probably be worth publishing. In the spring of 1847, my attention was called to a large break of Spruce Fir plants, growing in a nursery in this neighbourhood, and which presented an unusual appearance, there being large patches over the whole break in which the young plants were yellow, sickly, and apparently in a dying state. Upon examining the roots, I found in every instance that they were almost wholly denuded of their outer coat or bark. The Spruce were planted out the previous autumn, being then two and three years seedlings. I need hardly add that all that were affected as described, died. I am given to understand that the disease referred to is well known to nurserymen, and is attributed to the ravages of a small beetle. In the same spring, I visited one or two farms —heavy clay soil—where the Clover failure was very bad, and seeing that the fields had very much the appearance as the break of Spruce referred to, only in the diseased patches the Clover leaf was either wholly gone, or what remained was quite dry and withered, I carefully lifted a great many of the roots, and without a single exception, they were peeled or barked exactly as the Spruce. On the same farms, the red Clover has, for the last two years, been as entire and luxuriant a crop as ever it was in the best days of that useful plant. With regard to the duration of red Clover—about six years ago I was anxious to ascertain if there was any difference in the produce of seed from various countries. I therefore procured genuine samples of seed, of English, French, American, and Dutch growth, and in the month of April I sowed a drill of each on a medium dry soil, and the whole were cut in August or September, that same season, and the whole kept the ground fresh and vigorous for the three following years, cutting them twice each year, and, I suppose, they would have stood till now, but I dug them up. No manure was applied after the first year. I could see no difference in luxuriance or otherwise, in the four samples. I make no comments on the above, but I shall be well repaid for the trouble in noticing the facts, if they should, in the least degree, throw any light on the cause of the Clover failure. *H. D., Stirling, N. B.*

*Keeping Cows in the Yard.*—As many inquiries are made as to the best mode of keeping cows, I venture to suggest a plan which I am about to adopt. I have one field of 16 acres under plough and this I shall divide into four courses—1, Vetches sown in February, followed by transplanted Cabbages in June and July; 2, Mangold Wurzel; 3, Vetches in March, followed by Italian Rye-grass sown in August; 4, the Italian Rye-grass sown the year previous. These are the courses I propose for artificial Grasses and winter food. I have some Grass land besides, and shall purchase straw for litter, being certain of getting any quantity I desire, and at a cheaper cost than I can grow it. The cows will be kept in stalls in a yard, and all the dung will stand for the 16 acres of plough land. The produce will be consumed as follows—April and May, Italian Rye-grass; May to July, Vetches; July to September, Italian Rye-grass; October to January, Cabbages; January to March, Mangold Wurzel. *A. B. C.*

*Tank* v. *Box.*—I asked a friend of mine, last summer, by what means he invariably obtained such exuberant crops of first-rate Grass? This was his enthusiastic answer—"By means of the tank, spring, summer, autumn, and winter, I work at the tank—the tank is my sheet anchor, and it must be yours. My good sir, stick to the tank." But in the *Agricultural Gazette*, Nov. 29, 1851, are these remarkable words, in answer to a query as to the proper size of a tank for a certain number of acres, "No tank at all, is the right method. This, with the adoption of box-feeding in stables, as well as in the feeding stalls, is the most economical mode of manure management." Here, then, are two large and influential parties of the agricultural world at issue on a vital point. On the one hand, the numerous and intelligent party, of which my friend is but the type, have long been, and still are, loud in praise of the tank; and capable, moreover, of practically demonstrating its highly fertilising effects. On the other hand, you, sir, yourself a host, with a crowd of experienced and clear-sighted men at your elbow, denounce the tank, and stick to the box. I presume that the advocates of the tank, as well as those of the box, agree that this is by no means a question of mere fertility, however great, but of fertility in combination with the largest net profit. Let account books and balance sheets decide which party is entitled to the prize. *A. Z.*

*Fork Husbandry.*—I have waited for the announcement of a handsome Christmas-box to the most diligent peruser of your Journal, that I might prove my right to the prize, and claim it at one and the same time. You have not determined what the prize shall be, and your correspondent, H. Copland, may be in despair, so, in charity to him, I write to let him know that the book he inquires for is a "New Practical System of Fork and Spade Husbandry," by John Sillett: Simpkin, Marshall, and Co. Now, if I were not the most diligent reader of your Paper, how could it have happened that so many of your other subscribers could have left the query unanswered which appears in No. 46, Nov. 15? And a very useful book H. Copland will find John Sillett's little tract. His system is that of the Rev. Mr. Smith, with divers improvements of his own—chief amongst which improvements in the making and using a large quantity of manure. When the doctors have settled the great question of organic or inorganic, such men as John Sillett will cease to manure. Which of the S's is the capital I don't know. I should say Sillett had priority, but Sillett is not a clerkly man. His system, nevertheless, appears to extort from the breast of our common mother by much the larger quantity of milk. His practice has clearly anticipated the recommendations in your very able leader, in a late number, on the subject of Rev. Mr. Smith's system. That was a very smart paper, and very sarcastic. I doubt, however, if it will be useful to those chiefly interested—the agriculturists.

> Satire should, like a polished razor keen,
> Wound with a touch that's rather felt than seen

Wit may be so subtle, so keen, as to be neither felt nor seen. *W. R. Carter, Eel Moor Farm, Cove, Bagshot, Dec. 2.*

## SMITHFIELD CATTLE SHOW.

We have a detailed report of the cattle, sheep, and pigs exhibited at Baker-street during the past week; but, owing to its length, must postpone it until our next publication, when we shall ask our readers to walk round both the London and Birmingham Exhibitions with us, and give us an opportunity of pointing out to them the character and history of many of the specimens therein. Having obtained the dimensions of almost all the animals exhibited at both places, we shall then be able to draw a strict comparison between the two. Meanwhile, we have merely to state, in general terms, that the Baker-street Exhibition was as good as usual in point of numbers, and better than usual as regards quality. The Hereford breed has appeared in great force, and carried off an unusual number of prizes. The system which sets animals of different breeds in competition with one another, however desirable it may be as the only remaining test of relative merit, which we have among our public cattle shows, is one which renders modern judgment extremely difficult and rarely satisfactory to competitors, and it is not improbable that this cause may act to the prejudice of the Smithfield Club and to the advantage of the Birmingham Exhibition, where the more easy and satisfactory method of classification according to breed is obtained. The former, however, with the exception of the class Pigs, is, of course, still much inferior to the latter in point both of quality and extent. As regards the pigs shown, there was more equality between the metropolitan and provincial meetings. But on this, as on other points, we shall be able to speak more particularly next week. The Baker-street exhibition included as usual a large collection of agricultural implements; among which the rival reaping machines excited much curiosity—and the collections of vegetable specimens were numerous and creditable.

The following is the award of prizes:

### OXEN OR STEERS.

Class I.—Oxen or Steers, of any breed, above 4 and not exceeding 5 years old.

1st prize, of 30*l.*, to Mr. William Heath, of Ludham-hall, Norwich, and Silver Medal to the breeder, Mr. John Oakes, of Afcott, Church Stretton.—2d, 15*l.*, Mr. William Henry Brickwell, of Leckhampstead, Bucks.—3d, 5*l.*, His Royal Highness Prince Albert.

Class II.—Oxen or Steers, of any breed, above 3 and not exceeding 4 years.

1st prize, of 30*l.*, to Mr. Edward Longmore, Adforton, near Ludlow, and Silver Medal to the breeder, Mr. Edward Longmore.—2d, 15*l.*, Mr. William Heath, of Ludham-hall, Norwich.—3d, 5*l.*, His Royal Highness Prince Albert.

Class III.—Oxen or Steers, of any breed, above 2 and not exceeding 3 years old.

1st prize, of 25*l.*, to Mr. Joseph Phillips, of Ardington, near Wantage, Berkshire, and Silver Medal to the breeder, Mr. Thomas Carter, of Dodmore, near Ludlow, Salop.—2d, 15*l.*, His Royal Highness Prince Albert.—3d, 5*l.*, Mr. Isaac Niblett, of Conygre Farm, Filton, near Bristol.

Class IV.—Oxen or Steers, of any breed and age, not exceeding 80 stone weight.

1st prize, of 20*l.*, to the Right Hon. Earl of Leicester, of Holkham-hall, Norfolk, and Silver Medal to the breeder, Mr. William Baker, of Bishop's Nympton.—2d, 10*l.*, Mr. Daniel Maydwell, of Ashstead, Surrey.

Class V.—Oxen or Steers, of any breed and age, not exceeding 80 stone weight.

1st prize, of 15*l.*, to the Right Hon. the Earl of Leicester, of Holkham-hall, Norfolk, and Silver Medal to the breeder, Mr. George Turner, of Barton, near Exeter.—2d, 5*l.*, Mr. Thomas Bond, of Bishop's Lydeard, near Taunton.

Class VI.—Oxen or Steers of the Scoteh, Welsh, or Irish (Kerry) breed, of any age.

The prize of 10*l.*, to Mr. G. H. Kinderley, of Kilpalson, Pembroke.

### COWS AND HEIFERS.

Class VII.—Fattened Cows or Heifers under 5 years old.

1st prize of 20*l.*, to Mr. Samuel Druce, of Eynsham, near Oxford, and Silver Medal to the breeder, Mr. Samuel Druce.—2d, 10*l.*, Mr. Richard Stratton, of Broad Hinton, near Swindon, Wilts.—3d, 5*l.*, Mr. John Philips, of Ardington, near Wantage, Berkshire.

Class VIII.—Fattened Cows of 5 years old and upwards.

1st prize of 20*l.*, to the Right Hon. Lord Feversham, of Duncombe-park, Helmsley, York, and Silver Medal to the breeder, the Right Hon. Lord Feversham.—2d, 10*l.*, Mr. Joseph Gillett, of Little Haseley, near Wheatley, Oxon.

Class IX.—Fattened Cows, of 5 years old and upwards, that shall have had at least two live Calves at separate births.

1st prize of 20*l.*, to Mr. William Holland, of Lightcliffe, near Halifax, and Silver Medal to the breeder, Mr. William Holland.—2d, 10*l.*, Mr. Robert Beman, of Moreton-in-the-Marsh, Gloucester.

### LONG-WOOLLED SHEEP.

Class X.—Fat Wether Sheep, of any long-woolled breed 1 year old.

1st prize of 20*l.*, to Mr. R. L. Bradshaw, of Burley-on-the-Hill, Oakham, and Silver Medal to the breeder, Mr. R. L. Bradshaw.—2d, 10*l.*, Mr. R. F. Hall, of Hesley, near Bantry.—3d, 5*l.*, Mr. George Walmsley, of Rudston, near Bridlington.

Class XI.—Fat Wether Sheep, of any long-woolled breed, 1 year old.

1st prize of 20*l.*, to Mr. Lawrence Willmore, of Whetstone, near Leicester, and Silver Medal to the breeder, Mr. Lawrence Willmore.—2d, 10*l.*, Mr. Thomas Pulver, of Broughton, near Kettering.—3d, 5*l.*, the Marquis of Exeter, of Burghley-house, Stamford.

### LONG WOOLLED (NOT BEING LEICESTERS).

Class XII.—Fat Wether Sheep, of any long-woolled breed, (not Leicesters), 1 year old.

1st prize of 10*l.*, to Mr. Robert Beman, of Moreton-in-the-Marsh, Gloucester, and Silver Medal to the breeder, Mr. Robert Beman.

### CROSS-BRED SHEEP.

Class XIII.—Long and Short-woolled Cross-bred fat Wether Sheep, 1 year old.

1st prize of 10*l.*, to Mr. J. R. Overman, of Burnham Sutton, near Burnham Market, and Silver Medal to the breeder, Mr. J. R. Overman.—2d, 5*l.*, Mr. Samuel Druce, of Eynsham, near Oxford.

Class XIV.—Long and Short-Woolled Cross-bred fat Wether Sheep, 1 year old, under 220 lbs. live weight.

1st prize of 10*l.*, to Mr. J. R. Overman, of Burnham Sutton, near Burnham Market, Norfolk, and Silver Medal to the breeder, Mr. J. R. Overman.

### SHORT-WOOLLED SHEEP.

Class XV.—Fat Wether Sheep, of any short-woolled breed, 1 year old.

1st prize of 20*l.*, to his Grace the Duke of Richmond, of Goodwood, Chichester, and Silver Medal to the breeder, his Grace the Duke of Richmond.—2d, 10*l.*, Mr. William Sainsbury, of West Lavington, Devizes.

Class XVI.—Fat Wether Sheep, of any short-woolled breed, 1 year old, under 200 lbs. live weight.

1st prize of 10*l.*, to Mr. William Sainsbury, of West Lavington, Devizes, and a Silver Medal to the breeder, Mr. William Sainsbury.

Class XVII.—Fat Wether Sheep, of any short-woolled breed, 2 years old.

1st prize of 20*l.*, to his Grace the Duke of Richmond, of Goodwood, Chichester, and a Silver Medal to the breeder, his Grace the Duke of Richmond.—2d, 10*l.*, Mr. J. V. Shelley, of Maresfield Park, Maresfield.

### SHORT-WOOLLED (NOT BEING SOUTHDOWNS.)

Class XVIII.—Fat Wether Sheep, of any short-woolled breed (not Southdowns), 1 year old.

Prize withheld.

### PIGS.

Class XIX.—Pigs of any breed, above 13 and not exceeding 26 weeks old.

1st prize of 10*l.*, to Mr. John Coate, of Hammoon, near Blandford, Dorset, and a Silver Medal to the breeder, Mr. John Coate.—2d, 5*l.*, Mr. William Mills Barker, of Langley Broom, Slough, Bucks.

Class XX.—Pigs of any breed, above 26 and not exceeding 52 weeks old.

1st prize of 10*l.*, to Mr. John Coate, of Hammoon, near Blandford, Dorset, and a Silver Medal to the breeder, Mr. John Coate—2d, 5*l.*, to his Royal Highness Prince Albert.

Class XXI.—Pigs, of any breed, above 12 and under 18 months old.

1st prize of 10*l.*, to Mr. John Coate, of Hammoon, near Blandford, and a Silver Medal to the breeder, Mr. John Coate.—2d, 5*l.*, the Earl of Radnor, Coleshill, near Farringdon.

The Gold Medal for the best ox or steer in Classes 1, 2, 3, 4, 5, or 6, to Mr. Edward Longmore, of Adforton, near Ludlow, Salop.

The Gold Medal for the best cow or heifer in Classes, 7, 8, or 9, to Mr. Samuel Druce, of Eynsham, near Oxford.

The Gold Medal for the best pen of long-woolled sheep in Classes 10, 11, or 12, to Mr. R. L. Bradshaw, of Burley-on-the-Hill, Oakham.

The Gold Medal for the best pen of short-woolled sheep in Classes 15, 16, or 18, to his Grace the Duke of Richmond, of Goodwood.

21. The Gold Medal for the best pen of Pigs in Classes 19, 20, or 21, to Mr. John Coate, of Hammoon, near Blandford.

EXTRA STOCK.

A Silver Medal for the best beast in extra stock, to Mr. William Heath, of Ludham-hall, Norwich (this animal was too heavy for Class 4).

A Silver Medal for the best long-woolled sheep, to Mr. Lawrence Willmore, of Whetstone, near Leicester.

A Silver Medal for the best short-woolled sheep, to Mr. William Sainsbury, West Lavington, near Devizes.

A Silver Medal for the best cross-bred sheep, to Mr. John Hitchman, of Little Milton, Wheatly.

A Silver Medal for the best pig, to No. 263, viz., to Mr. William Culliford, of Hayling Island, Havant, Hants.

COMMENDATIONS.

Class 2.—The judges commend Mr. Richard Stratton's ox; Sir C. E. Isham's ox. They highly commend Mr. A. Beisley's ox.

Class 7.—The judges commend Mr. R. Healy's heifer; Mr. Joseph Phillips' heifer; Mr. Isaac Niblet's heifer. They highly commend Mr. W. M. Gibbs' heifer.

Class 15.—Highly commended: Mr. John Williams' pen of Southdown wethers; Messrs. W. and T. Arkcoll's pen of Southdown wethers. Commended: Lord Walsingham's pen of Southdown wethers; Mr. J. R. Overman's pen of Southdown wethers.

Class 16.—Commended: the Duke of Richmond's pen of Southdown wethers.

Class 19.—Commended: Mr. William Goodson's pen of pigs; Sir John Conroy's pen of pigs; Mr. S. Marjoribank's pen of pigs.

Class 20.—The judges highly commend Sir John Conroy's pen of pigs; Mr. Stewart Marjoribank's pen of pigs; Mr. Thomas King's pen of pigs.

Judges of cattle and long-woolled sheep—Messrs. James Quartley, Henry Chamberlain, Thomas Greetham.

Judges of cross-bred sheep (short-wools) and pigs—Messrs. Edward Pope, John Ford, jun., John Farncombe.

Stewards of cattle and long-wool sheep—Messrs. George Turner, John Buckley, William Loft.

Stewards of cross-bred sheep (short-wools) and pigs—Messrs. Jonas Webb, James Burgess, J. Saxby.

## BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION OF FAT CATTLE, &c.

We shall make a further reference to the character of this exhibition next week. Meanwhile, we may say that it was this year a great improvement upon last. The cattle shown were generally superior, some of the classes excellent; the pigs were, as last year, very good, the sheep were a more numerous and better show than last year, and the exhibition of poultry was, there can be no doubt, unparalleled. Four thousand head of poultry never before entered the lists on one occasion, and never before did birds of such excellent quality compete with one another. Many thousand persons, no doubt, availed themselves upon the Tuesday, of what was called the "private" view!—for both on that and the following days, the great hall was crowded. We shall hereafter be able to make a detailed comparison of the two shows of this week—at Birmingham and Smithfield respectively. Meanwhile, we have only room to add the prize list of the former.

PRIZE LIST.—FAT CATTLE.

Judges.—Mr. John Booth, Killerby, near Catterick, Yorkshire; Mr. Edward Price, Court House, Pembridge, Leominster; and Mr. Valentine Barford, Foxcote, near Towcester.

Class I.—Herefords: Oxen or Steers.

1st prize, 10*l.*, and the Gold Medal, and Extra Prize of 15*l.*, for the best ox or steer of any breed, His Royal Highness Prince Albert. Medal to Mr. Stedman, as breeder.—2d, 5*l.* The Executors of the late Sir Francis Lawley, Bart., Middleton Hall.

Highly commended.—Mr. Henry Chamberlain, Desford, near Leicester.

Commended.—The Right Hon. Lord Hatherton, Teddesley Park.

Class II.—Herefords: Steers.

1st prize, 5*l.*, and Silver Medal, as Breeder. The Right Hon. Lord Hatherton, Teddesley Park.

Class III.—Herefords: Cows.

1st prize, 10*l.*, and the Gold Medal, and Extra Prize of 15*l.*, for the best cow or heifer of any breed. Mr. William Vaughan, Cholstrey, near Leominster. Silver Medal to the Rev. Henry Blissett, as Breeder.—2d, 5*l.* Mr. Edmund Herbert, Powick, near Worcester.

Highly commended.—Mr. William Rogers, Martley Court, near Worcester. The class generally commended.

Class IV.—Herefords: Heifers.

1st prize, 10*l.* Mr. John Walker, Holmer, near Hereford. Silver Medal to Mr. Thomas Morris, as breeder.—2d, 5*l.* Mr. Henry Hill, Stableford, near Bridgnorth.

Highly commended.—Mr. John Walker, Knightwick, near Worcester.

Class V.—Short-Horns: Oxen or Steers.

1st prize, 10*l.* Mr. Richard Spraggett, Southam, near Warwick. Silver Medal to Mr. James Richards, as breeder.—2d, 5*l.* W. de Capel Brooke, Esq., Geddington Grange, Northamptonshire.

Highly commended.—Mr. Samuel Wallis, Barton Seagrave, near Kettering; Mr. John Worsey, jun., Lower Clopton, near Stratford-upon-Avon.

Commended.—Mr. William Cox, Brailsford, near Derby.

Class VI.—Short-Horns: Steers.

1st prize, 5*l.*—Mr. Thomas Pulver, Broughton, Northamptonshire.

Commended.—Mr. John Henry Lees, Bacon's End, Coleshill.

Class VII.—Short-Horns: Cows.

1st, prize, 10*l.*,—Mr. Robert Beman, Moreton-in-the-Marsh.—2d, 5*l.* Mr. Samuel Wiley, Bransby, near York.

Highly commended.—Charles Towneley, Esq., Towneley Park, near Burnley, Lancashire.

Commended.—Captain Dilke, Maxstoke Castle, Coleshill.—Mr. James Dormer, Ashow, near Kenilworth. Age, 4 years and 4 months.—Mr. W. T. Cox, Spondon, near Derby.

Class VIII.—Short-Horns: Heifers.

1st prize, 10*l.*, and Silver Medal, as breeder. The Right Honourable Viscount Hill, Hawkstone, near Shrewsbury.—2d, 5*l.* Mr. William Woodward, Breedon's Norton, near Tewkesbury.

Highly commended.—Mr. William Fletcher, Radmanthwaite, near Mansfield.

Commended.—The Right Honourable the Earl Howe, Gopsall, Leicestershire; Mr. Joseph L. Hassall, Packington, near Ashby-de-la-Zouch.

Class IX.—Devon Oxen or Steers.

First prize, 10*l.*, and Silver Medal, as breeder, the Right Honourable the Earl of Leicester, Holkham Hall, Norfolk.—2d, 5*l.*, The Right Honourable the Earl of Leicester, Holkham Hall, Norfolk.

Highly commended.—The Right Honourable the Earl of Aylesford, Packington, near Coventry.

Class X.—Devon Steers.

Prize of 5*l.* The Right Hon. the Earl of Aylesford, Packington, near Coventry.

Class XI.—Devon Cows.

1st prize, 10*l.* The Right Hon. the Earl of Aylesford.—2d, 5*l.* Mr. Abraham Umbers, Weston Hall, Leamington Spa.

Class XII.—Devon Heifers.

1st prize, 10*l.* Mr. Thomas Newbold, Baginton, near Coventry.—2d, 5*l.* The Right Hon. the Earl of Leicester, Holkham Hall, Norfolk.

Class XIII.—Long-horn Cows or Heifers.

10*l.* and Silver Medal, as breeder. Mr. Richard Gibbs, Blackford Mill, Henley-in-Arden. Age, 11 years and 9 months.—2d, 5*l.* Capt. Inge, Thorpe Constantine, near Tamworth.

EXTRA CLASSES.

Class XIV.—Oxen or Steers.

1st prize, 10*l.* The Right Honourable Lord Leigh, Stoneleigh Abbey, Kenilworth.—2d, 5*l.* Mr. Richard Spraggett, Southam, near Warwick.

Commended.—Mr. William Thomas Cox, Spondon, near Derby.

Class XV.—Cows.

1st prize, 10*l.* Mr. William Timms, Grandborough, near Southam, Warwickshire. Silver Medal to Mr. Cartwright, as breeder.—2d, 5*l.* Mr. Matthew Ingle, Wigginton, near Tamworth.

Highly commended.—Mr. Henry Brown, Derby.

Commended.—The Right Honourable Lord Hatherton, Teddesley Park.

Class XVI.—Heifers.

1st prize, 10*l.*, and Silver Medal as breeder. Mr. A. Umbers, Weston Hall, Leamington Spa.—2d, 5*l.* The Right Hon. the Earl of Leicester, Holkham Hall, Norfolk.—3d, 5*l.* Mr. Thomas Yeld, the Broome, near Leominster.

Highly commended.—Mr. Abraham Hopkins, Yardley. Breeder unknown.

Class XVII.—Scotch or Welsh Oxen or Steers.

1st prize, 10*l.* Capt. Musgrove, Milverton Hill, near Leamington, Silver Medal to Mr. Campbell as breeder.—2d, 5*l.* Mr. Joseph D. Rob, Catton, near Thirsk. The whole class commended.

Class XVIII.—Scotch or Welch Heifers.

Prize, 5*l.* Mr. John Pickthall, Mint House, near Kendal, Westmoreland.

SHEEP.

Class XIX.—Leicesters.—(Fat Wethers, not exceeding 22 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder. The Most Noble the Marquis of Exeter, K.G., Burghley-house, near Stamford.—2d, 5*l.* Mr. George Walmsley, Rudston, near Bridlington.

Class XX.—Leicesters.—(Fat Wethers, not exceeding 34 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder, and Silver Medal, as exhibitor of the best pen of Long-woolled Sheep in Classes 19, 20, 21, and 22. Mr. John Henry Lees, Bacon's-end, Coleshill.—2d, 5*l.*, to the same.

Commended.—Mr. Robert Holloway, Yardley.

Class XXI.—Long-Woolled Sheep, not being Leicesters.—(Fat Wethers, not exceeding 22 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder. Mr. William Coldicott, Over Norton, Oxfordshire.—2d, 5*l.*, to the same.

Class XXII.—Long-Woolled Sheep, not being Leicesters.—(Fat Wethers, not exceeding 34 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder. Exhibitor and breeder: Mr. Robert Beman, Moreton-in-the-Marsh, Gloucestershire.—2d, 5*l.*, Mr. Richard Spraggett, Southam, near Warwick.

Class XXIII.—Pure-Bred Southdowns.—(Fat Wethers, not exceeding 22 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder, and Silver Medal, as exhibitor of the best pen of Short-woolled Sheep in Classes 23, 24, 25, and 26. Mr. John Williams, Buckland, Farringdon, Berks.—2d 5*l.*, to the same. The class generally commended.

Class XXIV.—Pure Bred Southdowns.—(Fat Wethers, not exceeding 34 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder. Darwin Galton, Esq., Edstone Hall, near Stratford upon-Avon.

Class XXV.—"Shropshire," and other short-woolled Sheep, not being Southdowns.—(Fat Wethers, not exceeding 22 months old.)

1st prize, 8*l.*, and Silver Medal, as breeder. Mr. John Benjamin Twitchell, Welby, near Northampton.—2d, 5*l.*, Mr. James Williams, Culmington, near Ludlow.

Commended.—Mr. James Williams; the Right Honourable the Earl of Aylesford; James Foster, Esq., Kinver Hill Farm, near Stourbridge.

Class XXVI.—"Shropshire," and other short-woolled Sheep, not being Southdowns.—(Fat Wethers, not exceeding 34 months old).

1st prize, 8*l.*, and Silver Medal as breeder. The Right Hon. the Earl of Aylesford.—2d, 5*l.*, Mr. Michael Goodall, Evelith Manor, Shiffnall, Salop.

Class XXVII.—Cross bred Sheep.—(Fat Wethers, not exceeding 22 months old.)

1st prize, 8*l.*, and Silver Medal as breeder, and Silver Medal as Exhibitor of the best pen of cross-bred Sheep in Classes 27 and 28. Mr. John Benjamin Twitchell, Welby, near Northampton.—2d, 5*l.*, Mr. William Gillett, Southleigh.

Highly commended.—Mr. Charles Randell, Chadbury, near Evesham.

Commended.—The Right Hon. the Earl of Leicester; Mr. Benjamin Twitchell, Welby, near Northampton.

Class XXVIII.—Cross-bred Sheep.—(Fat Wethers, not exceeding 34 months old.)

1st prize, 8*l.*, and Silver Medal as breeder. The Right Hon. the Earl Howe, Gopsall, Leicestershire.—2d, 5*l.*, Mr. Abraham Nurse, Ashby Parva, near Lutterworth.

An excellent collection of Roots, grown by Lord Hatherton, the Earl of Aylesford, Mr. Bretherton, Mr. Wiggan, Mr. E. Southall, and Mr. G. Peters, and exhibited by Mr. T. Burbidge, were inspected by the Judges of Cattle and Sheep, and highly commended by them. The collection included very fine specimens of Mangold Wurzel, Swedes, Cabbages, Kohl Rabi, green-topped Turnips, &c.

PIGS.

Judges.—Mr. William Wethrell, Kirk Bridge, near Darlington; Mr. B. Swaffield, Chatsworth, Derbyshire; Mr. William Heseltine, Warlaby House, near Brigg, Yorkshire. Mr. William Hollingsworth accompanied the Judges in the capacity of referee as to the ages of the Pigs.

Class XXIX.—Fat Pigs.—(Not exceeding 10 months old).

1st prize, 10*l.*, and Silver Medal, as Breeder. James Taylor, Esq., Moseley Hall, near Birmingham.—2d, 5*l.* Exhibitor: Mrs. Martha Emuss, Handsworth.

Commended—Mr. Edward Lowe, Comberford Mill, Tamworth. Mr. William Burbidge, Bromsgrove-street, Birmingham. Mr. Henry Oldham, Leamington.

Class XXX.—Fat Pigs.—(Not exceeding 15 months old.)

First prize, 10*l.*, and a Silver Medal, as breeder. Mr. Thomas Studholme Wilkins, Peddemoor Hall, near Sutton Coldfield.—2d, 5*l.* Mr. W. D. Hollister, Hampstead Mill, near Birmingham,

Class XXXI.—Fat Pigs.—(Exceeding 15 months old.)

First prize, 5*l.*, and Silver Medal, as breeder. Exhibitor and breeder, Mr. Arthur Perks, Kingsbury, Warwickshire.—2d, 3*l.* Mr. Thomas Beaumont Shilock, Hose, Leicestershire.

Highly commended.—Mr. Edward Lowe, Comberford Mill, near Tamworth; Mr. William Hopkins, Nelson Inn, Deritend, Birmingham.

Commended.—Mr. James Baldwin, King's Norton.

Class XXXII.—Breeding Pigs, of a Large Breed. (Not exceeding seven months old.)

1st prize, 10*l.*, and Silver Medal, as breeder. Mr. Arthur Perks, Kingsbury, Warwickshire.—2d, 5*l.* Mr. George Graham, Yardley, Worcestershire.

Silver Medal.—Mr. Moses Cartwright, Stanton Hill, near Burton-upon-Trent.

Class XXXIII.—Breeding Pigs of a Small Breed. (Not exceeding seven months old.)

1st prize, and Silver Medal, as breeder. Mr. William Ludlam, Bradford, Yorkshire.—2d, 5*l.* To the same.

Silver Medals.—Mr. Matthew Pemberton, Gibraltar Soap Works, Leeds.—Mr. William Eaton, Copley Wood, Halifax, Yorkshire.

## Miscellaneous.

*A Digging Machine.*—George Guthrie, of Appleby, Chamberlain to the Earl of Stair, for improvements in machinery for digging, tilling, or working land.—Patent dated March 24, 1851. [Reported in the *Mechanics' Magazine*]. The machinery which forms the subject of this patent is intended to facilitate the operations of digging and working land, by the application thereto of steam power. The machine is composed of a strong rectangular wooden framework mounted on four wheels, which are made wide in the tyre to prevent their sinking into the ground, and to facilitate the travelling of the machine. The motive power for working the grape movement or digging action, is derived from a pair of steam cylinders, supported by the framing, which serve also to supply the power for propelling the machine. The diggers are formed with three prongs each, and they may be of such a number, arranged side by side, as to extend across the whole width of the machine. In addition to the downward motion imparted to the grapes by a crank, for the purpose of causing them to enter the ground, they are also acted upon, after they have passed through the first half of the down stroke, by a second crank, by which they are raised to a horizontal position, carrying with them the portion of the earth immediately in front and within the scope of their action. As soon as the grapes have arrived in this horizontal position, the shaft on which they are mounted is caused, by means of a slide working on a spiral or screw of coarse pitch cut on that shaft, to make a semi-revolution on its axis, so as to throw off the earth which had been supported on the grapes, which are then returned to their original position, and carried back ready for operating on a fresh piece of ground, over which the machine will by this time have been moved. The patentee does not confine himself to the employment of cranks for effecting the movements of the grapes, as other means, capable of producing a similar motion approximating closely to that of the spade in hand-digging, may be adopted for the purpose; instead, also, of the above-mentioned arrangement of the grapes, they may be fixed to a revolving shaft, and the earth may be removed from them, by causing them in their revolution to come in contact with suitable stops. It may be necessary in some cases, in order to facilitate the action of the grapes, to make a series of cuts in the land previous to the grapes coming into operation; and this may be effected by attaching to the front of the machine a series of circular cutters fixed on a revolving shaft, and brought into action as the machine is propelled forward. *Claims.*—1. The general arrangement of the grapes, forks, or spades, for digging and working land. 2. The system or mode of turning the grapes or digging apparatus by a screw and traversing slide. 3. The application and use of guides for giving direction to the grapes. 4. The system or mode of digging or working land by causing the grape or digging apparatus to turn, or partially revolve, when loaded with earth. *From the Architect, Oct.* 11.

*Cultivation and Cutting of Straw for Plaiting.*—The best straw for plaiting is grown on the rich soils of Bedfordshire, and in the neighbourhood of St. Alban's. The straw grown on the richest soil in Ireland should be selected for plaiting. The straw must be cut a little before it is quite ripe, and the greatest care must be taken not to crush or break the straw while it is being cut and bound. When cut it is bound into small sheaves, and left standing up on the field for two or three days, or until it is thoroughly dry. The best straw for bonnets is the white wheaten straw. The head of the straw containing the grain is then cut off or slashed. In England the grain is boiled in milk and given to the reapers and girls, or else stored for feeding poultry. The straw is then housed for cutting, for the straw is more valuable than the grain. This process requires care and experience, in order not to break the straw, and also to cut it the lengths without waste. Four or five hands are generally employed in cutting, and are placed before a bench with drawers in it, which receive the straw as it is cut. On each straw there are three knots or joints, the top knot being in all cases the finest and consequently the most valuable. The first hand at the bench cuts off the top close above the first knot, and drops it into the drawer, while she is passing the remainder of the straw to the second hand, who cuts off the next pipe at the second joint, and so on until the whole straw is cut into fine lengths, and each length deposited in a separate drawer. By adopting this course, a great deal of time, trouble, and waste will be saved. When cut the straw is called "pipe straw," and is tied up in bundles of 50, 100, and 200, and bound with different sized gads of straw to denote the various sizes and quality. The top or first cut is used for "rice straw" and fine "Dunstable plait," and is worth from 3*d.* to 4*d.* a bundle, of 200 straws. The second and third cuts are used for "whole straw," "cord edge," and "split straw," and are worth from 3*d.* to 5*d.* per bundle. The lower or bottom cuts are the coarsest and are generally dyed various colours and used in "mixed plait." These when dyed realize from 2*d.* to 4*d.* per bundle of 200 straws. In this process of preparing the straw, the small farmers

of Ireland might find ample and remunerative employment of the lightest description for their wives and daughters. Markets would be found in London, Luton, Dunstable, St. Alban's, Bedford, Walford, Hitchin, Market-street, Woburn, Berkhampstead, Hemel Hempstead, and in nearly all the principal towns in the Southern and Midland counties of England, for the largest quantity of pipe straw that this country can produce. And, totally irrespective of the profit arising from the manufacture of straw into plait, many of the farmers of Ireland would, if properly directed, be able to pay much of their rent and taxes from this source alone. *Belfast Paper.*

METEOROLOGICAL REPORT.—December.
*(Continued from p. 781.)*

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| * 3 | 8 a.m. | 30.18 | ... | W. Calm, thawing; dull, foggy, comfortless day. |
| * | 10.40 p.m | ... | 30.15 | |
| 4 | 7.45 a.m. | ... | 30.15 | Calm. S. Mild, damp. |
| | 2.30 p.m. | 30.16 | ... | P.M., drizzling and hazy. |
| 5 | 7.30 a.m. | 30.18 | ... | A.M., N.W., calm, overcast. |
| † | Noon. | 30.18 | ... | Noon. WSW., calm, overcast; 3.30 clearing. 6.20 WNW. Thick scud. Barometer steady all day. |
| 6 | 12.20 a.m. | 30.19 | ... | Midnight. Barometer rising a little. |
| | 8 a.m. | 30.17 | ... | WSW. Gentle, hazy. A.M. Fine, very mild. Barometer sinking. |
| | 6.30 p.m. | ... | 30.15 | Evening raining. |
| Sun. 7 | 7.50 a.m. | 30.12 | ... | SSW. Gentle A.M. Noon; increasing and threatening rain. |
| | 10.10 p.m. | ... | 29.94 | Stormy looking evening. Night boisterous. Barometer fallen steadily. |
| ‡ 8 | 7.30 a.m. | ... | 29.83 | A.M. Calm WSW. Bright overhead, but horizon banked all round. |
| | 8 a.m. | ... | 29.88 | Noon WNW. Gentle. Beautiful and sunny day. |
| | 11 p.m. | 30.09 | ... | Night. Fine night; full moon. |

* This storm came from the westward and passed over England to the eastward.

† The change of the wind and the pause in the rise of the barometer are consistent with the supposition that this was a storm's-eye passing over England from west to east.

‡ I never saw any instance of a storm's-eye more clearly developed than on the morning of the 18th, clear above, and horizon a dense bank all round; at 8 a.m. the barometer began to rise, and at noon the wind drew to north of west. This storm came from the south-west and crossed England to the east.

Dorchester, Dec. 9. *F. P. B. M.*

*(To be continued.)*

## Notices to Correspondents.

Cow: *Pocklington.* The occurrence is certainly unusual, and may be considered as one of those anomalies sometimes met with. It is quite as likely that the first might have been successful as the second; but, surely it can now be readily ascertained whether the animal is in calf or not. *W. C. S.*

Food of Cows: *Pocklington.* Your feeding appears so successful, that we should advise you to let well alone; although there can be no objection to the food suggested. *W. C. S.*

# Markets.

COVENT GARDEN, Dec. 13.

The supply of English Pine-apples is well kept up for the season, and Grapes continue to be plentiful. Pears are still furnished from Guernsey. The best English kinds fetch from 2s. to 4s. a dozen, and 8s. to 12s. per half sieve. They consist of Glout Morceau, Winter Nelis, and Chaumontelle. Oranges are plentiful and good. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are still dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

### FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 8s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Apples, kitchen, per bushel, 2s to 3s 6d | — per 100, 6s to 10s |
| Pears, dessert, p. doz., 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p. bsh., 12s to 14s |
| Walnuts, per bush., 12s to 24s | Filberts, per 100 lbs., 70s to 90s |

### VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 2s to 4s | Garlic, per lb., 6d to 8d |
| Broccoli, p. bunch, 8d to 1s 3d | Artichokes, Jerusalem, per hf. sieve, 5d to 1s |
| Potatoes, per ton, 45s to 80s | Lettuce, Cab., p. score, 4d to 1s |
| — per cwt., 2s to 5s | — Cos, per score, 3d to 1s |
| — per bush., 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Turnips, p. bunch, 1d to 2d | Horse Radish, p. bundle, 1s to 4s |
| Cucumbers, each, 6d to 1s | Mushrooms, p. pot., 1s to 2s 6d |
| Radishes, per doz., 9d to 1s | — per bushel, 7s to 10s |
| — Turnip, p. doz., 9d to 1s | Sorrel, per hf. sieve, 6d to 9d |
| Celery, p. bundle, 6d to 1s 6d | Fennel, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Savory, per bunch, 2d to 3d |
| Brussels Sprouts, p. half sieve, 1s 6d to 2s | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Endive, per score, 9d to 1s | Marjoram, do., 3d to 4d |
| Beet, per doz., 6d to 1s | Watercress, per doz. bunches, 4d to 6d |
| Parsnips, per doz., 6d to 1s | |
| Leeks, per bunch, 1d to 2d | |

POTATOES.—Southwark, Monday, Dec. 8.

The committee report that the supply coastwise has been very limited for the season of the year; notwithstanding the trade has been extremely dull, and prices a shade lower for some sorts than last week, owing to a larger supply by rail and from the neighbourhood of London. The following were the quotations:—York Regents, 70s. to 80s.; Scotch do., 60s. to 75s.; Kent and Essex do., 75s. to 80s.; ditto Shaws, 65s. to 70s.; Lincolnshire and Wisbeach, 60s. to 75s.; French, 55s. to 70s.

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 11.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 70s | to 75s | Clover ... ... ... | 70s | to 80s |
| Inferior ditto... ... | 60 | 67 | 2d cut ... ... ... | 60 | 70 |
| Rowen ... ... ... | 60 | 63 | Straw ... ... ... | 22 | 25 |
| New Hay ... ... | — | — | | | |

J. Cooper.

Trade brisk.

Cumberland Market, Dec. 11.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 72s | to 77s | Inferior ... ... ... | 65s | to 75s |
| Inferior ditto... ... | 60 | 68 | New Clover ... ... | — | — |
| New Hay ... ... | — | — | Straw ... ... ... | — | — |
| Old Clover ... ... | 78 | 84 | | | |

Joshua Baker.

Whitechapel, Dec. 11.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | 72s | to 75s | Old Clover ... ... | 80s | to 86s |
| New Hay ... ... | 63 | 70 | Inferior ditto ... | — | — |
| Inferior ditto... ... | 50 | 60 | New Clover ... ... | 75 | 80 |
| Straw ... ... ... | 20 | 24 | Inferior ditto... ... | 55 | 65 |

HOPS.—Friday, Dec. 12.

Messrs. Pattenden and Smith report that the demand for fine Sussex and Weald of Kent Hops continues to increase, and prices to advance considerably, the stock of such being almost exhausted.

ENGLISH TIMBER AND BARK.—Dec. 13.

| | Round Timber. Per Load. | Plank. Per Foot Cube. | Inch Board. Per Foot Super. |
|---|---|---|---|
| Oak | £5 0 0 to £6 10 0 | 3s. 0d. to 5s. 0d. | 0s. 4½d. to 0s. 6d. |
| Ash | 4 0 0 — 5 0 0 | 2 3 — 3 3 | 0 3 — 0 4 |
| Elm | 3 0 0 — 4 0 0 | 1 3 — 2 0 | 0 2 — 0 3 |
| Beech | 2 10 0 — 3 10 0 | 1 3 — 1 9 | 0 2 — 0 3 |
| Lime | 3 0 0 — 4 0 0 | 1 6 — 2 0 | 0 3½ — 0 4½ |

ENGLISH AND FOREIGN BARK.

No import. In English few transactions have taken place, and prices continue nearly the same.

| | | | |
|---|---|---|---|
| English Coppice, £ s. £ s. | | Per ton—£ s. £ s. | |
| p. ld. of 45 cwt. | 13 0 to 14 10 | Antwerp Coppice | 5 0 — 5 10 |
| Do. timber, do. | 12 0 — 13 10 | — timber ... | 5 0 — 5 5 |

LIVERPOOL BARK MARKET.

| | | | |
|---|---|---|---|
| P. ton of 2400 lbs. £ s. £ s. | | P. ton of 2400 lbs.—£ s. £ s. | |
| English timber... | 6 0 — 6 5 | Belgium timber . | 4 10 — 4 15 |
| — coppice ... | 6 5 — 6 10 | — coppice ... | 5 5 — 5 10 |

SMITHFIELD, Monday, Dec. 8.

There was a few more Beasts at market, and trade certainly slower, although the choicest kinds, being scarce, were not much lower. A clearance could not be effected of inferior qualities. The number of Sheep a full average; trade very slow, and it was with difficulty that late quotations were realised. Calves not much in demand; prices on the average lower. From Holland and Germany there were 658 Beasts, 3090 Sheep, and 197 Calves; from France, 90 Sheep and 6 Calves; from Scotland 230 Beasts; from Norfolk and Suffolk, 120; 2850 from the northern, and 200 from the western counties.

| Per st. of 8 lbs.—s d | s d | Per st. of 8 lbs.—s d | s d |
|---|---|---|---|
| Best Scots, Herefords, &c. ... | 3 8 to 4 0 | Best Long-wools . | 3 8 to 3 10 |
| Best Short-horns | 3 6 — 3 8 | Ditto Shorn ... | ... |
| 2d quality Beasts | 2 10 — 3 4 | Ewes & 2d quality | 3 0 — 3 4 |
| Best Downs and Half-breds ... | 4 0 — 4 4 | Ditto Shorn ... | ... |
| Ditto Shorn ... ... | | Lambs ... .. | 0 0 — 0 0 |
| | | Calves ... ... | 2 8 — 4 0 |
| | | Pigs ... ... | 3 0 — 4 6 |

Beasts, 4289; Sheep and Lambs 23,900; Calves, 243; Pigs, 410.

Friday, Dec 12.

We have a large supply of Beasts, and several of very good quality; trade is exceedingly dull, and they cannot all be sold, although there is a disposition to take lower rates. We have but few Sheep and buyers are equally scarce; our quotations are with difficulty realised. Calves are plentiful; choice ones are making about as much as of late, and inferior are unsaleable. From Germany and Holland we have 190 Beasts, 350 Sheep, and 194 Calves; from Spain, 52 Beasts; from Scotland, 200; from Norfolk and Suffolk, 100; from the northern and midland counties, 700; from the western, 230; and 110 Milch Cows from the home counties.

| Best Scots, Herefords, &c. ... | 3 8 to 3 10 | Best Long-wools . | 3 6 — 3 10 |
|---|---|---|---|
| Best Short-horns | 3 6 — 3 8 | Ditto Shorn ... | ... |
| 2d quality Beasts | 3 0 — 3 4 | Ewes & 2d quality | 2 10 — 3 4 |
| Best Downs and Half-breds ... | 4 0 — 4 4 | Ditto Shorn ... | ... |
| Ditto Shorn ... ... | | Lambs ... ... | 0 0 — 0 0 |
| | | Calves ... ... | 2 8 — 4 0 |
| | | Pigs ... ... | 3 0 — 4 4 |

Beasts, 1713; Sheep and Lambs, 2920; Calves, 245; Pigs, 280.

MARK LANE.

Monday, Dec. 8.—The continuance of mild weather appears to have a depressing influence on the corn trade. The supply of English Wheat by land carriage samples this morning was small, but the condition being generally bad, such qualities could only be realised 1s. to 2s. per qr. below the prices of this day se'nnight. For foreign there was scarcely any demand, but holders were not disposed to make any reduction from our quotations.—Barley, Beans, and Hog Peas are a slow trade at 1s. per qr. reduction; the value of White Peas remains unaltered.—The Oat trade is very dull, and rices must be written 6d. per qr. cheaper.

| Per Imperial Quarter. | s. s. | | s. s. |
|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 39—41 | Red ..... | 36—38 |
| — — fine selected runs...ditto | 42—44 | Red ..... | 38—40 |
| — — Talavera ..... | 46—48 | | |
| — Norfolk, Lincoln, & York... White | 34—38 | Red ..... | — |
| — Foreign ..... | 32—49 | | |
| Barley, grind. & distil., 25s to 26s...Chev. | 28—31 | Malting . | 25—27 |
| — Foreign... grinding and distilling | 22—26 | Malting . | — |
| Oats, Essex and Suffolk ..... | 16—18 | | |
| — Scotch and Lincolnshire...Potato | 19—21 | Feed..... | 18—20 |
| — Irish .....Potato | 18—20 | Feed..... | 17—19 |
| — Foreign .....Poland and Brew | 18—21 | Feed..... | 16—19 |
| Rye ..... | 28—3 | Foreign . | — |
| Rye-meal, foreign.....per ton | — | | |
| Beans, Mazagan ... ..25s to 28s.....Tick | 26—31 | Harrow . | 26—31 |
| — Pigeon.....28 — 33... Winds | 31—32 | Longpod | 25—27 |
| — Foreign .....Small | 22—30 | Egyptian | 23—25 |
| Peas, white, Essex and Kent.....Boilers | 34—36 | Suffolk... | 35—37 |
| — Maple.....27s to 29s .....Grey | 25—27 | Foreign . | 28—36 |
| Maize ..... White | — | Yellow... | — |
| Flour, best marks delivered ...per sack | 35—39 | | |
| — Suffolk .....ditto | 25—32 | Norfolk . | 25—32 |
| — Foreign .....per barrel | 15—21 | Per sack | 28—33 |

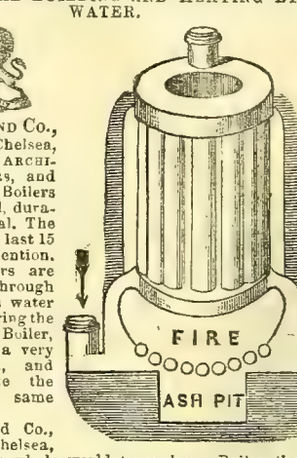
Friday, Dec. 12.—The arrivals of all grain continue small, particularly of Wheat from abroad. To-day's market was attended by a few country millers visiting the cattle show; holders evince great firmness, but the amount of sales continues unusually limited; prices of Wheat must be considered nominally unaltered.—The value of Barley, Beans, Peas, and Oats remains as on Monday, there being scarcely any business doing.—Flour continues in moderate request.—A cargo of Sandomirka Wheat afloat realised 38s. per qr. f. o. b., including freight and insurance.

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Nov. 1..... | 36s 6d | 25s 7d | 17s 5d | 24s 9d | 28s 6d | 27s 5d |
| — 8..... | 36 1 | 26 1 | 17 6 | 25 11 | 28 10 | 28 2 |
| — 15..... | 36 4 | 26 7 | 18 1 | 26 0 | 28 8 | 28 3 |
| — 22..... | 36 9 | 27 0 | 18 3 | 23 2 | 29 8 | 28 7 |
| — 29..... | 37 2 | 27 1 | 18 8 | 25 7 | 30 5 | 28 10 |
| Dec. 6 ..... | 37 6 | 27 0 | 18 2 | 27 6 | 30 6 | 29 6 |
| Aggreg. Aver. | 36 9 | 26 7 | 18 0 | 25 4 | 29 5 | 28 5 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Nov. 1. | Nov. 8. | Nov. 15. | Nov. 22. | Nov. 29. | Dec. 6. |
|---|---|---|---|---|---|---|
| 37s 6d | ... | ... | ... | ... | ... | |
| 37 2 | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |
| 36 6 | ... | ... | ... | ... | ... | ... |
| 36 4 | ... | ... | ... | ... | ... | ... |
| 36 1 | ... | ... | ... | ... | ... | ... |


HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

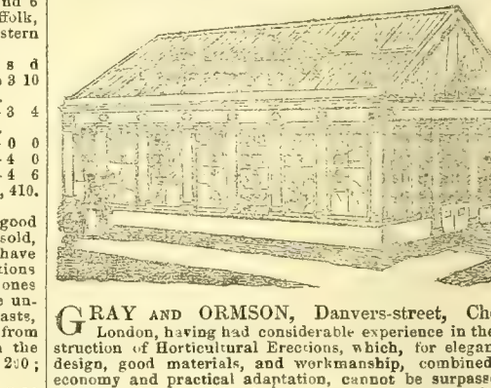



J. Weeks and Co., King's Road, Chelsea, Horticultural Architects, Engineers, and Builders. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. Weeks and Co., King's Road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their Victoria regia Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY and ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.



This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

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WARMING AND VENTILATING.

D. and E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The public is respectfully informed the ALES of this season's Brewings are now ready for delivery, and may be obtained Genuine in Casks of 18 Gallons and upwards, either singly or in any quantity, at their respective Stores, as under, where also a list of the Bottlers may be had:—The Brewery, Burton-on-Trent; 61, King William-street, City, London; Cook-street, Liverpool; High-street, Birmingham; The Exchange, Manchester; Royal Brewery, Dudley, and 33, Virginia-street, Glasgow.

CROSBY HALL VAULTS, No. 35, BISHOPSGATE-STREET-WITHIN.—CURRALL and SON beg to invite public notice to their STOCK of OLD BOTTLED WINES. They being desirous to secure that patronage which wines of the first quality, at fair and remunerating profits, will maintain, respectfully submit the annexed list of cash Prices:—

| | Per doz | | Per doz. |
|---|---|---|---|
| Port, old bottled | 36s. and 42s. | White Port in pints, bottles and package inclusive | 30s. |
| Ditto, six years in bottle | 48s. | Sherry (excellent dinner wine) | 28s. |
| Sherries, pale and brown | 36s. | Port, superior draught | 28s. to 33s. |
| Ditto ditto | 42s. to 48s. | | |
| Marsala | 24s. | | |
| Champagne (1 doz. cases) | 54s. | | |

PALE BRANDY, 60s. per doz.; bottles, 2s. per doz.; hampers, 1s. per doz.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s, Sole Establishment, 130B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

PRIZE TURKEYS AT BIRMINGHAM.—Three Couple of young wild American Turkeys, hatched on the 24th of May last, from these fine birds (which were awarded an extra Medal, as well as the first Prize, at Birmingham), may be had on application to E. W. WILMOT, Hulme Wa field, Congleton, Cheshire.—Price 4l. a couple

INTERESTING FACT.—"The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'ROWLANDS' MACASSAR OIL,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. The fact speaks too strongly for itself to require comment."—*Bell's Week'y Messenger.*

ROWLANDS' MACASSAR OIL.

The unprecedented success of this discovery in restoring, preserving, and beautifying the human hair, is too well known and appreciated to need comment. For Children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine comb unnecessary.—Price 3s 6d., 7s.; family bottles, (equal to 4 small), 10s. 6d., and double that size, 21s. per bottle.

N B. Each bottle of the genuine article has the words—ROWLANDS' MACASSAR OIL, engraved in two lines on the wrapper; and on the back of the wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Druggists.

CHRISTMAS HOLIDAYS.—THE GARDENS of the ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY, except Sunday, from Christmas Eve to January 6, inclusive. The HIPPOPOTAMUS and the URAN UTAN are exhibited from 11 to 4 o'clock. The collection includes 1750 living animals, having recently been increased by the addition of 60 species from the collection at Knowsley.

FORD'S EUREKA SHIRTS.—"The Great Exhibition has produced a multitude of novelties which have alternately delighted and astonished the world. How many of these will survive for any practical purpose is a question. It is another question if any one of them will bring half the practical comfort of a good shirt. Mr. FORD, of the Strand, has an invention of this kind, which is a material improvement upon the old plans, and for positive enjoyment is worth nineteen-twentieths of the marvels of the huge building in Hyde-park."—*Atlas.*

FORD'S EUREKA SHIRTS are not sold by any Hosiers or Drapers, and can, therefore, be obtained only at 185, Strand. They are made in two qualities, the first of which is 40s the half dozen, and the second quality 30s the half dozen. List of Prices, containing an illustration, with directions for self-measurement, sent per post free.—RICHARD FORD, 185, Strand.

DINING-ROOM FURNITURE, Sideboards, Chairs, extending Dining Tables, &c., in oak and mahogany, warranted of first-rate materials and workmanship.—The public are invited to select from a choice of 40 sideboards, in various styles, 100 dozen of chairs in morocco, and 30 sets of extending dining tables. Also, several sets Utrecht velvet and silk damask window curtains, ready made, Turkey and Brussels carpets, &c., at prices one-third less than elsewhere; also a large quantity of second-hand furniture constantly on sale.—DRUCE and Co., 68, 69, and 58, Baker-street, Portman-square, London.

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DOMESTIC SANITARY MEASURES.—Places in Gardens rendered as comfortable as the best-constructed water-closets, by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Sold only at FIFE and Co.'s Scientific Repository, 26, Tavistock-street, Covent Garden, London, sole depôt for the Patent Hermetically-Sealed Inodorous Chamber Commodes, 1l. 1s., 2l. 6s., and 3l.; also improved Portable Water Closets, with pump, cistern, and self-acting valve. Orders by post attended to.

THE BRITISH HEATING AND VENTILATING COMPANY, Offices, 14, Lincoln's-inn-fields, London, Under Hazerd's Patent.—The Company has now been successfully employed in all parts of the Kingdom, in PUBLIC and PRIVATE BUILDINGS, CHURCHES, CONSERVATORIES, FACTORIES, DRYING-HOUSES, &c., where a genial and healthy atmosphere is required.—Particulars and testimonials can be obtained by applying at the Company's Office.

Parties about to build, or those who suffer inconvenience from present arrangements, will save expense by consulting the Patentee, Mr. Hazerd, who has made ventilation and warming a peculiar study for years.



WATER BASINS.

J. SEELEY begs to inform Gardeners engaged in large grounds that he is prepared to supply ORNAMENTAL COPING FOR WATER BASINS, of various patterns, and to suit any circumference.

NOS. 1—4, KEPPEL ROW, NEW ROAD, REGENT'S PARK, LONDON.

SACKS.—4 Bushels, 3¾ lbs. ... 1s. 1d. net cash.
" 4 " 4 " ... 1 2 "
" 5 " 5 " ... 1 5 "
Present price for Bales of 100.
B. S. PLUMMER, 18, Bread-street, London.

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THE AGRICULTURIST'S CALCULATOR: A SERIES OF TABLES for LAND-MEASURING, DRAINING, MANURING, PLANTING, WEIGHT of HAY and CATTLE by MEASUREMENT, BUILDING, &c., Adapted to the use of all engaged in Agriculture or the Management of Land.

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Free by post for 13 Postage Stamps,
THE TREATISE ON THE CULTIVATION OF THE CHRYSANTHEMUM so favourably noticed and highly recommended by the Editor of the *Gardeners' Chronicle* (see No. 47, November 22). To be had of the Author, WILLIAM IVORY, gardener to the Rev. George Chetwode, Chilton House, Thame, Oxford (late of Tring Park).

CHRYSANTHEMUMS.

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INDEX.


| | | | |
|---|---|---|---|
| Agricultural Soc. of England.. | 812 *c* | Manures, hints to buyers of .. | 810 *b* |
| Ammonia, escape of ..... | 809 *b* | — Pinguedo ..... | 811 *a* |
| Apples, table..... | 808 *b* | Manure heaps ..... | 809 *b* |
| — kitchen ..... | 808 *c* | North London Floricultural Society ..... | 807 *c* |
| Banana, the ..... | 805 *c* | Onions, Potato..... | 805 *a* |
| Bats and fireflies..... | 805 *a* | Orchids, sale of ..... | 808 *a* |
| Berberis nepalensis ..... | 807 *b* | Peat, Irish ..... | 811 *a* |
| Birds, to keep off Gooseberries | 805 *a* | Pelargoniums, scarlet ..... | 807 *c* |
| Caledonian Hort. Society..... | 806 *b* | Plane tree timber ..... | 805 *c* |
| Calendar, Horticultural ..... | 808 *a* | Potatoes, manure for..... | 811 *b* |
| Chrysanthemums, Mr. Salter's | 807 *b* | Poultry yard, rev. ..... | 807 *a* |
| — at Birmingham ..... | 807 *c* | Pruning forest trees ..... | 805 *c* |
| Draining, under ..... | 310 *c* | — fruit trees ..... | 805 *b* |
| Fels, propagation of ..... | 806 *b* | Royal Botanic Garden, Kew .. | 807 *a* |
| Esenbeck's Herbarium..... | 807 *c* | Royal South London Floricultural Society ..... | 807 *c* |
| Forest trees, to prune ..... | 805 *c* | Seeds, bad ..... | 805 *a* |
| Fuchsia serratifolia ..... | 804 *a* | Smithfield show ..... | 811 *b* |
| Fungi, fructification of..... | 803 *b* | Stockholm Naturalists' Soc. .. | 807 *a* |
| Garden, hints on making ..... | 8 5 *b* | Strawberries, new ..... | 811 *c* |
| Garden Gleanings, foreign .... | 804 *b* | Timbe . Plane ..... | 805 *c* |
| Gooseberries, to keep birds from..... ..... | 806 *a* | — effect of soil on ..... | 805 *a* |
| Grape, Reeves' Muscadine .... | 808 *c* | Trees, forest, to prune ..... | 805 *c* |
| Grass seeds ..... | 813 *c* | — fruit, to prune ..... | 806 *b* |
| Harkness (Mr.) his election | 809 *b* | Victoria Regia ..... | 805 *b* |
| Herbarium Esenbeck's ..... | 807 *c* | Vines, management of.. | 805 *c*–815 *c* |
| Kitchen garden, to crop ..... | 805 *a* | Weather, the ..... | 814 *a* |
| Lisbon, gardens at ..... | 804 *b* | | |


ERRATUM.—In the Advertisement of A FARM TO LET IN WESTMORELAND, inserted last week at p. 800, for "A, Box No. 80, Liverpool," read "A, Box M. 80, Liverpool."

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GREAT SALE OF NURSERY PLANTS.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off, at moderate prices, at his extensive Nursery Grounds, a very large stock of transplanted LARCH, SCOTCH, and SPRUCE FIR PLANTS, of strong and smaller sizes, including seedlings, with a great variety of many of the other kinds of Forest and Ornamental Trees, generally grown in large nurseries; also Fruit Trees, Gooseberry, Currant, and Raspberry bushes, &c.

A large stock and great variety of very fine, strong, healthy, Ornamental Shrubs.

A very fine stock of Standard, Half Standard, and Dwarf Roses, many of them of the new kinds, and also of the approved and most beautiful sorts.

N.B.—As the advertiser wishes to retire from business, a Lease of all his Nursery Grounds, which belong to himself, and every encouragement would be given to a purchaser of the above stock, and the good-will of the business, which has been carried on by his relations for more than 70 years past, and with great success.

Should a purchaser not be found, a partner with capital, and a good knowledge of the business, would be agreed with.

TO NURSERYMEN, PLANTERS, &c.

J. OGDEN begs to offer from 3000 to 4000 fine well-grown TREES, from 10 to 15 feet high, comprising grafted English Elms, Birch, Ash, Beech, Limes, Horse and Spanish Chestnuts, English Oak, Italian Poplar, Hornbeam, Mountain Ash, Purple Beech, &c. Several hundred Spruce Firs, 6 to 9 feet.

Also a fine collection of SPECIMEN WEEPING PLANTS, and a general assortment of Nursery Stock. Nurseries adjoining the railway station.—Coventry, Dec. 20.

TO NURSERYMEN.—Tenders or Offers are required for the supply of several Hundreds of the undermentioned TREES and SHRUBS, viz.:—Black Italian and Balsam Poplar, Spanish and Horse Chesnut, Sycamore, Silver Beech, Scarlet Maple, Mountain Ash, Larch, Elm, Spanish Oak, about 10 feet high.

Thorns (various), Lilacs, Laburnum, Guelder Rose, about 5 feet high.

Spiræa Frutex, Persian Lilac, Scarlet Dog-wood, Laurel, Arbor-Vitæ, Lauristinus, Aucuba, Evergreen Oak, Phillyreas, 2 feet 6 inches.

To be delivered, if in London, at the Bricklayers' Arms Station; and, if in the country, at the nearest Station on the London, Brighton, and South Coast Railway. Letters addressed to Mr. LEWIS SLIGHT, Brighton, will meet with immediate attention.

LANDSCAPE GARDENING.
EXCLUSIVELY PROFESSIONAL.

MR. THOROLD, of Norwich, offers his services to the Nobility and Gentry as a LANDSCAPE AND ORNAMENTAL GARDENER, in the highest style of the Art, including Decorations around a House, forming Water, Approaches, Picturesque Scenery, &c.

AMERICAN APPLE TREES.

J. GREGORY has for sale about 1000 Choice APPLE TREES, imported from America in the autumn of 1850, including the following:—Northern Spy, Spitzenburgh, Jersey Blue, Rhode Island Greening, &c., all grafted on Seedling Stocks of three years' growth, and are in a thriving condition, having advanced from 2 to 4 feet since planted in this country. Price 12*s.* per doz.

Post-office orders made payable to JEREMIAH GREGORY, Yardly Gobion, near Stoney Stratford, Bucks.

MANNINGTON'S PEARMAIN.

JAMES CAMERON, NURSERYMAN and FLORIST, returns his best thanks to his friends and the public in general for their liberal support, and begs to say he has now for sale a sufficient quantity of the above valuable APPLE, and is thus enabled to offer them at so reduced a price as to ensure their extensive cultivation. It is a middle sized variety, and different from any in cultivation, and remarkable for its rich sugary and aromatic flavour. It is in its height of flavour from January till the end of May, and a very good bearer. Strong maiden plants 2*s.* 6*d.* each. Remittances from unknown correspondents previous to the trees being sent, by Post-office orders, made payable to JAMES CAMERON, Nurseryman, Uckfield, Sussex.

J. C. has also an extensive stock of Spruce, Larch, Fir, and Forest Trees of all descriptions; Fruit Trees, Evergreens, and Roses of first-rate quality.

HOME GROWN SEEDS.

SUTTON'S COLLECTIONS OF GARDEN SEEDS.—*The superior quality of our Seeds is plainly testified by the numerous orders we are daily receiving from parties who have had them in previous seasons, very many of which contain remarks, such as the following:—*

Extracts from letters now before us, which may be seen at our office. The names of the writers may be known by post, if required.

*From a Clergyman, near Darlington.*

"The best kitchen garden seeds I ever had were furnished by you."

*From Doneraile, Ireland.*

"Lord D. would be glad to have," &c., &c. "The seeds sent last year were excellent."

*From Cirencester.*

"I never received such a numerous collection, so good in quality, from any house."

*From Ripon, Yorkshire.*

"At one of the Horticultural Shows at Harrowgate, my gardener took 20 prizes, most of them from the produce of your seed; we also gained several prizes at other meetings, as many as 18 at one of them."

*From an eminent Horticulturist, at Sunninghill.*

"My gardener speaks very highly of your seeds."

*From Girvan, N.B.*

"I have much satisfaction in recommending your seeds to various friends, as I find they are much pleased with them."

*From a Clergyman, at Newport, Monmouthshire.*

"I have invariably found your seeds of all kinds very good."

*From North Walsham.*

"Your seeds are decidedly superior to those I can procure in this neighbourhood; I shall at all times be glad to recommend you to my friends."

*From a Clergyman, at Meonstoke, Hants.*

"I always recommend my friends to supply themselves from your establishment."

*From another Clergyman, at Kinsale, Ireland.*

"Being so much pleased with the garden and flower seeds sent last season, induces me to send to you for my agricultural seeds also."

*The very best kinds of seeds in cultivation may be obtained at 30 per cent. less than the prices charged in most parts of the kingdom, by ordering one of the undermentioned "complete collections."*

SUTTON'S COLLECTION OF GARDEN SEEDS.

| | £ | *s.* | *d.* |
|---|---|---|---|
| No. 1.—A COMPLETE COLLECTION OF GARDEN SEEDS, FOR ONE YEAR'S SUPPLY OF A LARGE GARDEN; including 20 quarts of Peas, in the best eight sorts for succession; the best eight sorts of Broccoli, together with the choicest Melons, Cucumbers, Lettuces, Cauliflowers, and every other sort of Vegetable required, and in full quantities ... ... ... ... ... ... | 2 | 10 | 0 |
| No. 2.—A COMPLETE COLLECTION, IN QUANTITIES PROPORTIONATELY REDUCED ... | 1 | 10 | 0 |
| No. 3.—A COMPLETE COLLECTION, EQUALLY CHOICE SORTS ... ... ... ... | 1 | 1 | 0 |
| No. 4.—A SMALL AND VERY CHOICE ASSORTMENT ... ... ... ... ... ... ... | 0 | 12 | 6 |

*If some kinds of Seeds are already possessed purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.*

EARLY ORDERS ARE PARTICULARLY REQUESTED, *and will have the preference of scarce sorts.*

Remittances *are not required* with the orders from clergymen, noblemen, and resident gentlemen, or their gardeners.

Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

SUPERB NEW EARLY PROLIFIC MELON, "VICTORY OF BATH."

GARAWAY, MAYES, AND Co. having purchased the entire stock of the above MELON, beg to offer it to the public as a variety unequalled in flavour and productiveness. It obtained a Certificate of Merit at the April Show, in Bath; First Prize at Chiswick, in May; also two First Prizes at Bath, in May and June last. It was grown in pots with Bromham Hall, under precisely the same treatment, and Ripe Fruit cut full six weeks earlier. The whole of the fruit exhibited were grown in pots.

| MELONS. | Per Packet—*s.* | *d.* |
|---|---|---|
| Victory of Bath ... | ... 2 | 6 |
| Bromham Hall ... | ... 1 | 0 |
| Camerton Court ... | ... 1 | 0 |
| With all other approved sorts. | | |

| CUCUMBERS. | Per Packet—*s.* | *d.* |
|---|---|---|
| Lord Kenyon's Favourite | 1 | 0 |
| Victory of Bath ... | ... 1 | 0 |
| Roman Emperor ... | ... 1 | 0 |
| Holm Pierpoint Wonder | 1 | 0 |
| Kelway's Victory | ... 1 | 0 |
| With all other approved sorts. | | |

G., M., and Co. also beg to inform their friends that they are now prepared to send out their well selected stock of Agricultural, Kitchen, and Flower Garden Seeds, the latter grown under their own inspection. Catalogues to be had on application.

G., M., and Co. can with confidence recommend their stock, as every article is thoroughly proved before sent out.

Durdham Down Nurseries, Bristol, Dec. 20.

SEEDS DIRECT FROM THE GROWERS—CARRIAGE FREE TO ANY STATION ON THE GREAT NORTHERN, GREAT WESTERN, SOUTH-WESTERN, OR SOUTH-EASTERN RAILWAYS.

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply their choice sorts of KITCHEN GARDEN SEEDS, NEW AND TRUE, at THIRTY PER CENT. LESS than the prices usually charged in most parts of the Kingdom. Carriage free, as see their Advertisement in the last page of last week's *Gardeners' Chronicle.*—Further particulars may be had by post, on application (enclosing one postage stamp), addressed, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

KNIGHT AND PERRY, in very gratefully acknowledging the liberal patronage they have been honoured with during the current season, beg respectfully to inform those among their patrons who may have transmitted their instructions and have not yet received the seeds ordered, that several seed lists have come to hand without a signature or any other mark by which it can be ascertained from whence they come. This fact, it is hoped, will fully explain to those, who unfortunately may be disappointed, the reason why their orders remain unexecuted.

K. and P., under these circumstances, will feel extremely obliged if their patrons will advise them by post, so that they may be in a position to prevent further delay or disappointment.—Exotic Nursery, Chelsea, Dec. 20.

GLASS FOR CONSERVATORIES,
GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS AND CO. beg to hand in their prices of SHEET GLASS for cash:

| Cut to order in Panes not above 40 inches long. | | Packed in Boxes of 100 feet each. | £. | *s.* | *d.* |
|---|---|---|---|---|---|
| 16 ozs.... ... 3*d.* to 3½*d.* | | 6 by 4, 6½ by 4½ ... | 0 | 13 | 0 |
| 21 do. ... ... 3½*d.* to 5*d.* | | 7 by 5, 7½ by 5½ ... | 0 | 15 | 0 |
| 26 do. ... ... 5*d.* to 7½*d.* | | 8 by 5, 8 by 5½ ... | 0 | 15 | 0 |
| In Crates of 300 ft., 16 ozs. to the foot, 2¾*d.* per foot. | | 8 by 6, 8½ by 6 ... | 0 | 17 | 6 |
| | | 9 by 7, 10 by 8 ... | 1 | 0 | 0 |

FOREIGN SHEET GLASS, of very superior quality, packed in cases of 200 feet, and in sizes varying from 36 by 26 to 44 by 30 inches, at 38*s.*, 40*s.*, to 42*s.* per case.

HARTLEY'S PATENT QUARRY GLASS.

Milk Pans, from 2*s.* to 6*s.* each, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the Trade.

HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate-street Without.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... ... ... | 13*s.* | 0*d.* |
| 7 ,, | 5 and 7½ by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 5 and 8 by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 6 and 8½ by 6½ | ... ... ... | 17 | 6 |
| 9 ,, | 7 and 10 by 8 | ... ... ... | 20 | 0 |
| 12 ,, | 10 and 13 by 9 | ... ... ... | 20 | 0 |

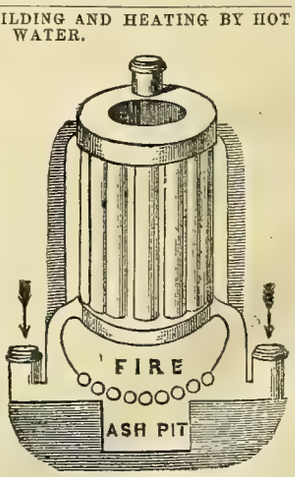
And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured. In sizes under 15 inches ..... 6*d.* per foot.

,, ,, 35 ,, ..... 8*d.* ,,
,, ,, 50 ,, ..... 9½*d.* ,,
,, ,, 75 ,, .....12*d.* ,,

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.




J. WEEKS AND Co., King's Road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS and Co., King's Road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's Road, Chelsea, London.

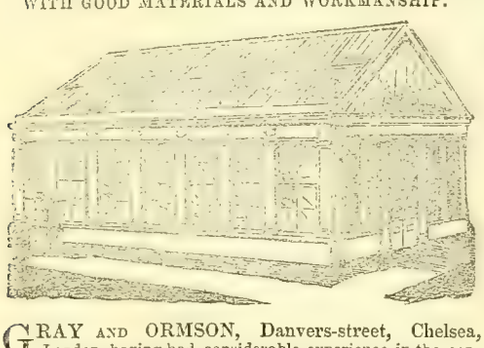
GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GREEN AND HOTHOUSE BUILDER. — Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1⅝ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 4*d.* per foot extra. J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where Roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance of Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

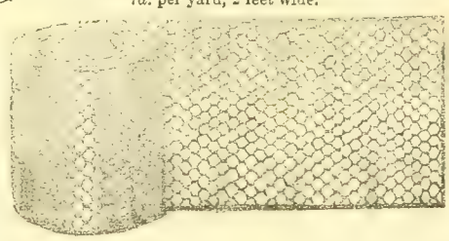
FOOD FOR INFANTS, LADIES NURSING, AND INVALIDS.—BULLOCK'S SEMOLA is agreeable to the taste, easy of digestion, and the most nutritious substance ever introduced. This food is sanctioned by the leading members of the profession.—Sold in packets at 1*s.*, 2*s.* 6*d.*, and 7*s.* 6*d.* each, by LLOYD BULLOCK, 22, Conduit-street, Hanover-square, and may be ordered of chemists and druggists.

CHRISTMAS HOLIDAYS.—THE GARDENS of the ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY, except Sunday, from Christmas Eve to January 6, inclusive. The HIPPOPOTAMUS and the URAN UTAN are exhibited from 11 to 4 o'clock. The collection includes 1750 living animals, having recently been increased by the addition of 60 species from the collection at Knowsley.

BERDOE'S SUPERIOR OVERCOATS.—QUALITY THE TRUE TEST OF CHEAPNESS.— A very large Stock of first class Garments, adapted to every taste and purpose, and reduced to the lowest possible scale of charge; also Overcoats for Boys of all ages (at from 25*s.* to 35*s.*), kept for selection, or made to order, at same charge, at a day's notice. Waterproof Shooting Jackets, Riding and Driving Capes, Leggings, &c. All guaranteed to resist any amount of rain, and possess every quality essential to a really respectable and permanently satisfactory article.

W. BERDOE, 96, New Bond-street, and 69, Cornhill (only).

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

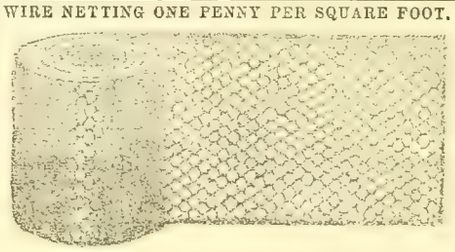


| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, .. | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1⅝-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1⅝-inch ,, strong ,, .. | 10 ,, | 8 ,, |
| 1⅝-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

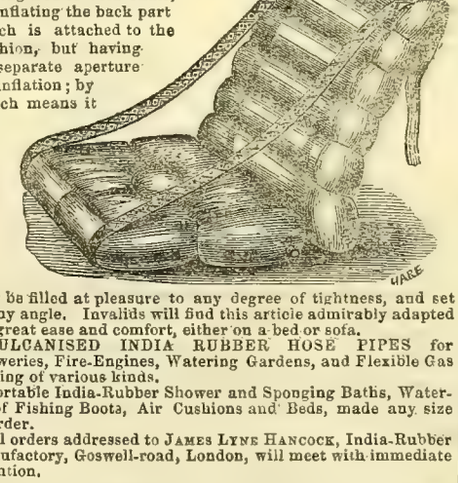
| | | | |
|---|---|---|---|
| 12 inches wide 3*d.* per yard. | | 30 inches wide 7½*d.* per yard. | |
| 18 ,, ,, 4½*d.* ,, | | 36 ,, ,, 9*d.* ,, | |
| 14 ,, ,, 6*d.* ,, | | 48 ,, ,, 1*s.* ,, | |

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for Plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.

This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it



may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.

ENGLISH TIMBER cut to any length and scantling at from 2*s.* 4*d.* to 3*s.* per foot for Oak or Ash, 1*s.* and upwards for Elm; Oak Sash Sills from 2½*d.* per foot; Foreign Timber, Dantzic, at 55*s.* per load; Yellow Deals from 3*d.* per foot; Floor Boards, ¾ in. and 1 in., yellow batten, at 12*s.* 6*d.* and 15*s.* All other descriptions equally low.—Apply to Mr. MAY, 90, Leadenhall-street, London.

TO LANDOWNERS AND AGRICULTURISTS.
EXTENSIVE DRAINAGE.

MESSRS. EASTON AND AMOS (Consulting Engineers to the Royal Agricultural Society of England), have just erected an

APPOLD PUMP, AT WHITTLESEA MERE,

which is 20½ times larger than the one exhibited by Mr. Appold at the Crystal Palace, and five times larger than any of the kind yet made. This powerful pump was publicly tried on the 12th of November, in the presence of the landed proprietors and farmers of the county, assisted by several scientific gentlemen, and at various lifts from 1 to 10 feet. At two to three feet, it raised 101 tons of water per minute (which would cover an acre of land one inch deep); and at five feet, it raised 75 tons per minute.—Grove, Southwark.

CROSBY HALL VAULTS, No. 35, BISHOPSGATE-STREET-WITHIN.—CURRALL and SON beg to invite public notice to their STOCK of OLD BOTTLED WINES. They being desirous to secure that patronage which wines of the first quality, at fair and remunerating profits, will maintain, respectfully submit the annexed list of cash Prices:—

| | Per doz. | | Per doz. |
|---|---|---|---|
| Port, old bottled | 36*s.* and 42*s.* | White Port in pints, bottles and package inclusive | 30*s.* |
| Ditto, six years in bottle | 48*s.* | Sherry (excellent dinner wine) | 28*s.* |
| Sherries, pale and brown | 36*s.* | Port, superior draught | 28*s.* to 33*s.* |
| Ditto ditto | 42*s.* to 48*s.* | | |
| Marsala | 24*s.* | | |
| Champagne (1 doz. cases) | 54*s.* | | |

PALE BRANDY, 60*s.* per doz.; bottles, 2*s.* per doz.; hampers, 1*s.* per doz.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The public is respectfully informed the ALES of this season's Brewings are now ready for delivery, and may be obtained Genuine in Casks of 18 Gallons and upwards, either singly or in any quantity, at their respective Stores, as under, where also a list of the Bottlers may be had:—The Brewery, Burton-on-Trent; 61, King William-street, City, London; Cook-street, Liverpool; High-street, Birmingham; The Exchange, Manchester; Royal Brewery, Dudley, and 33, Virginia-street, Glasgow.

NUMBER ONE, SAINT PAUL'S CHURCH-YARD.—HAPPY OLD CHRISTMAS in his joyous rounds now rapidly approaches. All his votaries are preparing to welcome him with becoming honours, first among which are good fellowship and kindness. Presents are flying from one end of the country to the other, and mutual good wishes are exchanged. There is no present more acceptable to our country friends than a little good tea. It is received with thankfulness, and is esteemed a rarity; its excellence is appreciated, and its enlivening and invigorating qualities impart cheerfulness to the circle. Don't then at this time forget to remember

DAKIN AND COMPANY, TEA MERCHANTS,
AND PATENTEES FOR ROASTING COFFEE IN SILVER CYLINDERS,
NUMBER ONE, SAINT PAUL'S CHURCH-YARD.

December 20.

*** The celebrated collection of Chinese teas from the Great Exhibition is now on show at "Number One."

CHRISTMAS PRESENTS.—At this festive period of the year, when friends and lovers assemble at the social board, or join in the mazes of the dance, a more than usual anxiety is created for PERSONAL ATTRACTION, and the following unrivalled discoveries for the TOILET are called into increased requisition; namely — ROWLANDS' MACASSAR OIL, for creating and sustaining a luxuriant head of hair, ROWLANDS' KALYDOR, for rendering the Skin soft, fair, and blooming. ROWLANDS' ODONTO, OR PEARL DENTIFRICE, for imparting a pearl-like whiteness to the Teeth, and ROWLANDS' AQUA D'ORO, a fragrant and spirituous Perfume, an essential accompaniment to places of public amusement, and crowded assemblies.

BEWARE OF SPURIOUS IMITATIONS.—The only GENUINE of each bears the name of "ROWLANDS'" preceding that of the Article on the Wrapper or Label.

Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

HOUSE FURNISHING AND INTERIOR DECORATIVE ESTABLISHMENT, 451, OXFORD-STREET, LONDON.—Cabinet Furniture of every description at marked prices—Brussels Carpet, 2*s.* 6*d.* per yard.—Damask Curtains, 10*d.* per yard and upwards; Ditto, in Silk and Worsted (French fabric), nearly two yards wide, at 8*s.* per yard.—The best Floor Cloths that can be made, cut to any dimensions, 2*s.* 3*d.* per yard. The largest Manufactory in London for Paper Hangings, English and French Decorations, adapted either to the Cottage or the Mansion, fitted up, showing the side of a room finished for occupation.

FRIGI DOMO.—A perfect protector against frost, a non-conductor of heat or cold, and cheaper in price than bass matting. A canvas made of prepared hair and wool, adapted to many horticultural and floricultural purposes, for covering up, where a fixed temperature is required. It is 2½ yards wide, and of any required length at 1*s.* 4*d.* per yard run.—Manufactured only by E. T. ARCHER, Carpet Manufacturer, 451, Oxford-street, London.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION. — Beware of the words "From METCALFE'S," adopted by some houses.

DOMESTIC SANITARY MEASURES.—Places in Gardens rendered as comfortable as the best-constructed water-closets, by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l.* Sold only at FIFE and Co.'s Scientific Repository, 26, Tavistock-street, Covent Garden, London, sole depôt for the Patent Hermetically-Sealed Inodorous Chamber Commodes, 1*l.* 4*s.*, 2*l.* 6*s.*, and 3*l.*; also improved Portable Water Closets, with pump, cistern, and self-acting valve. Orders by post attended to.

FORD'S EUREKA SHIRTS and FORD'S EUREKA SHIRT COLLARS are not sold by any hosiers or drapers. The Collars possess an improved method of fastening, which entirely dispenses with the use of strings, loops, or elastic contrivances. Adapted to any size, suitable for once or twice round cravats. They may be had in three different sizes, and either rounded or pointed. Price 1*l*s. 6*d.* per dozen. Two, as samples, sent post free on receipt of twenty-eight postage stamps.—RICHARD FORD, 185, Strand, London.

THREE THOUSAND LONDON POLICE CAPES, fresh dressed, 18*s.* and 24*s.* per dozen, for labourers and farm servants. Waggon and cart Waterproof Covers, 2*s.* per square yard, made up. Horses' loin Cloths, 7*s.* for shaft, and 9*s.* 6*d.* for fore horse. Driving Aprons, Waterproof Coats, Sou'-Wester Hats, 1*s.* each, large sized Capes, to effectually preserve a man from wet while stooping down, 3*s.* each. Transparent Sheeting, for garden use, 1*s.* per yard, nearly two yards wide: a large quantity of second-hand thick Tarpaulings, in excellent condition, 1*s.* per square yard, any size required. ROBERT RICHARDSON, 21, Tonbridge-place, corner of Judd-street, New-road, London.

ESTABLISHED 1786.
WEST OF ENGLAND AGRICULTURAL AND HORTICULTURAL ESTABLISHMENT,
For the supply of every requisite for the Farm and the Garden,
UNION ROAD, PLYMOUTH
(Adjoining the Station and Terminus of the South Devon Railway.)

NEW KITCHEN GARDEN SEEDS, GROWTH OF 1851.

WILLIAM E. RENDLE AND Co., Plymouth, have much pleasure in announcing that they have just prepared a

PRICED CATALOGUE
OF KITCHEN GARDEN AND FLOWER SEEDS,
Being an Appendix to the "Garden Directory," issued last season, as a guide to those who do not require the FULL COLLECTION.

*The prices are affixed to every article, and will be found as low as any respectable House in the Trade.*

They would particularly direct attention to the COLLECTIONS of Vegetable and Flower Seeds, which they have the fullest confidence in recommending, from the universal satisfaction they have given to their numerous customers.

COLLECTIONS OF GARDEN SEEDS.
Containing all the choicest Sorts offered, at the following prices:

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| No. 1.—Complete Collection of 20 quarts of Peas, and all other Seeds in proportion, for One Year's supply ... ... ... ... ... | 2 | 10 | 0 |
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The QUANTITIES for each Collection are STATED IN FULL in their "*Price Current and Garden Directory*," so that purchasers may see exactly what they are buying.

*Our* PRICED *Catalogue of Seeds may be had in exchange for* ONE PENNY STAMP. *There are also a few remaining copies of their "Price Current and Garden Directory," which will be sent in exchange for six penny stamps.*

*All Orders for Seeds, above 2l. (excepting heavy articles, as Grain, Tares, Clover, &c.), will be delivered* FREE OF CARRIAGE *to any Station on the following Railways:*

GREAT WESTERN
BRISTOL & BIRMINGHAM
SOUTHAMPTON AND DORCHESTER
BRISTOL AND EXETER
SOUTH-WESTERN
SOUTH DEVON,

*Or to any Market Town in Devon and Cornwall.*

OR TO

CORK, DUBLIN, AND BELFAST BY STEAMER.

For Catalogues and Price Currents, apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.
ESTABLISHED MORE THAN HALF A CENTURY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERÆ, ROSES, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had on application, by enclosing two postage stamps.—Windlesham Nursery, Bagshot, Surrey.

MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M. having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1s. 3d. per lb.; any quantity under 10 lbs. will be charged 2s. per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

SUPERB NAMED AND MIXED ASSORTMENTS OF ANEMONES, RANUNCULI, GLADIOLI, TULIPS, IRIS, CROCUS, LILIUM, IMPORTED DUTCH HYACINTHS, &c., with a large Collection of other Roots.—For BASS AND BROWN'S Priced Advertisement of the above, see *Gardeners' Chronicle* of Nov. 8th and 22d, or Catalogues sent free on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

RHUBARB.
MITCHELL'S ROYAL ALBERT
MYATT'S LINNÆUS ... ... ...
MYATT'S VICTORIA ... ... ... ...
Strong Roots, 50s. per 100.
WILLIAM MITCHELL, Enfield Highway, Middlesex.

SCARLET GERANIUM "THE AMAZON."

HUGH LOW AND Co. having purchased from Mr. Carpenter, of Bath, the entire stock of the above-named new SCARLET GERANIUM, have great pleasure in offering it to all admirers of showy ornamental plants. It is of robust habit, most brilliant colour, and a very free bloomer; and from the encomiums which have already been passed upon it by competent judges, who had opportunities of seeing it in perfection in the nursery of the successful raiser, H. L. and Co. feel confident it will be considered as ornamental an addition to our flower garden plants as its prototype was to the Great Exhibition. The following is the report of the Floricultural Editor of the *Gardeners' Chronicle*, and H. L. and Co. do not hesitate to say, it is the best Scarlet Geranium ever offered to the public:—

"PELARGONIUMS: *E Carpenter*. An excellent scarlet, robust in habit, and a profuse bloomer; trusses very large; each pip of excellent shape; petals substantial; together forming a globular head, rarely deformed by seed vessels; colour brilliant. A variety which is sure to become a favourite."

Strong well-established plants ... ... 7s. 6d.
Extra ditto, with flowering buds ... ... 10 6
Usual discount to the Trade.
Clapton Nursery, London, Dec. 20.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price 2s. 6d. per quart.

York Regent Potatoes, from prepared cuttings, 6s. per bush. Cambridge Radical do. (a first-rate second early) 6s. do. American Native, 10s. 6d. do. Early Manley, 10s. 6d. do. Early Ash-leaf Kidney, 10s. 6d. do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, 1s. 6d.; two-bushel, 2s. 6d. Sacks, 2s. 6d. each.

PLANTING SEASON.

W. H. ROGERS, NURSERYMAN and LANDSCAPE GARDENER, 130, High-street, Southampton, begs to offer any quantity and description of finely grown and well-rooted NURSERY STOCK, including Forest and Ornamental Trees, Evergreen and Flowering Shrubs, American Plants, Fruit Trees, Roses, Herbaceous Plants, &c., &c., at a very reduced price. Planting contracted for to any extent, engaging to replace failures. Gardens and Pleasure Grounds laid out and planted in the best taste.—All communications addressed to W. H. ROGERS, as above, will meet with immediate attention.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that he has just published a new CATALOGUE of Hardy Rhododendrons, Azaleas, Roses, Conifers, &c., and which may be obtained by enclosing two postage stamps.

*** The Colours of all the Rhododendrons worthy of cultivation are described; thus purchasers are afforded every facility in making selections.

G. JACKMAN, NURSERYMAN, Woking, Surrey, (1¼ mile from Woking Station, South-Western Railway), begs to announce that he has published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.—Woking Nursery, Dec. 20.

BEST LANCASHIRE GOOSEBERRIES, named, at 15s. per 100.
Also, APPLES, PEARS, CURRANTS, RHUBARB, &c., in all the best varieties, and at equally moderate prices.
Carefully packed, to carry any distance, or for exportation.
H. BIGLAND and Co., Manchester.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

JOHN ANDREW HENDERSON AND Co. have the pleasure of informing their patrons and friends that they are now sending out this very excellent new Grape at 21s. each.

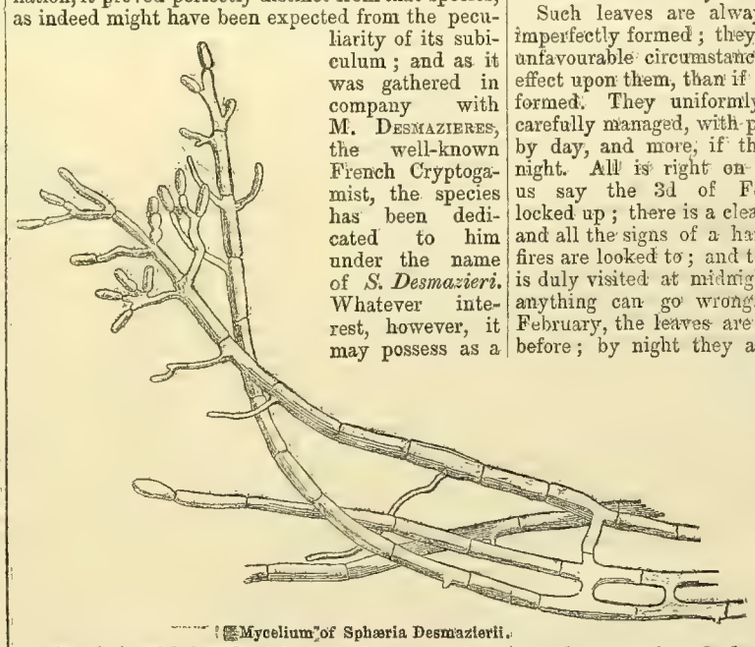
Its distinguishing characteristics are as follows:—The foliage is more deeply serrated, and the wood shorter jointed than the Black Hamburgh; the berries are oval and rather elongated, and are remarkable for a very fine bloom, not unlike that of an Orleans Plum; when fully ripe are of a fine deep black, having a fine rich flavour, and very juicy.

It colours full ten days earlier than the Black Hamburgh; being a most abundant bearer, and good setter, will prove a most desirable kind for pot-culture. One very remarkable property this Grape possesses, which much enhances its value, and makes it so superior to the Black Hamburgh is, that it never produces abortive, or, as they are termed, vinegar berries; after careful observation, extending over three successive seasons, not one could be detected, although in each season the crop was abundant and good. The usual allowance to the Trade.—Pine Apple Place, Edgeware Road, London.

The Gardeners' Chronicle.
*SATURDAY, DECEMBER* 20, 1851.

MEETING FOR THE ENSUING WEEK.
TUESDAY, Dec. 23—Civil Engineers (Anniversary) ..8 P.M.

FACTS are every day multiplying, indicative of two forms of fructification in Fungi, as in Algæ. FRIES, with his usual tact, has in great measure anticipated many late discoveries, but so long as his notions rested upon mere acuteness of intellect, without the certainty of actual vision, many of his most profound views could be regarded merely as theories, suggestive indeed of matter for much investigation, but not entitled to be recorded as so many truths actually acquired by science. We have lately adverted to one or two instances of double fructification, and we have now before us one which is most striking. A large and beautiful *Sphæria* occurred during the present summer, running over the ground and spreading to every neighbouring tuft of Moss and fallen leaf, covering them at first with a mouse-coloured felt, and soon developing its large perithecia with very much the appearance of the well-known *Sphæria aquila*. On examination, it proved perfectly distinct from that species, as indeed might have been expected from the peculiarity of its subiculum; and as it was gathered in company with M. DESMAZIERES, the well-known French Cryptogamist, the species has been dedicated to him under the name of *S. Desmazieri*. Whatever interest, however, it may possess as a species, it is with its physiological character alone that we are at present concerned.


Mycelium of Sphæria Desmazierii.

The great peculiarity about it is, that the subiculum, apart from the anastomosing of its threads, and a certain compactness of growth, is as complete a *Polyactis* as can well be conceived. The free extremities of the threads are branched in the same fashion, and the spores are as highly developed as in any species of the genus; and yet there is not the least question about the connexion of the subiculum with the perithecia; or, in other words, the latter are not mere parasites, but the legitimate offspring of the byssoid threads. Similar phenomena will doubtless be exhibited by other species; indeed we believe it all but certain that *Sporotrichum Geochroum* and some neighbouring species are merely rudimentary states of certain *Sphæriæ*, but we have seen nothing so striking as the instance before us.

In connexion with this subject it may not be uninteresting to give a curious case of the production of a second form of fruit in an obscure Lichen, in a situation where nothing of the kind has hitherto been suspected. Two or three black apothecia, resembling some obscure *Peziza*, but with evident traces of a crust, and belonging, we believe, to that form of *Biatora vernalis*, published by MOUGEOT and NESTLER, under the name of *Lecidea sabuletorum* occurred upon a dead stem of the common *Ammophila arundinacea*, which had been sent by Mr. W. GARDINER from the sands of Barrie, on account of its being covered with a minute Sphæria. The apothecia were at first examined under the supposition of their being some *Peziza;* but a glance at the hymenium, even before the discovery of the crust, was sufficient to show their true nature. In addition, however, to the usual structure of a Lichen, the paraphyses were crowned with from one to three well formed purple-brown obovate vesicles, just after the manner of the sporophores of many Hymenomycetous fungi. We do not recollect anything approaching to this except possibly the spores of *Lichenopsis* as figured by SCHWEINITZ. The two cases of the *Sphæria* and Lichen are worth recording, were it only for the curious analogy exhibited, in the one case to a true *Polyactis*, and in the other to the normal mode of Hymenomycetous fructification in an ascosporous genus; even if they are not indicative of something more than mere analogy. We have given figures of the subiculum of the *Sphæria*, with its conidia or second form of fructification, and of the fruit-bearing paraphyses of the Lichen mixed with asci filled with sporidia. *M. J. B.*


Conidiiferous paraphyses of Lichen.

IT is not very uncommon to hear of VINE LEAVES being BURNT in the winter time. With the ground covered with snow, and a dull sun, if any, it seems impossible that such a thing should occur, unless a flue bursts or something becomes red-hot inside a Vinery. Nevertheless we every year receive samples of leaves, brown and soft, which have evidently met a violent death; and how can they have died unless they were burnt?

Such leaves are always young and thin, and imperfectly formed; they are in the state when any unfavourable circumstances are more likely to take effect upon them, than if they were hard and fully formed. They uniformly come out of Vineries carefully managed, with plenty of heat and moisture by day, and more, if there is any difference, at night. All is right on some eventful day, let us say the 3d of February; the house is locked up; there is a clear moon and a bright sky, and all the signs of a hard frost, and therefore the fires are looked to; and to make all sure the Vinery is duly visited at midnight. It is impossible that anything can go wrong. Next day, the 4th of February, the leaves are not so green as they were before; by night they are unmistakeably brown; and on the 5th half are evidently dead. "How is this?" "Oh!" it is said, "the 4th was a bright sunny day, and the leaves were sunburnt." This answer is considered satisfactory; blinds are provided against another year. When February comes they are drawn down every sunny day, and withdrawn at night. But, somehow or other, the leaves are tenderer than ever, and another disaster befalls them; they are again burnt worse than before.

Well, then, it cannot be the sun that has done it. A flue must have leaked; and gas must have escaped into the house. But the house is warmed with water in pipes. Then, in that case, it must have been something from the pipes; or a hole, which nobody can find, *must* exist between the inside of the Vinery and the furnace, or the stoke-hole. Yet, it is very strange, no one can smell the gas. At

last, the cause of the heating apparatus having been fairly heard, and all the evidence for and against it having been fully weighed, a verdict is given in its favour; and some other cause of mischief has to be sought.

Then comes the grand discovery that the Vines *must* be poisoned. It *must* be something in the soil, or in the water; and as the analysis of soil and water is a mystery which passes ordinary comprehension, or as the water that is blamed can no longer be brought up for trial, suspicion rests upon it, and the soil is pronounced to have been the criminal.

It seems never to have occurred to those who have the misfortune to suffer from these accidents, that more things exist in nature than are dreamt of in their philosophy; or that a *tertium quid* remains uninquired about. Least of all seems dryness likely to afford a solution of the puzzle. What! dryness in a house, the floors of which are watered, and the walls syringed, and which reeks like a vapour bath whenever a cold draught finds its way in. Dryness! when a man in spectacles can't see an inch beyond his nose! Such a suggestion seems to be the most absurd of absurdities. Nevertheless we believe that in the majority of the cases to which these remarks apply, dryness, and nothing else, is at the bottom of the mischief.

If we were to remind a gardener that it is of little use to pour water into a tub with a hole in the bottom, for that in a few minutes the tub will be as dry as if it had received no water at all, he would probably admit the truth of the observation, although he might not have much respect for its profundity. But if we say that the more you heat and damp a Vinery the drier it will become, he will lend a less ready acquiescence; and yet, under certain circumstances, the one assertion is as true as the other.

In the late Professor Daniell's excellent memoir on climate, in the "Transactions of the Horticultural Society," the danger to plants in a damp heated atmosphere of a sudden depression of the external temperature, was first pointed out to gardeners. We all know that if a piece of cold glass is introduced into a warm damp room, moisture, in the form of dew, is immediately formed upon the glass. Now, this moisture previously existed in the form of elastic vapour; and the dew that forms on the glass is at the expense of the vapour surrounding it; so that if a cubic body of such vapour be represented by 1000, and 250 parts of it be abstracted by precipitation, or condensation, upon the cold glass, it is clear that there will be only 750 parts left; in other words, the air will be one-quarter drier after the introduction of the cold glass than it was before. Now, if we suppose that this abstraction of vapour were carried to its utmost limits, it is evident that the end will be the total drying of the air, in consequence of the condensation of all its vapour on the surface of cold glass.

The Vine leaf, when young, will not bear an atmosphere the degree of saturation of which is much below 800. If the saturation falls to 500, it will be dried up and perish. Now, observe what Prof. Daniell says, "The heat of the glass of a hot-house at night *cannot exceed the mean of the external and internal air*, and taking these at 80° and 40° (respectively), 20 degrees of dryness are kept up in the interior, or a degree of saturation not exceeding 528. To this, in a clear night, we may add at least 6° for the effects of radiation, to which the glass is particularly exposed, which would reduce the saturation to 434, and this is a degree of drought *which must be nearly destructive*." ——"When it is considered that a temperature at night of 20° is no very unfrequent occurrence in this country, *the saturation of the air may upon such occasions fall to* 120°." That is to say, instead of the atmosphere surrounding Vine leaves amounting to 7 or 8 parts in 10, which is what they require, it may not amount to more than $1\frac{1}{4}$ in 10, which is fatal to them. And thus, in an atmosphere of heat and moisture, the Vine leaves may actually die of drought. And that this occasionally happens, and is a frequent though unsuspected cause of injury to tender foliage, near a glass roof, we entertain no manner of doubt.

## FUCHSIA SERRATIFOLIA.

This being a favourite of mine, I am induced to send you my method of cultivating it; during this dreary season (when anything in bloom is desirable), I find it one of the gayest ornaments of the conservatory. At the present time I have many plants in 11-inch pots, a complete mass of flower, on shoots about six inches long; these have been subjected to the following treatment:—cuttings were struck early in February, and, after being potted off, they were repeatedly shifted into a mixture of equal parts loam, peat, and leaf-mould, with a little silver sand, until about the middle of May, keeping them well-topped; by that time they were nice bushy plants. As soon as the weather permitted, I then turned them into the open borders, where the soil was not over rich, choosing as dry a place as possible, and I took no further notice of them till the end of September, when they began to show their flower buds. I then prepared the same soil for them as before, and carefully lifted them into suitable pots, according to their size, keeping them in a close pit for a few days, and syringing them every evening till they recovered from the check they had received, giving air by degrees, till they could be fully exposed. I then placed them in a shady situation until they were housed, which was when the other greenhouse plants were taken in-doors. I cut back two-year-old plants as soon as they have done flowering, reducing the ball when they commence growing; I afterwards shift them as they require it, subjecting them exactly to the same treatment as young plants. I find that two-year-old plants bloom more freely than young plants, but the flowers are not so large.

Under the above treatment this is found to be a most desirable plant, and it amply repays the trouble expended on it, blooming freely from November till February. I have many times treated Salvia splendens in the same way, and it has continued gay in the conservatory through the winter months. *W. J. Ward, Prospect-hill, Reading.*

## FOREIGN GARDEN GLEANINGS.

(Lisbon.)

Two years ago I sent you a few observations on the Lisbon and Cintra gardens (see Vol. for 1849, page 405). The following is a letter I have received, giving some account of the appearance of these gardens in the early spring of this year. *Dodman.*

"*March* 24.—I have not forgotten my promise of giving you some account of Lisbon gardens and flowers. I have only delayed doing so because this has been a most disappointing winter to me, who saw Lisbon from October, 1848, to February, 1849, during which time its gardens were never without flowers, and I cannot remember riding out without seeing scarlet and pink Geraniums and Heliotropes fringing and hanging down from the tops of tall walls that enclosed terraced gardens, and occasionally the great bells of the Datura waving above them. In January, large Barbadoes Aloes thrust their crooked flower stems in all directions from among these; and great bunches of the golden tree Sedum, with its bright green tabular-shaped masses of leaves, relieved the monotony of the red and green line. In the gardens of the British embassy the dense foliage of the Belleassombre, the waving graceful Bamboo, the shining leaves of the Azorian Jessamine and Alegro campi, in the bright sunshine, cheated you into the belief that summer was hardly at an end. The warmth was sufficient in Lisbon, though not in Buenos Ayres, to enable you to live without fire; and during the seven months I spent there, so little rain fell that, in the spring, the flocks were dying for want of water. Four seasons of drought have sadly changed the beauty of these gardens; during the last summer scarcely any rain fell at all, and so cold a winter as this last has scarcely ever been felt. My impressions on returning here are very different from those of my first visit. The very Orange trees in a quinta I visited, between Belem and the mouth of the river, had suffered much from frost, and more than 50 had been killed; these probably were unhealthy trees or in too forward a state; the situation being in a moist valley, it is very different from the warmer climate near Lisbon.

"The public gardens being those to which attention is usually first directed, I shall begin by giving some account of the largest. Here in fine weather a band plays on Sundays, ladies and gentlemen promenade, and nimble-fingered gentry exercise their profession. In the week days the garden is nearly desolate, especially since there is only a gate at each end, those of the sides having been closed to stop up an agreeable thoroughfare half through its length. When I first came here, on each side the gate, as you entered, there was a pretty small garden, divided, in the Portuguese fashion, by hedges (not edgings) of Box from the walks, and subdivided by thick smaller hedges into formal beds; these were filled with shrubs and flowers; in the centre before you, on entering, there is a large round basin of water, with shoals of gold and silver fish, and a fountain which, however, I never saw play. But, lately, *improvements* have been made which entirely destroy the originality of the garden. The hedges and edgings have been taken away, and little remains save two fine round bushes of the Rosemary of the North, a Diosma. A vile palisade of canes (to cover which creepers seem to refuse to grow) protects the shrubs; each is at least 5 feet high. The space gained by the destruction of the two little gardens has been planted with trees, and for two years has had an unfinished melancholy appearance. You may remember how gay and pretty this little garden was in October, 1848.

"The whole garden site is a parallelogram of which you may judge the size from Knight's Map of Lisbon. At some distance, but round the circular basin I mention, four seats, segments of circles, backed by Box hedges, are placed; plenty of open space is allowed between these seats and the water. On leaving the fountain you enter the main walk or mall, which is very wide. Six rows of trees on each side form six other walks, and before the late *improvements* you might, on a glaring sunny day, go from one end to the other of the garden, when once the basin was passed, under shelter of these trees. But now, midway on each side, many trees have been cut down, to form two flower-gardens, to replace those destroyed. I cannot approve either of the change of situation or the method of laying out; the old parterres with their formal Box hedges suited a garden situated in the centre of a town and the rest of the design. Now you are interrupted in these shady walks by the new gardens, the principal feature of which are irregular little basins of water surrounded by yellow rocks on which a pure white water-god reposes. Luckily the rocks are planted with Irises and rock plants; and at the rapid rate at which all things grow here, it may be hoped their ochry hue will be soon overcome. The parterres are formal, but have shrubs planted in them. There were some charming very dwarf Apple-trees in full flower yesterday; the yellow Tobacco that here becomes a great tree, was yet in bloom, although fresh green leaves were appearing: Eucalyptus, Mimosas, Poinsettia, and the large varieties of Fuchsias are planted here; the beds are margined with different kinds of edgings; Thrift now in bloom, tiny Pinks also in flower, Rosemary, Thyme, the Lavender with a serrated leaf, Polyanthus, and Gorterias; this last forms the most beautiful edging I ever saw. There were thousands of flowers open in the sun, and when they were closed even the dark green and white leaves, and its close habit of growing, make it a pretty plant for the purpose.

"The whole of the beds were gay with common Ranunculus, scarlet and yellow colours prevailing, some Gladiolus, Stocks, Verbenas of different colours, Toad Flax, Larkspur, different varieties of China Roses Anemones, white Petunias; white and purple Iris and Calla, with other plants, fringed the water and its rockwork. The beauty, however, of the garden at the moment I write is the tender green of Acacias mixed with the brilliant lilac of the Judas tree; this latter is a tree that flourishes especially in this country; it grows as fast as the Elm, and seems to attain almost the same size: the Elm is not, however, a very large tree in this country. It appears to grow in any situation, as young ones have been planted among and under the rows of trees in this garden; and though all are planted thicker than I think right for avenues of trees, they seem to flourish well. I have also seen trees sheltered and shaded of the Judas cut down to about 7 feet from the ground, when of a large size, throw up a single shoot from the top of the ring of bark, and soon form a good head. The tendency here to flower is so great that some of the trees in one of the public walks have the branches, and even part of the stem, covered with masses of bloom. This garden, though not carefully cultivated, employs several people, on account of the labour required, even at this season, in watering, when the sun is so strong that one is glad to retire once more under the trees. Then you observe that these side alleys are in part separated from the main walk because, between every two trees, there is a thick tall Box hedge; and you are astonished, by finding, that not only trees are easily reared under other trees, but that round great Elms, Poplars, Acacias, rings of brilliant Virginian Stock are in flower, and that the white Florentine Iris, the scarlet Geranium, Oxalis Braziliensis (?), and other plants, flower and flourish, there being in fact plenty of light. Near the end of the shaded walks, on each side, are tall hedges of Box, arranged so as to form an oval space, with four openings; against each Box segment of the oval a handsome stone seat is placed. The centre walk terminates in a large fountain placed in three arches against a wall; in the middle one is some ugly black rockwork, more covered with weeds than plants; the only one worth noticing, and belonging to the situation, being Adiantum Capillus-Veneris, with which formerly every fountain, or dropping well, or watercourse in the environs of Lisbon abounded, but of late it has been so much gathered for the manufacture of capilaire for the coffee-houses, that it threatens to become extinct. You know how it grows near Cintra; formerly there were more Box hedges between the trees in these walks, and it is a pity they were destroyed: a garden full of these hedges is the characteristic of the Portuguese style of gardening. Beckford has described them well; being in this case only planted in the space between two trees, and then a space left between the two next, they did not interrupt the passage from alley to alley."

## Home Correspondence.

*New Strawberries.*—When I ventured to express an opinion upon the merits of Mr. Cuthill's Black Prince and Kitley's Goliath Strawberries, I was prepared to encounter some little opposition to my view of their merits. But I confess that I did not expect to be honoured with a challenge from Mr. Kitley, little conceiving that so large and excellent a grower as I believe him to be (in a locality so pre-eminent for this fruit), would select a person who only grows for private consumption (and who consequently has but a comparatively limited space of ground to select from), for an antagonist. Truth is often unpalateable, and I fear it may be so on this occasion; but still I have no hesitation in saying that neither of these kinds has realised the expectation I had formed of them, although subjected to the most liberal culture. Mr. K. takes exception at my expression "insipid;" and he is right, for I admit that it was indefinite; but I will substitute for that word, that it did not prove high flavoured with me. Were I to say that it is not a fine large kind, I should do it injustice; but every one who tasted them at Nuneham preferred the British Queen. Mr. Kitley refers me to testimonials; I refer him to the Journal of the Horticultural Society of London, where, at p. 283 (if he will

refer to it), under the head of "New Fruits," he will find "Kitley's Goliath Strawberry: Fruit very large, but not so large as Myatt's Mammoth; red, with a coarse surface; flesh pale, with a large core; too acid. This variety cannot be recommended for cultivation." As I cannot see that if I were to accept Mr. K.'s challenge, it would be of any use to the gardening public, I must respectfully decline his offer, as unsuited to "my book." He will therefore, in this matter, walk triumphantly over the course. When I say that I have been "victimised," I mean that I paid much attention, and took great pains, to cultivate Goliath, thinking I had got a prize; but it proved, in the opinion of myself, my employer, and many other gentlemen, a blank. Certainly my stock did not come from Mr. Kitley himself direct. Perhaps the gentleman who has so kindly elucidated the history of the Black Prince, in a former number of your Paper, will favour us with that of the "Aberdeen Beehive;" a kind, I believe, that originated with some honey-seekers in the "far north." In justice to Mr. Cuthill, I ought to say that I have heard that the Black Prince "forces well," and it may be useful from its earliness in small gardens, where there is not convenience for forcing. To the market gardeners it is so, for a day or two in ripening must make a great difference in price. In the Journal of the Horticultural Society, at page 282, under the head of "Cuthill's Black Prince," it is said that "earliness is the principal merit of this Strawberry;" and, again, "flesh dark red, tolerably rich, but scarcely equal in this respect to the Roseberry." Now, the Roseberry, as every one knows, has been in existence for these 30 years, and the Horticultural Society admits that it is slightly superior to this *very Black* Prince. Mr. Kitley scarcely gives me fair play when he says that I make Mr. Myatt and the late Mr. Wilmot victimisers, because I said that Eleanor was too acid to be agreeable to my taste; but I added that it would prove valuable on account of its lateness and also for preserving. I have known both these growers intimately for some years, and never had a Strawberry or any other kind of fruit from them which did not maintain the character they gave it. Many years ago Mr. Wilmot sent out his "Superb," and superb it was, according to the general run of Strawberries at that time; but it was coarse and hollow, and too much like the Chili Pine in texture, which said Chili Pine is, I believe, the source from which large size in the fruit was originally obtained. I do not accuse Mr. Kitley of crossing from this kind, as it is probably not to be found in England at this time, unless the Horticultural Society may have preserved it. It is an enormously large, hollow, coarse, yellow kind. To that institution I am indebted for what I know on this subject, and for the opportunity of seeing this curious and now obsolete variety. I ventured a remark upon the Bicton Strawberry, which I grew for two or three years, and then found it useless, except for variety of colour in a large dessert. "Can a Strawberry be valuable for its colour?" asks Mr. K. Let him ask the French cook or confectioner who is making jellies and ice creams, or even Strawberry jam. Myatt's Mammoth is a very large kind, which, though not fit to eat, is so truly magnificent that I grow it extensively for display. The desserts here (according to the style of dinner), are sometimes made up with high stands of confectionery and fruit; in the latter it is grouped and mixed, the Grapes hanging down, and the Pine or Melon surmounting the whole. In the intervals are placed the Peaches, Nectarines, Figs, or Pears, and a few of the Mammoth Strawberries mixed with them have a most improving effect; the white Strawberry is pretty for this purpose, but too small. I beg that it may be understood that any remarks I may have made upon the varieties of this fruit apply only to my own requirements, which oblige me to produce a vast supply of fine fruit, both early and late, for the kitchen and the table. I now take my leave of the subject, first assuring Mr. Kitley that I have acted conscientiously in the opinion I have given, that I am not at all unwilling to concede to him all the eminence as a grower which he claims for himself, humbly hoping he he will permit me to exercise my judgment upon the evidence of my senses; and promising to do public penance, in the way of recantation, whenever Goliath has driven British Queen and Eliza from Covent Garden Market, and the Philistines form an army of occupation at Manor Farm, Deptford. *Henry Bailey, Nuneham Park, Oxford.*

*Bad Seeds* (see p. 789).—I was glad to see the remarks which were appended to "Falcon's" account of bad seeds. I for one have suffered as "Falcon" describes, *i. e.*, either from carelessness or wilful neglect; last spring I sowed Broccoli seed from four packets, with the names on them as ordered, but when they came up it would have puzzled anyone to make more than two kinds of them—these, viz., Walcheren and Winter Imperial Broccoli, were, however, very fine; two kinds of Beet were ordered, but the seed was evidently from one bag, for no distinction whatever could be perceived between the two. *Commoneo.* [Yes; that's the way.]

*Potato or Underground Onions.*—I have grown a quantity of these during the past season, but they are not to be depended upon, as every third or fourth season proves fatal to them. They become rotten very early in the autumn, and so often does this happen that few now attempt their growth. One thing in their favour is that when the general crop of spring sown ones is a failure, they are likely to be good, as in 1849, while in the present year I do not expect to be able to save one to plant next season, and the crop of spring ones here, as in most other places, has been good. *An Old Gardener.*

*Victoria Regia in the Calcutta Botanic Garden.*—It will also be doubly gratifying to such of your readers as are interested in this Lily (and few I suspect are not), to learn that it is now flowering in these gardens. Our plant was raised from seeds received, last March, from Chatsworth; on reaching Calcutta one of the seeds was found to be sprouting, and this produced the plant which is now in bloom. On the 26th of May the seedling had got sufficiently large to be planted out on a hillock of prepared earth in one of the tanks. On the 5th of September the first flower-bud opened; since then seven other flowers have been produced. They average ten inches across; at first they are of a purer white, and subsequently of a brighter pink or rose than those flowers I have seen on the parent-plant at Chatsworth; while the fragrance, which cannot in my opinion be compared with that of any other flower or fruit with which I am familiar, is most delicious, and is quite perceptible at a considerable distance from the plant. The leaves are developed with great rapidity, but they show no rim at the edges, except during the first 12 hours of their existence on the surface of the water. Being naturally much interested in the success of the plant, I have watched its development closely. From daily observations made on the growth of the leaves, the following may be regarded as a statement of facts. July 25th, 4 P.M., entire foliaceous surface 45 square feet, four-fifths of which had attained full growth. July 26th, 4 P.M., entire foliaceous surface 54 square feet; increase, 9 square feet, produced by the united efforts of three leaves during a period of 24 hours, in an average temperature—air 89°, water 94°, Fah. The youngest leaf trebled its foliaceous surface by adding 4 square feet, nearly one half of the work. At that time (July 26th), none of the leaves, when fully grown, exceeded 3 feet in diameter, and all leaves produced since have been under 4 feet across. The number and size of the flowers, however, offer a proof that the leaves, although not attaining a large size, have at least done good duty. Do you consider the fact of the seed from which our plant was raised being matured on a plant growing under an English sky sufficient to account for the deficiency in the size of the foliage? [No.] As there is every prospect of the Victoria seeding soon, I shall observe to what extent the offspring develop their leaves, and give the result. *Robert Scott, Botanic Garden, Calcutta, Oct.* 6.

*Hints to Persons Making a Garden.*—Water is a no less important department in horticulture than rock and wood, and capable of being rendered a valuable addition to the garden; yet it is seldom well managed. Water may be considered in four points of view for horticultural purposes—as river, lake, cascade, or marsh. The advantage of running water for aquatic plants is generally acknowledged: some floating kinds are seen to the best advantage in a lake, while the stronger sorts, that flower above the water, stand well in a flowing stream, especially if backed by wood. On the borders of a lake or bay, of generally still water in a river, Hydrangeas not only grow well, but are seen in their greatest beauty, dipping their blue or rosy heads into the water, on the surface of which they are reflected. A cascade, or rather the damp rocks over which it must fall, may be made serviceable for mountain Ferns and Mosses, as well as for various Alpine plants that usually grow in such situations, Pinguicula, Adiantum, and some mountain Sedums, such as Monregalense, Saxifrages, especially of the mossy-leaved sorts, and other small plants—Saponaria, Silene, many dwarf Bell-flowers, &c., are adapted to the rocks within the spray of the waterfall. It may surprise many people to hear of a marsh as a garden feature. But many stately and beautiful plants are natives of marshes or shallow pools, dry half the year, where their strong roots go deep below the reach of frost. In a garden, most of such plants, Richardia æthiopica, Pontederia, Villarsia, &c., may be more ornamentally grown by the side of a lake, yet they compose a different class, horticulturally speaking, from the true floating herbaceous aquatics, as Water-Lilies, and will grow in deep moist soil, never covered with water; but here their flowering is doubtful. Under water, many roots are protected from frost, which would perish in the earth above its level. To flower them, however, the water must be of a certain warmth in summer, and had, therefore, better be only deep enough, where such plants are grown, to exclude the chance of freezing solid. The roots of many aquatics, even of the floating kinds, will bear to remain dry in the soil of a desiccated marsh, or even out of it, for many months, though they require immersion to grow and flower. Wood is the next important part of the pleasure-ground or garden, and a very important one in its capabilities. Most gardens, not very small, have some grove, coppice, or shrubbery, the management and adorning of which will come under this head. The first rule, then, should be, not to grow in a wood any but what are naturally wood plants. The forest admits of less latitude than the rock in the range of plants suited to it. But among those that are so, are many that are highly ornamental, and not fitted for any other situation. Such are the larger Ferns, many of the finest plants of the Boragineæ, herbaceous Orchids, Aroideæ, Hellebores, some leguminous plants, Lathyrus and Orobus, a variety of under-shrubs, evergreen and deciduous. In a peaty soil, the northern Pyrola, Convallaria, Rubus of many sorts, besides climbers, especially species from North America, Vaccinium, Azalea, Andromeda, Alliums, which would not meet encouragement in the flower garden, and other Liliaceous plants, will suit particularly well. It is a pity that the hardy species of Bignonia, Clematis, Virginian Creeper, &c., are not trained to trees in our groves. Celastrus scandens makes a fine effect so placed, with its amber berries. Aristolochia Sipho and Smilax excelsa are not to be judged of unless rambling in a state of nature over low bushes or climbing the loftiest trees of the forest. Wood may be properly connected with the moist or Alpine rocks, but should not be suffered near the arid or maritime ones, on account of their attracting damp, scattering dead leaves, and encouraging weeds. *S.*

*Plane Tree Timber.*—A correspondent at p. 725 inquires if any of your readers have any experience in the case of this timber. This is replied to at p. 757, where another correspondent says there are some bookcases made of this wood near Bridlington; but this correspondent (at p. 757) is evidently speaking of the Oriental Plane tree; whereas, I suspect the one at page 725 is speaking of the common Sycamore (Acer Pseudo-Platanus), which is universally called a Plane tree in the north of England; at least, I can scarcely suppose any gentleman would go and cut down such fine specimens of the Oriental Plane as are there spoken of—14 feet in circumference. If the Sycamore is meant, your correspondent may find an excellent market for it in the manufacturing districts, where it is in very extensive use for calendar bowls for bleachers, calico printers, &c., and fetches (for choice logs) as good a price as Oak; at all events it sells readily at from 4*s.* to 5*s.* per cubic foot. If your correspondent speaks of the Oriental Plane I can give him no information. *T. G., Clitheroe.*

*Vine Culture*—I should feel obliged if you would kindly give me some information on the following two points: 1st. I have a small house with Black Hamburgh, St. Peter's, Muscadine, Muscat, and Grizzly Frontignan Vines. The border (outside) has been most carefully made and drained, and is now covered with thick tarpauling for the winter. The house is not forced early, but we begin about the middle of March. The Vines bear most admirably, and have done so for several years; and their growth and general appearance proclaims that there is not very much wrong in the border or general management. The Grizzly Frontignan bears as well as, or even better, than its neighbours; generally showing two bunches, and in some cases even three on a spur; but in a length of rafter of 14 feet, I have never exceeded 15 or 16 bunches; last year I tried only 13, in the hope of preventing what I now proceed to describe. The bunches swell well, the berries becoming very fine (for the sort); they are always well thinned, and never shrink or shrivel at the points of the bunches; but many berries in each bunch remain green when the others colour, and never acquire flavour or sweetness. The footstalks only of these berries show a small black mark, and look pinched at that point; and I myself should describe the disease as a sort of shanking. I mean a decay of a small part of the footstalk only, instead of the stem or larger part of the bunch, as we generally observe in ordinary shanking. I have seven cart-loads of tan in a pit in the house, and perhaps I am too fond of moisture, but this is withdrawn as the Grapes begin to change colour (I mean both tan and moisture), abundance of air given, and fire heat if wanted. The thermometer is kept as near as may be to 75° without sun heat in the day time, and never above 65° at night; a trifle of air is admitted all night, so that I have never a rusted berry nor a scorched leaf. Hamburgh and St. Peter's colour admirably, and so do the unaffected berries of Frontignan, whose footstalks are sound: 2d. With the above sorts of Grapes I have one Muscat of Alexandria; I can grow the berries to a good large size, and get many almost up to the right proper amber colour by the end of September. I want to know what amount of heat I may give to the house, not to injure Black Hamburghs, St. Peter's, Muscadine, and Frontignan (Grizzly), so as if possible to help the Muscat a trifle more, and yet not injure any other Vines. The Muscats are even now very eatable, but not quite right. I want the best method of growing this magnificent Grape with the others. It is on the warmest rafter; my flue is the old smoke one, but with tan and abundant sprinklings, and we get on pretty well. *Novice.* [It appears from your statements that the general management of your Vines is good. Your border is protected from the chilling snow and rain of winter; but when you begin forcing, then an injurious discrepancy of temperature, as regards root and top, commences. From this cause, more perhaps than from any other, Vines are weakened and thrown out of condition; and shanking more or less is induced. Better remove the winter covering from your border by the 1st of March, and substitute plenty of hot dung for the purpose of warming the soil; this is more especially necessary for the Frontignan and Muscat of Alexandria. Fresh roots will thus be earlier formed; and you may afterwards increase the heat, for the sake of your Muscat, to 84°, without injuring the other sorts.][]

*The Banana.*—Is the Banana (Musa Paradisiaca) brought into England as a ripe fruit? If it is not, it might easily be brought from Egypt all the winter, as it seems to be cut and hung up in the pantry in Judea, to ripen, all the winter there! The Chaté Cucumber from Egypt may also be introduced fit for the table, with green Peas, French Beans, &c. *W.* [We fear that the Chaté Cucumber would not be to the taste of English people. The Banana is not unfrequently seen in London fruiterers' shops. We believe it comes from Madeira.]

*What is Pruning?*—In my remarks under this title

at p. 756, I omitted to notice what I think a great recommendation of Midsummer as the best season for pruning; which is, 1st, that the wound is smaller, by one whole season's growth, than it would be if deferred to the ensuing winter. 2d, that the healing process then begins immediately upon the amputation; a ring of young wood being formed round the edges of the wound in the same season. So that the practice of summer-pruning actually antedates, by two whole years, the final closing of the wound. *J. S. H., Perthshire.*

*Bats and Fireflies.*—I observe, at p. 789, a letter from Mr. Waterton, in which that gentleman regards my quotation from Dr. Buchanan's "Researches in the East," as apocryphal, characterising it as an 'Eastern nursery tale.' So high an authority, so emphatically put forth, is worthy of all regard; and I am really glad to be advised of my unintentional error. I may remark that the very same passages have been extracted into the columns of the "Penny Magazine," the "Saturday Magazine," and a variety of other literary journals,—in every instance it having been considered orthodox. I, like others, have fallen into the trap, and been deceived. *W. Kidd, Dec.* 15.

*Protection of Gooseberry and Currant Tree Buds from the Depredation of Birds.*—Mr. Rivers's mode of effecting this desideratum is as follows:—After the trees are pruned *secundum artem* for the ensuing season, he scatters thickly throughout the bushes "short muck," as we call it in Norfolk; or, in longer and more general parlance, "short litter from the dunghill." This is left on the bushes till the incipient leaves of spring burst from the buds, and perfectly preserves the bushes from depredation. *W. Mason, Nectou, Norfolk.*

*How to Crop a Small Kitchen Garden.*—Your correspondent "Vectis" now states, at p. 741, that he has got a good crop of Broccoli as well as Cabbage Sprouts; but I presume he is still deficient of the other things I mentioned, and many more I might have enumerated. Now, though I do not wish to blame him for adopting such a system, yet I think he should have done, what he evidently has not done, given it a fair trial himself before he recommended it to others. As he evidently, however, wishes to discover a mode of cropping by which he may make his garden more productive, and yet change his crops every year, I will endeavour to explain to him how I proceed to crop, so as to accomplish that object, as far as it can be done. If he attempts to grow many of the Brassica tribe he will, however, find it impossible to avoid having some of them on the same spot two seasons together; but by well manuring and digging for them he will find them equally as good; neither would he find the manure in any way injure their flavour, provided it was well decomposed. The manner in which I carry on the rotation of crops is by pre-arranging in my mind what each part of the garden is to contain for years. Thus I mark out a space 18 feet wide, in length according to the width of the garden, or from path to path. I well manure and ridge trench it now. About the beginning of March I plant it with 10 rows of early Potatoes, 2 feet row from row, and 8 inches set from set. I then sow spring Spinach broadcast, and rake it in; it is thinned out to about 5 inches apart; when fit for use, I cut that next the Potatoes first, it is all cleared off by the time the Potatoes are 6 or 8 inches high. I then fork the ground, earthing up the Potatoes; about the end of May I plant four rows of Brussels Sprouts between, placing the first row between the second and third row of Potatoes, the other three between the alternate rows. About the end of June, or beginning of July, I plant five rows of Broccoli; the first row between the first and second rows of Potatoes, the others between the alternate rows, so that the Broccoli and Brussels Sprouts stand 2 feet apart. The beginning of August I take up the Potatoes, forking the earth well up to the plants. In November I remove the Brussels Sprouts and transplant them thickly into some out-of-the-way corner; I then fork the earth up to the Broccoli as high as their lower leaves, in order to protect them from frost. In the first week in April I sow two rows of Peas where the Brussels Sprouts grew. About the end of the same month I sow two more. When the Broccoli are all off the Peas are earthed and staked. They are off by September, when the ground is again well dunged and dug, and planted with Coleworts 1 foot apart each way. When they are off it is again ridged and trenched without dung, and in March a trench is formed in the centre of the piece, 18 inches wide, with a bed on each side 4 feet 6 inches wide; a trench again on the outside, 18 inches wide, which leaves a space 2 feet 3 ins. wide on the outsides; the beds are sown with Onions, the trenches planted with Celery (and in early localities a row of White Cos Lettuce may be grown in each trench before the Celery is fit to plant out). A row of Cauliflowers is planted on the outer spaces, 15 inches from the trenches. When the Celery is off, the ground is again ridged, without dung, and in spring two beds are marked out, 4 feet 6 inches wide, with 1 foot for an alley between the beds; the same on the outsides. The beds are sown with Carrots, and a row of White Cos Lettuce is planted up the centre alley. The remaining 6 feet is sown with Scorzonera, 10 inches row from row. *J. Steel, Clitheroe.*

*Influence of Soil and Situation on Timber.*— The influence of soil, situation, and other circumstances on the quality of timber is perhaps greater than one is generally aware of, and I am led to infer (as far as a single instance can serve) that situation has much to do with the singular shakiness to which Chestnut timber is so liable. My instance is, that a number of Chestnut trees were lately felled in this neighbourhood, on a very high spot of sandy soil, the timber of which was found to be of excellent quality, very few of the trees being shaky; while among the Chestnuts felled in the low valleys below, though in similar soil, almost all the trees were found to be shaky. Oak trees will often flourish exceedingly on sandy soils, but I believe it is well known to sawyers that the timber grown on such soils is far inferior to that grown on clay lands. The vast difference in the quality of the timber of the Pinus sylvestris, as imported from the Baltic, and as usually grown at home, has led to an opinion that the trees from which such different timber is obtained must be of a different species or variety. I cannot help suspecting that this is an unfounded opinion, and that differences in soil, climate, or situation, are sufficient to account for the difference in quality; in fact, that perhaps nothing but age and slow growth are requisite to make our Scotch Fir timber equal in value to foreign red Deal. In confirmation of this opinion, I send you a a specimen cut from the side bough of a Scotch Fir, above 100 years old, in which the growth has been so slow, that most of the annual rings are too close to becounted. The wood is very hard, and, I suppose, durable in proportion. I have lately felled several Scotch Firs above 100 years old, the timber of which was pronounced excellent; and, in the opinion of the carpenter, nearly, if not quite, equal to foreign red Deal. *B.B.B.*

*Propagation of Eels.*—My attention has been called to a paragraph in a Worcester paper, giving an account of a so-called discovery by Mr. Boccius, that eels are propagated by spawn, like other fishes, and that they are not brought forth alive, as has hitherto been supposed! This may be true; but before I can give an unqualified belief to the assertion, I should like to have a few questions answered by Mr. Boccius. Who saw the fish from which these thousands of eggs were extracted, at the time this dissection was made? Are the parties who saw these eggs quite certain that the fish was an eel, and not a lamprey? Who saw the eggs from which Mr. Boccius produced living eels? Who, beside Mr. Boccius, ever saw eel-fry in a pond, which had no communication with a river? Will Mr. Frederick Allies, and Mr. Reed (the gentlemen to whom this spawn was exhibited), say whether the ovary which was shown to them was pretty much of the same form as that of the lamprey? And if not, in what respect did it differ? I am induced to ask these questions, both because, by inference, they show my own opinions on the subject, and because I am led, on undoubted authority, to believe that Mr. Boccius is inclined to claim all that belongs to him at least; and also because I have my doubts about the scientific attainments of Mr. Boccius in the natural history of fishes. It is difficult to prove a negative. My never having seen the strange things above mentioned certainly does not prove that other people, with better eyes and more discrimination, have likewise failed to do so; but I cannot help doubting, and I publish my doubt in the hope that the subject may be further inquired into. A true naturalist ought to wish only for the truth, without reference to his own pre-conceived notions; but, so far as my examinations have gone, I have failed altogether in detecting spawn in the fringes which I have fancied were the ovaria of the fish, or elsewhere; and I do not believe that eels are bred in fresh water at all. I see the fry ascending from the sea, in May and June, by thousands and millions; but I never met with one of these in a pond having no communication with a river. I have little doubt that I shall be pronounced in error touching this matter; except, perhaps, by those who know how perseveringly these little eels make their way up every stream, ditch, and driblet of water into which they can gain access. They penetrate into the water pipes and pumps; they climb up the perpendicular faces of the rocks and weirs, which obstruct the course of the river, even when they are only moist; adhering to the moss and stones almost as well as snails. The downward migration of the eels is observed here from July to the middle of September; but in the Manchester market, I find them up to this time (the end of November), and am informed that they are caught at the foot of Windermere in their downward migration. Pray will a dissection of the conger at various seasons throw no light on the propagation of eels? One would think that, in such large fish, the ovary would be much more easily distinguished than in smaller specimens. *T. G., Clitheroe.*

*Pruning young Fruit Trees.*—I have purchased at Mr. Bell's nursery, Bracondale, Norwich, a quantity of Pears and Apples (espaliers), vigorous trees, about four years old, and well rooted. They have been removed several times in this nursery, and root pruned. I shall feel obliged by your informing me if I am to cut them back, how much, and when; the trees were planted in October last. *C. G.* [Under the above circumstances, it will not be necessary to cut back, regularly, your newly-planted espalier trees. If you find that some of the branches have weak, soft, badly-matured wood at the extremity of the shoots, you cannot err in cutting several inches of it off. Side shoots, where they occur on the principal branches, should be cut back to within six inches of their bases.][]

## Societies.

Caledonian Horticultural, *Dec.* 4.—J. Hope, Esq., in the chair. Office-bearers for 1852 were elected on this occasion, together with three new ordinary members. —For the best four sorts of Pears fit for dessert, there were 10 competitors. A first prize was awarded to Mr. Hamilton, Gilmerton-house, for fine specimens of Marie Louise, Winter Beurré, Beurré d'Aremberg, and Doyenne d'Hiver; a second to Mr. Anderson, gr. to the Earl of Stair, for Marie Louise, Winter Nelis, Beurré d'Aremberg, and Beurré Diel; and a third to Mr. Ramsay, gr. to Sir D. Baird, Bart., for Beurré Rance, Beurré Diel, Beurré d'Aremberg, and Althorpe Crassane. —For the best six kinds of table Apples there were seven competitors, and three prizes were awarded—the first, to Mr. Calder, gr. to Lady Harris, Seacliffe, for Dickson's Emperor, Cambusnethen Pippin, Ribston Pippin, Gravenstein, Old Nonpareil, and Cornish Aromatic; the second, to Mr. Young, gr. to Mrs. H. N. Ferguson, for Ribston Pippin, Blenheim Pippin, Borsdorffer, Hollow-eyed Pippin, Doonside, and Old Nonpareil; and the third, to Mr. Morrison, Elvingston, for Redwell Pippin, Paradise Pippin, Old Nonpareil, Scarlet Nonpareil, Blenheim and Ribston Pippins.—For the best bunch of retarded Grapes, a first prize was awarded to Mr. Lees, gr. to the Earl of Haddington, for a bunch of Muscat of Alexandria; and a second to Mr. Thom, gr. to C. Balfour, Esq., for a bunch of Black Hamburgh. For 12 finest single clusters of Chinese Chrysanthemums, the first prize was gained by Mr. Young, Archerfield, with the following varieties:—Queen of England, Temple of Solomon, Minerva, Madame Chauviere, Queen, Princess Maria, Lucidum, La Reine d'Or, Queen of Gypsies, Salter's Annie, Defiance, and Queen of Yellows. The stand considered best entitled to a second premium was accompanied by no declaration, and the second prize was therefore voted to Mr. Reid, gr. to J. Wauchope, Esq., who produced the following:—Minerva, Mareschal, Queen of the Gypsies, Victory, Tasselled Yellow, Gem, Salter's Annie, Queen Victoria, Emma, Queen of Yellows, Beauty, and Julia. For the four finest flowered plants of Chrysanthemums, the silver medal was awarded, as first prize, to Mr. Pender, gr. to D. Anderson, Esq., his varieties being Princess Maria, Salter's Annie, Gem, and Pherasta. The second prize was assigned to Mr. Mitchell, gr. to Lady Keith, who produced Salter's Annie, General Marceau, Triumphans, and Lucidum. For the best two Chinese Primroses, the prize was assigned to Mr. Henderson, gr. to C. K. Sivewright, Esq., for well grown plants of the single and double white. For Savoys, one prize was given, to Mr. Gourlay, gr. to Sir J. Warrender, Bart. For four Leeks, each blanched to the extent of 6 inches at least: the prize was gained by Mr. Pousty, gr. to W. M. Innes, Esq., with specimens of a hybrid variety raised by him, which were superior to any entered for competition last year; the other sets produced on this occasion were inferior to those brought forward in 1850. For Celery, a prize was assigned to Mr. Goodall, Newbattle Abbey, for Cole's Red, and Goodall's Broad White Solid Celery. For three sorts of Onion, the first, Mr. Lees, Tynninghame, for James' Keeping, Strasburg, and White Globe; second, Mr. Nisbet, Summerfield, for James' Keeping, White Portugal, and Blood Red; and third, Mr. Goodall, for Strasburg, Yellow Portugal, and James' Keeping. For the silver medal offered by the Society for the best collection of dried specimens of British flowering plants and Ferns, there were two competitors, both producing excellent collections. The prize was awarded to Mr. Wilson, journeyman gardener, Minto House, near Hawick; his collection contained 719 species and varieties, the specimens being well preserved. A second premium was voted to Mr. Bell, journeyman in the Society's Garden, whose collection, although considerably inferior to the last in numbers, containing 591 species and varieties, was nevertheless deemed well worthy of a prize; the specimens had been well selected and carefully dried, and while displaying great neatness, the distinctive characters of the species were well preserved. The prize of two guineas offered by Messrs. P. Lawson and Son, for the best collection of dried specimens of hardy perennial herbaceous plants, was awarded to Mr. Anderson, journeyman in the Royal Botanic Garden, Edinburgh, for an excellent collection containing 2400 species and varieties. It seems necessary, however, to state that in this Herbarium, as in the one sent in competition for Messrs. Lawson's prize last year, the numbers have been swelled to an unnecessary extent by the introduction of Cyperaceæ, Gramineæ, and other plants not strictly "adapted for garden culture," as required in the Society's prize schedule. Messrs. Cunningham, Fraser, and Co., of the Comley Bank Nursery, contributed a flowering plant of Tillandsia splendens, Gynerium argenteum, &c.; Mr. Carstairs sent a collection of greenhouse plants, including Pelargoniums, Veronica Andersonii, Liliputian Chrysanthemums, &c.; and Mr. Stark exhibited a box of Chrysanthemums, of fine named varieties, and a pot of jelly made from the berries of Gaultheria Shallon. From Canonmills Cottage there was a beautifully flowered plant of Oncidium ornithorynchum; from Miss Wauchope, several greenhouse plants; from Mr. Laing, gr. to the Earl of Rosslyn, Calceolaria perfoliata in flower, and good Onions; from Mr. Young, a box of Chrysanthemums, and an Enville Pine-apple; from Mr. Stirling, Moray-place Gardens, Primula capitata, in flower; from Mr. Murray, gr. to the Marquis of Breadalbane, 11 varieties of Oranges, for which an honorary award was voted; from Mr. Calder, Seacliffe, a collection of 56 named Apples, 20 named Pears, and two seedling Apples, for which an honorary award was likewise voted; from Mr. M'Farlane, Lochend, five varieties of fine Pears; from Mr. Reid, Edmonston, a device of flowers; and from Mr. J. Street, Beil, samples of Minorca and other Holly berries, &c., accompanied by a communication on

the subject of the acclimatising of exotic plants at Beil. There were likewise several exhibitors of vegetables. Mr. Allison sent a large Drumhead Cabbage; Mr. Liddle, six large roots of Mangold Wurzel; Mr. Wardie, a head of German greens; and Mr. Aitken, nine large Onions.

At the *Meeting of Naturalists at Stockholm*, 1851, the following papers were read:—Prof. Fries, upon Najas flexilis, specimens of which were also presented.—Mr. Vaupell, on the Formation of Turf-moors in Denmark.—Bishop Agardh presented a Moss, Grimmia elongata, new to Sweden, and discovered by Mr. Hardin; also some observations on a form of Saxifraga, allied to S. tridactylites and controversa.—Prof. Liebmann produced a collection of Mexican Conifers.—Mr. Areschoug showed a collection of Corallines.—Mr. Vaupell made some observations upon anomalous structures in Rhizomes, upon cell formation and growth especially in perennial not woody stems; also upon fossil Conifers from Denmark, and upon a Greenland Pine.—Prof. Liebmann exhibited drawings of plants from Sweden and Norway, to be admitted into the Flora Danica.—Mr. Anderssen exhibited the drawings of his speedily-forthcoming "Agrostographia Scandinaviæ."—Mr. Lagerheim gave some information respecting the herbarium of the late Prof. Afzelius.—Bishop Agardh described the formation of the flowering parts of Willow-worts, whereupon Mr. Anderssen made observations on their nectaries.—Prof. Liebmann exhibited a collection of anomalous woods, and explained the formation of the stems of tropical climbers.—Mr. Areschoug made some observations upon Sarcophyce (?) potatorum, and a perfect specimen of this gigantic Algal was produced.—Dr. Angström presented a monograph on the northern species of the genus Botrychium.—Mr. Sandahl compared the vegetation of Kinnekulle with that of Billingen. *Botanische Zeitung.*

## Reviews.

*The Country House. No. I.—The Poultry-yard.* 12mo. Charles Knight.

This is one of a series of useful 'Manuals,' written in a plain and popular style, on the many adjuncts peculiar to a 'Country House.' It is, perhaps, one of the very best existing treatises on poultry, inasmuch as it discards all the superfluous matter generally introduced in books, and which puzzles rather than assists an inquiring reader. The writer evidently *understands* his subject, and this stamps his observations with a value which otherwise they would not possess.

We observe he strongly recommends the Spanish fowls for general use, and we quite agree with him that, for the sake of their flesh and eggs, they cannot be too strongly commended. The flesh is delicately white, tender, and juicy; and the hens are free layers. The eggs, too, are of very large size, and of first-rate flavour.

Inferior cross breeds of the Spanish variety, it is needful to remark, are very often to be met with; but such are not worth keeping. The pure strain is alone to be cultivated. They may be preserved from degenerating by the occasional introduction of males of the same race, up to the mark in every point, and which have descended by a collateral branch from the same root; having, therefore, only a remote connexion with the stock to which they are admitted. Breeders, by mutual exchanges, might in this way materially assist each other.

The classification of the various tribes and orders; the remarks on their structures and habits, their general character and origin, and treatment generally, cannot be too highly appreciated. The introduction, too, is replete with curious, valuable, and most interesting matter.

Towards the close of the book, are given particulars of the various maladies, diseases, and ailments to which poultry are occasionally liable; and the treatment recommended is judicious and useful. We can, however, plainly see that the author is, at heart, clearly of our opinion, that "the knife" is the best operator in nine cases out of ten. He remarks—"To speak the truth, neither are the diseases of fowls well understood, nor is the treatment of them anything but empirical." This is perfectly true; and as all the race invariably pursue each other, when sick, 'even to death,' if not separated, why not at once end their days, and their miseries, together?

We should add that this little volume is very correctly illustrated by spirited wood engravings, descriptive of fowls, ducks, geese, turkeys, pigeons, &c.; and that its scope includes the *Columbine* order, as well as the *Natatores*, all which are ably treated of.

The 'Dairy,' 'Piggery,' 'Stable,' 'Apiary,' &c., are announced to follow; and the series, when completed, will form three select tomes for all who are provided with a 'Country House.'

## Garden Memoranda.

Royal Botanic Garden, Kew.—The spirit of improvement, in this glorious national establishment, is, we are happy to see, as far as ever from manifesting any disposition to flag. On the contrary, the progress of works is manifest in every direction. A very fine new opening through the wood has been made from the Palm House to the Thames. Ground has been staked out for a new Victoria House. The enclosed land, lately in the possession of the King of Hanover, has been already thrown into the garden; the walls which surrounded it are falling, and walks are forming so as to connect it with the remainder of the garden. Many new rooms have been added to the beautiful museum, partly in order to receive Messrs. Lawson's fine Scotch collection lately presented to the garden, and partly to enable the numerous other acquisitions to be displayed. But after all, it is evident that a much larger space must soon be provided for the rapidly accumulating materials which the popularity of Sir W. Hooker's management is daily gaining for the museum; and it is to be hoped that funds will be provided for the construction of a building to which the hidden, and so far as the public is concerned, utterly useless collections now reposing in the British Museum, may, among other things, be transferred. Some idea of the large mass of valuable objects which still wait for accommodation, may be formed from the single fact that a great shed is actually filled with the precious collections of Palms, Tree Ferns, and similar objects obtained in the Himalayah by Dr. Hooker, at great cost, and at the peril of his life.

We may add, for the information of plant growers, that the Sikkim Rhododendrons here, in a cool house, are looking well, some of the species appearing to be as cultivable as *Rh. arboreum* itself.

Lucombe, Pince, and Co.'s Nursery, Exeter.—We understand that the rare Berberis nepalensis is just about to flower in this establishment. A plant in the show-house has six or seven fine long spikes of bloom, and is presenting a very grand appearance. Even if this plant should not prove quite hardy, it will at least be found to be one of the finest of all the species with pinnated leaves. The specimen at Exeter is, we believe, the first that has flowered in Europe.

## FLORICULTURE.

Chrysanthemums at Versailles Nursery, Hammersmith.—We lately made a morning call at this establishment, for the purpose of inspecting Mr. Salter's collection of this useful flower. Being formerly of Versailles in France, most of our floricultural friends are aware that we are indebted to Mr. Salter for many of the best foreign novelties, not only as respects the flower in question, but also as regards Dahlias, Fuchsias, Phloxes, Iris, &c.; and it is gratifying to know, that although now firmly established in this country, Mr. S. still retains his connexion with the continent; and an intimate knowledge of the leading growers of France, Germany, and Belgium, with their several ideas of quality, renders him a prominent and useful member to floriculture. Chrysanthemum growers need not be informed that Annie Salter, Queen of England, Campestroni, Jenny Lind, Lysias, Fleur de Marie, &c., rank among the best varieties of this flower in cultivation, and in the case of Dahlias, Toison d'Or, Empereur de Maroc, Gasparine, El Dorado, Striata Perfecta, John Edward, &c., number among his introductions, and merit a place in every collection. We anticipate a glorious harvest next season from the thousands of seedlings which Mr. Salter possesses, including Phloxes, Pentstemons, Chrysanthemums, &c. The place was remarkably gay with Pompone and the large flowering varieties of the last named flower; we commend Racine, bright deep orange with bister points, large, incurved; Madame Laborde, white and fine in form; Plutus, clear yellow, with broad petals and free from notch, fine and incurved; Anaxo, orange salmon, large and incurved; Miss Kate, delicate peach, full, of medium size; Nandee, lemon, medium size, but although double, thin; Rosa mystica, cream and rose, large, full, and incurved; Ne plus ultra, rosy lilac, similar, if not identical with Christine; President Perrin, reddish crimson; Monge, crimson, violet yellow points, medium size, and full. From Pompones, an improving class, we would select Surprise, white tipped rose, medium size, double, yet inclined to be thin; Asmodie, reddish brown, base of petals yellowish buff, double; Argentine, blush white, double, medium size; Adonis, white tipped with cherry, double, but thin; Modèle, pure white, and of exquisite form, in fact a model; Autumnum, brown, double, medium size; Perfectum, mottled white, with pale purplish lilac, double, flat, medium size; Sacramento, bright orange; Daphnis, reddish purple or claret, more than average size; Cybele, yellow, medium size petals, somewhat notched; Madame Lemerchez, deep lilac; Solfaterre, clear primrose, prolific, double, yet somewhat thin; Golden Drop, an anemone, centre elevated, guards numerous; Mignonette, golden yellow, tipped with red, remarkably double, and of exquisite form; Le Pygmée, deepish yellow, tinged with buff, double, but petals serrated; Nini, an anemone, centre reddish buff, elevated, guard petals few; Pomponette, an anemone, blush lilac, centre tinged with orange; La Ruche, an anemone, blush white, with but a single row of guard petals. We remarked here Versailles Defiance, to which the National Floricultural Society awarded a Certificate of Merit; Delicatum is large and full, peach blush; Conspicuum, mottled, rosy lilac, large and full, apparently well adapted for pot culture; these we look upon with some interest as regards 1852. Pentstemon variabilis was in good flower; it cannot fail to prove an attractive autumn and winter plant. A waxy, white variety of Fuchsia serratifolia, and a dwarf Scarlet Geranium, named Roseum Compactum, were among the list to be "sent out" next season. In the propagating house was a fine stock of Dahlia-roots, both English and Foreign; of those not "out" may be mentioned, Toison Orange (Cailloux); Marie Louise (Mignet); Evening Star (Salter); Annie Salter (Salter); Gloire de Kain (Cailloux); Sanspareil (Cailloux); Rembrandt (De Knyff); Spectabilis (Salter); &c. The late frost had damaged the beauty of out-of-door flowers generally, but there was, nevertheless, much to admire.

Birmingham Chrysanthemum Show, *Dec.* 15.—The lovers of this last but most showy flower of autumn, had a great treat at Birmingham on Monday last. The success which had attended the exhibitions at Stoke Newington, Highgate, Norwich, and other places, no doubt put the growers in the midland counties on the *qui vive*, for, after a lapse of 12 years, they resolved that the Chrysanthemum should again assert its claims to pre-eminence as the floral queen of December; and well have they backed their favourite, for the Corn Exchange, in which the trial took place, was in every respect adapted for the arrangement of plants to the best advantage. The specimen plants and collections in general showed great skill in cultivation, and some of them were quite equal in size and growth to those exhibited at Stoke Newington, particularly a Madame Poggi in Mr. Cooper's collection of twelve, than which nothing could be better, either as regards good culture or profusion of flowers. A Fleur de Marie in Mr. Craythorn's group was magnificent; several of the flowers must have been 5 inches across, and they were perfect models of form. Mr. Cooper also showed a Queen of England, in grand style, many of the blooms were 6 inches across; The Duke, Pilot, Vortigern, and Queen of Gipsies, were also greatly admired. Of new flowers of 1851, there were but few; Mr. Salter exhibited three blooms of his seedling Conspicuum, a rose lilac, distinct in colour, very double, and of good form—a flower that must be in request by the growers of specimen plants. No cut flowers were exhibited, except a collection of 50 new varieties of Pompons from Mr. Salter, of the Versailles Nursery, Hammersmith, which attracted their share of attention. The prizes for 12 plants were awarded as follows:—1st, to Mr. Cooper, for Queen of Gipsies, Madame Miellez, Park's Yellow, Hengist, Madame Poggi, Victory, Rosalind, Tasselled Yellow, Queen of England, Duke, Pilot, and the Warden; 2d, to Mr. Craythorn, for Fleur de Marie, Hengist, Peruvienne, Queen of England, Vièrge Marie, Col. Coombe, Annie Salter, Madame Poggi, Queen of Gipsies, Vortigern, Lady Talfourd, and Pilot; 3d, to Mr. Marsden, for Madame Poggi, Annie Salter, Fleur de Marie, Duke, Nancy de Sermet, Queen of Yellows, Rosalind, Madame Miellez, and Queen of Gipsies. Six plants: 1st, to Mr. Marsden, for Golden Cluster, Pilot, Vesta, Queen of Gipsies, Annie Salter, and Queen of Yellows; 2d, to Mr. Mayle, for Queen of England, Madame Foggi, Pomponette, Col. Coombe, Queen of Gipsies, and Golden Cluster; 3d, to Mr. Cooper, for Formosum, Competitor, Annie Salter, Lady Talfourd, Pilot, and Queen of England. Three plants: 1st, to Mr. Blackburn, for Fleur de Marie, Madame Poggi, and Chancellor; 2d, to Mr. Mayle. Mr. Cole's prize was awarded to Mr. Blackburn, for Pilot, Annie Salter, Madame Poggi, Queen of Gipsies, Orlando, and Chancellor. Pompones, 3 plants: 1st, to Mr. Cooper, for La Fiancée, D'or, and Pouledetto; 2, to Mr. Mayle, for Elize Miellez, Pouledetto, and La Fiancée. New varieties of 1851: 1st, to Mr. Mayle, for Sacramento; 2d, to Mr. Craythorn, for Petrarque. Seedlings: Ccertificate of Merit to Mr. Salter, for three blooms of Conspicuum. *J. E.*

Royal South London Floricultural Society.—At a general meeting held at the Horns Tavern, Kennington, on the 11th inst., J. Coppock, Esq., in the chair, officers were elected for the ensuing year, and a report from the committee read. From the latter it appeared that the number of subscribers who have paid during the past year is 221, against 209 in the preceding. Of this number 50 have joined during the year. It was shown that the prizes given by the Society in the year amounted to 270*l.* 7*s.* 6*d.*, in addition to 24*l.* 17*s.* 6*d.* given by members and others, making the total of prizes 295*l.* 5*s.* The auditor's report stated, that after all claims whatever had been paid, the Society was indebted to its treasurer the sum of 16*s.*, against which it was mentioned that there were good subscriptions unpaid to more than that amount. *J. E.*

North London Floricultural Society.—The anniversary general meeting took place on the 17th inst., at the Gate House, Highgate, the President being in the chair. The statement of receipts and expenditure for the current year proved highly satisfactory: after all claims had been paid, a balance was shown to be in the hands of the Treasurer. Officers for the ensuing year were then elected, and a long list of new members furnished. *J. E.*

Catalogues and Lists received from Messrs. Appleby, Rivers, Lane, Wilkinson, Francis, and Foster. *J. E.*

Cineraria: *D W.* A charmingly coloured flower resembling royal purple, and suffused with a golden bronze; petals free from notch and tolerably broad, but their arrangement, owing perhaps to the early season in which it is sent, is not in strict accordance with our notions of regularity; disc many shades darker than the petals; truss compact and large."

Scarlet Geraniums: *A B.* Brightness of colour, freedom of bloom, and size of truss characterise the following: Beauty of St. John's Wood, Commander-in-Chief, Dazzle, King of Nepaul, Mrs. Mayler, Oriflame, Punch, Reidii, Tedworth Horseshoe, The Amazon, Tom Thumb's Master, and Triomphe de Paris. *J. E.*

## Miscellaneous.

*Sale of Nees von Esenbeck's Library and Herbarium.*—Professor Nees von Esenbeck has lately published a catalogue of his library, from the preface of which the following is an extract:—"I am," says the author, "without property; my library, my herbarium, is all I possess—all I am able to leave to my family. In my career as a medical man I always considered the interests of the poor sufferers of primary, my own of secondary importance, and being devoted too much to scientific pursuits, I did not obtain a good, certainly never an extensive practice. A small estate, inherited from a relation, afforded for some years means and leisure of cultivating science successfully, until, during the French wars, the property became untenable, and I was induced to accept a professorship in Erlangen and the Presidency of the Imperial L. C. Academy of Naturalists. Having, by exchanging Erlangen for Bonn, settled in Prussia, it became a question whether the Academy should have its seat in Bavaria, because my predecessor resided in Erlangen when the German empire dissolved, or whether it should retain its position as a national institution over the whole of Germany. The negotiations which followed ended by the Academy keeping its independence, and, as far as circumstaces would permit, its position towards the Confederation; and it was by my exertions that the institution obtained a confirmation of its old statutes, and, so long as it should stay in Prussia, an annual grant of 1200 thalers. Since 1818, I have constantly laboured in restoring this ancient institution, and discharging my duties as Professor in the University; indeed my academical duties required my whole attention, and prevented me from accepting any of the more lucrative places which from time to time became vacant. Thus it happens that, since the government has deprived me of the professorship, I am labouring under circum-

stances which force me to part with my library and herbarium. Having no prospect of a pension, and no desire to solicit favours in high places, I address myself to the members of the Academy, and to my friends and contemporaries, begging them to exert themselves in trying to dispose of my collections. If my library and herbarium could be sold as a whole, I should be able to realise their value, and would consider that amount as an acknowledgment of 30 years' academical services. The herbarium consists of 297 packets in folio and 42 packets in quarto, and contains 80,000 sheets. It is valuable on account of being chiefly made up of exotic specimens, including plants collected by Sieber, Preiss, Wallich, Wight, Ecklon, Zeyher, Drege, Pappe, Wied, and others, and representing most fully the floras of Mexico, New Holland, North America, Brazil, Southern Africa, the East Indies, and Europe. What renders it still more important is its containing the original specimens on which my monographic labours, the dissertation on the Laurineæ, Solaneæ, Acanthaceæ, Hepaticæ, Astereæ, Cyperaceæ, Gramineæ, and Restiaceæ, are founded. The library is composed of 3000 volumes, embracing the standard works of Natural History and Natural Philosophy. It is to be sold in Brelau, on the 1st of May, 1852, by public auction, and commissions will be received by the Schlettersche Buchhandlung in Breslau, or any other great bookseller on the continent. The herbarium, if it cannot be sold as a whole, is to be disposed of in sets. It has been valued at 12,000 thalers, the Laurineæ at 280 thalers, the Acanthaceæ at 600, and the Glumaceæ at 3000." *Botanical Gazette.*

*Sale of Orchids.*—Twenty-six lots of Vanda cærulea were sold by Mr. Stevens, on Tuesday last. They fetched from 1*l.* to 8*l.* per plant.

## Calendar of Operations.

*(For the ensuing week.)*

### PLANT DEPARTMENT.

In this department the chief things to be attended to during the present dull weather is to keep as low a temperature as is consistent with the health of the plants, as a high close atmosphere will, in a few days, do more injury than can be repaired in months of care after the mischief is done. Ventilate with judgment; but let there be ventilation even where the most tender plants are kept; and, if at the cost of a little extra fuel, to maintain the necessary temperature in connection with a circulation of fresh air. Where this advice is adhered to, there will be no sickliness for want of light. Watering will require to be done with great caution, and we cannot do better than repeat the simple directions we have so frequently given, that is, never to water till the soil immediately below the surface is sufficiently dry to warrant a full supply. Be careful to prevent sourness in the soil; as, if this takes place, and is not rectified, the loss of the roots will be the consequence. Avoid spilling water on the floor when watering, and endeavour by every means to maintain a sweet and not over damp nor over dry atmosphere.

### FORCING DEPARTMENT.

Let the heat of the litter about the roots of Vines lately excited be daily examined; and see that it is regularly kept at a temperature of 60°, until the Vines are coming into leaf, when a slight increase of heat should be obtained. It will be well, however, not to exceed 70° for some time yet; as too great a degree of root heat produces a weakly growth. The temperature of the atmosphere should be kept at 50° by night, and 60° by day, until the buds are all starting; when a rise of one degree each night may be indulged in, until you arrive at 58° or 60°, with a corresponding increase by day, according to the out-door temperature. But it will not be safe to go beyond 60° by night; and a small portion of air should be always allowed, to keep the atmosphere sweet, and in motion. With sun heat a rise of 10° with a gradual increase of air, must be obtained as often as possible; and to assist in this, the heat in the pipes must be increased early, whenever there is the appearance of sunshine. Peaches in pots should now be brought into the house, and plunged in Oak leaves, that are in a slightly fermenting state; 55° to 60° in the plunging material, whatever it may be, will be sufficient during the first month. The atmosphere should be 45° to 50° by night, and 55° to 60° by day. Syringe frequently during fine weather, but never when damp. Apricots, Plums, and Figs will require the same treatment as Peaches; but Cherries must have a lower temperature than these, after the first fortnight or three weeks. Vines in pots are greatly benefited by being plunged in a gentle bottom-heat, and their shoots should be depressed, so as to cause them to break all the buds. The atmosphere for these should be similar to that for Vines established in the border. Where very early Strawberries are required, some of the strongest plants of Keens' Seedling may be brought into the pit for starting, but no artificial heat need be applied for the first week or 10 days. Let the plants be freed from decaying leaves, and top-dress the surface with rich loamy soil, having a sprinkling of soot in it, to drive out any worms which may be in the pots.

### FLORISTS' FLOWERS.

During damp and foggy weather, both Auriculas and Carnations (in frames), will require especial attention; they are apt occasionally to have small portions of dirt lodge in the axils of the leaves. This must be carefully removed, for should this be damp and wet, serious injury to the plants will most certainly accrue. Carnations, too, if kept close, will contract mouldiness, being liable to the attack of both a black as well as white parasitical fungus. The leaves affected must be cut away; and, if possible, remove the affected plants from the others, giving plenty of air, the want of which, and late planting, superinduce these serious evils. Pansies, Pinks, Carnations, &c., on beds, should, if in exposed places, be protected; the best material is small pieces of the Spruce Fir. Hoop over Tulip beds, and cover in severe weather. The tops of the spike being now very near the surface, this precaution is essentially necessary.

### KITCHEN GARDEN.

Previous to the general manuring and trenching of vacant ground, the rotation of crops which are to be cultivated upon it during the ensuing summer, should be decided upon. One of the first principles to be attended to in this arrangement is that no annual crop be grown for two successive years on the same plot of ground. Another variation should be made by taking care that those crops which immediately succeed each other are not such as are liable to be preyed upon by the same kind of insect, as their increase is encouraged to a fearful extent by thus putting in their way the food of which they are most fond. It is important that both the manuring and the depth of the trenching be regulated by the requirements of the crops; and their rotation should be so arranged, that the ground be not trenched to the same depth for two successive seasons, but so that different portions of the soil be brought to the surface in turns. The perennial or permanent crops will of course form a class by themselves, as they do not require a change of situation for many years; but when this is necessary with any portion of them, the ground from which they are removed will fall into the ordinary rotation in the way of a regular exchange. By cultivating the Celery and Cardoon on the Scotch or wide bed system, a large ridge of soil is thrown up between the trenches, the surface of which is excellently adapted for the cultivation of dwarf Peas, Beans, Spinach, Turnips, and similar vegetables; observing, however, that only the earlier sowings of these several crops should be made on these ridges, that they may be removed in due course, before the ground is required for earthing up the principal crop. As a matter of course this arrangement must not interfere with the very earliest crops of Peas, &c., which are generally allowed a place on the side borders near the walls. For the latest crops of Peas, &c., a portion of ground must be allotted, which, with that occupied by the Celery and Cardoon ridges, will generally amount to about one-third of the ground occupied by annual vegetables. The extensive turning over which the Celery and Cardoon soil undergoes, acts admirably in preparing the ground for deep rooting plants, such as Turnips, Carrots, Onions, &c., and in the following year may be devoted to the cultivation of the Cabbage family, whose roots are confined more nearly to the surface. If the vegetable garden is so large as to allow of the cultivation of a portion of the general Potato crop within the walls, it will form a fourth course in the rotation, and will come in after the Brassica tribe. Working upon this system, Cabbages have been planted during the autumn on ground which had been occupied by late summer Turnips; and the ground which now requires trenching is that from which the later Turnips, Onions, Carrots, Beet, &c., have been removed, and which will next spring be planted with Cauliflower, Broccoli, &c. Preparation for these should be made by trenching in a very heavy dressing of manure, which shall serve for that and the succeeding crop; as the last few years have fully convinced us of the impropriety of planting Potatoes on ground recently manured.

State of the Weather near London, for the week ending Dec. 18 1851, as observed at the Horticultural Garden, Chiswick.

| Dec. | Month & Age. | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth 1 foot deep. | Of the Earth 2 feet deep. | Wind. | Rain |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 12 | 19 | 30.516 | 30 442 | 38 | 30 | 34.0 | 44 | 42 | N.W. | .00 |
| Satur.. 13 | 20 | 30.464 | 30.389 | 44 | 37 | 40.5 | 42 | 41½ | E. | .00 |
| Sunday. 14 | 21 | 30.472 | 30.416 | 41 | 36 | 38.5 | 42 | 41½ | E. | .00 |
| Monday 15 | 22 | 30.437 | 30.387 | 40 | 36 | 38.0 | 42 | 41 | S. | .01 |
| Tues. .. 16 | 23 | 30.365 | 30.336 | 43 | 39 | 41.0 | 41½ | 41 | S.W. | .00 |
| Wed. .. 17 | 24 | 30.301 | 30.232 | 44 | 33 | 38.5 | 42 | 41 | S. | .00 |
| Thurs.. 18 | 25 | 30.185 | 30.136 | 45 | 34 | 39.5 | 42 | 41 | S. | .00 |
| Average.... | | 30.383 | 30.334 | 42.1 | 35 0 | 38.5 | 42 2 | 41.3 | | .01 |

Dec. 12—Dense fog; exceedingly dense in afternoon, no object visible at 12 yards distance.
— 13—Foggy; hazy throughout.
— 14—Foggy; very hazy; foggy.
— 15—Hazy; cold slight drizzle; overcast.
— 16—Foggy throughout; overcast at night.
— 17—Foggy; hazy throughout.
— 18—Foggy; hazy; densely overcast.
Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick, during the last 25 years, for the ensuing week, ending Dec. 27, 1851.

| Dec. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 21 | 43.1 | 33.2 | 38.1 | 9 | 0.20 in. | — | 6 | 2 | 1 | 2 | 8 | 3 | 3 |
| Mon 22 | 45.2 | 33.8 | 39.5 | 12 | 0.38 | 3 | 4 | 2 | 1 | 2 | 6 | 5 | 2 |
| Tues. 23 | 44.0 | 32.3 | 38.2 | 12 | 0.25 | 4 | 6 | 1 | 1 | 1 | 7 | 1 | 2 |
| Wed. 24 | 42.9 | 31.7 | 37.3 | 9 | 0.36 | 3 | 3 | 3 | 1 | 1 | 9 | 1 | 4 |
| Thurs. 25 | 42.7 | 28.9 | 35.8 | 5 | 0.22 | 2 | 5 | 3 | — | 2 | 5 | 5 | 3 |
| Friday 26 | 42.4 | 32.3 | 37.4 | 9 | 0.39 | 1 | 4 | 2 | 3 | 4 | 7 | 1 | 3 |
| Satur. 27 | 42 0 | 30.2 | 36.1 | 8 | 0.40 | 3 | 4 | 1 | — | 5 | 4 | 6 | 2 |

The highest temperature during the above period occurred on the 25th, 1827—therm. 58 deg.: and the lowest on the 24th, 1830—therm. 10 deg.
On the average of 25 years the night of the 25th December is colder than any other night throughout the year.

## Notices to Correspondents.

Apples: *A Sub.* Twelve sorts for table use, the soil rather heavy:—Wormsley Pippin, Ribston Pippin, Golden Reinette, Court of Wick, Blenheim Pippin, Boston Russet, Scarlet Nonpareil, Mannington's Pearmain, Pearson's Plate, Adams' Pearmain, Sturmer Pippin, and Court-pendu Plat. Six sorts for kitchen use:—Hawthornden, Dumelow's Seedling, Bedfordshire Foundling, Yorkshire Greening, Rymer, and Waltham Abbey Seedling.‖

Back Numbers. Full price will be given for the following Numbers:—1846, 25; 1848, 38, 42, and 48; 1851, 24, 27, 30, and 49.—*A G.* Much obliged, but we only require the numbers mentioned in the Paper.

Birds: "Sparrow Clubs:" *J D.* There can be no possible objection to your joining the proposed 'club.' These birds, just now are very numerous, and very destructive; and it would be mere affectation to talk about the "cruelty" of destroying them. As well might we object to the slaughter of an "innocent lamb." In the *spring*, sparrows are decidedly useful; indeed they are some of the gardeners' best friends. But being over-numerous, and their winter depredations heavy, do as you propose; and in the graphic phraseology of Dickens's hero 'Quilp,' load your gun-barrel, and "blaze away!"—*W S.* The soft-billed birds owe you many obligations. Your plan of providing for their winter accommodation and vigour of constitution, is admirable. When matured, we shall be happy to hear further particulars. —*Jane F.* Do not attempt to "pair" *any* birds until March. You have been wrongly advised.—*W E.* They will open immediately after Christmas. This foggy weather retards their progress.—*Arabella C.* Use a piece of soft flannel and common soap; and when your birds' perches are thoroughly cleansed, be sure and *keep* them clean.—*W J.* Snails and raw beef.—*Georgiana M.* The yolk of egg should be boiled hard, and mixed with some sponge cake; administer this twice a week.—*Maria P.* Saffron is really a bad medicine. Boiled milk is more effectual, and very palateable to the taste. Why not use it?—*Harriet.* You cannot have a handsomer bird than a starling. Their glossy coat and vivid colours always gain them admirers, and they may be rendered *very* tame by kindness.—*John T.* You may give them green meat all the year round, occasionally; it amalgamates with their food, and keeps them healthy.—*W N R.* Your kind favour has come to hand, and we have done what you requested us to do. Any information we can render you about your birds, pheasants, or poultry generally, is quite at your service.—*Sarah G.* Your shilling has not been ill disposed of. A yellow-hammer is a sprightly, cheerful bird, and certainly much handsomer than a canary. His song, however, is monotonous.—*Josephine:* Java Sparrows are delightful birds to keep in a cage; but of so truly affectionate a disposition, that we advise you to keep "a pair." If you begiven to moralise, as we *all* ought to be, you will glean from your observations of these faithful, affectionate creatures, many a lesson of great practical utility through life.—*Gulielmus.* The Song-thrush, by all means. If you want execution and effect, *he* is to be commended before all others. Feed him on German paste, sweet buns, snail's, and beef.—*Lucy.* You have yourself unwittingly described *the cause* of your Canary's restlessness, and of his continually pecking himself. The insects which you saw through your microscope inhabiting the crevices of his cage, are known as "vermin." They have been feasting for some time on your bird's blood, drawn from his veins in the night. *Burn* the cage immediately, and procure an entirely new one; then affectionately examine the skin and feathers of the innocent sufferer; and when quite cleansed, introduce him to his new abode. He will recover in a week, if prompt measures be taken. *W. K.*

Books: *Highlander.* Brown's "Forester."

Collinsia tinctoria: *T M.* This was introduced from California by Messrs. Veitch and by the Horticultural Society. It has no kind of resemblance to Calliopsis tinctoria.

Cottagers' Stoves: *S A S.* The most economical, the cheapest, and the best for cooking with which we are acquainted, is one manufactured by Messrs. Baileys, Ironmongers, Holborn. It was exhibited in Prince Albert's Model Cottages, which led us to have it tried; and we can say, after four months' experience, that we do not see how it can be improved. To cottagers it is invaluable.

Fenugreek: *J C* asks what will remove the smell of powdered Fenugreek seeds from the hands on which they have been rubbed.

Fruit Trees: *L H.* The Peaches and the Nectarines you mention will do for forcing; but you should likewise introduce the Bellegarde if possible, as it will afford an excellent succession. We should prefer, for a new Vinery, young plants from eyes.‖

Gooseberries: *Amateur Sub.* We never recommend dealers.‡

Laurustinus: *A M.* No doubt you may strike it from cuttings placed under a north wall in the autumn, without the aid of a hand-glass; but under a hand-glass the cuttings will root with more certainty, and grow faster. It is far better, however, to propagate the plant by layers.

Miniature Garden: *W M B.* Place it on a hollow metal case, filled every night with warm water, and in bad weather throw a woollen cloth over the whole apparatus. No lamp-heating will answer. If you cannot do this, introduce metal cases filled with hot water, as is done in French railway carriages. Always remember, however, that if the case is pretty dry, frost will not do much harm, provided the plants are thawed in the dark. Get Turner's (late Beck's) "Florist."

Mushrooms: *Croydon.* In the "Horticultural Transactions," vol. iii., p. 6, and vol. ii., p. 345, you will find good practical directions. Also in "Lindley's Guide to the Orchard," &c., Loudon's "Encyclopædia of Gardening," and in all such works. Nothing can be more easy. Perhaps you fail from too much or too little moisture and want of warmth.

Names of Fruits: *G F Unthank.* 1 and 2, notwithstanding their difference in form, appear to be the Princesse d'Orange; 3, Scarlet Crofton; 4, Court of Wick.‖—*F M.* Ribston Pippin.‖ —*H B R.* The slice of Apple was bruised; but, from your description, it is most probably the Dumelow's Seedling; if so, you will find the wood is very much spotted.‖

Names of Plants: *J W.* 1, Maxillaria punctata; 2, Zygopetalum brachypetalum.—*Tivana.* Your little delicate fronds are destitute of fructification. Similar sized fronds of Asplenium lanceolatum would be like what you have sent, but they are too flaccid to be it; and also, being slightly pilose, leads us to infer that your plant is not A. lanceolatum, but rather a seedling of Lastrea dilatata, growing in a warm place. Send a frond in fructification. *S.*—*W Mitchell.* 1, Acacia urophylla; 2, A. nigricans. Apply to Mr. Ross, Featherstone Buildings, Holborn.

Oak Coppice: *J S H.* "Old reserved Oak-trees with thick bark are apt, when felled, to prove barren stools. Is there any method of encouraging such trees, when destined to fall, to form eyes—such as paring off the spongy outer bark at the bottom of the stem, a year or two previously?" Some experienced forester will, we dare say, reply to this.

Reeves's Muscadine Grape: *S E W.* The following account of this sort, published in 1847, in Vol. III. of the Journal of the Horticultural Society, has been corroborated by subsequent fruitings:—"This was imported from the Cape of Good Hope, without a name, by John Reeves, Esq.; and as it appeared worthy of cultivation, it has been designated as above. Bunch large, broad-shouldered; stalk thick; pedicles short, stiff; berries oval; skin yellowish white, rather thick; pulp melting, juicy, and rich. A good Grape, ripening quite as early as the Black Hamburgh under similar circumstances." To the preceding account it may be added, that the variety in question is, under ordinary circumstances, a *sure* and *abundant bearer*. It requires less heat than the Muscat of Alexandria or Cannon Hall, and it cannot be said to equal these sorts in point of high Muscat flavour; neither should it be planted in a house specially adapted for these and similar sorts. As regards cultivation, it should be classed with the Royal Muscadine, &c.‖

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Turnip Manure, per ton ... ... ... | £7 | 0 | 0 |
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Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

FOSSIL BONES AND PSEUDO-COPROLITES (FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD AND CO., Artificial Manure Manufacturers, Ipswich, Suffolk.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE, PEAT CHARCOAL, impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's Seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MILK, CHEESE, AND BUTTER.

HENRY BAKER, OPTICIAN, 90, Hatton Garden, London, advises any one who keeps Cows to send two postage stamps, and obtain a description of his LACTOMETER, with its uses, and the results of experiments with it upon different Milks. Lactometers, complete, in a mahogany box, 10s. 6d.; Do., with cheaper fittings, 7s. 6d. and 5s.; Hydrometers for testing sulphuric acid, 5s., 7s., and 10s. No consumer of acid should be without one, as it is often sold highly diluted. Saccharometers for Brewing, with tables, 5s., 7s., and 10s. Pediment Barometers, from 1l. each. Wheel Barometers, from 1l. 1s. each. Packed carefully for the country, there being nothing to fear of them getting out of order, as they are warranted to be properly made and good instruments.

A PRIZE MEDAL FOR SUPERIOR LOCKS WAS AWARDED TO J. H. BOOBBYER, AT THE GREAT EXHIBITION OF 1851.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

THE ONLY PERFECT STOVE!—All who study Health, Comfort, and Economy, should throw aside their old Stoves, and replace them with the PATENT PORTABLE VENTILATING SUSPENSION STOVE, which consumes only *Three Farthings worth of fuel per day*, and is universally admired for the delightful temperature it produces, and for the extraordinary manner in which it purifies the air. It is strongly RECOMMENDED BY THE FACULTY, and is adapted for Bed-rooms, Churches, Chapels, Schools, Halls, Libraries, Greenhouses, Shops, Warehouses, &c. Prospectuses to be had free by post. In operation daily at DEANE, DRAY, and Co.'s, London-bridge.

"COATES'S HERD-BOOK."

MR. H. STRAFFORD begs most respectfully to inform Short-Horn Breeders that he is now preparing for publication the 10th Volume of Coates's Herd-Book, which will contain the Pedigrees of Bulls, Cows, and Heifers, with their produce to the 31st December, 1851. Returns to be made the first week in January, 1852. The Entrance Fee in this Volume will be 1s. for each Pedigree to Subscribers, and 2s. for each Pedigree to Non-Subscribers. Price of the volume, 21s.

List of Entries and Subscribers' Names to be sent to H. Strafford, 3, Camden Villas, Camden Town, London, of whom may be had any of the previous Volumes, or full sets of the Work.

COOKE'S NEW AGRICULTURAL DRAINAGE LEVEL IMPROVED. See notice in the Journal of the Royal Agricultural Society of England, 1849, Vol. X., Part I., page 165, and other most flattering testimonials. This level is adapted alike for the gentleman farmer, the practised drainer, or any ordinary workman. Has a powerful telescope, and combines great accuracy with facility in the using of it. The rise and fall can be correctly taken at one observation. The book accompanying the instrument gives an explanation of it, and an easy and correct system of levelling for agricultural purposes. Price, with levelling staff complete, 4l. T. Cooke, sole maker, optician and mathematical instrument maker, York; or L. Cassella and Co., appointed agents, 23, Hatton Garden, London.

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The Agricultural Gazette.

*SATURDAY, DECEMBER* 20, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, JAN. 1—Agricultural Imp. Soc. of Ireland.

WE are happy to announce the election of Mr. HARKNESS, of Dumfries, to the office of Secretary to the Royal Agricultural Improvement Society of Ireland, vacant by the resignation of Mr. BULLEN. Mr. HARKNESS has already proved himself an able agricultural improver, in his connection with the District Society of Stranraer, which was, and probably still is, one of the most active local farmers' clubs in the kingdom; and the influence he there so usefully exerted will, we are persuaded, now be earnestly and successfully brought to bear upon the agricultural condition of that larger field, in which the Agricultural Improvement Society is at work. The gentlemen who have had the appointment of Mr. BULLEN's successor to this office, seem to have had a somewhat difficult task to perform, no fewer than 54 candidates having presented themselves; and their appointment of a Scotchman seems to have wounded the easily offended nationality of some of the Dublin journals. We are persuaded that they have done right to choose the man whose testimonials certified the highest qualifications for the office; they have done right to confine their attention to those points only in the candidate for the office, which concerned his ability to perform its duties; and that Mr. HARKNESS will prove an efficient agricultural labourer in the field of Ireland, all our experience of his efficiency elsewhere goes to prove.

"WHAT 's 'Taxes,' TUMMAS?" quoth JOHN the footman to THOMAS the groom. What answer THOMAS made, history records not. An unconscious subject of concentrated taxation in himself, he might have well felt the pressure of the joke too keenly for reply, and only looked unutterable things.

'What's AMMONIA?'——If agriculture, like politics, had its 'Punch' or its 'H. B,' would not this be the corresponding question? From the stable and the cow-house, from the farm-yard, from the mixen, from the creaking dung-cart, from every heap that dots the laboured field, there rises into the atmosphere a certain tributary essence which if anything could be said to be omnipresent to the farmer's senses, to invite his curiosity, to dog his steps with 'inward questionings of outward things,' it would be this curious compound gas, this spirit that is ever floating around him, ever flitting from his grasp, this EURYDICE that the instant his senses acknowledge her presence is his no longer. In the midst of this eternal exhalation, toiling for it, and by means of it, putting it through an endless circle of productive and reproductive process and experiment, heaping it up as the miser does his gold, yet wasting it like the miser's spendthrift heir, unconsciously using it as the agent and re-agent of all his plans and purposes—the subdominant principle by whose *plus* or *minus* in the sum of life he either accumulates wealth, or sinks into poverty—our agricultural 'John' quietly pockets his hands, and with a calm indifferent *resumé* of voice and manner asks

'What *is* Ammonia?'

We are got so practical now-a-days that the difficulty is wonderful of exciting a belief in anything belonging to the Invisible world. Time was when if DICK the waggoner's boy came into the kitchen some dark night o' Christmas-time swearing that he had seen the Spirit of the old white cow that died in calf-bed last Lady-day, standing in the middle of the fold and beckoning him to come and milk her, the chances were he would create a decided and immediate sensation amongst the party round the fire. But the *ghost of a departed Dung-heap*—oh! come—that 's *too* much!

'What scribble tales—come cease to play the fool:
Christmas is past, and children *gone to school.*'

Of all the impediments to the admission of knowledge into the adult mind, the most obstinate and embarrassing is its *unbelief*. It is the veriest mistake to suppose that the untaught mind remains *empty*—in the sense of an empty vessel, which *at any time may be filled*. The mischief of mischiefs is that if not timely filled with what is true, it gorges itself with what is *not* true. 'Like an unweeded garden grown to seed, things rank and *gross in nature* possess it *merely*.' The partner and exact counter-part of the body in that respect, it *will* have food of some kind. If through the unlucky destiny of youth, it has never been "on the fair pasture made to feed" it "battens on the moor," swelling itself out with error—error more proud than the proudest science that ever veiled its head in silence, at the thought of its own nothingness compared to the VAST UNKNOWN,—more hard and fixed than the sternest efforts or resolves of the mind or body that systematically denies itself to seek the good of others. But never is it more proud, more hard, more tyrannical, than when you come to speak to it of that portion of creation which it cannot *see* or *handle*. From these two bodily senses—the sight and touch—its sole idea of existing things is derived. Talk to it about a cart-load of dung, you talk the language of an ordinary rational being; tell it that the essence, the spirit, to which this mass of matter owes its fertilising power, is an invisible gas that would find itself not incommoded within the space of a few quart bottles!—instantly you become before its pitying eyes a 'mere Theorist,' to be listened to, if at all, out of very charity and patience.

How are you to prove it? By no earthly means at hand! Why? Because 'Proof' implies not only a prover, but a mind to which the proof when given is intelligible. Translate the adult man back to childhood, educate the faculties within him, and he becomes the conscious owner of other senses besides 'seeing' and 'touching,'—senses far more certain and reliable,—mental sight, and mental touch, as infinitely superior to the deceptive bodily organs which are ever being imposed upon, as the purest ammonia is to the barren residue of a fire-fanged dungheap.

Aye! charm back the 'practical' opinionated man into the simple school-child. Eradicate the ingrained error that has hardened through thirty or forty summers and winters into fixed and habitual falsity of idea about the comparative importance of the visible and invisible in the creation around him, attaching the notion of reality and unreality as inversely *to the facts* as if he put Darkness for Light and Light for Darkness. Undo all that—tear it off—and return the grown-up man to the inquisitive docile child he was (actually he!) some 'forty year ago'—and how easily might you *then*, without doubt or difficulty, address him thus.

'Now my little man—you rosy-cheeked merry rogue, come here! You are going to be a Farmer: so come and learn the FIRST LESSON.'

The 'air' which we are all so busy breathing, without thinking of it, day and night, and which scientific folks call the 'atmosphere,' is a body—just as water is, only not so thick and heavy—which surrounds and clings to the Earth like the peel round an orange; but with this difference, that the orange-peel is equally thick throughout, while the atmosphere, like wool piled in a loft, is thicker at the bottom, pressed down by its own upper weight, against the Earth. Whatever gases or exhalations rise from the ground—as from a smoking dunghill *seen* on a frosty morning—rise only to a certain height, till they find their level, which is not very far. They don't go to some imaginary 'nowhere' up above the clouds; but the clouds rather show us about the height to which, at most, they ever *do* go. Now this particular gas, ammonia (consisting of two

gases which we will not speak of separately now), happens to have a strong affection for water, especially in its purest state; so when the clouds turn to water and come down, which they have a habit of doing under certain electrical conditions which we needn't trouble about at present, down comes the ammonia with the rain, giving to it a most delicious scent, especially if it has not rained for a long time before, and the quantity of ammonia collected in the air is considerable.

This same gas has one remarkable property, among others: it loves those, and falls on those, and blesses those who prepare for it and receive it kindly. It falls with the occasional shower, not to mention the nightly dew, to an extent exceeding *a hundred and fifty pounds weight* annually* on every acre of land. But, like that dew, it hates a stale surface. On a road, a neglected fallow, on any hard impervious sun-baked surface, it absolutely refuses to perch or settle: so if you wish to attract its sweet and sovereign influences—*stir the surface*—nay, keep it continually stirred; and no matter how coarse the subsoil you have brought to the top, the quantity of ammonia you may absorb in a single summer is such that, you may laugh—or mourn, as you please—at neighbor Drychaff's dung-cart, that creaking hearse that is carrying to the field the dead body whose departed spirit has descended weeks and months ago upon your acres, by the care you have taken to attract it. You may 'call spirits from the vasty deep' and from the dry land, and from every dung-hill, or other mass of decaying animal or vegetable matter for miles around you; and 'they will come when you do call for them,' which is more to the purpose—*if* only you will do one thing,—keep your soil in the condition to attract, receive, and *retain* them. Observe these three words, for there are some things that attract but do not retain,—rain-water for instance, which as it falls attracts all the ammonia of the air but parts with it again to the bare fallow it falls upon, which, again, *receives* but does not retain it; for the hot sun of July and August, as it glares on the unshaded field, draws the light spirit up again; and if you will stoop down and look along the ground on a bright hot day, you may sometimes even *see* it dancing and flickering to the eye, like a sort of bright tremulous sea of vapour. I do not tell you this is *all* ammonia; but it is that condition of the air in contact with the ground, in which ammonia is most constantly escaping, owing to its *affinity* for moisture, whether in the shape of vapour or rain. Now of all the attracters and retainers of ammonia, the most powerful and staunch, as Professor Way will tell you, and *show* you,—is fresh-broken loamy clay—provided only that you keep it pulverised and surface-moved, presenting a fresh morning face from time to time, and a deep hearty *free* welcome into its very bosom. Once get the spirit there, and it will stop.

But what to do for *shade* and shelter through the hot evaporating months of July and August?

A plan has been recently improved upon and perfected by which this desideratum is attained—by one of those happy accidents which escort and cheer the steps of true discovery—in the course of a system of Wheat-growing on clay soils, by which the field is sectioned into strips of Wheat and fallow, whereby the growing corn as it rises into stem closes over the alternate beds of rich fresh undersoil dug up and spread over the top mould, the previous autumn, before the winter's frost; and which, supported on its soft feather-bed below, has been during the spring and early summer, continually manured with this ammonia—Nature's own quintessence of the dungheap—distilled in the alembic of the air, and precipitated upon the fresh thirsty beds by her own minutely dividing and evenly apportioning hand—better than any dung-fork.

And only think that there are people professing to write about agriculture, who have the hardihood to assert that this is "opposed to every known principle connected with the cultivation of grain-crops, which the *experience* of man has *enunciated!*" When *you* grow up and write about the 'principles *connected with* the cultivation of grain-crops,' my happily in-'experienced' young farmer, mind and learn the meaning of words before you attempt to pronounce upon 'principles.' '*Experience*' does not '*enunciate.*' But Language does: and sometimes very significantly; exposing with an occult adroitness of its own the very source and centre of the error it seemed to be the tool of.

That extra cultivation would to a certain extent supply the want of manure, especially for grain-crops, is an 'experience' and a 'principle' as old and well-known as any in the whole round of husbandry. To *how great* an extent it will do so, few have attempted to prove. It is on this very point that 'experience' is sadly in the rear. *Why* it does so *at all*, has but recently received explanation; but that explanation has opened up such a mine of enquiry and experiment in the laboratory of Mr. Way; and has lately been illustrated by *facts* so well attested and deeply interesting in the fields of Mr. Smith, that the very sneer may be welcomed which provokes a more useful argument than its own, on such a problem, at the present moment, as the cultivation of clay soils. *H.*

* Dr. Fownes, Highland Agricultural Journal.

## HINTS TO PURCHASERS OF MANURES.

There is certainly nothing in the cultivation of crops that an agriculturist ought to be more particular in ascertaining than the true composition and value of the substances which he adds to his land, with the view of obtaining a suitable augmentation of produce; and yet how few there are among the farming class who trouble themselves about taking this precaution.

I am induced to offer the present remarks in consequence of the vast quantity of stuff that is sold in the market as artificial manures, possessing but little intrinsic efficacy; some of them with high-sounding names, and patented too, as if such distinctions can add anything to the scale of their worth. Now, the fact is, there exists in the preparation of many of these as much humbug and rascality as we find practised in matters of law. That there are some among them, however, which form an exception, inasmuch as benefiting by their application the crop raised, to a certain extent, I will not deny; but the question is, how far does their money value correspond with the result eventually derived therefrom? If the increase of crop obtained yields no more than will cover the cost of the application, it must, of course, be considered a failure. I have, unfortunately, myself been considerably duped, by placing too implicit a reliance upon the infallibility of various of these manures, as I was led to believe, by their vendors; whereas, in my practical trials, I could seldom discover any advantage to arise from them at all, equal to the expense incurred in their purchase. It may be said, that in procuring the article from parties of known respectability and integrity, these occurrences will be guarded against. But such is not always the case. Many of the manufacturers, although they may be very upright men, with regard to character, are but little, if at all, acquainted with the principles of chemical combinations, affinities, and changes. They fancy that by mixing together certain proportions of this and that elementary substance, which they have learnt from books or other theoretical sources, constitute a part of the food and construction of plants, their compound must prove to be of first-rate excellence, without taking at all into consideration how completely altered in their properties the respective ingredients used may have become by their action upon each other. Nor is it alone relative to the more complicated compositions that this circumstance will apply, for many of the more simple substances also offered for sale in the manure market are improperly prepared. I shall take, for instance, superphosphate of lime. Dr. Anderson, the talented and scientific chemist of the Highland Agricultural Society of Scotland has shown, as may be seen by a reference to their published Transactions, vol. 5, that the commercial superphosphate analysed by him, actually contained no *super*-phosphate at all, and that its money value was 1*l.* 5*s.* per ton less than the kind prepared as it ought to be! In further support, also, of the accuracy of what I have above stated, relative to the blending together of sundry substances, I was myself induced to form a compound as follows, each ingredient having been procured from a most respectable manure merchant in town:—

| | | Cost. | | | Parts in 100. |
|---|---|---|---|---|---|
| 98 lbs. | dry urate (prepared by precipitating gypsum in urine) ... ... ... | £ 0 | s. 1 | d. 4 | 29.56 |
| 56 ,, | superphosphate of lime ... ... | 0 | 3 | 6 | 16.224 |
| 42 ,, | sulphate of ammonia ... ... ... | 0 | 6 | 0 | 12.168 |
| 28 ,, | sulphate of soda ... ... ... | 0 | 1 | 6 | 8.112 |
| 21 ,, | sulphate of magnesia ... ... ... | 0 | 1 | 10½ | 6.84 |
| 14 ,, | sulphate of potash ... ... ... | 0 | 3 | 0 | 4.56 |
| 21 ,, | nitrate of soda ... ... ... ... | 0 | 2 | 7½ | 6.84 |
| 14 ,, | nitrate of potash ... ... ... | 0 | 3 | 6 | 4.56 |
| 14 ,, | chloride of potassium .. ... ... | 0 | 2 | 7½ | 4.56 |
| 28 ,, | chloride of sodium (common salt) .. | 0 | 0 | 4 | 8.112 |
| 336 ,, | or 3 cwt. | £ 1 | 6 | 3½ | 100.000 |

Now, as this mixture apparently contains every element in the way of ammonia, alkaline substances, acids, &c., proportionately divided, that are found to enter into the structure of plants, I certainly expected that it would have proved at least equal, if not preferable, to guano, its cost amounting to about the same as the best Peruvian. Conceive, then, my disappointment at receiving the annexed analysis of it made by Dr. Anderson, together with the accompanying letter, viz.—

| | |
|---|---|
| Water ... ... ... ... ... ... ... | 11.013 |
| Organic matter ... ... ... ... ... | 4.826 |
| Peroxide of iron and alumina ... ... ... | 1.154 |
| Phosphate of lime ... ... ... ... ... | 4.941 |
| Common salt ... ... ... ... ... ... | 5.275 |
| Sulphate of soda ... ... ... ... ... | 4.759 |
| Sulphate of potash ... ... ... ... ... | 4.230 |
| Sulphate of ammonia ... ... ... ... | 4.178 |
| Gypsum ... ... ... ... ... ... ... | 34 374 |
| Carbonate of lime ... ... ... ... ... | 10.946 |
| Carbonate of magnesia ... ... ... ... | 3.342 |
| Sand and insoluble matter ... ... ... | 11.151 |
| | 100.189 |

"Edinburgh, July 3, 1850.

"Enclosed, I send you the analyses of the manure you forwarded to me. I have made a careful analysis of it, because I think that the only way in which its value can be determined. The other sort of analysis to which you allude is merely the determination by tests of the absence of adulteration in such substances as nitrate of soda, or the like, a method totally inapplicable to the more complex manures, such as this. The manure seems to be made by saturating gypsum with cows' urine, and I do not imagine its value to be very high, certainly very far inferior to that of guano. Thomas Anderson."

Now, here is a most material discrepancy manifested between the substances I originally employed and their analysis subsequently. That a chemical action from their combination would take place, and produce a change in some respects, I was perfectly well aware of, but the analysis especially tends to show that adulteration of the simple ingredients must have existed to an enormous extent, reducing, indeed, the value of the compound, I may say, to one half of its cost, or even beyond that; and hence the necessity of caution being exercised with regard to purchased manures, either simple or compound.

So as that the farmer may be protected from the risk of disbursing his money unprofitably, in supplying himself with any of these portable manures, I would strongly recommend his insisting to be furnished, along with the commodity, by the party from whom it is obtained, with a minute analysis thereof, and when received, his having it again submitted to the investigation of an adept chemist employed by himself. The facilities afforded by means of the agricultural societies now established throughout the country, will enable him to effect this, without any difficulty, at a very moderate charge, and he will, no doubt, find the trifle thus expended well laid out. In this way all fraud or disappointment may be averted, as he will thereby be made fully cognisant, previous to his purchasing, of what the manure is composed, and can have his remedy if, upon delivery, it should differ in quality from the statement given. Without such information it is in fact like "buying a pig in a poke."

With the guano supplied by Messrs. Gibbs, a certificated analysis may always be had from them, and the price of the article is regulated according thereto, by which means the purchaser may be satisfied that he is fairly dealt with. By thus mentioning them, however, I beg to say, that I possess no interested motive whatever, being wholly unacquainted with them personally; indeed, never having even seen, to my knowledge, any member of their establishment. I do so merely because I have invariably found every reason to be satisfied with what I have on sundry occasions obtained from them; but there are, no doubt, also others in the trade who may be depended upon acting quite as honourably.

In a very able statement and numerous analyses of Professor Way, published in the Journal of the Royal Agricultural Society of England, Vol. X., he has most distinctly and satisfactorily demonstrated that, with regard to genuine guano, the purchaser obtains his full money value at the price now charged for it in this country. How far the same may occur in respect to the other manures of commerce in the market, simple or complex, or those that are home prepared, it is, of course, impossible for me here to determine. All I can repeat here to the reader is, in concluding my subject, let him take care to ascertain that such is really the case, before he parts with his cash, whether the commodity be patented or not. *Ver. Sap., Nov.* 28.

## UNDER-DRAINING.

All wet soils must be thoroughly drained, to render them in a fit state to be cultivated with the greatest advantage, whether the wetness arises from springs or surface water. After the land is drained, open furrows will seldom be required; if they are, the draining, in all probability, has been ineffectually and partially executed, and consequently the land will be only in a slight degree improved. One main object in draining is to admit the whole of the rain-water to percolate through the soil and subsoil, carrying with it air to the subsoil, and leaving the greater part of any fertilizing matters it contains in the surface soil, rendering the one more fertile, and gradually altering and ameliorating the texture of the other. When water is allowed to escape by open furrows it must carry with it a portion of the soil itself, together with some manure that may have been carried on the land at a great expense, with all the fertilizing matters the rain-water may itself contain. In this case, the subsoil remains unimproved, instead of gradually becoming ameliorated by a frequent percolation of water through it, and consequently a free admission of air into it.

There are two great points to be attained by effectual under-draining; first, to admit the rain-water to pass freely through the soil and subsoil, and, next, to render the surface soil in a more fit state for cultivation; and to produce better crops. Rain-water and air, it is now known, play a more important part in the economy of the vegetable kingdom than was formerly supposed.

Much has been said and written on the subject of deep and shallow draining. The proper depth to make the drains in clays and strong land will depend entirely on the capacity of saturation of the subsoil. During the descent of the water through the soil and subsoil, the drains cannot act any more than they would placed in a dry sand or gravel; but immediately the subsoil becomes saturated, the water ceases to descend, but rather to

ascend in conjunction with that which reaches the surface soil in rain. The drains prevent the ascending water rising above their level, and saturating the soil above. During rain, there is a constant percolation of water through the soil and subsoil, until it arrives at the level of the drains, below which the subsoil is already saturated, and cannot absorb more; and the drains prevent saturation above their level, except that arising from capillary attraction. Deep draining is, no doubt, most effective, by preventing the water rising near the surface by capillary attraction, and reducing the temperature of the soil; and, in land in which saturation of the subsoil commences at a great depth, it is clearly the proper system. On very retentive land, such as the Wealden clays, where saturation commences near the surface, shallow draining must be adopted. Were deep drains made here, they would not act until after a long period —many days after rain—and much mischief, probably, had been done to the surface soil on land of less stubborn texture, drained by placing some of the drains deep, and others shallow. The deep drains would be the first and the last to act; indeed, the shallow drains could not act at all, except during, or after, very heavy and sudden falls of rain, so that the subsoil should become saturated up to their level, in consequence of the deep drains not having the capacity to carry off all the water, or keep it down to their level; and it would be physically impossible for the shallow drains to act unless this took place.

Drains cannot act until after the subsoil below them is saturated by the rain-water, or until the water is arrested in its descent, and saturation is ascending. In clays drains carry off ascending, and not descending water.

All clays lose much of their moisture during the summer, and generally become hard, dry, and cracked —the cracks, or fissures, extending sometimes to the depth of several feet. During the autumnal or winter rains, the land again becomes saturated, and when this has arrived at, or risen to, the level of the drains, they begin to act, and not before. This is the correct theory on under-draining clays - and it explains the cause of upright drains—made directly up an ascent, being more effective than those laid across a hill or rising ground.

In draining clays, and other soils, a stratum of sand, or mingled sand and clay, is occasionally found at various depths—this holds the water. If the drain-pipes were laid in this stratum of sand and clay, a large body of water would constantly stand at their level, and would probably rise near the surface by capillary attraction. Therefore, to drain this description of land effectually, it is indispensable to place the drain-pipes a few inches below this stratum, with the clay beneath. In this instance, the water does fall into the drains—indeed it may be termed draining diffused springs.

To illustrate this theory of draining clays in a very simple and intelligible manner, let us suppose a barrel placed on one end, the uppermost end removed, and the barrel filled with mould, and drain-pipes inserted through the bung-hole across the centre of the barrel, with some substance placed round the outside pipe to prevent the escape of water between it and the edges of the bung-hole; then pour water continuously on the mould from a watering-pot with the rose on, that the whole surface of the mould may receive an equal quantity. The water will descend through the mould to the bottom of the barrel, passing the pipes, and not entering them; from thence it will rise and saturate the mould until it reaches the drain-pipes, which will then carry off the ascending water, and prevent saturation above them.

When a field is to be drained, and doubts are entertained of the proper depth to make the drains, it might be advisable to make, during the dry weather in the autumn, three short drains, 30 feet apart, and parallel to each other, one 5 feet deep, one 4 feet, and the other 3 feet. The proper depth for draining that soil would then be ascertained soon after the commencement of wet weather, and in time to execute the drainage that season.

No precise depth can be stated for making the drains either in clays or land wet from springs; capacity of saturation in one, and the position of the water in the other, must determine the necessary depth of drains. *W. C. Selby, Ightham, Kent.*

## Home Correspondence.

*Peat.*— There is a description of peat in Ireland, known by the name of "stone turf," which, if thoroughly dried and reduced to powder, would probably answer the purpose of fixing the ammonia of manure, without charring. It would be worth the trial, as the present price of prepared turf is too expensive for general use. Perhaps some of your readers, who have the means of testing the experiment, will do so, and report the result in the *Agricultural Gazette*, for the benefit of agriculturists. *Falcon.*

*Pinguedo.*—In reply to your correspondent "T. J.'s" inquiry, I beg to state that the "Pinguedo" is not sold nor manufactured by anybody now. In the years 1846 and 1847, I used to prepare it, and as "novelties" are never taken particularly by farmers, I discontinued the manufacturing of it; but knowing by experience that it does great good to all kinds of crops, and particularly to Wheat (which, by this artificial manure can be grown year after year), I thought proper not to be selfish, but to give the world the benefit of my discovery, and to expose its composition in the *Agricultural Gazette*, at page 716. Any one can mix the ingredients himself, and without much trouble or expense. The salts so named can be had at any drysalter's. I advise some of the artificial manure manufacturers, who advertise in your paper, to start the "Pinguedo" on a large scale, as it will pay well; provided they will still call it by the name I gave it, "Hopkins' Pinguedo." *J. W. Hopkins, Woodfields, Ashton-on-Mersey.*

*Liquid Manure.*—I have tried, as recommended by the *Gazette*, diluting liquid manure with water, in order to destroy the powerful smell, when using it on Grass, or in the garden, without the remedy having the desired effect. I have many hundred gallons of liquid manure in two deep wells, which I shall be obliged to lead into an adjoining brook, unless I can discover something to fix the perfume. If this note should catch Professor Way's eye, perhaps he will be kind enough to give me his valuable advice, as to the best means of depriving the liquid manure of its disagreeable qualities, without injuring its efficacy, as a fertilised charcoal or charred turf will not answer, as the mixture must be pumped out. *Ammonia.*

*Potatoes.*—Your directions in the last Number of the *Agricultural Gazette*, as to the best manure for Potatoes, are valuable, and calculated to be of great use to farmers; but there is one omission, much felt by practical farmers. This is, an uncertainty as to the mode of applying the different compositions recommended by you. In particular, should the compositions of guano, sulphates, &c., be mixed with the dung—or gently spread in the seed drills —or top-dressed? The two first plans of mixing with dung and scattering in the drills, I have tried, and my Potatoes are not quite so good as my neighbours'. *J. Murdoch Campbell.* ["W. D. S." will perhaps be good enough to explain more fully.]

## THE SMITHFIELD CATTLE SHOW.

We shall now ask our readers to walk round with us and notice some of the individual animals among the large number exhibited.

The first in Class I. is a roan short-horn steer, exhibited by Mr. Brickwell, of Leckhampstead, near Buckingham, weighing somewhere near 11 cwt. —a square, well-formed animal, of good quality, slightly deficient in the shoulder points, and drooping slightly in the back. It received the 2d prize of 15*l.*

3 is likewise a roan short-horn ox, exhibited by Lord Feversham, which may be described as not deep enough in the flank; his neck is too small; he is not fat enough; otherwise he is the best beast in the yard; he is a large, well made beast, and his faults are very slight; and his condition, were it improved, would cover them. He is descended from the well known herd of Mr. Bates—from his well known "Duchess" family.

4 is a very level well-formed beast, with very deep, good, wide, fore quarter; light offal—a Hereford ox, shown by Mr. Heath, of Ludham Hall, near Norwich; a perfect model of a beast, weighing at least 12 cwt. He received the 1st prize of 30*l.*

6 is a Hereford ox, shown by his Royal Highness Prince Albert, and received the 3d prize of 5*l.* He is remarkable for the firmness and exeellence of his flesh, and that is all that can be said in his favour, for he is by no means well formed, having high hips, with drooping rump, and thin thighs; and we should certainly have preferred seeing the prize that he received awarded elsewhere.

7 is a Devon ox, shown by Mr. Hole, of Dunster; he has good fine fore quarters, with low loins, but well covered; rather deficient in hind quarters, and rather a small beast.

8 is a Durham ox, shown by Mr. Leeds, of Lexham, in Norfolk; the heaviest beast we have yet seen, weighing at least 15 cwt. He is a fine gay looking animal, with deep and wide fore quarters, a very round well formed body, and deep flank; good twist; its flesh might have been firmer; but it is a better beast, in our opinion, than that of his Royal Highness Prince Albert.

9 (Hereford), is a straight, evenly covered little beast, deficient in its hind quarters. Exhibited by Lord Warwick.

12 is a short-horn ox, from the stock of Lord Spencer, shown by Mr. Herbert Langham, of Cottesbrook, in Northampton. He has a fine head and fore quarters, with broad back, but narrow loin; rump and flank good, but as a whole a plain beast.

13 is an ox for the most part short-horn, exhibited by Messrs. Martin, of Aberdeen; he has a nice head, good chest, fair loin and flank; droops a little in the rump; the twist might have been better.

14 has a good head and fore quarters; chest and crop are good; flank and twist pretty good; the fore loin rather narrow. Shown by Mr. White, of Harlow.

15 a short-horn, of rich roan colour, good quality, having a good head, deep and well developed chest, wide and well covered hip, good rump; altogether a good animal, but rather patchy. The whole class contains many good animals, though it does not come up to the quality shown by some of the other classes.

Class II.—Oxen between 3 and 4 years old, contains 26 beasts, among which we may name a few.

17 is a short-horn ox, shown by Lord Exeter; it has a good "crop," wide chest, wide and well covered loin, with good flesh; "plates" not good, and it droops a little in the back; tail set on too high; altogether is a very useful beast, weighing probably nearly 12 cwt.

18 possesses good head and fore quarters, and is well and evenly covered with good flesh. Hind quarters, rump, twist, and flank, very good. Fore loin somewhat deficient, but a very compact beast. Shown by Mr. Coombe, of Taunton.

20 carried off the 1st prize in this class (30*l.*). He is a well formed animal, evenly covered with first-rate quality of flesh, and looks a beautiful specimen of the Hereford breed. He might have been a little heavier in the flank. He is the best beast we have yet seen, and deserves the Gold Medal, which he received; as the best ox in the yard. Shewn by Mr. Longmore, near Ludlow.

21 (Hereford), has good head and fore-quarters, and plates; quality good, deficient in his rump and buttock; shown by Mr. Maydwell, of Ashstead, Surrey.

23 (Short-horn), shown by Mr. Stratton, of Swindon, was deservedly commended by the judges. He is got by a son of "Sir T. Fairfax," the winner at Bristol, and possesses a good deal of his style in the fore-quarters, but is firmer loined.

25, shown by Lord Fitzwilliam, is a square useful beast, head not very stylish.

26 (Devon), shown by Mr. Fouracre; has good fore-quarters, and good quality of flesh, and light offal; but slightly defective in hind quarters.

27 (Hereford), shown by Mr. Heath; received the second prize in its class. It had a good head, and good quality of flesh, loin, rump, twist, and flank good. He is remarkably evenly covered with very good flesh, but might have been a little better behind the shoulders.

29 is a good Hereford ox of remarkably good fore-quarters, chest both wide and deep, with very full plates, well covered with fine and good flesh, rather drooping in the rump. It received the third prize in its class.

31, a good short-horn beast, of large frame and fine fore-quarters, good quality, its twist and flank might have been deeper; shown by Mr. H. Hall, of Willesden.

32 (Hereford), head, fore-quarters, plates, flank, and twist, good and firm, and has good quality of flesh. Shown by Mr. Niblett, of Filton.

34 (Hereford), is a very compact evenly covered beast, of good quality. Its loin is good, and its flank hangs well, but it might have been heavier. It is deservedly "highly commended" by the judges, and is shown by Mr. Beisley of Romsey, Hants.

35 is a good Hereford ox, with good head and fore-quarters, and of good quality; hind quarters slightly defective. Shown by Lord Hatherton.

36 is a very straight, well-proportioned, fine looking animal, of good quality; if kept till another year, he would be a very "clever" animal. Shown by Mr. Kinder, of St. Alban's.

38 is a fine straight beast, with good flank, and hind quarters of nice quality; shoulders rather heavy, and plates might have been better. Shown by Mr. Marjoribanks, of Watford.

40 (Short-horn, shown by Mr. Drory, of Long Sutton, Lincolnshire), is of rich colour, good head, deep fore-quarters, plates and crop good, very deep and round in body, of good quality, perhaps too loose in flesh, good hips and rump, loin not wide enough, flank and twist fair; a very thick good beast, and if he had been firmer in his flesh, would have had a chance of being rewarded by a prize.

Class II. contained a large number of beasts, and generally of good quality.

Class III.—Oxen, above 2 and under 3 years old.

42 is a pretty little thick useful beast (short-horn), evenly covered with firm good flesh. Shown by Mr. Frost, of Linton.

44 (a cross-bred Devon and short-horn ox), is of very nice quality, rump and hind quarters pretty good, stands very nicely on its legs. Shown by Lord Leicester.

46, shown by Mr. Griffin, of Peterborough, is a very even fleshed animal, with good head and fore quarters, rump might have been a little better—altogether a very useful beast.

47, Mr. Thomas Bond showed a small Devon steer, having nice fore quarters and good flank, but rather narrow rump.

57 (Hereford, shown by H.R.H. Prince Albert), received the 2d prize in its class; a nice well formed beast, with very good fore quarters, chest wide and deep, plates good, evenly covered with good flesh; flank, loin and twist good; rump drooping, as in the other animals bred in the same neighbourhood, shown by his Royal Highness in the other classes. In other respects, No. 51 is a very clever animal.

52, a larger framed animal than 51, with good fore-quarters, and better twist than 51, but not so firm in flesh; he stands well. Shown by Mr. Niblett, of Filton, and received the 3d prize in its class.

54 (short-horn), a handsome animal, with good head and fore quarters, and rich colour. Shown by Mr. Newbath, of Sleaford.

55 (Hereford), good head and fore quarters, well filled in all points with good flesh, received the 1st prize in its class. Shown by Mr. Phillips, of Wantage.

58 is a cross animal between the Brahmin and short-horn breeds; a slightly formed but good sized animal, and fat. Shown by the Earl of Derby.

Class IV.—Oxen under 90 stone weight.

61 is a pretty little Devon ox, head and fore quarters good, well covered with good flesh; hind quarters might have been better. Remarkable for its lightness of offal. The 1st prize in its class was awarded to it. Shown by Lord Leicester.

62 received the 2d prize. Good head, plates, and crop; shoulder rather bare; loin, hips, flank, and rump good; full twist; firm good flesh. Shown by Mr. Maydwell, of Ashstead, Surrey.

67, shown by Prince Albert, is rather a compact, thick, useful beast, well covered with good flesh; rump good.

Class V.—Oxen under 80 stone weight.

76 (Devon, shown by Lord Leicester), received the

1st prize in its class. A small perfect animal; if faulty anywhere, it is in the hind quarters; fore quarters beautiful.

77, Mr. Frampton, of Farringdon, showed a nice fleshed, thick, useful Hereford ox.

78 (Devon) carried off the 2d prize. Good head and fore quarters; flank and quality good; light offal; narrow rump. Shown by Mr. Bond, of Taunton.

80, is a very thick, useful Scot, very compact, and well covered with good flesh. Shown by Mr. Rob, jun., of Thirsk.

81, another West Highland ox; is a very fine beast, perhaps not so compact as the other.

Class VI.—Oxen of any age, of Scotch, &c., breeds.

85 received the prize; it is a thick, useful beast. Shown by Mr. Kinderley, of Pembroke.

88, a very nice, thick, well-formed Scot, with nice head and horns; remarkable for excellence of hair. Shown by Mr. W. M'Combie, of Alford, Aberdeen.

91 is a very thick, useful, and fairly-formed beast. Shown by Mr. Rob, of Thirsk.

92, well-formed, but might have been evener in flesh. Shown by Mr. Jonas, of Ickleton.

93 (Scot), a fairly-formed beast; loins might have been wider. Shown by Mr. Knowles, of Aberdeen.

94, shown by Mr. Rob, has better loins, but is rather a smaller animal.

95 (Scot), of good size, well-formed, with even, good flesh. Shown by Lord Aylesford.

96 (West Highland ox), a noble looking beast; crop might have been better, but a fine animal.

Class VII.—Cows and Heifers under 5 years old.

101 (Short-horn) is a nice square well-formed beast; very good loin, shoulder points rather bare, plates not deep enough, but of good quality; commended by the judges; shown by Mr. Healy, of Folkingham, Lincoln.

102, a beautiful well-formed beast; all points up well and good; very nice head: 1st prize, 20*l.*; shown by Mr. Druce, of Eynsham.

105 well deserves the 2d, which it received; got by a son of "Sir T. Fairfax;" shown by Mr. Stratton, of Swindon; the only fault is a deficiency in the rump; colour rich roan; altogether a beautiful looking animal.

106 is a good strong useful beast, with firm flesh; shown by Mr. Calthorp, of Deeping Fen.

107 is a well-formed beast, broad in the back and loin, and good twist; flesh very hard; shown by Mr. Gurney, of Easton, near Norwich.

108, altogether a nice beast, and deservedly "commended" by the judges; shown by Mr. Phillips, of Wantage.

111 (Short-horn; shown by Mr. Niblett, of Filton) is a nice little beast, of good quality.

112 received the 3d prize: good head, and fore quarters, evenly covered with good flesh; shown by Mr. Phillips; every point full and good; altogether a first-rate animal, and there are few better in the yard.

115 (Devon) is a pretty little beast, of good quality, with narrow rump; "highly commended" by the judges.

120, a very neat, good fat beast, a cross of Brahmin and Ayrshire, and a better animal than the other individual of the same cross named before; exhibited by Lord Derby.

Class VIII.—Fattened Cows over 5 years old.

121 (Short-horn), rich roan, a good head, and a good broad back, capital loin, and is in every respect a very "clever" animal; twist might have been better. It received the 1st prize. She is a very stylish, and even grand cow, from the herd of Mr. Bates. Her loin is remarkable, and quality good, the union of which is characteristic of Mr. Bates' stock. Shewn by Lord Feversham.

122, good wide hind quarters, quality good, but far inferior to 121; received the 2d prize; shown by Mr. Gillett, of Wheatley.

Class IX.—Fattened Cows of 5 Years old, that shall have had Two Calves.

125 is a large-framed animal, of good quality, with great patchy rump, thin thighs, and not good twist; she received the 1st prize in her class; shown by Mr. Holland, of Halifax.

127 is firm, and evenly fleshed, straight, with good twist and hind-quarters; shown by Mr. Hicks, of Newbury.

129 is a very pretty, well-formed animal, of rich colour and good quality—very good indeed; shown by Mr. Beman, of Moreton-in-the-Marsh; received the 2d prize, and *ought to have had the first.*

132, a short-horn, shown by Sir C. Knightley, Bart.; head and fore quarter not very grand; flank fair; hips, rump, and twist first-rate.

Extra Stock.

66, a remarkably good Hereford ox; might have been more even, but of firm good flesh. Silver Medal.

139, a very large polled Scot; if well fatted would have been a tremendously large beast; length, 6 feet 3 inches; in girth, 9 feet 3 inches; height, 5 feet 10 inches. Shown by H.R.H. Prince Albert.

In this class various breeds are exhibited, but nothing very remarkable is shown.

SHEEP.

Class X.—Fat Wether Sheep of any Long-woolled Breed 1 year old.

155 (Leicester), a very equal pen of Leicester sheep; good backs, rumps, and plates; good wool; good head and neck. Shown by Mr. Bradshaw, of Oakham, and received the 1st prize in the class.

156 (Leicester), good size and quality; wool good. Shown by Mr. Walmsley, Bridlington. 3d prize.

159, very good sheep; nice looking heads, good wool; received the 2d prize. Shown by Mr. Hall, of Bawtry, Notts.

Class XI.—Fat Wether Sheep 1 year old, under 220 lbs. live weight.

164, pretty little sheep. Shown by the Marquess of Exeter, and received the 3d prize.

168, heads fair, back and plates good, wool fair; 2d prize. Shown by Mr. Pulver, of Kettering.

171, good heads, broad backs; plates, rumps, and legs good; 1st prize. Shown by Mr. Willmore, of Leicester. One sheep in the pen somewhat faulty in the back.

Class XII.—Fat Wether Sheep—Long-woolled.

173 received the prize; Cotswold sheep shown by Mr. Beman, of Moreton-in-the-Marsh; very useful sheep of fair quality.

174 are larger framed sheep than 173, not so much wool.

Class XIII.—Cross-bred Wethers.

188, a pen of cross-bred sheep shown by Mr. Druce, characterised by frames of good quality, with good wool; neck, back, and plates good—an excellent cross; received the 2d prize.

189 well deserved the 1st prize, which they received. Shown by Mr. Overman, of Burnham Market, Norfolk. Heads pretty, wool very good; compact sheep.

In Class XIV. Mr. Overman again carried the prize for his smallest pen of cross-bred wethers, of the same character as those in 189.

Class XV.—Fat Wether Sheep of Short-woolled breed.

202, Mr. Sainsbury's pen of southdown wethers carried the second prize; they are characterised by well-formed frames, pretty heads, and good wool, backs broad, and legs good.

205 is a pen of good sheep, good in every point, altogether well formed sheep, "highly commended;" shown by Messrs. Askcoll, of Eastbourne, Sussex.

211, the most perfect sheep in the yard, too much cannot be said in their praise. They deservedly received the first prize and gold medal; exhibited by His Grace the Duke of Richmond. No. 1, the length 4 ft., girth 4 ft. 9½ in.; No. 2, length 4 ft., girth 4 ft. 10½; No. 3, length 4 ft. 1 in., girth 4 ft. 7 in. These sheep were weighed and were within 2 lbs. weight of one another, so evenly matched.

Class XVI.—Short-woolled Fat Sheep, under 200 lbs. live weight.

213, Mr. Sainsbury's pen gained the prize; heads very good, a good deal of wool, neck, back, and legs very good; very well matched.

216, the pen shown in this class by the Duke of Richmond are very good, firm, and compact sheep; good wool; not so good a countenance as 213.

Class XVII.—Fat Wether Sheep, 2 year olds.

217, very well made, quality good; heads might have been better. No. 1, length 4 ft. 1 in., girth 4 ft. 9 in.; No. 2, length 4 ft. ½ in., girth 4 ft. ½ in.; No. 3, length 4 ft. 5½ in., girth 4 ft. 10 in. Received the 2d prize. Shown by Mr. Villiers Shelley.

220 is a pen shown by the Duke of Richmond, and of similar quality to 211. They received the 1st prize in their class. No. 1, length 4 ft. 4 in., girth 4 ft. 11 in.; No. 2, length 4 ft. 4 in., girth 5 ft. 1¾ in.; No. 3, length 4 ft. 6 in., girth 5 ft. ½ in.

Class XVIII.—Fat Short-woolled Wether Sheep, not Southdown.

Three pens were shown here, but to none of them was a prize awarded.

Extra Stock.

226 is a very clever sheep, shown by Mr. Sainsbury, and exhibiting the same character as 213. It received the silver medal.

Class XIX.—There was a very good show of Pigs,

243 received the prize; 3 black Dorset pigs, of good quality, good heads, and of good size. Shown by Mr. Coate, of Blandford.

246, Mr. Barber's (of Slough) pigs received the 2d prize; nice quality.

245, very nice little pigs, not so large as 246; shown by Prince Albert.

247, useful pigs, of nice quality, and of great size, if no older than specified. Shown by Sir J. Conroy, Bart.

Class XX.—Pigs between 26 and 52 weeks old.

201, perfect beauties; cannot be too highly praised. They received the 1st prize. Shown by Mr. Coate, of Blandford.

256 is a pen of very nicely bred Berkshire pigs, of good quality. Shown by Mr. Thomas King, of 12, Paddington-street.

Class XXI.—Pigs of any Breed, between 12 and 18 months old.

258 is a pen of good sized black pigs, well deserving the 1st prize, which they have received, and which Mr. Coate, of Blandford, their owner, has carried off in all the three classes in which he has shown.

260 is a pen of Coleshill pigs, shown by Lord Radnor, and receiving the 2d prize. They have beautiful heads, and quality; the cheek almost covering the nose. One pig not so good as the others, or this pen must have carried the first prize. One of these pigs, we think, the best in the yard.

Extra Stock.

263 was an enormous beast. Had had two litters, and was spayed. Weighed 140 stones.

271 was a very fat sow, well formed, and of nice quality, with a good deal of hair. Shown by Mr. Maw, of Tetley.

## BIRMINGHAM CATTLE SHOW.

Class I.—Hereford Oxen.

3 was a well-formed Hereford ox, with good loin. Not very good about the head. Shown by the executors of the late Sir F. Lawley; received 2d prize.

5, head good, chest deep and wide, plates good, evenly covered with fair flesh; shown by Prince Albert, and received the 1st prize; rump drooping, and somewhat deficient in flesh on the shoulder.

Class II.—Hereford Steers.

12, a fair beast, but not very good, shown by Lord Hatherton, received the prize.

Class III.—Hereford Cows.

14, which received the prize, is deficient in shoulder top; twist full, but not well formed, firm flesh, rather a gay looking beast. Shown by Mr. Vaughan, of Leominster.

15, received the 2d prize. Rather a compact beast, somewhat smaller than the last, but better made on the whole. Exhibited by Mr. Hill, of Bridgenorth.

Class IV.—Hereford Heifers.

21 received the 1st prize, although, *having had a calf*, she is, one would suppose, disqualified. She is a fair beast. Exhibited by Mr. Morris, of Therrow.

22, a good beast; points well "up." Exhibited by Mr. Hill, of Bridgenorth, and received the 2d prize.

Class V.—Short-horn Oxen.

28, a large, well-formed, useful beast; not striking in colour, flank not quite deep enough, but a very good animal. Got by the well-known bull "Lord Warden." Exhibited by Lord Spencer.

37 has a beautiful head, and is evenly covered with good flesh; hardly fat enough. Exhibited by Mr. Spraggett, of Warwick, and received the 1st prize.

Class VI.—Short-horn Steers.

47, good crop, fair loin and hind quarter, light flank. Exhibited by Mr. Pulver, of Broughton.

Class VII.—Short-horn Cows.

☞51. The well-known "Lady Thorn," never beaten before, and the winner of many prizes; exhibited by Mr. Towneley. She is now beaten, from her age, by Mr. Beman's cow, 63, and Mr. Wiley's, 54. She is remarkable for fine quality of flesh.

54 is a good fleshed, thick, heavy, useful cow.

63, Mr. Beman's cow, which gained the first prize, is a very good cow, slightly deficient in the crop.

Class VIII.—Short-horn Heifers.

76 is a pretty compact little heifer, of good flesh, and light offal. It received the first prize. Exhibited by Lord Hill.

Class IX.—Devon Oxen.

88 is a very pretty ox, of good form; exhibited by Lord Leicester; it received the 1st prize. Deficient in the chest.

Class X.—Devon Steers.

89 deserves the prize it has received; a very pretty little beast. Exhibited by Lord Aylesford.

Class XII.

A pretty little beast, with rather loose flesh, was exhibited by Lord Leicester, and received the 2d prize. The 1st prize was carried off by a small, compact, firm-fleshed heifer, remarkable for lightness of offal; shown by Mr. Newbold, of Coventry.

Class XVII.

Mr. Rob, of Thirsk, showed a remarkably even lot of Scotch oxen, for one of which he received a 2d prize. Mr. Rob's oxen, both here and at Smithfield, do great credit to his judgment as a purchaser.

Class XVIII.—Scotch Heifers.

Mr. J. Pickthall, of Kendal, exhibited a beautiful little beast; not a nicer animal in the yard.

The show of sheep was an improvement upon that of last year, both as regards quantity and quality. The Leicester prize sheep were remarkable for their size and quality, and the show of Downs contained many good specimens; but our report has already arrived at such a length that we must postpone our further remarks, with those upon the show of pigs, till next week, when we will enter into a comparison of the animals exhibited at the two shows, in point of average weight, as ascertained by measurement.

# Societies.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Wednesday last, the 10th December; present, the Earl of Ducie, president, in the chair, Duke of Richmond, Lord Berners, Sir M. W. Ridley, Bart., Mr. Ambrose, Mr. Raymond Barker, Mr. John Bethell, Mr. A. Carden, Captain Stanley Carr, Colonel Challoner, Mr. J. W. Clarke, Mr. E. Davy, Mr. Duncan, Mr. Dyer, Mr. Gadesden, Mr. Garrett, Mr. R. F. Gower, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Lawford, Mr. Adams, Mr. Mainwaring Paine, Mr. Paul, Mr. Rowlandson, Mr. Shaw (London), Mr. Shelley, Mr. Sollifant, Professor Simonds, Mr. Smith (Exmoor), Mr. C. Townley, Mr. Tunno, Mr. Turner (Barton), Professor Way, and Mr. Wight.

The names of six other candidates for election at the next Monthly Council were read.

Mr. Nesbit favoured the Council with an experimental illustration of his new mode, by which farmers and others, little conversant with chemical manipulation, may, in a simple manner, ascertain whether the guano they are about to purchase is adulterated.—Captain Stanley Carr, on his return to England, gave an interesting statement of facts connected with his observations of the occurrence and amount of guano in different geographical localities.—Mr. Turner undertook inquiries in reference to Mr. Amos Bryant's communications on

cultivation of land.—Professor Simonds reported on the cattle probang submitted to the notice of the Council at a former meeting, and referred to his examination. The result was not favourable to the claims advanced.—Mr. Murcott transmitted a further communication on the Clover insect.—Mr. Parish and Mr. Davy addressed letters to the Council, on the subject of Flax-cultivation and management.—Captain Chapman, R.A., made enquiries on the flooring of barns. Mr. Chivas transmitted specimens of Turnips.

The Council ordered their usual acknowledgments for the favour of these communications.

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A Special Council was held on Thursday, the 11th of December, for deciding on the prizes to be offered for live-stock at the Lewes meeting. Present: The Earl of Ducie, President, in the chair, Lord Camoys, Lord Portman, Sir M. W. Ridley, Bart., Mr. Raymond Barker, Mr. Barnett, Mr. S. Bennett, Mr. Brandreth, Col. Challoner, Mr. Fisher Hobbs, Mr. Law Hodges, M.P., Mr. Hudson (Castleacre), Col. Hulse, Mr. Jonas, Mr. Milward, Mr. Popham (Littlecote), Mr. Shaw (London), Mr. Shelley, Mr. Sillifant, Prof. Simonds, Mr. Smith (Exmoor), Mr. Turner (Barton), and Mr. Jonas Webb.

The prize sheet was arranged, and the final adjustment of general regulations deferred to the 4th of February.

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A Special Council was held on Friday, the 12th of December, for receiving the report of the General Lewes Committee, and agreeing to the report to be made by the Council to the ensuing general meeting. Present: The Earl of Ducie, President, in the chair; Lord Ashburton, Mr. Raymond Barker, Colonel Challoner, Mr. Druce, Mr. Fisher Hobbs, Mr. Shelley, Professor Simonds, and Mr. Thompson. The report of the Lewes Committee having been read and adopted, the Council agreed to their report to be made to the general meeting on the following day.

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The December General Meeting was held at the Society's House in Hanover-square, on Saturday last. The Earl of Ducie, President, in the chair.

The Secretary, by direction of the President, read the following Report from the Council:—

REPORT.

The Council have to report that, since the last General Meeting, 132 Members have been elected; 69 have died, and 149 have been removed from the list, so that the Society consists accordingly of 91 Life Governors, 158 Annual Governors, 690 Life Members, 4076 Annual Members, and 19 Honorary Members, making a total of 5034 Members on the list of the Society at the present time. The Council have filled up the vacancy in their body occasioned by the loss of the Hon. Capt. Pelham, by the election of Mr. Law Hodges, M.P. for West Kent.

The Finances of the Society are in a highly favourable state: the floating cash-balance in the hands of the Bankers being equal to the discharge of current claims; while the Council have been enabled to purchase Stock in Government Securities to the amount of 11,190*l.*, on account of the investment of Life Compositions of Governors and Members, made in accordance with the principle originally laid down as essential to the security of the Society.

The Windsor Meeting has been held, under most gratifying circumstances, and with perfect success. The Members were honoured on the occasion by the gracious presence of her Majesty the Queen, the Royal Patroness of the Society; and his Royal Highness Prince Albert, as one of its Governors, evinced a lively participation in the proceedings of the Meeting, and with kind condescension sat down to dinner, in the Pavilion, with 2000 guests of the Society, whom he most heartily bid welcome to the Home Park. The Mayor and Corporation, and the Local Committee, with the most zealous co-operation, anticipated and executed the wishes of the Council on every point connected with the convenience and accommodation of the Society, and the perfect preservation of the peace of the borough. The Railway arrangements were in every respect as complete as the increased pressure of traffic and the multiplicity of details would allow; and the Stock of the Exhibitors was liberally conveyed free of charge in both directions by the principal Railway Companies throughout the kingdom. The number of the stock, the variety of the breeds, and the high character so great a proportion of the animals exhibited, rendered the Show at Windsor one of the most remarkable, perhaps, that has ever taken place in this or any other country; and notwithstanding the increased expenses attending so large an exhibition, the balance-sheet of the meeting will be found to present a result more favourable to the Society than on any former occasion.

The Council have arranged that the Lewes Meeting shall be held in the week commencing Monday, the 12th of July next. They have also decided on the Prizes to be offered at that meeting, for Agricultural Implements and Machinery, and for Live Stock intended for breeding purposes. The former include important additions, intended to draw the attention of Agricultural Engineers and Machinists more strongly to the different degrees of motive power required by farmers under different circumstances, and to its convenient adaptation to agricultural purposes: and it is hoped that an opportunity will be afforded for obtaining a satisfactory trial of the efficiency of those reaping machines which have attracted so much attention subsequently to the period when the Prize Sheet for Implements was arranged by the Council for the year 1852. The latter comprise distinct classes of prizes for the Sussex breed of Cattle, the Romney Marsh or Kentish Sheep, and Domestic Poultry; having reference respectively to the counties of Sussex, Kent, and Surrey, constituting the district of the Country Meeting to be held next year at Lewes. They have made the rule more stringent by which fines are levied on exhibitors for not sending to the show the stock they have entered, and for which the Society provide accommodation in the show-yard. They have resolved that no prize of the Society shall be given to bulls exceeding five years old; they have limited the competition in the class of agricultural stallions hitherto known as that of any age, to horses that are above two years old; and they have decided to require in the class of three years old heifers not in milk, the same certificate as in the case of in-calf cows not in milk before paying the amount of the prize, namely, a certificate that such in-calf heifer had in due course produced a live calf. The Council have under their anxious consideration two most important questions connected with their Country Meeting: namely, the best mode of appointing the Judges, and the conditions under which their attention should be directed to a veterinary inspection of the animals. The Council consider that the stock to which the prizes of the Society are awarded ought not only in the opinion of the judges to be the best specimens of their particular class in the yard, but that in condition and function they ought also to be fully qualified to propagate their species, without communicating to their offspring any tendency to hereditary disease or imperfection; and in order more clearly to call attention to the circumstances under which such tendency might be apprehended, the Council have offered a prize of 20*l.* for the best Essay on the subject. The Council have received from Colonel Le Couteur the scale of points for Jersey cattle, which has been found so satisfactory in enabling the Judges of the Royal Agricultural Society in that island to arrive at uniform decisions. At his request these points were placed by the Council in the hands of the Judges of Channel Islands' cattle at Windsor; and the award of the first prize in that class, although made to an animal bred in the county of Sussex, as well as the other awards, have, it is believed, given entire satisfaction to the Channel Islands' breeders. This scale of points, and the accompanying illustrations, having been placed at the disposal of the Society for publication, in the hope that an equally successful attempt may be made for other breeds of cattle in England, the Journal Committee have directed their insertion in the ensuing number of the Journal. The Council have given directions for the preparation of a plan of the show-yard at Lewes, and have decided that a pavilion for the great dinner shall be constructed to accommodate 1000 persons. At their request, Prof. Simonds has kindly consented to deliver a lecture in the week of the Lewes Meeting, on such practical and important questions connected with the management and diseases of animals on a farm, as may be considered most interesting for the purpose. The position of Lewes in reference to the Southdown district, its immediate vicinity to Brighton, its connexion by a navigable river with the sea, and its direct railway communication with London and the West of England, will no doubt render it a place of convenient access both to the breeders of Sussex, the members and exhibitors of the Society, and the public generally, who intend to be present at the meeting; while the great facilities offered by the authorities of the borough, and the immediate residence of so many active members of the Society, will secure the most advantageous arrangements for the occasion.

The Duke of Richmond has reported to the Council the progress of the communications he was requested by them to enter into with Viscount Palmerston, her Majesty's Principal Secretary of State for the Foreign Department, on the subject of a cheap and abundant supply of guano to this country. His lordship has signified his entire willingness to lend every aid in furtherance of this important object, by requesting the Admiralty to instruct the commander of every ship in her Majesty's Navy to search for deposits of guano in the rainless regions within the tropics, and every surgeon of such ships to be prepared to examine on the spot the amount and quality of each deposit of guano that may be discovered: the search for mineral phosphate of lime in any part of the world being also included in this instruction. Lord Palmerston having also stated his desire that the Council should draw up a code of such instructions and queries they would wish to have distributed by the Admiralty, they have requested the Chemical Committee of the Society to prepare these instructions and queries accordingly. The announcement of this most gratifying participation of her Majesty's Government in a question affecting in so high a degree the cause of practical agriculture, will be received with satisfaction by the Society; and these measures of the Government, with the prize of 50*l.* already offered by the Society for a statement of the geographical distribution and the discovery of new sources of guano, will, it is hoped, lead to interesting details and important results. In the meantime, as the large proportion of ammonia resulting from guano constitutes, in a great measure, its essential value, it will be an important object to discover a mode by which a cheap and abundant supply of that valuable element may be obtained. The simple and effectual modes now available for detecting adulteration in the guano of commerce, ought to prevent the great loss and disappointment to which farmers at the present time are very liable; and in furtherance of this object, Prof. Way has reduced his charge for an analysis of this manure to a rate which brings it within the means of every farmer who will take the trouble to guard himself by this analysis from fraud.

The Journals of the Society contain from time to time the results of Professor Way's Chemical Investigations, instituted under the instructions of the Chemical Committee of the Society; and the lectures which he has delivered to the members since the last general meeting, on the agricultural employment of lime and gypsum, have been valuable in themselves, and have led to interesting practical discussions.

The Council have taken means to bring before the members various suggestions made during the past year for extending in this country the growth of Flax, as an agricultural crop. The conditions of soil and culture, the management of fibre, and the question of there being or not a sure market for its sale, are practical and prudential considerations, which will no doubt of themselves engage the attention of farmers, without any special caution being given to them by the Council; who, although well aware that there are, under ordinary circumstances, no difficulties attending the cultivation of this crop, yet feel at the same time that at present adequate means are not generally available for taking the crop off the grower's hands.

The Council, in conclusion, have the continued satisfaction of calling the attention of the members to the gradual and vigorous development of the Society in its practical and useful objects, and to the addition of new members to its list from among the friends of agricultural improvement in every part of the United Kingdom.

By order of the Council,
James Hudson, Sec.

On the motion of the Rev. James Linton, of Hemingford, Huntingdonshire, seconded by Mr. Wingate, of Hareby House, Lincolnshire, this Report was received and unanimously adopted by the meeting.

Mr. Raymond Barker, Chairman of the Finance Committee, reported to the meeting the following balance-sheet of the auditors:

Half-yearly Account, ending the 30th of June, 1851.

| Receipts. | £ | s. | d. |
|---|---|---|---|
| Balance in the hands of the Bankers, 1st January, 1851 | 738 | 2 | 8 |
| Balance in the hands of the Secretary, 1st January, 1851 | 11 | 9 | 1 |
| Dividends on Stock | 169 | 6 | 1 |
| Life-Composition of Governors | 90 | 0 | 0 |
| Life-Composition of Members | 360 | 0 | 0 |
| Annual Subscriptions of Governors | 625 | 0 | 0 |
| Annual Subscriptions of Members | 3002 | 7 | 0 |
| Receipts on account of Journal | 266 | 19 | 6 |
| Windsor Subscription to Country Meeting of 1851 | 600 | 0 | 0 |
| | £5854 | 4 | 4 |

| Payments. | | | |
|---|---|---|---|
| Permanent Charges | 170 | 12 | 6 |
| Taxes and Rates | 18 | 2 | 2 |
| Establishment | 481 | 11 | 0 |
| Postage and Carriage | 28 | 0 | 11 |
| Advertisements | 3 | 19 | 9 |
| Payments on account of Journal | 1759 | 18 | 3 |
| Chemical Grant—two quarters | 100 | 0 | 0 |
| Chemical Investigations | 200 | 0 | 0 |
| Payments on account of Country Meetings | 493 | 0 | 2 |
| Repayments to Bankers | 11 | 0 | 0 |
| Sundry Items of Petty Cash | 3 | 9 | 9 |
| Balance in the hands of the Bankers, 30th June, 1851, | 2584 | 9 | 5 |
| Balance in the hands of the Secretary, 30th June, 1851 | 0 | 1 | 2 |
| | £5854 | 4 | 4 |

(Signed) Thomas Raymond Barker, Chairman,
C. B. Challoner,
Thomas Austen,
Henry Blanshard,
} Finance Committee.

Examined, audited, and found correct, this 12th day of Dec., 1851.
(Signed) Thomas Knight,
Geo. I. Raymond Barker,
} Auditors on the part of the Society.

On the motion of Mr. Astbury, of London, seconded by Mr. Woodward, of Worcestershire, the thanks of the meeting were voted to the auditors, for their care in auditing its accounts.

On the motion of Mr. Astbury, seconded by Mr. C. Druce, of Oxfordshire, Mr. Knight, Mr. G. J. Raymond Barker, and Mr. George Dyer, were elected auditors for the year ensuing.

On the motion of the Duke of Richmond, seconded by the Rev. James Linton, the best thanks of the meeting were voted by acclamation to the Earl of Ducie, for his conduct in the chair, and his devotion to the interests of the Society. His lordship acknowledged the compliment paid to him, regretting that indisposition had prevented his attendance as the President-elect at the Windsor meeting.

The meetings of the Council stand adjourned over the Christmas recess to Wednesday the 4th of February.

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## Notices to Correspondents.

Books: *Nemo.* Dickson's work is out of print; at Bohn's Library, Covent-garden, it may probably be heard of, as well as the translations you wish for. The other questions you would find answered in Hoskyns' "Inquiry into the History of Agriculture," published by Bradbury and Evans.

British Guano: *Walter.* What is it?

Chalk: *Sussex.* It will in the long run have the same effect on land as caustic lime, but we cannot answer your question quantitatively: 40 or 50 cubic yards per acre is a common dressing.

Drains: *A Subscriber.* The only remedy we can suggest is to make the drains *very* deep through the parts interlaced with the tree roots. We would not make the main drain through them at all, as to risk it would be to risk the whole drainage of the field. The better plan would be to cut a main for the general drainage just out of the reach of the trees, and to cut two or three deep—say 5 feet deep—parallel drains through the rooty part for the drainage of that part of the field.

Fallow-land: *Sussex.* It is not good to harrow fallow now. Let the land lie rough till after winter.

Grass Seeds: *J Dodwell.* For permanent pasture, Blackie's Cyclopedia recommends—Alopecurus pratensis, 2 lbs.; Dactylis glomerata, 6 lbs; Festuca duriuscula, 2 lbs; F. elatior, 2 lbs.; F. pratensis, 2 lbs.; Lolium italicum, 6 lbs.; L. perenne, 8 lbs.; Phleum pratense, 2 lbs.; Poa nemoralis

*sempervirens*, 2 lbs.; P. trivialis, 3 lbs.; Medicago lupulina, 1 lb.; Trifolium pratense, 1 lb.; T. perenne, 3 lbs.; T. repens, 6 lbs.

Mr. Watson's Ventilators. In reply to several inquiries on this subject, we have simply to state that Mr. Watson's address is 31, Rhodes-street, Halifax.

Pale Ale: *A Correspondent* says, he would be much obliged if any of our readers would be kind enough to give him a recipe for making pale ale from sugar, as recommended by Mr. Donovan, in his "Domestic Economy."

Pigs: *J Dolwell*. The boiled Swedes, Beans, and Barley will make better bacon, and probably make it as fast as if a portion of the grain were replaced by Linseed.

Poultry: *Georgius*. We must refer you for dealers to our advertising columns.

Reaping Machine: *Agricola*. Many such machines have been invented. You probably allude to the one acting on the principle of the shears, invented by the Rev. P. Bell, of Carmyle, in Forfarshire, which was worked in 1827, and was rewarded by a prize of 50*l*. from the Highland Society.

Water from Steamed Roots: *Sigma*. We have used the water from steaming Mangold Wurzel for throwing over the straw chaff given to cattle, and have no doubt that the same from Swedish Turnips will be equally harmless.

Wheat: *Caradoc*. In circumstances tending to a bulky growth of straw, you should choose kinds that grow a short straw, such as "Piper's Thickset."

Yeast: One of our correspondents inquired for the best means of getting the bitter out of yeast. *T W T, Cheshire*, says: "The following plan has been tried with success in my family for several years. For every pound of yeast put a handful of bran into a sieve, and run the yeast through it."

## METEOROLOGICAL REPORT.—December.

(*Continued from p. 798.*)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| 9 | 1 p.m. | 30.03 | ... | SSW. Brisk. Barometer steady; drizzling and foggy. |
| 10 | 8 a.m. | 29.92 | ... | SSW. all day; dense, overcast. |
| * | 11.30 a.m. | ... | 29.87 | Stiff breeze, and small driving |
| | 4 p.m. | ... | 29.87 | rain. |
| | 7.30 p.m. | ... | 29.93 | |
| | 10.15 p.m. | 30.03 | ... | Night bright and cloudless. |
| 11 | 7.10 a.m. | ... | 30.24 | NW. Slight frost. Bright and sunny. |
| | 6.10 p.m. | 30.37 | ... | Evening calm. |
| 12 | 7.40 a.m. | 30.31 | ... | E.N.E. Gentle, calm day; |
| | Noon. | ... | 30.29 | dense fog; barometer steady. |
| 13 | 8 a.m. | 30.25 | ... | N. Moderate. Dense, overcast; very hazy. |
| † | 11.30 a.m. | ... | 30.22 | NW. Do. do. do. |
| | 6 p.m. | ... | 30.24 | Calm. Do. do. |
| | 10.30 p.m. | 30.25 | ... | Evening. Barometer rising. |
| Sun. 14 | 8 a.m. | ... | 30.30 | NNE. Gentle, overcast. |
| | 12.55 p.m. | 30.31 | ... | NE. Gentle, overcast. |

* This is a storm crossing England from west to east, the centre lying to the northward.

† This fog travelled up the Channel, coming from the westward. It was over Cornwall on Thursday, and reached London on Friday, the wind being westward; on Saturday the storm's-eye was over London; and on Sunday, the storm having passed to the German Ocean, the fog came back again with the back draught of the hinder quadrants.

Dorchester, Dec. 18. *F. P. B. M.*

(*To be continued.*)

# Markets.

## COVENT GARDEN, Dec. 20.

English Pine-apples and Grapes continue to be plentiful. Pears are still furnished from Guernsey. The best English kinds fetch 2*s.* to 4*s.* a doz., and 8*s.* to 12*s.* per hf. sieve. They consist of Glout Morceau, Winter Nelis, and Chaumontelle. Oranges are plentiful and good. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are still dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

### FRUIT.

Pine-apples, per lb., 3*s* to 6*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*
— Lisbon, per lb., 9*d* to 1*s*
Apples, kitchen, per bushel, 2*s* to 3*s* 6*d*
Pears, dessert, p. doz., 2*s* to 4*s*
Lemons, per doz., 1*s* to 2*s*
Walnuts, per bush., 12*s* to 24*s*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Oranges, per doz., 1*s* to 1*s* 6*d*
— per 100, 6*s* to 10*s*
Nuts; Barcelona, p. bsh, 20*s* to 22*s*
— Brazil, p. bsh., 12*s* to 14*s*
Filberts, per 100lbs., 70*s* to 90*s*

### VEGETABLES.

Cabbages, per doz., 8*d* to 1*s*
Cauliflowers, p. doz., 2*s* to 4*s*
Broccoli, p. bunch, 3*d* to 1*s* 3*d*
Potatoes, per ton, 45*s* to 80*s*
— per cwt., 2*s* to 5*s*
— per bush., 1*s* 6*d* to 2*s* 6*d*
Turnips, p. bunch, 1*d* to 2*d*
Cucumbers, each, 6*d* to 1*s*
Radishes, per doz., 9*d* to 1*s*
— Turnip, p. doz., 9*d* to 1*s*
Celery, p. bundle, 6*d* to 1*s* 6*d*
Carrots, per bunch, 4*d* to 6*d*
Brussels Sprouts, p. half sieve, 1*s* 6*d* to 2*s*
Spinach, per sieve, 1*s* to 1*s* 6*d*
Onions, p. bunch, 1*d* to 5*d*
— Spanish, p. doz., 1*s* 6*d* to 3*s*
Endive, per score, 9*d* to 1*s*
Beet, per doz., 6*d* to 1*s*
Parsnips, per doz., 6*d* to 1*s*
Leeks, per bunch, 1*d* to 2*d*
Shallots, per lb., 6*d* to 8*d*
Garlic, per lb., 6*d* to 8*d*
Artichokes, Jerusalem, per hf. sieve, 9*d* to 1*s*
Lettuce, Cab., p. score, 4*d* to 1*s*
— Cos, per score, 3*d* to 1*s*
Small Salads, p. punn., 2*d* to 3*d*
Horse Radish, p. bundle, 1*s* to 4*s*
Mushrooms, p. pot., 1*s* to 2*s* 6*d*
— per bushel, 7*s* to 10*s*
Sorrel, per hf. sieve, 6*d* to 9*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, per doz. bun., 2*s* to 3*s*
Mint, per bunch, 1*d* to 2*d*
Basil, p. bunch, 3*d* to 4*d*
Marjoram, do., 3*d* to 4*d*
Watercress, per doz. bunches, 4*d* to 6*d*

## POTATOES.—Southwark, Monday, Dec. 15.

The committee report that the arrivals coastwise have been limited, but the supply by rail has been very large. The trade continues very dull, and lower prices for some sorts have been submitted to. The following are this day's quotations; — Yorkshire Regents, 75*s.* to 80*s.*; Scotch ditto, 65*s.* to 70*s.*; Kent and Essex do., 70*s.* to 80*s.*; ditto Shaws, 60*s.* to 70*s.*; Lincolnshire and Wisbeach, 60*s.* to 75*s.*; French, 65*s.* to 70*s.*

## HAY.—Per Load of 36 Trusses.

### Smithfield, Dec. 18.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 70*s* | to 75*s* | Clover ... ... ... | 70*s* | to 80*s* |
| Inferior ditto ... ... | 55 | 65 | 2d cut ... ... ... | 60 | 70 |
| Rowen ... ... ... | 55 | 63 | Straw ... ... ... | 22 | 25 |
| New Hay ... ... ... | — | — | | | |

Trade dull. J. Cooper.

### Cumberland Market, Dec. 18.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 74*s* | to 78*s* | Inferior ... ... ... | 65*s* | to 75*s* |
| Inferior ditto ... ... | 60 | 70 | New Clover ... ... | — | — |
| New Hay ... ... ... | — | — | Straw ... ... ... | 24 | 28 |
| Old Clover ... ... | 78 | 84 | | Joshua Baker. | |

### Whitechapel, Dec. 18.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay ... | 70*s* | to 75*s* | Old Clover ... ... | 81*s* | to 88*s* |
| New Hay ... ... | 63 | 70 | Inferior ditto ... | — | — |
| Inferior ditto ... ... | 45 | 65 | New Clover ... ... | 75 | 80 |
| Straw ... ... ... | 21 | 24 | Inferior ditto ... ... | 55 | 65 |

## COAL MARKET.—Friday, Dec. 19.

Wallsend Riddell, 16*s.* 9*d.*; Wallsend Haswell, 18*s.* 6*d.*; Wallsend Hetton, 18*s.* 6*d.*; Wallsend Lambton, 18*s.*; Wallsend Tees, 18*s.*—Ships at market, 81.

## HOPS.—Friday, Dec. 19.

Messrs. Pattenden and Smith report that the demand for Hops continues good and that a considerable advance is expected after Christmas.

## SMITHFIELD, Monday, Dec. 15.

As is usual on the Great Market Day, we have a good collection of fat Beasts; the number, however, is not so large as exhibited last year. The general quality is very choice; trade is slow, and prices are by no means good. The supply of Sheep is small. Big Sheep are not so much in request as on former occasions, but those of moderate size are selling well. There are a few choice Calves; there is not much demand, but owing to shortness of supply they are dearer. From Holland and Germany there are 544 Beasts, 2470 Sheep, and 24 Calves; from France, 220 Sheep and 13 Calves; from Scotland 350 Beasts; from Norfolk and Suffolk, 400; and 3200 from Leicester, Northampton, and Lincoln.

| Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|
| Best Scots, Hereford, &c. ... | 3 | 8 | to 4 | 0 |
| Best Short-horns | 3 | 6 | — 3 | 10 |
| 2d quality Beasts | 3 | 0 | — 3 | 2 |
| Best Downs and Half-breds ... | 4 | 0 | — 4 | 4 |
| Ditto Shorn ... ... | | | | |

| Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|
| Best Long-wools | 3 | 8 | to 3 | 10 |
| Ditto Shorn ... ... | | | | |
| Ewes & 2d quality | 2 | 10 | — 3 | 4 |
| Ditto Shorn ... ... | | | | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 3 | 0 | — 4 | 2 |
| Pigs ... ... | 3 | 4 | — 4 | 4 |

Beasts, 6103; Sheep and Lambs, 23,420; Calves, 74; Pigs, 482.

Friday, Dec. 19.

We have (the day considered) a very moderate supply of Beasts. There is certainly this year a considerable deficiency in the weight of meat sent to this market. The average quality is good—not too fat. There is a numerous attendance of buyers, and prices generally are better than on Monday. We have very few Sheep on offer; trade is brisk at a small advance. The number of Calves is large, but choice ones are scarce, consequently the best qualities are readily sold at an advance of nearly 4*d.* per 8 lbs.; middling ones are very low. From Germany and Holland we have 112 Beasts, 360 Sheep, and 189 Calves; from Spain, 20 Sheep; from Norfolk, 200 Beasts; from the northern and midland counties, 500; and 118 Milch Cows from the home counties.

| Best Scots, Hereford, &c. ... | 3 | 10 | to 4 | 2 |
|---|---|---|---|---|
| Best Short-horns | 3 | 8 | — 3 | 10 |
| 2d quality Beasts | 3 | 0 | — 3 | 4 |
| Best Downs and Half-breds ... | 4 | 0 | — 4 | 4 |
| Ditto Shorn ... ... | | | | |

| Best Long-wools | 3 | 8 | — 4 | 0 |
|---|---|---|---|---|
| Ditto Shorn ... ... | | | | |
| Ewes & 2d quality | 3 | 0 | — 3 | 4 |
| Ditto Shorn ... ... | | | | |
| Lambs ... ... | 0 | 0 | — 0 | 0 |
| Calves ... ... | 2 | 8 | — 4 | 4 |
| Pigs ... ... | 3 | 4 | — 4 | 4 |

Beasts, 1321; Sheep and Lambs, 3410; Calves, 329; Pigs, 362.

## MARK LANE.

Monday, Dec. 15.—The supply of English Wheat by land carriage samples to this morning's market was small, and, with the exception of a few picked samples, was sold at a decline of 1*s.* per qr. upon the prices of this day se'nnight, being generally out of condition. The demand for foreign continues to be most trifling, but its value is fully supported.—Flour is a slow sale, but there is some inquiry for barrels.—The supply of Barley increases, and the trade is dull with a tendency to a decline in prices.—Beans and Hog Peas are the turn cheaper. We reduce our quotations on White Peas 1*s.* to 2*s.* per qr.—Oats are a slow sale at a reduction of 6*d.* per qr. from the rates of last Monday.

| Per Imperial Quarter. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk... White | 39 | —41 | Red ..... | 36 | —38 |
| — — fine selected runs...ditto | 42 | —44 | Red ..... | 38 | —40 |
| — — Talavera ..... | 46 | —48 | | | |
| — Norfolk, Lincoln, & York... White | 34 | —38 | Red ..... | — | |
| — Foreign ..... | 32 | —49 | | | |
| Barley, grind. & distil., 25*s* to 26*s*...Chev. | 28 | —31 | Malting . | 25 | —27 |
| — Foreign... grinding and distilling | 22 | —26 | Malting . | — | |
| Oats, Essex and Suffolk ..... | 16 | —18 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —21 | Feed ..... | 18 | —20 |
| — Irish .....Potato | 18 | —20 | Feed ..... | 17 | —19 |
| — Foreign .....Poland and Brew | 18 | —21 | Feed ..... | 16 | —19 |
| Rye ..... | 28 | —30 | Foreign . | — | |
| Rye-meal, foreign.....per ton | — | | | | |
| Beans, Mazagan ... ..25*s* to 28*s*.....Tick | 26 | —31 | Harrow . | 26 | —31 |
| — Pigeon.....28 — 33... Winds | 31 | —32 | Longpod | 25 | —27 |
| — Foreign .....Small | 22 | —30 | Egyptian | 23 | —25 |
| Peas, white, Essex and Kent.....Boilers | 33 | —35 | Suffolk... | 34 | —36 |
| — Maple.....27*s* to 29*s* .....Grey | 25 | —27 | Foreign . | 28 | —35 |
| Maize .....White | — | | Yellow ... | — | |
| Flour, best marks delivered ...per sack | 35 | —39 | | | |
| — Suffolk .....ditto | 25 | —32 | Norfolk . | 25 | —32 |
| — Foreign .....per barrel | 15 | —21 | Per sack | 28 | —32 |

Friday, Dec. 19.—To-day's market was but thinly attended, and although we are without any arrivals of foreign Wheat or Barley, the business doing in all descriptions of corn was most limited, and prices of each may be considered nominally as on Monday. In Floating cargoes of Wheat from the South of Europe, the firmness of holders prevents business. The dulness of last week has since been pretty generally succeeded by a slight decline in the value of all descriptions of grain throughout the kingdom, without producing any activity in trade.

Arrivals this Week.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English ... | 3810 | 9240 | 3160 | 1950 sacks |
| Irish ..... | — | — | 3300 | |
| Foreign ... | — | — | 2760 | 1780 sacks |

| Imperial Averages. | Wheat. | Barley. | Oats. | Rye. | Beans. | Peas. |
|---|---|---|---|---|---|---|
| Nov. 8..... | 36*s* 1*d* | 26*s* 1*d* | 17*s* 6*d* | 25*s* 1*d* | 28*s* 10*d* | 28*s* 2*d* |
| — 15..... | 36 4 | 26 7 | 18 1 | 26 0 | 28 8 | 28 3 |
| — 22..... | 36 9 | 27 0 | 18 3 | 23 2 | 29 8 | 28 7 |
| — 29..... | 37 2 | 27 1 | 18 8 | 25 7 | 30 5 | 28 10 |
| Dec. 6..... | 37 6 | 27 0 | 18 2 | 27 6 | 30 6 | 29 6 |
| — 13..... | 37 5 | 26 8 | 18 6 | 27 2 | 30 2 | 30 0 |
| Aggreg. Aver. | 36 11 | 26 9 | 18 2 | 25 9 | 29 9 | 28 11 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

| Prices. | Nov. 8. | Nov. 15. | Nov. 22. | Nov. 29. | Dec. 6. | Dec. 13. |
|---|---|---|---|---|---|---|
| 37*s* 6*d* | ... | ... | ... | ... | ... | ... |
| 37 5 | ... | ... | ... | ... | ... | |
| 37 2 | ... | ... | ... | | ... | ... |
| 36 9 | ... | ... | | ... | ... | ... |
| 36 4 | ... | | ... | ... | ... | ... |
| 36 1 | | ... | ... | ... | ... | ... |

Liverpool, Tuesday, Dec. 16.—At our market this morning there was a fair attendance of the trade, but, as usual at this period of the year, the business done was quite of a retail character, and where sales of Wheat were made, a reduction of 1*d.* per 70 lbs. was submitted to. Flour of good quality, both sack and barrel, supported late rates. Oats and Oatmeal, with a languid demand, were 1*d.* per 45 lbs. and 3*d.* per load lower. Barley and Peas were without change, but Beans were 6*d.* per qr. dearer. Indian Corn met with little attention, but holders generally refused to submit to any decline.—Friday, Dec 12.—The attendance at our Corn Exchange this morning was thin, and the business transacted was small. Wheat was 1*d.* per bushel worse than on Tuesday. American and French Flour barely supported late rates.


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time, principle of
execution, &c.
Binding up
Budding knife
Budding, time of
year, day, time of
day, state of the
plant, care of buds
Budding upon body
Bud, insertion of,
into stock
Bud, preparation of,
for use
Buds, dormant and
pushing
Buds, failing
Buds, securing a
supply of
Caterpil lars, slugs,
and snails, to
destroy
Causes of success
Dormant buds,
theory of replant-
ing with explained
Guards against
Labelling [wind
Loosing ligatures
March pruning
Mixture for healing
wounds
Pruning for trans-
plantation
Planting out, ar-
rangement of
trees, &c.
Pushing eye, spring
treatment of dwarf
shoots from
Roses, different sorts
on the same stock
Roses, short list of
desirable sorts for
budding with a
pushing eye
Sap-bud, treatment
of
Shape of trees
Shoots and buds,
choice of
Shoots for budding
upon, and their
arrangement
Shoots, keeping
even, and remov-
ing thorns
Shortening wild
shoots
Stocks, planting out
for budding upon;
the means of pro-
curing; colour,
age, height; sorts
for different spe-
cies of Rose; tak-
ing up, trimming
roots, sending a
distance, shorten-
ing heads, &c.
saw proper for
the purpose
GRAFTING.
Aphides, to keep
down
Free-growers, re-
marks on
Graft, binding up
and finishing
Grafting, advantage
of
Grafting, disadvan-
tage of
Operation in differ-
ent months
Preliminary obser-
vations
Roses, catalogue
and brief descrip-
tion of a few sorts
Scion, preparation
and insertion of
Scion, choice and
arrangement of
Stock, preparation
of
APPENDIX.
A selection of vari-
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Comparison be-
tween budding
and grafting

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Carnations
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Cherries
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Colewort
Cress
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Crocus
Crown Imperials
Cucumbers
Cultiuation of flowers in Windows
Currants
Dahlias Daises
Dog's-Tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
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Gilias
Gooseberries
Grafting
Green fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
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Hydrangeas
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Indian Cress
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Leeks
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Lettuce
Lobelias
London Pride
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Marjoram
Manures
Marvel of Peru
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Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagate by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic vases
Sage
Salvias
Savoys
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Scarlet Runner Beans
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INDEX.


| | | | |
|---|---|---|---|
| Ammonia, to fix | 822 *a* | Horses, keep of | 830 *a* |
| Apple fungus | 819 *c* | Insects, to kill | 821 *c* |
| Barley after Wheat | 827 *a* | Kitchen garden, to crop | 822 *c* |
| Birds, British song | 820 *c* | Machine, agricultural | 825 *c* |
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| Botanical Society of Edinburgh | 822 *c* | — to fix ammonia in | 822 *a* |
| Butter, Turnipy | 827 *b* | Mechi's (Mr.), farmi g | 825 *b* |
| Calendar, Horticultural | 824 *a* | Melons, artificial manures for | 821 *a* |
| Calla æthiopica | 822 *c* | Nymphæas | 821 *b* |
| Carrick Agri. Soc. | 829 *a* | Oak Lucombe | 821 *c* |
| Cattle stalls, to pave | 829 *c* | Ostrich, the | 821 *b* |
| Cheeses, cream | 827 *a* | Parrots | 822 *a* |
| Cherries | 821 *c* | Paulownia, flower-buds of | 822 *b* |
| Chrysanthemum, the | 823 *b* | Peach trees | 822 *a* |
| Cirencester College | 826 *a* | Plough and spade | 829 *b* |
| — Farmers' Club | 829 *a* | Potato and emigration | 826 *b* |
| College, Cirencester | 826 *a* | Railway literature | 823 *b* |
| Corn, price of | 829 *c* | Robin, audacity of | 822 *c* |
| Cornish gardens | 821 *b* | Salads, old | 823 *c* |
| Eels, propagation of | 822 *a* | — Sydney Smith's | 824 *a* |
| Emigration and the Potato | 826 *b* | Science, benefits of | 829 *c* |
| Family Economist, the, rev. | 823 *b* | Smithfield and Birmingham shows | 825 *b*—827 *c* |
| Farming, Mechi's | 825 *b* | Spade and plough | 829 *b* |
| Feeding stock | 827 *a* | Stock to feed | 829 *a* |
| Ferns, Moore's, rev. | 823 *b* | Timber, preservation of | 820 *a* |
| Forest trees, to prune | 822 *a* | Trees, forest, to prune | 822 *a* |
| Fungi on Apples | 819 *c* | Vine leaves, burning of, in winter | 819 *a* |
| Game | 827 *b* | Vines in pots | 822 *b* |
| Gardens in Cornwall | 831 *b* | Walks, coal tar | 822 *b* |
| — to make | 822 *b* | Weather, the | 830 *a* |
| Garden, Kitchen, to crop | 822 *c* | Wheat before Barley | 827 *a* |
| Guano frauds | 835 *b* | | |



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*Our* PRICED *Catalogue of Seeds may be had in exchange for* ONE PENNY STAMP. *There are also a few remaining copies of their "Price Current and Garden Directory," which will be sent in exchange for six penny stamps.*

*All Orders for Seeds, above* 2*l.* (*excepting heavy articles, as Grain, Tares, Clover, &c.*), *will be delivered* FREE OF CARRIAGE *to any Station on the following Railways:*

| | |
|---|---|
| GREAT WESTERN | BRISTOL AND EXETER |
| BRISTOL & BIRMINGHAM | SOUTH-WESTERN |
| SOUTHAMPTON AND DORCHESTER | SOUTH DEVON, |

*Or to any Market Town in Devon and Cornwall.*

OR TO

CORK, DUBLIN, AND BELFAST BY STEAMER.

For Catalogues and Price Currents, apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

CAMDEN NURSERY, PECKHAM.

WILLIAM BARNES begs respectfully to announce that he has taken the above named Nursery (late in the occupation of Mr. Thos. Watts), and that it is his intention to keep a well selected stock of Choice Plants, Shrubs, Seeds, &c; and he trusts, from his long and successful experience as a grower of superior Horticultural and Floricultural productions, that his judgment may be relied upon by those who may favour him with their commands.

W. B. would also assure his patrons and friends that he is determined to meet the demands of the times, and supply every article from his stock at the most moderate charges.

W. BARNES during the last 19 years (15 years of which he was in the service of G. W. Norman, Esq., of Bromley, in Kent, and four years at Poles Gardens, Herts, the seat of R. Hanbury, Esq.), has had awarded to him by the judges at the Gardens of the Horticultural Society, at the Royal Botanic Society, and at the provincial Exhibitions, more than Eight Hundred Prizes.

Address, WILLIAM BARNES, Camden Nursery, Peckham.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

THE BEST EARLY PEAS, &c.

| | |
|---|---|
| Taylor's New Early Prolific | Early Grotto Marrow |
| Early Emperor | Fairbeard's Surprise |
| Essex Champion [Dwarf | ,, Champion of England |
| New Long-podded Bishop's | Burbidge's Eclipse |

Also the best new later sorts.

| | | | |
|---|---|---|---|
| 20 fine and new sorts of Peas, 1 quart of each, for succession ... ... ... ... ... ... | £0 | 12 | 6 |
| A complete assortment of vegetables, with a number of very choice and new kinds, including the above | 2 | 10 | 0 |
| An assortment containing 12 quarts of Peas in 12 sorts, and other seeds equally choice, &c. ... ... ... | 1 | 10 | 0 |
| An assortment equally choice ... ... ... ... | 1 | 0 | 0 |
| An assortment of choice and esteemed sorts ... ... | 0 | 10 | 6 |

*The above Collections will give the fullest satisfaction. The names of the sorts may be had on application, and if any are not wanted, enlarged quantities of others will be sent to make up the amount. Our Seeds comprise the very finest sorts, which are universally approved.*

The priced Seed Catalogue will be sent on application. Also Wholesale prices to the trade.

Goods sent carriage free to London, Ipswich, Norwich, or any station on the line.

Post-office orders payable to STEPHEN BROWN, or to BASS and BROWN.

HOME GROWN SEEDS.

SUTTON'S COLLECTIONS OF GARDEN SEEDS.—*The superior quality of our Seeds is plainly testified by the numerous orders we are daily receiving from parties who have had them in previous seasons, very many of which contain remarks, such as the following:*—

Extracts from letters now before us, which may be seen at our office. The names of the writers may be known by post, if required.

*From a Clergyman, near Darlington.*

"The best kitchen garden seeds I ever had were furnished by you."

*From Doneraile, Ireland.*

"Lord D. would be glad to have," &c., &c. "The seeds sent last year were excellent."

*From Cirencester.*

"I never received such a numerous collection, so good in quality, from any house."

*From Ripon, Yorkshire.*

"At one of the Horticultural Shows at Harrowgate, my gardener took 20 prizes, most of them from the produce of your seed; we also gained several prizes at other meetings, as many as 18 at one of them."

*From an eminent Horticulturist, at Sunninghill.*

"My gardener speaks very highly of your seeds."

*From Girvan, N.B.*

"I have much satisfaction in recommending your seeds to various friends, as I find they are much pleased with them."

*From a Clergyman, at Newport, Monmouthshire.*

"I have invariably found your seeds of all kinds very good."

*From North Walsham.*

"Your seeds are decidedly superior to those I can procure in this neighbourhood; I shall at all times be glad to recommend you to my friends."

*From a Clergyman, at Meonstoke, Hants.*

"I always recommend my friends to supply themselves from your establishment."

*From another Clergyman, at Kinsale, Ireland.*

"Being so much pleased with the garden and flower seeds sent last season, induces me to send to you for my agricultural seeds also."

*The very best kinds of seeds in cultivation may be obtained at 30 per cent. less than the prices charged in most parts of the kingdom, by ordering one of the undermentioned "complete collections."*

SUTTON'S COLLECTION OF GARDEN SEEDS.

| | £ | *s.* | *d.* |
|---|---|---|---|
| No. 1.—A COMPLETE COLLECTION OF GARDEN SEEDS, FOR ONE YEAR'S UPPLY OF A LARGE GARDEN; including 20 quarts of Peas, in the best eight sorts for succession; the best eight sorts of Broccoli, together with the choicest Melons, Cucumbers, Lettuces, Cauliflowers, and every other sort of Vegetable required, and in full quantities ... ... ... ... ... ... | 2 | 10 | 0 |
| No. 2.—A COMPLETE COLLECTION, IN QUANTITIES PROPORTIONATELY REDUCED ... | 1 | 10 | 0 |
| No. 3.—A COMPLETE COLLECTION, EQUALLY CHOICE SORTS ... ... ... ... ... | 1 | 1 | 0 |
| No. 4.—A SMALL AND VERY CHOICE ASSORTMENT ... ... ... ... ... ... ... | 0 | 12 | 6 |

*If some kinds of Seeds are already possessed purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.*

EARLY ORDERS ARE PARTICULARLY REQUESTED, *and will have the preference of scarce sorts.*

Remittances *are not required* with the orders from clergymen, noblemen, and resident gentlemen, or their gardeners.

Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

THE POTATO DISEASE.—Agriculturists, Farmers, and Gardeners are respectfully informed that the Advertiser is in possession of a Remedy that will entirely prevent the Disease that has for a very long period been so destructive to that valuable plant—the Potato; it will not only very materially increase the crop, but much improve the quality, as also improve the growth of WHEAT, BARLEY, GRASSES, TURNIPS, &c., as it totally annihilates all Insects, such as the Fly, Wire-worm, Blight, &c.—Direct, free, enclosing a Post-office order for 10*s.*, to THOMAS BRUCE, Marshall-place, King's-road, Reading, Berks, when the same will immediately be forwarded free of expense.

SELECT NURSERY STOCK.—The Subscribers beg to offer the following Choice Stock at the annexed greatly reduced prices. Goods from these extensive Nurseries have given great satisfaction throughout the Kingdom for many years.

| | £ | *s.* | *d.* |
|---|---|---|---|
| 100 fine double prize Hollyhocks, strong, 4 years old | 1 | 0 | 0 |
| 100 Dwarf Roses, handsome prize varieties, two of a sort | 1 | 10 | 0 |
| 50 Standard Roses, do. do., including the fine Perpetuals ... ... ... ... ... | 3 | 0 | 0 |
| 100 species and varieties of Ornamental, Flowering, and Evergreen Shrubs ... ... ... | 2 | 0 | 0 |
| 12 best Camellias, with flower-buds ... ... ... | 1 | 10 | 0 |
| 100 Rhododendron campanulatum (from seed), 6 years old, stout plants, extra transplanted ... ... | 5 | 0 | 0 |
| 100 Standard Rhododendrons, of various colours ... | 20 | 0 | 0 |
| 12 New Hardy Yellow Rhododendrons ... ... ... | 3 | 0 | 0 |
| 12 Rhododendrons, Scarlet, Crimson, Purple, White, and all shades of colours, selected from their celebrated collection of more than 100 varieties | 1 | 10 | 0 |
| 12 Standard Berberis dulcis, fine heads ... ... | 2 | 0 | 0 |
| 12 Abies Douglasii, very fine ... ... ... ... | 4 | 0 | 0 |
| 100 large Cedar of Lebanon (well rooted) ... ... | 4 | 0 | 0 |
| 12 very best Ghent Azaleas, 1½ to 2 feet, bushy and on their own roots, with flower-buds ... ... | 0 | 18 | 0 |

Prices of all other Nursery Stock, and every other information on application. A reference or remittance is respectfully solicited from unknown correspondents.

WM. JACKSON and Co., Bedale, Yorkshire, Dec. 27.

This Advertisement will not be repeated.

COCHIN CHINA FOWLS.—An Amateur, who obtained two prizes for this breed at the late great poultry show at Birmingham, has several pairs of these splendid Fowls to dispose of; also a few Cocks, separately.—Apply to JOSEPH LEMON, Post-office, Sandbach, Cheshire.

DOUBLE ITALIAN TUBEROSE ROOTS, *4s.* per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORBETT'S Foreign Warehouse, 18, Pall-mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

SUPERB NEW EARLY PROLIFIC MELON, "VICTORY OF BATH."

GARAWAY, MAYES, AND Co. having purchased the entire stock of the above MELON, beg to offer it to the public as a variety unequalled in flavour and productiveness. It obtained a Certificate of Merit at the April Show, in Bath; First Prize at Chiswick, in May; also two First Prizes at Bath, in May and June last. It was grown in pots with Bromham Hall, under precisely the same treatment, and Ripe Fruit cut full six weeks earlier. The whole of the fruit exhibited were grown in pots.

| MELONS. | Per Packet—*s. d.* | CUCUMBERS. | Per Packet—*s. d.* |
|---|---|---|---|
| Victory of Bath ... ... | 2 6 | Lord Kenyon's Favourite | 1 0 |
| Bromham Hall ... ... | 1 0 | Victory of Bath ... ... | 1 0 |
| Camerton Court ... ... | 1 0 | Roman Emperor ... ... | 1 0 |
| Trentham Hybrid Green Flesh ... ... ... | 1 0 | Holm Pierpoint Wonder | 1 0 |
| Beechwood... ... ... | 1 0 | Kelway's Victory ... | 1 0 |
| With all other approved sorts. | | With all other approved sorts. | |

G., M., and Co. also beg to inform their friends that they are now prepared to send out their well selected stock of Agricultural, Kitchen, and Flower Garden Seeds, the latter grown under their own inspection. Catalogues to be had on application. G., M., and Co. can with confidence recommend their stock, as every article is thoroughly proved before sent out.

Durdham Down Nurseries, Bristol, Dec. 27.

SANGSTER'S NEW EARLY No. 1 PEA.

HAY, SANGSTER, AND CO., in submitting the above valuable PEA to the public, can recommend it with the greatest confidence, as the largest podded and best Early Pea known, and of first-rate quality; height, 2 feet. Price *2s. 6d.* per quart.

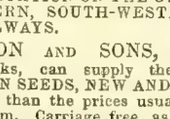
York Regent Potatoes, from prepared cuttings, *6s.* per bush. Cambridge Radical do. (a first-rate second early) *6s.* do. American Native, *10s. 6d.* do. Early Manley, *10s. 6d.* do. Early Ash-leaf Kidney, *10s. 6d.* do.

For Testimonials, see *Gardeners' Chronicle*, Nov. 8, p. 705.

Post-office orders to be made payable at the Borough Post-office to HAY, SANGSTER, and Co., Nursery and Seedsmen, Newington Butts, London. One-bushel hampers and booking, *1s. 6d.*; two-bushel, *2s. 6d.* Sacks, *2s. 6d.* each.

SEEDS DIRECT FROM THE GROWERS—CARRIAGE FREE TO ANY STATION ON THE GREAT NORTHERN, GREAT WESTERN, SOUTH-WESTERN, OR SOUTH-EASTERN RAILWAYS.

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, can supply their choice sorts of KITCHEN GARDEN SEEDS, NEW AND TRUE, at THIRTY PER CENT. LESS than the prices usually charged in most parts of the Kingdom. Carriage free, as see their Advertisement in the *Gardeners' Chronicle* of the 6th instant.—Further particulars may be had by post, on application (enclosing one postage stamp), addressed, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

EWING'S PATENT GLASS WALLS. —One of the greatest defects in British gardening has hitherto been the uncertainty of securing a crop of fruit on common brick or stone walls, owing to the variableness and humidity of the climate. This is now remedied by substituting hollow Glass Walls, by means of which not only will the young wood in autumn be fully matured, but the blossoms will be completely protected from the frosts and biting winds of spring, and a climate secured equal to that of southern Europe.

These walls are particularly adapted to the growing of Grapes, Peaches, Nectarines, Apricots, Oranges, Lemons, and the finer sorts of Pears and Plums, producing fruit equal to that of France or Italy at no more expense than usually attending trees upon a common stone or brick wall.

Glass Walls must eventually not only take the place of brick and stone walls, but will, in a great measure, supersede the present mode of erecting hothouses, from their cheapness at first cost, the great economy of fuel and heating apparatus, the small space they occupy, and their peculiar elegant appearance. They are also admirably adapted for climbing Exotics, and a variety of other purposes.

The highest authorities on Horticultural matters in this country have expressed their unqualified approbation of these designs, at the head of whom is Dr. LINDLEY, and for whose opinion the public are referred to the leading columns of the *Gardeners' Chronicle* of December 6; also of Robert Marnock, Esq., Curator of the Royal Botanic Gardens, Regent's-park, London, in the leading columns of the *Gardeners' and Farmers' Journal*, of December 20. The patentee having made arrangements with some of the largest firms of iron-founders in the kingdom, and also with one of the most extensive British Glass manufacturers; and from the well-known respectability of those gentlemen who have become Agents, feels confident that he furnishes a sufficient guarantee that all orders in connection with the Glass Walls will be promptly and efficiently carried out in any part of England, Scotland, or Ireland.

The following are the accredited Agents, and with whom drawings of the Glass Walls can be seen, and all particulars as to prices, &c., obtained on application:—Messrs. Knight and Perry, Exotic Nursery, Chelsea; Messrs. Henderson and Co., Pine-apple-place, Edgware-road, London; Messrs. Whitley and Osborn, Nurserymen, Fulham, London; Mr. Glendinning, Nurseryman and Landscape Gardener, Chiswick, London; Messrs. Veitch and Son, Nurserymen, Exeter; Messrs. F. and J. Dickson, Nurserymen, &c., Chester; Messrs. Lawson and Son, Edinburgh, Nurserymen and Seedsmen to the Royal Agricultural Society of Scotland; Messrs. Dickson and Turnbull, Nurserymen, Perth; Mr. M'Intosh, F.R.P.S., F.R.S.S.A., author of the "Practical Gardener," "Book of the Garden," &c., late Curator of the Royal Gardens of his Majesty the King of the Belgians, and now to his Grace the Duke of Buccleuch, at Dalkeith Palace, Scotland; Mr. Fleming, F.H.S., Head Gardener, &c., to his Grace the Duke of Sutherland, Trentham, Staffordshire; Mr. Ewing, Gardener, &c., Bodorgan, Anglesea; Messrs. Pilkington, Crown, Sheet, and Plate Glass Works, St. Helen's, Lancashire.

*** Prices for facing existing brick or stone Walls with glass and iron will be given on application.

TO BE SOLD, THE LEASE OF A SIX ROOMED COTTAGE, with nearly 4 acres of Land, well stocked with Fruit Trees. There is every convenience; a small Cottage for a Man; well suited to a Gentleman who wants a country residence at a small cost.—For particulars inquire by letter, address B., to the Office of this Paper. Also a detached 12 Roomed House, with half an acre of Garden.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR RIDGE AND FURROW ROOFS, GREENHOUSES, RAILWAY STATIONS, ENGINE SHEDS, MILLS, MARKET-HALLS, AND PUBLIC BUILDINGS GENERALLY.

| For Conservatories, Public Buildings, Manufactories, Skylights, &c. &c. | ⅛th inch thick. | 3-16th inch thick. | ¼ inch thick. |
|---|---|---|---|
| | *s. d.* | *s. d.* | *s. d.* |
| PACKED IN CRATES, for cutting up of the sizes as Manufactured:— 30 inches wide and from 40 to 50 long ... ... ... ... ... ... ... ... ... Or 20 ,, ,, 50 to 70 ,, ... ... ... ... ... ... ... ... ... | 0 6 | 0 8 | 0 10 |
| IN SQUARES, cut to the sizes ordered:— Under 8 by 6 ... ... ... ... ... ... ... ... ... ... ... | 0 4 | 0 6 | 0 7 |
| 8 by 6 and under 10 by 8 ... ... ... ... ... ... ... ... ... ... ... | 0 4½ | 0 7 | 0 8 |
| 10 by 8 ,, 14 by 10 ... ... ... ... ... ... ... ... ... ... ... | 0 5 | 0 7 | 0 9 |
| 14 by 10 ,, 1½ feet super., if the length does not exceed 20 inches ... ... ... | 0 5½ | 0 7 | 0 9 |
| 1½ feet sup. ,, 3 ,, or if above 20, and not above 30 inches long ... ... ... | 0 6 | 0 8 | 0 10 |
| 3 ,, ,, 4 ,, ,, 20 ,, 30 ,, ... ... ... | 0 6½ | 0 8 | 0 10 |
| 4 ,, ,, 5 ,, ,, 30 ,, 35 ,, ... ... ... | 0 7 | 0 8½ | 0 10 |
| 5 ,, ,, 6 ,, ,, 35 ,, 40 ,, ... ... ... | 0 7½ | 0 9 | 0 10½ |
| 6 ,, ,, 8 ,, ,, 40 ,, 45 ,, ... ... ... | 0 8 | 0 9½ | 0 11 |
| 8 ,, ,, 10 ,, ,, 45 ,, 55 ,, ... ... ... | 0 8½ | 0 10 | 1 0 |
| 10 ,, ,, 12 ,, ,, 55 ,, 70 ,, ... ... ... | 0 9 | 0 11 | 1 1 |
| 12 ,, ,, 15 ,, ,, 70 ,, 85 ,, ... ... ... | ..... | 1 0 | 1 2 |

*Packed in boxes of 50 feet each.*

| Ins. Ins. | Ins. Ins. | *s. d.* |
|---|---|---|
| 6 by 4 and | 6½ by 4½ ... ... ... ... | 10 6 |
| 7 by 5 ,, | 7½ by 5½ ... ... ... ... | 12 0 |
| 8 by 6 ,, | 8½ by 6½ ... ... ... ... | 13 0 |
| 9 by 7 ,, | 9½ by 7½ and 10 by 8 ... ... | 15 0 |

NOTE.—Squares are charged according to the superficial contents, except where the length exceeds the restriction above, in which case the higher price is charged irrespective of the contents.

*Bending.*—*1-8th, 6d.; 3-16ths, 9d.; ¼ inch, 1s. per foot, net.*

*Irregular shapes are charged as squares.*

*When Crates are ordered, the 30-inch widths will be sent, unless otherwise specified.*

JAMES PHILLIPS & CO, HORTICULTURAL GLASS MERCHANTS, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

THE PATENT ROUGH PLATE, one-eighth of an inch thick, and weighing 2 lbs. to the foot, has now become an article of very extensive and increasing consumption.

*It is universally admitted to be the best and most suitable Glass for Ridge and Furrow Roofs, Greenhouses, Factories, Workshops,*

And all such like purposes, and is a cheap and efficient substitute for Fluted or Obscured Glass, where the object is to intercept the vision without diminishing the light. Its non-transparency, strength, and cost (being no more weight for weight than Common Sheet Glass), render it eminently suitable for the Glazing of Conservatories and Roofs of all kinds; Blinds are unnecessary, and when used in Greenhouses *no scorching occurs*.

Where still greater strength is required the 3-16ths and ¼ inch thick will be found much cheaper than the Common Rough Plate. Samples will be forwarded on application, by applying to

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS.

THOMAS MILLINGTON'S FOREIGN SHEET GLASS is far superior to any other manufacture, as well as cheaper. In 100 feet boxes packed for immediate delivery.

| | | | | |
|---|---|---|---|---|
| 6 inches by 4 and | 6½ by 4½ | ... ... ... | 13*s.* 0*d.* | |
| 7 ,, | 5 and 7½ by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 5 and 8 by 5½ | ... ... ... | 15 | 0 |
| 8 ,, | 6 and 8½ by 6½ | ... ... ... | 17 | 6 |
| 9 ,, | 7 and 10 by 8 | ... ... ... | 20 | 0 |
| 12 ,, | 10 and 13 by 9 | ... ... ... | 20 | 0 |

And many other sizes, or cut to order in various thicknesses. Cases containing large Sheets, in 100, 200, and 300 feet, at 21*s.* per 100 feet.

ROUGH PLATE, perfectly flat, ⅛ in. thick, best manufactured.

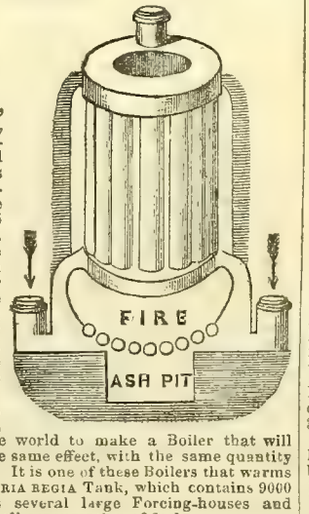
| | | | |
|---|---|---|---|
| In sizes under 15 inches | ..... | 6*d.* per foot. | |
| ,, ,, 35 ,, | ..... | 8*d.* | ,, |
| ,, ,, 60 ,, | ..... | 9½*d.* | ,, |
| ,, ,, 75 ,, | ..... | 12*d.* | ,, |

Milk Pans, 2*s.* to 6*s.* each; Metal Hand-frames, Glass Tiles and Slates; Cucumber, Propagating, and Bee Glasses; Wasp Traps, Glass Shades, and Plate Glass, at 87, Bishopsgate-street Without, same side as Eastern Counties Railway.—Established 100 years.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



J. WEEKS AND Co., King's Road, Chelsea, HORTICULTURAL ARCHITECTS, ENGINEERS, and BUILDERS. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes, through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.




J. WEEKS and Co., King's Road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel, in a given time. It is one of these Boilers that warms the water of their VICTORIA REGIA Tank, which contains 9000 gallons, and also heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's Road, Chelsea, London.

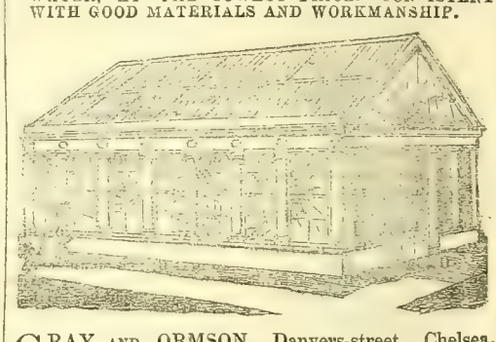
GREEN AND HOTHOUSE BUILDER.—Green and Hothouses made by Machinery, sent to all parts of the United Kingdom. These Horticultural Buildings are warranted to be made of the best materials, and the cheapest in England. Lists of prices post free. 1½ in. greenhouse lights, 2½*d.*; 1⅞ in. ditto, 3*d.*; 2 in. ditto, 3½*d.* per foot; if glazed with 16 oz. sheet-glass of a large size, 1*d.* per foot extra.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

THE BRITISH HEATING AND VENTILATING COMPANY, Offices, 14, Lincoln's-inn-fields, London. Under Hazerd's Patent.—The Company has now been successfully employed in all parts of the Kingdom, in PUBLIC and PRIVATE BUILDINGS, CHURCHES, CONSERVATORIES, FACTORIES, DRYING-HOUSES, &c., where a genial and healthy atmosphere is required.—Particulars and testimonials can be obtained by applying at the Company's Office.

Parties about to build, or those who suffer inconvenience from present arrangements, will save expense by consulting the Patentee, Mr. Hazerd, who has made ventilation and warming a peculiar study for years.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

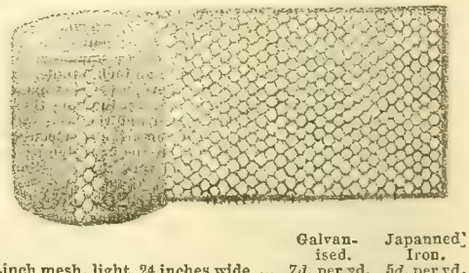


GRAY AND ORMSON, Danvers-street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & Co. have been extensively employed by the Nobility, Gentry, and London Nurserymen, and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



| | Galvanised. | Japanned Iron. |
|---|---|---|
| 2-inch mesh, light, 24 inches wide ... | 7*d.* per yd. | 5*d.* per yd. |
| 2-inch ,, strong ,, ... | 9 ,, | 6½ ,, |
| 2-inch ,, extra strong ,, ... | 12 ,, | 9 ,, |
| 1½-inch ,, light ,, ... | 8 ,, | 6 ,, |
| 1½-inch ,, strong ,, ... | 10 ,, | 8 ,, |
| 1½-inch ,, extra strong ,, ... | 14 ,, | 11 ,, |

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

NUMBER ONE, SAINT PAUL'S CHURCH-YARD.—HAPPY OLD CHRISTMAS in his joyous rounds now rapidly approaches. All his votaries are preparing to welcome him with becoming honours, first among which are good fellowship and kindness. Presents are flying from one end of the country to the other, and mutual good wishes are exchanged. There is no present more acceptable to our country friends than a little good tea. It is received with thankfulness, and is esteemed a rarity; its excellence is appreciated, and its enlivening and invigorating qualities impart cheerfulness to the circle. Don't then at this time forget to remember

DAKIN AND COMPANY, TEA MERCHANTS, AND PATENTEES FOR ROASTING COFFEE IN SILVER CYLINDERS,

NUMBER ONE, SAINT PAUL'S CHURCH-YARD.

December 20.

*** The celebrated collection of Chinese teas from the Great Exhibition is now on show at "Number One."

CHRISTMAS HOLIDAYS.—THE GARDENS of the ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY, except Sunday, from Christmas Eve to January 6, inclusive. The HIPPOPOTAMUS and the URAN UTAN are exhibited from 11 to 4 o'clock. The collection includes 1750 living animals, having recently been increased by the addition of 60 species from the collection at Knowsley.

HOSEA WATERER'S Descriptive Catalogue of AMERICAN PLANTS, CONIFERS, ROSES, &c., for the ensuing Autumn, is just published, and may be had on application, enclosing two postage stamps, to Mr. HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

STANDISH AND NOBLE'S detailed Advertisement will appear in this Paper on the first Saturday in every Month, to which they invite the attention of all interested in HARDY ORNAMENTAL PLANTS. Their Descriptive Catalogue, with the Treatise on the "Cultivation of American Plants," can still be had, by enclosing six stamps for postage.
Gentlemen requiring the services of a Landscape Gardener, can procure such by applying to the Advertisers.
Bagshot, Surrey, Dec. 27.

BEST LANCASHIRE GOOSEBERRIES, named, at 15s. per 100.
Also, APPLES, PEARS, CURRANTS, RHUBARB, &c., in all the best varieties, and at equally moderate prices.
Carefully packed, to carry any distance, or for exportation.
H. BIGLAND and Co., Manchester.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERÆ, ROSES, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had on application, by enclosing two postage stamps.—Windlesham Nursery, Bagshot, Surrey.

MITCHELL'S MATCHLESS WINTER PARSLEY.—J. M having saved a much larger quantity of Seed this season than last, can offer it to the public at a much reduced price. Wholesale, to seedsmen, 1s. 3d. per lb.; any quantity under 10 lbs. will be charged 2s. per lb. Can be sent to any part of the World, on receipt of a Post-office order, made payable to JOHN MITCHELL, Ponder's-end, Enfield, Middlesex.

SUPERB NAMED AND MIXED ASSORTMENTS OF ANEMONES, RANUNCULI, GLADIOLI, TULIPS, IRIS, CROCUS, LILIUM, IMPORTED DUTCH HYACINTHS, &c., with a large Collection of other Roots.—For BASS AND BROWN'S Priced Advertisement of the above, see *Gardeners' Chronicle* of Nov. 8th and 22d, or Catalogues sent free on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

RHUBARB.
MITCHELL'S ROYAL ALBERT
MYATT'S LINNÆUS ... ... ...
MYATT'S VICTORIA ... ... ... } Strong Roots, 50s. per 100.
WILLIAM MITCHELL, Enfield Highway, Middlesex.

AMERICAN APPLE TREES.
J. GREGORY has for sale about 1000 Choice APPLE TREES, imported from America in the autumn of 1850, including the following:—Northern Spy, Spitzenburgh, Jersey Blue, Rhode Island Greening, &c., all grafted on Seedling Stocks of three years' growth, and are in a thriving condition, having advanced from 2 to 4 feet since planted in this country. Price 12s. per doz.
Post-office orders made payable to JEREMIAH GREGORY, Yardly Gobion, near Stoney Stratford, Bucks.

MANNINGTON'S PEARMAIN.
JAMES CAMERON, NURSERYMAN and FLORIST, returns his best thanks to his friends and the public in general for their liberal support, and begs to say he has now for sale a sufficient quantity of the above valuable APPLE, and is thus enabled to offer them at so reduced a price as to ensure their extensive cultivation. It is a middle sized variety, and different from any in cultivation, and remarkable for its rich sugary and aromatic flavour. It is in its height of flavour from January till the end of May, and a very good bearer. Strong maiden plants 2s. 6d. each. Remittances from unknown correspondents previous to the trees being sent, by Post-office orders, made payable to JAMES CAMERON, Nurseryman, Uckfield, Sussex.
J. C. has also an extensive stock of Spruce, Larch, Fir, and Forest Trees of all descriptions; Fruit Trees, Evergreens, and Roses of first-rate quality.

**The Gardeners' Chronicle.**
*SATURDAY, DECEMBER* 27, 1851.

MEETINGS FOR THE ENSUING WEEK.

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| WEDNESDAY, | Dec. 31 | Microscopical | 8 P.M. |
| THURSDAY, | Jan. 1 | Zoological | 3 P.M. |
| FRIDAY, | — 2 | Botanical | 8 P.M. |

OUR correspondents think us right in the interpretation we ventured to give last week of the BURNING OF VINE LEAVES in winter; they only complain of the antidote not having been offered at the same time. But is it not obvious? If Vine leaves are burnt by excessive condensation of water on the glass of a greenhouse, and if that condensation is caused by a very low external temperature, it seems evident that the practical mode of counteracting the evil is to prevent the external temperature from becoming dangerously low, or rather to prevent any excessive difference between the temperature inside and outside of the house. This, of course, may be done by lowering the internal heat, as well as by raising the external.

The ingenious philosopher who first pointed out the probability of plants being scorched in hothouses by the action of external cold upon a glass roof (for we claim no part in the discovery), has some excellent remarks upon the principle on which the evil is to be met. "Lower your temperature," he says, "or cover your houses at night with mats or canvas." The philosophy of this very important subject is still so generally forgotten or misunderstood, that we cannot do better than submit a few of the more striking passages in Professor DANIELL'S memoir which elucidate it.

"The power of emitting heat in straight lines in every direction, independently of contact, may be regarded as a property common to all matter; but differing in degree in different kinds of matter. Co-existing with it, in the same degrees, may be regarded the power of absorbing heat so emitted from other bodies."

"If a body be so situated that it may receive just as much radiant heat as itself projects, its temperature remains the same; if the surrounding bodies emit heat of greater intensity than the same body, its temperature rises, till the quantity which it receives exactly balances its expenditure, at which point it again becomes stationary: and if the power of radiation be exerted under circumstances which prevent a return, the temperature of the body declines."

"Any portion of the surface of the globe which is fully turned towards the sun receives more radiant heat than it projects, and becomes heated; but when, by the revolution of the axis, this portion is turned from the source of heat, the radiation into space still continues, and being uncompensated, the temperature declines."

"But this unequal effect will only be perceived when the atmosphere is unclouded, and a free passage is open into space; for even a light mist will arrest the radiant matter in its course, and return as much to the radiating body as it emits. The intervention of more substantial obstacles will of course equally prevent the result, and the balance of temperature will not be disturbed in any substance which is not placed in the clear aspect of the sky. A portion of a grass-plat under the protection of a tree or hedge, will generally be found, on a clear night, to be eight or ten degrees warmer than surrounding unsheltered parts, and it is well known to gardeners that less dew and frost are to be found in such situations than in those which are wholly exposed."

"Anything which obstructs the free aspect of the sky arrests in proportion the progress of this refrigeration, and the slightest covering of cloth or matting annihilates it altogether."

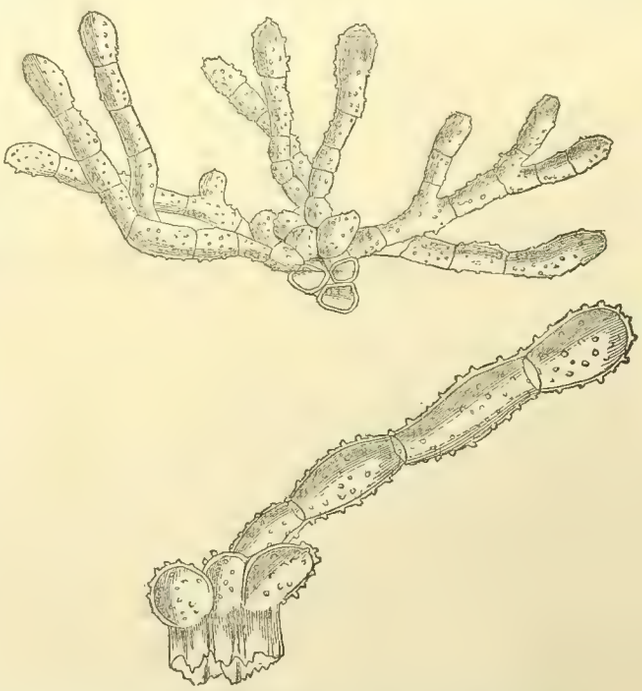
"Experience has taught gardeners the advantages of warding off the effects of frost from tender vegetables, by loose straw or other litter, but the system of matting does not appear to be carried to that extent which its simplicity and efficacy would suggest. Neither does the manner of fixing the screen exhibit a proper acquaintance with the principle upon which it is resorted to; it is generally bound tight round the tree which it is required to protect, or nailed in close contact with its foliage. Now it should be borne in mind, that the radiation is only transferred from the tree to the mat, and the cold of the latter will be conducted to the former in every point where it touches. Contact should therefore be prevented by hoops or other means properly applied, and the stratum of air which is enclosed will, by its low conducting power, effectually secure the plant."

From these details, the great merit of which is their clearness, it is quite evident that the mode of preventing an excessive difference between external and internal temperature, and therefore the burning of leaves consequent upon such difference, is to cover Vineries at night *loosely* with mats or some kind of screen. And we entertain no doubt whatever that four-fifths of the injury sustained by plants in glass-houses would be obviated if this precaution could be taken. In fact, we have only to look to the robust health of Camellias and similar plants grown in cold pits covered in very bad weather or at night with mats, in order to assure ourselves of the fact. Many excellent gardeners constantly adopt this practice, even with their houses, but many others neglect it, fancying that plenty of heat in the inside of a house will compensate for the want of it on the outside; their opinion being that mats only keep plants warm, and that, provided there is warmth enough, it matters not at all how it is obtained. Let us hope that these remarks will assist in correcting that fatal mistake.

The objection to external coverings are, 1st, their expense; and, 2d, the trouble attending them. If, however, the needless cost of fuel, and the injury sustained by plants be placed in one scale, and the expense of an external covering in the other, it would be found that the balance would turn unmistakeably in favour of the latter. The trouble of covering a house with mats, every night, is no doubt the main obstacle to their employment; and to this we would urgently invite the attention of those who have mechanical ingenuity. Long ago, Sir JOSEPH PAXTON used moveable thatched roofs, running in a sort of groove or rail, capable of being pushed over a house every night, and pushed off again at one end every morning; and this device left nothing to be desired in principle. But it demanded space. For every 50 feet run of glass house, 50 more feet were required at the end of it to receive the moveable roof during the day, and it is only here and there that so much space can be afforded. Nor is the plan applicable at all to houses of any considerable dimensions. It therefore still remains for some ingenious person to show how glass houses may be covered every night *cheaply*, and *without trouble*, by a moveable roof. And we may add with perfect confidence, that this is a want very much greater than any other horticultural desideratum now remaining, except ventilation. We know how to build, and glaze, and warm, and we have little to learn as to mere cultivation; but of the right way to prevent nocturnal radiation, and how to secure perpetual ventilation, we are very nearly as ignorant as we were a century ago.

EVERY one must have observed the little white downy lines running across the inner surface of the carpels of Apples. We are not, however, aware that any notice of them has ever been published, nor had we ourselves any notion of their beautiful structure till our attention was called to them by Mr. PONSONBY LYONS. A question, however, arose as to their real nature. Externally they resemble exactly some parasitic mould, and a microscopic examination of their component threads is at first in favour of this view; but the history of their growth, their very frequent presence in so peculiar a situation, unaccompanied by the slightest symptom of decay, a peculiar feel when touched with the point of a lancet on the field of the microscope, the want of fructification, and the similarity to the soft tissue beyond the carpels with which they are in immediate connection when tested with chemical agents, all indicate rather a hypertrophy of the soft cells exposed by the fissure of the hard substance of the carpels, in some measure resembling what CORDA has published under the name of *Septotrichum*, and of which SPRENGEL'S *Erineum melastomatis* is a good example.

A close examination has confirmed our views as to this very curious, and, we may add, elegant production. The white elongated or sometimes radiating sori, which are often considerably elevated, are always coincident with ruptures in the indurated walls of the carpels, so that they have a direct communication with the subjacent larger and more tender cells. The base of the sori generally consists of a few closely packed cells, of which those which are external send forth radiating often forked threads, consisting of slightly swollen articulations clothed through their whole length with scattered granules, some of which swell out above so as greatly to resemble spores. These granulations are clearly little raised nodules or cæca in the outer membrane, very much after the ashion of the asperities on the surface of many hairs in Phænogams, of which the Nettle sting, as figured by KÜTZING, is an example. By one of those curious analogies, which are so frequent in natural productions, the threads resemble almost exactly those of the genus *Rhinotrichum*, of which it might very pardonably be considered a species. If a thin slice through the carpels, together with the sori and the subjacent tissue, be first steeped in iodine, and then in sulphuric acid, the thick walls of the carpellar cells become of a dark yellow, while those of the softer tissue and of the sori assume a beautiful violet of precisely the same



Hypertrophy of Cellular Subcarpellar Tissue in Apples.

tint, a few only of the threads of the latter, and those the most external, presenting now and then a deep yellow tinge. It is true, that where the wall of fungal cells, as in the asci of *Pezizæ* is very distinct from the central substance, the membrane so treated is violet; but even then the nitrogenous contents are very conspicuous; in most cases, especially in the very youngest fungal tissues, the colour of the protein mass within quite overpowers the violet of the cellulose. We have no doubt, then, of the real nature of the sori.

This example may serve to show how possible it is that certain Cryptogams, such as *Elachistea scutulata*, may, after all, be only cases of hypertrophy of cellular tissue, though it will not sanction the views of authors who would resolve most epiphyllous parasitic fungi, even where mycelium is very evident, into mere instances of anomalous development of cells.

It may be remarked also that this chemical test is often very valuable where it is requisite to ascertain the state of diseased tissues. We have been able to establish with the greatest certainty the presence of mycelium in morbid plants, by this treatment, where we could ascertain nothing certain by the unassisted microscope. Such tissues exhibit sometimes the most beautiful appearance. A slice of *Cucurbita verrucosa*, for instance, or of an Apple when just beginning to be attacked by mycelium, is a most beautiful object. The delicate violet of the cell walls, the yellowish tint of the fluid contained in them, the deep indigo of the starch grains, and the orange threads of the mycelium creeping amongst them, afford the most charming effect. Under such treatment, there will be no danger of confounding either the sections of the walls themselves or the folds which so often appear on them with threads of mycelium. The merest glance is sufficient to show the difference. Our figures give two views of the threads; in the latter case, which is more highly magnified, the connection of the granular threads with a large torn folded cell is very evident. *M.J.B.*

## ON THE PRESERVATION OF TIMBER BY CREOSOTE.*

By J. E. Clift, of Birmingham.

In the present day, when the requirements for timber in the various mining, engineering, and other works are so great, it becomes necessary to consider carefully the best means of rendering it as durable as possible, and that at the least expense; and the writer cannot think that sufficient attention has been paid to the subject by the parties most interested, from the fact that but few of the larger consumers of that article have adopted any plans for its preservation; and this fact must be the apology for bringing before the Institution a paper upon a process which has been partially in use for several years.

In looking through the colliery districts, it is found that thousands of loads of timber are taken green from the forests and used every year; and the greater portion is used in the pits where, owing to damp atmosphere and increased temperature, it is rotted in a few months; whereas, with a small expense, it might be made to last for years. It may be observed, also, that the railway engineers are seeking for a more durable bearing for the rails in iron sleepers, and overlooking the means of making wood, which is allowed to be the most agreeable for travelling upon, and the most durable, as well as the most economical, material for the permanent way.

The plan which is the subject of the present paper is the one invented by Mr. Bethell, for the use of a material obtained by the distillation of coal-tar. This material consists of a series of bituminous oils, combined with a portion of creosote, this latter substance being acknowledged to possess the most powerful antiseptic properties. The action of this material may be thus described:—When injected into a piece of wood, the creosote coagulates the albumen, thus preventing the putrefactive decomposition, and the bituminous oils enter the whole of the capillary tubes, incasing the woody fibre as with a shield, and closing-up the whole of the pores, so as entirely to exclude both water and air; and these bituminous oils being insoluble in water, and unaffected by air, renders the process applicable to any situation. So little is this oil affected by atmospheric change that the writer has seen wrought-iron pipes that had merely been painted over with it, and laid in a light ground 1 foot beneath the surface, taken up after 20 years, and they appeared and smelt then as fresh as when first laid down. By using these bituminous oils, the most inferior timber, and that which would otherwise soonest decay from being more porous and containing more sap, or being cut too young or at the wrong season, is rendered the most durable. This will be readily understood when it is considered that this porous wood will absorb a larger portion of the preserving material than the more close and hard woods: in fact, the soft woods are rendered hard by this process. By this means, therefore, engineers will be enabled to use a cheaper timber with greater advantage than they could use a more expensive timber uncreosoted; thus, taking the cost of a sleeper of American Yellow Pine at 4*s.*, and one of Scotch Fir at 3*s.*, and then adding 1*s.* to the latter for creosoting, the two would be the same cost; but the former one would last, under the most favourable circumstances, not more than 10 or 12 years, and the other would be good, under any circumstances, in all probability, in a hundred years.

This system of preserving timber has been in use on several railways, and other works, for several years past. A portion of the London and North-Western Railway, about 17 miles in length, has been laid with the creosoted sleepers from 9 to 11 years, during which period the engineer reports that no instance has occurred in which any decay has been detected in them; and they continue as sound as when first put down. On the Stockton and Darlington Railway creosoted sleepers have also been laid for 10 years, and are found to continue without any appearance of change or decay; also, on the Lancashire and Yorkshire Railway, creosoted timber has been used for five years, as paving-blocks, posts, &c.: the upper part becomes very hard, and the part underground appears as fresh as when taken out of the creosote tank, though the timber was of inferior, sappy quality. In a trial commenced 12 years since, by Mr. Price, of Gloucester, of the comparative durability of timber in the covers of a Melon-pit, where it was exposed constantly to the combined action of decomposing matter and the atmosphere, the unprepared timber became decayed in one year, and required replacing in a few years; a portion of the timber that had been Kyanised lasted well for about seven years, but then gradually, though very slowly, became quite decayed; but the timber that had been creosoted still continues as sound as when first put down, 12 years since. From these facts, it appears not unreasonable to infer, that if timber be made to continue unchanged, and to show no symptom of decay for 10 or 12 years, under circumstances that reduce unprepared timber to dust in two years, and in the absence of any proof to the contrary, we may expect to find it will last an unlimited period, and that 100 years will be a moderate life to assign to it. And not only does this creosoting process render wood free from decay, but it also preserves it from the attacks of the teredo worm, when used for ship-building, harbours, docks, and other works contiguous to the sea.

This has been satisfactorily proved at Lowestoft Harbour, where the plan has had a very extensive trial for four years; and the superintendent reports that there is no instance whatever of an uncreosoted pile being sound; they are all attacked by the limnoria and the teredo to a very great extent, and the piles in some instances are eaten through; but there is no instance whatever of a creosoted pile being touched, either by the teredo or the limnoria, and all the creosoted piles are quite sound, though covered with vegetation, which generally attracts the teredo. This extraordinary fact is to be accounted for by the creosote remaining intact in the timber, either wet or dry; and, being destructive to all animal life, is proof against the attack of these parasites;—whereas, with the other processes, the metallic salts are washed out, or that portion which unites with and coagulates the albumen is rendered quite innocuous by the process. Several specimens exhibited proved that the ravages of the worm reduce the unprepared timber to a completely honeycombed state in two years; but the creosoted timber remains untouched after a period of four years.

There are two processes in use by Mr. Bethell, for impregnating timber with creosote;—one is by placing the wood in a strong iron cylinder, and exhausting the air from it by an air-pump, until a vacuum is created, equal to about 12 lbs. on the square inch; the creosote is then allowed to flow into the cylinder, and afterwards a pressure is put upon the creosote, by a force-pump, equal to about 150 lbs. on the square inch; the timber when taken out is fit for use.

The second process is by placing the timber in a drying-house, and passing the products of combustion through it; thereby not only drying the timber rapidly, but impregnating it, to a certain extent, with the volatile oily matter and creosote contained in the products given off from the fuel used to heat the house. When the timber is taken out of this house, it is at once immersed in hot creosote in an open tank, thus avoiding the use of a steam-engine, or pumps.

Specimens were exhibited of creosoted sleepers which had been in use for 10 years on the London and North-Western Railway, they were still perfectly sound and unchanged; also specimens of creosoted piles from Lowestoft Harbour, which had been in the sea for four years, and continued quite fresh and sound, and without being touched by the worm; with specimens of similar piles uncreosoted, from the same situation, which were completely eaten away and honeycombed by the worm in the same period.

Mr. Bethell observed, that when he first commenced to preserve timber, he found that no pressure would get the creosote into the timber, from the presence of the moisture in the pores, and it became necessary to adopt the system of drying the timber first; and after 14 days he found that the wood lost 3 lbs. in weight in every cubic foot; this was by the old process of drying. He then introduced the present drying-house, and in 12 or 14 hours they lost 8 lbs. per cubic foot, in Scotch sleepers, and these then absorbed an equal weight of creosote. An average of 11½ lbs. of creosote per cubic foot was now put into all the Memel timber at Leith Harbour works; it was forced in with a pressure of 130 lbs. per inch. One piece of creosoted timber had been observed at Lowestoft, which had been half cut through for a mortice, but not filled up again, and a teredo had penetrated a little way into it at that part, and then attempted to turn to the right, and then to the left, and had ultimately quitted the timber without proceeding any further. Young wood was the most porous round the exterior, and consequently absorbed most creosote, which formed a shield to keep off the worm. The creosoted sleepers were better after eight or ten years than when new, because the creosote got consolidated in them and rendered them harder. He had taken the idea originally from the Egyptian mummy; it was exactly the same process; any animal put into a creosote tank assumed the appearance and became in like condition to a mummy. Timber creosoted was now chiefly used in railways, but he believed that if it was introduced into coal-pits it would be found that no timber so used in those places would rot.

Mr. Clift said he had taken up the subject in the present paper with the object of drawing attention to pit timber, and he was satisfied that if the timber used in coal-pits was creosoted, it might, when done with in one situation, be again taken out to use in another place; whereas now, because the dry rot seized the timber so quickly, it was left behind in the workings of the pits.

Mr. Bethell, in answer to questions put by the chairman, said that every piece of timber was weighed before it was put into the creosote tank, and again when taken out, and each piece was required to be increased in weight by the process 10 lbs. per cubic foot; the quantity of oil used always rather exceeded the weight gained in the timber, on account of the loss of weight from the moisture extracted by the exhaustion of the air-pump. Oak only absorbed half as much creosote as Memel timber. Common Fir creosoted would last double the time of hard wood creosoted, because it took more creosote. Beech made the best wood, being full of very minute pores, and they could force a greater quantity of creosote into the Beech than into any other wood; consequently it took a more uniform colour throughout from the process.—Long pieces of timber were found to require more time to saturate them in proportion to their length, and the creosote appeared to enter at the two ends and be forced up through the whole length of the pores. The progress was known by the quantity of creosote forced into the tank after it was filled, according to the number of cubic feet of timber contained in the tank. *Civil Engineer and Architects' Journal.*

* Paper read at the Institution of Mechanical Engineers, October 22d, 1851.

## BRITISH SONG BIRDS.

("Instinct" in the Larger Animals.*)

No. LIX.—Our observations hitherto have, of course, been principally confined to the instinct of the feathered tribes—our legitimate subject of investigation; and we have shown how Nature varies her gifts to all and each of her children, on particular occasions. When they are breeding, for instance, they have a double share of affection (Στοργή) given them, and when their offspring are able to "run alone," the latter are immediately forsaken, and recognised no longer. So also, at the end of the breeding season, a separation takes place between the parent birds, who, for the most part, seldom again commit matrimony without selecting each a *new* mate. All that has passed between them during summer, in the way of love and affection, becomes in the autumn forgotten; and each successive season opens for them new views, new occupations. We will now, as our space is becoming circumscribed, take a glance at certain animals whose intelligence is of a still higher order. (If we were to shrink from this, we should be accused, justly, of having acted with unfairness, and of having "garbled" the inquiry.) Of these there are so many, that we must of necessity select a few only to dilate upon. Let us take at random the Elephant, the Fox, the Hare, the Beaver, the Cat, the Horse, and the Dog.

It would be folly in us to attempt to prove, that in all the creatures we have named there does not exist a wonderfully instinctive power of perception and ready wit, most of them coming continually before us in some way or other. We cannot but feel amazed at their intelligence. Still, we find them all partaking of the same natural endowments, and, however cultivated, never able to get beyond a certain point,—at which point all their sagacity terminates. They are born for a purpose, and that purpose they fulfil. With us, that which we call reason is never stationary—we shall know to-morrow more than we know to-day; and every year adds to our wisdom in a marvellous degree. A talent is given us, and we gain other ten talents. Our talent, Reason, is always "out at interest." *Vires acquirit eundo*, like the running stream.

The Fox is an animal of a predatory character, and therefore obnoxious to mankind, who are his natural enemy. He is therefore gifted with a very astute cunning—only look at his countenance!—that generally enables him to save his life; though sometimes at considerable hazard. *All his race are equally cunning*—they are born so. One of these animals has been known to get access to a hen-roost, and having eaten to repletion, enlarged his proportions so as to prevent his egress through the hole at which he entered. Throwing himself on his back, as if killed by surfeit, he has laid apparently dead and waited the opening of the door. Being "taken up for dead," he has watched his opportunity, darted from the hand that held him, and escaped!

* As this is the last week of the present year, we think it right, as promised, to bring this very popular discussion to a close. The further we advance in it, the more intensely interesting does it become. We have said quite sufficient to produce "thought," and to lead to "investigation." *Patience* must do the rest.

Hence the saying, 'cunning as a fox.' We see no "reason" here, but *very much* animal sagacity.

The HARE is an animal born, 'fated' if you will, to be hunted; and the instinctive knowledge of this fact haunts the poor creature day and night. It is said—and truly, we believe—to sleep with its eyes open. To compensate for this, it is endowed with large, projecting eyes, the conformation of which enables it to see equally well behind, before, and on either side of it; so that it has often timely notice to escape the very many threatened dangers by which it is encompassed. Still it ever lives in bodily fear. We often wonder at the brutality of man—lord of the Creation!—who revels so luxuriously in the tortures he inflicts upon this poor, helpless, harmless animal. In this instance, if we see little "reason" in the pursued, we see even less in the pursuer. There certainly is more than 'a dash' of the savage in our composition!

The CAT is a domestic animal with whose habits we are all familiar. Anecdotes of the race—some of them true, more of them false—abound. They are sagacious and cunning, but assuredly *not* reasonable creatures. If you take away their kittens, they will suckle a rat, a rabbit, a puppy, or indeed any other animal that may be put to them. They are strongly attached to the house of their birth, and have been known by a remarkable instinct to travel to almost incredible distances. Beyond this, we need inquire no further.

Of the Dog we can all be eloquent; and I could relate "true anecdotes" of some of my canine favourites that would hardly be credited. Still, with all my success in teaching dogs to do marvellous things, *I never could teach them that when they jumped up with dirty feet there was an injury done to my clothes.* When they obeyed the command of "Down, sir!" sometimes enforced by a gentle *coup de main*, they never could reason about the 'why and because.' Nor have I ever yet met with any dog, or ever heard of any dog, that *could* be "argued with" on these moral proprieties and observances. Talking of the memory of dogs—one of mine, 'Dash' by name, was once stolen from me. After being absent 13 months, he one day entered my office in town, with a long string tied round his neck. He had broken away from the fellow who held him prisoner. Our meeting may be imagined. I discovered the thief; had him apprehended, and took him before a magistrate. He swore the dog was *his*, and called witnesses to bear him out. "Mr. Kidd," said Mr. Twyford—I see him now—addressing me, "Can you give us any satisfactory *proof* of this dog being your property?" Placing my mouth to the dog's ear, first giving him a knowing look, and whispering a little masonic communication, known to us two only, 'Dash' immediately reared up on his hind legs, and went through a series of gymnastic manœuvres with a stick, guided meanwhile by my eye, which set the whole Court in a roar. My evidence needed NO FURTHER CORROBORATION, the thief stood committed; 'Dash' was liberated; and amidst THE CHEERS of the multitude we bounded merrily homewards. The *réunion* among my 'household gods' may be imagined. It would be farcical to relate it; nor must I dwell upon certain other rare excellences of this same dog; with whom, and his equally sagacious better half, 'Fanny,' I passed many years of happy intimacy.—I did intend to speak of the GEOMETRIC SPIDER, and of the truly marvellous sagacity of the WHITE ANTS, or *termites*, which abound in the tropics; but these matters will bear keeping.

Before closing this our final Chapter on "Instinct and Reason," let us here assist in immortalising the remark of COLERIDGE on the bounties of the Creator: "In wonder," exclaims he, "all philosophy began; in wonder it ends; and admiration fills up the interspace. But the first wonder is the offspring of IGNORANCE; the last is the parent of ADORATION." I must to this just add, with a view of reverentially closing the "good Old year"—"1851"—*Gloria Deo in excelsis! William Kidd.*

## Home Correspondence.

*Special Inorganic Manures for Melons.*—The following hints, taken from the experience of Dr. Hull, of Newburgh, New York, may be acceptable to English cultivators. They are abstracted from Mr. Downing's "Horticulturist." For three consecutive years, namely in 1849, 1850, and 1851, Dr. Hull has been making experiments with specific inorganic manures, in regard to their influence on the size, productiveness, and flavour of Melons. 1849.—It appears that the soil about Newburgh is naturally clay loam, lying upon "hard pan." The site selected for the experiments was trenched 3 feet deep, the strata incorporated, and well rotted horse manure freely distributed through the whole mass. Hills 6 inches high were raised, in which the soil was lightened by fine sand, and these were distinguished with one exception by the addition of the following materials faithfully commingled. Bed No. 1, Superphosphate of lime and sulphate of potash; No. 2, Burned turf; No. 3, Muck neutralised by potash; No. 4, Ashes; No. 5, No mineral addition. The beds were mulched with long litter. The kind of Melon grown was the Nutmeg; on the 14th September No. 1 exhibited the greatest number of large Melons; Nos. 2 and 3 were the earliest to offer ripe fruit, No. 5 the latest, No. 2 produced Melons grouped in beautiful clusters, more numerous for the space covered than the others; Nos. 3 and 4 gave larger samples than the others. Note, 28th of September: No. 1 has afforded the largest amount of Melons of full size, and contains most at present matured and maturing. No. 2: The clusters have been closer than either of the others, the total amount less than No. 1. No. 3 has produced an amount equal to No. 2; nearly all have been matured for some days, evidently exceeding all the others in this respect. No. 4 has exhibited the greatest number of very large Melons, but has not equalled No. 1 in productiveness. No. 5: The produce has been intermediate between 1 and 4 as to size; between 2 and 3 as to productiveness. It would seem, therefore, that the produce from the superphosphate of lime and sulphate of potash excelled in size, quantity, and lateness; that from muck neutralised by potash, in the early maturing of the entire crop; that from ashes and the unmanured bed, in the size of select specimens, their productiveness being inferior to No. 1. Dr. Hull, himself, preferred the flavour of those grown in Nos. 1 and 3, where superphosphate of lime, and sulphate of potash, and the humate or gyate of potash exercised their specific influence. Mr. Downing on this point states, that the flavour was very distinct in the different beds, the produce of the burnt turf being to his taste the most sugary and rich, that of the superphosphate the most juicy and melting. 1850.—Holes were dug in 2 feet trenched ground, and hills formed by the addition of sand, old manure, &c. The beds were manured with the following substances:—No. 1, Potash in muck; 2, Ashes in muck; 3, Burned turf; 4, Superphosphate of lime; 5, the same with sulphate of potash; 6, Sulphate of soda in muck; 7, Salt and lime mixture; 8, Poudrette. The results are briefly stated thus: the Melons fed by humate of potash exceeded in number, size, and flavour; those by poudrette equalled these in number and size; those by superphosphate of lime, and lime and sulphate of potash equalled the first in flavour, and approached the two foregoing in size. 1851.—The experiments were again repeated, but owing to illness, the results were not so accurately stated. Dr. Hull's gardener, however, gave a decided preference to the produce of the beds modified by preparations of potash and superphosphate of lime. Mr. Downing mentions Dr. Hull's success as surpassing all precedent in America. From a plot, 40 feet by 180 feet, the enormous number of sixteen hundred Melons was produced. *T. Moore, Chelsea.*

*Nymphœa.*—In the first days of September, Nymphæa cærulea threw up a flower-bud in my pond; but it never succeeded in expanding its petals. It has another bud now under the water, which of course can come to nothing, unless indeed it could live through the winter. *A. H.*——We beg to inform you that Nymphæa cærulea is in full flower in our open heated pond. *J. Weeks and Co., King's-road Nursery, Chelsea, Dec.* 19.

*Gardens in Cornwall.*—Though we often hear of the wonderful climate in Cornwall, we hear but little of the gardens of that part of England. I think that it would be interesting to many of your readers if some of the western gentlemen would give accounts of the best among the gardens in the county; we hear often of the fine evergreen Oaks scattered apparently throughout the west, of great age and large size, but we should like to hear something definite, as they may possibly be inferior to those in Goodwood Park, and also with regard to the shrubs and plants said to prove hardy in the far west, which are supposed to be tender in the other parts of England; for if Rhododendron arboreum (true), Acacia affinis, Melianthus major, Benthamia fragifera, and many other plants which have failed in the more eastern part of the kingdom really arrived at anything like perfection, the western gardens must be worth a journey to see; but we are at present in ignorance which gardens to choose, in order that we may see the best things: I have no doubt but that the travellers of Messrs. Lucombe and Pince and Messrs. Veitch would give the clearest information; and as the West is proverbial for hospitality, I have no doubt that a stranger would be allowed to feast his eyes. *C. B., Chichester.*

*The Ostrich.*—I am not surprised at my comment on the Ostrich, at p. 740, having attracted attention; for I find, on inquiry, that the habits of the bird are by no means well known; and that hardly any two persons are agreed upon the subject! I would not for an instant venture, nor presume to doubt, the correctness of your correspondent "Observator;" but his, I believe, differs so very widely from all literary authorities, that one almost feels inclined to question whether the bird disputed about be one and the same. I have received a private letter from a very clever man, who tells me that the instinct of the ostrich is remarkable. Immediately on the parent dropping her eggs, and covering them in the sand, she lays yet *another* egg at some little distance,—after first breaking the extreme end, so as to admit the air. By this ingenious manœuvre, the heat of the sun soon causes the egg to putrefy, and a host of maggots are produced in readiness for the young to feed on when hatched. Another thing is disputed by naturalists,—viz.: the *impossibility* of the ostrich, whose legs are of great length, and very thick, being *able* to perform the duties of incubation. To me it appears incredible. I am well aware that it is polygamous, like our domestic fowls, and that it lays many eggs in the same nest,—merely a hole in the sand, whose heat preserves the vital warmth necessary for hatching; but "Observator" must not think me rude if I say that I cannot at present understand *how* they contrive to sit without breaking their eggs. I will diligently inquire, till I get further corroborative proof that we both are talking about the same bird. If the *stork* be the bird, I can well understand the prevalent affection (Στοργή), for its large family of young ones, or even of another's young ones; for the Hebrew word *chasidah* indicates the stork to be possessed of "excessive fondness" for its offspring. I have consulted Alexander CRUDEN on the subject of the ostrich, a man whose researches and inquiries are too well known to be dwelt upon. He says,—"the ostrich is made the symbol of cruelty and forgetfulness. We are told of it, that it lays its eggs upon the ground, hides them under the sand, and *the sun hatches them.* Being extremely large and heavy, she would break her eggs if she were to sit upon them like other birds. She therefore hides them in the sand, watches them, and hatches them,—as it were, with her eye. The male and female stay with them alternately, and whilst one of them goes to seek its provision, the other does not leave sight of them. However, if either of them should be driven away, or go too far from their nest, they could not find their eggs again. And it is probably this," he adds, "that has given occasion to what is said of their cruelty and forgetfulness." *W. Kidd, New Road, Hammersmith, Dec.* 19.

*The Lucombe Oak.*—This is classed among the varieties of Quercus Cerris, or mossy-cupped Oak, in Loudon's "Arboretum Britannicum," where it is stated to bear so close a resemblance to the Fulham Oak as scarcely to be worth keeping distinct. Be this as it may, it is unquestionably a very handsome, free growing, sub-evergreen tree, attaining a large size in situations favourable to its growth, and producing a very striking effect during the winter months, when most other trees are deprived of their foliage. There are some fine specimens of it at this place, growing on a sloping part of the park eastward of the house, where the soil is a friable loam resting on a dry, hard, clayey subsoil, and where the trees are to some extent protected by large Sycamore and Elms from the cutting north-west winds, which prove so destructive to vegetation in this part of the kingdom. The group consists of 10 trees, the largest of which measures 9 feet 3 inches in girth at 4 feet from the ground, and has an erect stem from 45 to 50 feet high, furnished with numerous spreading branches. Its height altogether is about 90 feet, and the diameter of the space covered by its branches is 20 yards. The other trees are all nearly of the same height, but vary in girth from 8 feet 9 inches to 7 feet 4 inches, which is the smallest in the group. To persons residing in the midland counties where large Oak trees are more common than in Cornwall, the above dimensions will probably not be considered anything very remarkable; but in so far as they have reference to the Lucombe Oak, I think they are worth recording, were it only for the sake of bringing this noble sub-evergreen tree under the notice of the planter, and thereby leading to its more frequent introduction near a residence, where it is certain to prove highly ornamental, if sufficient room is allowed for it to spread. From a tree which was cut down some years ago, I ascertained the wood to be very clean grained, and beautifully marked when sawn up into plank. It was one of the first planted here, and considered to be about 70 years old. *Wm. Beattie Booth, Carclew.*

*Clark's Preparation for killing Mealy Bug.*—It is generally admitted that this is the greatest pest which a gardener has to deal with. I have tried various things recommended for its destruction, but I always found that when they killed the insect they also injured the plant. This, however, does not apply to Mr. Clark's excellent preparation, which I have found to be an effectual remedy, without harming in the least the plant. *J. Rust, Enfield.*

*Cherries.*—Mr. Lindley, in his "Guide to the Orchard," in describing Hunt's large Tawny Nectarine, says that it originated from another Nectarine (Hunt's small Tawny), but not through a seminal process. He says that Mr. Knight described a Mayduke Cherry which on one of its branches had oblong fruit, which ripened later, and were of greater weight than those of any other part of the tree. I am induced to quote this, because I have two Mayduke Cherries which exhibit the same peculiarity; the trees grow against a south wall, and in one the sport is confined to a small horizontal branch, but in the other the leading shoot, which now forms one-half of the tree, exhibits the same peculiarity; the blossom is a fortnight later than the other part, and however favourable the weather may be when this plant is in blossom, there is never more than a tithe of a crop. This has now continued for so many years, that I feel strongly tempted to cut out this offending branch; but I have gone on hoping that some year, when the frost destroys the other blossoms, I may get a crop from this part of the tree (which is 30 feet high), but so far I have been always disappointed. The few Cherries which are produced on his part of the tree are fully a fortnight later than the others, and they are very fine and good-flavoured; but I must acknowledge that I don't admire those very fine sorts of fruit from which I never gather a crop. I was foolish enough to try to grow Peaches for 10 years, and in that time I certainly never gathered 10 good Peaches, whereas, if the same extent of good wall had been covered with Capiaumont and Beurré Rance Pears, I should have gathered thousands of fruits of much better quality. Would you recommend me to cut this part of the tree away? I don't admire cutting off large branches from either Plum or Cherry trees, on account of the gum. But I don't like to cover a large extent of wall with a tree which gives me no fruit. *T. G., Clitheroe.* [There is no probability of the objectionable branch behaving better. Its peculiarities are constitutional, fixed, and capable of being propagated by grafts, &c., as is the case with other "sports," of which this is but an instance.]

*Pruning Forest Trees.*—Your correspondent, "Expertus," intimates (p. 630) that the advocates for pruning forest trees are probably not convinced of the error of their doctrine—although silenced—because the matter in controversy can only be decided by experience and observation. In this I am inclined to agree with "Expertus;" but as none of us live long enough to see timber trees, subjected to systematic pruning, arrive at an age when they can be converted into massive beams, or cut into planks fit for the shipwright—the point of experience must be left for a future generation. Now, as to what observation can do for the subject. I should beg to refer "Expertus," and others who think with him, to the immense Pine logs from the prairies of America, that never had a branch touched by any pruning instrument, in their life, and yet they attain an immense length of stem, with scarcely the semblance of a knot to be seen, when sawn up into boards. Would pruning have improved them? Look again to the Fir timbers imported from the north of Europe; it is true some of it is found knotty (as the joiners call it), but would pruning have improved it? that is the question. Again, recurring to home-grown timber, three years ago a number of Oaks were felled, under my own inspection, a very little distance from where I now write, that I am confident were never touched by any pruning instrument; most of these had stems of large size—from 30 to 50 feet in length—with scarcely a flaw, from dead boughs grown in, or other causes. Now, would early pruning have improved these? I think not. It might have retarded their growth. Again, "Expertus" says, what may seem very plausible at first sight, about the branches of unpruned trees dying, and healing over, leaving the same defective union, &c., as in the pruned branch; now this looks very feasible, and I have seen instances of faults in timber from that very cause—but they are the exception, and not the rule. I have looked at the matter with anxiety in young growing Oaks; and, however inexplicable it may seem, there is, in most cases when an under-side branch dies, a sort of compression by the living stem, that nearly or quite obliterates in a few years all trace of the defunct member, and leaves scarcely a mark behind; so much for "observation." As to the cases of necessity mentioned by "Expertus," these are exceptions altogether to the general systematic pruning of plantations with a view to improve (?) the timber; where lopping or pruning at all becomes a necessity, then cut close, by all means. On the whole, I would like to conclude, that, as the pruning advocates are "silenced," they are on the high way to conviction, and will lose no time in abandoning a practice involving much labour only to do mischief. *Quercus.*

*Propagation of Eels.*—At p. 806, "T. G." denies the possibility of eels breeding in fresh water. We have a pond here, covering from three to four acres, which swarms with eels of all sizes. I have caught them from the size of my little finger up to the weight of five pounds; the supply of water is from nothing else but land springs, there being no communication between the pond and any river; when much rain occurs, I am obliged to put up a sluice board, in order to prevent the banks from overflowing. I have taken from 1 to cwt. at a time from a box, which the water flows through at the bottom of the sluice board; the large quantity that has been taken out of this pond leaves no doubt that they breed to a great extent, but whether they are propagated by spawn, or brought forth alive, I am unable to say. *G. H., Finedon Hall.* [We have also a letter upon this subject from Mr. Boccius, who, we are sorry to see, is offended at the remarks of "T. G." As no offence was meant, it is needless to print the complaint].

*Parrots.*—Mr. Kidd having taken up the cudgels against the noisy parrots, I beg to inform him that I know a parrot, brought from the Gold Coast this summer, that already is in excellent music.(!) It has caught the cluck of a hen when calling its chickens, the bark of a dog, mewing of a cat, the cackle of geese, &c.; says "Pretty Polly Hop," "Cook," "Poor Poll," and several other words. I also know a parrot near Matlock, in Derbyshire, that was much attached to a pet dog which some time ago died, and, on calling the dog by its name, the parrot immediately repeated "Carlo—why where's Carlo? he's dead!" and exhibited signs of great distress. This bird repeats after its mistress the greater part of the song of "Polly Hopkins," and when it sees a beggar at the gate, it immediately bawls out, "Be off! you've no business there!" and many other droll tricks and sayings. I do *not*, however, argue from my observations that the parrot is gifted with "reason," but phrenologists may say it has the bump or organ of imitation *C. P., Boston.*——Mr. Kidd may be amused at hearing that there is in this city a parrot, which, not content with talking, which he does excellently well, actually turns heels over head on the floor of his cage, in a manner which might excite the jealousy of Mons. Oriol; Mr. Potter, to whom he belongs, assures me that he never tried to teach him, but that he copied some tumblers in the street; to say the least, his performance is very original for a bird. *C. B., Chichester.*

*Peach Trees and Fixing Ammonia.*—Although I doubt not the point has been often settled, I wish some one would once more inform such ignoramuses as myself, what depth of soil should cover the roots of Peaches and Nectarines. Also, what is the best method of managing stable dung to prevent the escape of the ammonia? One of your correspondents is anxious to fix the perfume of the liquid in his tank. Can he not bear it for the one day during which he is laying it on its final destination? From sunrise the following morning it will have departed as entirely as if it had been disposed of a century ago. If he doubts the truth of this, let him try it, by saturating a heap of common earth with it to-day, and in 24 hours let him take a handful of the same, and put it to his nose. He will have little, if anything, but his servants' word that the earth was saturated at all. *Enquirer.*

*Hints to Persons making a Garden.*—The last point—many would think it the first—on which it is necessary to touch in making a garden, is soil. As to quality, it may be naturally classed under the head of sand, lime, or clay; as to peculiar character, it may be ferruginous, saline, or otherwise chemically affected; as to condition, it may be wet, dry, rocky, arid, or peaty. There is so little sandy soil in England, as compared with the continent, and the dampness of our climate goes so far to counteract the complete pulverisation of other soils, even in our summer, that it is not wonderful that many very ornamental hardy plants fail with us from that cause alone; such are the Astragali, several Dianthi, &c. Lime is generally a poor soil, but the Leguminosæ, and many of the smaller ornamental and rock plants, flourish on it, perhaps more on limestone than on any other sort of rock. Clay is more favourable to the arborescent and shrubby plants than either of the former, but many fine-rooted plants refuse absolutely to take to the soil. On the whole, a clay soil would seem to grow a smaller number of species than either sand or lime. It may sound like a paradox; but a rich, natural, alluvial soil, the best for a field or kitchen garden, is far from being equally good for a flower garden. A very moderate, or even poor, workable, manageable soil, well drained, is preferable to the richest meadow land, as the basis of a flower garden. It should be light, or hundreds of delicate plants will not thrive in it. It can be made rich at pleasure, but should never be heavy. The reason is obvious. A variable soil will accommodate the largest variety of species; and as in our most temperate climate we try to, and with care and skill can, associate plants from the Arctic circle to the edge of the tropic, from the High Alps to the shores of Egypt, it follows that a very rich earth which grows the tallest specimens of a few strong plants, Dahlia, Helianthus, Silphium, and equally Cardoons, Urtica, and Rumex, will suit but a few and spoil the natural character of the rest. Any one who has grown the plants of a dry climate in England will bear witness to this. The ferruginous or saline properties of a given soil may be very important in stimulating the growth and perfection of some plants, but they certainly injure some others. These points can only be ascertained by local experience. Dryness or wetness of soil, or of the situation, not exactly the same thing, is an all important item in the choice of garden-ground, and of the management of it afterwards. Good drainage need hardly be insisted on at the present day, but as some plants require wet soils, they must be especially provided for. It is a common error to confound marsh and marsh-plants with peat, and the plants belonging to a turfy moor; both qualities of soil being commonly, but carelessly, called bog. It is as necessary to distinguish between these two descriptions of soil and plants, as between the Alpine and other rocks before alluded to. Hibiscus palustris, from the rich mud of a Virginian swamp, requires very different conditions from Parnassia palustris from the peat mosses of the north. Near the sea, Pines and other Conifers seldom succeed well, nor do Rhodoraceæ, except in very sheltered spots, prosper much better. On the other hand, all saline, alkaline, succulent, and rigid plants, though not truly maritime species, grow and flourish to a degree unknown in the inland counties. These observations are now at an end, and it is hoped they may call forth more from your more experienced correspondents. *S.*

*Paulownia.*—At the extremities of the main branches of this plant I have slender buds or shoots, forming elongations in a right line of those branches. None laterally from those branches; and none at all on the minor branches. These I hope are flower buds. *A. H.* [We fear not. The flowers are all lateral.]

*Coal-tar Walks and Bees.*—Some of your correspondents have inquired about coal-tar for garden walks. It is in very extensive use here for foot-paths, but it is unsuited for garden walks, except at a distance from houses, both from its appearance and smell. I use it in my kitchen garden, but I think it very prejudicial to the bees. When fresh, it appears to produce on them a stupifying effect, similar to chloroform; at least, immediately after it was applied the walks were strewed with thousands of my bees, crawling about, in an apparently dying state. I could attribute it to nothing but the vapour from the coal-tar, and shall remove my hives before I venture to apply it again. It must be acknowledged that it makes a dry and firm walk, which is neither troubled with worms nor weeds for several years. *T. G., Clitheroe.* [If gravel walks are only painted, as we have recommended, *and then sanded* or *covered with coal ashes*, no inconvenience arises from the smell except to bees.]

*Vines in Pots.*—In answer to numerous inquirers respecting the culture of Vines in pots, I beg to advise those interested to pursue the following plan. Procure strong well-ripened Vines from eyes; they can be trained up rafters or on a trellis, but they look better and are more portable trained low, round sticks placed in the pots. Proper sorts can be selected either for the forcing-house, Vinery, or out of doors. During their growth use weak manure water; but withhold it nearly altogether, or use it very sparingly, during the time the fruit is ripening; otherwise, it will injure its colour and flavour. It is not essential to use manure water, unless fine bunches are required. After the fruit is gathered, let the plants remain dormant till the turn of the year, then cut the Vines down close to the ground, and shift them into rich compost, to enable them to throw up a good-sized cane; but, above all, ripen their wood well, the following year it will bear fruit. Thus, every alternate year a crop will be obtained from the same plant. Of course, by keeping up a succession of Vines, a crop of this excellent fruit may be got every year with scarcely any expense, and with so little attention as to be a mere amusement. *J. R., Nov.* 26.

*How to Crop a small Kitchen Garden.*—If early Peas and Beans have been sown across an open part of the garden, and succeeded by Cauliflowers, as I recommended, let the ground be cropped next year in the following manner. As soon as the Cauliflowers are all off, give the ground a slight dressing of manure, and ridge trench it. About the latter end of February, or beginning of March, fork down the ridges, plant Potatoes 2 feet row from row, and sow Spring Spinach broadcast over them, raking it in. When it has formed its first rough leaves, thin it out to 3 inches apart. When fit for use, cut that next the rows of Potatoes first. When it is all cut, fork the earth up to the Potatoes. Plant one row of Broccoli between the first and second row of a sort to come in for use the following April; it will be off in time for a row of Runner Kidney Beans. Let the second and third rows be taken up for use as soon as fit; when they are off, draw three drills, 10 inches apart, and 3 inches deep. Plant a row of Leeks in each drill, 6 inches plant from plant, shorten their tops, thin their roots, and well water, if the weather is dry. Leave the three next rows of Potatoes without putting any other crop between them; take them up the first week in August, and sow Turnips, 10 inches row from row; thin them out to about 3 inches apart; when large enough, thin as required for use, taking out every other one. Let Savoys be planted between the remaining rows of Potatoes, a row between each, at 20 inches apart in the rows. Take up every alternate row, as required for use, which will give the Savoys the benefit of light and air, much sooner than they would get it were the rows to be taken up regularly. When the alternate rows are all removed, proceed to take up the others, and fork the earth well up to the Savoys. The above mode of cropping will answer equally well for a border (provided the Peas were sown there), with the exception of the row of Broccoli, which must be grown on an open quarter. *J. Steel, Clitheroe.*

*Audacity of the Robin.*—The little history of the wren's nest, given by Mr. Kidd (p. 756), may be overmatched by the history of a robin's nest, built last spring in my garden at Hammersmith. The pair of old birds had already reared off one brood, and commenced building a second nest in some Ivy growing on a wall close to which my family were in the constant habit of passing. Unfortunately they had selected a spot where there was not sufficient support for their materials, which fell to the ground almost as soon as put together. Seeing this state of things, I determined to help the ill-judging pair, and nailed and tied up some twigs beneath the spot, into which I thrust a handful of dead leaves, &c., which had already fallen to the ground. Notwithstanding this interference, which is I believe often followed by birds in the act of building leaving the place which they had selected, the robins soon set things to rights, and hatched their second brood. By constantly passing close to the nest, however, they became not only used to our presence, but absolutely audacious, especially to the females of my family, flying at them, and on several occasions actually pulling off their caps and other head gear. *J. O. W.*

*Calla æthiopica.*—I get on poorly enough with this Calla, and I wish for some theoretical explanation thereupon. Taking 4 inches for the thickness which ice very rarely exceeds, why is it said this plant requires 18 inches of water above the crown of its roots, and dies in 12 inches; or, in other words, must be removed 14 inches below the line of frost? What other causes, besides frost, and at a distance from frost, work its destruction? Is the water underneath a given thickness of ice warmer, as though a frame of so much glass were spread over it; or is it for any reason colder than before the ice was formed above it? *A. H.* [We take it that the reduction of temperature will be in proportion to the bulk of water to be cooled; that shallow water loses heat much faster than deep water; and hence that a tender plant may survive a winter if 18 inches under water, although it may die if only 4 inches under water.]

## Societies.

Botanical of Edinburgh, *Dec.* 11.—The President in the chair. Several donations were announced. Mr. M'Nab read the following extract of a letter from Mr. Goldie, Ayr, Canada West (late of Ayrshire):—"I observed in the *North British Agriculturist*, that at one of your botanical meetings there was a discussion about what kind of trees were generally struck by lightning. Since I came here I have learnt something on the subject. One morning no less than four trees were struck by lightning within three miles of this place, one of them close at hand. Of the four trees alluded to, all were gigantic specimens of the Weymouth Pine, Pinus Strobus. Indeed, I may say, that I do not recollect of seeing any other sort of tree being injured by lightning in this part of the country. Whether this occurs from the Pine being taller and more pointed than any of the trees here, or from any other cause, I shall not presume to say. In

all the lightning-struck trees which I have examined, the electric fluid proceeded from the top to the root, following the grain of the wood, and cutting out the bark 2 or 3 inches all the way, as if it had been scooped out with a gauge." The following papers were read:—1. *Notice of a new British Viola.* By C. C. Babington, M.A. 2. *On the Fuchsia, considered morphologically.* By the Rev. Dr. M'Cosh, Brechin. 3. *On Monstrosities of the Dandelion and common Clover observed near Turin.* By Charles Murchison, M.D. 4. *On the Flora of Bonn, on the Rhine.* By G. S. Blackie, Esq. The author noticed some of the objects of interest in a botanical point of view, in the neighbourhood of Bonn, including the Botanic Garden, and the Museum of Natural History at Poppelsdorf, remarking particularly upon the geological collection, containing many interesting specimens, some of which were from brown coal pits at Friesdorf, three miles distant. "The stratum at Friesdorf is in fact a forest buried at an exceedingly remote period, and now converted into brown coal. The trunks of trees lie in beds of clay and sand, and are found in various stages from the perfect fossil tree in which the form and structure are plainly visible, to this coal. The layers of coal alternate with layers of aluminous earth which furnishes materials for a large alum work, on the same hill. This coal also yields the pigment known by the name of Burnt Umber or Cologne earth. At Putzberg, near Friesdorf, trunks of trees 10 and 12 feet in diameter have been frequently found." The author then proceeded to remark:—"Bonn possesses a salubrious climate, severe winter, early spring, and very warm summer. It stands near the head of that immense plain which extends from the seven mountains to Rotterdam. There are no very high hills in the neighbourhood except the Drachenfels and its six brothers, eight or nine miles up the river, though between Bonn and these seven mountains the country is gradually rising, and below Bonn there is hardly a hillock. Many of the smaller heights, if not covered by vineyards, are clothed with forests of short stunted trees, and inhabited by deer, roe, and even, though very rarely, by the wild boar. The soil of the country is in general rich, though in many places very stony; the whole country has been formed by volcanic agency, and consists of lava, trachyte, and basalt, and one or two of the hills are plainly extinct volcanoes, more especially that of Rodeberg, which is opposite the seven mountains. This is one of the largest extinct volcanoes on the Rhine. It has a circular crater about a quarter of an English mile in diameter, and 100 feet deep, and great quantities of tufa and scoriæ are found in and around it. The country is under a high state of cultivation, and the hills are drained and cultivated to their summits. Many of the fields yield two crops in the year. One great want is the entire absence of pasture; for all animals are fed at home, and never put out to graze. The appearance of the country, on this account chiefly, is curious to an English eye, as, instead of fine large fields, they have small patches of different crops, of one or two acres in extent, growing side by side without hedge, fence, or tree, giving a patchwork appearance to the whole, which does not at all add to the picturesque character of the scenery, and, indeed, after the fine trees and hedge-rows of old England, makes the country look plain. These small crops, however, have this advantage, that as in that country there are mostly small farmers, one crop failing, they have one or two more to rely on. The chief plants cultivated near Bonn, are Rye, Wheat Oats, Barley, Potatoes, Cabbage (near the towns and villages, chiefly for *sauer kraut*), rich Grasses and Clover for the cattle, Ervum Lens, the Hop (Humulus Lupulus), Valerianella olitoria, Brassica oleracea, Rapa and Napus, Buckwheat, Hemp and Flax rarely, the Vine; and among cultivated trees Robinia pseud-Acacia, brought from North America, and Æsculus Hippocastanum, introduced first at Vienna from the East Indies in 1575, are most universal. It is astonishing to remark the perseverance and diligence with which the Vine is cultivated. On the almost perpendicular banks of the Rhine between Mayence and Coblence, or nearer Bonn, the steep heights of the valley of the Ahr are cultivated to their summits, soil being carried up the rocks by means of ladders, and placed in baskets fixed on ledges of the rock, and then dyked round, lest the wind and rain should carry off the plants. In this Ahr valley there are hills higher than Arthur's Seat, cultivated to their peaks in this way, a specimen of industry, rivalling even that of the sands of Holland. The Vine is not properly a native of this country, having come from the southern parts of Europe, but it has in some places escaped from cultivation and appears wild, and is even held to be so by some authors. Further up the Rhine, towards Mayence and Frankfort, the climate is warmer, and on account of the absence of heights the cultivation of the Vine almost ceases, while Tobacco and Indian Maize are grown in abundance. Though much Tobacco is grown on this part of the Rhine, the greater part of that smoked in Germany comes from Holland, where the rich damp soil is very favourable to it, though it soon exhausts a soil. 5. *Microscopic Observations on a kind of Paper made from Vegetable Tissue.* By John Mathews, Esq. Mr. M. stated that he had examined the specimen of paper presented at last meeting of the Society, and found that it exhibited beautiful cells with stomata. It was, therefore, the cuticle of a plant, and from the quadrangular stomata he was disposed to think that it was allied to Agave.—Office-bearers were elected for the ensuing year; six gentlemen, chosen Fellows; and Mr. J. B. Davies, entered as an Associate.

## Notices of Books.

*A Popular History of British Ferns and the Allied Plants.* By Thomas Moore, F.L.S. Square 12mo. Reeve and Benham; pp. 354, with 20 coloured plates of 48 species.

Among the works which a taste for the study of British Ferns has produced, this stands at the head, beyond all comparison. Excellent as were Mr. Newman's woodcuts, and clever as his letter-press, yet even that beautiful volume belongs to a less popular order of publication. In the work before us the plates have been drawn on stone by Mr. Fitch, who is now without a rival among English botanical draughtsmen. Mr. Moore very properly dedicates his book to Mr. N. B. Ward, "whose invention," as he truly says, "of close glazed cases has extended the cultivation of Ferns to the parlour, the window-sill, and the city court-yard," and we have no doubt will lead to a still greater extension of the taste. We wonder indeed that these beautiful objects, cultivable with such an inconsiderable amount of either care or skill, should still be so seldom seen, either in the open garden or in glass houses. Assuredly no race excels them in delicacy of texture, or grace of outline or beauty of colour. The exotic kinds being more varied than others, most especially merit the attention of those who have heat and glass at command. In Orchid houses they produce the most charming effect, entirely destroying by their infinitely diversified forms and way of growth, the monotony of foliage proper to the whole order of epiphytes. It is to moisture, shade, and protection from winds that the finest of these plants trust for their existence, and to those conditions only. Old sandstone quarries, the north face of damp cliffs, loose stone walls supporting a considerable depth of earth, through which water percolates, the borders of waterfalls, are their favourite resorts; and all that the gardener has to do is to provide an imitation of these natural conditions. This is so much more easily done under glass than in the open air, that we entertain no doubt about cold Fern houses becoming in time as common as greenhouses. Mr. Moore's book has however more of a practical than of a speculative turn, and therefore we will ourselves offer a suggestion for the construction of a very cheap and suitable place, in which they may be easily cultivated without even a gardener. Throw a span roof over a ditch through which water is usually flowing. Make the south roof of weather-boarding, and the north roof of glass; break up the sides of the ditch as deep as circumstances will permit, for the reception of burs or fragments of stone, among which the Ferns are to be planted, and the thing is done. Water, damp air, shade, shelter, are all provided without further care.

Of *Railway Literature* the supply is kept up by Mr. Murray and Messrs. Longman, without a symptom of deterioration. If it is continued, we shall have the most remarkable Cabinet Library in any language, unrivalled in price and quality. Mr. Murray has furnished *The Road*, by Nimrod, and *The Turf*, by the same clever author, both volumes embellished with capital woodcuts; and a small edition of *James's Fables of Æsop*, with Tenniel's clever illustrations. In the same period we have from Messrs. Longman's *Madame Pfeiffer's Voyage Round the World*, *Eothen*, and *Macaulay's Essay on the Life of Addison and Horace Walpole*, all well known and very interesting works, of standard reputation. Reading-rooms, with limited funds, would do well to keep an eye upon this class of publications, which cannot fail to raise the standard of feeling among the lower classes.

*The Family Economist*, for 1851 (Groombridge), is full of useful information. A shilling cannot be better spent than in its purchase. Another work, from the same publishers, called *Rural Economy for Cottage Farmers and Gardeners*, compiled from the writings of Martin Doyle and others, also deserves commendation as a useful addition to the cottager's little library. It is just the book for small prizes in country schools, or for a new year's present to young deserving labourers.

## FLORICULTURE.

The Chrysanthemum.—It is stated in your list, at p. 790, that Nonpareil is light coloured; now I had this first-rate variety direct from Mr. Bell, of the Bracondale Nursery, from which it was first let out, and with me it is a peculiar shade of purple, certainly not light. [It is considered about London to be correctly classified.] It is beautifully incurved, but the petals are rather sharp pointed. It never shows an eye. I consider it to be one of the best in cultivation as regards colour and form, at least it is so under my system of management; therefore the number of times exhibited at the London shows, compared with that of other varieties, is no criterion of its merits; in fact, so high does it stand in my estimation, that it is one of four particularly recommended in my treatise. Vesta is represented by No. 29, in comparison with Defiance, No. 46. Now in what point is Vesta second to Defiance, or any other light or white sort? With me it is without a rival; indeed I grow several plants of it. The habit, colour, and size of blooms, the freedom with which they expand (rarely producing a defective bud), are points which render it second to none; and I think I am not singular in this opinion, for it was the admiration of all who have seen my plants during this and previous seasons. Queen of Yellows I consider indispensable to a good collection. Its colour is peculiar and distinct, and with me the blooms are very large, with their centres well up; and although in your list it is placed low, in comparison with other yellows, I should recommend it even for a collection of six or twelve, either for exhibitions or for decorative effect. Its power of resisting the effect of damp is greater than that of many others. Superb Clustered Yellow is, without doubt, the best and brightest of the class; Annie Salter is next, then Queen of Yellows. Marshal de Crique does not appear in your list at all; yet, what variety, in its way, has superseded it? In colour, habit, number and fragrance of blooms, what can surpass it? I say fragrance, for it is sweet as a Violet. I have another variety, known in Norfolk as Freestone's Queen Victoria. I imagine it is little known, as its name has not figured in any list I have seen; its colour is light peach blossom, the petals are very broad, flowers medium-sized, but rather too thin for some purposes. In habit it is dwarf (15 to 18 inches), and it requires no support from sticks. It is worthy of a place in any collection; in colour it is distinct from anything I have seen; I have known it for 10 or 12 years; it is admired by all who have seen it. Perhaps it may be cultivated under some other name; and if so, I shall feel obliged by being informed of it. *William Ivory, Gardener to Rev. G. Chetwode, Chilton House, Thame, Oxford.*

### NOTICES OF BOOKS FOR DECEMBER.

*The Midland Florist* (a double number), is as usual full of good floricultural and ordinary gardening information. The editor's address to his readers is in all respects admirable.

*Beck's Florist* (now Turner's), contains some capital articles, and is altogether a useful number.

*Floricultural Cabinet* (double number). The illustrations are "Dr. Horner" Tulip and three Gloxinias. "Orion" brings his "Progress of the Pelargonium" to a close, and well deserves the compliments of the conductor.

*The Gardeners' Magazine of Botany.* It turns out that we announced the discontinuance of this periodical a month too soon. We have now before us the acknowledged concluding number, which, however, wants the two coloured plates, and the index promised on the 1st of January.

In *Paxton's Flower Garden* is Pentstemon azureus, a Californian azure or blue perennial of considerable merit; Wrightii is stated to be deep rich rose. The number is beautifully illustrated, and in every way "well got up."

*Birmingham Magazine.* This contains some good practical matter. We hope to see Fuchsia "King Charming," at an early date. We know the taste of the Birmingham men in these matters. *J. E.*

Chrysanthemums: *Reader.* Apply to Mr. Ivory, Chilton-house, Thame, Oxford. *J. E.*

Fancy Dahlias: *Eremita.* You will find an answer to your question at page 599 of the current year's volume. *J. E.*

Florists' Flowers: "Crito" asks, "What constitutes a florist flower?" *J. E.*

Fuchsias: *T.* These, with Verbenas, Antirrhinums, and similar subjects, are mostly sent out in spring. *J E.*

Liliums: *A R.* No better time than the present; "the where" may be known by reference to our weekly columns: it is not for us to say more. *J. E.*

List and Catalogue received from Messrs. A. Paul and Son. —Lists have been received from Messrs. Wood and Curtis. *J. E.*

Picotees: *H F., Isleworth.* Mrs. Barnard (Barnard), light-edged rose; Alfred (Dodwell), heavy edged purple; Princess Royal (Wilmer), heavy edged red. Yellows: Euphemia, Princess Alice, and Conrad. We never recommend dealers. *J. E.*

Rose Amateur: The critique given in your favour confirms the view we have ever taken. We have reason to know that the very suggestions thrown out on the 20th of September were not only taken as intended, but that inquiries have been instituted by the proper authorities concerning them; it would therefore be a pity to disturb the kindly flow of feeling at this juncture, when all promises so fairly. *J. E.*

Tulips: *J C.* You shall quickly hear. *J. E.*

Misc: *Rosa* Willing to give you the benefit of our observations on floral subjects; annual flower seeds are out of our province. *J. E.*

## Miscellaneous.

*Salads.*—Amidst our old school of garden literature the name of Evelyn marks quite an epoch. His "Kalendarium Hortense, or Gardener's Almanack," set the pattern for a multitude of similar productions, and may even yet be referred to as a useful reminder. His "plant Potatoes in your worst ground" is what we are obliged to come to after all. It is now the fashion to resuscitate from long forgotten seed-drawers many of his plants that had been shelved for years, as Chervil and Basil: and attempts are being made to render others more popular, as Orache and Lamb-lettuce or Corn-salad. Purslane, we hope, will follow in the list of revivals; in Germany it is still in great request for spring soups. Ourselves, long baffled in an attempt to raise a crop of Skirrets from seed, found in him the wrinkle which a host of gardeners had failed to supply: "March. Sow Skirrets in rich, mellow, fresh earth, and moist; and when about a finger long, plant but one single root in a hole, at a foot distance." His new conservatory or greenhouse was the beginning of a series of results which it would be very long to relate. His translation of the "Compleat Gardener, by M. de la Quintinye, chief director of all the gardens of the French King," which, when "made English," he believes to be "first and best of that kind that introduced the use of the Olitorie garden to any purpose," must have had its effects; as also his "Acetaria, or Discourse of Sallets," proving (even although pickles are included in the term), that a more varied and artistical *Sallet* could be served 200 years back than now, and that our only mode of advancement in this line is to revive old fashions. Where is our list of "Sallet-plants reduced to a competent number, not exceeding *thirty-five?*" We

may be inclined to refuse the Sow-thistle, so "exceedingly welcome to the late Morocco ambassador;" but such a thing as a good Salad is now never dished in England, if there be truth in the proverb:

"L'insalata non è [illegible] bella,
Ove non è la pimpinella."

This Pimpernel is our common Burnet; "but," says Evelyn, "a fresh sprig in wine recommends it to us as its most genuine element," which may well account for its being "of so cheering and exhilarating a quality." "Sampier," too, is cruelly neglected:—"Not only pickled, but crude and cold, when young and tender (and such as we may cultivate and have in our kitchen-gardens almost the year round), it is, in my opinion, for its aromatic and other excellent vertues and effects against the spleen, cleansing the passages, sharpening appetite, &c., so far preferable to most of our hotter herbs and sallet ingredients, that I have often wondered it has not been long since propagated in the potagere, as it is in France, from whence I have frequently received the seeds, which have prospered better and more kindly with me than what comes from our own coasts. It does not indeed pickle so well, as being of a more tender stalk and leaf, but, in all other respects, for composing sallets it has nothing like it." We are all acquainted with

"One that gathers Samphire"

half-way down the face of Dover cliff; but how many of our readers know the taste of the produce of that "dreadful trade"? The Samphire business now-a-days must be a small concern. One or two species of Glasswort are sold and pickled in Norfolk by the style and title of Samphire, but are as false a substitution as was the fair maid who listed "under the name of Richard Carr." The pickled Salicornias taste of nothing but the vinegar and the spices, and altogether differ from that classic umbellifer the Crithmum maritimum. Were it not unfair to disturb the repose of so good a man, one would almost wish to raise the ghost of Evelyn to solve a great difficulty of modern times—what is the mode of dressing sallet? Family quarrels have arisen on the subject; the salad-bowl may yet lead to divorces *à mensâ*. With us, an early recollection is simple lettuce shred tolerably fine, just moistened all over with vinegar, and dusted with sugar; a preparation to be tried by those hitherto ignorant of it. A mode that has been dogmatically insisted on, as the only orthodox one, is to wipe each leaf of Lettuce (which is alone admissible) dry; then to bring the oil in contact with every part of the surface, finishing with the least dash of vinegar and sprinkle of salt. This would be the order of the day—pure and simple. A favourite Parisian top-dressing is to place a little flock of fresh-water crayfish on the summit of the verdant mass; an appropriate garnish for fish salads, and, with us, imitable by shrimps and prawns when crayfish are not. The azure and blue flowers of Borage, and the orange and brown ones of Nasturtium, are grateful to two senses at least; but it is not easy to have them fresh on a London sideboard. Faded, they are as bad as the flowers out of Madam's last summer's bonnet. Dr. Kitchener's cooked salad, strewn over with a stratum of uncooked, deserves a serious and unprejudiced consideration. Tarragon vinegar, or anything else which must predominate, we hold to be heretical. Salad is good society; whatever is obtrusive must be excluded. Therefore we think that the quality of the oil is not criticised with sufficient strictness: if it has the least twang, it predominates over everything, and you continue to taste it after it should have been long forgotten. At this juncture our readers will thank us for producing (by permission courteously granted) a "Receipt for a Winter Salad," written many years ago at Castle Howard by the late Mr. Sydney Smith. He so rarely (after school-days) used his admirable talent for versification, that this specimen of it would be valued, even although the prescription were not—what it certainly is—in itself an excellent one:—

"Two large Potatoes, passed through kitchen sieve,
Unwonted softness to the salad give.
Of mordant mustard add a single spoon—
Distrust the condiment which bites so soon;
But deem it not, thou man of herbs, a fault
To add a double quantity of salt.
Three times the spoon with oil of Lucca crown,
And once with vinegar, procured from town.
True flavour needs it, and your poet begs
The pounded yellow of two well-boiled eggs.
Let Onion atoms lurk within the bowl,
And, scarce suspected, animate the whole;
And lastly, on the flavoured compound toss
A magic teaspoon of anchovy sauce.
Then, though green turtle fail, though venison's tough,
And ham and turkey are not boiled enough,
Serenely full, the epicure may say—
Fate cannot harm me—I have dined to day!"

*Quarterly Review.*

## Calendar of Operations.

*(For the ensuing week.)*

FORCING DEPARTMENT.

Should the weather continue wet and cold, an additional quantity of litter will be required for maintaining the heat in the outside Vine borders. It often happens that a heavy fall of rain very much chills the fermenting material; and to bring the heat again into action, a little fresh litter spread over the top is all that is required. Keep up a genial, but not excessively moist atmosphere within, guarding against too much vapour, as well as against the opposite extreme; and where there are vapour pans upon the pipes, and the soil of the inside border is exposed to the atmosphere, this can always be managed without much difficulty. Thin, flabby leaves are produced by an excess of moisture, and an insufficient quantity of fresh air; and too much attention cannot be paid to providing proper ventilation for the Vines, at all times giving more or less air, according to the state of the external atmosphere and the command of heat within. No gardener can produce good fruit early in the season, unless there is a proper command of heat from the pipes, and the flues in the back wall; but with perfect appliances he can create an artificial atmosphere, which will do wonders even in the dull days of winter and early spring. There is much work requires doing in the houses at this season, that can be carried on to greater advantage, during inclement weather, than out-of-door work. The dust and soot should all be washed off the glass, rafters, and walls; after which the Vines should be dressed over with a little sulphur and soap, and tied. Inside painting may also be done, and the walls whitewashed. Before commencing to force any house, the state of the furnace should be properly examined into, and all the flues cleared of soot, which should be stowed away in some dry place, ready for being used upon the ground before it is prepared for sowing, or planting in the spring. Few insects can stand it when applied in a dry state; and besides this, it is an excellent manure for most things.

HARDY FRUIT GARDEN.

In giving the Gooseberry and Currant compartments their annual dressing, we seldom remove much of the young wood, as the bulfinches, with the occasional assistance of sparrows, destroy so many buds, that there are sometimes scarcely any left to produce fruits; and when the trees have plenty of foliage on them in March and April, the fruit is less liable to be injured by frost. Should too many fruit set, they can easily be removed, along with some of the shoots, after all danger of frost is over. These plants should have a little manure over their roots every year, and in digging or forking among them, avoid cutting the roots as much as possible. Any Pear or Apple trees which grow near the vegetable compartments, and are becoming too gross, from feeding upon the rich substances supplied to the vegetable crops, should be root-pruned; as it is anything but desirable that they should be allowed to get into a rampant growth in the kitchen garden, where everything should be kept to a certain size, so as not to deprive the vegetables of any portion of light and air. The orchard is the proper place for large trees to be grown in; and there, the sooner they arrive at their full size the better, as they will then cease making gross wood, and will bear more and better flavoured fruit. Keep the heads of large fruit trees from getting too much crowded, or you will perhaps have a greater number of fruit, but at the expense of size and flavour of quality. Remove Moss and Lichens, by first scraping it off, and then washing over the branches with a thick paint of lime, soot, fresh cow-manure, and clay; and if, in addition to being mossed over, they are becoming exhausted with long bearing, top-dress them with some good turfy soil and manure. The fruit-room will at this season require daily attention. The fruit least likely to keep should be picked out for immediate use, or when they decay they will injure the sound ones. Let an uniform temperature be preserved, and give sufficient ventilation to allow of the damp escaping.

FLOWER GARDEN.

This is a good time to prepare labels for all ornamental trees and shrubs in the flower garden and pleasure ground; and when well painted, and thoroughly dry, they can be put in their proper places, and will give much interest, and an air of good management to the whole. Turf may still be laid; and where the ground is wet, and liable to be infested with worms, a few inches of coal ashes should be used for laying it on. Crocuses will now be pushing through the ground, and the mice will soon become very troublesome, unless they are stopped in time. Traps should be laid in immediately to destroy as many as possible, before they discover the Crocuses; as afterwards they are very particular about taking the bait. If there are any choice seeds of Rhododendrons or Azaleas, which it is desirable should be saved, they must be seen to at once; as during sunny days in January, the capsules will open, and the seed drop out.

FLORISTS' FLOWERS.

Much of the routine culture lately recommended must be persevered in.—Polyanthuses in frames are sometimes attacked by mice; they eat the hearts out of the plants, whilst Auriculas they do not meddle with; traps should be set as soon as their ravages are apparent or they soon do serious mischief; in frosty weather give the bed for Ranunculuses a turn over.

KITCHEN GARDEN.

Let the trenching of vacant ground be done with all convenient despatch, unless when it is frozen; as the clods, if turned over in that state, will remain a long time ere they thaw; as, by loosening of the soil, non-conducting cavities are created, which check the progress of heat, either upwards or downwards. Instances have been recorded of ground being trenched during a severe frost, and of the clods being found, or by partially thawed at Midsummer. In mentioning the protection of kitchen garden crops, we omitted to recommend the branches of Spruce Fir, Yew, or other evergreens. These are quite as effectual, if used in sufficient abundance, as litter and other matters, which are too untidy to be seen in a well kept kitchen garden. Attend to the forcing of Rhubarb, Seakale, Asparagus, Chicory, &c., and keep up a supply, if possible, equal to the demand. Let Cauliflowers, Endive, and Lettuce, in frame, be frequently examined, and divested of decaying foilage; and protect from the ravages of slugs, by carefully sprinkling a little lime and soot upon the surface of the soil.

State of the Weather near London, for the week ending Dec. 25, 1851, as observed at the Horticultural Garden, Chiswick.

| Dec. | Moon's Age | Barometer. Max. | Barometer. Min. | Temperature. Of the Air. Max. | Of the Air. Min. | Of the Air. Mean | Of the Earth. 1 foot deep. | Of the Earth. 2 feet deep. | Wind. | Rain. |
|---|---|---|---|---|---|---|---|---|---|---|
| Friday.. 19 | 26 | 30.118 | 29 995 | 52 | 43 | 47.5 | 42½ | 41½ | S. | .01 |
| Satur... 20 | 27 | 30.087 | 29.968 | 53 | 46 | 49.5 | 43 | 42 | S.W. | .02 |
| Sunday . 21 | 28 | 29.760 | 29.564 | 49 | 38 | 43.5 | 45 | 43 | S. | .15 |
| Monday 22 | 29 | 29 832 | 29.543 | 46 | 35 | 40.5 | 44 | 44 | E. | .21 |
| Tues. .. 23 | 1 | 30.226 | 30.063 | 46 | 30 | 38.0 | 42½ | 43½ | N.E. | .00 |
| Wed.l .. 24 | 2 | 30.288 | 30.261 | 41 | 24 | 32.5 | 42 | 43 | S.E. | .00 |
| Thurs... 25 | 3 | 30.357 | 30.318 | 41 | 25 | 33.0 | 42 | 42 | S.W. | .00 |
| Average.... | | 30.095 | 29.959 | 46.8 | 34 4 | 40.6 | 43.0 | 42 7 | | .49 |

Dec. 19—Fine; exceedingly fine; overcast.
— 20—Hazy and drizzly; cloudy; densely overcast and mild.
— 21—Rain; boisterous at night.
— 22—Constant rain throughout the day; clear at night.
— 23—Fine; clear; overcast.
— 24—Hazy; very fine; overcast; frost at night.
— 25—Clear; very fine throughout; cloudy at night; frosty.
Mean temperature of the week, 2¼ deg. above the average.

State of the Weather at Chiswick, during the last 25 26 years, for the ensuing week, ending Jan. 3, 1852.

| Dec. and Jan. | Average Highest Temp. | Average Lowest Temp. | Mean Temp. | No. of Years in which it Rained. | Greatest Quantity of Rain. | Prevailing Winds. N. | N.E. | E. | S.E. | S. | S.W. | W. | N.W. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sunday 28 | 41.2 | 29.8 | 35.5 | 8 | 0.16 in. | 3 | 3 | 2 | 3 | 2 | 1 | 7 | 4 |
| Mon 29 | 42.8 | 31.7 | 37.2 | 11 | 0.17 | 2 | 3 | 1 | 3 | 4 | 3 | 5 | 4 |
| Tues. 30 | 44.5 | 33.4 | 38.9 | 10 | 0.30 | 1 | 5 | 2 | 2 | 2 | 6 | 6 | 1 |
| Wed. 31 | 43.9 | 33.0 | 38.5 | 7 | 0.42 | — | 6 | 1 | 4 | 7 | 4 | 3 | |
| Thurs. 1 | 42.6 | 30.6 | 36.6 | 9 | 0.70 | 4 | 4 | 2 | 4 | 3 | 3 | 3 | 3 |
| Friday 2 | 41.5 | 29.7 | 35.6 | 8 | 0.21 | 3 | 1 | 5 | — | 3 | 5 | 3 | 6 |
| Satur. 3 | 42.0 | 31.0 | 36.5 | 14 | 0.56 | 1 | 2 | 5 | — | 5 | 5 | 3 | 5 |

The highest temperature during the above period occurred on the 30th, 1833—therm. 56 deg.; and the lowest on the 1st, 1837, and 3d, 1827—therm 12 deg.

## Notices to Correspondents.

Back Numbers: *T S P.* You can have the number for June 14th, 1851.

Birds: *E C.* We are indeed pleased to know that our "advice" has been so useful to you, in saving the lives of your two birds; but raw beef and egg must be only occasionally used, as it is of too laxative a nature for such small birds. Keep them warm through the winter, and all will be well.—*J C W.* Your favour came to hand, and we will not lose sight of your request. The new year will give new life to all these little creatures, and we will speak of them in turn. The Sky-lark, being young, will open 'early.' Keep him from draughts.—*Jane L.* We have just saved the life of a favourite and valuable canary, who has been suffering in the precise manner you state. We gave him a little stale bun, dipped in milk, and afterwards in moist sugar. He refused food in *every shape*—this alone excepted. This shows how we must study the "peculiarities" of Song Birds. Write again. —*W P.* These bat-folded birds are too often "wild." You must suspend him at some considerable height, and not let him see the light of a candle. The shadows thereby produced 'fright him from his propriety.'—*Eleanor.* Procure a bird that is at least two years old, and a fine songster; you may then teach your young birds "how to excel."—*Ninetta.* Give him, immediately, some fresh-boiled milk; and, to induce him to partake of it, soak in it some crumbs of stale bread. He will rally.—*W J.* Discontinue the Hemp-seed at once.—*Winnifred.* From 21*s.* to 42*s.* Such birds are well worth their cost. — *Dorothea.* Prevent your birds seeing each other. This is *alone* the cause of their "silence." —*Lucy.* Our advice last week was minutely correct. You will return in armies. Procure a common cage, having three sides of wood, and the front wire. The cost will be about 2*s.* 6*d.* Also, let the top be of wood. If your *large cage* be of mahogany, which we much doubt, it must be taken to pieces, and well washed with spirits of wine and turpentine before being again put together. *Still*, we must be faithful—all will avail nothing, and your bird will eventually perish. All cages, excepting those made of mahogany, are to be dreaded. *W. K.*

Glass Walls. We have many communications upon this interesting subject. It is, however, desirable to reserve them for a short time, until we have further details concerning Mr. Ewing's plan.

Hops: *X Y Z.* These are climbing plants, and will grow 15 or 16 feet long in rich stiff soil. They do not bear a berry; the Hops from which beer is made are the female inflorescence. The male Hop is not worth growing.

Medlars: *J P.* The change of colour in the Medlar is not decay, but ripeness; that kind of ripeness which is called bletting. The austere qualities of the Medlar become saccharine, and with the change in quality comes a change in colour. The young lady is perfectly right.

Names of Fruits: *J W.* 1, Napoléon; 2, 4, Beurré Rance; 3, Beurré Diel; 5, Glout Morceau; 6, Passe Colmar; 7, King of the Pippins; 8, Golden Noble.‖—*H B.* 1, Court of Wick; 2, Golden Pippin; 3, Northern Greening; 4, Blenheim Pippin; 5, St. Germain; 6, Beurré Diel.‖—*S A.* 1, 4, Blenheim Pippin; 2, Kilkenny Pearmain; 3, Court of Wick; 5, King of the Pippins; 7, Hornread Pearmain; 8, Northern Greening; 9, Probably Wormsley Pippin; 10, Baxter's Pearmain; 12, Golden Noble; 14, Hollandbury; 16, Alfriston; 17, Dumelow's Seedling; 19, Pennington's Seedling.‖—*A C.* 1, 28, King of the Pippins; 2, Hollandbury; 3, Reinette Grise; 4, Reinette du Canada; 7, London Pippin; 8, Winter Pearmain; 9, Bedfordshire Foundling; 10, Fearn's Pippin; 11, Golden Reinette; 12, Dutch Mignonne; 14, Pennington's Seedling; 16, Court of Wick; 19, Early Nonpareil; 20, Beurré Diel; 22, Glout Morceau; 23, Beurré Rance; 24, Forelle; 25, Beurré d'Aremberg; 27, Buchanan's Spring Beurré; 29, Bezo de Caissoy.‖—*Arundel.* 1, Brabant Bellyfleur; 3, Boston Russet; 4, Northern Greening; 5, Beauty of Kent; 6, 16, Blenheim Pippin; 7, Calville Blanche d'Hiver; 8, Old Nonpareil; 9, Yorkshire Greening; 11, Api Noir; 12, Pomme de Neige; 13, Brickley Seedling; 14, Pearson's Plate; 15, King of the Pippins; 18, Dumelow's Seedling; 20, Kirke's Lord Nelson; 26, Hoary Morning; 1, Buchanan's Spring Beurré; 3, Knight's Monarch, *true*; 4, Knight's Monarch, *the false* and worthless.‖

Names of Plants: *Erzeroum.* 206, Telephium orientale; 652, Polygala comosa.—*W O H.* The Deodar, or Indian Cedar.—*J W.* The genus Cupressus and the genus Juniperus cannot be distinguished except when in fruit. The first has a cone, the second the fleshy body called a Galbulus.

Spruce Firs: *J A.* You will not strike them from cuttings. You may graft the shoots when quite soft next year, by inserting them on the soft young wood of the common Spruce.

Vines: *J B.* We cannot precisely state the properties of the Prince Albert Grape. The Black Alicant is the same as the well known Black Prince. It is a good bearer, and it colours well. In this respect it has the advantage of the Black Hamburgh.‖

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.

CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS, AS THE ONLY IMPORTERS OF PERUVIAN GUANO,

Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

THE LONDON MANURE COMPANY beg to offer PERUVIAN GUANO, warranted perfectly genuine; Superphosphate of Lime, Wheat Manure, Concentrated Urate, Irish Peat Charcoal, Gypsum, Nitrate of Soda, and every artificial Manure, on the best terms. Also a constant supply of Salt for Agricultural Purposes, at a low rate. English and Foreign Linseed Cake, Rape Cake, &c.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

| | | | |
|---|---|---|---|
| Turnip Manure, per ton | ... | ... | £7 0 0 |
| Superphosphate of Lime | ... | ... | 7 0 0 |
| Sulphuric Acid and Coprolites | ... | ... | 5 0 0 |

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of ammonia, &c.

FOSSIL BONES AND PSEUDO-COPROLITES (FROM THE SUFFOLK CRAG).

EDWARD PACKARD AND CO., of Ipswich, having erected very powerful Machinery for the purpose of reducing these Phosphatic Nodules to a fine Powder, and being in the immediate locality of where they are found, are now prepared to supply them on the most economical terms, in any quantity, either Ground, Whole, or Dissolved in Acid. They form the cheapest source of Phosphate of Lime in the market, and are peculiarly eligible for manufacturing Superphosphate of Lime in conjunction with Bone.

Prices and every information connected with their use forwarded on application to EDWARD PACKARD AND CO., Artificial Manure Manufacturers, Ipswich, Suffolk.

FARMERS AND GARDENERS are invited to try the NEW and VALUABLE MANURE, PEAT CHARCOAL, impregnated by pressure with the fertilising matter of the LONDON SEWAGE, the Ammonia, Phosphates, and Fæces being absorbed, and the water left bright and palatable. Sold at the Charcoal and Sewage Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

A PRIZE MEDAL FOR SUPERIOR LOCKS WAS AWARDED TO J. H. BOOBBYER, AT THE GREAT EXHIBITION OF 1851.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

THERMOMETERS.

HENRY BAKER'S (90, Hatton Garden, London), List of Prices. Every instrument made by him warranted accurate.—Vertical self-registering THERMOMETER, for heat and cold, of the best construction, and not liable to get out of order, 14 inches high, in copper case, 1l. 5s.; in japan case, 1l. 1s., and 1l; 10 inches high, in copper case, 1l. 2s.; in japan case, 18s. Horizontal Thermometers for registering the extreme of cold only, 4s. 6d.; Hot-bed Thermometers, in oak frames, 1l. 1s.; copper frames, 1l. 5s. Thermometers for Brewing, Baths, &c., in copper cases, 14 inches, 7s. 6d.; 10 inches, 5s. 6d.; 8 inches, 4s. 6d.; in japan cases, 14 inches, 5s.; 10 inches, 3s. 6d.; 8 inches, 2s. 6d. Dr. Mason's Hygrometer, or wet bulb Thermometer, for showing the humidity of the air, with tables, ivory scale, 1l.; wood, 15s. An invaluable instrument in Hothouses, Sick Chambers, &c. Wheel Barometers from 1l. 1s. each, sent, securely packed, without fear of getting out of order.

WARMING AND VENTILATING.

D. AND E. BAILEY, 272, Holborn, having had many years' experience in warming buildings by Hot Water, continue to erect Hot Water Apparatus on the most approved principles, for Mansions, Warehouses, Conservatories, and other Horticultural Buildings, and they beg to introduce to the public a BOILER of their invention, which has been used with great success, and has this season been put up in the gardens of the Horticultural Society, Chiswick, and is noticed and commended in the *Gardeners' Chronicle* of Saturday, Sept. 20, 1851, page 598. Dr. Arnott's Ventilating Valves, upon the best construction, many having been made under the kind superintendence of Dr. Arnott himself. Also a very complete, cheap, and efficient Portable Cooking Apparatus or Cottagers' Stove.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost. When used as a stucco, it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.

Manufacturers—J. B. WHITE and SONS, Millbank-street, Westminster; 11, South Wharf-road, Paddington; and Earl-street, Blakfriars, London; and 36, Seel-street, Liverpool.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much Improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description; but to those who have not seen them in operation, prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the Kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected on the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

The Agricultural Gazette.

*SATURDAY, DECEMBER* 27, 1851.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 1—Agricultural Imp. Soc. of Ireland.

WE had hoped to have given in the present Number our usual comparison of the cattle shows at Smithfield and Birmingham, respectively, in order to illustrate, so far as the few specimens concerned are competent to do so, the relative merits of the different breeds at different ages; but the demands upon our space require us to postpone this attempt. Two duties remain to us, however, in connection with these shows. The first relates to the specimens of green crops exhibited at Smithfield, of which no notice has hitherto been taken, and which we now name merely to call attention to the fine collection of specimens of Irish grown crops sent by the Earl of Clarendon, which certainly illustrates most admirably the capabilities of Irish soil and Irish climate for green crop cultivation. And the second relates to the show of pigs at Birmingham. We can place entire confidence in the judgment of our reporter, whose statement appears in an adjoining page. And it appears from his report that the authorities who regulate the details of that exhibition will need to exercise the closest supervision of all certificates of entry, and to make investigation into the circumstances of any case where the slightest suspicion of dishonesty arises, if they would have their exhibition maintain its character for excellence. The words "small breed," too, should be defined as implying a certain limit as to weight at a certain age—or the competition of the *bona fide* breeders of such animals will altogether cease. And in order to insure attention to the condition requiring ownership for a certain period before the show, it might perhaps be advisable to require longer notice of intention to exhibit than is now demanded.

OUR readers will do well to bear in mind that GUANO GRINDING is carried on as vigorously as ever, in spite of chemistry, and guardian societies, and exposures to the contrary.

The following communication has just been received from the Manchester Society of Guardians for the Protection of Trade.

"It may, perhaps, interest the readers of the *Agricultural Gazette*, to be informed that the manufacture of guano is now largely carried on here. It is principally made from street sweepings, which probably contain sufficient ammonia to deceive, and a kind of yellow clay; these ingredients, together with other rubbish, are ground together in the common horse grinding mill.

"Your Lincolnshire friends should be warned as to this stuff, especially as I know that one person named DARCY sent last week no less than nine truck-loads, or between 40 and 50 tons of this guano (?) to Brigg station by the Sheffield and Lincolnshire Railway, and the Lancashire and Yorkshire have also carried a great deal of it. The stuff is barely worth the freight.

IT appears that Mr. MECHI, like the rest of us, has been losing money by farming during the past year. He has valued his Wheat at 4s. 9d. per bushel, his Potatoes at 5l. 10s. per acre, his Mangold Wurzel at 6s. a ton, his Swedes at 5s. 6d. a ton, his pasture at 3l. and his Clover at 4l. an acre, and other green produce at similar rates; and yet he has made only 71l. profit off 170 acres. But in most of the above particulars his valuation is higher than average experience justifies. We have frequently, in the case of particular lots of oxen, made as much as 9s. a ton for Swedes and Mangold Wurzel, after paying for the expense of attendance and of purchased food; but over the whole of several years' transactions in the manufacture of beef and mutton out of Clover, roots, and purchased food, we have not received more than 4s. a ton for the green food consumed; and Mr. MECHI's experience tallies with our own in this matter; for while his *farm* account, with the above valuations, represents a profit of 71l., his *live stock* account shows that instead of having paid for their food as much as he supposes to be its "consuming" value, his cattle have landed him in a loss of 576l. To be sure this loss appears after charging 9s. a ton for all roots, beside the cost of purchased food, though 6s. and 5s. 6d. only were charged for them before—a discrepancy we do not understand; but even reducing this charge upon the cattle to the lower rate, a great loss appears. In fact, though the live stock be supposed to have received their green food gratis, the cost of grain purchased for them will, it appears, altogether swamp the increase of their value under Mr. MECHI's management.

Now if we assume this management to have been perfect, then we are driven to the conclusion, everywhere, of course, most eagerly seized, that all this is the unavoidable result of the present prices of agricultural produce; but is it not more reasonable to suppose, that both the management and the result of it admit of improvement? Most of the discussions we have hitherto seen on this subject have turned almost exclusively upon Mr. MECHI's character as an agricultural teacher: but this surely is not anything like the main point at issue. The main point at issue is the light thrown upon the present position of the farmer by this very rare phenomenon—the published experience of a year's proceedings in agriculture. And our opinion is that Mr. MECHI's experience is by no means conclusive of the matter. We have no hesitation, after inspection of his balance sheet, in saying that the management of stock adopted at Tiptree-hall can by no means be held to furnish the premisses out of which any inference of the profits of the meat manufacture generally can be drawn. Take the item of 235l. spent per annum in the labour of managing 1700l. worth of cattle—an extraordinary amount, as any farmer will at once perceive. Or take the extraordinary item of 1500l., spent per annum on a farm of 170 acres, in the purchase of cattle food! We do not say it is impossible that such a purchase should be profitable, but we say, that it could be profitable only in the case of the very best bred cattle in the country; and these, certainly, are not to be found at Tiptree Hall.

But how will Mr. MECHI's opponents remedy his losses? To double the price of the Wheat he has grown will not do it. And if they raise the value of the 2000l. worth of meat which he has sold, they must also raise the price of the 1500l. worth of grain and other cattle food which he has bought; so that little gain will arise out of that transaction. THE MAIN CAUSES OF MR. MECHI'S LOSSES EXIST IN HIS adoption of a system of farm management, involving a most extravagant expenditure on cattle food—and probably, also, though here we do not speak from personal knowledge, in the absence of that market ability, on which, more perhaps than on any other thing, the profits of the farmer generally depend. These two causes would, we believe, have landed him in loss, though the prices obtained for his produce had been what farmers generally would have been satisfied with.

We have been silent hitherto on a subject which is making so much noise, because its discussion hitherto has turned exclusively upon the comparatively immaterial point of Mr. MECHI's status as a teacher, and we have had no desire to assist in the work of bandying personalities on that point. But as several correspondents have applied for information, we shall next week do our best to state the principal points of the case in detail.

A WITTY correspondent favoured us some weeks ago with the description of a machine not exhibited in the Crystal Palace, whose wonderful performances, nevertheless, claimed for it, in his opinion, the very closest attention. This machine, according to him, is already in extensive operation—it affects the whole surface of a farm, and the condition of all connected with it at once—it harrows, threshes, grinds, to any conceivable degree—it does all sorts of agricultural work in the "rough" line with precision—and according to "Bastinado," who undertook to expose it, its influence is most mischievous. The "mercantile relation" machine, to which all these effects are attributed, is one however, we imagine, which will continue to operate in spite of any writing to the contrary. The mercantile relation is the only one which can be assumed to exist between the parties to a business transaction; and to suppose either that its operation in agriculture is a novelty, or that its operation generally is mischievous, is simply a mistake. All that agricultural writers can do as regards its influence on the subjects coming within the range of their remarks, is to state the true interests of the several parties to an agricultural bargain, in order that the particular and justifiable form of selfishness developed in the mercantile relation may not be of that ignorant and

near-sighted description to which "Bastinado" appears to refer.

This, however, is not immediately and directly the subject of our present remarks: it is to another agricultural machine that we would direct the attention of our readers—a machine for the very purpose of conferring that knowledge and far-sightedness which will render the mercantile relation everywhere beneficial. It is certainly one of the most efficient and economical machines for this purpose that we have anywhere seen. Gentlemen come from all quarters, and after examination of its parts and its processes, they are astonished that so little is known of this machine—that an instrument so thoroughly adapted for the very important purposes it is intended to serve, should not be more fully and constantly employed. Only supply this machine with an amount of the raw material on which it is designed to operate, in some measure proportioned to the powers and means which it possesses, and the land would very soon be covered with intelligent landowners and intelligent farmers, and the mercantile relation between the two would produce nothing but good to either. We are sure we cannot better employ the leading section of our Paper in this, the last Number for another year, than by once more calling attention to the Royal Agricultural College at Cirencester—the machine to which we refer.

Having lately been over the college, and the farm connected with it, it is with perfect confidence that we can speak of their present condition; and we say that, considering, on the one side, the efficiency of every department within this institution, and on the other, the 100*l.* premium which in hundreds and thousands of instances is paid in this country and in Scotland for the mere privilege of a year's residence on a farm, it is shameful that an educational apparatus so perfect should in any degree lack employment. Ignorance of its existence must be the main cause of the still comparatively small, though gradually increasing, number of students on its roll. If so, we shall endeavour to remove this ignorance, so far as our own readers are concerned; and other journals ought, for mere patriotism, to do the same. No doubt the many changes which during past years have taken place in the management of the Agricultural College have been one cause of its comparative inactivity; but the present staff of professors and office-bearers is beginning to exert its influence, and the number of students is increasing; it ought to be overflowing, for the constant employment of such an institution to the full extent of its power is a matter of national importance. The college is presided over by a gentleman admirably qualified for the superintendence of an educational institution; the several departments are in the hands of most excellent teachers; Prof. Voelcker is well known as a chemist, and especially as an agricultural chemist, by his performances in the laboratory of Prof. Johnston, and by his late contributions to agricultural literature: the several branches of natural history are efficiently taught; the different departments of agricultural engineering form the subject of special instruction; lectures on veterinary science are delivered by a gentleman, to whose skill in this department the admirable condition of the museum bears testimony; and that the practice of agriculture is well taught, the present condition of the farm under Mr. Vallentine's skilful and energetic management is ample proof.

On the occasion of a meeting of agriculturists in the town of Cirencester during a past year, Mr. Peter Mathews, one of the most energetic and intelligent practical farmers in the neighbourhood, took occasion to laugh at the management on the College farm. The same gentleman has lately been again addressing a Cirencester audience; but we find no exhibition of sarcastic criticism on that subject now; on the contrary, Mr. Mathews is now "an advocate for improvement" himself.

And we take the omission of the College from among the topics commented upon in his speech to indicate a consciousness that public opinion in its neighbourhood had altered in its favour. This we are glad to know is the case: and we strongly recommend any who may be enquiring after the means of agricultural education, to take it as a proof that the Agricultural College deserves a visit before they decide.*

And now we may, perhaps, be allowed to digress, in a concluding remark on the mercantile relation referred to at first. The speech of Mr. Mathews, just named, altogether ignores this relationship—"the poor labourer looks up to us for support, and we, in our turn, have a right to assistance from the landlord,"—is the burden of its cry. "Every man has a right to the market value of his goods, whether they be land or labour," is the true doctrine, and the only chance of relief for the farmer; apart from that, "farm high, drain deep, and cultivate better"—the constant exhortation to which Mr. Mathews refers with such indignant scorn—lies in an increased market value of the goods he sells, or in a diminished market value of the goods he buys. Now the country will not permit any attempt at an artificially high price of agricultural produce, and so Mr. Mathews is unavoidably driven to a reduced market value of land as the only hope of its cultivators. Well! but if so, why does he crow with such triumphant sarcasm over those who, in the face of falling prices, have thrown up their farms. Does he not see that a single act of that kind, so far as influence upon the market value of land is concerned, must be worth any quantity of talk? Let 10,000 men follow his own example, and make speeches full of sarcasm and complaint, and we shall have things just as they are. Let 10,000 men follow the example he derides, and farmers would begin to lift up their heads again; for we believe that land is in general too highly rented, and 10,000 farms seeking tenants would bring it down. We make no apology for the personal character of these remarks, for Mr. Mathews has himself exhibited no consideration for the trifle, as he doubtless considers it, of professional reputation in others; and we venture therefore to submit to him individually, that acting is more influential than speaking, and that if he were to throw up his farm because of the ruin he foresees, then though he ceased his complaint, he would be heard more influentially than he ever yet has been; the gain to the tenant farmers from his *act* in that one particular, would go very far indeed towards making up to them for the loss of his *tongue*.

* For further particulars the reader is referred to advertisements—or to the College itself, where his enquiries will, no doubt, receive attention.

## EMIGRATION AND THE POTATO.

It has been said that a tree shall be known by its fruit. The prosperous state of Ireland for years and years past, of one-third of the homestead of the British dominions, of all that can alone be depended on as the integer of the British crown, proclaims with trumpet tongue, the fulness and efficiency of all governments to which she has been submitted. I was wrong to question it. It had escaped me that every accident has been wisely foreseen, and as wisely provided for; every remedy promptly and judiciously applied, every measure well timed; that, with the fixed stability of Mede and Persian law, so well has the collective wisdom of the state been applied that further change has been uncalled for, and inadmissible; that the wise laws of our fathers have been carried out by the wiser laws of their sons; that the fabrics they built have been strengthened and secured by the conservative hands of their children, till nothing more is required than to discover the best mode of perpetuating the blessed fruits of our wonderful economy; and it has been found. With a benevolence and liberality truly astonishing, at the cost of all that is dear to us, our bones, our sinews, and our blood, we are to enrich, and strengthen, and ennoble the vast western continent, not our own share of it, with the descendants of the Celt, the brave and hardy Highlanders of Scotland, and the intelligent, spirited, and grateful sons of Ireland—grateful of British rule—who go forth to spread their satisfaction, to renew and add intensity, and extend more widely from the shores of the Atlantic to those of the Pacific, those kindly feelings which the fire and sword enkindled in a struggle for independence; to give power, and strength, and numbers, and to bring on with redoubled speed that period when America shall add to the will the ability to command and control us. But it is the immutable law of creation, and it is vain to attempt to contravene it. Nations, like men, grow old and succumb to those of younger birth.

Now this may all be very generous, but is it very politic? With a population thinned down to the mere numbers necessary, with the aid of machinery, for ordinary production, in what position shall we be placed when comes the tug of war, when convulsed Europe in all her tempest of revolution shall roll her democratic waves upon us; or should continental freedom lie prostrate at the feet of absolutism and young, rising, ambitious Russia, freed from other employment for her arms, pour on us the full tide of her force, our Indian empire invaded and our homes defiled? How shall we deplore the wide waste of depopulation, the destruction of those humble homes from which our armies in the days of our strength, when we withstood the world in arms, were recruited, the hardy Highlander and the active child of the western isle.

But will emigration stop with these? Has it not began from the shores of more happy, or, as we were wont to say, in other days, of merry England? The small end of the wedge has been introduced; can we say how far it will be driven? The same social associations which are now acting in geometrical progression in Ireland may find a corresponding feeling in England; the spirit of adventure, the love of change, that curious predisposition of expecting prosperity anywhere but where we are, have only to become strong enough to conquer the love of home, as they have done in Ireland, and the tide of emigration will roll as strong in England as it is flowing in Ireland.

In this excessive and increasing emigration I see the first step of our decline. Am I to be met with sarcasm when I express the danger I apprehend, or when I deplore the apathy with which it is regarded, or the inability (from whatever cause it may arise) of our rulers to check it, or the unfortunate circumstances which gave rise to it and those which have nourished its growth? We know that we must fall; it is a fond conceit to imagine we may prove an exception to the general rule of Nature; yet it were wise to watch every symptom of decline—to keep the hand upon the pulse—that we may prolong our existence and extend the period of our prosperity.

There are, however, peculiar circumstances which distinguish us from all other nations, and which, with due watchfulness, may tend to the continuance of our prosperity. We have a happy constitution, the gradual growth of ages, continually renewing, and, as we hope improving, a humane amelioration of our laws, a growing care of and regard to the welfare of the poorer classes—a purer working out of the principles of a religion which in its truth has never yet been fully developed. In these and many other matters we differ from all examples of bygone nations, and in this difference affords us the best founded hopes that our march of prosperity may be further extended than theirs.

But to return to Ireland. I am free to admit that, looking alone to individual interests, from Irish emigration under existing circumstances, almost every objection has been removed. The tears of his relatives and friends no longer accompany the parting emigrant, he no longer goes from his home, for it has ceased to be in Ireland; but he proceeds to provide a home for those whom he is compelled to leave behind in the lost land of his love, where they expect to find the prosperity that it is vain to look for in Ireland, and where they will find all those associations that constitute a home. It is not then for the Irish people, as they are, that I complain of emigration, but I deplore the circumstances that have brought on so frightful an evulsion of every feeling of country and of home.

I deeply regret that absence of foresight, that ignorance of conditions, or that want of ability to provide, which has tended so much to augment the predisposition to emigrate—it is an advice to the young huntsman when shaken from the saddle to regain it with as little delay as possible—when, by a severe dispensation of Providence, the working capital of so large a portion of the empire had been destroyed (for it was not the mere loss of a crop that gave sustenance to near three-fourths of the people, as some have weakly thought, but the annihilation of all means of future employment, that left utterly prostrate every employer in the country), it had been wise to restore the equilibrium with as little delay as possible, at any cost; it is lamentable there was not sufficient talent in the council of the nation to discover the means, and moral courage to use them.

To remove a blot from the page of our humanity 20 millions of public money was not thought too much, but the re-establishment of a third part of the empire was not entitled to such consideration; we were satisfied with limiting our views to the administration of food to the starving people, and that though largely, yet perhaps necessarily so, parsimoniously supplied, that it left a million of corses on the land; and this is to be said of an empire on which the sun never sets, and whose navy floats on every sea, commanding the resources of the world.

"But emigration has been the resource of every people where the population has become greater than the means of subsistence." Except in tribes of wandering Arabs, and in the single instance of the passage of the sons of Israel into the land of Egypt, both sacred and profane history is very barren in such evidences; I find it not in the eruptions of the Huns and other barbarous nations. The occupation of South America was not the consequence of an excess of population in a country from which the Moors had just been expelled, and which to this day is most thinly inhabited. That of North America is as little to be attributed to excessive population in a country thinned by the Wars of the Roses, and in which premiums were given on the exportation of her grain. Nor is the emigration of Ireland at this moment proceeding because "the population has become greater than the means of subsistence," for she is still a very large exporter of food and is capable of far exceeding her present productiveness. When her population did not amount to two millions, she was not more competent to their support; to what amount, then, is it requisite to reduce it?

Prostrated by the hand of Heaven, helpless of her own hand, Ireland had and has every claim on the sympathies of all mankind; is it manly, is it befitting a British yeoman to meet her calamities with jeers? A pull on the Treasury—on what Treasury? On that of England, or on that of the United Kingdom? to put her on her feet again, that she may stand by the side of England, adding to her wealth and her consequence, as she erst did in the fields of fame, to her glory; to raise her from the abism of degradation, which has made her a blot and a shame on the escutcheon of England; to bring her from a maudlin state of scarce being to a glorious angel by her side.

Is she to be twitted with the various and even contradictory views, which in her desperation she entertains of the modes of relief, when these, from their very numbers, show the necessity of her case, and when the right to entertain this glorious variety of opinions on every matter is a proud privilege of Englishmen?

I should have been happy long ago to see established the Belgian system, for which the Irishman, both from

his intelligence and from the small extent of his holdings, is well adapted; but instruction was required, and Belgian farming is about as much known in Ireland as farming in the moon is known in England; and another very great deficiency exists in the want of agricultural capital—it does not exist to the extent of a pound an acre. I would not make a pull on the Treasury to supply this capital, but it would be a politic administration of the public funds; but surely the intelligence of the Legislature might be taxed to frame a law that would give security to borrowed capital so employed. And years ago, the want of agricultural education ought to have been supplied by similar means to those now adopted at the eleventh hour, and even by wider ones, by parochial model farms of six or eight acres each. But the Government had its theoretical schemes, and the people theirs, and between the two stools practical measures found the ground. *J. M. Goodiff, Granard, Nov. 8.*

## Home Correspondence.

*Barley after Wheat.*—I have never yet seen any notice in your Paper of the exceedingly prejudicial effects of growing Barley on land which is afterwards intended for Wheat; it may be that I am mistaken in my supposition; but I think not. Some years ago I attempted to grow Wheat on the same land, year after year, and for six or seven years succeeded tolerably well; but after that time, partly owing to the arguments of the thin seed school, and partly to an unfavourable winter, there were so few plants left in the spring, that it was judged advisable to drill in Barley to make up the crop; this was done, and Barley and Wheat, taken together, produced an excellent crop (48 bushels to the acre); the field was again sowed with Wheat, which up to the time of flowering looked exceedingly well and gave promise of another abundant crop; but after that time three-fourths of the Wheat died at the root, without ripening any grain, and the crop was a failure. This was a puzzle to me, and was so discouraging that I gave up the experiment; but in reading the Agricultural Society's Journal, some months afterwards, I found, in an essay on the Agriculture of the East Riding of Yorkshire, that the farmers of that district had, in a great measure, given up the growth of Barley in consequence of the after crops of Wheat going off by night ripening, and the explanation of this night ripening proved that it was identical with what I had observed in my own field; if such effects are general, it becomes a question whether it is desirable to grow Barley so frequently at the expense of the after crop of Wheat; and it may be as well for Barley growers to ascertain this generally, which I think may be easily done in the following manner:—Let two plots of land in the same field, manured in the same manner, be sowed, one with Wheat and the other with Barley, and when the crop is reaped plough up the land and sow both plots again with Wheat—if, as I suppose, that on which the Barley grew the previous season, the Wheat perishes by night ripening, whilst no such effect is observed where the Wheat was grown the year before, it will show what an exhausting crop Barley is on Wheat land, and it may make some farmers pause before they determine to sow Barley, at least in every four years' rotation. I found, in my Wheat growing experiments, that soluble silicate of soda was a very valuable manure, and I attributed the bad effects of the Barley to its abstracting so much larger a portion of this from the soil than was required by the Wheat. Query—Am I right in this supposition? if not, what is the cause of this? or is such an effect generally observed? if it is, what is the remedy? The Clover sickness seems to puzzle all the knowing ones. Does not night ripening also? I have again commenced growing Wheat on the same land, year after year. Last year I had 40 bushels to the acre; this year I have 50, and hope, with a tolerable season, to have 60 next year. Give me a Wheat short enough in the straw, and I will engage to grow 80; this looks very like an idle boast, but I really do not see any difficulty in it, if I could get the straw to stand upright. Do any of your correspondents possess a Wheat of good quality, which is shorter in the straw than "Piper's Thickset?" If so, where is it to be obtained? *Clitheroe.*

*Cream Cheeses.*—In your "Notices to Correspondents" in your last Paper (that of the 6th Dec.), you say that it is made by adding the cream of one meal's milk "to the milk immediately taken from the cow—this, after being *made* and pressed two or three times, and carefully turned for a day or two, is fit for use." With all due deference to you, Mr. Editor, this is anything but a good receipt. How is anybody who never made a cream cheese to make one by it? Do you mean that all the cream from one meal of milk, and all the milk from the next, are to be added together? If so, it would be a very so-so affair; and what do you mean by being *made?* The lady who never made one, will be apt to say, "If I knew how to make it, there would be no occasion to ask; and here is a learned editor assuming we are all as wise as himself." That I may not be guilty of the fault of which I am complaining, I add a receipt or two for making cream cheeses, for the excellence of which I will vouch. Gentle reader! Do you wish to make a cream cheese for your own eating? If so, observe what Dean Swift says:—

> "Put no water at all,
> For it maketh things small,"

and I say put no milk at all, but take a quart of good cream, and having prepared a piece of good stout Barnsley linen, by soaking it in salt and water—made strong enough to float an egg—place this in a bowl, and pour the cream into it; tie it up loosely, and hang it up in a tree in your garden. Next day break down the cream with a wooden spoon, and then hang it up again. Repeat this process for two or three days, and by that time the whey will have separated from the cream, which will be about the consistency of butter; collect this carefully into a muslin cloth, place it on a board with another board upon it (that is, supposing you have no cheese mould), and put a 4lb. weight upon it; turn it daily for two or three days, and then take it out of the cloth and lay it upon the board without weight, daily turning it until it is ripe, which will be in about 10 days in cool weather; if you don't want a rich cheese use one quart of milk to one quart of cream, and put in a little salt (a pinch), and keep the mixture in a warm kitchen, stirring it daily for two or three days; it will then have thickened considerably, and may be hung up in the linen cloth and treated as before described. A lady friend, to whom I have submitted this receipt, tells me I am wrong in not using milk. She says, "the addition of a little milk (say one pint to one quart of cream) makes the cheese more velvety and handsomer than when made all of cream." (Try both.) A much readier way of making a cream cheese than this has been successfully practised in this neighbourhood. Take your cream (a quart), tie it in your salted linen cloth, giving it as much room inside as the size of your cloth will allow, and then bury it in moist river or sea sand which has been thoroughly washed; if this is done overnight the capillary attraction of the sand will have carried off the whole of the whey by next morning, and you will have a cream cheese, almost impromptu. If your cream is not very good, or if you use half milk, the precaution must be taken of mixing the milk and cream some days previously, stirring it and keeping it in a warm room to give it consistency, otherwise it will almost all escape through the cloth. *Clitheroe.*

*Turnipy Butter.*—I may as well make a clean breast of it, and give all the receipts I am in possession of, which are likely to interest your dairy readers. When angling in Wharfdale two or three years ago, I was driven by a heavy shower of rain to shelter in a small farm-house, when the farmer's wife was just starting to market with her basket of butter. As the rain detained her as well as me, I got into conversation with her about her dairy. She observed, "However many Turnips our cows get, we have never Turnipy butter." "Well, that is a secret worth knowing. How do you manage?" "I mix half a pint of scalding hot water with each gallon of milk when I syle (strain) it, before setting it away in the bowls, and this simple plan entirely removes all the taste of the Turnips." This is very easily tried, and those of your readers who are troubled with butter of this kind, may make the experiment with little trouble. *Clitheroe.*

*Game.*—It grieves me to see the violent way in which some people are attacking the Game-laws. Now listen, Mr. Cuthill. I am a proprietor (I wish I was), of some 3000 acres, principally surrounding my house, wherein I reside for at least 10 months out of the 12, doing as much good as I can to my neighbours, by spending most of my income on the spot. One of the greatest pleasures I have through the year is to get some of my friends around me, and turn out on a fine day, and shoot my 10 or 20 brace of partridges, or a few pheasants, or hares, as it may be, and thoroughly do we enjoy ourselves. Now why should you take from us this enjoyment? My tenants have no cause to complain, nor do they; for in letting my farms, I look upon it as a commercial transaction, and if I prefer taking any part of the yearly value in game chasing, thus to pay for my pleasure, what right have you to step in and say "No, you shall take it all in money?" My neighbours don't complain, for, since the hare killing act, a shilling will find them a license to kill and destroy *ad libitum*; so the remedy is in their own hands. Rabbits I consider vermin, though they are good enough to eat (when did you eat a cat last, that you know her pussyship to be as good, Mr. Cuthill?), and I take care to keep them down. Winged game I am convinced, as Mr. Wilkins says, do far more good than harm. As for your saying that the land will rise in price when the Game-laws are abolished, it is just stuff. The extent of land where game is highly preserved is very small; what, then, should make all the land rise in price? "Oppressed farmer!" I'll undertake to say that if the votes of all the farmers in England were taken as to the abolition of the Game-laws, there would be a decidedly large majority in their favour. How many farmers are fond of shooting, themselves? And how many more delight to show their sportsmen friends some game on their farms? The fact is, Mr. Cuthill, you choose to look at those estates only where game is preserved for battue shooting, which I, passionately fond of shooting as I am, consider a tame, unsportsmanlike, gluttonous amusement. They are exceptional cases, and serve to bring all advocates of the Game-laws into disrepute. But don't, for their sake, spoil one of the principal pleasures a country life brings; that evil will cure itself; or, rather, free-trade will cure it. When these inordinate game preservers find that their rents must fall yet a little lower, they will sink their game, and if they are really fond of sport, will take it in a rational way. You speak as if all game were to be extirpated. Why? Those animals were not created for nothing. One might as well say—extirpate market gardeners. "But they are articles of luxury;" so are Strawberries; there is more nourishment even in the despised rabbit than in a tenpenny pottle of them. And if laws are to be abolished because rascals break them, then I claim to walk into your garden, Mr. C., and help myself as I like, and have any law abolished whereby I may be punished. *A. R. T.*

## BIRMINGHAM SHOW OF POULTRY.

It is almost impossible on viewing this exhibition of 1851, to believe it is the offspring of the small show of 1848, and the result speaks volumes for the enterprise and capabilities of the people of Birmingham.

If the efforts of the committee and directors had been confined to the mere exhibition of poultry, and the gratification of the sight-seeing public, little would have been attained beyond the mere addition of one more spectacle to the many that are the harbingers of Christmas.

But they had higher objects in view; they saw in poultry a valuable auxiliary to the agriculturist; they found it a neglected, and almost despised, class, and they directed their best energies and endeavours to rescue it from what they considered a position below its merits. To do this, they prepared a long list of prizes embracing every known breed, and lest any should be excluded, they empowered the judges to award extra medals or money prizes to new and distinct varieties.

They also issued instructions that "high condition, beauty of plumage, and purity of race, should be preferred above mere weight;" thus leaving judges free from a rule which has been too often the bane of infant societies, and has disheartened the possessors of really valuable and profitable specimens.

These are not the only merits of their arrangements; they have neglected nothing that could contribute to to make the exhibition the first of its class. Their liberal treatment of the dealers who send extra stock; the care taken of the birds while exhibited, and the regularity with which they are sent off when the show is closed, entitle them to the thanks of all interested in the subject.

It would be unfair to conclude here, without giving the due meed of commendation to Messrs. Wright, John Lowe, and Shackel, to whose endeavours the town of Birmingham and the lovers of poultry are mainly indebted for this display.

If any were sceptical as to the good result of this exhibition, the gradual progress and improvement in the more useful breeds would prove that when such societies as this are directed aright, success must be the result. This introduction is rendered necessary because Penzance, Salisbury, and other towns are following the example of Birmingham; the note of preparation has sounded; and while they cannot hope to equal "the Midland Counties," they may, by framing their rules and conduct after their model, ensure the accomplishment of their desires.

At this show, worthy of the year in which it was held, there were 1056 entries for competition, comprising 3440 birds, exclusive of pigeons or pheasants.

The first in order on the prize list came the Spanish. This was not so well contested as last year; the birds were not so good, and all the principal prizes were carried off by Mr. Peck, of Wigan.

It would be a pity this breed should fall off; the beauty of the birds, the size of their eggs, and their peculiar fitness for a residence in the back-yards and scanty outlets of a town, render them in many respects desirable. There were 53 entries in this class.

A far more satisfactory display awaited the admirers of the grey and speckled Dorkings; the entries amounted to 107; the gradual appreciation of this most useful bird of the gallinaceous tribe cannot be better proved than by the increase of this class, and the quality of the birds sent for competition. Many were perfect, and all were good. It is hard to look on a Dorking pullet, and not to think while weighing her good qualities (and the century and a half she has stood her ground against all new comers), that she realises in herself the valuable properties the Vicar of Wakefield's wife sought in her wedding dress, which was chosen "not for its fine glossy surface, but for such qualities as would wear well." The Hon. and Rev. S. W. Lawley, here gained a first prize, and extra silver medal for unusual merit; and Mr. George Lowe, of Birmingham, was equally successful.

The class in which those who are seeking their fancy, rather than utility, and that in which the greatest interest was excited, both from the quality of the birds, their value, and the number of entries, was the Cochin China; the competitors here numbered 153.

The amateur may see such an exhibition again, but he will never see it surpassed; for nothing could exceed the beauty of many of these birds. There were hens uniting to faultless symmetry and colour the weight of 10 lbs., and a cock, the property of Mr. Sturgeon, of Gray, weighed 11½ lbs. There were, doubtless, heavier birds, but their visible defects and deviations from the "line of beauty," rendered any appeal to the scale unnecessary, even to give them hope by the side of their more favoured competitors.

The first prize and extra silver medal for unusual merit were awarded to Mr. G. J. Andrews, of Dorchester; they were richly merited by a pen of birds which have never yet been equalled. Mr. Sturgeon, of Gray, had similar success; his birds were very beautiful, and heavier than his rivals, but, on the whole, the balance leaned to the first lot. The difference was but trifling, and it may fairly be doubted whether two such pens ever before competed; next in rank came Mr. Steggall, of Weymouth. These three gentlemen took ten prizes in this class. Mr. Herbert, of Powick, Worcestershire,

successfully exhibited some choice specimens of white Cochin China fowls.

Little can be said of the Malays. Either these birds are out of fashion, or the owners are careless to exhibit, for the display was much below the average.

The admirers of the game fowl were regaled with a magnificent display of this beautiful bird; 126 pens entered the lists; and although in this, as in many other classes, the judges exceeded the number of prizes to be awarded, they with regret left many deserving birds undistinguished, and were obliged to content themselves with a general commendation of the whole class. Messrs. France, Parkes, and Bullock received large silver medals in this competition.

Next in rank came the elegant and useful gold and silver pencilled Hamburgh, the "beau ideal" of a fowl for a lodge gate, and the caterers for the breakfast-table, when others have ceased to lay. There were many beautiful pens of these birds; and so careful has one gentleman, Mr. Edward Lowe, of Cumberford Mill, near Tamworth, been in breeding and selecting his birds of the golden variety, that he carried off the three principal prizes. In the silver, Mr. Thomas Lowe, of Whateley, near Fazeley, did the same.

Yorkshire claims pre-eminence in the "Spangles," and maintained her reputation by securing the prizes.

The Poland fowls, in the different classes, were of average merit; the best pen (silver) being the property of Mrs. Hosier Williams, of Eaton Marcott, Shrewsbury.

Among the new varieties were two Scotch fowls, the property of his Royal Highness Prince Albert, which gained a prize; some remarkably fine cuckoos, the property of the Lady Guernsey; and some Ancona fowls, admired, like some other things, on account of their extreme ugliness. There were same good pigeons; and the bantams, though not good, were better than last year.

So many fine geese have seldom been seen together; their weights may speak for them, the pen rewarded with extra silver medal weighed (three birds) 63 lbs. of this the gander alone brought 29 lbs. to the scale. Mr. Towneley Parker, of Sutton Grange, gained three prizes in this class; and the merit of the whole may be imagined when it is stated the unsuccessful competitors averaged from 50 lbs. to 59 lbs. per pen.

The ducks were a good and numerous class.

The turkeys were excellent.

These were the principal points of this great exhibition; but, among the extra stock, there were birds requiring especial notice.

The most beautiful and interesting to the naturalist were three hybrids between the golden and common pheasants. These exquisite birds show the mixture of both parents, but lean more to the golden in shape and tail. The more brilliant colours are sobered down by the mixture of plain brown with all the feathers, except behind the ear, where a small tuft stands out in relief from the otherwise sober plumage. There is plain distinction of sex, two having a small ripper, and the golden cock's tail in full length, while the third is evidently a hen. Mr. Shackel, of Blenheim House, exhibited fine specimens of the gold and silver pheasants, which both gained prizes. Mr. C. Sturge, of Birmingham, was successful in three classes of pea-fowls. There were some very perfect hybrids between the pheasant and fowl exhibited by Lord Guernsey, and a beautiful bird bred between the pintail and wild duck, by Lord Wenlock.

Forty thousand persons were admitted, and the money taken at the doors amounted to 1665*l.* The amount would be greater were it not that subscribers are admitted gratis, on showing their cards. Hundreds of the nobility and gentry were there from all parts of England, and many of them were competitors in the different classes.

The advantage of a poultry show is manifest, because it opens the arena of competition to the many who, from situation or circumstances, cannot compete where quadrupeds are alone admitted. It points out the most useful breeds, and it gives the uninitiated the opportunity of forming and maturing a judgment on them.

The judges were—the Rev. E. S. Dixon, of Cringleford Hall, Norwich; Henry Hinxman, Esq., of Dumford House, Salisbury; John Mott, Esq., of York; and Mr. John Baily, 115, Mount-street, London.

Class I.—Spanish (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. John Henry Peck, Wigan; 10*s.*, Mr. John Henry Peck, Wigan; 5*s.*, Mr. John W. Ward, Repton.

Class II.—Spanish (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. John Henry Peck, Wigan; 10*s.*, Mr. Edward Simons, Dale End, Birmingham.

Class III.—Spanish (Cock and one Hen).—10*s.*, Mr. John Henry Peck, Wigan.

Class IV.—Dorking (Cock and three Hens).—*1l.* 1*s.*, and Extra Medal, Mr. George Lowe, Smithfield, Birmingham; 10*s.*, Mr. T. B. Wright, Great Barr, Staffordshire; 5*s.*, the Hon. and Rev. Stephen Willoughby Lawley, Escrick Rectory, near York.

Class V.—Dorking (pen of six Chickens).—15*s.*, and Extra Medal, the Hon. and Rev. Stephen Willoughby Lawley, Escrick Rectory, near York; 10*s.*, the Rev. John Hill, the Citadel, Hawkestone, Shrewsbury; 5*s.*, Thomas Townley Parker, Esq., of Sutton Grange, near St. Helen's, Lancashire; and Mr. Edward Mander, Park Farm, Beau-desert, Henley-in-Arden.

Class VI.—Dorking (Cock and one Hen).—10*s.*, Thomas Townley Parker, Esq., Sutton Grange, St. Helen's, Lancashire; 10*s.*, Mr. George Lowe, Smithfield, Birmingham; 10*s.*, Mr. George Lowe, Smithfield, Birmingham.

Class VII.—White Dorking (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. Joseph Jennens, Moseley; 10*s.*, the Right Hon. the Earl of Beauchamp, Madresfield Court, Worcestershire; 5*s.*, the Rev. George Hutton, Gate Burton, near Gainsborough.

Class VIII.—White Dorking (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. Nathaniel Antill, Portsea, Hants.

Class IX.—White Dorking (Cock and one Hen).—No prize awarded.

Class X.—Cochin China (Cock and three Hens).—*1l.* 1*s.*, and Extra Medal, Mr. George James Andrews, Dorchester; *1l.* 1*s.*, and Extra Medal, Mr. Thomas Sturgeon, Manor House, Grays, Essex; 10*s.*, Mr. Frederick Charles Steggall, Weymouth, and Mr. George James Andrews, Dorchester.

Class XI.—Cochin China (pen of six Chickens.)—15*s.*, and Extra Medal, Mr. Thomas Sturgeon, Manor House, Grays, Essex; 15*s.* or small Silver Medal, for White Cochins, Mr. Edmund Herbert, Powick, Worcestershire; 10*s.*, William Cust Gwynne, Esq., M.D., Sandbach, Cheshire; 10*s.*, for White Cochins, Mr. Edmund Herbert, Powick, Worcestershire, and Mr. Thomas Sturgeon, Manor House, Grays, Essex; (Extra), 15*s.*, or small Silver Medal, Mr. Thomas Sturgeon, Manor House, Grays, Essex; (extra), 10*s.*, Mr. Thomas Sturgeon, Manor House, Grays, Essex, and Mr. George James Andrews, Dorchester; (Extra), 5*s.*, Mr. Charles Frderick Steggall, Weymouth; and William Cust Gwynne, Esq., M.D., Sandbach, Cheshire.

Class XII.—Cochin China (Cock and one Hen).—10*s.*, Mr. James Cattell, Hartfield House, Mosely; 5*s.*, Mr. Frederick Charles Steggall, Weymouth; 10*s.* (white), Mr. George Graham, Yardley, Worcestershire; 5*s.* (white), Mr. Edmund Herbert, Powick, Worcestershire.

Class XIII.—Malay (Cock and three Hens).—5*s.*, Mr. Edward Armfield, Edgbaston.—No 1st and 2d prizes awarded.

Class XIV.—Malay (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. James Oldham, Nether Whitacre; 10*s.*, Mr. James Oldham, Nether Whitacre.

Class XV.—Malay (Cock and one Hen).—5*s.*, Mr. Edward Armfield, Edgbaston.

Class XVI.—Game Fowl (Cock and three Hens).—*1l.* 1*s.* and Extra Medal, Mr. Edward H. France, Ham-hill, near Worcester; 10*s.*, Mr. Benjamin Williams, Lozells, Handsworth; 5*s.*, Mr. James Thomas Wilson, Redditch; *1l.* 1*s.*, or large Silver Medal, Messrs. William and James H. Parkes, Camphill, Birmingham; *1l.* 1*s.*, or large Silver Medal, Mr. Edwin L. Bullock, Hawthorn House, Handsworth; 10*s.*, Mr. Isaac Avery, King's Norton, Worcestershire; 5*s.*, Mr. Thomas Smith, Cheapside, Birmingham.

Class XVII.—Game Fowl (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. Edward Glover, Olton Green, Solihull; 10*s.*, Mr. William Williams, Ox Hill, Handsworth; 5*s.*, Mr. Edward Barber, Monkspath.

Class XVIII.—Game Fowl (Cock and one Hen).—10*s.*, Mr. George Graham, Yardley, Worcestershire; 5*s.*, Mr. Edward Lowe, Comberford Mill, near Tamworth; 10*s.*, Mr. Edwin L. Bullock, Hawthorn House, Handsworth; 10*s.*, Mr. Thomas Smith, Cheapside, Birmingham.

Class XIX.—Golden Pencilled Hamburgh (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. Edward Lowe, Comberford Mill, near Tamworth; 10*s.*, Mr. James Oldham, Nether Whitacre; 5*s.*, Mr. John Whiting Ward, Repton.

Class XX.—Golden Pencilled Hamburgh (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. Edward Lowe, Comberford Mill, near Tamworth; 10*s.*, Mr. John Whiting Ward, Repton.

Class XXI.—Golden Pencilled Hamburgh (Cock and one Hen).—10*s.*, Mr. Edward Lowe, Comberford Mill, near Tamworth.

Class XXII.—Golden Spangled Hamburgh (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. Henry Clapham, Aireworth, near Keighley, Yorkshire; 10*s.*, Mr. Joseph Silk, jun., Beehive Inn, Handsworth; 5*s.*, Mr. Charles John Mold, Makeney House, Belper.

Class XXIII.—Golden Spangled Hamburgh (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. James Blackham, Thorohill Farm, Handsworth; 10*s.*, Mr. William Banister, Handsworth.

Class XXIV.—Golden Spangled Hamburgh (Cock and one Hen).—10*s.*, Mr. William Dawson, Handsworth.

Class XXV.—Silver Pencilled Hamburgh (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. Thomas Lowe, Whateley, near Fazeley; 10*s.*, Mr. Thomas Lowe; 5*s.*, Mr. William Hazeldine Austin, Norton, Shiffnall, Shropshire.

Class XXVI.—Silver Pencilled Hamburgh (pen of six Chickens).—10*s.*, or small Silver Medal, Mr. Thomas Lowe; 10*s.*, the Right Hon. Viscount Hill, Hawkstone, Salop.

Class XXVII.—Silver Pencilled Hamburgh (Cock and one Hen).—10*s.*, Mr. Thomas Lowe.

Class XXVIII.—Silver Spangled Hamburgh (Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. William Ludlam, Bradford, Yorkshire; 10*s.*, Mr. Timothy Town, Keighley, Yorkshire; 5*s.*, Mr. John Harlow, Moseley, near Birmingham.

Class XXIX.—Silver Spangled Hamburgh (pen of six Chickens).—15*s.*, or small Silver Medal, Mr. Joseph Rinder, Elmwood Grove, Leeds; 10*s.*, Mr. James Whilock, High-street, Birmingham.

Class XXX.—Silver Spangled Hamburgh (Cock and one Hen).—10*s.*, Charles Robert Colville, Esq, Stretton Hall, near Atherstone.

Class XXXI.—Poland Fowl (black, with white crests—Cock and three Hens).—*1l.* 1*s.*, or large Silver Medal, Mr. Edward Hewitt, Eden Cottage, Sparkbrook, near Birmingham; 10*s.*, Mr. George H. Smith, Villa Road, Handsworth; 5*s.*, Mr. Edward Simons, Dale End, Birmingham.

Class XXXII.—Poland Fowl (black, with white crests—Pen of six Chickens).—No prize awarded.

Class XXXIII.—Poland Fowl (black, with white crests—Cock and one Hen).—5*s.*, Mr. John Charles Mould, Makeney House, Belper; no first prize awarded.

Class XXXIV.—Poland Fowl (golden—Cock and three Hens).—1*s.* 1*s.*, or large Silver Medal, W. G. Vivian, Esq., Singleton, Glamorganshire; 10*s.*, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury.

Class XXXV.—Poland Fowl (golden—Pen of six Chickens).—10*s.*, W. G. Vivian, Esq., Singleton, Glamorganshire.

Class XXXVI.—Poland Fowl (golden—Cock and one Hen).—10*s.*, Mr. T. B. Wright, Great Barr, Staffordshire.

Class XXXVII.—Poland Fowl (silver—Cock and three Hens)—*1l.* 1*s.*, or large Silver Medal, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury.

Class XXXVIII.—Poland Fowl (Silver—Pen of six Chickens)—15*s.*, or small Silver Medal, Mr. John Whiting Ward, Repton. No second prize awarded.

Class XXXIX.—Poland Fowl (Silver—Cock and one Hen).—10*s.*, Mr. James Bissell, Birmingham.

Class XL.—For any other distinct breed.—10*s.*, his Royal Highness Prince Albert; his Grace the Duke of Sutherland, Trentham Hall, Staffordshire.

Cuckoo.—15*s.*, or small Silver Medal, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury; 10*s.*, the Right Honourable Viecountess Guernsey, the Bury, near Leamington.

Rumpless.—15*s.*, or small Silver Medal, Mr. George C. Peters, Charlton Cottage, Moseley; 10*s.*, Mr. Thomas Beetenson, Vauxhall Grove, Birmingham; 5*s.*, Mr. Thomas Beetenson, Vauxhall Grove, Birmingham.

Andalusian.—10*s.*, Mr. John Taylor, Crescy House, Shepherd's Bush, near London.

Ancona.—10*s.*, Mr. Edward Simons, Dale End, Birmingham,

Italian or Frizzled.—*1l.*, W. G. Vivian, Esq., Singleton, Glamorganshire; 15*s.*, or small Silver Medal, Mr. Charles Sturge, Birmingham; 5*s.*, Mr. George Wigley, Golden's-court, Bull Ring, Birmingham.

Shanghae China.—10*s.*, Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury.

White Poland.—10*s.*, W. G. Vivian, Esq., Singleton, Glamorganshire.

Mixed.—5*s.*, George Fleming, gardener to his Grace the Duke of Sutherland.

Class XLI.—Bantams (Cock and two Hens), "Gold laced."—10*s.*, Captain Clement, Delves Hill, Summerhill, Newport, Shropshire; 5*s.*, Mr. James Bissell Birmingham.]

Bantams, "Silver Laced."—10*s.*, Mr. James Bissell, Birmingham; 5*s*, Mr. Edward Hewitt, Eden Cottage, Sparbrook, near Birmingham.

White Bantams.—10*s.*, Mr. Joseph Rinder, Elmwood Grove, Leeds; 5*s.*, the Rev. John Hill, the Citadel, Hawkstone, near Shrewsbury.

Black Bantams.—10*s.*, the Rev. John Hill, the Citadel, Hawkstone, near Shrewsbury; 5*s.*, Mr. James Dixon, West Brook-place, Horton, near Bradford, Yorkshire.

Other Varieties.—10*s.*, Mr. Joseph Rinder, Elmwood Grove, Leeds; 5*s.*, Mr. Joseph Rinder, Elmwood Grove, Leeds.

Owing to want of room we are forced to omit the commendations of the judges, as well as the prize list of pigeons and water-fowl.

## BIRMINGHAM SHOW OF PIGS.

Class XXIX.—Fat Pigs, not exceeding 10 months old.

210, first prize was awarded to three thick, well-formed white pigs; heads pretty, and quality good; a slight defect behind the shoulder, plenty of size for 9 months. Shown by Mr. Taylor, of Moseley Hall.

212, 2d prize; very pretty pigs; straight, well-formed, and of good quality. Shown by Mrs. Martha Emus, of Handsworth.

Class XXX.—Fat Pigs, under 15 months.

231, 1st prize; very useful white pigs. Shown by Mr. Wilkins, Sutton Coldfield.

232, 2d prize; very plain sort of pigs, long legs and noses, which is the characteristic of the Tamworth breed. Shown by Mr. Hollister, of Birmingham.

Class XXXI.—Fat Pigs, over 15 months.

250, 2d prize; large well-made pig, with pretty head, and fine quality. Shown by Mr. Shilcock.

251, 1st prize; large, useful pigs, but nothing very striking. Shown by Mr. Perks, of Kingsbury.

In the three classes for fat pigs there are some very large and good animals, and many are highly and justly commended. One was disqualified for incorrectly stating the age.

Class XXXII.—Pigs of Large Breed, not exceeding 7 months old.

263; five very pretty sort of pigs, the truest specimen of the Berkshire I saw there. Not many of that breed were exhibited.

272, received a Silver Medal. This pen contained a great long sow, with long and strong legs, and a nose to correspond. The sow of course, is not shown for a prize, and she does her offspring but little credit; the little ones look very pretty, from their various colours. I suppose this fancy colour has won the medal for them, for I see nothing else very attractive about them. Shown by Mr. Cartwright, of Burton-on-Trent.

278, 1st prize. These pigs are very large for the age, five months and ten days. To be precise, I do not say that Mr. Perks would make an incorrect statement knowingly; but I do say, that though I am acquainted with both large and small breeds of pigs, I never saw pigs come to the same height at the same age as these and several others in this class.

271 is the next I will mention, stated at 15 weeks old. There appears to be more than one sort in this pen; and certainly there is a great difference in size and quality—one of them measures from the setting on of the tail to the setting on of the ear, 3 feet 7½ inches, and girts the same (this must be truly a large breed); besides it is only in fair store condition. I have had in my care a very large sow, which won the first prize at Leeds (the very nursery of large pigs), and at Scarborough, Huddersfield, Bradford, and the Royal Agricultural Society of England's first prize for the large breed, besides several other local shows; and bred some very large pigs, some of them kept upon new milk till three months old, and afterwards well kept, but I never could come anywhere near the pig in question.

276 and 277, shown by Mr. Abbott, of Leeds; one of these pens, to a close inspection, look like two families. Perhaps some follow the father, and some the mother!

Class XXXIII.—Breeding Pigs of Small Breed, not exceeding 7 months.

293, 2d prize; these are very pretty compact pigs, equal in size and quality, and are a first-rate sort; and are in my opinion justly entitled to the first prize. Shown by Mr. Ludlam, of Bradford.

294, 1st prize, shown by Mr. Ludlam; thick useful pigs; fair quality, not so equal as 293; they are too large to stand in the class. If such pigs are allowed to compete for the prize of the small breed, the most valuable specimens will never appear in competition against them. It appears both pens are by the same boar, but the dams I will venture to say are not own sisters, nor yet both of the same breed.

Lord Radnor may be justly proud of the perfection that he has brought his pigs to, and he has exhibited some good specimens in this class; but what chance has he against pigs that can easily be made to weigh 20 score at an early age, and 30 at full age? These in my opinion ought to be in the large class.

296, shown by Mr. Pemberton, Leeds. In this pen like has not produced like. One is a fine well made pig, with a very fine coat; had his plates and flank been a shade better there would be few in the yard so good, while some of the others present a very different appearance, being dressed in a very much coarser jacket, nor equal in size. The best boar pig was purchased, I understand, by Mr. Graham, of Yardley.

304, shown by Mr. Brown, of Wigton, Cumberland. This pen is an excellent specimen of the Cumberland white pigs of the small breed; had they been a little older they would, in my opinion, have stood second to none in the class; their hair, quality, and symmetry cannot be surpassed. As a proof of their excellence, I would just state that they were all readily sold at good prices, and further orders were given. It will be re-

membered that Mr. Brown exhibited the same breed of pigs in several classes last year with great success. When the same stamp of pigs are exhibited every year by the same exhibitor, it shows that attention is paid to breeding.

The Tamworth breed appears to be great a favourite in the neighbourhood of Birmingham, and I am quite at a loss to know why they claim preference over any other breed. There certainly was a few fair pigs shown of that breed, but the generality of them are long and coarse legged, with bad hams, with long noses, and as free from cheek as a greyhound. They do not, in my opinion, possess that propensity to fatten that many other breeds exhibit. I would rather be the eater than the feeder of them. Last summer, a gentleman from Kentucky was with me, wanting to purchase pigs, when I showed some very good ones. He admired them much, but did not buy, on the ground of their carcase being too heavy for their small legs! He wanted them stronger and longer in the leg, as he had to send them a 70 days' journey to market. When he calls again, in the spring, I shall be able to inform him where he can get suited to a hair's breadth. *K.*

## Societies.

CARRICK.—Mr. KENNEDY, of Myremill, made the following remarks on the *Feeding of Stock*, at the late annual meeting of this Society:—

I hold true the old saying, "the more cattle the more corn;" that is, I think a very sure evidence of a farm being in good order is, when it supports a large herd of cattle upon it. You have thus a strong argument for supplementing your green crops by giving whatever substance you can find cheapest, taking into account its feeding properties. I admit, however, that there is room for difference of opinion as to these substances. Turnips, like the Grasses, are the best test of quality of the land on which they are grown. I mean roots grown on land of the best quality will lay on as much beef or mutton, without either cake or corn, as roots grown on land of inferior quality will do with a moderate quantity of either of these auxiliaries. It is, of course, impossible to lay down a rule to be followed, applicable to every farm, as every one will be guided by circumstances, according to the quality of his land and the facility of procuring manure in the locality in which he resides. It may be laid down as a general rule that, when cattle are put up to fatten, the temperature of the byre must be kept as even as possible. Their improvement will depend very much on the temperature at which the animals are kept. If the place is cold, they will consume more food without a corresponding degree of improvement; for a large proportion of their food will then be consumed, to keep up the heat of the body. I have found my cattle thrive better on a moderate quantity of roots than when they have been supplied with as many as they could consume, provided, however, that they also got bulk of other food. A bullock of 7 cwt. will require to get from 60 to 70 lbs. of roots per day; a larger quantity, in my opinion, is only lost as bulk, and is not assimilated by the animal. Bulk being necessary to enable the digestive process in herbivorous animals to proceed; for without it they cannot ruminate, and rumination is necessary to ensure their thriving and keeping in health. I have given my cattle for some years past a cooked food, composed of Linseed or oilcake-meal, Bean-meal, bruised Barley, Oats, or bran, being guided by their respective prices, viewed in connection with their feeding properties, and laying it down latterly as a rule never, if possible, to exceed 5*s.* or 6*s.* a month for extra food for each animal. These ingredients, made up with chopped Oat-straw or hay, given as a midday feed, being in a succulent and easily digested form, the animals eat greedily, thrive on it, and the Turnips are economised. By this means you convert a great deal of the fodder of the farm to a more valuable use than when given in a dry state. I have likewise found Rye-grass hay a very good supplement to Turnips. Cattle, given roots grown on good land, and what Rye-grass hay they will eat, will generally thrive as well as those fed on straw, with cake or corn, as auxiliary to Turnips. I think it better to give a small quantity of extra food to cattle for a length of time, in preference to giving them none for the first three or four months, and a large quantity the last two, because when a large quantity is given, a good deal of it passes through the animal without its being assimilated. In proof of this opinion, it is generally found that cattle long fed on a moderate allowance of extra food, kill better than when given a large quantity for a short time. Cattle should not be fed oftener than three times per day; when fed oftener they do not thrive so well, being kept more on their feet, and having less time for lying to ruminate their feed. I am satisfied that the extra expence of washing and cutting the Turnips for cattle will pay, and that a more perfect preparation of their food, rendering it more soluble, will amply repay any one who tries it. How is it that dairy cows, after calving in the spring of the year, and while in the house, yield more milk if their food is given them in a prepared or more soluble state, than when dry? Why, just because the organs act more easily on the feeding ingredients contained in that food, whatever it is. I think it quite clear that the same results will follow with feeding cattle. Dr. Anderson stated, in my hearing, that he thought it could be proved cattle convert into flesh the greatest amount of nitrogen when it was in the most digestible condition, or when it was in a state to be taken up by the organs with the greatest rapidity. In this opinion I entirely agree, having found my cattle thrive better on prepared food at a less expense than when they got Bean-meal, or cake in a concentrated form. This opinion, however, I am aware, is very much laughed at by many of the feeders in some parts of the country. I hold a distinct opinion that oilcake and Beans are the two articles which contain the most valuable feeding properties. Dr. Anderson has also stated this to be proved by scientific analysis, and my own experience enables me to concur with him. A ton of Beans contains 99 lbs. of nitrogen, and 32 lbs. of oil or fatty matter. A ton of oilcake contains 103 lbs. of nitrogen, and 224 lbs. of oil, these being the most valuable ingredients. Rape-cake contains nearly the same amount of feeding properties as oil-cake, and I have used it extensively for some years past, as its price is about half that of oilcake, and it helps to cheapen the feed. It can, however, only be given in small quantities, as it is bitter in taste, and cattle will not eat it by itself with relish. I hold, that those farmers who give extra food to their stock have been better paid than those who give none. In 1849 it was considered that the Turnip crop in this country was almost entirely lost, that feeders did not realise more for their stock, over the inlaid price, than paid for their extra food; this, I am sorry to say, was true; but those who gave no extra food could not turn their stock into money, while those who fed high could always sell, and had the satisfaction of putting a good article into their customers' hands, besides obtaining an increased quantity and quality of manure.

## Farmers' Clubs.

CIRENCESTER.—The annual meeting and show of cattle, connected with this Society, took place lately. The most vigorous speech delivered on that occasion was from Mr. Peter Mathews:—

"I am an advocate for improvement, gentlemen (said Mr. Mathews with much energy), but most inveterate against deception. The theorists held out that wonderful results would flow from free trade, and it had led the farmers, the public, and he believed the legislature, astray. The state of things commenced about 10 years ago, when farmers could not travel in a railway carriage, without being taunted about want of skill; but time had proved that there was more difficulty in performing farming than in writing about it. At a meeting, held a few years ago, at the White Hart Inn, a gentleman got up and said there was five times more corn grown on Whitfield Farm, than on any farm round Cirencester. That was too great an insult to be put up with, and I then contradicted the gentleman," continued Mr. Mathews, "and said I had as much corn as Lord Ducie, and could farm as well as his Scotch steward. This was high treason, but time has gone on, and two years ago the 9th of last July, I had the pleasure of telling Lord Ducie before 4000 people that I would defy him to show a balance-sheet, and he admitted he could not do it. What has Mr. Morton done? Why, after writing works to instruct the farmer, given up farming in despair! First of all it was called "The Experimental Farm," next "The Example Farm," but now, I think, we must call it "The Profitless Farm!" (Loud Cheers.) Then there is that fine fellow, the Rev. Mr. Huxtable, who has found out the secret, that pigs can be fatted with bacon. Next, Mr. Hewitt Davis; and then there is the London shopkeeper, Mr. Mechi, who comes all the way from Leadenhall-street, to teach us farming. Well, I went to inspect him—(cheers and laughter)—and a very slovenly gentleman I found him. He has lost more by farming than is the fee simple of his estate. He has not a bad flock of sheep, but I never saw any half so badly managed. Then there is a gentleman who lives in Scotland, a Mr. Caird (I do not know how to pronounce his name), the biggest humbug of the lot. But the greater the humoug the more notice he is taken of; for Sir James Graham spoke of Mr. Caird's pamphlet in the House of Commons. We are sold for very little; we are the middle class of agriculture (I am not speaking of towns), but the labourer looks up to us for support and assistance, and we know that without him we can do nothing, and the land is not worth a farthing. Then, have not we as much right to look to the aristocracy as the poor have to look to us? Did not our landlords formerly say, that we must sink or swim together? Yes, but I am sorry to say, that they have now sailed off, and taken away the boat. I defy contradiction. Under present circumstances we cannot go on. If rents got up to wheat at 7*s.* a bushel, how can we do now, when it is at 4*s.* 6*d.*? The rent of the country is 60,000,000*l.*, and Mr. Villiers—[A voice: What! Lord Villiers?]—no, the Hon. C. Villiers, in the House of Commons, said that the consumption had gained 90,000,000, but I will put it at 60,000,000, by the cheapness of food. I will ask if they have got it, have we not lost it? I believe it is worse than madness for the landlords of this country to look on so coolly and see us ruined. You may depend upon it, if they remain quiet much longer, their time will come next. Taxes must be lowered—the salaries of all public officers must be reduced according to the price of provisions. (Hear.) The salaries of the county officers should be diminished. Another thing is very important, and that is the fundholders; they can live much cheaper—would it be very bad to take from them 9,000,000, if they have taken from us 60,000,000. I do not know but what the landlords have been very much benefited up to this time by the alteration—some of them return from 5 to 15 per cent. of their rents, but a very great number have not reduced it one single farthing, and mine is one of the number. (Hear.) The average taken off is not more than 10 per cent. I have been talking lately to a great many landlords, and some of them seem to think we can wriggle on without any reduction in rent or taxes. If you attend meetings, you will find them exhorting us to farm high, to drain high, to cultivate better. Yes, and see our wives and children come to poverty. That is all we get. I have used my utmost endeavours to get the present state of things altered, but without avail. It is useless to attempt to do so without the landlords will assist us, and if they will do so, we have but two alternatives; either to embark in another business, or emigrate to a distant country. All we want is evenhanded justice—favour we scorn. I hope next year we shall meet under more favourable circumstances.

## Miscellaneous.

*Price of Corn.*—There has been a remarkable rise in the price of flour in the Paris market during the week. Choice samples were sold as high as 51f. the sack of 159 kilogrammes; superior quality, at from 49f. to 50f.; and second quality, from 44f. to 46f.—being a rise of from 5f. to 6f. the sack within 10 days. Many experienced speculators calculate that as the last wheat crop was deficient in quantity although fine in quality, it is possible that the grain which has been hitherto sold to speculators at prices disastrous for the producers, may be resold before long at an exorbitant price to the consumer. There has been a visible improvement in the cattle fairs, particularly in those departments which have not been disturbed. *Times.*

*Paving for Cattle Stalls.*—At a meeting of the Highland Agricultural Society, held last week, Mr. Maxwell, before the commencement of the discussion, called the attention of the meeting to specimens of grooved bricks for laying the floors of cattle stalls, invented and manufactured by Mr. Forbes at the Newark brickworks, near Ellon, in Aberdeenshire. Their peculiarity consisted in the bricks being slit in the surface and grooved in the centre; the grooves communicating with a larger brick of similar construction, on the principle of a main drain, which receives their contents, and forms the grip or gutter. He mentioned that he had received from Sir John Forbes, and various practical farmers in Aberdeenshire, statements certifying the advantages of the invention in point of cleanliness, economy of litter, and comfort, and that he understood the bricks were sold at the kiln at 8*s.* per 100, 160 being sufficient for four animals. *From the Builder, Dec.* 6.

*Benefits of Science.*—The practical view of agriculture cannot be more clearly or profoundly conceived than it was by the North American chief, whose speech on the subject is reported by Crèvecœur. The chief, in recommending agriculture to his tribe, the Mississean Indians, said: "Do you not see that the whites live on corn, but we on flesh; that the flesh requires more than 30 moons to grow, and it is often scarce? that every one of the wonderful seeds which they scatter on the soil returns them more than an hundred-fold? that the flesh has four legs to run away, and we only two to catch it? that te seeds remain and grow, where the white man sows them? that the winter, which for us is the season of laborious hunts, is to them a time of rest? It is for these reasons that they have so many children, and live longer than we do. I say, then, to every one who hears me, before the trees above our huts shall have died of age, before the maples of the valley cease to yield us sugar, the race of the sowers of corn will have extirpated the race of flesh-eaters, unless the hunters resolve also to sow." In his difficult and laborious life of the chase, the Indian consumes in his limbs a large sum of force, but the effect produced is very trifling, and bears no proportion to the expense. Cultivation is the economy of force. Science teaches us the simplest means of obtaining the greatest effect with the smallest expenditure of power, and with given means to produce a maximum of force. The unprofitable exertion of power, the waste of force in agriculture, in other branches of industry, in science, or in social economy, is characteristic of the want of true civilisation. *Liebig.*

METEOROLOGICAL REPORT.—DECEMBER.

(*Continued from p.* 814)

| Date. | Time. | Max. | Min. | Wind and Weather. |
|---|---|---|---|---|
| 15 | 7.30 a.m | 30.31 | ... | NNE. Calm. Densely overcast; thick scud. |
| | 2.40 p.m. | ... | 30.26 | |
| 16 | 7 40 a.m. | 30.25 | ... | Northerly. Calm. Densely overcast; hazy; during night, rain. |
| | 2.15 p.m. | ... | 30,24 | |
| 17 | 8 a.m. | 30.20 | ... | A.M. SE. Calm. Densely overcast. |
| | 8.10 p.m. | ... | 39,13 | 4 P.M. E. by N. Do. do. Barometer falling slowly. |
| 18 | 1.30 a.m. | 30.11 | ... | SSE. Gentle. Overcast. |
| | 3 p.m. | ... | 30.02 | Barometer falling slowly. |
| 19 | 6.55 a.m. | 30.00 | ... | S. Gentle. Raining fast. At 8, storm's-eye passing over; clearing up. |
| * | 2 p.m. | ... | 29.99 | Noon. Brisk, passing showers. |
| | 10.10 p.m. | 30.01 | ... | Evening. Gentle. Densely overcast, and raining fast. Barometer rising. |
| 20 | 7.30 a.m. | 29.99 | ... | SSW. Brisk; overcast; drizzling. Barometer falling steadily. Hot, muggy day. |
| | 10.5 p.m. | ... | 29.85 | |
| Sun. 21 | 8 a.m. | 29.59 | ... | A.M. S. Blowing hard and raining fast. |
| † | 1.5 p.m. | ... | 29.35 | Barometer falling rapidly. |
| | 2.50 p.m. | ... | 29.42 | 2.50 W.N.W. Clear overhead. Dense banks all round. Barometer rising rapidly. |
| | 10.30 p.m. | 29.48 | ... | Evening. Fine. Clear and calm. SSW. |
| 22 | 7 50 a.m. | ... | 29.43 | WNW. Brisk. Dense overcast; squally; drizzling. 10 A.M. NW. Stiff breeze; P.M. N. Raining. Barometer rising steadily. |
| | 10.50 p.m. | 29.78 | ... | |
| 23 | 4.30 a.m. | ... | 29.91 | NNW. Almost calm. Bright, sunny day. Barometer rising steadily. |
| | 10.30 p.m. | 30.08 | ... | |

* This storm came from the westward, and crossed England to the eastward: at 8 A.M. of the 19th I had a very good opportunity of watching the passage of the storm's-eye, just as one would the progress of an eclipse; and though the morning was fair, apparently promising a fine day, nevertheless, agreeably to my anticipations, the evening was wet, notwithstanding the barometer rose.

† From the extreme warmth of Saturday, whilst the barometer was falling, I imagine this storm to have come from the southward, and to have travelled up the Irish channel, and then to have curved eastward and crossed over the centre of England towards the Baltic. The passage of the storm's-eye on Sunday afternoon was very remarkable; as the downward tendency of the barometer was suspended soon after noon, and the clouds cleared away, and a very fine evening succeeded a most wet boisterous forenoon. As this happened on a Sunday, and I travelled up the South-western line the next day, I had an opportunity of ascertaining that the clearing up of the weather, which at Dorchester was before the commencement of the afternoon service, was observed at Southampton as the congregation came out of church, and at Dover not until 6 o'clock P.M. This would therefore allow about 50 miles an hour for the passage of this storm.

Dorchester, Dec. 25. *F. P. B. M.*

(*To be continued.*)

## Notices to Correspondents.

CHICORY: *A G D.* Having grown the roots, wash them, cut them into pieces the size of a Walnut, dry them on a malt-kiln; they are then saleable at 10*l.* to 12*l.* a ton, or more, and are bought by those who roast them as coffee beans are roasted, by which process the root is prepared for use.

DUNG OF CARRIAGE HORSES: *J H.* Your questions have not been received, or they certainly would have received answers. You want to know the value of the dung at the stable. It depends much on the way the animals are littered. The dung may be worth 5*s.* a ton, if well made—*that is*, not fire-fanged, and not too strawy; the quantity made per week of course depends on the way the animals are littered.

HAY CHAFF: *Clericus.* Relative weekly expense of keeping horses:

| | | | | | |
|---|---|---|---|---|---|
| 1.—*2 cwt. of Grass hay, at 8*s.* 6*d.* per cwt.... | | | | 7*s.* 9*d.* | —7*s.* 9*d.* |
| 2.— 2 cwt. | ,, | at 3*s.* 6*d.* per cwt.... | | 7 9 | |
| †1½ peck of Oats, ¼ peck per diem, at 2*s.* 6*d.* per bushel | | | | 1 1 | —8 10 |
| 3.—2 cwt. of Oat straw, at 1*s.* 6*d.* per cwt. | | | | 3 0 | |
| 8½ pecks of Oats, or 1½ peck per diem, at 2*s.* 6*d.* per bushel | | | | 5 5½ | —8 5½ |
| 4.—2 cwt. of Bean straw, at 1*s.* 6*d.* per cwt. | | | | 3 0 | |
| 4 pecks of Oats, at 2*s.* 6*d.* per bushel | | | | 2 6 | |
| Cutting to chaff | | | | 0 6 | —6 0 |
| 5.—160 lbs. of Bean straw, at 1*s.* 6*d.* per cwt. | | | | 2 0 | |
| 300 lbs. of Carrots, at 1*s.* 6*d.* | ,, | | | 3 10 | |
| 1½ pecks of Oats, at 2*s.* 6*d.* per bushel | | | | 1 1 | |
| Cutting straw and Carrots | | | | 0 6 | —7 5 |
| 6.—1½ cwt. of Bean straw, at 1*s.* 6*d.* per cwt. | | | | 2 4 | |
| ‡9 pecks of small Potatoes, at 2*s.* 6*d.* per sack | | | | 1 10½ | |
| 1¾ pecks of Oats, at 2*s.* 6*d.* per bushel | | | | 1 1 | |
| Cutting straw and boiling Potatoes | | | | 0 8 | —5 11½ |

* I have several times weighed for our horses, and find they eat and waste 75 lbs. of hay, uncut, in 24 hours, and when cut, 4 lbs. to 5 lbs. less. Best hay is generally 3*l.* 10*s.* per ton.

† Oats are generally sold in Somersetshire, from 16*s.* to 18*s.* per qr.

‡ Small Potatoes, for pigs, can generally be bought for about 2*s.* 6*d.* per sack; and this year I have bought many sacks (a little infected, so as not to be likely to keep long, but large Potatoes), at 2*s.* per sack.

KEEPING COWS IN THE YARD: *B R.* The course of cropping is stated in the article referred to. No corn is grown.

MALT DUST FOR COWS: *X Y.* It may be steeped in either hot or cold water, and allowed to stand for some hours and so given as a mash. A peck a day may thus be given with other food.

PASTURE: *Constant Reader.* If the land grows Moss, you might spread some lime and salt over it. Slake 40 or 60 bushels of lime with brine, and mix the slaked lime with any vegetable earth and spread the compost whenever you can safely cast it on the land.

POTATOES: *W D S*, in his article on the "Experiments with various Manures in the Cultivation of Potatoes," does not mention the time of planting; nor do I quite understand whether he spread the artificial manures over the Potato sets or on the top of the drills. If the farmer was the case, did he not plough up a great deal of the dung in opening the drills? Do you recommend early planting? [Yes.] *Sussex.*

POULTRY: *M W.* If the poultry be not over-done in cooking, the cause must be the bad quality of the food, from which the fat and flesh is produced: try more generous diet. Poultry will fatten on poor food, as Potatoes, but the fat will not stand in cooking.—*S V.* True black Spanish fowls must have white faces; the cheek is often confounded with the ear-lobe, which is white in many fowls; but a real Spanish bird should be white from the ear-lobe to the beak, and completely round the eye and face. I cannot say whether the two Messrs. Barber are identical.—*Y Y.* A pure Cochin China fowl has very little tail, and nothing like sickle feathers in it. The fifth claw cannot be admitted, but a double or rose comb is entirely out of the question. —*A Poultry Fancier.* I know no book giving all the details you require. The Rev. E. S. Dixon's is the best work we have at present on poultry.—*A R S.* Clay, well rammed down, with a layer of gravel stones on the top, will make a floor for a poultry house, or clay alone. I should prefer this to asphaltum, and know of hundreds of such floors which will bear sweeping with a birch-broom, without injury to the surface. Crooked breasts are sometimes caused by small perches, but are more frequently, in fast-grown large birds, the result of weakness. Lacking strength to support the body by the clasp of the feet on the perch, they, while the bones are young and soft, rest the breast constantly on it, and it takes the curve. It may be avoided by using, while the birds are young, a bar raised about 12 inches from the ground, and covered with straw until it presents a good wide surface, on which they will roost with impunity until they are strong enough to perch in the ordinary way. A laying pullet should not be too fat; she wants something wherewith to form the shell of her eggs. Let her have chalk and lime, also gravel; give her some whole corn for a change, and do not feed too much on Potatoes. There should not be more than one cock to six hens.—*P.* When you speak of the season, I presume you mean the present time. The pullets of this year are the fowls now laying, and they are few in number; by your own account you have no younger birds than 1849. They will not lay till after next month, unless the weather be very mild. *J. Baily*, 113, *Mount-street*

SHEEP: *B.* They are the better for straw certainly; though wicker hurdles are not harder than, during the past fortnight, the ground has been on which flocks have been folded. A little straw would suffice.

# Markets.

COVENT GARDEN, Dec. 27.

English Pine-apples and Grapes continue plentiful. Pears, though in small quantities, are still furnished from Guernsey. The best English kinds fetch good prices They consist of Glout Morceau, Winter Nelis, and Chaumontelle. Oranges are plentiful and good. Nuts are nearly the same as last quoted. Carrots, Turnips, Cabbages, &c., are sufficient for the demand. Potatoes are generally good in quality. Lettuces and other salading are sufficient for the demand. Mushrooms are still dear. Cut flowers consist of Heaths, Pelargoniums, Mignonette, Stephanotis, Bignonia venusta, Chrysanthemums, Camellias, and Roses.

FRUIT.

| | |
|---|---|
| Pine-apples, per lb., 3s to 6s | Almonds, per peck, 6s |
| Grapes, hothouse, p. lb., 2s to 5s | — sweet, per lb., 2s to 3s |
| — Lisbon, per lb., 9d to 1s | Oranges, per doz., 1s to 1s 6d |
| Apples, kitchen, per bushel, 2s to 3s 6d | — per 100, 6s to 10s |
| Pears, dessert, p. doz., 2s to 4s | Nuts, Barcelona, p. bsh, 20s to 22s |
| Lemons, per doz., 1s to 2s | — Brazil, p, bsh., 12s to 14s |
| Walnuts, per bush., 12s to 24s | Filberts, per 100 lbs., 70s to 90s |

VEGETABLES.

| | |
|---|---|
| Cabbages, per doz., 8d to 1s | Shallots, per lb., 6d to 8d |
| Cauliflowers, p. doz., 2s to 4s | Garlic, per lb., 6d to 8d |
| Broccoli, p. bunch, 8d to 1s 3d | Artichokes, Jerusalem, per hf. sieve, 9d to 1s |
| Potatoes, per ton, 45s to 80s | Lettuce, Cab., p. score, 4d to 1s |
| — per cwt., 2s to 5s | — Cos, per score, 3d to 1s |
| — per bush., 1s 6d to 2s 6d | Small Salads, p. punn., 2d to 3d |
| Turnips, p. bunch, 1d to 2d | HorseRadish, p. bundle, 1s to 4s |
| Cucumbers, each, 6d to 1s | Mushrooms, p. pot., 1s to 2s 6d |
| Radishes, per doz., 9d to 1s | — per bushel, 7s to 10s |
| — Turnip, p. doz., 9d to 1s | Sorrel, per hf. sieve, 6d to 9d |
| Celery, p. bundle, 6d to 1s 6d | Fennel, per bunch, 2d to 3d |
| Carrots, per bunch, 4d to 6d | Savory, per bunch, 2d to 3d |
| Brussels Sprouts, p. half sieve, 1s 6d to 2s | Thyme, per bunch, 2d to 3d |
| Spinach, per sieve, 1s to 1s 6d | Parsley, per doz. bun., 2s to 3s |
| Onions, p. bunch, 1d to 5d | Mint, per bunch, 1d to 2d |
| — Spanish, p. doz., 1s 6d to 3s | Basil, p. bunch, 3d to 4d |
| Endive, per score, 9d to 1s | Marjoram, do., 3d to 4d |
| Beet, per doz., 6d to 1s | Watercress, per doz. bunches, 4d to 6d |
| Parsnips, per doz., 6d to 1s | |
| Leeks, per bunch, 1d to 2d | |

POTATOES.—SOUTHWARK, MONDAY, Dec. 22.

The committee report that there have been several arrivals coastwise, and a large supply by rail. The weather very mild for the season; trade extremely dull at the following prices:—Yorkshire Regents, 70s. to 80s.; Scotch ditto, 60s. to 65s.; Kent and Essex do., 65s. to 75s.; ditto Shaws, 55s. to 65s.; Lincolnshire and Wisbeach, 55s. to 70s.; French, 55s. to 60s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Dec. 24.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 70s to 75s | | Clover | 70s to 84s | |
| Inferior ditto | 55 | 65 | 2d cut | 60 | 72 |
| Rowen | 60 | 63 | Straw | 22 | 25 |
| New Hay | — | — | | J. COOPER. | |

CUMBERLAND MARKET, Dec. 26.

| | | | | | |
|---|---|---|---|---|---|
| Prime Meadow Hay | 72s to 77s | | Inferior | 65s to 72s | |
| Inferior ditto | 60 | 65 | New Clover | — | — |
| New Hay | — | — | Straw | 24 | 28 |
| Old Clover | 80 | 86 | | JOSHUA BAKER. | |

WHITECHAPEL, Dec. 23.

| | | | | | |
|---|---|---|---|---|---|
| Fine Old Hay | 70s to 75s | | Old Clover | 84s to 88s | |
| New Hay | 63 | 70 | Inferior ditto | — | — |
| Inferior ditto | 45 | 55 | New Clover | 75 | 80 |
| Straw | 21 | 24 | Inferior ditto | 55 | 65 |

COAL MARKET.—FRIDAY, Dec. 26.

The Market is closed until Monday for the Christmas holidays.

HOPS.—FRIDAY, Dec. 26.

Messrs. Pattenden and Smith report that the Hop market continues very firm.

SMITHFIELD, MONDAY, Dec 22.

The number of Beasts and Sheep is small, but larger than on the corresponding day last year. The butchers having generally provided for the Christmas consumption, buy very sparingly to-day. Trade is dull, and prices on the average lower; our top quotations are only realised in extreme cases. There is scarcely any alteration in the trade for Calves. From Holland and Germany there are 242 Beasts, 1690 Sheep, and 110 Calves; from France, 22 Beasts and 12 Calves; and 110 Beasts from Scotland.

| Per st. of 8 lbs. | s | d | s | d | Per st. of 8 lbs. | s | d | s | d |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 8 | to 4 | 0 | Best Long-wools | 3 | 8 | to 3 | 10 |
| Best Short-horns | 3 | 6 | — 3 | 8 | Ditto Shorn | ... | ... | | |
| 2d quality Beasts | 2 | 8 | — 3 | 2 | Ewes & 2d quality | 2 | 8 | — 3 | 4 |
| Best Downs and Half-breds | 4 | 0 | — 4 | 4 | Ditto Shorn | ... | ... | | |
| Ditto Shorn | ... | ... | | | Lambs | 0 | 0 | — 0 | 0 |
| | | | | | Calves | 2 | 8 | — 4 | 0 |
| | | | | | Pigs | 3 | 4 | — 4 | 6 |

Beasts, 1232; Sheep and Lambs, 12,200; Calves, 167; Pigs, 360.

FRIDAY, Dec. 26.

To-day is quite a holiday market. There are very few things indeed on offer, and the demand is smaller even than the supply. We retain Monday's quotations, although it is a mere nominal affair; however, it pretty fairly represents the small amount of business that is transacted. Our foreign supply consists of 109 Beasts, 120 Sheep, and 44 Calves. The number of Milch Cows is 80.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Best Scots, Herefords, &c. | 3 | 8 | to 4 | 0 | Best Long-wools | 3 | 8 | — 3 | 10 |
| Best Short-horns | 3 | 6 | — 3 | 8 | Ditto Shorn | ... | ... | | |
| 2d quality Beasts | 2 | 8 | — 3 | 2 | Ewes & 2d quality | 3 | 8 | — 3 | 4 |
| Best Downs and Half-breds | 4 | 0 | — 4 | 4 | Ditto Shorn | ... | ... | | |
| Ditto Shorn | ... | ... | | | Lambs | 0 | 0 | — 0 | 0 |
| | | | | | Calves | 2 | 8 | — 4 | 0 |
| | | | | | Pigs | 3 | 4 | — 4 | 6 |

Beasts, 272; Sheep and Lambs, 590; Calves, 106; Pigs, 200.

MARK LANE.

MONDAY, Dec. 22.—There were no arrivals of foreign Wheat or Barley into this port during last week, an occurrence we have not witnessed for many years past. The supply of English Wheat by land carriage samples to this morning's market was small, the condition being generally bad; considering which prices must be noted the same as on this day se'nnight, but the sale is heavy. Foreign met with rather more inquiry without leading to any increase in business, and its value remains nominally unaltered.—Barley is a very dull sale at somewhat lower rates.—Beans and Peas are 1s. per qr. cheaper. —The value of Oats remains unaltered, but the trade is very heavy.—There has been rather a large arrival of American Flour, and less money is offered for barrels, but holders are not disposed to give way in price.

| PER IMPERIAL QUARTER. | s. | s. | | s. | s. |
|---|---|---|---|---|---|
| Wheat, Essex, Kent, & Suffolk...White | 39 | —41 | Red | 36 | —38 |
| — — fine selected runs...ditto | 42 | —44 | Red | 38 | —40 |
| — — Talavera | 46 | —48 | | | |
| — Norfolk, Lincoln, & York...White | 34 | —38 | Red | — | |
| — Foreign | 32 | —49 | | | |
| Barley, grind. & distil., 25s to 26s...Chev. | 28 | —31 | Malting | 25 | —27 |
| — Foreign...grinding and distilling | 22 | —26 | Malting | — | |
| Oats, Essex and Suffolk | 16 | —18 | | | |
| — Scotch and Lincolnshire...Potato | 19 | —21 | Feed | 18 | —20 |
| — Irish ...Potato | 18 | —20 | Feed | 17 | —19 |
| — Foreign ...Poland and Brew | 18 | —21 | Feed | 16 | —19 |
| Rye | 28 | —30 | Foreign | — | |
| Rye-meal, foreign...per ton | — | | | | |
| Beans, Mazagan ...24s to 27s...Tick | 25 | —30 | Harrow | 25 | —30 |
| — Pigeon...27 — 33...Winds | 30 | —31 | Longpod | 24 | —26 |
| — Foreign ...Small | 22 | —30 | Egyptian | 23 | —25 |
| Peas, white, Essex and Kent...Boilers | 32 | —34 | Suffolk | 33 | —35 |
| — Maple...26s to 28s ...Grey | 24 | —26 | Foreign | 27 | —34 |
| Maize ...White | — | | Yellow | — | |
| Flour, best marks delivered ...per sack 35 | | | | | |
| — Suffolk ...ditto | 25 | —32 | Norfolk | 25 | —32 |
| — Foreign ...per barrel | 15 | —21 | Per sack | 28 | —33 |

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

| | Flour, 12494 sks & 22663 brls | Wheat. Qrs. | Barley. Qrs. | Malt. Qrs. | Oats. Qrs. | Beans. Qrs. | Peas. Qrs. |
|---|---|---|---|---|---|---|---|
| English | | 4044 | 8712 | 6378 | 1855 | 684 | 1078 |
| Irish | | — | 180 | — | 3420 | — | — |
| Foreign | | — | — | — | 5092 | 760 | 837 |

FRIDAY, Dec. 26.—The arrivals of all kinds of grain during the week have been small, and having a thin attendance at market this morning, the business transacted was very trifling, and the value of all articles may be considered the same as on Monday, holders showing no disposition to take less money.

ARRIVALS THIS WEEK.

| | Wheat. Qrs. | Barley. Qrs. | Oats. Qrs. | Flour. |
|---|---|---|---|---|
| English | 1130 | 3150 | 2990 | 420 sacks |
| Irish | — | — | 3320 | |
| Foreign | 2250 | 1860 | 3910 | 2970 sacks |

| IMPERIAL AVERAGES, | WHEAT. | BARLEY. | OATS. | RYE. | BEANS. | PEAS. |
|---|---|---|---|---|---|---|
| Nov. 15 | 36s 4d | 26s 7d | 18s 1d | 26s 0d | 28s 8d | 28s 3d |
| — 22 | 36 9 | 27 0 | 18 3 | 23 2 | 29 8 | 28 7 |
| — 29 | 37 2 | 27 1 | 18 8 | 25 7 | 30 5 | 28 10 |
| Dec. 6 | 37 6 | 27 0 | 18 2 | 27 6 | 30 6 | 29 6 |
| — 13 | 37 5 | 26 8 | 18 6 | 27 2 | 30 2 | 29 0 |
| — 20 | 37 7 | 26 6 | 18 3 | 27 4 | 29 9 | 29 6 |
| Aggreg. Aver. | 37 2 | 26 10 | 18 4 | 26 2 | 29 10 | 29 1 |
| Duties on Foreign Grain | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 | 1 0 |

Fluctuations in the last six weeks' Averages.

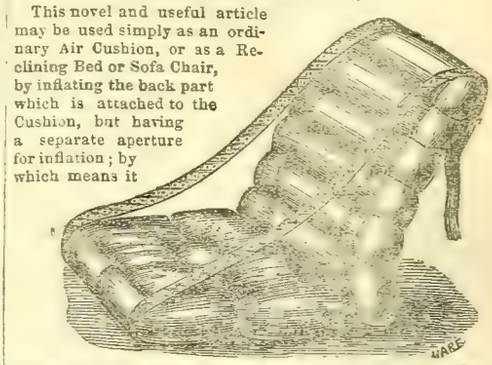
| PRICES. | Nov. 15. | Nov. 22. | Nov. 29. | Dec. 6. | Dec. 13. | Dec. 20. |
|---|---|---|---|---|---|---|
| 37s 7d | ... | ... | ... | ... | ... | ... |
| 37 6 | ... | ... | ... | ... | ... | ... |
| 37 5 | ... | ... | ... | ... | ... | ... |
| 37 2 | ... | ... | ... | ... | ... | ... |
| 36 9 | ... | ... | ... | ... | ... | ... |
| 36 4 | ... | ... | ... | ... | ... | ... |

SEEDS.—Dec. 22.

| | | | |
|---|---|---|---|
| Canary, per qr. | 36s to 38s | Coriander, p. cwt. | 11s to 11s |
| Caraway, per cwt. | 32 — 33 | Mustard, white, p. bush. | 5 — 6 |
| Hempseed, per qr. | 32 — 34 | — brown, do. | 6 — 7 |
| Linseed, foreign, do. | — | Rape, per last | 20l.—21l. |
| Clover, red, p. cwt. | — | Cakes, Linseed, p. 1000 | 9l. 5s. |
| — — foreign, do. | — | — — foreign, p. ton | 7l. 15s. |
| — white, do. | — | — Rape, foreign, do. | 4l. 7s. |
| — — foreign, do. | — | Tares, per bush, | 4s 0d—4s 6d |

LIVERPOOL, TUESDAY, Dec. 23.—The arrivals from Ireland and coastwise during the week are light. From foreign ports, however, the supply has been large. The trade has been extremely quiet, and the few transactions which have taken place have been quite of a retail character, at previous rates. The weather continues damp and unseasonable. At our market this morning there was only a moderate attendance of the trade; but, notwithstanding the dull accounts from Mark-lane, a fair business was done in Wheat and Flour, at the rates of this day week. Other articles, with the exception of Indian Corn, which was 6d. per 480 lbs. cheaper, were without change in value. — FRIDAY, Dec 19.—There was a very fair business doing in Wheat and Flour by millers and dealers, at Tuesday's prices, the tone of the trade being decidedly stronger. Oats and Oatmeal were likewise as on Tuesday, with a scarcity of fine quality of the former. There was no observable change in the value of Indian Corn, Barley, or Peas.


J. L. HANCOCK'S INFLATED INDIA-RUBBER AIR-PROOF BED-CHAIR.

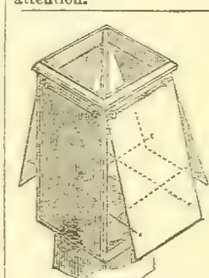


This novel and useful article may be used simply as an ordinary Air Cushion, or as a Reclining Bed or Sofa Chair, by inflating the back part which is attached to the Cushion, but having a separate aperture for inflation; by which means it may be filled at pleasure to any degree of tightness, and set to any angle. Invalids will find this article admirably adapted for great ease and comfort, either on a bed or sofa.

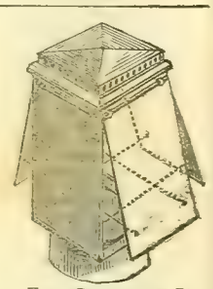
VULCANISED INDIA RUBBER HOSE PIPES for Breweries, Fire-Engines, Watering Gardens, and Flexible Gas Tubing of various kinds.

Portable India-Rubber Shower and Sponging Baths, Waterproof Fishing Boots, Air Cushions and Beds, made any size to order.

All orders addressed to JAMES LYNE HANCOCK, India-Rubber manufactory, Goswell-road, London, will meet with immediate attention.



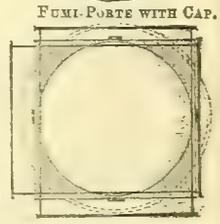
FUMI-PORTE.



FUMI-PORTE WITH CAP.

LAWRENCE AND CO., No. 55, Parliament-street, Westminster; and No. 10, York-place, Lambeth, ZINC DEALERS and MANUFACTURERS.

Chimney Shafts, 9d. per foot; various Cowls and Tops for Chimneys; Perforated Zinc, 3½d. per foot; Drawn Bell Tube, &c., 3d. per lb.; Rain Pipe, 3 inches, 4d. per foot; 2 inches, 3d. per foot; Skylights and Windows, Drawn Bay, Cottage, and Church Lights, made to order and plan; Brass and Zinc Plates engraved and fixed on glass; Sheet Zinc, Nails, and Spelter, at market prices.



PASSAGE OF SMOKE.

CHRISTMAS PRESENTS.—At this festive period of the year, when friends and lovers assemble at the social board, or join in the mazes of the dance, a more than usual anxiety is created for PERSONAL ATTRACTION, and the following unrivalled discoveries for the TOILET are called into increased requisition, namely — ROWLANDS MACASSAR OIL, for creating and sustaining a luxurian head of hair, ROWLANDS' KALYDOR, for rendering the Skin soft, fair, and blooming, ROWLANDS' ODONTO, OR PEARL DENTIFRICE, for imparting a pearl-like whiteness to the Teeth, and ROWLANDS' AQUA D'ORO, a fragrant and spirituous Perfume, an essential accompaniment to places of public amusement, and crowded assemblies.

BEWARE OF SPURIOUS IMITATIONS.—The only GENUINE of each bears the name of "ROWLANDS'" preceding that of the Article on the Wrapper or Label.

Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

CHRISTMAS FESTIVITIES.

SEWELL AND Co's great SALE of NOVELTIES for BALL and EVENING DRESS for this week consists of a splendid assortment of rich embroidered tarlatan robes, with flounces, at 12s. 6d.; a superb selection of white muslins in tucks and flounces, commencing at 14s. 9d. the dress; embroidered net robes in colours, 8s. 9d. to 12s. 9d.; a few very richly embroidered Swiss muslins in tunics, also with flounces, double skirts, 10s. 6d. to 28s. 6d., very elegant, worth 2½ guineas; white lace, tulle, and blondes, in great variety. The new pentalina robe, worked in gold and silver, 28s. 6d.; a few fresh muslin robes for young ladies, very cheap.—Royal Robe Rooms, 44, 45, 46, Old Compton-street; and 46, 47, Frith-street, Soho, London.

FOOD for INFANTS, Invalids, Ladies who are Suckling, and Persons of Delicate Constitutions.—BULLOCK'S SEMOLA.—This substance is prepared solely from the finest wheat. Its great merit consists in its being rich in gluten, the pure nutritive or staminal principle of that grain. One part being equal in nutritive power to five parts of wheaten flour, it contains absolutely more nourishment than beef or mutton. Semola, while most easy of digestion, supplies nourishment in a highly concentrated form, and not being so stimulating as animal food, is particularly adapted to persons afflicted with a weak stomach, or suffering from debility in any form. As an infant's food it supplies exactly what is needed for the growth of the body, and will be found to agree with a weak stomach. All the usual farinaceous and infant's food consist principally of starch, or often of the farina of the coarser grains. Semola may be given by itself, or added to any other forms of food, to increase their nutritive powers, so that for children accustomed to other food, half or two-thirds of the Semola may be mixed with it with great advantage. It is also applicable in many special cases, where potatoes, puddings, and pastries are prohibited, and where even bread is known to be injurious; but in such cases it can only be duly appreciated by the profesion, and must be given under the direction of the medical attendant. Semola is agreeable and palatable added to every variety of food, custards, cakes, puddings, &c. It is particularly adapted for in addition to soups, broth, beef or mutton tea, in place of vermicelli, rice, or barley; whilst it improves the flavour of these forms of diet, it greatly increases their nutritive powers. Semola may be obtained, wholesale or retail, of LLOYD BULLOCK, 22, Conduit-street, London. Retail price, in packets, 1s., 2s. 6d., and 7s. 6d. And may be ordered of all chemists and druggists. Semola Chocolate, made by FRY and SONS; Semola Biscuits, by HUNTLEY and PALMER.

LONDON TO DUBLIN (*viâ* HOLYHEAD) in THIRTEEN HOURS and a HALF.

Three communications daily on week days; two on Sundays. Sea passage Four Hours and a Half. First class, 3*l.*; second, 2*l.* Return tickets (available for a fortnight), first class, 4*l.* 10*s.*; second, 3*l.* Children under twelve, half-price.

For full particulars of the booking-through system between England and Ireland, see "Bradshaw's Guide," page 122; "Walsh's Irish Guide," page 20; "Fisher's Irish Guide," page 2.

THE MOST APPROVED STOVES.—The demand for the CHUNK and VESTA STOVES (separately patented) still continuing unabated, and numbers having been sold last session (in all upwards of 14,000) through the patronage of families who have had experience of their pre-eminently useful qualities, WILLIAM S. BURTON has renewed confidence in recommending them for their cleanliness, economy, and safety. During the last eleven years they have been found sources of great comfort in the bed-room of the invalid, affording a uniform temperature throughout the day and night, with one supply of fuel, without attention. Particulars sent postage free. Chunk, 30*s.* to 50*s.*; Vesta, from 25*s.*; Stoves for warehouses, &c., from 10*s.* each. Joyce's Patent Fuel, 4*s.* 6*d.* per sealed Bag.

THE PERFECT SUBSTITUTE FOR SILVER.—The REAL NICKEL SILVER, introduced 15 years ago by WILLIAM S. BURTON, when plated by the patent process of Messrs. Elkington and Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

| | Fiddle Pattern. | Thread Pattern. | King's Pattern. |
|---|---|---|---|
| Tea Spoons, per dozen ... ... | 18*s.* | 32*s.* | 36*s.* |
| Dessert Forks ,, ... ... | 30*s.* | 54*s.* | 58*s.* |
| Dessert Spoons ,, ... ... | 30*s.* | 56*s.* | 62*s.* |
| Table Forks ,, ... ... | 40*s.* | 65*s.* | 70*s.* |
| Table Spoons ,, ... ... | 40*s.* | 70*s.* | 75*s.* |

Tea and Coffee sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

| | Fiddle. | Thread. | King's. |
|---|---|---|---|
| Table Spoons and Forks, full size, per dozen ... ... ... ... | 12*s.* | 28*s.* | 30*s.* |
| Dessert ditto and ditto ... ... | 10*s.* | 21*s.* | 25*s.* |
| Tea ditto ... ... ... ... ... ... | 5*s.* | 11*s.* | 12*s.* |

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